Vacuum Vessel System
Sub Assembly Fabrication

For National Stellarator Experiment
at the Princeton Plasma Physics Laboratory

Major Tool and Machine, Inc.

Indianapolis, IN

Turn on Bookmarks

Program Mgr: Mike Manuel and Lead Engineer: Doug McCorkle

Dec 10, 2004

PPPL NCSX VVSA Primary job information

Work Order Number: 65678
Customer: PPPL (Princeton Plasma Physics Lab)
Customer Project: NCSX (National Compact Stellarator Experiment)
Part Number: SE120-002
Part Description: VVSA (Vacuum Vessel Sub-Assembly)
Contract #: S005243-F
SOW #: NCSX-SOW-121-03
Product Specification #: NCSX-CSPEC-121-02

Manufacturing Routing Job / Lot Breakdown:

- **Lot 1: 120 Degree VVSA Period # 1 (Including its VV Spacer Sub-Assembly)**
- **Lot 2: 120 Degree VVSA Period # 2 (Including its VV Spacer Sub-Assembly)**
- **Lot 3: 120 Degree VVSA Period # 3 (Including its VV Spacer Sub-Assembly)**
- **Lot 4: Panel Production / Forming (for lot 1)**
- **Lot 5: Panel Production / Forming (for lot 2)**
- **Lot 6: Panel Production / Forming (for lot 3)**
- **Lot 7: Port Extensions, Flanges, Seals, Hardware, etc…(for lot 1)**
- **Lot 8: Port Extensions, Flanges, Seals, Hardware, etc…(for lot 2)**
- **Lot 9: Port Extensions, Flanges, Seals, Hardware, etc…(for lot 3)**
- **Lot 10: Panel Forming Die Sets / Inspection Gages / Panel Development**
- **Lot 11: 60 Degree Build Fixtures (x2)**
- **Lot 12: 120 Degree Fab/Mach/Insp Fixture (x3)**
- **Lot 13: Fixtures: Fabricated Port Extensions & Field Joint Spacer**
- **Lot 14: VVSA Miscellaneous Equipment / Supplies**

Process Specification procedures:

- **PS480 Visual Weld Inspection Procedure……..Rev.**
- **PS481 Volumetric Inspection Procedure……....Rev.**
- **PS482 Laser Tracker Procedure…….Rev.**
- **PS483 Cleanliness Control Procedure……....Rev.**
- **PS484 Magnetic Permeability Inspection Procedure……Rev.**
- **PS485 U-T Inspection Procedure…….Rev.**
- **PS486 Vacuum Testing Procedure……..Rev.**
- **PS487 Surface Finish Inspection Procedure……..Rev.**
- **PS488 Subcontract / Subcontractor requirements……Rev.**
- **PS489 Material Procurement requirements……..Rev.**
- **PS490 Serialization / Part Identification……Rev.**
- **PS491 Welding……..Rev.**

PPPL NCSX VVSA Primary job information

Port Extension summary:

- **Port NB: Neutral Beam Port Extension (1/2" Fabricated) (1x / Vessel)**
- **Port 4: Personnel Access Port Extension (1/2" Fabricated) (2x / Vessel)**
- **Port 5: (purpose unknown). (6" O.D. x 0.188" Wall Tubing) (2x / Vessel)**
- **Port 6: (purpose unknown). (10" O.D. x 0.25" Wall Tubing) (2x / Vessel)**
- **Port 7: (purpose unknown). (8" O.D. x 0.188" Wall Tubing) (2x / Vessel)**
- **Port 8: (purpose unknown). (3.5" Sch 40 Pipe) (2x / Vessel)**
- **Port 9: (purpose unknown). (6" O.D. x 0.188" Wall Tubing) (2x / Vessel)**
- **Port 10: (purpose unknown). (10" O.D. x 0.25" Wall Tubing) (2x / Vessel)**
- **Port 11: (purpose unknown). (2.5" Sch. 40 Pipe) (2x / Vessel)**
- **Port 12: (purpose unknown). (1/2" Fabricated) (2x / Vessel)**
- **Port 18: (purpose unknown).((2) 3.5" Sch 40 Pipe and (1) commercial dome) (4x / Vessel) / (2x / Vessel)**
- **Spacer Port: (purpose unknown). (3.5" Sch 40 Pipe) (1x / Vessel)**

Fixture Number / Description summary:

- **MTMFX-3060: Neutral Beam Port Extension Build Fixture**
- **MTMFX-3067: # 12 Port Extension Build Fixture**
- **MTMFX-3078: # 4 Port Extension Build Fixture**
- **MTMFX-3079: Dome Port Tube Fitting Fixture**
- **MTMFX-3080: Field Joint Spacer Build Fixture**
- **MTMFX-3075: 60 Degree Vessel Build Fixture**
- **MTMFX-3076: 120 Degree Vessel Build Fixture**
- **MTMFX-3077: Zero Degree Reinforcement**
- **MTMFX-3074: Pin Next Extension (non-deliverable)**
- **MTMFX-3081: Port NB Seal Retainer Machining Fixture**
- **MTMFX-3082: Port 4 Seal Retainer Machining Fixture**
- **MTMFX-3083: Port 12 Seal Retainer Machining Fixture**
- **MTMFX-2883: Die Set # 1 Cavity**
- **MTMFX-2884: Die Set # 1 Core**
- **MTMFX-2885: Die Set # 2 Cavity**
- **MTMFX-2886: Die Set # 2 Core**
- **MTMFX-2887: Die Set # 3 Cavity**
- **MTMFX-2892: Die Set # 3 Core**
- **MTMFX-2888: Die Set # 4 Cavity**
- **MTMFX-2889: Die Set # 4 Core**
- **MTMFX-2890: Die Set # 5 Cavity**
- **MTMFX-2891: Die Set # 5 Core**
- **MTMFX-3084: Die Set # 6 Cavity**
- **MTMFX-3085: Die Set # 6 Core**
- **MTMFX- 3086: Die Set # 7 Cavity**
- **MTMFX- 3087: Die Set # 7 Core**

- **MTMFX-3088: Die Set # 8 Cavity**
- **MTMFX-3089: Die Set # 8 Core**
- **MTMFX- 3090: Die Set # 9 Cavity**
- **MTMFX- 3091: Die Set # 9 Core**
- **MTMFX- 3092: Die Set # 10 Cavity**
- **MTMFX- 3093: Die Set # 10 Core**
- **MTMFX-3095: Trim Geometry (Mylar) for Port NB**
- **MTMFX-3096: Trim Geometry (Mylar) for Port 2**
- **MTMFX-????: Trim Geometry (Mylar) for Port 4**
- **MTMFX-????: Trim Geometry (Mylar) for Port 5**
- **MTMFX-????: Trim Geometry (Mylar) for Port 6**
- **MTMFX-????: Trim Geometry (Mylar) for Port 7**
- **MTMFX-????: Trim Geometry (Mylar) for Port 8**
- **MTMFX-????: Trim Geometry (Mylar) for Port 9**
- **MTMFX-????: Trim Geometry (Mylar) for Port 10**
- **MTMFX-????: Trim Geometry (Mylar) for Port 11**
- **MTMFX-????: Trim Geometry (Mylar) for Port 12**
- **MTMFX-????: Trim Geometry (Mylar) for Port 15**
- **MTMFX-????: Trim Geometry (Mylar) for Port 17**
- **MTMFX-????: Trim Geometry (Mylar) for Port 18**
- **MTMFX-????: Trim Geometry (Mylar) for Port FJ**

Drawing Number / Description summary:

- **SE120-002-1MTM: Panel # 1 Blank Drawing**
- **SE120-002-2MTM: Panel # 2 Blank Drawing**
- **SE120-002-3MTM: Panel # 3 Blank Drawing**
- **SE120-002-4MTM: Panel # 4 Blank Drawing**
- **SE120-002-5MTM: Panel # 5 Blank Drawing**
- **SE120-002-6MTM: Panel # 6 Blank Drawing**
- **SE120-002-7MTM: Panel # 7 Blank Drawing**
- **SE120-002-8MTM: Panel # 8 Blank Drawing**
- **SE120-002-9MTM: Panel # 9 Blank Drawing**
- **SE120-002-10MTM: Panel # 10 Blank Drawing**

- **SE120-002-11MTM: Formed Panel # 1 Inspection Drawing**
- **SE120-002-12MTM: Formed Panel # 2 Inspection Drawing**
- **SE120-002-13MTM: Formed Panel # 3 Inspection Drawing**
- **SE120-002-14MTM: Formed Panel # 4 Inspection Drawing**
- **SE120-002-15MTM: Formed Panel # 5 Inspection Drawing**
- **SE120-002-16MTM: Formed Panel # 6 Inspection Drawing**
- **SE120-002-17MTM: Formed Panel # 7 Inspection Drawing**
- **SE120-002-18MTM: Formed Panel # 8 Inspection Drawing**

- **SE120-002-19MTM: Formed Panel # 9 Inspection Drawing**
- **SE120-002-20MTM: Formed Panel # 10 Inspection Drawing**

- **SE121-020-1MTM: Field Joint Spacer Panel # 1 Blank Drawing**
- **SE121-020-2MTM: Field Joint Spacer Panel # 2 Blank Drawing**
- **SE121-020-3MTM: Field Joint Spacer Panel # 3 Blank Drawing**
- **SE121-020-4MTM: Field Joint Spacer Panel # 4 Blank Drawing**
- **SE121-020-5MTM: Field Joint Spacer Panel # 5 Blank Drawing**

- **SE121-020-6MTM: Field Joint Spacer Formed Panel # 1 Inspection Drawing**
- **SE121-020-7MTM: Field Joint Spacer Formed Panel # 2 Inspection Drawing**
- **SE121-020-8MTM: Field Joint Spacer Formed Panel # 3 Inspection Drawing**
- **SE121-020-9MTM: Field Joint Spacer Formed Panel # 4 Inspection Drawing**
- **SE121-020-10MTM: Field Joint Spacer Formed Panel # 5 Inspection Drawing**

- **SE120-002-21MTM: Port NB Cover Blank Drawing**
- **SE120-002-22MTM: Port NB Flange Blank Drawing**
- **SE120-002-23MTM: Port NB Seal Retainer Blank Drawing**
- **SE120-002-24MTM: Port NB Sidewall Blank Drawing**
- **SE120-002-25MTM: Port NB Formed Sidewall Inspection Drawing**
- **SE120-002-26MTM: Port NB Sub-Assy Weld number / X-ray Map**

- **SE120-002-27MTM: Port 4 Cover Blank Drawing**
- **SE120-002-28MTM: Port 4 Flange Blank Drawing**
- **SE120-002-29MTM: Port 4 Seal Retainer Blank Drawing**

- **SE120-002-30MTM: Port 4A1 Sidewall Blank Drawing**
- **SE120-002-31MTM: Port 4A2 Sidewall Blank Drawing**
- **SE120-002-32MTM: Port 4A3 Sidewall Blank Drawing**
- **SE120-002-33MTM: Port 4A4 Sidewall Blank Drawing**
- **SE120-002-34MTM: Port 4A5 Sidewall Blank Drawing**
- **SE120-002-35MTM: Port 4A1 Formed Sidewall Inspection Drawing**
- **SE120-002-36MTM: Port 4A2 Formed Sidewall Inspection Drawing**
- **SE120-002-37MTM: Port 4A3 Formed Sidewall Inspection Drawing**
- **SE120-002-38MTM: Port 4A4 Formed Sidewall Inspection Drawing**
- **SE120-002-39MTM: Port 4A5 Formed Sidewall Inspection Drawing**
- **SE120-002-40MTM: Port 4A Sub-Assy Weld number / X-ray Map**

- **SE120-002-41MTM: Port 4B1 Sidewall Blank Drawing**
- **SE120-002-42MTM: Port 4B2 Sidewall Blank Drawing**
- **SE120-002-43MTM: Port 4B3 Sidewall Blank Drawing**
- **SE120-002-44MTM: Port 4B4 Sidewall Blank Drawing**
- **SE120-002-45MTM: Port 4B5 Sidewall Blank Drawing**
- **SE120-002-46MTM: Port 4B1 Formed Sidewall Inspection Drawing**

- **SE120-002-47MTM: Port 4B2 Formed Sidewall Inspection Drawing**
- **SE120-002-48MTM: Port 4B3 Formed Sidewall Inspection Drawing**
- **SE120-002-49MTM: Port 4B4 Formed Sidewall Inspection Drawing**
- **SE120-002-50MTM: Port 4B5 Formed Sidewall Inspection Drawing**
- **SE120-002-51MTM: Port 4B Sub-Assy Weld number / X-ray Map**

- **SE120-002-52MTM: Port 12 Cover Blank**
- **SE120-002-53MTM: Port 12 Flange Blank**
- **SE120-002-54MTM: Port 12 Seal Retainer Blank**

- **SE120-002-55MTM: Port 12A1 Sidewall Blank**
- **SE120-002-56MTM: Port 12A2 Sidewall Blank**
- **SE120-002-57MTM: Port 12A1 Formed Sidewall Inspection Drawing**
- **SE120-002-58MTM Port 12A2 Formed Sidewall Inspection Drawing**
- **SE120-002-59MTM: Port 12A Sub-Assy Weld number / X-ray Map**

- **SE120-002-60MTM: Port 12B1 Sidewall Blank**
- **SE120-002-61MTM: Port 12B2 Sidewall Blank**
- **SE120-002-62MTM: Port 12B1 Formed Sidewall Inspection Drawing**
- **SE120-002-63MTM: Port 12B2 Formed Sidewall Inspection Drawing**
- **SE120-002-64MTM: Port 12B Sub-Assy Weld number / X-ray Map**

- **SE120-004-20MTM: Spherical Dome Blank**
- **SE120-002-1PDAXMTM: Port Dome A Sub-Assy Weld number / X-ray Map**
- **SE120-002-1PDBXMTM: Port Dome B Sub-Assy Weld number / X-ray Map**

- **SE120-002-1-60XMTM: 60 Degree Vessel Weld number / X-ray Map**
- **SE120-002-1-120XMTM: 120 Deg. Vessel Weld Map (0 deg., port stubs & flanges)**
- **130022MTM: Detail drawing to machine blank flange to fit pipe**

ADD PORT EXTENSION BLANK AND INSPECTION DRAWINGS
DOME PORT ELLIPTICAL HEAD DRAWING (WITH EXCESS TRIM ALLOWANCE)
DOME PORT BLANK DRAWING

LOT

1

LOT

2

LOT

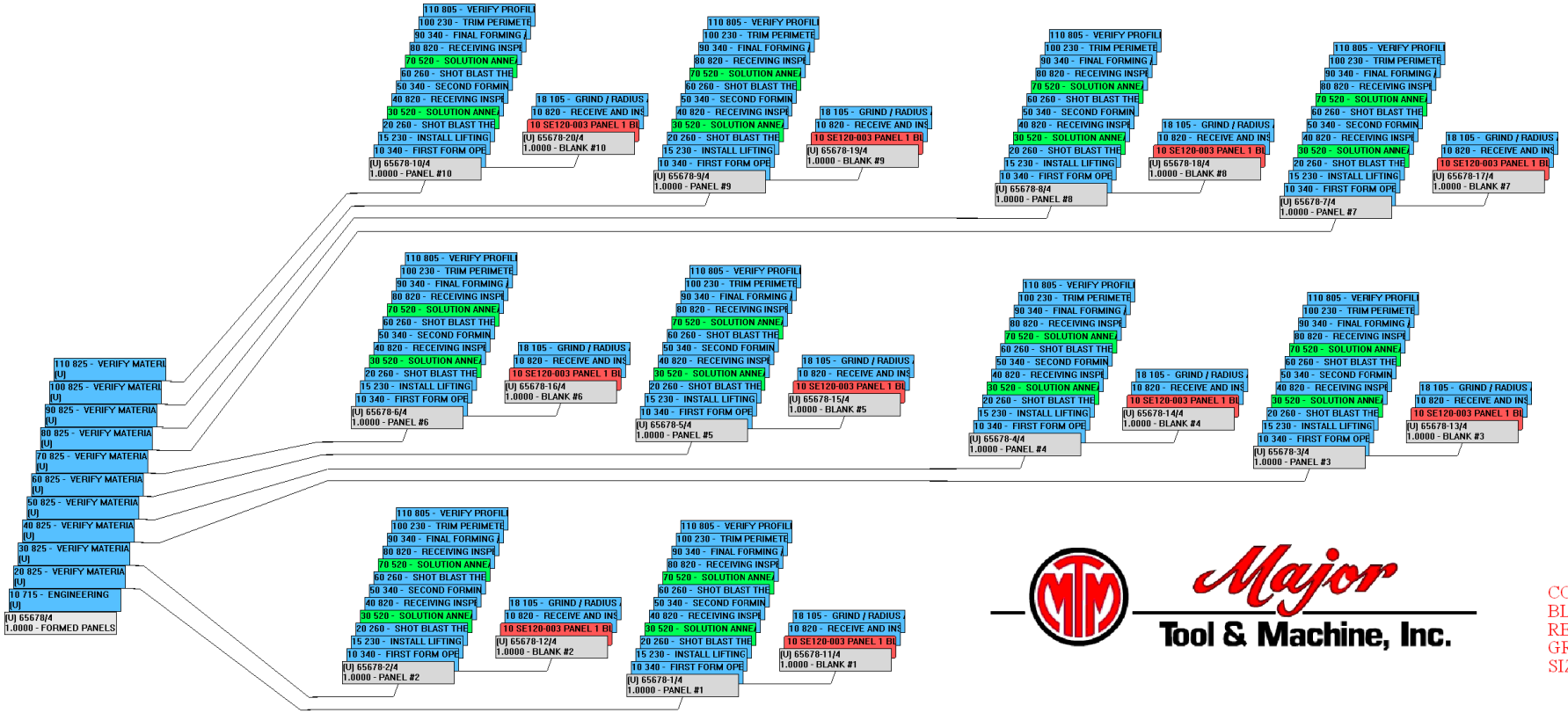
3

LOT

4

NCSX VVSA

FORMED PANELS



Major Tool & Machine, Inc.

COLOR CODE:
BLUE - OPERATION CARD
RED - MATERIAL CARD
GREEN - SUB CONTRACT
SIZE = 1-25-2-1

Process Outline 65678/4,5,6 VVSA Formed Panel Segment Production

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	ENGINEERING	65678/4.0 - Sub:0 Op#:10			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:20			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:30			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:40			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:50			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:60			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:70			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:80			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:90			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:100			
	VERIFY MATERIAL TRACEABLILITY / QAP REQUIREMENTS ARE IN ORDER FOR FORMED PANEL	65678/4.0 - Sub:0 Op#:110			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:1 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS491	65678/4.0 - Sub:1 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1	65678/4.0 - Sub:1 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:1 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES-CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:1 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:1 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1	65678/4.0 - Sub:1 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:1 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:1 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Fixture: MTMFX-2883--Fixture: MTMFX-2884--Fixture: MTMFX-3121	65678/4.0 - Sub:1 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS487--Specification: PS485	65678/4.0 - Sub:1 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Fixture: MTMFX-3121--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:1 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 1 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:11 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:11 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 1 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:11 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:2 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS491	65678/4.0 - Sub:2 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2	65678/4.0 - Sub:2 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:2 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:2 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:2 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2	65678/4.0 - Sub:2 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:2 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:2 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Fixture: MTMFX-2885--Fixture: MTMFX-2886--Fixture: MTMFX-3122	65678/4.0 - Sub:2 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS487--Specification: PS485	65678/4.0 - Sub:2 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Fixture: MTMFX-3122--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:2 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 2 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:12 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:12 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 2 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:12 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:3 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS491	65678/4.0 - Sub:3 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3	65678/4.0 - Sub:3 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:3 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:3 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:3 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3	65678/4.0 - Sub:3 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:3 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:3 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Fixture: MTMFX-2887--Fixture: MTMFX-2892--Fixture: MTMFX-3123	65678/4.0 - Sub:3 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS487--Specification: PS485	65678/4.0 - Sub:3 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Fixture: MTMFX-3123--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:3 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 3 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:13 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:13 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 3 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:13 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:4 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS491	65678/4.0 - Sub:4 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4	65678/4.0 - Sub:4 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:4 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:4 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:4 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4	65678/4.0 - Sub:4 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:4 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:4 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Fixture: MTMFX-2888--Fixture: MTMFX-2889--Fixture: MTMFX-3124	65678/4.0 - Sub:4 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS487--Specification: PS485	65678/4.0 - Sub:4 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Fixture: MTMFX-3124--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:4 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 4 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:14 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:14 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 4 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:14 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:5 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS491	65678/4.0 - Sub:5 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5	65678/4.0 - Sub:5 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:5 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:5 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:5 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5	65678/4.0 - Sub:5 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:5 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-++--Part Description: PANEL SEGMENT #++--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:5 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Fixture: MTMFX-2890--Fixture: MTMFX-2891--Fixture: MTMFX-3125	65678/4.0 - Sub:5 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS487--Specification: PS485	65678/4.0 - Sub:5 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Fixture: MTMFX-3125--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:5 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 5 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:15 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:15 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 5 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:15 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:6 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS491	65678/4.0 - Sub:6 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6	65678/4.0 - Sub:6 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:6 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:6 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:6 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6	65678/4.0 - Sub:6 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:6 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:6 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Fixture: MTMFX-2884--Fixture: MTMFX-2885--Fixture: MTMFX-3126	65678/4.0 - Sub:6 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS487--Specification: PS485	65678/4.0 - Sub:6 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Fixture: MTMFX-3126--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:6 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 6 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:16 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:16 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 6 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:16 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:7 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS491	65678/4.0 - Sub:7 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7	65678/4.0 - Sub:7 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:7 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:7 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:7 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7	65678/4.0 - Sub:7 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:7 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:7 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Fixture: MTMFX-3086--Fixture: MTMFX-3087--Fixture: MTMFX-3127	65678/4.0 - Sub:7 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS487--Specification: PS485	65678/4.0 - Sub:7 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Fixture: MTMFX-3127--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:7 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 7 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:17 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:17 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 7 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:17 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:8 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS491	65678/4.0 - Sub:8 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8	65678/4.0 - Sub:8 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:8 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:8 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:8 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8	65678/4.0 - Sub:8 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:8 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:8 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Fixture: MTMFX-3088--Fixture: MTMFX-3089--Fixture: MTMFX-3128	65678/4.0 - Sub:8 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS487--Specification: PS485	65678/4.0 - Sub:8 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Fixture: MTMFX-3128--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:8 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 8 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:18 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:18 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 8 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:18 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:9 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS491	65678/4.0 - Sub:9 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9	65678/4.0 - Sub:9 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:9 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:9 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:9 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9	65678/4.0 - Sub:9 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:9 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:9 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Fixture: MTMFX-3090--Fixture: MTMFX-3091--Fixture: MTMFX-3129	65678/4.0 - Sub:9 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS487--Specification: PS485	65678/4.0 - Sub:9 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Fixture: MTMFX-3129--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:9 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 9 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:19 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:19 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 9 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:19 Op#:18	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCI	65678/4.0 - Sub:10 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS491	65678/4.0 - Sub:10 Op#:15	PS483 / PS491		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10	65678/4.0 - Sub:10 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:10 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:10 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL - SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POS	65678/4.0 - Sub:10 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10	65678/4.0 - Sub:10 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/4.0 - Sub:10 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS483--Specification: PS488--Specification: PS484	65678/4.0 - Sub:10 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Fixture: MTMFX-3092--Fixture: MTMFX-3093--Fixture: MTMFX-3130	65678/4.0 - Sub:10 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS487--Specification: PS485	65678/4.0 - Sub:10 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Fixture: MTMFX-3130--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:10 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 10 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/4.0 - Sub:20 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification

Process Outline 65678/4,5,6 VVSA Formed Panel Segment Production

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:20 Op#:10 Pc:10	ASTM B443 / PS483 / PS489		Material Certification
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 10 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/4.0 - Sub:20 Op#:18	PS483		

LOT

5

LOT

6

LOT

7

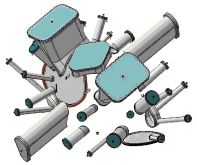
LOT

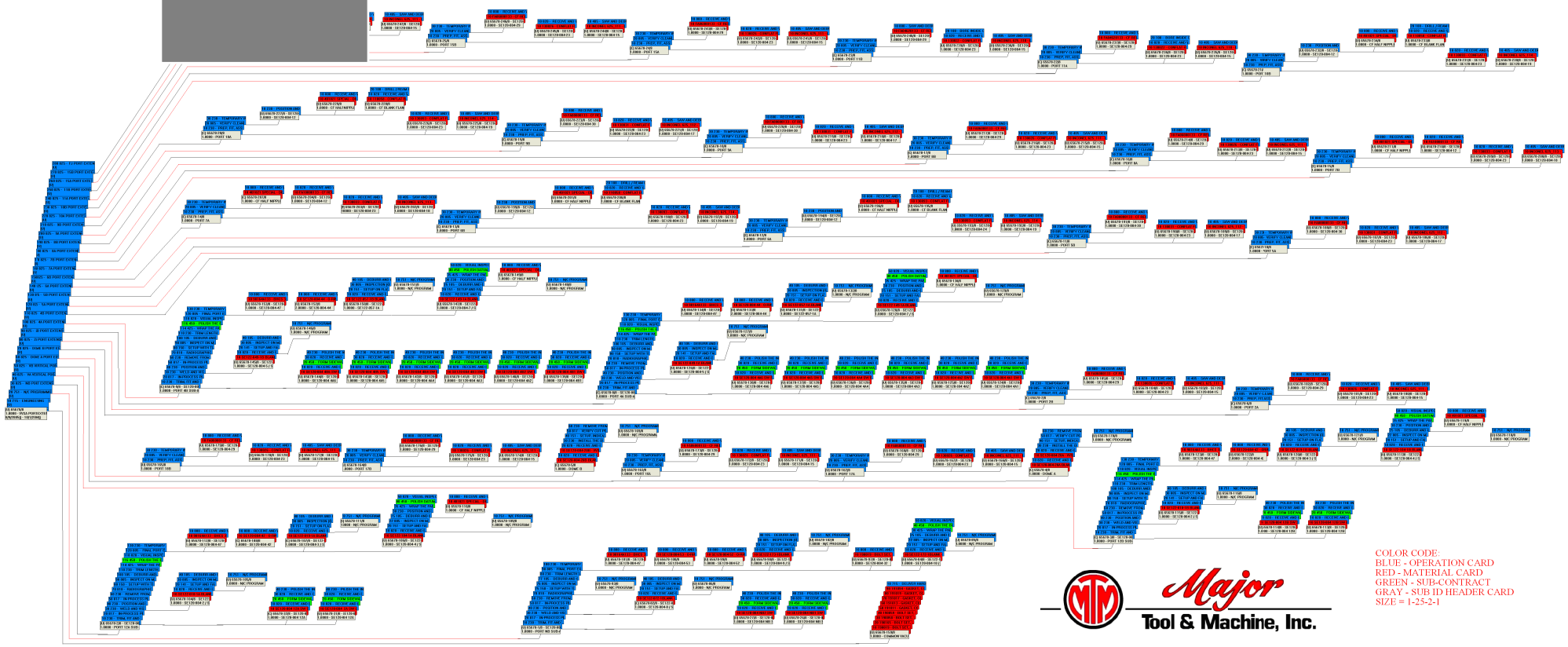
8

LOTS 7, 8 & 9 are the same (one for each 120 deg section)

NCSX VVSA

PORT EXTENSION SUB-ASSEMBLIES





COLOR CODE:
BLUE - OPERATION CARD
RED - MATERIAL CARD
GREEN - SUB-CONTRACT
GRAY - SUB ID HEADER CARD
SIZE = 1-25-2-1

Major Tool & Machine, Inc.

Major Tool Process Outline 65678/8 VVSA Port Extension Sub-Assemblies

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness/ Hold Point	Reporting/ Documentation Req
	ENGINEERING	65678/8.0 - Sub:0 Op#:10			
	N/C PROGRAMMING	65678/8.0 - Sub:0 Op#:20			
	NB PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:30			
	VA VERTICAL PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:40			
	VB VERTICAL PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:50			
	DOME A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:60			
	DOME B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:70			
	2A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:80			
	2B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:90			
	4A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:100			
	4B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:110			
	5A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:120			
	5B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:130			
	6A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:140			
	6B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:150			

	7A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:160			
	7B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:170			
	8A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:180			
	8B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:190			
	9A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:200			
	9B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:210			
	10A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:220			
	10B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:230			
	11A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:240			
	11B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:250			
	15A PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:260			
	15B PORT EXTENSION SUB-ASSEMBLY	65678/8.0 - Sub:0 Op#:270			
	FJ PORT EXTENSION	65678/8.0 - Sub:0 Op#:280			

	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	190019-BOLT SET- .500-20 X 3	65678/8.0 - Sub:159 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	190165-BOLT SET- .312-24 X 2.00 LG	65678/8.0 - Sub:159 Op#:10 Pc:20			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	190058-BOLT SET- .312-24 X 1.25 12PT SILVER PLT	65678/8.0 - Sub:159 Op#:10 Pc:30			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	190059-BOLT SET- .312-24 X 1.75 12PT SILVER PLT	65678/8.0 - Sub:159 Op#:10 Pc:40			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	191011-GASKET- COPPER- 3.01 I.D.	65678/8.0 - Sub:159 Op#:10 Pc:50			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	191013-GASKET- COPPER- 4.01 I.D.	65678/8.0 - Sub:159 Op#:10 Pc:60			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			

	191017-GASKET- COPPER- 6.01 I.D.	65678/8.0 - Sub:159 Op#:10 Pc:70			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			
	191019-GASKET- COPPER- 8.01 I.D.	65678/8.0 - Sub:159 Op#:10 Pc:80			Certificate of Conformance / Material Certification
	DELIVER HARDWARE (BOLT SETS AND VACUUM SEALS) TO ENGINEERING	65678/8.0 - Sub:159 Op#:10			Certificate of Conformance / Material Certification
	191094-GASKET- COPPER- 10.00 I.D.	65678/8.0 - Sub:159 Op#:10 Pc:90			Certificate of Conformance / Material Certification
	TRIM- FIT AND POSITION THE PANELS TO THE BUILD FIXTURE (MAINTAIN FLUSH FIT TO 0.188- MAX GAP). DURING INITIAL FITTING- ENSURE THE EDGES PROTRUDE AT LEAST 0.125- BEYOND THE FIXTURE FACE.--CLEAN THE WELD JOINTS AND TACK WELD PANELS TO THE FIXTURE AND EACH OTHER.--TEAM LEADER VISUAL INSPECT WELD JOINT (IN TACK WELDED CONDITION)--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A--Fixture: MTMFX-3060 Rev: 0A	65678/8.0 - Sub:1 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		
	IN-PROCESS PROFILE INSPECTION--INSPECT THE ENTIRE PART PROFILE AND RECORD IDC DATA--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:1 Op#:20	PS482 / PS483		
	WELD AND VISUAL INSPECT THE TWO SIDE PANEL STRUCTURAL WELD JOINTS COMPLETE--TRIM THE FLANGE END FLUSH WITH THE ADJACENT FIXTURE SURFACE AND PREP FOR INSTALLING AND FITTING THE FLANGE.--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A	65678/8.0 - Sub:1 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		

	POSITION AND WELD THE FLANGE IN PLACE PER DRAWING--NOTE: AFTER THE EXTERIOR COVER PASS IS COMPLETED (AND INSPECTED)- BLEND SMOOTH (AS NECESSARY) AND WELD THE EXTERIOR FILLETS (SKIP WELDS)--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:1 Op#:40	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	IN-PROCESS PROFILE INSPECTION--INSPECT PROFILE IN THE APPLIED WELD ZONE AREAS AND RECORD IDC DATA--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:1 Op#:50	PS482 / PS483		
	REMOVE FROM FIXTURE- CLEANUP- AND LAYOUT FOR X-RAY--INSTALL AND WELD MACHINING SUPPORT STRUCTURES--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS481--Specification: PS483--Specification: PS491 Rev: A--Additional Drawing: MYLAR	65678/8.0 - Sub:1 Op#:60	PS481 / PS483 / PS491		
	RADIOGRAPHIC INSPECT (LOCATIONS IDENTIFIED ON PART) (DOUBLE LOAD FILM) PER THE FOLLOWING:--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS481--Specification: PS483--MTM NDT Cert: --Material Type: INCONEL 625--Material Thickness: 1/2---Specification: 20.A.100 Rev: 2--Specification: ASME SECT V- ARTICLE 2--Specification: ASME SECT VIII-DIV 1-UW-51--Map(s): SE120-002-1PNX Rev:	65678/8.0 - Sub:1 Op#:70	20.A.100 / ASME SECT V- ARTICLE 2 / ASME SECT VIII-DIV 1-UW-51 / PS481 / PS483		MTM NDT Cert / Map(s)
	SETUP WITH THE FLANGE FACING THE SPINDLE--LEVEL TO THE SIDEWALL SURFACES--INDICATE THE FLANGE FACE / VERIFY STOCK AND ALIGNMENT--CLAMP IN PLACE (NOTE THAT CLAMPING PROVISIONS WILL BE TACK WELDED TO THE OUTSIDE SURFACES OF THE PORT SIDEWALLS AS NECESSARY TO SUPPORT THE STRUCTURE.--N/C MACHINE THE FLANGE FACE-GROOVE- AND HOLES PER DRAWING AND PROGRAM.--NOTE THAT THE 32 RA MICRO-INCH SURFACE FINISH WILL BE POLISHED LATER.--NOTIFY Q/A PRIOR TO REMOVING.--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0--Material Type: INCONEL 625	65678/8.0 - Sub:1 Op#:75	PS483		/ IDC:10

	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDCS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE122-072 Rev: 0--Specification: PS484 Rev: C	65678/8.0 - Sub:1 Op#:76	PS483 / PS484		
	DEBURR AND CLEANUP--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE122-072 Rev: 0	65678/8.0 - Sub:1 Op#:77	PS483		
	TRIM LENGTH PER PROVIDED MYLAR (NOTE THAT THE MYLAR TRIM LINE INCLUDES EXCESS STOCK FOR FITTING AND TRIMMING THE PORT EXTENSION TO THE VESSEL WALL)--GRIND / BLEND ALL INTERIOR WELDS FLUSH--POLISH INTERIOR AND FLANGE FACE TO A 32 MICRO-INCH RA SURFACE FINISH--CREATE I.D. TAG- POSITION AND TACK WELD IN PLACE--CLEAN AND PROTECT PART--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A--Specification: PS480	65678/8.0 - Sub:1 Op#:80	PS480 / PS483 / PS485 / PS487 / PS490 / PS491		
	FINAL PORT EXTENSION SUB-ASSEMBLY INSPECTION--VERIFY THE FOLLOWING CHARACTERISTICS:--PROFILE--MATERIAL THICKNESS--SUFACE FINISH--MAGNETIC PERMEABILITY--CLEANLINESS--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS482--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Map(s): INSPECTION MAP	65678/8.0 - Sub:1 Op#:90	PS482 / PS483 / PS484 / PS485 / PS487 / PS490		/ IDC:6
	TEMPORARY ASSEMBLE THE SEAL RETAINER- SEALS- AND COVER PLATE PER DRAWING (BOLTS ONLY REQUIRE TO BE TIGHT ENOUGH TO ENSURE THE COVER IS FIRMLY IN PLACE AND WILL NOT MOVE DURING HANDLING AND FITTING OF THE PORT EXTENSION SUB-ASSEMBLY TO THE VESSEL WALL)--WRAP THE PERIMETER OF THE FLANGE AND COVER WITH STRETCH WRAP.--SEAL THE OPEN END AND EXPOSED THREADED FLANGE HOLES TO ENSURE CLEANLINESS IS MAINTAINED.--Part Number: SE120-004 PORT NB--Part Description: PORT NB SUB-ASSEMBLY--Specification: PS483--Specification: PS486	65678/8.0 - Sub:1 Op#:100	PS483 / PS486		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 NB1 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT NB SIDEWALL BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:26 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 NB1 SW BLANK-PORT NB SIDEWALL BLANK	65678/8.0 - Sub:26 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 NB1 SW--Part Description: PORT NB SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3060 Rev:	65678/8.0 - Sub:26 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 NB1 SW--Part Description: PORT NB SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:26 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 NB1 SW--Part Description: PORT NB SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:26 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 NB2 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT NB SIDEWALL BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:27 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 NB2 SW BLANK-PORT NB SIDEWALL BLANK	65678/8.0 - Sub:27 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.04- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 NB2 SW--Part Description: PORT NB SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3060 Rev:	65678/8.0 - Sub:27 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 NB2 SW--Part Description: PORT NB SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:27 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 NB2 SW--Part Description: PORT NB SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:27 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.--Part Number: SE122-072-1BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING Rev: --Part Description: PORT NB FLANGE BLANK	65678/8.0 - Sub:82 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-072-1BLANK-PORT NB FLANGE BLANK	65678/8.0 - Sub:82 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO MINIMUM CLEANUP--N/C INNER AND OUTER PROFILE PER PROGRAM--INVERT AND FACE THE OTHER SIDE TO CLEANUP MAINTAINING A 1.400- MINIMUM FLANGE THICKNESS.--Part Number: SE122-072-1--Part Description: PORT NB FLANGE--Specification: PS483--Material Type: INCONEL 625	65678/8.0 - Sub:82 Op#:20	PS483		/ IDC:8
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDC DATA.--NOTE THAT HOLES AND THICKNESS WILL BE FINISHED AFTER WELDING TO PORT SIDEWALLS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-072-1--Part Description: PORT NB FLANGE--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:82 Op#:30	PS483 / PS484 / PS487		
	DEBURR AND CLEANUP--Part Number: SE122-072-1--Part Description: PORT NB FLANGE--Specification: PS483	65678/8.0 - Sub:82 Op#:40	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:86 Op#:10			
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:93 Op#:10			

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-172-1BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT NB COVER BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:84 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-172-1BLANK-PORT NB COVER BLANK	65678/8.0 - Sub:84 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO CLEANUP--N/C PERIMETER TO FINISH PER DRAWING AND PROGRAM--DRILL AND REAM A CONSTRUCTION HOLE (0.2500- DIAMETER X 0.250- MAX DEEP) AT THE INTERSECTION OF DATUMS -A- & -B-.--INVERT- REPOSITION AND CLAMP.--FACE TO BRING IN THICKNESS PER DRAWING--N/C GROOVE PER DRAWING AND PROGRAM (NOTE FINISH REQUIREMENTS- PART WILL BE POLISHED TO A 16 MICRO-INCH SURFACE FINISH AFTER MACHINING)--DRILL AND TAP HOLES PER DRAWING AND PROGRAM--RECORD IDC DATA--Part Number: SE122-172-1--Part Description: PORT NB COVER--Specification: PS483 -Material Type: INCONEL 625	65678/8.0 - Sub:84 Op#:20	PS483		/ IDC:3
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDC DATA.--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-172-1--Part Description: PORT NB COVER--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:84 Op#:22	PS483 / PS484 / PS487		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:84 Op#:25	PS483		

	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--NOTE THAT THREE PARTS SHOULD SHIP TOGETHER ON ONE PALLET.--Specification: PS483	65678/8.0 - Sub:84 Op#:30	PS483		
	POLISH THE BOTTOM OF THE GROOVE TO ACHIEVE A 16 MICRO-INCH RA SURFACE FINISH--POLISH THE SIDES OF THE GROOVE TO ACHIEVE A 63 MICRO-INCH RA SURFACE FINISH--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0281 DATED 09NOV04.--Part Number: SE122-172-1--Part Description: PORT NB COVER--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: INCONEL 625	65678/8.0 - Sub:84 Op#:40	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT GROOVE DIMENSIONAL FEATURES--INSPECT GROOVE SURFACE FINISH (SIDES AND BOTTOM)--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE122-172-1--Part Description: PORT NB COVER--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:84 Op#:50	PS483 / PS487		/ IDC:7
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:85 Op#:10			
	RECEIVE AND INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY DOUG MCCORKLE UPON RECIEPT--Certificate of Conformance: --Part Number: 190019--Part Description: BOLT SET--Specification: PS489	65678/8.0 - Sub:97 Op#:10	PS489		Certificate of Conformance / Material Certification
	190019-BOLT SET- .500-20 X 3	65678/8.0 - Sub:97 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-173-1BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: NB SEAL RETAINER BLANK	65678/8.0 - Sub:98 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-173-1BLANK-PORT NB SEAL RETAINER BLANK	65678/8.0 - Sub:98 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP ON FLAT SUB-PLATE--BOLT IN PLACE THROUGH PROVIDED HOLES--ALIGN AND CLAMP IN PLACE--N/C PERIMETER PROFILE PER DRAWING AND PROGRAM--N/C FACE MILL TO THICKNESS PER DRAWING AND PROGRAM--DRILL THROUGH HOLES PER DRAWING (WILL C'BORE IN NEXT SETUP)--REMOVE AND SETUP INTO SUPPORT FIXTURE (SUPPORTING THE OUTSIDE PROFILE)--ALIGN AND CLAMP IN PLACE (THROUGH PART HOLES- AND TOE CLAMP FROM THE OUTSIDE AS NECESSARY).--ROUGH N/C TO REMOVE INNER DROP MATERIAL--FINISH N/C THE INNER PROFILE PER DRAWING AND PROGRAM--COUNTERBORE THE HOLES PER DRAWING AND PROGRAM--Specification: PS483--Part Number: SE122-173-1--Part Description: PORT NB SEAL RETAINER--Fixture: MTMFX-3081 Rev: --Material Type: INCONEL 625	65678/8.0 - Sub:98 Op#:20	PS483		/ IDC:15
	INSPECTION (ON MACHINE) IN RESTRAINED CONDITION--VERIFY PREVIOUS SEQUENCE IDCs--INSPECT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-173-1--Part Description: PORT NB SEAL RETAINER--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:98 Op#:30	PS483 / PS484		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:98 Op#:40	PS483		

	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:102 Op#:10			
	RECEIVE AND VISUAL INSPECT CUSTOMER SUPPLIED MATERIAL PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY DOUG MCCORKLE UPON RECIEPT--Part Number: SE120-004-52--Part Description: O-RING- METAL- HELICOFLEX--Specification: PS489	65678/8.0 - Sub:99 Op#:10	PS489		Certificate of Conformance / Material Certification
	SE120-004-52-O-RING- METAL- HELICOFLEX TYPE HNV	65678/8.0 - Sub:99 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CUSTOMER SUPPLIED MATERIAL PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY DOUG MCCORKLE UPON RECIEPT--Part Number: SE120-004-53--Part Description: O-RING- METAL- HELICOFLEX--Specification: PS489	65678/8.0 - Sub:100 Op#:10	PS489		Certificate of Conformance / Material Certification
	SE120-004-53-O-RING- METAL- HELICOFLEX TYPE HNV	65678/8.0 - Sub:100 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-47--Part Description: SEAL RETAINER SCREW	65678/8.0 - Sub:101 Op#:10			Material Certification
	98164A133-BHCS 316SST #8-32UNC-3A X 0.25- LONG	65678/8.0 - Sub:101 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	TRIM- FIT AND POSITION THE PANELS TO THE BUILD FIXTURE (MAINTAIN FLUSH FIT TO 0.188- MAX GAP). DURING INITIAL FITTING- ENSURE THE EDGES PROTRUDE AT LEAST 0.125- BEYOND THE FIXTURE FACE.--CLEAN THE WELD JOINTS AND TACK WELD PANELS TO THE FIXTURE AND EACH OTHER.--TEAM LEADER VISUAL INSPECT WELD JOINT (IN TACK WELDED CONDITION)--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A--Fixture: MTMFX-3067 Rev: 0A	65678/8.0 - Sub:2 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		

	IN-PROCESS PROFILE INSPECTION--INSPECT THE ENTIRE PART PROFILE AND RECORD IDC DATA--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:2 Op#:20	PS482 / PS483		
	WELD AND VISUAL INSPECT THE TWO SIDE PANEL STRUCTURAL WELD JOINTS COMPLETE--TRIM THE FLANGE END FLUSH WITH THE ADJACENT FIXTURE SURFACE AND PREP FOR INSTALLING AND FITTING THE FLANGE.--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A	65678/8.0 - Sub:2 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		
	POSITION AND WELD THE FLANGE IN PLACE PER DRAWING--NOTE: AFTER THE EXTERIOR COVER PASS IS COMPLETED (AND INSPECTED)- BLEND SMOOTH (AS NECESSARY) AND WELD THE EXTERIOR FILLETS (SKIP WELDS)--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:2 Op#:40	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	IN-PROCESS PROFILE INSPECTION--INSPECT PROFILE IN THE APPLIED WELD ZONE AREAS AND RECORD IDC DATA--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:2 Op#:50	PS482 / PS483		
	REMOVE FROM FIXTURE- CLEANUP- AND LAYOUT FOR X-RAY--INSTALL AND WELD MACHINING SUPPORT STRUCTURES--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS481--Specification: PS483--Specification: PS491 Rev: A--Additional Drawing: MYLAR	65678/8.0 - Sub:2 Op#:60	PS481 / PS483 / PS491		
	RADIOGRAPHIC INSPECT (LOCATIONS IDENTIFIED ON PART) (DOUBLE LOAD FILM) PER THE FOLLOWING:--Part Number: SE120-004 PORT 12A--Part Description: PORT 21A SUB-ASSEMBLY--Specification: PS481--Specification: PS483--MTM NDT Cert: --Material Type: INCONEL 625--Material Thickness: 1/2---Specification: 20.A.100 Rev: 2--Specification: ASME SECT V- ARTICLE 2--Specification: ASME SECT VIII-DIV 1-UW-51--Map(s): X-RAY MAP Rev:	65678/8.0 - Sub:2 Op#:70	20.A.100 / ASME SECT V- ARTICLE 2 / ASME SECT VIII-DIV 1-UW-51 / PS481 / PS483		MTM NDT Cert / Map(s)

	SETUP WITH THE FLANGE FACING THE SPINDLE--LEVEL TO THE SIDEWALL SURFACES--INDICATE THE FLANGE FACE / VERIFY STOCK AND ALIGNMENT--CLAMP IN PLACE (NOTE THAT CLAMPING PROVISIONS WILL BE TACK WELDED TO THE OUTSIDE SURFACES OF THE PORT SIDEWALLS AS NECESSARY TO SUPPORT THE STRUCTURE.--N/C MACHINE THE FLANGE FACE-GROOVE- AND HOLES PER DRAWING AND PROGRAM.--NOTE THAT THE 16 & 63 RA MICRO-INCH SURFACE FINISHES WILL BE POLISHED LATER.--NOTIFY Q/A PRIOR TO REMOVING.--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0--Material Type: 316L SST	65678/8.0 - Sub:2 Op#:80	PS483		/ IDC:12
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDCS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE122-072 Rev: 0--Specification: PS484 Rev: C	65678/8.0 - Sub:2 Op#:90	PS483 / PS484		
	DEBURR AND CLEANUP--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483	65678/8.0 - Sub:2 Op#:100	PS483		
	TRIM LENGTH PER PROVIDED MYLAR (NOTE THAT THE MYLAR TRIM LINE INCLUDES EXCESS STOCK FOR FITTING AND TRIMMING THE PORT EXTENSION TO THE VESSEL WALL)--GRIND / BLEND ALL INTERIOR WELDS FLUSH--POLISH INTERIOR AND FLANGE FACE TO A 32 MICRO-INCH RA SURFACE FINISH--CREATE I.D. TAG- POSITION AND TACK WELD IN PLACE--CLEAN AND PROTECT PART--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A--Specification: PS480	65678/8.0 - Sub:2 Op#:110	PS480 / PS483 / PS485 / PS487 / PS490 / PS491		
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:2 Op#:114	PS483		

	POLISH THE BOTTOM OF THE GROOVE TO ACHIEVE A 16 MICRO-INCH RA SURFACE FINISH--POLISH THE SIDES OF THE GROOVE TO ACHIEVE A 63 MICRO-INCH RA SURFACE FINISH--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0281 DATED 09NOV04.--Part Number: SE122-018-1A--Part Description: PORT 12A FLANGE--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:2 Op#:116	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT GROOVE DIMENSIONAL FEATURES--INSPECT GROOVE SURFACE FINISH (SIDES AND BOTTOM)--RECORD IDC DATA--Part Number: SE122-018-1A--Part Description: PORT 12A FLANGE--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:2 Op#:118	PS483 / PS487		/ IDC:5
	FINAL PORT EXTENSION SUB-ASSEMBLY INSPECTION--VERIFY THE FOLLOWING CHARACTERISTICS:--PROFILE--MATERIAL THICKNESS--SUFACE FINISH--MAGNETIC PERMEABILITY--CLEANLINESS--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS482--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Map(s): INSPECTION MAP	65678/8.0 - Sub:2 Op#:120	PS482 / PS483 / PS484 / PS485 / PS487 / PS490		/ IDC:7
	TEMPORARY ASSEMBLE THE SEAL RETAINER- SEALS- AND COVER PLATE PER DRAWING (BOLTS ONLY REQUIRE TO BE TIGHT ENOUGH TO ENSURE THE COVER IS FIRMLY IN PLACE AND WILL NOT MOVE DURING HANDLING AND FITTING OF THE PORT EXTENSION SUB-ASSEMBLY TO THE VESSEL WALL)--WRAP THE PERIMETER OF THE FLANGE AND COVER WITH STRETCH WRAP.--SEAL THE OPEN END AND EXPOSED THREADED FLANGE HOLES TO ENSURE CLEANLINESS IS MAINTAINED.--Part Number: SE120-004 PORT 12A--Part Description: PORT 12A SUB-ASSEMBLY--Specification: PS483--Specification: PS486	65678/8.0 - Sub:2 Op#:130	PS483 / PS486		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 12A SW LR BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12A SIDEWALL BLANK	65678/8.0 - Sub:31 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 12A SW LR BLANK-PORT 12A SW LR FLAT BLANK	65678/8.0 - Sub:31 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 12A SW LR--Part Description: PORT 12A SIDEWALL LARGE RADIUS--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C	65678/8.0 - Sub:31 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 12A SW LR--Part Description: PORT 12A SIDEWALL LARGE RADIUS--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:31 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 12A SW LR--Part Description: PORT 12A SIDEWALL LARGE RADIUS--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:31 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 12A SW SR BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12A SIDEWALL BLANK	65678/8.0 - Sub:32 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 12A SW SR BLANK-PORT 12A SW SR FLAT BLANK	65678/8.0 - Sub:32 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 12A SW SR--Part Description: PORT 12A SIDEWALL SMALL RADIUS--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C	65678/8.0 - Sub:32 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 12A SW SR--Part Description: PORT 12A SIDEWALL SMALL RADIUS--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:32 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 12A SW SR--Part Description: PORT 12A SIDEWALL SMALL RADIUS--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:32 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.--Part Number: SE122-018-1A BLANK--Part Description: PORT 12A FLANGE BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Material Certification: --Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:104 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-018-1A BLANK-NCSX VVSA PORT 12A FLANGE BLANK	65678/8.0 - Sub:104 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO MINIMUM CLEANUP--N/C INSIDE AND OUTSIDE PERIMETERS TO FINISH PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING.--RECORD IDC DATA--Part Number: SE122-018-1A--Part Description: PORT 12A FLANGE--Specification: PS483	65678/8.0 - Sub:104 Op#:20	PS483		/ IDC:5
	INSPECT ON MACHINE.--VERIFY PREVIOUS SEQUENCE IDCS--Specification: PS483	65678/8.0 - Sub:104 Op#:30	PS483		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:104 Op#:40	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:105 Op#:10			

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-104-1A BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12A COVER BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:106 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-104-1A BLANK-PORT 12A COVER BLANK	65678/8.0 - Sub:106 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO CLEANUP--N/C PERIMETER TO FINISH PER DRAWING AND PROGRAM--INSTALL ALL HOLES OBTAINABLE FROM THIS SETUP--INVERT- REPOSITION AND CLAMP.--FACE TO BRING IN THICKNESS PER DRAWING AND PROGRAM (NOTE FINISH REQUIREMENTS- PART WILL BE POLISHED TO A 16 MICRO-INCH SURFACE FINISH AFTER MACHINING)--DRILL DIA. 0.125- HOLES PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FROM EACH SETUP FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-104-1A--Part Description: PORT 12A COVER ASSY--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:106 Op#:20	PS483		/ IDC:13
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDC DATA.--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-104-1A--Part Description: PORT 12A COVER ASSY--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:106 Op#:22	PS483 / PS484 / PS487		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:106 Op#:25	PS483		

	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-104-1A--Part Description: PORT 12A COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:106 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--NOTE THAT SIX PARTS SHOULD SHIP TOGETHER ON ONE PALLET.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:106 Op#:35	PS483		
	POLISH DATUM -A- SURFACE TO ACHIEVE 16 MICRO-INCH RA SURFACE FINISH--(REF. DRAWING SECTION VIEW E-E- ZONE C8)--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0286 DATED 15NOV04.--NOTE: A LIST OF MATERIALS AND COMPOUNDS THAT WILL BE USED TO PERFORM THE POLISHING MUST BE PROVIDED TO- AND APPROVED BY MTM PRIOR TO BEGINNING WORK.--Part Number: SE122-104-1A--Part Description: PORT 12A COVER ASSY--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:106 Op#:40	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT POLISHED SURFACE FINISH--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE122-104-1A--Part Description: PORT 12A COVER ASSY--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:106 Op#:50	PS483 / PS484 / PS487		/ IDC:3
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:109 Op#:10			
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:110 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:110 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-019-1A BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: PORT 12A SEAL RETAINER BLANK	65678/8.0 - Sub:107 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-019-1A BLANK-PORT 12A SEAL RETAINER BLANK	65678/8.0 - Sub:107 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP ON FLAT SUB-PLATE--BOLT IN PLACE THROUGH PROVIDED HOLES--ALIGN AND CLAMP IN PLACE--N/C PERIMETER PROFILE PER DRAWING AND PROGRAM--N/C FACE MILL TO THICKNESS PER DRAWING AND PROGRAM--DRILL THROUGH HOLES PER DRAWING (WILL C'BORE IN NEXT SETUP)--REMOVE AND SETUP INTO SUPPORT FIXTURE (SUPPORTING THE OUTSIDE PROFILE)--ALIGN AND CLAMP IN PLACE (THROUGH PART HOLES- AND TOE CLAMP FROM THE OUTSIDE AS NECESSARY).--ROUGH N/C TO REMOVE INNER DROP MATERIAL--FINISH N/C THE INNER PROFILE PER DRAWING AND PROGRAM--COUNTERBORE THE HOLES PER DRAWING AND PROGRAM--Specification: PS483--Part Number: SE122-019-1A--Part Description: PORT 12A SEAL RETAINER--Fixture: MTMFX-3083 Rev: --Material Type: 316L SST	65678/8.0 - Sub:107 Op#:20	PS483		/ IDC:10
	INSPECTION (ON MACHINE) IN RESTRAINED CONDITION--VERIFY PREVIOUS SEQUENCE IDCs--INSPECT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-019-1A--Part Description: PORT 12A SEAL RETAINER--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:107 Op#:30	PS483 / PS484		/ IDC:1
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:107 Op#:40	PS483		

	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:111 Op#:10			
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-42--Part Description: VITON O-RING	65678/8.0 - Sub:108 Op#:10			Certificate of Conformance / Material Certification
	SE120-004-42-O-RING- VITON	65678/8.0 - Sub:108 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-47--Part Description: SEAL RETAINER SCREW	65678/8.0 - Sub:112 Op#:10			Material Certification
	98164A133-BHCS 316SST #8-32UNC-3A X 0.25- LONG	65678/8.0 - Sub:112 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	TRIM- FIT AND POSITION THE PANELS TO THE BUILD FIXTURE (MAINTAIN FLUSH FIT TO 0.188- MAX GAP). DURING INITIAL FITTING- ENSURE THE EDGES PROTRUDE AT LEAST 0.125- BEYOND THE FIXTURE FACE.--CLEAN THE WELD JOINTS AND TACK WELD PANELS TO THE FIXTURE AND EACH OTHER.--TEAM LEADER VISUAL INSPECT WELD JOINT (IN TACK WELDED CONDITION)--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A--Fixture: MTMFX-3067 Rev: 0A	65678/8.0 - Sub:3 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		
	IN-PROCESS PROFILE INSPECTION--INSPECT THE ENTIRE PART PROFILE AND RECORD IDC DATA--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:3 Op#:20	PS482 / PS483		
	WELD AND VISUAL INSPECT THE TWO SIDE PANEL STRUCTURAL WELD JOINTS COMPLETE--TRIM THE FLANGE END FLUSH WITH THE ADJACENT FIXTURE SURFACE AND PREP FOR INSTALLING AND FITTING THE FLANGE.--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A	65678/8.0 - Sub:3 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		

	POSITION AND WELD THE FLANGE IN PLACE PER DRAWING--NOTE: AFTER THE EXTERIOR COVER PASS IS COMPLETED (AND INSPECTED)- BLEND SMOOTH (AS NECESSARY) AND WELD THE EXTERIOR FILLETS (SKIP WELDS)--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:3 Op#:40	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	IN-PROCESS PROFILE INSPECTION--INSPECT PROFILE IN THE APPLIED WELD ZONE AREAS AND RECORD IDC DATA--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:3 Op#:50	PS482 / PS483		
	REMOVE FROM FIXTURE- CLEANUP- AND LAYOUT FOR X-RAY--INSTALL AND WELD MACHINING SUPPORT STRUCTURES--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS481--Specification: PS483--Specification: PS491 Rev: A--Additional Drawing: MYLAR	65678/8.0 - Sub:3 Op#:60	PS481 / PS483 / PS491		
	RADIOGRAPHIC INSPECT (LOCATIONS IDENTIFIED ON PART) (DOUBLE LOAD FILM) PER THE FOLLOWING:--Part Number: SE120-004 PORT 12B--Part Description: PORT 21B SUB-ASSEMBLY--Specification: PS481--Specification: PS483--MTM NDT Cert: --Material Type: INCONEL 625--Material Thickness: 1/2---Specification: 20.A.100 Rev: 2--Specification: ASME SECT V- ARTICLE 2--Specification: ASME SECT VIII-DIV 1-UW-51--Map(s): X-RAY MAP Rev:	65678/8.0 - Sub:3 Op#:70	20.A.100 / ASME SECT V- ARTICLE 2 / ASME SECT VIII-DIV 1-UW-51 / PS481 / PS483		MTM NDT Cert / Map(s)
	SETUP WITH THE FLANGE FACING THE SPINDLE--LEVEL TO THE SIDEWALL SURFACES--INDICATE THE FLANGE FACE / VERIFY STOCK AND ALIGNMENT--CLAMP IN PLACE (NOTE THAT CLAMPING PROVISIONS WILL BE TACK WELDED TO THE OUTSIDE SURFACES OF THE PORT SIDEWALLS AS NECESSARY TO SUPPORT THE STRUCTURE.--N/C MACHINE THE FLANGE FACE-GROOVE- AND HOLES PER DRAWING AND PROGRAM.--NOTE THAT THE 16 & 63 RA MICRO-INCH SURFACE FINISHES WILL BE POLISHED LATER.--NOTIFY Q/A PRIOR TO REMOVING.--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0--Material Type: 316 SST	65678/8.0 - Sub:3 Op#:80	PS483		/ IDC:12

	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDCS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE122-072 Rev: 0--Specification: PS484 Rev: C	65678/8.0 - Sub:3 Op#:90	PS483 / PS484		
	DEBURR AND CLEANUP--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483	65678/8.0 - Sub:3 Op#:100	PS483		
	TRIM LENGTH PER PROVIDED MYLAR (NOTE THAT THE MYLAR TRIM LINE INCLUDES EXCESS STOCK FOR FITTING AND TRIMMING THE PORT EXTENSION TO THE VESSEL WALL)--GRIND / BLEND ALL INTERIOR WELDS FLUSH--POLISH INTERIOR AND FLANGE FACE TO A 32 MICRO-INCH RA SURFACE FINISH--CREATE I.D. TAG- POSITION AND TACK WELD IN PLACE--CLEAN AND PROTECT PART--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A--Specification: PS480	65678/8.0 - Sub:3 Op#:110	PS480 / PS483 / PS485 / PS487 / PS490 / PS491		
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:3 Op#:114	PS483		
	POLISH THE BOTTOM OF THE GROOVE TO ACHIEVE A 16 MICRO-INCH RA SURFACE FINISH--POLISH THE SIDES OF THE GROOVE TO ACHIEVE A 63 MICRO-INCH RA SURFACE FINISH--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0281 DATED 09NOV04.--Part Number: SE122-018-1B--Part Description: PORT 12B FLANGE--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:3 Op#:116	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT GROOVE DIMENSIONAL FEATURES--INSPECT GROOVE SURFACE FINISH (SIDES AND BOTTOM)--RECORD IDC DATA--Part Number: SE122-018-1B--Part Description: PORT 12B FLANGE--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:3 Op#:118	PS483 / PS487		/ IDC:5

	FINAL PORT EXTENSION SUB-ASSEMBLY INSPECTION--VERIFY THE FOLLOWING CHARACTERISTICS:--PROFILE--MATERIAL THICKNESS--SUFACE FINISH--MAGNETIC PERMEABILITY--CLEANLINESS--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS482--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Map(s): INSPECTION MAP	65678/8.0 - Sub:3 Op#:120	PS482 / PS483 / PS484 / PS485 / PS487 / PS490		/ IDC:7
	TEMPORARY ASSEMBLE THE SEAL RETAINER- SEALS- AND COVER PLATE PER DRAWING (BOLTS ONLY REQUIRE TO BE TIGHT ENOUGH TO ENSURE THE COVER IS FIRMLY IN PLACE AND WILL NOT MOVE DURING HANDLING AND FITTING OF THE PORT EXTENSION SUB-ASSEMBLY TO THE VESSEL WALL)--WRAP THE PERIMETER OF THE FLANGE AND COVER WITH STRETCH WRAP.--SEAL THE OPEN END AND EXPOSED THREADED FLANGE HOLES TO ENSURE CLEANLINESS IS MAINTAINED.--Part Number: SE120-004 PORT 12B--Part Description: PORT 12B SUB-ASSEMBLY--Specification: PS483--Specification: PS486	65678/8.0 - Sub:3 Op#:130	PS483 / PS486		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 12B SW LR BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12B SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:113 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 12B SW LR BLANK-PORT 12B SW LR FLAT BLANK	65678/8.0 - Sub:113 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 12B SW LR--Part Description: PORT 12B SIDEWALL LARGE RADIUS--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: ?????	65678/8.0 - Sub:113 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 12B SW LR--Part Description: PORT 12B SIDEWALL LARGE RADIUS--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:113 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 12B SW LR--Part Description: PORT 12B SIDEWALL LARGE RADIUS--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:113 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 12B SW SR BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12B SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:114 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 12B SW SR BLANK-PORT 12B SW SR FLAT BLANK	65678/8.0 - Sub:114 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 12B SW SR--Part Description: PORT 12B SIDEWALL SMALL RADIUS--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: ?????	65678/8.0 - Sub:114 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 12B SW SR--Part Description: PORT 12B SIDEWALL SMALL RADIUS--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:114 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 12B SW SR--Part Description: PORT 12B SIDEWALL SMALL RADIUS--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:114 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.--Part Number: SE122-018-1B BLANK--Part Description: PORT 12B FLANGE BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Material Certification: --Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:115 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification

	SE122-018-1B BLANK-NCSX VVSA PORT 12B FLANGE BLANK	65678/8.0 - Sub:115 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO MINIMUM CLEANUP--N/C INSIDE AND OUTSIDE PERIMETERS TO FINISH PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING.--RECORD IDC DATA--Part Number: SE122-018-1B--Part Description: PORT 12B FLANGE--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:115 Op#:20	PS483		/ IDC:5
	INSPECT ON MACHINE.--VERIFY PREVIOUS SEQUENCE IDCS--Specification: PS483	65678/8.0 - Sub:115 Op#:30	PS483		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:115 Op#:40	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:116 Op#:10			
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-104-1B BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 12B COVER BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:117 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-104-1B BLANK-PORT 12B COVER BLANK	65678/8.0 - Sub:117 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	SETUP AND FACE ONE SIDE TO CLEANUP--N/C PERIMETER TO FINISH PER DRAWING AND PROGRAM--INSTALL ALL HOLES OBTAINABLE FROM THIS SETUP--INVERT- REPOSITION AND CLAMP.--FACE TO BRING IN THICKNESS PER DRAWING AND PROGRAM (NOTE FINISH REQUIREMENTS- PART WILL BE POLISHED TO A 16 MICRO-INCH SURFACE FINISH AFTER MACHINING)--DRILL DIA. 0.125- HOLES PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FROM EACH SETUP FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-104-1B--Part Description: PORT 12B COVER ASSY--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:117 Op#:20	PS483		/ IDC:13
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDC DATA.--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-104-1B--Part Description: PORT 12B COVER ASSY--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:117 Op#:22	PS483 / PS484 / PS487		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:117 Op#:25	PS483		
	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-104-1B--Part Description: PORT 12B COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:117 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--NOTE THAT SIX PARTS SHOULD SHIP TOGETHER ON ONE PALLET.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:117 Op#:35	PS483		

	POLISH DATUM -A- SURFACE TO ACHIEVE 16 MICRO-INCH RA SURFACE FINISH--(REF. DRAWING SECTION VIEW E-E- ZONE C8)--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0286 DATED 15NOV04.--NOTE: A LIST OF MATERIALS AND COMPOUNDS THAT WILL BE USED TO PERFORM THE POLISHING MUST BE PROVIDED TO- AND APPROVED BY MTM PRIOR TO BEGINNING WORK.--Part Number: SE122-104-1B--Part Description: PORT 12B COVER ASSY--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:117 Op#:40	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT POLISHED SURFACE FINISH--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE122-104-1B--Part Description: PORT 12B COVER ASSY--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:117 Op#:50	PS483 / PS484 / PS487		/ IDC:3
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:118 Op#:10			
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:119 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:119 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-019-1B BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: PORT 12B SEAL RETAINER BLANK	65678/8.0 - Sub:120 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-019-1B BLANK-PORT 12B SEAL RETAINER BLANK	65678/8.0 - Sub:120 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP ON FLAT SUB-PLATE--BOLT IN PLACE THROUGH PROVIDED HOLES--ALIGN AND CLAMP IN PLACE--N/C PERIMETER PROFILE PER DRAWING AND PROGRAM--N/C FACE MILL TO THICKNESS PER DRAWING AND PROGRAM--DRILL THROUGH HOLES PER DRAWING (WILL C'BORE IN NEXT SETUP)--REMOVE AND SETUP INTO SUPPORT FIXTURE (SUPPORTING THE OUTSIDE PROFILE)--ALIGN AND CLAMP IN PLACE (THROUGH PART HOLES- AND TOE CLAMP FROM THE OUTSIDE AS NECESSARY).--ROUGH N/C TO REMOVE INNER DROP MATERIAL--FINISH N/C THE INNER PROFILE PER DRAWING AND PROGRAM--COUNTERBORE THE HOLES PER DRAWING AND PROGRAM--Specification: PS483--Part Number: SE122-019-1B--Part Description: PORT 12B SEAL RETAINER--Fixture: MTMFX-3083 Rev: --Material Type: 316L SST	65678/8.0 - Sub:120 Op#:20	PS483		/ IDC:10
	INSPECTION (ON MACHINE) IN RESTRAINED CONDITION--VERIFY PREVIOUS SEQUENCE IDCs--INSPECT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-019-1B--Part Description: PORT 12B SEAL RETAINER--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:120 Op#:30	PS483 / PS484		/ IDC:1
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:120 Op#:40	PS483		

	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:121 Op#:10			
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-42--Part Description: VITON O-RING	65678/8.0 - Sub:122 Op#:10			Certificate of Conformance
	SE120-004-42-O-RING- VITON	65678/8.0 - Sub:122 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-47--Part Description: SEAL RETAINER SCREW	65678/8.0 - Sub:123 Op#:10			Material Certification
	98164A133-BHCS 316SST #8-32UNC-3A X 0.25- LONG	65678/8.0 - Sub:123 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--PREPARE BLANK PANEL FOR FORMING--RECORD IDC DATA.----Part Number: SE122-004-20A BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: DOME A BLANK	65678/8.0 - Sub:4 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004-20A BLANK-VVSA DOME A FLAT BLANK MATERIAL	65678/8.0 - Sub:4 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT ELLIPTICAL HEAD PER DRAWING AND MTM PURCHASE ORDER REQUIREMENTS.--RECORD IDC DATA--Certificate of Conformance: --Dimensional Report: --Specification: PS483--Part Number: SE120-004-20A--Part Description: VVSA DOME A--Specification: PS488 Rev: C--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C	65678/8.0 - Sub:4 Op#:20	PS483 / PS484 / PS485 / PS487 / PS488		Certificate of Conformance / Dimensional Report
	SE120-004-20A-VVSA DOME A	65678/8.0 - Sub:4 Op#:20 Pc:10			Certificate of Conformance / Material Certification
	INSTALL THE DOME ONTO A BASE SUPPORT STRUCTURE. LEVEL-BRACE- AND LAYOUT FOR MACHINING.--Q/A LASER TRACKER ASSIT POSITIONING AND LAYOUT.--Specification: PS483--Part Number: SE120-004-20A--Part Description: VVSA DOME A--Specification: PS491 Rev: A	65678/8.0 - Sub:4 Op#:30	PS483 / PS491		
	SETUP- INDICATE DIAMETER AND LEVEL TO FIXTURE.--N/C PROFILE GEOMETRY PER PROGRAM (leaves 1- excess stock from finish).--Specification: PS483--Part Number: SE120-004-20A--Part Description: VVSA DOME A	65678/8.0 - Sub:4 Op#:40	PS483		
	VERIFY CUT PROFILE GEOMETRY--INSPECT MATERIAL THICKNESS AND MAGNETIC PERMEABILITY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C	65678/8.0 - Sub:4 Op#:50	PS483 / PS484 / PS485		
	REMOVE FROM SUPPORT STRUCTURE--DEBURR AND CLEANUP--POLISH THE INTERIOR TO A 32 MICRO-INCH RA SURFACE FINISH--PREPARE FOR FITTING / INSTALLATION--Specification: PS483--Part Number: SE120-004-20A--Part Description: VVSA DOME A	65678/8.0 - Sub:4 Op#:60	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:170 Op#:10			

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 17A--Part Description: PORT EXT. 17A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:162 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 17A--Part Description: PORT EXT. 17A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:162 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 17A--Part Description: PORT EXT. 17A SUB-ASSY	65678/8.0 - Sub:162 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:166 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:166 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:167 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:167 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:168 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:168 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 18A--Part Description: PORT EXT. 18A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:163 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 18A--Part Description: PORT EXT. 18A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:163 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 18A--Part Description: PORT EXT. 18A SUB-ASSY	65678/8.0 - Sub:163 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:171 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:171 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:172 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:172 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:173 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:173 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--PREPARE BLANK PANEL FOR FORMING--RECORD IDC DATA.----Part Number: SE122-004-20B BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: DOME B BLANK	65678/8.0 - Sub:5 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004-20B BLANK-VVSA DOME B FLAT BLANK MATERIAL	65678/8.0 - Sub:5 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND INSPECT ELLIPTICAL HEAD PER DRAWING AND MTM PURCHASE ORDER REQUIREMENTS.--RECORD IDC DATA--Certificate of Conformance: --Dimensional Report: --Specification: PS483--Part Number: SE120-004-20B--Part Description: VVSA DOME B--Specification: PS488 Rev: C--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C	65678/8.0 - Sub:5 Op#:20	PS483 / PS484 / PS485 / PS487 / PS488		Certificate of Conformance / Dimensional Report

	SE120-004-20B-VVSA DOME B	65678/8.0 - Sub:5 Op#:20 Pc:10			Certificate of Conformance / Material Certification
	INSTALL THE DOME ONTO A BASE SUPPORT STRUCTURE. LEVEL-BRACE- AND LAYOUT FOR MACHINING.--Q/A LASER TRACKER ASSIT POSITIONING AND LAYOUT.--Specification: PS483--Part Number: SE120-004-20B--Part Description: VVSA DOME B--Specification: PS491 Rev: A	65678/8.0 - Sub:5 Op#:30	PS483 / PS491		
	SETUP- INDICATE DIAMETER AND LEVEL TO FIXTURE.--N/C PROFILE GEOMETRY PER PROGRAM (leaves 1- excess stock from finish).--Specification: PS483--Part Number: SE120-004-20B--Part Description: VVSA DOME B	65678/8.0 - Sub:5 Op#:40	PS483		
	VERIFY CUT PROFILE GEOMETRY--INSPECT MATERIAL THICKNESS AND MAGNETIC PERMEABILITY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C	65678/8.0 - Sub:5 Op#:50	PS483 / PS484 / PS485		
	REMOVE FROM SUPPORT STRUCTURE--DEBURR AND CLEANUP--POLISH THE INTERIOR TO A 32 MICRO-INCH RA SURFACE FINISH--PREPARE FOR FITTING / INSTALLATION--Specification: PS483--Part Number: SE120-004-20B--Part Description: VVSA DOME B	65678/8.0 - Sub:5 Op#:60	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:169 Op#:10			
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 17B--Part Description: PORT EXT. 17B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:164 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2

	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 17B--Part Description: PORT EXT. 17B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:164 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 17B--Part Description: PORT EXT. 17B SUB-ASSY	65678/8.0 - Sub:164 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:174 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:174 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:175 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:175 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:176 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:176 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 1BA--Part Description: PORT EXT. 18B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:165 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 18B--Part Description: PORT EXT. 18B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:165 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 18B--Part Description: PORT EXT. 18B SUB-ASSY	65678/8.0 - Sub:165 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:177 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:177 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:178 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:178 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:179 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:179 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 2A--Part Description: PORT EXT. 2A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:6 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 2A--Part Description: PORT EXT. 2A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:6 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 2A--Part Description: PORT EXT. 2A SUB-ASSY	65678/8.0 - Sub:6 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:180 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:180 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:181 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:181 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:182 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:182 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 2B--Part Description: PORT EXT. 2B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:7 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 2B--Part Description: PORT EXT. 2B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:7 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		

	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 2B--Part Description: PORT EXT. 2B SUB-ASSY	65678/8.0 - Sub:7 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:183 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:183 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:184 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:184 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:185 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:185 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	TRIM- FIT AND POSITION THE PANELS TO THE BUILD FIXTURE (MAINTAIN FLUSH FIT TO 0.188- MAX GAP). DURING INITIAL FITTING- ENSURE THE EDGES PROTRUDE AT LEAST 0.125- BEYOND THE FIXTURE FACE.--CLEAN THE WELD JOINTS AND TACK WELD PANELS TO THE FIXTURE AND EACH OTHER.--TEAM LEADER VISUAL INSPECT WELD JOINT (IN TACK WELDED CONDITION)--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS480--Specification: PS483-Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A--Fixture: MTMFX-3078 Rev: 0A	65678/8.0 - Sub:8 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		

	IN-PROCESS PROFILE INSPECTION--INSPECT THE ENTIRE PART PROFILE AND RECORD IDC DATA--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:8 Op#:20	PS482 / PS483		
	WELD AND VISUAL INSPECT ALL STRUCTURAL WELD JOINTS COMPLETE--TRIM THE FLANGE END FLUSH WITH THE ADJACENT FIXTURE SURFACE AND PREP FOR INSTALLING AND FITTING THE FLANGE.--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A	65678/8.0 - Sub:8 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		/ IDC:9
	POSITION AND WELD THE FLANGE IN PLACE PER DRAWING AND WPS--NOTE: AFTER THE EXTERIOR COVER PASS IS COMPLETED (AND INSPECTED)- BLEND SMOOTH (AS NECESSARY) AND WELD THE EXTERIOR FILLETS (SKIP WELDS)--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:8 Op#:40	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	IN-PROCESS PROFILE INSPECTION--INSPECT PROFILE IN THE APPLIED WELD ZONE AREAS AND RECORD IDC DATA--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:8 Op#:50	PS482 / PS483		
	REMOVE FROM FIXTURE- CLEANUP- AND LAYOUT FOR X-RAY--INSTALL AND WELD MACHINING SUPPORT STRUCTURES--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS481--Specification: PS483--Specification: PS491 Rev: A--Additional Drawing: MYLAR	65678/8.0 - Sub:8 Op#:60	PS481 / PS483 / PS491		
	RADIOGRAPHIC INSPECT (LOCATIONS IDENTIFIED ON PART) (DOUBLE LOAD FILM) PER THE FOLLOWING:--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS481--Specification: PS483--MTM NDT Cert: --Material Type: INCONEL 625--Material Thickness: 1/2---Specification: 20.A.100 Rev: 2--Specification: ASME SECT V- ARTICLE 2--Specification: ASME SECT VIII-DIV 1-UW-51--Map(s): X-RAY MAP Rev:	65678/8.0 - Sub:8 Op#:70	20.A.100 / ASME SECT V- ARTICLE 2 / ASME SECT VIII-DIV 1-UW-51 / PS481 / PS483		MTM NDT Cert / Map(s)

	SETUP WITH THE FLANGE FACING THE SPINDLE--LEVEL TO THE SIDEWALL SURFACES--INDICATE THE FLANGE FACE / VERIFY STOCK AND ALIGNMENT--CLAMP IN PLACE (NOTE THAT CLAMPING PROVISIONS WILL BE TACK WELDED TO THE OUTSIDE SURFACES OF THE PORT SIDEWALLS AS NECESSARY TO SUPPORT THE STRUCTURE.--N/C MACHINE THE FLANGE FACE-GROOVE- AND HOLES PER DRAWING AND PROGRAM.--NOTE THAT THE 32 RA MICRO-INCH SURFACE FINISH WILL BE POLISHED LATER.--NOTIFY Q/A PRIOR TO REMOVING.--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0	65678/8.0 - Sub:8 Op#:80	PS483		/ IDC:10
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDCS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0--Specification: PS484 Rev: C	65678/8.0 - Sub:8 Op#:90	PS483 / PS484		
	DEBURR AND CLEANUP--(NOTE THAT GROOVE WILL BE POLISHED LATER)--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483	65678/8.0 - Sub:8 Op#:100	PS483		
	TRIM LENGTH PER PROVIDED MYLAR (NOTE THAT THE MYLAR TRIM LINE INCLUDES EXCESS STOCK FOR FITTING AND TRIMMING THE PORT EXTENSION TO THE VESSEL WALL)--GRIND / BLEND ALL INTERIOR WELDS FLUSH--POLISH INTERIOR AND FLANGE FACE TO A 32 MICRO-INCH RA SURFACE FINISH--CREATE I.D. TAG- POSITION AND TACK WELD IN PLACE--CLEAN AND PROTECT PART--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A--Specification: PS480	65678/8.0 - Sub:8 Op#:110	PS480 / PS483 / PS485 / PS487 / PS490 / PS491		
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:8 Op#:114	PS483		

	POLISH THE BOTTOM OF THE GROOVE TO ACHIEVE A 16 MICRO-INCH RA SURFACE FINISH--POLISH THE SIDES OF THE GROOVE TO ACHIEVE A 63 MICRO-INCH RA SURFACE FINISH--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--Part Number: SE122-049-1A--Part Description: PORT 4A FLANGE--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:8 Op#:116	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT GROOVE DIMENSIONAL FEATURES--INSPECT GROOVE SURFACE FINISH (SIDES AND BOTTOM)--RECORD IDC DATA--Part Number: SE122-049-1A--Part Description: PORT 4A FLANGE--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:8 Op#:118	PS483 / PS487		/ IDC:5
	FINAL PORT EXTENSION SUB-ASSEMBLY INSPECTION--VERIFY THE FOLLOWING CHARACTERISTICS:--PROFILE--MATERIAL THICKNESS--SUFACE FINISH--MAGNETIC PERMEABILITY--CLEANLINESS--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS482--Specification: PS483-Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Map(s): INSPECTION MAP	65678/8.0 - Sub:8 Op#:120	PS482 / PS483 / PS484 / PS485 / PS487 / PS490		/ IDC:6
	TEMPORARY ASSEMBLE THE SEAL RETAINER- SEALS- AND COVER PLATE PER DRAWING (BOLTS ONLY REQUIRE TO BE TIGHT ENOUGH TO ENSURE THE COVER IS FIRMLY IN PLACE AND WILL NOT MOVE DURING HANDLING AND FITTING OF THE PORT EXTENSION SUB-ASSEMBLY TO THE VESSEL WALL)--WRAP THE PERIMETER OF THE FLANGE AND COVER WITH STRETCH WRAP.--SEAL THE OPEN END AND EXPOSED THREADED FLANGE HOLES TO ENSURE CLEANLINESS IS MAINTAINED.--Part Number: SE120-004 PORT 4A--Part Description: PORT 4A SUB-ASSEMBLY--Specification: PS483--Specification: PS486	65678/8.0 - Sub:8 Op#:130	PS483 / PS486		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A1 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A1 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:124 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A1 SW BLANK-PORT 4A1 SW FLAT BLANK	65678/8.0 - Sub:124 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A1 SW--Part Description: PORT 4A1 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:124 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A1 SW--Part Description: PORT 4A1 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:124 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A1 SW--Part Description: PORT 4A1 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:124 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A2 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A2 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:125 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A2 SW BLANK-PORT 4A2 SW FLAT BLANK	65678/8.0 - Sub:125 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A2 SW--Part Description: PORT 4A2 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:125 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A2 SW--Part Description: PORT 4A2 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:125 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A2 SW--Part Description: PORT 4A2 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:125 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A3 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A3 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:135 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A3 SW BLANK-PORT 4A3 SW FLAT BLANK	65678/8.0 - Sub:135 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--Specification: PS483 Rev: B--Part Number: SE120-004 4A3 SW--Part Description: PORT 4A3 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:135 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A3 SW--Part Description: PORT 4A3 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:135 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A3 SW--Part Description: PORT 4A3 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:135 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A4 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A4 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:136 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A4 SW BLANK-PORT 4A4 SW FLAT BLANK	65678/8.0 - Sub:136 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A4 SW--Part Description: PORT 4A4 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:136 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A4 SW--Part Description: PORT 4A4 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:136 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A4 SW--Part Description: PORT 4A4 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:136 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A5 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A5 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:137 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A5 SW BLANK-PORT 4A5 SW FLAT BLANK	65678/8.0 - Sub:137 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A5 SW--Part Description: PORT 4A5 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:137 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A5 SW--Part Description: PORT 4A5 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:137 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A5 SW--Part Description: PORT 4A5 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:137 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A6 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A6 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:138 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4A6 SW BLANK-PORT 4A6 SW FLAT BLANK	65678/8.0 - Sub:138 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A6 SW--Part Description: PORT 4A6 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:138 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A6 SW--Part Description: PORT 4A6 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:138 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A6 SW--Part Description: PORT 4A6 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:138 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.--Part Number: SE122-049-1A BLANK--Part Description: PORT 4A FLANGE BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Material Certification: --Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:126 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-049-1A BLANK-NCSX VVSA PORT 4A FLANGE BLANK	65678/8.0 - Sub:126 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO MINIMUM CLEANUP--N/C INSIDE AND OUTSIDE PERIMETERS TO FINISH PER DRAWING AND PROGRAM--INVERT- REPOSITION AND CLAMP.--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-049-1A--Part Description: PORT 4A FLANGE--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:126 Op#:20	PS483		/ IDC:5
	INSPECT ON MACHINE.--VERIFY PREVIOUS SEQUENCE IDCS--Specification: PS483	65678/8.0 - Sub:126 Op#:30	PS483		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:126 Op#:40	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:127 Op#:10			

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-149-1A BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A COVER BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:128 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-149-1A BLANK-PORT 4A COVER BLANK	65678/8.0 - Sub:128 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO CLEANUP--N/C PERIMETER TO FINISH PER DRAWING AND PROGRAM--INSTALL ALL HOLES OBTAINABLE FROM THIS SETUP--INVERT- REPOSITION AND CLAMP.--FACE TO BRING IN THICKNESS PER DRAWING AND PROGRAM (NOTE FINISH REQUIREMENTS- PART WILL BE POLISHED TO A 16 MICRO-INCH SURFACE FINISH AFTER MACHINING)--DRILL DIA. 0.125- HOLES PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FROM EACH SETUP FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-149-1A--Part Description: PORT 4A COVER ASSY--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:128 Op#:20	PS483		/ IDC:13
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:128 Op#:25	PS483		

	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-149-1A--Part Description: PORT 4A COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:128 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--NOTE THAT SIX PARTS SHOULD SHIP TOGETHER ON ONE PALLET.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:128 Op#:35	PS483		
	POLISH DATUM -A- SURFACE TO ACHIEVE 16 MICRO-INCH RA SURFACE FINISH--(REF. DRAWING SECTION VIEW E-E- ZONE C8)--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0286 DATED 15NOV04.--NOTE: A LIST OF MATERIALS AND COMPOUNDS THAT WILL BE USED TO PERFORM THE POLISHING MUST BE PROVIDED TO- AND APPROVED BY MTM PRIOR TO BEGINNING WORK.--Part Number: SE122-149-1A--Part Description: PORT 4A COVER ASSY--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:128 Op#:40	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT POLISHED SURFACE FINISH--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE122-149-1A--Part Description: PORT 4A COVER PLATE--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:128 Op#:50	PS483 / PS484 / PS487		/ IDC:3
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:129 Op#:10			
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:130 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:130 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-057-1A BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: PORT 4A SEAL RETAINER BLANK	65678/8.0 - Sub:131 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-057-1A BLANK-PORT 4A SEAL RETAINER BLANK	65678/8.0 - Sub:131 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP ON FLAT SUB-PLATE--BOLT IN PLACE THROUGH PROVIDED HOLES--ALIGN AND CLAMP IN PLACE--N/C PERIMETER PROFILE PER DRAWING AND PROGRAM--N/C FACE MILL TO THICKNESS PER DRAWING AND PROGRAM--DRILL THROUGH HOLES PER DRAWING (WILL C'BORE IN NEXT SETUP)--REMOVE AND SETUP INTO SUPPORT FIXTURE (SUPPORTING THE OUTSIDE PROFILE)--ALIGN AND CLAMP IN PLACE (THROUGH PART HOLES- AND TOE CLAMP FROM THE OUTSIDE AS NECESSARY).--ROUGH N/C TO REMOVE INNER DROP MATERIAL--FINISH N/C THE INNER PROFILE PER DRAWING AND PROGRAM--COUNTERBORE THE HOLES PER DRAWING AND PROGRAM--Specification: PS483--Part Number: SE122-057-1A--Part Description: PORT 4A SEAL RETAINER--Fixture: MTMFX-3082 Rev: --Material Type: 316L SST	65678/8.0 - Sub:131 Op#:20	PS483		/ IDC:10
	INSPECTION (ON MACHINE) IN RESTRAINED CONDITION--VERIFY PREVIOUS SEQUENCE IDCs--INSPECT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-057-1A--Part Description: PORT 4A SEAL RETAINER--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:131 Op#:30	PS483 / PS484		/ IDC:1
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:131 Op#:40	PS483		

	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:132 Op#:10			
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-44--Part Description: O-RING- VITON--Specification: PS483	65678/8.0 - Sub:133 Op#:10	PS483		Certificate of Conformance
	SE120-004-44-O-RING- VITON	65678/8.0 - Sub:133 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-47--Part Description: SEAL RETAINER SCREW	65678/8.0 - Sub:134 Op#:10			Material Certification
	98164A133-BHCS 316SST #8-32UNC-3A X 0.25- LONG	65678/8.0 - Sub:134 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	TRIM- FIT AND POSITION THE PANELS TO THE BUILD FIXTURE (MAINTAIN FLUSH FIT TO 0.188- MAX GAP). DURING INITIAL FITTING- ENSURE THE EDGES PROTRUDE AT LEAST 0.125- BEYOND THE FIXTURE FACE.--CLEAN THE WELD JOINTS AND TACK WELD PANELS TO THE FIXTURE AND EACH OTHER.--TEAM LEADER VISUAL INSPECT WELD JOINT (IN TACK WELDED CONDITION)--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS480--Specification: PS483-Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A--Fixture: MTMFX-3078 Rev: 0A	65678/8.0 - Sub:9 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		
	IN-PROCESS PROFILE INSPECTION--INSPECT THE ENTIRE PART PROFILE AND RECORD IDC DATA--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:9 Op#:20	PS482 / PS483		

	WELD AND VISUAL INSPECT ALL STRUCTURAL WELD JOINTS COMPLETE--TRIM THE FLANGE END FLUSH WITH THE ADJACENT FIXTURE SURFACE AND PREP FOR INSTALLING AND FITTING THE FLANGE.--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS491 Rev: A	65678/8.0 - Sub:9 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS491		/ IDC:9
	POSITION AND WELD THE FLANGE IN PLACE PER DRAWING AND WPS--NOTE: AFTER THE EXTERIOR COVER PASS IS COMPLETED (AND INSPECTED)- BLEND SMOOTH (AS NECESSARY) AND WELD THE EXTERIOR FILLETS (SKIP WELDS)--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:9 Op#:40	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	IN-PROCESS PROFILE INSPECTION--INSPECT PROFILE IN THE APPLIED WELD ZONE AREAS AND RECORD IDC DATA--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Specification: PS482	65678/8.0 - Sub:9 Op#:50	PS482 / PS483		
	REMOVE FROM FIXTURE- CLEANUP- AND LAYOUT FOR X-RAY--INSTALL AND WELD MACHINING SUPPORT STRUCTURES--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS481--Specification: PS483--Specification: PS491 Rev: A--Additional Drawing: MYLAR	65678/8.0 - Sub:9 Op#:60	PS481 / PS483 / PS491		
	RADIOGRAPHIC INSPECT (LOCATIONS IDENTIFIED ON PART) (DOUBLE LOAD FILM) PER THE FOLLOWING:--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS481--Specification: PS483--MTM NDT Cert: --Material Type: INCONEL 625--Material Thickness: 1/2---Specification: 20.A.100 Rev: 2--Specification: ASME SECT V- ARTICLE 2--Specification: ASME SECT VIII-DIV 1-UW-51--Map(s): X-RAY MAP Rev:	65678/8.0 - Sub:9 Op#:70	20.A.100 / ASME SECT V- ARTICLE 2 / ASME SECT VIII-DIV 1-UW-51 / PS481 / PS483		MTM NDT Cert / Map(s)

	SETUP WITH THE FLANGE FACING THE SPINDLE--LEVEL TO THE SIDEWALL SURFACES--INDICATE THE FLANGE FACE / VERIFY STOCK AND ALIGNMENT--CLAMP IN PLACE (NOTE THAT CLAMPING PROVISIONS WILL BE TACK WELDED TO THE OUTSIDE SURFACES OF THE PORT SIDEWALLS AS NECESSARY TO SUPPORT THE STRUCTURE.--N/C MACHINE THE FLANGE FACE-GROOVE- AND HOLES PER DRAWING AND PROGRAM.--NOTE THAT THE 32 RA MICRO-INCH SURFACE FINISH WILL BE POLISHED LATER.--NOTIFY Q/A PRIOR TO REMOVING.--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0	65678/8.0 - Sub:9 Op#:80	PS483		/ IDC:10
	INSPECT ON MACHINE AND VERIFY PREVIOUS SEQUENCE IDCS--AUDIT MAGNETIC PERMEABILITY AND RECORD IDC--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Additional Drawing: SE120-004 Rev: 0--Specification: PS484 Rev: C	65678/8.0 - Sub:9 Op#:90	PS483 / PS484		
	DEBURR AND CLEANUP--(NOTE THAT GROOVE WILL BE POLISHED LATER)--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483	65678/8.0 - Sub:9 Op#:100	PS483		
	TRIM LENGTH PER PROVIDED MYLAR (NOTE THAT THE MYLAR TRIM LINE INCLUDES EXCESS STOCK FOR FITTING AND TRIMMING THE PORT EXTENSION TO THE VESSEL WALL)--GRIND / BLEND ALL INTERIOR WELDS FLUSH--POLISH INTERIOR AND FLANGE FACE TO A 32 MICRO-INCH RA SURFACE FINISH--CREATE I.D. TAG- POSITION AND TACK WELD IN PLACE--CLEAN AND PROTECT PART--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A--Specification: PS480	65678/8.0 - Sub:9 Op#:110	PS480 / PS483 / PS485 / PS487 / PS490 / PS491		
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:9 Op#:114	PS483		

	POLISH THE BOTTOM OF THE GROOVE TO ACHIEVE A 16 MICRO-INCH RA SURFACE FINISH--POLISH THE SIDES OF THE GROOVE TO ACHIEVE A 63 MICRO-INCH RA SURFACE FINISH--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--Part Number: SE122-049-1B--Part Description: PORT 4B FLANGE--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:9 Op#:116	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT GROOVE DIMENSIONAL FEATURES--INSPECT GROOVE SURFACE FINISH (SIDES AND BOTTOM)--RECORD IDC DATA--Part Number: SE122-049-1B--Part Description: PORT 4B FLANGE--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:9 Op#:118	PS483 / PS487		/ IDC:5
	FINAL PORT EXTENSION SUB-ASSEMBLY INSPECTION--VERIFY THE FOLLOWING CHARACTERISTICS:--PROFILE--MATERIAL THICKNESS--SUFACE FINISH--MAGNETIC PERMEABILITY--CLEANLINESS--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS482--Specification: PS483-Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Map(s): INSPECTION MAP	65678/8.0 - Sub:9 Op#:120	PS482 / PS483 / PS484 / PS485 / PS487 / PS490		/ IDC:6
	TEMPORARY ASSEMBLE THE SEAL RETAINER- SEALS- AND COVER PLATE PER DRAWING (BOLTS ONLY REQUIRE TO BE TIGHT ENOUGH TO ENSURE THE COVER IS FIRMLY IN PLACE AND WILL NOT MOVE DURING HANDLING AND FITTING OF THE PORT EXTENSION SUB-ASSEMBLY TO THE VESSEL WALL)--WRAP THE PERIMETER OF THE FLANGE AND COVER WITH STRETCH WRAP.--SEAL THE OPEN END AND EXPOSED THREADED FLANGE HOLES TO ENSURE CLEANLINESS IS MAINTAINED.--Part Number: SE120-004 PORT 4B--Part Description: PORT 4B SUB-ASSEMBLY--Specification: PS483--Specification: PS486	65678/8.0 - Sub:9 Op#:130	PS483 / PS486		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4B1 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B1 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:139 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B1 SW BLANK-PORT 4B1 SW FLAT BLANK	65678/8.0 - Sub:139 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4B1 SW--Part Description: PORT 4B1 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:139 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4B1 SW--Part Description: PORT 4B1 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:139 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4B1 SW--Part Description: PORT 4B1 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:139 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4B2 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B2 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:140 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B2 SW BLANK-PORT 4B2 SW FLAT BLANK	65678/8.0 - Sub:140 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4B2 SW--Part Description: PORT 4B2 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:140 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4B2 SW--Part Description: PORT 4B2 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:140 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4B2 SW--Part Description: PORT 4B2 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:140 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4B3 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B3 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:141 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B3 SW BLANK-PORT 4B3 SW FLAT BLANK	65678/8.0 - Sub:141 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--Specification: PS483 Rev: B--Part Number: SE120-004 4B3 SW--Part Description: PORT 4B3 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:141 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4B3 SW--Part Description: PORT 4B3 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:141 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4B3 SW--Part Description: PORT 4B3 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:141 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4B4 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B4 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:142 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B4 SW BLANK-PORT 4B4 SW FLAT BLANK	65678/8.0 - Sub:142 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4B4 SW--Part Description: PORT 4B4 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:142 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4B4 SW--Part Description: PORT 4B4 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:142 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4B4 SW--Part Description: PORT 4B4 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:142 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4A5 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4A5 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:143 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B5 SW BLANK-PORT 4B5 SW FLAT BLANK	65678/8.0 - Sub:143 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4A5 SW--Part Description: PORT 4A5 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:143 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report

	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4A5 SW--Part Description: PORT 4A5 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:143 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4A5 SW SR--Part Description: PORT 4A5 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:143 Op#:40	PS483 / PS487		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-004 4B6 SW BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B6 SIDEWALL BLANK--Map(s): FLAT BLANK DRAWING	65678/8.0 - Sub:144 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE120-004 4B6 SW BLANK-PORT 4B6 SW FLAT BLANK	65678/8.0 - Sub:144 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	FORM SIDEWALLS PER DRAWING AND TO FIT THE PROFILE OF FIXTURE AS FOLLOWS:--WHEN THE FORMED PANEL IS -BEST FIT- TO THE FIXTURE THEIR MUST BE A MAXIMUM GAP OF 0.125- BETWEEN THE FIXTURE PROFILE AND PANEL SURFACE- AND THE EDGES OF THE PART MUST PROTRUDE BEYOND THE ADJACENT FIXTURE FACES AT LEAST 0.25-.--NOTE THAT THE SURFACE IDENTIFIED AS -INSIDE- IS TO BE THE CONCAVE OR INWARD SURFACE AFTER FORMING.--100% DIMENSIONAL VERIFICATION AND CERTIFICATE OF COMPLIANCE TO PURCHASE ORDER SPECIFICATIONS IS REQUIRED WITH SHIPMENT.--MATING SURFACES OF FINISH FORMED ADJOINING PANELS MUST BE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING BY MTM.--Specification: PS483 Rev: B--Part Number: SE120-004 4B6 SW--Part Description: PORT 4B6 SIDEWALL--Dimensional Report: DIMENSIONAL REPORT--Certificate of Conformance: --Material Type: INCONEL 625--Material Thickness: 0.5---Specification: PS488 Rev: C--Fixture: MTMFX-3078	65678/8.0 - Sub:144 Op#:20	PS483 / PS488		Certificate of Conformance / Dimensional Report
	RECEIVE AND INSPECT FORMED PANELS AS FOLLOWS:--DIMENSIONAL INSPECT PART TO FIXTURE BY VERIFYING PART TO FIXTURE GAP- AND EXCESS TRIM ALLOWANCE EXISTS WHERE NECESSARY.--AUDIT MATERIAL THICKNESS (KEY ON AREAS WHICH RECEIVED A HIGH DEGREE OF FORMING)--VISUAL INSPECT THE ENTIRE SURFACE FINISH--AUDIT SURFACE FINISH WITH GAGE--AUDIT MAGNETIC PERMEABILITY--ENSURE MATING SURFACES OF FORMED ADJOINING PANELS ARE CONTROLLED (MATCHED SETS) WITHIN 0.03- OF EACH OTHER TO PROVIDE ACCURATE ALIGNMENT DURING FITTING AND WELDING.--RECORD IDC DATA--Part Number: SE120-004 4B6 SW--Part Description: PORT 4B6 SIDEWALL--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Fixture: MTMFX-3060	65678/8.0 - Sub:144 Op#:30	PS483 / PS484 / PS485 / PS487		
	POLISH THE INTERIOR SUFACE TO A 32 MICRO-INCH SURFACE FINISH (LESS TRIM / WELD / HEAT AFFECTED ZONES)--Part Number: SE120-004 4B6 SW--Part Description: PORT 4B6 SIDEWALL--Specification: PS483--Specification: PS487 Rev: C	65678/8.0 - Sub:144 Op#:40	PS483 / PS487		

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.--Part Number: SE122-049-1B BLANK--Part Description: PORT 4B FLANGE BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Material Certification: --Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:145 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-049-1B BLANK-NCSX VVSA PORT 4B FLANGE BLANK	65678/8.0 - Sub:145 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO MINIMUM CLEANUP--N/C INSIDE AND OUTSIDE PERIMETERS TO FINISH PER DRAWING AND PROGRAM--INVERT- REPOSITION AND CLAMP.--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-049-1B--Part Description: PORT 4B FLANGE--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:145 Op#:20	PS483		/ IDC:5
	INSPECT ON MACHINE.--VERIFY PREVIOUS SEQUENCE IDCS--Specification: PS483	65678/8.0 - Sub:145 Op#:30	PS483		
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:145 Op#:40	PS483		
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:146 Op#:10			

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS (plus aprx 0.25- stock on all surfaces)--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-149-1B BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Part Description: PORT 4B COVER BLANK--Map(s): BLANK PANEL DRAWING Rev:	65678/8.0 - Sub:147 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-149-1B BLANK-PORT 4A COVER BLANK	65678/8.0 - Sub:147 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP AND FACE ONE SIDE TO CLEANUP--N/C PERIMETER TO FINISH PER DRAWING AND PROGRAM--INSTALL ALL HOLES OBTAINABLE FROM THIS SETUP--INVERT- REPOSITION AND CLAMP.--FACE TO BRING IN THICKNESS PER DRAWING AND PROGRAM (NOTE FINISH REQUIREMENTS- PART WILL BE POLISHED TO A 16 MICRO-INCH SURFACE FINISH AFTER MACHINING)--DRILL DIA. 0.125- HOLES PER DRAWING AND PROGRAM--NOTIFY Q/A FOR DIMENSIONAL VERIFICATION PRIOR TO REMOVING FROM EACH SETUP FOR DIMENSINOAL VERIFICATION--RECORD IDC DATA--Part Number: SE122-149-1B--Part Description: PORT 4B COVER ASSY--Specification: PS483--Material Type: 316L SST	65678/8.0 - Sub:147 Op#:20	PS483		/ IDC:13
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:147 Op#:25	PS483		

	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-149-1B--Part Description: PORT 4B COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:147 Op#:30	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	WRAP THE PART WITH POLYETHYLENE FOAM AND SHEET AND PALLETIZE FOR DELIVERY TO SUBCONTRACT.--NOTE THAT SIX PARTS SHOULD SHIP TOGETHER ON ONE PALLET.--ENSURE EACH PART IS CLEARLY IDENFIED WITH IT'S CORRESPONDING PART / SERIAL NUMBERS--Specification: PS483	65678/8.0 - Sub:147 Op#:35	PS483		
	POLISH DATUM -A- SURFACE TO ACHIEVE 16 MICRO-INCH RA SURFACE FINISH--(REF. DRAWING SECTION VIEW E-E- ZONE C8)--DIMENSIONAL VERIFICATION RECORD AND CERTIFICATE OF CONFORMANCE REQUIRED WITH SHIPMENT--REFERENCE ROLLEIGH QUOTATION RQ-0286 DATED 15NOV04.--NOTE: A LIST OF MATERIALS AND COMPOUNDS THAT WILL BE USED TO PERFORM THE POLISHING MUST BE PROVIDED TO- AND APPROVED BY MTM PRIOR TO BEGINNING WORK.--Part Number: SE122-149-1B--Part Description: PORT 4B COVER ASSY--Specification: PS483--Specification: PS488 Rev: C--Dimensional Report: --Certificate of Conformance: --Material Type: 316L SST	65678/8.0 - Sub:147 Op#:40	PS483 / PS488		Certificate of Conformance / Dimensional Report
	VISUAL INSPECT PART FOR HANDLING DAMAGE- ETC...--VERIFY SUBCONTRACTOR DOCUMENTATION--VERIFY FLATNESS HAS BEEN MAINTAINED--INSPECT POLISHED SURFACE FINISH--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE122-149-1B--Part Description: PORT 4B COVER PLATE--Specification: PS483--Specification: PS487 Rev: C--Specification: PS484 Rev: C	65678/8.0 - Sub:147 Op#:50	PS483 / PS484 / PS487		/ IDC:3
	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:148 Op#:10			
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:149 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:149 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR VISIBLE IMPERFECTIONS.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--INSPECT MATERIAL THICKNESS- MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE122-057-1B BLANK--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS489--Specification: PS490--Map(s): BLANK PANEL DRAWING--Part Description: PORT 4B SEAL RETAINER BLANK	65678/8.0 - Sub:150 Op#:10	PS483 / PS484 / PS485 / PS487 / PS489 / PS490		Material Certification
	SE122-057-1B BLANK-PORT 4B SEAL RETAINER BLANK	65678/8.0 - Sub:150 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	SETUP ON FLAT SUB-PLATE--BOLT IN PLACE THROUGH PROVIDED HOLES--ALIGN AND CLAMP IN PLACE--N/C PERIMETER PROFILE PER DRAWING AND PROGRAM--N/C FACE MILL TO THICKNESS PER DRAWING AND PROGRAM--DRILL THROUGH HOLES PER DRAWING (WILL C'BORE IN NEXT SETUP)--REMOVE AND SETUP INTO SUPPORT FIXTURE (SUPPORTING THE OUTSIDE PROFILE)--ALIGN AND CLAMP IN PLACE (THROUGH PART HOLES- AND TOE CLAMP FROM THE OUTSIDE AS NECESSARY).--ROUGH N/C TO REMOVE INNER DROP MATERIAL--FINISH N/C THE INNER PROFILE PER DRAWING AND PROGRAM--COUNTERBORE THE HOLES PER DRAWING AND PROGRAM--Specification: PS483--Part Number: SE122-057-1B--Part Description: PORT 4B SEAL RETAINER--Fixture: MTMFX-3082 Rev: --Material Type: 316L SST	65678/8.0 - Sub:150 Op#:20	PS483		/ IDC:10
	INSPECTION (ON MACHINE) IN RESTRAINED CONDITION--VERIFY PREVIOUS SEQUENCE IDCs--INSPECT MAGNETIC PERMEABILITY AND RECORD IDC DATA--Part Number: SE122-057-1B--Part Description: PORT 4B SEAL RETAINER--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:150 Op#:30	PS483 / PS484		/ IDC:1
	DEBURR AND CLEANUP--Specification: PS483	65678/8.0 - Sub:150 Op#:40	PS483		

	N/C PROGRAMMING FOR PARENT OPERATION SEQUENCE REQUIREMENTS	65678/8.0 - Sub:151 Op#:10			
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-44--Part Description: O-RING- VITON--Specification: PS483	65678/8.0 - Sub:152 Op#:10	PS483		Certificate of Conformance
	SE120-004-44-O-RING- VITON	65678/8.0 - Sub:152 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VISUAL INSPECT CATALOG COMPONENT(S) PER MTM PURCHASE ORDER REQUIREMENTS--NOTIFY ENGINEERING (DOUG McCORKLE) UPON RECEIPT--Part Number: SE120-004-47--Part Description: SEAL RETAINER SCREW	65678/8.0 - Sub:153 Op#:10			Material Certification
	98164A133-BHCS 316SST #8-32UNC-3A X 0.25- LONG	65678/8.0 - Sub:153 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 5A--Part Description: PORT EXT. 5A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:10 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 5A--Part Description: PORT EXT. 5A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:10 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		

	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 5A--Part Description: PORT EXT. 5A SUB-ASSY	65678/8.0 - Sub:10 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:186 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_112-TUBE- 6.0 OD X .188 WALL	65678/8.0 - Sub:186 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:187 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130031-CONFLAT FLANGE- 8.0 OD TAPPED	65678/8.0 - Sub:187 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:188 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA08000133-CF REDUCING NIPPLE- 8.00 TO 1.33-	65678/8.0 - Sub:188 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 5B--Part Description: PORT EXT. 5B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:11 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 5B--Part Description: PORT EXT. 5B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:11 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 5B--Part Description: PORT EXT. 5B SUB-ASSY	65678/8.0 - Sub:11 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:189 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_112-TUBE- 6.0 OD X .188 WALL	65678/8.0 - Sub:189 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:190 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130031-CONFLAT FLANGE- 8.0 OD TAPPED	65678/8.0 - Sub:190 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:191 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA08000133-CF REDUCING NIPPLE- 8.00 TO 1.33-	65678/8.0 - Sub:191 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 6A--Part Description: PORT EXT. 6A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:12 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 6A--Part Description: PORT EXT. 6A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:12 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 6A--Part Description: PORT EXT. 6A SUB-ASSY	65678/8.0 - Sub:12 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:192 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_114-TUBE- 10.0 OD X .188 WALL	65678/8.0 - Sub:192 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:193 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130093-CONFLAT FLANGE- 12.0 OD TAPPED	65678/8.0 - Sub:193 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-112-1A--Part Description: PORT 6A COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:194 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: SE122-112--Part Description: CF FLANGE	65678/8.0 - Sub:195 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130093-CONFLAT FLANGE- 12.0 OD TAPPED	65678/8.0 - Sub:195 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	DRILL / REAM CENTER HOLE PER DRAWING AND DEBURR--Specification: PS483	65678/8.0 - Sub:195 Op#:20	PS483		
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:196 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:196 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 6B--Part Description: PORT EXT. 6B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:13 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 6B--Part Description: PORT EXT. 6B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:13 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 6B--Part Description: PORT EXT. 6B SUB-ASSY	65678/8.0 - Sub:13 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:197 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_114-TUBE- 10.0 OD X .188 WALL	65678/8.0 - Sub:197 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:198 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130093-CONFLAT FLANGE- 12.0 OD TAPPED	65678/8.0 - Sub:198 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-112-1B--Part Description: PORT 6B COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:199 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: SE122-112--Part Description: CF FLANGE	65678/8.0 - Sub:200 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	110058-CONFLAT BLANK FLANGE- 12.0 DIA.	65678/8.0 - Sub:200 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	DRILL / REAM CENTER HOLE PER DRAWING AND DEBURR--Specification: PS483	65678/8.0 - Sub:200 Op#:20	PS483		
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:201 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:201 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 7A--Part Description: PORT EXT. 7A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:14 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2

	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 7A--Part Description: PORT EXT. 7A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:14 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 7A--Part Description: PORT EXT. 7A SUB-ASSY	65678/8.0 - Sub:14 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:202 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_113-TUBE- 8.0 OD X .188 WALL	65678/8.0 - Sub:202 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:203 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130033-CONFLAT FLANGE- 10.0 OD TAPPED	65678/8.0 - Sub:203 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:204 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA10000133-CF REDUCING NIPPLE- 10.00 TO 1.33-	65678/8.0 - Sub:204 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:207 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:207 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 7B--Part Description: PORT EXT. 7B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:15 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 7B--Part Description: PORT EXT. 7B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:15 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 7B--Part Description: PORT EXT. 7B SUB-ASSY	65678/8.0 - Sub:15 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:208 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_113-TUBE- 8.0 OD X .188 WALL	65678/8.0 - Sub:208 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:209 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130033-CONFLAT FLANGE- 10.0 OD TAPPED	65678/8.0 - Sub:209 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:210 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA10000133-CF REDUCING NIPPLE- 10.00 TO 1.33-	65678/8.0 - Sub:210 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:211 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:211 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 8A--Part Description: PORT EXT. 8A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:16 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 8A--Part Description: PORT EXT. 8A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:16 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 8A--Part Description: PORT EXT. 8A SUB-ASSY	65678/8.0 - Sub:16 Op#:30	PS483		

	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:212 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:212 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:213 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:213 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:214 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:214 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 8B--Part Description: PORT EXT. 8B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:17 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 8B--Part Description: PORT EXT. 8B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:17 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		

	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 8B--Part Description: PORT EXT. 8B SUB-ASSY	65678/8.0 - Sub:17 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:215 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:215 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:216 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:216 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:217 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:217 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 9A--Part Description: PORT EXT. 9A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:18 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 9A--Part Description: PORT EXT. 9A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:18 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 9A--Part Description: PORT EXT. 9A SUB-ASSY	65678/8.0 - Sub:18 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:218 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_112-TUBE- 6.0 OD X .188 WALL	65678/8.0 - Sub:218 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:219 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130031-CONFLAT FLANGE- 8.0 OD TAPPED	65678/8.0 - Sub:219 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:220 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA08000133-CF REDUCING NIPPLE- 8.00 TO 1.33-	65678/8.0 - Sub:220 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 9B--Part Description: PORT EXT. 9B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:19 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 9B--Part Description: PORT EXT. 9B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:19 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 9B--Part Description: PORT EXT. 9B SUB-ASSY	65678/8.0 - Sub:19 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:221 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_112-TUBE- 6.0 OD X .188 WALL	65678/8.0 - Sub:221 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:222 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130031-CONFLAT FLANGE- 8.0 OD TAPPED	65678/8.0 - Sub:222 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:223 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA08000133-CF REDUCING NIPPLE- 8.00 TO 1.33-	65678/8.0 - Sub:223 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 10A--Part Description: PORT EXT. 10A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:20 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 10A--Part Description: PORT EXT. 10A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:20 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		

	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 10A--Part Description: PORT EXT. 10A SUB-ASSY	65678/8.0 - Sub:20 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:225 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_114-TUBE- 10.0 OD X .188 WALL	65678/8.0 - Sub:225 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:226 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130093-CONFLAT FLANGE- 12.0 OD TAPPED	65678/8.0 - Sub:226 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-112-1--Part Description: PORT 10A COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:227 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: SE122-112--Part Description: CF FLANGE	65678/8.0 - Sub:228 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	110058-CONFLAT BLANK FLANGE- 12.0 DIA.	65678/8.0 - Sub:228 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	DRILL / REAM CENTER HOLE PER DRAWING AND DEBURR--Specification: PS483	65678/8.0 - Sub:228 Op#:20	PS483		

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:229 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:229 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 10B--Part Description: PORT EXT. 10B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:21 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 10B--Part Description: PORT EXT. 10B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:21 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 10B--Part Description: PORT EXT. 10B SUB-ASSY	65678/8.0 - Sub:21 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:230 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_114-TUBE- 10.0 OD X .188 WALL	65678/8.0 - Sub:230 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:231 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130093-CONFLAT FLANGE- 12.0 OD TAPPED	65678/8.0 - Sub:231 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	POSITION AND WELD THE CF HALF NIPPLE IN PLACE PER DRAWING AND WPS--Part Number: SE122-112-1--Part Description: PORT 10B COVER ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:232 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: SE122-112--Part Description: CF FLANGE	65678/8.0 - Sub:233 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	110058-CONFLAT BLANK FLANGE- 12.0 DIA.	65678/8.0 - Sub:233 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	DRILL / REAM CENTER HOLE PER DRAWING AND DEBURR--Specification: PS483	65678/8.0 - Sub:233 Op#:20	PS483		
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:234 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	401021 SPECIAL-DEL-SEAL CF HALF NIPPLE (SPECIAL LENGTH)	65678/8.0 - Sub:234 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 11A--Part Description: PORT EXT. 11A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:22 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 11A--Part Description: PORT EXT. 11A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:22 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 11A--Part Description: PORT EXT. 11A SUB-ASSY	65678/8.0 - Sub:22 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:235 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_110-PIPE- 2.5- SCH 40	65678/8.0 - Sub:235 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:236 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130022-CONFLAT FLANGE- 4.63 OD TAPPED	65678/8.0 - Sub:236 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	BORE INSIDE DIAMETERS PER DRAWING--Specification: PS483--Part Number: SE120-004-23--Part Description: CF FLANGE	65678/8.0 - Sub:236 Op#:20	PS483		
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:237 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA04620133-CF REDUCING NIPPLE- 4.63 TO 1.33-	65678/8.0 - Sub:237 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 11B--Part Description: PORT EXT. 11B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:23 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 11B--Part Description: PORT EXT. 11B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:23 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 11B--Part Description: PORT EXT. 11B SUB-ASSY	65678/8.0 - Sub:23 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:238 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification

	INCONEL 625_110-PIPE- 2.5- SCH 40	65678/8.0 - Sub:238 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:239 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130022-CONFLAT FLANGE- 4.63 OD TAPPED	65678/8.0 - Sub:239 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	BORE INSIDE DIAMETERS PER DRAWING--Specification: PS483--Part Number: SE120-004-23--Part Description: CF FLANGE	65678/8.0 - Sub:239 Op#:20	PS483		
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:240 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA04620133-CF REDUCING NIPPLE- 4.63 TO 1.33-	65678/8.0 - Sub:240 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 15A--Part Description: PORT EXT. 15A SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:24 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 15A--Part Description: PORT EXT. 15A SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:24 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		

	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 15A--Part Description: PORT EXT. 15A SUB-ASSY	65678/8.0 - Sub:24 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:241 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:241 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:242 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:242 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:243 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:243 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT 15B--Part Description: PORT EXT. 15B SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:25 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT 15B--Part Description: PORT EXT. 15B SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:25 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT 15B--Part Description: PORT EXT. 15B SUB-ASSY	65678/8.0 - Sub:25 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:244 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:244 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:245 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:245 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:246 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:246 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	PREP- FIT- ASSEMBLE- WELD AND VISUAL INSPECT THE CF FLANGE TO ONE END OF THE TUBE/PIPE PER DRAWING AND WPS.--BLEND THE INTRIOR EDGES PER DRAWING.--TOUCH UP THE INTERIOR AS NECESSARY TO RE-PRODUCE THE 32 MICRO-INCH RA SURFACE FINISH REQUIREMENT WITHIN THE APPROXIMATE FINISH PART AREA (PART HAS EXCESS TRIM STOCK ON THE END OPPOSITE THE FLANGE)--METAL STAMP THE PART SERIAL NUMBER ON THE O.D. OF THE CF FLANGE.--Part Number: SE120-004 PORT FJS--Part Description: PORT EXT. FJS SUB-ASSY--Specification: PS480--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490--Specification: PS491 Rev: A	65678/8.0 - Sub:224 Op#:10	PS480 / PS483 / PS484 / PS485 / PS487 / PS490 / PS491		/ IDC:2
	VERIFY CLEANLINESS AND PART IDENTIFICATION--AUDIT INSPECT THE INTERIOR SURFACE FINISH AND MAGNETIC PERMEABILITY--RECORD IDC DATA--Part Number: SE120-004 PORT FJS--Part Description: PORT EXT. FJS SUB-ASSY--Specification: PS483--Specification: PS484 Rev: C--Specification: PS485 Rev: C--Specification: PS487 Rev: C--Specification: PS490	65678/8.0 - Sub:224 Op#:20	PS483 / PS484 / PS485 / PS487 / PS490		
	TEMPORARY INSTALL THE COVER PLATE AND A VITON O-RING (0-RING AVAILABLE FROM ENGINEERING) TO PROTECT THE CF FLANGE AND PORT INTERIOR DURING SUBSEQUENT FAB OPERATIONS--WRAP THE PORT EXTENSION WITH POLYETHYLENE FOAM AND SHEET AND STAGE IN A SAFE AREA FOR LATER ASSEMBLY.--Specification: PS483--Part Number: SE120-004 PORT FJS--Part Description: PORT EXT. FJS SUB-ASSY	65678/8.0 - Sub:224 Op#:30	PS483		
	SAW AND DEBURR TUBE/PIPE PER MATERIAL CARD--(ENSURE EACH END IS SQUARE)--Specification: PS483	65678/8.0 - Sub:247 Op#:10	ASTM B444 / ASTM B705 / PS483 / PS489		Material Certification
	INCONEL 625_111-PIPE- 3.5- SCH 40	65678/8.0 - Sub:247 Op#:10 Pc:10			Certificate of Conformance / Material Certification

	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C	65678/8.0 - Sub:248 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	130026-CONFLAT FLANGE- 6.0 OD TAPPED	65678/8.0 - Sub:248 Op#:10 Pc:10			Certificate of Conformance / Material Certification
	RECEIVE AND VERIFY CATALOG COMPONENT PER MTM PURCHASE ORDER REQUIREMENTS.--AUDIT SURFACE FINISH AND MAGNETIC PERMEABILITY. RECORD IDC DATA--Specification: PS483--Specification: PS484 Rev: C--Part Number: FA06000133--Part Description: REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:249 Op#:10	PS483 / PS484		Certificate of Conformance / Material Certification
	FA06000133-CF REDUCING NIPPLE- 6.00 TO 1.33-	65678/8.0 - Sub:249 Op#:10 Pc:10			Certificate of Conformance / Material Certification

LOT

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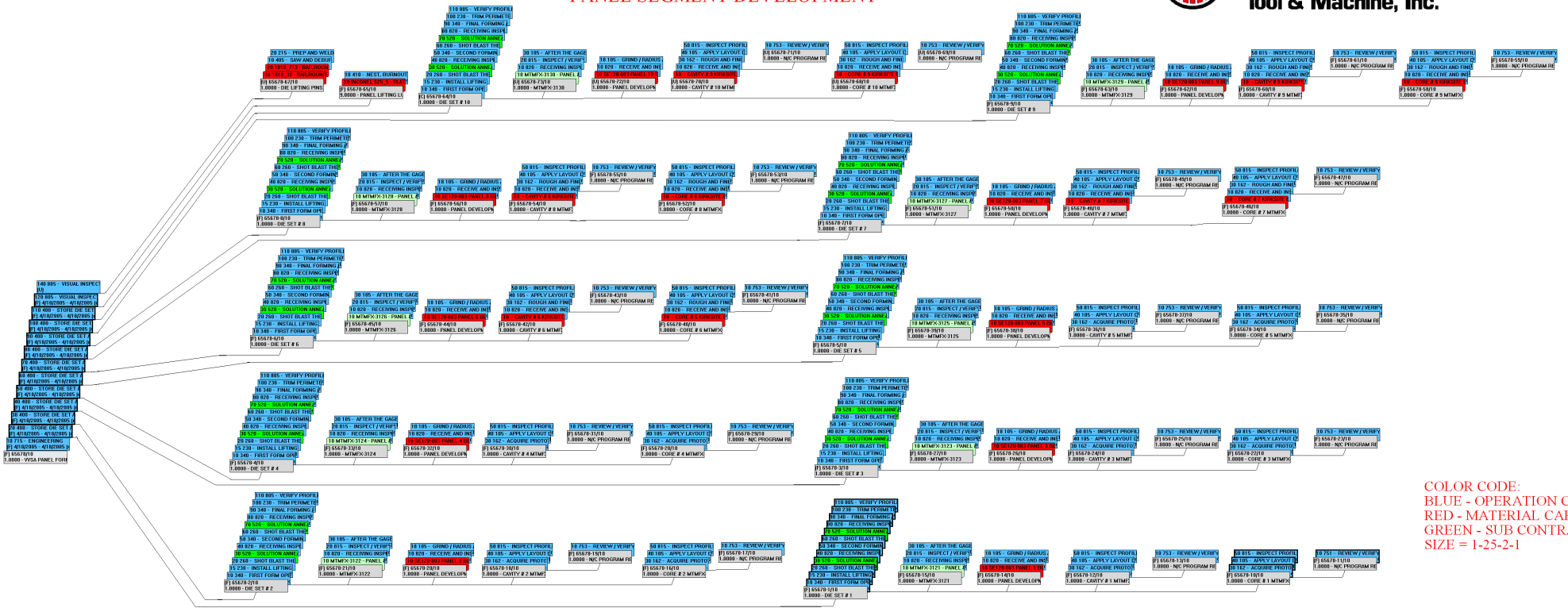
NCSX VVSA

FORMING DIE PRODUCTION

PANEL SEGMENT DEVELOPMENT

Major Tool & Machine, Inc.



COLOR CODE:
BLUE - OPERATION CARD
RED - MATERIAL CARD
GREEN - SUB CONTRACT
SIZE = 1-25-2-1

Process Outline 65678/10

VVSA Fomring Die Production and Panel Segment Development

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	ENGINEERING	65678/10.0 - Sub:0 Op#:10			
	STORE DIE SET AFTER USE--Part Number: MTMFX-2883--Part Number: MTMFX-2884--Specification: PS483	65678/10.0 - Sub:0 Op#:20	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-2885--Part Number: MTMFX-2886--Specification: PS483	65678/10.0 - Sub:0 Op#:30	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-2887--Part Number: MTMFX-2892--Specification: PS483	65678/10.0 - Sub:0 Op#:40	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-2888--Part Number: MTMFX-2889--Specification: PS483	65678/10.0 - Sub:0 Op#:50	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-2890--Part Number: MTMFX-2891--Specification: PS483	65678/10.0 - Sub:0 Op#:60	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-3084--Part Number: MTMFX-3085--Specification: PS483	65678/10.0 - Sub:0 Op#:70	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-3086--Part Number: MTMFX-3087--Specification: PS483	65678/10.0 - Sub:0 Op#:80	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-3088--Part Number: MTMFX-3089--Specification: PS483	65678/10.0 - Sub:0 Op#:90	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-3090--Part Number: MTMFX-3091--Specification: PS483	65678/10.0 - Sub:0 Op#:100	PS483		
	STORE DIE SET AFTER USE--Part Number: MTMFX-3092--Part Number: MTMFX-3093--Specification: PS483	65678/10.0 - Sub:0 Op#:110	PS483		
	VISUAL INSPECT LIFTING LUGS--FORWARD TO W/C 230	65678/10.0 - Sub:0 Op#:120			
	VISUAL INSPECT LIFTING LUGS--FORWARD TO PRODUCTION CONTROL	65678/10.0 - Sub:0 Op#:140			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:1 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS491	65678/10.0 - Sub:1 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1	65678/10.0 - Sub:1 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:1 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:1 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:1 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1	65678/10.0 - Sub:1 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:1 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:1 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Fixture: MTMFX-2883--Fixture: MTMFX-2884--Fixture: MTMFX-3121	65678/10.0 - Sub:1 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Specification: PS487--Specification: PS485	65678/10.0 - Sub:1 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-1--Part Description: PANEL SEGMENT #1--Fixture: MTMFX-3121--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:1 Op#:110	PS483 / PS484 / PS485 / PS487		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2884--Part Description: DIESET #1 CORE HALF--Specification: PS483	65678/10.0 - Sub:10 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2884--Part Description: DIESET #1 CORE HALF	65678/10.0 - Sub:10 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2884--Part Description: DIESET #1 CORE HALF	65678/10.0 - Sub:10 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:11 Op#:10	PS483		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2883--Part Description: DIESET #1 CAVITY HALF--Specification: PS483	65678/10.0 - Sub:12 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2883--Part Description: DIESET # 1 CORE HALF	65678/10.0 - Sub:12 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2883--Part Description: DIESET # 1 CORE HALF	65678/10.0 - Sub:12 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:13 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 1 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:14 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 1 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:14 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 1 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:14 Op#:18	PS483		
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3121--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:15 Op#:10	PS483		Certificate of Conformance
	MTMFX-3121-PANEL #1 PROFILE INSPECTION GAGE	65678/10.0 - Sub:15 Op#:10 Pc:10			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3121--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:15 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3121--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:15 Op#:30	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:2 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS491	65678/10.0 - Sub:2 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2	65678/10.0 - Sub:2 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:2 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:2 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:2 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2	65678/10.0 - Sub:2 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:2 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:2 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Fixture: MTMFX-2885--Fixture: MTMFX-2886--Fixture: MTMFX-3122	65678/10.0 - Sub:2 Op#:90	PS483		
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Specification: PS487--Specification: PS485	65678/10.0 - Sub:2 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-2--Part Description: PANEL SEGMENT #2--Fixture: MTMFX-3122--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:2 Op#:110	PS483 / PS484 / PS485 / PS487		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2886--Part Description: DIESET #2 CORE HALF--Specification: PS483	65678/10.0 - Sub:16 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2886--Part Description: DIESET #2 CORE HALF	65678/10.0 - Sub:16 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2886--Part Description: DIESET #2 CORE HALF	65678/10.0 - Sub:16 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:17 Op#:10	PS483		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2885--Part Description: DIESET #2 CAVITY HALF--Specification: PS483	65678/10.0 - Sub:18 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2885--Part Description: DIESET #2 CAVITY HALF	65678/10.0 - Sub:18 Op#:40	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2885--Part Description: DIESET #2 CAVITY HALF	65678/10.0 - Sub:18 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:19 Op#:10	PS483		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 2 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:20 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 2 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:20 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 2 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:20 Op#:18	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3122--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:21 Op#:10	PS483		Certificate of Conformance
	MTMFX-3122-PANEL #2 PROFILE INSPECTION GAGE	65678/10.0 - Sub:21 Op#:10 Pc:10			
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3122--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:21 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3122--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:21 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:3 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS491	65678/10.0 - Sub:3 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3	65678/10.0 - Sub:3 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:3 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:3 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:3 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3	65678/10.0 - Sub:3 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:3 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:3 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Fixture: MTMFX-2887--Fixture: MTMFX-2892--Fixture: MTMFX-3123	65678/10.0 - Sub:3 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Specification: PS487--Specification: PS485	65678/10.0 - Sub:3 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-3--Part Description: PANEL SEGMENT #3--Fixture: MTMFX-3123--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:3 Op#:110	PS483 / PS484 / PS485 / PS487		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2892--Part Description: DIESET #3 CORE HALF--Specification: PS483	65678/10.0 - Sub:22 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2892--Part Description: DIESET #3 CORE HALF	65678/10.0 - Sub:22 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2892--Part Description: DIESET #3 CORE HALF	65678/10.0 - Sub:22 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:23 Op#:10	PS483		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2887--Part Description: DIESET #3 CAVITY HALF--Specification: PS483	65678/10.0 - Sub:24 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2887--Part Description: DIESET #3 CAVITY HALF	65678/10.0 - Sub:24 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2887--Part Description: DIESET #3 CAVITY HALF	65678/10.0 - Sub:24 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:25 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 3 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:26 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 3 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:26 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 3 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:26 Op#:18	PS483		
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3123--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:27 Op#:10	PS483		Certificate of Conformance
	MTMFX-3123-PANEL #3 PROFILE INSPECTION GAGE	65678/10.0 - Sub:27 Op#:10 Pc:10			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3123--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:27 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3123--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:27 Op#:30	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:4 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS491	65678/10.0 - Sub:4 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4	65678/10.0 - Sub:4 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:4 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:4 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:4 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4	65678/10.0 - Sub:4 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:4 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:4 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Fixture: MTMFX-2888--Fixture: MTMFX-2889--Fixture: MTMFX-3124	65678/10.0 - Sub:4 Op#:90	PS483		
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Specification: PS487--Specification: PS485	65678/10.0 - Sub:4 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-4--Part Description: PANEL SEGMENT #4--Fixture: MTMFX-3124--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:4 Op#:110	PS483 / PS484 / PS485 / PS487		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2889--Part Description: DIESET #4 CORE HALF--Specification: PS483	65678/10.0 - Sub:28 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2889--Part Description: DIESET #4 CORE HALF	65678/10.0 - Sub:28 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2889--Part Description: DIESET #4 CORE HALF	65678/10.0 - Sub:28 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:29 Op#:10	PS483		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2888--Part Description: DIESET #4 CAVITY HALF--Specification: PS483	65678/10.0 - Sub:30 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2888--Part Description: DIESET #4 CAVITY HALF	65678/10.0 - Sub:30 Op#:40	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2888--Part Description: DIESET #4 CAVITY HALF	65678/10.0 - Sub:30 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:31 Op#:10	PS483		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 4 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:32 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 4 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:32 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 4 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:32 Op#:18	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3124--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:33 Op#:10	PS483		Certificate of Conformance
	MTMFX-3124-PANEL #4 PROFILE INSPECTION GAGE	65678/10.0 - Sub:33 Op#:10 Pc:10			
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3124--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:33 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3124--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:33 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:5 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS491	65678/10.0 - Sub:5 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5	65678/10.0 - Sub:5 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:5 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:5 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:5 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5	65678/10.0 - Sub:5 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:5 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-++--Part Description: PANEL SEGMENT #++--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:5 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Fixture: MTMFX-2890--Fixture: MTMFX-2891--Fixture: MTMFX-3125	65678/10.0 - Sub:5 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Specification: PS487--Specification: PS485	65678/10.0 - Sub:5 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-5--Part Description: PANEL SEGMENT #5--Fixture: MTMFX-3125--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:5 Op#:110	PS483 / PS484 / PS485 / PS487		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2891--Part Description: DIESET #5 CORE HALF--Specification: PS483	65678/10.0 - Sub:34 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2891--Part Description: DIESET #5 CORE HALF	65678/10.0 - Sub:34 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2891--Part Description: DIESET #5 CORE HALF	65678/10.0 - Sub:34 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:35 Op#:10	PS483		
	ACQUIRE PROTOTYPE FORMING DIE FROM INVENTORY--SETUP AND POSITION WITH 3D PROFILE FACING SPINDLE- INDICATE ALIGNMENT / CONSTRUCTION FEATURES--ADJUST / SHIFT Z-AXIS POSITION IN ORDER TO -SINK- GEOMETRY TO ENSURE CLEANUP PER PROGRAM / SETUP SHEET.--FINISH MACHINE PROFILE PER PROGRAM.--Part Number: MTMFX-2890--Part Description: DIESET #5 CAVITY HALF--Specification: PS483	65678/10.0 - Sub:36 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PP475--Part Number: CORE 1--Part Description: DIESET # 1 CORE HALF--Specification: PS483--Part Number: MTMFX-2890--Part Description: DIESET #5 CAVITY HALF	65678/10.0 - Sub:36 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-2890--Part Description: DIESET #5 CAVITY HALF	65678/10.0 - Sub:36 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:37 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 5 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:38 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 5 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:38 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 5 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:38 Op#:18	PS483		
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3125--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:39 Op#:10	PS483		Certificate of Conformance
	MTMFX-3125-PANEL #5 PROFILE INSPECTION GAGE	65678/10.0 - Sub:39 Op#:10 Pc:10			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3125--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:39 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3125--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:39 Op#:30	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:6 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS491	65678/10.0 - Sub:6 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6	65678/10.0 - Sub:6 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:6 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:6 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:6 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6	65678/10.0 - Sub:6 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:6 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:6 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Fixture: MTMFX-2884--Fixture: MTMFX-2885--Fixture: MTMFX-3126	65678/10.0 - Sub:6 Op#:90	PS483		
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Specification: PS487--Specification: PS485	65678/10.0 - Sub:6 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-6--Part Description: PANEL SEGMENT #6--Fixture: MTMFX-3126--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:6 Op#:110	PS483 / PS484 / PS485 / PS487		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3085--Part Description: DIE SET #6 CORE HALF	65678/10.0 - Sub:40 Op#:10	PS483		
	-	65678/10.0 - Sub:40 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3085--Part Description: DIE SET #6 CORE HALF	65678/10.0 - Sub:40 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3085--Part Description: DIE SET #6 CORE HALF	65678/10.0 - Sub:40 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3085--Part Description: DIE SET #6 CORE HALF	65678/10.0 - Sub:40 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:41 Op#:10	PS483		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3084--Part Description: DIE SET #6 CAVITY HALF	65678/10.0 - Sub:42 Op#:10	PS483		
	-	65678/10.0 - Sub:42 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3084--Part Description: DIE SET #6 CAVITY HALF	65678/10.0 - Sub:42 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3084--Part Description: DIE SET #6 CAVITY HALF	65678/10.0 - Sub:42 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3084--Part Description: DIE SET #6 CAVITY HALF	65678/10.0 - Sub:42 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:43 Op#:10	PS483		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 6 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:44 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 6 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:44 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 6 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:44 Op#:18	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3126--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:45 Op#:10	PS483		Certificate of Conformance
	MTMFX-3126-PANEL #6 PROFILE INSPECTION GAGE	65678/10.0 - Sub:45 Op#:10 Pc:10			
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3126--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:45 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3126--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:45 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:7 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS491	65678/10.0 - Sub:7 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7	65678/10.0 - Sub:7 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:7 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:7 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:7 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7	65678/10.0 - Sub:7 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:7 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:7 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Fixture: MTMFX-3086--Fixture: MTMFX-3087--Fixture: MTMFX-3127	65678/10.0 - Sub:7 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Specification: PS487--Specification: PS485	65678/10.0 - Sub:7 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-7--Part Description: PANEL SEGMENT #7--Fixture: MTMFX-3127--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:7 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3087--Part Description: DIE SET #7 CORE HALF	65678/10.0 - Sub:46 Op#:10	PS483		
	-	65678/10.0 - Sub:46 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3087--Part Description: DIE SET #7 CORE HALF	65678/10.0 - Sub:46 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3087--Part Description: DIE SET #7 CORE HALF	65678/10.0 - Sub:46 Op#:40	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3087--Part Description: DIE SET #7 CORE HALF	65678/10.0 - Sub:46 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:47 Op#:10	PS483		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3086--Part Description: DIE SET #7 CAVITY HALF	65678/10.0 - Sub:48 Op#:10	PS483		
	-	65678/10.0 - Sub:48 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3086--Part Description: DIE SET #7 CAVITY HALF	65678/10.0 - Sub:48 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3086--Part Description: DIE SET #7 CAVITY HALF	65678/10.0 - Sub:48 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3086--Part Description: DIE SET #7 CAVITY HALF	65678/10.0 - Sub:48 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:49 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 7 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:50 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 7 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:50 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 7 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:50 Op#:18	PS483		
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3127--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:51 Op#:10	PS483		Certificate of Conformance
	MTMFX-3127-PANEL #7 PROFILE INSPECTION GAGE	65678/10.0 - Sub:51 Op#:10 Pc:10			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3127--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:51 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3127--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:51 Op#:30	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:8 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS491	65678/10.0 - Sub:8 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8	65678/10.0 - Sub:8 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:8 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:8 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:8 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8	65678/10.0 - Sub:8 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:8 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:8 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Fixture: MTMFX-3088--Fixture: MTMFX-3089--Fixture: MTMFX-3128	65678/10.0 - Sub:8 Op#:90	PS483		
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Specification: PS487--Specification: PS485	65678/10.0 - Sub:8 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-8--Part Description: PANEL SEGMENT #8--Fixture: MTMFX-3128--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:8 Op#:110	PS483 / PS484 / PS485 / PS487		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3089--Part Description: DIE SET #8 CORE HALF	65678/10.0 - Sub:52 Op#:10	PS483		
	-	65678/10.0 - Sub:52 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3089--Part Description: DIE SET #8 CORE HALF	65678/10.0 - Sub:52 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3089--Part Description: DIE SET #8 CORE HALF	65678/10.0 - Sub:52 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3085--Part Description: DIE SET #8 CORE HALF	65678/10.0 - Sub:52 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:53 Op#:10	PS483		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3088--Part Description: DIE SET #8 CAVITY HALF	65678/10.0 - Sub:54 Op#:10	PS483		
	-	65678/10.0 - Sub:54 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3088--Part Description: DIE SET #8 CAVITY HALF	65678/10.0 - Sub:54 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3088--Part Description: DIE SET #8 CAVITY HALF	65678/10.0 - Sub:54 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3088--Part Description: DIE SET #8 CAVITY HALF	65678/10.0 - Sub:54 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:55 Op#:10	PS483		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 8 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:56 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 8 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:56 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 8 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:56 Op#:18	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3128--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:57 Op#:10	PS483		Certificate of Conformance
	MTMFX-3128-PANEL #8 PROFILE INSPECTION GAGE	65678/10.0 - Sub:57 Op#:10 Pc:10			
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3128--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:57 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3128--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:57 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:9 Op#:10	PS483		
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS491	65678/10.0 - Sub:9 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9	65678/10.0 - Sub:9 Op#:20	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:9 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:9 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:9 Op#:50	PS483		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9	65678/10.0 - Sub:9 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:9 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:9 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Fixture: MTMFX-3090--Fixture: MTMFX-3091--Fixture: MTMFX-3129	65678/10.0 - Sub:9 Op#:90	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Specification: PS487--Specification: PS485	65678/10.0 - Sub:9 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-9--Part Description: PANEL SEGMENT #9--Fixture: MTMFX-3129--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:9 Op#:110	PS483 / PS484 / PS485 / PS487		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3091--Part Description: DIE SET #9 CORE HALF	65678/10.0 - Sub:58 Op#:10	PS483		
	-	65678/10.0 - Sub:58 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3091--Part Description: DIE SET #9 CORE HALF	65678/10.0 - Sub:58 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3091--Part Description: DIE SET #9 CORE HALF	65678/10.0 - Sub:58 Op#:40	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3091--Part Description: DIE SET #9 CORE HALF	65678/10.0 - Sub:58 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:59 Op#:10	PS483		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3090--Part Description: DIE SET #9 CAVITY HALF	65678/10.0 - Sub:60 Op#:10	PS483		
	-	65678/10.0 - Sub:60 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3090--Part Description: DIE SET #9 CAVITY HALF	65678/10.0 - Sub:60 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3090--Part Description: DIE SET #9 CAVITY HALF	65678/10.0 - Sub:60 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3090--Part Description: DIE SET #9 CAVITY HALF	65678/10.0 - Sub:60 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:61 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 9 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:62 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 9 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:62 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 9 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:62 Op#:18	PS483		
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3129--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:63 Op#:10	PS483		Certificate of Conformance
	MTMFX-3129-PANEL #9 PROFILE INSPECTION GAGE	65678/10.0 - Sub:63 Op#:10 Pc:10			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3129--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:63 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3129--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:63 Op#:30	PS483		
	FIRST FORM OPERATION:--LOAD- ALIGN- AND BOLT THE DIE SET INTO THE HYDRAULIC PRESS.--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--LOAD THE PANEL BLANK INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094- MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING. CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). SECONDARY AND FINAL FORMING SEQUENCES ARE PROVIDED FOR FINAL FORMING AND FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE STO	65678/10.0 - Sub:64 Op#:10	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	INSTALL LIFTING LUG TO THE SMALL END (POSITION WITH THE INTENT OF THE PANEL BEING STOOD ON END IN THE FURNACE TO AID IN RAPID COOLING) CONTACT ENGINEERING IF LOCATION IS NOT OBVIOUS.--(NOTE THAT THE LIFTING LUG IS 3/8- INCONEL 625 MATERIAL AND SHOULD BE POSITIONED / ORIENTATED IN A WAY THAT DOES NOT INTERFERE WITH THE FOLLOWING FORMING OPERATION IF POSSIBLE)--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS491	65678/10.0 - Sub:64 Op#:15	PS483 / PS491		
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10	65678/10.0 - Sub:64 Op#:20	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:64 Op#:30	AMS 2774 / PS483 / PS488		Certification / Furnace charts

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:64 Op#:40	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance
	SECOND FORMING OPERATION:--ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT- OIL- GRIME- FOREIGN MATTER- RAISED OR EMBEDDED MATERIAL- ETC.... --ENSURE THE PANEL BLANK IS CLEAN AND FREE OF FOREIGN MATTER.--RE-LOAD THE PRE-FORMED / ANNEALED PANEL INTO THE DIE SET.--HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO THE INSPECTION GAGE (AS NEAR AS PRACTICAL AT THIS POINT).--NOTE THAT THE FINAL PANEL TO GAGE GAP TOLERANCE IS .094-MAX. IT IS DESIRED TO GET AS CLOSE TO THIS AS POSSIBLE PRIOR TO ANNEALING (.125- MAX AT THIS POINT). CLOSELY WATCH THE FORMING- WRINKLING- AND SPRING-BACK CHARACTERISTICS OF THE MATERIAL DURING THE FORMING PROCESS. WHEN IT'S APPARENT THE MATERIAL IS WORK HARDENING TO A DEGREE THAT FORMING BECOMES DIFFICULT- OR THE PHYSICAL INTEGRITY OF THE MATERIAL IS AT RISK- PROCEED TO THE NEXT SEQUENTIAL OPERATION (BLAST AND ANNEAL). A FINAL FORMING SEQUENCES IS PROVIDED FOR FINAL -SIZING- AFTER THE MATERIAL HAS BEEN ANNEALED.--ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE FAR ENOUGH TO PROVIDE ADEQUATE	65678/10.0 - Sub:64 Op#:50	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.--MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES--BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10	65678/10.0 - Sub:64 Op#:60	PS483		
	SOLUTION ANNEAL FORMED PANEL PER THE FOLLOWING:--ATTACH A MINIMUM OF THREE EQUALLY SPACED THERMOCOUPLES TO THE FORMED PANEL--CHARGE FURNACE AND HEAT PART UNTIL THERMOCOUPE READINGS ARE WITHIN 1900 +/-15F.--HOLD PART TEMPERATURE AT 1900 DEGREES F. (+/- 15 DEGREES) HOLD FOR 45 MINUTES (+/ 5 MINUTES)--RAPID COOL (VIA. WATER QUENCHING OR FORCED AIR CIRCULATION) TO 1000 DEGREES F. OPEN AIR COOL TO AMBIENT TEMP.--Specification: AMS 2774 Rev: NOV 01--Certification: H/T CERTIFICATE--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Furnace charts: FURNACE CHART--Specification: PS483--Specification: PS488	65678/10.0 - Sub:64 Op#:70	AMS 2774 / PS483 / PS488		Certification / Furnace charts
	RECEIVING INSPECTION--VERIFY CONFORMANCE TO MTM PURCHASE ORDER REQUIREMETNS--REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART--ENSURE EACH DOCUMENT IS SCANNED AND LINKED TO THE PRECEEDING OPERATION SEQUENCE QAP--VISUAL INSPECT SURFACE FOR DAMAGE- PITTING- GOUGES- SCRAPES- CONTAMINATION- ETC.....--ON THE INSIDE (CONCAVE SURFACE)- LOOK SPECIFICALLY FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT (IN LATER PROCESSING). ON THE OUTSIDE (CONVEX SURFACE)- VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443.--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Certificate of Conformance: --Specification: ASTM B443--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS483--Specification: PS488--Specification: PS484	65678/10.0 - Sub:64 Op#:80	ASTM B443 / PS483 / PS484 / PS488		Certificate of Conformance

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	FINAL FORMING / SIZING OPERATION:--RELOAD THE PREFORMED PANEL INTO THE DIE SET.---RE-STRIKE- HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE--IT IS PREFERRED TO HAVE AT LEAST PARTIAL CONTACT WITH EACH INSPECTION / REST PAD WIHIN THE INTERIOR OF THE GAGE. A SLIGHT GAP AROUND THE PERIMETER OF THE GAGE IS PREFERRED OVER SOLID CONTACT. THE MAXIMUM PANEL TO GAGE GAP TOLERANCE IS 0.094-.--NOTIFY Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER--LAYOUT FINAL TRIM-LINES ON THE PANEL ESTABLISHED FROM THE PERIMETER OF THE INSPECTION GAGE.--TRIM THE PERIMETER OF THE PANEL TO APPROXIMATELY PLUS 0.25 TO 0.5- EXCESS STOCK FOR TRIMMING AND FITTING AT INSTALLATION.--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Fixture: MTMFX-3092--Fixture: MTMFX-3093--Fixture: MTMFX-3130	65678/10.0 - Sub:64 Op#:90	PS483		
	TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING APPROXIMATLEY 0.50-0.75- STOCK FOR POSITIONING AND FITTING ON THE FAB FIXTURE). NOTE THAT INSTALLING THE WELD PREP IS NOT REQUIRED AT THIS STAGE (ADDITIONAL FITTING / TRIMMING WILL BE REQUIRED AT INSTALLATION)--NOTIFY Q/A FOR FINAL PANEL PROFILE CONFIRMATION PRIOR TO COMPLETING THE POLISHING AND INSTALLATION OF PROTECTIVE PLASTIC--SAND AND POLISH THE INSIDE SURFACE 100% TO ACHIEVE A 32 MICRO SURFACE FINISH (WITH THE EXCEPTION OF THE WELDING / TRIMMING ZONES).--MONITOR MATERIAL THICKNESS AS REQUIRED TO AVOID EXCESSIVE THINNING--APPLY PROTECTIVE PLASTIC FILM OVER THE POLISHED SURFACE.--STAGE PANEL FOR FITTING AND INSTALLATION--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Specification: PS487--Specification: PS485	65678/10.0 - Sub:64 Op#:100	PS483 / PS485 / PS487		
	VERIFY PROFILE TO INSPECTION GAGE--AUDIT SURFACE FINISH--AUDIT MATERIAL THICKNESS--AUDIT MAGNETIC PERMEABILITY--RECORD IDC DATA--Specification: PS483--Part Number: SE120-003-1-10--Part Description: PANEL SEGMENT #10--Fixture: MTMFX-3130--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:64 Op#:110	PS483 / PS484 / PS485 / PS487		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3093--Part Description: DIE SET #10 CORE HALF	65678/10.0 - Sub:68 Op#:10	PS483		
	-	65678/10.0 - Sub:68 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3093--Part Description: DIE SET #10 CORE HALF	65678/10.0 - Sub:68 Op#:30	PS483		
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3093--Part Description: DIE SET #10 CORE HALF	65678/10.0 - Sub:68 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3093--Part Description: DIE SET #10 CORE HALF	65678/10.0 - Sub:68 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:69 Op#:10	PS483		
	RECEIVE AND INSPECT KIRKSITE BLOCK PER MTM PURCHASE ORDER--Specification: PS483--Part Number: MTMFX-3092--Part Description: DIE SET #10 CAVITY HALF	65678/10.0 - Sub:70 Op#:10	PS483		
	-	65678/10.0 - Sub:70 Op#:10 Pc:10			
	ROUGH AND FINISH MACHINE PER DRAWING AND PROGRAM--Specification: PS483--Part Number: MTMFX-3092--Part Description: DIE SET #10 CAVITY HALF	65678/10.0 - Sub:70 Op#:30	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).--Specification: PS483--Part Number: MTMFX-3092--Part Description: DIE SET #10 CAVITY HALF	65678/10.0 - Sub:70 Op#:40	PS483		
	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3092--Part Description: DIE SET #10 CAVITY HALF	65678/10.0 - Sub:70 Op#:50	PS483		
	REVIEW / VERIFY CDI PROVIDED TOOL PATHS.--POST PROCESS PROGRAM FOR SELECTED MACHINING CENTER.--(REFER TO PARENT OPERATION FOR SPECIFIC DIE SET / DOCUMENT / COMPONENT PART ID INFORMATION)--Specification: PS483	65678/10.0 - Sub:71 Op#:10	PS483		
	RECEIVE AND INSPECT CUT SHAPE PER MTM PURCHASE ORDER REQUIREMENTS AND THE FOLLOWING:--DIMENSIONAL INSPECT PER PART DRAWING DIMENSIONS--VISUAL INSPECT BOTH SIDES OF THE PLATE SURFACES FOR PITS- POCK MARKS- GOUGES- OR IMPERFECTIONS GREATER THAN 0.03-.--IDENTIFY ALL VISIBLE IRREGULARITIES ON THE FACES OF THE PLATE.--IDENTIFY INTERIOR / EXTERIOR SURFACE IF NECESSARY (NOTE THAT THE CRITICAL INSIDE PART SURFACE WILL ALWAYS BE FACING UP WITHIN THE ENGINEERING GEOMETRY) (APPROXIMATE MARKING LOCATION PROVIDED ON DETAIL DRAWING)--INSPECT MATERIAL THICKNESS-MAGNETIC PERMEABILITY- AND AUDIT SURFACE FINISH--APPLY TRACE ID TAG AND ENSURE SERIALIZATION CODE IS INCLUDED AND CLEARLY LEDGIBLE--RECORD IDC DATA.----Part Number: SE120-003 PANEL 10 BLANK--Part Description: PANEL SEGMENT FLAT BLANK--Specification: PS483--Specification: PS484--Specification: PS485--Specification: PS487	65678/10.0 - Sub:72 Op#:10	ASTM B443 / PS483 / PS484 / PS485 / PS487 / PS489		Material Certification
	SE120-003 PANEL 10 BLANK-VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:72 Op#:10 Pc:10			
	GRIND / RADIUS ALL CUT EDGES PRIOR TO FORMING (aprx .03-.06 Rad MIN)--CLEAN PANEL BLANK AND FORWARD TO PRESS ROOM--Specification: PS483--Part Number: SE120-003 PANEL 10 BLANK--Part Description: VVSA PANEL SEGMENT FLAT BLANK	65678/10.0 - Sub:72 Op#:18	PS483		

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	RECEIVING INSPECTION. VISUAL INSPECT THE MANUFACTURED GAGE FOR COMPLETENESS AND COMPLIANCE TO MTM PURCHASE ORDER (REVIEW WITH ENGINEERING- COMPARE TO DIE SURFACE- AND PANEL INSPECTION DRAWING REQUIREMENTS). LOG GAGE INTO MTM CALIBRATION SYSTEM (1 YEAR RE-CALIBRATION REQUIREMENT)--SETNCIL THE GAGE NUMBER ON THE EXTERIOR OF THE STRUCTURE--FORWARD GAGE TO CMM FOR DIMENSIONAL INSPECTION.--Specification: PS483--Part Number: MTMFX-3130--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:73 Op#:10	PS483		Certificate of Conformance
	MTMFX-3130-PANEL #10 PROFILE INSPECTION GAGE	65678/10.0 - Sub:73 Op#:10 Pc:10			
	INSPECT / VERIFY GAGE PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.--RECORD IDC DATA--Specification: PS483--Part Number: MTMFX-3130--Part Description: PROFILE INSPECTION GAGE	65678/10.0 - Sub:73 Op#:20	PS483		
	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED)- REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK- AND FORWARD THE GAGE TO THE PRESSROOM.--SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.--Specification: PS483--Part Number: MTMFX-3130--Part Description: PROFILE INSEPCT GAGE	65678/10.0 - Sub:73 Op#:30	PS483		
	NEST- BURNOUT- AND CLEANUP LIFTING LUGS PER DRAWING. APPLY TRACEABLITY- AND DELIVER TO MEDIUM FAB SOUTH.	65678/10.0 - Sub:65 Op#:10			
	INCONEL 625_5-PLATE-NICKEL ALLOY .375- THK	65678/10.0 - Sub:65 Op#:10 Pc:10			
	SAW AND DEBURR ROUND STOCK PER MATERIAL CARDS (40 pieces each).	65678/10.0 - Sub:67 Op#:10			
	1018_32-BAR-ROUND-CR. 2.0- DIA	65678/10.0 - Sub:67 Op#:10 Pc:10			
	SAW AND DEBURR ROUND STOCK PER MATERIAL CARDS (40 pieces each).	65678/10.0 - Sub:67 Op#:10			
	1018_713-BAR-ROUND-CR. 3.0- DIA	65678/10.0 - Sub:67 Op#:10 Pc:20			

Spec Ref	Activity	Visual Mfg Ref.	Ref Procedure	Witness /Hold Point	Reporting/Documentation Req
	PREP AND WELD FLANGE TO PIN PER ENGINEERING INSTRUCTION--(3/16 to 1/4- FILLET WELD)--40 PIECES ARE REQUIRED.--NOTIFY DOUG McCORKLE WHEN COMPLETE	65678/10.0 - Sub:67 Op#:20			

LOT

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LOT

12

LOT

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LOT

14

Process Specification Documents

Approved

PS-484

Process Specification – Magnetic Permeability Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters to ensure magnetic permeability testing performed on the NCSX SE120-002 Vacuum Vessel Sub Assembly is maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for measuring magnetic permeability of materials used to produce the NCSX VVSA components (using a Severn Engineering High Sensitivity Low-Mu Permeability Indicator) when required by the MTM MIT.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
NCR – Non-Conformance Report

4. REFERENCE DOCUMENTS

PPPL Product Specification NCSX-CSPEC-121-02
ASTM A800/A800M – Standard Practice for Estimating Ferrite Content
Operating manual – High Sensitivity Low-Mu Permeability Indicator – Severn Engineering
QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS483 – Cleanliness Control

5. EQUIPMENT AND SUPPLIES

- High Sensitivity Low-Mu Permeability Indicator – Severn Engineering

6. GENERAL INFORMATION / PRECAUTIONS

(obtained from Severn Engineering website)

The operation of the Indicator is based on the mutual attraction of a permanent bar magnet for a known standard and an unknown material. In use, an insert is screwed into the top of the case. The magnet is then attracted to the insert by a force dependent upon the insert's permeability. The end of the magnet projecting from the opening in the bottom of the case is then brought into contact with the material being tested. It is essential that the contact surface be clean and free from oxide scale or foreign material. The Indicator is then moved away in a direction normal to the contact surface. If the material being tested has a permeability higher than that of the insert value, the magnet will first break contact with the insert as the Indicator is moved away. Only full, complete breaks should be considered as indicative of a higher permeability than the test material. On the other hand, if the permeability of the material being tested is lower than that of the insert value, the magnet will first break contact with the test material as the Indicator is moved away. Thus, by interchanging the inserts, it is possible to bracket the permeability of the materials under test.

Two features of the Indicator deserve special mention. First, the balanced beam to which the magnet is attached permits the use of the Indicator in all positions without correction due to gravity. Secondly, the hemispherical magnet ends provide point contact with the inserts and the test materials.
The High Sensitivity Low-Mu Permeability Indicator must be handled with care. The following precautions should be observed:

- Remove metal filings, chips and dirt from the surface of the material under test. Filings and dirt on the end of the magnet can be removed with masking tape.
- Under no circumstances bring another magnet in contact with the indicator magnet. This will disturb the calibration of the Indicator to such an extent that it will necessitate its return and subsequent recalibration.
- Be sure inserts are screwed firmly in place so as to establish contact with the magnet.
- Do not jerk the Indicator away from the test material, especially with the 1.01 insert in place. This will tend to give a false indication. Smoothly lift the unit straight up. Do not "rock" the unit while removing.
- Avoid as much as possible contacting the Indicator with strongly magnetic materials such as steel, cast iron, or straight chromium steels. This can be accomplished by first screening the materials under test with a hand magnet.
- Do not drop the Indicator
- When not in use keep the Indicator in its box with the highest value insert in place in the Indicator.
- Inserts are not interchangeable between indicators

7. INSTRUCTIONS

7.1. Ensure all locations where measurements will be taken are clean and free of any dirt, oil, lint, or any other foreign matter that may affect the readings taken.

7.1.1. If cleaning is necessary, it should be performed in compliance with PS483.

7.2. Ensure the part being checked is isolated from ferrous materials (e.g. work tables, bracing, tools, etc…). In addition, any part or material that is suspect of holding residual magnetism must be demagnetized before taking a permeability measurement. Residual magnetism can adversely effect permeability measurements.

7.3. If the panel / assembly has not already been laid out for inspection, layout according to the inspection drawing. The layout should cover the entire part evenly, and consist of an approxi mate 6" grid throughout the body of the component, and an approximate 1" grid near weld seams and edges.

7.4. Inspect the magnetic permeability at each inspection point following the directions given within the manufacturer's operating manual, MTM MIT, above information, and the following:

7.4.1. Screw the insert reflecting the maximum allowable relative permeability into the top of the case. For example, if the area in question cannot exceed 1.2 mu, use the 1.2 mu indicator.

7.4.1.1. Use the following criteria for insert selection:

- Overall relative magnetic permeability of Inconel 625 components: 1.02 max.
- Overall relative magnetic permeability of 316SST components: 1.02 max.
- Overall relative magnetic permeability in welds (and heat affected zones) joining 316 SST to Inconel 625: 1.2 max.

7.4.2. Place the indicator on the piece under test with the exposed magnet making contact within the grid cell.

7.4.3. Smoothly lift the indicator away from the test surface, in a direction perpendicular to the test surface.

7.4.4. If the magnet breaks contact with the test piece before breaking contact with the indicator, the test piece has a lower relative magnetic permeability and is acceptable.

7.4.5. If the magnet breaks contact with the indicator before breaking contact with the test piece, the test piece has a higher relative magnetic permeability.

7.4.5.1. Recheck the area with successively higher value indicators until a determination can be made that the test piece permeability is greater than one indicator (indicator broke first), but less than another (test piece broke first).

7.5. If out-of-tolerance conditions are detected, additional measurements must be taken in the immediate area to adequately define the extent of the non-conformance. Continue checking in all directions in a circular pattern until conforming material is found. The approximate size and location of the nonconformance will be mapped and/or identified on the inspection drawing. The completed map / drawing will be included as an attachment to the resulting NCR.

8. QUALITY ASSURANCE / DOCUMENTATION

8.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

8.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

8.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

8.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

8.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

8.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-485

Process Specification – Ultrasonic Thickness Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters to ensure ultra-sonic thickness testing performed on the NCSX SE120-002 Vacuum Vessel Sub Assembly is maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for ultrasonic pulse-echo measuring the material thickness of the NCSX VVSA highly shaped vessel walls and components (which are primarily inaccessible to standard mechanical measuring devices) when required by the MTM MIT.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
NCR – Non-Conformance Report

4. REFERENCE DOCUMENTS

PPPL Product Specification NCSX-CSPEC-121-02-01
Operating manual – Krautkramer DM4E, DM4, DM4 DL Ultrasonic testing meters
QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS483 – Cleanliness Control

5. EQUIPMENT AND SUPPLIES

- Krautkramer DM4E Ultrasonic Testing Meter

6. INSTRUCTIONS

6.1. The panel blanks, formed panel segments, vessel walls, and port extension wall material will be inspected for thickness using MTM's Krautkramer DM4E Ultrasonic Testing Meter in Normal Thickness Measurement (THK) Mode.

6.2. The use of this equipment will follow the guidelines in the operating manual (available in the MTM NDE Laboratory, or MTM Engineering) without exception.

6.3. Prior to inspection, ensure all locations where measurements will be taken are clean and free of any oil, scale, or any other foreign matter that could effect the measure ment result. If cleaning is necessary, it should be performed within the applicable guidelines of PS483.

6.4. Material thickness can be checked from either the inner or outer profile surfaces.

6.5. The area(s) being tested must be at, or near ambient temperature.

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Process Specification – Ultrasonic Thickness Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

6.6. Initial and in-process thickness inspection will be performed only by MTM NDE personnel, or manufacturing personnel who have been instructed on the use of the unit, and have a clear understanding of the operating manual.

6.6.1. Measurements being made by MTM Manufacturing personnel will be audited by MTM NDE personnel.

6.6.2. It is the responsibility of manufacturing personnel to contact NDE personnel for verification prior to completing the applicable manufacturing operation sequence.

6.6.3. If conflicting results occur, the inspection will be repeated in entirety by MTM NDE personnel, and the appropriate corrections must take place prior to continuing (e.g. training, instruction, personnel adjustment)

6.7. Measurements that are gauged at the limit of tolerance, and/or out of tolerance will be verified by MTM NDE personnel prior to continuing.

6.8. Measurements confirmed as out of tolerance will be documented within the MTM Non-Conformance system per QA-SOP-01, and the following:

6.8.1. Additional measurements must be taken to clearly define the extent of the nonconforming area.

6.8.2. Mark the approximate size and location of the nonconformance on the outside surface of the part being tested.

6.8.3. The approximate length, width, and location of the nonconformance must be reported to MTM's engineering department along with the deviation (via definitive photograph / NCR attachment).

6.9. Final thickness inspection of each formed panel (prior to welding), and the final welded / polished assembly will be performed and documented only by MTM NDE personnel as defined within the manufacturing routing.

6.10. If the formed panel / assembly has not already been laid out for inspection, layout according to the criteria specified within the MTM Manufacturing Routing.

6.10.1. The layout should cover the entire part evenly, and consist of an approximate 6" grid throughout the body of the formed panels, and an approximate 1" grid near the weld seams / edges.

6.10.2. Marking material used must be included on the "approved material list" (available from Engineering).

6.11. Calibrate the ultrasonic test equipment using the 2-point calibration procedure (via. Calibrated step wedge).

6.12. To ensure accuracy, the following steps must be followed during every inspection sequence:

6.12.1. Verify the calibration of the test equipment to the calibration standard (at a minimum, re-calibrate after every 25 test points).

6.13. When possible, periodically confirm thickness readings near the edges of the part by means of mechanical inspection.

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Process Specification – Ultrasonic Thickness Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

7. QUALITY ASSURANCE / DOCUMENTATION

7.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

7.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

7.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

7.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

7.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

7.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-487

Process Specification – Surface Finish Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters required to ensure surface finish requirements for the NCSX SE120-002 Vacuum Vessel Sub Assembly are maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for maintaining and verifying material surface finish of the NCSX VVSA materials and components throughout manufacturing / MTM MIT performance.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
PFM – Purchased Finished Material (e.g. vacuum flanges, hardware, etc…)

4. REFERENCE DOCUMENTS

PPPL Product Specification NCSX-CSPEC-121-02
ASME B46.1 Rev: 95 – Surface Texture (roughness, waviness, and lay)
Operating manual; Phase II+ Surface Roughness Gage Model # SRG-1000
QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS483 – Cleanliness Control
PS485 – Ultrasonic Thickness Testing

5. EQUIPMENT AND SUPPLIES

Phase II+ Surface Roughness Gage Model # SRG-1000

6. GENERAL REQUIREMENTS

6.1. All handling equipment such as slings, hooks, and lift-truck forks will be protected with wood, cloth, plastic, or rubber buffers, where feasible, to reduce the possibility of surface damage.

6.2. All material will be inspected upon receipt, and throughout the manufacturing process in accordance with the MTM MIT as follows:

6.2.1. Specific acceptance criteria for raw material surface finish will be according to the national standards / specifications, and specific criteria provided within the MTM MIT. Additionally, any imperfections, pits, voids, or irregularities exceeding 0.04” in depth, that fall within finish part

geometry, are to be documented within MTM's Non-Conformance system. Remedial disposition will be provided by Engineering (e.g. weld repair and blend smooth).

6.2.2. Specific acceptance criteria for manufactured items (e.g. CF Flanges, hardware, etc…) surface finish will be per the MTM MIT specified part drawing and/or manufacturer's part identifying catalog requirements.

6.2.3. Acceptance criteria for all interim detail / sub-assy surface finish will be provided within the MTM MIT (e.g. operation card instruction, IDC record, etc…).

6.2.4. All interior / vacuum facing surfaces of the completed VVSA (including the port extension assemblies) will be polished and verified to a minimum of 32 micro-inch roughness average surface finish.

6.2.5. Exterior / non-machined surfaces will remain as produced by the material/ component manufacturer, and/or will be blast cleaned as specified within the MTM MIT.

6.3. During the polishing / finishing process, cleanliness / contamination control will be maintained according to PS483.

6.4. During the polishing / finishing process, material thickness will be monitored per PS485. Interim / final material thickness tolerances will be provided on the subsequent part drawing(s), or within the MTM MIT.

6.5. When necessary to protect the surface, polished production components will be covered with protective polyethylene foam cushioning and/or polyethylene sheeting when not being worked on for an extended period of time. Part temperature must be below 150 Degrees Fahrenheit prior to covering.

6.6. Walking on the polished surfaces will be avoided where possible. When necessary to walk on polished surfaces, plastic foam sheeting will be applied to the surface face for protection.

6.7. Appropriate care will be taken during subsequent handling of highly polished surfaces to avoid damaging the surfaces.

7. INSTRUCTIONS FOR USING THE SURFACE ROUGHNESS GAGE

7.1. A clear understanding of the gage operating manual is required. The following steps are to be performed according to the operating manual requirements.

7.2. Prior to taking measurements, set the gage to "Ra" and a sampling length of 0.8mm.

7.3. Prior to taking measurements, and periodically during inspection, ensure gage accuracy by measuring the standard included with the gage. This should be performed approximately every 15 measurements. During multiple point inspections, if the gage is found to have lost accuracy, the condition is to be corrected in accordance with gage operating manual. If this is not successful, the gage is to be returned to Q/A for the appropriate action (e.g. correction, repair, removal from service). After gage correction, all previous points (to the last known standard verification) are to be re-inspected.

7.4. Measure the surface area specified within the manufacturing routing, following the operating manual instructions. Note the vessel wall surfaces are highly shaped. Take special care to ensure the gage is held as perpendicular as possible to the area being tested.

8. QUALITY ASSURANCE / DOCUMENTATION

8.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

8.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

8.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

8.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

8.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

8.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-488

Process Specification – Sub-Contract Requirements
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the procedures to ensure subcontract manufacturing operations are performed on NCSX SE120-002 Vacuum Vessel Sub Assembly components are maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimumcontractual requirements for all subcontract sequences required by MTM MIT 65678. This document is a supplement to MTM standard business terms and conditions, and MTM Purchase Order requirements from which it is referenced.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
NCR – Non-Conformance Report

4. REFERENCE DOCUMENTS

PUR-SOP-10 – Vendor Assessment
QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS481 – Radiographic Inspection
PS483 – Cleanliness Control
PS486 – Vacuum Testing

5. GENERAL REQUIREMENTS

5.1. The responsibility for performing all test and verification rests with the seller. MTM and/or PPPL reserves the right to witness or separately perform all specified tests or otherwise inspect any or all tests and inspections.

5.2. The intent of a contract awarded to a selected Subcontractor is for the material / services be provided solely by the named contractor. Offloading / Sub-supplier activities must be reviewed, and pre-approved by MTM prior to execution.

5.3. Neither MTM review and/or approval of Subcontractors documents nor MTM inspection of Subcontractors items or services shall relieve the Subcontractor of responsibility for full compliance with the requirements of the Subcontract.

5.4. Nonconforming items shall be positively identified, and where possible, segregated to prevent use. MTM must be notified of non-conformances within one (1) business day of discovery. The Subcontractor shall

document each nonconformance, identifying the extent and location of the nonconformance and proposing a remedial disposition. The written concurrence of MTM is required prior to implementing the disposition. The Subcontractors system shall provide not only for timely resolution of non-conformances but also for analysis of non-conformances to determine root cause and to implement appropriate and effective corrective actions.

5.5. The Subcontractor shall maintain an effective Quality Assurance Program to assure that the Subcontractors work meets the required quality and is performed in accordance with contractual requirements. Subcontractors quality assurance function shall be actively involved in the planning, processing oversight, problem resolution, and determination of acceptability of all work associated to this specification. The function shall be organized to have sufficient authority and independence to identify quality problems, verify conformance of supplied items or services to specified requirements and obtain satisfactory resolution of conflicts involving quality.

5.6. Inspection and tests shall be performed to ensure quality and provide the necessary documentation required by the MTM Purchase Order quality assurance provisions. Except where specifically stated otherwise, actual data and accept/reject status for each inspection and test shall be documented. Reports shall clearly identify the item inspected, the locations or areas covered by the report, the performing individual, the date performed, equipment used (with calibration status), and the signature of the authorized individual.

5.7. The Subcontractor shall maintain a system of documentation whereby objective evidence of required operations, inspections, examinations, and tests is systematically compiled, indexed, stored and ultimately provided to MTM for inclusion in MTM's quality documentation system. Such objective evidence may include "travelers", and material test, certification, inspection, examination, test and nonconformance reports; which shall be complete, legible, and validated by responsible personnel and shall be traceable to subject items.

5.8. Material and equipment identification shall be maintained throughout the program and be traceable to records. Status of acceptability shall be readily discernible through the Subcontractors use of tags, stamps, serial numbers or other positive means.

5.9. Inspections and tests shall be performed using properly calibrated measuring and test equipment. Subcontractor shall have in its possession the necessary equipment of perform the required inspections and tests. Calibration standards shall be traceable to the National Institute for Standards and Technology (NIST) or equivalent acceptable to MTM and shall not be used for shop inspections, but instead be protected against damage or degradation.

5.10. Authorized representatives of MTM, PPPL, and the U.S. Government shall have the right at all reasonable times to visit the Subcontractor's premises and those of Subcontractor's suppliers during the performance of the Subcontract for the purposes of inspection, surveillance, audit, and/or obtaining any required information as may be necessary to assure the items or services are being furnished in accordance with specified requirements. Such visits shall be coordinated with the subcontractors personnel to minimize interference with the normal operations of said premises. The Subcontractor shall make available records and documentation necessary for this function and shall provide all reasonable facilities and assistance for the safety and convenience of MTM, PPPL, and/or U.S. Government representatives in the performance of their duties. MTM, PPPL, and the U.S. Government recognize the Subcontractors right to withhold information concerning proprietary processes.

5.11. All tooling specially fabricated for the performance of work related to this specification shall become the property of the U.S. Government and will be clearly identified and included with the final shipment of product to MTM.

5.12. The materials / parts supplied by MTM are to be protected at all times from damage and/or contaminants.

5.13. The cleanliness requirements of PS483 apply to all subcontract operations.

5.14. Material thickness, magnetic permeability, surface finish are critical component characteristics for all contracted activities and will be thoroughly inspected by MTM both prior to subcontracting, and after receipt of processed goods.

6. THERMAL PROCESSING OPERATIONS

6.1. When installing formed panels onto a transportation device (e.g. shipping skid, wood struts, or truck bed), the parts are to be orientated convex side up.

6.2. Internal furnace surfaces (e.g. fire brick, supporting structures, or shims) that contact the parts, must be clean and free of excessive loose contaminants / swarf which may contaminate the panel surface at temperature.

6.3. The parts must rest only on the peripheral edges during the thermal cycle. (The formed panels have approximately ½" (minimum) of excess material remaining on the perimeter that will be removed and discarded during later processing)

6.4. After the parts are positioned in the furnace, they are to be visually inspected for suitable support, stability, and cleanliness. If dirt or debris exists on the part or contacting supporting structure, it must be removed using an approved solvent or cleaning process prior beginning the heat treat cycle.

6.5. An adequate number of thermocouples must be used to ensure accurate temperature measurement and recording. At a minimum two thermocouples will be attached to each panel, one on the perimeter (within 1" of the edge), and one in the approximate center of the panel, on the convex side. No thermocouples are to be attached to the concave side of the formed panels.

7. CUTTING, FORMING, AND BENDING OPERATIONS

7.1. All Cutting, forming, and bending shall be performed in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

7.2. Prior to use, the functional faces of all tooling (e.g. Forming Dies, Plate Rollers, Press Brake Dies, etc…) will be thoroughly cleaned to remove any dirt, oil, harmful debris, unnecessary marking and/or materials. This will be accomplished by one or more of the following processes.

7.2.1. Remove bonded materials by scraping, or with authorized abrasive products.
7.2.2. Remove loose debris by blowing with compressed air.
7.2.3. High pressure washing.
7.2.4. Solvent wiping and dry wiping with clean new rags.

7.3. The functional tooling surfaces, and production part surfaces will be visually monitored for cleanliness throughout the forming process. If it is noticed during the process, that harmful foreign matter has accumulated on the production panel, or the functional tooling surface, the forming operation will halt until the component is re-cleaned.

8. POLISHING OPERATIONS

8.1. Tools used in polishing and lapping operations shall be nonferrous ceramics or nonmagnetic stainless steel, which have never been in contact with materials other than Inconel.

8.2. All surfaces specified for polishing are required to be polished to a minimum of 32 micro-inch Ra surface finish. Surfaces requiring polishing will be clearly identified by either description within the Purchase Order (e.g. "polish the tubing / pipe I.D.), or a detail drawing, or by clear identification on the surface of the part being polished (e.g. descriptive marking, tags, stickers, etc…).

8.3. Surface polishing is a critical finishing step and will be closely monitored by the MTM CFT Engineer and/or Quality Assurance representative. The MTM Subcontract Administrator / Production Control will advise the Engineer when the parts are being delivered for polishing and provide a contact for open communication / dialog / oversight / follow-up throughout the polishing process.

9. MTM INSPECTION REQUIREMENTS

9.1. Prior to delivering material / components to a sub-contractor, and again after receiving the processed material / components, MTM Q/A personnel will inspect and document the parts at a minimum for cleanliness, material thickness, surface finish, surface hardness, and magnetic permeability characteristics as required by the MTM MIT operation instructions.

9.2. The MTM material handler / driver will visually inspect the part(s) at the point of drop off, and pick up for cleanliness and surface damage / imperfections. Concerns will be communicated to MTM Q/A and/or CFT for appropriate action.

9.3. At a minimum, all contractor produced features which the MTM Purchase Order requires an actual dimensional record, or inspection report, will be re-inspected / verified upon receipt at MTM. All other features will be audited as determined necessary by the MTM MIT.

10. QUALITY ASSURANCE / DOCUMENTATION

10.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

10.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

10.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

10.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number

- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

10.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

10.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-490

Process Specification – Part Serialization Requirements
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the procedure to ensure all NCSX SE120-002 Vacuum Vessel Sub Assembly details and components are identified and serialized in a manner to provide absolute traceability and ensure proper field assembly of loose components / sub-assemblies as required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum identification / serialization requirements for all detail components, assemblies, and sub-assemblies when required by MTM MIT 65678.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
NCR – Non-Conformance Report

4. REFERENCE DOCUMENTS

QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS483 – Cleanliness Control

5. SERIALIZATION REQUIREMENTS

5.1. All beginning and in-process part identification / traceability will be maintained via MTM's Quality System.
5.2. At the point of completion of each major component and/or sub-assembly, the MIT will require additional part identification. The component and/or assembly will be permanently serialized to provide an absolute trace to the specific MIT segment from which it evolved. The serial number will provide an exact reference to the work order number, manufacturing sub identification number, operation sequence number.
5.3. The serial number for each component / sub-assembly will be provided in the applicable MIT operation instructions (via QAP record).
5.4. Specific marking location / orientation direction will be provided (e.g. drawing, sketch, or descriptive text).
5.5. Marking method and font size / depth (where applicable) will be included within the operation instruction.
5.6. Once established, all following MIT required documentation will include reference to the applicable component serial number.
5.7. Prior to removing serialized Port Extension Sub-Assemblies, the applicable serial number will be transferred to the vessel wall using (Inconel 625) tags. The tags will be metal stamped with the serial number and tack welded to the outer vessel surface near the port opening.

PS-490

Process Specification – Part Serialization Requirements
65678 PPPL NCSX Vacuum Vessel Sub Assembly

6. QUALITY ASSURANCE / DOCUMENTATION

6.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

6.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

6.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

6.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

6.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

6.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

Process

Specification
Documents

Submitted
for Approval

PS-480

Process Specification – Visual Weld Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters required to ensure visual weld inspections on the NCSX SE120-002 Vacuum Vessel Sub Assembly are performed within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for visual inspecting all welds applied to the NCSX VVSA highly shaped vessel walls and components when required by the MTM MIT.

3. DEFINITIONS

CWI – AWS Certified Welding Inspector
PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system

4. REFERENCE DOCUMENTS

PPPL Product Specification NCSX-CSPEC-121-02
AWS QC1 – Standard for Certification of Welding Inspectors.
AWS B1.11 – Guide for the Visual Examination of Welds
AWS D1.6 – Structural Welding Code, Stainless Steel
WPS328.5-PPPL – MTM Welding Procedure Specification
WPS390-PPPL – MTM Welding Procedure Specification
QA-SOP-01 – Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS483 – Cleanliness Control
QA-SOP-05 – Gage Calibration

5. EQUIPMENT AND SUPPLIES

5.1. Equipment used for inspection may include, but is not limited to, scales, undercut gages, fillet weld gages, Cambridge gages, mismatch gages, mirrors, pyrometers, and magnifying devices. All equipment used for visual examination shall be capable of meeting the requirements of the applicable codes or specifications. Measuring devices must be capable of meeting the required precision for the specified dimension being measured. All gages used to make accept/reject decisions must be calibrated per MTM QA-SOP-05.

6. INSPECTION INSTRUCTIONS

6.1. All visual weld inspections will be performed per AWS B1.11at 8X magnification.

6.2. Adequate / auxiliary lighting will be utilized when necessary to maintain a minimum light intensity at the surface being inspected (using natural or supplementary lighting) of 100 foot-candles. The light intensity shall be verified using calibrated light meters as required (available from the MTM NDE lab).

6.3. Each completed weld pass will be visually inspected for the entire length of the weld.

6.4. Direct visual inspections will be made when access is sufficient to place the inspector's eye within 24 inches and at an angle not less than 30 degrees from the surface of the component.

6.5. Mirrors may be utilized to improve the angle of vision.

6.6. Indirect visual inspections, utilizing bore-scopes, cameras, or other suitable instruments, may be substituted for direct examination providing the resolution of the instrument is at least equivalent to that obtainable by direct visual observation

7. ACCEPTANCE CRITERIA

7.1. Visually inspected welds will be accepted or rejected according to AWS D1.6, Paragraph 6.29.1 with the following exceptions:

7.1.1. No visible porosity will be accepted
7.1.2. Inter-pass visual inspections may be performed prior to cooling to ambient temperature, as long as the part is within the inter-pass temperature required by the WPS.

7.2. Weld preparations will be clean, smooth, free of burrs and heavy grinding marks.

7.3. Weld joint fit-up will be smooth and continuous, with a maximum allowable joint misalignment of 1/32".

8. TASK RESPONSIBILITIES

8.1. Qualified MTM Mfg. Personnel may only perform visual inspections under the approval and guidance of a CWI. A CWI will retain the responsibility of accepting or rejecting parts.

8.2. The primary visual inspection responsibility will be distributed as follows:

- Final weld joint visual inspection: MTM CWI
- Inter pass (stringer) visual weld inspections: Qualified MTM Mfg. personnel
- Root pass visual weld inspection: Qualified MTM CWI
- Weld joint fit-up / alignment verification: Qualified MTM Mfg. Team Leader
- Weld preparation inspection prior to fit-up: Qualified MTM Mfg. Team Leader

8.3. All personnel performing visual inspections on VVSA welds will be trained according to AWS B1.11 2000 by an AWS QC-1 CWI. The qualifying MTM CWI will provide training documentation in accordance with AWS B 1.11. At a minimum, this training will consist of the following items:

- The requirements of this process specification
- Overview of welding code / specifications / PQR / WPS requirements
- Inspection instructions / equipment / methods / practices
- Inspection acceptance criteria

8.4. All personnel performing visual inspections shall have documented evidence of having met visual acuity requirements of 20/40 (or better) Jaeger J2, or an equivalent visual acuity standard.

8.5. The responsible Mfg. Team Leader and CWI will audit / monitor inter-pass visual inspections being performed by Mfg. personnel throughout the production process to verify accuracy is maintained.

8.6. If imperfections are discovered within inter-pass welds, they will be removed, repaired, and verified by the responsible Team Leader, and/or CWI prior to applying covering passes.

8.7. If imperfections are discovered in completed weld joints, which have been submitted to the CWI for certification, they will be documented and repaired via MTM Non-Conformance system.

8.8. Periodically, in order to ensure accuracy, a fine line 1/32" wide or less in width, or other simulated imperfection, will be placed in the least discernable area on the surface of the part to serve as a reference. The inspector's verification of the imperfection shall validate the inspection process.

9. QUALITY ASSURANCE / DOCUMENTATION

9.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

9.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

9.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

9.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

9.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which comp letes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

9.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-481

Process Specification – Radiographic Weld Inspection
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters required to ensure that radiographic weld inspection performed on the NCSX SE120-002 Vacuum Vessel Sub Assembly is accomplished within the guidelines of PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for radiographic weld inspection of the NCSX VVSA highly shaped vessel walls and components when required by MTM MIT 65678.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
MQS – Cooperheat/MQS Inspections. Resident radiographic contractor, utilizing MTM's X-ray facilities.

4. REFERENCE DOCUMENTS

- PPPL Product Specification NCSX-CSPEC-121-02-01
- ASME Section VIII, Division 1, UW-51
- ASME Section V, Article 2
- 20.A.100 – Cooperheat / MQS Radiographic Inspection Test Procedure
- QA-SOP-01 Non-Conformance Control
- MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
- PS483 – Cleanliness Control

5. EQUIPMENT AND SUPPLIES

- MTM X-Ray Booth
- Iridium 192 Isotope Gamma Source
- Kodak AA, or T speed film
- ASTM E 747 Wire penetrameters

6. INSTRUCTIONS – MTM FABRICATION PERSONNEL

6.1. Layout and number film locations on the exterior of the part using an approved marking device.

6.1.1. Use provided templates / markings / targets to orientate the film positions relative to the port holes which will be cut later.
6.1.2. Each film location requires a unique serial number that will not be re-used throughout the production of all three 120 Degree Vessels.
6.1.2.1. Identify each film location with it's respective serial number based on the following numbering scheme:
- Work Order number (65678), Lot number, Sub ID number, Sequence number, shot number.

6.2. Record the film location / serial number on the x-ray map (available via the MTM MIT). Log and file the record within the MTM QAP system as required by the MIT.

6.3. Ensure the part is adequately supported and orientated for safe transport, and efficient inspection setup / performance.

6.4. Position / setup the part in the MTM X-Ray Booth per MTM NDE and/or MQS direction.

7. INSTRUCTIONS – MTM NDE, & MQS PERSONNEL

7.1. Apply the film (double load) and transfer serial numbers from the part layout. Ensure each film is clearly identified, and traceable to its corresponding location via MTM x-ray map.

7.1.1. Note that two separate exposures are required for each shot. One will be filed and logged within MTM's record's control system, and the other will be provided to PPPL as a supplement to the final quality document package.

7.2. Perform the radiographic examination per the following:

- 20.A.100
- ASME Section VIII, UW-51
- ASME Section V, Article 2

7.3. Once the inspection is complete, and the film is processed, identified, and interpreted. Forward one complete set of film to Engineering for submittal to PPPL. Process the remaining film normally.

8. QUALITY ASSURANCE / DOCUMENTATION

8.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

8.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

8.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

8.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

8.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each

sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

8.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-483

Process Specification – Cleanliness / Contamination Control
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters required to ensure the cleanliness of the NCSX SE120-002 Vacuum Vessel Sub Assembly, and all sub-components is maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02-01

2. SCOPE

This specification defines the minimum requirements for the control of cleanliness during receiving, handling, fabrication, assembly, testing, and preparation for shipment to ensure that all vessel components are free of scale, water, dirt, oil, rust, grease, unspecified markings, foreign matter, debris, and contaminants throughout the manufacturing process and shipping to PPPL.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM quality assurance planning system
PAC – Plasma Arc Cutting

4. REFERENCE DOCUMENTS

- PPPL Product Specification NCSX-CSPEC-121-02-01
- ASTM A-380 Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment and Systems (with the exception to any chlorinated products)
- MTM QAWI008 – Receiving Ordered Material
- MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
- QA-SOP-01 Non-Conformance Control

5. EQUIPMENT AND SUPPLIES

- MTM Blast Booth
- MTM Paint Booth
- MTM Wash Booth, High temp / high pressure wash unit
- Crystal Simple Green® specialized cleaner (or approved equivalent)
- De-Ionizing tanks
- Lint free wipes
- Solvent (e.g. Acetone, Isopropanol)
- Virgin Aluminum Oxide Blast Media

6. CLEANING AND HANDLING REQUIREMENTS

6.1. Receiving Inspection operations

6.1.1. Raw material will be visually inspected and verified for cleanliness in accordance with ASTM A-380, paragraph 7.2, and as specified within the manufacturing routing

6.1.2. Purchased components will be visually inspected for cleanliness. Each piece must be clean to the extent that it is free of dirt, oil, grease, and residue. Each piece (or lot) must be adequately wrapped to prevent contamination.

6.1.3. Standard catalog components (e.g. copper seals, CF flanges, hardware) that are provided in hermetically sealed bags will remain in their sealed container until required for use unless otherwise directed by MTM Engineering. If determined that a sealed bag should be opened, the parts will be re-packaged, and re-sealed accordingly.

6.2. General handling / storage requirements (applies to all manufacturing operations)

6.2.1. All handling equipment such as slings, hooks, and lift-truck forks will be protected with wood, cloth, plastic, or rubber buffers, where feasible, to minimize contact with iron surfaces.

6.2.2. Contact with iron, or iron alloy tools and work surfaces will be avoided when possible. If not possible, contacted surfaces will be visually inspected for contamination, and if necessary, re-cleaned prior to use.

6.2.3. Where necessary to maintain cleanliness, production components and fixturing will be covered with a protective polyethylene sheet when not being worked on for an extended period of time. Part temperature must be below 150 Degrees Fahrenheit prior to covering.

6.2.4. Fixturing and bracing components that come into direct contact with the production part surfaces will be made from Austenitic stainless steel.

6.2.4.1. When it is necessary to weld fixturing and/or bracing in place, attachment tabs (of the same material composition as base material) will be utilized to prevent metallurgical contamination.

6.2.5. Production part cleanliness requirements also apply to (part contacting) bracing / fixturing surfaces.

6.3. Panel Die Forming operations

6.3.1. Prior to use, the functional faces of each die set will be thoroughly cleaned to remove any residual machining coolant, dirt, oil, harmful debris, unnecessary marking and/or model maker materials. This will be accomplished by one or more of the following processes.

6.3.1.1. Remove bonded materials by scraping, or with authorized abrasive products.
6.3.1.2. Remove loose debris with compressed air.
6.3.1.3. High pressure washing.
6.3.1.4. Solvent wipe with Isopropanol (or approved equivalent).

6.3.2. The forming die set functional surfaces, and production panels will be visually monitored for cleanliness during the forming process. If it is noticed during the forming process, that harmful foreign matter has accumulated on the die set, or production panel, the forming operation will halt until the component is re-cleaned.

6.4. Subcontract Forming Operations

6.4.1. Parts are to be covered and protected from the elements and road debris during transportation to and from the sub-contractor.

6.4.1.1. MTM quality assurance personnel will inspect (and document) the parts for material thickness, surface finish, cleanliness, and magnetic permeability prior to delivery to the contractor, and after receiving the formed parts.
6.4.1.2. The MTM material handler will visually inspect the part at the point of drop off, and pick up for cleanliness and surface imperfections.
6.4.1.3. Straps and/or chains must not come into direct contact with the part surfaces.
6.4.1.4. If stacking similar panels is necessary, adequate protection must be provided to ensure protection between parts.

6.4.2. The general handling / storage requirements (above) also apply to the sub-contractor. It is the responsibility of MTM Purchasing Department to ensure the requirements are precisely followed by the contractor.

6.4.3. Parts are to be handled by approved lifting equipment only. The use of plate gripping parts clamps is not acceptable.

6.4.4. Equipment surfaces (e.g. Plate Rollers, Press Brake Dies, etc…) that contact the parts, must be clean and free of loose contaminants.

6.4.4.1. The forming equipment (part contacting) surfaces, and production panels will be visually monitored for cleanliness during the forming process. If it is noticed during the forming process, that harmful foreign matter has accumulated on the functional tool faces, or production panel, the forming operation will halt until the component is re-cleaned.

6.5. Annealing operations

6.5.1. Parts are to be covered and protected from the elements and road debris during transportation to and from the metal treating contractor.

6.5.1.1. When installing onto the transportation device (e.g. shipping skid, wood struts, or truck bed), the parts are to be orientated convex side up.
6.5.1.2. The MTM material handler will visually inspect the part at the point of drop off, and pick up for cleanliness.
6.5.1.3. Straps and/or chains must not come into direct contact with the part surfaces.
6.5.1.4. If stacking similar panels is necessary, adequate protection must be provided to ensure protection between parts.

6.5.2. The general handling / storage requirements (above) also apply to the heat treat contractor. It is the responsibility of MTM Production Management / Production Control, and Material Handlers to ensure the requirements are precisely followed.

6.5.3. Parts are to be handled by provided lifting provisions only. If other handling mechanisms are necessary, they must comply with the above general handling requirements, and MTM engineering approval is required prior to use. The use of plate gripping parts clamps is not acceptable.

6.5.4. Internal furnace surfaces (e.g. brick, supporting structures, or shims) that contact the parts, must be clean and free of loose contaminants.

6.5.5. The parts must rest only on the peripheral edges during the thermal cycle. (The formed panels have approximately ½" (minimum) of excess material remaining on the perimeter that will be removed and discarded during later processing)

6.5.6. After the parts are positioned in the furnace, they are to be visually inspected for suitable support, and cleanliness. If dirt or debris exists on the part or contacting supporting structure, it must be removed using an approved solvent or cleaning process prior beginning the heat treat cycle.

6.6. Blasting operations

6.6.1. As required by the MTM Mfg. Routing, components will be blast cleaned using virgin aluminum oxide media only.

6.6.2. Surfaces with high tolerance surface finish will be masked off accordingly (e.g. polished vacuum facing surface, machined surfaces, etc…). Afterward, any tape residue will be removed using Isopropanol (or Acetone, followed by Isopropanol) and lint free wipes.

6.6.3. Specific blast media grit size, and necessary masking requirements will be stated within the MIT.

6.7. Cutting / Trimming / Welding / grinding / polishing operations

6.7.1. All grinding wheels, paper abrasives, and stainless steel wire brushes will be kept segregated for use on either stainless/nickel alloy or carbon steel as applicable. The tools used on stainless/nickel alloy will be marked specifically for use on stainless/nickel alloy only. Unidentified tools, or tools previously used on ferrous material, will not be used on components associated with this specification.

6.7.2. Cutting and trimming will be accomplished by either PAC, or abrasive cutting wheel. If using PAC for finish cuts, the resulting Oxide layer will be completely removed.

6.7.2.1. For incremental panel trimming during the forming operation, adequate radii will be applied to all edge corners in order to avoid gouging and scraping the forming die material.

6.7.3. Each weld joint and weld joint area (approximately 3” zone) will be cleaned with Isopropanol prior to welding.

6.7.4. Each weld joint will be visual inspected for cleanliness and conformance to the requirements of this specification at the point of fit-up, tack welding, and each inter-pass.

6.7.5. After each weld joint is completed, any oxides or contaminants that reside on the weld surface and heat affected zone will be completely removed.

6.7.6. After all welding is completed, in order to remove any foreign matter, or free iron contamination that may have accumulated during the fabrication process, all affected surfaces, with the exception of machined surfaces, and surfaces with high tolerance surface finish requirements, will be thoroughly cleaned by one or more of the following processes:

6.7.6.1. Grinding / sanding, wire brushing, and/or sand blasting.

6.8. High pressure washing operations

6.8.1. The parts will be washed using heated, de-ionized water, a mild non-chlorinated cleaning solution (e.g. Simple Green®, or authorized equivalent), and a high pressure washer. The spray pressure at the nozzle will be approximately 1,000 to 1,500 psi and the cleaning solution temperature will be approximately 150°F.

6.8.2. Following detergent wash, all parts will be final rinsed with de-ionized water and wiped dry with clean new rags.

6.9. Cleaning / Assembly operations

6.9.1. Cleaning and assembly prior to vacuum testing

6.9.1.1. After the VVSA Period and/or sub-component has been through its final polishing sequence, and prior to assembling the seals, blank-off flanges, and preparing the part for thermal cycling and vacuum testing, all vacuum facing surfaces will be cleaned by one or more of the following:

6.9.1.1.1. High pressure washing, followed by blowing dry with oil free instrument air
6.9.1.1.2. Wiped down with solvent, and wiped dry with lint-free wipes

6.9.1.2. After the cleaning is complete, the entire interior surface will be visual inspected, and certified for cleanliness by a qualified MTM Q/A representative. Appropriate lighting and equipment will be used to ensure the necessary level of cleanliness is achieved.

6.9.1.3. After the final interior cleaning is finished and confirmed, the installation of covers, and blank plates will be done as soon as possible to seal and protect the interior from contamination.

6.9.1.3.1. When necessary to ensure cleanliness, subsequent handling of vacuum facing components (e.g. installation / assembly of seals, and CF flanges, etc…) will be performed wearing lint free gloves.
6.9.1.3.2. When practical, and necessary to maintain cleanliness, the entire VVSA will be covered with polyethylene at all times when not being worked. Tape may be used to secure the polyethylene, but the adhesive surface of the tape should not be allowed to come into contact with highly polished / functional surfaces of the part. If tape does come into contact with the part, the residue will be removed using Isopropanol (or Acetone, followed by Isopropanol).

6.9.1.4. During subsequent handling of the finish cleaned assembly, care will be taken, as necessary, to avoid contamination / recontamination.

6.9.1.5. If the part becomes contaminated after the final cleaning, it will be spot cleaned using the appropriate method listed above.

6.9.2. Final cleaning operation

6.9.2.1. Once the interior has been cleaned, and the flanges and seals have been assembled, the interior will be considered at its final stage of cleanliness. Necessary provisions will be maintained to protect the interior surfaces from becoming contaminated (e.g. temporary covers, masking, etc…)
6.9.2.2. After the Port Extensions have been removed, and all primary manufacturing operations have been completed, any resulting debris and / or contaminants will be removed by blowing with compressed air, and wiping clean with Isopropanol, using lint free wipes.

6.10. Final visual inspection operations

6.10.1. Following the final cleaning of the VVSA components / assemblies, and prior to shipping, the parts will be visually inspected for cleanliness and certified as specified within the MTM Mfg.

routing instructions in accordance with ASTM A-380 paragraph 7.2, by a qualified MTM Q/A representative. Appropriate lighting and equipment will be used to ensure the necessary level of cleanliness is achieved.

6.10.2. Immediately afterward, all openings will be covered with their respective cover-plates, or fit with temporary protective covers which will remain in place until removed at PPPL.

6.11. Shipping operations

6.11.1. Shipping personnel will ensure all protective covers have remained securely in place prior to, during, and after loading for shipping. If it is noticed that a cover has become loose, or damaged, the appropriate Q/A, and CFT personnel will be notified for visual inspection, and to provide remedial disposition prior to proceeding.

6.11.2. The entire vessel component will be covered and wrapped to ensure the vessel is properly sealed, and cleanliness is maintained throughout shipping. This will be confirmed by the appropriate Q/A, and CFT representatives prior to covering and shipping.

7. QUALITY ASSURANCE / DOCUMENTATION

7.1. The electronic completion (or "closing / clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) Routing which includes reference to this document as a task requisite acknowledges compliance to the relevant requirements. The designated MTM employee completing the electronic exchange acknowledges completeness and compliance to the routing instructions.

7.2. When necessary, additional documentation requirements will be provided within the associated MTM IDC, and QAP system.

7.2.1. When an IDC record and/or Inspection report is required, reference to the specific area being tested will be clearly discernable.

7.2.2. When an IDC record and/or Inspection report is required, it will include the following information:

- MTM Work Order number
- Part identification number
- Part description
- Date of inspection
- Gage serial number
- Reference standard serial number
- Inspector signature, or initials, or stamp

7.3. Exceptions / out of tolerance conditions will be documented within the MTM Non-Conformance system per QA-SOP-01.

PS-491

Process Specification – General Welding Requirements
65678 PPPL NCSX Vacuum Vessel Sub Assembly

1. PURPOSE

This specification establishes the process parameters to ensure that all welding performed on the NCSX SE120-002 Vacuum Vessel Sub Assembly is maintained within the guidelines required by PPPL product specification NCSX-CSPEC-121-02

2. SCOPE

This specification defines the minimum requirements for welding processes and fabrication practices required by the MTM MIT.

3. DEFINITIONS

PPPL – Princeton Plasma Physics Laboratory
MTM – Major Tool & Machine, Inc.
NCSX – National Compact Stellarator Experiment
VVSA - Vacuum Vessel Sub Assembly
MIT – Manufacturing, Inspection, and Test plan (MTM Mfg. Routing)
IDC – MTM Inspection Data Checklist system
QAP – MTM Quality Assurance Planning system
NCR – Non-Conformance Report
WPS – Welding Procedure Specification
PQR – Procedure Qualification Record

4. REFERENCE DOCUMENTS

PPPL Product Specification NCSX-CSPEC-121-02
ASME Boiler and Pressure Vessel Code, Section V (Articles 2 and 9)
ASME SFA 5.14 Nickel and Nickel Alloy Bare Welding Rods Electordes.
AWS D1.6: Structural Welding Code – Stainless Steel, (Paragraph 6.29.1)
AWS QC1, Standard and Guide for Qualification and Certification of Welding Inspectors, 1996
ASNT 2055, Recommended Practice SNT-TC-1A
QA-SOP-01 Non-Conformance Control
MTM Mfg. Routing / Inspection Plan / Quality Assurance Plan 65678
PS480 – Visual Weld Inspection
PS481 – Radiographic Weld Inspection
PS482 – Dimensional Inspection (Laser Tracker)
PS483 – Cleanliness / Contamination Control
PS484 – Magnetic Permeability measurement
PS485 – Ultrasonic Thickness Testing
PS487 – Surface Finish Inspection
PS490 – Part Identification / Serialization

5. REQUIREMENTS

5.1. ASME Code stamping of the VVSA is not required.

5.2. Weld Filler Material

5.2.1. Weld Filler metal shall meet the requirements of the applicable AWS A series specifications or ASME SFA specifications. Certified material test reports shall be supplied for all materials.

5.3. Weld joint identification; weld mapping; traceability

5.3.1. Each weld joint will be individually identified / serialized throughout the welding and inspecting process per PS490. The primary method of individual weld identification will be using the manufacturing routing serial number (work order, lot, sub-id, sequence numbers) appended with a weld number. For example, a serial number 65678-1-15-20W1-2 would indicate the subject weld is joining panels 1 & 2 together, and can be traced to the MIT job number 65678, lot 1, sub ID 15, Sequence 20. A map will be completed that will show the general location of the panels, the adjoining weld, and its respective film number and location.

5.4. Weld Joint preparation.

5.4.1. Prior to fit-up, each weld joint preparation will be visually inspected by a Team Leader, or CWI for the following prior to fitting and welding.
5.4.1.1. Verify the weld joint preparation / joint prep angle are of optimum configuration.
5.4.1.2. Verify the weld joint preparation is clean and smooth, with no heavy grinding marks.
5.4.1.3. Verify any dross / oxidation / recast layer resulting from panel trimming has been completely removed.
5.4.1.4. Verify material thickness is adequate to allow for anticipated local reduction which will result from grinding / blending / and polishing the welds.

5.5. Fit-up

5.5.1. All fabrication fixturing designed to support vacuum facing surfaces, and manufactured under this work order is produced to nominal profile geometry. It is preferred that at the time of fit-up, the weld joints are at least slightly raised above the fixture surfaces to better facilitate unavoidable weld shrinkage.

5.5.2. During fitting and attaching components to fixturing, tabs made of the same material as the component must be used (e.g. Inconel 625, and 300 Series SST). Specific WPS information will be included within the MIT. Components are not to be welded directly to dissimilar fixturing materials.

5.5.3. Necessary fixturing manufactured under this work order will be specified for use within the first operation sequence which it is required. Parts will remain with the fixture until the following removal instructions are provided (within later operation sequences)

5.5.4. After each component has been positioned and installed onto it's respective assembly fixture, the Team Leader will verify fit-up and joint alignment per the following criteria:
5.5.4.1. When possible, the weld joint should be gapped away from the fixture surfaces.
5.5.4.2. Mating parts should be aligned to within approximately 1/32" of their shared profile.
5.5.4.3. The included weld prep angle should be even and consistent throughout the entire length of the joint.
5.5.4.4. Parts should be secured (via. Fixturing and/or tack welding) adequately to ensure fit-up and alignment is maintained during welding.

5.6. Welding Processes / Techniques

5.6.1. All welding shall be performed only by personnel qualified to welding procedures identified within the MIT. Weld procedures will be in accordance with ASME Code, Section IX. GMAW and GTAW are the only approved processes. Individual welding operation sequences will identify the specific process / WPS information for each welding requirement.

5.6.2. Weld sequencing and back stepping will be utilized to inhibit excessive weld shrinkage and distortion.

5.6.3. Details / sub-components will be grouped, and welded as sub-assemblies where possible to provide the opportunity to compensate for welding shrinkage while fitting to the primary fabrication.

5.7. Purging / Back Purging

5.7.1. Each weld joint will be purged with 100% argon.

5.7.2. Purge dam material must be either 625 Inconel or 300 Series Stainless Steel.

5.7.3. Back purging must be maintained through a minimum of two weld layers (root pass, and at least one stringer / inter pass). Once the purge material is removed, the back side of the weld joint is to be monitored for oxidation / discoloration. If the back surface turns gray during welding, back purging will resume, and continue until enough weld thickness is deposited until excessive oxidation is discontinued. Some discoloring (e.g. straw to blue colors) on the back side is normal, and will be removed during subsequent blasting, blending, or polishing operations.

5.8. Inspections

5.8.1. Visual Inspection

5.8.1.1. All visual weld inspections will be performed in accordance with PS480 and the following:

- Each weld pass requires 100% visual inspection prior to beginning the next (covering) weld pass. The MTM MIT will include inspection data checklist records for each visual inspection step required within a given welding operation sequence. The visual inspection verification (IDC(s)) must be completed prior to beginning a covering weld pass on all structural weld joints. The number of IDCs provided within each manufacturing operation is based on an estimated number of weld passes required to complete a given weld joint. If more (or less) IDC records are required than have been provided, the welding operation will halt until engineering is notified, and the records are added (or removed).
- Each completed weld joint will be 100% visually inspected under a minimum of 8X magnification in accordance with PS480.

5.8.2. Radiographic Inspection

5.8.2.1. Each welded sub-assembly will require 10% radiographic inspection of structural welding as required by the MIT in accordance with PS481.

5.8.3. Cleanliness / Contamination control

5.8.3.1. Cleanliness will be maintained throughout the fabrication process as required by the MIT in accordance with PS483.

5.8.4. Material thickness

5.8.4.1. Material thickness will be audited throughout the process of preparation, fit-up, inter-pass, and final grinding, blending, and polishing as required by the MIT in accordance with PS485.

5.8.5. Magnetic Permeability

5.8.5.1. Magnetic permeability will be audited throughout the process of fit-up, inter-pass, and final grinding, blending, and polishing as required by the MIT in accordance with PS484.

6. QUALITY ASSURANCE / DOCUMENTATION

6.1. The MTM MIT will specify all in-process and final inspection documentation requirements. All quality documentation will be compiled electronically utilizing MTM's integrated IDC and QAP systems

6.1.1. At a minimum, the MTM MIT will require documentation for all contractual features and/or physical requirements (e.g. final component features / final material condition).

6.1.2. To ensure compliance is maintained throughout the manufacturing process, interim / additional documentation requirements will be provided within the associated MTM IDC, and QAP system

6.1.3. When an IDC record, or QAP document is completed, reference to the specific area being tested will be clearly discernable. The record will include the following information (as applicable):

- MTM Work Order Number
- Part Identification Number
- Part Description
- Part Serial Number
- Date of Inspection
- Gage Serial Number
- Reference Standard Serial Number
- Inspector Signature / Acknowledgement, Initials, or Stamp

6.1.4. For all MIT operation sequences that include this document as a task requisite, but do not specify physical inspection records or documentation, the electronic completion ("clocking out") of each sequential manufacturing operation within the MTM (Visual Manufacturing®) routing confirms compliance to the applicable requirements. The MTM employee completing the electronic transaction (which completes and closes the operation sequence) personally acknowledges completeness and compliance to the routing instructions.

6.2. All un-authorized exceptions / out of tolerance conditions according to MTM MIT will be documented within the MTM Non-Conformance system per QA-SOP-01.

Fixture Drawings

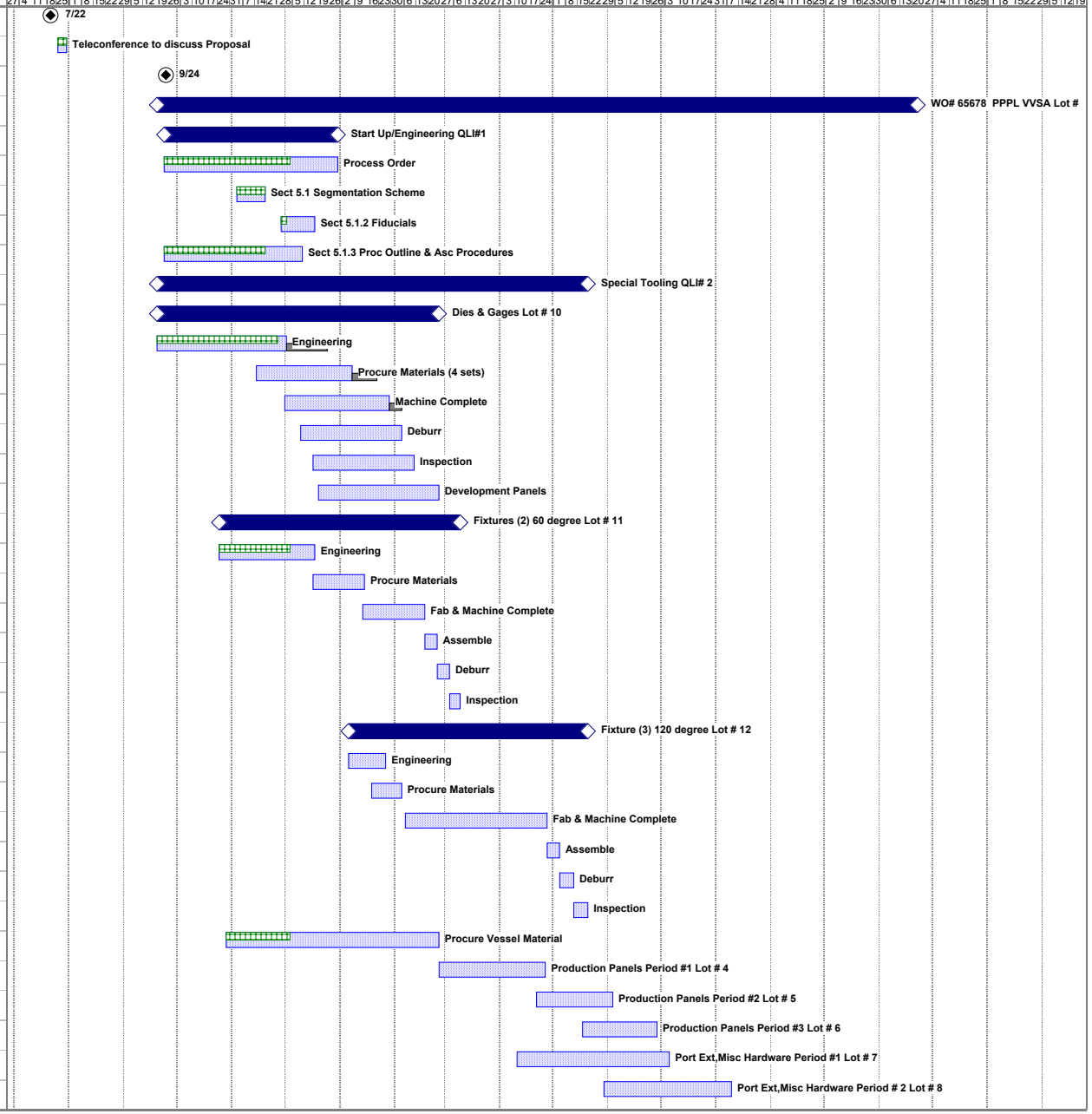
SCHEDULE

Major Tool & Machine, Inc.

NCSX VVSA for PPPL
Subcontract S005243-F
MTM WO# 65678

PPPL PRINCETON PLASMA PHYSICS LABORATORY

ID	Task Name	Contract S	Contract F	Mile Stones	% Comp
1	Submit Proposal	7/22/04	7/22/04		100
2	Teleconference to discuss Proposal	7/26/04	7/30/04		100
3	Receive Order	9/24/04	9/24/04		100
4	**WO# 65678 PPPL VVSA Lot # 14**	**9/20/04**	**11/22/05**		
5	**Start Up/Engineering QLI#1**	**9/24/04**	**12/30/04**		
6	Process Order	9/24/04	12/30/04		20
7	Sect 5.1 Segmentation Scheme	11/4/04	11/19/04	75	100
8	Sect 5.1.2 Fiducials	11/29/04	12/17/04	55	5
9	Sect 5.1.3 Proc Outline & Asc Procedures	9/24/04	12/10/04	95	70
10	**Special Tooling QLI# 2**	**9/20/04**	**5/20/05**		
11	**Dies & Gages Lot # 10**	**9/20/04**	**2/25/05**		
12	Engineering	9/20/04	12/1/04		50
13	Procure Materials (4 sets)	11/15/04	1/7/05	215	
14	Machine Complete	12/1/04	1/28/05		
15	Deburr	12/10/04	2/4/05		
16	Inspection	12/17/04	2/11/05	239	
17	Development Panels	12/20/04	2/25/05		
18	**Fixtures (2) 60 degree Lot # 11**	**10/25/04**	**3/9/05**		
19	Engineering	10/25/04	12/17/04		70
20	Procure Materials	12/17/04	1/14/05		
21	Fab & Machine Complete	1/14/05	2/17/05		
22	Assemble	2/18/05	2/24/05		
23	Deburr	2/25/05	3/3/05		
24	Inspection	3/4/05	3/9/05		
25	**Fixture (3) 120 degree Lot # 12**	**1/6/05**	**5/20/05**		
26	Engineering	1/6/05	1/26/05		1
27	Procure Materials	1/19/05	2/4/05	220	
28	Fab & Machine Complete	2/7/05	4/27/05		
29	Assemble	4/28/05	5/4/05		
30	Deburr	5/5/05	5/12/05		
31	Inspection	5/13/05	5/20/05		
32	Procure Vessel Material	10/29/04	2/25/05	290	30
33	Production Panels Period #1 Lot # 4	2/25/05	4/26/05	260	
34	Production Panels Period #2 Lot # 5	4/22/05	6/3/05	200	
35	Production Panels Period #3 Lot # 6	5/17/05	6/28/05	200	
36	Port Ext,Misc Hardware Period #1 Lot # 7	4/11/05	7/5/05		
37	Port Ext,Misc Hardware Period # 2 Lot # 8	5/30/05	8/9/05		



Summary Contract Milestone Planned Completed

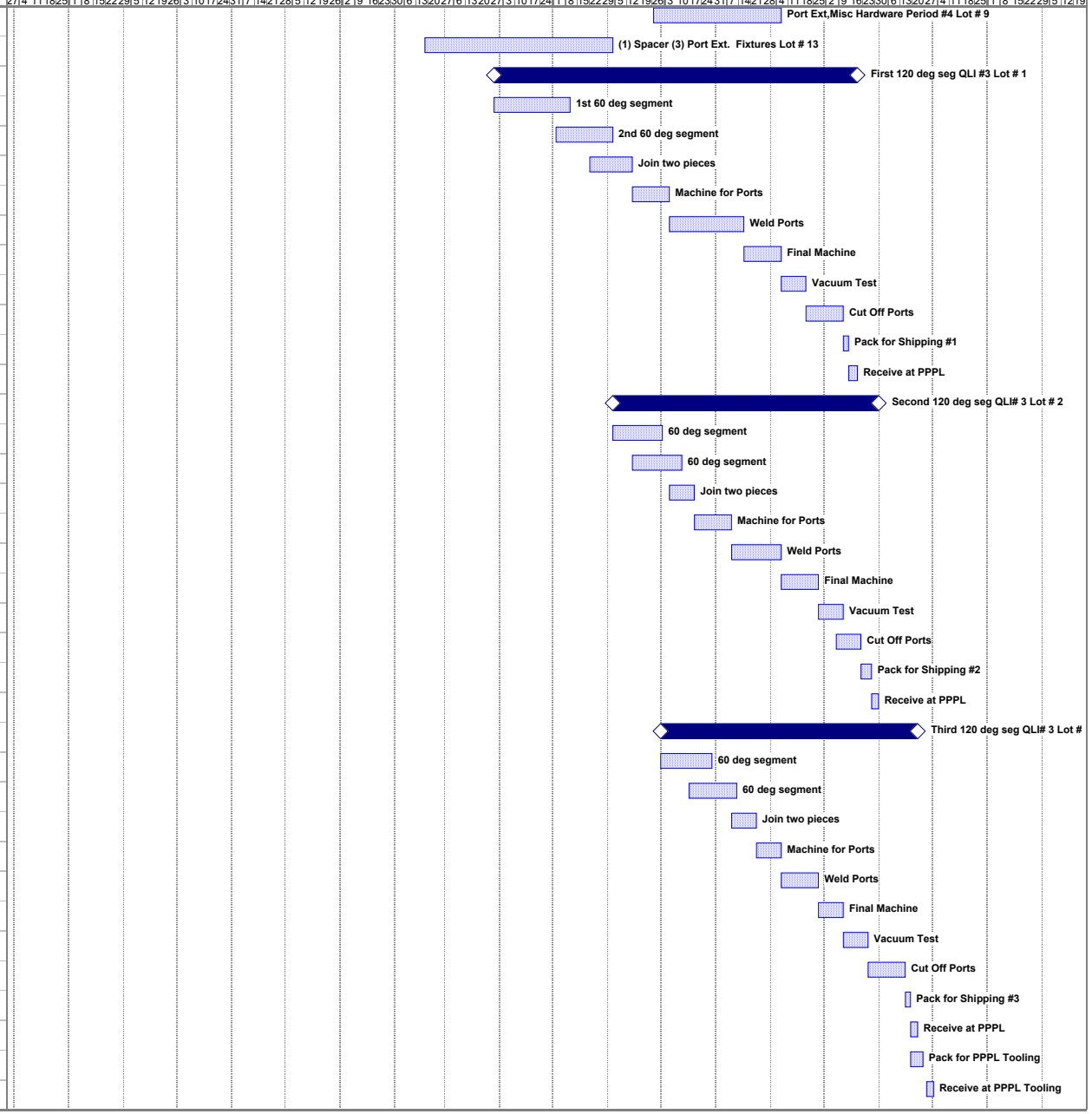
Mike Manuel
12-01-04
manuel@majortool.com

Major Tool & Machine, Inc.

NCSX VVSA for PPPL
Subcontract S005243-F
MTM WO# 65678

PPPL PRINCETON PLASMA PHYSICS LABORATORY

ID	Task Name	Contract S	Contract F	Mile Stones	% Comp
38	Port Ext,Misc Hardware Period #4 Lot # 9	6/27/05	9/6/05		
39	(1) Spacer (3) Port Ext. Fixtures Lot # 13	2/17/05	6/3/05		
40	**First 120 deg seg QLI #3 Lot # 1**	**3/29/05**	**10/19/05**		
41	1st 60 deg segment	3/29/05	5/10/05		
42	2nd 60 deg segment	5/3/05	6/3/05		
43	Join two pieces	5/22/05	6/14/05	350	
44	Machine for Ports	6/14/05	7/5/05		
45	Weld Ports	7/5/05	8/16/05		
46	Final Machine	8/16/05	9/6/05		
47	Vacuum Test	9/6/05	9/20/05		
48	Cut Off Ports	9/20/05	10/11/05		
49	Pack for Shipping #1	10/11/05	10/14/05		
50	Receive at PPPL	10/14/05	10/19/05	375.56	
51	**Second 120 deg seg QLI# 3 Lot # 2**	**6/3/05**	**10/31/05**		
52	60 deg segment	6/3/05	7/1/05		
53	60 deg segment	6/14/05	7/12/05		
54	Join two pieces	7/5/05	7/19/05	350	
55	Machine for Ports	7/19/05	8/9/05		
56	Weld Ports	8/9/05	9/6/05		
57	Final Machine	9/6/05	9/27/05		
58	Vacuum Test	9/27/05	10/11/05		
59	Cut Off Ports	10/7/05	10/21/05		
60	Pack for Shipping #2	10/21/05	10/27/05		
61	Receive at PPPL	10/27/05	10/31/05	375	
62	**Third 120 deg seg QLI# 3 Lot # 3**	**7/1/05**	**11/22/05**		
63	60 deg segment	7/1/05	7/29/05		
64	60 deg segment	7/17/05	8/12/05		
65	Join two pieces	8/9/05	8/23/05	375	
66	Machine for Ports	8/23/05	9/6/05		
67	Weld Ports	9/6/05	9/27/05		
68	Final Machine	9/27/05	10/11/05		
69	Vacuum Test	10/11/05	10/25/05		
70	Cut Off Ports	10/25/05	11/15/05		
71	Pack for Shipping #3	11/15/05	11/18/05		
72	Receive at PPPL	11/18/05	11/22/05	375	
73	Pack for PPPL Tooling	11/18/05	11/25/05		
74	Receive at PPPL Tooling	11/28/05	12/1/05	486	



Summary Contract Milestone Planned Completed

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