Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

NSCX PROTOTYPE VACUUM VESSEL SEGMENT
SCOPE OF WORK: NCSX-SOW-121-01-02
SPECIFICATION: NCSX-CSPEC-121-01-01

Sub ID	Part ID	Qty	Drawing ID / Rev
0	NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: N	1	/

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 10	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	SE121 / A
(R)	SOW 3.2.1 TASK 2				
	MIT/QA PLANS FOR PVVS FOR VVSA				

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL625_062_GTAW-WELD WIRE/GTAW, .062 DIA	52.0		4434	
	Vendor Part ID: INCONEL625_062_GTAW				
	Mfg Part ID: INCONEL 625				
(R)	ASME/AWS SFA 5.14, ERNiCrMo-3				

INCONEL 625 WELD WIRE, CUT LENGTH
0.062" DIA. X 36" LONG.
SUPPLIED IN 10 LB TUBES.

EACH PIECE OF CUT LENGTH WIRE MUST BE IDENTIFIED AT MINIMUM WITH THE AWS WELD WIRE CLASS.

MATERIAL CERTIFICATION REQ'D WITH SHIPMENT

Material Certification: TRACE ID: 38561
Part Number: SE121-001P
Part Description: PVVS PRIMARY WELDMENT

QAP Count: 3

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
30	INCONEL625_093_GTAW-WELD WIRE/GTAW, .093 DIA	72.0		4434	
	Vendor Part ID: INCONEL625_093_GTAW				
	Mfg Part ID: INCONEL 625				
(R)	ASME/AWS SFA 5.14, ERNiCrMo-3				

INCONEL 625 WELD WIRE, CUT LENGTH
0.093" DIA. X 36" LONG.
SUPPLIED IN 10 LB TUBES.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

EACH PIECE OF CUT LENGTH WIRE MUST BE IDENTIFIED AT MINIMUM WITH THE AWS WELD WIRE CLASS.

MATERIAL CERTIFICATION REQ'D WITH SHIPMENT

Material Certification: TRACE ID: 41171
Material Certification:
Part Number: SE121-001P
Part Description: PVVS PRIMARY WELDMENT

QAP Count: 4

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
40	INCONEL625_035_GMAW-WELD WIRE/GMAW, .035 DIA	6.0			
	Mfg Part ID: INCONEL 625				
(R)	ASME/AWS SFA 5.14, ERNiCrMo-3				

INCONEL625_035_GMAW
WELD WIRE, GMAW .035 DIA.
CERTS AND MILL TEST REPORTS REQUIRED WITH SHIPPMENT

Material Certification:
Part Number: SE121-001P
Part Description: PVVS PRIMARY WELDMENT

QAP Count: 3

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 11	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	
(R)	SOW 3.1 TASK 1				
	3.1.1 METHODS FOR FABRICATING VVSA				
	3.1.2 DESIGN CHANGES				
	3.1.3 PRELIMINARY MIT/AQ FOR VVSA				
	3.1.4 BUDGETARY COST/SCHEDULE FOR VVSA				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 12	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	
(R)	SOW 3.3.1 & SOW 3.3.2 Task 8				
	3.3.1 FINAL MIT/QA FOR VVSA				
	3.3.2 FINAL COST/SCHEDULE FOR VVSA				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 13	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	
(R)	ENGINEERING, PLANNING & PROJECT MGT				
	TASK 9				

FOLLOWING IS A LIST STANDARD OPERATING PROCEDURES AND WORK INSTRUCTIONS THAT APPLY IN PART OR IN WHOLE TO THE EXECUTION OF THIS WORK ORDER.
ENGINEERING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURES: ENGSOP01 - Mfg. Quality Plans; ENGSOP02 - Specification-Standard Control; ENGSOP03 - Internal Drawing Generation; ENGSOP04 - Drawing Control.
CAD / CAM OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURE: CADSOP01 - CNC Program Control;
MANUFACTURING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURES: MFGSOP01 - Project Manufacturing; MFGSOP02 - Material Handling and Storage; MTLSOP01 - Material Storage; PCSOP01 - Production Control; QASOP01 - Nonconformance Control; QASOP03 - Traceability-Identification
QUALITY ASSURANCE AND INSPECTION OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURES: QASOP01 - Nonconformance Control; QASOP05 - Calibration
RECEIVING INSPECTION OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURE: QASOP04 - Receiving Inspection
IN-PROCESS INSPECTION OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURE: QASOP02 - In Process Inspection
SHIPPING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURE: SHSOP01 - Shipping-Packaging
MACHINING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURE: TLGSOP01 - Cutting Tool Control
WELDING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING STANDARD OPERATING PROCEDURES: WLDSOP02 - Qualification of Welders and WPS; WLDSOP03 - Welding Process Development; WLDSOP04 - Stores Control of Weld Wire; WLDSOP05 - Weld Mapping; WLDSOP06 - Welding Filler Metal and Flux Procurement
ENGINEERING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: ENGWI001 - Material Card; ENGWI002 - Drawing Control; ENGWI003 - Bill of Manufacturing; ENGWI005 - Engineering Contract Review; ENGWI007 - Work Order Review Release; ENGWI008 - Operation Cards; ENGWI009 - Quality Planning; ENGWI010 - Service Cards; ENGWI013 - Work Order Header Card Maintenance; ENGWI014 - Inspection Fields; ENGWI019 - Nonconformance to Customers.
CAD / CAM OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: CADWI004 - Developing a CADCAM program; CADWI005 - Updating CADCAM Program or File
MANUFACTURING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: MFGWI018 - Workmanship; PCWI001 - Use of MTM Routing; PCWI004 - Scheduling System Procedures
CLEANING / WASHING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTION: MFGWI005 - High Pressure-High Temperature Water Cleaning of Parts
SUBCONTRACT OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTION: PCWI005 - Subcontract Procedure; PURWI002 - Vendor Setup and Assessment
NON-DESTRUCTIVE TESTING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: NDTWI001 - NDT Exam Personnel Qualification; NDTWI011 - Visual Weld Inspection
QUALITY ASSURANCE, IN-PROCESS INSPECTION OPERATIONS AND/OR RECEIVING INSPECTION OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: QAWI001 - MTM Inspection Method Guidelines; QAWI006 - Sampling Inspection Criteria; QAWI008 - Receiving Ordered Material; QAWI010 - Calibration; QAWI015 - Checking Out and Returning Gauges; QAWI017 - Recording Inspection Results; QAWI018 - Quality Sign Off Control; QAWI020 - Organization and Control of Quality Records; QAWI021 - Quality Record Storage and Retention; QAWI023 - Nonconformance System Navigation; QAWI026 - Part Relocation with SMX; QAWI027 - SMX Part Inspection Checklist; QAWI028 - QAP Data Package Generation; QAWI029 - Scanning Certifications; QAWI031 - Material Certification Program.
SHIPPING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: SHWI002 - Guidelines for Shipping Documentation; SHWI003 - General Guidelines for Building Containers; SHWI004 - Guidelines for Loading Parts for Shipment; SHWI005 - General Guidelines for Packaging Parts; SHWI007 - Guidelines for Coordinating Transport.
WELDING OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: WLDWI003 - Welding Personnel Training; WLDWI004 - Welder

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Performance Qualification; WLDWI005 - Storage and Maintenance of Welding Documents; WLDWI006 - Welding Engineering Work Order Review Process; WLDWI007 - Weld Wire and Stub Control; WLDWI008 - Assessment of Welder's Ability
BLAST BOOTH OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: SBWI001 - General Sandblast Guidelines;
MATERIAL PROCUREMENT OPERATIONS WILL BE PERFORMED PER THE FOLLOWING WORK INSTRUCTIONS: PURWI001 - Purchasing Data; PURWI002 - Vendor Setup and Assessment

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 14	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	
(R)	ENGINEERING TECHNICAL SUPPORT				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 15	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	PPPL / 0
(R)	QUALITY ENGINEERING REVIEW OF CUSTOMER PRODUCT SPECIFICATION AND STATEMENT OF WORK. REFERANCE SPEC NCSX-CSPEC-121-01-01 OR NCSX-SOW-121-01-02 IN LIBRARIAN BY SEARCHING UNDER THE REFERANCE DOCUMENT ID FOR SPECIFIC SPEC NUMBER OR PPPL.				

IDC Count : 0 Dwg Count: 2 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 20	825-FINAL INSPECTION - PLANTS 1	1.00	1.00	1.00	SE121 / A
(R)	FINAL VISUAL INSPECTION (ENGINEERING CONCURRENCE REQUIRED).				

FINAL CLEANLINESS VERIFICATION PER PP475 AND PREPARE CERTIFICATION / CLEANLINESS REPORT
COMPILE ELECTRONIC DATA BOOK INFORMATION PER MTM QAP.
TAKE SEVERAL PHOTOGRAPHS OF PART
PREPARE C OF C AND REQUEST FOR SHIPPING RELEASE (CONTACT ENGINEERING (DOUG McCORKLE) FOR RELEASE FORM IF NOT AVAILABLE ELECTRONICALLY.
WITNESS AND PHOTOGRAPH THE PACKAGING / PREPARATION FOR SHIPMENT (NEXT SEQUENTIAL OPERATION).
Test Certification: CLEANLINESS CERTIFICATION Rev:
Part Number: SE121-003P Rev: 0
Part Description: NCSX PVVS COMPLETE
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 30	425-SHIPPING - PLANTS 1 & 2	1.00	1.00	1.00	SE121 / A
(R)	SHIP PER CUSTOMER RELEASE FORM				

(CONTAINER MANUFACTURED IN SUB I.D. 28)
AT A MINIMUM ENSURE THE PART IS COMPLETELY WRAPPED WITH PLASTIC FOAM AND SHRINK WRAP.
DO NOT APPLY TAPE TO THE PART. THE PLASTIC FOAM CAN BE TAPED ONLY TO ITSELF TO HOLD POSITION UNTIL SHRINK WRAP IS APPLIED.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

SPECIAL CRATE REQUIREMENTS:
CONTAINER MUST BE CLEARLY MARKED WITH THE FOLLOWING INFORMATION:
SUPPLIER:
MAJOR TOOL & MACHINE, INC.
1458 E. 19TH ST.
INDIANAPOLIS, IN 46218
CONTENTS:
SE121 NCSX PVVS
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 0 / Seq: 9876	601-AUTOMATED SCHEDULING BU	1.00	1.00	1.00		TESTNG/MISC

Drw N/A IDC N/A IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
1	SE121 PROTOTYPE VACUUM VESSEL	1	SE121 / A
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	OPERATION SEQUENCE DELETED				
	ADVANCE TO SUB ID 45 FOR PANEL SUB-SET 2-5, SUB ID 41 FOR PANEL SUB-SET 2-5-4				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 70	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	OPERATION SEQUENCE DELETED				
	ADVANCE TO SUB ID 40 FOR PORT EXTENSION INSTALLATION				

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 90	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-002P / 0
(R)	OPERATION SEQUENCE DELETED				
	ADVANCE TO SUB ID 39 FOR FINAL FABRICATION OPERATION				

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 115	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-003P / 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) OPERATION SEQUENCE DELETED
ADVANCE TO SUB ID 39 FOR FINAL FABRICATION OPERATION

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
14	SE121-001P-2 PANEL # 1	1	SE121-001P / 0 Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DEVELOPMENT DRAWING (AUDIT DIMENSIONS WILL BE PROVIDED BY DOUG McCORKLE)
INSPECT MATERIAL THICKNESS PER PP477
VISUAL INSPECT SURFACE FINISH (PANEL SURFACE SHOULD BE A SMOOTH MILL PRODUCED SURFACE, WITHOUT SCRAPES, GOUGES, HEAVY PITS, ETC... IT SHOULD BE IN A CONDITION THAT CAN BE READILY POLISHED WITHOUT EXCESSIVE MATERIAL REMOVAL (CONTACT ENGINEERING (DOUG McCORKLE IF FURTHER CLARIFICATION IS NEEDED)
SAMPLE INSPECT MAGNETIC PERMEABILITY PER PP476, AND ASTM A800, SUPPLIMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT). SAMPLE LOT SIZE: AT LEAST 10 EVENLY SPACED LOCATIONS.
RECORD IDC DATA

Specification: ASTM A800 Rev: 2001
Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASME B46.1 Rev: 95
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP475 Rev: 8
Specification: ASTM A380 Rev: 99

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 10 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE121-001P-2 PANEL # 1-PANEL BLANK .375" THK INCONEL 625 Vendor Part ID: SE121-001P-2 PANEL # 1	1.0	SE121 / --	1810	

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE (SE121-001P-2 PANEL # 1.DXF, REV. --)
MATERIAL REQUIREMENTS: INCONEL 625 (UNS N06625) PER ASTM B 443-00 ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.
APPROXIMATE OVERALL SIZE: 54.97*76.37

Material Certification:
Part Number: SE121-001P-2 PANEL 1

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 2001
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 18	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	SE121-001P / A
(C)	RADIUS ALL CUT EDGES PRIOR TO FORMING				
	Specification: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 20	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / 0
(R)	1ST FORM OPERATION:				
	LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2883 - MTMFX-2884 INTO THE 750 TON 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 INSPECTION GAGE # MTMFX-2903.				
	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). A FINAL FORMING SEQUENCE IS PROVIDED FOR "FINAL SIZING" AFTER THE MATERIAL HAS BEEN ANNEALED.				
	ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE (ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING AFTER ANNEALING).				

Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A
(C)	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: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 14 / Seq: 30	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(C)
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: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Customer: PPPL
Furnace charts: FURNACE CHART

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 31	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / 0

(C)
REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART
Part Number: SE121-001P-2 PANEL 1

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 35	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / A

(C)
VISUAL INSPECT SURFACE FOR DAMAGE, PITTING, GOUGES, SCRAPES ETC.....
ON THE INSIDE (CONCAVE SURFACE), LOOK FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT. ON THE OUTSIDE (CONVEX SURFACE), VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443-00.
NOTIFY ENGINEERING (DOUG McCORKLE) FOR CONCURRENCE
VERIFY MAGNETIC PERMEABILITY AND RECORD I.D.C. DATA
Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8
Specification: ASTM B443 Rev: 00
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 40	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / A

(C)
2ND FORMING OPERATION
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC....

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

LOAD THE PREFORMED / ANNEALED PANEL INTO THE DIE SET.
"RE-STRIKE" HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE # MTMFX-2903. PANEL TO GAGE GAP TOLERANCE: .094" MAX.
NOTIFY INSPECTOR FOR Q/A IDC VERIFICATION

Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 50	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE FINAL FORMING PROCESS.
MAINTAIN AN APPROXIMATE 20 - 40 DEGREE BLAST ANGLE
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING 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)
HIGH PRESSURE WASH PER PP475
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).
CLEAN PANEL PER PP475
APPLY PROTECTIVE PLASTIC FILM (CONTACT DOUG McCORKLE FOR MATERIAL)
STAGE PANEL FOR INSTALLATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(R) VERIFY PROFILE TO INSPECTION GAGE # MTMFX-2903. GAP TOLERANCE: .094" MAX. RECORD ACTUAL GAP READINGS ON INSPECTION DRAWING
VERIFY PART PERIMETER EXCEEDS GAGE PERIMETER FOR TRIMMING AND FITTING AT ASSEMBLY
INSPECT AND RECORD INTERIOR SIDE SURFACE FINISH (LESS PERIMETER / WELD ZONES) AND RECORD ACTUAL READINGS ON INSPECTION DRAWING
INSPECT MAGNETIC PERMEABILITY PER PP476 AND ASTM A800, SUPPLEMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT. THE SURFACES OF THE PVVS SHELL AND PORT EXTENSION SHALL BE CHECKED AND DOCUMENTED ON A 6" GRID. THE SURFACES AT AND NEAR WELDS WILL BE CHECKED ON A 1" GRID.
RECORD ACTUAL PERMEABILITY READINGS ON INSPECTION DRAWING
INSPECT MATERIAL THICKNESS PER PP477 (6" GRID)

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RECORD ACTUAL MATERIAL THICKNESS ON INSPECTION DRAWING

Test Certification: SE121-001P-10MTM Rev: 2A
Part Number: SE121-001P-2 PANEL 1
Part Description: DIE FORMED PANEL
Specification: ASME B46.1 Rev: 95
Specification: ASTM A800 Rev: 2001
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP479 Rev: 3

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
15	SE121-001P-2 PANEL # 2	1	/
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DEVELOPMENT DRAWING (AUDIT DIMENSIONS WILL BE PROVIDED BY DOUG McCORKLE)
INSPECT MATERIAL THICKNESS PER PP477
VISUAL INSPECT SURFACE FINISH (PANEL SURFACE SHOULD BE A SMOOTH MILL PRODUCED SURFACE, WITHOUT SCRAPES, GOUGES, HEAVY PITS, ETC... IT SHOULD BE IN A CONDITION THAT CAN BE READILY POLISHED WITHOUT EXCESSIVE MATERIAL REMOVAL (CONTACT ENGINEERING (DOUG McCORKLE IF FURTHER CLARIFICATION IS NEEDED)
SAMPLE INSPECT MAGNETIC PERMEABILITY PER PP476, AND ASTM A800, SUPPLIMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT). SAMPLE LOT SIZE: AT LEAST 10 EVENLY SPACED LOCATIONS.
RECORD IDC DATA

Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 2001
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASME B46.1 Rev: 95
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: ASTM A380 Rev: 99

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 10 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE121-001P-2 PANEL # 2-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	
	Vendor Part ID: SE121-001P-2 PANEL # 2				

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(SE121-001P-2 PANEL # 2.DXF, REV. --)
MATERIAL REQUIREMENTS: INCONEL 625 (UNS N06625) PER ASTM B 443-00 ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.
APPROXIMATE OVERALL SIZE: 35.07*44.03

Material Certification:
Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 01
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 18	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	SE121-001P / A
(C)	RADIUS ALL CUT EDGES PRIOR TO FORMING				
	Specification: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 20	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / A
(C)	1ST FORM OPERATION:				

LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2885 - MTMFX-2886 INTO THE 750 TON 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 INSPECTION GAGE # MTMFX-2904.
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). A FINAL FORMING SEQUENCE IS PROVIDED FOR "FINAL SIZING" AFTER THE MATERIAL HAS BEEN ANNEALED.
ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE (ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING AFTER ANNEALING).

Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 22	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C) CUT OUT A LIFTING EYE FROM THE EXCESS TRIM STOCK THAT WAS REMOVED DURING THE FORMING CYCLE. INSTALL AND WELD IT TO THE PERIPHERAL EDGE OF THE FORMED PANEL (WHICH STILL HAS EXCESS TRIM STOCK REMAINING).
POSITIONING CONSIDERATIONS:
1. POSITION TO SUIT NORMAL HANDLING AND LIFTING.
2. POSITION TO SUIT SETTING IN A VERTICAL STANCE IN THE HEAT TREAT OVEN (WIDE SIDE DOWN).
3. SHAPE AND POSITION THE LIFTING HOOK FOR A "QUICK AND EASY GAFF HOOK STYLE GRAB" WHEN REMOVING THE PARTS FROM THE HOT OVEN FOR A RAPID COOLING CYCLE.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 1

WPS115 Rev:1 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes: LIFTING HOOK TO PANEL EDGE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) 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: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 15 / Seq: 30	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(C) 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: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Customer: PPPL
Furnace charts: FURNACE CHART
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 31	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / 0

(C) REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART
Part Number: SE121-001P-2 PANEL 2

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 35	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(C) VISUAL INSPECT SURFACE FOR DAMAGE, PITTING, GOUGES, SCRAPES ETC.....
ON THE INSIDE (CONCAVE SURFACE), LOOK FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT. ON THE OUTSIDE (CONVEX SURFACE), VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443-00.
NOTIFY ENGINEERING (DOUG McCORKLE) FOR CONCURRENCE
VERIFY MAGNETIC PERMEABILITY AND RECORD I.D.C. DATA
Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8
Specification: ASTM B443 Rev: 00
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 40	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / 0

(C) 2ND FORMING OPERATION
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC....
LOAD THE PREFORMED / ANNEALED PANEL INTO THE DIE SET.
"RE-STRIKE" HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE # MTMFX-2904. PANEL TO GAGE GAP TOLERANCE: .094" MAX.
NOTIFY INSPECTOR FOR Q/A IDC VERIFICATION

Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 50	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / 0

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE FINAL FORMING PROCESS.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R)

TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING 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)
HIGH PRESSURE WASH PER PP475
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).
CLEAN PANEL PER PP475
APPLY PROTECTIVE PLASTIC FILM (CONTACT DOUG McCORKLE FOR MATERIAL)
STAGE PANEL FOR INSTALLATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(R)

VERIFY PROFILE TO INSPECTION GAGE # MTMFX-2904. GAP TOLERANCE: .094" MAX. RECORD ACTUAL GAP READINGS ON INSPECTION DRAWING
VERIFY PART PERIMETER EXCEEDS GAGE PERIMETER FOR TRIMMING AND FITTING AT ASSEMBLY
INSPECT AND RECORD INTERIOR SIDE SURFACE FINISH (LESS PERIMETER / WELD ZONES) AND RECORD ACTUAL READINGS ON INSPECTION DRAWING
INSPECT MAGNETIC PERMEABILITY PER PP476 AND ASTM A800, SUPPLEMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT. THE SURFACES OF THE PVVS SHELL AND PORT EXTENSION SHALL BE CHECKED AND DOCUMENTED ON A 6" GRID. THE SURFACES AT AND NEAR WELDS WILL BE CHECKED ON A 1" GRID.
RECORD ACTUAL PERMEABILITY READINGS ON INSPECTION DRAWING
INSPECT MATERIAL THICKNESS PER PP477 (6" GRID)
RECORD ACTUAL MATERIAL THICKNESS ON INSPECTION DRAWING

Test Certification: SE121-001P-10MTM Rev: 2A
Part Number: SE121-001P-2 PANEL 2
Part Description: DIE FORMED PANEL
Specification: ASME B46.1 Rev: 95
Specification: ASTM A800 Rev: 2001
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP479 Rev: 3

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
16	SE121-001P-2 PANEL # 3	1	/
			Parent Sub:1 Op:10

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DEVELOPMENT DRAWING (AUDIT DIMENSIONS WILL BE PROVIDED BY DOUG McCORKLE)
INSPECT MATERIAL THICKNESS PER PP477
VISUAL INSPECT SURFACE FINISH (PANEL SURFACE SHOULD BE A SMOOTH MILL PRODUCED SURFACE, WITHOUT SCRAPES, GOUGES, HEAVY PITS, ETC... IT SHOULD BE IN A CONDITION THAT CAN BE READILY POLISHED WITHOUT EXCESSIVE MATERIAL REMOVAL (CONTACT ENGINEERING (DOUG McCORKLE IF FURTHER CLARIFICATION IS NEEDED)
SAMPLE INSPECT MAGNETIC PERMEABILITY PER PP476, AND ASTM A800, SUPPLIMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT). SAMPLE LOT SIZE: AT LEAST 10 EVENLY SPACED LOCATIONS.
RECORD IDC DATA

Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 2001
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASME B46.1 Rev: 95
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: ASTM A380 Rev: --

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 10 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE121-001P-2 PANEL # 3-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	

Vendor Part ID: SE121-001P-2 PANEL # 3

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE (SE121-001P-2 PANEL # 1.DXF, REV. --)
MATERIAL REQUIREMENTS: INCONEL 625 (UNS N06625) PER ASTM B 443-00 ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.
APPROXIMATE OVERALL SIZE: 54.97*76.37

Material Certification:
Part Number: SE121-001P-2 PANEL # 1
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 01
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 18	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	SE121-001P / A

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(C) RADIUS ALL CUT EDGES PRIOR TO FORMING
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 20	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / A

(C) 1ST FORM OPERATION:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2887 - MTMFX-2892 INTO THE 750 TON 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 INSPECTION GAGE # MTMFX-2905.
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). A FINAL FORMING SEQUENCE IS PROVIDED FOR "FINAL SIZING" AFTER THE MATERIAL HAS BEEN ANNEALED.
ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE (ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING AFTER ANNEALING).

Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 22	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C) CUT OUT A LIFTING EYE FROM THE EXCESS TRIM STOCK THAT WAS REMOVED DURING THE FORMING CYCLE. INSTALL AND WELD IT TO THE PERIPHERAL EDGE OF THE FORMED PANEL (WHICH STILL HAS EXCESS TRIM STOCK REMAINING).
POSITIONING CONSIDERATIONS:
1. POSITION TO SUIT NORMAL HANDLING AND LIFTING.
2. POSITION TO SUIT SETTING IN A VERTICAL STANCE IN THE HEAT TREAT OVEN (WIDE SIDE DOWN).
3. SHAPE AND POSITION THE LIFTING HOOK FOR A "QUICK AND EASY GAFF HOOK STYLE GRAB" WHEN REMOVING THE PARTS FROM THE HOT OVEN FOR A RAPID COOLING CYCLE.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 1

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE INITIAL FORMING PROCESS.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

MAINTAIN AN APPROXIMATE BLAST ANGLE OF 20 TO 40 DEGREES
BLOW OFF ALL RESIDUAL BLAST MEDIA PRIOR TO HANDLING.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 16 / Seq: 30	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(C) 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: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Customer: PPPL
Furnace charts: FURNACE CHART
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 31	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / 0

(C) REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART
Part Number: SE121-001P-2 PANEL 3

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 35	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(C) VISUAL INSPECT SURFACE FOR DAMAGE, PITTING, GOUGES, SCRAPES ETC.....
ON THE INSIDE (CONCAVE SURFACE), LOOK FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT. ON THE OUTSIDE (CONVEX SURFACE), VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443-00.
NOTIFY ENGINEERING (DOUG McCORKLE) FOR CONCURRENCE
VERIFY MAGNETIC PERMEABILITY AND RECORD I.D.C. DATA
Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8
Specification: ASTM B443 Rev: 00
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 40	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / 0

(R) 2ND FORMING OPERATION
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC....
LOAD THE PREFORMED / ANNEALED PANEL INTO THE DIE SET.
"RE-STRIKE" HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE # MTMFX-2905. PANEL TO GAGE GAP TOLERANCE: .094" MAX.
NOTIFY INSPECTOR FOR Q/A IDC VERIFICATION

Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 50	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / 0

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE FINAL FORMING PROCESS.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING 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)
HIGH PRESSURE WASH PER PP475
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).
CLEAN PANEL PER PP475
APPLY PROTECTIVE PLASTIC FILM (CONTACT DOUG McCORKLE FOR MATERIAL)
STAGE PANEL FOR INSTALLATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(R) VERIFY PROFILE TO INSPECTION GAGE # MTMFX-2905. GAP TOLERANCE: .094" MAX. RECORD ACTUAL GAP READINGS ON INSPECTION DRAWING
VERIFY PART PERIMETER EXCEEDS GAGE PERIMETER FOR TRIMMING AND FITTING AT ASSEMBLY
INSPECT AND RECORD INTERIOR SIDE SURFACE FINISH (LESS PERIMETER / WELD ZONES) AND RECORD ACTUAL READINGS ON INSPECTION DRAWING
INSPECT MAGNETIC PERMEABILITY PER PP476 AND ASTM A800, SUPPLEMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

PERMEABILITY RATHER THAN FERRITE CONTENT. THE SURFACES OF THE PVVS SHELL AND PORT EXTENSION SHALL BE CHECKED AND DOCUMENTED ON A 6" GRID. THE SURFACES AT AND NEAR WELDS WILL BE CHECKED ON A 1" GRID.
RECORD ACTUAL PERMEABILITY READINGS ON INSPECTION DRAWING
INSPECT MATERIAL THICKNESS PER PP477 (6" GRID)
RECORD ACTUAL MATERIAL THICKNESS ON INSPECTION DRAWING

Test Certification: SE121-001P-10MTM Rev: 2A
Part Number: SE121-001P-2 PANEL 3
Part Description: DIE FORMED PANEL
Specification: ASME B46.1 Rev: 95
Specification: ASTM A800 Rev: 2001
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP479 Rev: 3

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
17	SE121-001P-2 PANEL # 4	1	/
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C)
INSPECT BLANK SIZE PER DEVELOPMENT DRAWING (AUDIT DIMENSIONS WILL BE PROVIDED BY DOUG McCORKLE)
INSPECT MATERIAL THICKNESS PER PP477
VISUAL INSPECT SURFACE FINISH (PANEL SURFACE SHOULD BE A SMOOTH MILL PRODUCED SURFACE, WITHOUT SCRAPES, GOUGES, HEAVY PITS, ETC... IT SHOULD BE IN A CONDITION THAT CAN BE READILY POLISHED WITHOUT EXCESSIVE MATERIAL REMOVAL (CONTACT ENGINEERING (DOUG McCORKLE IF FURTHER CLARIFICATION IS NEEDED)
SAMPLE INSPECT MAGNETIC PERMEABILITY PER PP476, AND ASTM A800, SUPPLIMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT). SAMPLE LOT SIZE: AT LEAST 10 EVENLY SPACED LOCATIONS.
RECORD IDC DATA

Part Number: SE121-001P-2 PANEL 4
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 2001
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASME B46.1 Rev: 95
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: ASTM A380 Rev: 99

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 10 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE121-001P-2 PANEL # 4-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	
	Vendor Part ID: SE121-001P-2 PANEL # 4				

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE
(SE121-001P-2 PANEL # 1.DXF, REV. --)
MATERIAL REQUIREMENTS: INCONEL 625 (UNS N06625) PER ASTM B 443-00 ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.
APPROXIMATE OVERALL SIZE: 54.97*76.37

Material Certification:
Part Number: SE121-001P-2 PANEL # 1
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 01
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 18	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	SE121-001P / A

(C) RADIUS ALL CUT EDGES PRIOR TO FORMING
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 20	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / A

(C) 1ST FORM OPERATION:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2888 - MTMFX-2889 INTO THE 750 TON 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 INSPECTION GAGE # MTMFX-2906.
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). A FINAL FORMING SEQUENCE IS PROVIDED FOR "FINAL SIZING" AFTER THE MATERIAL HAS BEEN ANNEALED.
ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE (ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING AFTER ANNEALING).

Part Number: SE121-001P-2 PANEL 4

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 22	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C) CUT OUT A LIFTING EYE FROM THE EXCESS TRIM STOCK THAT WAS REMOVED DURING THE FORMING CYCLE. INSTALL AND WELD IT TO THE PERIPHERAL EDGE OF THE FORMED PANEL (WHICH STILL HAS EXCESS TRIM STOCK REMAINING).
POSITIONING CONSIDERATIONS:
1. POSITION TO SUIT NORMAL HANDLING AND LIFTING.
2. POSITION TO SUIT SETTING IN A VERTICAL STANCE IN THE HEAT TREAT OVEN (WIDE SIDE DOWN).
3. SHAPE AND POSITION THE LIFTING HOOK FOR A "QUICK AND EASY GAFF HOOK STYLE GRAB" WHEN REMOVING THE PARTS FROM THE HOT OVEN FOR A RAPID COOLING CYCLE.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 1

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) 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: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 17 / Seq: 30	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(C) 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: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 4
Part Description: DIE FORMED PANEL
Customer: PPPL
Furnace charts: FURNACE CHART
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 31	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / 0

(C) REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART
Part Number: SE121-001P-2 PANEL 4

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 35	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(C) VISUAL INSPECT SURFACE FOR DAMAGE, PITTING, GOUGES, SCRAPES ETC.....
ON THE INSIDE (CONCAVE SURFACE), LOOK FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT. ON THE OUTSIDE (CONVEX SURFACE), VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443-00.
NOTIFY ENGINEERING (DOUG McCORKLE) FOR CONCURRENCE
VERIFY MAGNETIC PERMEABILITY AND RECORD I.D.C. DATA
Part Number: SE121-001P-2 PANEL 4
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8
Specification: ASTM B443 Rev: 00
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 40	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / 0

(C) 2ND FORMING OPERATION
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC....
LOAD THE PREFORMED / ANNEALED PANEL INTO THE DIE SET.
"RE-STRIKE" HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE # MTMFX-2906. PANEL TO GAGE GAP TOLERANCE: .094" MAX.
NOTIFY INSPECTOR FOR Q/A IDC VERIFICATION

Part Number: SE121-001P-2 PANEL 4
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 50	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / 0

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE FINAL FORMING PROCESS.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R)
TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING 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)
HIGH PRESSURE WASH PER PP475
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).
CLEAN PANEL PER PP475
APPLY PROTECTIVE PLASTIC FILM (CONTACT DOUG McCORKLE FOR MATERIAL)
STAGE PANEL FOR INSTALLATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 17 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(R)
VERIFY PROFILE TO INSPECTION GAGE # MTMFX-2906. GAP TOLERANCE: .094" MAX. RECORD ACTUAL GAP READINGS ON INSPECTION DRAWING
VERIFY PART PERIMETER EXCEEDS GAGE PERIMETER FOR TRIMMING AND FITTING AT ASSEMBLY
INSPECT AND RECORD INTERIOR SIDE SURFACE FINISH (LESS PERIMETER / WELD ZONES) AND RECORD ACTUAL READINGS ON INSPECTION DRAWING
INSPECT MAGNETIC PERMEABILITY PER PP476 AND ASTM A800, SUPPLEMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT. THE SURFACES OF THE PVVS SHELL AND PORT EXTENSION SHALL BE CHECKED AND DOCUMENTED ON A 6" GRID. THE SURFACES AT AND NEAR WELDS WILL BE CHECKED ON A 1" GRID.
RECORD ACTUAL PERMEABILITY READINGS ON INSPECTION DRAWING
INSPECT MATERIAL THICKNESS PER PP477 (6" GRID)
RECORD ACTUAL MATERIAL THICKNESS ON INSPECTION DRAWING

Test Certification: SE121-001P-10MTM Rev: 2A
Part Number: SE121-001P-2 PANEL 4
Part Description: DIE FORMED PANEL
Specification: ASME B46.1 Rev: 95
Specification: ASTM A800 Rev: 2001
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP479 Rev: 3

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
18	SE121-001P-2 PANEL # 5	1	/
			Parent Sub:1 Op:10

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DEVELOPMENT DRAWING (AUDIT DIMENSIONS WILL BE PROVIDED BY DOUG McCORKLE)
INSPECT MATERIAL THICKNESS PER PP477
VISUAL INSPECT SURFACE FINISH (PANEL SURFACE SHOULD BE A SMOOTH MILL PRODUCED SURFACE, WITHOUT SCRAPES, GOUGES, HEAVY PITS, ETC... IT SHOULD BE IN A CONDITION THAT CAN BE READILY POLISHED WITHOUT EXCESSIVE MATERIAL REMOVAL (CONTACT ENGINEERING (DOUG McCORKLE IF FURTHER CLARIFICATION IS NEEDED)
SAMPLE INSPECT MAGNETIC PERMEABILITY PER PP476, AND ASTM A800, SUPPLIMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT). SAMPLE LOT SIZE: AT LEAST 10 EVENLY SPACED LOCATIONS.
RECORD IDC DATA

Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 2001
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASME B46.1 Rev: 95
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: ASTM A380 Rev: 99

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 10 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE121-001P-2 PANEL # 5-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	

Vendor Part ID: SE121-001P-2 PANEL # 5

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE (SE121-001P-2 PANEL # 1.DXF, REV. --)
MATERIAL REQUIREMENTS: INCONEL 625 (UNS N06625) PER ASTM B 443-00 ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.
APPROXIMATE OVERALL SIZE: 54.97*76.37

Material Certification:
Part Number: SE121-001P-2 PANEL # 1
Part Description: DIE FORMED PANEL
Specification: ASTM A800 Rev: 01
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 18	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	SE121-001P / A

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(C) RADIUS ALL CUT EDGES PRIOR TO FORMING
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 20	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / A

(C) 1ST FORM OPERATION:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2890 - MTMFX-2891 INTO THE 750 TON 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 INSPECTION GAGE # MTMFX-2907.
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). A FINAL FORMING SEQUENCE IS PROVIDED FOR "FINAL SIZING" AFTER THE MATERIAL HAS BEEN ANNEALED.
ENSURE THE PANEL MATERIAL EXTENDS BEYOND THE PERIMETER OF THE GAGE (ENOUGH TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING AFTER ANNEALING).

Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 22	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C) CUT OUT A LIFTING EYE FROM THE EXCESS TRIM STOCK THAT WAS REMOVED DURING THE FORMING CYCLE. INSTALL AND WELD IT TO THE PERIPHERAL EDGE OF THE FORMED PANEL (WHICH STILL HAS EXCESS TRIM STOCK REMAINING).
POSITIONING CONSIDERATIONS:
1. POSITION TO SUIT NORMAL HANDLING AND LIFTING.
2. POSITION TO SUIT SETTING IN A VERTICAL STANCE IN THE HEAT TREAT OVEN (WIDE SIDE DOWN).
3. SHAPE AND POSITION THE LIFTING HOOK FOR A "QUICK AND EASY GAFF HOOK STYLE GRAB" WHEN REMOVING THE PARTS FROM THE HOT OVEN FOR A RAPID COOLING CYCLE.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 1

WPS115 Rev:1 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes: LIFTING HOOK TO PANEL EDGE

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) 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: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 18 / Seq: 30	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(C) 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: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Customer: PPPL
Furnace charts: FURNACE CHART
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 31	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / 0

(C) REVIEW HEAT TREAT CERTIFICATE AND FURNACE CHART
Part Number: SE121-001P-2 PANEL 5

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 35	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(C) VISUAL INSPECT SURFACE FOR DAMAGE, PITTING, GOUGES, SCRAPES ETC.....
ON THE INSIDE (CONCAVE SURFACE), LOOK FOR ANY SURFACE DEFECTS OR IRREGULARITIES THAT MAY INHIBIT ACHIEVING THE REQURIED 32 MICRO-INCH FINISH REQURIEMENT. ON THE OUTSIDE (CONVEX SURFACE), VERIFY THE SURFACE FINISH STILL MEETS THE REQUIREMENTS OF ASTM B 443-00.
NOTIFY ENGINEERING (DOUG McCORKLE) FOR CONCURRENCE
VERIFY MAGNETIC PERMEABILITY AND RECORD I.D.C. DATA
Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: ASTM B443 Rev: 00
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 40	341-PACIFIC 750	1.00	1.00	1.00	SE121-001P / 0

(C) 2ND FORMING OPERATION
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC....
LOAD THE PREFORMED / ANNEALED PANEL INTO THE DIE SET.
"RE-STRIKE" HYDRAULIC FORM THE PANEL TO ACHIEVE THE GEOMETRICAL SHAPE CONFORMING TO INSPECTION GAGE # MTMFX-2907. PANEL TO GAGE GAP TOLERANCE: .094" MAX.
NOTIFY INSPECTOR FOR Q/A IDC VERIFICATION

Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 50	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / 0

(C) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE / MARKINGS FROM THE FINAL FORMING PROCESS.
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) TRIM PERIMETER TO PROVIDED TRIM-LINES (LEAVING 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)
HIGH PRESSURE WASH PER PP475
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).
CLEAN PANEL PER PP475
APPLY PROTECTIVE PLASTIC FILM (CONTACT DOUG McCORKLE FOR MATERIAL)
STAGE PANEL FOR INSTALLATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) VERIFY PROFILE TO INSPECTION GAGE # MTMFX-2907. GAP TOLERANCE: .094" MAX. RECORD ACTUAL GAP READINGS ON INSPECTION DRAWING
VERIFY PART PERIMETER EXCEEDS GAGE PERIMETER FOR TRIMMING AND FITTING AT ASSEMBLY
INSPECT AND RECORD INTERIOR SIDE SURFACE FINISH (LESS PERIMETER / WELD ZONES) AND RECORD ACTUAL READINGS ON INSPECTION DRAWING
INSPECT MAGNETIC PERMEABILITY PER PP476 AND ASTM A800, SUPPLEMENTARY REQUIREMENT S1 (BUT THE MEASUREMENT SHALL BE TAKEN IN RELATIVE PERMEABILITY RATHER THAN FERRITE CONTENT. THE SURFACES OF THE PVVS SHELL AND PORT EXTENSION SHALL BE CHECKED AND DOCUMENTED ON A 6" GRID. THE SURFACES AT AND NEAR WELDS WILL BE CHECKED ON A 1" GRID.
RECORD ACTUAL PERMEABILITY READINGS ON INSPECTION DRAWING
INSPECT MATERIAL THICKNESS PER PP477 (6" GRID)
RECORD ACTUAL MATERIAL THICKNESS ON INSPECTION DRAWING

Test Certification: SE121-001P-10MTM Rev: 2A
Part Number: SE121-001P-2 PANEL 5
Part Description: DIE FORMED PANEL
Specification: ASME B46.1 Rev: 95
Specification: ASTM A800 Rev: 2001
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP479 Rev: 3

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
24	SURFACE FINISH TESTING TEST P	1	/
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 24 / Seq: 10	410-BURNOUT TABLE	1.00	1.00	1.00	SE121-001P / A

(C) BURNOUT TEST PLATES PER MATERIAL CARD.
DEBURR AND SAND EDGES SMOOTH (WITH UNCONTAMINATED GRINDING WHEEL ONLY).
FORWARD ONE PLATE TO ENGINEERING (DOUG McCORKLE) AND PROCESS THE OTHER PER THE FOLLOWING ROUTING STEPS.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_670-SHEET,NICKEL ALLOY .25" THK	480.0			480

(C) INCONEL 625 SHEET, .25" THICK PER
AMS 5599.
CERT AND MILL TEST REPORT REQ'D WITH SHIPMENT.

Material Certification: NONE REQ'D TEST SAMPLE

QAP Count: 1

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 24 / Seq: 20	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / A

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(C) SAND AND POLISH THE TEST PIECE (ONE SIDE) TO A 32 RA MICRO SURFACE FINISH

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 24 / Seq: 25	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(C) MASK THE POLISHED SIDE AND BLAST THE OTHER SIDE WITH 180-220 GRIT VIRGIN ALUMINUM OXIDE.

Drw N/A IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 24 / Seq: 28	230-FABRICATION - WEIDNER	1.00	1.00	1.00	PP475 / 6

(C) CLEAN SAMPLE MATERIAL SURFACES PER PP475, 5.7 & 5.8. WRAP THE PART IN PLASTIC FOAM.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 24 / Seq: 30	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / A

(R) VERIFY THE FOLLOWING TEST SAMPLE ATTIBUTES:
SURFACE FINISH (PER ASME B46.1-1995) POLISHED 32 MICRO ON ONE SIDE, SMOOTH BLASTED SURFACE SIDE OPPOSITE (NO PITS, SCRAPES, GOUGES, ETC...).
CLEANLINESS PER PP475.
MAGNETIC PERMEABILITY (1.01 MAX)
REPORT RESULTS TO ENGINEERING (DOUG McCORKLE) FOR FINAL DEVELOPMENT OF PP479.

IDC Count : 3 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
26	SE121-001P-2 TEST PANEL NOTE:	1	/
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(C) WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 1

INSTALL FIT, TRIM, AND TACK-WELD PANEL TO THE BUILD FIXTURE. SET PANEL ONTO THE MACHINED REGISTER OF THE BUILD FIXTURE BASE-PLATE (THE DATUM -B- SURFACE (10 DEGREE OFFSET) DOWN). POSITION AND TAB TO THE FIXTURE. NOTE THAT THE INTERIOR PROFILE FIXTURE REST STOP SURFACES ARE DESIGNED AT NOMINAL GEOMETRIC POSITION TO AVOID STARTING ANY LOWER THAN MID-TOLERANCE. SHIM IF NECESSARY TO MAINTAIN AN AVERAGE PROFILE STARTING POSITION OF (+.090").
UTILIZE THE LASER TRACKER TO ENSURE PROFILE IS MAINTAINED AND TOLERANCE IS OPTIMIZED PRIOR TO TACK-WELDING THE SEAM. ENSURE THERE IS EXCESS STOCK REMAINING ON THE TWO OTHER WELD SEAM PANEL EDGES (FOR FOLLOWING OPERATION FITTING AND TRIMMING). ENSURE THE UPPER AND LOWER EDGES PROTRUDE AT LEAST .06" ABOVE (AND BELOW) THE FIXTURE FACES TO COMPENSATE FOR NORMAL LONGITUDINAL WELD SHRINKAGE AND FINAL TRIMMING THE OVERALL HEIGHT TO THE FIXTURE REGISTER FACES.
ONCE THE PANEL IS IN OPTIMUM POSITION, THE MATING SEAM IS FIT (AND ACCEPTED BY ENGINEERING), AND THE REMAINING PERIPHERAL EDGES ARE TRIMMED AS DESIRED, INSTALL POSITIVE REST STOPS TO ENSURE ACCURATE RELOCATION AFTER THE PANEL IS REMOVED FOR GRINDING THE WELD PREP

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

AND CLEANING.
REMOVE THE PANEL AND GRIND WELD PREPS. ***NOTE: THE WELD JOINT ROOT / FACE GEOMETRY MUST BE CONFIGURED AND ORIENTATED TO MINIMIZE DISTORTION AND KEEP THE BEAD WIDTH ON THE INTERIOR SIDE OF THE VESSEL (VACUUM SIDE) AS NARROW AS POSSIBLE. INTERIOR (VACUUM FACING) SIDE WELD FACES MUST BE KEPT AS NARROW AS POSSIBLE (1 WELD BEAD WIDTH MAX).
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
REINSTALL THE PANELS TO THE FIXTURE REST STOPS. UTILIZE THE LASER TRACKER TO CONFIRM PROFILE / PART ORIENTATION HAS BEEN MAINTAINED. ENSURE EACH PANEL IS RE-ALIGNED (SMOOTH AND CONTINUOUS) TO ITS ADJACENT MEMBER AND MIS-MATCH IS MINIMIZED. CWI / ENGINEERING CONCURRENCE REQUIRED.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
TACK-WELD THE PANELS TOGETHER.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
AFTER EACH PANEL IS POSITIONED, FIT, TRIMMED, AND TACK-WELDED IN PLACE; LAYOUT AND PRICK PUNCH THE APPROXIMATE INSPECTION POINTS PER DRAWING SE121-001P-1MTM. NOTE THAT THE SOLE PURPOSE OF THE PUNCH MARKS IS TO MAINTAIN REPEATABLE PROFILE INSPECTION LOCATIONS THROUGHOUT THE FABRICATION PROCESS. THE DEPTH OF EACH PUNCH MARK NEEDS TO BE ONLY DEEP ENOUGH THAT IT WOULD NOT BE REMOVED BY NORMAL PREPARATION / WELDING / BLENDING / BLASTING, ETC. LIGHTLY SAND OF ANY RAISED and/or DISPLACED MATERIAL (SHOULD BE MINIMAL) THAT MAY HAVE RESULTED FROM THE PUNCH.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 8 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 70	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(C)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 1				

LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
AFTER THE PANEL IS COMPLETELY POSITIONED AND TACK WELDED, INSPECT / VERIFY POSITIONING, FIT-UP, AND PROFILE OF EACH TACK WELDED SUB-SET PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE UPPER HALF OF THE APPLIED BI-LATERAL TOLERANCE AS FOLLOWS: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR BELOW NOMINAL GEOMETRY (INWARD).

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
INSPECT THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS AT EACH PROFILE INSPECTION POINT.
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 80	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 2				

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL ROOT PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 90	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 2				

AFTER THE ROOT WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.02" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% NEAR WELDS, AND APPROXIMATELY 10% WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 100	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 3				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL FIRST INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 110	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 3				

AFTER THE FIRST INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.04" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 120	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 4				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL SECOND INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 130	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 4				

AFTER THE SECOND INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.06" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 140	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 5				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL THIRD INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 150	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 5				

AFTER THE THIRD INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.08" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 160	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 6				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL FOURTH INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 170	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 6				

AFTER THE FOURTH INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.100" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 180	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 7				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL INTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 190	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 7				

AFTER THE INTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.120" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 200	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 8				

BACK GRIND THE EXTERIOR SIDE OF THE WELD JOINT.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
CWI VISUAL INSPECT BACK GRIND 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE TEST PANEL EXTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 210	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	WELD TEST/DEVELOPMENT PANEL INSPECTION OPERATION # 8				

AFTER THE EXTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 220	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	WELD TEST/DEVELOPMENT PANEL FABRICATION OPERATION # 9				

REMOVE THE TEST PANEL FROM THE BUILD FIXTURE
BLEND INTERIOR WELD SMOOTH TO VESSEL WALL SURFACE
CLEAN PANEL SUB SET AND PREPARE FOR RADIOGRAPHIC INSPECTION.
Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 230	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0

(R) 100% RADIOGRAPHIC INSPECT THE PANEL 2-5 SUB-SET STRUCTURAL WELD (LOCATIONS IDENTIFIED ON PART) PER THE FOLLOWING:
ASME SECTION VIII, DIVISION 1, UW-51
MAP THE FILM NUMBERS AND FILM LOCATIONS ON MTM INSPECTION DRAWING.
Specification: ASME SECTION VIII
Map(s): SE121-001P-1MTM Rev: 0A
Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Material Type: 625 INCONEL
Test Certification: RADIOGRAPHIC CERTIFICATE Rev:
Material Thickness: .375"
Specification: 20.A.100 Rev:
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 240	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) CLEAN AND POLISH THE INTERIOR SURFACE OF THE TEST / WELD DEVELOPMENT PANEL TO A 32 MICRO RA SURFACE FINISH.
Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: ASDFASDF Rev: ASDF

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 26 / Seq: 250	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0

(R) INSPECT MATERIAL THICKNESS.
INSPECT SURFACE FINISH OF TEST / WELD DEVELOPMENT PANEL INTERIOR.
RECORD IDC DATA
Part Number: SE121-001P TEST
Part Description: WELD DEVELOPMENT PANEL
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
30		1	/
			Parent Sub:26 Op:60

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 30 / Seq: 10	410-BURNOUT TABLE	1.00	1.00	1.00	

(C) BURN OUT TWO TEST PLATES 6 X 15 AND CLEANUP.
NOTIFY WELDING ENGINEERING WHEN PARTS ARE AVALIABLE

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_5-PLATE,NICKEL ALLOY .375" THK	338.3		1810	15.375*22

Vendor Part ID: INCONEL 625_5

(C) INCONEL 625 (UNS N06625) PER ASTM B 443-00
ANNEALED
MAGNETIC PERMEABILITY SHALL NOT EXCEED 1.00 (REF. ASTM A800).
SURFACE MUST BE PROTECTED FROM CONTACT WITH IRON AND IRON ALLOY MATERIALS
CERTS & MILL TEST REPORTS REQ'D WITH SHIPMENT.

QAP Count: 3

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 30 / Seq: 20	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C) WELD PQR PLATE PER WELDING ENGINEERING DIRECTION.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 1 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 30 / Seq: 30	705-WELD ENGINEERING/ CWI	1.00	1.00	1.00	

(C) CWI to visually inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. MTM NDT certification form required

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 30 / Seq: 40	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	

(C) Radiographically inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. Reference acceptance to all three specifications on the reader sheet.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 30 / Seq: 50	450-SUBLET	1.00	1.00	1.00		TESTNG/MISC

(C)
* Perform destructive testing (ref: 2 tensile tests, 2 face bend tests, and 2 root bend tests) to the requirements of the following three specifications; ASME Sect. IX, AWS D1.1, and AWS B2.
* All test samples and remaining plate to be returned to Major Tool and Machine when complete.
* Separate test reports are required for each specification. Test reports are to reference the PQR number and must provide the tensile failure locations/characterss.
* All NDT has been performed by Major Tool and Machine. A copy of the radiographic report is included with the test plate for reference.
* A reference sheet with pertinent welding data is included with the test plate.
* Test plate info:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

- One plate - 3/8" thick 304L stainless steel
- One plate - 3/8" thick Inconel 625
- Both plates butt welded using filler material ERNiCrMo-3 (Inconel 625)
- No post-weld heat treatment is required.
- Test plate is supplied in the as-welded condition.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
37		1	/
			Parent Sub:26 Op:60

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 37 / Seq: 20	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(C)
PLASMA CUT TWO TEST PIECES 7"*18*
CLEANUP, REMOVE HEAT AFFECTED ZONE.
INSPECT MAGNETIC PERMEABILITY AND RECORD IDC
PREP, WELD PQR PLATE PER WELDING ENGINEERING DIRECTION.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 37 / Seq: 30	705-WELD ENGINEERING/ CWI	1.00	1.00	1.00	

(C) CWI to visually inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. MTM NDT certification form required

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 1 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 37 / Seq: 40	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	

(C) Radiographically inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. Reader sheet to state acceptance to all three specifications.

* PQR390
* Test plate material: .375" thick Inconel 625.
* Butt weld using Inconel 625 filler / GTAW process.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 37 / Seq: 50	450-SUBLET	1.00	1.00	1.00		TESTNG/MISC

(C)
* Perform destructive testing (ref: 2 tensile tests, 2 face bend tests, and 2 root bend tests) per the requirements of the following three specifications; ASME Sect. IX, AWS D1.1, and AWS B2.1
* All test samples and remaining plate to be returned to Major Tool and Machine when complete.
* Separate test reports are required for each specification. Test reports are to reference the PQR number and must provide the tensile failure locations/characteristics.
* All NDT has been performed by Major Tool and Machine. A copy of the radiographic report is included with the test plate for reference.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

* A reference sheet with pertinent welding data is included with the test plate.
* Test plate info:
- Test plate number: PQR390
- One plate - 3/8" thick Inconel 625
- One plate - 3/8" thick Inconel 625
- Both plates butt welded using filler material ERNiCrMo-3 (Inconel 625)
- No post-weld heat treatment is required.
- Test plate is supplied in the as-welded condition.

Test Certification: VENDOR FORM

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
19	SE212-003P-3-PORT EXTENSION	1	SE121-001P / 0
			Parent Sub:1 Op:70

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 19 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	POSITION, INSTALL AND WELD CONFLAT FLANGE TO TUBE PER DRAWING.				
	FIT AND TRIM THE LENGTH FOR INSTALLATION. PREP FOR WELDING IN PLACE.				
	GRIND / BLEND THE INTERIOR WELD SMOOTH.				
	POLISH THE ENTIRE INSIDE SURFACE SMOOTH TO ACHIEVE A 32 MICRO SURFACE FINISH. CLEAN PER PP475				
	CWI VISUAL INSPECT THE PORT EXTENSION TUBE TO CONFLAT FLANGE WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.				
	Part Number: SE212-003P-3				
	Specification: PP475 Rev: 8				
	Part Description: PORT EXTENSION				
	Certification: CWI CERTIFICATION				
	Specification: PP479 Rev: 3				

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 5 NDT Count: 0 WPS Count: 1

WPS328.5-PPPL Rev:2 GTAW MAN
GTAW - Manual Fillers: INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 19 / Seq: 20	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0
(R)	VERIFY CLEANLINESS				
	INSPECT THE INTERIOR SURFACE FINISH OF THE PORT SUB-ASSY.				
	INSPECT THE MAGNETIC PERMEABILITY OF THE PORT EXTENSION TO FLANGE WELD AND SURROUNDING AREA.				
	RECORD IDC DATA				
	Part Number: SE212-003P-3				
	Part Description: PORT EXTENSION				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Customer: PPPL
Specification: ASME B46.1 Rev: 95
Specification: A800 Rev: 2001
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Specification: PP475 Rev: 8
Specification: PP479 Rev: 3

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
20	CONFLAT FLANGE	1	/
			Parent Sub:19 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 20 / Seq: 10	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-002P / --
(C)	RECEIVING INSPECTION				

RECEIVE AND INSPECT THE FOLLOWING PARTS:
(THEY SHOULD ALL ARRIVE TOGETHER)
F10000000NC4
FG1000CI
FG1000VU
FB1000C12S
GC0275S
CONTACT ENGINEERING (DOUG McCORKLE) WHEN PARTS ARRIVE.

IDC N/A IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	F10000000NC4-FLANGE, CONFLAT, NON-ROTATE, 10.00"	1.0			
(C)	FLANGE, CONFLAT, NON-ROTATABLE				

10.00 X BLANK X 0.97", CLEAR BOLT HOLES, 304L

Material Certification:
Part Number: F10000000NC4

QAP Count: 2

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
20	FG1000CI-GASKET KIT (10/PK), COPPER, FOR 10" CFF	1.0			
(C)	GASKET KIT (10/PACK), COPPER, INDIVIDUAL SEAL, FOR 10" CONFLAT FLANGE				

VARIAN VACUUM TECHNOLOGIES

Material Certification:
Part Number: FG1000CI

QAP Count: 2

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

30 FG1000VU-GASKET, VITON, FOR 10" CFF — Qty 1.0
(C) GASKET, VITON, FOR 10" CONFLAT FLANGE
VARIAN VACUUM TECHNOLOGIES

Material Certification:
Part Number: FG1000VU

QAP Count: 2

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
40	FB1000C12S-BOLT AND NUT KIT, 12 PT, SILVER PLATED	1.0			

(C) BOLT AND NUT KIT (25/PACK), 12 POINT, ASTM A193 GR. B8 SILVER PLATED, FOR 10" CONFLAT FLANGE
VARIAN VACUUM TECHNOLOGIES

Material Certification:
Part Number: FB1000C12S

QAP Count: 2

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
50	GC0275S-GASKET CLIP KIT (10/PK), FOR 10" CFF	1.0			

(C) GASKET CLIP KIT (10/PACK)
FOR 10" CONFLAT FLANGE
VARIAN VACUUM TECHNOLOGIES

Material Certification:
Part Number: GC0275S

QAP Count: 2

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 20 / Seq: 20	108-TOOL ROOM - PLANT 1	1.00	1.00	1.00	SE121-002P / 0

(R) **HOLD FOR ENGINEERING PROCESS DEVELOPMENT DRAWING.
MACHINE SPECIAL PORT FEATURE FOR VACUUM TESTING.
SPOTFACE, DRILL A CENTER DRILL SPOT IN THE CENTER OF THE FLANGE (FOR INSTALLATION / POSITIONING AID).

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
21	PORT EXTENSION TUBE	1	/

Parent Sub:19 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 21 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-002P / --

(C) OPERATION SEQUENCE DELETED

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

10 SE121-001P-5-INCO 625 TUBE 8.0" OD X .12" WA. X 18.0" 1.0 5647
Vendor Part ID: SE121-001P-5
(C) TUBE, ROUND, INCONEL 625, SEAMLESS OR WELDED. ASTM B444 OR ASTM B705
MTM AUTHORIZATION OF WELDING PROCEDURE REQUIRED PRIOR TO STARTING WORK.
NOTE THAT THE FOLLOWING REQUIREMENTS WILL BE PERFORMED / TESTED BY MAJOR TOOL & MACHINE AFTER DELIVERY. ALL EFFORTS TO ACCOMODATE / ENSURE SUCESS MUST BE MAINTAINED:
MAGNETIC PERMEABILITY REQUIREMENT: 1.01 MAX.
VACUUM INTEGRITY REQUIREMENT: TOTAL HELIUM LEAK RATE FOR THE TUBE SHALL BE LESS THAN OR EQUAL TO 1.7 X 10(-9) TORR-L/S
INTERIOR SURFACE FINISH REQUIREMENT: INTERIOR WELD BEADS WILL BE GROUND FLUSH. THE ENTIRE INTERIOR SURFACE WILL BE POLISHED TO A 32 MICRO SURFACE FINISH AND VERIFIED PER ASME B46.1.
EXTERIOR SURFACE FINISH: MILL SURFACE ACCEPTABLE. NO PITS, SCRAPES OR GOUGES.
MATERIAL CERTIFICATION AND TEST REPORTS REQ'D WITH SHIPMENT.

QAP Count: 3

Sub ID	Part ID	Qty	Drawing ID / Rev
29	PORT EXTENSION TUBE (TAKE 2)	1	SE121-002P / 0
			Parent Sub:19 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 10	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-002P / --

(R) PRIOR TO CUTTING / FORMING, INSPECT AND RECORD THE MAGNETIC PERMEABILITY OF THE SHEET (COORDINATE WITH MATERIALS DEPT. AND INSPECT THE APPROXIMATE PART ENVELOPE WITHIN THE STOCK SHEET)
Part Number: SE121-001P-3
Part Description: PVVS PORT EXTENSION TUBE
Specification: PP476 Rev: 4
Specification: PP475 Rev: 8

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 20	415-ROLLING/SHEAR/BRAKE PRESS	1.00	1.00	1.00	SE121-002P / --

(C) 1. SHEAR RECTANGLE PER MATERIAL CARD DIMENSIONS
2. ROLL TO 8" O.D. =/-0.03" X 20" LONG. LEAVE TRIM STOCK OVERLAPPED (FABRICATOR WILL TRIM). ENSURE OVERLAP IS ADEQUATE TO TRIM AND FIT THE DIAMETER REMOVING ANY ROLL FLATS RESULTANT FROM STARTING AND FINISHING THE ROLLING SEQUENCE.
3. NOTIFY Q/A FOR DIMENSIONAL / MAGNETIC PERMEABILITY VERIFICATION.
Part Number: SE121-001P-3
Part Description: PVVS PORT EXTENSION TUBE
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_660-SHEET,NICKEL ALLOY .125" THK	760.0			20*38

(C) INCONEL 625 SHEET, .125" THICK PER
AMS 5599 / ASTM B443 (UNS N06625).

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CERT AND MILL TEST REPORT REQ'D WITH SHIPMENT.

Material Certification:
Part Number: SE121-001P-3
Part Description: PORT EXTENSION TUBE

QAP Count: 3

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 30	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-002P / --
(C)	1. INSPECT DIAMETER AND OVERALL LENGTH.				
	2. INSPECT AND RECORD MAGNETIC PERMEABILITY (AFTER ROLLING)				
	Part Number: SE121-001P-3				
	Part Description: PVVS PORT EXTENSION TUBE				
	Specification: PP476 Rev: 4				
	Specification: PP475 Rev: 8				

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 40	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-002P / --
(C)	TRIM, FIT, (PURGE WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL) AND TACK WELD INTO 8" O.D. TUBE.				
	CLEAN AND PREPARE FOR PLASMA ARC WELDING				
	Specification: PP475 Rev: 8				
	Part Number: SE121-001P-3				
	Part Description: PVVS PORT EXTENSION TUBE				

IDC Count : 6 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 50	205-PLASMA WORKCENTER	1.00	1.00	1.00	SE121-001P / 0
(R)	PORT EXTENSION TUBE WELDING OPERATION				

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
SETUP, PURGE WELD JOINT WITH 100% ARGON.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

PLASMA ARC WELD THE AXIAL WELD SEAM.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.

Test Certification: CWI CERTIFICATE Rev:
Part Number: SE121-001P-3
Part Description: PORT EXTENSION TUBE
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 1

WPS380-PPPL Rev:2 PAW MAC
PAW - Machine Fillers: INCONEL625_035_GMAW
Notes: PLASMA WELDING

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 60	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	BLEND THE INTERIOR WELD SURFACE FLUSH TO THE BASE MATERIAL.				
	POLISH THE ENTIRE INTERIOR OF THE TUBE TO ACHIEVE A 32 MICRO-INCH RA SURFACE FINISH.				
	CLEAN PER PP475				
	Specification: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 29 / Seq: 70	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / 0
(R)	INSPECT DIAMETER, WALL THICKNESS, ROUNDNESS, WELDING DISTORTION, MAGNETIC PERMEABILITY, AND INTERIOR SURFACE FINISH.				
	RECORD IDC DATA				
	Part Number: SE121-001P-3				
	Part Description: PVVS PORT EXTENSION TUBE				
	Specification: PP475 Rev: 8				
	Specification: PP476 Rev: 4				
	Specification: PP477 Rev: 5				
	Specification: ASME B46.1 Rev: 95				
	Specification: A800 Rev: 2001				
	Specification: PP479 Rev: 3				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
32	PLASMA PQR	1	/
			Parent Sub:29 Op:50

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 32 / Seq: 10	705-WELD ENGINEERING/ CWI	1.00	1.00	1.00	

(C) CWI to visually inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. MTM NDT certification form required

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 1 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 32 / Seq: 20	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	

(C) Radiographically inspect PQR test plate per the requirements of ASME Sect. IX, AWS D1.1, and AWS B2.1. Reference acceptance to all three specifications on the reader sheet.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 32 / Seq: 30	450-SUBLET	1.00	1.00	1.00		TESTNG/MISC

(C)
* Perform destructive testing (ref: 2 tensile tests, 2 face bend tests, and 2 root bend tests) to the requirements of the following three specifications; ASME Sect. IX, AWS D1.1, and AWS B2.
* All test samples and remaining plate to be returned to Major Tool and Machine when complete.
* Separate test reports are required for each specification. Test reports are to reference the PQR number and must provide the tensile failure locations/characterss.
* All NDT has been performed by Major Tool and Machine. A copy of the radiographic report is included with the test plate for reference.
* A reference sheet with pertinent welding data is included with the test plate.
* Test plate info:
- One plate - 3/8" thick Inconel 625
- One plate - 3/8" thick Inconel 625
- Both plates butt welded using filler material ERNiCrMo-3 (Inconel 625)
- No post-weld heat treatment is required.
- Test plate is supplied in the as-welded condition.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
33	ASTM B 705 MECHANICAL TEST PIE	1	/
			Parent Sub:19 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 33 / Seq: 10	415-ROLLING/SHEAR/BRAKE PRESS	1.00	1.00	1.00	

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) 1. SHEAR RECTANGLE PER MATERIAL CARD DIMENSIONS
2. ROLL TO 8" O.D. =/-0.03" X 6" LONG. LEAVE TRIM STOCK OVERLAPPED (FABRICATOR WILL TRIM). ENSURE OVERLAP IS ADEQUATE TO TRIM AND FIT THE DIAMETER REMOVING ANY ROLL FLATS RESULTANT FROM STARTING AND FINISHING THE ROLLING SEQUENCE.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_660-SHEET,NICKEL ALLOY .125" THK	180.0			6*30

(R) INCONEL 625 SHEET, .125" THICK PER
AMS 5599 / ASTM B443 (UNS N06625).
CERT AND MILL TEST REPORT REQ'D WITH SHIPMENT.

Material Certification:
Part Number: SE121-001P-3
Part Description: PORT EXTENSION TUBE

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 33 / Seq: 20	205-PLASMA WORKCENTER	1.00	1.00	1.00	SE121 / --

(R) TRIM FIT AND TACK WELD CYLINDER.
SETUP, PURGE WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL, AND PLASMA ARC WELD THE JOINT

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 1

WPS380-PPPL Rev:2 PAW MAC
PAW - Machine Fillers: INCONEL625_035_GMAW
Notes: PLASMA WELDING

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 33 / Seq: 30	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(R) TRIM BOTH ENDS TO PRODUCE A TEST PIECE 4" MINIMUM LENGTH
PERFORM A FLATTENING TEST PER ASTM B 705, 7.2
(ENGINEERING WITNESS REQUIRED)
FILL OUT VISUAL TEST CERTIFICATE
Specification: ASTM B705 Rev: 94
Test Certification: VISUAL INSPECTION CERT
Part Number: ASTM B 705 MECH. TEST PIECE

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
52		1	/
			Parent Sub:19 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID			Qty	Drawing ID / Rev			Engineer
64880/1.0				1	/			BLUE/DOUG MCCORKLE
Sub: 52 / Seq: 10	800-RECEIVING	1.00	1.00	1.00				
(U)	RECEIVE / VERIFY AND SCAN CERTS NOTIFY ENGINEERING (DOUG McCORKLE) WHEN PARTS ARRIVE							

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10		1.0			
(U)	CONFLAT FLANGE Incomplete, leave unreleased				

QAP Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
20		1.0			
(U)	50-63MM PORT Incomplete, leave unreleased				

QAP Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
30		1.0			
(U)	NW25 Incomplete, leave unreleased				

QAP Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
25	SE121-003P-4-PORT EXTENSION WELD BACKING RING	1	/ Parent Sub:1 Op:90

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 25 / Seq: 10	415-ROLLING/SHEAR/BRAKE PRESS	1.00	1.00	1.00	SE121-003P / 0
(R)	1. SHEAR STRIP PER MATERIAL CARD AND DEBURR. 2. ROLL THE EASY WAY TO A 8.093" I.D. OBJ (0.031" WELD SHRINKAGE ALLOWANCE). 3. NOTIFY Q/A FOR DIMENSIONAL / MAGNETIC PERMEABILITY VERIFICATION. Specification: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_660-SHEET,NICKEL ALLOY .125" THK	162.0			4.5*36
(C)	INCONEL 625 SHEET, .125" THICK PER AMS 5599 / ASTM B443 (UNS N06625). CERT AND MILL TEST REPORT REQ'D WITH SHIPMENT. Material Certification: Part Number: SE121-003P-4 Part Description: WELD BACKING RING				

QAP Count: 3

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 25 / Seq: 15	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121 / --

(C) INSPECT AND RECORD MAGNETIC PERMEABILITY (AFTER ROLLING)
Part Number: SE121-001P-4
Part Description: PVVS PORT EXTENSION WELD RING
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 25 / Seq: 20	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-003P / 0

(R) 1. TRIM AND FIT TO VESSEL CONTOUR, CUT WIDTH, PREP
2. WELD PER DRAWING (SIZE TO EXISTING PORT TUBE)
3. BLEND WELD FLUSH TO BASE METAL
4. CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
5. COORDINATE RE-ROLLING IF NECESSARY TO IMPROVE ROUNDNESS.
Specification: PP475 Rev: 8
Part Number: SE121-003P-4
Part Description: PORT EXTENSION WELD RING
Certification: CWI CERTIFICATE

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 25 / Seq: 30	415-ROLLING/SHEAR/BRAKE PRESS	1.00	1.00	1.00	SE121 / A

(R) RE-ROLL / ROUND UP BAND (IF NECESSARY)
FABRICATOR WILL ADVISE...
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 25 / Seq: 40	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-003P / 0

(R) VERIFY DIMENSIONAL CONDITION / FIT-UP TO EXISTING PORT EXTENSION TUBE
VERIFY MAGNETIC PERMEABILITY
VERIFY WALL THICKNESS
VERIFY CLEANLINESS
RECORD I.D.C. DATA
Part Number: SE121-003P-4

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: ASTM A800 Rev: 2001
Specification: PP476 Rev: 4
Specification: PP475 Rev: 8
Part Description: PORT EXTENSION WELD RING
Specification: PP479 Rev: 3

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
28	STORAGE / SHIPPING CRATE	1	/
			Parent Sub:1 Op:115

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 28 / Seq: 10	425-SHIPPING - PLANTS 1 & 2	1.00	1.00	1.00	SE121 / A

(R) BUILD A CUSTOM STORAGE / SHIPPING CRATE PER ENGINEERING DIRECTION TO SUIT THE FOLLOWING REQUIREMENTS:
1. THE CONTAINER MUST PROTECT THE PART FROM DAMAGE AND CONTAMINATION DURING STORAGE / HANDLING DURING THE MANUFACTURING PROCESS AT MTM.
2. THE PART RESTS / SUPPORTS MUST BE HARDWOOD AND CONFIGURED SO NO NAILS OR SCREWS COME INTO CONTACT WITH THE PART.
3. THE CONTAINER MUST HAVE PROVISIONS TO BE LIFTED AND HANDLED BY EITHER A FORKLIFT, OR CRANE / LIFTING STRAPS.

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
31	NAMEPLATE	1	/
			Parent Sub:1 Op:115

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 31 / Seq: 10	415-ROLLING/SHEAR/BRAKE PRESS	1.00	1.00	1.00	

(C) SHEAR RECTANGLE PER MATERIAL CARD
DEBURR EDGES AND CLEANUP
NOTIFY Q/A AND HAVE THE MAGNETIC PERMEABILITY CHECKED (AND RECORDED) PRIOR TO SUBCONTRACTING.

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_660-SHEET,NICKEL ALLOY .125" THK	24.0			4*6

(C) INCONEL 625 SHEET, .125" THICK PER
AMS 5599 / ASTM B443 (UNS N06625).
CERT AND MILL TEST REPORT REQ'D WITH SHIPMENT.

Material Certification: TRACE ID: 92220
Part Number: NAMEPLATE

QAP Count: 2

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Sub: 31 / Seq: 11	260-SANDBLAST	1.00	1.00	1.00	
(C)	BLAST 100% WITH 180-220 VIRGIN ALUMINUM OXIDE MEDIA CLEANUP AND WIPE DOWN WITH ISOPROPANOL USING LINT FREE WIPES (AVAILABLE IN Q/A) CONTACT ENGINEERING (DOUG McCORKLE) FOR VISUAL INSPECTION. AFTER ACCEPTED, WRAP AND TAPE WITH FOAM PROTECTION.				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 31 / Seq: 15	450-SUBLET	1.00	1.00	1.00		ENGRVNG/ETCHNG
(R)	ETCH THE FOLLOWING INFORMATION PER PROVIDED DRAWING: MAJOR TOOL & MACHINE, INC. LOGO (USE FURNISHED ARTWORK) PPPL LOGO (USE FURNISHED ARTWORK) SE121-01 NATIONAL COMPACT STELLARATOR EXPERIMENT PROTOTYPE VACUUM VESSEL SEGMENT PRIME-CONTRACT: DE-AC02-76-CH03073 SUB-CONTRACT: S-04344-F SCOPE: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-01 MANUFACTURER: MAJOR TOOL AND MACHINE, INC. MTM #: 64880 NOTES: THE SUPPLIED DRAWING IS ONLY A CONCEPT AND IS PROVIDED TO DEFINE THE NECESSARY IDENTIFICATION INFORMATION. THE FINAL COMPOSITION IS TO BE DETERMINED BY THE MANUFACTURER. VENDOR IS TO PROVIDE PROTOTYPE SAMPLES (EITHER A PHYSICAL SAMPLE OR RENDERING) OF I.D. TAG DESIGN / COMPOSITION FOR MTM APPROVAL PRIOR TO PRODUCING THE FINAL ARTICLE. THE MATERIAL OF THE TAG (625 INCONEL, OR 316L STAINLESS) HAS BEEN SELECTED BASED ON IT'S LOW MAGNETIC PERMEABILITY PROPERTIES. EXTREME CARE MUST BE MAINTAINED DURING THE PROCESSING AND HANDLING OF THE TAG. ALL EFFORTS MUST BE MADE TO AVOID THE INDUCTION OF MAGNETIC PROPERTIES BY MEANS OF CONTAMINATION FROM CONTACT WITH IRON BASED MATERIALS (EG PLATTENS, WORK TABLES, HAND TOOLS, ETC....) THE METHOD OF PART MARKING ALSO MUST NOT AFFECT MAGNETIC PERMEABILITY. REFERENCE MTM CLEANLINESS CONTROL PROCEDURE PP475 Specification: PP475 Rev: 8 Part Number: PVVS NAMEPLATE					

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 2 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 31 / Seq: 20	820-RECEIVING INSPECTION	1.00	1.00	1.00	
(R)	RECEIVE AND INSPECT NAMEPLATE PER MTM PURCHASE ORDER INSPECT MAGNETIC PERMEABLITY AND RECORD IDC DATA Specification: PP476 Rev: 4				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

IDC Count : 1 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
38	FIXED DATUM TARGETS FOR PROFIL	1	/
			Parent Sub:1 Op:115

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 38 / Seq: 10	405-SAWS- PLANT 2	1.00	1.00	1.00	

(R) SAW / DEBURR PER MATERAIL CARD
Specification: PP475 Rev: 8

Drw N/A IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 1 NDT Count: 0 WPS Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	INCONEL 625_233-BAR,ROUND,NICKEL ALLOY .438" DIA	3.4		4434	1.125

Vendor Part ID: INCONEL 625_233
Mfg Part ID: INCONEL 625
(R) INCONEL 625
BAR,ROUND,NICKEL ALLOY .438" DIA

Material Certification:
Part Number: DATUM TARGET
Part Description: PVVS FIXED DATUM TARGET

QAP Count: 3

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 38 / Seq: 20	108-TOOL ROOM - PLANT 1	1.00	1.00	1.00	

(R) FACE ONE END AND DRILL / REAM SLIP FIT FOR .250" DOWEL THROUGH THE AXIS. (3 PIECES)
DELIVER TO DOUG McCORKLE
APPROXIMATE FINISH LENGTH 1.0"
Specification: PP475 Rev: 8
Part Number: DATUM TARGET
Part Description: PVVS FIXED DATUM TARGET

Drw N/A IDC N/A IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
39	SE121-003P NCSX PVVS COMPLETE	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 39 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-002P / 0

(R) LAYOUT AND PLASMA CUT THE PORT EXTENSION TUBE OFF THE VESSEL WALL (NORMAL TO VESSEL SURFACE) PER DRAWING.
PLASMA CUT THE PORT OPENING INTO THE VESSEL WALL PER DRAWING (CUT UNDERSIZE ALLOWING FOR GRINDING / SIZING TO PORT EXTENSION I.D.) USE A

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CIRCLE CUTTING DEVICE TO ENSURE PROPER SIZE AND ROUNDNESS.
REMOVE THE RE-CAST / HEAT AFFECTED ZONE FROM EACH CUT SURFACE BY GRINDING. GRIND / BLEND THE PORT EXTENSION EDGE AND VESSEL WALL OPENING SMOOTH (MAINTAINING PROPER SIZE AND RELATIONSHIP TO THE I.D. OF THE PORT EXTENSION TUBE STUB).
CLEANUP AND PREP THE EDGES OF THE PORT STUB AND PORT EXTENSION TUBE FOR RE-INSTALLATION.
POSITION AND SKIP WELD THE BACKING RING (SE121-003P-4) IN PLACE (TO THE END OF THE DETACHED PORT EXTENSION TUBE) PER DRAWING SE121-003P
SET THE PART ON THE RE-POSITIONING RISERS, USE THE PORT LOCATING FEATURE FOR POSITIONING, AND RE-INSTALL THE PORT EXTENSION ASSEMBLY TO THE PORT STUB AND WELD IN PLACE PER DRAWING SE121-003P.
GRIND AND BLEND THE PORT EXTENSION INTERIOR WELD SMOOTH.
CWI VISUAL INSPECT EACH WELD PASS 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ENSURE ALL COSMETIC WELDING AND BLENDING IS COMPETE, ENSURE ALL INTERIOR SURFACES ARE POLISHED AND CLEANED, MASK THE INTERIOR SURFACES AND CONFLAT FLANGE SURFACES, AND PREPARE PART FOR FINAL (EXTERIOR) BLAST AND FINAL INSPECTION.

Part Number: SE121-003P Rev: 0
Part Description: NCSX PVVS COMPLETE
Specification: ASNT 2055 SNT-TC-1A Rev: 1996
Method: VT-PP-001 Rev: B
Specification: PP475 Rev: 8
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 39 / Seq: 20	260-SANDBLAST	1.00	1.00	1.00	SE121 / A

(R) BLAST THE OUTSIDE SURFACE 100% USING 220 GRIT VIRGIN ALUMINUM OXIDE.
Specification: PP475 Rev: 8
Part Number: SE121-003P
Part Description: NCSX PVVS COMPLETE

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 39 / Seq: 30	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-003P / 0

(R)
1. REMOVE MASKING AND PROTECTIVE PLASTIC
2. THOROUGHLY CLEAN THE PVVS
3. SET THE PVVS ONTO THE TEMPORARY SUPPORT DEVICES AND TACK WELD IN PLACE (IN A FREE STATE)
4. INSTALL TOOLING BALL MONUMENTS TO THE PERIPHERY, TACK WELD IN PLACE. FINAL LOCATION / POSITION TO BE DETERMINED BY Q/A AND APPROVED BY ENGINEERING PRIOR TO WELDING. ENSURE ADEQUATE INERT GAS COVERAGE IS MAINTAINED (on both surfaces) THROUGHOUT THE WELDING AND COOLING PROCESS TO AVOID OXIDATION / DISCOLORATION)
5. INSTALL NAMEPLATE PER ENGINEERING DIRECTION
6. ENSURE PART IS PREPARED FOR FINAL INSPECTION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-003P Rev: 0
Part Description: NCSX PVVS
Specification: PP475 Rev: 8

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 39 / Seq: 40	817-SMX LASER	1.00	1.00	1.00	SE121-003P / 0

(R) FINAL DIMENSIONAL INSPECTION / POTENTIAL CUSTOMER SOURCE INSPECTION.

PRIOR TO BEGINNING, NOTIFY ENGINEEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.

FINAL PROFILE INSPECTION. INSPECT THE VESSEL PROFILE, TRIM LINES (20 DEGREE SURFACES), AND PORT EXTENSION POSITION.
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGMENT / VERIFICATION TO THE 3D MODEL.
RECORD ACTUAL RESULTS ON SE121-001P-1MTM
FINAL MAGNETIC PERMEABLITY VERIFICATION.
VERIFY MAGNETIC PERMEABILITY OF ALL STRUCTURAL WELDS (1" increments), VESSEL WALL (6" grid), PORT EXTENSION TUBE (6" grid), CONFLAT FLANGE, FLANGE TO TUBE WELD.
RECORD ACTUAL RESULTS ON SE121-001P-1MTM
INSPECT AND RECORD THE COORDINANTS OF EACH ATTACHED MONUMENT (ENGINEERING INPUT REQUIRED). THESE COORDINANTS WILL BE USED TO SETUP FOR PROFILE VERIFICATION AT PRINCETON.
FINAL INTERIOR SURFACE FINISH VERIFICATION. VISUAL INSPECT THE ENTIRE INTERIOR. VERIFY THE ENTIRE SURFACE IS SMOOTH AND FREE OF PITS, DENTS, IRREGULARITIES, GRINDING / SANDING MARKS, ETC... ENSURE THE ENTIRE SURFACE CAN BE WIPED CLEAN WITH A LINT FREE WIPE WITHOUT SNAGGING.
INSPECT (APROXIMATE 6" GRID) WITH PROFILOMETER. REFERENCE PP479 RECORD FINAL SURFACE FINISH INFORMATION ON SE121-001P-1MTM
FINAL MATERIAL THICKNESS VERIFICATION PER PP477 RECORD ACTUAL MEASURMENTS ON SE121-001P-1MTM
RECORD IDC DATA
Part Number: SE121-003P
Part Description: NCSX PVVS COMPLETE
Specification: ASME B46.1 Rev: 95
Certification: MAG. PERM. CERTIFICATION
Certification: PROFILE CERTIFICATION
Certification: INT. SURF. FINISH CERT.
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
Specification: PP476 Rev: 4
Specification: PP479 Rev: 3
Map(s): SE121-001P-1MTM Rev: 2A

IDC Count : 7 Dwg Count: 1 Pgm Count: 0 QAP Count: 11 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 39 / Seq: 50	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	REMOVE PART FROM INSPECTION SUPPORTS				
	CLEAN AS NECESSARY TO COMPLY WITH PP475				
	FORWARD TO QUALITY LAB FOR FINAL VISUAL INSPECTION AND PREPARATION FOR SHIPMENT				
	Part Number: SE121-003P				
	Specification: PP475 Rev: 8				
	Part Description: NCSX PVVS COMPLETE				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
40	PVVS PRIMARY FABRICATION JOIN	1	/
			Parent Sub:39 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION FITUP OPERATION # 1				
	INSTALL PANEL SUB-SET 2-5-4 ONTO THE BUILD FIXTURE. UTILIZE THE LASER TRACKER FOR PROFILE VERIFICATION DURING THE POSITIONING AND TACK WELDING.				
	TACK WELD THE PANEL SUB SET TO THE FIXTURE AND INSTALL TEMPORARY BRACING TO THE CENTER OF THE EDGES TO BE MACHINED				
	Part Number: SE121-001P Rev: 0				
	Part Description: PVVS PRIMARY FABRICATION				
	Specification: PP475 Rev: 8				

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 20	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION FITUP VERIFICATION OPERATION # 1				
	LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).				
	Part Number: SE121-001P				
	Part Description: PVVS PRIMARY FABRICATION				
	Specification: PP475 Rev: 8				

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121-001P-1MTM / 0A

(R) N/C MACHINE SEAM NUMBERS 1-2, AND 3-4 TO FINISH PER PROGRAM
NOTE: THE MACHINING WILL BE DONE ON THE PANEL SUB-SET NUMBER 2-5-4. THE NEXT SET WILL BE SCRIBED ONLY.
REFER TO DRAWING FOR PICTORIAL REPRESENTATION.
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 40	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) PRIMARY FABRICATION FITUP OPERATION # 2

REMOVE THE 2-5-4 PANEL SUB-SET FROM THE FIXTURE. DEBURR THE MACHINING. SPRAY WASH / CLEAN THE SUB-SET AND PREPARE IT FOR RE-INSTALLATION
INSTALL AND TACK WELD THE 1-3 PANEL SUB-SET ONTO THE FIXTURE (UTILIZING THE LASER TRACKER TO ENSURE PROFILE LIMITS ARE MAINTAINED)
NOTE THAT EXTRA BRACING SHOULD NOT BE REQUIRED FOR THIS STEP SINCE THE MACHINE WILL BE MERELY SCRIBING THE WELD SEAM LOCATION AS APPOSED TO THE MACHINING PERFORMED ON SUB-SET 2-5-4.

Part Number: SE121-001P Rev: 0
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 50	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0

(R) PRIMARY FABRICATION FITUP VERIFICATION OPERATION # 2

LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 60	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) N/C SCRIBE SEAM NUMBERS 1-2, AND 3-4 ONTO PANEL SUB-SET 1-3 (AT +0.100" STOCK) PER PROGRAM.
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 70	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) PRIMARY FABRICATION OPERATION # 1

REMOVE PANEL 1-3 SUB-SET FROM THE FIXTURE
HIGH PRESSURE WASH THE PANEL SUB-SET AND FIXTURE.
RE-INSTALL PANEL SUB-SET 2-5-4 ONTO THE BUILD FIXTURE (UTILIZE THE LAZER TRACKER TO ENSURE PROFILE / PROPER POSITION IS MAINTAINED) AND TACK WELD IN PLACE.
TRIM, FIT, AND POSTITION PANEL SUB-SET 1-3 TO THE FIXTURE AND PANEL SUB-SET 2-5-4 (UTILIZING THE LASER TRACKER TO ENSURE PROPER POSTITION AND PROFILE TOLERANCE IS MAINTAINED). TACK WELD IN PLACE.
NOTE THAT THE INTERIOR PROFILE FIXTURE REST STOP SURFACES ARE DESIGNED AT NOMINAL GEOMETRIC POSITION TO AVOID STARTING ANY LOWER THAN MID-TOLERANCE. SHIM IF NECESSARY TO MAINTAIN AN AVERAGE PROFILE STARTING POSITION OF (+.090").
UTILIZE THE LASER TRACKER TO ENSURE PROFILE IS MAINTAINED AND TOLERANCE IS OPTIMIZED PRIOR TO TACK-WELDING THE SEAM.
ENSURE THE UPPER AND LOWER EDGES PROTRUDE AT LEAST .06" ABOVE (AND BELOW) THE FIXTURE FACES TO COMPENSATE FOR NORMAL LONGITUDINAL WELD SHRINKAGE AND FINAL TRIMMING THE OVERALL HEIGHT TO THE FIXTURE REGISTER FACES.
ONCE THE TWO SUB-SETS ARE IN OPTIMUM POSITION, THE MATING SEAMS ARE FIT (AND ACCEPTED BY ENGINEERING), INSTALL POSITIVE REST STOPS TO ENSURE ACCURATE RELOCATION AFTER THE PANEL IS REMOVED FOR GRINDING THE WELD PREP AND CLEANING.
REMOVE THE PANELS AND GRIND WELD PREPS. ***NOTE: THE WELD JOINT ROOT / FACE GEOMETRY MUST BE CONFIGURED AND ORIENTATED TO MINIMIZE DISTORTION AND KEEP THE BEAD WIDTH ON THE INTERIOR SIDE OF THE VESSEL (VACUUM SIDE) AS NARROW AS POSSIBLE. INTERIOR (VACUUM FACING) SIDE WELD FACES MUST BE KEPT AS NARROW AS POSSIBLE (1 WELD BEAD WIDTH MAX).
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
REINSTALL THE PANELS TO THE FIXTURE REST STOPS. UTILIZE THE LASER TRACKER TO CONFIRM PROFILE / PART ORIENTATION HAS BEEN MAINTAINED.
ENSURE EACH PANEL IS RE-ALIGNED (SMOOTH AND CONTINUOUS) TO ITS ADJACENT MEMBER AND MIS-MATCH IS MINIMIZED. CWI / ENGINEERING CONCURRENCE REQUIRED.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
TACK-WELD THE PANELS TOGETHER.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 9 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 80	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 1				

LASER TRACKER ASSIST FABRICATOR WITH SUB-SET POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
AFTER THE SUB-SETS ARE COMPLETELY POSITIONED AND TACK WELDED, INSPECT / VERIFY POSITIONING, FIT-UP, AND PROFILE OF EACH TACK WELDED SUB-SET PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE UPPER HALF OF THE APPLIED BI-LATERAL TOLERANCE AS FOLLOWS: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
INSPECT THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS AT EACH PROFILE INSPECTION POINT.
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY WELDMENT
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 90	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 2				

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE ROOT PASSES UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 100	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 2				

AFTER THE ROOT WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.02" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% NEAR WELDS, AND APPROXIMATELY 10% WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 110 (R)	230-FABRICATION - WEIDNER PRIMARY FABRICATION OPERATION # 3	1.00	1.00	1.00	SE121-001P / 0

CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE FIRST INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 120	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) PRIMARY FABRICATION INSPECTION OPERATION # 3

AFTER THE FIRST INTER-PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.04" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 130	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

(R) PRIMARY FABRICATION OPERATION # 4

CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE SECOND INTER-PASSES (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 140	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 4				

AFTER THE SECOND INTER-PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.06" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 150	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 5				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE THIRD INTER-PASSES (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 160	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 5				

AFTER THE THIRD INTER-PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.08" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 170	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 6				

CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE FOURTH INTER-PASSES (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 180	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 6				

AFTER THE FOURTH INTER-PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.100" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 190	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 7				

CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE INTERIOR COVER PASSES UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 200	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 7				

AFTER THE INTERIOR COVER PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.120" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 210	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 8				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

BACK GRIND THE EXTERIOR SIDE OF THE WELD JOINTS.
CLEAN THE WELD JOINTS AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
CWI VISUAL INSPECT BACK GRIND 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE EXTERIOR COVER PASSES UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 220	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 8				

AFTER THE EXTERIOR COVER PASS WELDS ARE COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 230	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PRIMARY FABRICATION OPERATION # 9				

PRE-CLEAN, POSITION, TRIM, FIT, PREP, AND TACK WELD THE PORT EXTENSION IN PLACE PER DRAWING. INTILIZE THE FIXTURE POSITIONING PROVISIONS TO ENSURE PROPER LOCATION.
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 240	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 9				

AFTER THE PORT EXTENSION SUB-ASSEMBLY IS TACK WELDED IN PLACE, INSPECT AND RECORD THE POSITION OF THE PORT EXTENSION, AND PROFILE OF THE VESSEL WALL IN THE GENERAL AREA OF THE PORT EXTENSION PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 250	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 10				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PORT EXTENSION TO VESSEL ROOT PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 260	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 10				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

AFTER THE PORT EXTENSION SUB-ASSEMBLY ROOT WELD IS COMPLETE, INSPECT AND RECORD THE POSITION OF THE PORT EXTENSION, AND PROFILE OF THE VESSEL WALL IN THE GENERAL AREA OF THE PORT EXTENSION PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.160" (LOCALIZED) BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 270	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 11				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PORT EXTENSION TO VESSEL INTER-PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 280	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 11				

AFTER THE PORT EXTENSION SUB-ASSEMBLY INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE POSITION OF THE PORT EXTENSION, AND PROFILE OF THE VESSEL WALL IN THE GENERAL AREA OF THE PORT EXTENSION PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.170" (LOCALIZED) BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 290	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION OPERATION # 12				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PORT EXTENSION TO VESSEL COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
TRIM AND SAND THE OVERALL HEIGHT FLUSH TO THE FIXTURE FACES (FINISHING THE HEIGHT OF THE 20 DEGREE SEGMENT)
CLEAN THE PART, AND ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 300	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PRIMARY FABRICATION INSPECTION OPERATION # 12				

FINAL INSPECTION ON FIXTURE.
AFTER THE PORT EXTENSION SUB-ASSEMBLY COVER PASS WELD IS COMPLETE, AND THE PART HAS BEEN TRIMMED TO FINISH HEIGHT, INSPECT AND RECORD THE POSITION OF THE PORT EXTENSION, OVERALL HEIGHT, AND PROFILE OF THE ENTIRE VESSEL PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.180" (LOCALIZED) BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 3 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 310	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PRIMARY FABRICATION OPERATION # 13				

1. INSTALL TEMPORARY SUPPORTS TO RELOCATE THE PART FOR FINAL DIMENSIONAL INSPECTION (IN A FREE STATE).
2. REMOVE THE FABRICATION FROM THE FIXTURE.
3. POLISH AND CLEAN THE ENTIRE INTERIOR SURFACE OF THE PVVS (INCLUDING PORT EXTENSION).
4. INSTALL THE CONFLAT FLANGE COMPONENTS
5. CLEAN, LAYOUT, AND PREPARE THE PART FOR RADIOGRAPHIC INSPECTION.

Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 320	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	100% RADIOGRAPHIC INSPECT THE SEAM 1-2, AND 3-4 STRUCTURAL WELDS (LOCATIONS IDENTIFIED ON PART) PER THE FOLLOWING:				

ASME SECTION VIII, DIVISION 1, UW-51
MAP THE FILM NUMBERS AND FILM LOCATIONS ON MTM INSPECTION DRAWING.
Specification: ASME SECTION VIII
Map(s): SE121-001P-1MTM Rev: 0A
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION
Material Type: 625 INCONEL
Test Certification: RADIOGRAPHIC CERTIFICATE Rev:
Material Thickness: .375"
Specification: 20.A.100 Rev:
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 330	110-ASSEMBLY - RIGGING	1.00	1.00	1.00	SE121 / A

(R) BAKE OUT AT 150 DEGREES C (302F) FOR 6 HOURS TO REMOVE MOISTURE IN PREPARATION FOR THE NEXT SEQUENTIAL OPERATION (VACUUM / LEAK TESTING). NOTE THAT THIS SEQUENCE MUST BE COORDINATED WITH THE VACUUM TESTING SERVICE OPERATION. CONTACT ENGINEERING (DOUG McCORKLE) AND SUBCONTRACT ADMINISTRATOR (BOB JOACHIM) PRIOR TO BEGINNING FOR TIMING AND COORDINATION. CYCLE START TIME WILL BE ADVISED.
Part Number: SE121-001P Rev: 0
Part Description: PVVS PRIMARY FABRICATION
Furnace charts: FURNACE CHART
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 340	230-FABRICATION - WEIDNER	1.00	1.00	1.00	

(R) VACUUM TEST PREPARATION:

SETUP AND PREPARE FOR SUBCONTRACT VACUUM TESTING (NEXT ROUTING SEQUENCE) AS FOLLOWS:
STAGE THE PART IN THE AREA DESIGNATED FOR VACUUM TESTING.
ENSURE THE AREA AND PERSONNEL ARE PREPARED FOR THE TEST.
ENSURE CLEANLINESS HAS BEEN MAINTAINED.
ASSIST WITH THE VACUUM TEST AND ENSURE THE FOLLOWING PRECAUTIONS ARE OBSERVED:

Caution: The vacuum test procedure will subject the vessel to an internal vacuum that generates tremendous forces. Failure of any part of the vessel or test equipment could result in implosive/explosive reactions, ejected parts
and dangerous noise levels. Unnecessary personnel should vacate the test area whenever a vacuum is present in the vessel (Except essential personnel).

Specification: PP475 Rev: 8
Part Number: SE121-001P
Part Description: PVVS PRIMARY FABRICATION

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 40 / Seq: 350	450-SUBLET	1.00	1.00	1.00	SE121-003P / 0	MISC/SUBLET

(R) VACUUM TEST THE PORT EXTENSION SUB-ASSEMBLY (WELDED TO THE VESSEL WALL) PER PP478

MTM CONTRACT ADMINISTRATOR NOTE: THIS SEQUENCE MUST BE COORDINATED WITH THE PRECEDING (BAKE-OUT) OPERATION. PRODUCTION CONTROL WILL INITIATE COORDINATION PRIOR TO SCHEDULING / BEGINNING THE BAKE-OUT OPERATION SEQUENCE.
Part Number: SE121-001P Rev: 0
Part Description: PVVS PRIMARY WELDMENT
Customer: PPPL
Test Certification: VACUUM TEST REPORT Rev:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Specification: ASTM E 498 Rev: 95
Specification: PP475 Rev: 8
Specification: PP478 Rev: 5

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 40 / Seq: 360	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	
(R)	ASSIST / WITNESS VACUUM TESTING (PREVIOUS SEQUENCE.				
	REVIEW / SIGNOFF ON DOCUMENTATION / CERTIFICATIONS				
	Specification: PP475 Rev: 8				
	Specification: PP478 Rev: 5				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
41	PANEL SUB-SET 2-5-4	1	/
			Parent Sub:40 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 1				

ACQUIRE THE FOLLOWING DIE FORMED PANELS:

SE121-001P-2 PANEL 4
SE121-001P-2 PANEL 2-5 (SUB-SET)

INSTALL FIT, TRIM, AND TACK-WELD PANEL 4 AND PANEL SUB-SET 2-5 TO THE BUILD FIXTURE. START BY SETTING EACH PANEL / SUB-SET INDIVIDUALLY ONTO THE MACHINED REGISTER OF THE BUILD FIXTURE BASE-PLATE (THE DATUM -B- SURFACE (10 DEGREE OFFSET) DOWN). POSITION AND TAB TO THE FIXTURE. NOTE THAT THE INTERIOR PROFILE FIXTURE REST STOP SURFACES ARE DESIGNED AT NOMINAL GEOMETRIC POSITION TO AVOID STARTING ANY LOWER THAN MID-TOLERANCE. SHIM IF NECESSARY TO MAINTAIN AN AVERAGE PROFILE STARTING POSITION OF (+.090").
UTILIZE THE LASER TRACKER TO ENSURE PROFILE IS MAINTAINED AND TOLERANCE IS OPTIMIZED PRIOR TO TACK-WELDING THE SEAM. ENSURE THERE IS EXCESS STOCK REMAINING ON THE TWO OTHER WELD SEAM PANEL EDGES (FOR FOLLOWING OPERATION FITTING AND TRIMMING). ENSURE THE UPPER AND LOWER EDGES PROTRUDE AT LEAST .06" ABOVE (AND BELOW) THE FIXTURE FACES TO COMPENSATE FOR NORMAL LONGITUDINAL WELD SHRINKAGE AND FINAL TRIMMING THE OVERALL HEIGHT TO THE FIXTURE REGISTER FACES.
ONCE THE TWO PANELS ARE IN OPTIMUM POSITION, THE MATING SEAM IS FIT (AND ACCEPTED BY ENGINEERING), AND THE REMAINING PERIPHERAL EDGES ARE TRIMMED AS DESIRED, INSTALL POSITIVE REST STOPS TO ENSURE ACCURATE RELOCATION AFTER THE PANEL IS REMOVED FOR GRINDING THE WELD PREP AND CLEANING.
REMOVE THE PANELS AND GRIND WELD PREPS. ***NOTE: THE WELD JOINT ROOT / FACE GEOMETRY MUST BE CONFIGURED AND ORIENTATED TO MINIMIZE DISTORTION AND KEEP THE BEAD WIDTH ON THE INTERIOR SIDE OF THE VESSEL (VACUUM SIDE) AS NARROW AS POSSIBLE. INTERIOR (VACUUM FACING) SIDE WELD FACES MUST BE KEPT AS NARROW AS POSSIBLE (1 WELD BEAD WIDTH MAX).
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
REINSTALL THE PANELS TO THE FIXTURE REST STOPS. UTILIZE THE LASER TRACKER TO CONFIRM PROFILE / PART ORIENTATION HAS BEEN MAINTAINED. ENSURE EACH PANEL IS RE-ALIGNED (SMOOTH AND CONTINUOUS) TO ITS ADJACENT MEMBER AND MIS-MATCH IS MINIMIZED. CWI / ENGINEERING CONCURRENCE REQUIRED.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
TACK-WELD THE PANELS TOGETHER.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
AFTER EACH PANEL IS POSITIONED, FIT, TRIMMED, AND TACK-WELDED IN PLACE; LAYOUT AND PRICK PUNCH THE APPROXIMATE INSPECTION POINTS PER DRAWING SE121-001P-1MTM. NOTE THAT THE SOLE PURPOSE OF THE PUNCH MARKS IS TO MAINTAIN REPEATABLE PROFILE INSPECTION LOCATIONS THROUGHOUT THE FABRICATION PROCESS. THE DEPTH OF EACH PUNCH MARK NEEDS TO BE ONLY DEEP ENOUGH THAT IT WOULD NOT BE REMOVED BY NORMAL PREPARATION / WELDING / BLENDING / BLASTING, ETC. LIGHTLY SAND OF ANY RAISED and/or DISPLACED MATERIAL (SHOULD BE MINIMAL) THAT MAY HAVE RESULTED FROM THE PUNCH.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 8 Dwg Count: 0 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 20	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 1				

LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
AFTER THE SUB-SET IS COMPLETELY POSITIONED AND TACK WELDED, INSPECT / VERIFY POSITIONING, FIT-UP, AND PROFILE OF EACH TACK WELDED SUB-SET PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE UPPER HALF OF THE APPLIED BI-LATERAL TOLERANCE AS FOLLOWS: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

INSPECT THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS AT EACH PROFILE INSPECTION POINT.
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 30	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 2				

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET ROOT PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 40	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 2				

AFTER THE ROOT WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.02" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% NEAR WELDS, AND APPROXIMATELY 10% WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 50	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 3				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET FIRST INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 60	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 3				

AFTER THE FIRST INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.04" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID			Qty	Drawing ID / Rev	Engineer
64880/1.0				1	/	BLUE/DOUG MCCORKLE

Sub: 41 / Seq: 70	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 4				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET SECOND INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 80	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 4				

AFTER THE SECOND INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.06" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 90	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 5				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET THIRD INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 100	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 5				

AFTER THE THIRD INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.08" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 110	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 6				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET FOURTH INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 120	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 6				

AFTER THE FOURTH INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.100" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 130	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 7				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET INTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 140	817-SMX LASER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 7				

AFTER THE INTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.120" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 150	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 8				

BACK GRIND THE EXTERIOR SIDE OF THE WELD JOINT.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
CWI VISUAL INSPECT BACK GRIND 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5-4 SUB-SET EXTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 0 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 160	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / --
(R)	PANEL 2-5-4 SUB-SET INSPECTION OPERATION # 8				

AFTER THE EXTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 0 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 170	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	PANEL 2-5-4 SUB-SET FABRICATION OPERATION # 9				

REMOVE THE PANEL SUB-SET 1,3 FROM THE BUILD FIXTURE
BLEND INTERIOR WELD SMOOTH TO VESSEL WALL SURFACE
CLEAN PANEL SUB SET AND PREPARE FOR RADIOGRAPHIC INSPECTION.
Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 41 / Seq: 180	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P /
(R)	100% RADIOGRAPHIC INSPECT THE PANEL 2-5-4 SUB-SET STRUCTURAL WELD (LOCATIONS IDENTIFIED ON PART) PER THE FOLLOWING:				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ASME SECTION VIII, DIVISION 1, UW-51
MAP THE FILM NUMBERS AND FILM LOCATIONS ON MTM INSPECTION DRAWING.
Specification: ASME SECTION VIII
Map(s): SE121-001P-1MTM Rev: 0A
Part Number: SE121-001P 2-5-4
Part Description: PANEL 2-5-4 SUB-SET
Material Type: 625 INCONEL
Test Certification: RADIOGRAPHIC CERTIFICATE Rev:
Material Thickness: .375"
Specification: 20.A.100 Rev:
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
45	PANEL SUB-SET 2-5	1	/
			Parent Sub:41 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 1				

ACQUIRE THE FOLLOWING DIE FORMED PANELS:

SE121-001P-2 PANEL 2
SE121-001P-2 PANEL 5

INSTALL FIT, TRIM, AND TACK-WELD PANEL 2 AND 5 TO THE BUILD FIXTURE. START BY SETTING EACH PANEL INDIVIDUALLY ONTO THE MACHINED REGISTER OF THE BUILD FIXTURE BASE-PLATE (THE DATUM -B- SURFACE (10 DEGREE OFFSET) DOWN). POSITION AND TAB TO THE FIXTURE. NOTE THAT THE INTERIOR PROFILE FIXTURE REST STOP SURFACES ARE DESIGNED AT NOMINAL GEOMETRIC POSITION TO AVOID STARTING ANY LOWER THAN MID-TOLERANCE. SHIM IF NECESSARY TO MAINTAIN AN AVERAGE PROFILE STARTING POSITION OF (+.090").
UTILIZE THE LASER TRACKER TO ENSURE PROFILE IS MAINTAINED AND TOLERANCE IS OPTIMIZED PRIOR TO TACK-WELDING THE SEAM. ENSURE THERE IS EXCESS STOCK REMAINING ON THE TWO OTHER WELD SEAM PANEL EDGES (FOR FOLLOWING OPERATION FITTING AND TRIMMING). ENSURE THE UPPER AND LOWER EDGES PROTRUDE AT LEAST .06" ABOVE (AND BELOW) THE FIXTURE FACES TO COMPENSATE FOR NORMAL LONGITUDINAL WELD SHRINKAGE AND FINAL TRIMMING THE OVERALL HEIGHT TO THE FIXTURE REGISTER FACES.
ONCE THE TWO PANELS ARE IN OPTIMUM POSITION, THE MATING SEAM IS FIT (AND ACCEPTED BY ENGINEERING), AND THE REMAINING PERIPHERAL EDGES ARE TRIMMED AS DESIRED, INSTALL POSITIVE REST STOPS TO ENSURE ACCURATE RELOCATION AFTER THE PANEL IS REMOVED FOR GRINDING THE WELD PREP AND CLEANING.
REMOVE THE PANELS AND GRIND WELD PREPS. ***NOTE: THE WELD JOINT ROOT / FACE GEOMETRY MUST BE CONFIGURED AND ORIENTATED TO MINIMIZE DISTORTION AND KEEP THE BEAD WIDTH ON THE INTERIOR SIDE OF THE VESSEL (VACUUM SIDE) AS NARROW AS POSSIBLE. INTERIOR (VACUUM FACING) SIDE WELD FACES MUST BE KEPT AS NARROW AS POSSIBLE (1 WELD BEAD WIDTH MAX).
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
REINSTALL THE PANELS TO THE FIXTURE REST STOPS. UTILIZE THE LASER TRACKER TO CONFIRM PROFILE / PART ORIENTATION HAS BEEN MAINTAINED.
ENSURE EACH PANEL IS RE-ALIGNED (SMOOTH AND CONTINUOUS) TO ITS ADJACENT MEMBER AND MIS-MATCH IS MINIMIZED. CWI / ENGINEERING CONCURRENCE REQUIRED.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
TACK-WELD THE PANELS TOGETHER.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
AFTER EACH PANEL IS POSITIONED, FIT, TRIMMED, AND TACK-WELDED IN PLACE; LAYOUT AND PRICK PUNCH THE APPROXIMATE INSPECTION POINTS PER DRAWING SE121-001P-1MTM. NOTE THAT THE SOLE PURPOSE OF THE PUNCH MARKS IS TO MAINTAIN REPEATABLE PROFILE INSPECTION LOCATIONS THROUGHOUT THE FABRICATION PROCESS. THE DEPTH OF EACH PUNCH MARK NEEDS TO BE ONLY DEEP ENOUGH THAT IT WOULD NOT BE REMOVED BY NORMAL PREPARATION / WELDING / BLENDING / BLASTING, ETC. LIGHTLY SAND OF ANY RAISED and/or DISPLACED MATERIAL (SHOULD BE MINIMAL) THAT MAY HAVE RESULTED FROM THE PUNCH.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 8 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 20	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 1				

LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
AFTER THE SUB-SET IS COMPLETELY POSITIONED AND TACK WELDED, INSPECT / VERIFY POSITIONING, FIT-UP, AND PROFILE OF EACH TACK WELDED SUB-SET PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE UPPER HALF OF THE APPLIED BI-LATERAL TOLERANCE AS FOLLOWS: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
INSPECT THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS AT EACH PROFILE INSPECTION POINT.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 30	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 2				

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET ROOT PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 40	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 2				

AFTER THE ROOT WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.02" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% NEAR WELDS, AND APPROXIMATELY 10% WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 50	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 3				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET FIRST INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 60	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 3				

AFTER THE FIRST INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.04" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 70	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

(R) PANEL 2-5 SUB-SET FABRICATION OPERATION # 4

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET SECOND INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 80	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0

(R) PANEL 2-5 SUB-SET INSPECTION OPERATION # 4

AFTER THE SECOND INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.06" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 90	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 5				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET THIRD INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID			Qty	Drawing ID / Rev	Engineer
64880/1.0				1	/	BLUE/DOUG MCCORKLE

Sub: 45 / Seq: 100	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 5				

AFTER THE THIRD INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.08" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 110	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 6				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET FOURTH INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 120	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 6				

AFTER THE FOURTH INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.100" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 130	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 7				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET INTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 140	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 7				

AFTER THE INTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.120" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 150	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 8				

BACK GRIND THE EXTERIOR SIDE OF THE WELD JOINT.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
CWI VISUAL INSPECT BACK GRIND 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 2-5 SUB-SET EXTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 8 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 160	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 2-5 SUB-SET INSPECTION OPERATION # 8				

AFTER THE EXTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 170	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	PANEL 2-5 SUB-SET FABRICATION OPERATION # 9				

REMOVE THE PANEL SUB-SET 1,3 FROM THE BUILD FIXTURE
BLEND INTERIOR WELD SMOOTH TO VESSEL WALL SURFACE
CLEAN PANEL SUB SET AND PREPARE FOR RADIOGRAPHIC INSPECTION.
Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 45 / Seq: 180	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	100% RADIOGRAPHIC INSPECT THE PANEL 2-5 SUB-SET STRUCTURAL WELD (LOCATIONS IDENTIFIED ON PART) PER THE FOLLOWING: ASME SECTION VIII, DIVISION 1, UW-51				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

MAP THE FILM NUMBERS AND FILM LOCATIONS ON MTM INSPECTION DRAWING.
Specification: ASME SECTION VIII
Map(s): SE121-001P-1MTM Rev: 0A
Part Number: SE121-001P 2-5
Part Description: PANEL 2-5 SUB-SET
Material Type: 625 INCONEL
Test Certification: RADIOGRAPHIC CERTIFICATE Rev:
Material Thickness: .375"
Specification: 20.A.100 Rev:
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
46	SOURCE NOTIFICATION	1	/
			Parent Sub:45 Op:30

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 46 / Seq: 10	830-SOURCE HOLD POINT - IN PRO	1.00	1.00	1.00	
(R)	AFTER TACK WELDING, AND PRIOR TO WELDING SOURCE NOTIFICATION IS REQUIRED. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT.				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
47	SOURCE NOTIFICATION	1	/
			Parent Sub:41 Op:30

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 47 / Seq: 10	830-SOURCE HOLD POINT - IN PRO	1.00	1.00	1.00	
(R)	AFTER TACK WELDING, AND PRIOR TO WELDING SOURCE NOTIFICATION IS REQUIRED. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT.				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
42		1	/
			Parent Sub:40 Op:30

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 42 / Seq: 10	753-CAD/CAM - LARGE MILLING	1.00	1.00	1.00	SE121-001P-1MTM / 0A
(R)	N/C PROGRAM TO MACHINE WELD SEAM NUMBERS 1-2, AND 3-4 TO FINISH ON PANEL SUB-SET 2-5-4.				
	ELECTRONIC MODEL DEFINING VESSEL GEOMETRY AND WELD SEAM POSITION WILL BE PROVIDED BY ENGINEERING.				
	REFER TO DRAWING FOR PICTORIAL REPRESENTATION				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Sub ID	Part ID	Qty	Drawing ID / Rev
43	PANEL SUB-SET 1,3	1	/
			Parent Sub:40 Op:40

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 10	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 1				

ACQUIRE THE FOLLOWING DIE FORMED PANELS:

SE121-001P-2 PANEL 1
SE121-001P-2 PANEL 3

INSTALL FIT, TRIM, AND TACK-WELD PANEL 1 AND 3 TO THE BUILD FIXTURE. START BY SETTING EACH PANEL INDIVIDUALLY ONTO THE MACHINED REGISTER OF THE BUILD FIXTURE BASE-PLATE (THE DATUM -B- SURFACE (10 DEGREE OFFSET) DOWN). POSITION AND TAB TO THE FIXTURE. NOTE THAT THE INTERIOR PROFILE FIXTURE REST STOP SURFACES ARE DESIGNED AT NOMINAL GEOMETRIC POSITION TO AVOID STARTING ANY LOWER THAN MID-TOLERANCE. SHIM IF NECESSARY TO MAINTAIN AN AVERAGE PROFILE STARTING POSITION OF (+.090").
UTILIZE THE LASER TRACKER TO ENSURE PROFILE IS MAINTAINED AND TOLERANCE IS OPTIMIZED PRIOR TO TACK-WELDING THE SEAM. ENSURE THERE IS EXCESS STOCK REMAINING ON THE TWO OTHER WELD SEAM PANEL EDGES (FOR FOLLOWING OPERATION FITTING AND TRIMMING). ENSURE THE UPPER AND LOWER EDGES PROTRUDE AT LEAST .06" ABOVE (AND BELOW) THE FIXTURE FACES TO COMPENSATE FOR NORMAL LONGITUDINAL WELD SHRINKAGE AND FINAL TRIMMING THE OVERALL HEIGHT TO THE FIXTURE REGISTER FACES.
ONCE THE TWO PANELS ARE IN OPTIMUM POSITION, THE MATING SEAM IS FIT (AND ACCEPTED BY ENGINEERING), AND THE REMAINING PERIPHERAL EDGES ARE TRIMMED AS DESIRED, INSTALL POSITIVE REST STOPS TO ENSURE ACCURATE RELOCATION AFTER THE PANEL IS REMOVED FOR GRINDING THE WELD PREP AND CLEANING.
REMOVE THE PANELS AND GRIND WELD PREPS. ***NOTE: THE WELD JOINT ROOT / FACE GEOMETRY MUST BE CONFIGURED AND ORIENTATED TO MINIMIZE DISTORTION AND KEEP THE BEAD WIDTH ON THE INTERIOR SIDE OF THE VESSEL (VACUUM SIDE) AS NARROW AS POSSIBLE. INTERIOR (VACUUM FACING) SIDE WELD FACES MUST BE KEPT AS NARROW AS POSSIBLE (1 WELD BEAD WIDTH MAX).
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
REINSTALL THE PANELS TO THE FIXTURE REST STOPS. UTILIZE THE LASER TRACKER TO CONFIRM PROFILE / PART ORIENTATION HAS BEEN MAINTAINED. ENSURE EACH PANEL IS RE-ALIGNED (SMOOTH AND CONTINUOUS) TO ITS ADJACENT MEMBER AND MIS-MATCH IS MINIMIZED. CWI / ENGINEERING CONCURRENCE REQUIRED.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
TACK-WELD THE PANELS TOGETHER.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
AFTER EACH PANEL IS POSITIONED, FIT, TRIMMED, AND TACK-WELDED IN PLACE; LAYOUT AND PRICK PUNCH THE APPROXIMATE INSPECTION POINTS PER DRAWING SE121-001P-1MTM. NOTE THAT THE SOLE PURPOSE OF THE PUNCH MARKS IS TO MAINTAIN REPEATABLE PROFILE INSPECTION LOCATIONS THROUGHOUT THE FABRICATION PROCESS. THE DEPTH OF EACH PUNCH MARK NEEDS TO BE ONLY DEEP ENOUGH THAT IT WOULD NOT BE REMOVED BY NORMAL PREPARATION / WELDING / BLENDING / BLASTING, ETC. LIGHTLY SAND OF ANY RAISED and/or DISPLACED MATERIAL (SHOULD BE MINIMAL) THAT MAY HAVE RESULTED FROM THE PUNCH.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5

IDC Count : 8 Dwg Count: 1 Pgm Count: 0 QAP Count: 4 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 20	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 1				

LASER TRACKER ASSIST FABRICATOR WITH PANEL POSITIONING AND ALIGNMENT (PREVIOUS SEQUENCE).
AFTER THE SUB-SET IS COMPLETELY POSITIONED AND TACK WELDED, INSPECT / VERIFY POSITIONING, FIT-UP, AND PROFILE OF EACH TACK WELDED SUB-SET PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE UPPER HALF OF THE APPLIED BI-LATERAL TOLERANCE AS FOLLOWS: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
INSPECT THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS AT EACH PROFILE INSPECTION POINT.
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Sub: 43 / Seq: 30	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0	
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 2					

PRIOR TO BEGINNING, NOTIFY ENGINEERING / CFT THE PART IS READY AND AVAILABLE FOR POSSIBLE CUSTOMER HOLD / WITNESS POINT INSPECTION. HOLD FOR RESPONSE AND/OR FURTHER DIRECTION.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET ROOT PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 40	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 2				

AFTER THE ROOT WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.02" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% NEAR WELDS, AND APPROXIMATELY 10% WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 50	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 3				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET FIRST INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 60	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 3				

AFTER THE FIRST INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.04" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 70	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 4				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET SECOND INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 80	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 4				

AFTER THE SECOND INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.06" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Sub: 43 / Seq: 90	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0	
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 5					

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET THIRD INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 100	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 5				

AFTER THE THIRD INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.08" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 110	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 6				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET FOURTH INTER-PASS (STRINGER) UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 120	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 6				

AFTER THE FOURTH INTER-PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.100" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 130	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 7				

CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET INTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS.
NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 140	817-SMX LASER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 7				

AFTER THE INTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.120" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 150	230-FABRICATION - WEIDNER	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 8				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

BACK GRIND THE EXTERIOR SIDE OF THE WELD JOINT.
CLEAN THE WELD JOINT AND APPROXIMATELY THREE INCHES OF THE SURROUNDING AREA PER THE APPLICABLE SECTION OF PP475. (NOTE THAT CLEANLINESS IS TO BE MONITORED AND MAINTAINED THROUGHOUT THE MANUFACTURING PROCESS)
CWI VISUAL INSPECT BACK GRIND 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
NOTE: PURGE EACH WELD JOINT WITH 100% ARGON. PURGE DAM MATERIAL MUST BE MADE FROM EITHER 625 INCONEL OR 300 SERIES STAINLESS STEEL. THE PURGE IS TO BE MAINTAINED THROUGHOUT THE WELDING PROCESS ON ALL JOINTS.
WELD THE PANEL 1-3 SUB-SET EXTERIOR COVER PASS UTILIZING THE BACK-STEPPING METHOD TO MINIMIZE WELD DISTORTION.
ENSURE THE MATERIAL THICKNESS IS ADEQUATE TO ALLOW NORMAL REDUCTION THAT WILL OCCUR FROM GRINDING / BLENDING / POLISHING THE WELDS. NOTIFY ENGINEERING (DOUG McCORKLE) IF CONCERNS EXIST.
NOTIFY Q/A FOR PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS VERIFICATION.
ENSURE QUALITY ASSURANCE AND CERTIFIED WELDING INSPECTORS ARE CLOSELY INVOLVED, AND INTER-PASS PROFILE AND VISUAL INSPECTIONS ARE PERFORMED ON EACH SUB-ASSEMBLY AFTER TACK WELDING, ROOT PASS, EACH INTER-PASS, AND COVER PASS IS COMPLETED.
CWI VISUAL INSPECT WELD 100% UNDER 8X MAGNIFICATION PER ASME CODE ARTICLE 6, SECTION V. ACCEPTANCE PER AWS D1.6, 6.29.1.
ASSIST Q/A WITH PROFILE VERIFICATION.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP477 Rev: 5
NDT/LPI/FPI/VI: MTM WELD INSPECTION FORM
Method: VT-PP-001 Rev: B
Specification: ASNT 2055 SNT-TC-1A Rev: 1996

IDC Count : 5 Dwg Count: 1 Pgm Count: 0 QAP Count: 7 NDT Count: 0 WPS Count: 1

WPS390-PPPL Rev:0 GTAW MAN
GTAW - Manual Fillers: INCONEL625BOEING_062_GTAW / INCONEL625BOEING_093_GTAW / INCONEL625_035_GMAW / INCONEL625_045_FCAW / INCONEL625_062_FCAW / INCONEL625_062_GTAW / INCONEL625_093_GTAW
Notes:

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 160	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	PANEL 1-3 SUB-SET INSPECTION OPERATION # 8				

AFTER THE EXTERIOR COVER PASS WELD IS COMPLETE, INSPECT AND RECORD THE PANEL SUB-SET PROFILE PER THE FOLLOWING:
INCLUDE AT LEAST THREE DATUM TARGETS IN EACH POINT CLOUD SCAN FOR ALIGNMENT / VERIFICATION TO THE 3D MODEL.
ENSURE THE PART PROFILE IS WITHIN THE FOLLOWING TOLERANCE ZONE: VERIFY THAT NO INSPECTION POINT IS ABOVE THE HIGH LIMIT OF TOLERANCE (OUTWARD) OR 0.140" BELOW NOMINAL GEOMETRY (INWARD).
RECORD ACTUAL (HIGH/LOW RANGE) ON MTM IDC
REPORT ANY OUT OF TOLERANCE READINGS VIA MTM NCR
NOTIFY ENGINEERING (DOUG McCORKLE) FOR EVALUATION OF RESULTS PRIOR TO RELEASING THE PART BACK TO PRODUCTION.
INSPECTION POINT GRID: APPROXIMATE 6" CENTERS THROUGHOUT WITH APPROXIMATE 1" CENTERS AT AND NEAR WELD JOINTS.
ENSURE THE FIXTURE DATUM TARGETS ARE ADEQUATELY POSITIONED FOR THE REPOSITIONING AT THE NEXT SEQUENTIAL INSPECTION
AUDIT INSPECT AND RECORD THE MAGNETIC PERMEABILITY AND MATERIAL THICKNESS (APPROXIMATELY 25% (RANDOM) NEAR WELDS, AND

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

APPROXIMATELY 10% (RANDOM) WITHIN THE REMAINDER OF THE PANEL SURFACE AREA).
RECORD PROFILE, MAGNETIC PERMEABILITY, AND MATERIAL THICKNESS ON SE121-001P-1MTM.
RESULTS MUST BE RECORDED, REVIEWED BY ENGINEERING, SCANNED AND LINKED PRIOR TO COMPLETING THE INSPECTION SEQUENCE.

Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8
Specification: PP476 Rev: 4
Specification: PP477 Rev: 5
Map(s): SE121-001P-1MTM Rev: 0A

IDC Count : 2 Dwg Count: 1 Pgm Count: 0 QAP Count: 6 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 170	230-FABRICATION - WEIDNER	1.00	1.00	1.00	
(R)	PANEL 1-3 SUB-SET FABRICATION OPERATION # 9				

REMOVE THE PANEL SUB-SET 1,3 FROM THE BUILD FIXTURE
BLEND INTERIOR WELD SMOOTH TO VESSEL WALL SURFACE
CLEAN PANEL SUB SET AND PREPARE FOR RADIOGRAPHIC INSPECTION.
Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 3 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 43 / Seq: 180	818-MQS CONTRACTOR X-RAY	1.00	1.00	1.00	SE121-001P / 0
(R)	100% RADIOGRAPHIC INSPECT THE PANEL 1-3 SUB-SET STRUCTURAL WELD (LOCATIONS IDENTIFIED ON PART) PER THE FOLLOWING:				

ASME SECTION VIII, DIVISION 1, UW-51
MAP THE FILM NUMBERS AND FILM LOCATIONS ON MTM INSPECTION DRAWING.
Specification: ASME SECTION VIII
Map(s): SE121-001P-1MTM Rev: 0A
Part Number: SE121-001P 1-3
Part Description: PANEL 1-3 SUB-SET
Material Type: 625 INCONEL
Test Certification: RADIOGRAPHIC CERTIFICATE Rev:
Material Thickness: .375"
Specification: 20.A.100 Rev:
Specification: PP475 Rev: 8

IDC Count : 0 Dwg Count: 1 Pgm Count: 0 QAP Count: 9 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE
48	SOURCE NOTIFICATION	1	/	
			Parent Sub:43 Op:30	

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 48 / Seq: 10	830-SOURCE HOLD POINT - IN PRO	1.00	1.00	1.00	
(R)	AFTER TACK WELDING, AND PRIOR TO WELDING SOURCE NOTIFICATION IS REQUIRED. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT.				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
44		1	/
			Parent Sub:40 Op:60

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 44 / Seq: 10	753-CAD/CAM - LARGE MILLING	1.00	1.00	1.00	SE121-001P-1MTM / 0A
(R)	N/C PROGRAM TO SCRIBE WELD SEAM NUMBERS 1-2, AND 3-4 TO (+0.100" STOCK) ON PANEL SUB-SET 1-3. ELECTRONIC MODEL DEFINING VESSEL GEOMETRY AND WELD SEAM POSITION WILL BE PROVIDED BY ENGINEERING. REFER TO DRAWING FOR PICTORIAL REPRESENTATION				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
49	SOURCE NOTIFICATION	1	/
			Parent Sub:40 Op:90

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 49 / Seq: 10	830-SOURCE HOLD POINT - IN PRO	1.00	1.00	1.00	
(R)	AFTER TACK WELDING, AND PRIOR TO WELDING SOURCE NOTIFICATION IS REQUIRED. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT.				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
51	SOURCE NOTIFICATION	1	/
			Parent Sub:40 Op:340

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 51 / Seq: 10	830-SOURCE HOLD POINT - IN PRO	1.00	1.00	1.00	
(R)	SOURCE NOTIFICATION REQURIED ONE TO TWO WEEKS PRIOR TO VACUUM TESTING PORT SUB-ASSEMBLY. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT				

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
50	SOURCE NOTIFICATION	1	/

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/1.0		1	/	BLUE/DOUG MCCORKLE

Parent Sub:39 Op:40

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 50 / Seq: 10	831-SOURCE INSPECTION - FINAL	1.00	1.00	1.00	

(R) FINAL SOURCE INSPECTION NOTIFICATION REQUIRED ONE TO TWO WEEKS PRIOR TO FINAL INSPECTION. CUSTOMER DECISION WILL FOLLOW. NOTIFICATION VIA CFT.

IDC Count : 0 Dwg Count: 0 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0