Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE
	Panel Segment Forming Dies			

Sub ID	Part ID	Qty	Drawing ID / Rev
0	Panel Segment Forming Dies	1	/

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 10	700-BLUE TEAM, ENGINEERING	1.00	1.00	1.00	
(R)	ENGINEERING / DIE DESIGN				
	PLANNING / TECHNICAL SUPPORT				

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		30.0			
(C)	BUSHING				
	L-48-16				
	CARR-LANE				
	MTM RECEIVING NOTE: DELIVER TO DOUG McCORKLE UPON RECEIPT.				

QAP Count: 0

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
20	E71T-1_045_FCAW-WELD WIRE,FCAW .045 DIA	0.0			
	Vendor Part ID: E71T-1_045_FCAW				
(C)					

QAP Count: 1

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 0 / Seq: 15	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	
(R)	N/C PROGRAMMING AND CAD: DIE SETS 1 THROUGH 5.				

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: 0 / Seq: 20	825-FINAL INSPECTION - PLANTS 1	1.00	1.00	1.00	
(R)	FINAL INSPECTION				
	VISUAL INSPECT AND PHOTOGRAPH EACH DIE SET				
	ENSURE EACH DIE SET IS PERMANENTLY IDENTIFIED				

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	DIE SET # 1 MTMFX-2884, MTMFX	1	/

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 5	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DRAWING
VERIFY EDGES ARE SMOOTH AND CORNERS HAVE RADII APPLIED.
INSPECT MATERIAL THICKNESS
VISUAL INSPECT SURFACE FINISH
INSPECT MAGNETIC PERMEABILITY
RECORD IDC DATA
Specification: ASTM A800 Rev: 2001
Part Number: SE121-001P-2 PANEL 1D
Part Description: DEVELOPMENT PANEL
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

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

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE120-002-2 PANEL 1-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	

Vendor Part ID: SE120-002-2 PANEL 1

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE
(SE120-002-2 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: 68 X 82

Material Certification:
Part Number: SE121-001P-2 PANEL 1D
Part Description: DEVELOPMENT 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: 1 / Seq: 10	340-VERSON 500	1.00	1.00	1.00	SE121 / A

(C) "SPOT IN" / DEVELOP DIE SET AND PANEL FORMING PROCESS:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2883 MTMFX-2884 INTO THE PRESS.
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC.... WIPE THE DIE-SET FACES CLEAN WITH ISOPROPANOL PRIOR TO INSTALLING THE PANEL.
INSTALL / POSITION THE PANEL BLANK INTO THE DIE SET.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

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 TRIM-LINES OF THE GAGE BY AT LEAST 1" (TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING).

Drw N/A IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 12	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(U) BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE FROM THE FORMING 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: 1 / Seq: 15	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

(U) 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 1D
Part Description: DEVELOPMENT 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: 1 / Seq: 17	340-VERSON 500	1.00	1.00	1.00	SE121-001P / A

(U) RELOAD THE PREFORMED 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 Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER
LAYOUT TRIM-LINES ON THE PANEL ESTABLISHED FROM THE MACHINED PERIMETER OF THE INSPECTION GAGE.

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
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 1 / Seq: 20	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / A
(R)	VERIFY PROFILE TO INSPECTION GAGE #MTMFX-2903. GAP TOLERANCE: .094" MAX.				
	RECORD IDC DATA				
	FORWARD THIS PANEL TO SANDBLAST WITH A MOVE TICKET FROM 64880-26/1 SEQ. 50				

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

Sub ID	Part ID	Qty	Drawing ID / Rev
6	CORE # 1 MTMFX-2884	1	MTMFX-2884 / A
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 6 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	
(C)	N/C PROGRAMMING				

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: 6 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A
(C)	RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.				

IDC N/A 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		1.0			
(C)	PUNCH #1: KIRKSITE BLOCK: 24*66*70				

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 6 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A
(C)	SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)				
	SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING				
	MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.				
	N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE				
	(1.0 - 2.0" CHARACTER HEIGHT)				
	ROUGH MACHINE PROFILE PER PROGRAM				

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 6 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A
(C)	REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES				
	FINISH MACHINE PROFILE PER PROGRAM				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 6 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).

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: 6 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: PUNCH # 1
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
7	CAVITY # 1 MTMFX-2883	1	MTMFX-2883 / A Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 7 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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: 7 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) DIE #1: KIRKSITE BLOCK: 26*66*70

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 7 / Seq: 20	152-TC-5000	1.00	1.00	1.00	SE121 / A

(C) SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)
SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING
MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE
(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 7 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 7 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE. BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS). USE EXTREME CARE NOT TO REMOVE THE PART OUTLINE AND INSPECTION GAGE LAYUP SPOTS (APPROXIMATELY 6" GRID PATTERN). NOTIFY ENGINEERING (DOUG McCORKLE) WHEN COMPLETE

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: 7 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: DIE # 1
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
23	PANEL ANNEAL (ADDED DURING DE	1	/
			Parent Sub:1 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 23 / Seq: 10	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

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE120-002-2 PANEL 1
Part Description: DIE DEVELOPMENT 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

Sub ID	Part ID	Qty	Drawing ID / Rev
16	MTMFX-2903 INSPECTION GAGE FO	1	/
			Parent Sub:1 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 16 / Seq: 10	450-SUBLET	1.00	1.00	1.00		MISC/SUBLET
(C)	PRODUCE PROFILE INSPECTION GAGE (SE120-002-2 PANEL 1) FROM MTM MACHINED FORMING DIE (OFFSET FOR .375" MATERIAL THICKNESS) REFERENCE CENTRAL INDIANA PATTERN AND MOLD QUOTATION DATED 17AUG03.					

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: 16 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / --
(C)	INSPECT / VERIFY GAGE MTMFX-2903 PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY. RECORD IDC DATA INPUT GAGE CALIBRATION DATA, ASSIGN GAGE NUMBER (NOTIFY DOUG McCORKLE OF NUMBER), AND LOG GAGE INTO THE CALIBRATION SYSTEM. PLACE GAGE SECURELY INTO IT'S STORAGE BOX. ENSURE IT IS FIRMLY SUPPORTED (SHORED UP), AND THE GAGE FACE IS STORED UPWARD AND COVERED WITH PLASTIC FOAM.				

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 16 / Seq: 30	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	
(C)	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED), REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK, AND FORWARD THE GAGE TO THE PRESSROOM. SETNCIL THE FIXTURE NUMBER ON THE OUTER SURFACE.				

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
2	DIE SET # 2 MTMFX-2886, MTMFX	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 2 / Seq: 5	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A
(C)	INSPECT BLANK SIZE PER DRAWING VERIFY EDGES ARE SMOOTH AND CORNERS HAVE RADII APPLIED.				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

INSPECT MATERIAL THICKNESS
VISUAL INSPECT SURFACE FINISH
INSPECT MAGNETIC PERMEABILITY
RECORD IDC DATA
Specification: ASTM A800 Rev: 2001
Part Number: SE121-001P-2 PANEL 2D
Part Description: DEVELOPMENT PANEL
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

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

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE120-002-2 PANEL 2-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	
	Vendor Part ID: SE120-002-2 PANEL 2				

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE
(SE120-002-2 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 X 53

QAP Count: 6

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 2 / Seq: 10	341-PACIFIC 750	1.00	1.00	1.00	SE121 / A

(C) "SPOT IN" / DEVELOP DIE SET AND PANEL FORMING PROCESS:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2886, MTMFX-2885 INTO THE PRESS.
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC.... WIPE THE DIE-SET FACES CLEAN WITH ISOPROPANOL PRIOR TO INSTALLING THE PANEL.
INSTALL / POSITION 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 TRIM-LINES OF THE GAGE BY AT LEAST 1" (TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING).

Drw N/A IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Sub: 2 / Seq: 12	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A	
(R)	SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE FROM THE FORMING PROCESS. REFER TO PP478 FOR HANDLING REQUIREMENTS Specification: PP478 Rev: 1					

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: 2 / Seq: 15	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. NOTE THAT THIS SEQUENCE IS POSITIONED AFTER THE FORMING OPERATION TO BE USED AT THE DESCRETION OF MANUFACTURING. RETURN TO PREVIOUS SEQUENCE TO COMPLETE THE FORMING AFTER ANNEAL CYCLE. Specification: AMS2774 Rev: JUL95 Certification: H/T CERTIFICATE Part Number: SE121-001P-2 PANEL 2D Part Description: DEVELOPMENT 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: 2 / Seq: 17	340-VERSON 500	1.00	1.00	1.00	SE121-001P / A
(R)	RELOAD THE PREFORMED 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 Q/A FOR VERIFICATION PRIOR TO MOVING THE PART TO THE NEXT WORK CENTER LAYOUT TRIM-LINES ON THE PANEL ESTABLISHED FROM THE MACHINED PERIMETER OF THE INSPECTION GAGE.				

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: 2 / Seq: 20	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / A
(R)	VERIFY PROFILE TO INSPECTION GAGE #MTMFX-2904. GAP TOLERANCE: .094" MAX. RECORD IDC DATA FORWARD PANEL TO STORES				

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

Sub ID	Part ID	Qty	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE
8	CORE # 2 MTMFX-2886	1	MTMFX-2886 / A Parent Sub:2 Op:10	

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 8 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	
(C)	N/C PROGRAMMING				

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: 8 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A
(C)	RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.				

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		1.0			
(C)	PUNCH #2: KIRKSITE BLOCK: 19*27*49				

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 8 / Seq: 20	160-30FT MITSU	1.00	1.00	1.00	SE121 / A
(C)	SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL) SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS. N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE (1.0 - 2.0" CHARACTER HEIGHT) ROUGH MACHINE PROFILE PER PROGRAM				

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 8 / Seq: 30	160-30FT MITSU	1.00	1.00	1.00	SE121 / A
(C)	REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES FINISH MACHINE PROFILE PER PROGRAM				

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 8 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	
(C)	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).				

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
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 8 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: PUNCH # 2
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
9	CAVITY # 2 MTMFX-2885	1	MTMFX-2885 / A Parent Sub:2 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 9 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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: 9 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) DIE #2: KIRKSITE BLOCK: 22*28*50

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 9 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)
SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING
MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.
N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE
(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 9 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 9 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE. BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS). USE EXTREME CARE NOT TO REMOVE THE PART OUTLINE AND INSPECTION GAGE LAYUP SPOTS (APPROXIMATELY 6" GRID PATTERN). NOTIFY ENGINEERING (DOUG McCORKLE) WHEN COMPLETE

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: 9 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: DIE # 2
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
17	MTMFX-2904 INSPECTION GAGE FO	1	/
			Parent Sub:2 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 17 / Seq: 10	450-SUBLET	1.00	1.00	1.00		MISC/SUBLET

(C) PRODUCE PROFILE INSPECTION GAGE (SE120-002-2 PANEL 2) FROM MTM MACHINED FORMING DIE (OFFSET FOR .375" MATERIAL THICKNESS)
REFERENCE CENTRAL INDIANA PATTERN AND MOLD QUOTATION DATED 17AUG03.

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: 17 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / --

(C) INSPECT / VERIFY GAGE MTMFX-2904 PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.
RECORD IDC DATA
INPUT GAGE CALIBRATION DATA, ASSIGN GAGE NUMBER (NOTIFY DOUG McCORKLE OF NUMBER), AND LOG GAGE INTO THE CALIBRATION SYSTEM.
PLACE GAGE SECURELY INTO IT'S STORAGE BOX.
ENSURE IT IS FIRMLY SUPPORTED (SHORED UP), AND THE GAGE FACE IS STORED UPWARD AND COVERED WITH PLASTIC FOAM.

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Sub: 17 / Seq: 30 — 105-DEBURR PLT 1 LOW BAY — 1.00 — 1.00 — 1.00

(R) AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED), REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK, AND FORWARD THE GAGE TO THE PRESSROOM.

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
3	DIE SET # 3 MTMFX-2892, MTMFX	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 3 / Seq: 5	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DRAWING
INSPECT MATERIAL THICKNESS
VISUAL INSPECT SURFACE FINISH
INSPECT MAGNETIC PERMEABILITY
RECORD IDC DATA
Specification: ASTM A800 Rev: 2001
Part Number: SE121-001P-2 PANEL 3D
Part Description: DEVELOPMENT PANEL
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

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

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE120-002-2 PANEL 3-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	

Vendor Part ID: SE120-002-2 PANEL 3

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE (SE120-002-2 PANEL # 3.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: 65 X 84.4

Material Certification:
Part Number: SE121-001P-2 PANEL 3D
Part Description: DEVELOPMENT PANEL
Specification: ASTM A800 Rev: 01
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

QAP Count: 6

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 3 / Seq: 10	340-VERSON 500	1.00	1.00	1.00	SE121 / A

(C)

"SPOT IN" / DEVELOP DIE SET AND PANEL FORMING PROCESS:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2892, MTMFX-2887 INTO THE PRESS.
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC.... WIPE THE DIE-SET FACES CLEAN WITH ISOPROPANOL PRIOR TO INSTALLING THE PANEL.
INSTALL / POSITION 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 TRIM-LINES OF THE GAGE BY AT LEAST 1" (TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING).

Drw N/A IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 3 / Seq: 12	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 FROM THE FORMING 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: 3 / Seq: 15	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.
NOTE THAT THIS SEQUENCE IS POSITIONED AFTER THE FORMING OPERATION TO BE USED AT THE DESCRETION OF MANUFACTURING. RETURN TO PREVIOUS SEQUENCE TO COMPLETE THE FORMING AFTER ANNEAL CYCLE.
Specification: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 3D
Part Description: DEVELOPMENT 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

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Sub: 3 / Seq: 20 — 805-INPROCESS INSPECTION - PLA — 1.00 — 1.00 — 1.00 — SE121-001P / A

(C) VERIFY PROFILE TO INSPECTION GAGE #MTMFX-2905. GAP TOLERANCE: .094" MAX.
RECORD IDC DATA
FORWARD PANEL TO STORES

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

Sub ID	Part ID	Qty	Drawing ID / Rev
10	CORE # 3 MTMFX-2892	1	MTMFX-2892 / A Parent Sub:3 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 10 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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: 10 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) PUNCH #3: KIRKSITE BLOCK: 29*57*76

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 10 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)
SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING
MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.
N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE
(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 10 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 10 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	
(C)	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).				

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: 10 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A
(C)	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY. RECORD IDC DATA Part Number: PUNCH # 3 Dimensional Report: CMM DATA SHEET				

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
11	CAVITY # 3 MTMFX-2887	1	MTMFX-2887 / A Parent Sub:3 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 11 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	
(C)	N/C PROGRAMMING				

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: 11 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A
(C)	RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.				

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		1.0			
(C)	DIE #3: KIRKSITE BLOCK: 26*58*78				

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 11 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A
(C)	SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL) SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS. N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 11 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 11 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE. BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS). USE EXTREME CARE NOT TO REMOVE THE PART OUTLINE AND INSPECTION GAGE LAYUP SPOTS (APPROXIMATELY 6" GRID PATTERN). NOTIFY ENGINEERING (DOUG McCORKLE) WHEN COMPLETE

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: 11 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: DIE # 3
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
18	MTMFX-2905 INSPECTION GAGE FO	1	/
			Parent Sub:3 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 18 / Seq: 10	450-SUBLET	1.00	1.00	1.00		MISC/SUBLET

(C) PRODUCE PROFILE INSPECTION GAGE (SE120-002-2 PANEL 3) FROM MTM MACHINED FORMING DIE (OFFSET FOR .375" MATERIAL THICKNESS)
REFERENCE CENTRAL INDIANA PATTERN AND MOLD QUOTATION DATED 17AUG03.

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: 18 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / --

(R) INSPECT / VERIFY GAGE MTMFX-2905 PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

RECORD IDC DATA
INPUT GAGE CALIBRATION DATA, ASSIGN GAGE NUMBER (NOTIFY DOUG McCORKLE OF NUMBER), AND LOG GAGE INTO THE CALIBRATION SYSTEM.
PLACE GAGE SECURELY INTO IT'S STORAGE BOX.
ENSURE IT IS FIRMLY SUPPORTED (SHORED UP), AND THE GAGE FACE IS STORED UPWARD AND COVERED WITH PLASTIC FOAM.

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 18 / Seq: 30	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	
(R)	AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED), REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK, AND FORWARD THE GAGE TO THE PRESSROOM.				

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
4	DIE SET # 4 MTMFX-2889, MTMFX	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 4 / Seq: 5	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A
(C)	INSPECT BLANK SIZE PER DRAWING INSPECT MATERIAL THICKNESS VISUAL INSPECT SURFACE FINISH INSPECT MAGNETIC PERMEABILITY RECORD IDC DATA Specification: ASTM A800 Rev: 2001 Part Number: SE121-001P-2 PANEL 4D Part Description: DEVELOPMENT PANEL Customer: PPPL Specification: ASTM B443 Rev: 00 Specification: ASTM B46.1 Rev: 95				

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

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE120-002-2 PANEL 4-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	
	Vendor Part ID: SE120-002-2 PANEL 4				

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE (SE120-002-2 PANEL # 4.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: 26.75 X 71

Material Certification:

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P-2 PANEL 4D
Part Description: DEVELOPMENT 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: 4 / Seq: 10	341-PACIFIC 750	1.00	1.00	1.00	SE121 / A

(C) "SPOT IN" / DEVELOP DIE SET AND PANEL FORMING PROCESS:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2889, MTMFX-2888 INTO THE PRESS.
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC.... WIPE THE DIE-SET FACES CLEAN WITH ISOPROPANOL PRIOR TO INSTALLING THE PANEL.
INSTALL / POSITION 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 TRIM-LINES OF THE GAGE BY AT LEAST 1" (TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING).

Drw N/A IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 4 / Seq: 12	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 FROM THE FORMING 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: 4 / Seq: 15	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.
NOTE THAT THIS SEQUENCE IS POSITIONED AFTER THE FORMING OPERATION TO BE USED AT THE DESCRETION OF MANUFACTURING. RETURN TO PREVIOUS SEQUENCE TO COMPLETE THE FORMING AFTER ANNEAL CYCLE.
Specification: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Part Number: SE121-001P-2 PANEL 4D
Part Description: DEVELOPMENT 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: 4 / Seq: 20	805-INPROCESS INSPECTION - PLA	1.00	1.00	1.00	SE121-001P / A
(R)	VERIFY PROFILE TO INSPECTION GAGE #MTMFX-2906. GAP TOLERANCE: .094" MAX.				
	RECORD IDC DATA				
	FORWARD PANEL TO STORES				

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

Sub ID	Part ID	Qty	Drawing ID / Rev
12	CORE # 4 MTMFX-2889	1	MTMFX-2889 / A
			Parent Sub:4 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 12 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	
(C)	N/C PROGRAMMING				

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: 12 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A
(C)	RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.				

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		1.0			
(C)	PUNCH #4: KIRKSITE BLOCK: 13*29*76				

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 12 / Seq: 20	160-30FT MITSU	1.00	1.00	1.00	SE121 / A
(C)	SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)				
	SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING				
	MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.				
	N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE				
	(1.0 - 2.0" CHARACTER HEIGHT)				
	ROUGH MACHINE PROFILE PER PROGRAM				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 12 / Seq: 30	160-30FT MITSU	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 12 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).

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: 12 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: PUNCH # 4
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
13	CAVITY # 4 MTMFX-2888	1	MTMFX-2888 / A
			Parent Sub:4 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 13 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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: 13 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) DIE #4: KIRKSITE BLOCK: 16*30*77

QAP Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 13 / Seq: 20	160-30FT MITSU	1.00	1.00	1.00	SE121 / A
(C)	SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)				
	SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING				
	MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.				
	N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE				
	(1.0 - 2.0" CHARACTER HEIGHT)				
	ROUGH MACHINE PROFILE PER PROGRAM				

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 13 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A
(C)	REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES				
	FINISH MACHINE PROFILE PER PROGRAM				

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 13 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	
(C)	APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE. BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS). USE EXTREME CARE NOT TO REMOVE THE PART OUTLINE AND INSPECTION GAGE LAYUP SPOTS (APPROXIMATELY 6" GRID PATTERN). NOTIFY ENGINEERING (DOUG McCORKLE) WHEN COMPLETE				

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: 13 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A
(C)	INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.				
	RECORD IDC DATA				
	Part Number: DIE # 4				
	Dimensional Report: CMM DATA SHEET				

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
19	MTMFX-2906 INSPECTION GAGE FO	1	/
			Parent Sub:4 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 19 / Seq: 10	450-SUBLET	1.00	1.00	1.00		MISC/SUBLET

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

(C) PRODUCE PROFILE INSPECTION GAGE (SE120-002-2 PANEL 4) FROM MTM MACHINED FORMING DIE (OFFSET FOR .375" MATERIAL THICKNESS)
REFERENCE CENTRAL INDIANA PATTERN AND MOLD QUOTATION DATED 17AUG03.

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: 19 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / --

(C) INSPECT / VERIFY GAGE MTMFX-2906 PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.
RECORD IDC DATA
INPUT GAGE CALIBRATION DATA, ASSIGN GAGE NUMBER (NOTIFY DOUG McCORKLE OF NUMBER), AND LOG GAGE INTO THE CALIBRATION SYSTEM.
PLACE GAGE SECURELY INTO IT'S STORAGE BOX.
ENSURE IT IS FIRMLY SUPPORTED (SHORED UP), AND THE GAGE FACE IS STORED UPWARD AND COVERED WITH PLASTIC FOAM.

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 19 / Seq: 30	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(R) AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED), REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK, AND FORWARD THE GAGE TO THE PRESSROOM.

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
5	DIE SET # 5 MTMFX-2891, MTMFX	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 5 / Seq: 5	820-RECEIVING INSPECTION	1.00	1.00	1.00	SE121-001P / A

(C) INSPECT BLANK SIZE PER DRAWING
VERIFY EDGES ARE SMOOTH AND CORNERS HAVE RADII APPLIED.
INSPECT MATERIAL THICKNESS
VISUAL INSPECT SURFACE FINISH
INSPECT MAGNETIC PERMEABILITY
RECORD IDC DATA
Specification: ASTM A800 Rev: 2001
Part Number: SE121-001P-2 PANEL 5D
Part Description: DEVELOPMENT PANEL
Customer: PPPL
Specification: ASTM B443 Rev: 00
Specification: ASTM B46.1 Rev: 95

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

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
10	SE120-002-2 PANEL 5-PANEL BLANK .375" THK INCONEL 625	1.0	SE121 / --	1810	
	Vendor Part ID: SE120-002-2 PANEL 5				

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

(C) PANEL BLANK AWJ CUT FROM .375" INCONEL 625 TO PROVIDED GEOMETRICAL SHAPE
(SE120-002-2 PANEL # 5.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: 50 X 75.72

Material Certification:
Part Number: SE121-001P-2 PANEL 5D
Part Description: DEVELOPMENT 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: 5 / Seq: 10	340-VERSON 500	1.00	1.00	1.00	SE121 / A

(C) "SPOT IN" / DEVELOP DIE SET AND PANEL FORMING PROCESS:
LOAD, ALIGN, AND BOLT DIE SET # MTMFX-2891, MTMFX-2890 INTO THE PRESS.
ENSURE THE DIE SET FACES ARE CLEAN AND FREE OF DIRT, OIL, GRIME, FOREIGN MATTER, RAISED OR EMBEDDED MATERIAL, ETC.... WIPE THE DIE-SET FACES CLEAN WITH ISOPROPANOL PRIOR TO INSTALLING THE PANEL.
INSTALL / POSITION 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 TRIM-LINES OF THE GAGE BY AT LEAST 1" (TO PROVIDE ADEQUATE STOCK ALLOWANCE FOR RE-POSITIONING, RE-STRIKING, AND ACCURATE TRIMMING).

Drw N/A IDC Count : 0 Dwg Count: 5 Pgm Count: 0 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 5 / Seq: 12	260-SANDBLAST	1.00	1.00	1.00	SE121-001P / A

(U) SHOT BLAST THE ENTIRE PANEL 100% USING 180-220 GRIT VIRGIN ALUMINUM OXIDE MEDIA TO REMOVE ANY RESIDUE FROM THE FORMING 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: 5 / Seq: 15	520-SUBLET, EXOTIC HEAT TREAT	1.00	1.00	1.00	SE121-001P / A	THRML TR/NA SA

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

(U) 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.
NOTE THAT THIS SEQUENCE IS POSITIONED AFTER THE FORMING OPERATION TO BE USED AT THE DESCRETION OF MANUFACTURING. RETURN TO PREVIOUS SEQUENCE TO COMPLETE THE FORMING AFTER ANNEAL CYCLE.
Specification: AMS2774 Rev: JUL95
Certification: H/T CERTIFICATE
Part Number: SE121-001P-2 PANEL 5D
Part Description: DEVELOPMENT 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: 5 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121-001P / A

(R) VERIFY PROFILE TO INSPECTION GAGE #MTMFX-2907. GAP TOLERANCE: .094" MAX.
RECORD IDC DATA
FORWARD PANEL TO STORES

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

Sub ID	Part ID	Qty	Drawing ID / Rev
14	CORE # 5 MTMFX-2891	1	MTMFX-2891 / A
			Parent Sub:5 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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: 14 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) PUNCH #5: KIRKSITE BLOCK: 26*40*53

QAP Count: 0

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)
SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING
MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.
N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE
(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 14 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE (APPROXIMATE FROM THE CAVITY SCRIBE LINES). BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS).

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: 14 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: PUNCH # 5
Dimensional Report: CMM DATA SHEET

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
15	CAVITY # 5 MTMFX-2890	1	MTMFX-2890 / A Parent Sub:5 Op:10

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 5	751-CAD/CAM - MEDIUM MILLING	1.00	1.00	1.00	

(C) N/C PROGRAMMING

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
64880/2.0		1	/	BLUE/DOUG MCCORKLE

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 10	800-RECEIVING	1.00	1.00	1.00	SE121 / A

(C) RECEIVE AND INSPECT THE CAST KIRKSITE BLOCK (TAPE MEASURE) PER MTM P.O.

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		1.0			

(C) DIE #5: KIRKSITE BLOCK: 27*42*60

QAP Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 20	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) SETUP AND FACE ONE SIDE FLAT (MINIMAL STOCK REMOVAL)
SETUP ON FLAT SURFACE AND BORE HOLES IN SIDES FOR LIFTING PROVISIONS PER DRAWING
MACHINE KEYING / ALIGMENT FEATURES PER DRAWING. INSTALL LIFTING PINS.
N/C MACHINE (SCRIBE) DIE SET NUMBER ON THE FRONT FACE
(1.0 - 2.0" CHARACTER HEIGHT)
ROUGH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 30	162-DORRIES SCHARMANN GANTR	1.00	1.00	1.00	SE121 / A

(C) REPOSITION WITH 3D PROFILE FACING SPINDLE, INDICATE ALIGNMENT / CONSTRUCTION FEATURES
FINISH MACHINE PROFILE PER PROGRAM

IDC Count : 0 Dwg Count: 5 Pgm Count: 32 QAP Count: 0 NDT Count: 0 WPS Count: 0

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 15 / Seq: 40	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(C) APPLY LAYOUT DIE TO THE INTERIOR OF THE FINISHED PART OUTLINE. BARBER / BLEND SCALLOPS SMOOTH TO AN APROXIMATE AVERAGE SURFACE FINISH OF 125 MICRO-INCHES (REMOVING APPROXIMATELY 1/2 OF THE EXISTING SCALLOPS). USE EXTREME CARE NOT TO REMOVE THE PART OUTLINE AND INSPECTION GAGE LAYUP SPOTS (APPROXIMATELY 6" GRID PATTERN). NOTIFY ENGINEERING (DOUG McCORKLE) WHEN COMPLETE

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: 15 / Seq: 50	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / A

(C) INSPECT PROFILE (CMM) PER PROGRAM / 3D MODEL GEOMETRY.
RECORD IDC DATA
Part Number: DIE # 5
Dimensional Report: CMM DATA SHEET

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

IDC Count : 1 Dwg Count: 5 Pgm Count: 1 QAP Count: 2 NDT Count: 0 WPS Count: 0

Sub ID	Part ID	Qty	Drawing ID / Rev
20	MTMFX-2907 INSPECTION GAGE FO	1	/
			Parent Sub:5 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev	Service ID
Sub: 20 / Seq: 10	450-SUBLET	1.00	1.00	1.00		MISC/SUBLET

(C) PRODUCE PROFILE INSPECTION GAGE (SE120-002-2 PANEL 5) FROM MTM MACHINED FORMING DIE (OFFSET FOR .375" MATERIAL THICKNESS)
REFERENCE CENTRAL INDIANA PATTERN AND MOLD QUOTATION DATED 17AUG03.

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: 20 / Seq: 20	815-CMM - GANTRY - PLANT 2	1.00	1.00	1.00	SE121 / --

(R) INSPECT / VERIFY GAGE MTMFX-2907 PROFILE PER PROGRAM / PROVIDED 3D GEOMETRY.
RECORD IDC DATA
INPUT GAGE CALIBRATION DATA, ASSIGN GAGE NUMBER (NOTIFY DOUG McCORKLE OF NUMBER), AND LOG GAGE INTO THE CALIBRATION SYSTEM.
PLACE GAGE SECURELY INTO IT'S STORAGE BOX.
ENSURE IT IS FIRMLY SUPPORTED (SHORED UP), AND THE GAGE FACE IS STORED UPWARD AND COVERED WITH PLASTIC FOAM.

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

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 20 / Seq: 30	105-DEBURR PLT 1 LOW BAY	1.00	1.00	1.00	

(R) AFTER THE GAGE HAS BEEN INSPECTED (AND ACCEPTED), REMOVE THE STRONGBACK / POSITIONING FRAMEWORK FROM THE STRUCTURE PER ENGINEERING (DOUG McCORKLE) DIRECTION. DISCARD THE EXCESS FRAMEWORK, AND FORWARD THE GAGE TO THE PRESSROOM.

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
22	LIFTING PINS	1	/
			Parent Sub:0 Op:20

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 22 / Seq: 10	405-SAWS- PLANT 2	1.00	1.00	1.00	

(C) SAW AND DEBURR ROUND STOCK PER MATERIAL CARDS.

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	1018_32-BAR,ROUND,CR. 2.0" DIA Vendor Part ID: 1018_32 Mfg Part ID: 1018 MATERIAL	440.0		5068	11

(C) BAR,ROUND,CR. 2.0" DIA

Workorder	Part ID	Qty	Drawing ID / Rev	Engineer
64880/2.0		1	/	BLUE/DOUG MCCORKLE

1018 MATERIAL
CERTS AND MILL TEST REPORTS REQ'D WITH SHIPMENT.
STOCK SIZE 12 FT

QAP Count: 2

Piece #	Part ID	Qty	Drawing ID / Rev	Vendor	Dimensions
20	1018_713-BAR,ROUND,CR. 3.0" DIA Vendor Part ID: 1018_713 Mfg Part ID: 1018 MATERIAL	20.0		5068	.5
(C)	1018 MATERIAL BAR,ROUND,CR. 3.0" DIA CERTS AND MILL TEST REPORTS REQ'D WITH SHIPMENT STOCK SIZE 12 FT				

QAP Count: 1

Operation	Resource	QtyPer	StartQty	EndQt	Drawing ID / Rev
Sub: 22 / Seq: 20	215-HGIH PROGRAM	1.00	1.00	1.00	
(C)	PREP AND WELD FLANGE TO PIN PER ENGINEERING INSTRUCTION (3/16 to 1/4" FILLET WELD) 40 PIECES ARE REQUIRED. NOTIFY DOUG McCORKLE WHEN COMPLETE				

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

WPS190 Rev:1 FCAW SEM----WPS192 Rev:2 GTAW MAN
GTAW - Manual Fillers: ER70S-2_035_GTAW / ER70S-2_045_GMAW / ER70S-2_062_GMAW / ER70S-2_062_GTAW / ER70S-2_093_GMAW / ER70S-2_093_GTAW
FCAW - Semi-automatic Fillers: E70T-1_045_FCAW / E70T-1_062_FCAW / E70T-1_093_FCAW
Notes: