

Energy Industries of Ohio

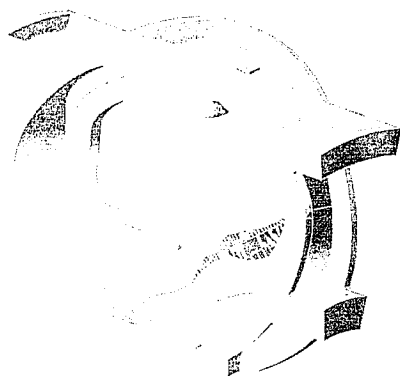
Manufacturing and Test Sequence (MTS) Serial Number C-5 Coil

9 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev 8 Dated Issued: 7-29-05

This is a replacement
MTS. Original was
stamped and be copied

460	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 ALL CONDITIONS. IF OK CHECK HERE <input checked="" type="checkbox"/> . MARK AND REPAIR AT STEP 390. IF REJECTED CHECK HERE <input type="checkbox"/> . MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II JDR	11/15	DCMA stamp
470	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <input checked="" type="checkbox"/> WASH AND SEND TO STEP 455. IF REJECTED CHECK HERE <input type="checkbox"/> . DOCUMENT REPAIRS USING S321 THROUGH S327.	LP - LEVEL II JDR	11/15	DCMA stamp
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEPS. EIO NOTIFIED ON 11/7 DCMA NOTIFIED ON 11/7	Q ENG OR QA MGR	Ch	
500	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. USE A 6" SQUARE BLOCK TO INDICATE TEST LOCATIONS AND RECORD RESULTS. COMPLIANT AREAS WILL NOT BE MARKED. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. OK CHECK HERE <input checked="" type="checkbox"/> AND GO TO STEP 530. IF REJECTED CHECK HERE <input type="checkbox"/>	TRC	11/17/05	
510	GRIND GCHI SOP 0100 REV 2	HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT. CIRCLE AREA REMEDIATE FOR RETEST.	MS		
520	RETEST MAG PERM SOP MAG PERM 100, REV 1	RETEST MAG PERMEABILITY AT FAILED TEST POINTS. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. ACCEPTANCE 1.02. IF OK CHECK HERE <input checked="" type="checkbox"/> . IF REJECTED CHECK HERE <input type="checkbox"/> RETURN TO STEP 510.			
530	DOC. REVIEW	REVIEW DOCUMENTS AS REQUIRED IN CAF CHECKLIST, ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (SHIPPER, C OF C, M.T.R., M.T.S., INSPECTION REPORT, X- RAY READER SHEETS AND HEAT TREAT CHARTS)	Ch	11/17/05	
NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON 11/1 BY Ch RECEIVED RELEASE FROM EIO ON _____.	Q ENG OR QA MGR	Ch	
540	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.			
1000	REVISION HISTORY	ORIGINAL 12-14-04. Approved 12-14-04. Revision level 1- Revised 1-26-05 new page 8, correct High stress areas, Revision level 2 3-16-05, delete LO step 455. Revision 3 3-28-05 Added note regarding hold point at weld step 400. Revision level 4 written for C-2 casting 4-18-05. Rev 5 added Layout SOP# and note regarding first casting layout responsibility. 5-10-05. Rev 6 added word LOT to weld material steps. 5-29-05. Rev 7 6-14-05 added "LOT" to weld step on supplement page. Rev. 8 7-29-05 added stress relief, deleted weld hold points, added vertical weld procedure, and several editorial changes.	CARUID		

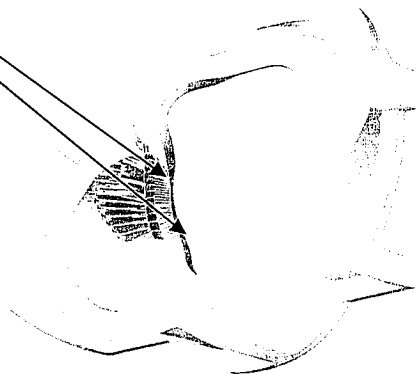
original on file
AT CAF. Ch



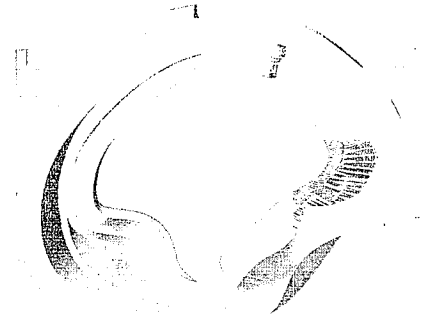
GENERAL ISOMETRIC
VIEW FROM TOP SIDE

TABS DESIGNATE
CRITICAL AREA

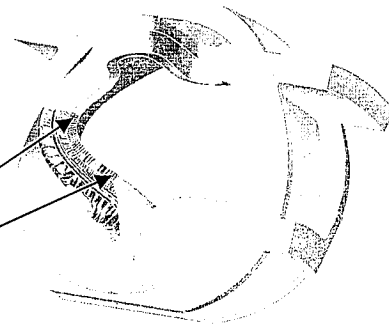
RED AREA INDICATES HIGH STRESSED AREA



TOP SIDE ISOMETRIC



TOP SIDE VIEW



BOTTOM SIDE ISOMETRIC



BOTTOM SIDE VIEW

OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON 8-3-05 FROM Pete D. SIGNED QUALITY MANAGER	<i>CDM</i>	
15	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, AND FOUNDRY MARK, TO THE PATTERN. CAST ON TEST BARS AND CAST ON BLOCKS (extra 3"x3"x1" specimens) REQUIRED, ID AS TO COIL NUMBER AND ZONE LOCATION.	<i>KM</i>	8/3
20	COREMAKE CORE SOP 0100 REV 6 CALIBRATION PER CORE SOP 0200R4/0300R6	MAKE CORES IN SAND MIXTURES AS DESCRIBED BY METALTEK ENGINEERING AND VERIFIED IN MODELING TRIALS. METALTEK CORE SOP 0100 REV 6) CORE WASH WITH ZIRCONIUM CORE WASH. (CALIBRATION OF EQUIPMENT REQUIRED PER CORE SOP 0200,R4 / 0300,R6) VERIFY COUNT AND INSPECT.	<i>BC</i>	8/4/05
30	MOLD MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/13 00R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/16 00R2	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. ENGINEER OF RECORD - ROGER BROMAN, CONSULT ON MOLD-RELATED CONCERNS. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS.	<i>BC</i>	8/8/05
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. RECORD POURING TEMPERATURE: <u>2745</u> CASTING POURED AT: <u>330 am</u> DATE: <u>8/8/05</u> HEAT #s: <u>30441, 30445</u> ELAPSED POUR TIME <u>25 min</u> KEEL BLOCKS POURED: <u>NA</u> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <u>JWJESSEN</u> Analyzed: <u>Gr. Hunt</u> Date: <u>8/8</u>	<i>JWG</i>	8/9/05
50	MELT SOP 0800R2	SHAKEOUT	<i>CA</i>	8/11

60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	JLC	8/19
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MAKE SURE TO BLOCK ALL FLANGES OF FORM AND RACETRACK TO MINIMIZE CREEP DISTORTION. Soak Temp: 2050F, Soak Time: 4HR + 1/2 HR/IN, Quench Type: Air Cool. MAKE SURE TEST MATERIAL IS PLACED IN THE CORRECT ZONE.	RJ	8/14/05
75	PHYSICAL TESTING	OBTAIN TEST SPECIMENS AND SUBMIT FOR PHYSICAL TESTING. REPORT RESULTS AS PART OF STEP 510.	WH	8/15/05
NOTE		THE ORDER OF CLEANING PROCESSES MAY BE ALTERED DUE TO CAPACITY CONSTRAINTS. HOLD POINTS AND COMPLIANCE WILL NOT BE COMPROMISED. EIO WILL BE ADVISED OF ALL CHANGES THAT MAY RESULT IN A REQUEST FOR DEVIATION FROM REQUIREMENTS.		
80	GRIND GSA SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.	JLC	8/16/05
85	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.	CAK	8/22/05
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	MTW	8/23/05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LAYOUT. EIO NOTIFIED ON 8/1 DCMA NOTIFIED ON 8/1	Q ENG OR QA MGR	Chk
100	INTERIM LAYOUT SOP LAYOUT 0100	APPROVAL RECEIVED ON 8/1 INSPECT CASTING TO VERIFY DIMENSIONS. THIS STEP MAY BE DELAYED UNTIL ALL REPAIRS ARE COMPLETE. NOTE: THE FIRST PART PRODUCED OF EACH TYPE A, B AND C WILL BE DIMENSIONED BY LAWTON PATTERN. IF DIMENSIONED BY LAWTON IT WILL BE DOCUMENTED HERE. Subsequent casting done internally per Romer Arm.	Jodg	8/18/05
110	INTERIM VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% OF COMPONENT ACCORDING TO ASTM A802 LEVEL 3 IN NON MACHINED AREAS AND LEVEL 2 IN MACHINED AREAS. IF OK CHECK HERE IF REJECTED CHECK HERE . MARK AND REPAIR AT STEP 120.	VT - LEVEL II	Wt
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LP STEP. EIO NOTIFIED ON . DCMA NOTIFIED ON	Q ENG OR QA MGR	↓

Vis +
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tal offer
RT
Chk

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NA

115	INTERIM 100% L.P. CQP 0300 REV 10	L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ MARK AND REPAIR AT STEP 120. IF REJECTED CHECK HERE _____	LP - LEVEL II	
120	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.		
125	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.		
130	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ IF REJECTED SEND BACK TO STEP 125.	LP - LEVEL II	
165	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		
170	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"x3.3". PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF X-RAY AND DIMENSIONAL STEPS. EIO NOTIFIED ON <u>8/23/05</u> DCMA NOTIFIED ON <u>8/23/05</u>		
NOTICE	WITNESS NOTIFICATION		Q ENG OR QA MGR	ZMS
190	X-RAY AT MQS MQS PROCEDURE 20.H.010 REV 0	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. WHEN MARKING USE BLACK MARKERS. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II 8/27/05	ZMS
210	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 260. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP 220.	RT - LEVEL II 9/1/05	DCMA STAP 9/14/05 DM

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220	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	<i>CA</i>	
225	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	<i>CA</i>	<i>9/14</i>
230	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE IF REJECTED SEND BACK TO STEP 225.	LP - LEVEL II <i>TRC</i>	<i>9/14/05</i>
240	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"X3.3". PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON <u>9/14/05</u> DCMA NOTIFIED ON <u>9/14/05</u>	<i>✓ JR</i>	
NOTICE	WITNESS NOTIFICATION		Q ENG OR QA MGR	<i>RMS</i>
260	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE <u>3018513/78308</u> PROCEDURE USED: <u>15GMAW CF8M</u> MATERIAL/LOT USED: <u>3018726/78309</u> QUALITY ENG. Name: <u>CA</u> Date: <u>10/6/05</u>		
270	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 (Flat) or 25 SMAW-CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2 HAND GRIND WELDS.	<i>TL5 10/6/05</i> <i>TAD 10/6/05</i>	
280	GRIND GCHI SOP 0100R2		<i>DWP 10/19/05</i> <i>KL B</i>	
290	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE	LP - LEVEL II <i>JR Repair</i>	<i>10/19/05</i>
	REPEAT	REPEAT STEPS 220 TO 290 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. DOCUMENT REWORK ON STEPS S220 TO S290. IF OK CHECK HERE AND PROCEED TO STEP 295.		
	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1ST 10/13/05 2ND 11/17 3RD 11-8-05 4TH 11-8-05 5TH	
S220	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.		

*DCMA
Stamp*

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NA

S230	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING.	LP - LEVEL II		
S240	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"X3.3".			
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR		
S260	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL /LOT USED : _____ QUALITY ENG. Name: _____ Date: _____			
S270	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 (Flat) or 25 SMAW - CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2			
S280	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.			
S290	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE _____ AND RETURN TO STEP S220.	LP - LEVEL II w/p	OK 11/10 REJ OK 11/10 REJ	OK REJ
	REPEAT	REPEAT STEPS S220 TO S290 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION.	QA ENG.		
295	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE _____ AND GO TO STEP 300. IF REJECTED CHECK HERE _____.		OK 11/10 REJ	OK 11/10 REJ
296	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 295. REPEAT UNTIL COMPLIANCE IS ACHIEVED.		NA	
300	X-RAY (NOTE)	IF RADIO GRAPHED AREAS ARE GREATER THAN FOUR TO FIVE INCHES THE CASTING WILL BE SENT TO MQS. SEND TO MQS CHECK HERE _____ RADIOGRAPH AT CAF CHECK HERE _____	QA ENGINE ER		QA ENGINE ER

21/10
11/10
NA
21/10
11/10
NA

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310 A	MQS X-RAY DEFECTS REPAIRED BY WELDING	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	LEVEL II	NA
310 B	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II	
320	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 340. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP 220.	RT - LEVEL II	see S220
	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1 ST	2 ND 3 RD 4 TH 5 TH
S321	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	NA	
S322	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING.	LP - LEVEL II	
S323	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"x3.3".		
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
S324	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL /LOT USED : _____ QUALITY ENG. Name: _____ Date: _____		
S325	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMA W-CF8MMNMN MOD REV 1 (Flat) or 25 SMA W-		

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		CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2					
S326	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.					
S327	L.P. WELD CQP 0300 REV 10	Grind L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <u>WASH AND SEND TO STEP 300.</u> IF REJECTED CHECK HERE <u>AND RETURN TO STEP S321.</u>	11/16 LP - LEVEL II OK REJ	OK REJ	OK REJ	OK REJ	OK REJ
	REPEAT	REPEAT STEPS S321 TO S327 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION.	QA ENG.	OK			
340	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		BB		11/16	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON <u>11/7</u> DCMA NOTIFIED ON <u>11/7</u>		Q ENG OR QA MGR		ctr	
350	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% OF COMPONENT ACCORDING TO ASTM A802 LEVEL 3 IN NON MACHINED AREAS AND LEVEL 2 IN MACHINED AREAS. IF OK CHECK HERE <u>✓</u> IF REJECTED CHECK HERE <u>MARK AND REPAIR AT STEP 385.</u> MUST BE PERFORMED BY LEVEL II in VT.		VT - LEVEL II JDR		11/16	
360	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <u>WASH AND SEND TO STEP 455.</u> IF REJECTED CHECK HERE		LP - LEVEL II JDR		11/16	
380	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.		NA			
385	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND EXCAVATION AS REQUIRED.					
390	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. IF OK CHECK HERE <u>IF REJECTED SEND BACK TO STEP 385.</u>		LP - LEVEL II			

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400	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"X3.3".		
420	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL/LOT USED: _____ QUALITY ENG. Name: _____ Date: _____		
430	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 (Flat) or 25 SMAW-CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		
440	GRIND GCHI SOP 0100 REV 2	HAND GRIND WELDS.		
450	L.P. WELDS CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. IF OK CHECK HERE _____ WASH AND SEND TO STEP 460. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 440.	LP - LEVEL II	
	REPEAT	REPEAT STEPS 350 TO 450 AS REQUIRED TILL WELDS CLEAR FINAL LIQUID PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
451	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS. RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE _____ AND GO TO STEP 430. IF REJECTED CHECK HERE _____.		
452	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 451. REPEAT UNTIL COMPLIANCE IS ACHIEVED.		
455	HEAT TREAT	STRESS RELIEF. Load casting into cold furnace. Ramp up to 1100 F at rate of 200 F per hour. Hold at temp 4 hours. Furnace cool to 500 F at 50 F per hour. Air cool. Submit furnace charts to QA.	KMR	11/14/05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON 11/7 DCMA NOTIFIED ON 11/7	Q ENG OR QA MGR	Chr