

MetalTek International - Carondelet Division

Manufacturing and Test Sequence (MTS) Coil Shim A COIL S/N 2

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OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON 11-1-05 FROM Pete D. SIGNED QUALITY MANAGER. SHADED BOXES NEED NOT BE SIGNED.	CAR	11-1-05
20	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, FOUNDRY MARK, TO THE PATTERN.		
30	MOLD	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS. MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/1300R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/1600R2		
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. HEAT # <u>29198</u> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <u>SR</u> Analyzed: <u>GT</u>	LG	4/28/05
50	MELT SOP 0800R2	SHAKEOUT		
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.		
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MINIMUM 4 HOURS AT 2050 F. AIR COOL.	DL5	6/20/05
80	GRIND GSWA SOP 0100R3 GCHI SOP 0100R2	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED. CHIP AND HAND GRIND SURFACE OF PART AS REQUIRED.		
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		
100	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"/> IF REJECTED CHECK HERE <input type="checkbox"/> MARK AND REPAIR AT STEP 1300R 140 IF WELDING IS REQUIRED. MAY PERFORM STEPS 110 AND 120 TOGETHER.	VT - LEVEL II K/A	12/27

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120	100% I.P. COP 0300 REV 10	I.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 2. IF OK CHECK HERE <u>✓</u> GO TO 150. IF REJECTED CHECK HERE <u>✓</u> MARK AND REPAIR AT STEP 130 OR 140 IF WELDING IS REQUIRED.	LP - LEVEL II	SSB 12-22-05
130	GRIND GCHI SOP 0100R2	HAND GRIND DEFECTS. CONFIRM REPAIRS VISUALL AND BY I.P. ACCEPTANCE AS NOTED ABOVE. IF OK, CHECK HERE <u>✓</u> AND GO TO STEP 170. IF WELDING IS NEEDED GO TO STEP 130. IF REPAIRS BY WELDING ARE REQUIRED DOCUMENT ON SUPPLEMENTAL MTS ON LAST PAGE.	CA	12/22/05
140 IF NEEDED				
150	CAF X-RAY DEFECTS REPAIRED BY WELDING COP 401 REV 5	X-RAY PER TECHNIQUE: SE-141-073-C SHIM. 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	12-16
160	X-RAY COP 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 <u>✓</u> AND SEND TO STEP 200. REJECTED CHECK HERE <u>✓</u> MARK UP DEFECTS, DOCUMENT REPAIRS ON S10 TO S70. REPEAT STEPS S10 TO S70 AS REQUIRED TILL WELDS CLEAR X-RAY.	RT - LEVEL II	12-16
170	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	QA ENG.	NA
180	LAYOUT SOP 0100 ORIGINAL	INSPECT CASTING TO VERIFY DIMENSIONS. THIS MAY BE PERFORMED EARLIER IF DESIRED. SUBMIT RPORT TO QA.		12-28
190	FINAL VISUAL INSPECTION COP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 2 ALL CONDITIONS. IF OK CHECK HERE <u>✓</u> IF REJECTED CHECK HERE <u>✓</u> MARK AND REPAIR DOCUMENT Rework ON A SUPPLEMENTAL MTS	VT - LEVEL II	12-28
200	FINAL I.P. COP 0300 REV 10	FINAL I.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 2 ALL AREAS. IF OK CHECK HERE <u>✓</u> WASH AND SEND TO NEXT STEP. IF REJECTED CHECK HERE <u>✓</u> MAKE REPAIRS AND DOCUMENT ON SUPPLEMENTL MTS.	LP - LEVEL II	SSB 12-29-05
210	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1 GRIND GCHI SOP 0100 REV 2	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT.		12-29-05
220	DOC. REVIEW	REVIEW DOCUMENTS ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (C OF C, M.T.R., SIGNED M.T.S., LAYOUT INSPECTION REPORT, X-RAY READER SHEETS AND HEAT TREAT CHARTS)		

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON _____ BY _____	Q ENG OR QA MGR	
	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL 12-14-04. Rev1 complete rewrite due to specification changes.	CARUD	
SUPPLEMENTAL MTS FOR WELD REPAIRS.				
S10	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS.		
S20	L.P. EXCAVATION COP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA- LEVEL 2.	LP - LEVEL II	LP - LEVEL II
S30	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS. 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 SEND REPORT ON ALL MAJOR WELDS, DEFINED AS OVER 20% OF WALL THICKNESS OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES TO CUSTOMER. MAJOR WELDS YES _____, REPORT SENT BY _____ DATE _____ NO MAJOR WELDS CHECK HERE _____ AND GO TO STEP 170.		
S40	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL USED: _____ QUALITY ENG. Name: _____ Date: _____		
S50	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MMN MOD REV 2		
S60	GRIND GCH SOP 0100R2	HAND GRIND WELDS.		
S70	L.P. WELD COP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 2. IF OK CHECK HERE _____ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 220.	LP - LEVEL II	LP - LEVEL II
	REPEAT	REPEAT STEPS S10 TO S70 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION.	QA ENG.	QA ENG.
S80	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 170. GRIND AS NEEDED TO REMEDIATE.		

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