



Manufacturing, Inspection and Test Plan For PVVS Die C Manufacture and Assembly

Procedure Number 03-8083-MITP-03 Rev. 0

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Customer Acceptance: _____ Date: _____
Purchaser



Job Number: 03-8083
Date: March 10, 2004

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PVVS Die Assemblies

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Job Number: 03-8083

Project Description: Manufacture and assembly of Die C to be used in forming of inconel sheets to be used in PVVS prototype.

Customer: Rohwedder Inc

Contract Number: 338302

Technical Specification: NCSX-CSPEC-121-01-01 Rev. 1, Rohwedder MIT Section 1.9

Quality Standard: ISO 9001:2000

Inspection Glossary

VP Indicates 'Verification' point.
WP Indicates 'Witness' point.
HP Indicates 'Hold' point.



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Customer Drawing List

Model file Name	Revision	Description
Cbtmplat.prt	4	Die C enclosure bottom plate
Ctopplat.prt	5	Die C enclosure top plate
Cside1.prt	5	Die C enclosure side plate #1
Cside2.prt	4	Die C enclosure side plate #2
Cside3.prt	4	Die C enclosure side plate #3
Cside4.prt	3	Die C enclosure side plate #4
Crib1.prt	6	Die C rib #1
Crib2.prt	6	Die C rib #2
Crib3.prt	6	Die C rib #3
Crib4.prt	6	Die C rib #4
Crib5.prt	6	Die C rib #5
Crib6.prt	6	Die C rib #6
Crib7.prt	6	Die C rib #7
Crib8.prt	6	Die C rib #8
Crib9.prt	6	Die C rib #9
Crib10.prt	6	Die C rib #10
Crib11.prt	6	Die C rib #11
Crib12.prt	6	Die C rib #12
Crib13.prt	6	Die C rib #13
Crib14.prt	6	Die C rib #14
Crib15.prt	6	Die C rib #15
Crib16.prt	6	Die C rib #16
Crib17.prt	6	Die C rib #17
Crib18.prt	5	Die C rib #18
Crib19.prt	5	Die C rib #19
Crib101.prt	8	Die C rib #101
Crib102.prt	6	Die C rib #101
Crib103.prt	7	Die C rib #103
Crib104.prt	5	Die C rib #104
Crib105.prt	5	Die C rib #105
Crib106.prt	5	Die C rib #106
Crib107.prt	5	Die C rib #107
Crib108.prt	5	Die C rib #108
Crib109.prt	5	Die C rib #109
Crib110.prt	5	Die C rib #110
Crib111.prt	5	Die C rib #111
Crib112.prt	5	Die C rib #112
Crib113.prt	5	Die C rib #113
Crib114.prt	6	Die C rib #114
Crib115.prt	6	Die C rib #115
Crib116.prt	6	Die C rib #116
Crib117.prt	6	Die C rib #117
Crib118.prt	6	Die C rib #118
Crib119.prt	6	Die C rib #119

PMW Drawing List



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Drawing Number	Revision	Description
03-8083-008	0	Die C bottom plate
03-8083-009	0	Die C top plate
03-8083-010	0	Die C side plate 1
03-8083-011	0	Die C side plate 2
03-8083-012	0	Die C side plate 3
03-8083-013	0	Die C side plate 4
03-8083-014	0	Die C Rib mounting hole

Supplier List

Material Supplier	Material Specification	Part Description	Supplier QA Program Level
Russel Metals	2" thick 44W Mild Steel Plate	Die base and side plates	CSA Z299.3-85
Superior Alloy Technology	1" thick 44W Mild Steel Plate	Die Ribs	Internal
Superior Alloy Technology	1/16" inconel plate	Scab Plate	Internal

Component Subcontractor	Address	Scope of Work	QA Program Level
Superior Alloy Technology	60 chemin de Tremblay, Boucherville, Quebec, J4B 6Z5	5-axis Water jet Die Ribs	Internal

Procedures Index:

Supplier	Procedure Number	Description	Revision	Quality Level
PMW	03-8083-P01 Part 1	Inspection and Test Control	1	ISO 9001:2000
PMW	03-8083-P01 Part 2	Inspection and Test Status	2	ISO 9001:2000
PMW	03-8083-P02	Control of Inspection, Measuring, and Test equipment	1	ISO 9001:2000
PMW	03-8083-P03 Part 1	Control of Non-conforming Product	1	ISO 9001:2000
PMW	03-8083-P03 Part 2	Corrective and Preventative Action	1	ISO 9001:2000
PMW	03-8083-P11	CMM Dimension and Tolerance Verification	0	ISO 9001:2000



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Manufacturing, Inspection and Test Plan Index:

Operation Series	Description
100	Receiving and Preparation
200	Manufacturing and In Process Inspections of Die Enclosure
300	Manufacturing and In Process Inspections of Die Ribs
400	Die Assembly and Inspections

Manufacturing, Inspection and Test Plan Process:

Operation	Description	PMW	Customer	Authorized Inspector
100	Receiving and Preparation			
101	Perform receiving of Die bottom, top and sides for enclosure (6 pieces) as per PMW Quality Manual incoming inspection procedures. Complete form F029. Once Inspection is complete proceed to Operation 200			
102	Perform receiving of individual die ribs (40 pieces) as per PMW Quality Manual Incoming Inspection Procedures using CMM with procedure 03-8083-P11. Complete form F029 for each rib. Once inspections are complete, dies may proceed to operations 300. (MIT section 1.9.4)			
200	Manufacturing and In Process Inspections of Die Enclosure (MIT section 1.9.5-1.9.6)			
201	Machine Die C bottom plate complete as per Drawing 03-8083-008			
202	Inspect Die C bottom plate as per 03-8083-P01 and 03-8083-P11.			
203	Machine Die C side plate 1 complete as per Drawing 03-8083-009			
204	Inspect Die C side plate 1 as per 03-8083-P01 and 03-8083-P11.			
205	Machine Die C side plate 2 complete as per Drawing 03-8083-0010			
206	Inspect Die C side plate 2 as per 03-8083-P01 and 03-8083-P11.			
207	Machine Die C side plate 3 complete as per Drawing 03-8083-011			
208	Inspect Die C side plate 3 as per 03-8083-P01 and 03-8083-P11.			
209	Machine Die C side plate 4 complete as per Drawing 03-8083-012			
210	Inspect Die C side plate 4 as per 03-8083-P01 and 03-8083-P11.			
211	Machine Die C top plate complete as per Drawing 03-8083-013			
212	Inspect Die C top plate as per 03-8083-P01 and 03-8083-P11.			
300	Manufacturing and In Process Inspections of Die Ribs (MIT section 1.9.7)			
301	Machine all Die Ribs as per drawing 03-8083-014			
302	Inspect all Die Ribs as per 03-8083-P01			



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Operation	Description	PMW	Customer	Authorized Inspector
400	Die Assembly and Inspections (MIT section 1.9.8-1.9.12)			
401	Fit and assemble Die C bottom plate, bottom side plate #1, and bottom side plate #2, and Die C bottom ribs			
402	Inspect Die C bottom assembly using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on Form F034			
405	Fit and assemble Die C top plate, top side plate #1, and top side plate #2, and Die A top ribs			
406	Inspect Die C top assembly using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on Form F034			
407	Fit and tack weld 1/16" inconel strips to top of both halves of die assembly to form scab plate			
408	Fully weld inconel strips to die ribs and grind and polish welds even to scab plate surface			
409	Inspect Die C bottom assembly with scab plate using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on F034			
410	Inspect Die C top assembly with scab plate using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on F034			
411	Drill 3/8" diameter holes at various locations in scab plate to be used later for marking reference points.			