



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

Procedure Number 03-8083-MITP-01

Prepared By: Tom Gilmore Date: 2004/01/20
Planner
Tom Gilmore, EIT
(Master copy signed at PMW)

Approved By: David Rioux Date: 2004/01/21
President
David Rioux, P. Eng.
(Master copy signed at PMW)

Approved By: Gary Armsrtong Date: 2004/01/21
Quality Assurance Manager
Gary Armstrong, CET
(Master copy signed at PMW)

Customer Acceptance: _____ Date: _____
Purchaser



Job Number: 03-8083	Manufacturing and Inspection Test Plan for	Page: 2 of 6
Date: January 18, 2004	PVVS Die Assemblies	Revision: 0

Manufacturing, Inspection and Test Plan

Revision: 0

Job Number: 03-8083

Project Description: Manufacture and assembly of dies 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.



Job Number: 03-8083	Manufacturing and Inspection Test Plan for	Page: 3 of 6
Date: January 18, 2004	PVVS Die Assemblies	Revision: 0

Customer Drawing List

Model file Name	Revision	Description
Abtmplat.prt	4	Die A enclosure bottom plate
Atopplat.prt	4	Die A enclosure top plate
Aside1.prt	6	Die A enclosure side plate #1
Aside2.prt	5	Die A enclosure side plate #2
Aside3.prt	11	Die A enclosure side plate #3
Aside4.prt	6	Die A enclosure side plate #4
Arib1.prt	9	Die A rib #1
Arib2.prt	8	Die A rib #2
Arib3.prt	8	Die A rib #3
Arib4.prt	7	Die A rib #4
Arib5.prt	8	Die A rib #5
Arib6.prt	7	Die A rib #6
Arib7.prt	8	Die A rib #7
Arib8.prt	9	Die A rib #8
Arib9.prt	7	Die A rib #9
Arib10.prt	7	Die A rib #10
Arib11.prt	7	Die A rib #11
Arib12.prt	7	Die A rib #12
Arib13.prt	7	Die A rib #13
Arib14.prt	7	Die A rib #14
Arib15.prt	8	Die A rib #15
Arib16.prt	8	Die A rib #16
Arib17.prt	8	Die A rib #17
Arib18.prt	8	Die A rib #18
Arib19.prt	8	Die A rib #19
Arib20.prt	9	Die A rib #20
Arib101.prt	12	Die A rib #101
Arib102.prt	9	Die A rib #101
Arib103.prt	9	Die A rib #103
Arib104.prt	9	Die A rib #104
Arib105.prt	9	Die A rib #105
Arib106.prt	9	Die A rib #106
Arib107.prt	9	Die A rib #107
Arib108.prt	9	Die A rib #108
Arib109.prt	9	Die A rib #109
Arib110.prt	9	Die A rib #110
Arib111.prt	10	Die A rib #111
Arib112.prt	10	Die A rib #112
Arib113.prt	10	Die A rib #113
Arib114.prt	10	Die A rib #114
Arib115.prt	11	Die A rib #115
Arib116.prt	10	Die A rib #116
Arib117.prt	9	Die A rib #117
Arib118.prt	10	Die A rib #118
Arib119.prt	9	Die A rib #119
Arib120.prt	7	Die A rib #120



Job Number: 03-8083	Manufacturing and Inspection Test Plan for	Page: 4 of 6
Date: January 18, 2004	PVVS Die Assemblies	Revision: 0

PMW Drawing List

Drawing Number	Revision	Description
03-8083-001	0	Die A bottom plate
03-8083-002	0	Die A side plate 1
03-8083-003	0	Die A side plate 2
03-8083-004	0	Die A side plate 3
03-8083-005	0	Die A side plate 4
03-8083-006	0	Die A top plate
03-8083-007	0	Die Rib mounting hole
03-8083-008	0	Die A Assembly

Supplier List

Material Supplier	Material Specification	Part Description	Supplier QA Program Level
Carbon Steel Profiles	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	1	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



Job Number: 03-8083	Manufacturing and Inspection Test Plan for	Page: 5 of 6
Date: January 18, 2004	PVVS Die Assemblies	Revision: 0

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 A bottom plate complete as per Drawing 03-8083-001			
202	Inspect Die A bottom plate as per 03-8083-P01			
203	Machine Die A side plate 1 complete as per Drawing 03-8083-002			
204	Inspect Die A side plate 1 as per 03-8083-P01			
205	Machine Die A side plate 2 complete as per Drawing 03-8083-003			
206	Inspect Die A side plate 2 as per 03-8083-P01			
207	Machine Die A side plate 3 complete as per Drawing 03-8083-004			
208	Inspect Die A side plate 3 as per 03-8083-P01			
209	Machine Die A side plate 4 complete as per Drawing 03-8083-005			
210	Inspect Die A side plate 4 as per 03-8083-P01			
211	Machine Die A top plate complete as per Drawing 03-8083-006			
212	Inspect Die A top plate as per 03-8083-P01			
300	Manufacturing and In Process Inspections of Die Ribs (MIT section 1.9.7)			
301	Machine all Die Ribs as per drawing 03-8083-106			
302	Inspect all Die Ribs as per 03-8083-P01			



Job Number: 03-8083	Manufacturing and Inspection Test Plan for	Page: 6 of 6
Date: January 18, 2004	PVVS Die Assemblies	Revision: 0

Operation	Description	PMW	Customer	Authorized Inspector
400	Die Assembly and Inspections (MIT section 1.9.8-1.9.12)			
401	Fit and assemble Die A bottom plate, bottom side plate #1, and bottom side plate #2, and Die A bottom ribs as per drawing 03-8083-008			
402	Inspect Die A 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 A top plate, top side plate #1, and top side plate #2, and Die A top ribs as per drawing 03-8083-008			
406	Inspect Die A top assembly using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on Form F034			
407	Cover Die ribs with 1/16" inconel scab plate			
408	Press die top and die bottom together to form scab plate to die profile			
409	Lightly tack weld 1/16" Inconel scab plate to Die A bottom assembly			
410	Lightly tack weld 1/16" Inconel scab plate to Die A top assembly			
411	Inspect Die A bottom assembly with scab plate using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on F034			
412	Inspect Die A top assembly with scab plate using CMM as per procedures 03-8083-P01, 03-8083-P02, 03-8083-P11 and record results on F034			
413	Fully plug weld scab plate into place on die ribs.			