



## PVVS Segment Tack & Final Weld Procedure

### Procedure Number 03-8083-WPS01

(PQR No: T/GP-2-F-P43-PMW1)

(Covers former WPS02, ~~WPS03~~, WPS04 and WPS05)

WPS01,

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PRECISION METAL WORKS LTD.

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Preliminary Welding Procedure Specification (PwWPS)

PQR No.: T/GP-2-F-P43-FMW1 Date: 1/20/2004 Page: 1 of 2

Test requirements: Standard tests Bend test type: Transverse

<p><b>Joint Design (QW-402)</b> Weld Type: <u>Groove weld</u> <u>Single-V groove</u> Backing: <u>Back-gouged and back welded</u> Root Opening: <u>1/8</u> in. Root Face: <u>1/8</u> in. Groove Angle: <u>75</u> °</p>	<p><b>Base Metals (QW-403)</b> Specification type and grade: <u>SB-366, N06625</u> to <u>SB-366, N06625</u> P-No.: <u>43</u> to P-No.: <u>43</u> Thickness (in.): <u>0.375</u></p> <p><b>Preheat (QW-406)</b> Minimum Preheat Temperature: <u>60</u> °F Preheat Maintenance: <u>N/A</u> Maximum Interpass Temperature: <u>200</u> °F Preheat when material is damp. Provide heat that will not contaminate surface by using indirect heat, natural gas, infrared or propane heater.</p> <p><b>Postweld Heat Treatment (QW-407)</b> Type: <u>No PWHT performed</u> PWHT Temperature: <u>None</u> °F PWHT holding time: <u>None</u> hr</p>
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Initial Cleaning: Degrease if necessary, Stainless steel wire brush clean 1" minimum on each side of joint.

Method of Back Gouging: Grinding

<p><b>First Process:</b> <u>GTAW</u> <b>Filler Metals (QW-404)</b> AWS Classification: <u>ERNiCrMo-3</u> SAE Spec.: <u>5,14</u> F-No.: <u>43</u> A-No. / Chem. Comp.: <u>N/A</u> Filler Metal Product Form: <u>Bare (Solid)</u> Filler Metal Trade Name: <u>N/R</u> Consumable Inert: <u>None</u> Weld Deposit <math>\gamma</math> (in.): <u>3/16</u> GTAW Flux: <u>None</u> Size of Filler Metal: <u>1/16</u></p> <p><b>Positions (QW-405)</b> Position of joint: <u>IG - Flat</u> Weld progression: <u>N/A</u></p> <p><b>Gas (QW-408)</b> Shielding: <u>100% Argon</u> / <u>15-20</u> CFH Backing: <u>None</u> / <u>-</u> CFH Trailing: <u>None</u> / <u>-</u> CFH</p>	<p><b>Type:</b> <u>Manual</u> <b>Electrical Characteristics (QW-409)</b> Current type / Polarity: <u>DCEN (straight)</u> Tungsten Type: <u>EWTh-2</u> Size: <u>3/32"</u> Pulsed Current: <u>None</u></p> <p><b>Welding Details</b></p> <table border="1"> <tr> <td>Filler Metal Size (in.):</td> <td><u>1/16</u></td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td>Amperage Used:</td> <td><u>100-120</u></td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td>Voltage Used:</td> <td><u>10-14</u></td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td>Travel Speed (in/min):</td> <td><u>Min. 3.5</u></td> <td><u>-</u></td> <td><u>-</u></td> </tr> <tr> <td>Heat Input (J/in):</td> <td><u>-</u></td> <td><u>-</u></td> <td><u>-</u></td> </tr> </table> <p><b>Technique (QW-410)</b> String / Weave Bead: <u>String bead</u> Nozzle / Gas Cup Size: <u>1/2"</u> Mult. / Single Pass (PerSide): <u>Single and multipass</u></p>	Filler Metal Size (in.):	<u>1/16</u>	<u>-</u>	<u>-</u>	Amperage Used:	<u>100-120</u>	<u>-</u>	<u>-</u>	Voltage Used:	<u>10-14</u>	<u>-</u>	<u>-</u>	Travel Speed (in/min):	<u>Min. 3.5</u>	<u>-</u>	<u>-</u>	Heat Input (J/in):	<u>-</u>	<u>-</u>	<u>-</u>
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Heat Input (J/in):	<u>-</u>	<u>-</u>	<u>-</u>																		

Gas lens required.

Filler wire to be added continuously.

WELDING SEQUENCE:

- 1) GTAW Root pass from inside
- 2) Back gouge from outside and GTAW one pass outside.
- 3) GMAW-P outside

Heat input not to exceed 30,000 J/in. Adhere to minimum weld speeds.

PRECISION METAL WORKS LTD.  
 Preliminary Welding Procedure Specification (PreWPS)

PQR No.: T/GP-2-F-P43-PMWI

Date: 1/20/2004 Page: 2 of 2

Test requirements:	Standard tests	Bond test type:	Transverse
Weld Process:	GMAW	Type:	Semiautomatic
Filler Metals (QW-404)		Electrical Characteristics (QW-409)	
AWS Classification:	ERNiCrMo-3	Current type / Polarity:	DCEP (reverse)
SFA Spec.:	5.14 P-No.: 43	Transfer Mode:	Pulsating arc
A-No. / Chem. Comp.:	N/A	Welding Details	
Filler Metal Product Form:	Bare (Solid)	Filler Metal Size (in.):	0.035
Filler Metal Trade Name:	N/R	Amperage Used:	-
Weld Deposit 'r' (in.):	3/16	Wire Feed Speed:	400-450
Pass Greater Than 1/8":	False	Voltage Used:	-
Supplemental Filler Metal:	None	Travel Speed (in/min):	18-22
Size of Filler Metal:	0.035	Heat Input (J/in):	
Positions (QW-405)		Technique (QW-410)	
Position of joint:	1G - Flat	String / Weave Bead:	String bead
Weld progression:	N/A	Nozzle / Gas Cup Size:	5/8"
Gas (QW-408)		Contact Tube to Work Distance:	3/8-1/2"
Shielding:	75% Argon, 25% He / 40-50 CFH	Mult. / Single Pass (Per Side):	Single and multipass
Backing:	None / - CFH		
Trailing:	None / - CFH		

Miller XMT 304 with 60M wire feeder.

Program ID # 1 (should be for 0.035" wire, 75Ar/25He)

Trim 24-30. Check also with 40-50.

Use non-adaptive mode to give welder more control of welding.

Amperes and Volts determined by programme. Record values obtained on PQR for each pass along with interpass temperature at start of new pass.

LIGHTLY GRIND SURFACES BETWEEN PASSES TO REMOVE SURFACE OXIDE. WIRE BRUSHING IS INSUFFICIENT.