

PRECISION
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PVVS Segment Tube to Flange Weld

Procedure Number 03-8083-WPS03


(PQR No: T/GP-2-F-P8/P43-PMW1)

Prepared By:
Planner

Tom Gilmore 
Tom Gilmore, EIT
(Master copy signed at PMW)

Date: 2004/01/26

Approved By:
President

David Rioux 
David Rioux, P. Eng.
(Master copy signed at PMW)

Date: 2004/01/27

Approved By:
Quality Assurance Manager

Gary Armstrong 
Gary Armstrong, CET
(Master copy signed at PMW)

Date: 2004/01/27

Customer Acceptance:
Purchaser

_____ Date: _____

PRECISION METAL WORKS LTD.

P.O. Box 3611, Station "B"
Fredericton, N.B., B3A 5L7

Preliminary Welding Procedure Specification (PreWPS)

PQR No.: T/CF-2-F-P8/P43-FMW1

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Test requirements: Standard tests

Bend test type: Longitudinal

<p>Joint Design (QW-402) Weld Type: <u>Groove weld</u> <u>Single-V groove</u></p> <p>Becking: <u>Back-gouged and back welded</u></p> <p>Root Opening: <u>1/8</u> in. Root Face: <u>1/8</u> in.</p> <p>Groove Angle: <u>75</u> °</p>	<p>Base Metals (QW-403) Specification type and grade: _____ to _____</p> <p>P-No.: <u>8</u> Group No.: _____ to P-No.: <u>43</u></p> <p>Thickness (in.): <u>0.375</u></p> <p>Preheat (QW-406) 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>Postweld Heat Treatment (QW-407) 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: Depress if necessary. Stainless steel wire brush clean 1" minimum on each side of joint.

Method of Back Gouging: Grinding

<p>First Process: <u>GTAW</u></p> <p>Filler Metals (QW-404) AWS Classification: <u>ERNiCrMo-3</u></p> <p>SFA Spec.: <u>5.14</u> F-No.: <u>43</u></p> <p>A-No. / Chem. Comp.: <u>N/A</u></p> <p>Filler Metal Product Form: <u>Bare (Solid)</u></p> <p>Filler Metal Trade Name: <u>N/R</u></p> <p>Consumable Inert: <u>None</u></p> <p>Weld Deposit 'r' (in.): <u>3/16</u></p> <p>GTAW Flux: <u>None</u></p> <p>Size of Filler Metal: <u>1/16</u></p> <p>Positions (QW-405) Position of joint: <u>1G - Flat</u></p> <p>Weld progression: <u>N/A</u></p> <p>Gas (QW-408) 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>Type: <u>Manual</u></p> <p>Electrical Characteristics (QW-409) Current type / Polarity: <u>DCEN (straight)</u></p> <p>Tungsten Type: <u>EWTh-2</u> Size: <u>3/32"</u></p> <p>Pulsed Current: <u>None</u></p> <p>Welding Details</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> </table> <p>Heat Input (J/in): _____</p> <p>Technique (QW-410) String / Weave Bead: <u>String bead</u></p> <p>Nozzle / Gas Cup Size: <u>1/2"</u></p> <p>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>
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>														

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.

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Preliminary Welding Procedure Specification (PreWPS)

PQR No.: T/CP-2-F-P8/P43-PMW1

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Test requirements:	Standard tests	Bend test type:	<u>Longitudinal</u>
Second Process:	<u>GMAW</u>	Type:	<u>Semiautomatic</u>
Filler Metals (QW-404)		Electrical Characteristics (QW-409)	
AWS Classification:	<u>ERNiCrMo-3</u>	Current type / Polarity:	<u>DCEP (reverse)</u>
SFA Spec.: <u>5.14</u>	F-No.: <u>43</u>	Transfer Mode:	<u>Pulsating arc</u>
A-No. / Chem. Comp.:	<u>N/A</u>	Welding Details	
Filler Metal Product Form:	<u>Barc (Solid)</u>	Filler Metal Size (in.):	<u>0.035</u>
Filler Metal Trade Name:	<u>N/R</u>	Amperage Used:	<u>-</u>
Weld Deposit 'r' (in.):	<u>3/16</u>	Wire Feed Speed:	<u>400-450</u>
Pass Greater Than 1/8":	<u>Pulse</u>	Voltage Used:	<u>-</u>
Supplemental Filler Metal:	<u>None</u>	Travel Speed (in/min):	<u>18-22</u>
Size of Filler Metal:	<u>0.035</u>	Heat Input (J/in):	<u>-</u>
Positions (QW-405)		Technique (QW-410)	
Position of joint:	<u>1G - Flat</u>	String / Weave Bead:	<u>String bead</u>
Weld progression:	<u>N/A</u>	Nozzle / Gas Cup Size:	<u>5/8"</u>
Gas (QW-406)		Contact Tube to Work Distance:	<u>3/8-1/2"</u>
Shielding:	<u>75% Argon, 25% He</u> / <u>40-50</u> CPH	Mult. / Single Pass (PerSide):	<u>Single and multipass</u>
Backing:	<u>None</u> / <u>-</u> CPH		
Trailing:	<u>None</u> / <u>-</u> CPH		

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.