

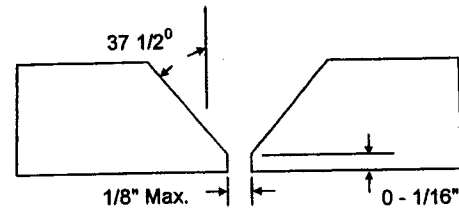
WPS NO: CA - 01
 Issue Date: January 1, 2009

Revision No: 2
 Revision Date: September 25, 2009

Welding Processes: GTAW/SMAW
 Type: Manual

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Maximum deposited pass thickness shall not exceed 1/2". Filler metal must be added for all GTAW passes.
This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/8" Maximum
 Retainers: N/A
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:
 Temperature: 50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

TYPICAL SKETCH
POSTWELD HEAT TREATMENT: (QW-407)
 Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS: (QW-404)

	GTAW	SMAW
Process:	GTAW	SMAW
SFA No:	5.18	5.1
AWS No:	ER70S-2	E7018
F-No:	6	4
A-No:	1	1
Maximum Deposited Thickness:	1/8" - Groove -	3/4"
Electrode Flux:	N/A	N/A
Consumable Insert:	N/A	N/A
Other:	None	None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	Argon	100%	15 - 20 cfm
Backing:	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)
 Tungsten Electrode: 3/32" or 1/8" diameter EWLa-1.5 (1.5% Lanthanated)
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE: (QW-410)
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/16" - 3/8"
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other
		Class	Diameter	Polarity	Amps.		
Root	GTAW	ER70S-2	3/32"	DCSP	70 - 140	10 - 15	N/A
Root	GTAW	ER70S-2	1/8"	DCSP	70 - 140	10 - 15	N/A
Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A
Fill & Cap	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A

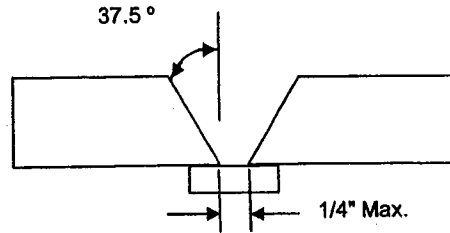
WPS NO: CA - 02
 Issue Date: January 1, 2009

Revision No: 1
 Revision Date: April 2, 2009

Welding Processes: SMAW
 Type: Manual

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No. 1
 Root Spacing: 1/4" Maximum
 Retainers: N/A
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

TYPICAL SKETCH
POSTWELD HEAT TREATMENT: (QW-407)
 Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT:
 Temperature: 50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

FILLER METALS: (QW-404)
 Process: SMAW
 SFA No: 5.1
 AWS No: E7018
 F-No: 4
 A-No: 1
 Max. Deposited Thickness: 3/4" - Groove -
 Electrode Flux: N/A
 Other: None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)
 Tungsten Electrode: N/A
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE: (QW-410)
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: N/A
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other
		Class	Diameter		Amps.			
Root, Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A	
Root, Fill & Cap	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A	

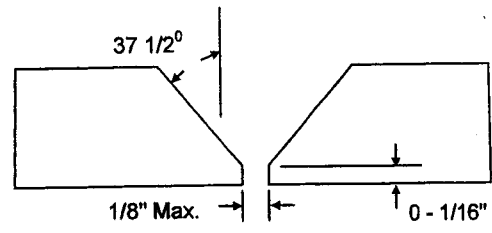
WPS NO: CA - 03
 Issue Date: January 1, 2009

Revision No: 2
 Revision Date: September 25, 2009

Welding Processes: GTAW/SMAW
 Type: Manual

BASE METALS:
 P-No: 8 to P No: 8
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Maximum deposited pass thickness not to exceed 1/2". Filler metal must be added for all GTAW passes.
This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/8" Maximum
 Retainers: None
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:
 Temperature: 50°F Minimum
 Interpass Temp: 350°F Maximum
 Preheat Maint: Throughout all welding

TYPICAL SKETCH
POSTWELD HEAT TREATMENT: (QW-407)
 Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS: (QW-404)

	GTAW	SMAW
Process:	GTAW	SMAW
SFA No:	5.9	5.4
AWS No:	ER309/309L	E309/309L-16
F-No:	6	5
A-No:	8	8
Maximum Deposited Thickness:	1/8" - Groove -	3/4"
Electrode Flux:	N/A	N/A
Consumable Insert:	N/A	N/A
Other:	None	None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	Argon	100%	10 - 20 cfh
Backing	Argon	100%	5 - 15 cfh
Shielding (GMAW):	N/A	N/A	N/A
Trailing:	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)
 Tungsten Electrode: 3/32" or 1/8" diameter EWLa-1.5 (1.5% Lanthanated)
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE: (QW-410)
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/16" to 3/8"
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other
		Class	Diameter		Amps.			
Root	GTAW	ER309/309L	3/32"	DCSP	80 - 110	10 - 14	N/A	
or Root	GTAW	ER309/309L	1/8"	DCSP	100 - 130	10 - 14	N/A	
Fill & Cap	SMAW	E309/309L-16	3/32"	DCRP	40 - 70	18 - 26	N/A	
and / or Fill & Cap	SMAW	E309/309L-16	1/8"	DCRP	60 - 100	18 - 26	N/A	

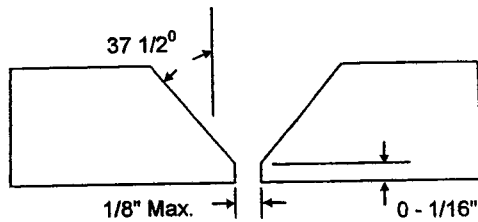
WPS NO: CA - 04
 Issue Date: January 1, 2009

Revision No: 1
 Revision Date: April 2, 2009

Welding Processes: SMAW
 Type: Manual

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/8" Maximum
 Retainers: N/A
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

TYPICAL SKETCH
POSTWELD HEAT TREATMENT:
 Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT:
 Temperature
 Interpass Temp: 50°F Minimum
600°F Maximum
 Preheat Maint: Throughout all welding

FILLER METALS:

	SMAW		SMAW
Process:	<u>5.1</u>		<u>5.1</u>
SFA No:	<u>E6010</u>		<u>E7018</u>
AWS No:	<u>3</u>		<u>4</u>
F-No:	<u>1</u>		<u>1</u>
A-No:	<u>1</u>		<u>1</u>
Maximum Deposited Thickness:	<u>1/8"</u>	- Groove -	<u>3/4"</u>
Electrode Flux:	<u>N/A</u>		<u>N/A</u>
Consumable Insert:	<u>N/A</u>		<u>N/A</u>
Other:	<u>None</u>		<u>None</u>

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Backing	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Shielding (FCAW):	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

TECHNIQUE:
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: N/A
 Oscillation: N/A
 Nozzle to Work Distance: N/A

ELECTRICAL CHARACTERISTICS:
 Tungsten Electrode: N/A
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A
 Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other
		Class	Diameter		Amps.			
Root	SMAW	E6010	3/32"	DCRP	40 - 70	18 - 26	N/A	
or Root	SMAW	E6010	1/8"	DCRP	75 - 130	18 - 26	N/A	
Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A	
and / or Fill & Cap	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A	

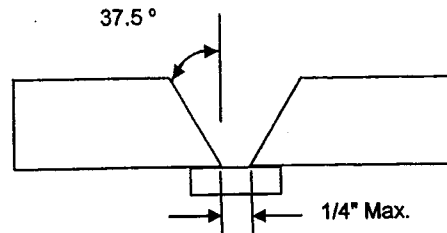
WPS NO: CA - 05
 Issue Date: January 1, 2009

Revision No: 1
 Revision Date: April 2, 2009

Welding Processes: FCAW
 Type: Semi-Automatic

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: 1/16" - 3/4" Diameter Range: All Groove: All
 Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No. 1
 Root Spacing: 1/4" Maximum
 Retainers: N/A
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

TYPICAL SKETCH
POSTWELD HEAT TREATMENT: (QW-407)
 Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT: Temperature
 Interpass Temp: 50°F Minimum
600°F Maximum
 Preheat Maint: Throughout all welding

FILLER METALS: (QW-404)
 Process: FCAW
 SFA No: 5.20
 AWS No: E71T-1M
 F-No: 6
 A-No: 1
 Max. Deposited Thickness: 3/4" - Groove -
 Other: None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	Argon/CO ₂	75%/25%	25 - 30 cfh

TECHNIQUE: (QW-410)
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 1/2"

ELECTRICAL CHARACTERISTICS: (QW-409)
 Tungsten Electrode: N/A
 Metal Transfer Mode: Spray
 Wire Feed Speed: 300 - 750 ipm
 Current Pulsing: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 3/4"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Other
		Class	Diameter		Amps.	Volts	
Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-1M	0.035"	DCRP	130 - 180	22 - 28	N/A
Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-1M	0.045"	DCRP	130 - 180	22 - 28	N/A
Root, Fill & Cap	FCAW	E71T-1M	0.062"	DCRP	130 - 180	22 - 28	N/A

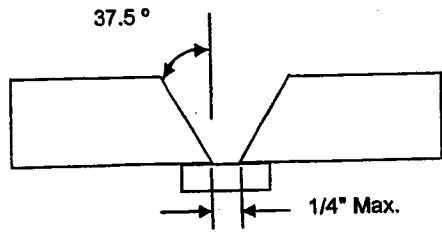
WPS NO: CA - 06
 Issue Date: January 1, 2009

Revision No: 0
 Revision Date: January 1, 2009

Welding Processes: FCAW
 Type: Semi Automatic

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Self Shielded FCAW - Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No 1
 Root Spacing: 1/4" Maximum
 Retainers: None
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

TYPICAL SKETCH
POSTWELD HEAT TREATMENT:
 Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT:
 Temperature: 50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

FILLER METALS:
 Process: FCAW
 SFA No: 5.20
 AWS No: E71T-11
 F-No: 6
 A-No: 1
 Maximum Deposited Thickness: 3/4" - Groove -
 Other: None

GAS:	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:
 Tungsten Electrode: N/A
 Metal Transfer Mode: Spray
 Wire Feed Speed: 150 - 275 ipm
 Current Pulsing: N/A

TECHNIQUE:
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 3/4" - 1"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 1/2"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other
		Class	Diameter	Polarity	Amps.		
Root, Fill & Cap	FCAW	E71T-11	0.035"	DC-SP	160 - 220	20 - 26	N/A
Root, Fill & Cap	FCAW	E71T-11	0.045"	DC-SP	160 - 220	20 - 26	N/A
Root, Fill & Cap	FCAW	E71T-11	0.062"	DC-SP	160 - 220	20 - 26	N/A

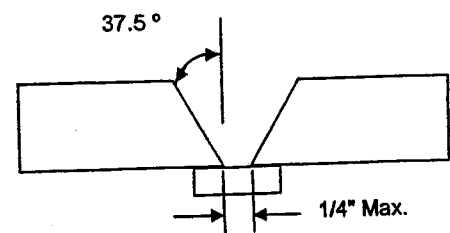
WPS NO: CA - 07
 Issue Date: January 1, 2009

Revision No: 0
 Revision Date: January 1, 2009

Welding Processes: FCAW
 Type: Semi Automatic

BASE METALS:
 P-No: 1 to P No: 1
 Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All
 Other: Self Shielded FCAW - Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:
 Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No 1
 Root Spacing: 1/4" Maximum
 Retainers: None
 Other: None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Down

TYPICAL SKETCH
POSTWELD HEAT TREATMENT:
 Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT:
 Temperature
 Interpass Temp: 50°F Minimum
600°F Maximum
 Preheat Maint: Throughout all welding

FILLER METALS:
 Process: FCAW
 SFA No: 5.20
 AWS No: E71T-11
 F-No: 6
 A-No: 1
 Maximum Deposited Thickness: 3/4" - Groove -
 Other: None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:
 Tungsten Electrode: N/A
 Metal Transfer Mode: Spray
 Wire Feed Speed: 150 - 275 ipm
 Current Pulsing: N/A

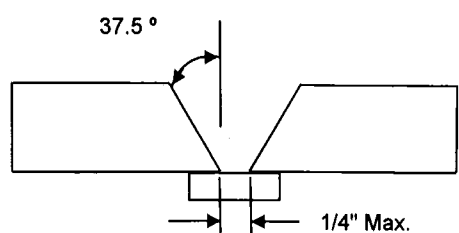
TECHNIQUE:
 Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 3/4" - 1"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 1/2"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other
		Class	Diameter	Polarity	Amps.		
Root, Fill & Cap	FCAW	E71T-11	0.035"	DC-SP	160 - 220	20 - 26	N/A
Root, Fill & Cap	FCAW	E71T-11	0.045"	DC-SP	160 - 220	20 - 26	N/A
Root, Fill & Cap	FCAW	E71T-11	0.062"	DC-SP	160 - 220	20 - 26	N/A

WPS NO: CA - 08Issue Date: June 10, 2015Revision No: 0Revision Date: June 10, 2015Welding Processes: FCAWType: Semi-Automatic

BASE METALS:								
P-No: <u>1</u>		to		P No: <u>1</u>				
Base Metal Thickness Range:		Groove: <u>1/16" - 3/4"</u>		Diameter Range:		Groove: <u>All</u>		
Other: <u>Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.</u>								
JOINTS:				 <p>TYPICAL SKETCH</p>				
Joint Design: <u>Vee - Groove</u>								
Backing (Type): <u>Metal</u>								
Material: <u>P-No. 1</u>								
Root Spacing: <u>1/4"</u> Maximum								
Retainers: <u>N/A</u>								
Other: <u>None</u>								
POSITIONS:				POSTWELD HEAT TREATMENT: (QW-407)				
Groove Position: <u>All</u>				Temp Range: <u>None</u>				
Weld Progression: <u>Vertical Up</u>				Time Range: <u>N/A</u>				
				Other: <u>N/A</u>				
PREHEAT:				GAS: (QW-408)				
Temperature				Gas		Composition		
<u>50°F</u> Minimum				<u>N/A</u>		<u>N/A</u>		
Interpass Temp: <u>600°F</u> Maximum				Shielding (GTAW): <u>N/A</u>		<u>N/A</u>		
Preheat Maint: <u>Throughout all welding</u>				Backing: <u>N/A</u>		<u>N/A</u>		
				Shielding (FCAW): <u>Argon/CO₂</u>		<u>75%/25%</u>		
						<u>25 - 30 cfh</u>		
FILLER METALS: (QW-404)				ELECTRICAL CHARACTERISTICS: (QW-409)				
Process: <u>FCAW</u>				Tungsten Electrode: <u>N/A</u>				
SFA No: <u>5.20</u>				Metal Transfer Mode: <u>Spray</u>				
AWS No: <u>E71T-12M</u>				Wire Feed Speed: <u>300 - 750 ipm</u>				
F-No: <u>6</u>				Current Pulsing: <u>N/A</u>				
A-No: <u>1</u>								
Max. Deposited Thickness: <u>3/4"</u> - Groove -								
Other: <u>None</u>								
TECHNIQUE: (QW-410)								
Beads-Stringer or Weave: <u>Stringer or Weave</u>				Passes Per Side: <u>Single or Multiple</u>				
Cup or Nozzle Size: <u>5/8"</u>				Peening: <u>Not Allowed</u>				
Oscillation: <u>N/A</u>				Electrode Stickout: <u>3/4"</u>				
Nozzle to Work Distance: <u>1/2"</u>				No. Electrodes: <u>Single</u>				
INITIAL/INTERPASS CLEANING: <u>As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.</u>								
BACK GOUGE: <u>None.</u>								
Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-12M	0.035"	DCRP	130 - 180	22 - 28	N/A	
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-12M	0.045"	DCRP	130 - 180	22 - 28	N/A	
Root, Fill & Cap	FCAW	E71T-12M	0.062"	DCRP	130 - 180	22 - 28	N/A	

WPS NO: CA - 09
 Issue Date: September 22, 2015

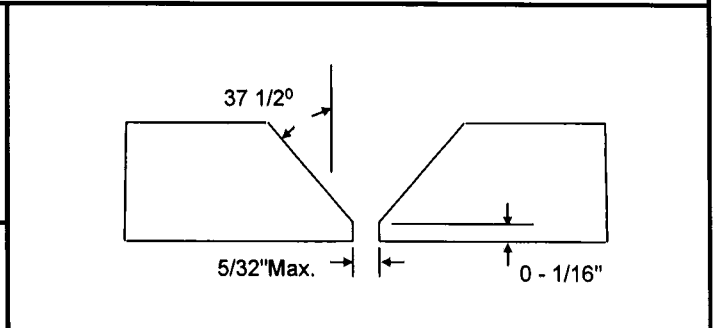
Revision No: 0
 Revision Date: September 22, 2015

Welding Processes: GTAW/SMAW
 Type: Manual

BASE METALS:
 P-No: 43 to P No: 43
Base Metal Thickness Range: Groove: 1/16" - 3/4" **Diameter Range:** Groove: All
 Other: Maximum deposited pass thickness not to exceed 1/2". Filler metal must be added for all GTAW passes. This WPS intended for performance qualification only.

JOINTS:

	GTAW	SMAW
Joint Design:	Vee - Groove	Vee-Groove
Backing (Type):	Gas	Metal
Material:	Argon	P-No. 43
Root Spacing:	5/32" Maximum	1/4"
Retainers:	None	None
Other:	None	None



POSITIONS:
 Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:

	Temperature
Interpass Temp:	50°F Minimum
Preheat Maint:	350°F Maximum
	Throughout all welding

POSTWELD HEAT TREATMENT: (QW-407)

Temp Range:	None
Time Range:	N/A
Other:	N/A

FILLER METALS: (QW-404)

	GTAW	SMAW
Process:	GTAW	SMAW
SFA No:	5.14	5.11
AWS No:	ERNiCr-3	ENiCrFe-3
F-No:	43	43
A-No:	N/A	N/A
Maximum Deposited Thickness:	1/8" - Groove -	3/4"
Electrode Flux:	N/A	N/A
Consumable Insert:	N/A	N/A
Other:	None	None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	Argon	100%	10 - 20 cfh
Backing	Argon	100%	5 - 15 cfh
Shielding (GMAW):	N/A	N/A	N/A
Trailing:	N/A	N/A	N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave:	Stringer or Weave
Cup or Nozzle Size:	5/16" to 3/8"
Oscillation:	N/A
Nozzle to Work Distance:	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode:	3/32" or 1/8" diameter EWLa-1.5 (1.5% Lanthanated)
Metal Transfer Mode:	N/A
Wire Feed Speed:	N/A
Current Pulsing:	N/A
Passes Per Side:	Single or Multiple
Peening:	Not Allowed
Electrode Stickout:	N/A
No. Electrodes:	Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Other
		Class	Diameter		Amps.	Volts	
Root or Root	GTAW	ERNiCr-3	3/32"	DCSP	95-200	10 - 13	N/A
Fill & Cap and / or Fill & Cap	GTAW	ERNiCr-3	1/8"	DCSP	95-200	10 - 13	N/A
	SMAW	ENiCrFe-3	3/32"	DCRP	40-65	24-28	N/A
	SMAW	ENiCrFe-3	1/8"	DCRP	65-95	26-30	N/A