

Crown ER 320LR

Gas Metal Arc Welding
(GMAW) MIG Wire

Gas Tungsten Arc Welding
(GTAW) TIG Wire

Stainless Steel Alloy



Austenitic Stainless Steel Welding Wire

Typical Applications

Crown ER 320LR is used for welding base metals with similar composition including Alloy 20 & Carpenter 20Cb-3*. This alloy resists severe corrosion involving a wide range of chemicals, including sulfuric and sulfurous acids and their salts. **Crown ER 320LR** has the same basic composition as ER 320, except the carbon, silicon, phosphorus and sulfur levels are kept at lower levels and the niobium and manganese are controlled at narrower ranges. These tighter ranges or low residuals (LR) reduce hot cracking and micro-fissuring (while maintaining corrosion resistance) frequently encountered in fully austenitic stainless steel weld metals. **Crown ER 320LR** exhibits outstanding oxidation and corrosion resistance and is able to withstand high temperatures and scaling. The aforementioned properties make the **Crown ER 320LR** ideal for the welding of stainless steel pipe lines, pump impellers, agitators, vacuum rotors, heat exchangers and tanks.

Specifications

AWS A5.9/A5.9M

- Tensile Strength 86,000 psi (typical)
- Yield Strength 58,000 psi (typical)
- Elongation in 2" up to 38%

Procedure

GMAW (MIG) Welding Parameters

Short Circuit Transfer Welding

Use DC reverse polarity (DCEP). Settings based on [90% Helium - 7½% Argon - 2½% CO₂] shielding gas.

Wire Diameter (inches)	Welding Current (amperage)	Arc Voltage (volts)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.035	55 – 170	18 – 23	120 – 250	20 – 25
.045	95 – 185	18 – 23	135 – 240	20 – 25

Spray Transfer Welding

Use DC reverse polarity (DCEP). Settings based on Argon and 1 to 5 percent Oxygen shielding gas.

.035	160 – 220	22 – 25	300 – 500	30 – 40
.045	195 – 270	23 – 27	250 – 400	30 – 45

GTAW (TIG) Welding Parameters

Manual Welding – DC straight polarity DCEN

Shielding gas: Pure argon is suggested for thickness up to approximately 1/2". For thicker sections, argon-helium mixtures or pure helium may be used for deeper penetration. Argon-hydrogen mixtures are occasionally used to improve bead shape and wettability.

Tungsten: Traditional choice is a 2% thoriated tungsten (Red Band), however, the more recent and safer introductions of 2% ceriated tungsten (Orange Band) or 1.5% lanthanated tungsten (Gold Band) have demonstrated superior performance in most applications.

Safety note: Thorium is radioactive & may present risks which are negligible under normal conditions of use.

Metal Thickness	Joint Type	Tungsten Diameter	Filler Rod Diameter	Arc Voltage (volts)	Welding Current (amperage)	Gas Flow (cfh)
.045"	All	.040	.045	5 – 10	30 – 50	10-15
1/16"	Butt/Corner	1/16	1/16	9 – 16	50 – 70	15
1/16"	Lap/Fillet	1/16	1/16	10 – 16	60 – 80	15
1/8"	Butt/Corner	1/16 to 3/32	3/32	12 – 18	70 – 90	15
1/8"	Lap/Fillet	1/16 to 3/32	3/32	12 – 18	90 – 115	15
3/16" & up	Butt/Corner	3/32	1/8	14 – 20	105 – 200	20
3/16" & up	Lap/Fillet	3/32	1/8	14 – 20	130 – 210	20

All suggested settings are approximate. Inverter-based welders generally require less heat input (lower amps). Welds should be tested to comply to your specifications.

Sizes and Part Numbers

TIG Diameter	Part Numbers	
	1# Package	10# Package
1/16 x 36"	ST320/TL-BP	ST320/TL
3/32 x 36"	ST320/TN-BP	ST320/TN
1/8 x 36"	ST320/TO-BP	ST320/TO

MIG Diameter	Part Numbers		
	2 lb (4") Spools	8" Spools	30lb Spools
.035	SS320/1F	SS320/2F	SS320/3F
.045	SS320/1G	SS320/2G	SS320/3G

*Carpenter 20Cb-3 is a registered trademark of Carpenter Technology Corporation



!!!! WARNING !!!!



WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).

THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.

SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.

