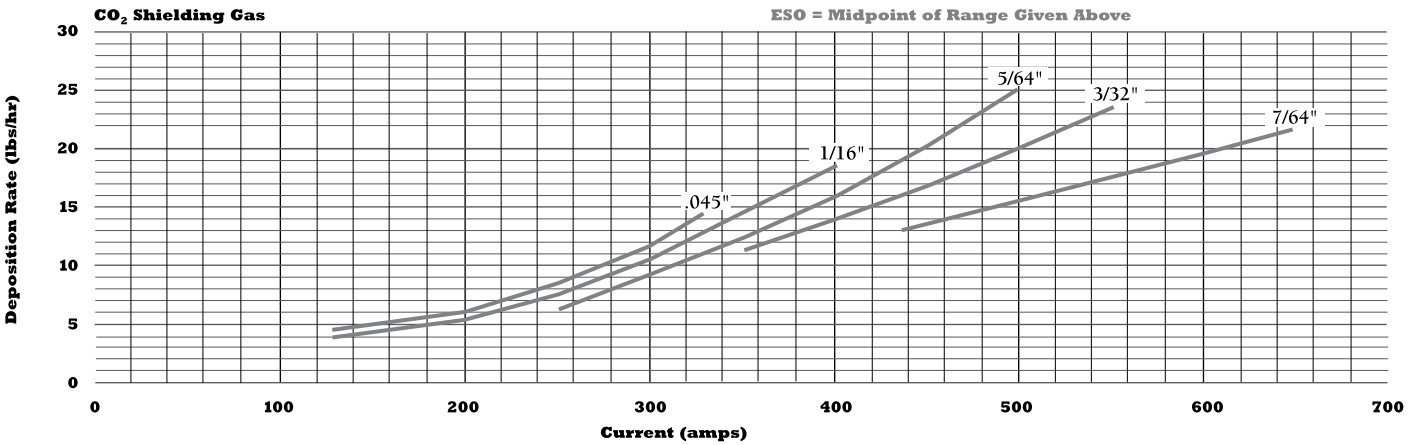


**Recommended Welding Parameters:  
Carbon & Low Alloy Steel Electrodes - Flux Cored - Flat and Horizontal - CO<sub>2</sub> - DCEP**

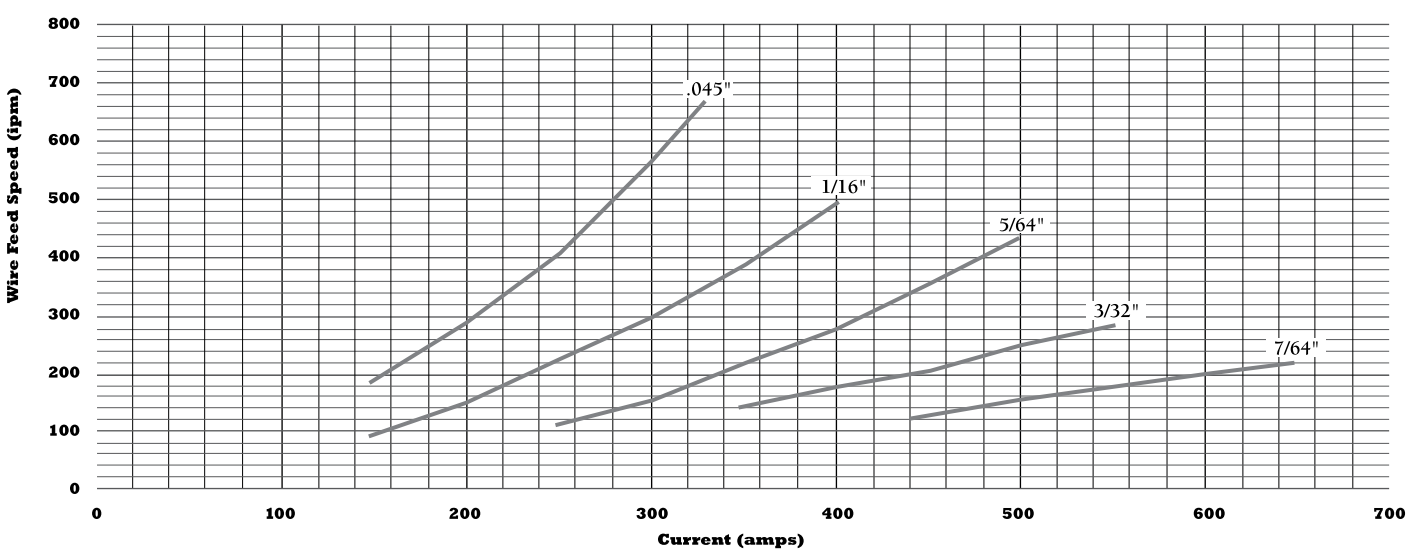
Diameter	Operating Range			Optimum			
	Amps	WFS (ipm)	Volts	Amps	WFS (ipm)	Volts	ESO
1/8"	450-800	75-180	30-36	600	125	32	3/4 - 1 1/4"
7/64"	375-700	80-240	28-36	550	150	30	3/4 - 1 1/4"
3/32"	300-550	110-270	26-34	425	180	29	3/4 - 1 1/4"
5/64"	280-430	140-300	26-33	390	250	29	3/4 - 1 1/4"
1/16"	150-400	130-500	22/34	330	330	29	1/2 - 1"
.045"	130-330	160-670	21/32	250	450	28	1/2 - 1"

**Flat and Horizontal Flux Cored Electrodes - Carbon & Low Alloy Steel**

**Deposition Rates**



**Wire Feed Speed vs. Current**



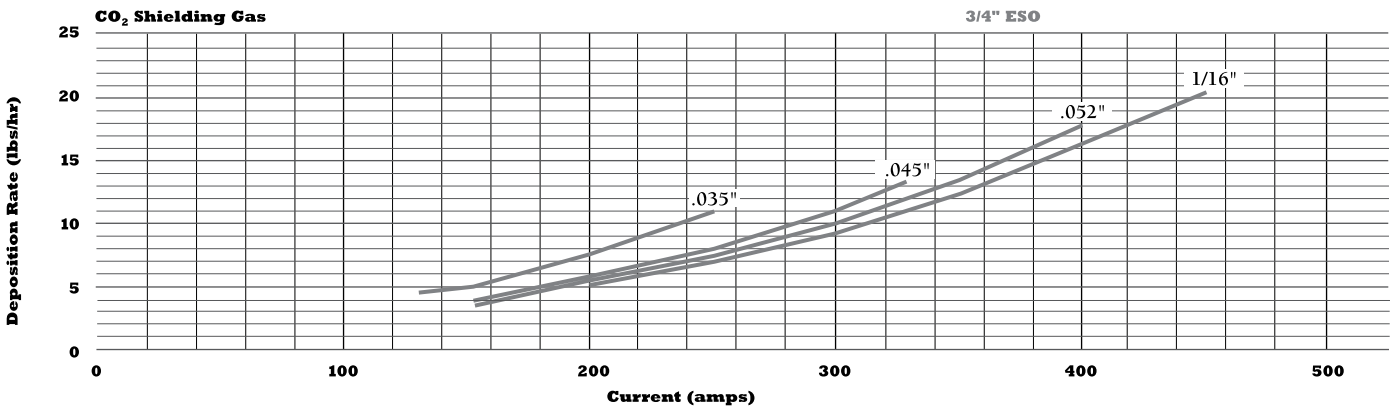
**Recommended Welding Parameters:  
Carbon & Low Alloy Steel Electrodes - Flux Cored - All Position - CO<sub>2</sub>\* - DCEP**

Diameter	Operating Range			Optimum			
	Position	Amps	Volts	Amps	WFS (ipm)	Volts	ES0
1/16"	Flat	150-400	22-34	330	330	29	1/2 - 1"
	Overhead	150-310	22-28	225	180	26	1/2 - 1"
	Vertical Up	150-280	22-27	225	180	25	1/2 - 1"
.052"	Flat	140-330	19-32	275	400	28	1/2 - 1"
	Overhead	150-290	21-28	200	245	26	1/2 - 1"
	Vertical Up	140-270	21-27	200	245	25	1/2 - 1"
.045"	Flat	130-300	21-32	250	450	28	1/2 - 1"
	Overhead	150-280	21-30	190	305	26	1/2 - 1"
	Vertical Up	130-260	21-29	190	305	25	1/2 - 1"
.035"	Flat	125-250	21-30	200	600	27	3/8 - 3/4"
	Overhead	115-220	21-28	175	490	25	3/8 - 3/4"
	Vertical Up	120-215	21-28	170	450	25	3/8 - 3/4"

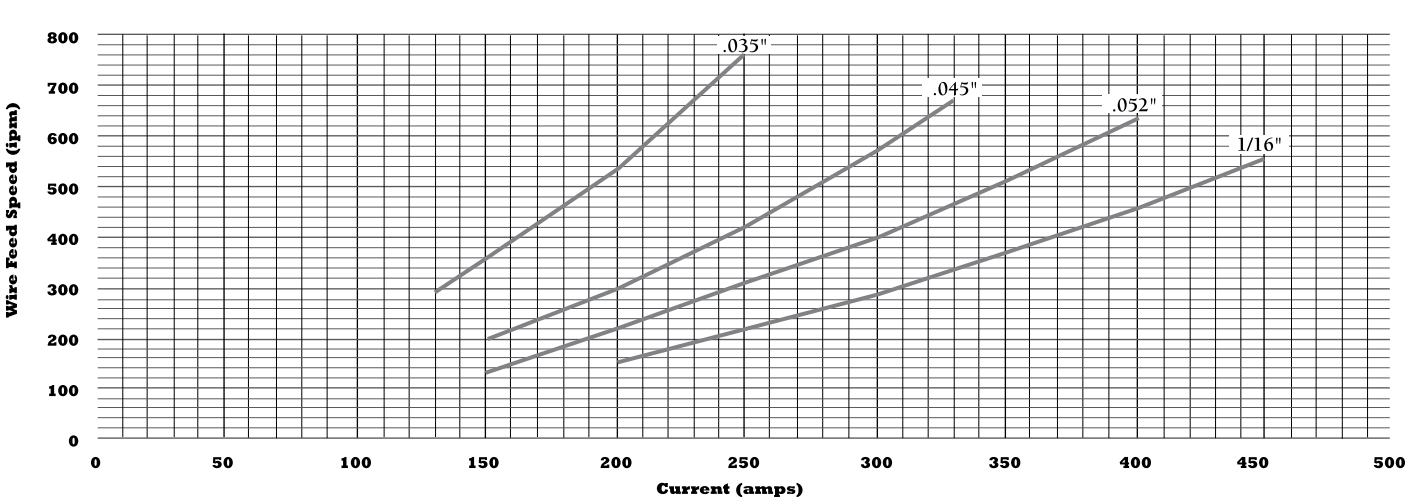
\* For Ar-25% CO<sub>2</sub> shielding gas reduce the voltage by 1 to 1.5 volts

**All Position Flux Cored Electrodes - Carbon & Low Alloy Steel**

**Deposition Rates**



**Wire Feed Speed vs. Current**



## Recommended Welding Parameters: Carbon and Low Alloy Steel Metal Cored - Argon/Carbon Dioxide - DCEP

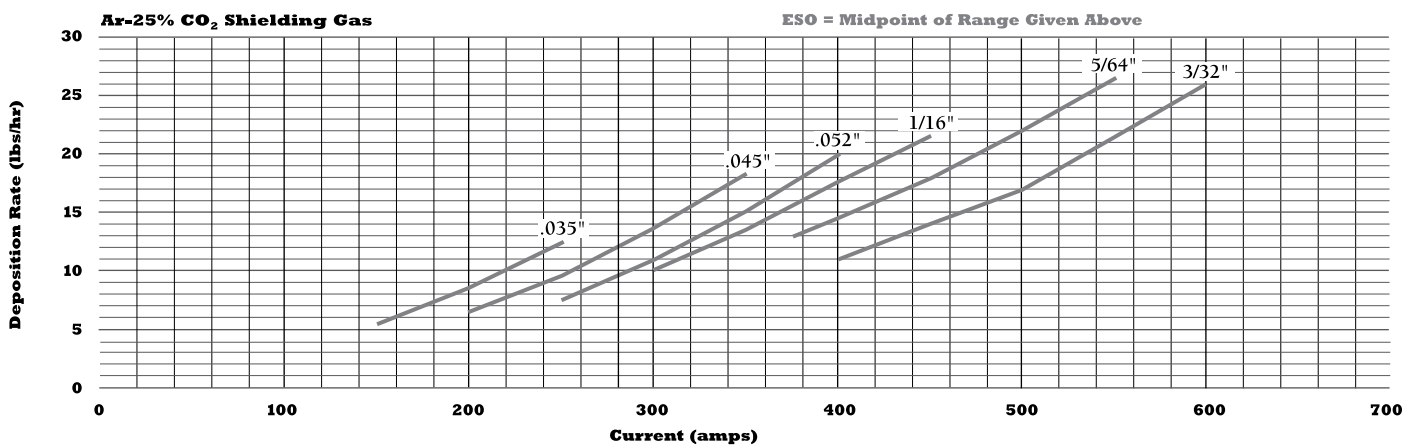
Diameter	Operating Range			Optimum			
	Amps	WFS (ipm)	Volts	Amps	WFS (ipm)	Volts	ESO
1/8"	450-625	95-145	26-32	500	100	28-29	1 - 1 1/4"
3/32"	400-600	125-250	28-36	420	165	29-30	1 - 1 1/4"
5/64"	350-550	170-350	27-36	450	245	29-30	1 - 1 1/4"
1/16"	240-520	175-500	26-37	360	300	29-30	3/4 - 1 1/4"
.052"	220-460	220-620	25-35	300	350	29-30	1/2 - 1"
.045"	180-330	240-600	27-33	255	410	29-30	1/2 - 1"
.035"	160-250	350-750	24-35	200	550	29-30	1/2 - 3/4"

### Typical Short Arc Parameters (for out-of-position welding)

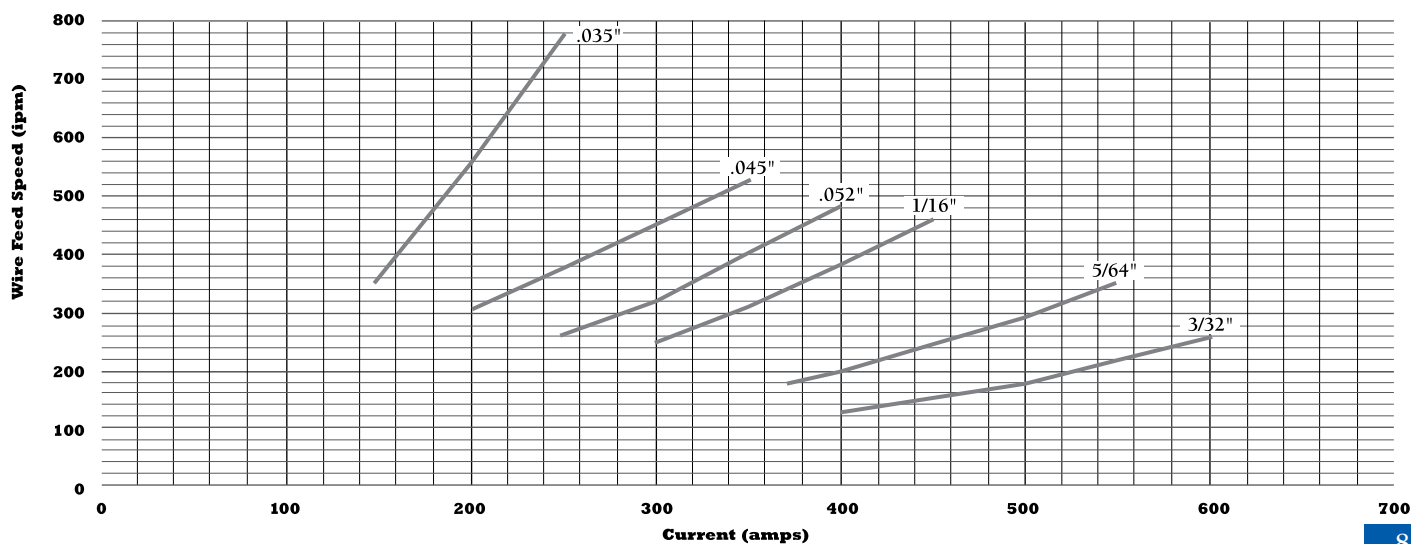
Diameter (in.)	Amps	WFS (ipm)	Volts
.035"	100	145	15-16
.045"	140	150	16-17
.052"	125	120	17-18

## Carbon and Low Alloy Steel

### Deposition Rates



### Wire Feed Speed vs. Current



### Recommended Welding Parameters: Carbon and Low Alloy Steel Flux Cored - Self-Shielded

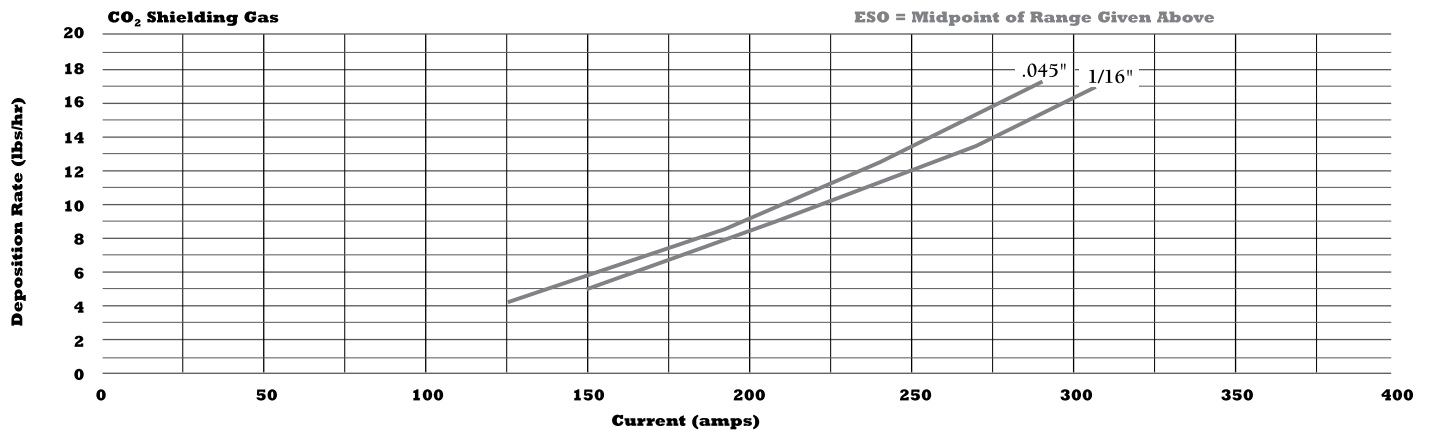
Diameter 701, 700GS	Operating Range			Optimum Flat & Horizontal			Optimum Vertical and OH		
	Amps DCEN	Volts	ESO	Amps	WFS (ipm)	Volts	Amps	WFS (ipm)	Volts
.030"	40-180	14-18	3/8 - 1/2"	125	215	15	100	170	15
.035"	60-220	14-19	3/8 - 1/2"	170	225	16	125	160	17
.045"	80-240	15-20	3/8 - 3/4"	200	190	17	170	155	17
1/16"	130-300	15-20	1/2 - 3/4"	250	110	18	170	90	16
5/64"	180-350	16-22	3/4 - 1"	300	75	18	–	–	–
3/32"	220-400	16-22	3/4 - 1"	325	65	19	–	–	–
<b>73</b>	<b>DCEP</b>	<b>Volts</b>	<b>ESO</b>	<b>Amps</b>	<b>WFS (ipm)</b>	<b>Volts</b>	<b>Amps</b>	<b>WFS (ipm)</b>	<b>Volts</b>
5/64"	300-450	24-28	1 - 1 1/4"	400	245	26	–	–	–
3/32"	350-500	25-29	1 - 1 1/4"	450	200	27	–	–	–
.120"	400-550	26-30	1 - 1 1/4"	500	145	28	–	–	–
<b>74</b>	<b>DCEP</b>	<b>Volts</b>	<b>ESO</b>	<b>Amps</b>	<b>WFS (ipm)</b>	<b>Volts</b>	<b>Amps</b>	<b>WFS (ipm)</b>	<b>Volts</b>
1/16"	175-260	28-31	1 3/4"	200	205	30	–	–	–
5/64"	200-350	28-34	2 3/4"	250	185	30	–	–	–
3/32"	250-400	28-33	2 3/4"	350	190	30	–	–	–
.120"	400-550	29-33	2 3/4"	450	135	31	–	–	–

## Recommended Welding Parameters: Flux Cored, Austenitic (3XX) & Duplex (2XXX) Stainless Steel - Flat & Horizontal

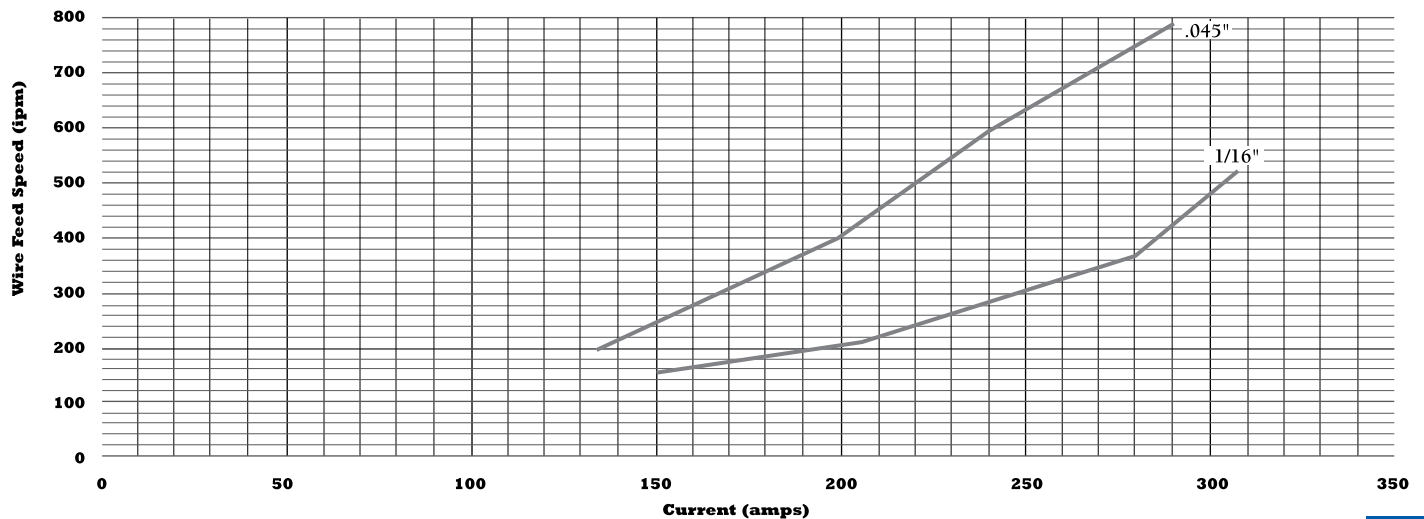
	WFS (ipm)	Amps	Volts	ESO
.035" Flat & Horizontal Flux Cored (CO <sub>2</sub> )*	200	75	22	1/2 - 5/8"
	300	105	24	1/2 - 5/8"
	400	125	26	1/2 - 5/8"
	550	155	27	1/2 - 5/8"
	650	165	29	1/2 - 5/8"
.045" Flat & Horizontal Flux Cored (CO <sub>2</sub> )*	200	120	25	5/8 - 3/4"
	335	170	27	5/8 - 3/4"
	440	200	29	5/8 - 3/4"
	780	290	35	5/8 - 3/4"
1/16" Flat & Horizontal Flux Cored (CO <sub>2</sub> )*	150	150	24	3/4 - 1"
	235	210	28	3/4 - 1"
	345	270	31	3/4 - 1"
	500	350	34	3/4 - 1"

\* When using Ar-25% CO<sub>2</sub> for flux cored arc welding lower the voltage by 2 volts

### Deposition Rates



### Wire Feed Speed vs. Current

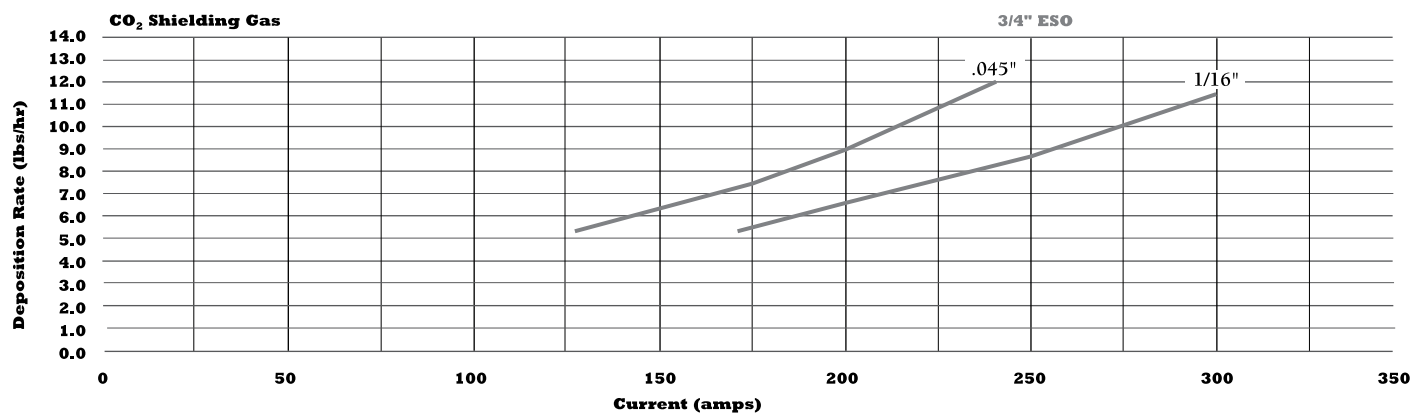


## Recommended Welding Parameters: Flux Cored, Austenitic (3XX-AP) & Duplex (2XXX-AP) Stainless Steel - All Position

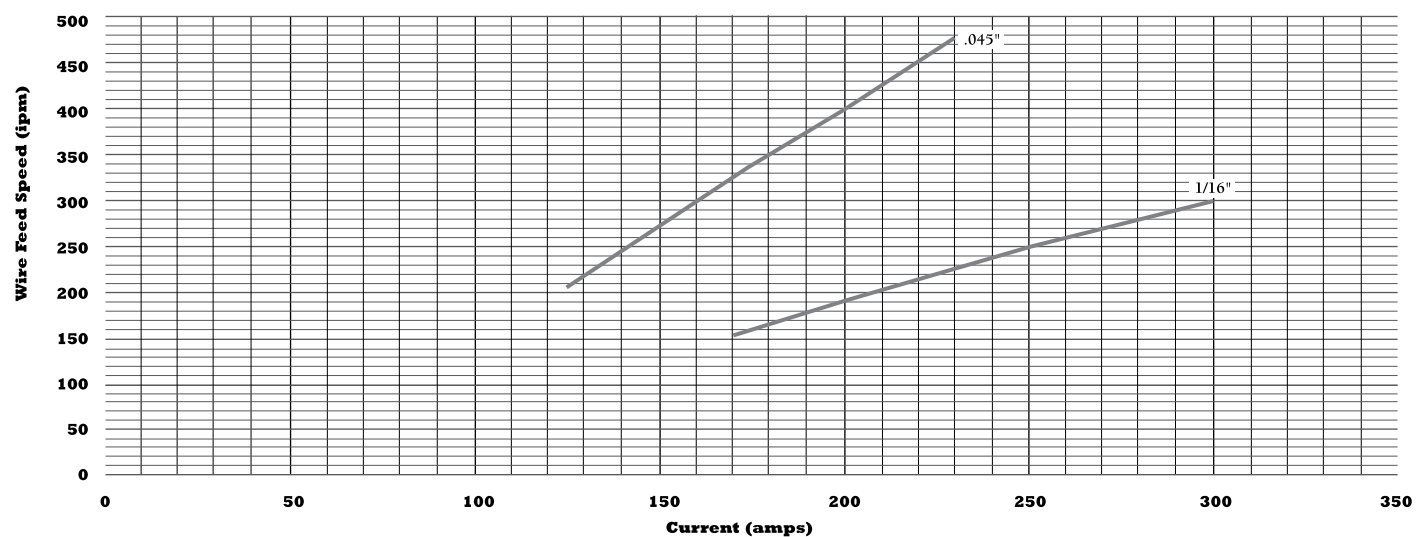
	WFS (ipm)	Amps	Volts	ESO
.035" All Position Flux Cored (CO <sub>2</sub> )*	300	110	25	3/4 - 1"
	500	150	26	3/4 - 1"
	600	165	27	3/4 - 1"
	700	175	28	3/4 - 1"
.045" All Position Flux Cored (CO <sub>2</sub> )*	250	130	24	5/8 - 3/4"
	300	160	26	5/8 - 3/4"
	425	200	28	5/8 - 3/4"
	780	270	34	5/8 - 3/4"
1/16" All Position Flux Cored (CO <sub>2</sub> )*	150	170	25	3/4 - 1"
	195	215	27	3/4 - 1"
	240	250	28	3/4 - 1"
	320	305	29	3/4 - 1"

\* When using Ar-25% CO<sub>2</sub> for flux cored arc welding lower the voltage by 2 volts

### Deposition Rates



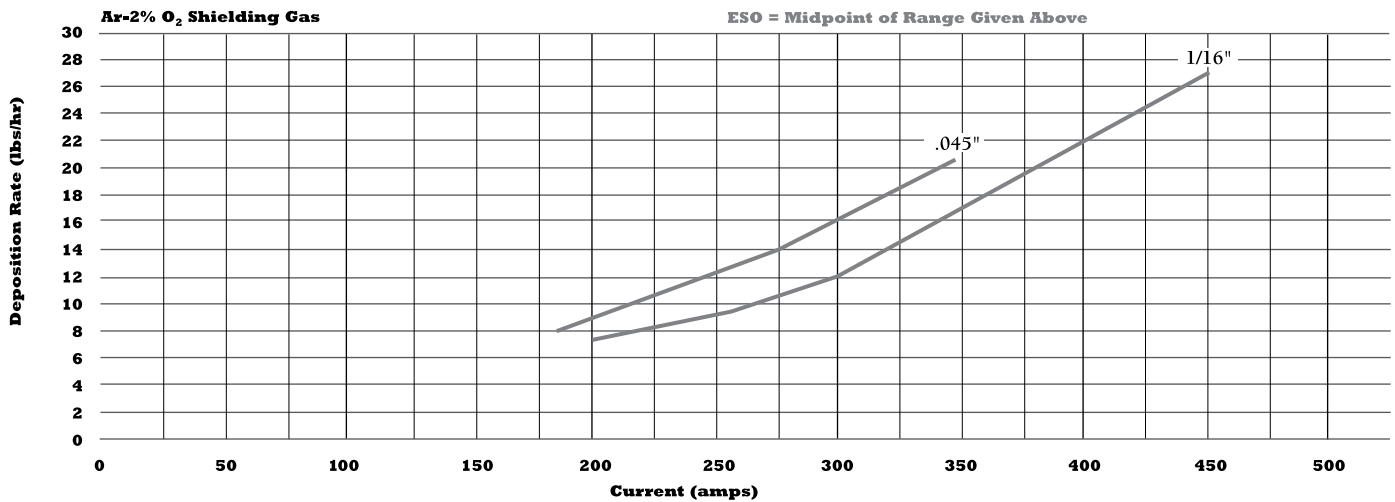
### Wire Feed Speed vs. Current



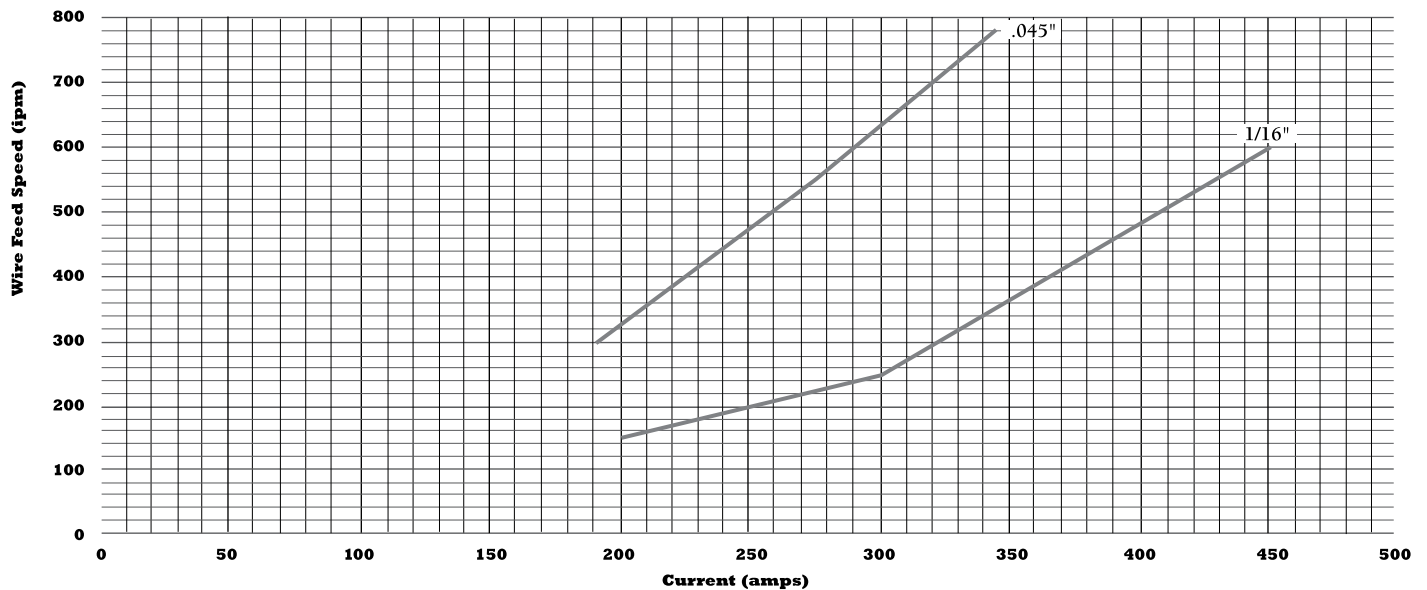
**Recommended Welding Parameters:  
Austenitic (3XX) & Duplex (2XXX) Stainless Steel - Metal Cored**

	WFS (ipm)	Amps	Volts	ESO
.045" Metal Cored (Ar-2%O <sub>2</sub> )	250	180	21	1/2 - 5/8"
	400	240	23	1/2 - 5/8"
	500	280	25	1/2 - 5/8"
	650	300	27.5	1/2 - 5/8"
1/16" Metal Cored (Ar-2%O <sub>2</sub> )	150	190	24	3/4 - 1"
	250	280	25	3/4 - 1"
	350	385	26	3/4 - 1"
	450	490	32	3/4 - 1"

**Deposition Rates**



**Wire Feed Speed vs. Current**



**Recommended Welding Parameters:  
Austenitic (3XXT0-3) Stainless Steel Electrodes - Self-Shielded**

Diameter	WFS (ipm)	Amperage	Voltage	ESO
.045"	180	100	24-26	5/8-3/4"
	240	125	24-27	5/8-3/4"
	300	145	25-28	5/8-3/4"
	400	170	27-30	5/8-3/4"
	500	190	29-31	5/8-3/4"
1/16"	150	126	27-30	3/4-1"
	200	155	29-32	3/4-1"
	250	190	28-31	3/4-1"
	300	215	30-33	3/4-1"
	350	240	31-33	3/4-1"
3/32"	135	250	25-27	1 1/4-1 1/2"
	180	300	27-29	1 1/4-1 1/2"
	225	350	28-30	1 1/4-1 1/2"
	300	400	29-31	1 1/4-1 1/2"
	340	450	29-31	1 1/4-1 1/2"

**Recommended Welding Parameters: Martensitic Stainless Steel Electrodes  
(410, 410NiMo) - Flux Cored - Flat and Horizontal - CO<sub>2</sub> - DCEP**

Diameter	Operating Range			Optimum			
	Amps	WFS (ipm)	Volts	Amps	WFS (ipm)	Volts	ESO
1/16"	150-400	130-500	22/34	330	330	29	1/2 - 1"
.045"	130-330	160-670	21/32	250	450	28	1/2 - 1"

**Recommended Welding Parameters: Martensitic Stainless Steel Electrodes  
(410-AP, 410NiMo-AP) - Flux Cored - All Position- CO<sub>2</sub>\* - DCEP**

Diameter	Position	Operating Range		Optimum			
		Amps	Volts	Amps	WFS (ipm)	Volts	ESO
1/16"	Flat	150-400	22-34	330	330	29	1/2 - 1"
	Overhead	150-310	22-28	225	180	26	1/2 - 1"
	Vertical Up	150-280	22-27	225	180	25	1/2 - 1"
.045"	Flat	130-300	21-32	250	450	28	1/2 - 1"
	Overhead	150-280	21-30	190	305	26	1/2 - 1"
	Vertical Up	130-260	21-29	190	305	25	1/2 - 1"

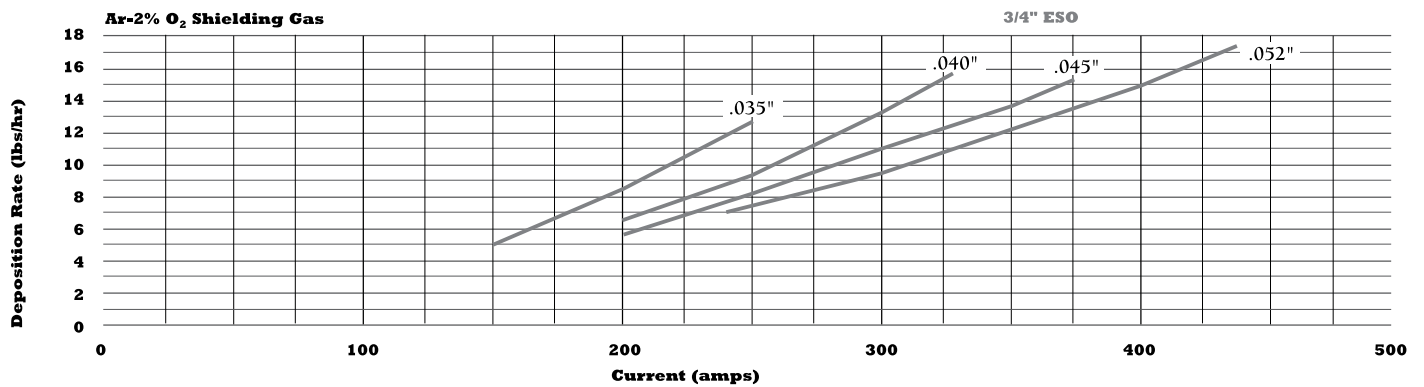
\* For Ar-25% CO<sub>2</sub> shielding gas reduce the voltage by 1 to 1.5 volts



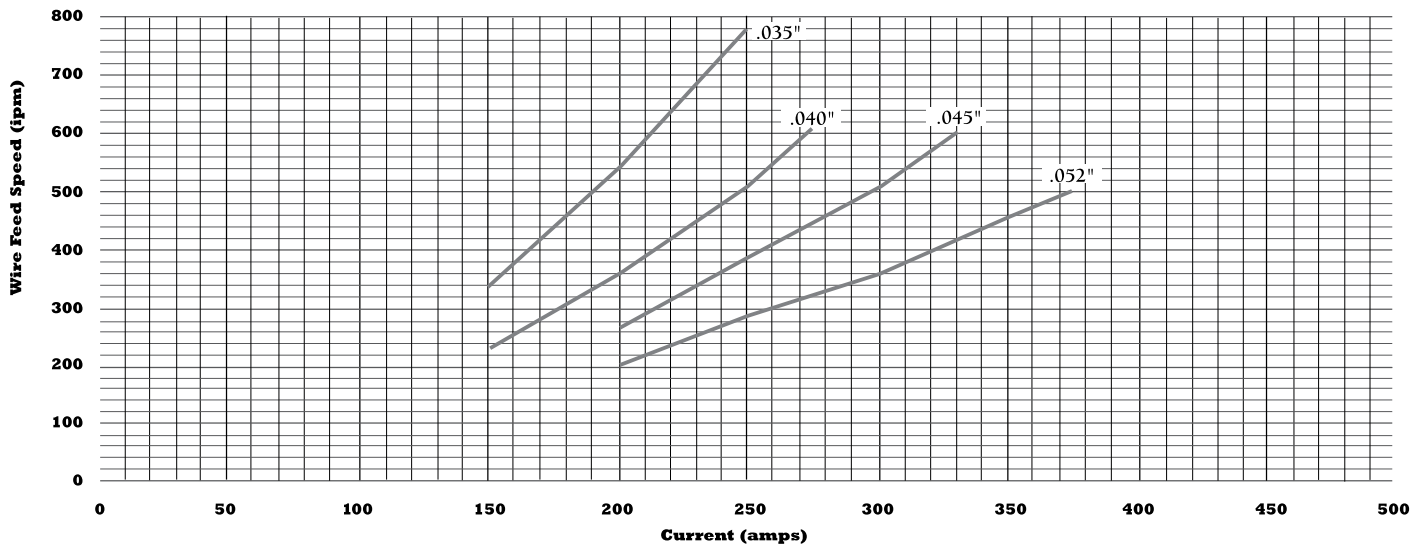
**Recommended Welding Parameters:  
Ferritic and Martensitic Stainless Steel (4XX Series) - Metal Cored - Argon/Oxygen - DCEP**

Diameter	Operating Range			Optimum			
	Amps	WFS (ipm)	Volts	Amps	WFS (ipm)	Volts	ES0
1/16"	230-520	160-500	22-31	360	300	26	3/4 - 1 1/4"
.052"	220-460	220-620	23-30	300	350	26	1/2 - 1"
.045"	180-330	240-600	22-28	255	410	26	1/2 - 1"
.035"	180-320	350-750	23-29	200	550	25	1/2 - 3/4"

**Deposition Rates**



**Wire Feed Speed vs. Current**



**Recommended Welding Parameters:  
Nickel Alloys, All Position - Flux Cored - CO<sub>2</sub> or 75% Argon/25%CO<sub>2</sub>**

Diameter	Position	Amperage	Optimum		Range	
			WFS	Voltage	Amperage	Voltage
.045"	Flat	190	400	27	125-215	24-28
	V-up/OH	155	320	24	125-175	23-26
1/16"	Flat	190	225	26	150-230	23-28
	V-up/OH	175	175	24	150-190	23-25

Use 1/2-5/8" Contact tip to work distance