

A LINCOLN ELECTRIC COMPANY

2014

Turn to the Pros

ALUMINUM MIG WIRES AND
TIG CUT LENGTHS

THE HARRIS PRODUCTS GROUP



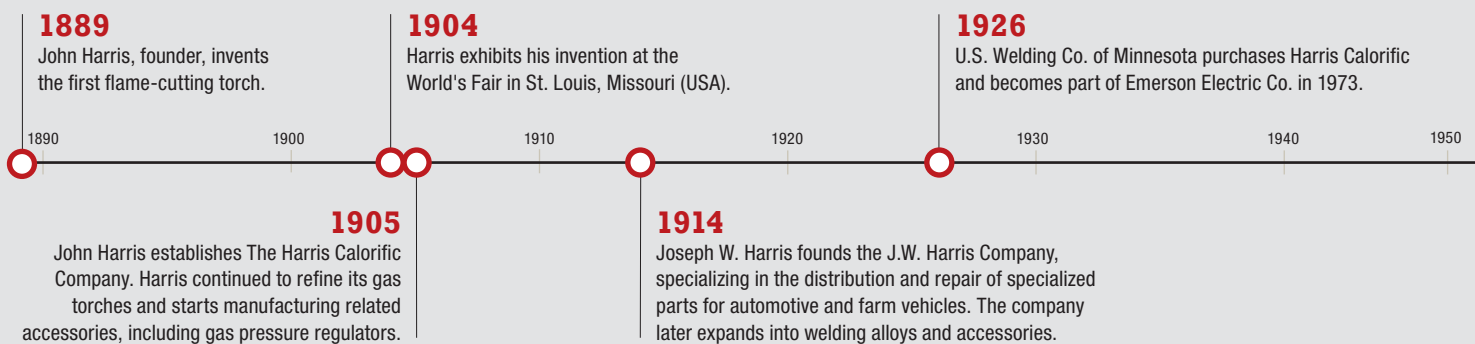
The Harris Products Group was formed by combining two strong names in the welding business—Harris Calorific and J.W. Harris. The Harris Products Group is a world leader in metalworking products used in the brazing, soldering, welding, cutting and gas distribution industries. The combined company offers excellence in the manufacture of:

- Gas welding and cutting equipment
- Industrial and specialty gas regulation equipment
- Gas distribution systems
- Brazing and soldering alloys
- Welding alloys
- Pre-formed bends, rings and return bends



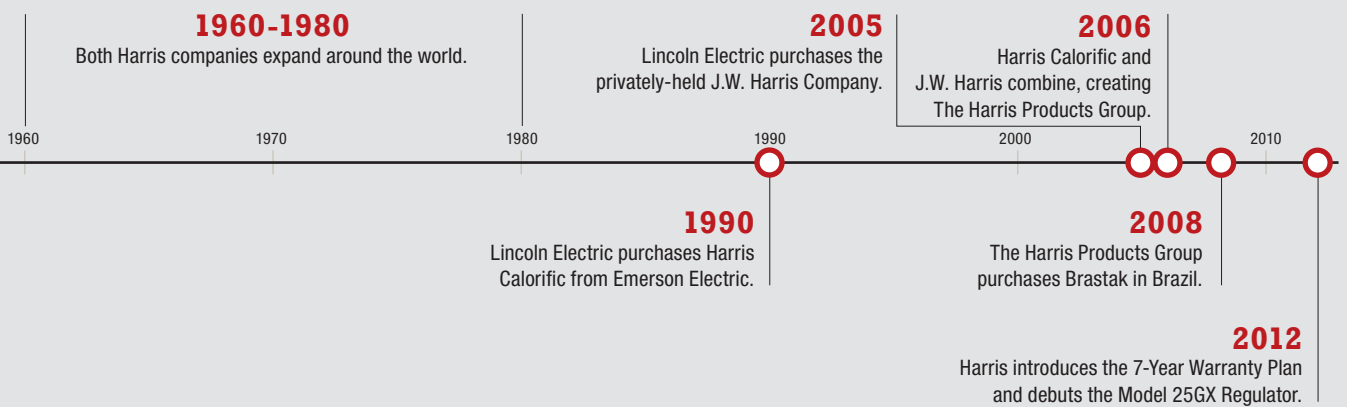
The Harris Products Group is a wholly-owned subsidiary of The Lincoln Electric Company. Lincoln has more than 45 manufacturing locations, including operations and joint ventures in 20 countries and a worldwide network of distributors and sales offices covering more than 160 countries.

THE HARRIS PRODUCTS GROUP HISTORY



MANUFACTURING FACILITIES

Based in Mason, Ohio, The Harris Products Group has five manufacturing locations in four countries and a worldwide network of distributors and sales offices covering more than 90 countries.



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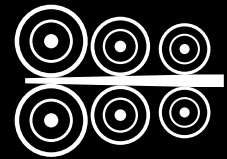
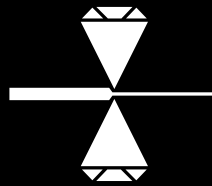




**DIAMOND
DRAW®**
TECHNOLOGY

PRODUCING EXCEPTIONAL ALLOYS FOR CRUCIAL WELDS

Harris Diamond Draw® Technology uses diamonds to cut and shape its aluminum filler metals.



ADVANTAGE HARRIS

DIAMOND DRAW® TECHNOLOGY

- Cutting with diamonds produces a consistent wire diameter along the length of the wire.

CLEAN FEED

- DIAMOND DRAW® produces consistent wire feeding and welds.
- No coolants or chemicals are used in manufacturing Diamond Draw® that can contaminate alloys or welds.

OTHERS

PRIMITIVE TECHNOLOGY

- Traditional wire manufacturers use a progressive die system to make wire, yielding an inconsistent diameter along the length of the wire.
- Part of the progressive die process requires the use of cooling fluids, there by allowing contaminants to be introduced into the alloys and welds.

1100 ALLOY

ALUMINUM MIG SPOOLED WIRE AND TIG ROD

KEY FEATURES

- Highly resistant to chemical corrosion and cracking
- Suitable for electrical and chemical applications using aluminum base metals with little or no alloying elements

ADVANTAGE HARRIS

- All-position aluminum MIG wire
- Superior wire surface finish for the best feedability and arc performance
- Optimal manufacturing process to precisely control chemical composition
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire
- Manufactured under a quality system certified to ISO 9001 standard

TYPICAL APPLICATIONS

- Joining 1XXX alloys to themselves
- Busbar
- Electrical boxes
- Heat exchangers
- Metallizing
- Chemical , construction and food industries

CONFORMS TO

ISO 18273:2004
AWS/A5.10/A5.10M:2012

APPROVALS

AWS A5.10/5.10M 2012

WELDING POSITIONS

All

SHIELDING GAS

- 100% Argon
- Argon/Helium mixtures
- Flow Rate: Refer to operating procedures page 16-18

ALLOY 1100 TIG :
0110050

ALLOY 1100 MIG :
01100F1



WIRE COMPOSITION		%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Aluminum Association	1100	99.00 min.	A	A	0.05-0.20	≤0.05	B	B	≤0.10	B	≤0.0003
AWS/A5.10 2012/A5.10M 2012	ER1100 R1100										
ISO 18273:2004 Numeral	S Al 1100										
ISO 18273:2004 Chemical	Al99, 0Cu										
EN 573.3	EN AW-A199. 0Cu										
Typical Results		Remainder	0.06	0.12	0.09	0.001	0.02	0.001	0.005	0.01	0.0000

A = %Si + %Fe = shall not exceed 0.95%

B = Other each 0.05 maximum, other total 0.15 maximum



1100 MIG SPOOLED WIRE ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
01100F1	1100 .035" x 1 lb spool (20 lb cartons)	0.35" (0.9 mm)	1 lb (0.45 kg)	✓			
0110021	1100 3/64" x 1 lb spool (20 lb cartons)	3/64" (1.2 mm)	1 lb (0.45 kg)	✓			
0110027	1100 3/64" x 16 lb spool	3/64" (1.2 mm)	16 lb (7.26 kg)	✓			
0110035	1100 1/16" x 5 lb spool	1/16" (1.6 mm)	5 lb (2.26 kg)	✓			
0110037	1100 1/16" x 16 lb spool	1/16" (1.6 mm)	16 lb (7.26 kg)	✓			

1100 TIG ROD ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
0110030	1100 1/16" x 36" x 10 lb box	1/16" (1.6 mm)	10 lb (4.53 kg)		✓		
0110050	1100 3/32" x 36" x 10 lb box	3/32" (2.4 mm)	10 lb (4.53 kg)		✓		
0110060	1100 1/8" x 36" x 10 lb box	1/8" (3.2 mm)	10 lb (4.53 kg)		✓		



HARRIS 1100

is an engineered aluminum alloy that is highly resistant to chemical corrosion, cracking and temperature changes, often found in the chemical, construction, and food industries.



THE HARRIS PRODUCTS GROUP
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ORDER: 1.800.733.4043

4043

ALLOY

ALUMINUM MIG SPOOLED WIRE AND TIG ROD

KEY FEATURES

- Designed for welding heat-treatable base alloys including 6XXX series alloys
- Lower melting point and more fluidity than 5XXX series filler alloys
- Low sensitivity to weld cracking with 6XXX series base alloys
- General purpose filler alloy for welding the most widely used welding alloys
- Excellent aesthetics results
- Not recommended for material to be anodized

ADVANTAGE HARRIS

- All-position aluminum MIG wire.
- Superior wire surface finish for the best feedability and arc performance
- Optimal manufacturing process to precisely control chemical composition
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire
- Manufactured under a quality system certified to ISO 9001 standard

TYPICAL APPLICATIONS

- For welding 6XXX alloys and most casting alloys
- Automotive components
- Bicycle frames
- Recreational vehicles

CONFORMS TO

AWS/A5.10/A5.10M:2012
ISO 18273:2004

WELDING POSITIONS

All

SHIELDING GAS

- 100% Argon
- Argon/Helium mixtures
- Flow Rate: Refer to operating procedures page 16-18

ALLOY 4043 TIG :
0404350

ALLOY 4043 MIG :
04043F5



WIRE COMPOSITION		%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Aluminum Association	4043	Remainder	4.5-6.0	≤0.8	≤0.30	≤0.05	≤0.05	A	≤0.10	≤0.20	≤0.0003
AWS/A5.10 1999/A5.10M 2012	ER4043 R4043										
ISO 18273:2004 Numeral	S Al 4043										
ISO 18273:2004 Chemical	AlSi5										
EN 573.3	EN AW-AISI5(A)										
Typical Results		Remainder	5.00	.150	.03	<0.001	<0.02	<0.001	0.005	0.01	0.0000

A = Other each 0.05 maximum, other total 0.15 maximum



4043 MIG SPOOLED WIRE ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
04043D1	4043 .025" x 1 lb spool (20 lb cartons.)	0.25" (6.4 mm)	1 lb (0.45 kg)	✓			
04043E1	4043 .030" x 1 lb spool (20 lb cartons)	0.30" (0.8 mm)	1 lb (0.45 kg)	✓			
04043E7	4043 .030" x 16 lb spool	0.30" (0.8 mm)	16 lb (7.26 kg)	✓			
04043F1	4043 .035" x 1 lb spool (20 lb cartons)	0.35" (0.9 mm)	1 lb (0.45 kg)	✓			
04043F5	4043 .035" x 5 lb spool	0.35" (0.9 mm)	5 lb (2.26 kg)	✓			
04043F13	4043 .035" x 13 lb spool	0.35" (0.9 mm)	13 lb (5.89 kg)	✓			
04043F6	4043 .035" x 16 lb spool	0.35" (0.9 mm)	16 lb (7.25 kg)	✓			
04043F1D	4043 .035" x 150 lb prod pak	0.35" (0.9 mm)	150 lb (68.03 kg)				✓
0404317	4043 .040" x 16 lb spool	0.40" (1.0 mm)	16 lb (7.25 kg)	✓			
0404321	4043 3/64" x 1 lb spool (20 lb cartons)	3/64" (1.2 mm)	1 lb (0.45 kg)	✓			
0404325	4043 3/64" x 5 lb spool	3/64" (1.2 mm)	5 lb (2.26 kg)	✓			
0404327	4043 3/64" x 16 lb spool	3/64" (1.2 mm)	16 lb (7.25 kg)	✓			
0404329	4043 3/64" x 20 lb spool	3/64" (1.2 mm)	20 lb (9.07 kg)	✓			
0404321D	4043 3/64" x 150 lb prod pak	3/64" (1.2 mm)	150 lb (68.03 kg)				✓
0404337	4043 1/16" x 16 lb spool	3/64" (1.2 mm)	16 lb (7.25 kg)	✓			
0404339	4043 1/16" x 20 lb spool	3/64" (1.2 mm)	20 lb (9.07 kg)	✓			
0404357	4043 3/32" x 16 lb spool	3/64" (1.2 mm)	16 lb (7.25 kg)	✓			

4043 TIG ROD ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
04043305	4043 1/16" x 36" x 5 lb box	1/16" (1.6 mm)	1 lb (0.45 kg)		✓		
0404330	4043 1/16" x 36" x 10 lb box	1/16" (1.6 mm)	1 lb (0.45 kg)		✓		
04043505	4043 3/32" x 36" x 5 lb box	3/32" (2.4 mm)	5 lb (2.26 kg)		✓		
0404350	4043 3/32" x 36" x 10 lb box	3/32" (2.4 mm)	10 lb (4.53 kg)		✓		
A404350	4043 3/32" x 36" x 50 lb pop	3/32" (2.4 mm)	50 lb (22.67 kg)			✓	
04043605	4043 1/8" x 36" x 5 lb box	1/8" (3.2 mm)	5 lb (2.26 kg)		✓		
0404360	4043 1/8" x 36" x 10 lb box	1/8" (3.2 mm)	10 lb (4.53 kg)		✓		
A404360	4043 1/8" x 36" x 50 lb pop	1/8" (3.2 mm)	50 lb (22.67 kg)			✓	
0404370	4043 5/32" x 36" x 10 lb box	5/32" (4 mm)	10 lb (4.53 kg)		✓		
04043805	4043 3/16" x 36" x 5 lb pop	3/16" (4.8 mm)	5 lb (2.26 kg)			✓	
0404380	4043 3/16" x 36" x 10 lb box	3/16" (4.8 mm)	10 lb (4.53 kg)		✓		



4047

ALLOY

ALUMINUM MIG SPOOLED WIRE AND TIG ROD

KEY FEATURES

- Lower melting point and narrower freezing range than 4043 wires
- Increased fluidity and reduced shrinkage
- Can be used as a substitute for 4043 wires to increase silicon in the weld metal, minimize hot cracking and produce higher fillet weld shear strength
- Not recommended for metal to be anodized

ADVANTAGE HARRIS

- All-position aluminum MIG wire
- Superior wire surface finish for the best feedability and arc performance
- Optimal manufacturing process to precisely control chemical composition
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire
- Manufactured under a quality system certified to ISO 9001 standard

TYPICAL APPLICATIONS

- Automotive components
- Body panels
- Brazing of aluminum sheets, extrusions, and castings

CONFORMS TO

AWS/A5.10/A5.10M:2012
ISO 18273:2004

WELDING POSITIONS

All

SHIELDING GAS

- 100% Argon
- Argon/Helium mixtures
- Flow Rate: Refer to operating procedures page 16-18

ALLOY 4047 TIG :
0071830

ALLOY 4047 MIG :
0404737



WIRE COMPOSITION		%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Aluminum Association	4047	Remainder	11.0 -13.0	≤0.8	≤0.30	≤0.15	≤0.10	≤0.05	≤0.20	≤0.05	≤0.0003
AWS/A5.10/A5.10M 2012	ER4047 R4047										
ISO 18273:2004 Numeral	S Al 4047										
ISO 18273:2004 Chemical	AlSi12										
EN 573.3	EN AW- AlSi12(A)										
Typical Results		Remainder	12.00	0.15	<0.005	<0.001	<0.02	<0.001	0.005	0.01	0.0000

A = Other each 0.05 maximum, other total 0.15 maximum



4047 MIG SPOOLED WIRE ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
0404737	4047 1/16" x 16 lb Spool	1/16" (1.6 mm)	16 lb (7.26 kg)	✓			

4047 TIG ROD ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
0071830	4047 1/16" x 36" x 10 lb Box (718 alum)	1/16" (1.6 mm)	10 lb (4.53 kg)			✓	
0071850	4047 3/32" x 36" x 10 lb Box (718 alum)	3/32" (2.4 mm)	10 lb (4.53 kg)			✓	
0071860	4047 1/8" x 36" x 10 lb Box (718 alum)	1/8" (3.2 mm)	10 lb (4.53 kg)			✓	



HARRIS 4047

with its lower melting point, narrow freezing range and increased silicone content makes it perfect for joining automotive panels and components.



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ORDER: 1.800.733.4043

5356

ALLOY

ALUMINUM MIG SPOOLED WIRE AND TIG ROD

KEY FEATURES

- General purpose filler alloy for welding 5XXX series alloys
- The most widely used welding alloy

ADVANTAGE HARRIS

- All-position aluminum MIG wire
- Superior wire surface finish for the best feedability and arc performance
- Optimal manufacturing process to precisely control chemical composition
- State-of-the-art testing equipment to ensure trouble-free performance of the weld wire
- Manufactured under a quality system certified to ISO 9001 standard

TYPICAL APPLICATIONS

- Automotive components
- Shipbuilding industry
- Railway industry
- Trailer industry
- General Fabrication
- Power industry

CONFORMS TO

AWS A5.10/A5.10M
ISO 18273:2004

WELDING POSITIONS

All

SHIELDING GAS

- 100% Argon
- Argon/Helium mixtures
- Flow Rate: Refer to operating procedures page 16-18

ALLOY 5356 TIG :
05356505

ALLOY 5356 MIG :
05356E1



WIRE COMPOSITION		%Al	%Si	%Fe	%Cu	%Mn	%Mg	%Cr	%Zn	%Ti	%Be
Aluminum Association	5356	Remainder	≤0.25	≤0.40	≤0.10	0.05-0.20	4.5-5.5	0.05-0.20	≤0.10	0.06-0.20	≤0.0003
AWS A5.10/A5:2012	ER5356 R5356										
ISO 18273:2004 Numeral	S Al 5356										
ISO 18273:2004 Chemical	AlMg5Cr(A)										
EN 573.3	EN AW-AMg5Cr(A)										
Typical Results		Remainder	0.05	0.12	0.005	0.12	4.9	0.12	0.005	0.09	0.0003

HARRIS 5356

is the most widely used aluminum welding alloy in ship building.



5356 MIG SPOOLED WIRE ORDERING INFORMATION

PART#	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
05356D1	5356 .025" x 1lb spool (20lb cartons)	0.025" (0.6 mm)	1 lb (0.45 kg)	✓			
05356E1	5356 .030" x 1lb spool (20lb cartons)	0.030" (0.8 mm)	1 lb (0.45 kg)	✓			
05356F1	5356 .030" x 5 lb spool	0.030" (0.8 mm)	5 lb (2.26 kg)	✓			
05356F5	5356 .035" x 1 lb spool (20lb cartons)	0.035" (0.9 mm)	1 lb (0.45 kg)	✓			
05356F13	5356 .035" x 5 lb spool	0.035" (0.9 mm)	5 lb (2.26 kg)	✓			
05356F6	5356 .035" x 13 lb spool	0.035" (0.9 mm)	13 lb (5.89 kg)	✓			
0535617	5356 .035" x 16 lb spool	0.035" (0.9 mm)	16 lb (7.25 kg)	✓			
0535621	5356 3/64" x 1 lb spool (20lb cartons)	0.047" (1.2 mm)	50 lb (22.67 kg)	✓			
0535625	5356 3/64" x 5 lb spool	0.047" (1.2 mm)	5 lb (2.26 kg)	✓			
0535627	5356 3/64" x 16 lb spool	0.047" (1.2 mm)	16 lb (7.25 kg)	✓			
0535629	5356 3/64" x 20 lb spool	0.047" (1.2 mm)	20 lb (9.07 kg)	✓			
0535621D	5356 3/64" x 150 lb prod pak	0.047" (1.2 mm)	150 lb (68.03 kg)				✓
0535637	5356 1/16" x 16 lb spool	0.062" (1.6 mm)	16 lb (7.25 kg)	✓			

5356 TIG ROD ORDERING INFORMATION

PART #	DESCRIPTION	WIRE DIAMETER	WEIGHT	PACKAGING			
				SPOOL	BOX	POP	PROD PAK
0535630	5356 1/16" x 36" x 10 lb box	1/16" (1.6 mm)	10 lb (4.53 kg)		✓		
05356505	5356 3/32" x 36" x 5 lb box	3/32" (2.4 mm)	5 lb (2.26 kg)		✓		
0535650	5356 3/32" x 36" x 10 lb box	3/32" (2.4 mm)	10 lb (4.53 kg)		✓		
A535650	5356 3/32" x 36" x 50 lb box	3/32" (2.4 mm)	50 lb (22.67 kg)		✓		
0535660	5356 1/8" x 36" x 10 lb box	1/8" (1.6 mm)	10 lb (4.53 kg)		✓		
A535660	5356 1/8" x 36" x 50 lb box	1/8" (1.6 mm)	50 lb (22.67 kg)		✓		
0535670	5356 5/32" x 36" x 10 lb box	5/32" (1.6 mm)	10 lb (4.53 kg)		✓		



FILLER METAL SELECTION

BASE METAL TO BASE METAL	1060, 1100, 30003, ALCLAD 3003	2219, A201.0	3004, ALCLAD 3004	5005, 5050	5052, 5652	5083, 5456	5086, 514.0, 535.0	5154, 5254	5454	6005, 6061, ALCLAD 6061, 6063, 6351	7005	354.0, C355.0	356.0, A356.0, 357.0, A357.0, 359.0, 443.0, A444.0
356.0, A356.0, 357.0, A357.0, 359.0, 443.0, A444.0	4043	4043*	4043	4043	4043	5356	5356	4043	4043	4043	4043	4043*	4043
354.0, C355.0	4043*	2319	4043*	4043*	4043	NR	NR	NR	4043	4043*	4043	4043*	
7005	5356	4043	5356	5356	5356	5556	5356	5356	5356	5356	5356		
6005, 6061, ALCLAD 6061, 6063, 6351	4043	4043*	5356	4043, 5356	5356, 4043	5356	5356	5356	5356	4043, 5356			
5454	4043	4043	5356	5356	5356	5356	5356	5356	5554				
5154, 5254	4043	NR	5356	5356	5356	5356	5356	5356					
5086, 514.0, 535.0	5356	NR	5356	5356	5356	5356	5356	5356					
5083, 5456	5356	NR	5356	5356	5356	5556, 5183	5356	5356					
5052, 5653	4043	4043	4043	4043, 5356	5356								
5005, 5050	4043	4043*	4043	4043, 5356									
3004, ALCLAD 3004	4043	4043*	4043										
2219, A201.0	4145	2319											
1060, 1100, 3003, ALCLAD 3003	1100												

NOTES:

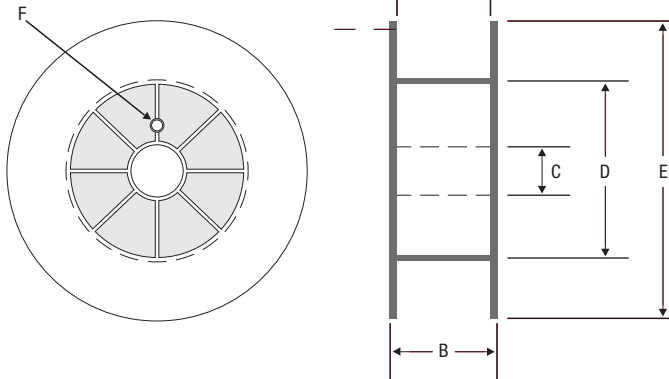
- 1) The filler alloy shown is the best choice for most structural applications.
- 2) Where two filler alloys are shown, either is acceptable.
- 3) Where the 4043 filler alloy is shown, 4047 is an acceptable alternative.
- 4) Where the 5356 filler alloy is shown, 5556 or 5183 are acceptable alternatives.
- 5) Al, Mg alloys containing more than 3% Mg should not be used in applications where long term exposures above 150° F (65° C) is encountered.
- 6) Some applications, with specific requirements, make it necessary to use either filler alloys than the ones listed above.

* 4145 may be used for some applications.



PACKAGING SPECIFICATIONS

PLASTIC SPOOLS



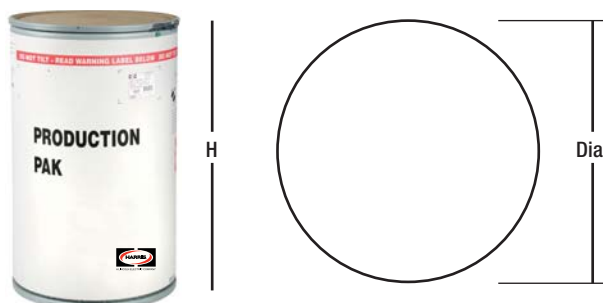
PLASTIC SPOOL	1 lb / 0.45kg	5 lb / 2.27kg	13 lb / 6kg	16 lb / 7.26kg	20 lb / 9kg
A. Inside Width	1-1/2" (38 mm)	1-13/16" (46 mm)	3-5/8" (92 mm)	3-5/8" (92 mm)	3-5/8" (92 mm)
B. Outside Width	2-7/16" (37 mm)	2-3/16" (56 mm)	4" (102 mm)	4" (102 mm)	4" (102 mm)
C. I.D. Arbor Hole	5/8" (16 mm)	2" (51 mm)	2" (51 mm)	2" (51 mm)	2" (51 mm)
D. O.D. Core	1-1/64" (4.4 mm)	3-3/4" (95 mm)	8" (203 mm)	7" (178 mm)	5" (127 mm)
E. O.D. Flange	4" (102 mm)	8" (203 mm)	11-11/16" (297 mm)	11-3/4" (299 mm)	11-3/4" (299 mm)
F. I.D. Drive Hole	WWIC	7/16" (11 mm)	7/16" (11 mm)	13/32" (10 mm)	7/16" (11 mm)
G. Drive Hole Offset		1-25/32" (45 mm)	1-3/4" (44 mm)	1-3/4" (44 mm)	1-3/4" (44 mm)

TIG CUT LENGTH BOXES



WEIGHT	LENGTH	WIDTH	HEIGHT
1 lb (0.45 kg)	38-5/8" (965.2 mm)	2-1/2" (63.5 mm)	2-1/16" (52.38 mm)
3 lb (1.36 kg)	37-5/8" (939.8 mm)	3-3/8" (85.73 mm)	3-1/8" (79.38 mm)
5 lb (2.26 kg)	37-7/8" (939.8 mm)	8-3/8" (212.73 mm)	8-3/8" (212.73 mm)
10 lb (4.53 kg)	48-7/16" (1230.31 mm)	7-11/16" (195.26 mm)	4-5/8" (117.48 mm)
40 lb (18.14)	38-13/16" (985.84 mm)	5-9/16" (141.29 mm)	6-3/16" (157.16 mm)

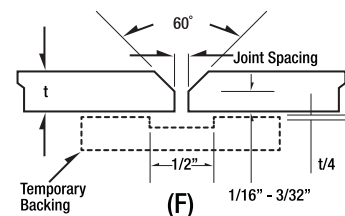
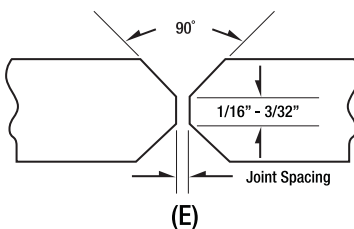
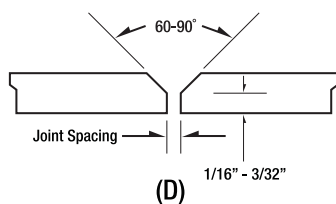
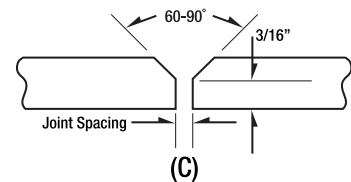
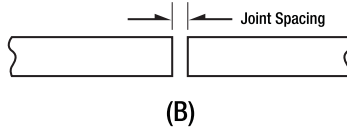
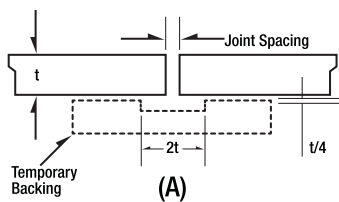
PRODUCTION PAK



Drum Diameter	Drum Height	Core Outside Diameter
20-3/8" (508 mm)	32-3/4" (812.8 mm)	11-5/8" (279.4 mm)

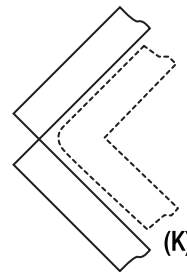
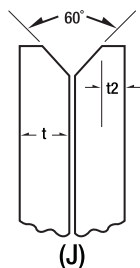
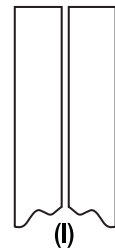
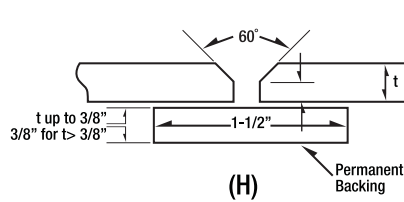
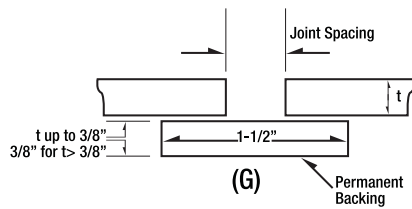
OPERATING PROCEDURES FOR ALUMINUM MIG WELDING (IMPERIAL)

METAL THICKNESS (in.)	WELD POSITION	EDGE PREPARATION	JOINT SPACING (in.)	WELD PASSES	WIRE DIAMETER (in.)	DC+ CURRENT (amps)	ARC VOLTAGE (volts)	ARGON GAS FLOW (cfh)	ARC TRAVEL SPEED (ipm/pass)	APPROX. WIRE CONSUMP. (lb/100ft)
1/16"	f	A	None	1	0.030"	70-110	15-20	25	25-45	1.5
	f	G	3/32"	1	0.030"	70-110	15-20	25	25-45	2
1/8"	f,v,h	A	0-3/32"	1	0.030"-3/64"	120-150	20-24	30	24-30	2
	f,v,h,o	G	3/16"	1	0.030"-3/64"	110-135	19-23	30	18-28	3
3/16"	f, v, h	B	0-1/16"	1F, 1R	0.030" - 3/64"	130-175	22-26	35	24-30	4
	f, v, h	F	0-1/16"	1	3/64"	140-180	23-27	35	24-30	5
	o	F	0-1/16"	2F	3/64"	140-175	23-27	60	24-30	5
	f, v	H	3/32"-3/16"	2	3/64"-1/16"	140-185	23-27	35	24-30	8
	h, o	H	3/16"	3	3/64"	130-175		60	24-35	10
1/4"	f	C-90°	0-3/32"	1F, 1R	3/64"-1/16"	175-200	23-27	40	24-30	6
	f	F	0-3/32"	2	3/64"-1/16"	185-225	23-27	40	24-30	8
	v, h	F	0-3/32"	3F, 1R	3/64"	165-190	24-28	45	25-35	10
	o	F	0-3/32"	3F, 1R	3/64"-1/16"	180-200	24-28	60	25-35	10
	f, v	H	1/8"-1/4"	2-3	3/64"-1/16"	175-225	24-28	40	24-30	12
	o, h	H	1/4"	4-6	3/64"-1/16"	170-200	24-28	60	25-40	12
3/8"	f	C-90°	0-3/32"	1F, 1R	1/16"	225-290	24-28	50	20-30	16
	f	F	0-3/32"	2F, 1R	1/16"	210-275	24-28	50	24-35	18
	v, h	F	0-3/32"	3F, 1R	1/16"	190-220	24-28	55	24-30	20
	o	F	0-3/32"	5F, 1R	1/16"	200-250	24-28	80	25-40	20
	f, v	H	1/4"-3/8"	4	1/16"	210-290	24-28	50	24-30	35
	o,h	H	3/8"	8-10	1/16"	190-260	24-28	80	25-40	50
3/4"	f	C-60°	0-3/32"	3F, 1R	3/32"	340-400	26-31	60	14-20	50
	f	F	0-1/8"	4F, 1R	3/32"	325-375	26-31	60	16-20	70
	v,h,o	F	0-1/16"	8F, 1R	1/16"	240-300	25-30	80	24-30	75
	f	E	0-1/16"	3F, 3R	1/16"	270-330	25-30	60	16-24	70
	v,h,o	E	0-1/16"	6F, 6R	1/16"	230-280	25-30	80	16-24	75



OPERATING PROCEDURES FOR ALUMINUM MIG WELDING (METRIC)

METAL THICKNESS (mm)	WELD POSITION	EDGE PREPARATION	JOINT SPACING (mm)	WELD PASSES	WIRE DIAMETER (mm)	DC+ CURRENT (amps)	ARC VOLTAGE (volts)	ARGON GAS FLOW (L/min)	ARC TRAVEL SPEED (mm/min.)	APPROX. WIRE CONSUMP. (lb/100ft)
1.6	f	A	None	1	0.8	70-110	15-20	12	635-1143	0.68
	f	G	2.38	1	0.8	70-110	15-20	12	635-1143	0.91
3.2	f,v,h	A	0-2.38	1	0.8-1.2	120-150	20-24	14	610-762	0.91
	f,v,h,o	G	4.76	1	0.8-1.2	110-135	19-23	14	457-711	1.36
4.8	f, v, h	B	0-1.5875	1F, 1R	0.8-1.2	130-175	22-26	17	610-765	1.81
	f, v, h	F	0-1.5875	1	1.2	140-180	23-27	17	610-765	2.27
	o	F	0-1.5875	2F	1.2	140-175	23-27	28	610-765	2.27
	f, v	H	2.38-4.76	2	1.2-1.6	140-185	23-27	17	610-765	3.63
	h, o	H	4.76	3	1.6	130-175		28	635-889	4.54
6.4	f	C-90°	0-2.38	1F, 1R	1.2-1.6	175-200	23-27	19	610-765	2.72
	f	F	0-2.38	2	1.2-1.6	185-225	23-27	19	610-765	3.63
	v, h	F	0-2.38	3F, 1R	1.6	165-190	24-28	21	635-889	4.54
	o	F	0-2.38	3F, 1R	1.2-1.6	180-200	24-28	28	635-889	4.54
	f, v	H	3.175-6.35	2-3	1.2-1.6	175-225	24-28	19	610-765	5.44
	o,h	H	6.35	4-6	1.6	170-200	24-28	28	635-1016	5.44
9.5	f	C-90°	0-2.38	1F, 1R	1.2-1.6	225-290	24-28	24	508-762	7.26
	f	F	0-2.38	2F, 1R	1.2-1.6	210-275	24-28	24	610-889	8.16
	v, h	F	0-2.38	3F, 1R	1.2-1.6	190-220	24-28	26	610-762	9.07
	o	F	0-2.38	5F, 1R	1.6	200-250	24-28	38	635-1016	9.07
	f, v	H	6.35-9.525	4	1.6	210-290	24-28	24	610-762	15.88
	o,h	H	9.525	8-10	1.6	190-260	24-28	38	635-1016	22.68
19.0	f	C-60°	0-2.38	3F, 1R	2.4	340-400	26-31	28	355-508	22.68
	f	F	0-3.175	4F, 1R	2.4	325-375	26-31	28	406-508	31.75
	v,h,o	F	0-1.5875	8F, 1R	1.6	240-300	25-30	38	610-762	34.02
	f	E	0-1.5875	3F, 3R	1.6	270-330	25-30	28	406-610	31.75
	v,h,o	E	0-1.5875	6F, 6R	1.6	230-280	25-30	38	406-610	34.02



OPERATING PROCEDURES FOR ALUMINUM MIG FILLET AND LAP WELDING (IMPERIAL)

METAL THICKNESS (in.)	WELD POSITION	WELD PASSES	WIRE DIAMETER (in.)	DC+ CURRENT (amps)	ARC VOLTAGE (volts)	ARGON GAS FLOW (cfh)	ARC TRAVEL SPEED (ipm/pass)	APPROX. WIRE CONSUMP. (lb/100ft)
3/32"	f,v,h,o	1	0.030"	100-300	18-22	30	24-30	1.8
1/8"	f	1	0.030"-3/64"	125-150	20-24	30	24-30	2
	v,h	1	0.030"	110-130	19-23	30	24-30	2
	o	1	0.030"-3/64"	115-140	20-24	40	24-30	2
3/16"	f	1	3/64"	180-210	22-26	30	24-30	4.5
	v, h	1	0.030"-3/64"	130-175	21-25	35	24-30	4.5
	o	1	0.030"-3/64"	130-190	22-26	45	24-30	4.5
1/4"	f	1	3/64"-1/16"	170-240	24-28	40	24-30	7
	v, h	1	3/64"	170-210	23-27	45	24-30	7
	o	1	3/64"-1/16"	190-220	24-28	60	24-30	7
3/8"	f	1	1/16"	240-300	26-29	50	18-25	17
	v, h	3	1/16"	190-240	24-27	60	24-30	17
	o	3	1/16"	200-240	25-28	85	24-30	17
3/4"	f	4	3/32"	360-380	26-30	60	18-25	66
	v,h	4-6	1/16"	260-310	25-29	70	24-30	66
	o	10	1/16"	275-310	25-29	85	24-30	66

OPERATING PROCEDURES FOR ALUMINUM MIG FILLET AND LAP WELDING (METRIC)

METAL THICKNESS (mm)	WELD POSITION	WELD PASSES	WIRE DIAMETER (mm)	DC+ CURRENT (amps)	ARC VOLTAGE (volts)	ARGON GAS FLOW (L/min)	ARC TRAVEL SPEED (mm/min)	APPROX. WIRE CONSUMP. (lb/100ft)
2	f,v,h,o	1	0.8	100-300	18-22	14	0.60-0.76	1.8
3	f	1	0.8-1.2	125-150	20-24	14	0.60-0.76	2
	v,h	1	0.8	110-130	19-23	14	0.60-0.76	2
	o	1	0.8-1.2	115-140	20-24	19	0.60-0.76	2
5	f	1	1.2	180-210	22-26	14	0.60-0.76	4.5
	v, h	1	0.8-1.2	130-175	21-25	16	0.60-0.76	4.5
	o	1	0.8-1.2	130-190	22-26	21	0.60-0.76	4.5
6	f	1	1.2-1.6	170-240	24-28	19	0.60-0.76	7
	v, h	1	1.2	170-210	23-27	21	0.60-0.76	7
	o	1	1.2-1.6	190-220	24-28	28	0.60-0.76	7
10	f	1	1.6	240-300	26-29	24	0.60-0.76	17
	v, h	3	1.6	190-240	24-27	28	0.60-0.76	17
	o	3	1.6	200-240	25-28	40	0.60-0.76	17
19	f	4	2.4	360-380	26-30	28	0.60-0.76	66
	v,h	4-6	1.6	260-310	25-29	33	0.60-0.76	66
	o	10	1.6	275-310	25-29	40	0.60-0.76	66

*This is a starting point for welding parameters, fine tune adjustments may be needed.
Material Safety Data Sheets (MSDS) available upon request

PRODUCT APPROVALS

ALLOY	PROCESS	CWB	TUV	DB	ABS	BV	DNV	GL	LR
1100	MIG	3/64"							
		1.2 mm							
	TIG								
4043	MIG	0.030"- up	0.030"- 1/16"	0.030"- 1/16"					
		0.8 mm-up	0.8 -1.6 mm	0.8 -1.6 mm					
	TIG	1/16"-up	5/64" -1/5"	5/64" -1/5"					
		1.6 mm-up	2.0-5.0 mm	2.0-5.0 mm					
5087	MIG		0.030"-1/16"	0.030"- 1/16"				.035"-1/16"	.035"-1/16"
			0.8-1.6 mm	0.8-1.6 mm				0.9-1.6 mm	0.9-1.6 mm
	TIG		5/64"-1/5"	5/64"-1/5"					
			2.0 -5.0 mm	2.0 -5.0 mm					
5183	MIG	3/64"	0.030"-1/16"	0.030"-1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"
		1.2 mm	0.8-1.6 mm	0.8-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm
	TIG		3/32"-3/16"	3/32"-3/16"					
			2.0-4.8 mm	2.0-4.8 mm					
5356	MIG	0.030"-up	0.030" - 1/16"	0.030" - 1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"	0.35"-1/16"
		0.8 mm-up	0.8-1.6 mm	0.8-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm	0.9-1.6 mm
	TIG	1/16"-up	5/64" - 3/16"	5/64" - 3/16"					
		1.6 mm-up	2.0-4.8 mm	2.0-4.8 mm					
5554	MIG	0.030"-up							
		0.8 mm-up							
	TIG	1/16"-up							
		1.6 mm-up							
5556	MIG				1/16"				
					1.6 mm				
	TIG								
5754	MIG		0.030" - 1/16"						
			0.8-1.6 mm						
	TIG		5/64" - 3/16"						
			2.0-5.0 mm						

*Wire diameter indicated in inches and (millimeters)
Product approvals not shown may be available upon request.





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