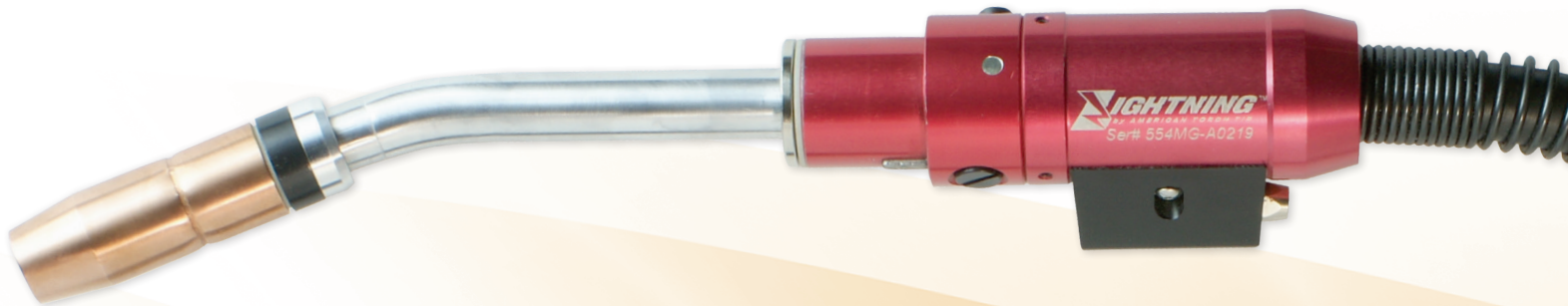


MIG WELDING PRODUCTS



GUNS, TORCHES & CONVERSION KITS
CONSUMABLES & REPLACEMENT PARTS FOR MOST BRANDS

Made In the USA

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LIGHTNING® ROBOTIC GUNS

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MIG

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MIG



140

AMERICAN TORCH TIP



SEMI-AUTOMATIC GUN
250, 350, 450, 550 AMPS

MIG

Tapered Contact Tip and Diffuser

- Tip and diffuser design allows for greater heat dissipation and electrical conductivity.
- Easy start contact tip has quick change double thread.

Rugged Gooseneck

- Insulated aircraft aluminum protects the gooseneck.
- 650 AMP capacity.

Million Pull Trigger Switch

- Lifetime Warranty on handle and trigger switch.

Durable Metal Trigger High Strength

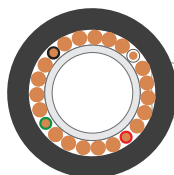
- Ergonomic engineered plastic handle is designed with special impact additives that stands up to extreme impact.

Strain Relief

- Supports cable weight and reduces cable kinking.
- Helps reduce welder fatigue.

Power Cable

- Outer insulation is tear and abrasion resistant.
- Hytrel tubing is kink resistant.
- Maximum amount of copper strands offer maximum productivity.



CONSUMABLES FEATURES

Nozzle

Hard drawn copper or brass in variety of shapes and sizes. High polished finish offers superior spatter protection. Brass inserts designed to protect against wear and offers superior nozzle protection.

Tip

Dual Thread
Tapered Seat
Acme Coarse Thread

SEMI-AUTOMATIC GUN ORDERING SYSTEM

CONSUMABLE PARTS	POWER PIN	GUN MODEL	CABLE LENGTH	WIRE SIZE
L Lightning	5T Tweco #5	20 250 amp	10 10 feet	30 .030"
	T Tweco/Std.	30 350 amp	12 12 feet	35 .035"
	B Bernard	40 450 amp	15 15 feet	10 1.0 mm
	E Euro	50 550 amp	20 20 feet	45 .045"
	H Hitachi		25 25 feet	52 .052"
	LN Lincoln			116 1/16"
	M Miller			332 3/32"
	P Panasonic			364 3/64" al
				564 5/64"

L T 40 15 - 45

MIG

DUTY CYCLE AMPERAGE RATINGS

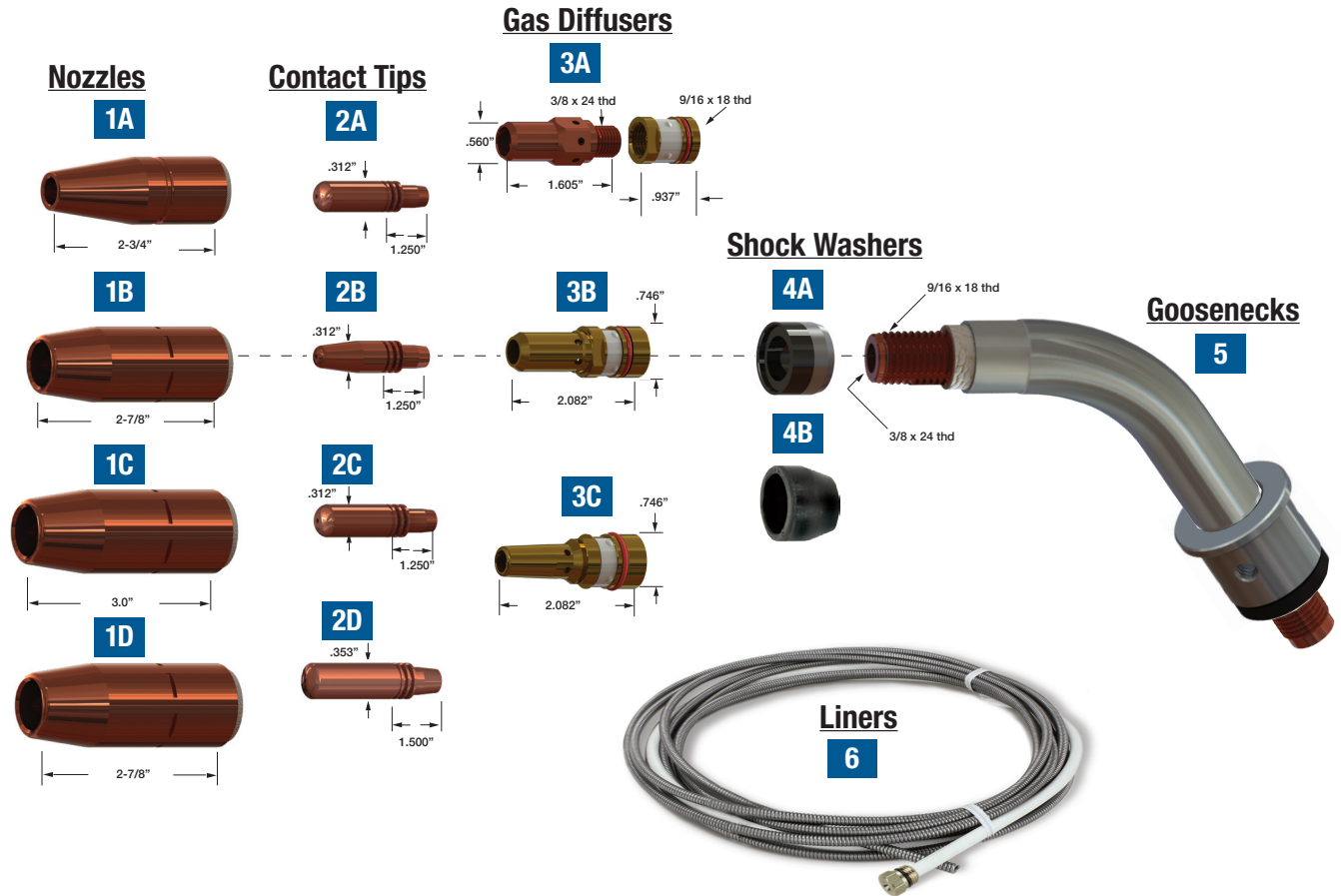
GUN MODEL	60% Duty Cycle - Mixed Gases 100% Duty Cycle - CO₂
250 amp	250 amps
350 amp	350 amps
450 amp	450 amps
550 amp	550 amps



CONSUMABLES AND REPLACEMENT PARTS ON FOLLOWING PAGES

CONSUMABLES – SEMI-AUTOMATIC 250, 350, 450 & 550 AMPS

MIG



Standard Gun Configuration – Lightning

Decription	Tips	Nozzles	Gas Diffuser	Liner	Shock Washer	Gooseneck
250 AMP	63-11xx	63-2150	63-3103	64-4xxx	63-6103 HD	63-5160
350 AMP	63-11xx	63-2150	63-3103	64-4xxx	63-6202 HD	63-5160
450 AMP	63-11xx	65-2562	63-3103	64-4xxx	63-6202 HD	64-5160
550 AMP	63-11xx	65-2562	63-3103	64-4xxx	63-6202 HD	65-5160

Heavy duty setup is available on request.

1. NOZZLES - INSULATED

			ID
A	63-2138	HD * Flush	3/8" (09.5mm)
	63-2662	HD 1/8" Stick-Out	5/8" (15.9mm)
B	63-2150	HD 1/8" Tip Recess	1/2" (12.7mm)
	63-2162	HD 1/8" Tip Recess	5/8" (15.9mm)
	63-2175	HD 1/8" Tip Recess	3/4" (19.1mm)
C	64-2562	Extra HD Cu 1/4" Tip Rec.	5/8" (15.9mm)
	64-2575	Extra HD Cu 1/4" Tip Rec.	3/4" (19.1mm)

ID

			ID
D	65-2550	HD Cu 1/8" Tip Recess	1/2" (12.7mm)
	65-2562	HD Cu 1/8" Tip Recess	5/8" (15.9mm)
	65-2575	HD Cu 1/8" Tip Recess	3/4" (19.1mm)
	64-2950	HD Bottleneck 1/8 Stick-out	1/2" (12.7mm)
	63-2950	HD Bottleneck 1/8 Recess	1/2" (12.7mm)
	65-2662	Extra HD 1/8 Stick-out	5/8" (15.9mm)
	65-2362	Extra HD Brass 1/8 Stick-out	5/8" (15.9mm)

* Heavy Duty

CONSUMABLES – SEMI-AUTOMATIC 250, 350, 450 AND 550 AMP

MIG

2. CONTACT TIPS

			ID	
A	63-1130	HD *	.030	(0.8mm) .037
	63-1135	HD	.035	(0.9mm) .043
	63-1140	HD	.040	(1.0mm) .048
	63-1145	HD	.045	(1.2mm) .055
	63-1152	HD	.052	(1.3mm) .063
	63-1178	HD	5/64	(2.0mm) .093
	63-1193	HD	3/32	(2.4mm) .110
	63-1162	HD	1/16"	(1.6mm) .073
	B	63-1230	HD Tapered	.030
63-1235		HD Tapered	.035	(0.9mm) .043
63-1245		HD Tapered	.045	(1.2mm) .055
63-1252		HD Tapered	.052	(1.3mm) .063
C	63-1335	HD CuCr **	.035	(0.9mm) .043
	63-1345	HD CuCr	.045	(1.2mm) .050
	63-1352	HD CuCr	.052	(1.3mm) .059
	63-1362	HD CuCr	1/16"	(1.6mm) .073
	63-1378	HD CuCr	5/64"	(2.0mm) .093
	63-1394	HD CuCr	3/32"	(2.4mm) .110
D	65-1130	Extra HD	.030	.037
	65-1135	Extra HD	.035	.043
	65-1145	Extra HD	.045	.055
	65-1162	Extra HD	1/16	.067
	65-1178	Extra HD	5/64	.093
	65-1193	Extra HD	3/32	.110
	65-11120	Extra HD	7/64	.120
	65-11125	Extra HD	1/8	.136
	65-1235	Extra HD	.035 tprd	.043
	65-1245	Extra HD	.045 tprd	.055
	65-1252	Extra HD	.052 tprd	.063
	65-1335	Extra HD CuCr	.035	.040
	65-1345	Extra HD CuCr	.045	.050
	65-1352	Extra HD CuCr	.052	.060
	65-1362	Extra HD CuCr	1/16	.060

NOTE:
65-11XX SERIES TIPS ARE ONLY TO BE USED WITH 65 SERIES LIGHTNING DIFFUSERS. PLEASE CALL FOR INFORMATION.

3. GAS DIFFUSERS & RETAINER

A	63-3201	Diffuser for HD Contact Tip
	63-3104	Retainer (for 63-3201 above)
B	63-3103	HD *
C	65-3103	Extra HD
	65-3103-2	Robotic Extra HD
	63-3301	Gas Diffuser O-Ring

4. SHOCK WASHERS

A	63-6202 HD (Heavy Duty)
B	63-6202

5. GOOSENECKS (INCLUDES BODY ASSY.)

62-5160	Fixed	60°	250
63-5100	Fixed	180°	250-350
63-5145	Fixed	45°	250-350
63-5160	Fixed	60°	250-350
63-5160S	Swivel	60°	250-350
64-5100	Fixed	180°	450
64-5145	Fixed	45°	450
64-5160	Fixed	60°	450
64-5160S	Swivel	60°	450
65-5160	Fixed	60°	550
65-5260S	Swivel	60°	550
65-5100	Fixed	180°	550
65-5145	Fixed	45°	550

6. LINERS

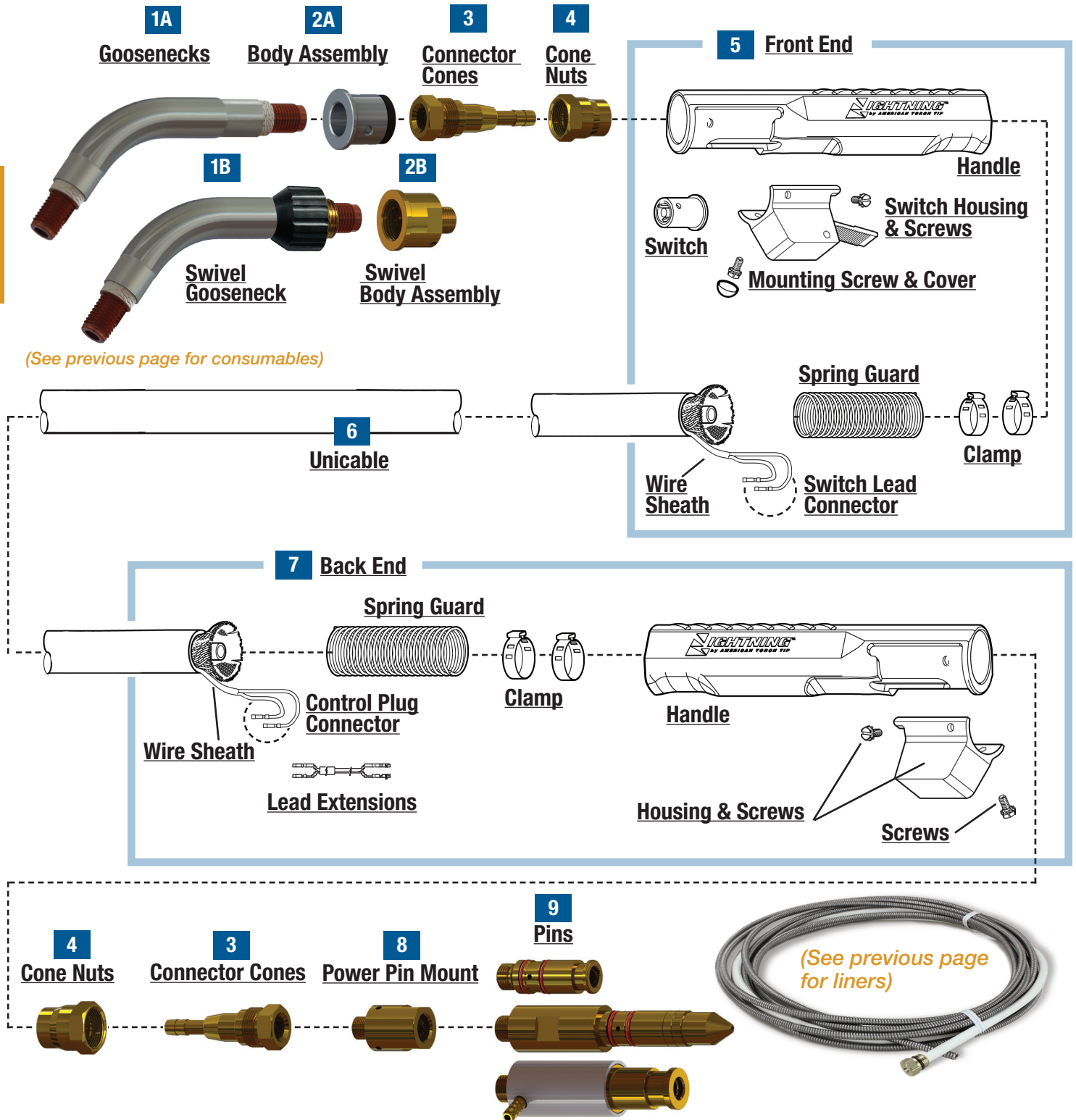
Wire Size	Length	Part#	OD	
.023"	(.6mm)	15'	64-4115	0.150
.035"	(.9mm)	15'	62-4315	0.156
.035"	(.9mm)	25'	62-4325	0.156
.045"	(1.6mm)	15'	62-4515	0.156
.045"	(1.6mm)	25'	62-4525	0.156
.030"	(.8mm)	15'	64-4215	0.182
.035"	(.9mm)	10'	64-4310	0.175
.035"	(.9mm)	15'	64-4315	0.175
.035"	(.9mm)	25'	64-4325	0.175
.035"	(.9mm)	25'	64-4325	0.175
.035"	(.9mm)al	15'	64-4415	0.189
.045"	(1.6mm)	10'	64-4510	0.189
.045"	(1.6mm)	15'	64-4515	0.189
.045"	(1.6mm)	25'	64-4525	0.189
3/64"	(1.6mm)	10'	64-4510	0.189
3/64"	(1.6mm)	15'	64-4515	0.189
3/64"	(1.6mm)	25'	64-4525	0.189
.52"	(1.6mm)	10'	64-4510	0.189
.52"	(1.6mm)	15'	64-4515	0.189
.52"	(1.6mm)	25'	64-4525	0.189
1/16"	(1.6mm)	10'	64-4510	0.189
1/16"	(1.6mm)	15'	64-4515	0.189
1/16"	(1.6mm)	25'	64-4525	0.189
3/64-1/16al		15'	64-4615	0.189
5/64-3/32		15' Flat	64-4715	0.189
5/64-3/32		FC 10'	64-4815	0.21
.035 - .045		15'	64-4915	0.192

(for S.S. Wire)

* Heavy Duty, ** Copper Zirconium Chrome

REPLACEMENT PARTS – SEMI-AUTOMATIC 250, 350, 450 AND 550 AMP

MIG



REPLACEMENT PARTS – SEMI-AUTOMATIC 250, 350, 450 AND 550 AMP

1. GOOSENECKS

A	62-5160	Gooseneck	60°	250
	63-5100	Gooseneck	180°	250-350
	63-5145	Gooseneck	45°	250-350
	63-5160	Gooseneck	60°	250-350
	64-5100	Gooseneck	180°	450
	64-5145	Gooseneck	45°	450
	64-5160	Gooseneck	60°	450
	65-5160	Gooseneck	60°	550
	65-5100	Gooseneck	180°	550
	65-5145	Gooseneck	45°	550
	65-5160	Gooseneck	60°	550
B	63-5160S	Swivel Gooseneck	60°	250-350
	64-5160S	Swivel Gooseneck	60°	450
	65-5260S	Swivel Gooseneck	60°	550

2. BODY ASSEMBLY

A	63-6601	Body Assembly
	63-6501	Body Set Screw
B	63-5104	Body Assembly Swivel Mount

3. CONNECTOR CONE

62-6301	Connector Cone	250 AMP
63-6301	Connector Cone	350 AMP
64-6301	Connector Cone	450-550 AMP

4. CONE NUT

63-6302	Cone Nut 250-450 AMP
65-6302	Cone Nut 550 AMP

5. GUN HANDLE

64-6106	Handle
64-6602	Switch Housing & Screws
64-6603	Dual Schedule Trigger
64-6604	Locking Trigger
64-6501	Mounting Screw
64-5110	Mounting Screw Cover
64-6601	Switch
62-7902	Clamps 250 AMP
64-7907	Clamps 350-450 AMP
65-7902	Clamps 550 AMP
63-6502	Spring Guard
64-7901	Switch Lead Connector
64-7902	Wire Sheath

6. UNICABLE

	Length	AMP		Length	AMP
62-7110	10	250	64-7110	10	450
62-7112	12	250	64-7112	12	450
62-7115	15	250	64-7115	15	450
62-7120	20	250	64-7120	20	450
62-7125	25	250	64-7125	25	450
63-7110	10	350	65-7110	10	550
63-7112	12	350	65-7112	12	550
63-7115	15	350	65-7115	15	550
63-7120	20	350	65-7120	20	550
63-7125	25	350	65-7125	25	550

**UNICABLE BULK
(per foot)**

62-7300	250 AMP
63-7300	350 AMP
64-7300	450 AMP
65-7300	500 AMP

7. BACK END

64-7902	Wire Sheath
64-8403	Control Plug (Lincoln)
64-7909	Control Plug Connector
64-8404	Lead Extensions (Standard)
63-6502	Spring Guard
62-7902	Clamp 250 AMP
64-7907	Clamp 350-450 AMP
65-7902	Clamp 550 AMP
64-6106	Handle
63-6101	Housing & Screws
64-6501	Screws
64-8303	Guide Cap, .035-1/16, Amphenol (Miller)
64-8304	Guide Cap, 5/64-3/32, Amphenol (Miller)
64-8306	Butt Connectors, Amphenol (Miller)
MSAK-354	Spade Connectors (female), Amphenol (Miller)

8. POWER PIN MOUNT

64-8208	Power Pin Mount
---------	-----------------

9. POWER PINS

64-8211	Tweco Std, Tweco #4
64-8212-L	Tweco #5
64-8501	Bernard
64-8100	Euro
64-8411	Lincoln
64-8311	Miller

ALSO AVAILABLE

Gooseneck Heat Shield (not shown)

MIG

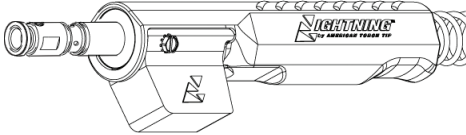
146

LIGHTNING®

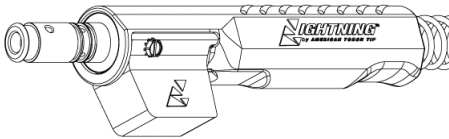
COMPLETE POWER PIN (BACK END) ASSEMBLIES

SEMI-AUTOMATIC – 250, 350, 450 and 550 Amp

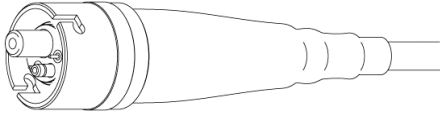
Tweco #4
64-8201



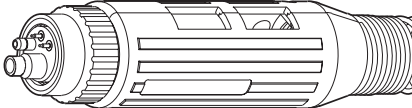
Tweco #5
64-8204-L



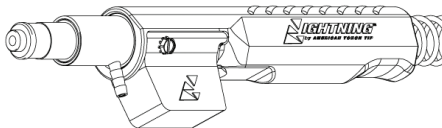
Bernard
64-8501



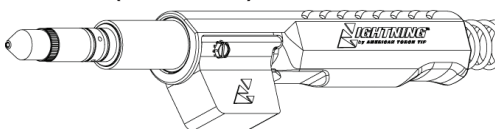
Euro
64-8100



Lincoln
64-8401



Miller
64-8301 (.035 - 1/16)



MIG

SEMI-AUTOMATIC 250, 350, 450 AND 550 AMP

MIG

GENERAL SAFETY

1. Disconnect all power before servicing or changing Lightning welding gun components. Failure to disconnect power can lead to dangerous electrical shock which can kill.
2. Smoke, fumes and gases can be dangerous to your health. Keep smoke, fumes and gases from the breathing area. Fumes from welding are of various types and strengths, depending on the kind of base metal being welded.
3. Arc welding produces dangerous light radiation. Adequate eye protection must be worn.
4. All exposed skin must be covered with flame resistant, protective clothing. Do not wear clothing made from flammable synthetic fibers.
5. Protective screens or barriers should be used to protect others from spatter, flash and glare while welding.

TROUBLESHOOTING

Contact tip burn back.

<u>Possible Cause</u>	<u>Possible Solution</u>
1. Improper voltage and/or wire feed speed.	1. Set parameters.
2. Erratic wire feeding.	2. See 'Erratic Arc'.
3. Improper tip stickout.	3. Adjust nozzle / tip relationship
4. Improper electrode stickout.	4. Adjust torch to base metal relationship.
5. Faulty ground.	5. Repair all cables and connectors.

Tip disengages from retaining head.

<u>Possible Cause</u>	<u>Possible Solution</u>
1. Worn retaining head.	1. Replace tip and/or retaining head.
2. Improper tip installation.	2. Finger-tighten, then finish tightening with the appropriate tool.

Erratic arc.

<u>Possible Cause</u>	<u>Possible Solution</u>
1. Worn contact tip.	1. Replace.
2. Buildup inside of liner.	2. Replace liner, check condition of electrode.
3. Wrong tip size.	3. Replace with correct tip size.
4. Incorrect Welding Parameters	4. Use wire manufacturer's parameters

Excess spatter.

<u>Possible Cause</u>	<u>Possible Solution</u>
1. Improper machine parameters.	1. Adjust parameters.
2. Incorrect tip or installation.	2. Adjust nozzle / tip relationship.
3. Incorrect nozzle or shielding.	3. Use correct nozzle and shielding gas coverage.
4. Contaminated wire or work piece.	5. Replace wire and clean work piece.

Discolored Liner.

<u>Possible Cause</u>	<u>Possible Solution</u>
1. Short circuit to electrode.	1. Check for wire short circuiting in feeder
2. Cuts in outer jacket, copper exposed	2. Replace gun.

continued >

TROUBLESHOOTING

Wire not feeding or bumpy feeding.

Possible Causes

1. Feeder relay / malfunction.
2. Broken control lead.
3. Poor adaptor connection.
4. Incorrect type of drive rolls.
5. Improper drive rolls size.
6. Drive roll tension misadjusted.
7. Burn back to contact tip.
8. Wrong size liner.
9. Buildup inside of liner.
10. Worn drive roll.
11. Improper guide tube relationship
12. Improper wire guide diameter.
13. Gaps at liner into gas diffuser

Possible Solution

1. Consult feeder manufacturer.
2. Connect spare control leads.
3. Test and replace leads and/or contact pins.
4. Use manufacturers recommended drive rolls
5. Replace with proper size.
6. Adjust tension at feeder.
7. See 'Contact tip burn back'.
8. Replace with correct size.
9. Replace liner, check condition of electrode.
10. Replace with new drive roll.
11. Eliminate all gaps in electrode path.
12. Replace with proper guide diameter.
13. Reset liner and lock or replace with new liner

Premature contact tip failure.

Possible Cause

1. Improper voltage or wire feed speed.
2. Erratic wire feeding.
3. Improper tip stickout.
4. Improper electrode stickout.

Possible Solution

1. Set parameters.
2. See 'Erratic Arc'.
3. Adjust nozzle / tip relationship.
4. Change length of wire stickout.

MIG Gun running hot.

Possible Cause

1. Exceeding duty cycle.
2. Loose or poor power connection.

Possible Solution

1. **a.** Replace with properly rated duty cycle MIG Gun.
b. Decrease parameters to within Gun rating.
2. **a.** Clean and retighten all electrical connections
b. Check rating and condition of ground clamp

Porosity in weld.

Possible Cause

1. Nozzle/Insulator/O-rings worn.
2. Retaining head spring/band
3. Extreme heat or duty cycle.
4. Gas not getting to the weld
5. Gas ports plugged.
6. Loose fittings or cut gas hose.

Possible Solution

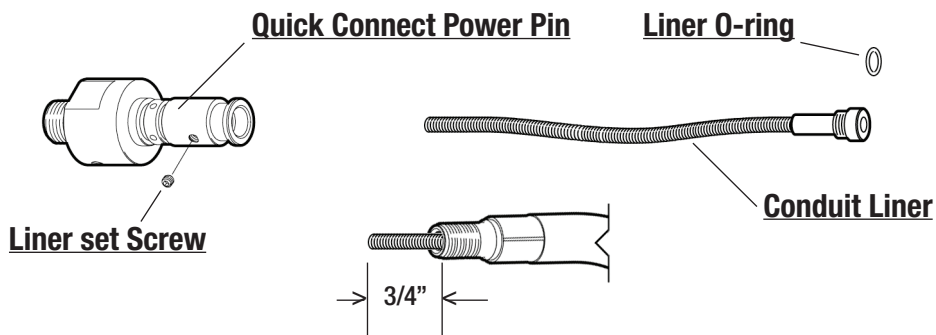
1. Replace
2. Replace retaining head.
3. Use Xheavy duty consumables.
4. Check gas regulator/flowmeter/cylinder
5. Clean or replace gas diffuser//nozzle.
6. Tighten or repair hose lines.

1.1 LINER REPLACEMENT

TOOLS REQUIRED

Vise
5/64 Allen wrench
Lineman pliers

1. Remove nozzle, contact tip and tip holder from gooseneck. (Not shown)
2. With gun straightened, loosen liner set screw on quick connect power pin at back end of gun using a 5/64" Allen wrench. (See Figure 1)
3. Using pliers, grip liner and remove from gun.
4. Install new liner by feeding through gun. Use short strokes to avoid kinking. Use clockwise rotation as needed.
5. Be sure o-rings on liner head seats into inside bore of power pin.
6. Tighten set screw on power pin to secure liner. Do not overtighten.
7. Using pliers, trim liner to extend to 3/4" (20mm) from end of gooseneck.
8. Remove any burrs on the inside and outside of liner to ensure smooth wire flow and proper seating inside diffuser.
9. Reinstall tip holder, contact tip and nozzle onto gooseneck.
Note: Liner should be visible through gas holes of tip holder.
10. Install gun to feeder.



* Trim dimension may change depending on front end consumables being used.
Figure 1

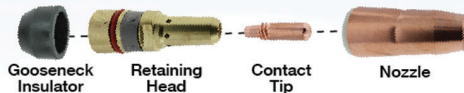
SEMI-AUTOMATIC GUN CONVERSION KITS

AVAILABLE FOR BERNARD, LINCOLN & TWECO WITH A SIMPLE CHANGE-OUT OF PARTS

LIGHTNING® RETAINING HEADS

Part #	Description
65-3103 *	Retaining Head for Extra Heavy Duty
63-3103	Retaining Head T/L
63-3103-2	Retaining Head T/L
63-3116	Thread-on Retaining Head HD
63-3402	Retaining Ring
63-3301	O-Ring Orange 016
63-3118-T	Diffuser, Bernard Threaded

* This retaining head must be used with #65-11XX contact tip. See Contact Tips Selector Chart on p.2



BENEFITS

- ✓ Greater surface area contact between tip and head ensures better heat dissipation and conductivity.
- ✓ Tapered tip design creates a more secure seat, eliminating loose tips.
- ✓ Cooler tip temperature reduces wear and extends tip life.
- ✓ Dual-lead thread design allows for 180 degree rotation of tip to new wear point for extended tip life.
- ✓ Brass insert prevents wear and extends life.
- ✓ Superior surface finish minimizes spatter adhesion.
- ✓ Durable hard drawn copper or brass withstands abuse.

Lightning® Contact Tips Selector Chart

Contact Tips Part #	Heavy Duty Tip - Size
63-1130	Contact Tip HD .030 pk 10
63-1135	Contact Tip HD .035 pk 10
63-1135-40	Contact Tip HD .035/.040 I.D. pk 10
63-1138	Contact Tip .030 Pk 10 Robotic
63-1140	Contact Tip HD .040 pk 10
63-1145	Contact Tip HD .045 pk 10
63-1147	Contact Tip HD 3/64" al pk 10
63-1152	Contact Tip HD .052 pk 10
63-1162	Contact Tip HD 1/16" pk 10
63-1168	Contact Tip HD .068 / .078 I.D. pk 10
63-1172	Contact Tip HD .072 pk 10 SPECIAL
63-1178	Contact Tip HD 5/64" pk 10
63-1193	Contact Tip HD 3/32" pk 10
Part #	Tapered Tip
63-12XX	XX = last 2 digits indicate wire size
Part #	CZ Tip (Chromium Zirconium)
63-13XX	XX = last 2 digits indicate wire size
Part #	Extra Heavy Duty Tip
65-11XX *	XX = last 2 digits indicate wire size

* This contact tip must be used with #65-3103 retaining head. See Lightning Retaining Heads Chart on p.1

BERNARD® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Q-Gun Series	63-6105	63-3118	63-11XX †	6X-XXXX **
EZ Feed Series	63-6105	63-3118	63-11XX †	6X-XXXX **
T-Series †	63-6202-HD	63-3103	63-11XX †	6X-XXXX **
Roughneck C Miller	63-6105	63-3118	63-11XX †	6X-XXXX **

LINCOLN® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Magnum 300	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum 400	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum Pro	63-6105	63-3119	63-11XX †	6X-XXXX **

TWECO® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Tweco #3	63-6105	63-3103	63-11XX †	6X-XXXX **
Tweco #4	63-6105	63-3103	63-11XX †	6X-XXXX **
SprayMaster 450	63-6105	63-3103	63-11XX †	6X-XXXX **
WeldSkill 400	63-6105	63-3103	63-11XX †	6X-XXXX **

Use the Lightning® contact tip system (gooseneck insulator, retaining head, contact tip and nozzle) with Bernard® Lincoln® or Tweco® MIG guns. Use 63-3118 Retaining Head on goosenecks with external 9/16"-18 thread, such as Q-gun and EZ Feed guns with 1/4" NPT thread.

† T-Series retaining head can only be used on Bernard T-Series (Tregaskiss) guns.

† 63-11XX (XX = your wire size)

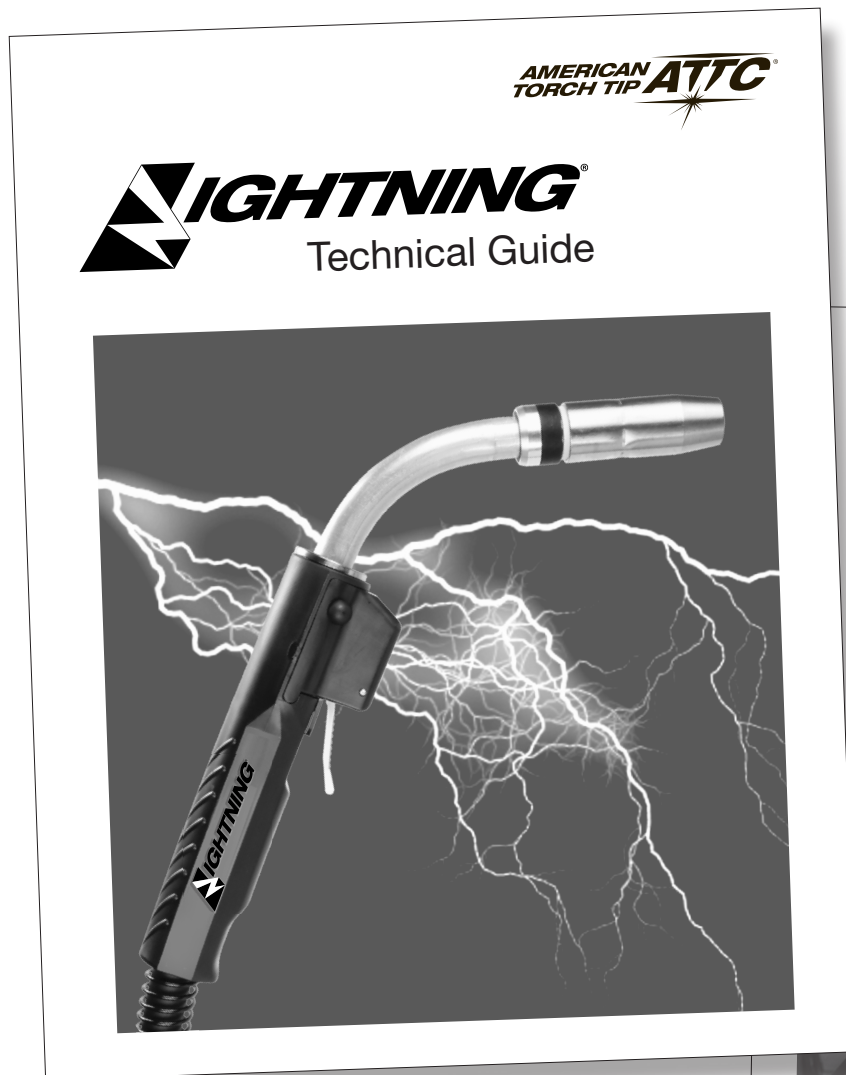
** 6X-XXXX (see Nozzle Selector Chart on next page)

Lightning® Nozzle Selector Chart (Air-Cooled Slip On)

Standard Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
63-2138	3/8" Copper	.938" / 2.75"	Flush
64-2950	1/2" Brass	.938" / 2.63"	1/8" Stickout
63-2950B	1/2" Brass	.938" / 2.88"	1/8" Recess
63-2150	1/2" Copper	.938" / 2.88"	1/8" Recess
63-2762	5/8" Copper	.938" / 2.51"	1/4" Stickout
63-2662	5/8" Copper	.938" / 2.63"	1/8" Stickout
63-2162	5/8" Copper	.938" / 2.88"	1/8" Recess
63-2175	3/4" Copper	.938" / 2.88"	1/8" Recess
Heavy Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
65-2550	1/2" Copper	1.062" / 2.88"	1/8" Recess
65-2662	5/8" Copper	1.062" / 2.63"	1/8" Stickout
65-2362	5/8" Brass	1.062" / 2.63"	1/8" Stickout
64-2962	5/8" Copper	1.062" / 2.75"	Flush
65-2862	5/8" Brass	1.062" / 2.75"	Flush
63-2362	5/8" Brass	1.062" / 2.88"	1/8" Recess
65-2562	5/8" Copper	1.062" / 2.88"	1/8" Recess
64-2562	5/8" Copper	1.062" / 3.00"	1/4" Recess
65-2575	3/4" Copper	1.062" / 2.88"	1/8" Recess
65-2375	3/4" Brass	1.062" / 2.88"	1/8" Recess
64-2575	3/4" Copper	1.062" / 3.00"	1/4" Recess
64-2387	7/8" Brass	1.062" / 3.00"	1/4" Recess
65-2562-T	5/8" Copper	1.062" / 2.78"	1/8" Recess

READ MORE ABOUT IT...

Download these Technical Guides and other **LIGHTNING**[®] literature at AmericanTorchTip.com/mig-brochures.



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AMERICAN TORCH TIP



ROBOTIC TORCH - 550 AMPS

A New Reliability in Robotic Guns

- The Lightning® 550 amp robotic MIG gun has been carefully designed to reduce downtime from part failure, faulty welds and change outs.
- All our components are made to operate in the harsh environment of high volume production. The American Torch Tip Lightning MIG gun stands up to excessive vibration, cable whip, temperature fluctuations and unexpected crashes.
- Precision components allow change outs to be made with confidence that the gooseneck will always be aligned with the gun housing; insuring reliability and repeatability.

Nozzle

- High polished finish offers superior spatter protection.
- Hard drawn copper or brass in variety of shapes and sizes.
- Brass inserts designed to protect against wear and offers superior nozzle protection.

Tapered Contact Tip and Diffuser

- Tip and diffuser design allows for greater heat dissipation and electrical conductivity.
- Easy start contact tip has quick change double thread.

Easy Change Gooseneck

- Fast and simple gooseneck change outs.
- Insulated aluminum protects the gooseneck.
- 650 AMP capacity.

High Strength Handle

- Solid Body design crafted from aircraft aluminum that stands up to extreme impact.

Strain Relief

- Supports cable weight and reduces cable kinking.

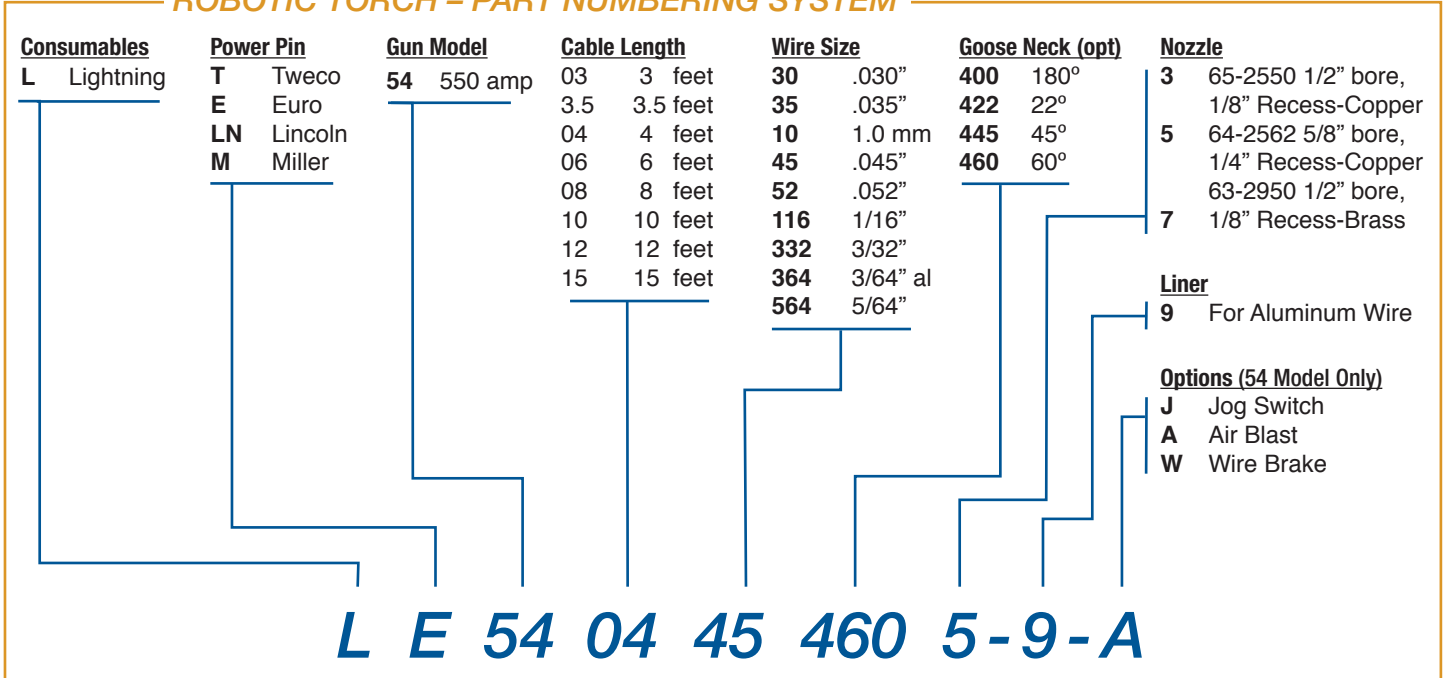
Adapters

- 22° robotic arms, adapters for most wire feeders, and a complete line of replacement parts are available.



MIG

ROBOTIC TORCH – PART NUMBERING SYSTEM



MIG

DUTY CYCLE AMPERAGE RATINGS

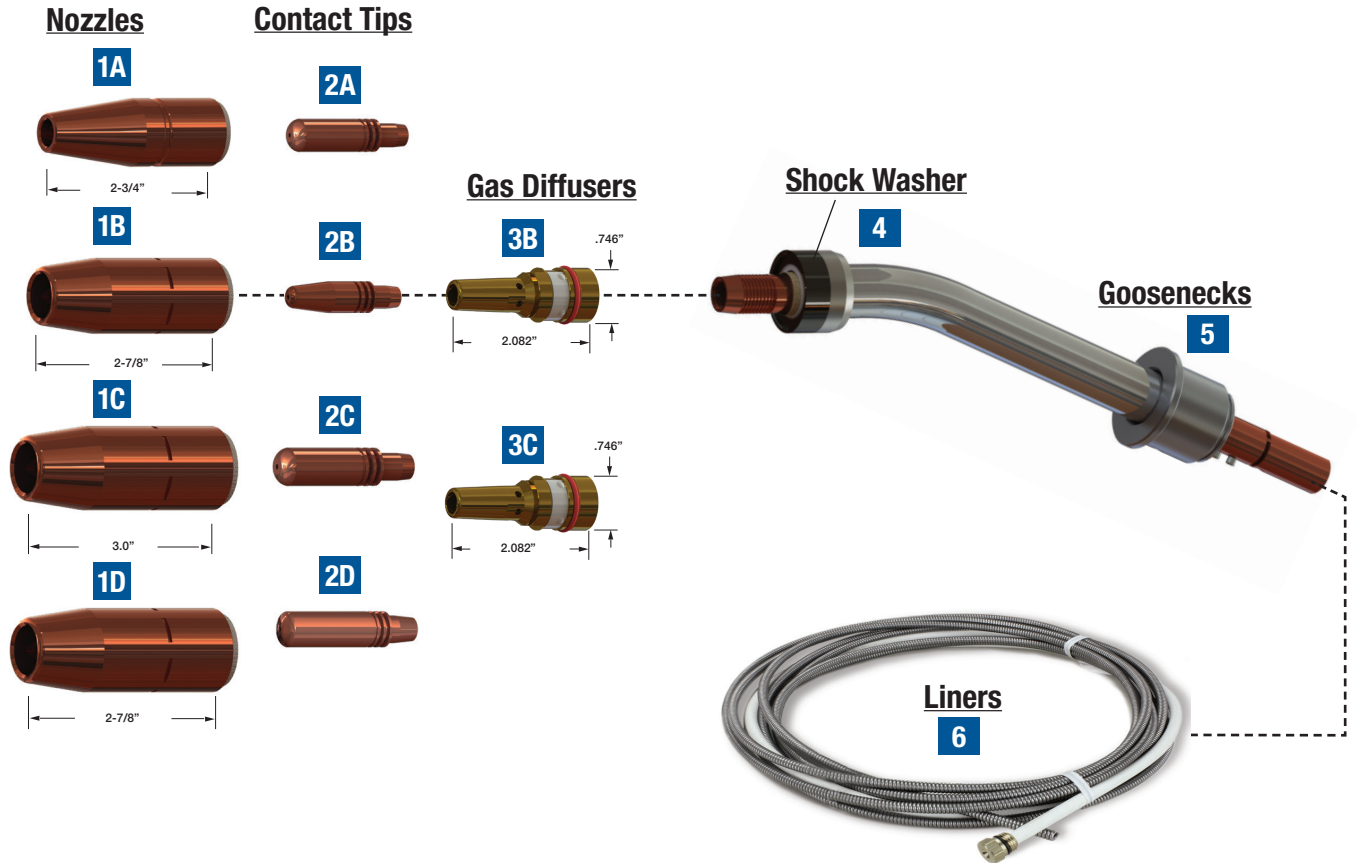
GUN MODEL	60% Duty Cycle - Mixed Gases 100% Duty Cycle - CO ₂
550 amp	550 amps



CONSUMABLES AND REPAIR PARTS ON FOLLOWING PAGES

CONSUMABLES – ROBOTIC TORCH 550 AMP

MIG



1. NOZZLES - INSULATED

ID

A	63-2138	Nozzle Std. Flush	3/8"	(09.5mm)
	63-2662	Nozzle 1/8" Stick-Out	5/8"	(15.9mm)
B	63-2150	Nozzle Std. 1/8" Tip Recess	1/2"	(12.7mm)
	63-2162	Nozzle Std. 1/8" Tip Recess	5/8"	(15.9mm)
	63-2175	Nozzle Std. 1/8" Tip Recess	3/4"	(19.1mm)
C	64-2562	Nozzle HD* Cu 1/4" Tip Rec.	5/8"	(15.9mm)
	64-2575	Nozzle HD Cu 1/4" Tip Rec.	3/4"	(19.1mm)
D	65-2550	Nozzle HD Cu 1/8" Tip Rec.	1/2"	(12.7mm)
	65-2562	Nozzle HD Cu 1/8" Tip Rec.	5/8"	(15.9mm)
	65-2575	Nozzle HD Cu 1/8" Tip Rec.	3/4"	(19.1mm)
	64-2950	Nozzle Bottleneck 1/8 STKT	1/2"	(12.7mm)
	63-2950	Nozzle Bottleneck 1/8 REC	1/2"	(12.7mm)
	65-2662	Nozzle HD 1/8 STKT	5/8"	(15.9mm)
	65-2362	Nozzle HD Brass 1/8 STKT	5/8"	(15.9mm)
	64-2962	Nozzle Flush	5/8"	

ALSO AVAILABLE

65-2862	Nozzle Flush	5/8"
63-2362	Nozzle 1/8" Stick Out	5/8"
65-2375	Nozzle 1/8" Recess	3/4"
64-2387	Nozzle 1/4" Recess	7/8"
63-2762	Nozzle 1/4" Stick-out	5/8"

NOTES:

THREADED VERSIONS AVAILABLE FOR ALL NOZZLES. ADD "T" TO PART NUMBER. EXAMPLE: 64-2562T

* Heavy Duty

CONSUMABLES – ROBOTIC TORCH 550 AMP

2. CONTACT TIPS

ID

A	63-1130	HD *	.030	(0.8mm)	.037
	63-1135	HD .035		(0.9mm)	.043
	63-1140	HD .040		(1.0mm)	.048
	63-1145	HD .045		(1.2mm)	.055
	63-1152	HD .052		(1.3mm)	.063
	63-1178	HD 5/64		(2.0mm)	.093
	63-1193	HD 3/32		(2.4mm)	.110
	63-1162	HD 1/16"		(1.6mm)	.073
B	63-1230	HD Tapered	.030	(0.8mm)	.037
	63-1235	HD Tapered	.035	(0.9mm)	.043
	63-1245	HD Tapered	.045	(1.2mm)	.055
	63-1252	HD Tapered	.052	(1.3mm)	.063
C	63-1335	HD CuCr **	.035	(0.9mm)	.043
	63-1345	HD CuCr	.045	(1.2mm)	.050
	63-1352	HD CuCr	.052	(1.3mm)	.059
	63-1362	HD CuCr	1/16"	(1.6mm)	.073
	63-1378	HD CuCr	5/64"	(2.0mm)	.093
	63-1394	HD CuCr	3/32"	(2.4mm)	.110
D	65-1130	Extra HD	.030		.037
	65-1135	Extra HD	.035		.043
	65-1145	Extra HD	.045		.055
	65-1162	Extra HD	1/16		.067
	65-1178	Extra HD	5/64		.093
	65-1193	Extra HD	3/32		.110
	65-11120	Extra HD	7/64		.120
	65-11125	Extra HD	1/8		.136
	65-1235	Extra HD Tapered	.035		.043
	65-1245	Extra HD Tapered	.045		.055
	65-1252	Extra HD Tapered	.052		.063
	65-1335	Extra HD CuCr **	.035		.040
	65-1345	Extra HD CuCr	.045		.050
	65-1352	Extra HD CuCr	.052		.060
	65-1362	Extra HD CuCr	1/16		.060

3. GAS DIFFUSERS (USE W/ H.D. NOZZLES)

B	63-3103-2	HD
	65-3103-2	Extra HD

4. SHOCK WASHER

63-6202-HD	Shock Washer HD
------------	-----------------

5. GOOSENECKS

65-R128-180	Gooseneck	180°	550
65-R128-45	Gooseneck	45°	550
65-R128-60	Gooseneck	60°	550
65-R128-60	Gooseneck	22°	550

6. LINERS

Wire Size	Length	Part #	OD
.035"(.9mm)	6'	64-4306	0.175
.035"(.9mm)	10'	64-4310	0.17
.045"(.1.6mm)	6'	64-4506	0.189
.045"(.1.6mm)	10'	64-4510	0.189

CALL FOR INFORMATION ABOUT OTHER REPLACEMENT LINERS

MIG

STANDARD ROBOTIC CONFIGURATION (Lightning®)

	STANDARD SHORT ARC				HEAVY DUTY				TAPERED			
	NOZZLE	CONTACT	DIFFUSER	SHOCK WASHER	NOZZLE	CONTACT	DIFFUSER	SHOCK WASHER	NOZZLE	CONTACT	DIFFUSER	SHOCK WASHER
LIGHTNING 550 AMP	65-2562	63-11xx	63-3103-2	63-6202-HD	65-2562	63-11xx	63-3103-2	63-6202-HD	63-2138	63-12xx	63-3103-2	63-6202-HD
TREGASKISS 550 AMP	65-2562	403-1-xx	404-3	63-6202-HD	65-2562	403-1-xx	404-3	63-6202-HD	63-2138	403-2-xx	404-3	63-6202-HD

* Heavy Duty, ** Copper Zirconium Chromium

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LIGHTNING®

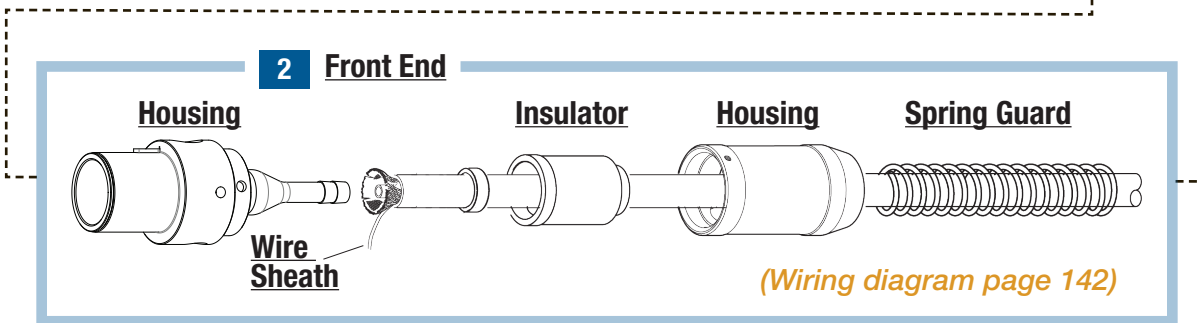
REPLACEMENT PARTS – ROBOTIC TORCH 550 AMP

MIG



1
Gooseneck

(See previous page for consumables)

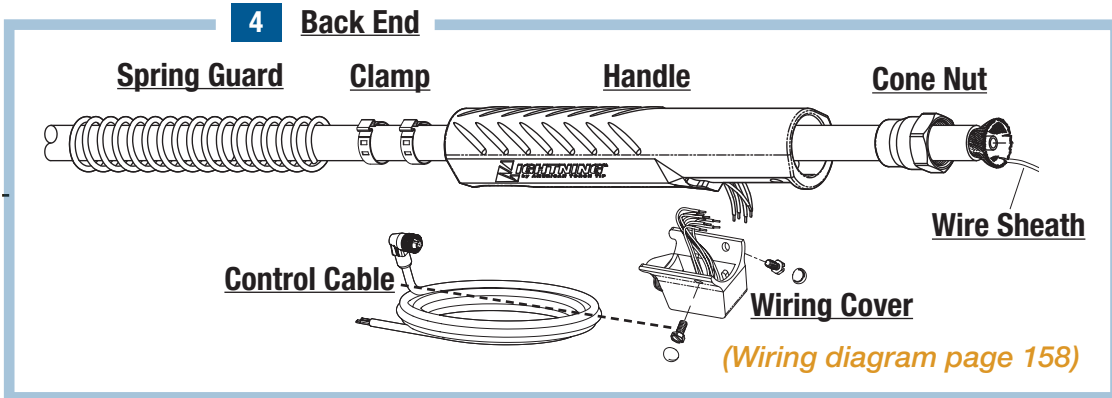


2 **Front End**

(Wiring diagram page 142)

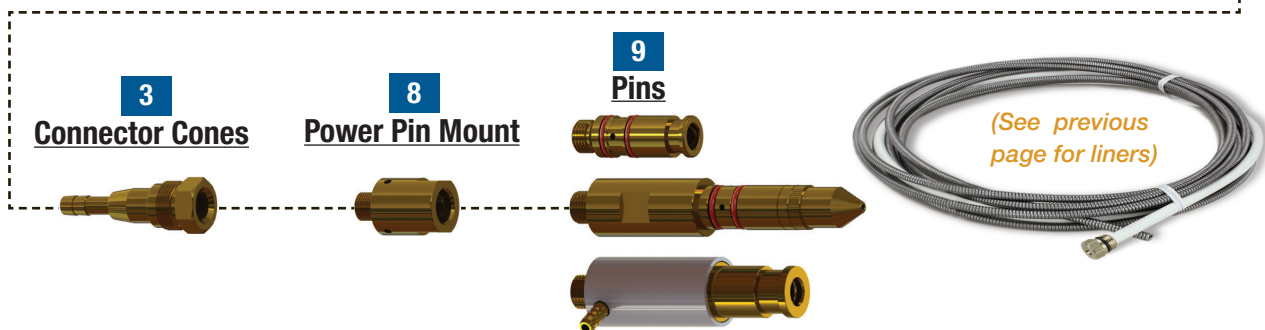


3 **Unicable**



4 **Back End**

(Wiring diagram page 158)



3
Connector Cones

8
Power Pin Mount

9
Pins

(See previous page for liners)

REPLACEMENT PARTS – ROBOTIC TORCH 550 AMP

1. GOOSENECK

65-R128-180	Gooseneck	180°	550
65-R128-45	Gooseneck	45°	550
65-R128-60	Gooseneck	60°	550
65-R128-22	Gooseneck	22°	550

Special lengths & angles are available. Call for information.

2. TORCH BODY

62-7902	Wire Sheath
65-6501	Spring Guard

3. UNICABLE

Call for information about replacement Unicable

4. POWER PIN HANDLE

65-6501	Spring Guard	
65-7902	Clamp (2 required)	550 AMP
64-6106	Handle	
65-6302	Cone Nut	550 AMP
62-7902	Wire Sheath	
63-6101	Wiring Cover	
65-R138	Control Cable	

5. CONNECTOR CONE

64-6301	Connector Cone
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6. POWER PIN MOUNT

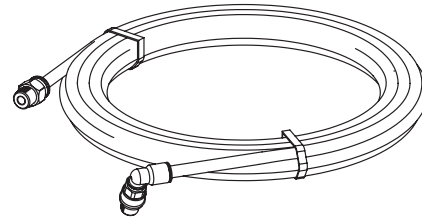
64-8208	Power Pin Mount
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7. POWER PINS

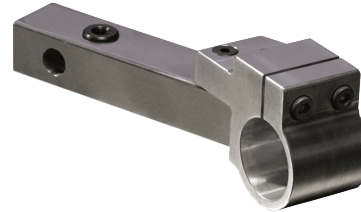
64-8211	Tweco Std, Tweco #4
64-8212-L	Tweco #5
64-8501	Bernard
64-8100	Euro
64-8411	Lincoln
64-8311	Miller

Call for availability of models not listed above.

ALSO AVAILABLE



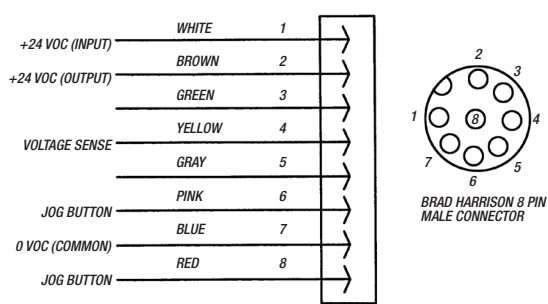
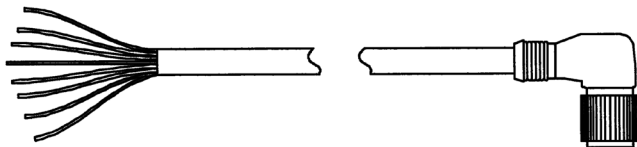
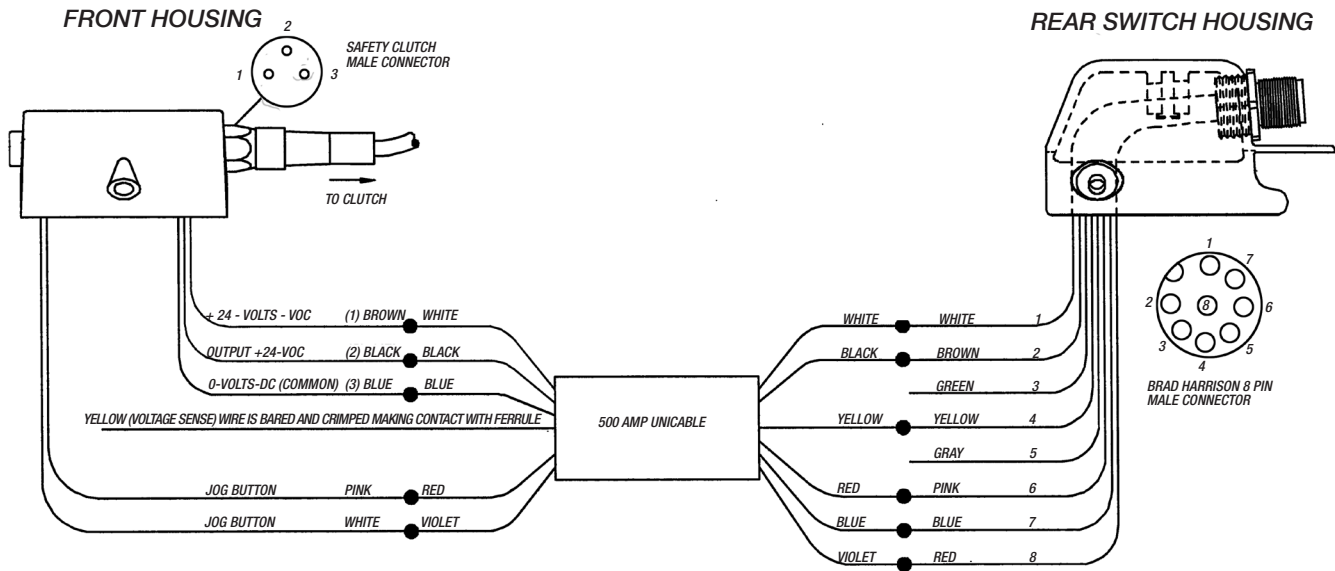
65-R148 Air Blast Hose

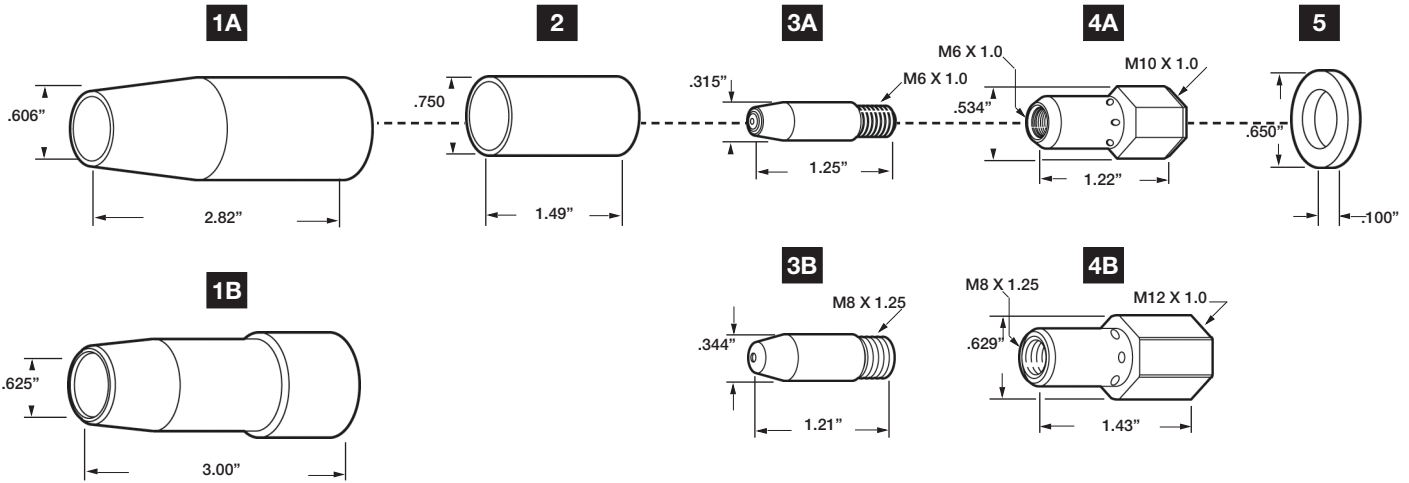


AS-306-3 Adapter 45 degrees
AS-306-1 Adapter 22 degrees
AS-306-2 Adapter 180 degrees

WIRING DIAGRAM – ROBOTIC TORCH 550 AMP

MIG





MIG

1. NOZZLE

			<i>I.D.</i>
A	750-04-013	Nozzle	.625
B	750-04-015S	Nozzle Self Ins.	.606

2. INSULATORS

A	750-01-738	Nozzle Insulator 300/400A	.650
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3. CONTACT TIPS

A	750-23-511	Contact Tip	.023
	750-35-511	Contact Tip	.035
	750-40-511	Contact Tip	.040
	750-45-511	Contact Tip	.045
	750-52-511	Contact Tip	.052
B	750-35-014	Contact Tip 500A	.035
	750-45-014	Contact Tip 500A	.045
	750-45-014-LL	Contact Tip CuCr	.050
	750-52-014	Contact Tip 500A	.052
	750-52-014-LL	Contact Tip CuCR	.059
	750-10-014	Contact Tip	.048
	750-035-014LL	Contact Tip CuCR	.040

4. DIFFUSER

A	750-02-007	Gas Diffuser
B	750-04-033	Gas Diffuser

5. INSULATING WASHER

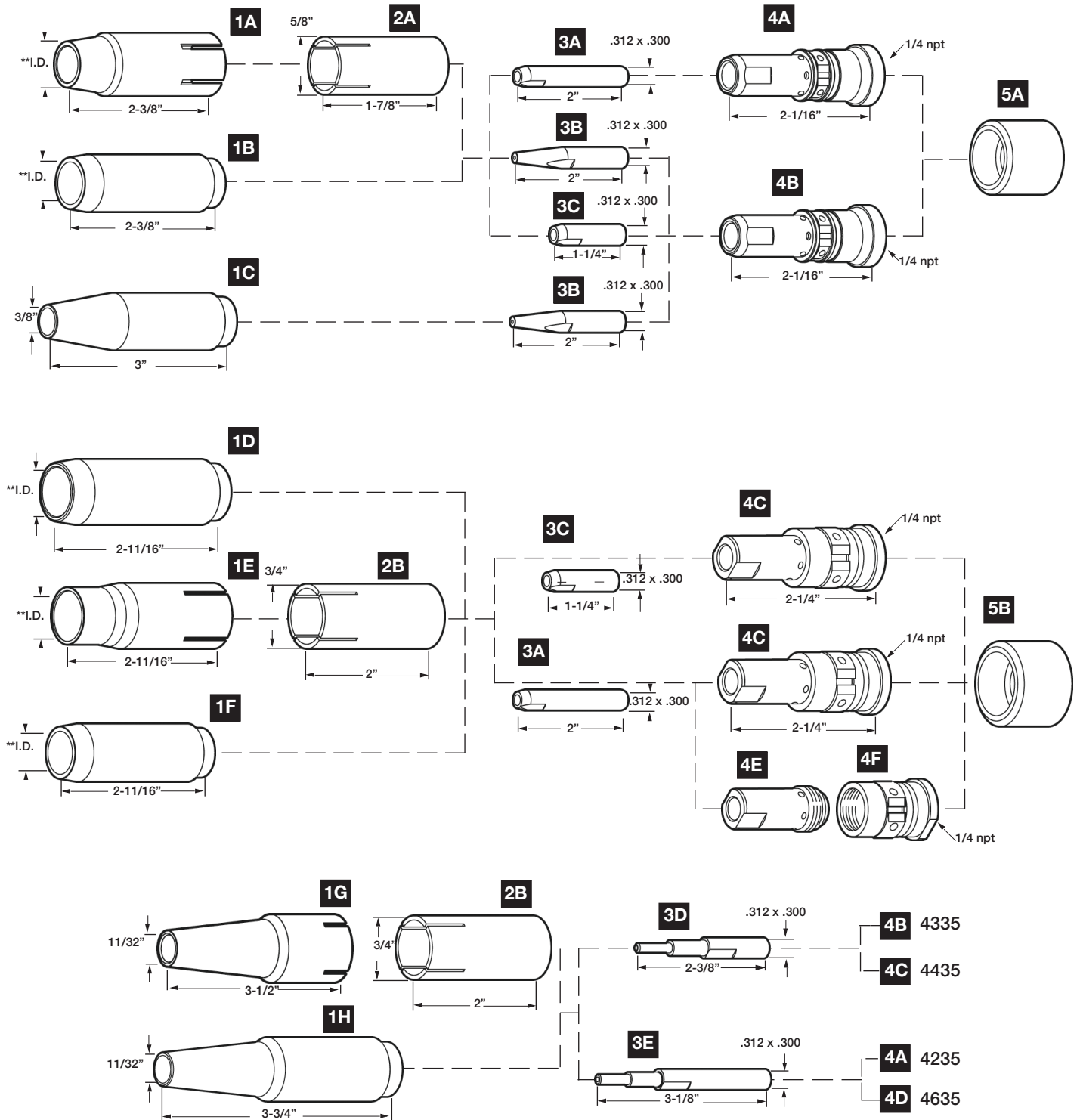
750-01-005	Insulating Washer 300A
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BERNARD®

CONSUMABLES
EZ FEED G / EZ FEED / EZ FEED II / EZ FEED Q

MIG



CONSUMABLES
EZ FEED G / EZ FEED / EZ FEED II / EZ FEED Q

1. NOZZLE

		I.D.
A	251 Nozzle Brass 1/2"	(12.7mm)
	241 Nozzle Copper 5/8"	(15.9mm)
B	4391 Nozzle Brass 5/8"	(15.9mm)
	4392 Nozzle Tapered Brass	1/2" (12.7mm)
	4393 Nozzle Copper 5/8"	(15.9mm)
C	4295 Nozzle Tapered Brass	3/8" (09.5mm)
D	4491 Nozzle Brss 3/4"	(19.0mm)
	4492 Nozzle tapered Brass	9/16" (14.3mm)
E	431 Nozzle Brass 1/2"	(12.7mm)
	401 Nozzle Brass 3/4"	(19.0mm)
	602 Nozzle Brass 3/4"	(19.0mm)
	601 Nozzle Copper 3/4"	(19.0mm)
	1501 Nozzle Copper H.D.	3/4" (19.0mm)
F	4591 Nozzle Copper 3/4"	(19.0mm)
	4592 Nozzle Copper 17/32"	(13.5mm)
G	242 Nozzle Tapered Brass	11/32" (8.7mm)
H	4395A Nozzle Tapered Brass	11/32" (8.7mm)

2. INSULATORS

A	256 Insulator
B	4061 Insulator

3. CONTACT TIPS

		I.D.
A	1597 Contact Tip .023	(0.6mm) .031
	1588 Contact Tip .030	(0.8mm) .037
	1589 Contact Tip .035	(0.9mm) .043
	1596 Contact Tip .040	(1.0mm) .048
	1590 Contact Tip .045	(1.2mm) .055
	1598 Contact Tip .052	(1.4mm) .064
	1591 Contact Tip 1/16"	(1.6mm) .076
	1592 Contact Tip 5/64"	(2.0mm) .093
	1593 Contact Tip 3/32"	(2.4mm) .110
	1594 Contact Tip 7/64"	(2.8mm) .125
	1595 Contact Tip 1/8"	(3.2mm) .144
B	4284 Contact Tip .023	(0.6mm) .031
	4285 Contact Tip .030	(0.8mm) .037
	4281 Contact Tip .035	(0.9mm) .043
	4282 Contact Tip .045	(1.2mm) .055
	4283 Contact Tip .052	(1.4mm) .064
	4280 Contact Tip 1/16"	(1.6mm) .076
C	7497 Contact Tip .023	(0.6mm) .031
	7488 Contact Tip .030	(0.8mm) .037
	7489 Contact Tip .035	(0.9mm) .043
	7496 Contact Tip .040	(1.0mm) .048
	7490 Contact Tip .045	(1.2mm) .055
	7498 Contact Tip .052	(1.4mm) .064
	7491 Contact Tip 1/16"	(1.6mm) .076
	7492 Contact Tip 5/64"	(2.0mm) .093
	7493 Contact Tip 3/32"	(2.4mm) .110
	7479 Contact Tip 7/64"	(2.8mm) .125

3. CONTACT TIPS (CONT.)

		I.D.
	7495 Contact Tip 1/8"	(3.2mm) .144
D	4381A Contact Tip .035	(0.9mm) .043
	4382A Contact Tip .045	(1.2mm) .055
E	243 Contact Tip .035	(0.9mm) .043
	244 Contact Tip .045	(1.2mm) .055

4. GAS DIFFUSERS

A	4235 GasDiffuser 200A
B	4335 GasDiffuser 200/300A
C	4435 GasDiffuser 400/500A
D	4635 GasDiffuser 600A
E	4635-2 Gas Diffuser, Tip Holder 600A
F	4635-1 Gas Diffuser, Tip 600A

5. CAPS

A	4323R Cap 200/250A
B	4423R Cap 400/500A

LINERS (not shown)

		I.D.	O.D.
A	43010 Liner 10' .023-.030	.036	.126
	43015 Liner 15' .023-.030	.036	.126
	43110 Liner 10' .023-.030	.036	.126
	43115 Liner 15' .035-.045	.069	.163
	43115X Liner Tef. 15' 3/64"Al	.090	.155
	43125 Liner 25' .035-.045	.069	.063
	43215 Liner 15' 1/16" .075	.175	
	44110 Liner 10' .035-.045	.068	.178
	44115 Liner 15' .035-.045	.068	.178
	44125 Liner 25' .035-.045	.068	.178
	44210 Liner 10' 1/16" .077	.189	
	44215 Liner 15' 1/16" .077	.189	
	44215X Liner Tef. 15' 1/16" Al.	.100	.185
	44225 Liner 25' 1/16" .077	.189	
	44310 Liner 10' 5/64" .125	.220	
	44315 Liner 15' 5/64" .125	.220	
	45410 Liner 10' 3/32" .125	.220	
	45415 Liner 15' 3/32" .125	.220	
	45610 Liner 10' 7/64" .138	.252	
	45615 Liner 15' 7/64" .138	.252	
B	43115T Liner 15' .035-.045	.071	.160
	44115T Liner 15' .035-.045	.068	.178
	44215T Liner 15' 1/16" .077	.189	
44225T	Liner 25' 1/16" .077	.189	

ALSO AVAILABLE (not shown)

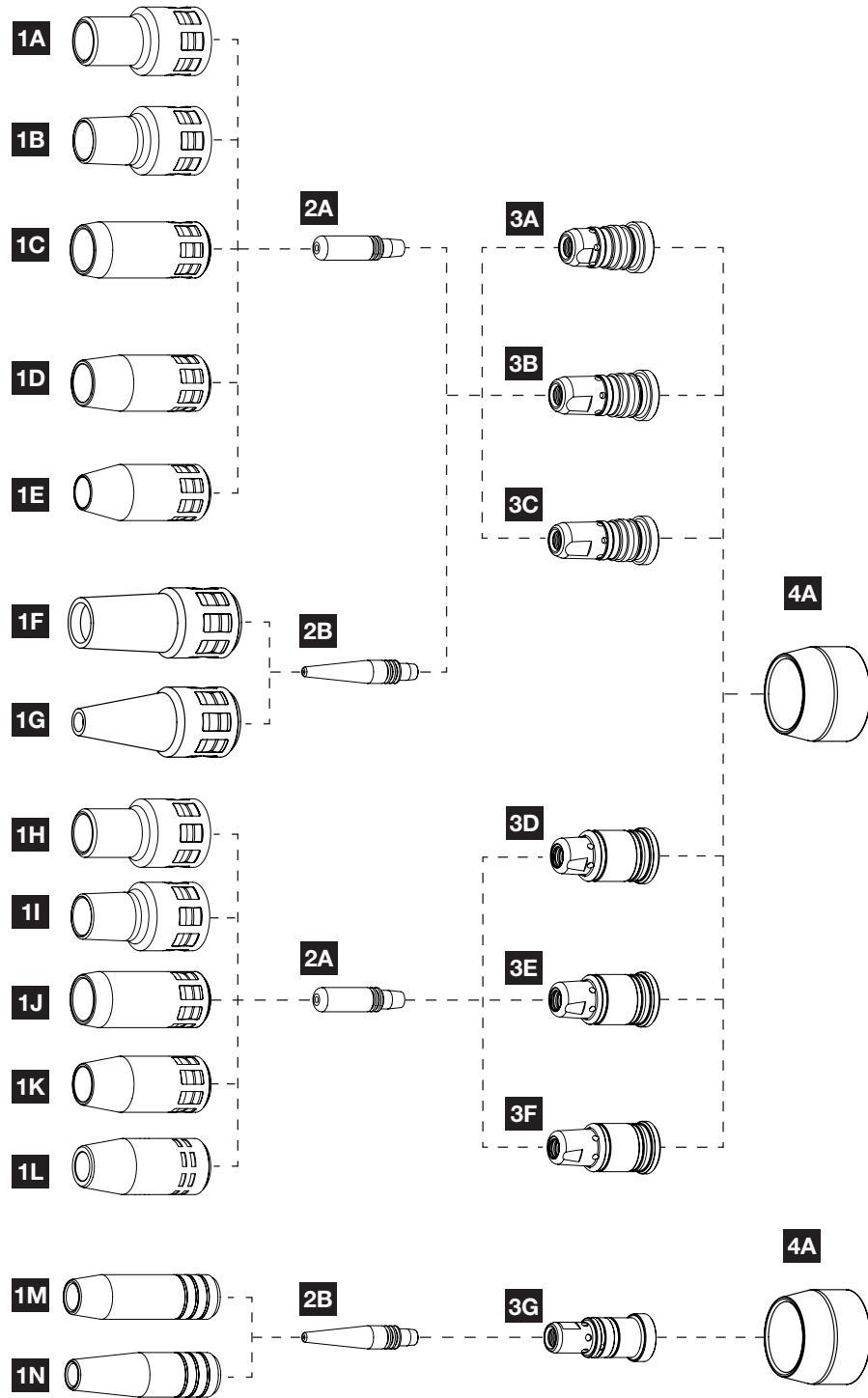
451	Diffuser
4790	Body Tube Assembly
4061ST	Insulator

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BERNARD®

QUIK TIP™ CONSUMABLES

MIG



See next page for part numbers and specifications

QUIK TIP™ CONSUMABLES

1. NOZZLES

			I.D.	O.D.
A	N1C34HQ	Nozzle Plated Copper, Heavy Duty	3/4"	1.125"
B	N1C58HQ	Nozzle Plated Copper, Heavy Duty	5/8"	1.125"
C	N1C34Q	Nozzle Plated Copper	3/4"	1.000"
	N1B34Q	Nozzle Brass	3/4"	1.000"
D	N1C58Q	Nozzle Plated Copper	5/8"	1.000"
	N1B58Q	Nozzle Brass	5/8"	1.000"
E	N1C12Q	Nozzle Plated Copper	1/2"	1.000"
F	N2C12HQ	Nozzle Plated Copper	1/2"	1.000"
G	N2C38HQ	Nozzle Plated Copper	3/8"	1.000"
H	N1C34HD	Nozzle Plated Copper, Heavy Duty	3/4"	1.125"
I	N1C58HD	Nozzle Plated Copper, Heavy Duty	5/8"	1.125"
J	N1C34	Nozzle Copper	3/4"	1.000"
K	N1C58	Nozzle Copper	3/4"	1.000"
L	N1C12	Nozzle Copper	1/2"	1.000"
M	N2C12	Nozzle Copper	1/2"	0.857"
N	N2C38	Nozzle Copper	3/4"	0.868"

2. CONTACT TIPS

			O.D.
Series 1 Contact Tips			
A	T1023	Contact Tip 0.023"	(0.6 mm) 0.310"
	T1030	Contact Tip 0.030"	(0.8 mm) 0.310"
	T1035	Contact Tip 0.035"	(0.8 mm) 0.310"
	T1039	Contact Tip 0.039"	(1.0 mm) 0.310"
	T1045	Contact Tip 0.045"	(1.2 mm) 0.310"
	T1364	Contact Tip 3/64"	(1.2 mm) 0.310"
	T1052	Contact Tip 0.052"	(1.4 mm) 0.310"
	T1116	Contact Tip 1/16"	(1.6 mm) 0.310"
	T1068	Contact Tip 0.068"	(1.7 mm) 0.310"
	T1072	Contact Tip 0.072"	(1.8 mm) 0.310"
	T1564	Contact Tip 5/64"	(2.0 mm) 0.310"
	T1332	Contact Tip 3/32"	(2.4 mm) 0.350"
	T1764	Contact Tip 7/64"	(2.8 mm) 0.350"
	T1118	Contact Tip 1/8"	(3.2 mm) 0.350"
Series 2 Contact Tips Taper			
B	T2023	Contact Tip 0.023", Tapered	(0.6 mm) 0.310"
	T2030	Contact Tip 0.030", Tapered	(0.8 mm) 0.310"
	T2035	Contact Tip 0.035", Tapered	(0.9 mm) 0.310"
	T2045	Contact Tip 0.045", Tapered	(1.2 mm) 0.310"
	T2364	Contact Tip 3/64", Tapered	(1.2 mm) 0.310"
	T2052	Contact Tip 0.052", Tapered	(1.4 mm) 0.310"
	T2116	Contact Tip 1/16", Tapered	(1.6 mm) 0.310"

Available in packages of 25 contact tips

3. DIFFUSERS

A	D114Q	1/4" Recess, Threaded
B	D118Q	1/8" Recess, Threaded
C	D1FQ	1/8" Recess, Threaded
D	D114	1/4" Recess, Slip-On
E	D118	1/8" Recess, Slip-On
F	D1F	Flush, Slip-On
G	D218	1/8" Recess, Slip-On

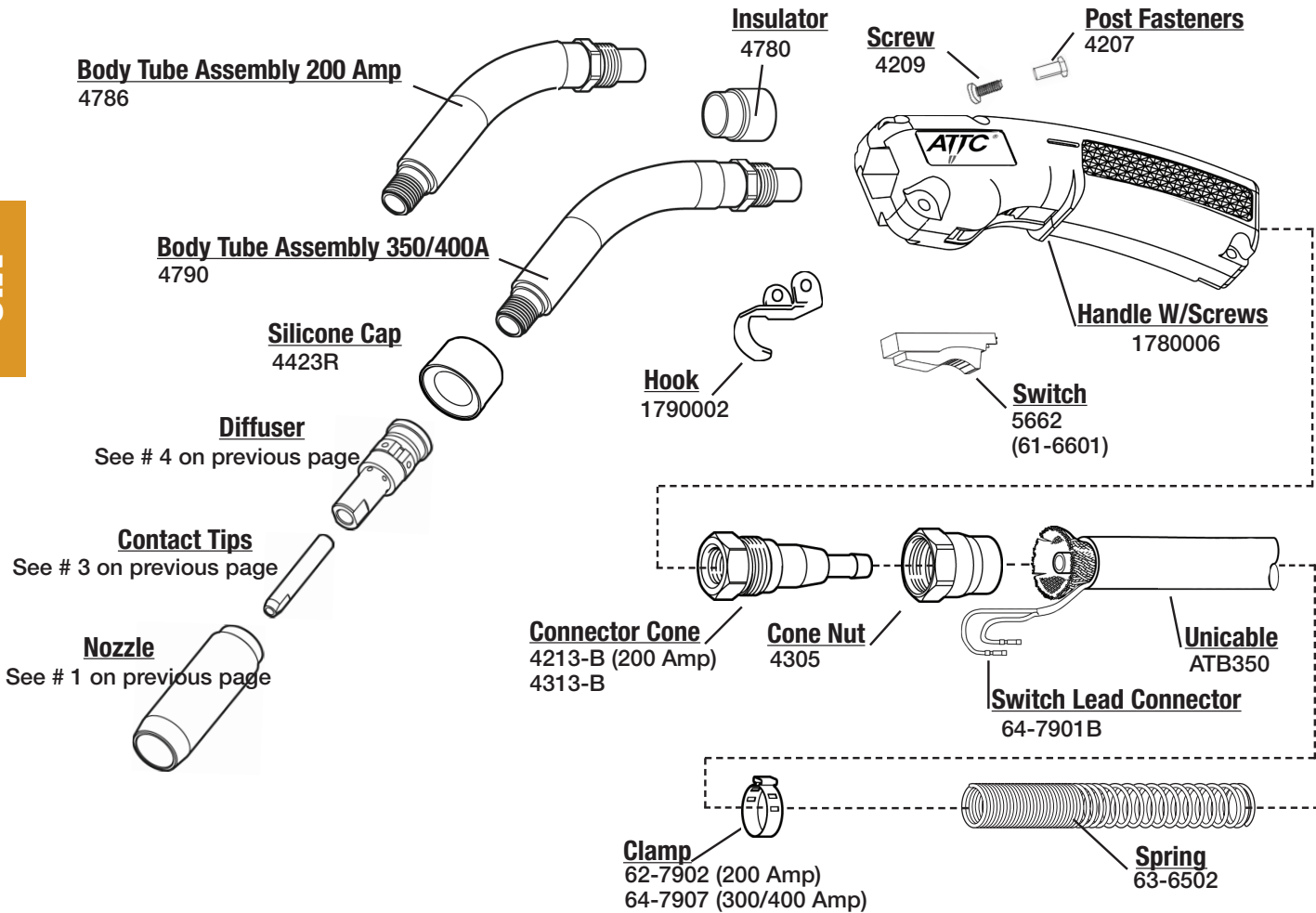
4. INSULATORS

A	4423R	Insulator, Rubber
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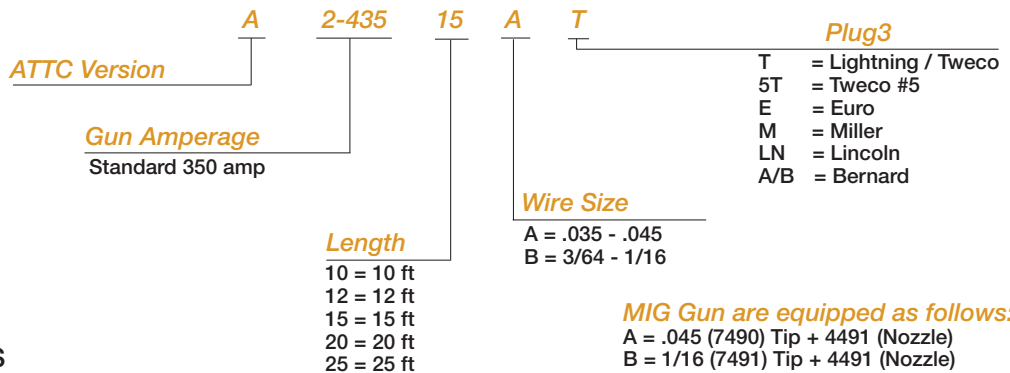
MIG

REPLACEMENT PARTS
B-200/350 COMPATIBLE WITH BERNARD EZ FEED 11 200/350 AMP

MIG



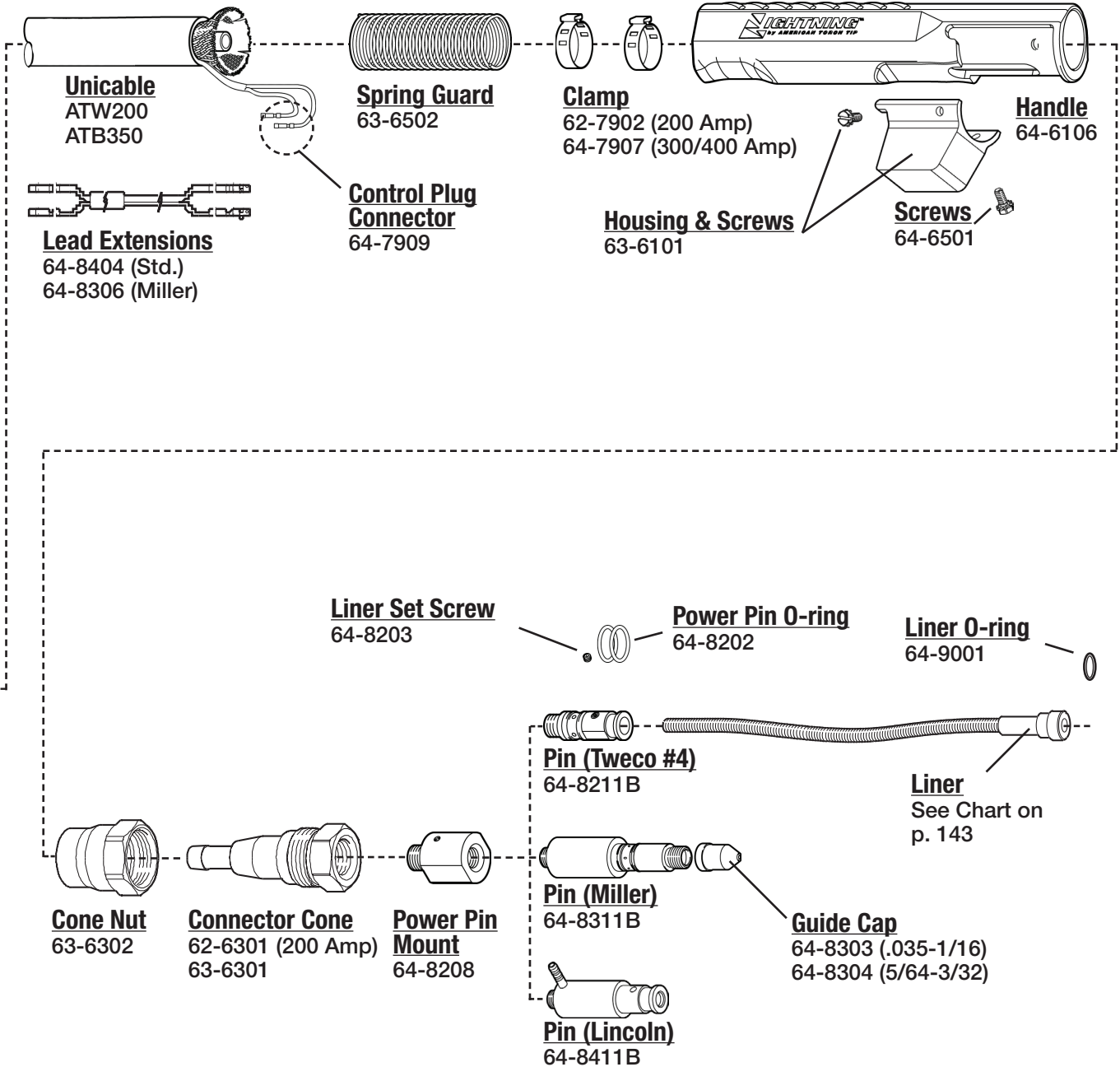
BERNARD GUN ORDERING SYSTEM



RATING
350 A C12 250A MIXED GAS
@ 100% DUTY CYCLE
.030" 0.8MM TO .062" 1.6MM WIRE

MIG Gun are equipped as follows:
A = .045 (7490) Tip + 4491 (Nozzle)
B = 1/16 (7491) Tip + 4491 (Nozzle)

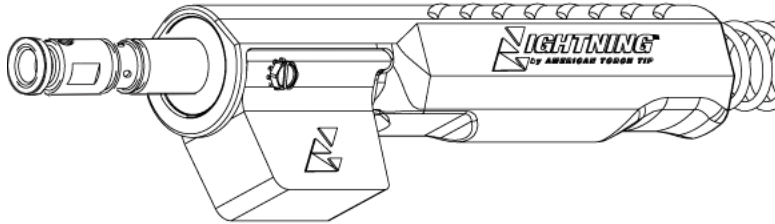
**REPLACEMENT PARTS
B-200/300 COMPATIBLE WITH BERNARD EZ FEED 11 200/300 AMP**



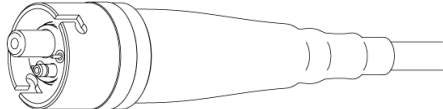
MIG

B-350 COMPATIBLE WITH BERNARD EZ FEED 11 350 AMP

Tweco #4
64-8201

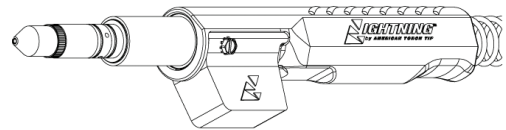


Bernard
64-8501

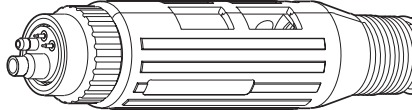


Miller

64-8301 (.035 - 1/16)
64-8302 (5/64 - 3/32)

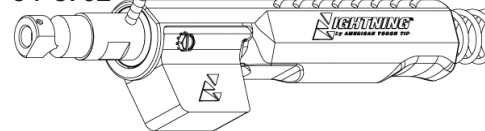


Euro
64-8100

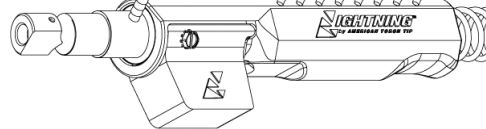


Panasonic

64-8702

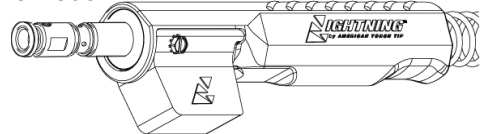


Hitachi
64-8422

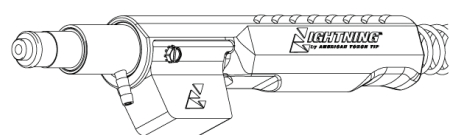


Thermal Arc

64-8901

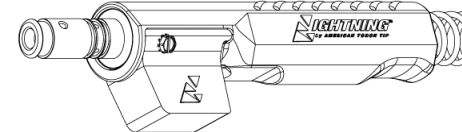


Lincoln
64-8401



Tweco #5

64-8204

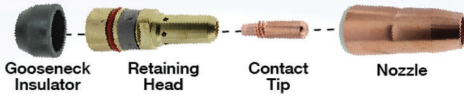


**SEMI-AUTOMATIC GUN CONVERSION KITS
AVAILABLE FOR BERNARD, LINCOLN & TWECO
WITH A SIMPLE CHANGE-OUT OF PARTS**

LIGHTNING® RETAINING HEADS

Part #	Description
65-3103 *	Retaining Head for Extra Heavy Duty
63-3103	Retaining Head T/L
63-3103-2	Retaining Head T/L
63-3116	Thread-on Retaining Head HD
63-3402	Retaining Ring
63-3301	O-Ring Orange O16
63-3118-T	Diffuser, Bernard Threaded

* This retaining head must be used with #65-11XX contact tip. See **Contact Tips Selector Chart** on p.2



BENEFITS

- ✓ Greater surface area contact between tip and head ensures better heat dissipation and conductivity.
- ✓ Tapered tip design creates a more secure seat, eliminating loose tips.
- ✓ Cooler tip temperature reduces wear and extends tip life.
- ✓ Dual-lead thread design allows for 180 degree rotation of tip to new wear point for extended tip life.
- ✓ Brass insert prevents wear and extends life.
- ✓ Superior surface finish minimizes spatter adhesion.
- ✓ Durable hard drawn copper or brass withstands abuse.

**Lightning®
Contact Tips Selector Chart**

Contact Tips Part #	Heavy Duty Tip - Size
63-1130	Contact Tip HD .030 pk 10
63-1135	Contact Tip HD .035 pk 10
63-1135-40	Contact Tip HD .035/.040 I.D. pk 10
63-1138	Contact Tip .030 Pk 10 Robotic
63-1140	Contact Tip HD .040 pk 10
63-1145	Contact Tip HD .045 pk 10
63-1147	Contact Tip HD 3/64" al pk 10
63-1152	Contact Tip HD .052 pk 10
63-1162	Contact Tip HD 1/16" pk 10
63-1168	Contact Tip HD .068 / .078 I.D. pk 10
63-1172	Contact Tip HD .072 pk 10 SPECIAL
63-1178	Contact Tip HD 5/64" pk 10
63-1193	Contact Tip HD 3/32" pk 10
Part #	Tapered Tip
63-12XX	XX = last 2 digits indicate wire size
Part #	CZ Tip (Chromium Zirconium)
63-13XX	XX = last 2 digits indicate wire size
Part #	Extra Heavy Duty Tip
65-11XX *	XX = last 2 digits indicate wire size

* This contact tip must be used with #65-3103 retaining head. See **Lightning Retaining Heads Chart** on p.1

BERNARD® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Q-Gun Series	63-6105	63-3118	63-11XX ‡	6X-XXXX **
EZ Feed Series	63-6105	63-3118	63-11XX ‡	6X-XXXX **
T-Series †	63-6202-HD	63-3103	63-11XX ‡	6X-XXXX **
Roughneck C Miller	63-6105	63-3118	63-11XX ‡	6X-XXXX **

LINCOLN® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Magnum 300	63-6105	63-3103	63-11XX ‡	6X-XXXX **
Magnum 400	63-6105	63-3103	63-11XX ‡	6X-XXXX **
Magnum Pro	63-6105	63-3119	63-11XX ‡	6X-XXXX **

TWECO® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Tweco #3	63-6105	63-3103	63-11XX ‡	6X-XXXX **
Tweco #4	63-6105	63-3103	63-11XX ‡	6X-XXXX **
SprayMaster 450	63-6105	63-3103	63-11XX ‡	6X-XXXX **
WeldSkill 400	63-6105	63-3103	63-11XX ‡	6X-XXXX **

Use the Lightning® contact tip system (gooseneck insulator, retaining head, contact tip and nozzle) with Bernard® Lincoln® or Tweco® MIG guns. Use 63-3118 Retaining Head on goosenecks with external 9/16"-18 thread, such as Q-gun and EZ Feed guns with 1/4" NPT thread.

† T-Series retaining head can only be used on Bernard T-Series (Tregaskiss) guns.

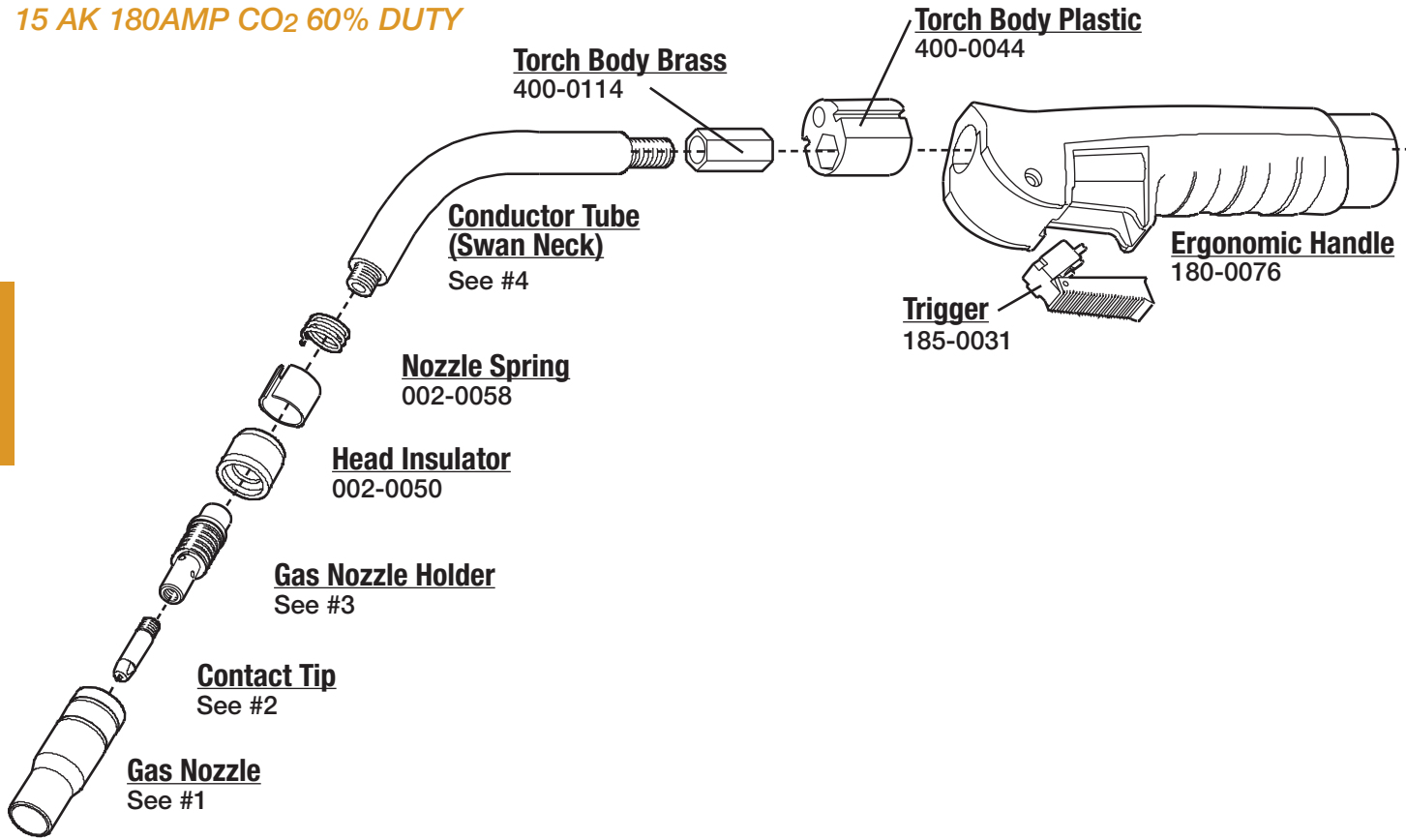
‡ 63-11XX (XX = your wire size)

** 6X-XXXX (see Nozzle Selector Chart on next page)

**Lightning®
Nozzle Selector Chart (Air-Cooled Slip On)**

Standard Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
63-2138	3/8" Copper	.938" / 2.75"	Flush
64-2950	1/2" Brass	.938" / 2.63"	1/8" Stickout
63-2950B	1/2" Brass	.938" / 2.88"	1/8" Recess
63-2150	1/2" Copper	.938" / 2.88"	1/8" Recess
63-2762	5/8" Copper	.938" / 2.51"	1/4" Stickout
63-2662	5/8" Copper	.938" / 2.63"	1/8" Stickout
63-2162	5/8" Copper	.938" / 2.88"	1/8" Recess
63-2175	3/4" Copper	.938" / 2.88"	1/8" Recess
Heavy Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
65-2550	1/2" Copper	1.062" / 2.88"	1/8" Recess
65-2662	5/8" Copper	1.062" / 2.63"	1/8" Stickout
65-2362	5/8" Brass	1.062" / 2.63"	1/8" Stickout
64-2962	5/8" Copper	1.062" / 2.75"	Flush
65-2862	5/8" Brass	1.062" / 2.75"	Flush
63-2362	5/8" Brass	1.062" / 2.88"	1/8" Recess
65-2562	5/8" Copper	1.062" / 2.88"	1/8" Recess
64-2562	5/8" Copper	1.062" / 3.00"	1/4" Recess
65-2575	3/4" Copper	1.062" / 2.88"	1/8" Recess
65-2375	3/4" Brass	1.062" / 2.88"	1/8" Recess
64-2575	3/4" Copper	1.062" / 3.00"	1/4" Recess
64-2387	7/8" Brass	1.062" / 3.00"	1/4" Recess
65-2562-T	5/8" Copper	1.062" / 2.78"	1/8" Recess

15 AK 180AMP CO₂ 60% DUTY



MIG

1. NOZZLES I.D.

A	145-0075	Nozzle, Conical	1/2"
	(12.7mm)		
	145-0123	Nozzle, Conical, Small	
	3/8"	(09.5mm)	
B	145-0041	Nozzle, Cylindrical	5/8"
	(15.9mm)		
C	145-0143	Nozzle, Tapered	33/64"
	(13.1mm)		
D	145-0168	Nozzle, Spot	5/8"
	(15.9mm)		

2. CONTACT TIPS I.D.

140-0008	Contact Tip M6 Cu .023	(0.6mm)	.028
140-0059	Contact Tip M6 Cu .030	(0.8mm)	.037
140-0177	Contact Tip M6 Cu .035	(0.9mm)	.043
140-0253	Contact Tip M6 Cu .040	(1.0mm)	.048
140-0387	Contact Tip M6 Cu .045	(1.2mm)	.055
141-0002	Contact Tip M6 Cu .030	(.8mm)Al	.043
141-0005	Contact Tip M6 Cu .035	(.9mm)Al	.048
141-0007	Contact Tip M6 Cu .040	(1mm)Al	.055

3. NOZZLE HOLDER

002-0078	Nozzle Holder
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4. CONDUCTOR TUBES

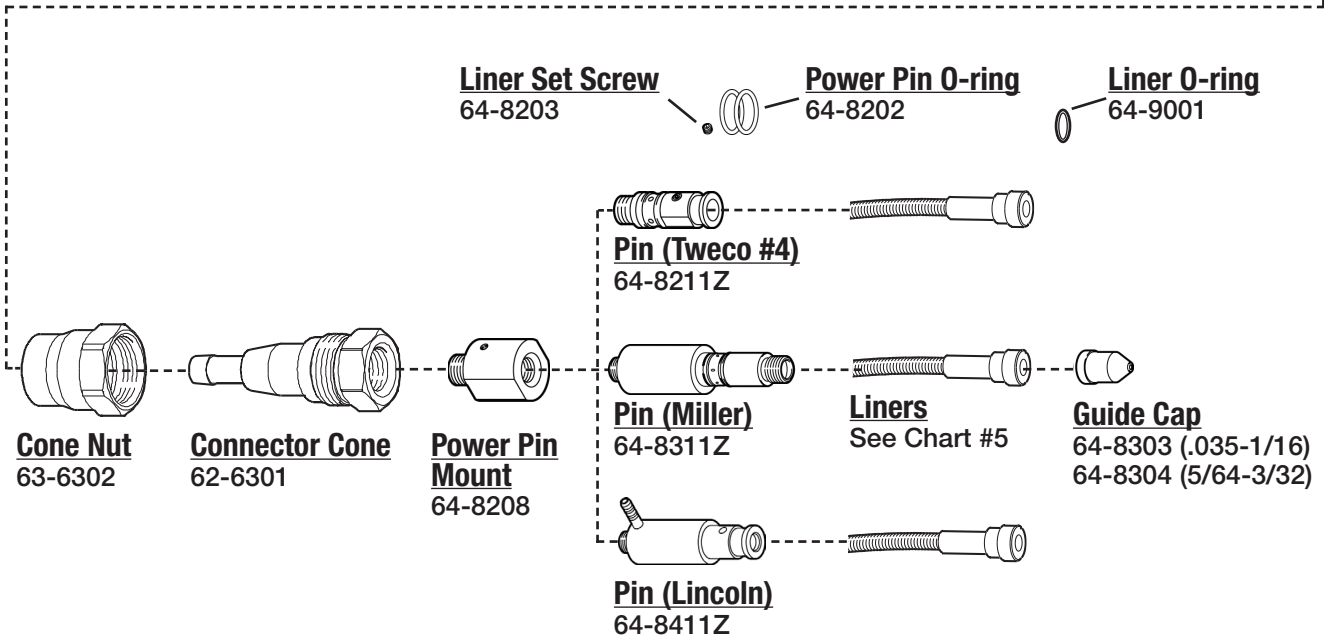
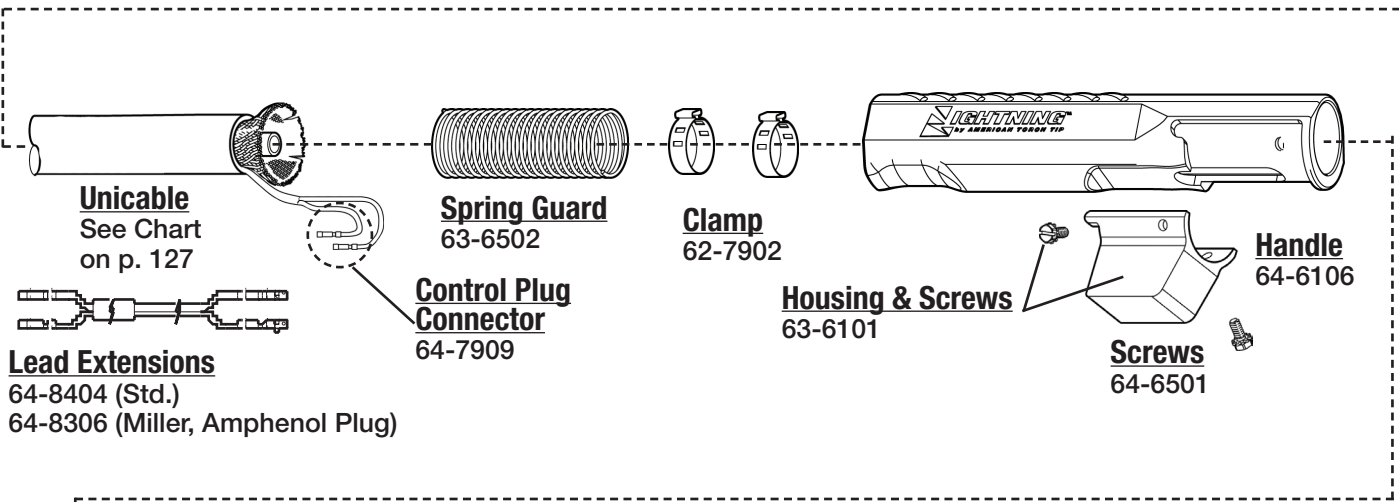
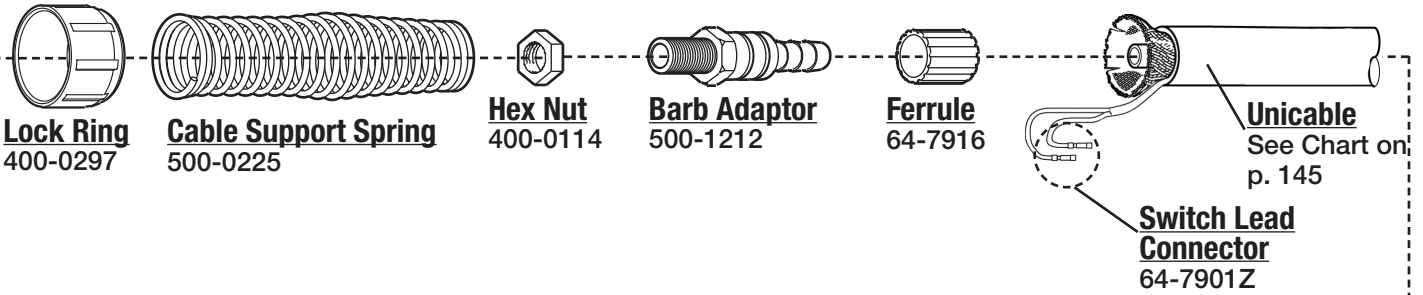
002-0009	Swanneck 50 Degree
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5. LINERS

			I.D.	O,D,
124-0011	Liner 3M	.030-.035	.053	.156
124-0012	Liner 4M	.030-.035	.053	.156
124-0015	Liner 5M	.030-.035	.053	.156
124-0026	Liner 3M	.035-.045		
124-0031	Liner 4M	.035-.045		
124-9003	Liner 5M	.040-.045	.071	.156
124-9004	Liner 5M	.045-1/16"	.095	.156

15 AK 180AMP CO₂ 60% DUTY

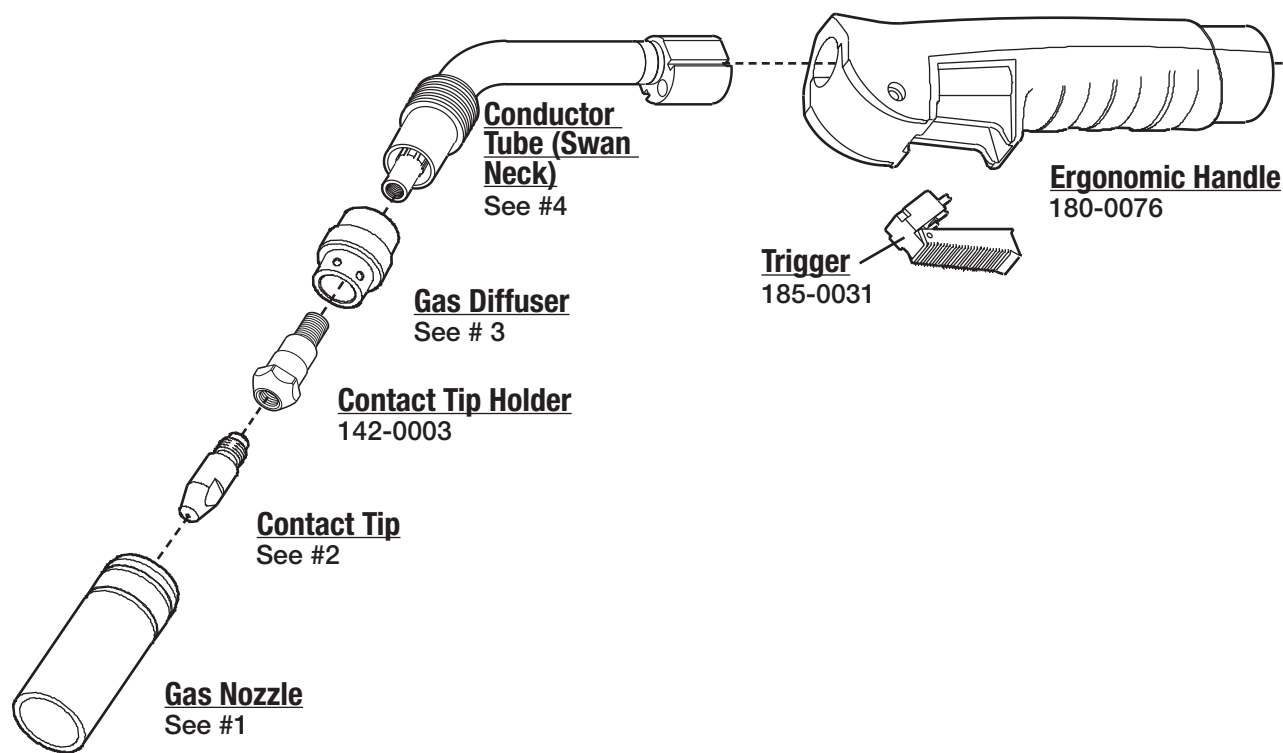
MIG



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BINZEL®

24 KD 250AMP CO₂ 60% DUTY



MIG

1. GAS NOZZLES

I.D.

A	145-0047	Nozzle Cylindrical	21/32"	(17mm)
	145-0062	Nozzle Cylindrical HD	21/32"	(17mm)
B	145-0080	Nozzle Conical	1/2"	(12.5mm)
	145-0101	Nozzle Conical HD	1/2"	(12.5mm)
C	145-0128	Nozzle Tapered	21/32"	(17mm)

2. CONTACT TIPS

I.D.

140-0051	M6	E-Cu	.030	(0.8mm)	.037
140-0242	M6	E-Cu	.040	(1.0mm)	.048
140-0379	M6	E-Cu	.045	(1.2mm)	.055
140-0054	M6	CuCrZr	.030	(0.8mm)	.037
140-0245	M6	CuCrZr	.040	(1.0mm)	.048
140-0382	M6	CuCrZr	.045	(1.2mm)	.055
141-0001	M6	E-Cu	.030	(0.8mm)	.043 AL
141-0006	M6	E-Cu	.040	(1.0mm)	.055 AL
141-0010	M6	E-Cu	3/64"	(1.2mm)	.059 AL

3. GAS DIFFUSER

012-0017	Gas Diffuser Black
012-0183	Gas Diffuser White

4. CONDUCTOR TUBES

012-0001	Swan Neck 50 Degree
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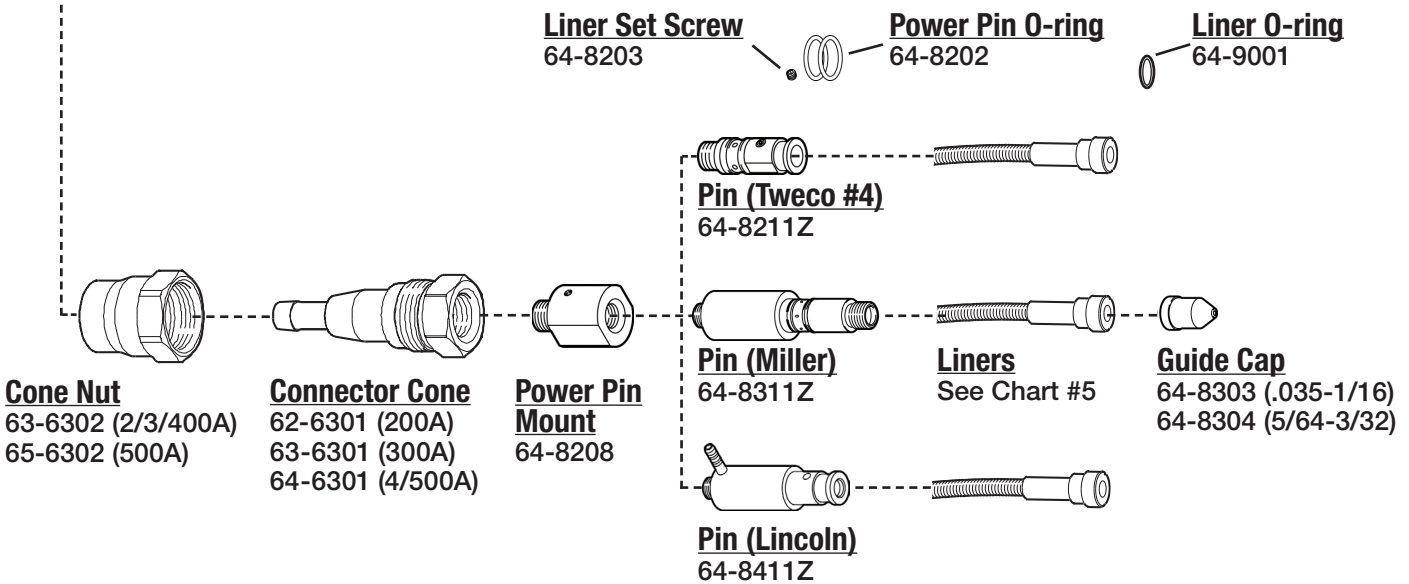
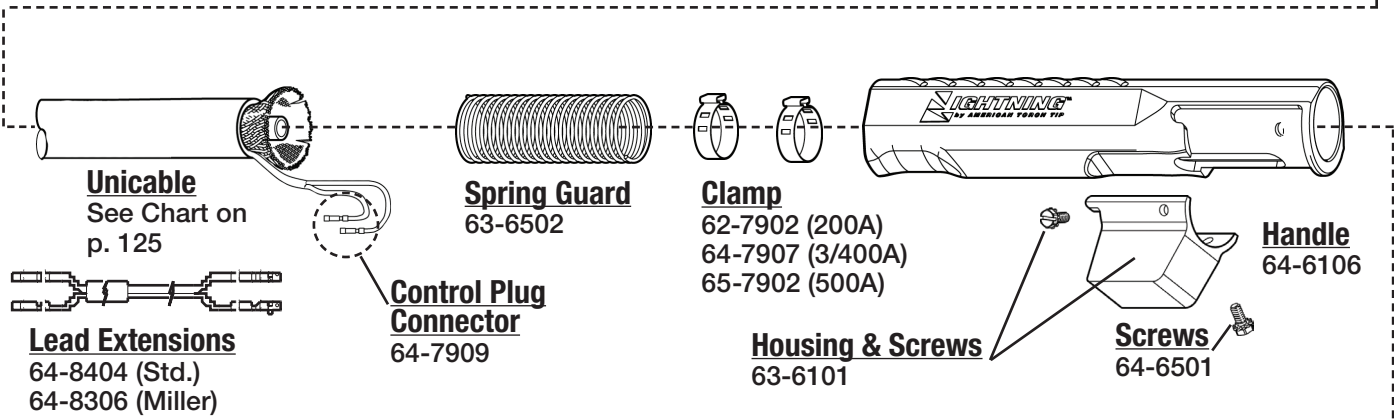
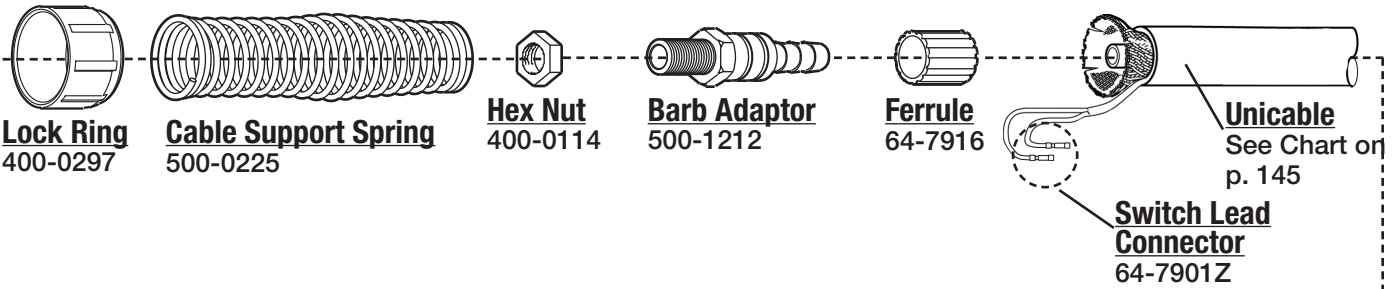
5. LINERS

I.D.

124-0011	Liner 3M	.030-.035	.053	.156
124-0015	Liner 5M	.030-.035	.053	.156
124-0026	Liner 3M	.040-.045	.071	.156
124-0031	Liner 4M	.040-.045	.071	.156
126-0011	Liner 5M	3/64"	.059	.156
126-0028	Liner 5M	5/64"	.078	.156

24 KD 250AMP CO₂ 60% DUTY

MIG

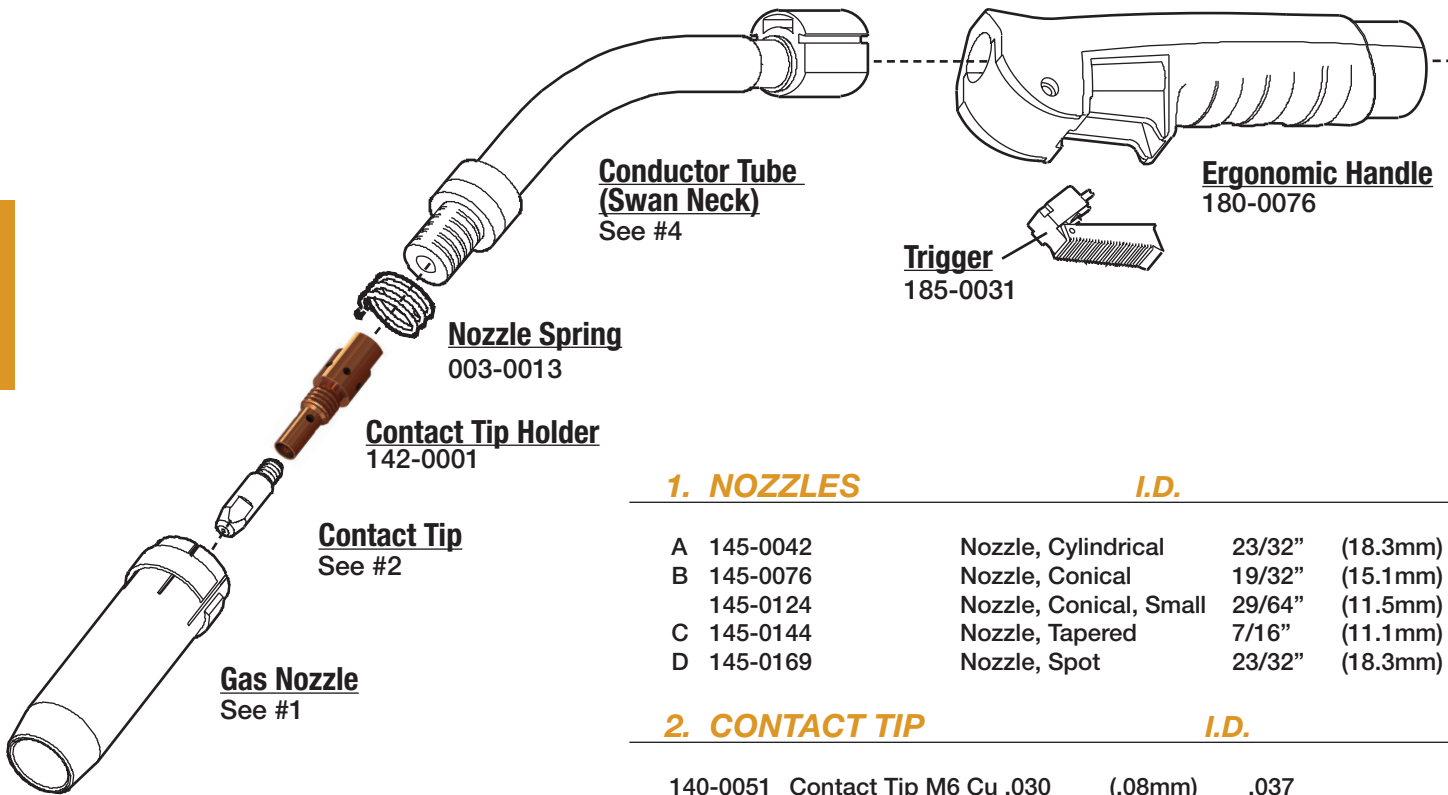


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BINZEL®

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MIG



1. NOZZLES

I.D.

A	145-0042	Nozzle, Cylindrical	23/32"	(18.3mm)
B	145-0076	Nozzle, Conical	19/32"	(15.1mm)
	145-0124	Nozzle, Conical, Small	29/64"	(11.5mm)
C	145-0144	Nozzle, Tapered	7/16"	(11.1mm)
D	145-0169	Nozzle, Spot	23/32"	(18.3mm)

2. CONTACT TIP

I.D.

140-0051	Contact Tip M6 Cu .030	(.08mm)	.037
140-0169	Contact Tip M6 Cu .035	(0.9mm)	.043
140-0242	Contact Tip M6 Cu .040	(1.0mm)	.048
140-0379	Contact Tip M6 Cu .045	(1.2mm)	.055
140-0555	Contact Tip M6 Cu 1/16"	(1.6mm)	.073
140-0054	Contact Tip M6 H.D. .030	(0.8mm)	.037
140-0172	Contact Tip M6 H.D. .035	(0.9mm)	.043
140-0245	Contact Tip M6 H.D. .040	(1.0mm)	.048
140-0382	Contact Tip M6 H.D. .045	(1.2mm)	.055
141-0004	Contact Tip M6 Cu .035	(0.9mm)Al	.048
141-0006	Contact Tip M6 Cu .040	(1.0mm)Al	.055
141-0010	Contact Tip M6 Cu 3/64"	(1.2mm)Al	.059

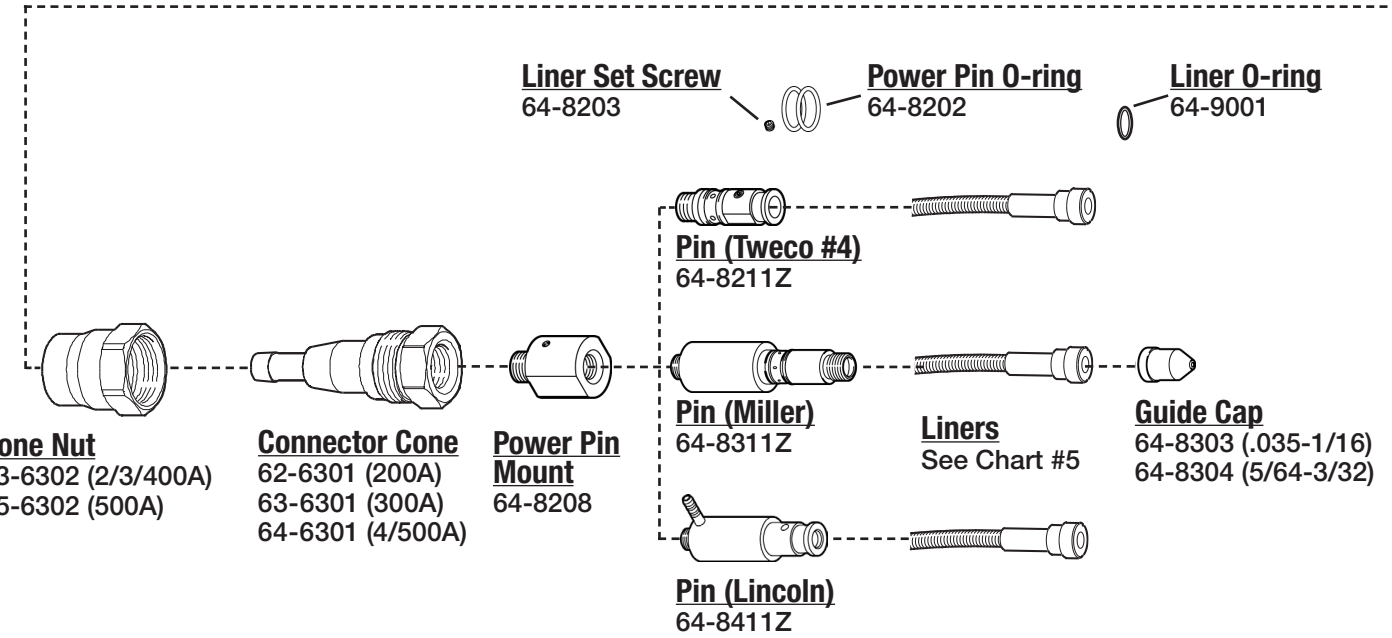
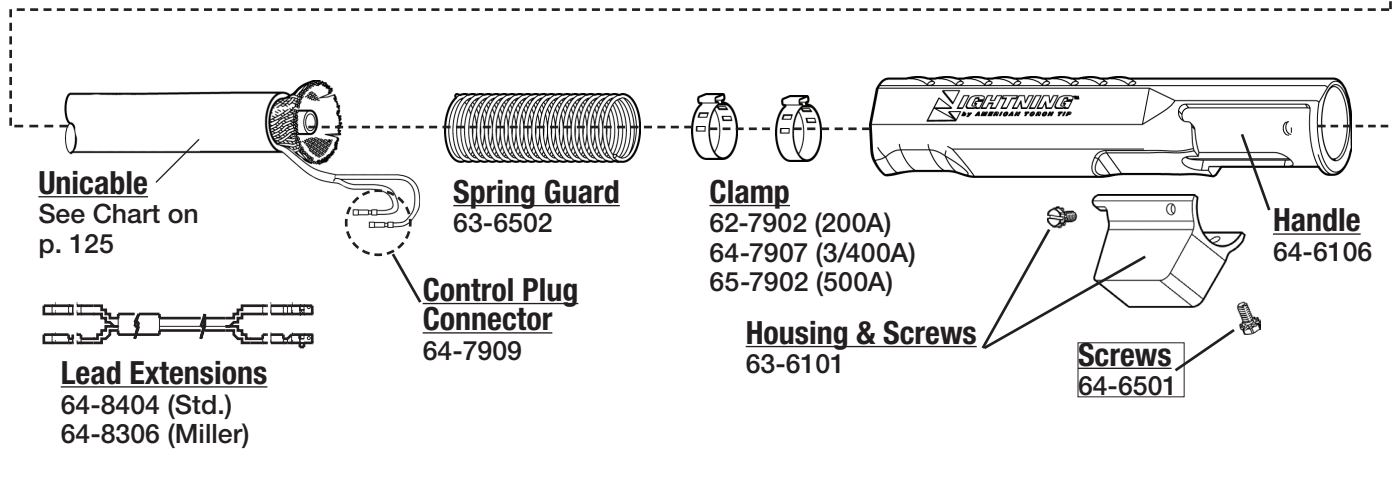
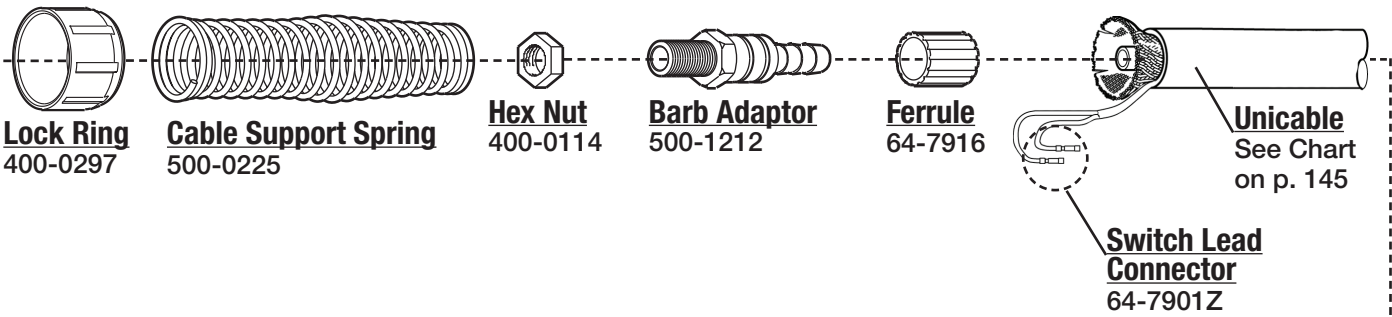
4. CONDUCTOR TUBES

004-0012	Swanneck 50°
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5. LINERS

I.D. O.D.

124-0011	Liner 3M .030-.035	.053	.156
124-0015	Liner 5M .030-.035	.053	.156
124-0026	Liner 3M .040-.045	.071	.156
124-0031	Liner 4M .040-.045	.071	.156
124-9003	Liner 5M .040-.045	.071	.156
124-9004	Liner 5M .045-1/16"	.095	.156

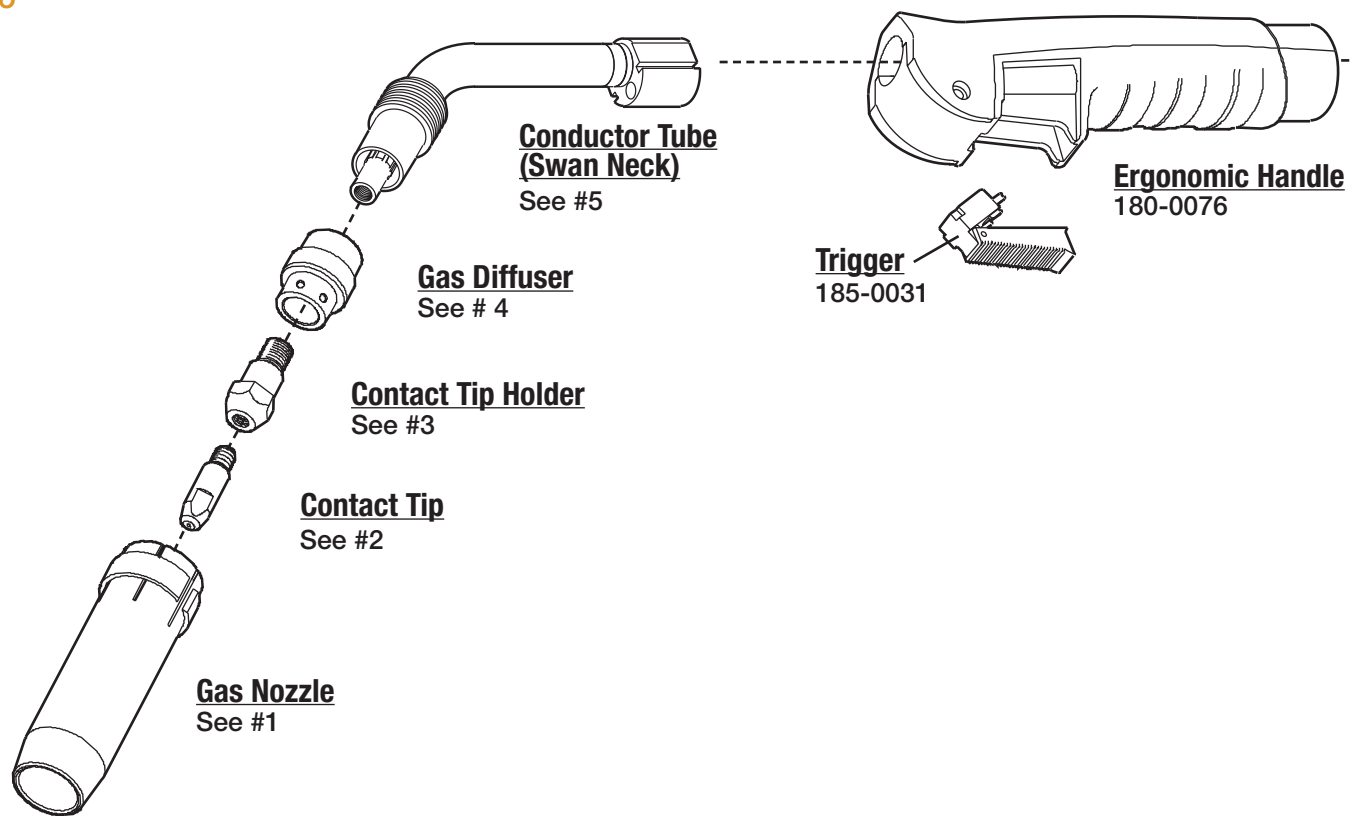


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BINZEL®

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MIG



1. GAS NOZZLES

I.D.

145-0051	Nozzle Cylindrical	25/32"	(20mm)
145-0085	Nozzle Conical	41/64"	(16mm)
145-0132	Nozzle Tapered	35/64"	(14mm)

2. CONTACT TIP

I.D.

140-0051	Contact Tip M6 E-Cu .030	(0.8mm)	.037
140-0242	Contact Tip M6 E-Cu .040	(1.0mm)	.048
140-0379	Contact Tip M6 E-Cu .045	(1.2mm)	.055
140-0054	Contact Tip M6 CuCrZr.030	(0.8mm)	.037
140-0245	Contact Tip M6 CuCrZr.040	(1.0mm)	.048
140-0382	Contact Tip M6 CuCrZr.045	(1.2mm)	.055
141-0001	Contact Tip M6 E-Cu.030	(0.8mm)	.043 AL
141-0006	Contact Tip M6 E-Cu.040	(1.0mm)	.055 AL
141-0010	Contact Tip M6 E-Cu3/64"	(1.2mm)	.059 AL

3. CONTACT TIP HOLDERS

I.D.

142-0007	Tip Holder M6 Short
142-0012	Tip Holder M6 Long

4. GAS DIFFUSER

018-0004	Gas Diffuser Black
018-0116	Gas Diffuser White

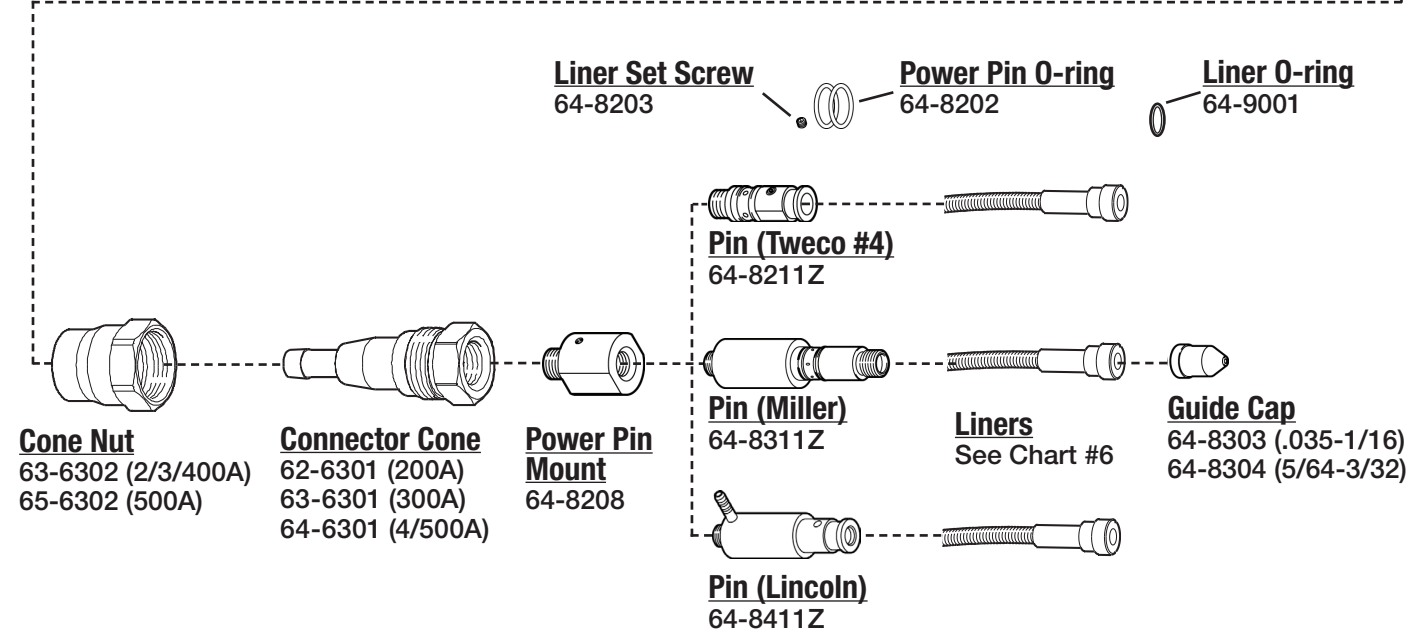
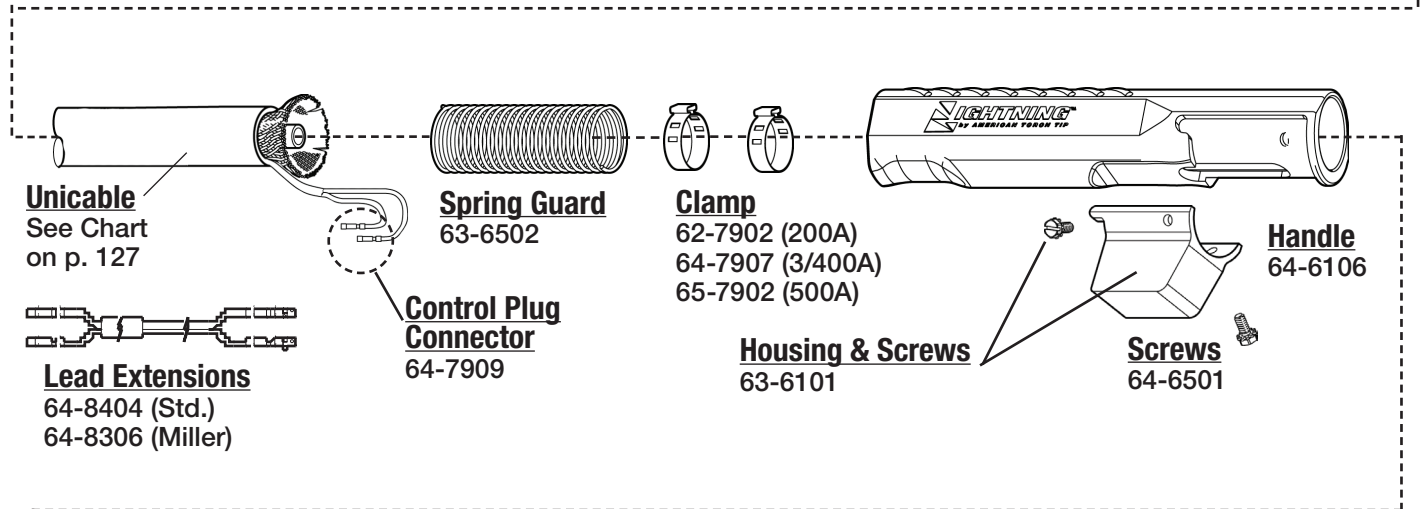
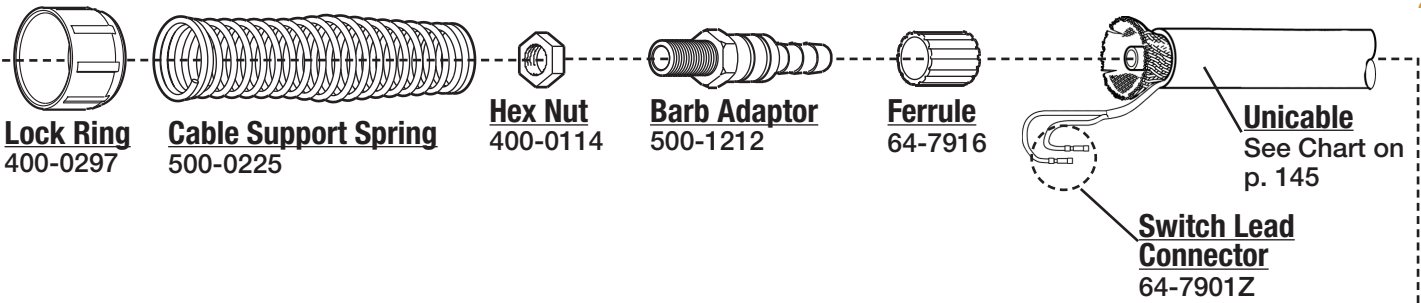
5. CONDUCTOR TUBES

018-0001	Swan Neck 50 Degree
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6. LINERS

I.D. O.D.

124-0011	Liner 10'	.024-.035	.053	.156
124-0015	Liner 15'	.024-.035 steel	.053	.156
124-0026	Liner 10'	.035-.045	.071	.156
124-9003	Liner 15'	.035-.045 steel	.071	.156
124-0041	Liner 10'	.045-1/16"	.095	.156
124-0042	Liner 15'	.045-1/16"	.095	.156
124-9004	Liner 15'	.052-1/16"	.095	.156
126-0005	Liner, Teflon 10'	3/64"	.059	.156

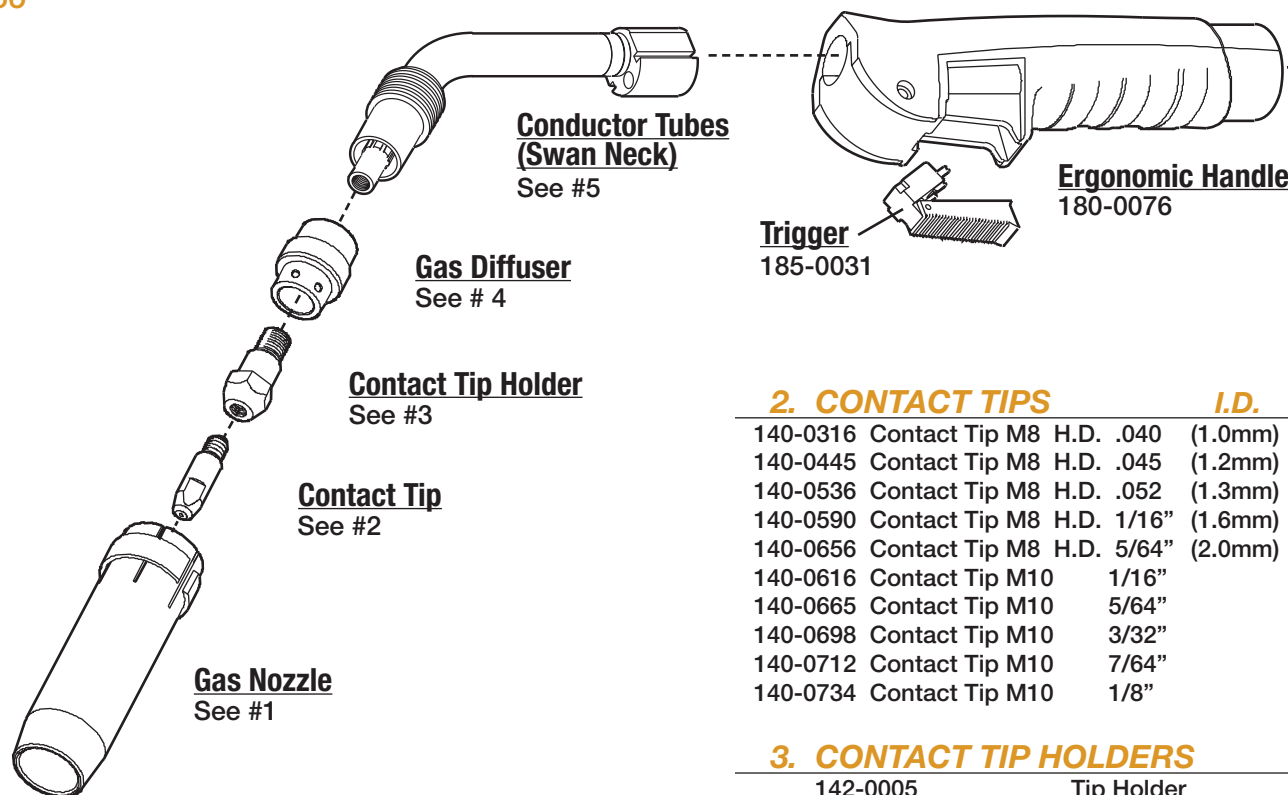


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BINZEL®

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MIG



1. GAS NOZZLES

I.D.

A	145-0078	Nozzle, Conical
B	145-0126	Nozzle, Tapered
C	145-0172	Nozzle, Spot Weld
D	145-0045	Nozzle, Cylindrical

2. CONTACT TIPS

I.D.

140-0051	Contact Tip M6	E-Cu	.030	(0.8mm)	.037
140-0242	Contact Tip M6	E-Cu	.040	(1.0mm)	.048
140-0379	Contact Tip M6	E-Cu	.045	(1.2mm)	.055
140-0054	Contact Tip M6	CuCrZr.030	(0.8mm)	.037	
140-0245	Contact Tip M6	CuCrZr.040	(1.0mm)	.048	
140-0382	Contact Tip M6	CuCrZr.045	(1.2mm)	.055	
141-0001	Contact Tip M6	E-Cu.030	(0.8mm)	.043	AL
141-0006	Contact Tip M6	E-Cu.040	(1.0mm)	.055	AL
141-0010	Contact Tip M6	E-Cu3/64"	(1.2mm)	.059	AL
140-0214	Contact Tip M8	Cu	.035	(0.9mm)	.043
140-0313	Contact Tip M8	Cu	.040	(1.0mm)	.048
140-0442	Contact Tip M8	Cu	.045	(1.2mm)	.055
140-0533	Contact Tip M8	Cu	.052	(1.3mm)	.063
140-0587	Contact Tip M8	Cu	1/16"	(1.6mm)	.073
140-0653	Contact Tip M8	Cu	5/64"	(2.0mm)	.093
140-0677	Contact Tip M8	Cu	3/32"	(2.4mm)	.110
140-0217	Contact Tip M8	H.D.	.035	(1.9mm)	.043

2. CONTACT TIPS

I.D.

140-0316	Contact Tip M8	H.D.	.040	(1.0mm)	.048
140-0445	Contact Tip M8	H.D.	.045	(1.2mm)	.055
140-0536	Contact Tip M8	H.D.	.052	(1.3mm)	.063
140-0590	Contact Tip M8	H.D.	1/16"	(1.6mm)	.073
140-0656	Contact Tip M8	H.D.	5/64"	(2.0mm)	.093
140-0616	Contact Tip M10		1/16"		
140-0665	Contact Tip M10		5/64"		
140-0698	Contact Tip M10		3/32"		
140-0712	Contact Tip M10		7/64"		
140-0734	Contact Tip M10		1/8"		

3. CONTACT TIP HOLDERS

142-0005	Tip Holder
142-0011	Tip Holder
142-0024	Tip Holder Long M8

4. GAS DIFFUSERS

018-0004	Gas Diffuser
014-0021	Gas Diffuser

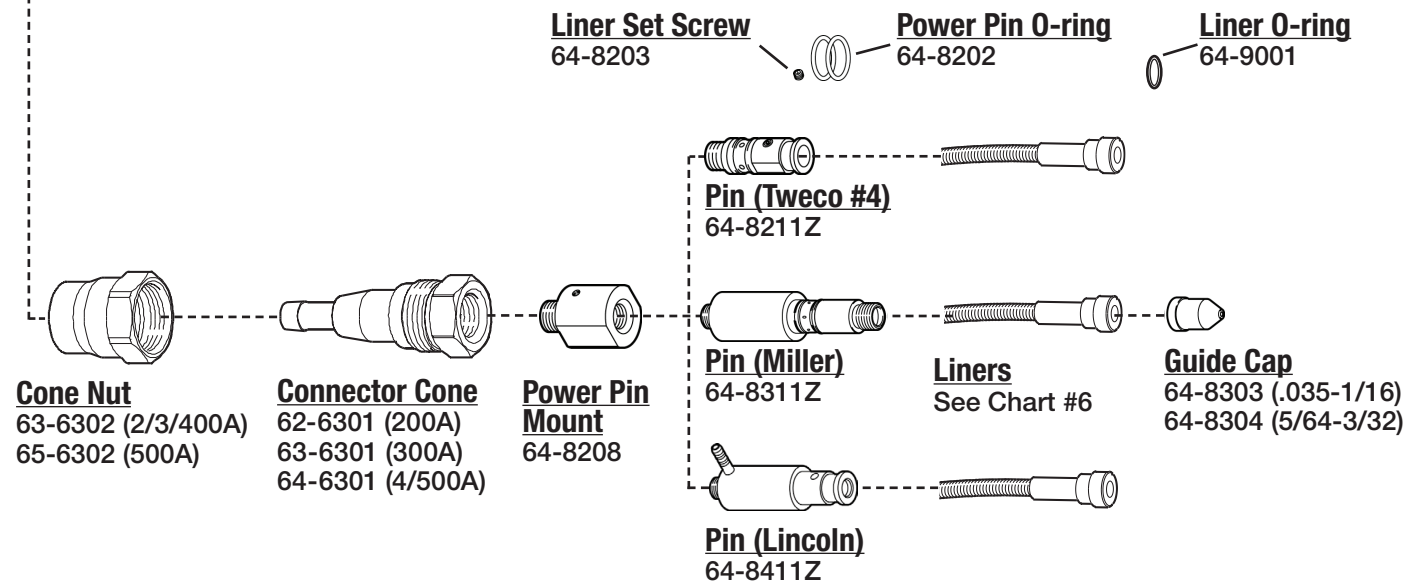
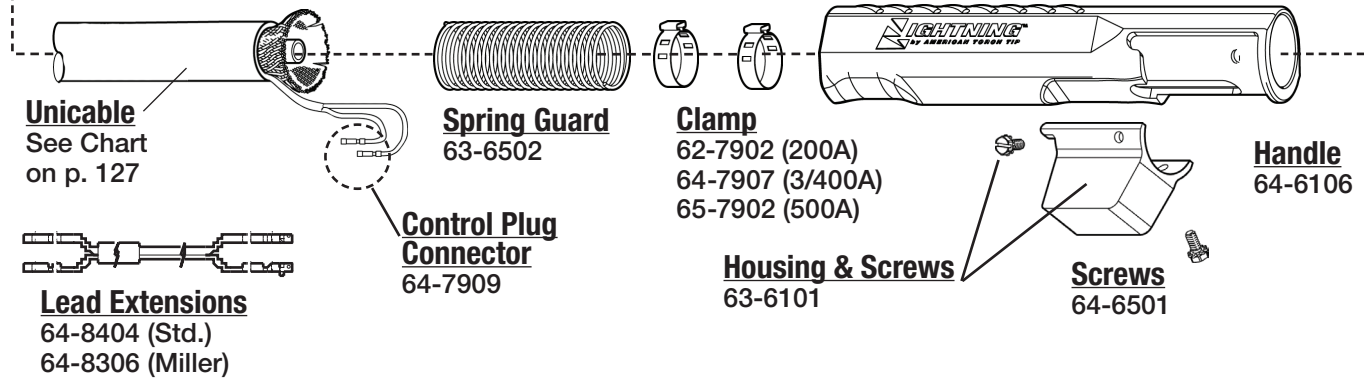
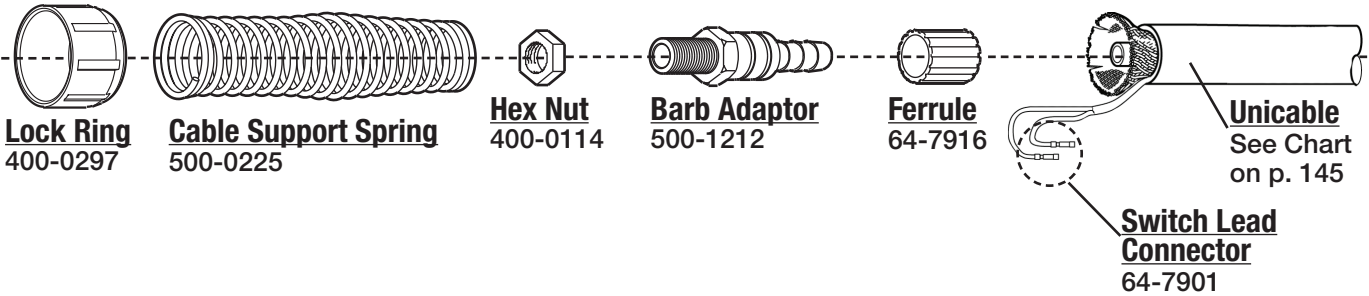
5. CONDUCTOR TUBES

014-0006	Swanneck 50 Degree
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6. LINERS

I.D. O.D.

124-0011	Liner 10'	.024-.035	.053	.156
124-0015	Liner 15'	.024-.035 steel	.053	.156
124-0026	Liner 10'	.035-.045	.071	.156
124-9003	Liner 15'	.035-.045 steel	.071	.156
124-0041	Liner 10'	.045-1/16"	.095	.156
124-0042	Liner 15'	.045-1/16"	.095	.156
124-9004	Liner 15'	.052-1/16"	.095	.156
126-0005	Liner, Teflon 10'	3/64"	.059	.156

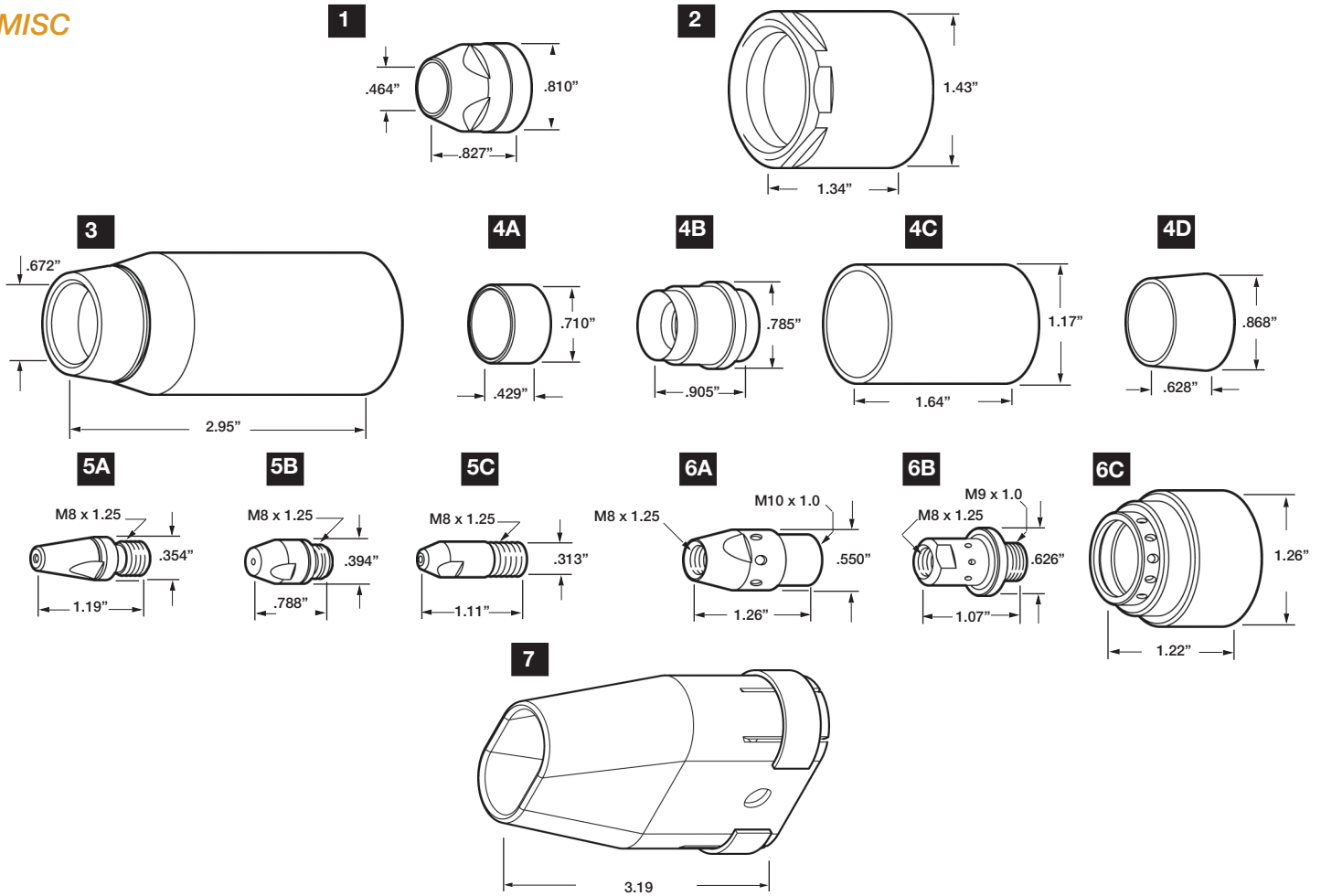


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CLOOS®

MISC

MIG



1. UNION NUT

743000506 Union nut

2. UNION NUT

754000004 Union Nut

3. NOZZLE

063056100 Nozzle

I.D.

.672"

4. INSULATOR

- A. 790220105 Insulator, brown
- B. 790220103 Insulator
- C. 754000007 Insulator
- D. 743000015 Insulator

5. CONTACT TIPS

- A. 062123112 Contact Tip, tapered .045"
- B. 062120604 Contact Tip .050"
- C. 062020062 Contact Tip 1.2mm

6. DIFFUSER

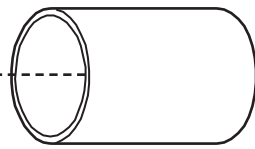
- A. 753000002 Diffuser
- B. 709000004 Diffuser
- C. 754000005 Diffuser

7. NOZZLE

753000600 Nozzle Air Cooled, Tandem

MR W 500-31 ROBOT WELDING TORCH

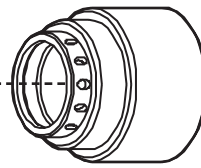
MIG



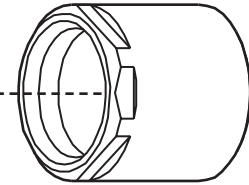
Insulator
709000003



O-Ring
110156178



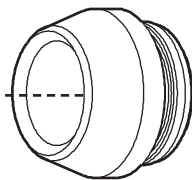
Insulating Bush
709000002



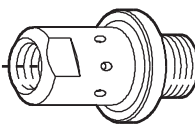
Clamping Nut
709000001



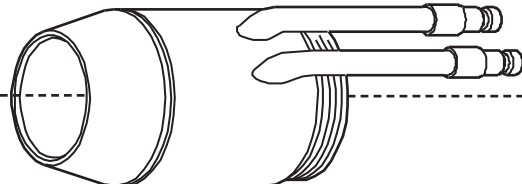
1.2 Tip
062120004
062120003 1.0



Shroud
709000005



Tip Holder
709000004



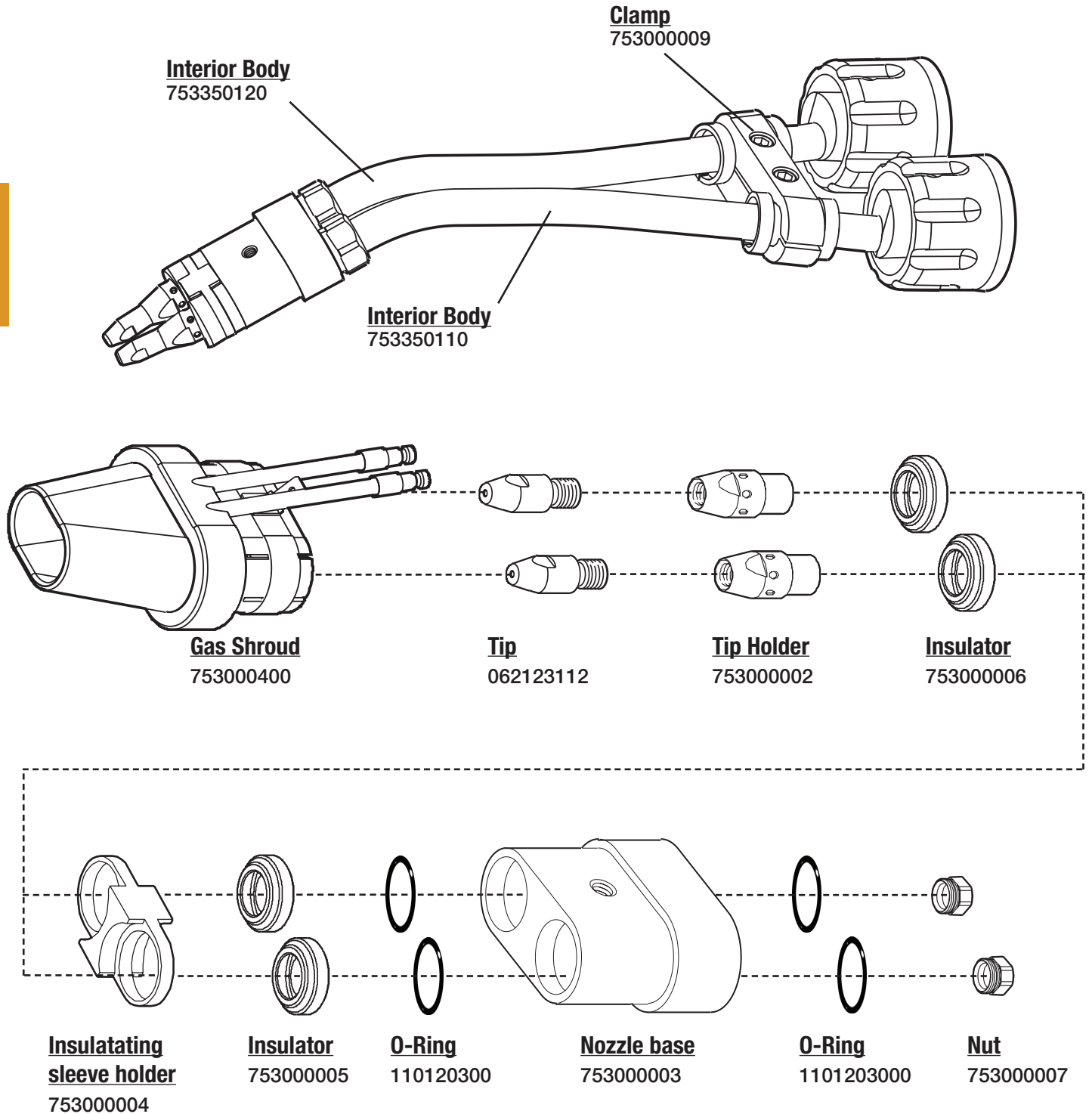
Water Jacket
709000400

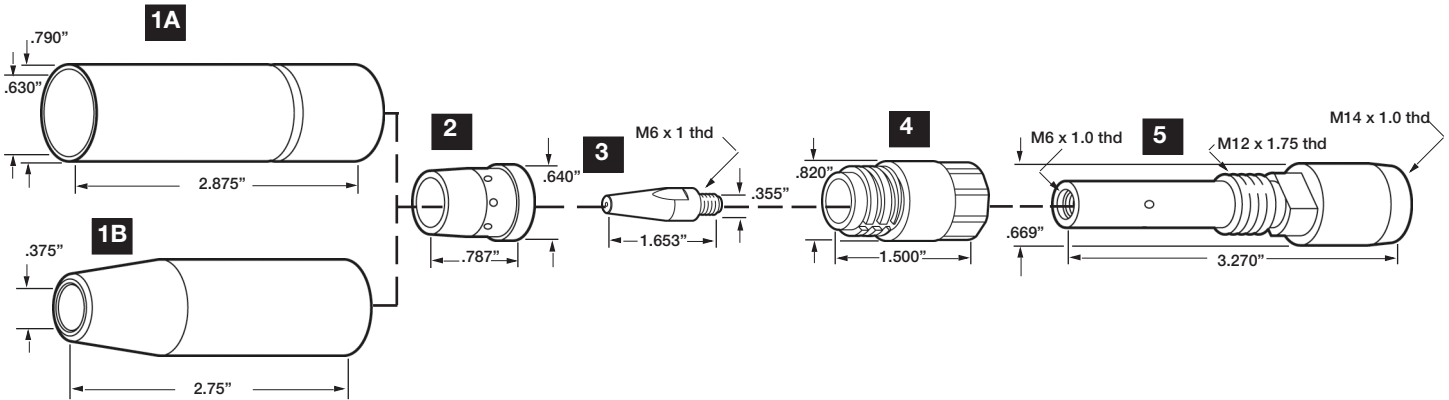
180

CLOOS®

ZMW 600 / 610

MIG





MIG

1. NOZZLES

I.D.

A	U608N02	Nozzle	5/8"	(16mm)
B	U2464H10	Nozzle #6	3/8"	(9.5mm)

2. ORIFICE

U4167G02	Orifice
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3. CONTACT TIPS

I.D.

A	U475E08	Contact Tip .030 H	(0.8mm)	.037
	U475E09	Contact Tip .035 H	(0.9mm)	.043
	U475E10	Contact Tip .045 H	(1.2mm)	.055

4. NOZZLE INSULATORS

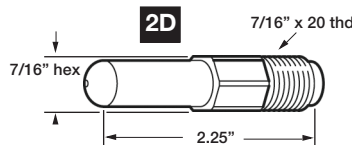
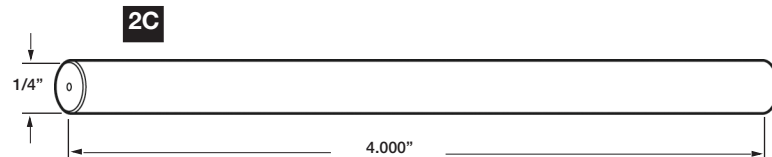
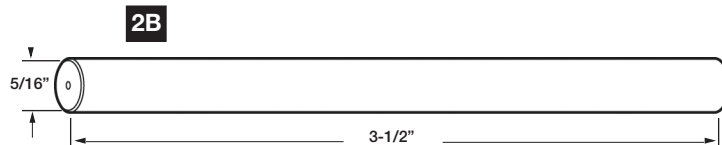
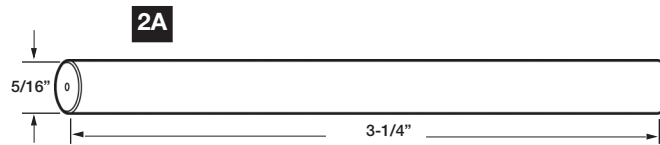
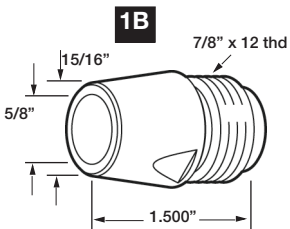
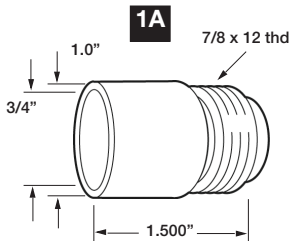
004 002	Nozzle Insulator Small
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5. TIP BODIES

U2437H07	Tip Body
U2437H07L	Tip Body Long

ALSO AVAILABLE (NOT SHOWN)

U1736D06	Tip 1.2mm	.050
U1736D16	Tip 0.9mm	.040
U2075J06	Nozzle	
U2437H01	Orifice Small	
U2464H10	Nozzle # 6	
U2769M05	Insulator	
U4167H12	Tip 0.8mm	.054
U4167H04	Deep Narrow Nozzle	
U4167H11	Tip	.062



1. NOZZLE

I.D.

A	10340	Nozzle Straight	3/4"	(19.0mm)
B	10359	Nozzle Tapered	5/8"	(15.9mm)

2. CONTACT TIPS

I.D.

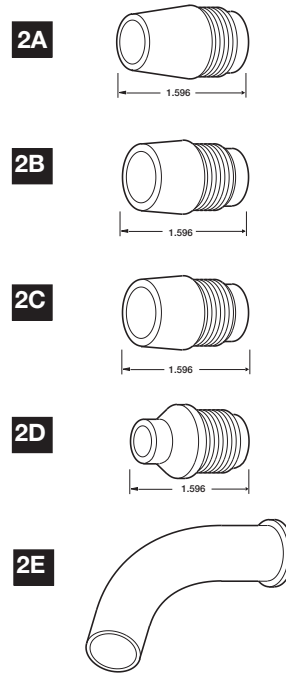
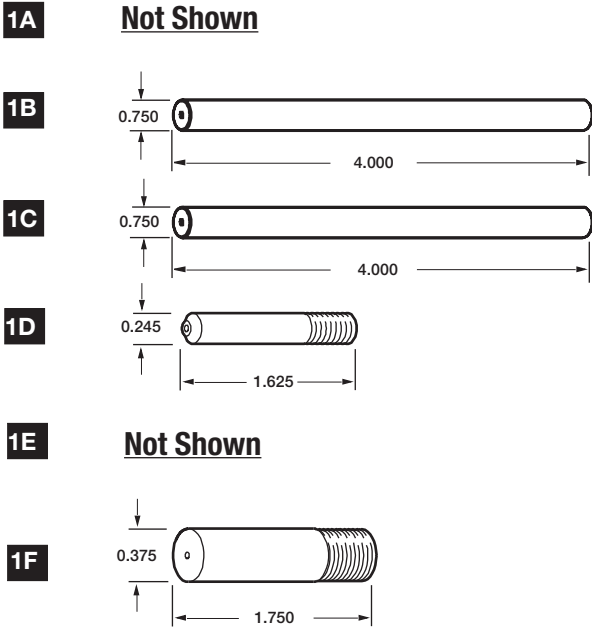
A	10893	Contact Tip .035 C	(0.9mm)	.043
	10894	Contact Tip .045 C	(1.2mm)	.055
	10895	Contact Tip .052 C	(1.4mm)	.063
	10896	Contact Tip 1/16" C	(1.6mm)	.073
	10897	Contact Tip 5/64" C	(2.0mm)	.093
B	10898	Contact Tip 3/32" C	(2.4mm)	.110
	10899	Contact Tip 7/64" C	(2.8mm)	.120
	10883	Contact Tip .030 H	(0.8mm)	.037
	10884	Contact Tip .035 H	(0.9mm)	.043
	10885	Contact Tip .045 H	(1.2mm)	.055
	10886	Contact Tip .052 H	(1.4mm)	.063
	10887	Contact Tip 1/16" H	(1.6mm)	.073
	10888	Contact Tip 5/64" H	(2.0mm)	.093
	10889	Contact Tip 3/32" H	(2.4mm)	.110

2. CONTACT TIPS (CONT.)

I.D.

C	10788	Contact Tip .035 H	(0.9mm)	.043
	10789	Contact Tip .045 H	(1.2mm)	.055
	10830	Contact Tip .052 H	(1.4mm)	.063
	10790	Contact Tip 1/16" H	(1.6mm)	.073
	10781	Contact Tip 3/64" Al	(1.2mm)	.059
D	10782	Contact Tip 1/16" Al	(1.6mm)	.081
	15117	Contact Tip .045 H	(1.2mm)	.055
	15121	Contact Tip .052 H	(1.4mm)	.063
	15118	Contact Tip 1/16" H	(1.6mm)	.073
	15119	Contact Tip 5/64" H	(2.0mm)	.093
	15120	Contact Tip 3/32" H	(2.4mm)	.110
	15126	Contact Tip 3/64" Al	(1.2mm)	.059
	15125	Contact Tip 1/16" Al	(1.6mm)	.081
	15124	Contact Tip 3/32" Al	(2.4mm)	.120

AIRCO



MIG

1. CONTACT TIPS

I.D.

2. NOZZLE

I.D.

A. 2354-0067	Bent Tip .030-.035	.060
2354-0068	Bent Tip .0453/64"	.081
2354-0069	Bent Tip 1/16"	.110
B. 2360-8304	Contact Tip .030	.040
2360-0356	Contact Tip .035	.044
2360-0299	Contact Tip .045	.060
2360-0300	Contact Tip 1/16"	.081
2360-0301	Contact Tip 5/64"	.093
C. 2360-2136	Bent Tip .030	.040
2360-2115	Bent Tip .035	.060
2360-2135	Bent Tip 1/16"	.081
D. 2354-0150	Contact Tip .030-.035	.040
2360-2223	Contact Tip .045	.055
2360-8575	Contact Tip .052	.073
2360-7019	Contact Tip 3/64"	.060
2360-7456	Contact Tip 1/16"	.081
E. 2360-2793	Contact Tip .030-.035	.040
2360-2839	Contact Tip .045	.055
2360-7020	Contact Tip 1/16"	.081
F. 2360-2314	Contact Tip .035	.044
2360-1925	Contact Tip .045	.054
2360-1926	Contact Tip 1/16"	.073
2360-1927	Contact Tip 5/64"	.093
2360-1928	Contact Tip 3/32"	.110
2360-1929	Contact Tip 1/8"	.136

A. 2354-0117	Nozzle Copper	1/2"	12.7mm
2354-0118	Nozzle Copper	3/4"	19.1mm
2350-2110	Nozzle Copper	5/8"	15.9mm
B. 2360-6269	Nozzle Brass	11/16"	
2360-2110	Nozzle Copper	11/16"	
C. 2360-6270	Nozzle Brass	11/16"	
D. 2360-6268	Nozzle Brass	7/16"	
E. 2360-2137	Bent Nozzle	5/8"	

3. NOZZLES BODY

A. 2354-7147 Nozzle Body (Not Shown)

4. SPACER

A. 2360-7641 Spacer (Not Shown)

5. ADAPTER SLEEVE

I.D.

A. 2360-7640 Adapter Sleeve (Not Shown)

6. BARREL

I.D.

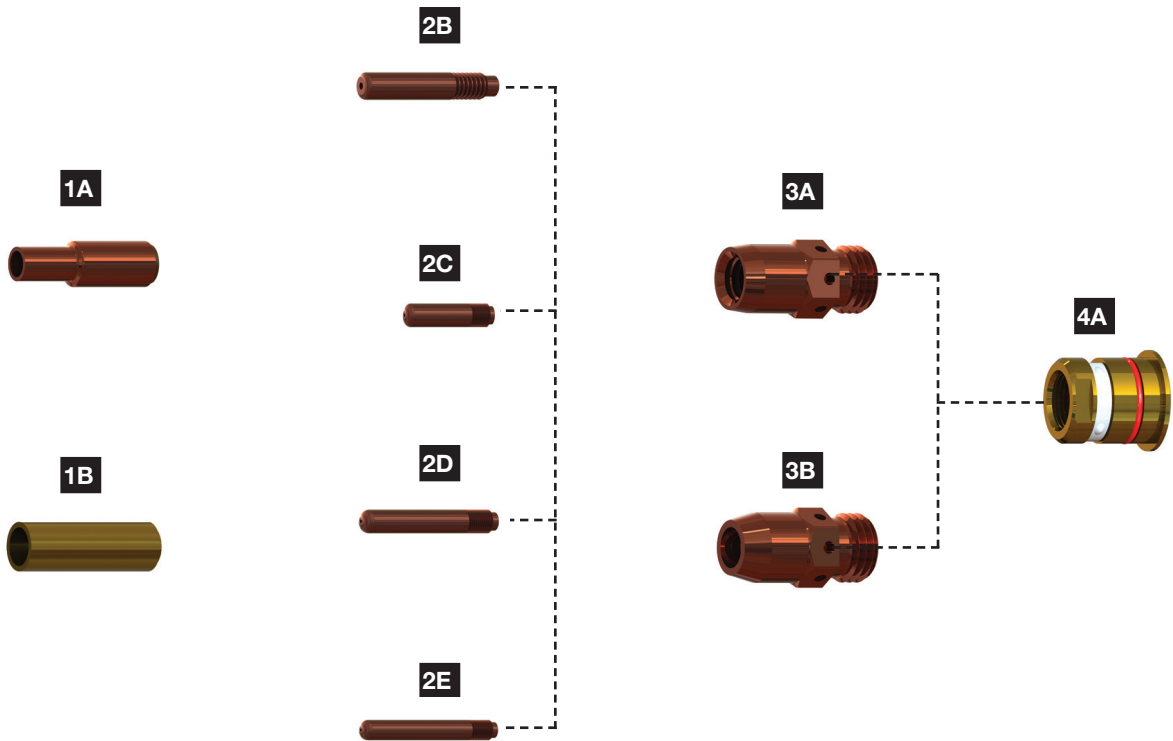
A. 2360-2108 Barrel Outer (Not Shown)

184

ESAB®

MT-200 / MT-200CC / MT-400 / MT-400CC / MT-500

MIG



1. NOZZLES

I.D.

A	998895	Nozzle #6 Insulated Slip-On	3/8"	(09.5mm)
	998893	Nozzle #8 Insulated Slip-On	1/2"	(12.7mm)
	998894	Nozzle #10 Insulated Slip-On	5/8"	(15.8mm)
B	999471	Nozzle H.D. #8 Slip-On	1/2"	(12.7mm)
	999472	Nozzle H.D. #10 Slip-On	5/8"	(15.8mm)
	999473	Nozzle H.D. #12 Slip-On	3/4"	(19.1mm)
	17350	Nozzle E.H.D. Brass #12	3/4"	(19.1mm)
C	948767	Nozzle H.D. #8 Threaded	1/2"	(12.7mm)
	948768	Nozzle H.D. #10 Threaded	5/8"	(15.8mm)
	948769	Nozzle H.D. #12 Threaded	3/4"	(19.1mm)

3. TIP ADAPTERS

A	17984	Adapter for H.D. Tips
B	17983	Adapter for Std. Tips
C	17766	Adapter for .045-1/16" H.D. Tips
	948786	Adapter for 5/64"-3/32" H.D. Tips
N/S	948785	Adapter for Std.Tips, H.D.

Nozzles

4. NOZZLE ADAPTERS

A	999452	Adapter for Slip-On Nozzles
B	17318	Adapter for H.D. Threaded Nozzles

2. CONTACT TIPS

I.D.

A	94832	Tip H.D. Short	5/64"	(2.0mm)	.093
	948833	Tip H.D. Short	3/32"	(2.4mm)	.110
B	17765	Tip H.D. Med.	.045-3/64"	(1.2mm)	.055
	17778	Tip H.D. Med.	.052	(1.3mm)	.063
	948835	Tip H.D. Med.	1/16"	(1.6mm)	.073
C	999578	Tip Short	.045-3/64"	(1.2mm)	.059
	948340	Tip Short	.052	(1.3mm)	.063
	948341	Tip Short	1/16"	(1.6mm)	.073
	2075230	Tip Short	5/64"	(2.0mm)	.093
D	20543	Tip Med.	.023	(0.6mm)	.028
	20544	Tip Med.	.030	(0.8mm)	.037
	996995	Tip Med.	.035	(0.9mm)	.043
	996999	Tip Med.	.045-3/64"	(1.2mm)	.055
	2075349	Tip Med.	.052	(1.3mm)	.063
	996997	Tip Med.	1/16"	(1.6mm)	.073
E	999742	Tip Long	.023	(0.6mm)	.028
	996994	Tip Long	.023	(0.6mm)	.028
	996996	Tip Long	.035	(0.9mm)	.043
	996998	Tip Long	.045-3/64"	(1.2mm)	.055
F	17159	Tube H.D. Short	5/64"	(2.0mm)	.093
	17161	Tube H.D. Short	3/32"	(2.4mm)	.110
G	17163	Tube H.D. Med.	.035	(0.9mm)	.043
	17164	Tube H.D. Med.	.045-3/64"	(1.2mm)	.055
	17155	Tube H.D. Med.	.052	(1.3mm)	.063
	17157	Tube H.D. MED.	1/16"	(1.6mm)	.073

LINERS (NOT SHOWN)

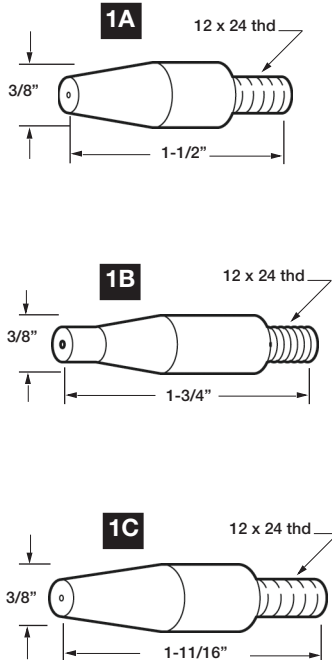
I.D. O.D

A	999743	Liner 10'	.023	.039	.120
B	948850	Liner 10'	.030	.060	.185
	2075237	Liner 10'	.035-.045	.070	.185
	2075239	Liner 10'	.052-1/16"	.094	.185
	2075245	Liner 10'	5/64"	.140	.200
	17717	Liner 12'	.030	.060	.185
	17718	Liner 12'	.035-.045	.070	.185
	17719	Liner 12'	.052-1/16"	.094	.185
	2075238	Liner 15'	.035-.045	.070	.185
	2075240	Liner 15'	.052-1/16"	.094	.185

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ESAB®

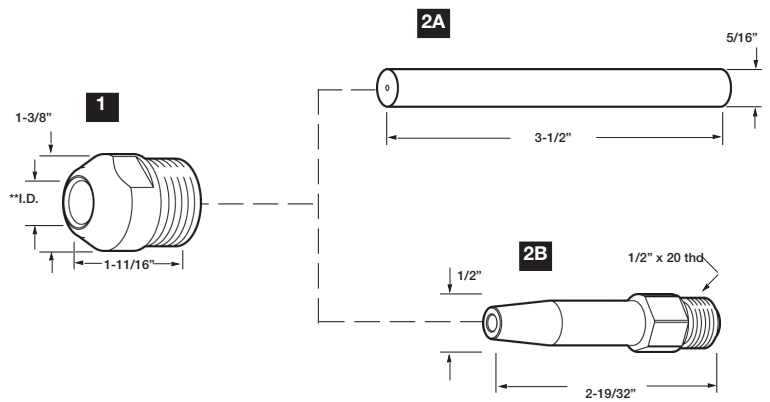
ST-9



1. CONTACT TIPS **I.D.**

A	12N55	Tip Short	.030	(0.8mm)	H	.037	
	49N44	Tip Short	.035	(0.9mm)	H	.043	
	55N06	Tip Short	.045-3/64"	(1.2mm)	H/C/S	.059	
B	55N04	Tip Long	.030	(0.8mm)	H	.037	
	55N05	Tip Long	.035	(0.9mm)	H	.043	
C	57N38	Tip Long	.045	(1.2mm)	H/C	.059	

ST-12



1. NOZZLES **I.D.**

61N24	Nozzle #10	5/8"	(15.9mm)
61N25	Nozzle #12	3/4"	(19.1mm)
61N26	Nozzle #14	7/8"	(22.2mm)

2. CONTACT TIPS **I.D.**

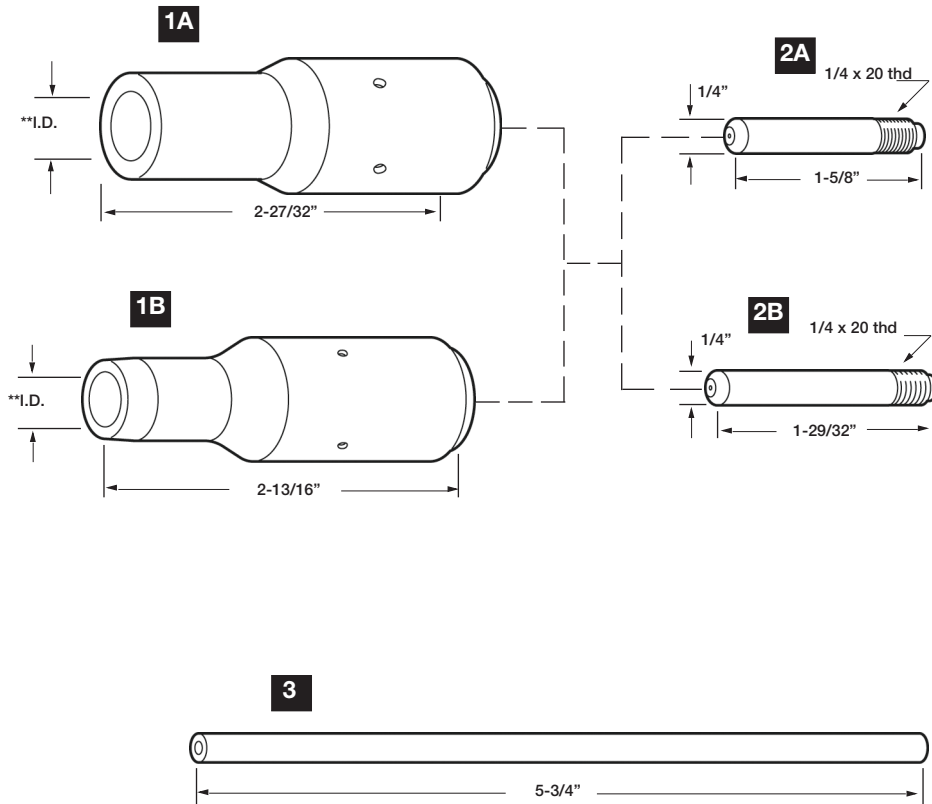
A						
61N35	Contact Tip .030	(0.8mm)	H/C	.037		
61N36	Contact Tip .035	(0.9mm)	H/C	.043		
61N37	Contact Tip .045	(1.2mm)	H/C	.055		
61N38	Contact Tip 3/64"	(1.2mm)	S	.059		
999117	Contact Tip .052	(1.3mm)	H/C	.063		
61N39	Contact Tip 1/16"	(1.6mm)	H/C	.073		
61N40	Contact Tip 1/16"	(1.6mm)	S	.081		
999966	Contact Tip 5/64"	(2.0mm)	H/C	.093		
61N41	Contact Tip 3/32"	(2.4mm)	H/C	.110		
61N42	Contact Tip 3/32"	(2.4mm)	S	.120		

2. CONTACT TIPS **I.D.**

B	61N45	Contact Tip 3/32"	(2.4mm)	H/C	.110
	61N46	Contact Tip 3/32"	(2.4mm)	S	.120
	61N47	Contact Tip 1/8"	(3.2mm)	H/C	.144
	61N48	Contact Tip 1/8"	(3.2mm)	S	.152

C = Cored Wire
 H = Hard Wire
 S = Soft Wire

MIG



MIG

1. NOZZLES

I.D.

A	998895	Nozzle #6 Insulated Slip-On	3/8" (09.5mm)
	998893	Nozzle #8 Insulated Slip-On	1/2" (12.7mm)
	998894	Nozzle #10 Insulated Slip-On	5/8" (15.8mm)
B	999471	Nozzle #8 H.D. Slip-On	1/2" (12.7mm)
	999472	Nozzle #10 H.D. Slip-On	5/8" (15.8mm)
	999473	Nozzle #12 H.D. Slip-On	3/4" (19.1mm)
	17350	Nozzle #12 H.D. Brass Slip-On	3/4" (19.1mm)

2. CONTACT TIPS

I.D.

A	20543	Tip Short .023	(0.6mm) .028
	20544	Tip Short .030	(0.8mm) .037
	996995	Tip Short .035	(0.9mm) .043
	996999	Tip Short .045-3/64"	(1.2mm) .055
	996997	Tip Short 1/16"	(1.6mm) .073
B	999742	Tip Long .023	(0.6mm) .028
	996994	Tip Long .030	(0.8mm) .037
	996996	Tip Long .035	(0.9mm) .043
	996998	Tip Long .045-3/64"	(1.2mm) .055

3. LINERS

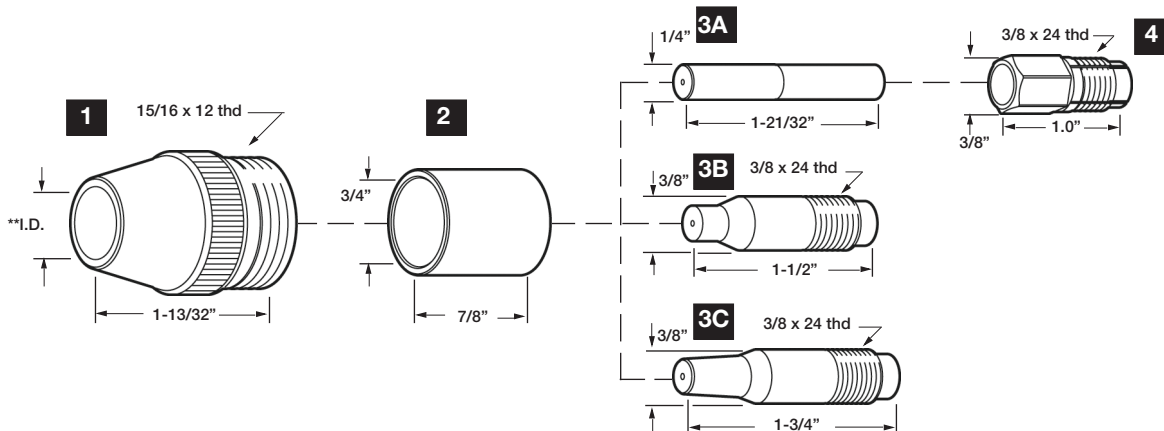
ID

O.D.

19167	Torch Liner	.045-1/16"	.096	.184
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MIG-41 / MT-450W ST-16 / ST-21

MIG



1. NOZZLES (USED ON ST-16 AND ST-21)

598739	Nozzle #8	1/2"	(12.7mm)
598721	Nozzle #10	5/8"	(15.9mm)
633985	Nozzle #12	3/4"	(19.1mm)

2. SPATTER LINERS

633603 Nozzle Spatter Liner

3. CONTACT TIPS

				I.D.		
A	996103	Tube	.030	(0.8mm)	.037	
	996104	Tube	.035	(0.9mm)	.043	
	996105	Tube	.045-3/64"	(1.2mm)	.059	
	996816	Tube	.052	(1.3mm)	.063	
	996106	Tube	1/16"	(1.6mm)	.073	
	996107	Tube	5/64"	(2.0mm)	.093	
	996108	Tube	3/32"	(2.4mm)	.110	
	B	632791	Tip Short	.030	(0.8mm)	.039
		632793	Tip Short	.035	(0.9mm)	.043
		632795	Tip Short	.045-3/64"	(1.2mm)	.059
948308		Tip Short	.052	(1.3mm)	.063	
632797		Tip Short	1/16"	(1.6mm)	.073	
632799		Tip Short	5/64"	(2.0mm)	.093	
632800		Tip Short	3/32"	(2.4mm)	.110	
633611		Tip Short	7/64"	(2.8mm)	.120	
17832		Tip L. L.	.045-364"	(1.2mm)	.059	
17833		Tip L. L.	1/16"	(1.6mm)	.073	
17834	Tip L. L.	3/32"	(2.4mm)	.110		
C	632794	Tip Long	.035	(0.9mm)	.043	
	632796	Tip Long	.045-3/64"	(1.2mm)	.059	
	948335	Tip Long	.052	(1.4mm)	.063	
	632798	Tip Long	1/16"	(1.6mm)	.073	

4. COLLETS

632811 Collet

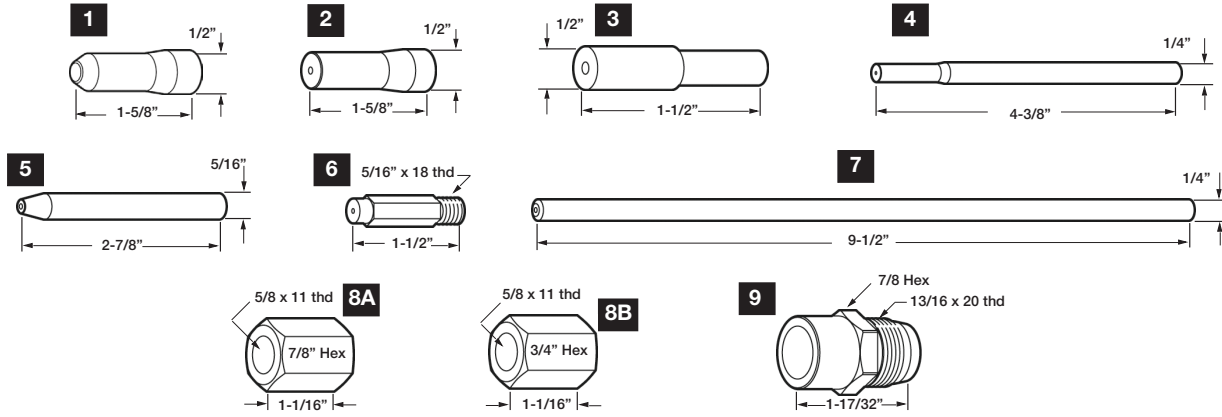
CONDUITS (USED ON ST-16 AND ST-21)

633455 Conduit 10' .030-.035
633456 Conduit 10' .045-1/16"

LINERS (USED ON MT-450W)

			ID	OD
999743	Liner 10'	.023	.039	.120
948850	Liner 10'	.030	.060	.185
2075237	Liner 10'	.035-.045	.070	.180
2075239	Liner 10'	.052-1/16"	.094	.185
2075245	Liner 10'	5/64"	.140	.200
17717	Liner 12'	.030	.060	.185
17718	Liner 12'	.035-.045	.070	.185
17719	Liner 10'	.052-1/16"	.094	.185
2075238	Liner 15'	.035-.045	.070	.185
2075240	Liner 15'	.052-1/16"	.094	.185

*Liners and Conduits are not shown.



1. CONTACT TIP

I.D.

568611	Contact Tip	.030	(0.8mm)	.037
409648	Contact Tip	.035	(0.9mm)	.043
409649	Contact Tip	.045	(1.2mm)	.055
568612	Contact Tip	1/16"	(1.6mm)	.073
568613	Contact Tip	3/32"	(2.4mm)	.110

2. CONTACT TIP

I.D.

19N45	Contact Tip	1/16"	(1.6mm)	.070
19N46	Contact Tip	5/64"	(2.0mm)	.093
19N47	Contact Tip	3/32"	(2.4mm)	.101
19N764	Contact Tip	7/64"	(2.8mm)	.120
19N120	Contact Tip	.120	(3.0mm)	.128
19N48	Contact Tip	1/8"	(3.2mm)	.136
19N49	Contact Tip	5/32"	(4.0mm)	.166
19N50	Contact Tip	3/16"	(4.8mm)	.199
19N51	Contact Tip	1/4"	(6.4mm)	.272

3. CONTACT TIP

I.D.

20N76	Contact Tip	1/8"	(3.2mm)	.136
20N75	Contact Tip	5/32"	(4.0mm)	.187

4. CONTACT TUBE

I.D.

49N15	Contact Tube	.030	(0.8mm)	.037
49N10	Contact Tube	.035	(0.9mm)	.043
49N11	Contact Tube	.045	(1.2mm)	.055
49N16	Contact Tube	3/64"	(1.2mm)	.063
49N13	Contact Tube	1/16"	(1.6mm)	.073
49N09	Contact Tube	1/16"	(1.6mm)	.081
49N12	Contact Tube	3/32"	(2.4mm)	.110
49N14	Contact Tube	3/32"	(2.4mm)	.120

5. CONTACT TUBE

I.D.

633504	Contact Tube	.035	(.09mm)	.043
633247	Contact Tube	3/64"	(1.2mm)	.059
633248	Contact Tube	1/16"	(1.6mm)	.078
633249	Contact Tube	5/64"	(2.0mm)	.093
633250	Contact Tube	3/32"	(2.4mm)	.110
633251	Contact Tube	3/32"	(2.4mm)	.120

6. CONTACT TIP

I.D.

49N06	Contact Tip	.030	(0.8mm)	.037
49N05	Contact Tip	.035	(0.9mm)	.043
49N04	Contact Tip	.045	(1.2mm)	.055
49N08	Contact Tip	.045-3/64"	(1.2mm)	.059
49N03	Contact Tip	1/16"	(1.6mm)	.073
49N02	Contact Tip	1/16"	(1.6mm)	.081
49N01	Contact Tip	3/32"	(2.4mm)	.116
49N07	Contact Tip	3/32"	(2.4mm)	.104

7. CONTACT TUBE

I.D.

08N54	Contact Tube	.035	(0.9mm)	.043
08N55	Contact Tube	.045	(1.2mm)	.055
08N50	Contact Tube	1/16"	(1.6mm)	.073
08N53	Contact Tube	1/16"Al	(1.6mm)	.081
08N52	Contact Tube	3/32"	(2.4mm)	.110
08N51	Contact Tube	3/32"	(2.4mm)	.120

8. TIP NUT

A.	999398	Tip Nut Subarc Large
B.	19N43	Tip Nut Subarc Small

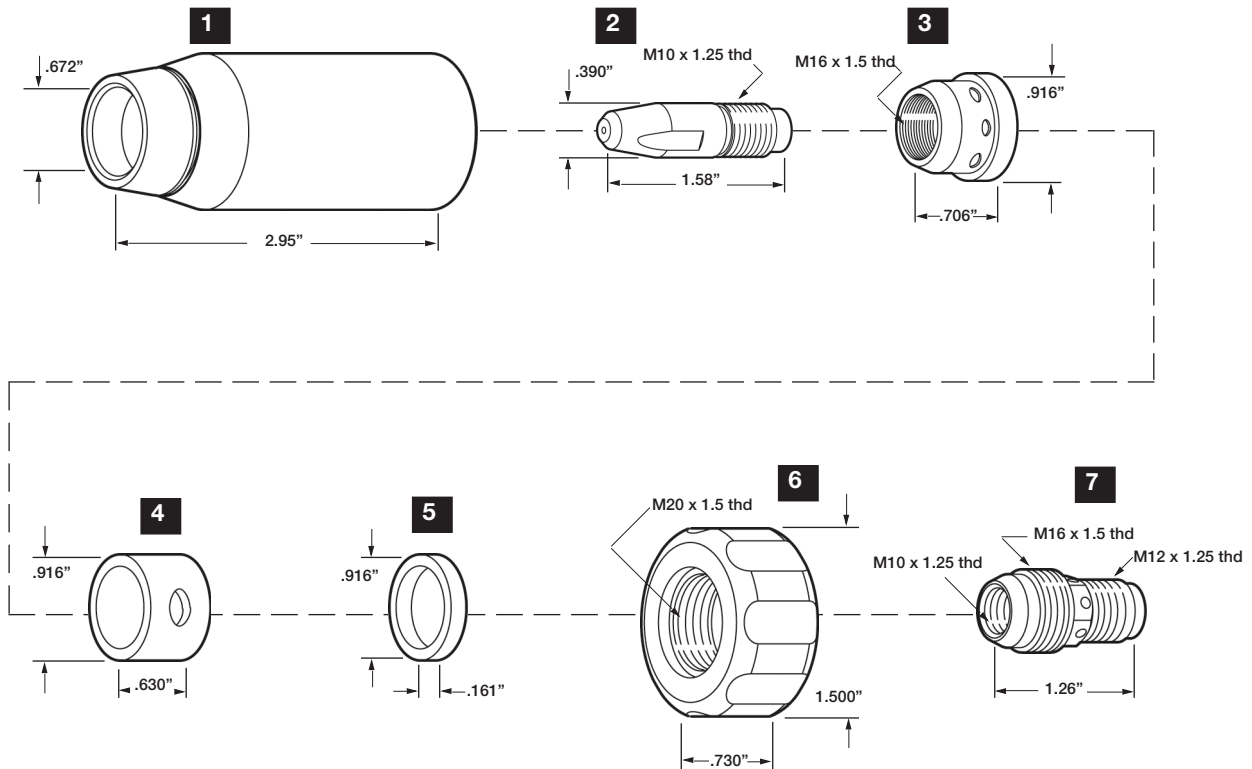
9. NOZZLE

105Z20	Nozzle #10	5/8"	(15.9mm)
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190

FRONIUS®

AW801-1R0



MIG

1. NOZZLES

I.D.

0185 Nozzle water Cooled .067 (17.1mm)

2. CONTACT TIPS

I.D.

1578 Contact Tip 1.2mm .052
1579 Contact Tip 1.6mm .070

3. COUNTER NUTS

0184 Counter Nut/Diffuser M16 x 1.5

4. WATER DISTRIBUTION RINGS

0181 Water Distribution Ring

5. GUIDE RINGS

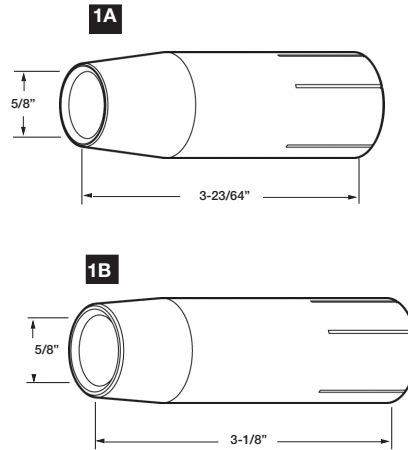
0182 Guide Ring

6. CLAMPING NUTS

0183 Clamping Nut

7. TIP ADAPTER

2166 Tip Adapter M16 x 1.5



1. NOZZLES

I.D.

2. CONTACT TIPS (Not Shown)

I.D.

WIRE

A	42.0001.5129	Nozzle	5/8	42.0001.1576	Contact Tip	.035	(.08mm)
B	42.0001.5155	Nozzle	5/8	42.0001.1577	Contact Tip	.045	(1.0mm)
	42.0001.5381	Nozzle		42.0001.1578	Contact Tip	.052	(1.2mm)
	42.0001.5130	Nozzle		42.0001.1579	Contact Tip	.070	(1.6mm)
				42.0001.1930	Contact Tip	.063	(1.4mm)
				42.0001.5052	Contact Tip		(1.2mm)

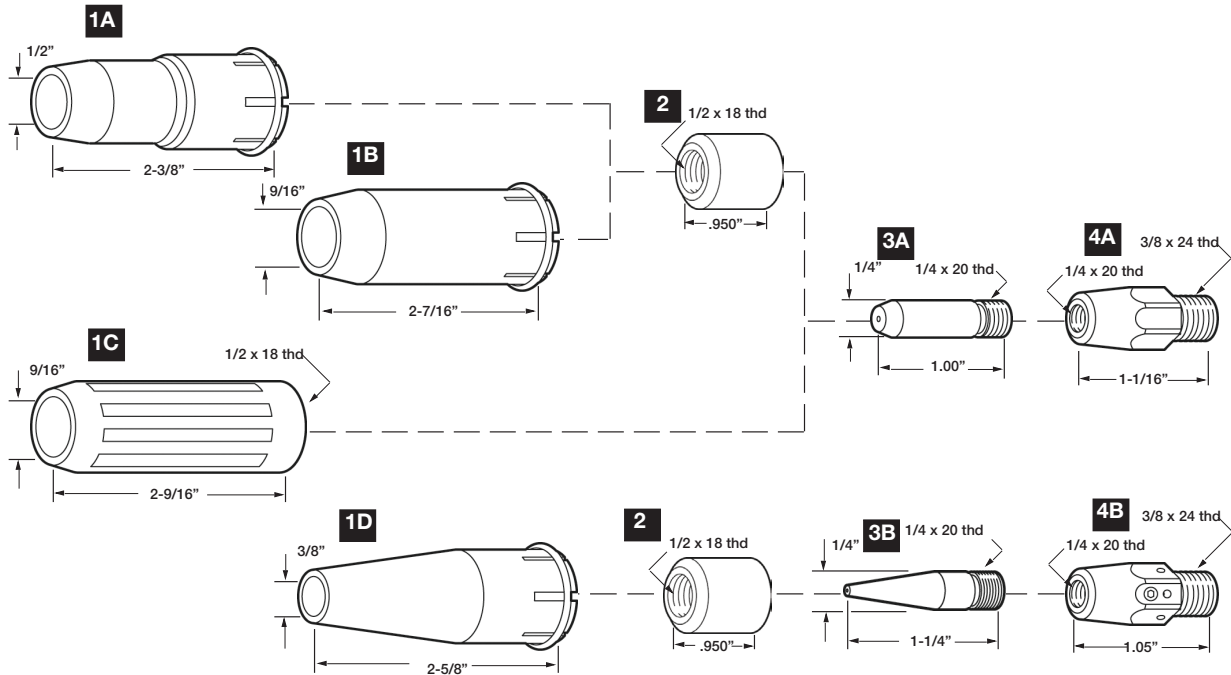
GAS DIFFUSER (Not Shown)

42.0001.5122	Gas Diffuser
42.0001.5382	Gas Diffuser
42.0001.1007	

INSULATOR RING (Not Shown)

42.0001.1016
42.0001.1018

PIECEMAKER 25-A GAL-300



1. NOZZLES

ID

A	379612 Nozzle Slip-On for .024"	1/2" (12.7mm)
B	379300 Nozzle Slip-On or .030"	9/16" (14.3mm)
C	379449 Nozzle Screw-On	9/16" (14.3mm)
D	177045 Nozzle Slip-On Slimline	3/8" (09.5mm)

2. INSULATORS

379301 Nozzle Insulator

3. CONTACT TIPS

ID

A	379587 Contact Tip .023	(0.6mm)H	.028
	379304 Contact Tip .030	(0.8mm)H	.037
	379314 Contact Tip .035	(0.9mm)H/T/AL	.043
	379315 Contact Tip .045	(1.2mm)H/T	.052
	379317 Contact Tip .045	(1.2mm)H/T/AL	.059
	379357 Contact Tip .052	(1.3mm)H/T	.063
	379649 Contact Tip 1/16"	(1.6mm)H/T	.073
B	177151 Tip Tapered .024	(0.6mm)H/T	.028
	177152 Tip Tapered .030	(0.8mm)H/T	.037
	177028 Tip Tapered .035	(0.9mm)H/T	.043
	177029 Tip Tapered .045	(1.2mm)H/T	.055

4. TIP ADAPTERS

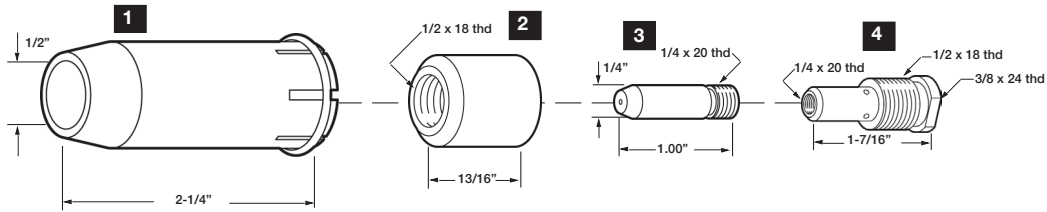
A	379595 Tip Adapter	.024
	379596 Tip Adapter	.030
	379433 Tip Adapter	.035-.045
B	177111 Tip Adapter	.024-.052

LINERS (NOT SHOWN)

ID OD

379601-3	Liner Assy. 15'	.024	H	.042	.130
379599-3	Liner Assy. 15'	.030	H/T	.057	.154
379335-3	Liner Assy. 15'	.035-.045	H/T	.070	.163
379349-3	Liner Assy. 15'	.052-1/16"	H/T		
379429-3	Liner Assy. 15'	.035-.045	H/T		
379347-4	Liner Assy. 12'	.035	Al.	.058	.176
379347-5	Liner Assy. 12'	.045-.052	Al.	.080	.176

PIECEMAKER 14-A



1. NOZZLES I.D.

379718 Nozzle Slip-On 1/2" (12.7mm)

2. NOZZLE ADAPTERS

379708 Nozzle Adapter

3. CONTACT TIPS I.D.

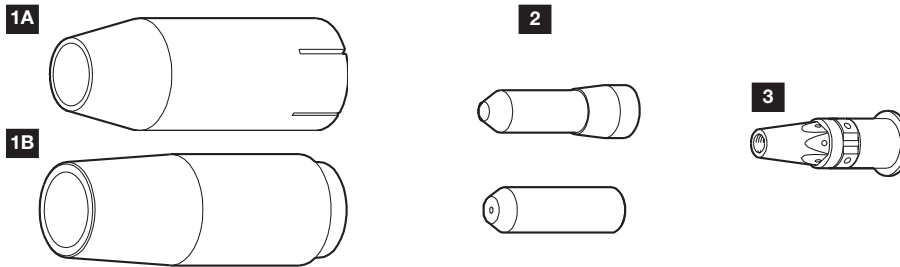
379587	Contact Tip .023 (0.6mm)	H	.028
379304	Contact Tip .030 (0.8mm)	H	.037
379314	Contact Tip .035 (0.9mm)	H/T/AL	.043
379315	Contact Tip .045 (1.2mm)	H/T	.055

4. GAS DIFFUSERS

177107 Gas Diffuser

MIG

GA-250, GA-400, GA-600



1. NOZZLES ID

- A 379925 hd nozzle 3/4
- B 379981 nozzle 598 act450/wc500

2. CONTACT TIPS ID

A.	377460	Contact Tip .030	.035
	377461	Contact Tip .035	.040
	377462	Contact Tip .035	.044
	377463	Contact Tip .045	.052
	377464	contact tip .045	.057
	377465	contact tip .045	.062
B.	377466	contact tip .030	.037
	377467	contact tip .035	.040
	377468	contact tip .035	.044
	377469	contact tip .045	.062

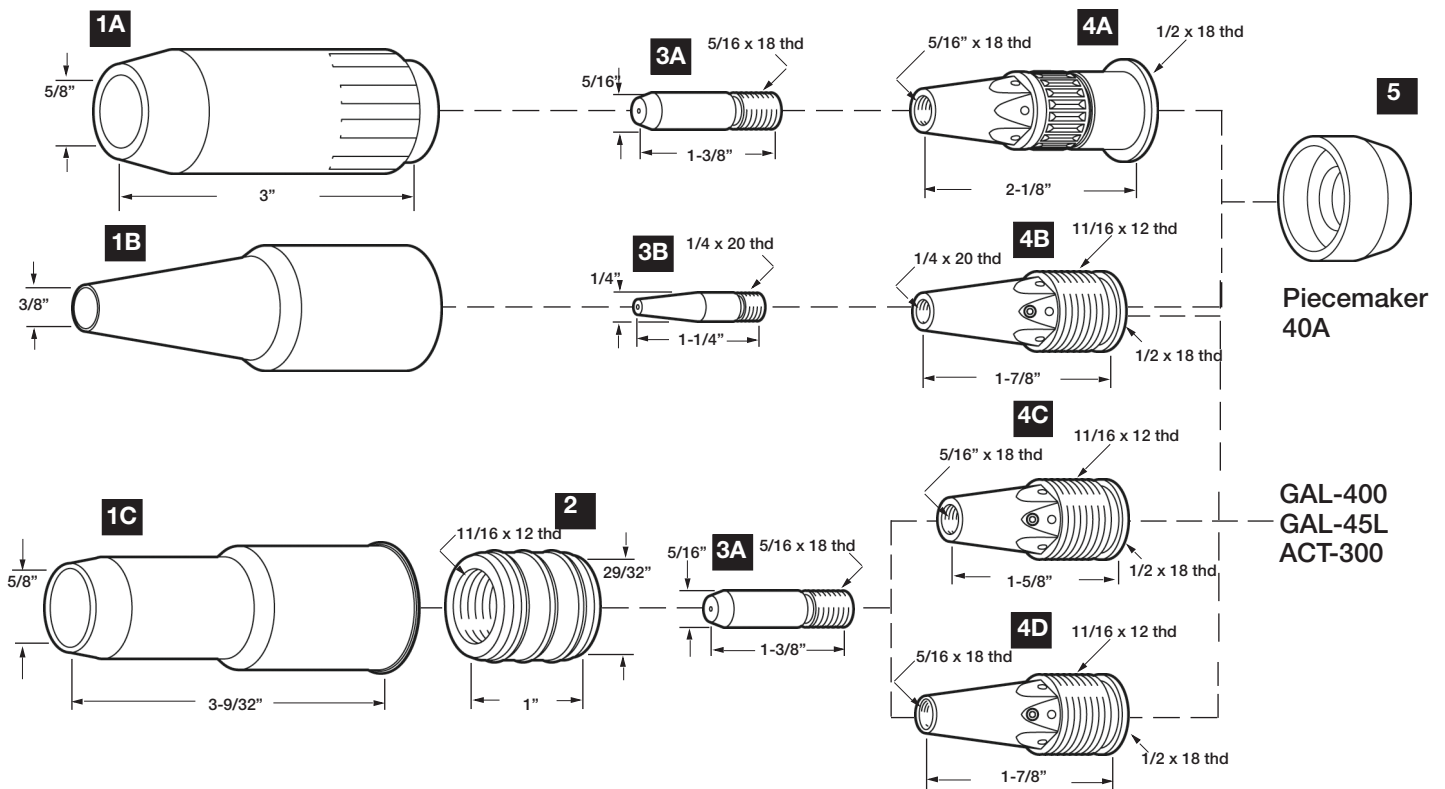
C.	377476	contact tip .045	.052
	377477	contact tip .052	.059
	377478	contact tip 1/16	.070
	377480	contact tip 1/16	.081
	377481	contact tip 5/64	.086
	377482	contact tip 3/32	.109
	377483	contact tip 7/64	.125
	377484	contact tip 1/8	.136
	377500	contact tip 5/32	.166

3 DIFFUSER ID

177135 Gas Diffuser
used with piecemaker 14a and gal-100

PIECEMAKER 40-A / GAL-400 - GAL-45L / ACT-300

MIG



1. NOZZLES

ID

A	177134	Nozzle Slip-On	5/8"	(15.9mm)
B	177042	Nozzle Threaded	3/8"	(9.5mm)
C	379645	Nozzle Slip-On	5/8"	(15.9mm)

2. NOZZLE ADAPTERS

379353 Nozzle Adapter

3. CONTACT TIPS

ID

A	379394	Contact Tip .035	(0.9mm)	H/T/AL	.043
	177000	Contact Tip .045	(1.2mm)	H/T	.055
	379296	Contact Tip .045	(1.2mm)	H/T/AL	.059
	379395	Contact Tip .052	(1.3mm)	H/T	.073
	379398	Contact Tip 1/16"	(1.6mm)	H/T	.081
	379396	Contact Tip 5/64"	(2.0mm)	T	.093
	379297	Contact Tip 3/32"	(2.4mm)	T	.110
B	177028	Tip Tapered .035	(0.9mm)	H/T	.043
	177029	Tip Tapered .045	(1.2mm)	H/T	.055

4. GAS DIFFUSERS

A	177304	Gas Diffuser
B	379592	Gas Diffuser Slim Line
C	379594	Gas Diffuser .035-.045 Wire
	379438	Gas Diffuser .052-5/64" Wire
D	379615	Gas Diffuser 3/32" Wire

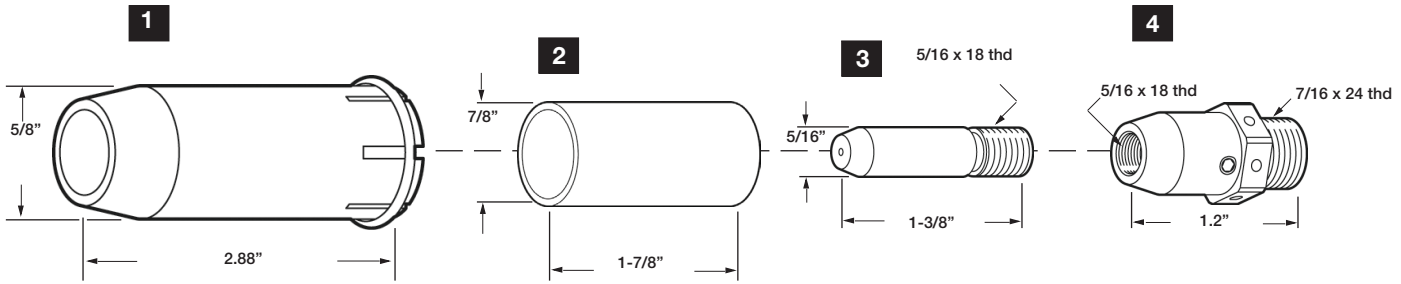
5. NOZZLE INSULATORS

177136 Nozzle Insulator (40-A)

LINERS (NOT SHOWN)

ID OD

A	379335-3	15'	.035-.045	H/T	(400)	.070	.163
	379349-3	15'	.052-1/16"	H/T	(400)	.088	.186
	379351-3	15'	5/64"	H/T	(40-A, 400)	.126	.186
	379347-4	12'	.035	AL	(40-A, 400)	.058	.178
	379347-5	12'	3/64"	AL	(40-A, 400)	.080	.178
	379529-7	15'	.035	AL	(45L)	.060	.178
	379529-8	15'	3/64"	AL	(45L)	.080	.178
	379529-9	15'	1/16"	AL	(45L)	.097	.178
	379521-3	15'	3/32"	T	(45L)	.129	.258



MIG

1. NOZZLES

ID

177166 Nozzle Slip-On 5/8" (15.9mm)

2. INSULATORS

377885-1 Nozzle Insulator

3. CONTACT TIPS

ID

.043	379394	Contact Tip .035	(0.9mm)	H/T/AL	
	177000	Contact Tip .045	(1.2mm)	H/T	.055
	379296	Contact Tip .045	(1.2mm)	H/T/AL	.059
	379395	Contact Tip .052	(1.3mm)	H/T	.073
	379298	Contact Tip 1/16"	(1.6mm)	H/T	.081
	379396	Contact Tip 5/64"	(2.0mm)	T	.093
	379297	Contact Tip 3/32"	(2.4mm)	T	.110

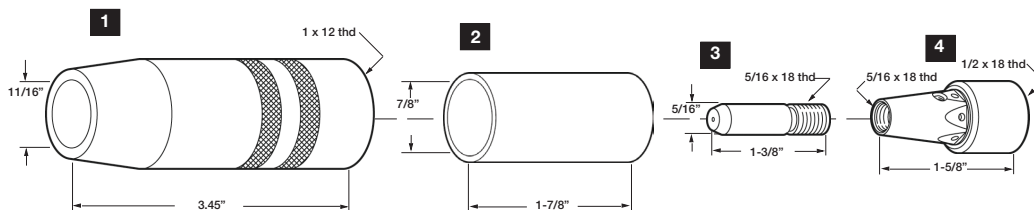
4. DIFFUSERS

379987 Gas Diffuser .035-.045
 379988 Gas Diffuser .052-5/64"

196

HOBART®

GAL-500



MIG

1. NOZZLES

ID

379450	Nozzle Screw-On	1 1/16"	(17.5mm)
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2. INSULATORS

37775-1	Nozzle Insulator
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3. CONTACT TIP

ID

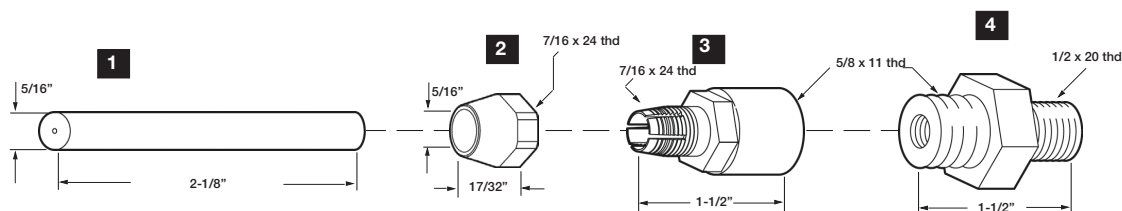
379394	Contact Tip .035	(0.9mm)	H/T/AL	.043
177000	Contact Tip .045	(1.2mm)	H/T	.055
379296	Contact Tip .045	(1.2mm)	H/T/AL	.059

379395	Contact Tip .052	(1.3mm)	H/T	.073
379298	Contact Tip 1/16"	(1.6mm)	H/T	.081
379396	Contact Tip 5/64"	(2.0mm)	T	.093
379297	Contact Tip 3/32"	(2.4mm)	T	.110

4. DIFFUSERS

379490	Gas Diffuser .035-1/16"
379530	Gas Diffuser 5/64"-3/32"

SAT-600



1. CONTACT TIPS

ID

378147	Contact Tube .035	(0.9mm)	H	.043
377939	Contact Tube .045	(1.2mm)	H	.055
377940	Contact Tube .052	(1.3mm)	H	.073
377941	Contact Tube 1/16"	(1.6mm)	H	.081
377942	Contact Tube 5/64"	(2.0mm)	H	.093
377943	Contact Tube 3/32"	(2.4mm)	H	.110
377944	Contact Tube 7/64"	(2.8mm)	H	.120
377945	Contact Tube 1/8"	(3.2mm)	H	.144

2. NUTS

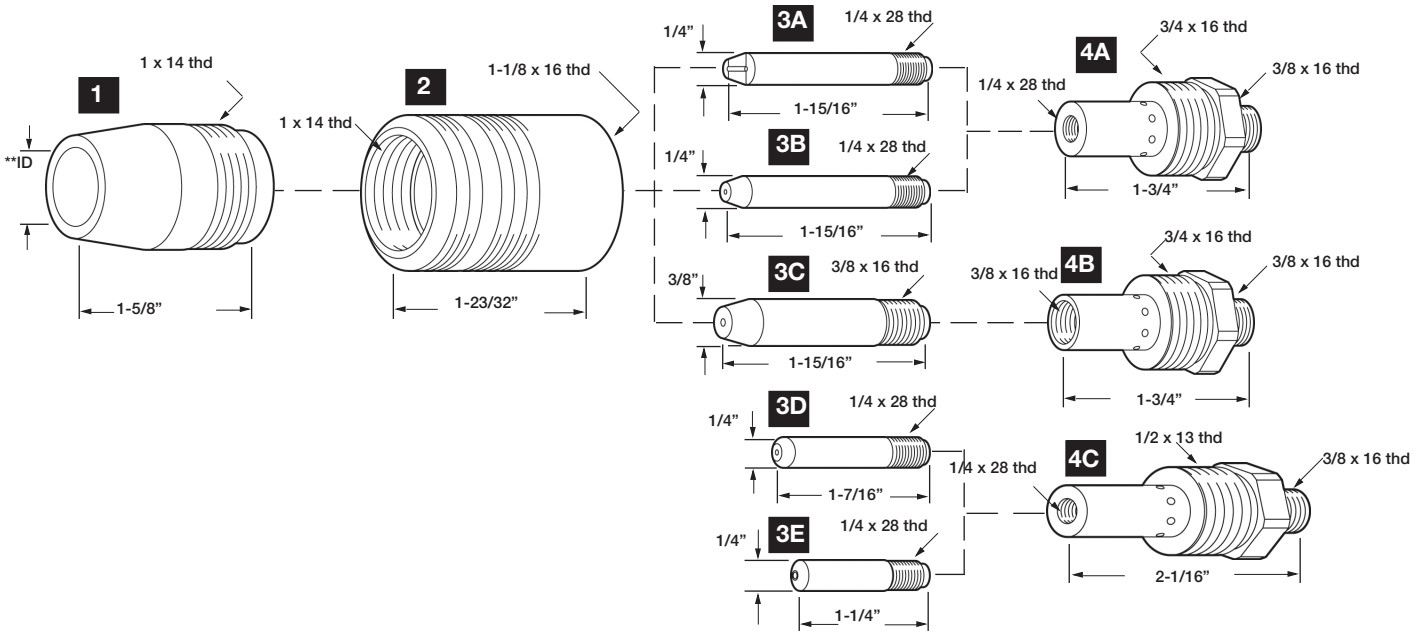
378320	Locking Tip Nut
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3. GAS DIFFUSERS

378653	Gas Diffuser
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4. TIP ADAPTERS

16DA629	Contact Tip Adapter
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1. NOZZLES

ID

407741	Nozzle Threaded	5/8"	(15.9mm)
407742	Nozzle Threaded	3/4"	(19.1mm)

2. NOZZLE BODIES

407842-1	Nozzle Body
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3. CONTACT TIPS

ID

A	407727	Contact Tip Notched	.030	(0.6mm)	.037
	407728	Contact Tip Notched	.035	(0.8mm)	.043
	407729	Contact Tip Notched	.045	(1.2mm)	.055
B	407730	Contact Tip Long	.030	(0.6mm)	.037
	407731	Contact Tip Long	.035	(0.8mm)	.043
	407732	Contact Tip Long	.045	(1.2mm)	.055
C	407734	Contact Tip H.D.	3/64"	(1.2mm)	.059
D	407839-1	Contact Tip	.030	(0.6mm)	.037

3. CONTACT TIPS (CONT.)

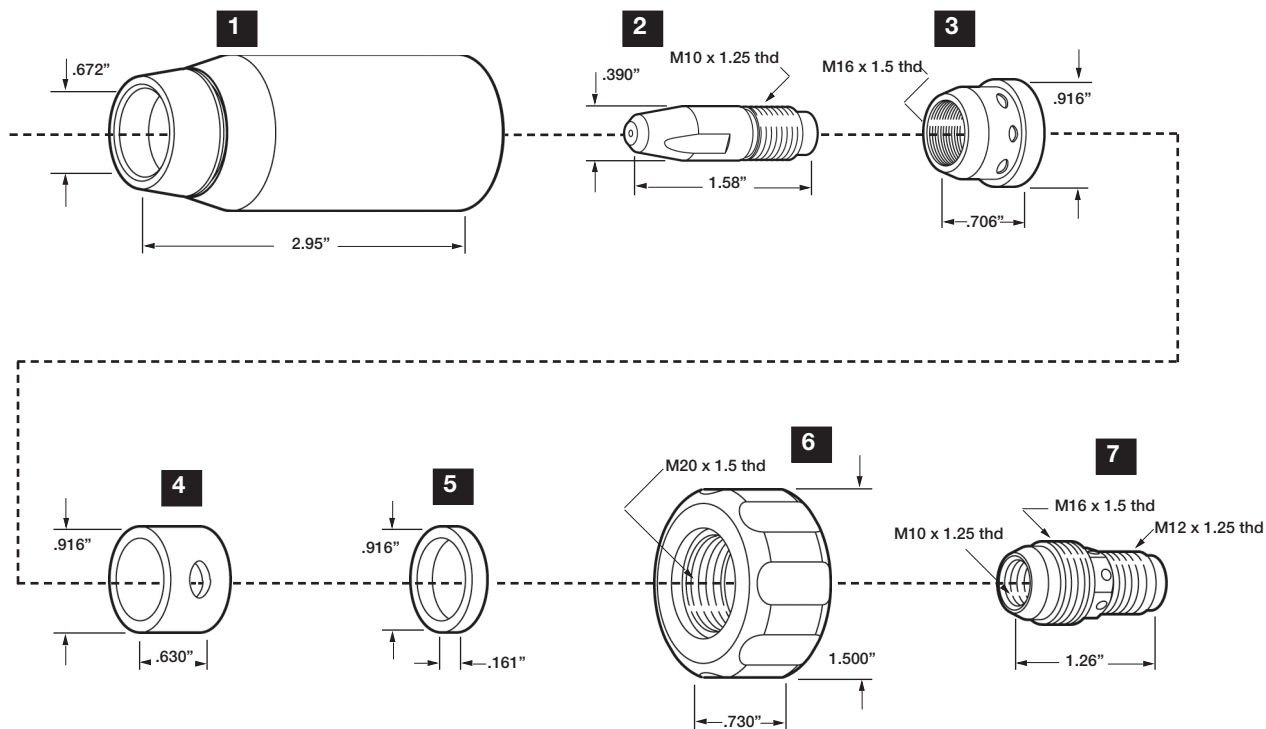
ID

	407839-4	Contact Tip	.035	(0.8mm)	.043
	407839-7	Contact Tip	.045	(1.2mm)	.055
E	407839-2	Contact Tip Short	.030	(0.6mm)	.037
	407839-5	Contact Tip Short	.035	(0.8mm)	.043
	407839-8	Contact Tip Short	.045	(1.2mm)	.055

4. GAS DIFFUSERS

A	407733	Gas Diffuser Standard
B	407735	Gas Diffuser H.D.
C	407846-2	Gas Diffuser for Adjustable Nozzles

MIG



1. NOZZLES

ID

60A200 Nozzle Water Cooled .672 (17.1mm)

2. CONTACT TIPS

ID

60A167	Contact Tip	(1.2mm)	.052
60A156	Contact Tip	(1.4mm)	.063
60A168-1.6	Contact Tip	(1.6mm)	.070
60A168-1.7	Contact Tip	(1.7mm)	.078
60A168-1.8	Contact Tip	(1.8mm)	.081
60A155	Contact Tip	(2.0mm)	.093

3. COUNTER NUTS

60A134 Counter Nut/Diffuser M16 x 1.5

4. WATER DISTRIBUTION RINGS

60A064 Water Distribution Ring

5. GUIDE RINGS

60A068 Guide Ring

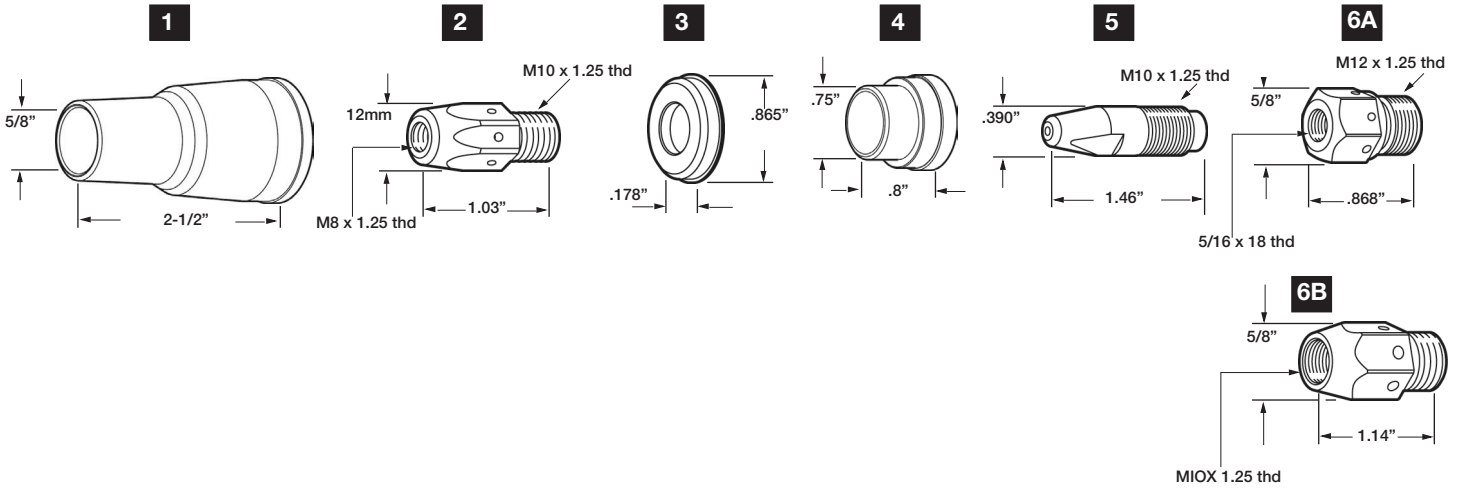
6. CLAMPING NUTS

60A066 Clamping Nut

7. TIP ADAPTERS

60A578 Tip Adapter M16 x 1.5

IGM SB399 & OTHER AVAILABLE IGM PARTS



MIG

1. NOZZLES

ID

31A266 Nozzle 5/8" (15.9mm)

2. TIP ADAPTER / DIFFUSERS

60A582 Tip Adapter/Diffuser

3. GUIDE RINGS

60A593 Guide Ring

4. NOZZLE INSULATION

31A248 Nozzle Insulation

5. CONTACT TIPS

ID

60A168-1.6S Contact Tip 35mm long 1.6mm .070

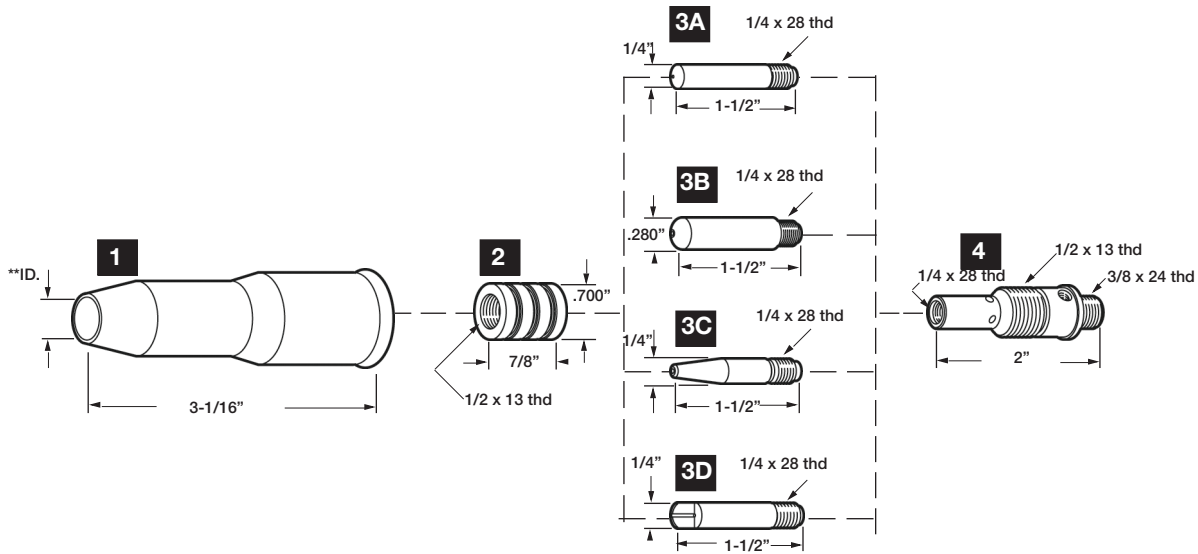
6. TIP ADAPTERS / DIFFUSERS

A 60A534 Tip Adapter/Diffuser
 B 60A156 Tip Adapter/Diffuser

200

LINCOLN®

MAGNUM 200 / MAGNUM 250SP



1. NOZZLES

I.D.

M16093-2	Nozzle Adjustable	1/2"	(12.7mm)
M16093-1	Nozzle Adjustable	5/8"	(15.9mm)

2. INSULATORS

S19417-1	Insulator for Adjustable Nozzles
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3. CONTACT TIPS

I.D.

A	S19391-6	Contact Tip.023	(0.6mm)	.028
	S19391-7	Contact Tip.030	(0.8mm)	.037
	S19391-1	Contact Tip.035	(0.9mm)	.043
B	S19391-2	Contact Tip.045	(1.2mm)	.055
	S19392-1	Contact Tip H.D..035	(0.9mm)	.043
	S19392-6	Contact Tip H.D..040	(1.0mm)	.048
S19392-2	Contact Tip H.D..045	(1.2mm)	.053	

3. CONTACT TIPS (CONT.)

I.D.

C	S19393-5	Contact Tip Tap.	.025 (0.6mm)	.028
	S19393-6	Contact Tip Tap.	.030 (0.8mm)	.037
	S19393-1	Contact Tip Tap.	.035 (0.9mm)	.043
	S19393-7	Contact Tip Tap.	.040 (1.0mm)	.048
D	S19393-2	Contact Tip Tap.	.045 (1.2mm)	.055
	S19397-44	Contact Tip Notch.	.030 (0.8mm)	.037
	S19397-45	Contact Tip Notch.	.035 (0.9mm)	.043
	S19397-46	Contact Tip Notch.	3/64" (1.2mm)	.059

4. GAS DIFFUSERS

S19418-2	Gas Diffuser .025-.030
S19418-1	Gas Diffuser .035-.045

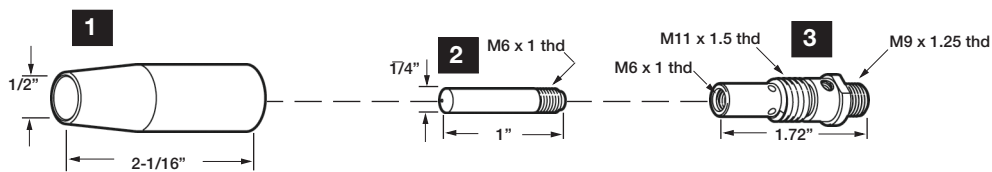
5. LINERS (NOT SHOW)

I.D.

O.D.

M16087-2	Liner Assy. 15'	.023	.036	.123
M16087-1	Liner Assy. 15'	.040-.045	.059	.156
M16107-1	Liner Nylon 15'	3/64"	.066	.148

MIG



MIG

1. NOZZLES

ID

M16294 Nozzle, Fixed 1/2" (12.7mm)

2. CONTACT TIPS

ID

S19726-1	Contact Tip	.023	(0.6mm)	.028
S19726-2	Contact Tip	.030	(0.8mm)	.037
S19726-3	Contact Tip	.035	(0.9mm)	.043
S19726-4	Contact Tip	.045	(1.2mm)	.055

3. GAS DIFFUSERS

S19728 Gas Diffuser

4. LINER ASSEMBLIES

ID OD

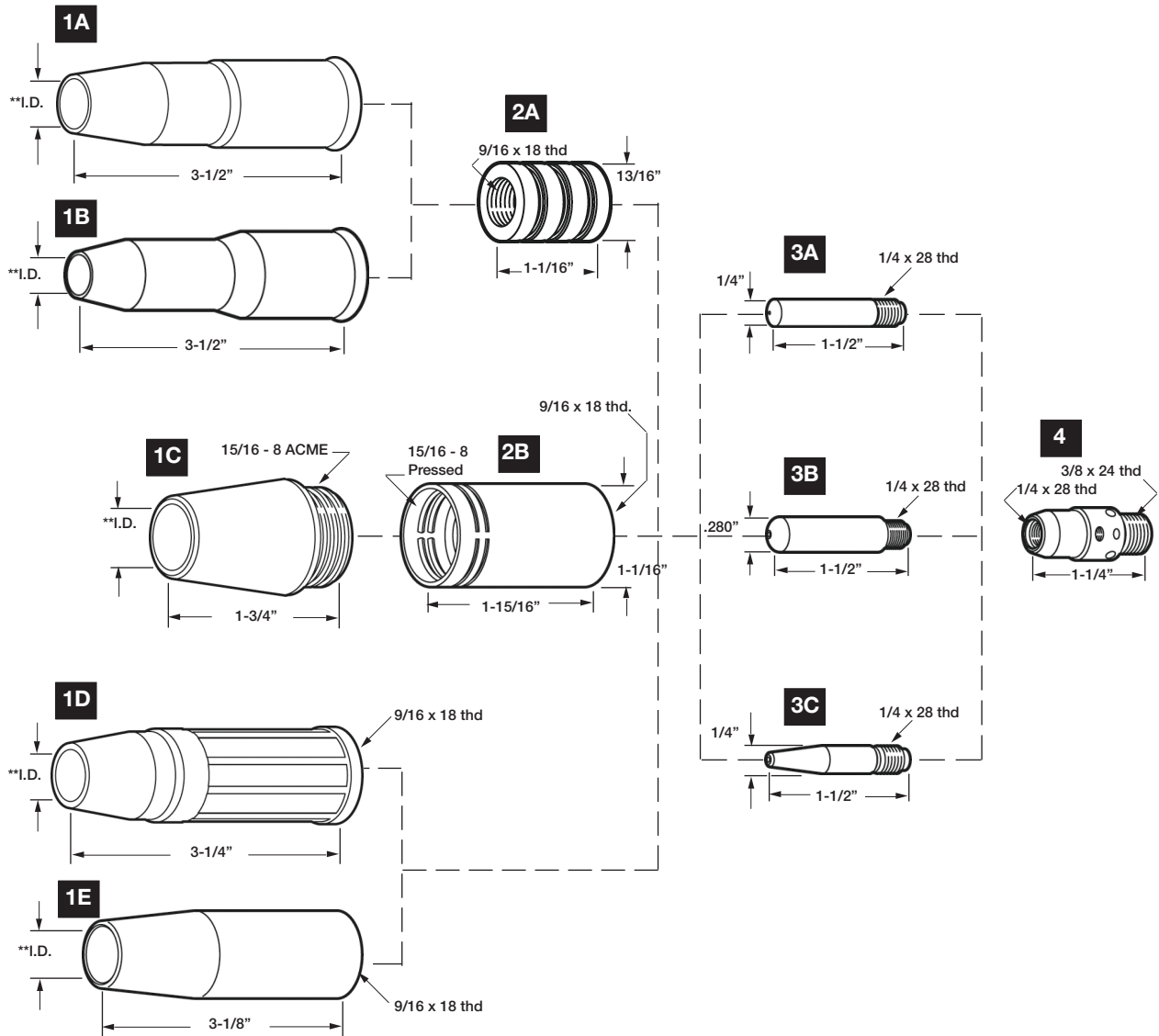
M16291-1	Liner Assy.	15'	.045	.063	.148
M16291-2	Liner Assy.	15'	.023	.036	.123

202

LINCOLN®

MAGNUM 300 / MAGNUM 400

MIG



1. NOZZLES

I.D.

A	M16082-1	Nozzle Adjustable	5/8"	(15.9mm)
	M16082-2	Nozzle Adjustable	1/2"	(12.7mm)
B	M16082-3	Nozzle Adj. Recessed	5/8"	(15.9mm)
	M16082-4	Nozzle Adj. Recessed	1/2"	(12.7mm)
C	M16830-1	Nozzle Coarse Thread	5/8"	(15.9mm)
	M16830-2	Nozzle Coarse Thread	3/4"	(19.1mm)
D	M16080-1	Nozzle Insulated	3/8"	(9.5mm)
	M16080-2	Nozzle Insulated	1/2"	(12.7mm)
	M16080-3	Nozzle Insulated	5/8"	(15.9mm)
	M16080-4	Nozzle Insulated	3/4"	(19.1mm)
E	M16081-1	Nozzle Insulated Flush	3/8"	(9.5mm)
	M16081-2	Nozzle Insulated Flush	1/2"	(12.7mm)
	M16081-3	Nozzle Insulated Flush	5/8"	(15.9mm)
	M16081-4	Nozzle Insulated Flush	3/4"	(19.1mm)

2. INSULATORS

A	S19394-1	Insulator Slip-On Nozzles
B	M16937-1	Insulator Coarse- Thread Nozzles

3. CONTACT TIPS

I.D.

A	S19391-6	Contact Tip	.025	(0.6mm)	.028
	S19391-7	Contact Tip	.030	(0.8mm)	.037
	S19391-1	Contact Tip	.035	(0.9mm)	.043
	S19391-8	Contact Tip	.040	(1.0mm)	.048
	S19391-2	Contact Tip	.045	(1.2mm)	.055
	S19391-3	Contact Tip	.052	(1.3mm)	.063
	S19391-4	Contact Tip	1/16"	(1.6mm)	.073

S19391-5 Contact Tip 5/64" (2.0mm) .093

3. CONTACT TIPS (CONT.)

I.D.

B	S19392-1	Contact Tip H.D.	.035	(0.9mm)	.043
	S19392-6	Contact Tip H.D.	.040	(1.0mm)	.048
	S19392-2*	Contact Tip H.D.	.045	(1.2mm)	.055
	S19392-3*	Contact Tip H.D.	.052	(1.3mm)	.063
	S19392-4*	Contact Tip H.D.	1/16"	(1.6mm)	.073
	S19392-5*	Contact Tip H.D.	5/64"	(2.0mm)	.093
C	S19393-5	Contact Tip Tapered	.025	(0.6mm)	.028
	S19393-6	Contact Tip Tapered	.030	(0.8mm)	.037
	S19393-1	Contact Tip Tapered	.035	(0.9mm)	.043
	S19393-7	Contact Tip Tapered	.040	(1.0mm)	.048
	S19393-2	Contact Tip Tapered	.045	(1.2mm)	.055
	S19393-3	Contact Tip Tapered	.052	(1.3mm)	.063
	S19393-4	Contact Tip Tapered	1/16"	(1.6mm)	.073

4. GAS DIFFUSERS

S19395-1	Gas Diffuser
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LINERS (NOT SHOWN)

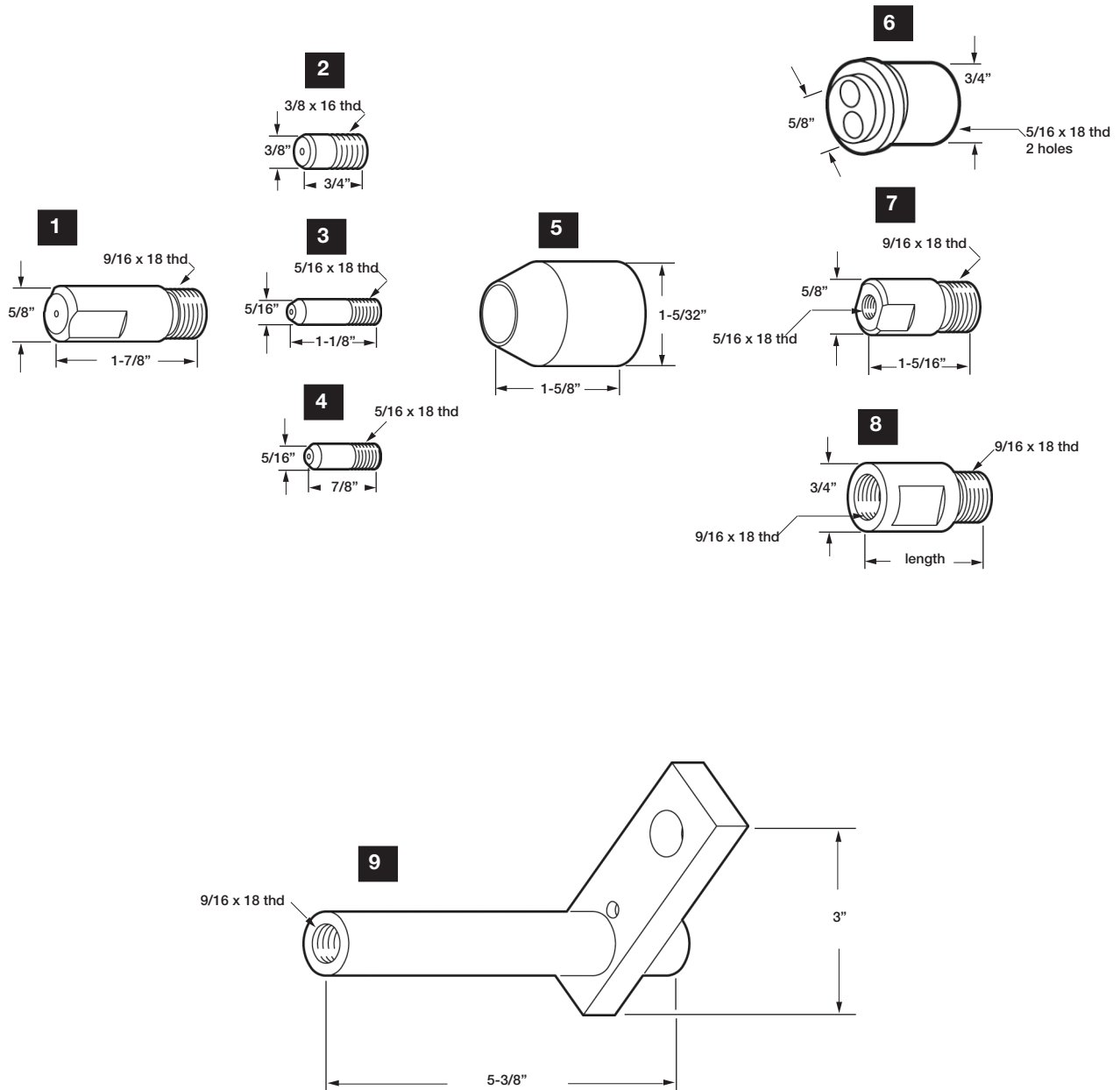
I.D. O.D.

M16083-1	Liner Assy. 15'	.035-.045	.066	.188
M16083-2	Liner Assy. 15'	1/16"	.076	.188
M16083-3	Liner Assy. 15'	5/64"	.098	.188
M16101-7	Liner Assy. 25'	.035-.045	.066	.188
M16101-8	Liner Assy. 25'	1/16"	.076	.188
M16101-9	Liner Assy. 25'	5/64"	.098	.188

MIG

FULL AUTO SUB-ARC / SEMI AUTO SUB-ARC

MIG



FULL AUTO SUB-ARC / SEMI AUTO SUB-ARC

MIG

1. CONTACT TIPS SUBMERGED ARC I.D.

S10125-1/16	Tip Sub-Arc	1/16"	(1.6mm)	.070
S10125-5/64	Tip Sub-Arc	5/64"	(2.0mm)	.093
S10125-3/32	Tip Sub-Arc	3/32"	(2.4mm)	.101
S10125-7/64	Tip Sub-Arc	7/64"	(2.8mm)	.120
S10125-1/8	Tip Sub-Arc	1/8"	(3.2mm)	.136
S10125-5/32	Tip Sub-Arc	5/32"	(4.0mm)	.166
S10125-3/16	Tip Sub-Arc	3/16"	(4.8mm)	.199
S10125-7/32	Tip Sub-Arc	7/32"	(5.6mm)	.288

2. CONTACT TIPS (USE ON K233, K114) I.D.

T12236-1/16	Contact Tip	1/16"	(1.6mm)	.073
T12236-.068	Contact Tip	.068	(1.7mm)	.078
T12236-.072	Contact Tip	.072	(1.8mm)	.082
T12236-5/64	Contact Tip	5/64"	(2.0mm)	.093
T12236-3/32	Contact Tip	3/32"	(2.4mm)	.101
T12236-7/64	Contact Tip	7/64"	(2.8mm)	.120
T12236-.120	Contact Tip	.120	(3.0mm)	.129
T12236-1/8	Contact Tip	1/8"	(3.2mm)	.136

3. CONTACT TIPS (K129, K231, K391, K239, K112, K113-2) I.D.

T14050-.045	Contact Tip	.045	(1.2mm)	.055
T14050-1/16	Contact Tip	1/16"	(1.6mm)	.073
T14050-.068	Contact Tip	.068	(1.7mm)	.078
T14050-.072	Contact Tip	.072	(1.8mm)	.081
T14050-5/64	Contact Tip	5/64"	(2.0mm)	.093
T14050-3/32	Contact Tip	3/32"	(2.4mm)	.110
T14050-7/64	Contact Tip	7/64"	(2.8mm)	.120

4. CONTACT TIPS (USE ON K113) I.D.

T12011-.035	Contact Tip	.035	(0.9mm)	.043
T12011-.045	Contact Tip	.045	(1.2mm)	.055
T12011-1/16	Contact Tip	1/16"	(1.6mm)	.073
T12011-.068	Contact Tip	.068	(1.7mm)	.078
T12011-5/64	Contact Tip	5/64"	(2.0mm)	.093
T12011-3/32	Contact Tip	3/32"	(2.4mm)	.110
T12011-7/64	Contact Tip	7/64"	(2.8mm)	.120

5. NOZZLES (USE K231, K391)

T10575 Flux Nozzle

6. TWIN ARC TIP HOLDERS (USE ON K129)

S15954 Twin Arc Tip Holder Bent for T14050 Tips
S15954-S Twin Arc Tip Holder Straight

7. TIP ADAPTERS (USE ON K391)

S16844 Tip Adapter for T14050 Tips

8. EXTENSIONS

S10157-1	Sub-Arc Extension	1" Long
S10157-1-1/2	Sub-Arc Extension	1-1/2" Long
S10157-2	Sub-Arc Extension	2" Long
S10157-2-1/2	Sub-Arc Extension	2-1/2" Long
S10157-3	Sub-Arc Extension	3" Long
S10157-4	Sub-Arc Extension	4" Long
S10157-5	Sub-Arc Extension	5" Long
S10157-6	Sub-Arc Extension	6" Long
S10157-7-1/2	Sub-Arc Extension	7-1/2" Long
S10157-9	Sub-Arc Extension	9" Long

9. NOZZLE BODY ASSEMBLIES

S10157 Nozzle Body Assembly

10. ASSEMBLY

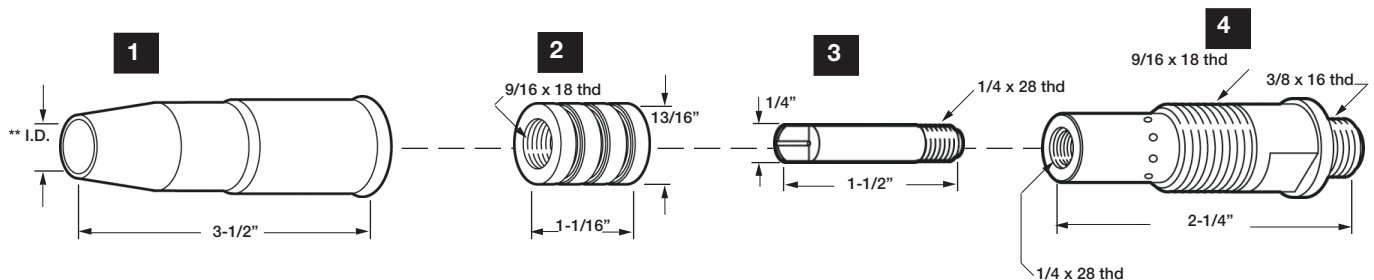
S13164 Nozzle Body Insulator Assembly (w nut)

206

LINCOLN®

MAGNUM SPOOL-GUN

MIG



1. NOZZLES

I.D.

M16082-1	Nozzle, Slip-On	5/8"	(15.9mm)
M16082-2	Nozzle, Slip-On	1/2"	(12.7mm)

2. INSULATOR

S19394-1	Insulator
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3. CONTACT TIPS

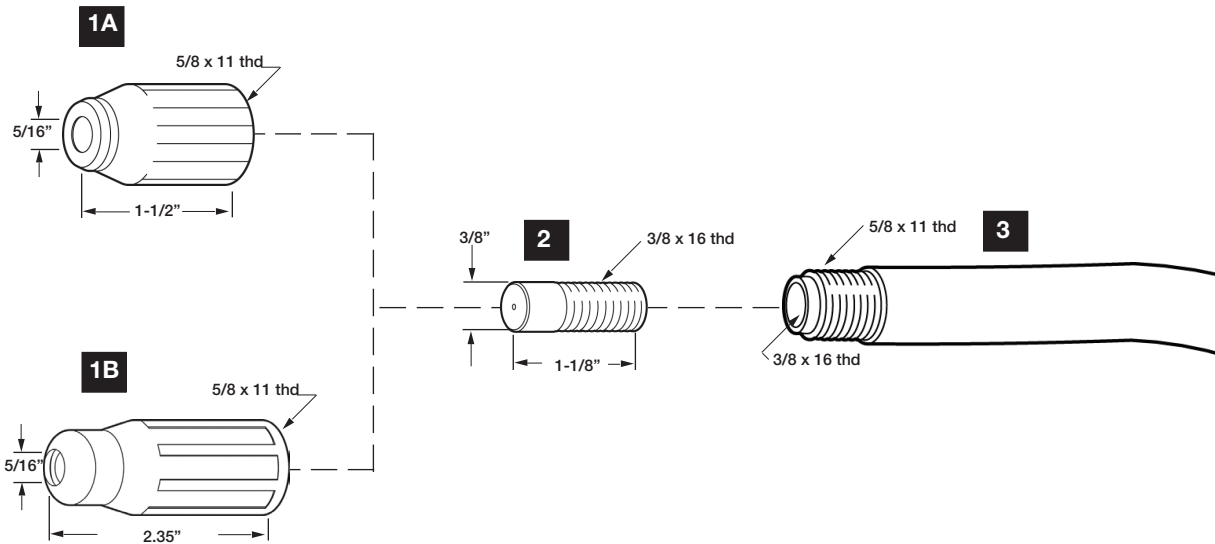
I.D.

S18697-52	Contact Tip	.023	(0.6mm)	.028
S18697-44	Contact Tip Notched	.030	(0.8mm)	.037
S18697-45	Contact Tip Notched	.035	(0.9mm)	.043
S18697-46	Contact Tip Notched	3/64"	(1.2mm)	.059

4. GAS DIFFUSER

S18697-47	Gas Diffuser
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FLUX-CORE INNERSHIELD / K115, K116



MIG

1. NOZZLES

I.D.

A	S13358	Nozzle, Insulator	5/16" (8.0mm)
B	S12691-1	Nozzle, Insul. 2-3/4" Stick-out	5/16" (8.0mm)

2. CONTACT TIPS

I.D.

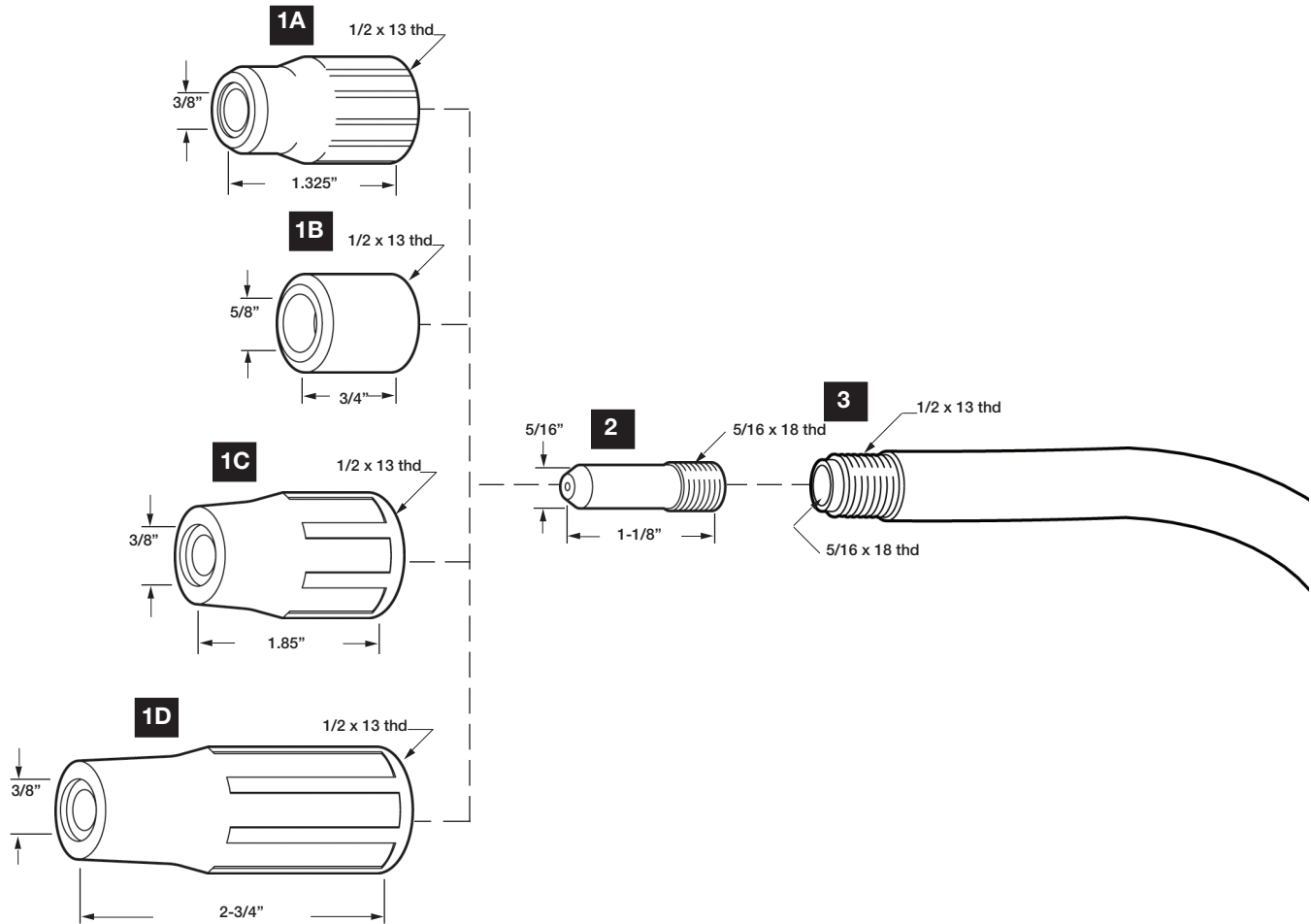
T14157-.035	Contact Tip	.035	(0.9mm)	.043
T14157-.045	Contact Tip	.045	(1.2mm)	.055
T14157-1/16	Contact Tip	1/16"	(1.6mm)	.073
T14157-.068	Contact Tip	.068	(1.7mm)	.078
T14157-.072	Contact Tip	.072	(1.8mm)	.081
T14157-5/64	Contact Tip	5/64"	(2.0mm)	.093
T14157-3/32	Contact Tip	3/32"	(2.4mm)	.110
T14157-7/64	Contact Tip	7/64"	(2.8mm)	.120
T14157-.120	Contact Tip	.120	(3.0mm)	.129
T14157-1/8	Contact Tip	1/8"	(3.2mm)	.136

3. GOOSENECKS

M11510	3/32 Gooseneck	3/32"	45°
M11510	.120 Gooseneck	7/64"-1/8"	45°
M14027-45	5/64 Gooseneck	1/16"-5/64"	45°
M11474	3/32 Gooseneck	3/32"	82°
M11474	.120 Gooseneck	7/64"-1/8"	82°
M14027-82	5/64 Gooseneck	1/16"-5/64"	82°

FLUX-CORE INNERSHIELD / K136, K264, K345, K355, K361

MIG



1. NOZZLES

I.D.

A	S15900	Nozzle, Insulated	3/8" (9.5mm)
B	T12313	Thread Protector	
C	S17217-1	Nozzle, Insulated 2" Stick out	3/8" (9.5mm)
D	T12315	Nozzle, Insul. 2-3/4" Stick out	3/8" (9.5mm)

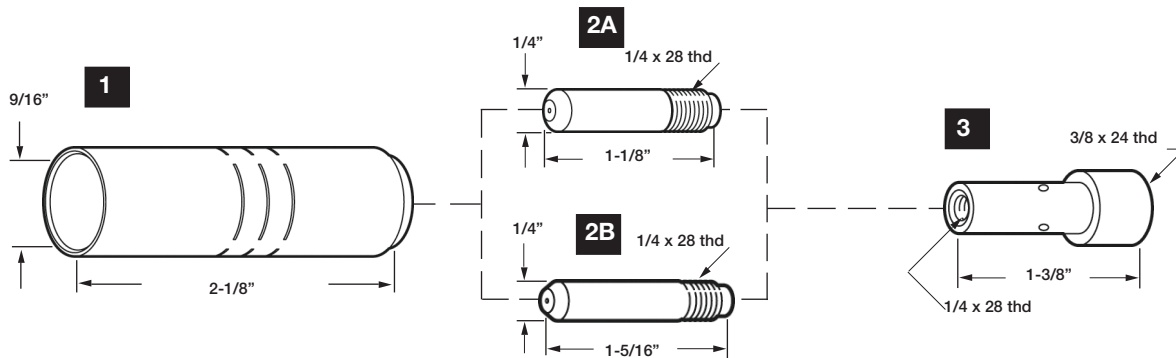
3. GOOSENECKS

M11476	Gooseneck	6"	50°
M13304-6	Gooseneck	6"	30°
M13304-12	Gooseneck	12"	30°
M13304-12-50	Gooseneck	12"	50°
M14188	Gooseneck	6"	90°

2. CONTACT TIPS

I.D.

T14050-.045	Contact Tip	.045 (1.2mm)	.055
T14050-1/16	Contact Tip	1/16" (1.6mm)	.073
T14050-.068	Contact Tip	.068 (1.7mm)	.078
T14050-.072	Contact Tip	.072 (1.8mm)	.081
T14050-5/64	Contact Tip	5/64" (2.0mm)	.093
T14050-3/32	Contact Tip	3/32" (2.4mm)	.110
T14050-7/64	Contact Tip	7/64" (2.8mm)	.120



MIG

1. NOZZLES

128-535 Nozzle Insulated 1/2" (12.7mm)

I.D.

3. TIP ADAPTERS

118-267 Wire Tip Adapter for .023-.025

2. CONTACT TIPS

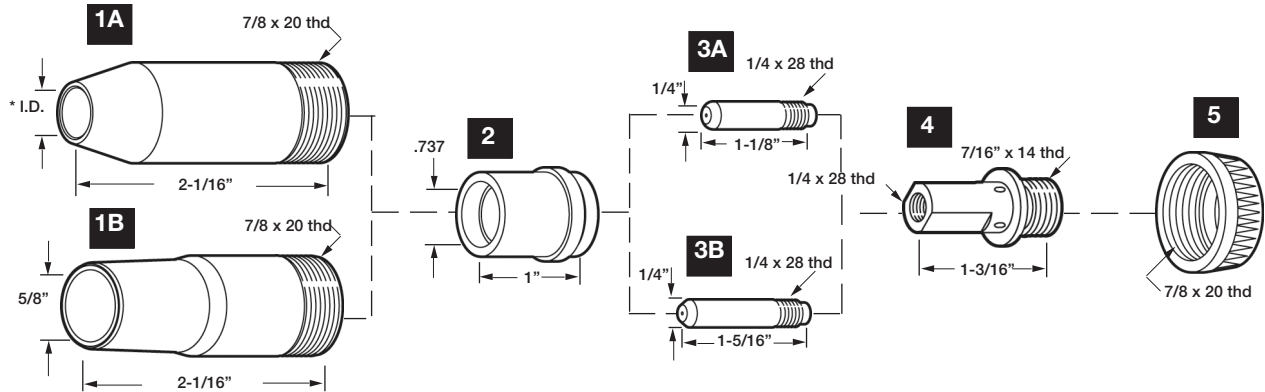
I.D.

A	087-299	Contact Tip Std.	.025 (0.6mm)	.028
	000-067	Contact Tip Std.	.030 (0.8mm)	.037
	000-068	Contact Tip Std.	.035 (0.9mm)	.043
B	087-300	Contact Tip Long	.025 (0.6mm)	.028
	071-825	Contact Tip Long	.030 (0.8mm)	.037
	054-202	Contact Tip Long	.035 (0.9mm)	.043

210

MILLER®

GA-20C



MIG

1. NOZZLES

I.D.

A	049-098	Nozzle	7/16"	(11.1mm)
	049-099	Nozzle	1/2"	(12.7mm)
B	049-929	Nozzle	5/8"	(15.9mm)

2. INSULATORS

082-241	Nozzle Insulator
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3. CONTACT TIPS

I.D.

A	087-299	Contact Tip Std.*	.025	(0.6mm)	.028
	000-067	Contact Tip Std.*	.030	(0.8mm)	.037
	000-068	Contact Tip Std.*	.035	(0.9mm)	.043
	000-069	Contact Tip Std.*	.045	(1.2mm)	.055
B	087-300	Contact Tip Long*	.025	(0.6mm)	.028
	071-825	Contact Tip Long*	.030	(0.8mm)	.037
	054-202	Contact Tip Long*	.035	(0.9mm)	.043
	054-201	Contact Tip Long*	.045	(1.2mm)	.055

4. CONTACT TIP ADAPTERS

146-426	Tip Adapter	.023-.025	(0.6mm)
146-425	Tip Adapter	.030-.045	(0.8-1.2mm)

5. NOZZLE RETAINING NUTS

082-063	Retaining Nut
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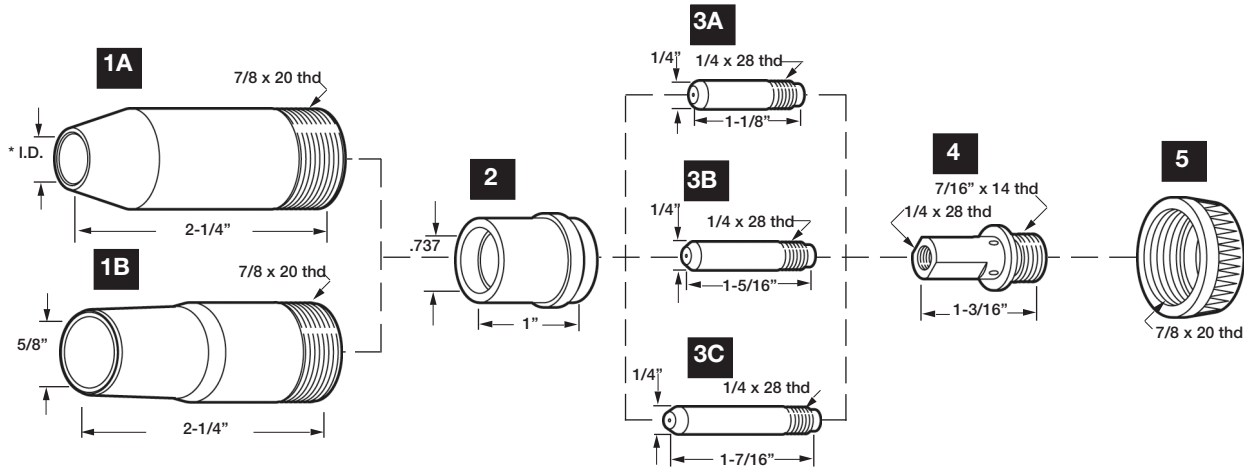
LINERS (NOT SHOWN)

I.D. O.D.

083-885	Liner	.030-.035	(0.8-0.9mm)	.052	.163
083-891	Liner	.035-.045	(0.9-1.2mm)	.064	.173

*Standard Contact Tips are flush with Nozzle.

*Long Contact Tips project 1/16" outside Nozzle.



1. NOZZLES

I.D.

A	149-147	Nozzle	7/16"	(11.1mm)
	149-148	Nozzle	1/2"	(12.7mm)
B	149-146	Nozzle	5/8"	(15.9mm)

2. INSULATORS

082-241	Insulator
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3. CONTACT TIPS

I.D.

A	087-299	Contact Tip Std.*	.025	(0.6mm)	.028
	000-067	Contact Tip Std.*	.030	(0.8mm)	.037
	000-068	Contact Tip Std.*	.035	(0.9mm)	.043
	000-069	Contact Tip Std.*	.045	(1.2mm)	.055
B	087-300	Contact Tip Long*	.025	(0.6mm)	.028
	071-825	Contact Tip Long*	.030	(0.8mm)	.037
	054-202	Contact Tip Long*	.035	(0.9mm)	.043
	054-201	Contact Tip Long*	.045	(1.2mm)	.055
C	149-150	Contact Tip Long*	.025	(0.6mm)	.028
	149-149	Contact Tip Long*	.030	(0.8mm)	.037
	054-183	Contact Tip Long*	.035	(0.9mm)	.043
	054-157	Contact Tip Long*	.045	(1.2mm)	.055

4. CONTACT TIP ADAPTERS

146-426	Tip Adapter	.023-.025	(0.6mm)
146-425	Tip Adapter	.030-.045	(0.8-1.2mm)

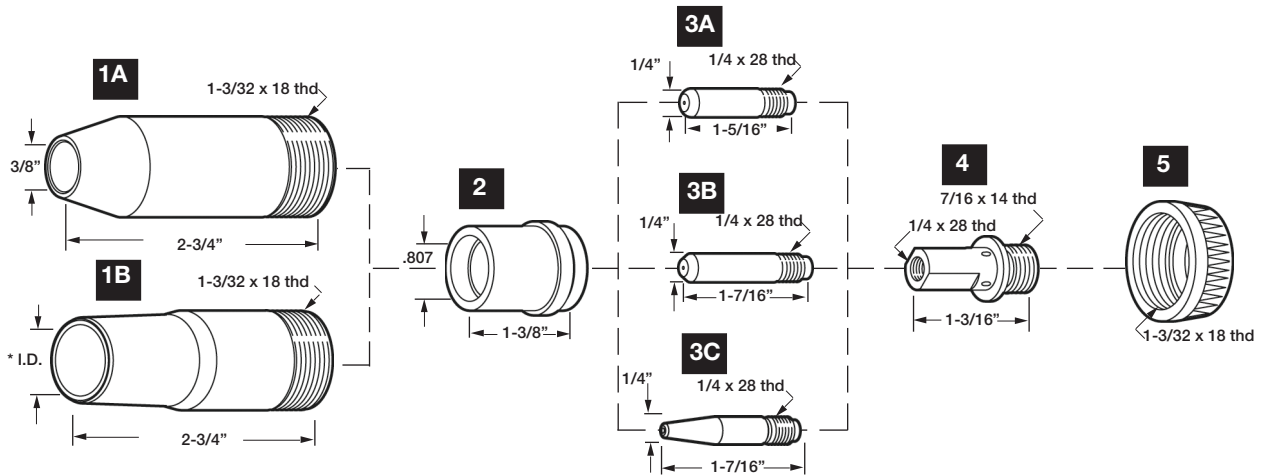
5. NOZZLE RETAINING NUTS

082-063	Retaining Nut
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*Short Contact Tips are recessd 1/16" inside Nozzle.

*Standard Contact Tips are flush with Nozzle.

*Long Contact Tips project 1/8" outside Nozzle.



1. NOZZLES

I.D.

A	071-214	Nozzle (GA-40C only)	3/8"	(09.5mm)
B	047-959	Nozzle	1/2"	(12.7mm)
	047-957	Nozzle	5/8"	(15.9mm)
	045-638	Nozzle	13/16"	(20.6mm)

2. INSULATORS

094-986	Nozzle Insulator
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3. CONTACT TIPS

I.D.

A	054-202	Contact Tip Short*	.035	(0.9mm)	.043
	054-201	Contact Tip Short*	.045	(1.2mm)	.055
	044-006	Contact Tip Short*	.052	(1.3mm)	.063
	047-566	Contact Tip Short*	1/16"	(1.6mm)	.073
	047-565	Contact Tip Short*	5/64"	(2.0mm)	.093
B	054-183	Contact Tip Std.*	.035	(0.9mm)	.043
	054-157	Contact Tip Std.*	.045	(1.2mm)	.055
	057-730	Contact Tip Std.*	.052	(1.3mm)	.063
	047-576	Contact Tip Std.*	1/16"	(1.6mm)	.073
	047-577	Contact Tip Std.*	5/64"	(2.0mm)	.093
C	071-212	Contact Tip Tpaer*	.035	(0.9mm)	.043
	071-213	Contact Tip Tpaer*	.045	(1.2mm)	.055

4. CONTACT TIP ADAPTERS

094-985	Tip Adapter .035-.045 for GA-40C
094-987	Tip Adapter 1/16"-5/64" for GA-40C
109-805	Tip Adapter 3/64" Al. for Ga-40CAL

5. NOZZLE RETAINING NUTS

047-603	Retaining Nut
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LINERS

I.D.

O.D.

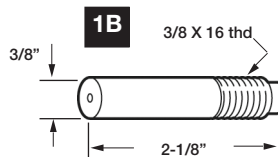
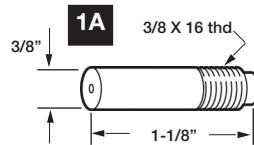
083-891	Liner 15'	.035-.045	.064	.173
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*Liners are not shown

*Short Contact Tips are recessed 1/8" inside Nozzle

*Standard and Tapered Contact Tips are flush with Nozzle

GA-50C1 / G-40GL / A-500GL / GA-50P



MIG

1. CONTACT TIPS

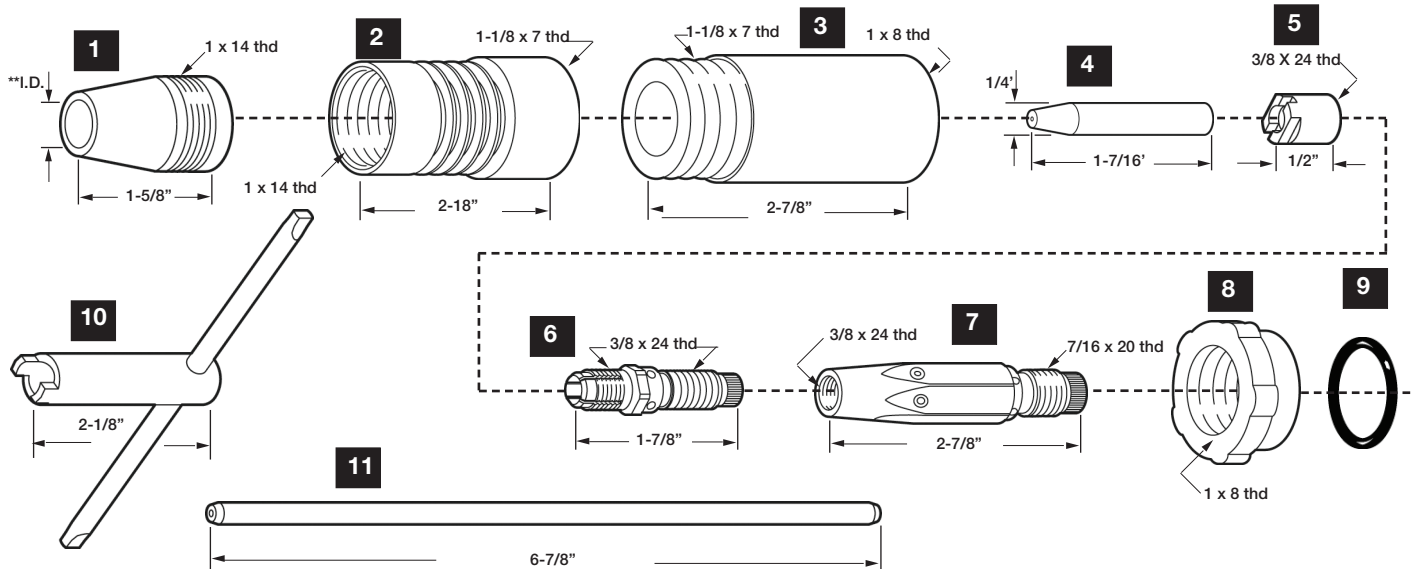
I.D.

1. CONTACT TIPS (CONT.)

I.D.

A	045-356	Contact Tip	.045	(1.2mm)	.055	B	054-972	Contact Tip	.045	(1.2mm)	.055
	091-653	Contact Tip	.052	(1.3mm)	.063		057-736	Contact Tip	.052	(1.3mm)	.063
	009-709	Contact Tip	1/16"	(1.6mm)	.073		054-545	Contact Tip	1/16"	(1.6mm)	.073
	090-922	Contact Tip	.068-.072	(1.7mm)	.081		054-353	Contact Tip	5/64"	(2.0mm)	.093
	052-056	Contact Tip	5/64"	(2.0mm)	.093		054-354	Contact Tip	3/32"	(2.4mm)	.110
	008-926	Contact Tip	3/32"	(2.4mm)	.110		054-355	Contact Tip	7/64"	(2.8mm)	.120
	008-925	Contact Tip	7/64	(2.8mm)	.120		054-356	Contact Tip	1/8"	(3.2mm)	.136
	008-924	Contact Tip	1/8"	(3.2mm)	.136						

SPOOLMATIC XR



1. NOZZLES

I.D.

050-115	Nozzle	1/2"	(12.7mm)
050-622	Nozzle	5/8"	(15.9mm)
050-116	Nozzle	13/16"	(20.6mm)

2. NOZZLE EXTENSION

144-862	Nozzle Extension
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3. BARREL EXTENSION

156-821	Barrel Extension
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4. CONTACT TUBES

I.D.

136-171	Contact Tube	.025	(0.6mm)	.028
135-427	Contact Tube	.030	(0.8mm)	.037
135-428	Contact Tube	.030	(0.8mm)	.040
147-314	Contact Tube	.035	(0.9mm)	.043
135-430	Contact Tube	.035	(0.9mm)	.052
135-429	Contact Tube	.047	(1.2mm)	.055
135-424	Contact Tube	.047	(1.2mm)	.059
135-426	Contact Tube	.062	(1.6mm)	.073
135-425	Contact Tube	.062	(1.6mm)	.081

5. NUT COMPRESSION

136-748	Nut Compression	.375-24
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6. ADAPTER CONTACT TUBE

136-680	Adapter Contact Tube
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7. TUBE HEAD

136-681	Tube Head with Set Screw	604-612
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8. NOZZLE EXTENSION JAM NUT

058-685	Nozzle Extension Jam Nut
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9. O-RING

134-800	O-Ring	.614 x .070 CS
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10. WRENCH

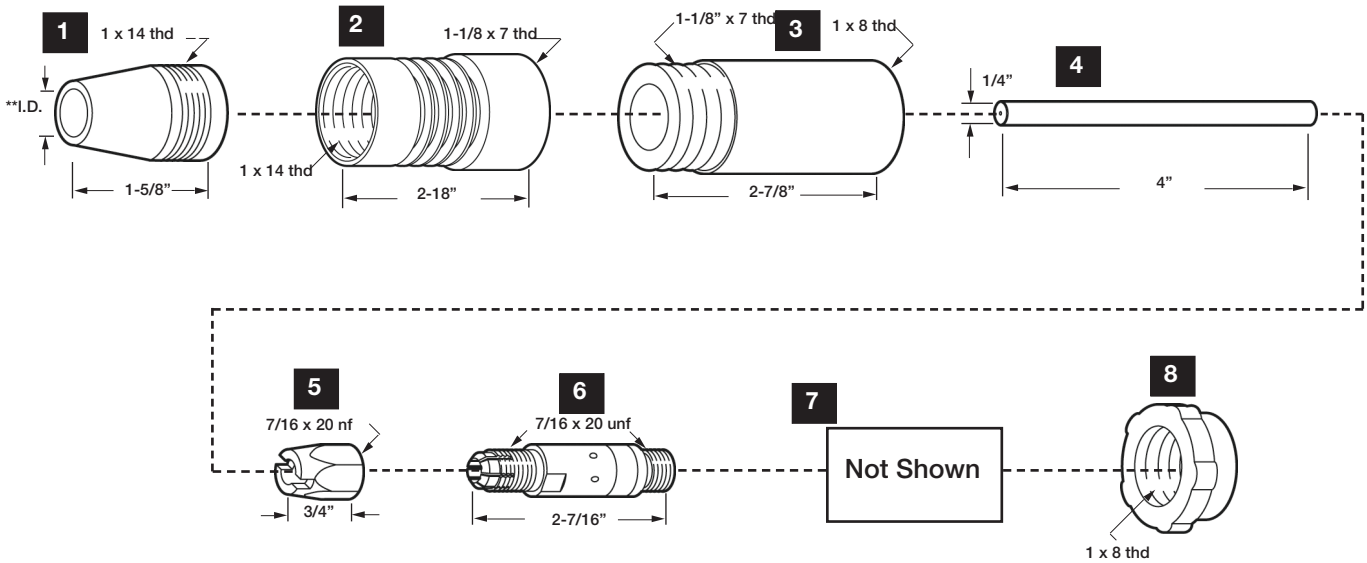
136-821	Wrench Contact Tube Nut
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11. LINERS

136-682	Liner Teflon	.023-.035
136-683	Liner Teflon	.045-1/16"

MIG

SPOOLMATIC 1 / SPOOLMATIC 2 / SPOOLMATIC 3



MIG

1. NOZZLES

I.D.

050-115	Nozzle	1/2"	(12.7mm)
050-622	Nozzle	5/8"	(15.9mm)
050-116	Nozzle	13/16"	(20.6mm)

2. NOZZLE EXTENSION

053-784	Nozzle Extension
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3. BARREL EXTENSION

053-785	Barrel Extension
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4. CONTACT TIPS

I.D.

050-638	Contact Tip	.030	(0.8mm)	.037
094-259	Contact Tip	.035	(0.9mm)	.043
094-260	Contact Tip	.047	(1.2mm)	.059
050-637	Contact Tip	1/16"	(1.6mm)	.081

5. NUT

058-676	Nut Brass Compression
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6. ADAPTER CONTACT TIP

058-678	Adapter Contact Tip
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7. ADAPTER BARREL

009-541	Adapter Barrel (NOT SHOWN)
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8. NOZZLE EXTENSION JAM NUT

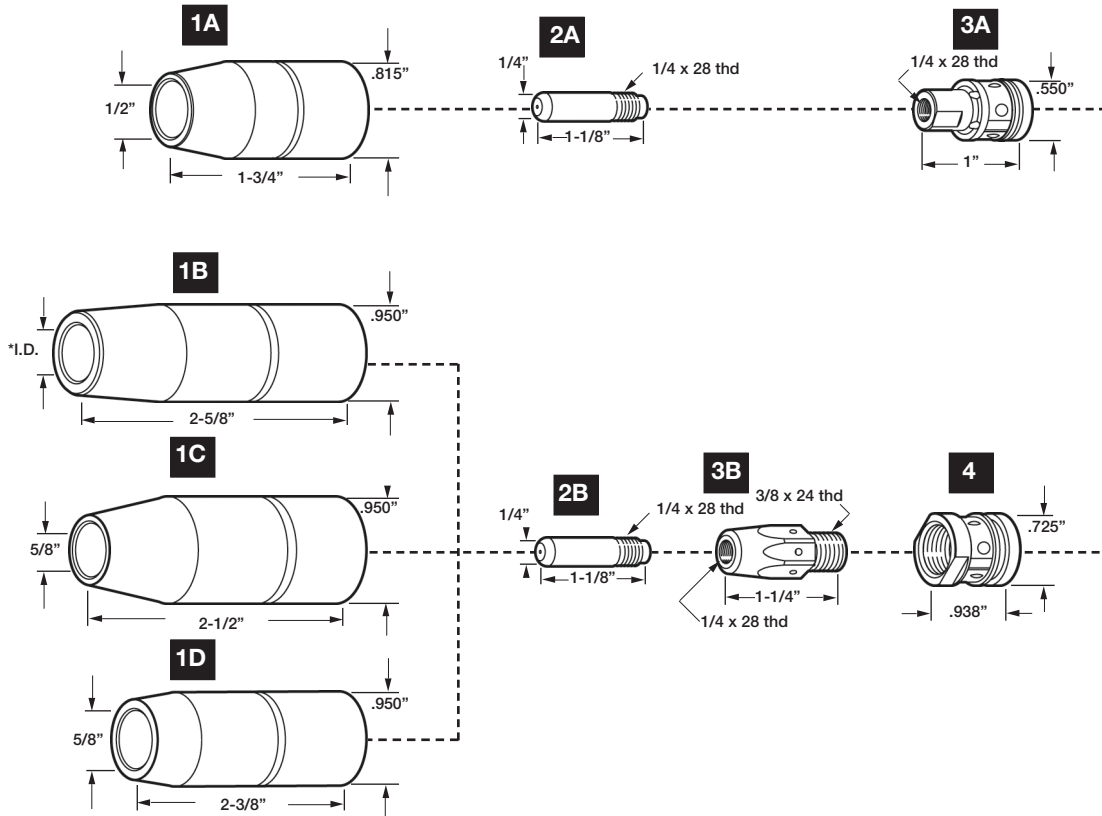
058-685	Nozzle Extension Jam Nut
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216

MILLER®

M15 / M25/25M / M40/M40AL

MIG



1. NOZZLES

I.D.

A	169-715	Nozzle Flush	1/2"	(12.7mm)
B	169-724	Nozzle 1/8" Tip Recess	1/2"	(12.7mm)
	169-725	Nozzle 1/8" Tip Recess	5/8"	(15.9mm)
C	169-726	Nozzle Flush	5/8"	(15.9mm)
D	169-727	Nozzle 1/8" Tip Stickout	5/8"	(15.9mm)

2. CONTACT TIPS

087-299	Contact Tip	.025	(0.6mm)
000-067	Contact Tip	.030	(0.8mm)
000-068	Contact Tip	.035	(0.9mm)
000-069	Contact Tip	.045	(1.2mm)
172-024	Contact Tip	1/16"	(1.6mm)
172-025	Contact Tip	5/64"	(2.0mm)
172-034	Contact Tip	3/64"Al.	(1.2mm)

3. CONTACT TIP ADAPTERS

A	169-716	Adapter
B	169-728	Adapter

4. NOZZLE RETAINERS

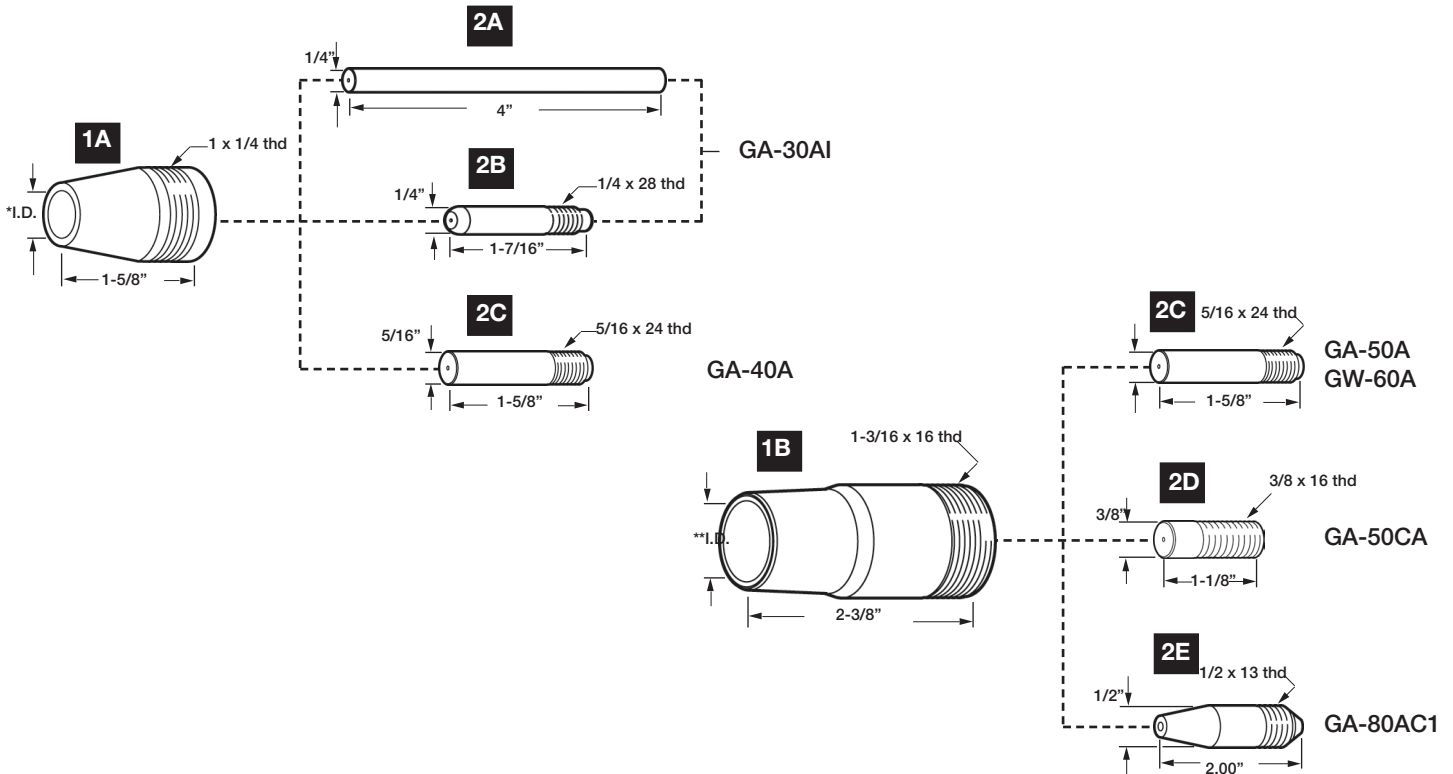
169-729	Nozzle Retainer
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LINERS (NOT SHOWN)

I.D. O.D.

172-257	Liner 15'	.023-.025	(0.6mm)	.051	.156
172-258	Liner 15'	.030-.035	(0.8-0.9mm)	.061	.166
172-259	Liner 15'	.035-.045	(0.9-1.2mm)	.087	.188
172-250	Liner 15'	1/16"-5/64"	(1.6-2.0mm)	.098	.188

AUTOMATIC WELDING GUNS



MIG

1. NOZZLES

I.D.

A	050-115	Nozzle	1/2"	(12.7mm)
	050-622	Nozzle	5/8"	(15.9mm)
	050-116	Nozzle	13/16"	(20.6mm)
B	075-659	Nozzle	5/8"	(15.9mm)
	008-620	Nozzle	3/4"	(19.1mm)

2. CONTACT TIPS (CONT.)

I.D.

	056-822	Contact Tip	.045 (mm)	.055
	057-737	Contact Tip	.052 (mm)	.063
	056-823	Contact Tip	1/16" (mm)	.073
	056-824	Contact Tip	5/64" (mm)	.093
D	045-356	Contact Tip	.045 (mm)	.055
	091-653	Contact Tip	.052 (mm)	.063
	009-709	Contact Tip	1/16" (mm)	.073
	090-922	Contact Tip	.068 (mm)	.081
	052-055	Contact Tip	5/64" (mm)	.093
	008-926	Contact Tip	3/32" (mm)	.110
	008-925	Contact Tip	7/64" (mm)	.120
	008-924	Contact Tip	1/8" (mm)	.136
	075-694	Contact Tip	3/64" (mm)	.059
	075-695	Contact Tip	1/16" (mm)	.073
	075-696	Contact Tip	5/64" (mm)	.093
	075-697	Contact Tip	3/32" (mm)	.110
	075-698	Contact Tip	7/64" (mm)	.120
	075-699	Contact Tip	1/8" (mm)	.144
	047-925	Contact Tip	5/32" (mm)	.171
	047-510	Contact Tip	3/16" (mm)	.203

2. CONTACT TIPS

I.D.

A	050-638	Contact Tube	.030	(0.8mm)	.043
	050-626	Contact Tube	.035-.047	(0.9-1.2mm)	.059
	050-637	Contact Tube	1/16"	(1.6mm)	.081
B	054-242	Contact Tip	.030	(0.8mm)	.037
	054-183	Contact Tip	.035	(mm)	.043
	054-157	Contact Tip	.045	(mm)	.055
	057-730	Contact Tip	3/64"-.052	(mm)	.063
	047-576	Contact Tip	1/16"	(mm)	.073
	047-577	Contact Tip	5/64"	(mm)	.093
C	056-820	Contact Tip	.030	(mm)	.037
	056-821	Contact Tip	.035	(mm)	.043

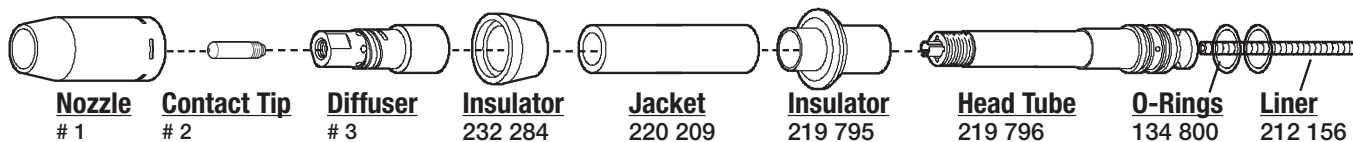
218

MILLER®

XR-PISTOL

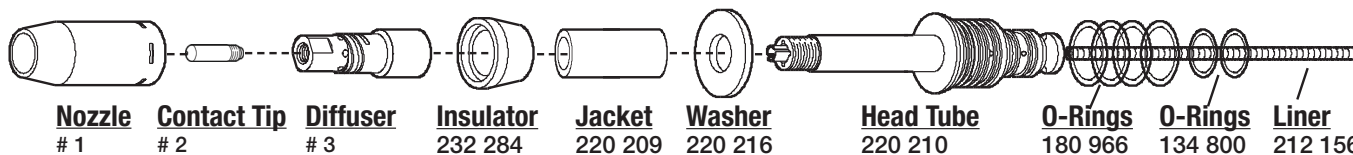
Air-Cooled Assembly

231 523-L



Water-Cooled Assembly

231 524-L



MIG

1. NOZZLES

I.D.

199615	Screw-on copper	1/2"
199616	Screw-on copper	3/4"
199617	Screw-on copper Heavy-duty	3/4"
198855	Screw-on copper	5/8"
199618	Screw-on copper Heavy-duty	5/8"
209035	Screw-on copper Tapered	3/8"
209036	Screw-on copper Tapered	1/2"

403-7-52	Contact Tip Long Life	.052	(1.3mm)	.059
403-7-116	Contact Tip Long Life	1/16"	(1.6mm)	.073
403-7-564	Contact Tip Long Life	5/64"	(2.0mm)	.093
403-7-332	Contact Tip Long Life	3/32"	(2.4mm)	.110
403-7-1.0	Contact Tip Long Life	.040	(1.0mm)	.048

3. DIFFUSERS

206195-L	Diffuser	1/8" Recess
210664-L	Diffuser	1/4" Recess
206196-L	Diffuser	Flush

2. CONTACT TIPS

I.D.

403-1-30	Contact Tip H.D.	.030	(0.8mm)	.037
403-1-35	Contact Tip H.D.	.035	(0.9mm)	.043
403-1-45	Contact Tip H.D.	.045	(1.2mm)	.055
403-1-364	Contact Tip H.D.	3/64"	(1.2mm)	.059
403-1-52	Contact Tip H.D.	.052	(1.3mm)	.063
403-1-116	Contact Tip H.D.	1/16"	(1.6mm)	.073
403-1-564	Contact Tip H.D.	5/64"	(2.0mm)	.093
403-1-332	Contact Tip H.D.	3/32"	(2.4mm)	.110
403-7-35	Contact Tip H.D.	.035	(0.9mm)	.040
403-7-45	Contact Tip Long Life	.045	(1.2mm)	.050

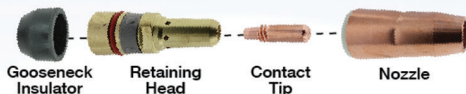
SEMI-AUTOMATIC GUN CONVERSION KITS

AVAILABLE FOR BERNARD, LINCOLN & TWECO WITH A SIMPLE CHANGE-OUT OF PARTS

LIGHTNING® RETAINING HEADS

Part #	Description
65-3103 *	Retaining Head for Extra Heavy Duty
63-3103	Retaining Head T/L
63-3103-2	Retaining Head T/L
63-3116	Thread-on Retaining Head HD
63-3402	Retaining Ring
63-3301	O-Ring Orange O16
63-3118-T	Diffuser, Bernard Threaded

* This retaining head must be used with #65-11XX contact tip. See **Contact Tips Selector Chart** on p.2



BENEFITS

- ✓ Greater surface area contact between tip and head ensures better heat dissipation and conductivity.
- ✓ Tapered tip design creates a more secure seat, eliminating loose tips.
- ✓ Cooler tip temperature reduces wear and extends tip life.
- ✓ Dual-lead thread design allows for 180 degree rotation of tip to new wear point for extended tip life.
- ✓ Brass insert prevents wear and extends life.
- ✓ Superior surface finish minimizes spatter adhesion.
- ✓ Durable hard drawn copper or brass withstands abuse.

Lightning® Contact Tips Selector Chart

Contact Tips Part #	Heavy Duty Tip - Size
63-1130	Contact Tip HD .030 pk 10
63-1135	Contact Tip HD .035 pk 10
63-1135-40	Contact Tip HD .035/.040 I.D. pk 10
63-1138	Contact Tip .030 Pk 10 Robotic
63-1140	Contact Tip HD .040 pk 10
63-1145	Contact Tip HD .045 pk 10
63-1147	Contact Tip HD 3/64" al pk 10
63-1152	Contact Tip HD .052 pk 10
63-1162	Contact Tip HD 1/16" pk 10
63-1168	Contact Tip HD .068 / .078 I.D. pk 10
63-1172	Contact Tip HD .072 pk 10 SPECIAL
63-1178	Contact Tip HD 5/64" pk 10
63-1193	Contact Tip HD 3/32" pk 10
Part #	Tapered Tip
63-12XX	XX = last 2 digits indicate wire size
Part #	CZ Tip (Chromium Zirconium)
63-13XX	XX = last 2 digits indicate wire size
Part #	Extra Heavy Duty Tip
65-11XX *	XX = last 2 digits indicate wire size

* This contact tip must be used with #65-3103 retaining head. See **Lightning Retaining Heads Chart** on p.1

BERNARD® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Q-Gun Series	63-6105	63-3118	63-11XX †	6X-XXXX **
EZ Feed Series	63-6105	63-3118	63-11XX †	6X-XXXX **
T-Series †	63-6202-HD	63-3103	63-11XX †	6X-XXXX **
Roughneck C Miller	63-6105	63-3118	63-11XX †	6X-XXXX **

LINCOLN® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Magnum 300	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum 400	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum Pro	63-6105	63-3119	63-11XX †	6X-XXXX **

TWECO® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Tweco #3	63-6105	63-3103	63-11XX †	6X-XXXX **
Tweco #4	63-6105	63-3103	63-11XX †	6X-XXXX **
SprayMaster 450	63-6105	63-3103	63-11XX †	6X-XXXX **
WeldSkill 400	63-6105	63-3103	63-11XX †	6X-XXXX **

Use the Lightning® contact tip system (gooseneck insulator, retaining head, contact tip and nozzle) with Bernard® Lincoln® or Tweco® MIG guns. Use 63-3118 Retaining Head on goosenecks with external 9/16"-18 thread, such as Q-gun and EZ Feed guns with 1/4" NPT thread.

† T-Series retaining head can only be used on Bernard T-Series (Tregasskiss) guns.

‡ 63-11XX (XX = your wire size)

** 6X-XXXX (see Nozzle Selector Chart on next page)

Lightning® Nozzle Selector Chart (Air-Cooled Slip On)

Standard Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
63-2138	3/8" Copper	.938" / 2.75"	Flush
64-2950	1/2" Brass	.938" / 2.63"	1/8" Stickout
63-2950B	1/2" Brass	.938" / 2.88"	1/8" Recess
63-2150	1/2" Copper	.938" / 2.88"	1/8" Recess
63-2762	5/8" Copper	.938" / 2.51"	1/4" Stickout
63-2662	5/8" Copper	.938" / 2.63"	1/8" Stickout
63-2162	5/8" Copper	.938" / 2.88"	1/8" Recess
63-2175	3/4" Copper	.938" / 2.88"	1/8" Recess
Heavy Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
65-2550	1/2" Copper	1.062" / 2.88"	1/8" Recess
65-2662	5/8" Copper	1.062" / 2.63"	1/8" Stickout
65-2362	5/8" Brass	1.062" / 2.63"	1/8" Stickout
64-2962	5/8" Copper	1.062" / 2.75"	Flush
65-2862	5/8" Brass	1.062" / 2.75"	Flush
63-2362	5/8" Brass	1.062" / 2.88"	1/8" Recess
65-2562	5/8" Copper	1.062" / 2.88"	1/8" Recess
64-2562	5/8" Copper	1.062" / 3.00"	1/4" Recess
65-2575	3/4" Copper	1.062" / 2.88"	1/8" Recess
65-2375	3/4" Brass	1.062" / 2.88"	1/8" Recess
64-2575	3/4" Copper	1.062" / 3.00"	1/4" Recess
64-2387	7/8" Brass	1.062" / 3.00"	1/4" Recess
65-2562-T	5/8" Copper	1.062" / 2.78"	1/8" Recess

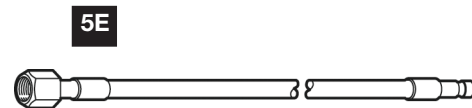
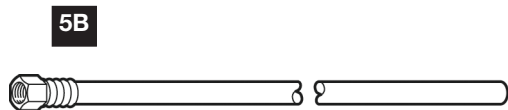
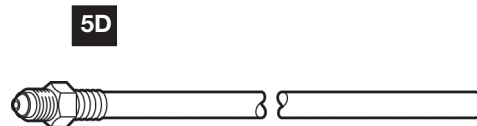
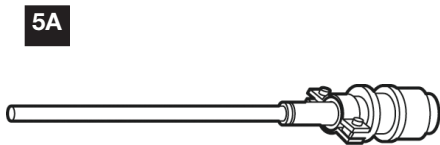
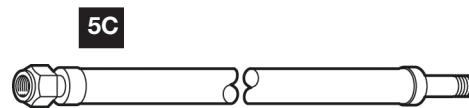
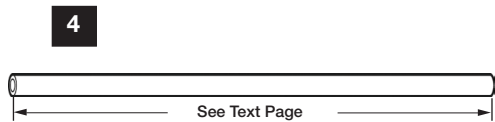
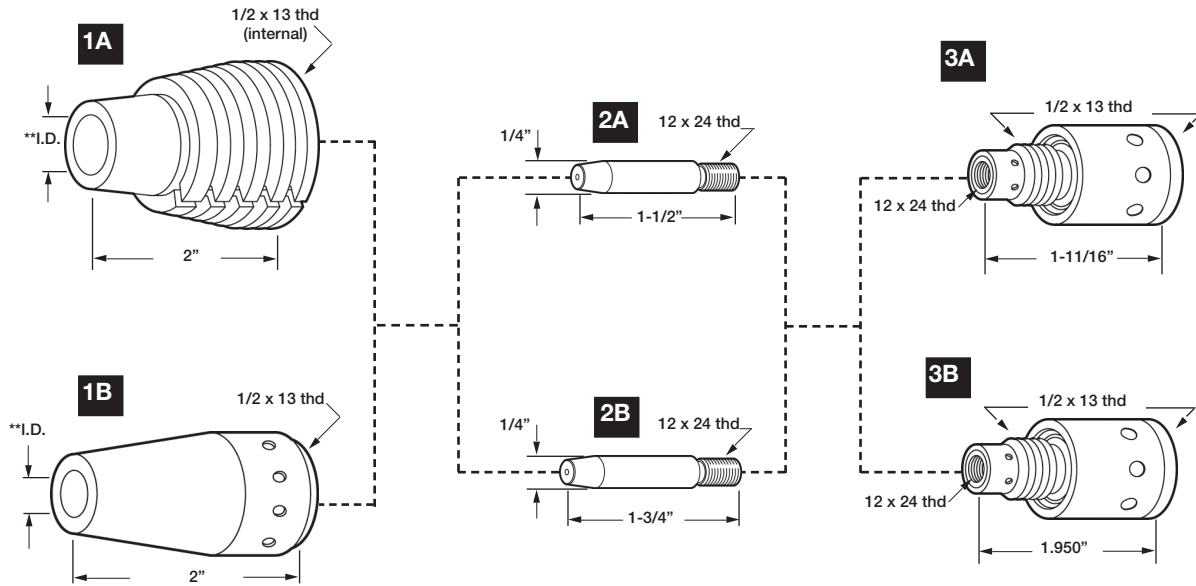
MIG

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MK PRODUCTS®

COBRA TORCH / PRINCE TORCH

MIG



COBRA TORCH / PRINCE TORCH

MIG

1. GAS CUPS

I.D.

A	621-0366	Gas Cup H.D. #8	1/2"	(12.7mm)
	621-0367	Gas Cup H.D. #10	5/8"	(15.8mm)
B	001-0137	Gas Cup Std. #6	3/8"	(9.5mm)
	001-0138	Gas Cup Std. #8	1/2"	(12.7mm)
	001-0139	Gas Cup Std. #10	5/8"	(15.8mm)

2. CONTACT TIPS

I.D.

621-0325	Tip Spray Arc. .030	(0.8mm)	.037
621-0076	Tip Spray Arc. .030	(0.8mm)	.040
621-0001	Tip Spray Arc. .035	(0.9mm)	.044
621-0327	Tip Spray Arc. .045	(1.2mm)	.053
621-0003	Tip Spray Arc. .045	(1.2mm)	.060
621-0075	Tip Spray Arc. 1/16"	(1.6mm)	.075
621-0153	Tip Spray Arc. 1/16"	(1.6mm)	.086
621-0326	Tip Spray Arc. .030	(0.8mm)	.037
621-0077	Tip Spray Arc. .030	(0.8mm)	.040
621-0002	Tip Spray Arc. .035	(0.9mm)	.044
621-0286	Tip Spray Arc. .052	(1.3mm)	.060
621-0154	Tip Spray Arc. 1/16"	(1.6mm)	.086

3. TIP EXTENSIONS

A	621-0017	Tip Extension	1-11/16"
B	003-0566	Tip Extension	1.95"

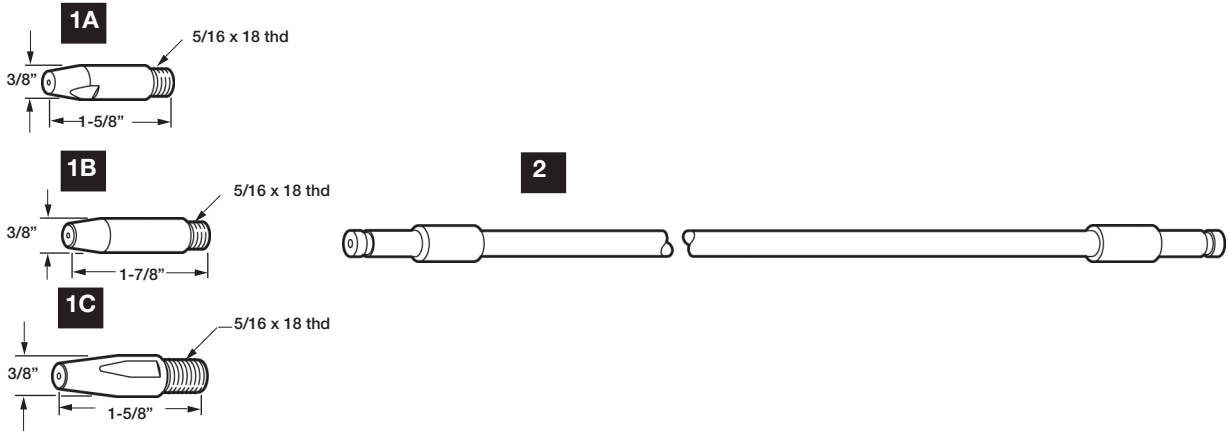
4. TORCH LINERS

615-0005	Teflon Liner	5-3/4"	Aluminum
615-0058	Teflon Liner	6-3/4"	Aluminum
615-0284	Spiral Liner	5-3/4"	Steel/Cored
615-0057	Spiral Liner	6-3/4"	Steel/Cored
615-0316	Green Teflon Liner	7-7/8"	All
615-0317	Green Teflon Liner	7-3/4"	Aluminum
615-0318	Steel Spiral Liner	7-1/2"	Steel/Cored
615-0319	Black Teflon Liner	3-1/4"	All
615-0325	WhiteTeflon H.D.	5-1/2"	All
615-0326	WhiteTeflon H.D.	7-3/4"	Aluminum

5. CABLE AND HOSE ASSEMBLIES

A	001-0610	Electrical Cable Assembly	15'
	001-0611	Electrical Cable Assembly	25'
	001-0612	Electrical Cable Assembly	30'
	001-0664	Electrical Cable Assembly	50'
	001-0613	7 Pin Cannon Plug	
B	001-0537	Gas Hose Assembly	15'
	001-0538	Gas Hose Assembly	25'
	001-0557	Gas Hose Assembly	30'
	001-0565	Gas Hose Assembly	50'
	001-0149	Power/Water Assembly	15'
	001-0150	Power/Water Assembly	25'
	001-0177	Power/Water Assembly	30'
	001-0666	Power/Water Assembly	50'
D	001-0529	Water-In Hose Assembly	15'
	001-0530	Water-In Hose Assembly	25'
	001-0565	Water-In Hose Assembly	30'
	001-0567	Water-In Hose Assembly	50'
E	001-0007	Conduit	15'
	001-0008	Conduit	25'
	001-0563	Conduit	30'
	001-0659	Conduit	50'

KINGCOBRA



1. CONTACT TIPS

I.D.

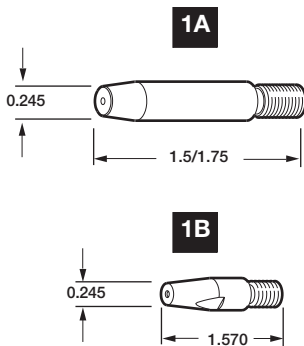
A	621-0157	Tip Spray Arc.	.035	(0.9mm)	.044
	621-0161	Tip Spray Arc.	.052	(1.2mm)	.053
	621-0162	Tip Spray Arc.	3/64 Al.	(1.2mm)	.060
	621-0163	Tip Spray Arc.	1/16	(1.6mm)	.075
	621-0164	Tip Spray Arc.	1/16 Al.	(1.6mm)	.085
B	621-0166	Tip Spray Arc.	.035	(0.9mm)	.044
	621-0167	Tip Spray Arc.	.052	(1.2mm)	.053
	621-0168	Tip Spray Arc.	3/64 Al.	(1.2mm)	.060

	621-0169	Tip Spray Arc.	1/16	(1.6mm)	.075
C	621-0021	Tip Spray Arc.	.035	(0.9mm)	.044
	621-0022	Tip Spray Arc.	.045	(1.2mm)	.053
	621-0023	Tip Spray Arc.	1/16	(1.6mm)	.075
	621-0027	Tip Spray Arc.	3/64 Al.	(1.2mm)	.060

2. CONDUITS

615-0007	Conduit	15'
615-0008	Conduit	25'
615-0068	Conduit	50'

SIDEWINDER, PRINCE SG, COBRA SX, COBRA MX

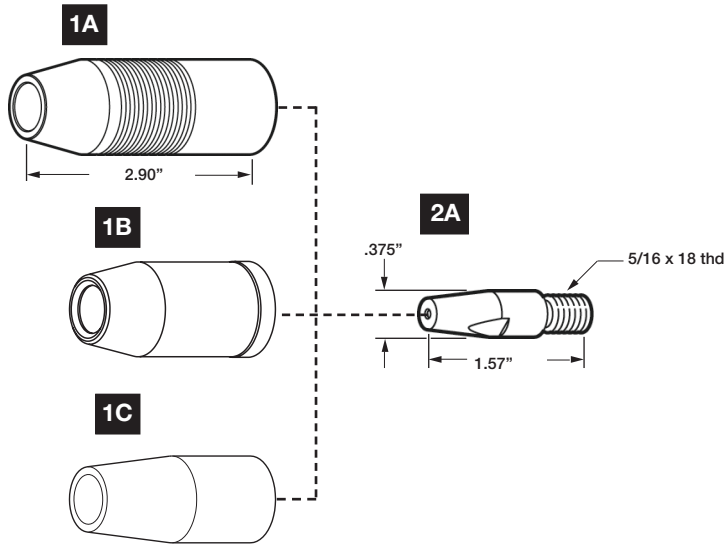


1 CONTACT TIPS I.D.

A	621-0057	Contact Tip .023"	.028
	621-0325	Contact Tip .030"	.037
	621-0076	Contact Tip .030"	.040
	621-0001	Contact Tip .035"	.044
	621-0077	Contact Tip .045"	.053
	621-0002	Contact Tip .035"	.044
	621-0327	Contact Tip .045"	.053
	621-0003	Contact Tip 3/64"	.060
	621-0076	Contact Tip 1/16"	.086
	621-0286	Contact Tip 3/64"	.060
	621-0075	Contact Tip 1/16"	.075
B	621-0390	Contact Tip .030"	.040
	621-0391	Contact Tip .035"	.044
	621-0397	Contact Tip .035"	.044
	621-0392	Contact Tip 3/64"	.053
	621-0398	Contact Tip 3/64"	.053
	621-0393	Contact Tip 3/64"	.060
	621-0394	Contact Tip 1/16"	.075

PYTHON, COBRAMAX, PRINCE XL, COBRA MX

AIR COOLED



1. NOZZLES

I.D.

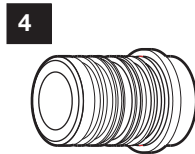
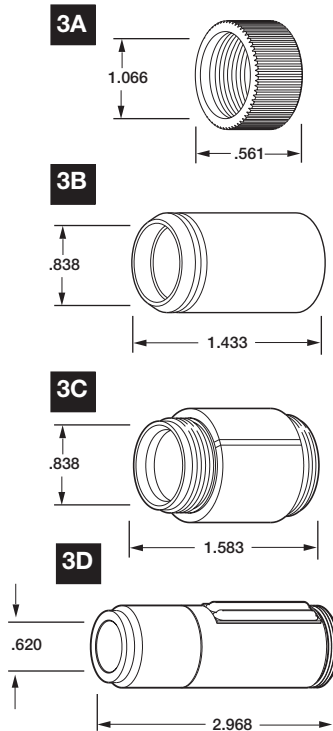
A	621-0248	Nozzle	3/8"
	621-0249	Nozzle, Finned	1/2"
	621-0250	Nozzle, Finned	5/8"
	621-0251	Nozzle, Finned HD	5/8"
B	621-0420	MAX Cup	3/8"
	621-0421	MAX Cup	1/2"
	621-0422	MAX Cup	5/8"
C	621-0440	Quick Cup	3/8"
	621-0441	Quick Cup	7/16"
	621-0442	Quick Cup	1/2"
	621-0443	Quick Cup	5/8"

MIG

2. CONTACT TIPS

I.D.

A	621-0390	Contact Tip .030"	.040
	621-0391	Contact Tip .035"	.044
	621-0392	Contact Tip .045"	.053
	621-0393	Contact Tip .052"	.060
	621-0394	Contact Tip 1/16"	.075
	621-0395	Contact Tip 1/16"	.085



WATER COOLED

3. NOZZLES

I.D.

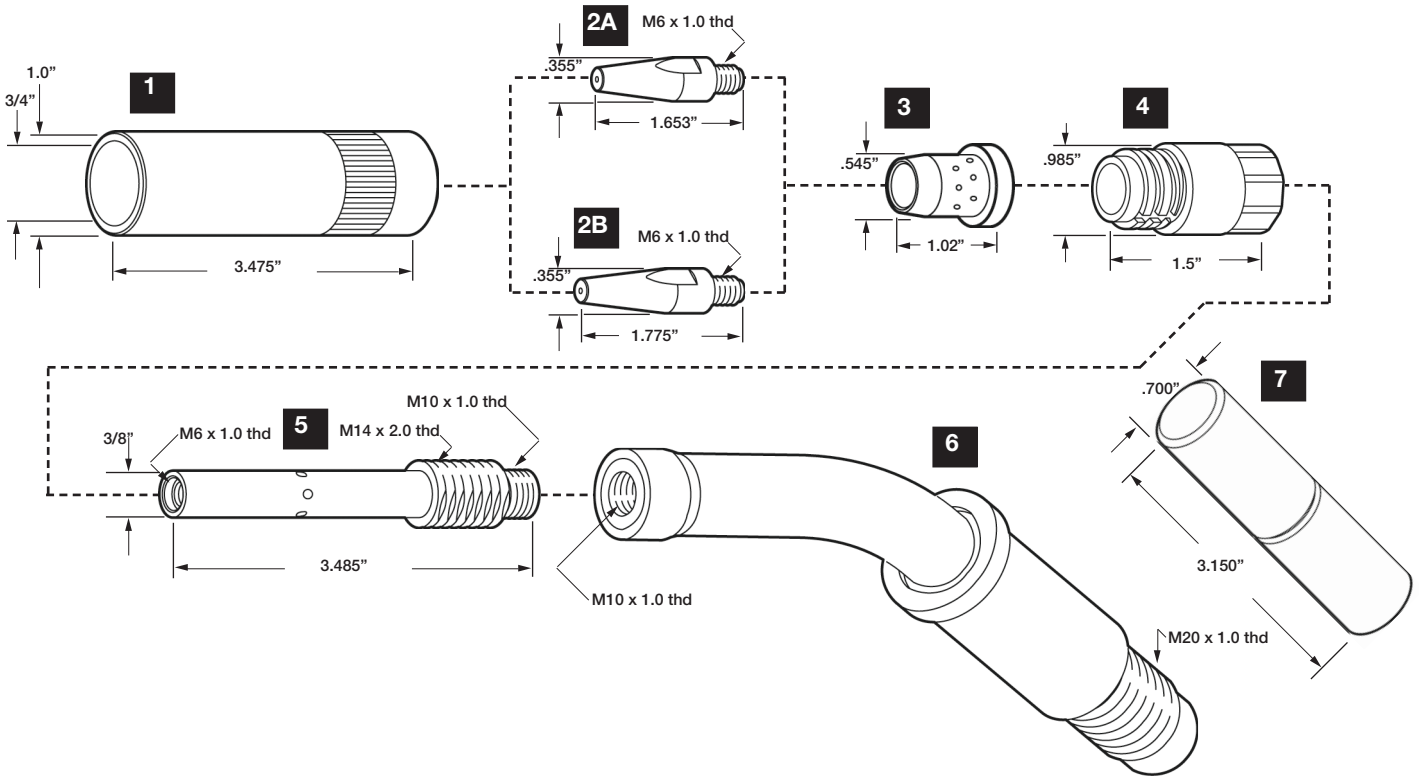
A	449-0193	Chrome Nut	
	621-0159	Gas Cup #8	1/2"
	621-0160	Gas Cup #10 A/C	5/8"
B	621-0170	Gas Cup #6 A/C	3/8"
	621-0101	Cup Adapter W/C	
D	621-0065	Gas Cup W/C	

4. INSULATOR CUP

261-0381

RT502-L / LRT501

MIG



1. NOZZLES

861PTA1010	Nozzle	3/4" (19.1mm)
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2. CONTACT TIPS

I.D.

A	0.8 x 42	Contact Tip	.030	(0.8mm)	.037
	0.9 x 42	Contact Tip	.035	(0.9mm)	.043
	1.0 x 42	Contact Tip	.040	(1.0mm)	.048
	1.2 x 42	Contact Tip	.045	(1.2mm)	.050
	1.6 x 42	Contact Tip	1/16"	(1.6mm)	.073
B	0.8 x 45	Contact Tip	.030	(0.8mm)	.037
	0.9 x 45	Contact Tip	.035	(0.9mm)	.043
	1.0 x 45	Contact Tip	.040	(1.0mm)	.048
	1.2 x 45	Contact Tip	.045	(1.2mm)	.050
	1.6 x 45	Contact Tip	1/16"	(1.6mm)	.073

3. DIFFUSERS/HEADS

861PTA1030	Orifice
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4. NOZZLE INSULATORS

86PTA1040	Insulator Cylinder
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5. DIFFUSERS/HEADS

PL115-0134	Tip Body
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6. TORCH BARRELS

PB351-0997	Torch Barrel
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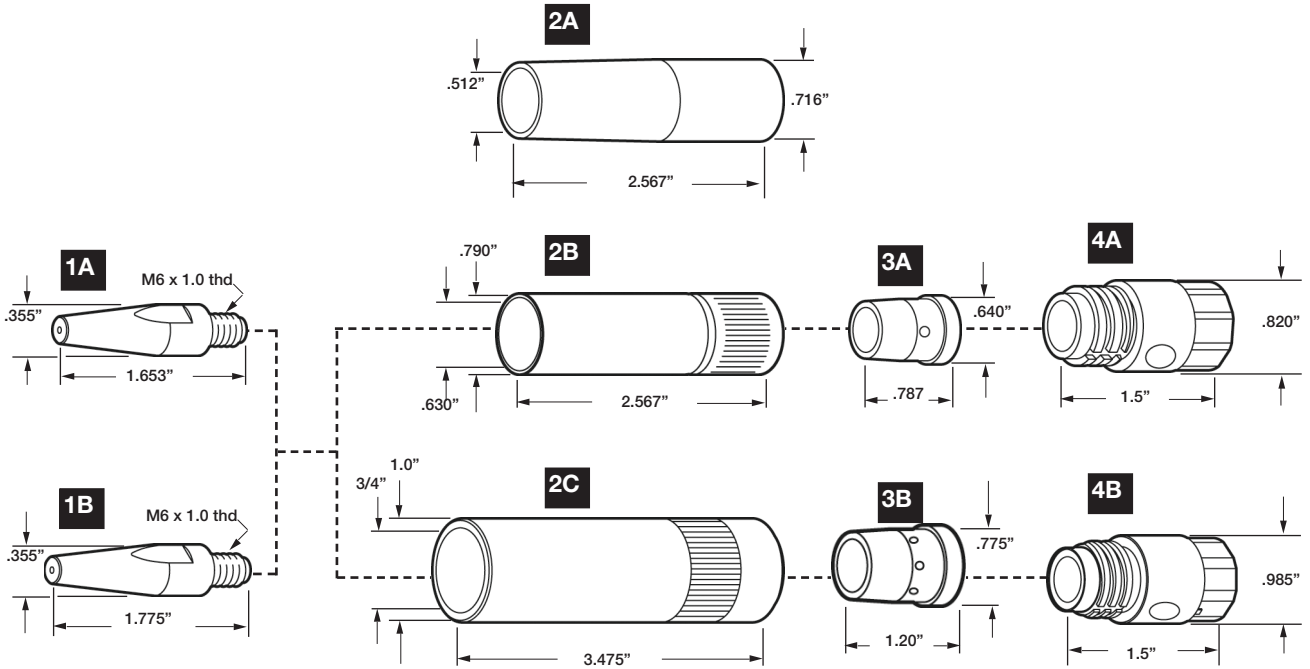
7. BREAK AWAY BARS

PL116-0200	Break Away Bar
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N/S OTHER AVAILABLE PARTS

PB351-1721	Spring Liner	64"
PB351-1723	Spring Liner	139"
PB351-0718	Cable Conduit	63"
PB351-0719	Cable Conduit	138"
PB351-0999	Conductive Bracket	

MIG



1. CONTACT TIPS
I.D.

A	002 005	Contact Tips	.030	(0.8mm)	.037
	002 001	Contact Tips	.035	(0.9mm)	.043
	002 002	Contact Tips	.040	(1.0mm)	.048
	002 003	Contact Tips	.045	(1.2mm)	.055
	002 004	Contact Tips	1/16"	(1.6mm)	.073
	002 018	Contact Tips	.045 AL	(1.2mm)	.059
	002 019	Contact Tips	1/16"AL	(1.6mm)	.078
B	002 006	Contact Tips Long	.030	(0.8mm)	.037
	002 007	Contact Tips	.035	(0.9mm)	.043
	002 008	Contact Tips	.040	(1.0mm)	.048
	002 009	Contact Tips	.045	(1.2mm)	.055

2. NOZZLES **I.D.**

A	038 050	Nozzle 180	.512	(13mm)
B	001 002	Nozzle	.630	(16mm)

3. ORIFICE

C	001 001	Nozzle	.750	(19mm)
A	003 002	Orifice Ceramic - Small		
B	003 001	Orifice Ceramic - Large		

4. NOZZLE INSULATORS

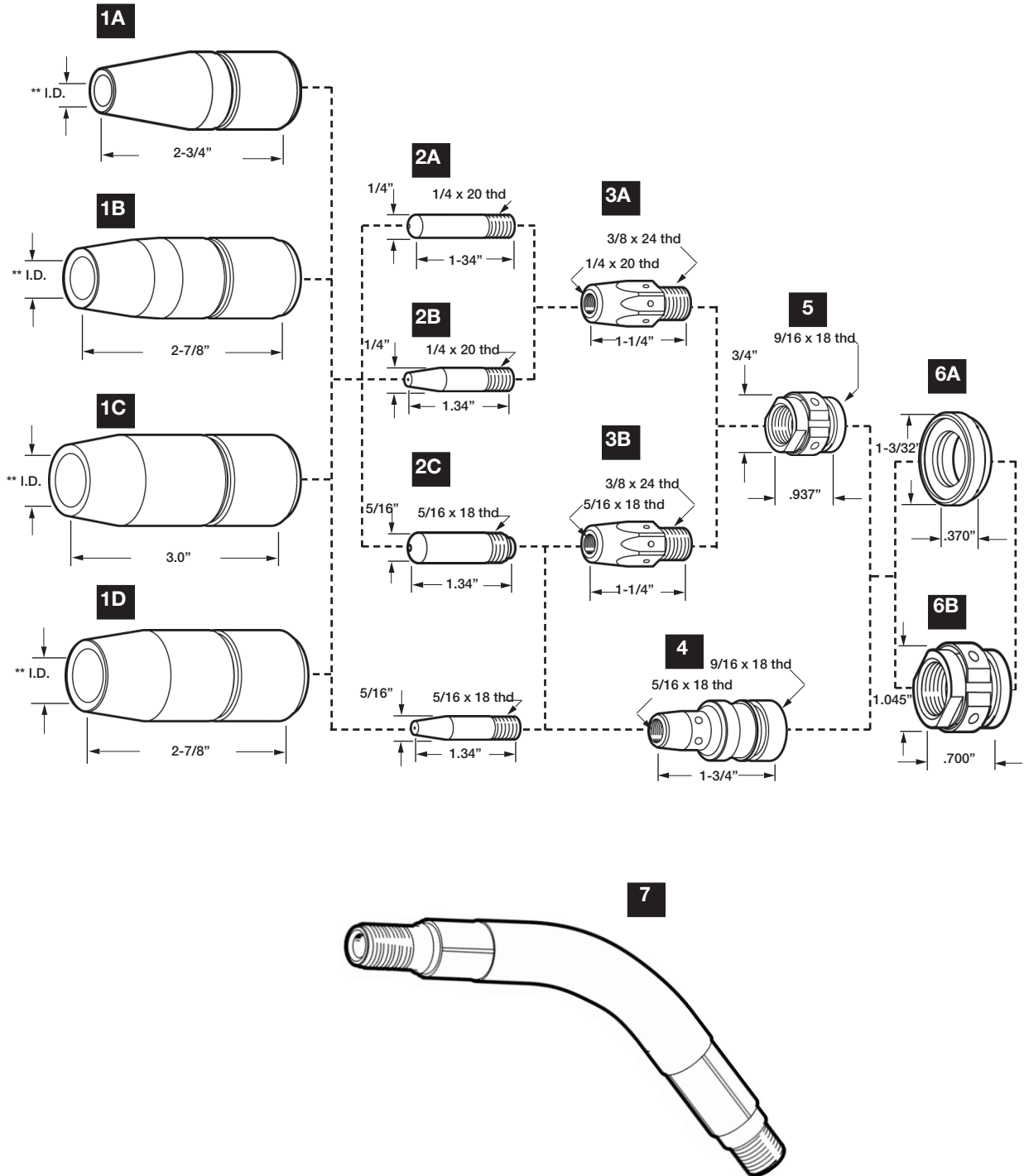
A	004 001	Nozzle Insulator - Large
B	004 002	Nozzle Insulator - Small

226

TREGASKISS®

TOUGH GUN 300, 400, 500

MIG



1. NOZZLES - INSULATED

I.D.

A	401-4-38	Nozzle Std. Flush	3/8" (09.5mm)
	401-4-62	Nozzle 1/8" Stick-Out	5/8" (15.9mm)
B	401-4-50	Nozzle Std. 1/8" Tip Recess	1/2" (12.7mm)
	401-4-62	Nozzle Std. 1/8" Tip Recess	5/8" (15.9mm)
	401-4-75	Nozzle Std. 1/8" Tip Recess	3/4" (19.1mm)
C	401-5-62	Nozzle H.D. Cu 1/4" Tip Rec.	5/8" (15.9mm)
	401-5-75	Nozzle H.D. Cu 1/4" Tip Rec.	3/4" (19.1mm)
	401-7-62	Nozzle H.D. Brass 1/4" Tip Rec.	5/8" (15.9mm)
D	401-6-62	Nozzle H.D. Cu 1/8" Tip Rec.	5/8" (15.9mm)
	401-6-75	Nozzle H.D. Cu 1/8" Tip Rec.	3/4" (19.1mm)
E	401-48-50	Nozzle Bottleneck 1/8 STKT	1/2"
	401-48-62	Nozzle Bottleneck Flush	5/8"
	401-81-62	Nozzle HD 1/8 STKT	5/8"
	401-87-62	Nozzle HD Brass 1/8 STKT	5/8"

3. GAS DIFFUSERS

A	404	Diffuser for Standard Contact Tips
B	404-1	Diffuser for H.D. Contact Tips

4. RETAINING HEADS (USE WITH H.D. NOZZLES)

404-3	Retaining Head H.D.
404-3A	Retaining Head H.D. Angled Holes

5. NOZZLE RETAINERS

402-3	Nozzle Retainer
-------	-----------------

6. SHOCK WASHERS

A	402-5	Shock Washer H.D.
B	402-7	Shock Washer Plastic

7. GOOSENECKS

205-60	Gooseneck	60°	200Amp
305-60	Gooseneck	60°	300Amp
405-45	Gooseneck	45°	400Amp
405-60	Gooseneck	60°	400Amp
505-60	Gooseneck	60°	500Amp

2. CONTACT TIPS

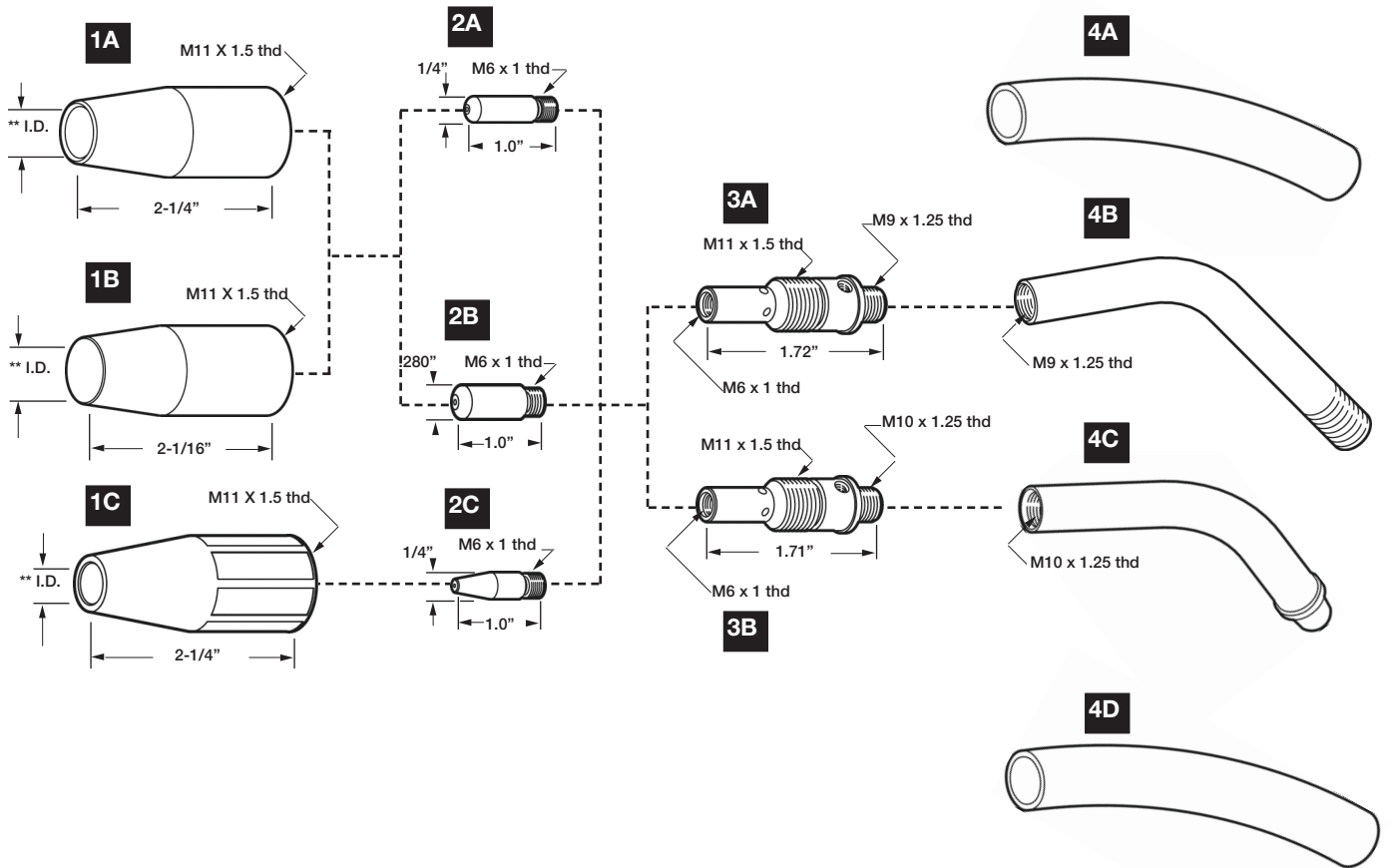
I.D.

A	403-23	Contact Tip Std.	.023	(0.6mm)	.028
	403-30	Contact Tip Std.	.030	(0.8mm)	.037
	403-35	Contact Tip Std.	.035	(0.9mm)	.043
	403-1.0	Contact Tip Std.	.040	(1.0mm)	.048
	403-45	Contact Tip Std.	.045	(1.2mm)	.055
	403-52	Contact Tip Std.	.052	(1.3mm)	.063
	403-116	Contact Tip Std.	1/16"	(1.6mm)	.073
B	403-2-23	Contact Tip Tapered	.023	(0.6mm)	.028
	403-2-30	Contact Tip Tapered	.030	(0.8mm)	.037
	403-2-35	Contact Tip Tapered	.035	(0.9mm)	.043
	403-2-45	Contact Tip Tapered	.045	(1.2mm)	.055
	403-2-52	Contact Tip Tapered	.052	(1.3mm)	.063
C	403-1-30	Contact Tip H.D.	.030	(0.8mm)	.037
	403-1-35	Contact Tip H.D.	.035	(0.9mm)	.043
	403-1-45	Contact Tip H.D.	.045	(1.2mm)	.055
	403-1-364	Contact Tip H.D.	3/64"	(1.2mm)	.059
	403-1-52	Contact Tip H.D.	.052	(1.3mm)	.063
	403-1-116	Contact Tip H.D.	1/16"	(1.6mm)	.073
	403-1-564	Contact Tip H.D.	5/64"	(2.0mm)	.093
	403-1-332	Contact Tip H.D.	3/32"	(2.4mm)	.110
	403-7-35	Contact Tip Long Life	.035	(0.9mm)	.040
	403-7-45	Contact Tip Long Life	.045	(1.2mm)	.050
	403-7-52	Contact Tip Long Life	.052	(1.3mm)	.059
	403-7-116	Contact Tip Long Life	1/16"	(1.6mm)	.070
	403-7-564	Contact Tip Long Life	5/64"	(2.0mm)	.093
	403-7-332	Contact Tip Long Life	3/32"	(2.4mm)	.110
	403-7-1.0	Contact Tip Long Life	.040	(1.0mm)	.045
D	403-3-30	Contact Tip H.D. Tap	.030	(0.8mm)	.037
	403-3-35	Contact Tip H.D. Tap	.035	(0.9mm)	.043
	403-3-40	Contact Tip H.D. Tap	.040	(1.0mm)	.048
	403-3-45	Contact Tip H.D. Tap	.045	(1.2mm)	.055
	403-3-52	Contact Tip H.D. Tap	.052	(1.3mm)	.063

LINERS (NOT SHOWN)

I.D. O.D.

415-35-10	Liner	10'	.035	White	.073	.175
415-35-15	Liner	15'	.035	White	.073	.175
415-35-25	Liner	25'	.035	White	.073	.175
415-116-6	Liner	6"	.045-1/16"	Red	.089	.189
415-116-10	Liner	10'	.045-1/16"	Red	.089	.189
415-116-15	Liner	15'	.045-1/16"	Red	.089	.189
415-116-25	Liner	25'	.045-1/16"	Red	.089	.189
415-332-15	Liner	15'	3/32"	Black	.118	.189
415-332-25	Liner	25'	3/32"	Black	.118	.189



1. NOZZLES

A	21-37	Nozzle Insul. 1/8" Recess	3/8" (09.5mm)
	21-50	Nozzle Insul. 1/8" Recess	1/2" (12.7mm)
	21-62	Nozzle Insul. 1/8" Recess	5/8" (15.9mm)
B	21-37-F	Nozzle Insulated Flush	3/8" (09.5mm)
	21-50-F	Nozzle Insulated Flush	1/2" (12.7mm)
	21-62-F	Nozzle Insulated Flush	5/8" (15.9mm)
C	21T-37	Nozzle Tapered 1/8" Recess	3/8" (09.5mm)

2. CONTACT TIPS

I.D.

A	11-23	Contact Tip	.023	(0.6mm)	.028
	11-30	Contact Tip	.030	(0.8mm)	.037
	11-35	Contact Tip	.035	(0.9mm)	.043
	11-40	Contact Tip	.040	(1.0mm)	.048
	11-45	Contact Tip	.045	(1.2mm)	.055
B	11-30	Contact Tip H.D.	.030	(0.8mm)	.037
	11H-35	Contact Tip H.D.	.035	(0.9mm)	.043
	11H-40	Contact Tip H.D.	.040	(1.0mm)	.048
	11H-45	Contact Tip H.D.	.045	(1.2mm)	.055
	11AH-364	Contact Tip H.D.	3/64"Al.	(1.2mm)	.059
C	11T-23	Contact Tip Tapered	.023	(0.6mm)	.028
	11T-30	Contact Tip Tapered	.030	(0.8mm)	.037
	11T-35	Contact Tip Tapered	.035	(0.9mm)	.043
	11T-40	Contact Tip Tapered	.040	(1.0mm)	.048
	11T-45	Contact Tip Tapered	.045	(1.2mm)	.055

3. GAS DIFFUSERS

A	35-50	Gas Diffuser (Mini-Mig)
B	51	Gas Diffuser (#1)
	51-23	Gas Diffuser (#1) .023

4. CONDUCTOR TUBES & INSULATION

A	35-70	Conductor Tube Insulation (Mini-Mig)
B	35-60-45	Conductor Tube 45° (Mini-Mig)
	35-60-60	Conductor Tube 60° (Mini-Mig)
C	61-45	Conductor Tube 45° (#1)
	61-60	Conductor Tube 60° (#1)
	61-180	Conductor Tube 180° (#1)
D	71	Conductor Tube Insulation (#1)

LINERS (NOT SHOWN)

I.D. O.D.

MINI-MIG

A	23-40-15	Liner Assy.	15'	.023	.036	.123
	35-40-15	Liner Assy.	15'	.030-.035	.050	.134
	35-40-20	Liner Assy.	20'	.030-.035	.050	.134
	35TF-40-10	Liner Assy. Teflon	10'	.035	.066	.148
	35TF-40-15	Liner Assy. Teflon	15'	.035	.066	.148
	45-40-15	Liner Assy.	15'	.035	.063	.138
	45TF-40-10	Liner Assy. Teflon	10'	.045	.079	.156
	45TF-40-15	Liner Assy. Teflon	15'	.045	.079	.156
#1						
B	42-23-15	Liner Assy.	15'	.023	.036	.123
	42-3035-15	Liner Assy.	15'	.030-.035	.053	.15
	42-3035-25	Liner Assy.	25'	.030-.035	.053	.156
	42-4045-15	Liner Assy.	15'	.040-.045	.059	.156
	42-4045-25	Liner Assy.	25'	.040-.045	.059	.156
	42N-3545-15	Liner Assy. Nylon	15'	.035-.045	.066	.148

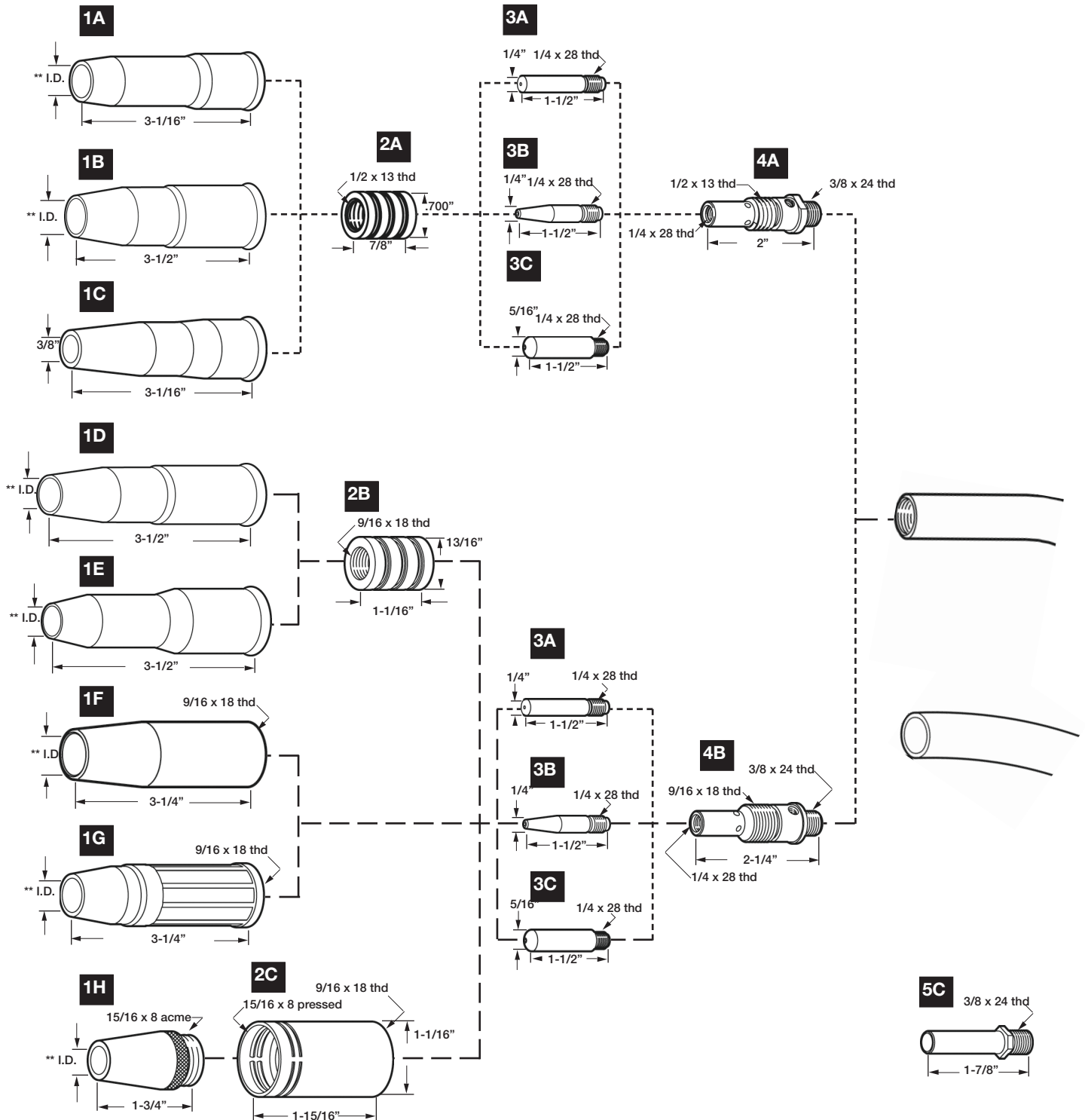
MIG

230

TWECO®

2 COMPATIBLE WITH TWECO 200AMP CONSUMABLES

MIG



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2 COMPATIBLE WITH TWECO 200AMP CONSUMABLES

MIG

1. NOZZLES

I.D.

A	22-50	Nozzle Adjustable	1/2" (12.7mm)
	22-62	Nozzle Adjustable	5/8" (15.9mm)
B	22-37-SS	Nozzle Adj. Short Stop	3/8" (09.5mm)
	22-50-SS	Nozzle Adj. Short Stop	1/2" (12.7mm)
	22-62-SS	Nozzle Adj. Short Stop	5/8" (15.9mm)
C	24T-37-SS	Nozzle Adj. Tapered S.S.	3/8" (09.5mm)
D	24A-50	Nozzle Adjustable	1/2" (12.7mm)
	24A-62	Nozzle Adjustable	5/8" (15.9mm)
	24A-75	Nozzle Adjustable	3/4" (19.1mm)
E	24A-37-SS	Nozzle Adj. Short Stop	3/8" (09.5mm)
	24A-50-SS	Nozzle Adj. Short Stop	1/2" (12.7mm)
	24A-62-SS	Nozzle Adj. Short Stop	5/8" (15.9mm)
	24A-75-SS	Nozzle Adj. Short Stop	3/4" (19.1mm)
	24AT-37-SS	Nozzle Adj. Tapered S.S.	3/8" (09.5mm)
F	23-37	Nozzle Insulated	3/8" (09.5mm)
	23-50	Nozzle Insulated	1/2" (12.7mm)
	23-62	Nozzle Insulated	5/8" (15.9mm)
	23-75	Nozzle Insulated	3/4" (19.1mm)
	23H-50	Nozzle Insulated H.D.	1/2" (12.7mm)
	23H-62	Nozzle Insulated H.D.	5/8" (15.9mm)
	23H-75	Nozzle Insulated H.D.	3/4" (19.1mm)
	23T-37	Nozzle Insulated Tapered	3/8" (09.5mm)
G	23-37-F	Nozzle Insulated Flush	3/8" (09.5mm)
	23-50-F	Nozzle Insulated Flush	1/2" (12.7mm)
	23-75-F	Nozzle Insulated Flush	3/4" (19.1mm)
	23T-37-F	Nozzle Insul. Tapered Flush	3/8" (09.5mm)
H	24CT-37-S	Nozzle Coarse Thread	3/8" (09.5mm)
	24CT-50-S	Nozzle Coarse Thread	1/2" (12.7mm)
	24CT-62-S	Nozzle Coarse Thread	5/8" (15.9mm)
	24CT-75-S+	Nozzle Coarse Thread	3/4" (19.1mm)

2. INSULATORS

A	32	Insulator (#2) for Adjustable Nozzles
B	34A	Insulator (#2,3,4) for Adjustable Nozzles
C	34CT	Insulator (#2,3,4) for Coarse Threaded Nozzles
D	34FN	Insulator (#2,3,4) for Fine Threaded Nozzles

3. CONTACT TIPS

ID

A	14-23	Contact Tip	.023	(0.6mm) .028
	14-30	Contact Tip	.030	(0.8mm) .037
	14-35	Contact Tip	.035	(0.9mm) .043
	14-40	Contact Tip	.040	(1.0mm) .048
	14-45	Contact Tip	.045	(1.2mm) .055
	14-52	Contact Tip	.052	(1.3mm) .063
	14A-364	Contact Tip	3/64	Al. (1.2mm) .059
B	14T-23	Contact Tip Tapered	.023	(0.6mm) .028
	14T-30	Contact Tip Tapered	.030	(0.8mm) .037
	14T-35	Contact Tip Tapered	.035	(0.9mm) .043
	14T-40	Contact Tip Tapered	.040	(1.0mm) .048
	14T-45	Contact Tip Tapered	.045	(1.2mm) .055
C	14H-30	Contact Tip H.D.	.030	(0.8mm) .037
	14H-35	Contact Tip H.D.	.035	(0.9mm) .043
	14H-40*	Contact Tip H.D.	.040	(1.0mm) .048
	14H-45*	Contact Tip H.D.	.045	(1.2mm) .055
	14AH-364*	Contact Tip H.D.	3/64	Al. (1.2mm) .059
	14AH-116*	Contact Tip H.D.	1/16	Al. (1.6mm) .081

4. GAS DIFFUSERS

A	52	Gas Diffuser (#2)	
	52-23	Gas Diffuser (#2)	.023
B	52FN	Gas Diffuser (#2)	

5. CONDUCTOR TUBES

A	62A-45	Conductor Tube 45°
	62A-60	Conductor Tube 60°
	62A-80	Conductor Tube 80°
	62A-180	Conductor Tube 180°
B	72A	Conductor Tube Insulation
C	64N	Nipple

+Available with spatter resistant coating (-C)

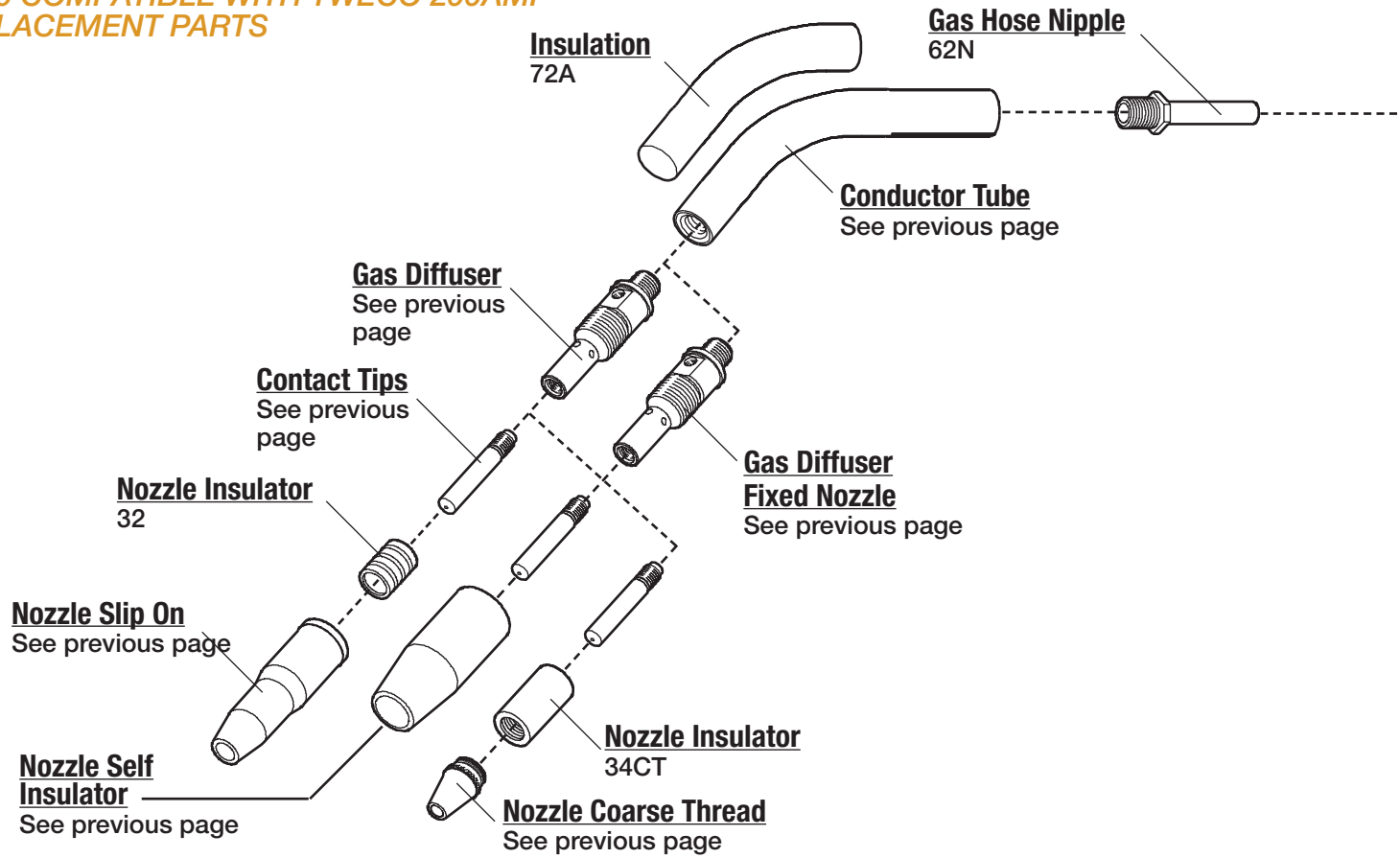
*Available in Long Lasting (LL)

232

T-200 MIG GUN®

T-200 COMPATIBLE WITH TWECO 200AMP REPLACEMENT PARTS

MIG

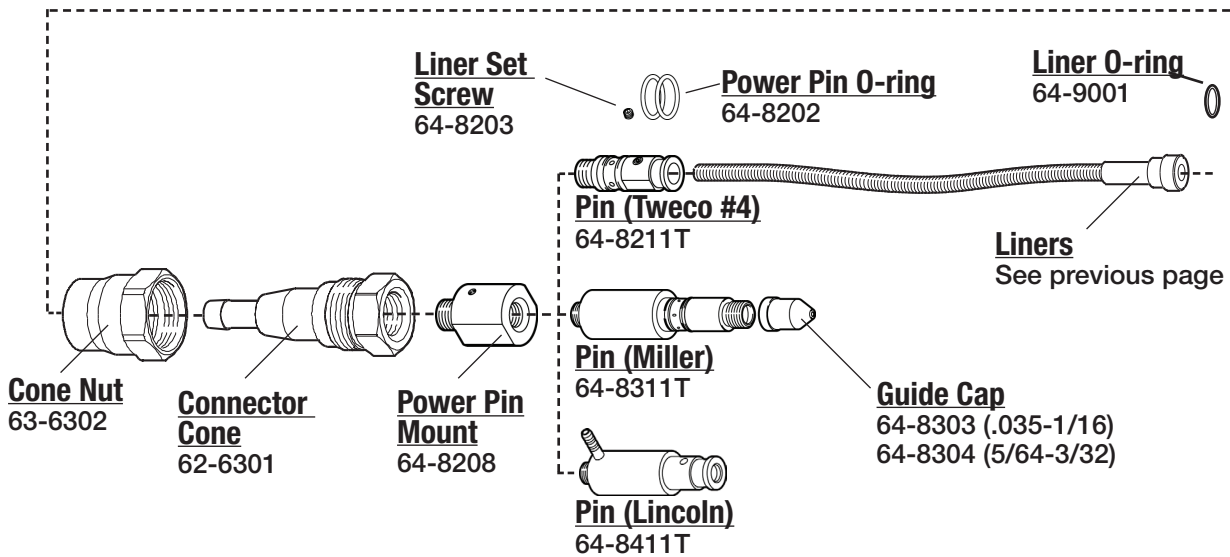
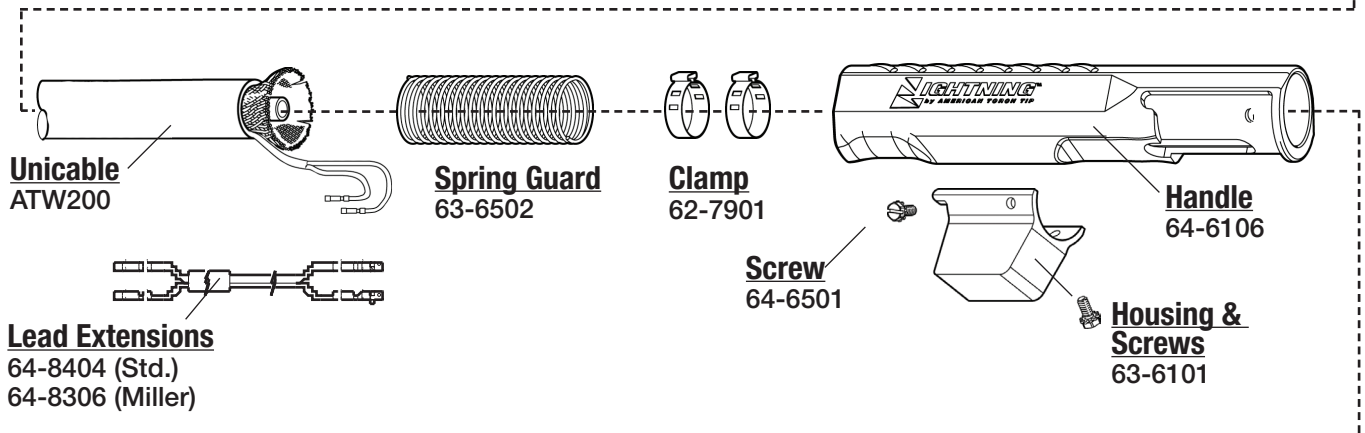
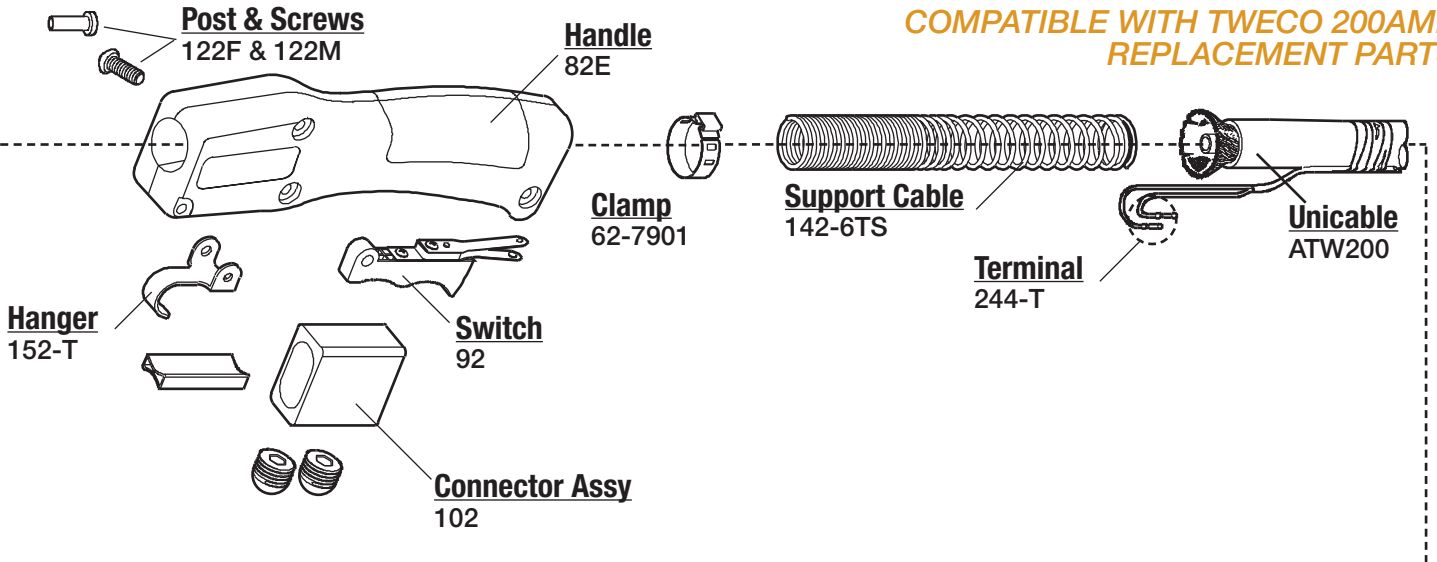


RATING:
200A C02 150A MIXED GAS
@ 100% DUTY CYCLE
.023" 0.6mm TO .045" 1.2mm WIRE

LINERS		I.D.	O.D.
42-23-15	Liner Assy. 15'	.023	.036 .123
42-3035-15	Liner Assy. 15'	.030-.035	.053 .156
42-3035-25	Liner Assy. 25'	.030-.035	.053 .156
42-4045-15	Liner Assy. 15'	.040-.045	.059 .156
42-4045-25	Liner Assy. 25'	.040-.045	.059 .156
42N-3545-15	Liner Assy. Nylon 15'	.035-.045	.066 .148

COMPATIBLE WITH TWECO 200AMP REPLACEMENT PARTS

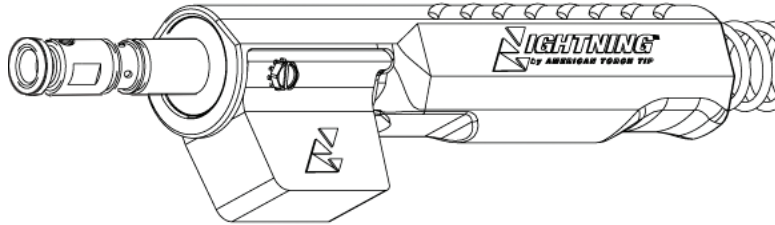
MIG



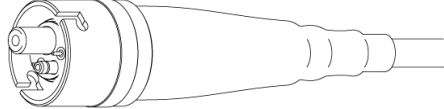
T-200 MIG GUN®

T-200 COMPATIBLE WITH TWECO 200AMP

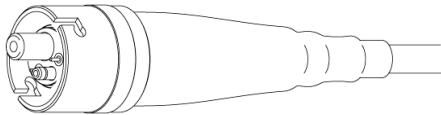
Tweco #4
64-8201



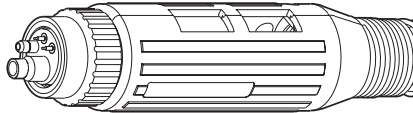
Bernard
64-8501



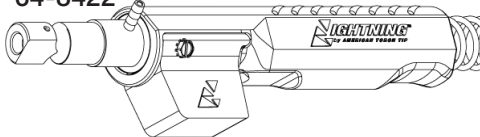
Daiden
64-8501



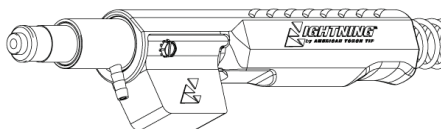
Euro
64-8100



Hitachi
64-8422

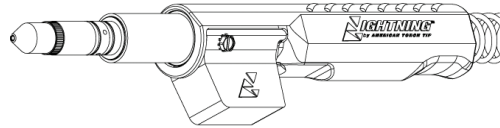


Lincoln
64-8401

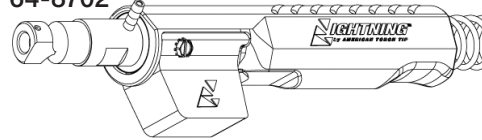


Miller

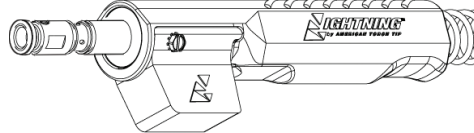
64-8301T (.035 - 1/16)
64-8302T (5/64 - 3/32)



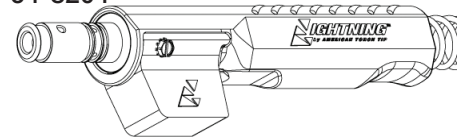
Panasonic
64-8702



Thermal Arc
64-8901



Tweco #5
64-8204



SEMI-AUTOMATIC GUN CONVERSION KITS

AVAILABLE FOR BERNARD, LINCOLN & TWECO WITH A SIMPLE CHANGE-OUT OF PARTS

LIGHTNING® RETAINING HEADS

Part #	Description
65-3103 *	Retaining Head for Extra Heavy Duty
63-3103	Retaining Head T/L
63-3103-2	Retaining Head T/L
63-3116	Thread-on Retaining Head HD
63-3402	Retaining Ring
63-3301	O-Ring Orange O16
63-3118-T	Diffuser, Bernard Threaded

* This retaining head must be used with #65-11XX contact tip. See Contact Tips Selector Chart on p.2



BENEFITS

- ✓ Greater surface area contact between tip and head ensures better heat dissipation and conductivity.
- ✓ Tapered tip design creates a more secure seat, eliminating loose tips.
- ✓ Cooler tip temperature reduces wear and extends tip life.
- ✓ Dual-lead thread design allows for 180 degree rotation of tip to new wear point for extended tip life.
- ✓ Brass insert prevents wear and extends life.
- ✓ Superior surface finish minimizes spatter adhesion.
- ✓ Durable hard drawn copper or brass withstands abuse.

Lightning® Contact Tips Selector Chart

Contact Tips Part #	Heavy Duty Tip - Size
63-1130	Contact Tip HD .030 pk 10
63-1135	Contact Tip HD .035 pk 10
63-1135-40	Contact Tip HD .035/.040 I.D. pk 10
63-1138	Contact Tip .030 Pk 10 Robotic
63-1140	Contact Tip HD .040 pk 10
63-1145	Contact Tip HD .045 pk 10
63-1147	Contact Tip HD 3/64" al pk 10
63-1152	Contact Tip HD .052 pk 10
63-1162	Contact Tip HD 1/16" pk 10
63-1168	Contact Tip HD .068 / .078 I.D. pk 10
63-1172	Contact Tip HD .072 pk 10 SPECIAL
63-1178	Contact Tip HD 5/64" pk 10
63-1193	Contact Tip HD 3/32" pk 10
Part #	Tapered Tip
63-12XX	XX = last 2 digits indicate wire size
Part #	CZ Tip (Chromium Zirconium)
63-13XX	XX = last 2 digits indicate wire size
Part #	Extra Heavy Duty Tip
65-11XX *	XX = last 2 digits indicate wire size

* This contact tip must be used with #65-3103 retaining head. See Lightning Retaining Heads Chart on p.1

BERNARD® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Q-Gun Series	63-6105	63-3118	63-11XX †	6X-XXXX **
EZ Feed Series	63-6105	63-3118	63-11XX †	6X-XXXX **
T-Series †	63-6202-HD	63-3103	63-11XX †	6X-XXXX **
Roughneck C Miller	63-6105	63-3118	63-11XX †	6X-XXXX **

LINCOLN® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Magnum 300	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum 400	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum Pro	63-6105	63-3119	63-11XX †	6X-XXXX **

TWECO® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Tweco #3	63-6105	63-3103	63-11XX †	6X-XXXX **
Tweco #4	63-6105	63-3103	63-11XX †	6X-XXXX **
SprayMaster 450	63-6105	63-3103	63-11XX †	6X-XXXX **
WeldSkill 400	63-6105	63-3103	63-11XX †	6X-XXXX **

Use the Lightning® contact tip system (gooseneck insulator, retaining head, contact tip and nozzle) with Bernard® Lincoln® or Tweco® MIG guns. Use 63-3118 Retaining Head on goosenecks with external 9/16"-18 thread, such as Q-gun and EZ Feed guns with 1/4" NPT thread.

† T-Series retaining head can only be used on Bernard T-Series (Treggaskiss) guns.

‡ 63-11XX (XX = your wire size)

** 6X-XXXX (see Nozzle Selector Chart on next page)

Lightning® Nozzle Selector Chart (Air-Cooled Slip On)

Standard Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
63-2138	3/8" Copper	.938" / 2.75"	Flush
64-2950	1/2" Brass	.938" / 2.63"	1/8" Stickout
63-2950B	1/2" Brass	.938" / 2.88"	1/8" Recess
63-2150	1/2" Copper	.938" / 2.88"	1/8" Recess
63-2762	5/8" Copper	.938" / 2.51"	1/4" Stickout
63-2662	5/8" Copper	.938" / 2.63"	1/8" Stickout
63-2162	5/8" Copper	.938" / 2.88"	1/8" Recess
63-2175	3/4" Copper	.938" / 2.88"	1/8" Recess
Heavy Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
65-2550	1/2" Copper	1.062" / 2.88"	1/8" Recess
65-2662	5/8" Copper	1.062" / 2.63"	1/8" Stickout
65-2362	5/8" Brass	1.062" / 2.63"	1/8" Stickout
64-2962	5/8" Copper	1.062" / 2.75"	Flush
65-2862	5/8" Brass	1.062" / 2.75"	Flush
63-2362	5/8" Brass	1.062" / 2.88"	1/8" Recess
65-2562	5/8" Copper	1.062" / 2.88"	1/8" Recess
64-2562	5/8" Copper	1.062" / 3.00"	1/4" Recess
65-2575	3/4" Copper	1.062" / 2.88"	1/8" Recess
65-2375	3/4" Brass	1.062" / 2.88"	1/8" Recess
64-2575	3/4" Copper	1.062" / 3.00"	1/4" Recess
64-2387	7/8" Brass	1.062" / 3.00"	1/4" Recess
65-2562-T	5/8" Copper	1.062" / 2.78"	1/8" Recess

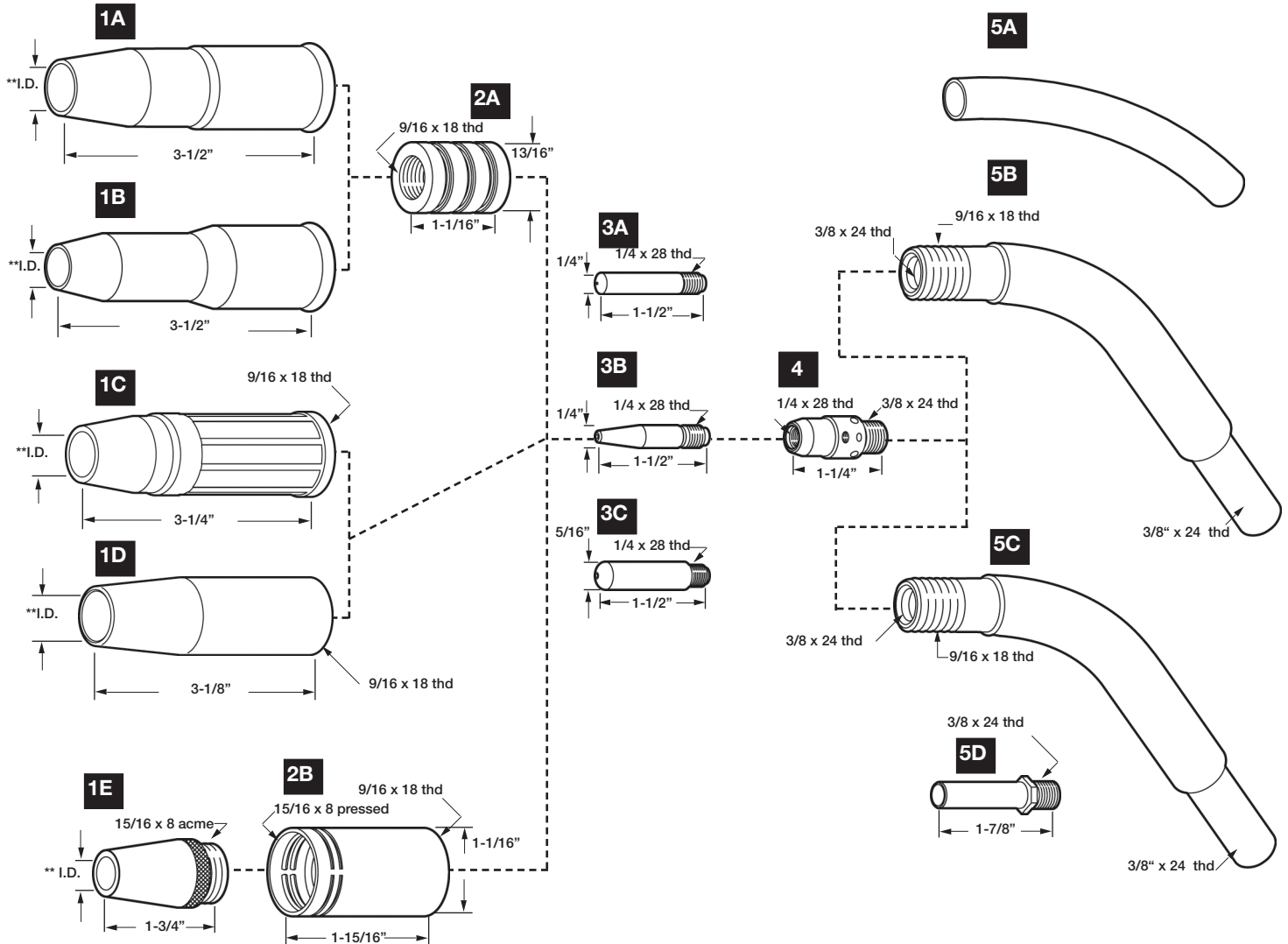
MIG

236

T-300/400 MIG GUN®

COMPATIBLE WITH TWECO 300/400AMP

MIG



COMPATIBLE WITH TWECO 300/400AMP

1. NOZZLES

I.D.

A	24A-50	Nozzle Adjustable	1/2"	(12.7mm)
	24A-62	Nozzle Adjustable	5/8"	(15.9mm)
	24A-75	Nozzle Adjustable	3/4"	(19.1mm)
	24AH-50	Nozzle Adj. Heavy-Duty	1/2"	(12.7mm)
	24AH-62	Nozzle Adj. Heavy-Duty	5/8"	(15.9mm)
	24AH-75	Nozzle Adj. Heavy-Duty	3/4"	(19.1mm)
	24A-37-SS	Nozzle Adj. Short Stop	3/8"	(9.5mm)
	24A-50-SS	Nozzle Adj. Short Stop	1/2"	(12.7mm)
	24A-62-SS	Nozzle Adj. Short Stop	5/8"	(15.9mm)
	24A-75-SS	Nozzle Adj. Short Stop	3/4"	(19.1mm)
B	24AH-50-SS	Nozzle Adj. H.D. Short Stop	1/2"	(12.7mm)
	24AH-62-SS	Nozzle Adj. H.D. Short Stop	5/8"	(15.9mm)
	24AH-75-SS	Nozzle Adj. H.D. Short Stop	3/4"	(19.1mm)
	24AT-37-SS	Nozzle Adj. Tapered S.S.	3/8"	(9.5mm)
C	23-37	Nozzle Insulated	3/8"	(9.5mm)
	23-50	Nozzle Insulated	1/2"	(12.7mm)
	23-62	Nozzle Insulated	5/8"	(15.9mm)
	23-75	Nozzle Insulated	3/4"	(19.1mm)
	23H-50	Nozzle Insul. Heavy-Duty	1/2"	(12.7mm)
	23H-62	Nozzle Insul. Heavy-Duty	5/8"	(15.9mm)
	23H-75	Nozzle Insul. Heavy-Duty	3/4"	(19.1mm)
	23T-37	Nozzle Insulated Tapered	3/8"	(9.5mm)
D	23-37-F	Nozzle Insulated Flush	3/8"	(9.5mm)
	23-50-F	Nozzle Insulated Flush	1/2"	(12.7mm)
	23-62-F	Nozzle Insulated Flush	5/8"	(15.9mm)
	23-75-F	Nozzle Insulated Flush	3/4"	(19.1mm)
	23T-37-F	Nozzle Insul. Tapered Flush	3/8"	(9.5mm)
E	24CT-37-S	Nozzle Coarse Thread	3/8"	(9.5mm)
	24CT-50-S	Nozzle Coarse Thread	1/2"	(12.7mm)
	24CT-62-S+	Nozzle Coarse Thread	5/8"	(15.9mm)
	24CT-75-S+	Nozzle Coarse Thread	3/4"	(19.1mm)

2. INSULATORS

- A 34A Insulator for Adjustable Nozzles
- B 34CT Insulator for Coarse Threaded Nozzles

3. CONTACT TIPS

I.D.

A	14-23	Contact Tip	.023	(0.6mm)	.028
	14-30	Contact Tip	.030	(0.8mm)	.037
	14-35	Contact Tip	.035	(0.9mm)	.043
	14-40	Contact Tip	.040	(1.0mm)	.048
	14-45	Contact Tip	.045	(1.2mm)	.055
	14-52	Contact Tip	.052	(1.3mm)	.063
	14-116	Contact Tip	1/16"	(1.6mm)	.073
	14-564	Contact Tip	5/64"	(2.0mm)	.093
	14A-364	Contact Tip	3/64"Al.	(1.2mm)	.059
	14A-116	Contact Tip	1/16"Al	(1.6mm)	.081

3. CONTACT TIPS (CONT.)

I.D

+ Available with spatter resis

B	14T-23	Contact Tip Tapered	.023	(0.6mm)	.028
	14T-30	Contact Tip Tapered	.030	(0.8mm)	.037
	14T-35	Contact Tip Tapered	.035	(0.9mm)	.043
	14T-40	Contact Tip Tapered	.040	(1.0mm)	.048
	14T-45	Contact Tip Tapered	.045	(1.2mm)	.055
	14T-52	Contact Tip Tapered	.052	(1.3mm)	.063
	14T-116	Contact Tip Tapered	1/16"	(1.6mm)	.073
	14H-30				
C	14H-35*	Contact Tip H.D.	.035	(0.9mm)	.043
	14H-40*	Contact Tip H.D.	.040	(1.0mm)	.048
	14H-45*	Contact Tip H.D.	.045	(1.2mm)	.055
	14H-52*	Contact Tip H.D.	.052	(1.3mm)	.063
	14H-116*	Contact Tip H.D.	1/16"	(1.6mm)	.073
	14H-564*	Contact Tip H.D.	5/64"	(2.0mm)	.093
	14H-332*	Contact Tip H.D.	3/32"	(2.4mm)	.110
	14AH-364	Contact Tip H.D.	364"Al.	(1.2mm)	.059
	14AH-116	Contact Tip H.D.	1/16"Al.	(1.6mm)	.078

4. GAS DIFFUSERS

- 54A Gas Diffuser

5. CONDUCTOR TUBES

- A 74A Conductor Tube Insulation
- B 63-45 Conductor Tube 45° For #3
- 63-60 Conductor Tube 60° For #3
- 63-80 Conductor Tube 80° For #3
- 63-180 Conductor Tube 180° For #3
- C 64A-45 Conductor Tube 45° For #4
- 64A-60 Conductor Tube 60° For #4
- 64A-80 Conductor Tube 80° For #4
- 64A-180 Conductor Tube 180° For #4
- D 64N Nipple
- 63J-45 Jacketed Goose Neck

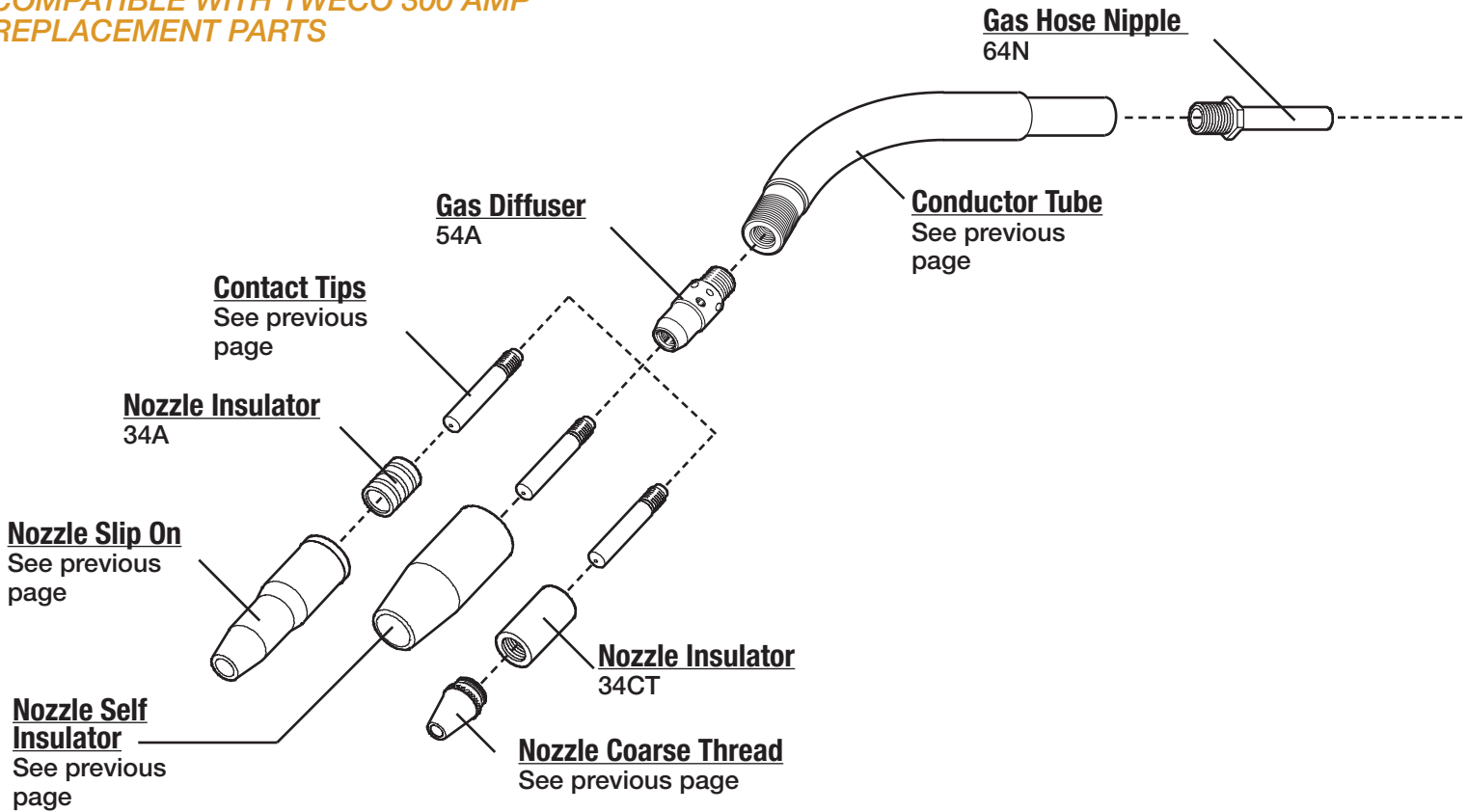
MIG

238

T-300 MIG GUN®

COMPATIBLE WITH TWECO 300 AMP REPLACEMENT PARTS

MIG



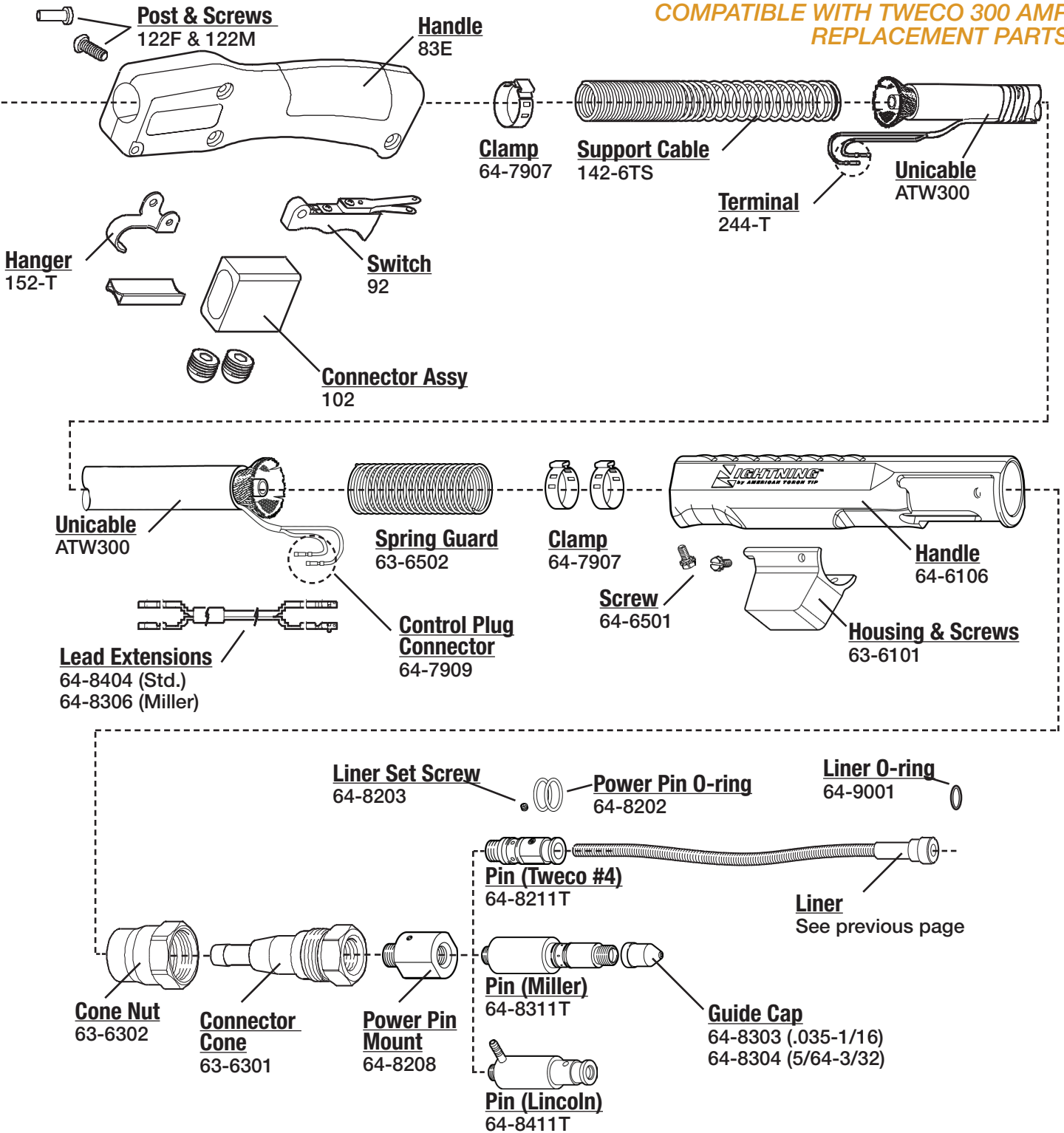
RATING:
 300A C02 150A MIXED GAS
 @ 100% DUTY CYCLE
 .023" 0.6mm TO .045" 1.2mm WIRE

LINERS

I.D. O.D.

44-116-15	Liner Assy.	15'	1/16"	.076	.188
44-116-25	Liner Assy.	25'	1/16"	.076	.188
44-3545-15	Liner Assy.	15'	.035-.045	.066	.188
44-3545-25	Liner Assy.	25'	.035-.045	.066	.188
44-564-15	Liner Assy.	15'	5/64"	.098	.188
44-564-25	Liner Assy.	25'	5/64"	.098	.188
44N-116-15	Liner Assy. Nylon	15'	1/16"	.100	.185
44N-3545-15	Liner Assy. Nylon	15'	.035-.045	.066	.188
44TF-116-15	Liner Assy. Teflon	15'	1/16"	.106	.185

COMPATIBLE WITH TWECO 300 AMP REPLACEMENT PARTS



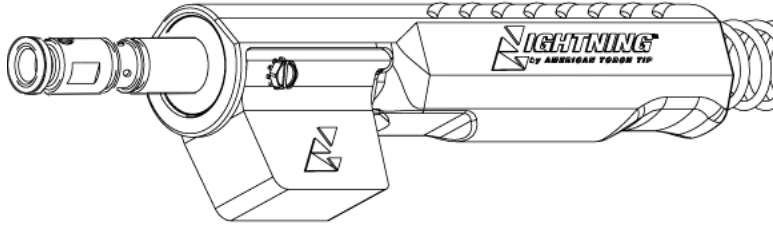
MIG

240

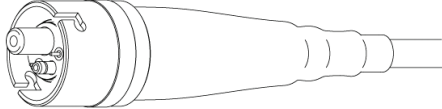
T-300 MIG GUN®

COMPATIBLE WITH TWECO 300 AMP

Tweco #4
64-8201

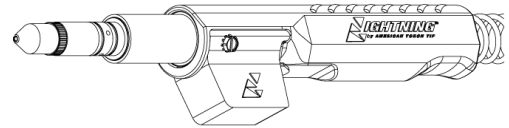


Bernard
64-8501

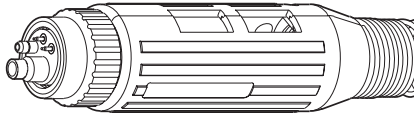


Miller

64-8301T (.035 - 1/16)
64-8302T (5/64 - 3/32)

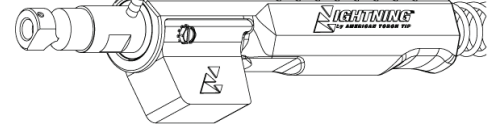


Euro
64-8100



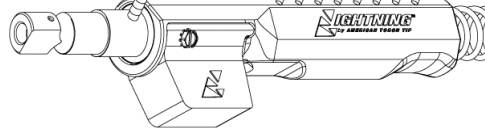
Panasonic

64-8702



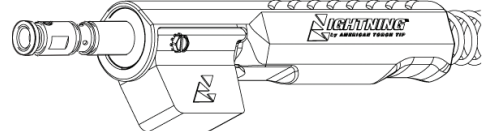
Hitachi

64-8422



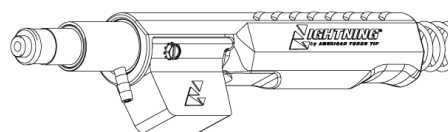
Thermal Arc

64-8901



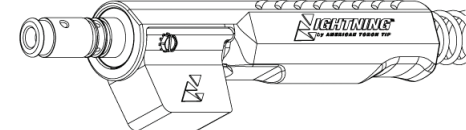
Lincoln

64-8401



Tweco #5

64-8204



MIG

COMPATIBLE WITH TWECO 400 AMP

1. NOZZLES

I.D.

A	24A-50	Nozzle Adjustable	1/2"	(12.7mm)
	24A-62	Nozzle Adjustable	5/8"	(15.9mm)
	24A-75	Nozzle Adjustable	3/4"	(19.1mm)
	24AH-50	Nozzle Adj. Heavy-Duty	1/2"	(12.7mm)
	24AH-62	Nozzle Adj. Heavy-Duty	5/8"	(15.9mm)
	24AH-75	Nozzle Adj. Heavy-Duty	3/4"	(19.1mm)
	24A-37-SS	Nozzle Adj. Short Stop	3/8"	(9.5mm)
	24A-50-SS	Nozzle Adj. Short Stop	1/2"	(12.7mm)
	24A-62-SS	Nozzle Adj. Short Stop	5/8"	(15.9mm)
	24A-75-SS	Nozzle Adj. Short Stop	3/4"	(19.1mm)
B	24AH-50-SS	Nozzle Adj. H.D. Short Stop	1/2"	(12.7mm)
	24AH-62-SS	Nozzle Adj. H.D. Short Stop	5/8"	(15.9mm)
	24AH-75-SS	Nozzle Adj. H.D. Short Stop	3/4"	(19.1mm)
	24AT-37-SS	Nozzle Adj. Tapered S.S.	3/8"	(9.5mm)
C	23-37	Nozzle Insulated	3/8"	(9.5mm)
	23-50	Nozzle Insulated	1/2"	(12.7mm)
	23-62	Nozzle Insulated	5/8"	(15.9mm)
	23-75	Nozzle Insulated	3/4"	(19.1mm)
	23H-50	Nozzle Insul. Heavy-Duty	1/2"	(12.7mm)
	23H-62	Nozzle Insul. Heavy-Duty	5/8"	(15.9mm)
	23H-75	Nozzle Insul. Heavy-Duty	3/4"	(19.1mm)
	23T-37	Nozzle Insulated Tapered	3/8"	(9.5mm)
D	23-37-F	Nozzle Insulated Flush	3/8"	(9.5mm)
	23-50-F	Nozzle Insulated Flush	1/2"	(12.7mm)
	23-62-F	Nozzle Insulated Flush	5/8"	(15.9mm)
	23-75-F	Nozzle Insulated Flush	3/4"	(19.1mm)
	23T-37-F	Nozzle Insul. Tapered Flush	3/8"	(9.5mm)
E	24CT-37-S	Nozzle Coarse Thread	3/8"	(9.5mm)
	24CT-50-S	Nozzle Coarse Thread	1/2"	(12.7mm)
	24CT-62-S+	Nozzle Coarse Thread	5/8"	(15.9mm)
	24CT-75-S+	Nozzle Coarse Thread	3/4"	(19.1mm)

2. INSULATORS

- A 34A Insulator for Adjustable Nozzles
- B 34CT Insulator for Coarse Threaded Nozzles

3. CONTACT TIPS

I.D.

A	14-23	Contact Tip	.023	(0.6mm)	.028
	14-30	Contact Tip	.030	(0.8mm)	.037
	14-35	Contact Tip	.035	(0.9mm)	.043
	14-40	Contact Tip	.040	(1.0mm)	.048
	14-45	Contact Tip	.045	(1.2mm)	.055
	14-52	Contact Tip	.052	(1.3mm)	.063
	14-116	Contact Tip	1/16"	(1.6mm)	.073
	14-564	Contact Tip	5/64"	(2.0mm)	.093
	14A-364	Contact Tip	3/64"Al.	(1.2mm)	.059
	14A-116	Contact Tip	1/16"Al	(1.6mm)	.081

3. CONTACT TIPS (CONT.)

I.D.

+ Available with spatter resis

B	14T-23	Contact Tip Tapered	.023	(0.6mm)	.028
	14T-30	Contact Tip Tapered	.030	(0.8mm)	.037
	14T-35	Contact Tip Tapered	.035	(0.9mm)	.043
	14T-40	Contact Tip Tapered	.040	(1.0mm)	.048
	14T-45	Contact Tip Tapered	.045	(1.2mm)	.055
	14T-52	Contact Tip Tapered	.052	(1.3mm)	.063
	14T-116	Contact Tip Tapered	1/16"	(1.6mm)	.073
	14H-30				
C	14H-35*	Contact Tip H.D.	.035	(0.9mm)	.043
	14H-40*	Contact Tip H.D.	.040	(1.0mm)	.048
	14H-45*	Contact Tip H.D.	.045	(1.2mm)	.055
	14H-52*	Contact Tip H.D.	.052	(1.3mm)	.063
	14H-116*	Contact Tip H.D.	1/16"	(1.6mm)	.073
	14H-564*	Contact Tip H.D.	5/64"	(2.0mm)	.093
	14H-332*	Contact Tip H.D.	3/32"	(2.4mm)	.110
	14AH-364	Contact Tip H.D.	3/64"Al.	(1.2mm)	.059
	14AH-116	Contact Tip H.D.	1/16"Al.	(1.6mm)	.078

4. GAS DIFFUSERS

- 54A Gas Diffuser

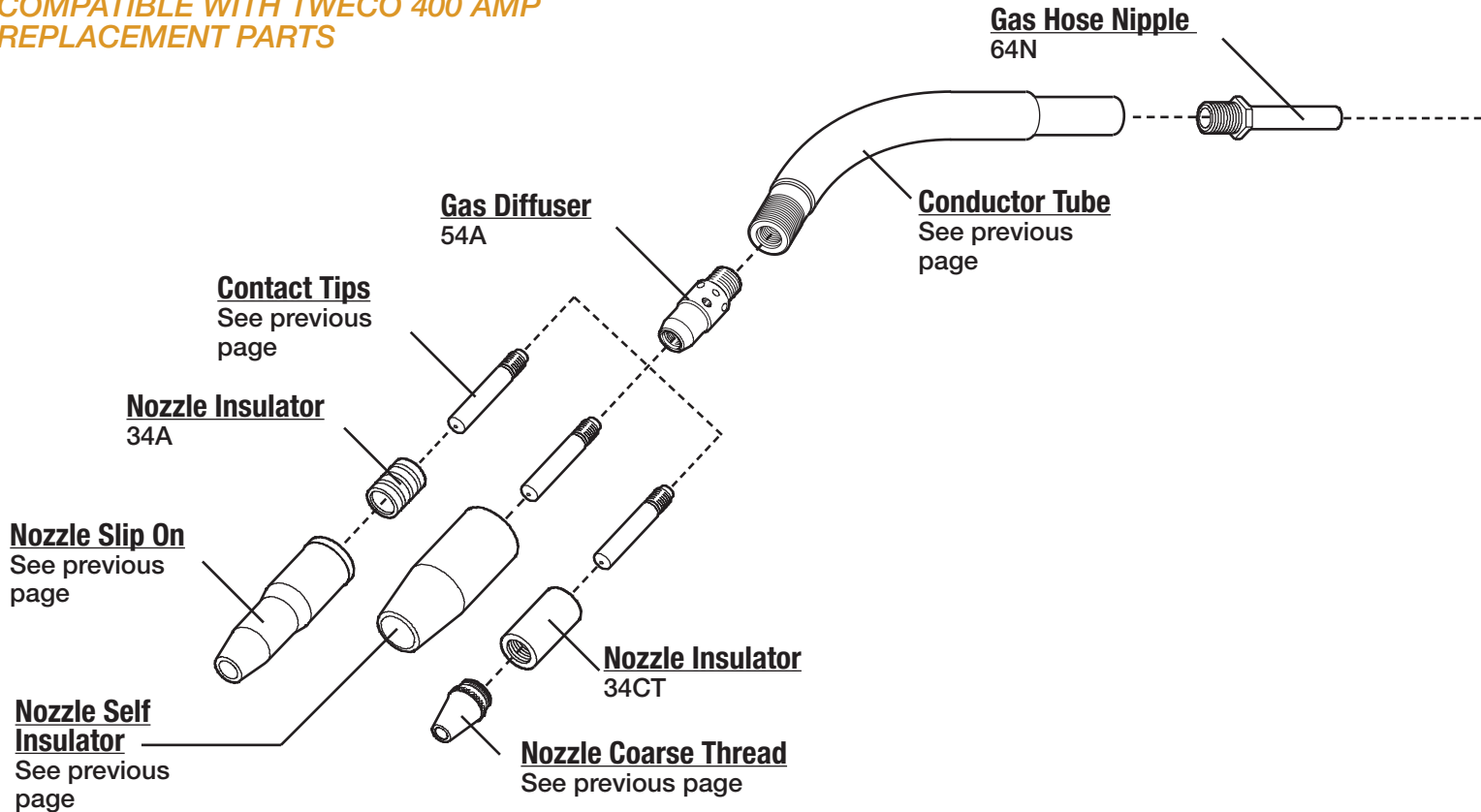
5. CONDUCTOR TUBES

- A 74A Conductor Tube Insulation
- B 63-45 Conductor Tube 45° For #3
- 63-60 Conductor Tube 60° For #3
- 63-80 Conductor Tube 80° For #3
- 63-180 Conductor Tube 180° For #3
- C 64A-45 Conductor Tube 45° For #4
- 64A-60 Conductor Tube 60° For #4
- 64A-80 Conductor Tube 80° For #4
- 64A-180 Conductor Tube 180° For #4
- D 64N Nipple
- 63J-45 Jacketed Goose Neck

MIG

COMPATIBLE WITH TWECO 400 AMP REPLACEMENT PARTS

MIG



RATING:
400A C02 150A MIXED GAS
@ 100% DUTY CYCLE
.023" 0.6mm TO .045" 1.2mm WIRE

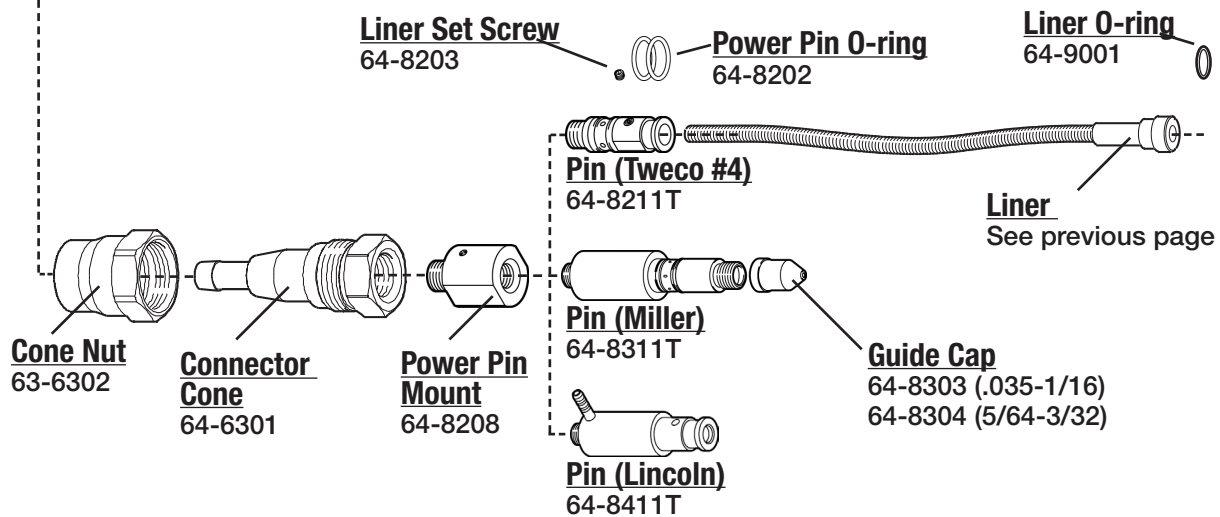
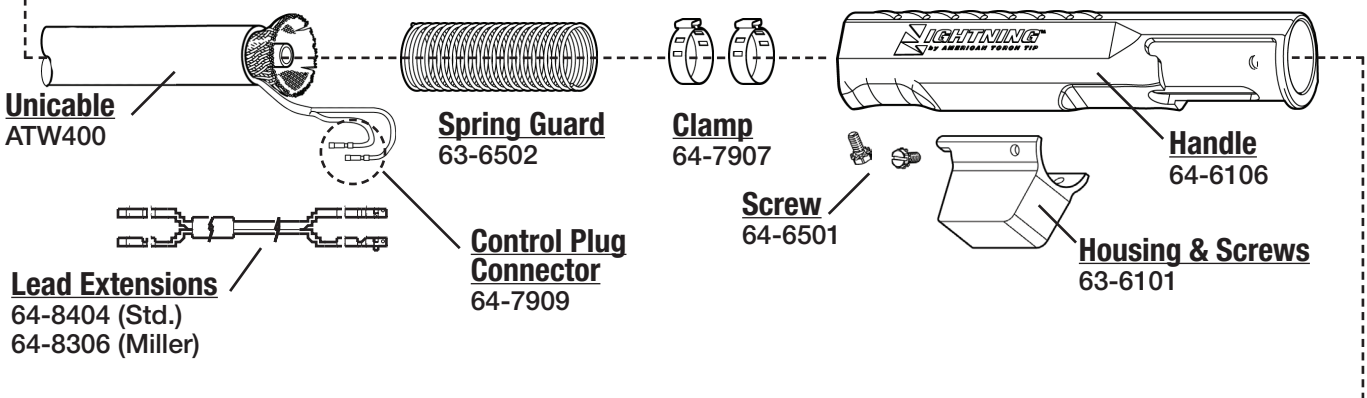
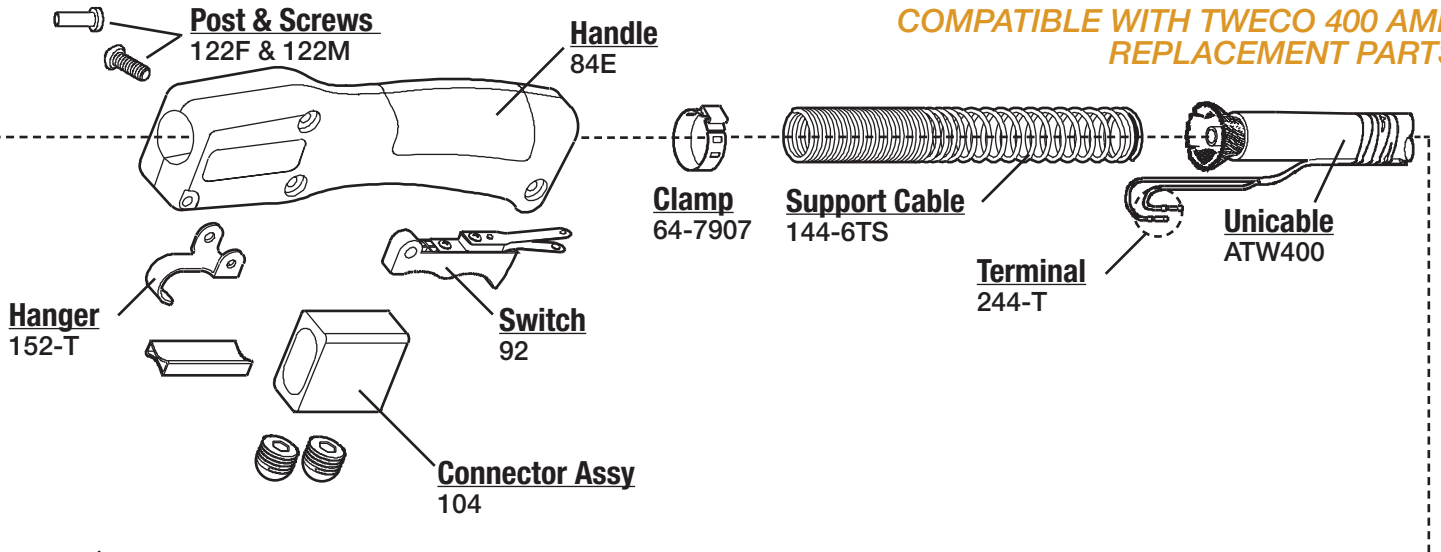
LINERS

I.D. O.D.

			I.D.	O.D.
44-116-15	Liner Assy.	15'	1/16"	.076 .188
44-116-25	Liner Assy.	25'	1/16"	.076 .188
44-3545-15	Liner Assy.	15'	.035-.045	.066 .188
44-3545-25	Liner Assy.	25'	.035-.045	.066 .188
44-564-15	Liner Assy.	15'	5/64"	.098 .188
44-564-25	Liner Assy.	25'	5/64"	.098 .188
44N-116-15	Liner Assy. Nylon	15'	1/16"	.100 .185
44N-3545-15	Liner Assy. Nylon	15'	.035-.045	.066 .188
44TF-116-15	Liner Assy. Teflon	15'	1/16"	.106 .185

COMPATIBLE WITH TWECO 400 AMP REPLACEMENT PARTS

MIG

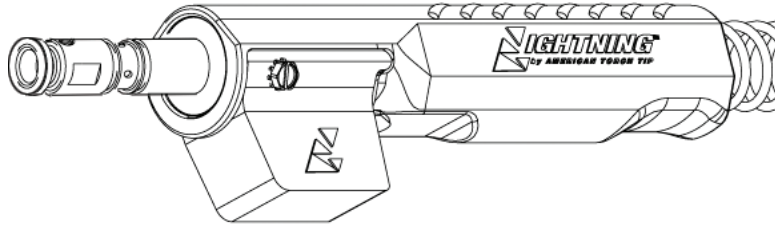


244

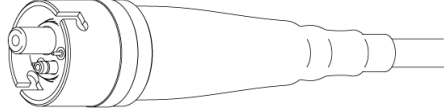
T-400 MIG GUN®

COMPATIBLE WITH TWECO 400 AMP

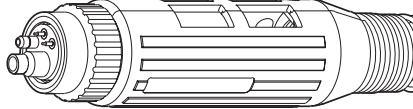
Tweco #4
64-8201



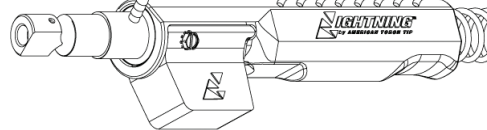
Bernard
64-8501



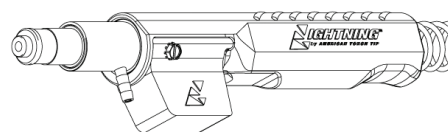
Euro
64-8100



Hitachi
64-8422

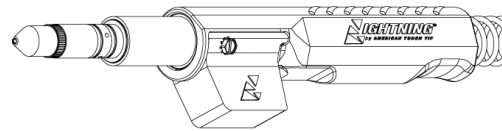


Lincoln
64-8401



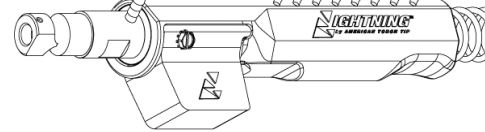
Miller

64-8301T (.035 - 1/16)
64-8302T (5/64 - 3/32)



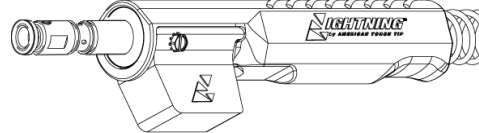
Panasonic

64-8702



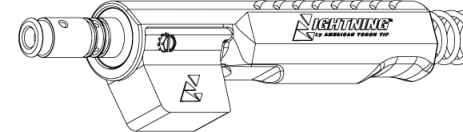
Thermal Arc

64-8901



Tweco #5

64-8204



MIG

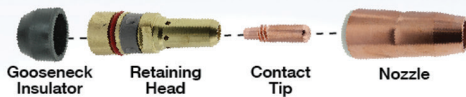
SEMI-AUTOMATIC GUN CONVERSION KITS

AVAILABLE FOR BERNARD, LINCOLN & TWECO WITH A SIMPLE CHANGE-OUT OF PARTS

LIGHTNING® RETAINING HEADS

Part #	Description
65-3103 *	Retaining Head for Extra Heavy Duty
63-3103	Retaining Head T/L
63-3103-2	Retaining Head T/L
63-3116	Thread-on Retaining Head HD
63-3402	Retaining Ring
63-3301	O-Ring Orange O16
63-3118-T	Diffuser, Bernard Threaded

* This retaining head must be used with #65-11XX contact tip. See **Contact Tips Selector Chart** on p.2



BENEFITS

- ✓ Greater surface area contact between tip and head ensures better heat dissipation and conductivity.
- ✓ Tapered tip design creates a more secure seat, eliminating loose tips.
- ✓ Cooler tip temperature reduces wear and extends tip life.
- ✓ Dual-head thread design allows for 180 degree rotation of tip to new wear point for extended tip life.
- ✓ Brass insert prevents wear and extends life.
- ✓ Superior surface finish minimizes spatter adhesion.
- ✓ Durable hard drawn copper or brass withstands abuse.

Lightning® Contact Tips Selector Chart

Contact Tips Part #	Heavy Duty Tip - Size
63-1130	Contact Tip HD .030 pk 10
63-1135	Contact Tip HD .035 pk 10
63-1135-40	Contact Tip HD .035/.040 I.D. pk 10
63-1138	Contact Tip .030 Pk 10 Robotic
63-1140	Contact Tip HD .040 pk 10
63-1145	Contact Tip HD .045 pk 10
63-1147	Contact Tip HD 3/64" al pk 10
63-1152	Contact Tip HD .052 pk 10
63-1162	Contact Tip HD 1/16" pk 10
63-1168	Contact Tip HD .068 / .078 I.D. pk 10
63-1172	Contact Tip HD .072 pk 10 SPECIAL
63-1178	Contact Tip HD 5/64" pk 10
63-1193	Contact Tip HD 3/32" pk 10
Part #	Tapered Tip
63-12XX	XX = last 2 digits indicate wire size
Part #	CZ Tip (Chromium Zirconium)
63-13XX	XX = last 2 digits indicate wire size
Part #	Extra Heavy Duty Tip
65-11XX *	XX = last 2 digits indicate wire size

* This contact tip must be used with #65-3103 retaining head. See **Lightning Retaining Heads Chart** on p.1

BERNARD® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Q-Gun Series	63-6105	63-3118	63-11XX †	6X-XXXX **
EZ Feed Series	63-6105	63-3118	63-11XX †	6X-XXXX **
T-Series †	63-6202-HD	63-3103	63-11XX †	6X-XXXX **
Roughneck C Miller	63-6105	63-3118	63-11XX †	6X-XXXX **

LINCOLN® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Magnum 300	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum 400	63-6105	63-3103	63-11XX †	6X-XXXX **
Magnum Pro	63-6105	63-3119	63-11XX †	6X-XXXX **

TWECO® MIG TORCHES

Model	Gooseneck Insulator	Retaining Head	Contact Tip	Nozzle
Tweco #3	63-6105	63-3103	63-11XX †	6X-XXXX **
Tweco #4	63-6105	63-3103	63-11XX †	6X-XXXX **
SprayMaster 450	63-6105	63-3103	63-11XX †	6X-XXXX **
WeldSkill 400	63-6105	63-3103	63-11XX †	6X-XXXX **

Use the Lightning® contact tip system (gooseneck insulator, retaining head, contact tip and nozzle) with Bernard® Lincoln® or Tweco® MIG guns. Use 63-3118 Retaining Head on goosenecks with external 9/16"-18 thread, such as Q-gun and EZ Feed guns with 1/4" NPT thread.

† T-Series retaining head can only be used on Bernard T-Series (Tregasskiss) guns.

‡ 63-11XX (XX = your wire size)

** 6X-XXXX (see Nozzle Selector Chart on next page)

Lightning® Nozzle Selector Chart (Air-Cooled Slip-On)

Standard Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
63-2138	3/8" Copper	.938" / 2.75"	Flush
64-2950	1/2" Brass	.938" / 2.63"	1/8" Stickout
63-2950B	1/2" Brass	.938" / 2.88"	1/8" Recess
63-2150	1/2" Copper	.938" / 2.88"	1/8" Recess
63-2762	5/8" Copper	.938" / 2.51"	1/4" Stickout
63-2662	5/8" Copper	.938" / 2.63"	1/8" Stickout
63-2162	5/8" Copper	.938" / 2.88"	1/8" Recess
63-2175	3/4" Copper	.938" / 2.88"	1/8" Recess
Heavy Duty Nozzle Part #	Bore/Material	O.D. / Length	Tip Location
65-2550	1/2" Copper	1.062" / 2.88"	1/8" Recess
65-2662	5/8" Copper	1.062" / 2.63"	1/8" Stickout
65-2362	5/8" Brass	1.062" / 2.63"	1/8" Stickout
64-2962	5/8" Copper	1.062" / 2.75"	Flush
65-2662	5/8" Brass	1.062" / 2.75"	Flush
63-2362	5/8" Brass	1.062" / 2.88"	1/8" Recess
65-2562	5/8" Copper	1.062" / 2.88"	1/8" Recess
64-2562	5/8" Copper	1.062" / 3.00"	1/4" Recess
65-2575	3/4" Copper	1.062" / 2.88"	1/8" Recess
65-2375	3/4" Brass	1.062" / 2.88"	1/8" Recess
64-2575	3/4" Copper	1.062" / 3.00"	1/4" Recess
64-2387	7/8" Brass	1.062" / 3.00"	1/4" Recess
65-2562-T	5/8" Copper	1.062" / 2.78"	1/8" Recess

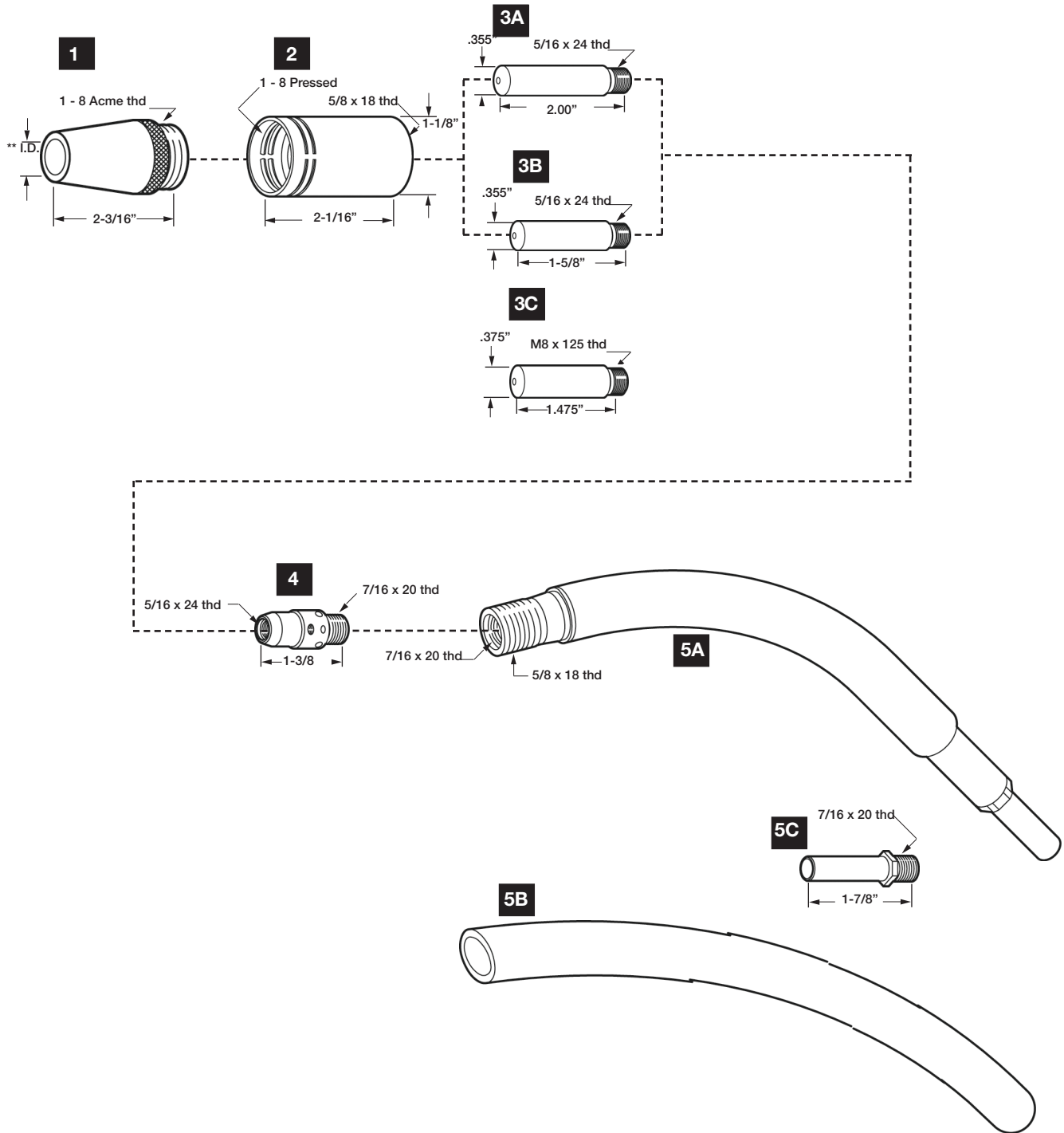
MIG

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TWECO®

5-6 COMPATIBLE WITH TWECO 500 AMP CONSUMABLES

MIG



5-6 COMPATIBLE WITH TWECO 500 AMP CONSUMABLES

1. NOZZLES

I.D.

25CT-50	Nozzle Coarse Thread	1/2"	(12.7mm)
25CT-62	Nozzle Coarse Thread	5/8"	(15.9mm)
25CT-75	Nozzle Coarse Thread	3/4"	(19.1mm)

2. INSULATORS

35CT	Nozzle Insulator Coarse Thread
------	--------------------------------

3. CONTACT TIPS

I.D.

A	15AH-364	Contact Tip H.D.	3/64" Al.	(1.2mm)	.059
	15AH-116	Contact Tip H.D.	1/16" Al.	(1.6mm)	.081
	15H-35	Contact Tip H.D.	.035	(0.9mm)	.043
	15H-45	Contact Tip H.D.	.045	(1.2mm)	.055
	15H-52	Contact Tip H.D.	.052	(1.3mm)	.063
	15H-116	Contact Tip H.D.	1/16"	(1.6mm)	.073
	15H-564	Contact Tip H.D.	5/64"	(2.0mm)	.093
	15H-332	Contact Tip H.D.	3/32"	(2.4mm)	.110
	15H-764	Contact Tip H.D.	7/64"	(2.8mm)	.120
	15H-18	Contact Tip H.D.	1/8"	(3.2mm)	.144
B	15AHFC-364	Con. Tip H.D. F-C	3/64" Al.	(1.2mm)	.059
	15AHFC-116	Con. Tip H.D. F-C	1/16" Al.	(1.6mm)	.081
	15HFC-35	Con. Tip H.D. F-C	.035	(0.9mm)	.043
	15HFC-45	Con. Tip H.D. F-C	.045	(1.2mm)	.055
	15HFC-52	Con. Tip H.D. F-C	.052	(1.3mm)	.063
	15HFC-116	Con. Tip H.D. F-C	.116	(1.6mm)	.073
	15HFC-564	Con. Tip H.D. F-C	5/64"	(2.0mm)	.093
	15HFC-332	Con. Tip H.D. F-C	3/32"	(2.4mm)	.110
	15HFC-764	Con. Tip H.D. F-C	7/64"	(2.8mm)	.120
	15HFC-18	Con. Tip H.D. F-C	1/8"	(3.2mm)	.144
C	16-116	Contact Tip	1/16"		
	16-18	Contact Tip	1/8"		
	16-332	Contact Tip	3/32"		
	16-564	Contact Tip	5/64"		
	16-764	Contact Tip	7/64"		
	16S-116	Contact Tip	1/16"		
	16S-18	Contact Tip	1/8"		
	16S-332	Contact Tip	3/32"		
	16S-35	Contact Tip	.035"		
	16S-45	Contact Tip	.045"		
	16S-52	Contact Tip	.052"		
	16S-564	Contact Tip	5/64"		
	16S-764	Contact Tip	7/64"		

4. GAS DIFFUSERS

55	Gas Diffuser - Use with 45N-116, 45-564 Liners
55H	Gas Diffuser - Use with 45H-332, 45H-764 Liners
55SW	Gas Diffuser - Use with 45-3545, 45-116 Liners

5. CONDUCTOR TUBES & EXTENSIONS

65-45	Conductor Tube 45° 5" radius bend
65-60	Conductor Tube 60° 5" radius bend
65-80	Conductor Tube 80° 5" radius bend
65-180	Conductor Tube 180° 5" radius bend
65-45-3R	Conductor Tube 45° 3" radius bend
65-60-3R	Conductor Tube 60° 3" radius bend
65-80-3R	Conductor Tube 80° 3" radius bend
65EX-45	Conductor Tube Extension 45°
65EX-60	Conductor Tube Extension 60°
65J-45	Conductor Tube 45° Jacketed
65J-60	Conductor Tube 60° Jacketed

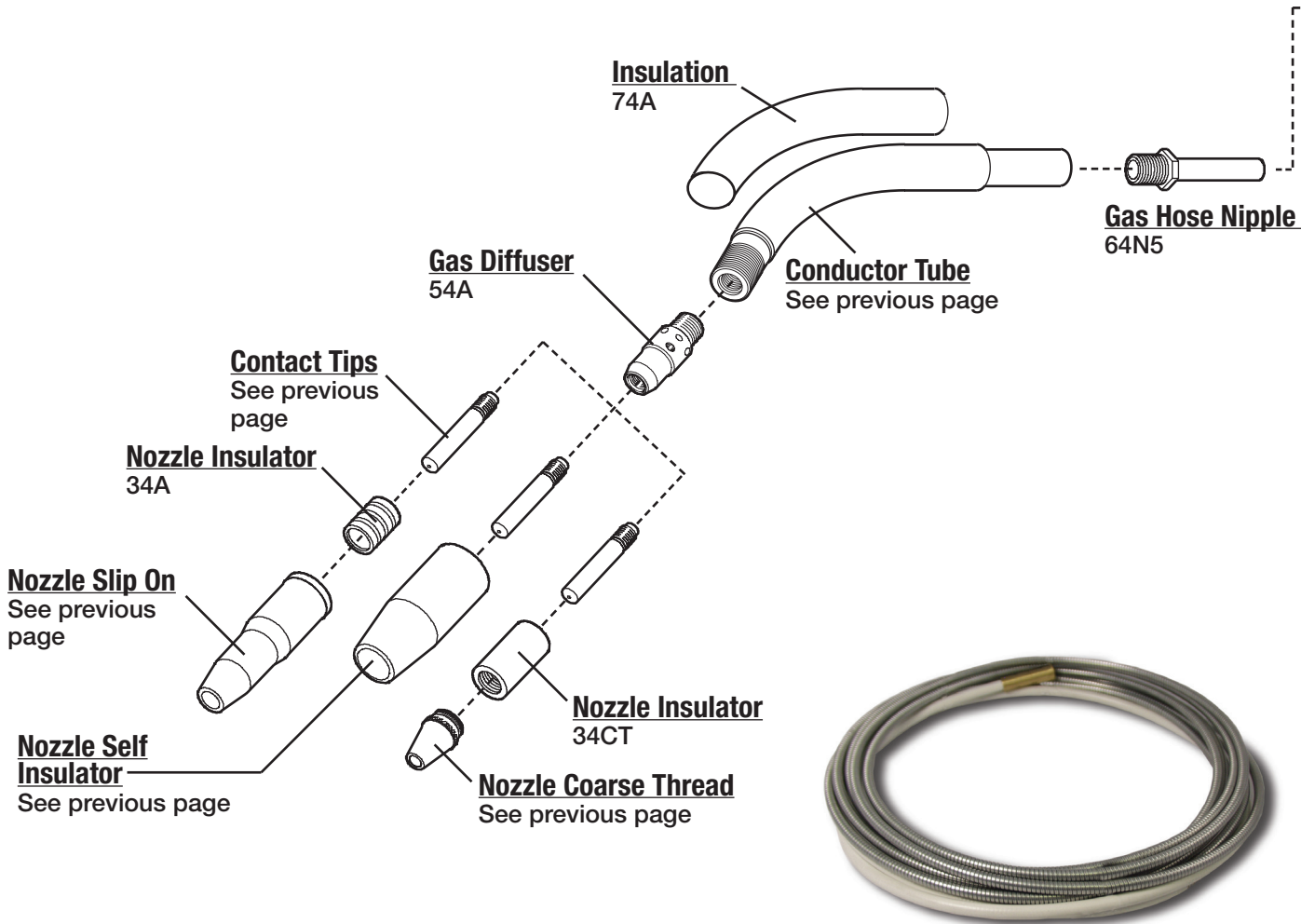
MIG

248

T-500 MIG GUN®

T-500 COMPATIBLE WITH TWECO 500AMP

MIG



RATING:
 500A C02 300A MIXED GAS
 @ 100% DUTY CYCLE
 130" 0.8mm TO 5/64" 2.0mm WIRE

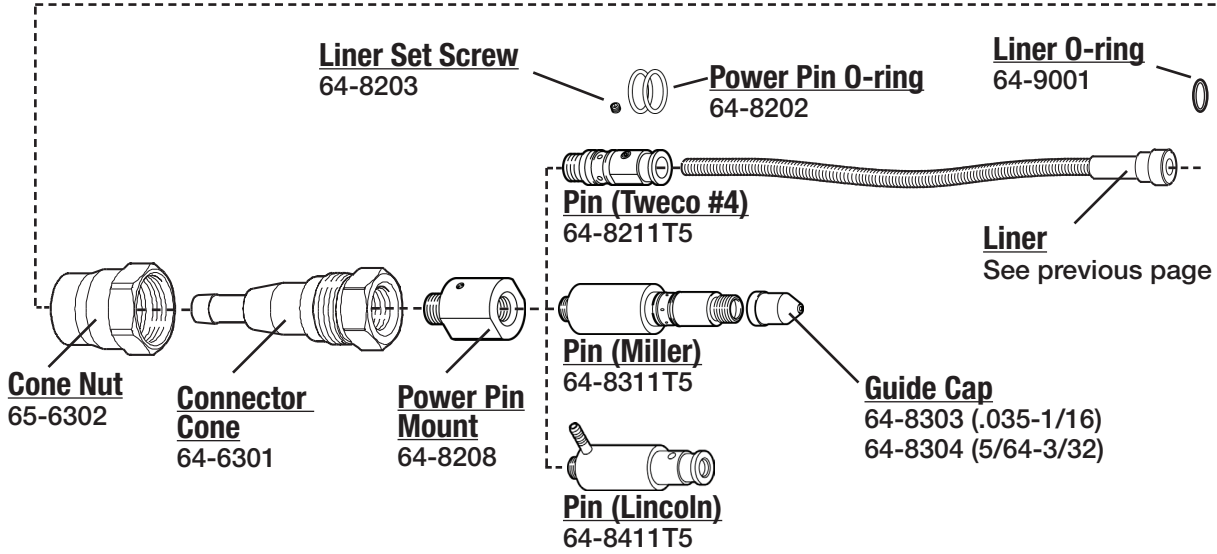
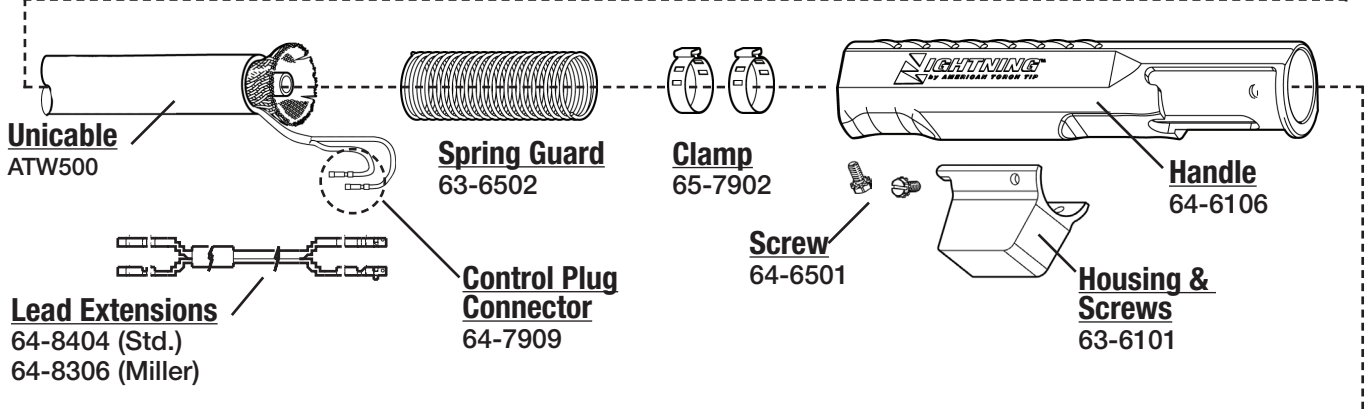
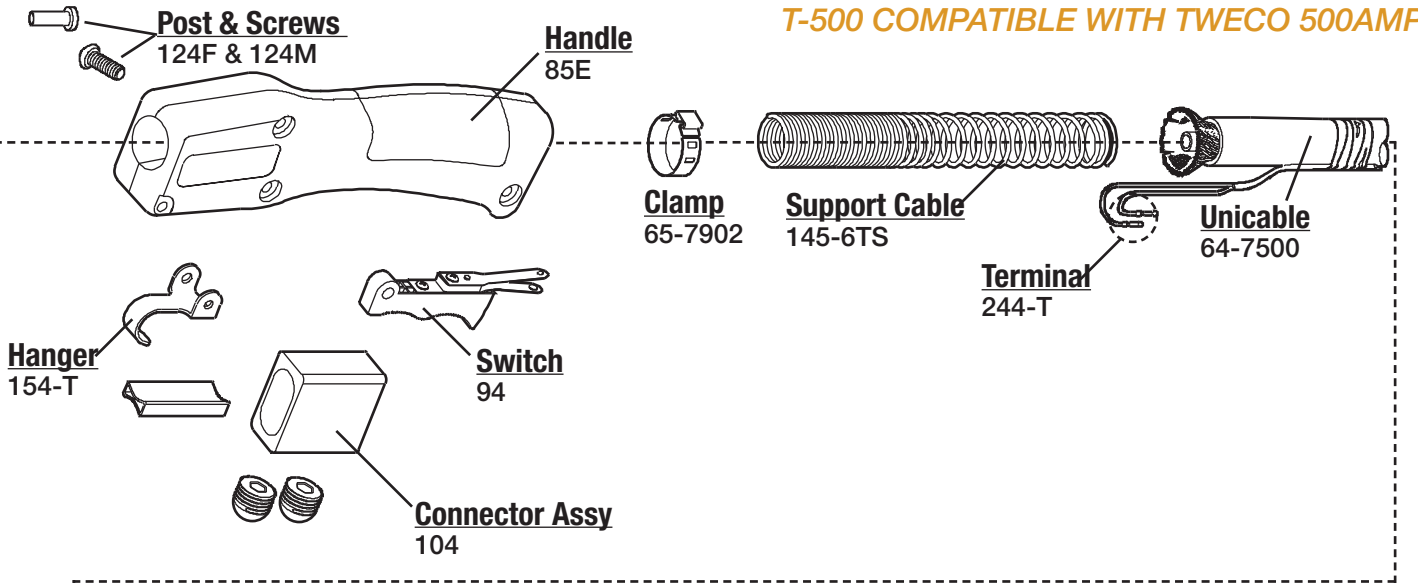
6. LINERS

I.D. O.D.

Part Number	Description	Length	I.D.	O.D.
45-116-15	Liner Assy.	15'	1/16"	.076 .188
45-116-25	Liner Assy.	25'	1/16"	.076 .188
45-3545-15	Liner Assy.	15'	.035-.045	.066 .188
45-3545-25	Liner Assy.	25'	.035-.045	.066 .148
45-564-15	Liner Assy.	15'	5/64"	.098 .238
45-564-25	Liner Assy.	25'	5/64"	.098 .238
45H-332-15	Liner Assy.	15'	3/32"	.124 .268
45H-764-15	Liner Assy.	15'	7/64"	.130 .268
45N-116-15	Liner Assy.	15'	1/16"	.100 .185
45N-3545-15	Liner Assy.	15'	.035-.045	.066 .188
65-4725	Liner Assy.	25'		
65-4715	Liner Assy.	15'	5/64"-3/32"	

T-500 COMPATIBLE WITH TWECO 500AMP

MIG

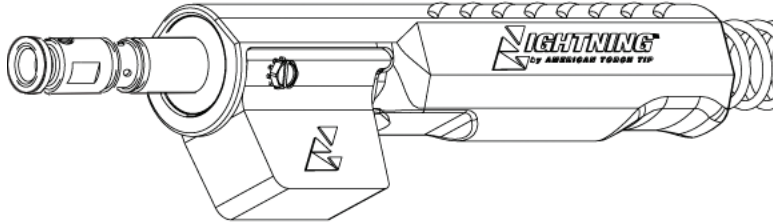


250

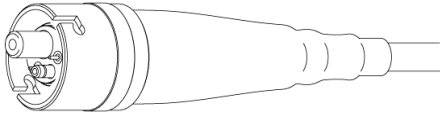
T-500 MIG GUN®

T-500 COMPATIBLE WITH TWECO 500AMP

Tweco #4
64-8201

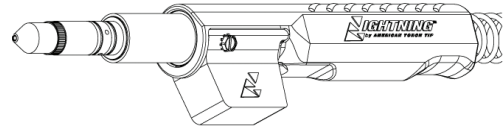


Bernard
64-8501

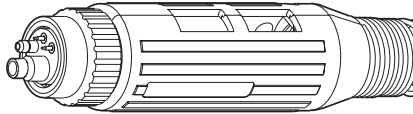


Miller

64-8301T (.035 - 1/16)
64-8302T (5/64 - 3/32)

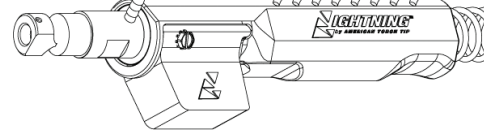


Euro
64-8100



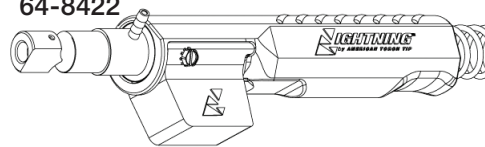
Panasonic

64-8702



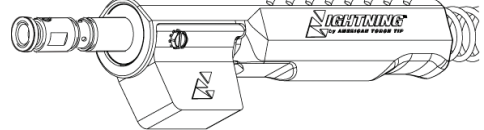
Hitachi

64-8422



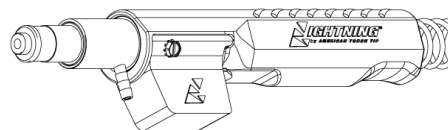
Thermal Arc

64-8901



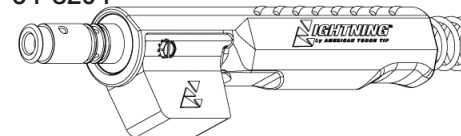
Lincoln

64-8401



Tweco #5

64-8204



MIG

MIG Welder Troubleshooting Guide



1. Poor Wire Feed

- Conduit liner clogged or kinked
- Incorrect liner size or contact tip
- Line cut too short and not seating properly in gas diffuser
- Drive rolls too tight resulting in scoring of welding wire
- Welding wire dirty, rusty and/or too much cast

2. Short Tip Life

- Drive rolls too tight resulting in scoring of the welding wire
- Welding wire dirty, rusty and/or too much cast
- Uncoated wire being used, increasing usage
- Wrong tip size
- Over torch rated duty cycle
- Loose contact tip and/or retaining head

3. Gun Overheating

- Loose retaining screw on quick connect block
- Insufficient gauge power cable and/or ground cable
- Loose connector cone and/or cone nut
- Gun being run beyond its amperage range
- Electrical malfunction in power source

4. Switch Malfunctioning

- Bad connection of leads to switch terminals
- Spatter built up between lever and switch housing
- Contacts dirty in switch
- Switch housing screws loose
- Broken or worn switch lead

5. Weld Porosity

- Spatter built up in nozzle blocking gas
- Leaks in gas hose or improper connection
- O-rings on power pin are cut or damaged
- Inner tube loose from connector cone
- Improper shielding gas or welding wire
- Rusty or poor quality welding wire
- Parent metal rusty or contaminated or high in Sulfur content
- Flow improperly set

6. Contact Tip Burn Back

- Improper voltage and/or wire feed speed
- Erratic wire feeding
- Improper tip stick-out
- Improper electrode stick-out
- Faulty ground

7. Erratic Arc

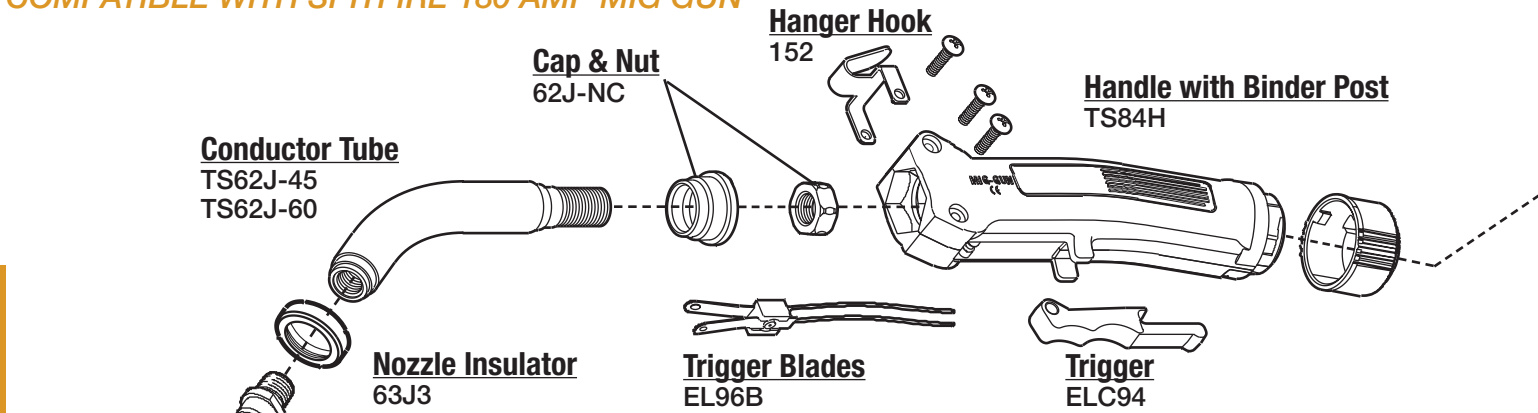
- Worn contact tip
- Buildup inside of line
- Wrong tip size
- Not enough bend in neck

8. Extreme Spatter

- Improper machine parameters
- Improper tip installation
- Improper tip shielding
- Contaminated wire or work piece

COMPATIBLE WITH SPITFIRE 180 AMP MIG GUN

MIG



SPITFIRE & SPRAY MASTER GUN PART NUMBERING SYSTEM

GUNS		AMPERAGE		LENGTH		ADAPTER		WIRE SIZE	
TS	- SpitFire	1	- 180	10	L	- Lincoln	35	- .035	
MS	- SprayMaster	2	- 250	15	M	- Miller	45	- .045	
		3	- 350	20	E	- Euro	364	- 3/64	
		4	- 450	25	X	- Tweco	52	- .052	
							116	- 1/16	
							564	- 5/64	
							332	- 3/32	

1. CONTACT TIPS

I.D.

Part No.	Description	Wire Size	I.D.	O.D.
11-23	Contact Tip	.023	(0.6mm)	.028
11-30	Contact Tip	.030	(0.8mm)	.037
11-35	Contact Tip	.035	(0.9mm)	.043
11-40	Contact Tip	.040	(1.0mm)	.048
11-45	Contact Tip	.045	(1.2mm)	.055

3. LINERS

I.D.

Part No.	Description	Length	Wire Size	I.D.	O.D.
42-3035-15	Liner Assy.	15'	.023-.035	.053	.15
42-3035-25	Liner Assy.	25'	.030-.035	.053	.156
42-4045-15	Liner Assy.	15'	.040-.045	.059	.156
42-4045-25	Liner Assy.	25'	.040-.045	.059	.156

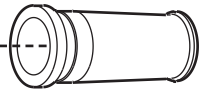
2. NOZZLES

I.D.

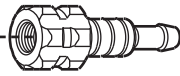
Part No.	Description	Length	I.D.	O.D.
21-37	Nozzle Insul. 1/8" Recess	3/8"	(09.5mm)	
21-50	Nozzle Insul. 1/8" Recess	1/2"	(12.7mm)	
21-62	Nozzle Insul. 1/8" Recess	5/8"	(15.9mm)	
21-37-F	Nozzle Insulated Flush	3/8"	(09.5mm)	
21-50-F	Nozzle Insulated Flush	1/2"	(12.7mm)	
21-62-F	Nozzle Insulated Flush	5/8"	(15.9mm)	
21T-37	Nozzle Tapered 1/8" Recess	3/8"	(09.5mm)	

COMPATIBLE WITH SPITFIRE 180 AMP MIG GUN

MIG



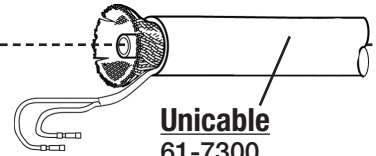
Cable Support Spring
TS25SR



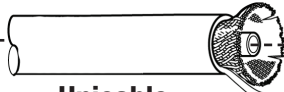
Barb Adaptor
TS100-2RK



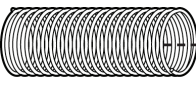
Ferrule
64-7916



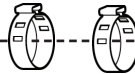
Unicable
61-7300



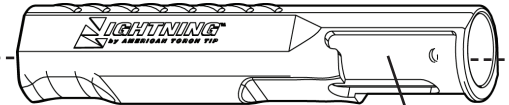
Unicable
61-7300



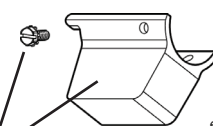
Spring Guard
63-6502



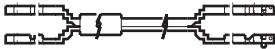
Clamp
62-7902



Housing & Screws
63-6101



Handle
64-6106



Lead Extensions
64-8404 (Std.)
64-8306 (Miller)

Control Plug Connector
64-7909

Screws
64-6501

Liner Set Screw
64-8203



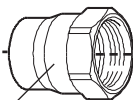
Power Pin O-ring
64-8202

Liner O-ring
64-9001

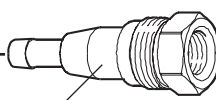


Pin (Tweco #4)
64-8211T

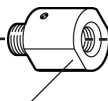
Liner
See Chart # 3



Cone Nut
63-6302



Connector Cone
62-6301



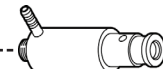
Power Pin Mount
64-8208



Pin (Miller)
64-8311T

Guide Cap

64-8303 (.035-1/16)
64-8304 (5/64-3/32)



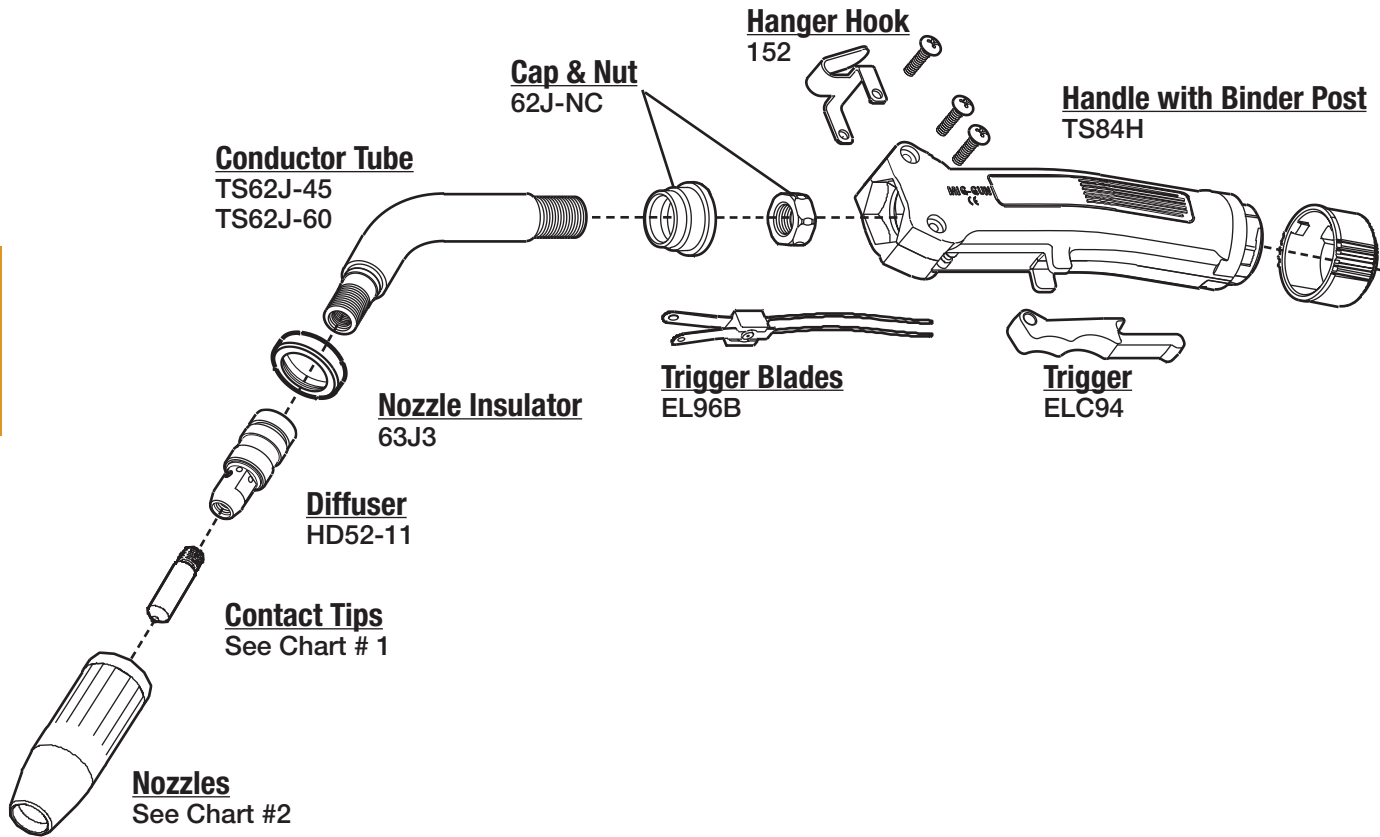
Pin (Lincoln)
64-8411T

254

TWECO®

COMPATIBLE WITH SPITFIRE 250 AMP MIG GUN

MIG



1. CONTACT TIPS

I.D.

11H-35	Contact Tip H.D.	.035	(0.9mm)	.043
11H-40	Contact Tip H.D.	.040	(1.0mm)	.048
11H-45	Contact Tip H.D.	.045	(1.2mm)	.055

2. NOZZLES

I.D.

HD22-37	Nozzle Std. 1/8" Recess	3/8" (09.5mm)
HD22-50	Nozzle Std. 1/8" Recess	1/2" (12.7mm)
HD22-62	Nozzle Std. 1/8" Recess	5/8" (15.9mm)
HD22-37F	Nozzle Flush	3/8" (09.5mm)
HD22-50F	Nozzle Flush	1/2" (12.7mm)
HD22-62F	Nozzle Flush	5/8" (15.9mm)

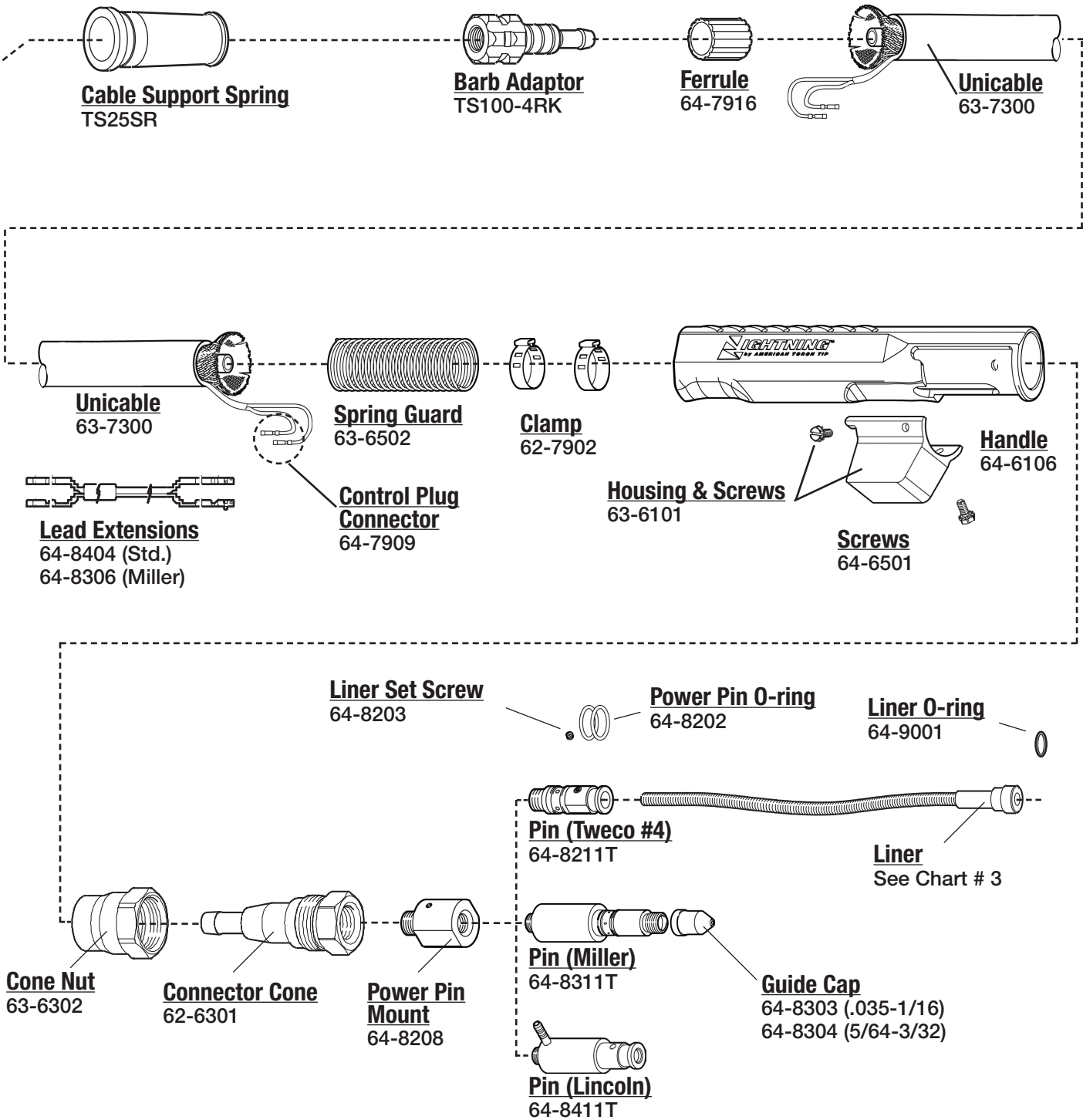
3. LINERS

I.D.

42-3035-15	Liner Assy.	15'	.023-.035	.053	.15
42-3035-25	Liner Assy.	25'	.030-.035	.053	.156
42-4045-15	Liner Assy.	15'	.040-.045	.059	.156
42-4045-25	Liner Assy.	25'	.040-.045	.059	.156

COMPATIBLE WITH SPITFIRE 250 AMP MIG GUN

MIG

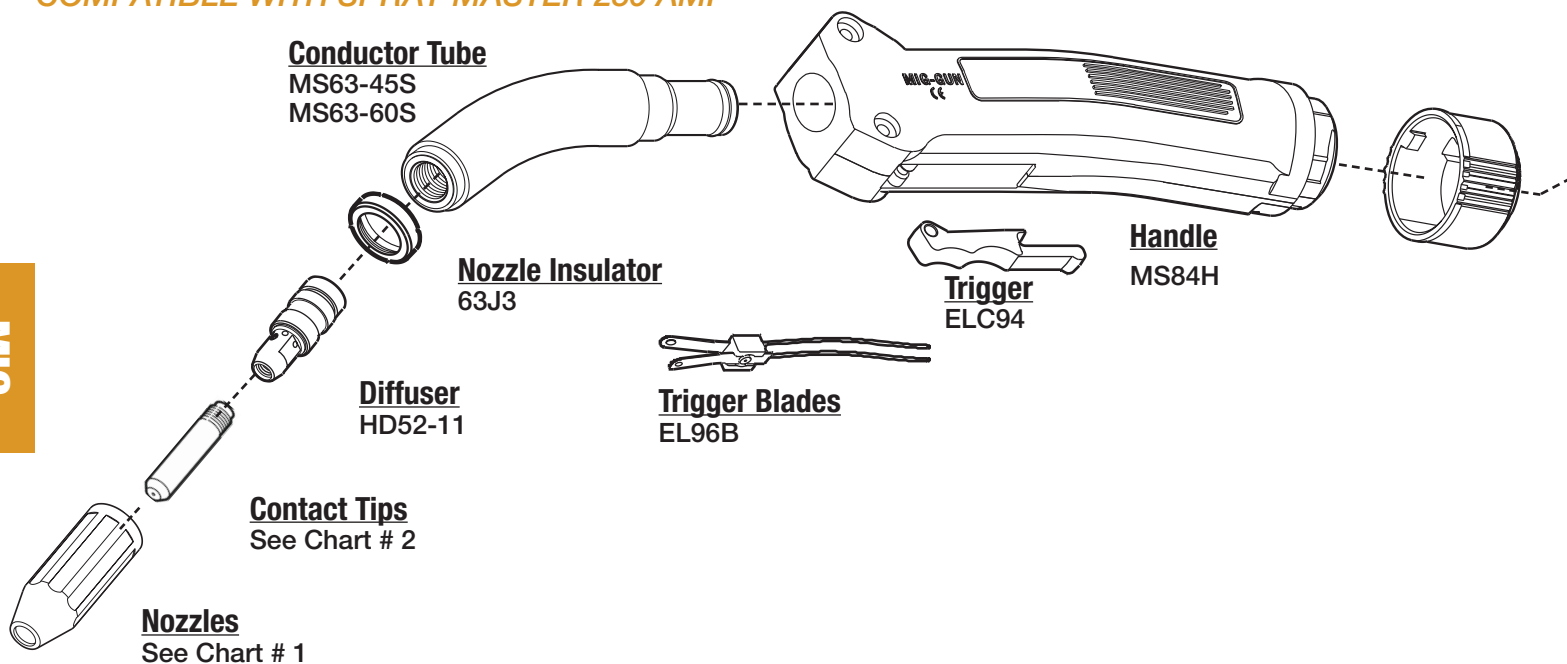


256

TWECO®

COMPATIBLE WITH SPRAY MASTER 250 AMP

MIG



1. NOZZLES

I.D.

A	HD22-37	Nozzle Std. 1/8" Recess	3/8" (09.5mm)
	HD22-50	Nozzle Std. 1/8" Recess	1/2" (12.7mm)
	HD22-62	Nozzle Std. 1/8" Recess	5/8" (15.9mm)
B	HD22-37F	Nozzle Flush	3/8" (09.5mm)
	HD22-50F	Nozzle Flush	1/2" (12.7mm)
	HD22-62F	Nozzle Flush	5/8" (15.9mm)

2. CONTACT TIP

I.D.

11-23	Contact Tip	.023	(0.6mm)	.028
11H-30	Contact Tip	.030	(0.8mm)	.038
11H-35	Contact Tip	.035	(0.9mm)	.048
11H-40	Contact Tip	.040	(1.0mm)	.038
11H-45	Contact Tip	.045	(1.2mm)	.055
11H-364	Contact Tip	3/64"	(1.2mm)AL	.059

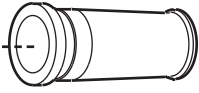
3. LINERS

I.D.

42-116-15	Liner Assy.	15'	1/16"	.076	.188
42-116-25	Liner Assy.	25'	1/16"	.076	.188
42-3545-15	Liner Assy.	15'	.035-.045	.066	.188
42-3545-25	Liner Assy.	25'	.035-.045	.066	.188

COMPATIBLE WITH SPRAY MASTER 250 AMP

MIG



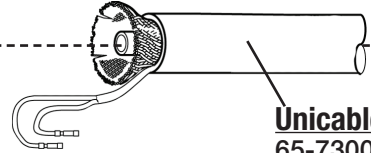
Cable Support Spring
TS25SR



Barb Adaptor
MS31



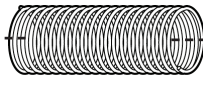
Ferrule
64-7916



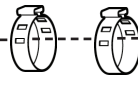
Unicable
65-7300



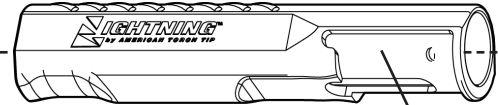
Unicable
65-7300



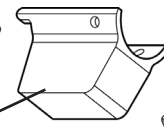
Spring Guard
63-6502



Clamp
64-7907



Housing & Screws
63-6101



Handle
64-6106



Lead Extensions
64-8404 (Std.)
64-8306 (Miller)

Control Plug Connector
64-7909

Screws
64-6501

Liner Set Screw
64-8203

Power Pin O-ring
64-8202

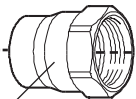
Liner O-ring
64-9001



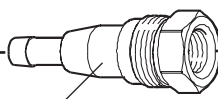
Pin (Tweco #4)
64-8211T



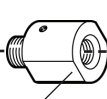
Liner
See Chart # 3



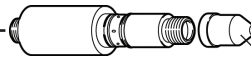
Cone Nut
63-6302



Connector Cone
62-6301

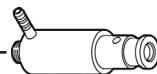


Power Pin Mount
64-8208



Pin (Miller)
64-8311T

Guide Cap
64-8303 (.035-1/16)
64-8304 (5/64-3/32)



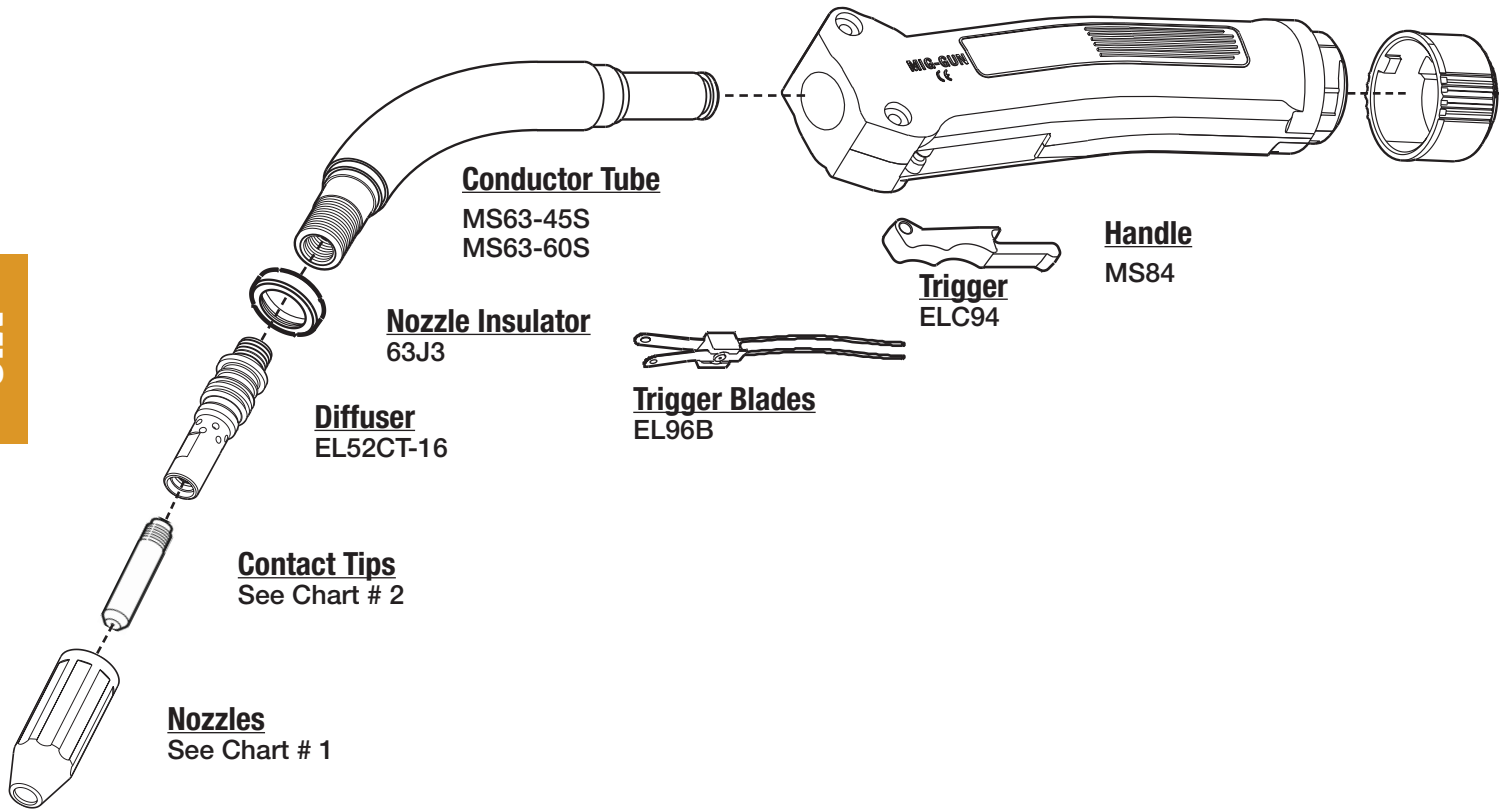
Pin (Lincoln)
64-8411T

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TWECO®

COMPATIBLE WITH SPRAY MASTER 350 AMP

MIG



1. NOZZLES

I.D.

A	EL22CT-37	Nozzle Std. 1/8" Recess	3/8" (09.5mm)
	EL22CT-50	Nozzle Std. 1/8" Recess	1/2" (12.7mm)
	EL22CT-62	Nozzle Std. 1/8" Recess	5/8" (15.9mm)
	EL22CT-75	Nozzle Std. 1/8" Recess	3/4" (19.1mm)
B	EL22CT-50F	Nozzle Flush	1/2" (12.7mm)
	EL22CT-62F	Nozzle Flush	5/8" (15.9mm)
C	EL22CT-62H	Nozzle H.D.	5/8" (15.9mm)

2. CONTACT TIP

I.D.

16S-35	Contact Tip	.035	(0.9mm)	.044
16S-40	Contact Tip	.040	(1.0mm)	.048
16S-45	Contact Tip	.045	(1.2mm)	.054
16S-52	Contact Tip	.052	(1.3mm)	.064
16S-116	Contact Tip	1/16"	(1.6mm)	.073
16S-564	Contact Tip	5/64"	(2.0mm)AL	.093
16AS-364	Contact Tip	3/64"	(1.2mm)AL	.059
16AS-116	Contact Tip	1/16"	(1.6mm)AL	.082
16S-332	Contact Tip	1/16"	(1.6mm)AL	.110

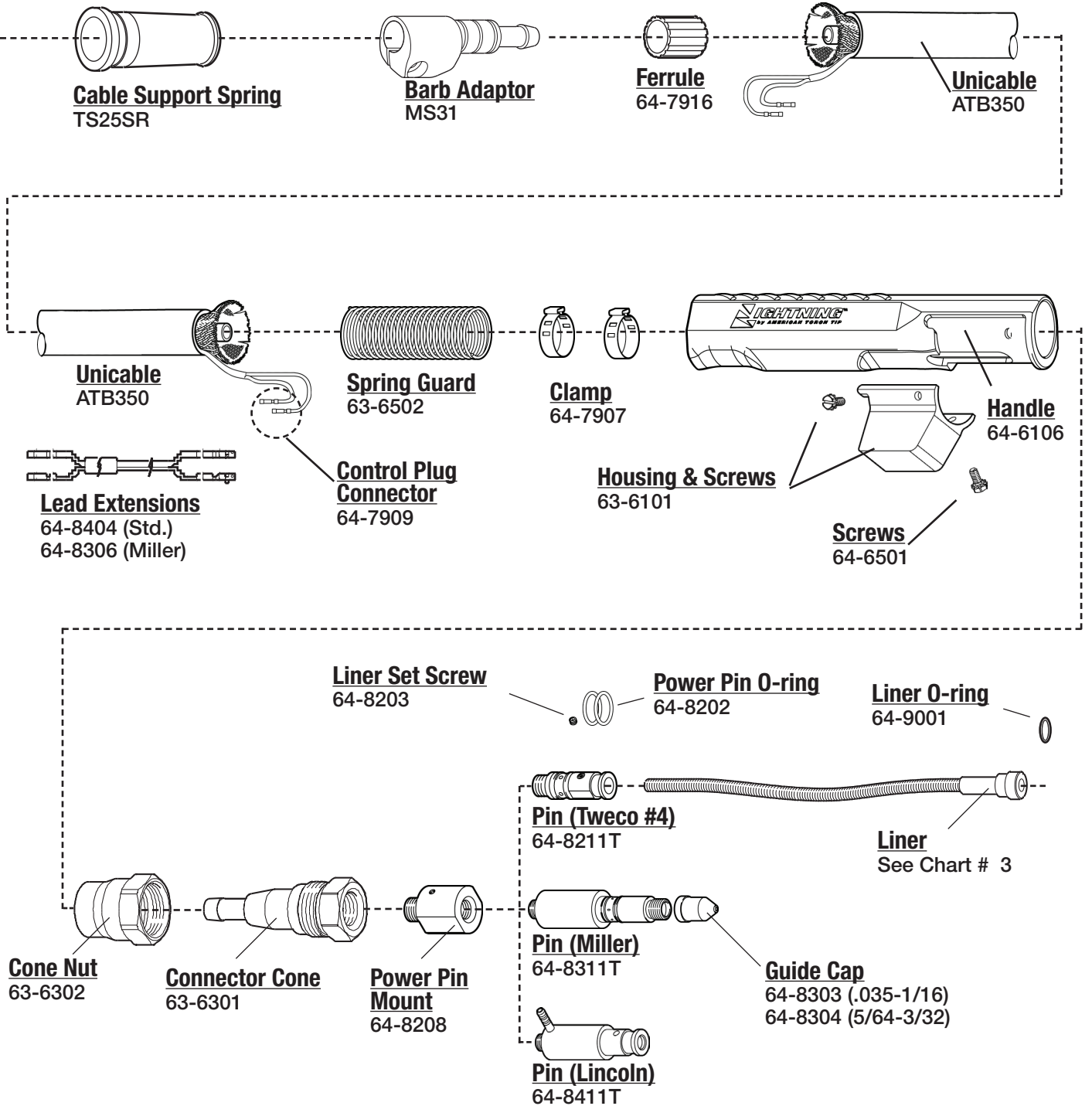
3. LINERS

I.D. O.D.

44-116-15	Liner Assy.	15'	1/16"	.076	.188
44-116-25	Liner Assy.	25'	1/16"	.076	.188
44-3545-15	Liner Assy.	15'	.035-.045	.066	.188
44-3545-25	Liner Assy.	25'	.035-.045	.066	.188

COMPATIBLE WITH SPRAY MASTER 350 AMP

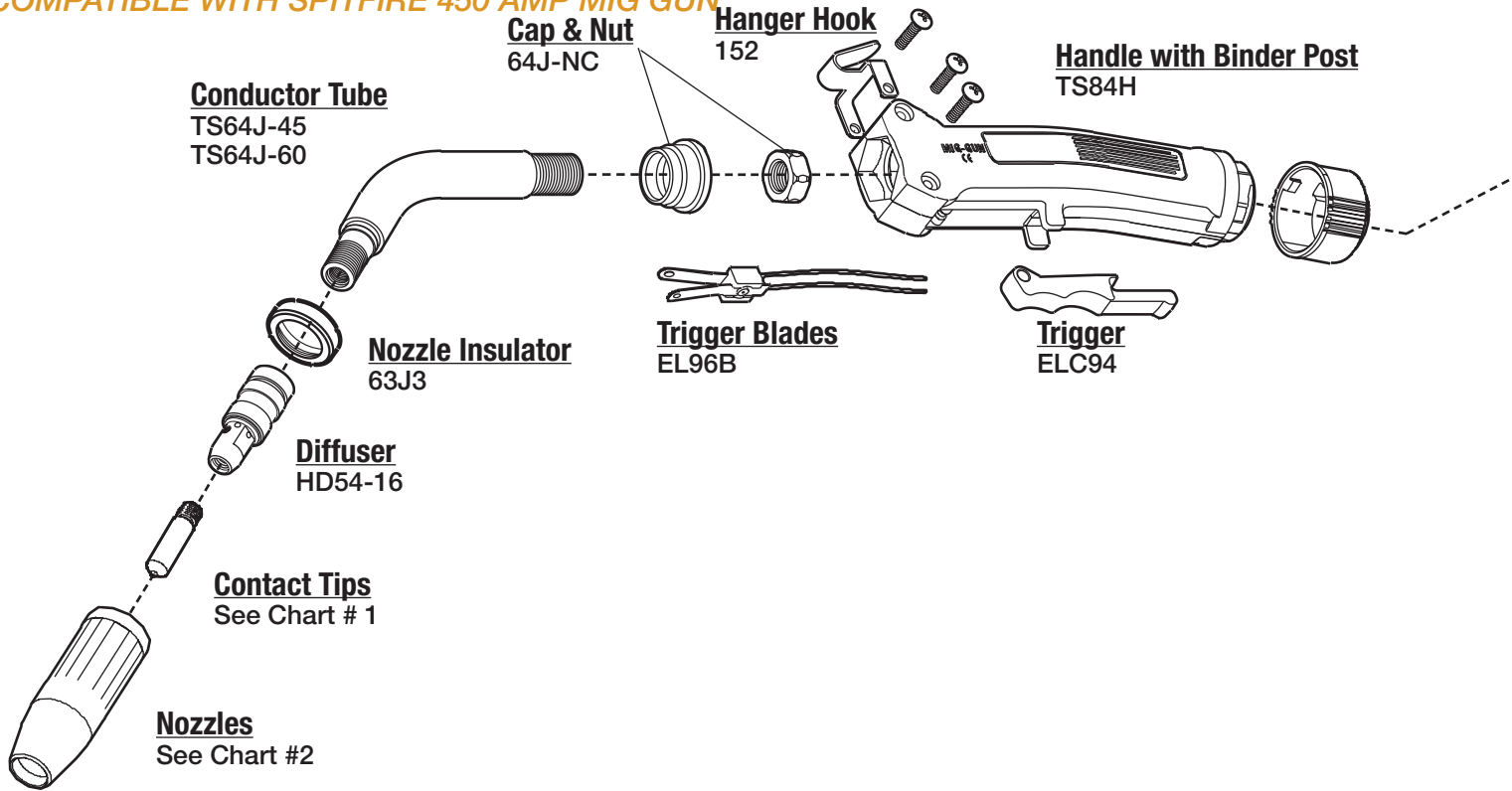
MIG



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TWECO®

COMPATIBLE WITH SPITFIRE 450 AMP MIG GUN



MIG

1. CONTACT TIP

I.D.

16S-35	Contact Tip	.035	(0.9mm)	.044
16S-40	Contact Tip	.040	(1.0mm)	.048
16S-45	Contact Tip	.045	(1.2mm)	.054
16S-52	Contact Tip	.052	(1.3mm)	.064
16S-116	Contact Tip	1/16"	(1.6mm)	.073
16S-364	Contact Tip	3/64"	(2.0mm)AL	.090
16AS-364	Contact Tip	3/64"	(1.2mm)AL	.059
16AS-116	Contact Tip	1/16"	(1.6mm)AL	.082

3. LINERS

I.D.

44-116-15	Liner Assy.	15'	1/16"	.076	.188
44-116-25	Liner Assy.	25'	1/16"	.076	.188
44-3545-15	Liner Assy.	15'	.035-.045	.066	.188
44-3545-25	Liner Assy.	25'	.035-.045	.066	.188

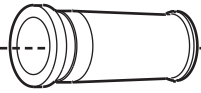
2. NOZZLES

I.D.

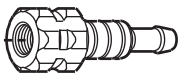
HD24L-50	Nozzle Std. Recess	1/2"	(12.7mm)
HD24L-62	Nozzle Std.	5/8"	(15.9mm)
HD24L-75	Nozzle Std.	3/4"	(19.1mm)
HD24L-50F	Nozzle Flush.	1/2"	
HD24L-62F	Nozzle Flush.	5/8"	
HD24L-75F	Nozzle Flush.	3/4"	
HD24-50	Nozzle H.D. Recess	1/8"	
HD24-62	Nozzle H.D. Recess	5/8"	
HD24-75	Nozzle H.D. Recess	3/4"	
HD24-50F	Nozzle H.D. Flush.	1/2"	
HD24-62F	Nozzle H.D. Flush.	5/8"	
HD24-75F	Nozzle H.D. Flush.	3/4"	

COMPATIBLE WITH SPITFIRE 450 AMP MIG GUN

MIG



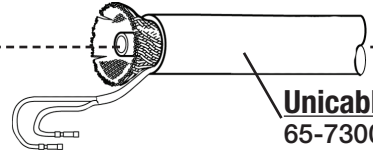
Cable Support Spring
TS25SR



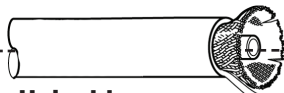
Barb Adaptor
TS100-4RK



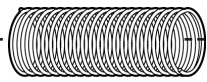
Ferrule
64-7916



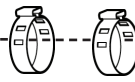
Unicable
65-7300



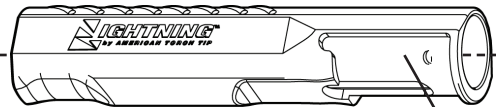
Unicable
65-7300



Spring Guard
63-6502



Clamp
64-7907



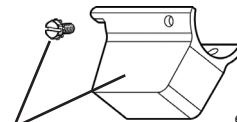
Housing & Screws
63-6101



Lead Extensions
64-8404 (Std.)
64-8306 (Miller)



Control Plug Connector
64-7909



Handle
64-6106



Screws
64-6501

Liner Set Screw
64-8203



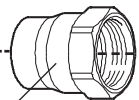
Power Pin O-ring
64-8202

Liner O-ring
64-9001

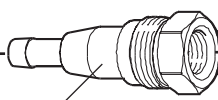


Pin (Tweco #4)
64-8211T

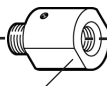
Liner
See Chart # 3



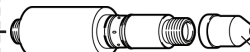
Cone Nut
63-6302



Connector Cone
64-6301



Power Pin Mount
64-8208



Pin (Miller)
64-8311T

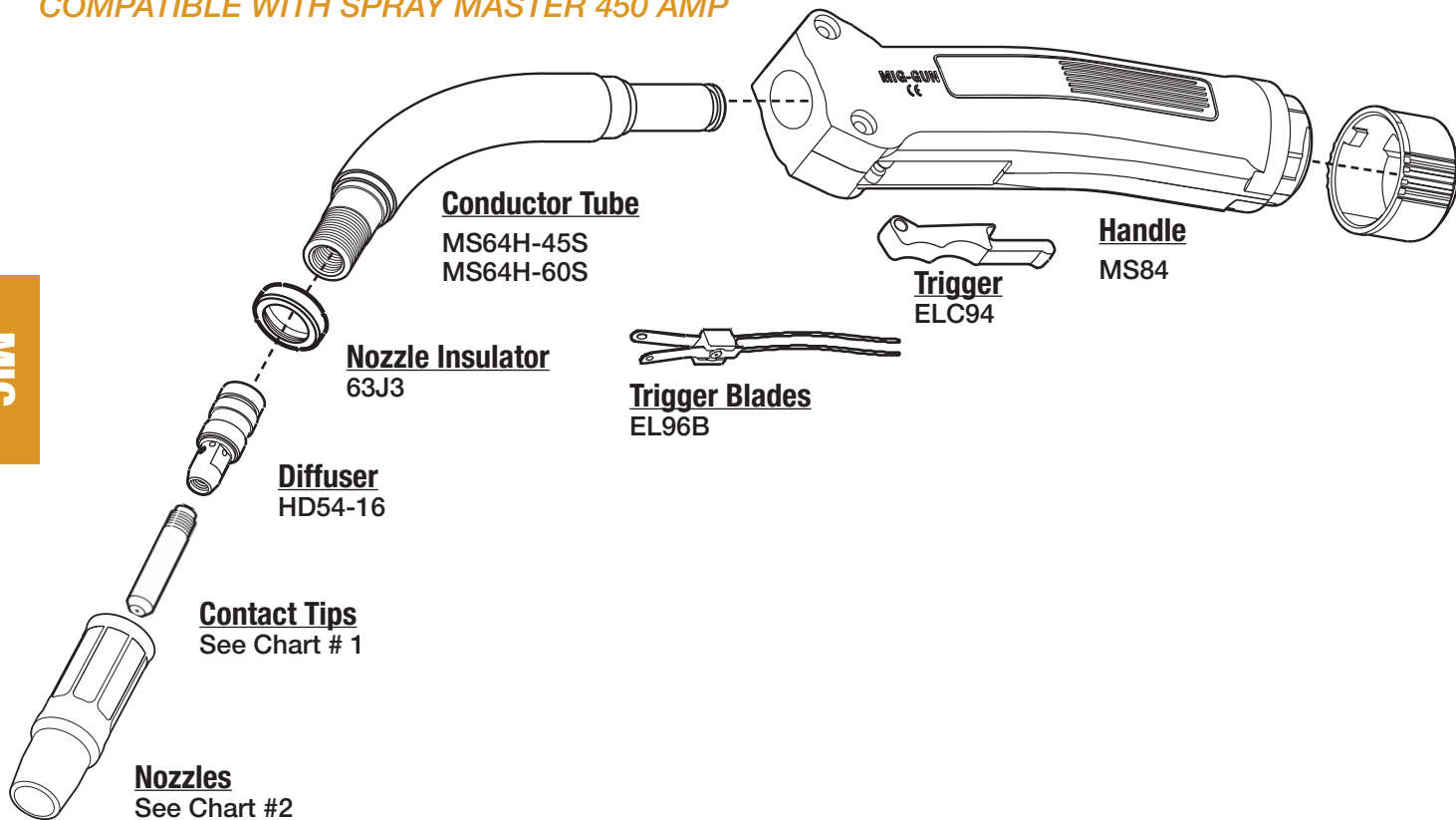
Guide Cap
64-8303 (.035-1/16)
64-8304 (5/64-3/32)



Pin (Lincoln)
64-8411T

COMPATIBLE WITH SPRAY MASTER 450 AMP

MIG



1. CONTACT TIP

			I.D.	
16S-35	Contact Tip	.035	(0.9mm)	.044
16S-40	Contact Tip	.040	(1.0mm)	.048
16S-45	Contact Tip	.045	(1.2mm)	.054
16S-52	Contact Tip	.052	(1.3mm)	.064
16S-116	Contact Tip	1/16"	(1.6mm)	.073
16S-564	Contact Tip	3/64"	(2.0mm)AL	.043
16AS-364	Contact Tip	3/64"	(1.2mm)AL	.059
16AS-116	Contact Tip	1/16"	(1.6mm)AL	.082

2. NOZZLES

			I.D.	
HD24L-50	Nozzle Std. Recess	1/2"	(12.7mm)	
HD24L-62	Nozzle Std.	5/8"	(15.9mm)	
HD24L-75	Nozzle Std.	3/4"	(19.1mm)	
HD24L-50F	Nozzle Flush.	1/2"		
HD24L-62F	Nozzle Flush.	5/8"		
HD24L-75F	Nozzle Flush.	3/4"		
HD24-50	Nozzle H.D. Recess	1/8"		

NOZZLES CONTINUED

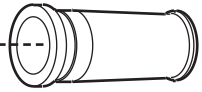
			I.D.	
HD24-62	Nozzle H.D. Recess	5/8"		
HD24-75	Nozzle H.D. Recess	3/4"		
HD24-50F	Nozzle H.D. Flush	1/2"		
HD24-62F	Nozzle H.D. Flush	5/8"		
HD24-75F	Nozzle H.D. Flush	3/4"		

3. LINERS

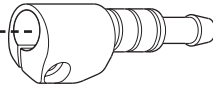
			I.D.	
44-116-15	Liner Assy.	15'	1/16"	.076 .188
44-116-25	Liner Assy.	25'	1/16"	.076 .188
44-3545-15	Liner Assy.	15'	.035-.045	.066 .188
44-3545-25	Liner Assy.	25'	.035-.045	.066 .188

COMPATIBLE WITH SPRAY MASTER 450 AMP

MIG



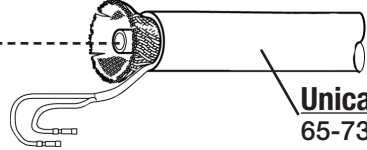
Cable Support Spring
TS25SR



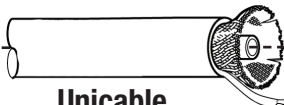
Barb Adaptor
MS31



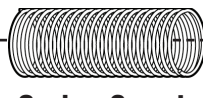
Ferrule
64-7916



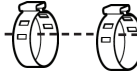
Unicable
65-7300



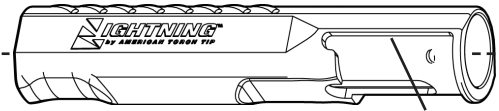
Unicable
65-7300



Spring Guard
63-6502



Clamp
64-7907



Handle
64-6106

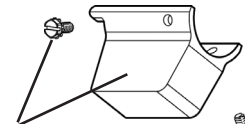


Lead Extensions
64-8404 (Std.)
64-8306 (Miller)



Control Plug Connector
64-7909

Housing & Screws
63-6101



Screws
64-6501

Liner Set Screw
64-8203



Power Pin O-ring
64-8202

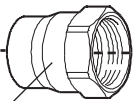


Liner O-ring
64-9001

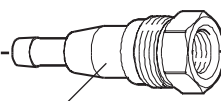


Pin (Tweco #4)
64-8211T

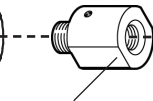
Liner
See Chart # 3



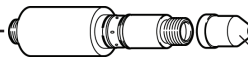
Cone Nut
63-6302



Connector Cone
64-6301

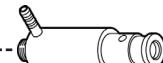


Power Pin Mount
64-8208



Pin (Miller)
64-8311T

Guide Cap
64-8303 (.035-1/16)
64-8304 (5/64-3/32)



Pin (Lincoln)
64-8411T

LIGHTNING® Consumables Reference Chart

MIG



63-2138
3/8" Bore
Flush
Copper
0.938" O.D.



63-2150
1/2" Bore
1/8" Recess
Copper
0.938" O.D.



63-2162
5/8" Bore
1/8" Recess
Copper
0.938" O.D.



63-2175
3/4" Bore
1/8" Recess
Copper
0.938" O.D.
Straight Bore



64-2387
7/8" Bore
1/4" Recess
Brass
1.062" O.D.
Straight Bore



64-2950
1/2" Bore
1/8" Stickout
Brass
0.938" O.D.
Straight Bore



64-2962
5/8" Bore
Flush
Copper
1.062" O.D.
Bottle Neck



65-2562
5/8" Bore
1/8" Recess
Copper
1.062" O.D.

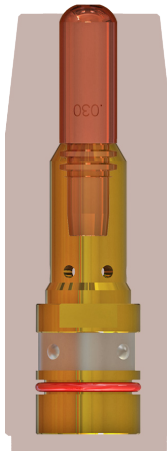


65-2362
5/8" Bore
1/8" Stickout
Brass
1.062" O.D.

MIG



63-2362
5/8" Bore
1/8" Recess
Brass
1.120" O.D.
Straight Bore



63-2662
5/8" Bore
1/8" Stickout
Copper
0.938" O.D.



63-2950B
1/2" Bore
1/8" Recess
Brass
0.938" O.D.
Straight Bore



64-2562
5/8" Bore
1/4" Recess
Copper
1.062" O.D.



64-2575
3/4" Bore
1/4" Recess
Copper
1.062" O.D.



65-2375
3/4" Bore
.125 Recess
Brass
1.120" O.D.
Straight Bore



65-2575
3/4" Bore
1/8" Recess
Copper
1.062" O.D.



65-2662
5/8" Bore
1/8" Stickout
Copper
1.062" O.D.



65-2550
1/2" Bore
1/8" Recess
Copper
1.062" O.D.

MIG

LIGHTNING[®]

PLASMA

PHD[®] PHDX[®]

OXY-FUEL

WALTEC[™]

TIG

Integra[™]

LASER

LASERTEC[®] 



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