



## Water-Cooled Robotic MIG Torches

For Models  
450R,550R,600R



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**INSTALLATION, OPERATIONS AND REPLACEMENT PARTS MANUAL**

SERVICE QUALITY SOLUTIONS

## **TABLE OF CONTENTS**

INTRODUCTION/WARRANTY.....	2
GENERAL SAFETY .....	3
TORCH SPECIFICATIONS .....	3
NOZZLE/TIP RELATIONSHIPS.....	4
INSTALLATION.....	4
LINER REPLACEMENT .....	4
GOOSENECK REPLACEMENT.....	6
UNICABLE REPLACEMENT.....	6
UNICABLE REPLACEMENT.....	5
DAILY MAINTENANCE.....	7
NOZZLE SELECTION CHART.....	8
CONTACT TIP SELLECTION CHART .....	9
PARTS BREAKDOWN .....	10-12

## **INTRODUCTION**

Thank you for purchasing an American Weldquip product. The American Weldquip product you have purchased has been carefully manufactured, assembled, and fully tested. This manual contains information on the installation, operation, maintenance, and replacement part breakdown. Please read, understand, and follow all safety instructions, warnings and procedures. Keep this manual handy for referencing installation, operation, maintenance, and part ordering information. While every precaution has been taken as to the accuracy in this manual, American Weldquip, Inc. assumes no responsibility for errors or omissions. American Weldquip, Inc. assumes no liability for damages resulting from the use of the information contained in this manual. American Weldquip, Inc. shall have no liability to the buyer for consequential damages or expenses by any defect whatsoever.

## **WARRANTY**

AMERICAN WELDQUIP equipment and parts are warranted to be free of defects in material and/or workmanship for the period of time listed below. For any product found to be defective under normal use, AMERICAN WELDQUIP, INC. at their option, will repair, replace, or issue a credit for the value of the defective product. All warranty claims must be submitted by the original purchaser. Use of non-genuine AMERICAN WELDQUIP parts and/or consumables may damage and/or severely limit the performance of the equipment which may limit or void any warranties. AMERICAN WELDQUIP, INC. will not assume responsibility for incidental damages or expenses related to any defect.

A Return Authorization Number (RA#) must be attained from the factory for any product being returned for Warranty Repair or Replacement. All returned product must be shipped freight prepaid by the sender. No- charge replacements, repaired products, or credit will be issued, once the returned product has been evaluated and warranty condition has been verified. If an immediate replacement is required before proper warranty evaluation, a purchase order number is required and the goods will be invoiced. A credit will be issued once it is determined that a warranty condition exists.

<b>MIG TORCHES and Components</b>	<b>= 180 Days</b>
<b>MIG Torch Trigger Switches (Contacts only) -Excludes Smoke Extraction and Pistol Grip</b>	<b>= Lifetime</b>
<b>Robotic Nozzle Cleaning Stations</b>	<b>= 90 Days</b>
<b>Robotic Peripherals, ArcSafe, Wire Cutter, Gun Mounts</b>	<b>= 90 Days</b>
<b>TIG POINT Tungsten Electrode Grinders</b>	<b>= 1 Year</b>

## **GENERAL SAFETY PRECAUTIONS**

Before installing, operating or performing maintenance please read the safety precautions below. Failure to observe safety precautions can result in injury or death.

**WARNING** – A welding arc emits ultraviolet (UV) and other radiation and can cause serious injury to unprotected skin and eyes.

**WARNING** – Hot metal produced by welding can cause severe burns. Heat from arcs and hot weld spatter and sparks can start fires and cause explosions of flammable gases.

**WARNING** – Fumes and gases generated from welding can cause severe injury to respiratory system and even death. DO NOT weld in confined spaces and make sure there is plenty of ventilation. Do not breathe fumes and gases as can cause asphyxiation.

**WARNING** – Electrical shock can kill. Do not touch live electrical parts and/or use in damp locations.

1. Always wear a welding helmet with the correct filter and cover plate.
2. Always wear safety Glasses with side shields in any work area even if a welding helmet is also required.
3. All exposed skin should be covered with flameproof protective clothing. This includes leather gloves, heavy long sleeve shirt, cuff less pants and high topped shoes. DO NOT WEAR CLOTHING MADE FROM FLAMMABLE SYNTHETIC FIBERS.
4. Protective screens or barriers should be used to protect others from spatter, flash and glare while welding.
5. Make sure work area is free of all combustible materials or cover with a protective non-flammable cover.
6. Remove all flammable gas cylinders as welding sparks can cause explosion in the event of a leak. Take serious precautions if welding in area of flammable gas lines and/or tanks.
7. Know where a fire extinguisher is at all times. The best practice is to have an extinguisher, water pail, fire hose and/or sand bucket available for immediate use.
8. Poorly maintained equipment can cause injury or death
9. Inspect, repair or replace worn or damaged welding cables and torch leads.
10. Insure equipment is properly grounded and installed according to code.
11. Never wrap the weld cable or torch leads around your body.
12. Make sure equipment is turned off when not in use.

### **ADDITIONAL SOURCES FOR SAFETY INFORMATION**

ANSI Standard Z49.1 CODE FOR SAFETY IN WELDING AND CUTTING - American National Standards Institute, 1430 Broadway, New York, NY 10018

NFPA Standard 51B, "Fire Prevention in the Use of Cutting and Welding Processes – National Fire Protection Association, Batterymarch Park, Quincy, MA 02269

CSA Standard W117.2 CODE FOR SAFETY IN WELDING AND CUTTING - Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

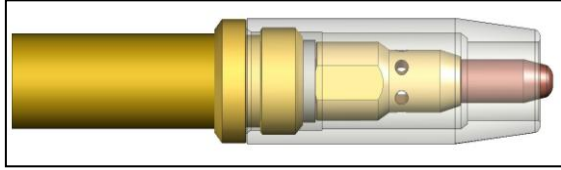
## **TORCH SPECIFICATIONS**

MODEL	AMPERAGE	100% Duty Cycle		60% Duty Cycle	
		CO2	Mixed Gas	CO2	Mixed Gas
450R	450	400A	350A	450A	400A
550R	550	500A	450A	550A	500A
600R	600	550A	500A	600A	550A

Duty Cycle is based on a complete cycle time of 10 minutes. (60% Duty Cycle = 6 minutes weld time, 4 minutes off time).

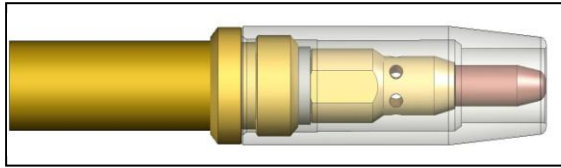
## **NOZZLE/TIP RELATIONSHIPS**

Shown below are typical relationship between the contact tip and nozzle in GMAW Semi-Automatic applications. Nozzles to tip relationships are usually dictated by the process and application but not necessarily the standard. Keep in mind that decreased tip life, increased spatter cleaning cycles may be required if the tip relationship is changed to achieve other objectives.



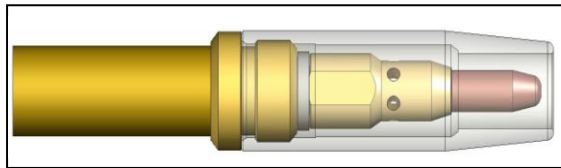
### **Extended Tip – Short Circuit (Short Arc, Dip Transfer) Welding Applications**

The tip stick out is usually 1/8" or 1/4" from the nozzle. Keep in mind that the further the stick out the more susceptible to gas porosity issues. Typically is used in short circuit, lower amperage applications, and/or where you may need to reach in to a corner.



### **Flush Tip – Higher current Short Circuit (Short Arc, Dip Transfer) Welding Applications**

The tip is flush with the end of the nozzle. Typically used in higher current and voltage short circuit applications.



### **Recessed Tip – Spray Arc, Pulsed, Flux Core Welding Applications**

The tip is usually recessed in the nozzle 1/8" or 1/4". Usually, the higher the heat and/or current the further the recess. However, this is also dependant on the wire used and the arc length requirement.

## **INSTALLATION**

Depending on how your torch was ordered your American Weldquip torch has been supplied with either a EURO type feeder connection or a DIRECT wire feeder connection. The American Weldquip torch can be installed to the wire feed unit in two ways.

- Euro Connection – Feeder Adaptor Kit may be required
- Direct Connection

### ***Direct Connect***

The direct connect torch system is designed for installation to the wire feeder without the need for any adaptor system. The torch is supplied (depending on the torch configuration ordered) with a feeder connection plug at the rear of the torch, gas connection, feeder control cable.

- 1) Fully insert the torch Direct Connection into wire feeder. Tighten screw or other method on wire feeder to secure torch
- 2) Connect the gas hose to barbed fitting on the direct connect pin if required.
- 3) Connect feeder control cable/plug to torch.
- 4) Connect feeder control cable/plug to the feeder.
- 5) Feed welding wire into the torch and tighten drive rolls.

**WARNING: WHEN FEEDING WELD WIRE THROUGH THE TORCH KEEP THE FRONT END OF THE TORCH POINTED AWAY FROM ANY PERSON OR OBJECT. DO NOT POINT AT FACE, HANDS ETC. FAILURE TO DO SO WILL RESULT IN BODILY INJURY AND POSSIBLY DEATH.**

## ***Using Feeder Adaptor Kit***

In some cases it may be desirable to use a feeder adaptor kit such as when using different manufactures wire feed units to commonize on a torch configuration.

- 1) Thread feeder adaptor plug into the adaptor block and tighten.
- 2) Insert the adaptor guide tube into the adaptor plug.
- 3) Fully insert the feeder adaptor assembly into the wire feeder. Tighten screw or other method on wire feeder to secure the adaptor assembly.
- 4) If required, connect the feeder control cable/plug to the wiring on the adaptor assembly.
- 5) Connect feeder control cable/plug to the feeder.
- 6) Connect the torch to the feeder adaptor assembly.
- 7) Feed welding wire into the torch and tighten drive rolls.

**WARNING: WHEN FEEDING WELD WIRE THROUGH THE TORCH KEEP THE FRONT END OF THE TORCH POINTED AWAY FROM ANY PERSON OR OBJECT. DO NOT POINT AT FACE, HANDS ETC. FAILURE TO DO SO WILL RESULT IN BODILY INJURY AND POSSIBLY DEATH.**

## ***Torch Mount Installation***

The robotic torch has a precious locating flat for accurate locating in the mating torch mount.

- 1) Loosen the cap screw in the torch mount.
- 2) Insert the torch through the top of the mount lining the locating flat on the torch with the mating flat on the torch mount.
- 3) Fully insert the torch into the torch mount.
- 4) Tighten the cap screw to secure the torch into the torch mounting arm.

## **MAINTENANCE**

### ***Liner Replacement***

There are two types of liners offered – standard and the EASY front loading liner system. The standard liner requires the torch be removed from the feeder in order to be changed. The EASY front load system only requires the removal of the front end consumables.

#### **Standard Liner Maintenance**

**Warnings – To avoid accidental injury ensure power supply and wire feed unit is turned off.**

- 1) Trim the end of the weld wire at contact tip.
- 2) Retract or completely remove weld wire so torch can be removed from the wire feeder.
- 3) Remove the nozzle, contact tip and diffuser.
- 4) Loosen the set screw at the torch feeder connection using a 5/64" Allen wrench.
- 5) Making sure the torch cable is straight, grasp the liner at the rear of the torch with a pair of pliers and remove.
- 6) Carefully feed the new liner into the torch using short strokes to avoid kinking. You may need to twist the liner for easier insertion.
- 7) Tighten the set screw to secure the liner in the torch.
- 8) Reinstall the torch to the wire feed unit.
- 9) **IMPORTANT:** at the front end of the torch push the liner back into the gun and hold in place.

- 10) Trim the liner to 3/4" stick out from the end of the gooseneck.
- 11) Replace the Diffuser, contact tip and nozzle.
- 12) Feed welding wire into the torch and tighten drive rolls.

**WARNING: WHEN FEEDING WELD WIRE THROUGH THE TORCH KEEP THE FRONT END OF THE TORCH POINTED AWAY FROM ANY PERSON OR OBJECT. DO NOT POINT AT FACE, HANDS ETC. FAILURE TO DO SO WILL RESULT IN BODILY INJURY AND POSSIBLY DEATH.**

### **EASY – Front Loading Liner Maintenance**

**Warnings – To avoid accidental injury ensure power supply and wire feed unit is turned off.**

Note: Do not retract or remove weld wire from the torch. Weld wire is used to guide the liner when reinserting.

- 1) Trim the end of weld wire at contact tip.
- 2) Remove the nozzle, contact tip and diffuser.
- 3) Grip the liner at the front end of torch using a pair of pliers and pull out of torch.
- 4) Insert the weld wire from the front of the torch into the liner and carefully feed the new liner into the torch using short strokes to avoid kinking. Make sure liner is fully seated at the rear of the torch. You will feel a slight click when inserted into the liner retainer. You may need to twist the liner for easier insertion.
- 5) **IMPORTANT:** at the front end of the torch push the liner back into the gun and hold in place.
- 6) Trim the liner to 3/4" stick out from the end of the gooseneck.
- 7) Replace the Diffuser, contact tip and nozzle.

**WARNING: WHEN FEEDING WELD WIRE THROUGH THE TORCH KEEP THE FRONT END OF THE TORCH POINTED AWAY FROM ANY PERSON OR OBJECT. DO NOT POINT AT FACE, HANDS ETC. FAILURE TO DO SO WILL RESULT IN BODILY INJURY AND POSSIBLY DEATH.**

## ***Gooseneck Replacement***

- 1) Secure Gooseneck in a vice.
- 2) Remove the liner from the torch.
- 3) Remove the four handle screws and separate the handle assembly.
- 4) Using a wrench loosen the gooseneck / cable connection and remove from the cable assembly.
- 5) Remove the Body Insulator from the old gooseneck and install on the new one.
- 6) Thread the new gooseneck on to the cable assembly and tighten.
- 7) Install the bottom handle assembly (trigger side) onto the gooseneck/cable assembly. The trigger wires will fit in the grooves on the sides of the body insulator. Make sure the trigger wires stay seating in the body insulator and the insulator is fully inserted into the bottom handle.
- 8) Slide the handle spring or cable support up and insert in the rear of the handle.
- 9) Install the top handle and secure with the (4) screws. **IMPORTANT:** Insure the trigger wires are not pinched between the handle.
- 10) Reinstall the diffuser, contact tip and nozzle.

## ***Hybrid Air-Cooled Unicable Replacement***

- 1) Secure Gooseneck in a vice.
- 2) Remove the liner from the torch.
- 3) Remove the handle screws and separate the handle assembly.
- 4) Using a wrench loosen the gooseneck / cable connection and remove from the cable assembly.
- 5) Thread the gooseneck on to the new cable assembly and tighten.
- 6) Install the bottom handle assembly (trigger side) onto the gooseneck/cable assembly. The trigger wires will fit in the grooves on the sides of the body insulator. Make sure the trigger wires stay seating in the body insulator and the insulator is fully inserted into the bottom handle.
- 7) Slide the handle spring or cable support up and insert in the rear of the handle.
- 8) Install the top handle and secure with the (4) screws. **IMPORTANT:** Insure the trigger wires are not pinched between the handle.
- 9) Reinstall the diffuser, contact tip and nozzle.
- 10) On the rear of the old cable assembly turn and remove the spring guard hand nut and slide back on the cable.

- 11) Remove the screw securing the handle to the feeder pin adaptor and separate the handle.
- 12) Unthread the power cable from the feeder adaptor block.
- 13) Slide the threaded rear handle support nut and rear spring onto the new cable assembly.
- 14) Thread the power cable to the feeder pin adaptor and tighten.
- 15) Install the bottom handle assembly onto the feeder adaptor assembly.
- 16) Install the other handle half and screw the rear handle support nut and rear spring on the rear handle assembly.
- 17) Install the screw on the rear handle and feeder adaptor.
- 18) Reinstall the liner.

## **Water-Cooled Cable Assembly Replacement**

- 1) Secure Gooseneck in a vice.
- 2) Remove the liner from the torch.
- 3) Remove the handle screws and separate the handle assembly.
- 4) Unthread the power cable from the gooseneck.
- 5) Cut off the clamps from the water line and conduit and pull off neck assembly. You may have to slit with knife.
- 6) Slide new clamps on the water line and conduit of the new cable assembly.
- 7) Thread the power cable to the gooseneck and tighten.
- 8) Push the water line and conduit on the gooseneck assembly and crimp the clamps.
- 9) Install two open end terminals to the trigger wire assembly and attached to the screws on the trigger assembly in the bottom handle.
- 10) Install the bottom handle assembly (trigger side) onto the gooseneck/cable assembly. The trigger wires will fit in the grooves on the sides of the body insulator. Make sure the trigger wires stay seating in the body insulator and the insulator is fully inserted into the bottom handle.
- 11) Slide the handle spring or cable support up and insert in the rear of the handle.
- 12) Install the top handle and secure with the (4) screws. **IMPORTANT:** Insure the trigger wires are not pinched between the handle.
- 13) Reinstall the diffuser, contact tip and nozzle.
- 14) On the rear of the old cable assembly turn and remove the spring guard hand nut and rear support spring and slide back on the cable assembly.
- 15) Remove the screw securing the handle to the feeder pin adaptor and separate the handle.
- 16) Unthread the power cable from the feeder adaptor block.
- 17) Cut off the clamps from the short red water line ( do not discard as reusable) and conduit and pull off. You may have to slit with knife.
- 18) Slide the threaded rear handle support nut and rear support spring onto the new cable assembly.
- 19) Slide new clamps on the short red water line and conduit of the new cable assembly.
- 20) Thread the power cable to the feeder pin adaptor and tighten.
- 21) Push the red water line and conduit on the feeder pin adaptor and crimp the clamps.
- 22) Install the trigger wire using (2) butt splices.
- 23) Install the bottom handle assembly onto the feeder adaptor assembly.
- 24) Carefully route the red and blue water lines and the trigger lead thru the opening in the handle half. Make sure the water lines are not pinched between the handle halves.
- 25) Install the other handle half and screw the rear handle support nut and spring on the rear handle assembly.
- 26) Install the screw on the rear handle and feeder adaptor.
- 27) Reinstall the liner.

## **DAILY MAINTENANCE**

A few minutes per day performing a quick check of your mig torch will help to decrease weld problems, minimize downtime, and help increase consumable life.

### **At Beginning of Shift**

- Inspect the cable for cuts, nicks or tears. If you can see bare copper return for maintenance.
- Inspect the front end consumables. Clean weld spatter and inspect the nozzle insulator. If nozzle insulation is damaged it should be replaced.

- Check that the gas diffuser is tight on the gooseneck.
- Check the gas holes on the diffuser and clean if necessary.
- Check and tighten the contact tip.
- Check all electrical connections including the power cable from the power supply, torch/feeder connections, and control cables for loose connections. Tighten if necessary. Loose connections can cause overheating of cables and/or loss of electrical power.

## **NOZZLE SELECTION CHART**

### **300R NOZZLES**

<b>PART #</b>	<b>DESCRIPTION</b>	<b>TYPE</b>	<b>BORE SIZE</b>	<b>MATERIAL</b>	<b>BORE ID DIMENSION</b>	<b>O.A.L.</b>	<b>INSULATOR REQUIRED</b>
75002013HR	NOZZLE - CONICAL	A	3/8" (9.5mm)	NI PLATED BRASS	.375"(9.5mm)	2.820" (71.6mm)	NONE REQ.
75002013HRS	NOZZLE - BOTTLE NOSE	C	3/8" (9.5mm)	NI PLATED BRASS	.375"(9.5mm)	2.820" (71.6mm)	NONE REQ.
75002015	NOZZLE - CONICAL	A	9/16"(14.2mm)	NI PLATED BRASS	.593"(15.1mm)	2.820" (71.6mm)	INSTALLED
75002015S	NOZZLE - TAPERED	B	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	2.820" (71.6mm)	INSTALLED
75002015TA	NOZZLE - BOTTLENOSE	C	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	2.672" (67.96mm)	INSTALLED
75002017	NOZZLE - CONICAL	A	9/16" (14.2mm)	NI PLATED BRASS	.593"(15.1mm)	2.545" (64.6mm)	INSTALLED
75002020	NOZZLE - SHORT TAPERED	G	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	1.937" (49.2mm)	NONE REQ.

### **400R/500R NOZZLES**

<b>PART #</b>	<b>DESCRIPTION</b>	<b>TYPE</b>	<b>BORE SIZE</b>	<b>MATERIAL</b>	<b>BORE ID DIMENSION</b>	<b>O.A.L.</b>	<b>INSULATOR REQUIRED</b>
75004010	NOZZLE - BOTTLE NOSE	E	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	3.125" (79.4mm)	75001738
75004011	NOZZLE - BOTTLE NOSE	C	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	3.031" (77.0mm)	75001733
75004013	NOZZLE - CONICAL	A	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	3.125" (79.4mm)	75001738
75004013C	NOZZLE - CONICAL	A	5/8" (15.9mm)	NI PLATED COPPER	.625"(15.9mm)	3.125" (79.4mm)	75001738
75004013CU	NOZZLE - CONICAL	A	5/8" (15.9mm)	BARE COPPER	.625"(15.9mm)	3.125" (79.4mm)	75001738
75004013T	NOZZLE - TAPERED	B	9/16" (14.2mm)	NI PLATED BRASS	.563"(14.2mm)	3.125" (79.4mm)	INSTALLED
75004013TC	NOZZLE - TAPERED	B	1/2" (12.7mm)	VI PLATED COPPER	.531"(13.5mm)	3.125" (79.4mm)	75001738
75004013TCU	NOZZLE - TAPERED	B	1/2" (12.7mm)	BARE COPPER	.531"(13.5mm)	3.125" (79.4mm)	75001738
75004013V	NOZZLE - TAPERED (LONG)	B	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	3.915" (99.4mm)	NONE REQ.
75004014	NOZZLE - SPOT	H	5/8" (15.9mm)	NI PLATED BRASS	.656"(16.7mm)	3.437" (87.3mm)	75001738
75004015	NOZZLE - CONICAL	A	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	2.820" (71.6mm)	INSTALLED
75004015CU	NOZZLE - CONICAL	A	5/8" (15.9mm)	BARE COPPER	.625"(15.9mm)	2.820" (71.6mm)	75001738
75004015S	NOZZLE - SMALL CONICAL	D	9/16" (14.2mm)	NI PLATED BRASS	.593"(15.1mm)	2.820" (71.6mm)	INSTALLED
75004015T	NOZZLE - SMALL CONICAL	D	7/16" (11.1mm)	NI PLATED BRASS	.438"(11.1mm)	2.820" (71.6mm)	INSTALLED
75004018	NOZZLE - BOTTLE NOSE	C	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	3.125" (79.4mm)	75001733
75004019	NOZZLE - CONICAL	A	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	3.031" (77.0mm)	INSTALLED
75004019CU-A	NOZZLE - TAPERED	B	5/8" (15.9mm)	BARE COPPER	.625"(15.9mm)	3.031" (77.0mm)	75001738
75004020	NOZZLE - SHORT CONICAL	G	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	1.875" (47.6mm)	INSTALLED
75004020L	NOZZLE - SHORT CONICAL	G	5/8" (15.9mm)	NI PLATED BRASS	.625"(15.9mm)	2.187" (55.6mm)	75001738
75004022	NOZZLE - CYLINDRICAL	F	3/4" (19.0mm)	NI PLATED BRASS	.703" (17.9mm)	3.125" (79.4mm)	75001738
75004022CU	NOZZLE - CYLINDRICAL	F	3/4" (19.0mm)	BARE COPPER	.703" (17.9mm)	3.125" (79.4mm)	75001738
75004024T	NOZZLE - SHORT TAPERED	G	9/16" (14.2mm)	NI PLATED BRASS	.563"(14.2mm)	2.375" (60.3mm)	INSTALLED
75004027	NOZZLE - BOTTLE NOSE	C	1/2" (12.7mm)	NI PLATED BRASS	.500"(12.7mm)	2.820" (71.6mm)	75001733
75004030	NOZZLE - SMALL CONICAL	D	7/16" (11.1mm)	NI PLATED BRASS	.438"(11.1mm)	3.125" (79.4mm)	INSTALLED

## **CONTACT TIP SELECTION CHART**

### **M6 CONTACT TIPS**

<b>PART #</b>	<b>WIRE SIZE</b>	<b>NOMINAL I.D.</b>	<b>DESCRIPTION</b>
<b><u>COPPER (CU)</u></b>			
75023511	.023" (.6mm)	.034"	CONTACT TIP (STANDARD)
75030511	.030" (.8mm)	.038"	CONTACT TIP (STANDARD)
75035511	.035" (.9mm)	.044"	CONTACT TIP (STANDARD)
75035512	.040" (1mm)	.048"	CONTACT TIP (STANDARD)
75045511	.045" (3/64") (1.2mm)	.053"	CONTACT TIP (STANDARD)
75045512	.045" (3/64") (1.2mm)	.059"	CONTACT TIP (STANDARD)

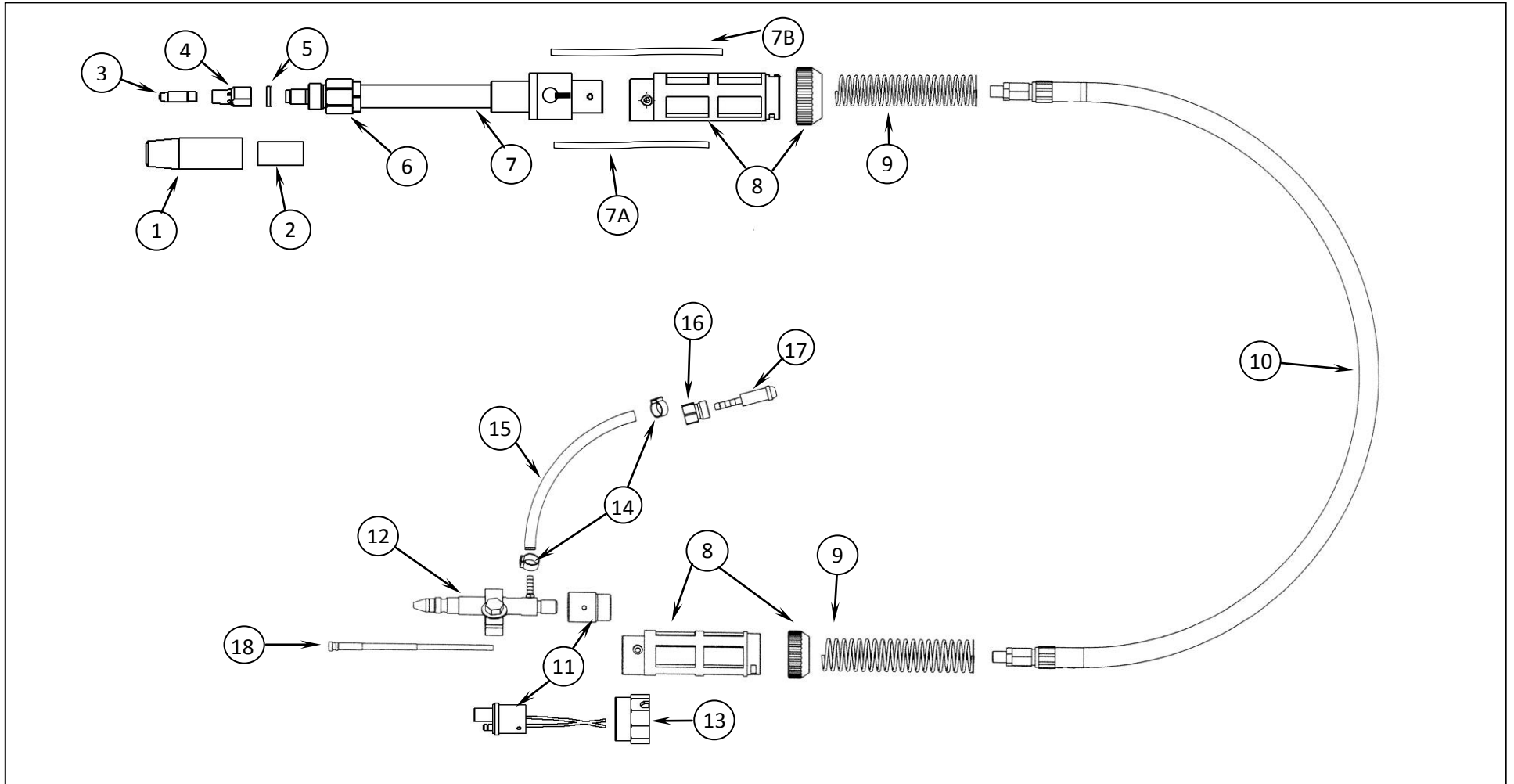
### **M8 CONTACT TIPS**

<b>PART #</b>	<b>WIRE SIZE</b>	<b>NOMINAL I.D.</b>	<b>DESCRIPTION</b>
<b><u>COPPER (CU)</u></b>			
75030014	.030" (.8mm)	.038"	CONTACT TIP (STANDARD)
75035014	.035" (.9mm)	.044"	CONTACT TIP (STANDARD)
75040014	.040" (1.0mm)	.048"	CONTACT TIP (STANDARD)
75045014	.045" (3/64") (1.2mm)	.054"	CONTACT TIP (STANDARD)
75052014	.052" (1.3mm)	.061"	CONTACT TIP (STANDARD)
75062014	.062" (1/16") (1.6mm)	.073"	CONTACT TIP (STANDARD)
75062015	.062" (1/16") (1.6mm)	.076"	CONTACT TIP (STANDARD)
75078014	.078" (5/64") (2.0 mm)	.087"	CONTACT TIP (STANDARD)
75093014	.093" (3/32") (2.4mm)	.106"	CONTACT TIP (STANDARD)

### **ROBOTIC TEACH TIPS**

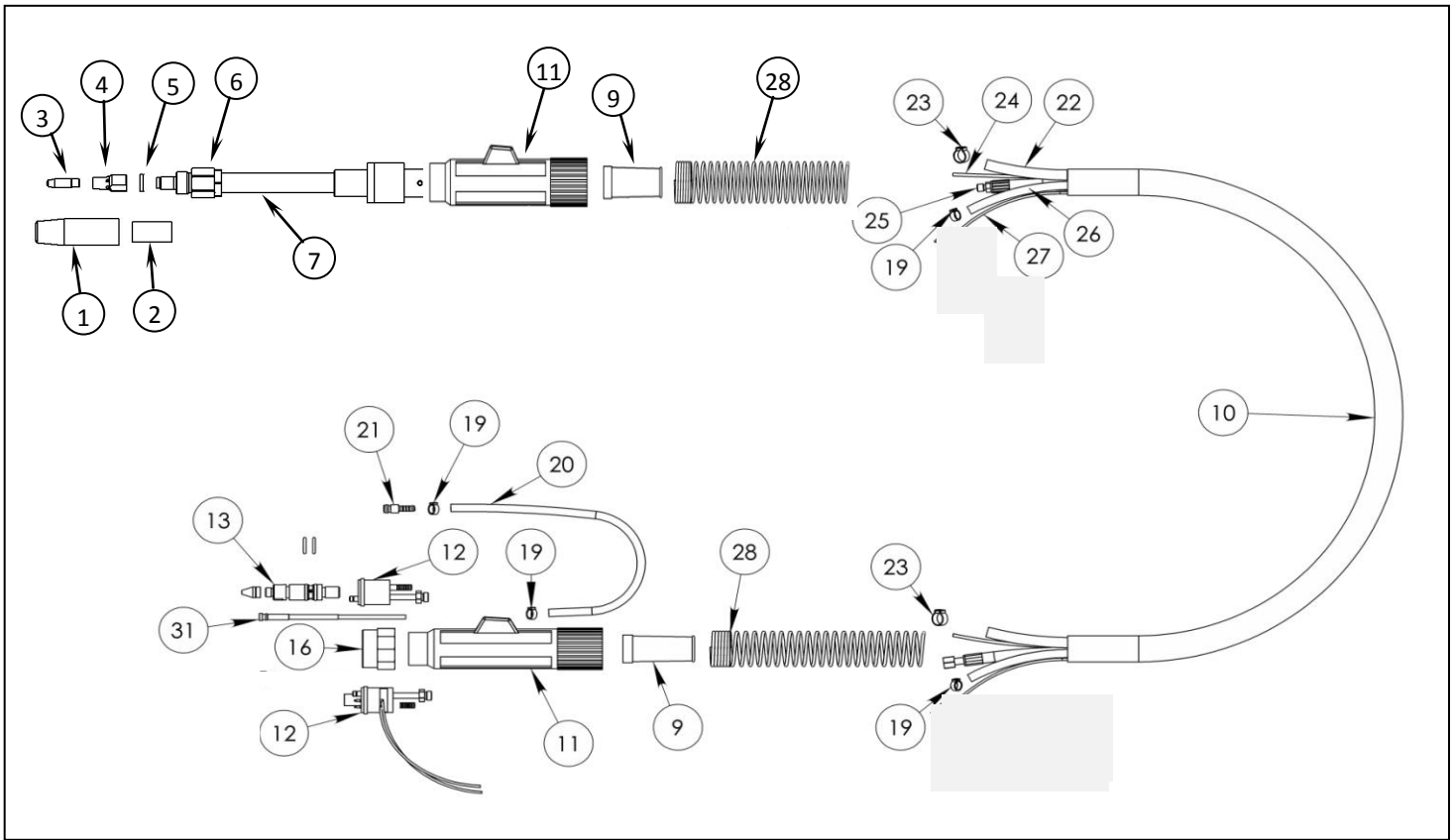
750TT014-.500	ROBOTIC TEACH TIP (014 SERIES TIP WITH .500" WIRE STICKOUT)
750TT014-.625	ROBOTIC TEACH TIP (014 SERIES TIP WITH .625" WIRE STICKOUT)
750TT014-.750	ROBOTIC TEACH TIP (014 SERIES TIP WITH .750" WIRE STICKOUT)
750TT230-.625	ROBOTIC TEACH TIP (230 SERIES TIP WITH .625" WIRE STICKOUT)
750TT511-.625	ROBOTIC TEACH TIP (511 SERIES TIP WITH .625" WIRE STICKOUT)

## PARTS BREAKDOWN – 450R/550R



NO.	DESCRIPTION	450R	550R
1	NOZZLE	SEE NOZZLE SELECTION TABLE PAGE 8	
2	NOZZLE INSULATOR	SEE NOZZLE SELECTION TABLE PAGE 8	
3	CONTACT TIP	SEE CONTACT TIP SELECTION TABLE PAGE 9	
4	GAS DIFFUSER, STANDARD	75004033	75004033
	GAS DIFFUSER, SHORT	75004033S	75004033S
	GAS DIFFUSER, LONG	75004033L	75004033L
	GAS DIFFUSER, X-LONG	75004033XL	75004033XL
5	INSULATING WASHER	75001004	75001006
6	REPLACEABLE NOZZLE SEAT - OPTION	75077850	75077580
7	GOOSENECK, 180 DEGREE	450R-180-H	550R-180-H
	GOOSENECK, 22 DEGREE	450R-22-H	550R-22-H
	GOOSENECK, 45 DEGREE-	450R-45-H	550R-45-H
7A	RED WATER HOSE - ORDER PER FT.	75006026	75006026
7B	RED WATER HOSE - ORDER PER FT.	75099025	75099025
8	HANDLE/ADAPTOR SUPPORT 2 PIECE	75077010	75077012
NS	ADAPTOR SCREW	75077011	75077011
9	CABLE SUPPORT SPRING	75002005	75006033
10	3' POWER CABLE	75003400R	75003500R
	4' POWER CABLE	75004400R	75004500R
	5' POWER CABLE	75005400R	75005500R
	6' POWER CABLE	75006400R	75006500R
	8' POWER CABLE	75008400R	75008500R
	10' POWER CABLE	75010400R	75010500R
11	DIR CON ADAPT BLK	37077000	37077000-C
	EURO ADAPTOR BLOCK	75001148	75001148
12	DIR CON FEEDER PLUGS		
	MILLER	37577705	37577705
	OTC / DAIHEN	37577700	37577700
	OTC DP SERIES	37577701	37577701
	LINCOLN LN7	37577832	37577832
	PANASONIC	37577999	37577999
	TWECO #4	37577699	37577699
	TWECO #5	37577930	37577930

NO.	DESCRIPTION	450R	550R
NS	MILLER O-RING	37577102	37577102
NS	TWECO #4 O-RING	37677102	37677102
NS	TWECO #5 O-RING	75000021	75000021
13	EURO ADAPT NUT	75077014	75077014
14	7/16 HOSE CLAMP	38577108	38577108
15	GAS HOSE PER FOOT	38577087	38577087
16	INERT GAS NUT	38677141	38677141
17	INERT GAS NIPPLE	38677142	38677142
18	.023-.030 LINER, 5FT - T STYLE	75005215T	75005215T
	.023-.030 LINER, 10FT - T STYLE	75010215T	75010215T
	.035-.045 LINER, 5FT - T STYLE	75005222T	75005222T
	.035-.045 LINER, 10FT - T STYLE	75010222T	75010222T
	.045-1/16 LINER, 5FT - T STYLE	75005228T	75005228T
	.045-1/16 LINER, 10FT - T STYLE	75010228T	75010228T
	5/64-3/32 LINER, 5FT - T STYLE	75005229T	75005229T
	5/64-3/32 LINER, 10FT - T STYLE	75010229T	75010229T
	EASY STYLE LINER .023-.030 5FT	75005215-FL	75005215-FL
	EASY STYLE LINER .023-.030, 10FT	75010215-FL	75010215-FL
	EASY STYLE LINER .035-.045 5FT	75005222-FL	75005222-FL
	EASY STYLE LINER .035-.045, 10FT	75010222-FL	75010222-FL
	EASY STYLE LINER 5/64-3/32, 5FT	75005229-FL	75005229-FL
	EASY STYLE LINER 5/64-3/32, 10FT	75010229-FL	75010229-FL
NS	EASY LINER RETAINER - T STYLE	75077052-FL	75077052-FL
	LINER ADAPTOR COLLET - EURO TO "T"	75077052-AE	75077052-AE
	LINER ORING	75000001	75000001
NS	LEATHER COVER - 3 FOOT	75099664	75099664



NO.	DESCRIPTION	PART NUMBER	NO.	DESCRIPTION	PART NUMBER
1	NOZZLE	SEE NOZZLE SELECTION TABLE PAGE 8	21	QUICK DISCONNECT – MALE	38660000
2	NOZZLE INSULATOR	SEE NOZZLE SELECTION TABLE PAGE 8	NS	QUICK DISCONNECT - FEMALE	38660001
3	CONTACT TIP	SEE CONTACT TIP SELECTION TABLE PAGE 9	22	WIRE/GAS CONDUIT – ORDER PER FOOT	75099600
4	GAS DIFFUSER, STANDARD	75004033	23	CONDUIT CLAMP	38577108
	GAS DIFFUSER, SHORT	75004033S	24	KEVLAR CORD – ORDER PER FOOT	75099001
	GAS DIFFUSER, LONG	75004033L	25	WATER-COOLED POWER CABLE 3'	75006003
	GAS DIFFUSER, X-LONG	75004033XL		WATER-COOLED POWER CABLE 4'	75006004
5	INSULATING WASHER	75001004		WATER-COOLED POWER CABLE 5'	75006005
6	REPLACEABLE NOZZLE SEAT - OPTION	75077850		WATER-COOLED POWER CABLE 6'	75006006
7	GOOSENECK, 180 DEGREE	600R-180-H		WATER-COOLED POWER CABLE 8'	75006008
	GOOSENECK, 22 DEGREE	600R-22-H		WATER-COOLED POWER CABLE 10'	75006010
	GOOSENECK, 45 DEGREE-	600R-45-H	26	WATER IN – BLUE ORDER PER FOOT	75099025
7A	RED WATER HOSE – ORDER PER FT.	75006026	28	SUPPORT SPRING	75006033S
7B	RED WATER HOSE – ORDER PER FT.	75099025	31	.023-.030 LINER, 5FT – T STYLE	75005215T
9	CABLE SUPPORT BOOT	75006033		.023-.030 LINER, 10FT – T STYLE	75010215T
10	3' POWER CABLE ASSY.	75003600R		.035-.045 LINER, 5FT – T STYLE	75005222T
	4' POWER CABLE ASSY.	75004600R		.035-.045 LINER, 10FT – T STYLE	75010222T
	5' POWER CABLE ASSY.	75005600R		.045-1/16 LINER, 5FT – T STYLE	75005228T
	6' POWER CABLE ASSY.	75006600R		.045-1/16 LINER, 10FT – T STYLE	75010228T
	8' POWER CABLE ASSY.	75008600R		5/64-3/32 LINER, 5FT – T STYLE	75005229T
	10' POWER CABLE ASSY.	75010600R		5/64-3/32 LINER, 10FT – T STYLE	75010229T
11	2 PIECE ADAPTOR SUPPORT	75077012		EASY STYLE LINER .023-.030 5FT	75005215-FL
12	DIR CON ADAPT BLK	775006148-DC		EASY STYLE LINER .023-.030, 10FT	75010215-FL
	EURO ADAPTOR BLOCK	75006148		EASY STYLE LINER .035-.045 5FT	75005222-FL
	DIR CON FEEDER PLUGS			EASY STYLE LINER .035-.045, 10FT	75010222-FL
	MILLER	37577705		EASY STYLE LINER 5/64-3/32, 5FT	75005229-FL
	OTC / DAIHEN	37577700		EASY STYLE LINER 5/64-3/32, 10FT	75010229-FL
	OTC DP SERIES	37577701	NS	EASY LINER RETAINER – T STYLE	75077052-FL
	LINCOLN LN7	37577832		LINER ADAPTOR COLLET – EURO TO "T"	75077052-AE
	PANASONIC	37577999		LINER ORING	75000001
	TWECO #4	37577699			
	TWECO #5	37577930			
NS	MILLER O-RING	37577102			
NS	TWECO #4 O-RING	37677102			
NS	TWECO #5 O-RING	75000021			
16	EURO ADAPT NUT	75077014			
19	7/16 HOSE CLAMP	38577108			
20	GAS HOSE PER FOOT	38577087			





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