AMERICAN WELDQUIP

SERVICE QUALITY SOLUTIONS

# Water-Cooled Semi-Automatic MIG Torches

**For Models**

**607CG**

This Product is
MADE IN THE U.S.A.

## INSTALLATION, OPERATIONS AND REPLACEMENT PARTS MANUAL

SERVICE QUALITY SOLUTIONS

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# 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 MIG guns 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 our 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. This warranty does not cover damage caused by misuse or abuse, accident, alteration of product, improper installation, misapplication, lack of reasonable care and maintenance, unauthorized repairs or modifications, loss of use while at a repair facility or other conditions that are beyond the control of American Weldquip, Inc.

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.

**STANDARD WARRANTY**

| | |
|---|---|
| All Semi-Automatic, Automatic, Robotic MIG TORCHES and Components | = 120 Days |
| MIG Torch Trigger Switches (Contacts only) -Excludes Smoke Extraction | = LIFETIME |
| Robotic Nozzle Cleaning Stations, Wire Cutter | = 90 Days |
| Robotic Peripherals, ArcSafe, Gun Mounts | = 90 Days |
| TIG POINT Tungsten Electrode Grinders | = 90 Days |

**LIMITED EXTENDED WARRANTY PROTECTION**

This limited extended warranty protection expands coverage to loyal customers who use all GENUINE American Weldquip consumables. Customers filing a claim under the extended warranty will need to prove, by providing past invoices, that they have been purchasing and using Genuine American Weldquip consumables.

| | |
|---|---|
| All Semi-Automatic, Automatic, Robotic MIG TORCHES and Components | = 1 YEAR |
| MIG Torch Trigger Switches (Contacts only) -Excludes Smoke Extraction | = LIFETIME |
| MIG Torch Handles | = LIFETIME |
| Robotic Nozzle Cleaning Stations, Wire Cutter | = 90 Days |
| Robotic Peripherals, ArcSafe, Gun Mounts | = 90 Days |
| TIG POINT Tungsten Electrode Grinders | = 90 Days |

## ROHS COMPLIANT

RoHS (Restriction of Hazardous Substances) is an environmental law which addresses the European Union directive 2002/95/EC known as the RoHS Directive. The RoHS directive restricts the use of hazardous substances listed below in electrical and electronic equipment. While it is not a requirement to meet the directive in the United States, currently, American Weldquip Inc. feels this is an important part of our "Go Green initiative. We have taken all reasonable steps to try to insure the supporting evidence regarding the absence of the restricted substances to support RoHS compliance.

For reference, the maximum concentration values of the restricted substances by weight in homogenous materials are:

| | |
|---|---|
| Lead/Lead Components | - 0.1% |
| Mercury | - 0.1% |
| Hexavalent Chromium | - 0.1% |
| Polybrominated Biphenyls (PBBs) | - 0.1% |
| Polybrominated Diphenyl Ethers (PBDEs) | - 0.1% |
| Cadmium | -0.01% |

For RoHS Certification of Compliance Letter on a particular product please visit our website – www.weldquip.com or email us at technical@weldquip.com or call 330-239-0317.

# SAFETY PRECAUTIONS – READ BEFORE USING

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

## CALIFORNIA PROPOSITION 65 WARNINGS

This product, when used for welding and cutting, can produce fumes or gases which contain chemicals known to cause birth defects and cancer. (California Health & Safety Code Section 25249.5 et seq.)

## EMF – ELECTRICAL AND MAGNETIC FIELDS MAY BE DANGEROUS

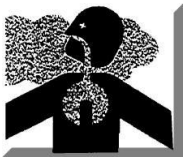
Electrical current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates and EMF field around welding cables and welding machines.

**WARNING - EMF fields may interfere with some pacemakers and other medical implants. Implanted medical device wearers should consult their doctor before operating or going near any arc welding applications. In addition, exposure to EMF fields in welding may have other unknown health effects.**

Welders should use the below procedures to minimize the exposure to EMF fields from the welding circuit.

1) Route the cables close together. Secure by twisting, taping or using a cable cover to keep together.
2) Never coil, wrap or drape welding cables around your body.
3) Do not place your body between welding cables. Arrange so that cables are on one side and away from the operator.
4) Connect the work clamp(ground) to the workpiece as close as possible to the area to be welded.
5) Do not sit, lean and stand next to the welding power source.

## FUMES AND GASES CAN BE DANGEROUS



**WARNING - WELDING AND CUTTING PRODUCE FUMES AND GASES THAT ARE HAZARDOUS TO YOUR HEALTH**

1) Do not breathe the fumes and gases as they can cause asphyxiation.
2) Fumes and gases generated from welding can cause severe injury to respiratory system and even death. In poorly vented areas it is required to properly ventilate the area and/or use local forced ventilation or other fume control equipment at the arc to remove welding and cutting fumes and gases.
3) The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed. The worker exposer level should be checked initially and periodically thereafter to maintain applicable OSHA PEL and ACGIH TVL limits.
4) In a poorly ventilated area, it is necessary to wear an approved air-supplied respirator.
5) Always read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes and metals.
6) Always have a trained watch-person nearby. Welding and cutting fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
7) Do not weld or cut in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
8) Do not weld or cut on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

**ELECTRIC SHOCK CAN KILL**

**WARNING - ELECTRICAL SHOCK CAN KILL. DO NOT TOUCH LIVE ELECTRICAL PARTS AND/OR USE IN DAMP LOCATIONS.**

1) The electrode and work (ground) circuit is electrically "HOT" whenever the welding equipment is on. Do not touch these electrically live parts with your bare skin or wet/damp clothing. Wear dry, hole-free gloves. Incorrectly installed or improperly grounded equipment is a hazard.
2) Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
3) Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semi-automatic DC constant voltage, 2) a DC manual (stick) welder or 3) an AC welder with reduced open-circuit voltage. In most situations, use of a DC, constant voltage wire welder is recommended and do not work alone!
4) Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tag out input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
5) Properly install ground and operate this equipment according to its Owner's Manual and national, state/provincial and local codes.
6) Always verify the supply ground. Make sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
7) Keep cords dry, free of oil and grease and protected from hot metal and sparks.
8) Frequently inspect input power cord for damage or bare wiring. Replace cord immediately if damaged. Bare wiring can kill.
9) Turn off all equipment when not in use.
10) Do not use worn, damaged, undersized or poorly spliced cables. It is illegal to use electrical tape to repair torch power cable or ground cable that has damaged outer insulation. The cable must be replaced.
11) Do not drape cables over your body.
12) Do not touch electrode if you are in contact with the work, ground or another electrode from a different machine.
13) Do not touch electrode holders connected to two welding machines at the same time since double open circuit voltage will be present.
14) Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
15) Wear a safety harness if working above floor level.
16) Keep all panels and covers securely in place.
17) Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
18) Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process when not in use.

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**ARC RAYS HAZARDS**

**WARNING – A WELDING ARC EMITS ULTRAVIOLET (UV) AND OTHER RADIATION AND CAN CAUSE SERIOUS INJURY TO UNPROTECTED SKIN AND EYES.**

1) Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87. I standards.
2) Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
3) Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

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**WELDING AND CUTTING CAN CAUSE FIRE OR EXPLOSION**

**WARNING – Welding and cutting produces sparks that fly off from the arc and can cause fires and/or explosions.**

1) Welding or cutting on closed containers, such as tanks, drums or pipes can cause them to blow up. Sparks can fly off from the welding or cutting arc. The flying sparks, hot work piece and hot equipment can cause fires and burns.
2) Accidental contact of electrode to metal objects can cause sparks, explosion, overheating or fire. Check and be sure the area is safe before doing any welding or cutting.
3) Do not weld or cut where flying sparks can strike flammable material.
4) Remove all flammables and fire hazards from the welding area. If this is not possible, tightly cover them with approved covers to prevent the welding sparks from starting a fire.
5) When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
6) Be alert that welding sparks and hot materials from welding and cutting can easily go through small cracks and openings and cause a fire in the adjacent areas.
7) Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.
8) Do not heat, cut or weld tanks, drums or containers that have held combustibles until the proper steps have been taken to ensure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society.
9) Do not weld or cut where the atmosphere may contain flammable dust, gas, or liquid vapors (such as gasoline).
10) Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuff less trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
11) Connect work cable to the work as close to the welding or cutting area as practical to prevent welding or cutting current from traveling long, possibly unknown paths and causing electric shock, sparks and fire hazards.
12) Do not use welder to thaw frozen pipes.
13) Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding or cutting.
14) Inspect area to ensure it is free of sparks, glowing embers, and flames after work is complete.

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**CYLINDERS CAN EXPLODE IF DAMAGED**

**WARNING – Compressed gas cylinders contain gas under high pressure and/or flammable gas. If damaged, the cylinder can explode.**

1) Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
2) Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
3) Cylinders should be located away from areas where they may be struck or subjected to physical damage and a safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
4) Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.
5) Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
6) Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
7) Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-l, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

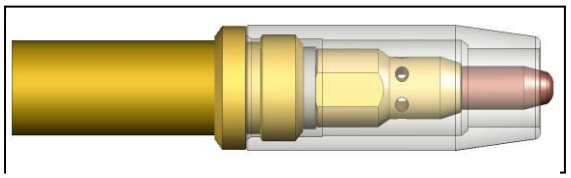
## TORCH SPECIFICATIONS

| MODEL | AMPERAGE | 100% Duty Cycle | | 60% Duty Cycle | |
|---|---|---|---|---|---|
| | | CO2 | Mixed Gas | CO2 | Mixed Gas |
| 607GW/PG | 600 | 600A | 500A | 625A | 600A |

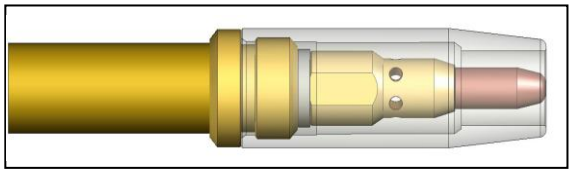
Duty Cycle is based on a complete cycle time of 10 minutes. (60% Duty Cycle = 6 minutes weld time, 4 minutes off time).

## NOZZLE/TIP RELATIONSHIPS

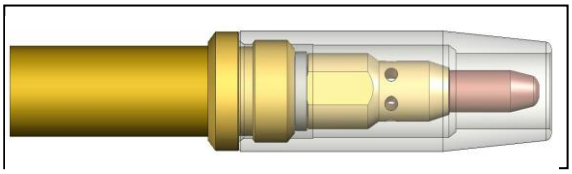
Shown below are typical relationship between the contact tip and nozzle in GMAW Semi-Automatic applications. Nozzles to tip relationships are usually dictated by the process and application but not necessarily the standard. Keep in mind that decreased tip life, increased spatter cleaning cycles may be 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 dependent 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 THROUGHT 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 communize 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 THROUGHT 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.**

# MAINTENANCE

## *Liner Replacement*

The standard liner requires the torch be removed from the feeder in order to be changed.

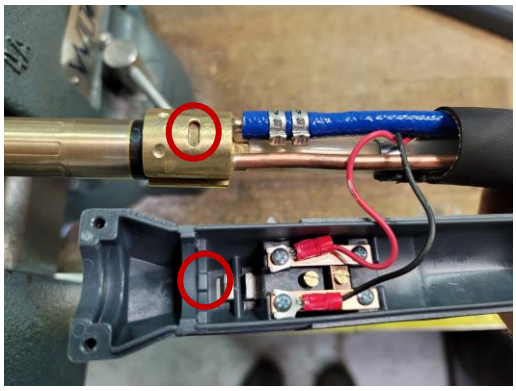
### Standard Liner Maintenance

**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 ¾” 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 THROUGHT 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*

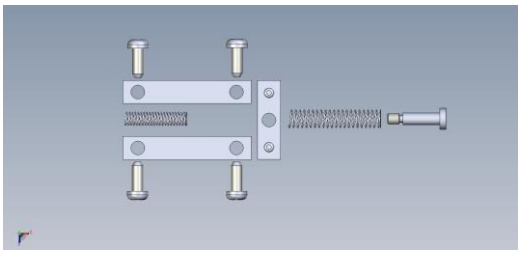


1) Secure Gooseneck in a vice.
2) Remove the liner from the torch.
3) Remove the four handle screws and separate the handle assembly.
4) Unthread the power cable from the gooseneck.
5) Cut off the clamps from the water line and conduit and pull off from neck assembly. You may have to slit with knife. Note: Cut off as little as possible from these two lines.
6) Slide new clamps on the water line and conduit.
7) Thread the power cable on the gooseneck and tighten.
8) Push the water line and conduit on the gooseneck assembly and crimp the clamps.
9) Install the bottom handle assembly (trigger side) onto the gooseneck/cable assembly. Verify the tab inside handle enters the notch in the insulator block of the gooseneck shown to the right.
10) The trigger wires will attach directly to the screws. Make sure 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: Ensure the trigger wires are not pinched between the handle.
13) Reinstall the diffuser, contact tip and nozzle.

## *Trigger Switch Replacement*

<u>CA/GW SERIES TORCHES</u>

The new Trigger Switch Assembly contains –
1ea. Trigger Paddle
2ea. Springs
4ea. Screws – for 2 outer contacts.
1ea. Shoulder Screw
2ea. Copper Outer Contact Plates
1ea. Copper Contact Plate



1) Secure Gooseneck in a vice.
2) Remove the four handle screws and separate the handle assembly.
3) Remove the trigger paddle shoulder screw and spring securing the center copper blade to the trigger paddle. If using the extended trigger there are two screws that secure the trigger paddle and must be removed.
4) Remove the (4) screws securing the copper contact assemblies and remove the trigger leads and contacts.
5) Using a screwdriver gently push, from the inside of the handle, the trigger paddle where it attaches to the handle and remove the trigger paddle and return spring.
6) Insert the return spring (the smaller diameter spring) into the seat on the bottom handle assembly.
7) Carefully insert the new trigger paddle into the handle assembly and tap the paddle in on the pivot point in the handle. The Trigger should snap in place.
8) Place the copper cross contact on the shoulder screw, then install the remaining spring over the screw, and thread into the trigger paddle until tight. DO NOT OVER TIGHTEN.
9) Using the (4) four screw provided attach the (2) two outer contact plates and install the (2) two trigger leads under the front contact plate screws.
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) four screws provided. IMPORTANT: Insure the trigger wires are not pinched between the handle.

<u>PG – PISTOL GRIP SERIES TORCHES</u>

1) Secure Gooseneck in a vice.
2) Remove the six (6) handle screws and separate the handle assembly.
3) Remove the trigger from the handle half and remover the trigger wires.
4) Reinstall the trigger wires on the new switch assembly.
5) Reinstall the trigger assembly inside the handle half.
6) Install the top handle half to the bottom handle half. IMPORTANT: Insure the trigger wires are not pinched between the handle.
7) Reinstall the six (6) handle screws and tighten.

## *Cable Assembly Replacement*

**1)** Secure Gooseneck in a vice.
**2)** Remove the liner from the torch.
**3)** Remove the four front 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: Ensure 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 and trigger wires 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.

## FLOW SWITCH REPLACEMENT

1. Remove liner from torch and set aside.
2. Unscrew spring from rear of adaptor support.
3. Open the loose section containing flow switch watching not to stress electric or water lines. Proceed to cut clamp holding blue water line to inside of flow switch. *Be careful not to cut to much blue hose on disassembly.*
4. Unplug wired connections to flow switch.
5. Remove screw from adaptor support to rear brass block. Set aside. **YOU WILL REUSE**.
6. Rotate adaptor support to unscrew power cable from rear.
7. Cut clamp holding clear gas conduit. Do not cut gas conduit as you will need the length.
8. Remove rear block and adaptor support. Leave spring on assembly then slide new adaptor support on. Be sure to slide over the brass block before reassembly.
9. Reverse steps to put back together.

## 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 is 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.

## OPTIONS

| Part Number | Description |
|---|---|
| 75000009 | Gun Hanger |
| 75000007-ET | Extended Trigger – Includes bottom Handle Half |
| 75000030 | Heat Shield |

## NOZZLE DETAIL SHEET

### 300 SERIES NOZZLES

| PART # | DESCRIPTION | TYPE | BORE SIZE | MATERIAL | BORE ID DIMENSION | O.A.L. | INSULATOR REQUIRED |
|---|---|---|---|---|---|---|---|
| 75133801 | NOZZLE - CONICAL | A | 3/8" (9.5mm) | *NI PLATED BRASS* | .375" (9.5mm) | 2.820" *(71.6mm)* | *NONE REQ.* |
| 75133802 | NOZZLE - BOTTLE NOSE | C | 3/8" (9.5mm) | *NI PLATED BRASS* | .375" (9.5mm) | 2.820" *(71.6mm)* | *NONE REQ.* |
| 75135601-I | NOZZLE - CONICAL | A | 9/16" (14.2mm) | *NI PLATED BRASS* | .593"(15.1mm) | 2.820" *(71.6mm)* | *INSTALLED* |
| 75135002-I | NOZZLE - TAPERED | B | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 2.820" *(71.6mm)* | *INSTALLED* |
| 75135003-I | NOZZLE - TAPERED | C | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 2.672" *(67.96mm)* | *INSTALLED* |
| 75135602-I | NOZZLE - CONICAL | A | 9/16" (14.2mm) | *NI PLATED BRASS* | .593"(15.1mm) | 2.545" *(64.6mm)* | *INSTALLED* |
| 75135004 | NOZZLE – CONICAL SHORT | G | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 1.937" *(49.2mm)* | *NONE REQ.* |

### 400 SERIES/500 SERIES NOZZLES

| PART # | DESCRIPTION | TYPE | BORE SIZE | MATERIAL | BORE ID DIMENSION | O.A.L. | INSULATOR REQUIRED |
|---|---|---|---|---|---|---|---|
| 75146201-I | NOZZLE - BOTTLE NOSE | E | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 3.125" *(79.4mm)* | *INSTALLED* |
| 75145001 | NOZZLE - BOTTLE NOSE | C | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 3.031" *(77.0mm)* | *75001733* |
| 75146202 | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 3.125" *(79.4mm)* | *75001738* |
| 75146202C | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *NI PLATED COPPER* | .625"(15.9mm) | 3.125" *(79.4mm)* | *75001738* |
| 75146202CU | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *BARE COPPER* | .625"(15.9mm) | 3.125" *(79.4mm)* | *75001738* |
| 75145601-I | NOZZLE - TAPERED | B | 9/16" (14.2mm) | *NI PLATED BRASS* | .563"(14.2mm) | 3.125" *(79.4mm)* | *INSTALLED* |
| 75145002C | NOZZLE - TAPERED | B | 1/2" (12.7mm) | *NI PLATED COPPER* | .531"(13.5mm) | 3.125" *(79.4mm)* | *75001738* |
| 75145002CU | NOZZLE - TAPERED | B | 1/2" (12.7mm) | *BARE COPPER* | .531"(13.5mm) | 3.125" *(79.4mm)* | *75001738* |
| 75145003 | NOZZLE - TAPERED (LONG) | B | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 3.915" *(99.4mm)* | *NONE REQ.* |
| 75146501S | NOZZLE - SPOT | H | 5/8" (15.9mm) | *NI PLATED BRASS* | .656"(16.7mm) | 3.437" *(87.3mm)* | *75001738* |
| 75146204-I | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 2.820" *(71.6mm)* | *INSTALLED* |
| 75146204CU | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *BARE COPPER* | .625"(15.9mm) | 2.820" *(71.6mm)* | *75001738* |
| 75145602-I | NOZZLE - SMALL CONICAL | D | 9/16" (14.2mm) | *NI PLATED BRASS* | .593"(15.1mm) | 2.820" *(71.6mm)* | *INSTALLED* |
| 75144301-I | NOZZLE - TAPERED | D | 7/16" (11.1mm) | *NI PLATED BRASS* | .438"(11.1mm) | 2.820" *(71.6mm)* | *INSTALLED* |
| 75145004 | NOZZLE - BOTTLE NOSE | C | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 3.125" *(79.4mm)* | *75001733* |
| 75146205-I | NOZZLE - CONICAL | A | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 3.031" *(77.0mm)* | *INSTALLED* |
| 75146205CU | NOZZLE - TAPERED | B | 5/8" (15.9mm) | *BARE COPPER* | .625"(15.9mm) | 3.031" *(77.0mm)* | *75001738* |
| 75146206-I | NOZZLE - SHORT CONICAL | G | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 1.875" *(47.6mm)* | *INSTALLED* |
| 75146207-I | NOZZLE - SHORT CONICAL | G | 5/8" (15.9mm) | *NI PLATED BRASS* | .625"(15.9mm) | 2.187" *(55.6mm)* | *INSTALLED* |
| 75147501 | NOZZLE - CYLINDRICAL | F | 3/4" (19.0mm) | *NI PLATED BRASS* | .703" (17.9mm) | 3.125" *(79.4mm)* | *75001738* |
| 75147501CU | NOZZLE - CYLINDRICAL | F | 3/4" (19.0mm) | *BARE COPPER* | .703" (17.9mm) | 3.125" *(79.4mm)* | *75001738* |
| 75145603-I | NOZZLE - SHORT TAPERED | G | 9/16" (14.2mm) | *NI PLATED BRASS* | .563"(14.2mm) | 2.375" *(60.3mm)* | *INSTALLED* |
| 75145005 | NOZZLE - BOTTLE NOSE | C | 1/2" (12.7mm) | *NI PLATED BRASS* | .500"(12.7mm) | 2.820" *(71.6mm)* | *75001733* |
| 75144302-I | NOZZLE - TAPERED | D | 7/16" (11.1mm) | *NI PLATED BRASS* | .438"(11.1mm) | 3.125" *(79.4mm)* | *INSTALLED* |

# CONTACT TIP SELECTION CHART

## M6 CONTACT TIPS

| PART # | WIRE SIZE | NOMINAL I.D. | DESCRIPTION |
|---|---|---|---|
| ***COPPER (CU)*** | | | |
| 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)* |

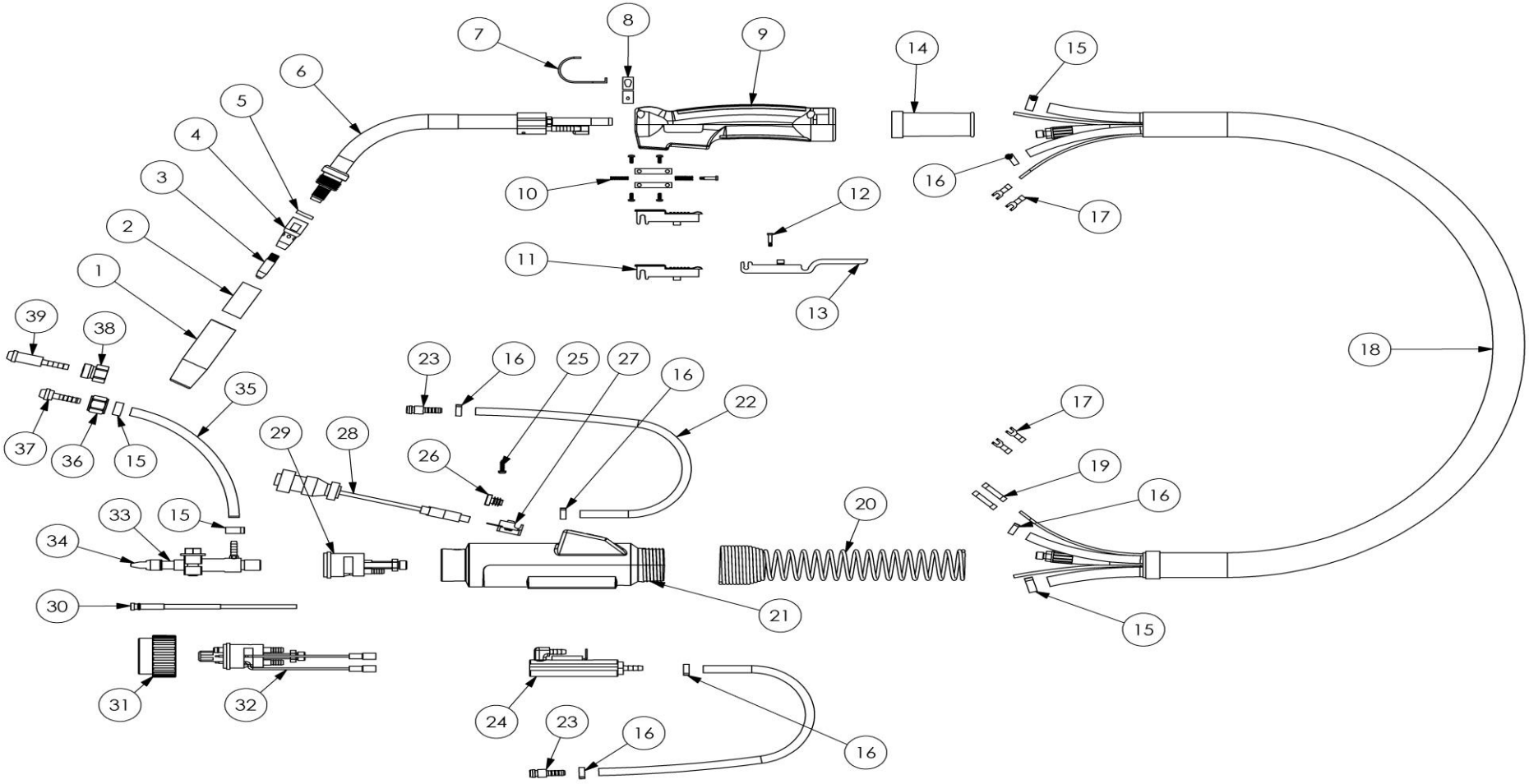
## M8 CONTACT TIPS

| PART # | WIRE SIZE | NOMINAL I.D. | DESCRIPTION |
|---|---|---|---|
| ***COPPER (CU)*** | | | |
| 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)* |

## M8 HRT – EXTENDED LIFE CONTACT TIPS

| PART # | WIRE SIZE | NOMINAL I.D. | DESCRIPTION |
|---|---|---|---|
| 20040400 | .040" *(1.0mm)* | .050" | .315 OD CONTACT TIP |
| 20045400 | .045" *(3/64") (1.2mm)* | .054" | .315 OD CONTACT TIP |
| | | | |
| 20035500 | .035" *(.9mm)* | .044" | .395 OD CONTACT TIP |
| 20040500 | .040" *(1.0mm)* | .050" | .395 OD CONTACT TIP |
| 20045500 | .045" *(3/64") (1.2mm)* | .054" | .395 OD CONTACT TIP |
| 20052500 | .052" *(1.3mm)* | .061" | .395 OD CONTACT TIP |
| 20062500 | .062" *(1/16") (1.6mm)* | .073" | .395 OD CONTACT TIP |

# PARTS BREAKDOWN – 607 GW



| NO. | DESCRIPTION | 607GW/CG |
|---|---|---|
| **1** | NOZZLE | SEE NOZZLE DETAIL SHEET PAGE 8 |
| **2** | NOZZLE INSULATOR | SEE NOZZLE DETAIL SHEET PAGE 8 |
| **3** | CONTACT TIP | SEE CONTACT TIP DETAIL SHEET PAGE 9 |
| **4** | GAS DIFFUSER, STANDARD | 75004033 |
| | GAS DIFFUSER, SHORT | 75004033S |
| | GAS DIFFUSER, LONG | 75004033L |
| | GAS DIFFUSER, X-LONG | 75004033XL |
| **5** | INSULATING WASHER | 75001004 |
| **6** | GOOSENECK, 60 DEGREE – CG SERIES | 75006053 |
| | GOOSENECK, 45 DEGREE – CG SERIES | 75006052 |
| **7** | GUN HANGER *(OPTIONAL)* | 75000009 |
| **8** | GUN HANGER BRACKET | 75000030C |
| **9** | HANDLE ASSEMBLY – COOL-GRIP | 75000044 |
| | HANDLE ASSEMBLY – EXT. TRIGGER - COOL-GRIP | 75000046 |
| | HANDLE ASSEMBLY – DUAL SCHEDULE- COOL-GRIP | 75000045 |
| | HANDLE ASSEMBLY – EXT. TRIG./D.SCHEDULE COOL- | 75000047 |
| | HANDLE SCREWS – STD *(4 REQUIRED)* | 75000008 |
| | SWITCH ASSEMBLY – DUAL SCHEDULE | 75000017 |
| **NS** | SWITCH ASSEMBLY – MULTI-SCHEDULE | 75000018 |
| **NS** | DS / MS SWITCH CONNECTORS | 75077018 |
| **10** | TRIGGER ASSEMBLY | 75000004 |
| **11** | TRIGGER PADDLE | 75000042 |
| **12** | EXT. TRIGGER SCREW | 75000013D |
| **13** | EXT. TRIGGER | 75000007-ET |
| **14** | RUBBER BOOT | 75006033 |
| **15** | 7/**1**6 HOSE CLAMP | 38577108 |
| **16** | 8MM HOSE CLAMP | 38577105 |
| **17** | TRIGGER CONNECTOR | 75077024 |
| **18** | BULK OUTER CABLE COVER | 32160999 |
| **19** | BUTT SPLICE | 75077066 |
| **20** | ADAPTOR SUPPORT SPRING | 75002018 |
| **21** | REAR ADAPTOR SUPPORT | 75077006 |
| **22** | RED HOSE BLK | 75099026 |
| **23** | QUICK DISCONNECT | 38577105 |
| **24** | FLOW SWITCH | FS-1000 |
| **25** | CONNECTING SCREW | 38000002 |
| **26** | HOLE PLUG | 38000003 |
| **27** | CABLE CONNECTOR | 38000001 |
| **28** | CONTROL CABLE, MILLER | 37777501 |
| | CONTROL CABLE, LINCOLN | 37777505 |
| | CONTROL CABLE, OTC | 37777503 |
| | CONTROL CABLE, TWECO | 37777500 |
| **29** | DIR CON ADAPT BLK | 75006148-DC |
| **30** | .023-.030 LINER, 10FT – T STYLE | 75010215T |
| | .023-.030 LINER, 15FT – T STYLE | 75015215T |
| | .035-.045 LINER, 10FT – T STYLE | 75010222T |
| | .035-.045 LINER, 15FT – T STYLE | 75015222T |
| | .035-.045 LINER, 25FT – T STYLE | 75025222T |
| | .045-1/16 LINER, 10FT – T STYLE | 75010228T |
| | .045-1/16 LINER, 15FT – T STYLE | 75015228T |
| | .045-1/16 LINER, 25FT – T STYLE | 75025228T |
| | 5/64-3/32 LINER, 10FT – T STYLE | 75010229T |
| | 5/64-3/32 LINER, 15FT – T STYLE | 75015229T |
| | 5/64-3/32 LINER, 25FT – T STYLE | 75025229T |
| | LINER ORING | 75000001 |
| | .023-.030 LINER, 10FT – T STYLE | 75010215T |

| | | |
|---|---|---|
| | .023-.030 LINER, 15FT – T STYLE | 75015215T |
| | .035-.045 LINER, 10FT – T STYLE | 75010222T |
| | .035-.045 LINER, 15FT – T STYLE | 75015222T |
| | .035-.045 LINER, 25FT – T STYLE | 75025222T |
| | .045-1/16 LINER, 10FT – T STYLE | 75010228T |
| | .045-1/16 LINER, 15FT – T STYLE | 75015228T |
| | | |
| **31** | EURO ADAPT HAND NUT | 75077014 |
| **32** | EURO REAR | 75006149 |
| **33** | MILLER DIR CON FEEDER PLUG | 37577705 |
| | OTC / DAIHEN DIR CON FEEDER PLUG | 37577700 |
| | OTC DP SERIES DIR CON FEEDER PLUG | 37577701 |
| | LINCOLN LN7 DIR CON FEEDER PLUG | 37577832 |
| | PANASONIC DIR CON FEEDER PLUG | 37577999 |
| | TWECO #4 DIR CON FEEDER PLUG | 37577699 |
| | TWECO #5 DIR CON FEEDER PLUG | 37577930 |
| **34** | CAP - MILLER FEEDER PIN | 37577705-N |
| | CAP - OTC FEEDER PIN | 38277001-N078 |
| | CAP - EURO | 37077005 |
| | CAP - MILLER FEEDER PIN | 37577705-N |
| | O-RING- MILLER PIN | 37577102 |
| **NS** | O-RING- TWECO #4 PIN | 37677102 |
| | O-RING- TWECO #5 PIN | 75000021 |
| | O-RING - EURO | 28500002 |
| **35** | GAS HOSE PER FOOT | 38577087 |
| **36** | TYPE B GAS NUT | 38677145 |
| **37** | TYPE B GAS NIPPLE | 38677144 |
| **38** | INERT GAS NUT | 38677141 |
| **39** | INERT GAS NIPPLE | 38677142 |
| **40** | 10’ POWER CABLE ASSEMBLY | 75006010 |
| | 12’ POWER CABLE ASSEMBLY | 75006012 |
| | 15’ POWER CABLE ASSEMBLY | 75006015 |
| | 20’ POWER CABLE ASSEMBLY | 75006001 |
| | 25’ POWER CABLE ASSEMBLY | 75006037 |
| | KEVLAR CORD | 75099001 |
| | BLUE HOSE BLK | 75099025 |
| | TRIGGER WIRES | 75099770 |
| | GAS CONDUIT | 75099660 |
| | | |
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# NOTES:

# AMERICAN WELDQUIP

**1375 Wolf Creek Trail – P.O. Box 397**
**Sharon Center, Ohio 44274**
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WORKING TO REDUCE OUR ENVIRONMENTAL IMPACT ON THE WORLD