



Robotic WIRE BRAKE For Models 300 Amp, 500 Amp Air-Cooled & 550 Amp Water-Cooled



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

INSTALLATION, OPERATIONS, AND REPLACEMENT PARTS

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 assumes no responsibility for errors or omissions. American Weldquip assumes no liability for damages resulting from the use of the information contained in this manual. American Weldquip 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 listed below. For any product found to be defective under normal use, AMERICAN WELDQUIP 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 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.

A Return Merchandise Authorization Number (RMA#) must be attained from the factory for any product being returned for Warranty Repair or Replacement. All returned products 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.....= 6 Months
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.....= 1 Year w/Exclusive Quip-Mist Use
 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 ensure 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.

Read and follow the Owner's Manual carefully before installing, operating, or servicing equipment. Read and understand all safety information.

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.) **WASH HANDS AFTER HANDLING.**

EMF – ELECTRICAL AND MAGNETIC FIELDS MAY BE DANGEROUS

Electrical current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates an 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.
- Route the cables close together. Secure by twisting, taping, or using a cable cover to keep together.
- Never coil, wrap, or drape welding cables around your body.
- Do not place your body between welding cables. Arrange so that cables are on one side and away from the operator.
- Connect the work clamp (ground) to the workpiece as close as possible to the area to be welded.
- Do not sit, lean, and stand next to the welding power source.
- Do not breathe the fumes and gases as they can cause asphyxiation.

FUMES AND GASES CAN BE DANGEROUS



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

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.

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 exposure level should

be checked initially and periodically thereafter to maintain applicable OSHA PEL and ACGIH TVL limits.

- In a poorly ventilated area, it is necessary to wear an approved air-supplied respirator.
- Always read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Always have a trained watchperson 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.
- 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.
- 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.

The electrode and work (ground) circuit are 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.

Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.

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!

- 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).
- Properly install ground and operate this equipment according to its Owner's Manual and national, state/provincial, and local codes.
- 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.
- Keep cords dry, free of oil and grease and protected from hot metal and sparks.
- Frequently inspect input power cord for damage or bare wiring. Replace cord immediately if damaged. Bare wiring can kill.
- Turn off all equipment when not in use.

- 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.
- Do not drape cables over your body.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process when not in use.

ARC RAYS HAZARDS



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

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 Z87.1 standards.

Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.

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.

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.

- 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.
- 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.
- Do not weld or cut where flying sparks can strike flammable material.
- 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.
- 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.
- 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.

Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.

- 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.
- Do not weld or cut where the atmosphere may contain flammable dust, gas, or liquid vapors (such as gasoline).
- 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.
- 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.
- Do not use welder to thaw frozen pipes.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding or cutting.
- Inspect area to ensure it is free of sparks, glowing embers, and flames after work is complete.

CYLINDERS CAN EXPLODE IF DAMAGED



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

- 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.
- Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
- 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.
- Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.
- Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, “Precautions for Safe Handling of Compressed Gases in Cylinders,” available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

PRINCIPAL SAFETY STANDARDS

Safety in Welding, Cutting and Allied Processes, ANSI Standard Z49.1 – available for download from the American Welding Society website at www.aws.org.

CSA Standard W117.2 – available from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Ontario, Canada L4W 5N5 or website – www.csa-international.org.

Nation Electric Code, NFPA Standard 70 – available from National Fire Protection Association, Quincy, MA 02269, or website – www.nfpa.org.

Safe Practices for Occupational and Educational Eye and Face Protection, ANSI Standard Z87.1 – available from the American National Standards Institute, 25 West 43rd Street, New York, NY 10036. Website – www.ansi.org.

OSHA, Occupational Safety and Health Standard for General Industry, Title 29, Code of Federal Regulations, Part 1910, Subpart Q and Part 1926, Subpart J available from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250. Website – www.osha.gov.

FEATURES

American Weldquip wire brake has been designed with advanced features and benefits to include.

Integrated Design – Designed as part of the gooseneck.

Holding Power – Designed to lock and hold weld wire stationary when wire sensing for joint detection.

Air Activated – Activated and deactivated through pneumatic hose. **Recommended air pressure of 60 - 80psi.**

Various Wire Sizes – Same system used for wire sizes up to 0.93” (2.4mm). No need to change components when changing wire sizes.

Adaptation – Same system used on both Air and Water Cooled Robotic torch systems.

Location – Manufactured in Sharon Center, Ohio allowing for quick turnaround.

COMPLETE LINER REPLACEMENT

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

The Wire Brake Robotic Torch utilizes a two-piece liner system. After completing Step #1 the additional trimmed liner piece will be used for the gooseneck jump liner.

LINER REMOVAL

- 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) Remove the gooseneck jump liner by pulling out of the front of the torch.
- 5) Remove the torch cable from the wire feed unit.
- 6) Loosen the set screw at the torch feeder connection using a 5/64" Allen wrench or remove the feeder pin liner cap.
- 7) Making sure the torch cable is straight, grasp the liner at the rear of the torch with a pair of pliers and remove.

INSTALLATION

- 8) Carefully feed the new liner into the torch using short strokes to avoid kinking.
- 9) Continue feeding the liner until you feel it stop at the rear of the wire brake.
- 10) Measure the length of liner that is sticking out of the rear of the torch feeder pin.
- 11) Remove the liner from the torch and cut the front end of liner the measured length.
- 12) Reinstall the liner into the torch and secure with setscrew or the retainer cap.
- 13) Reinstall the torch to the wire feed unit.
- 14) Using the previous trimmed liner piece or a new gooseneck liner install into the front of the gooseneck making sure it is seated into the front of the wire brake.
- 15) Trim the liner to 3/4" stick out from the end of the gooseneck. (FIG 1)
- 16) Replace the diffuser, contact tip and nozzle.
- 17) 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.

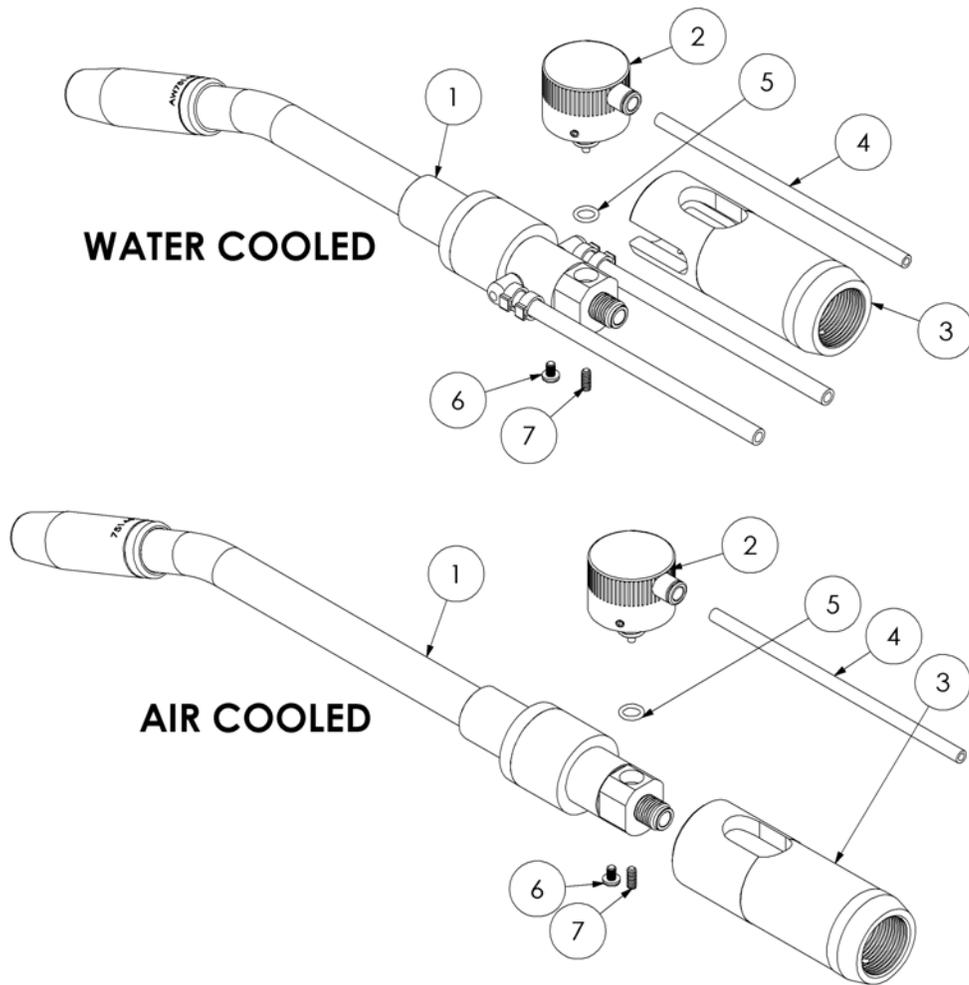


Gooseneck Jump Liner Replacement

- 1) Trim the end of the weld wire at contact tip.
- 2) Remove the nozzle, contact tip and diffuser.
- 3) DO NOT retract the weld wire as it is used to guide the gooseneck jump liner into position.
- 4) Remove the jump liner from the front of the torch using a pair of pliers.

- 5) Insert the weld wire into the new gooseneck jump liner and then push the liner into the front of the gooseneck making sure it is seated into the liner collet.
- 6) Trim the liner to $\frac{3}{4}$ " stick out from the end of the gooseneck. (FIG 1)
- 7) Replace the diffuser, contact tip and nozzle.

PART BREAKDOWN



NO	DESCRIPTION	WATER COOLED	AIR COOLED
1	Wire Brake Block (Included w/ Gooseneck)	Contact AWQ	Contact AWQ
2	Wire Brake Piston	WB-1000	WB-1000
3	Front Adaptor	WB-0107	WB-0109
4	Air Hose	38577087	38577087
5	O-Ring	37677117	37677117
6	Front Adaptor Screw	75077011	75077011
7	Wire Brake Set Screw	AST-139	AST-139



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