Operation Manual

Model #: MA-400™ Air-Cooled
SpinArc® Welding Torch

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Thank You for Choosing Weld Revolution®

Thank you for selecting a Weld Revolution product. The SpinArc® welding torch you have purchased is a breakthrough in new technology that has been carefully assembled, thoroughly tested and is ready to weld. Each product goes through a series of quality tests; and every system is weld tested prior to shipment to ensure the highest performance.

Before installing, compare the equipment received against the invoice to verify that the shipment is complete and undamaged. It is the responsibility of the purchaser to file all claims of damage or loss that may have occurred during transit with the carrier.

This Operation Manual contains general information, instructions, recommended operating ranges and preventative maintenance to maintain the product. Please read, understand and follow all safety precautions.

While every precaution has been taken to assure the accuracy of this Operation Manual, Weld Revolution assumes no responsibility for errors or omissions. Weld Revolution assumes no liability for damages resulting from the use of information contained herein. The information presented in this Operation Manual is accurate to the best of our knowledge at the time of printing.

Please reference www.weldrevolution.com for updated materials, how-to guides and videos.

Product Registration: www.weldrevolution.com/registration

Technical Support

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Applications: info@weldrevolution.com
Service, Parts & Warranty: service@weldrevolution.com

Serial Number: ________________________________

Date of Purchase: ________________________________

Purchased From: ________________________________

serial number is located on torch body

Subject to Change – The information presented in this manual is accurate to the best of our knowledge at the time of printing. Please visit www.weldrevolution.com for the most up-to-date information.
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SAFETY PRECAUTIONS – READ BEFORE USING

Welding is not particularly hazardous when certain safety practices are followed. Everyone using this equipment should be thoroughly trained in safe welding practices. Failure to observe safe practices may cause serious injury.

Handling welding torches presents no danger if the appropriate safety regulations are strictly adhered to. For example:

- Starting procedures must be reserved for those fully conversant with processes relating to arc welding equipment.
- Arc welding can prove damaging to eyes, skin, and hearing! It is therefore imperative that both management and operators understand and follow the ANSI Standard Z49.1, SAFETY IN WELDING AND CUTTING. All Personal Protective Equipment (PPE) shall be in place in accordance with this referenced specification and all other applicable and governing regulations.
- The operating data provided in the Specifications are maximum values. Overloading the welding torch will inevitably damage the product and void any and all warranties.
- Before changing any parts on the torch or Control Box, disconnect the torch from the welding power source and disconnect the Control Box input power source. Unplug the Control Box from the electrical outlet.
- The operating instructions for all other welding components - e.g. power source, wire feed and cooling unit must be followed per the manufacturer’s recommendations.
- Never pull the cable assembly across sharp edges or set down on a hot surface.
- Never move the torch by pulling or dragging by the welding torch or cable.
- Curtains or partitions shall be installed to protect other workers or observers from arc radiation.
- When handling gas cylinders, consult the instructions issued by the manufacturers and the suppliers of the pressurized gas.
- Work pieces that have been degreased using chlorinated solvents must be sprayed down with clean water before welding starts to avoid the risk of phosgene forming. For the same reason, no degreasing baths containing chlorine must be placed close to the welding point.
- All vapors given off by metals can cause harm and a special warning is attached to lead, cadmium, copper, zinc, and beryllium. Take appropriate precautions to ensure that the legal maximum levels of toxic concentrations are not exceeded.

- Do not touch the welding torch with bare skin until it has had adequate time to cool down.
- Wait to adjust the rotation diameter until the torch has cooled to room temperature.

Fume and Gases

FUMES AND GASES can be hazardous. Welding and cutting produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation 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.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer’s instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watch-person nearby. Welding 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.
### Arc Rays

**ARC RAYS** can burn eyes and skin. Arc rays from welding and cutting processes produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear an approved welding helmet fitted with a proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding, cutting, or watching (see ANSIZ49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash, glare, and sparks; warn others not to watch the arc.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.

### Welding and Cutting

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.

- Remove all flammables within 35 ft. (10.7 m) of the welding or cutting arc. If this is not possible, tightly cover them with approved covers.
- Do not weld or cut where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be aware that welding sparks and hot materials from welding and cutting can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding or cutting on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld or cut on containers that have held combustibles. If on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 and AWS A6.0 (see Safety Standards).

### Electric Shock

**Touching live electrical parts can cause fatal shocks or severe burns.**

The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In gas metal arc welding (GMAW), the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulated gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is danger of falling.
- Use AC output ONLY if required for the welding or cutting process.
- If AC output is required, use remote output control if present on unit.
- 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 GMAW DC constant voltage (wire) welder, 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 equipment. Lockout/tagout 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 – check and be 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.
- When making input connections, attach proper grounding conductor first and double-check connections.
- Keep cords dry, free of oil and greases and protected from hot metal and sparks.
- Frequently inspect 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.
- 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.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal. Disconnect cable for process when not in use.

Cylinders

Compressed gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding, cutting or other electrical circuits.
- Never drape a welding electrode or cutting torch over a gas cylinder.
- Never allow a welding electrode or cutting torch to touch any cylinder.
- Never weld on a pressurized cylinder – explosion will result.
- Use only the correct compressed gas cylinders, regulators, hoses and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve. Do not stand in front of or behind the regulator when opening the valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

Additional Safety Warnings for Installation, Operation and Maintenance

HOT PARTS can burn

- Do not touch hot parts bare handed.
- Allow cooling period before working on equipment.
- Do not attempt to adjust the rotation diameter setting until the torch is cool to the touch.
- While handling hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.
FLYING METAL OR DIRT can injure or kill
- Welding, cutting, chipping, wire brushing and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.

BUILDUP OF GAS can injure or kill
- Shut off compressed gas supply when not used.
- Always ventilate confined spaces or use approved air-supplied respirator.

ELECTRIC AND MAGNETIC FIELDS (EMF) can affect implanted Medical Devices
- Wearers of Pacemakers and other Implanted Medical Devices should keep away.
- Implanted Medical Device wearers should consult their doctor and the device manufacturer before going near arc welding, spot welding, gouging, plasma arc cutting or induction.

NOISE can damage hearing
- Noise from some processes or equipment can damage hearing.
- Wear approved ear protection if noise level is high.

FIRE OR EXPLOSION hazard
- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables. Do not overload building wiring – be sure power supply system is properly sized, rated and protected to handle this unit.

MOVING PARTS can injure
- Keep away from moving parts such as the rotating mechanism in the torch and the rotating contact tip. Keep away from moving fans.
- Keep all doors, panels, covers and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers or guards for maintenance and troubleshooting as necessary.

FLYING SPARKS can injure
- Wear a face shield to protect eyes and face.
- Shape tungsten electrode only on grinder with proper guards in a safe location wearing proper face, hand and body protection.
- Sparks can cause fires – keep flammables away.

READ INSTRUCTIONS
- Read and follow all labels and the Owner’s Manual carefully before installing, operating, or servicing the unit.
- Read the safety information at the beginning of the manual and each section.
- Use only genuine replacement parts from the manufacturer.
- Perform maintenance and service according to the Owner’s Manual, industry standards and national, state/provincial and local codes.

WELDING WIRE can injure
- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people or any metal when threading welding wire.

COMPRESSED AIR can injure or kill
- Before working on compressed air system, turn off and lockout/tagout unit, release pressure and be sure air pressure cannot be accidentally applied.
- Relieve air pressure before disconnecting or connecting air lines. Check compressed air system components and all connections and hoses for damage, leaks and wear before operating unit.
- Do not direct air stream toward self or others.
- Wear protective equipment such as safety glasses, hearing protection, leather gloves, heavy shirt and trousers, high shoes, and a cap when working on compressed air system.
- Use soapy water or an ultrasonic detector to search for leaks – never use bare hands. Do not use equipment if leaks are found.
TRAPPED AIR PRESSURE AND WHIPPING HOSES can injure

- Release air pressure from tools and system before servicing, adding or changing attachments or opening compressor oil drain or oil fill cap.

H.F. RADIATION can cause interference

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation. The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- Have the installation regularly checked and maintained.
- If notified by the FCC about interference, stop using the equipment at once.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

ARC WELDING AND PLASMA CUTTING can cause interference

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep cables as short as possible, close together, and down low, such as on the floor.
- Locate welding or cutting operation 100 meters from any sensitive electronic equipment.
- Be sure welding machine or plasma cutter is installed and grounded according to its Owner’s Manual.
- If interference still occurs, the user must take extra measures such as moving the welding or cutting machine using shielded cables, using line filters or shielding the work area.

OVERUSE CAN CAUSE OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter air flow to unit.

IMPORTANT: Be sure to follow your facility’s lock out / tag out procedures.

California Proposition 65 Warnings

Welding or cutting equipment produces fumes or gases that contain chemicals known to the State of California to cause birth defects and in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.) This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash your hands after using.

EMF Information

Electric current flowing through any conductor causes localized electric and magnetic fields (EMF). The current from arc welding (and allied processes including spot welding, gouging, plasma arc cutting, and induction heating operations) creates an EMF field around the welding circuit. EMF fields may interfere with some medical implants, e.g. Pacemakers. Protective measures for persons wearing medical implants have to be taken. For example, restrict access for passersby or conduct individual risk assessment for welders. Welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

- Keep cables close together by twisting or taping them, or using a cable cover.
- Do not place your body between welding cables. Arrange cables to one side and away from the operator.
- Do not coil or drape cables around your body.
- Keep head and trunk as far away from the equipment in the welding circuit as possible.
- Connect work clamp to workpiece as close to the weld as possible.
- Do not work next to, sit or lean on the welding power source.
- Do not weld while carrying the welding power source wire feeder.

About Implanted Medical Devices:

Implanted Medical Device wearers should consult their doctor and the device manufacturer before performing or going near arc welding, spot welding, gouging, plasma arc cutting, or induction heating operations. If cleared by your doctor, then following the above procedures is recommended.
Safety Standards


• ANSI Standard Z41.1, STANDARD FOR MEN’S SAFETY TOE FOOTWEAR obtainable from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

• ANSI Standard Z49.2, FIRE PREVENTION IN THE USE OF CUTTING AND WELDING PROCESSES obtainable from the American National Standards Institute, 1430 Broadway, New York, NY 10018.


• AWS Standard A6.0, WELDING AND CUTTING CONTAINERS WHICH HAVE HELD COMBUSTABLES obtainable from the American Welding Society, 2501 N.W. 7th St., Miami, FL 33125.

• NFPA Standard 70-1978, NATIONAL ELECTRICAL CODE obtainable from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.


• ANSI Standard Z87.1, SAFE PRACTICES FOR OCCUPATION AND EDUCATIONAL EYE AND FACE PROTECTION obtainable from the American National Standards Institute, 1430 Broadway, New York, NY, 10018.


• American Welding Society Standard AWSF4.1 “Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances”, obtainable from the American Welding Society, 2501 N.W. 7th St., Miami, FL 33125
**Introduction**

This manual provides basic instructions for Weld Revolution’s MA-400™ Mechanized Air-Cooled Welding Torch. This product delivers the benefits of Weld Revolution’s innovative and patented SpinArc® welding technology in a mechanized torch that can also be used semi-automatically with the optional hand welding kit.

This welding torch can be easily used with any modern welding power source and wire feeder. Simply select and install the appropriate power pin (wire feeder adapter) for the specific wire feeder. Refer to the list of power pins in the Spare Parts section of this manual.

**How it Works**

Weld Revolution's patented technology rotates the welding wire in a circular motion at a high rate of speed. Centrifugal force propels the molten droplets across the arc creating a consistent and sound weld bead. This enables high deposition rate welding for significant increases in productivity. The innovative torch design allows easy adjustment of the wire rotation diameter and rotational speed to optimize weld quality and performance.

**What's Included**

The MA-400 includes the following items:
- Weld Cable Assembly & Torch Body
- Control Box & Control Cables
- Flexure Nut Tool & Extra Flexure
- Power Pin, Wire Liner & Contact Tip
- Control Box Mounting Kit
- Replacement O-Ring Kit

**Optional Accessories**

The following items are also available:
- Hand Welding Kit
- ABI-Shield Ceramic Protective Spray (192.0228.1)

**Available Models**

<table>
<thead>
<tr>
<th>Model #</th>
<th>Length, ft. (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-400-6</td>
<td>6 ft. (1.8 m)</td>
</tr>
<tr>
<td>MA-400-10</td>
<td>10 ft. (3.0 m)</td>
</tr>
<tr>
<td>MA-400-15</td>
<td>15 ft. (4.6 m)</td>
</tr>
<tr>
<td>MA-400-XX</td>
<td>XX ft. Special Order 3 - 20 ft. (1.8 – 6.1 m)</td>
</tr>
</tbody>
</table>

**Consumables & Replacement Parts**

Contact tips, shielding gas nozzles, wire liners, flexures and other maintenance parts are listed later in the manual. Additional contact tips, nozzles and power pins are available by special request through our Customer Service Team.
## Specifications

### Table 2

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Amperage</strong></td>
<td>- <strong>Air-Cooled:</strong> 300 Amps/100% D.C. 80/20 Ar/CO₂</td>
</tr>
<tr>
<td></td>
<td>- <strong>With Water-Cooled Nozzle:</strong> 400 Amps/100% D.C. 80/20 Ar/CO₂</td>
</tr>
<tr>
<td></td>
<td><em>Rating based on tests that comply with IEC 60974-7 specifications</em></td>
</tr>
<tr>
<td><strong>Rotation Diameter</strong></td>
<td>1 – 8 mm (0.039 - 0.315 in.) at the wire tip tool-free adjustability in increments of approximately 1 mm</td>
</tr>
<tr>
<td><strong>Spin Direction</strong></td>
<td>Clockwise &amp; Counter-Clockwise</td>
</tr>
<tr>
<td><strong>Spin Start Delay</strong></td>
<td>0 – 5 seconds</td>
</tr>
<tr>
<td><strong>Rotation Speed</strong></td>
<td>400 – 5,500 rpm</td>
</tr>
<tr>
<td><strong>Operating Environment</strong></td>
<td>14 to 104 °F (-10 to 40 °C)</td>
</tr>
<tr>
<td><strong>Wire Diameters</strong></td>
<td>0.035 – 1/16” (0.90 - 1.6 mm)</td>
</tr>
<tr>
<td><strong>Welding Processes</strong></td>
<td>GMAW, GMAW-P, FCAW</td>
</tr>
<tr>
<td><strong>Control Box Input Power</strong></td>
<td>110 – 240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Cable Length</strong></td>
<td>Available in 6, 10 &amp; 15 ft. (1.8, 3.0 and 4.6 m)</td>
</tr>
<tr>
<td></td>
<td>Custom lengths available between 3 – 20 ft. (1.8 – 6.1 m)</td>
</tr>
<tr>
<td><strong>Compliance</strong></td>
<td>RoHS Compliant</td>
</tr>
<tr>
<td></td>
<td>IP 51, control box</td>
</tr>
<tr>
<td></td>
<td>IEC/EN 60974-7</td>
</tr>
</tbody>
</table>

*CE*
Installation

Step 1: **Install Power Pin**
The power pin attaches to the feeder end of the weld cable. This required part enables the torch to connect to the specific wire feeder model in use. Power pins are sold separately (see Replacement Parts).

![Welding Cable Assembly](image)

**Power Pin**

Step 2: **Install the Wire Liner (see also pg. 28)**
With the torch lying flat on the floor or table, insert the liner until it dead ends in the torch. Then, measure the amount sticking out the back of the power pin. Pull out the liner, cut off the torch end by that amount and reinstall it. Make sure the liner seats fully inside the torch and is flush inside the power pin.

At the power pin end, the liner should be flush for Lincoln or Tweco power pins. With Miller power pins, leave two coils outside the liner nut.

Step 3: **Connect Torch to Feeder**
Insert the power pin into the wire feeder bushing and tighten the screw on the wire feeder. Make sure that the control cable connection on the torch is facing down to protect it.

Step 4: **Mount the Torch**
Mount the welding torch using an electrically isolated clamp into existing mechanized systems by holding the middle section of the torch body, which is 1.75" (44.5 mm) in diameter. The optional isolated torch mount (PN 979.0055.1) is available separately.

Step 5: **Mount the Control Box**
The mounting kit can be used to attach the Control Box to the wire feeder or other magnetic surface. There are also mounting tabs on the case. With the box secure, and in the OFF
position, plug it into a grounded electrical outlet. Do not remove the grounding plug from the cable. Isolate the Control Box from all sources of high frequency.

**Step 6: Control Cable**
Connect the orange control cable to both the torch and the Control Box. Be careful to fully hand tighten both ends. Protect the cable from potential damage.

**Step 7:** Install Trigger Control Cable (TC-15) -- OPTIONAL
Details on the following two pages.

**Step 8:** Turn Control Box ON
First, make sure the spin switch is set to OFF. Verify the control cables and power cord are securely connected. Make sure the torch is mounted and connected to the wire feeder. Now, turn ON the Control Box. Verify the RPM readout is illuminated.

**Step 9:** Feed Wire
On the wire feeder, use the jog function to run the wire through the cable. As it approaches the torch, slow the wire speed down to ensure smooth feeding through the torch. HINT: It is helpful to turn ON the spin to about 1,000 rpm when feeding wire.

**Step 10:** Install Contact Tip
Two tools are needed to install or remove a contact tip. While holding the Contact Tip Extension with a 5/16" (8 mm) wrench or small adjustable wrench, use a second 5/16" (8 mm) wrench to remove or tighten the contact tip.

**NOTICE**
Do not twist Spin Shaft. Damage to Flexure is possible.

Clip the wire to the desired wire stick out, which will be approximately the same as conventional MIG welding without rotation, and you’re ready to weld.
Connecting Trigger Cable (TC-15) to wire feeder and/or aux equipment

The MA-400 can be connected to various wire feeders with the TC-15 wiring harness, included with the MA-400 system. This procedure allows the welder to trigger the arc and initiate spin remotely (e.g., on a Bug-O, side beam carriages and other automation). This cable goes between the aux. equipment and the feeder.

Connect TC-15 Cable
1. Connect cable end labelled CONTROL to the AUX TRIGGER plug on the Control Box.
2. The FEEDER end is 3 ft. (0.9 m) and has a Miller style connector. Attach this end to wire feeder (may require optional Lincoln or Fronius style adaptor, see next page). You can also modify this end and install spade connectors if required.
3. Following the welding bug manufacturer's instructions, connect the leads on the longest end (15 ft., 4.5m) to the trigger closure circuit on the bug or other automation system.
4. Once connected, the arc start button on the bug will initiate the welding arc (close the trigger circuit in the wire feeder) and start the rotation on the SpinArc welding torch. Use the delay knob on the Control Box if you need to start the welding arc first, and then start the spin a few seconds later.

Table 3

<table>
<thead>
<tr>
<th>Step 1: TC-15 Control Box Connection</th>
<th>Step 2a: TC-15 Wire Feeder End</th>
</tr>
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<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

| Step 3: TC-15 Cable to Bug-O Connection | |
|----------------------------------------| ![Image](image3.png)          |
Wire Feeder Trigger Connection Adaptors
In order to pass the arc start/stop trigger signal to the wire feeder, you will need the correct trigger lead jumper adaptor. The following table covers the most common welding machines.

Table 4

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>175.9121</td>
<td>Lincoln Electric 5-PIN trigger adaptor</td>
</tr>
<tr>
<td>175.9120</td>
<td>1/4&quot; (6 mm) Female Spades trigger adaptor</td>
</tr>
<tr>
<td>175.9127</td>
<td>Bare wire trigger adaptor, w/o connectors</td>
</tr>
<tr>
<td>175.9126</td>
<td>Panasonic / OTC 2-PIN trigger adaptor</td>
</tr>
<tr>
<td>175.9134.US</td>
<td>Fronius 9-PIN trigger adaptor</td>
</tr>
</tbody>
</table>
**Operation**

**Control Box Settings**

The Control Box is an integral part of the MA-400 SpinArc® Welding System. This is the user interface for setting the **Mode Setting**, **Spin Speed** (RPM), the **Spin Direction** (CW or CCW) and the **Spin Start Delay** (0 – 5 seconds). The desired RPM is shown prior The actual spin speed is displayed while rotating.

**Mode Setting (ON, OFF, REMOTE)**

- **ON/OFF**: Set the 3-position mode selector switch to either OFF, ON or REMOTE. In the ON position, the contact tip rotates. Toggle between the OFF (center toggle position) and ON position to manually enable rotation.

  **Remember to turn off the spin when not welding**

- **REMOTE**: The REMOTE mode is used to remotely start the wire rotation. This feature is helpful when using the torch in other mechanized/robotic systems and with the Optional Hand Welding Kit. A third-party system can initiate the arc start and rotation start simultaneously. For this mode, install the Trigger Control Cable (TC-15) between the box and the wire feeder trigger connection.

When the optional Hand Welding Kit is used, set the Mode to REMOTE, and install the Trigger Control Cable (TC-15).
Spin Direction (CC/CCW)
The spin direction is determined from the welder’s perspective while it is welding. The clockwise (CW) or counterclockwise (CCW) rotation is orientated looking down at the weld from the torch. In other words, looking into the shielding gas nozzle would be opposite of the spin direction setting.

The spin direction may be arbitrary in many situations. However, there may be particular applications where the direction of rotation is important. For example, in a horizontal fillet weld the relative direction of the arc may be important. If traveling from left to right with a CW spin, the arc traverses from the top leading edge to the bottom. Changing to CCW in this case, puts the arc on the bottom edge first. This may or may not affect the final results; however, it is a factor to consider.

Spin Start Delay
The Spin Start Delay knob is located on the bottom of the unit. This can be used to delay the start of the rotation, which may be helpful in certain applications. This feature works in both the ON and Auto modes. Verify that the knob is fully turned to the left (counter clockwise) direction if an immediate rotation is desired.

Torch Adjustments

Spin Diameter

HOT SURFACES can burn. Do not attempt to adjust the rotation diameter setting until the torch is cool to the touch.

MOVING PARTS can injure. Turn OFF the Control Box before opening the torch and attempting to adjust the spin diameter.

The spin diameter is easily adjusted by changing the “gear” position on the crank assembly. This is accessible by removing the lower cap and nozzle together, exposing the crank window. There are eight diameter settings for a range of approximately 0.10 – 0.33 in. (1 to 8 mm).

Changing Spin Diameter
To change the spin diameter, first verify that the torch is cool to the touch and can be handled without gloves. Then,

1. Unlock lower cap – twist left (1/4 turn)
2. Slide the cap down
3. Hold the numbered part stationary
4. Turn the aluminum piece using the thumb and forefinger of the other hand
5. Align the position indicator with the desire setting on the brass part
The spin diameter increases by approximately 0.039 in. (1.0 mm) with each setting (1 to 8).

Due to the design of the spinning mechanism, the spin diameter at the end of the electrode will be larger than the spin diameter at the contact tip. As shown in the figure below, the contact tube assembly has a fixed pivot point and the tube is driven in a circular motion by an eccentric rotational drive system.

The effective spin diameter is considered to be the outside rotational diameter of the electrode. The effective spin diameter is a function of the contact tip-to-work distance (CTWD), electrode wire stiffness, and rotational speed. For example, simply increasing the rotational speed for a given CTWD and electrode will increase the effective spin diameter due to centrifugal forces on the wire.

The table below is an example of effective spin diameter at different crank positions using a teach tip with 1 in. (25 mm) CTWD rotating at 1,000 RPM. These are approximate dimensions.

![Diagram of spinning mechanism](image)

<table>
<thead>
<tr>
<th>Crank Position</th>
<th>Approx. Spin Diameter, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5 – 1.5</td>
</tr>
<tr>
<td>2</td>
<td>1.5 – 2.5</td>
</tr>
<tr>
<td>3</td>
<td>2.5 – 3.5</td>
</tr>
<tr>
<td>4</td>
<td>3.5 – 4.5</td>
</tr>
<tr>
<td>5</td>
<td>4.5 – 5.5</td>
</tr>
<tr>
<td>6</td>
<td>5.5 – 6.5</td>
</tr>
<tr>
<td>7</td>
<td>6.5 – 7.5</td>
</tr>
<tr>
<td>8</td>
<td>7.5 – 8.5</td>
</tr>
</tbody>
</table>

Measuring the effective spin diameter is outlined in the following section.

**Measuring Effective Spin Diameter**

Use the welding electrode for the given welding procedure. Extend the wire to the desired Contact-Tip-To-Work distance (CTWD). Measure the outside diameter of the wire rotation at the specified CTWD with a set of high quality calipers. This diameter is the approximate spin diameter, or the effective spin diameter.

**Application Note:**

For multiple pass groove welds, different spin diameters can be utilized. For example, a smaller spin diameter may work better on the root and first fill passes. The spin diameter can be increased for the fill and cap passes.
**Application Notes**

Following are some important items to consider when developing welding procedures with the MA-400 SpinArc® Welding System.

**Weld Bead Width**

There are several variables that can affect the width of the deposited weld bead, including:

- Spin Diameter
- Contact Tip-to-Work Distance (CTWD)
- Welding Voltage
- Spin Speed (RPM)
- Welding Wire Diameter and Wire Stiffness

**Travel Speed**

The travel speed is a function of welding position, electrode type/size, amperage, voltage, joint type, spin speed and targeted heat input needed to achieve the required mechanical properties.

**Vertical Welding Progression**

In general, the SpinArc® welding process is better suited for vertical down welding (vs. vertical up).

**Gas Nozzles**

The gas nozzle must be selected in relation to the weld joint details. For example, in a narrow gap joint it may prove favorable to use a contact tip that is extended beyond the end of the nozzle. This extension can be obtained by using different contact tip extensions or by using a shortened nozzle. Additionally, a joint with a compound bevel can enable the nozzle to be inserted into the joint for thicker materials.

After opening the lower cap, it is good practice to purge it with shielding gas for several seconds prior to welding.

**High Amperage/High Duty Cycle Welding**

The optional Water-Cooled Nozzle/Cap (PN A1559) is recommended for demanding applications, such as welding over 300 Amps for long periods of time. This nozzle also has a wider opening compared to the standard gas nozzles for added shielding gas protection (1 in, 25.4 mm). See optional parts on page 31.

**Recommended Maximum RPM**

Operating within the recommendations in Table 4 below will provide optimum life of the Flexure. Some applications may require higher RPM values, which may reduce the operating life of the flexure. Inspection and replacement of the flexure is outline in the recommended maintenance schedule on page 23.

<table>
<thead>
<tr>
<th>Crank Position</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>5500</td>
<td>5500</td>
<td>5500</td>
<td>4500</td>
<td>3500</td>
<td>2750</td>
<td>2000</td>
<td>1200</td>
</tr>
</tbody>
</table>
## Consumables

### Contact Tips

Table 7

<table>
<thead>
<tr>
<th>Wire Dia.</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.035” (0.9 mm)</td>
<td>CT403-27-35</td>
<td>CrZr Extended Life HD for .035 in. (0.9 mm)</td>
</tr>
<tr>
<td></td>
<td>CT403-21-45</td>
<td>Tapered Tip for .045 in. (1.2 mm) wire</td>
</tr>
<tr>
<td>.045” (1.2 mm)</td>
<td>CT403-20-45</td>
<td>Heavy Duty for .045 in. (1.2 mm) Wire</td>
</tr>
<tr>
<td></td>
<td>CT403-27-45</td>
<td>CrZr Ext. Life HD for .045 in. (1.2 mm) wire</td>
</tr>
<tr>
<td>1.0 mm (0.040”)</td>
<td>CT403-21-1.0</td>
<td>Tapered Tip for 1.0 mm (0.040”) Wire</td>
</tr>
<tr>
<td>.052” (1.3 mm)</td>
<td>CT403-20-52</td>
<td>Heavy Duty for 0.052 in (1.3 mm) wire</td>
</tr>
<tr>
<td>1/16” (1.6 mm)</td>
<td>CT603-20-116</td>
<td>Extra HD Tip for 1/16 in. (1.6 mm) wire</td>
</tr>
<tr>
<td>Teach Tip</td>
<td>CT403-20-075</td>
<td>Teach Tip</td>
</tr>
</tbody>
</table>

CrZr and CZ tips are formulated with Chromium and Zirconium to handle higher amperage welding.

### Nozzles

Table 8

<table>
<thead>
<tr>
<th>Part #</th>
<th>Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N401-5-75</td>
<td>Tregaskiss</td>
<td>HD Nozzle, 3/4 in. (19 mm) Bore - 1/4 in. (6 mm) Recessed</td>
</tr>
<tr>
<td>N401-4-75</td>
<td></td>
<td>Nozzle, 3/4 in. (19 mm) Bore - 1/8 in. (3 mm) Recessed</td>
</tr>
<tr>
<td>N401-6-75</td>
<td></td>
<td>Nozzle, 3/4 in. (19 mm) Bore - 1/8 in. (3 mm) Recessed Copper</td>
</tr>
<tr>
<td>N401-7-75</td>
<td></td>
<td>HD Nozzle, 3/4 in. (19 mm) Bore - 1/8 in. Recessed</td>
</tr>
<tr>
<td>145.0381</td>
<td>Abicor Binzel</td>
<td>HD Nozzle, 3/4 in. (19 mm) Bore - 1/8 in. (3 mm) Recessed</td>
</tr>
<tr>
<td>979.0054.1</td>
<td></td>
<td>Water-Cooled Nozzle 15/16 in. (24 mm) Bore, Threaded *</td>
</tr>
</tbody>
</table>

* requires the 979.0048.1 Water-Cooled Nozzle Assembly, Complete

### Wire Liners

Table 10 – Tregaskiss Style

<table>
<thead>
<tr>
<th>Wire Dia.</th>
<th>Part #</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>.035 – .045 in. (0.9 – 1.1 mm)</td>
<td>L3A-10</td>
<td>10 ft. (3 m)</td>
</tr>
<tr>
<td></td>
<td>L3A-15</td>
<td>15 ft. (4.6 m)</td>
</tr>
<tr>
<td></td>
<td>L3A-25</td>
<td>25 ft. (7.6 m)</td>
</tr>
<tr>
<td>.045 – 1/16 in. (1.1 – 1.6 mm)</td>
<td>L4A-10</td>
<td>10 ft. (3 m)</td>
</tr>
<tr>
<td></td>
<td>L4A-15</td>
<td>15 ft. (4.6 m)</td>
</tr>
<tr>
<td></td>
<td>L4A-25</td>
<td>25 ft. (7.6 m)</td>
</tr>
<tr>
<td>Steel Wrapped Nylon .045 – 1/16 in. (1.1 – 1.6 mm)</td>
<td>L415-116-2</td>
<td>15 ft. (4.6 m)</td>
</tr>
</tbody>
</table>

Table 9 – Abicor Binzel Style

<table>
<thead>
<tr>
<th>Wire Dia.</th>
<th>Part #</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel Insulated Liners</td>
<td>0.035 – 0.045 in. (0.9 – 1.1 mm)</td>
<td>S4-3545-8PT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel with PTFE Core</td>
<td>0.052 – 1/16 in. (1.3 – 1.6 mm)</td>
<td>S4-5262-8PT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Part #</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Cable Assembly</td>
<td><strong>CA-6 (6 ft.)</strong>  CA-10 (10 ft.)  CA-15 (15 ft.)  CA-XX (desired length in even 1 foot increments between 3 – 20 ft.)</td>
</tr>
<tr>
<td>2</td>
<td>Upper Cap</td>
<td>1028</td>
</tr>
<tr>
<td>3</td>
<td>O-Ring, Power Stud</td>
<td>1037</td>
</tr>
<tr>
<td>4</td>
<td>Power Stud</td>
<td>1053</td>
</tr>
<tr>
<td>5</td>
<td>O-Ring, Outer Body</td>
<td>1099</td>
</tr>
<tr>
<td>6</td>
<td>Spin Shaft Assembly</td>
<td>A1554</td>
</tr>
<tr>
<td>7</td>
<td>Flexure</td>
<td>1032</td>
</tr>
<tr>
<td>8</td>
<td>Flexure Nut, Outer</td>
<td>1034</td>
</tr>
<tr>
<td>9</td>
<td>Flexure Nut, Inner</td>
<td>1033</td>
</tr>
<tr>
<td>10</td>
<td>Contact Tip Extension</td>
<td>See below</td>
</tr>
<tr>
<td>11</td>
<td>Contact Tip</td>
<td>See Consumables</td>
</tr>
<tr>
<td>12</td>
<td>Shielding Gas Nozzle</td>
<td>See Consumables</td>
</tr>
<tr>
<td>13</td>
<td>Control Box</td>
<td>CB-115CE</td>
</tr>
<tr>
<td>14</td>
<td>Nozzle Retaining Ring</td>
<td>001.9029</td>
</tr>
<tr>
<td>15</td>
<td>O-Ring, Cap</td>
<td>165.9012</td>
</tr>
<tr>
<td>16</td>
<td>Cap</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tregaskiss</td>
<td>1012</td>
</tr>
<tr>
<td></td>
<td>Abicor Binzel</td>
<td>1012BZ</td>
</tr>
<tr>
<td>17</td>
<td>Lower Cap for Water-Cooled Nozzle</td>
<td>1012-WC</td>
</tr>
<tr>
<td>18</td>
<td>W/C Nozzle 15/16&quot; (24 mm Bore)</td>
<td>979.0054.1</td>
</tr>
<tr>
<td>19</td>
<td>W/C Nozzle Assembly complete</td>
<td>979.0049.1</td>
</tr>
<tr>
<td>20</td>
<td>Lower Insulator</td>
<td>1007</td>
</tr>
<tr>
<td>21</td>
<td>Control Cable</td>
<td>See Table Below</td>
</tr>
<tr>
<td>22</td>
<td>Power Pin</td>
<td>See Table Below</td>
</tr>
<tr>
<td>23</td>
<td>Arc Start Trigger Accessory</td>
<td>TS-15</td>
</tr>
<tr>
<td>* Not Shown</td>
<td>Isolated Torch Mount</td>
<td>979.0055.1</td>
</tr>
</tbody>
</table>

* Optional items which are not included with torch packages
**Control Cables**

The CC-6 cable connects the torch to the Control Box.

**NOTICE**

Do not extend the orange control cable beyond 15 ft. (4.6 m).

The TC-15 is used to close the wire feeder trigger circuit for arc start. This is required when running in the “REMOTE” mode as described in the Operation section of this manual. It is also included in the optional Hand Welding Kit (HWK-1). The cable has an Amphenol connection on one end (connects to the Control Box) and two spade connections on the other end for connecting to the wire feeder trigger connection.

**Table 13**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-6</td>
<td>Control Cable, 6 ft. (1.8 m)</td>
</tr>
<tr>
<td>CC-15</td>
<td>Control Cable, 15 ft. (4.6 m)</td>
</tr>
<tr>
<td>TC-15</td>
<td>Trigger Cable, 15 ft. (3.0 m)</td>
</tr>
<tr>
<td>TC-15EXT</td>
<td>Trigger Control Cable, Extended Length, 15 ft. (4.6 m) to Aux., 15 ft. (3.0 m) to feeder</td>
</tr>
</tbody>
</table>
**Replacement Cable Assembly**

In the event the cable is damaged it can be replaced by ordering a replacement from our Customer Service Team by calling +1-832-585-1244.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA-6</td>
<td>Replacement Cable Assembly, 6 ft. (1.8 m)</td>
</tr>
<tr>
<td>CA-10</td>
<td>Replacement Cable Assembly, 10 ft. (3.0 m)</td>
</tr>
<tr>
<td>CA-15</td>
<td>Replacement Cable Assembly, 15 ft. (4.6 m)</td>
</tr>
<tr>
<td>CA-XX</td>
<td>Replacement Cable Assembly, designate length of cable at time of order (3 – 20 ft., 0.9 – 6.1 m)</td>
</tr>
</tbody>
</table>

*Note: This does not include the Power Pin, Wire Liner or Torch Body.*

**Contact Tip Extension**

The Contact Tip Extension is a consumable item connecting the Contact Tip to the Spin Shaft.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Contact Tip Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1043-00</td>
<td>Tregaskiss</td>
<td>Standard, 1.9 in. (48.5 mm)</td>
</tr>
<tr>
<td>1043-25</td>
<td></td>
<td>0.25 in. (6 mm) extension</td>
</tr>
<tr>
<td>1043-50</td>
<td></td>
<td>0.50 in. (12 mm) extension</td>
</tr>
<tr>
<td>1043-75</td>
<td></td>
<td>0.75 in. (19 mm) extension</td>
</tr>
<tr>
<td>1043-100</td>
<td></td>
<td>1.00 in. (25 mm) extension</td>
</tr>
<tr>
<td>1043-BZ1</td>
<td></td>
<td>1/4 in. (6 mm) Recessed</td>
</tr>
<tr>
<td>1043-BZ2</td>
<td></td>
<td>1/8 in. (3 mm) Recessed</td>
</tr>
<tr>
<td>1043-BZ3</td>
<td></td>
<td>Flush</td>
</tr>
<tr>
<td>1043-BZ4</td>
<td></td>
<td>1/8 in. (3 mm) Extended</td>
</tr>
<tr>
<td>1043-BZ5</td>
<td></td>
<td>1/4 in. (6 mm) Extended</td>
</tr>
</tbody>
</table>

**Power Pins**

The correct power pin is required to connect the torch to the wire feeder. Below is a list of the most common feeders and corresponding power pin part number.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Wire Feeder Manufacturer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP-TW4</td>
<td>Lincoln &amp; Others</td>
<td>Tweco #2 &amp; #4</td>
</tr>
<tr>
<td>PP-L4</td>
<td>Lincoln Electric</td>
<td>PowerWave 4R Series</td>
</tr>
<tr>
<td>PP-M1</td>
<td>Miller</td>
<td>Miller Feeders</td>
</tr>
<tr>
<td>PP-F3</td>
<td>Fronius</td>
<td>Fronius F++</td>
</tr>
<tr>
<td>PP-EURO with Fronius' Euro Kit (Fronius PN 4,100,617,U)*</td>
<td>Fronius</td>
<td>Fronius Special Connector (“FSC”): TPS/i machines WF25 i feeder</td>
</tr>
<tr>
<td>PP-EURO</td>
<td>Various</td>
<td>Euro Style Connector</td>
</tr>
</tbody>
</table>

Additional power pins may be available by special request through our Customer Service Team by calling +1-832-585-1244.

* Must be purchased from Fronius
Preventative Maintenance Schedule
At a minimum, these parts must be inspected and/or replaced according to the following schedule. In demanding applications or severe environments, inspect more often. These should be done by the welder/operator and shop maintenance personnel. A more detailed inspection and repair procedure follow for each.

Table 17

<table>
<thead>
<tr>
<th>Part</th>
<th>Hourly</th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Tip</td>
<td>I</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Nozzle</td>
<td>I</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welding &amp; Work Cable, including ground clamp and lugs</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Tip Extension</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spin Shaft</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire Liner</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Torch Body O-ring</td>
<td></td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cap</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crank</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Box</td>
<td></td>
<td></td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Flexure</td>
<td>I</td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Control Cables</td>
<td></td>
<td></td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Power Stud</td>
<td></td>
<td></td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Power Pin, including O-ring</td>
<td></td>
<td></td>
<td>I</td>
<td></td>
</tr>
</tbody>
</table>

I = Inspect and replace if necessary
R = Replace

Contact Tips

It is possible to damage the Flexure while changing the Contact Tip.

**NOTICE**

Change Contact Tip
1. Hold Contact Tip Extension with a 5/16” (8 mm) wrench
2. Use a 5/16” (8 mm) wrench to replace the Contact Tip
**Shielding Gas Nozzles**

It is important to keep the gas nozzle clear from weld spatter. Spatter build up inside the nozzle can interfere with the rotation. As needed, remove the nozzle and use welding plyers to clear any weld spatter buildup. **Anti-spatter or ceramic spray** can also be used to coat the inside of the nozzle, spin shaft, contact tip extension and the contact tip.

**Control Cables**

1. Check Control Cable (CC-6) and trigger cable (TC-15) for any damage
2. Check all connectors and pins for damage or debris

**Weld & Work Cable**

1. Check weld cable plastic housing and electrical pins at feeder end for damage
2. Inspect ground cable (work lead) and welding cable for damaged insulation, verify no exposed copper
3. Verify that all connections are tight, e.g. ground clamp and weld cable lugs

**Contact Tip Extension**

Make sure Contact Tip Extension is tight. Loose Contact Tips or Contact Tip Extensions can cause overheating and melting. It is possible to damage the Flexure while changing the Contact Tip Extension.

**Replace Contact Tip Extension**

1. Hold Spin Shaft with 5/16” (8 mm) wrench
2. Remove Contact Tip Extension with a second 5/16” (8mm) wrench
3. Hold the Spin Shaft stationary to avoid damaging the Flexure
4. Tighten new Contact Tip Extension

**Torch Body O-ring**

1. Remains seated in the O-ring groove
2. Not deformed, cracked, or cut
3. Check for positive seal with the Cap (no gas leaks)

**Spin Shaft**

1. Clean of welding spatter
2. Hand twist to verify Spin Shaft does not rotate in Flexure
3. Replace Spin Shaft if it is bent or damaged
4. Verify Contact Tip Extension threads and seats securely
5. Make sure it is properly mated with the Crank Assembly. The Spin Shaft bushing should be inserted into the inner bearing with approx. ¼" (3.2 mm) gap between the body of the Spin Shaft & body of the Crank (see picture).
Check that Flexure is secure by twisting (not bending) Spin Shaft by hand, it should not twist. Do not force the Spin Shaft to twist as this will damage the Flexure.

Spin Shaft Replacement Procedure
1. Use Flexure Nut Tool to remove Outer Flexure Nut
2. Remove the Spin Shaft Assembly by pulling it by hand from the Crank (it should slide out the front end of the torch easily)
3. Remove Inner Flexure Nut with a 12 mm wrench
4. Discard used Flexure
5. Put a new Flexure on the new Spin Shaft
6. Torque Inner Flexure Nut to 25 in lbs. (2.82 Nm)
7. Ensure that Flexure seats securely onto Spin Shaft
8. Slide Spin Shaft into torch
9. Make sure Spin Shaft bushing slides completely into crank bearing
10. Tighten Outer Flexure Nut with provided tool to 25 in lbs. (2.82 Nm)

Helpful Hint:
Make sure Flexure seats into place as the nut is tightened by holding Spin Shaft in place with index finger and thumb while tightening nut with custom Tool. Slightly rotate Spin Shaft between fingers, allowing Flexure to seat in place while tightening Outer Flexure Nut. You will notice when the nut seats against the Flexure because it will stop twisting. This will ensure the Flexure is fully seated in the designated spot.

Inspection Procedure
- After completing the operation, ensure the Spin Shaft is seated properly by trying to twist the Spin Shaft by using your fingers to see if it spins (it should not spin by hand).
- Spin the Crank by hand and ensure that it rotates freely
### Table 18

<table>
<thead>
<tr>
<th>PN: K1752 Spin Shaft Replacement Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

### Wire Liners

The liner runs through the welding cable. Having a properly functioning liner is critical to good wire feeding and acceptable welding performance. It’s important to replace the liner as needed, depending on the amount and type of welding electrodes used. In some cases, this is daily or multiple times per day. Throughout the day, liners collect debris and restrict the wire from moving smoothly through the cable. This restriction leads to wire feeding issues, including burning back the wire to the contact tip if not addressed in time.

#### Replace Wire Liner
1. With the torch lying flat on the floor or table, insert the liner until it dead ends in the torch.
2. Then, measure the amount sticking out the back of the power pin.
3. Pull out the liner, cut off the torch end by that amount and reinsert it.
4. Make sure the liner seats fully inside the torch and is flush inside the power pin.
5. At the power pin end, the liner should be flush for Lincoln or Tweco power pins. With Miller power pins, leave two coils outside the liner nut.

#### Cap
1. Verify Cap slides on and off smoothly
2. Clean threads with compressed air or wire brush
3. Check nozzle O-ring
4. Cap can be replaced if threads are damaged

#### Crank
1. Snaps in each of the eight positions
2. Stays in the set position while spinning and after stopping
3. Clean as needed with compressed air

#### Control Box
1. Verify CW & CCW operation
2. Inspect input power cable for damage, replace if required
3. Replace input power cable if earth ground pin is damaged or missing
4. Confirm full RPM range (400 to 5,500)
5. Verify 1A breaker is operational
Flexure Nuts

It is important that both flexure nuts remain tight. These keep the flexure from rotating, which is key to efficient power transfer and a stable welding arc.

Flexure Nut Inspection & Tightening Procedure
1. Gently grab the Spin Shaft and try to spin it about its centerline axis (it should not twist by hand)
2. If the flexure rotates, then the flexure nuts must be tightened
3. Remove Contact Tip Extension (see above)
4. Use Flexure Nut Tool to remove Outer Flexure Nut
5. Remove the Spin Shaft Assembly by pulling it by hand from the Crank
6. Hold back end of the Spin Shaft with 19 mm wrench or non-marring vice
7. Tighten Inner Flexure Nut to 25 in-lbs (2.82 Nm) with 12 mm wrench
8. Slide Spin Shaft Assembly back into torch body
9. Using the Flexure Nut Tool (PN 1087), tighten nut to 25 in-lbs (2.82 Nm) while slightly rotating Spin Shaft between fingers, allowing Flexure to seat in place while tightening Outer Flexure Nut
10. Use caution. Do not cross thread the nut

NOTICE
Ensure that the flexure is not bent or twisted, as this will dramatically reduce the useful life of this part.
**Flexure**

The Flexure (PN 1032) should be inspected and included in the preventive maintenance program. Part life depends on the crank setting and spin speed (see Table 4 for recommended maximum settings). Operating within these recommendations provides optimum life and performance. Operating above these RPMs will reduce part life.

*Note: The flexure is not covered under warranty and is considered a standard maintenance part.*

1. Visually inspect Flexure for warpage or cracking
2. Verify it is fully seated on the Spin Shaft and secured by the Inner Flexure Nut
3. Confirm Outer Flexure Nut is tight
4. If damaged, remove and replace

**Flexure Replacement**

1. Remove Spin Shaft Assembly (see previous section)
2. Hold Spin Shaft with 19 mm wrench or non-marring vice
3. Remove Inner Flexure Nut using wrench or socket
4. Discard old Flexure and install new Flexure, tightening Inner Flexure Nut to 25 in-lbs (2.82 Nm)
5. Slide Spin Shaft Assembly back into torch body
6. Using the Flexure Nut Tool, tighten nut to 25 in-lbs (2.82 Nm) while slightly rotating Spin Shaft between fingers, allowing Flexure to seat in place while tightening Outer Flexure Nut
**Power Stud**

1. Make sure Power Stud is tight in to the Torch Body
2. Inspect O-ring and replace, if cut or worn
3. Ensure cable clamp is tight on the Power Stud

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**Power Pin**

1. Inspect O-rings for wear and replace as needed
2. If a gas leak is suspected, replace O-rings on the Power Pin
3. See Appendix 4 for O-ring part numbers
4. Inspect the Power Pin for damage

**How to replace Power Pin:**

a) Remove the existing Wire Liner
b) Remove the Power Pin with wrench
c) Install and tighten new Power Pin
d) Install new Wire Liner
**Accessories & Parts**

**Hand Welding Kit**
The mechanized torch can be used by hand with the optional Hand Welding Kit.  Part # HWK-1

**Control Box Mounting Kit**
The Control Box can be easily attached to existing welding equipment, carts, or other parts with our mounting kit. Includes heavy-duty magnetic base.  Part # CB-MK1

**Control Box Bump Guard**
The bump guard is designed to protect the Control Box.  Part # CB-BG1

**Arc Start Trigger Switch**
Can be used to start the arc and spinning when not controlled by a welding bug or other system. Connects directly to the trigger cable that is included with each system.  Part # TS-15

**Water-Cooled Nozzle/Cap**
For use in high amperage/high duty cycle applications.  Part # A1559
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wire feeding problems (chatter, bird's nest, burn back, arc flaring)</td>
<td>1. Improper or worn drive rolls</td>
<td>1. Replace drive rolls</td>
</tr>
<tr>
<td></td>
<td>2. Incorrect drive roll tension</td>
<td>2. Adjust tension at feeder</td>
</tr>
<tr>
<td></td>
<td>3. Wrong size liner</td>
<td>3. Replace with correct size</td>
</tr>
<tr>
<td></td>
<td>4. Buildup inside liner</td>
<td>4. Replace liner</td>
</tr>
<tr>
<td></td>
<td>5. Incorrect Contact Tip</td>
<td>5. Replace with correct Contact Tip size</td>
</tr>
<tr>
<td></td>
<td>6. Improper drive roll guide tube</td>
<td>6. (a) Replace and adjust guides (b) Eliminate all gaps in electrode path</td>
</tr>
<tr>
<td></td>
<td>7. Tight weld cable bend</td>
<td>7. Provide a larger radius for the wire to feed through</td>
</tr>
<tr>
<td></td>
<td>8. Cable assembly is too long</td>
<td>8. Replace with shorter cable assembly, especially important with alloy and stainless wires</td>
</tr>
<tr>
<td>2. Contact tip burn back</td>
<td>1. Long arc length</td>
<td>1. Adjust voltage or wire feed speed</td>
</tr>
<tr>
<td></td>
<td>2. Short stickout</td>
<td>2. Increase wire stickout</td>
</tr>
<tr>
<td>3. Broken Flexure</td>
<td>1. Exceeded design life</td>
<td>1. Replace Flexure; See Table 4 for max rpm settings</td>
</tr>
<tr>
<td></td>
<td>2. Operating above max RPM</td>
<td>2. Inspect components for damage, replace Flexure, and limit spin speed to the maximum rpm shown in the Operations Manual for each spin dia. Setting.</td>
</tr>
<tr>
<td></td>
<td>3. Improper Flexure installation</td>
<td>3. Replace Flexure</td>
</tr>
<tr>
<td></td>
<td>4. Worn Bearing Assembly</td>
<td>4. Service required by Authorized Repair Facility</td>
</tr>
<tr>
<td>4. Short contact tip life</td>
<td>1. Loose contact tip</td>
<td>1. Tighten contact tip</td>
</tr>
<tr>
<td></td>
<td>2. Improper contact tip size</td>
<td>2. Replace with proper size</td>
</tr>
<tr>
<td></td>
<td>3. Overheating tips</td>
<td>3. Replace with heavy duty contact tips</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Corrective Action</td>
</tr>
<tr>
<td>--------------------</td>
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<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>5. Weld Porosity</strong></td>
<td>1. Incorrect gas flow</td>
<td>1. Adjust gas flow rate (could be too high or too low)</td>
</tr>
<tr>
<td></td>
<td>2. No shielding gas</td>
<td>2. Install full tanks, check for hose leaks, check regulator/flowmeter for proper function</td>
</tr>
<tr>
<td></td>
<td>3. Poor gas flow</td>
<td>3. Replace nozzle, check for gas, check regulator/flowmeter for proper function</td>
</tr>
<tr>
<td></td>
<td>4. Damaged gas hose</td>
<td>4. Replace or repair the line or hoses</td>
</tr>
<tr>
<td></td>
<td>5. Worn, cut or missing O-rings</td>
<td>5. Replace O-rings on the torch body, Cap, Power Pin, and Power Stud</td>
</tr>
<tr>
<td></td>
<td>6. Loose fittings</td>
<td>6. Tighten Cap on torch body, Power Stud, and cable connections</td>
</tr>
<tr>
<td></td>
<td>8. Gas flow restrictor in place at feeder, limits flow rate</td>
<td>8. Remove gas flow restrictor, if present</td>
</tr>
<tr>
<td><strong>6. Control Box not working</strong></td>
<td>1. No input power</td>
<td>1. Check to make sure the power cord is plugged in to 110 or 240 VAC and is in good working condition</td>
</tr>
<tr>
<td></td>
<td>2. Circuit breaker tripped</td>
<td>2. Reset the circuit breaker on the Control Box. If it trips again, discontinue using the Control Box and contact an Authorized Service Facility</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Opening Control Box voids warranty</strong></td>
</tr>
<tr>
<td><strong>7. Motor does not spin</strong></td>
<td>1. Clogged nozzle</td>
<td>1. Clean or replace Gas Nozzle</td>
</tr>
<tr>
<td></td>
<td>2. Spin Delay set</td>
<td>2. Check spin delay setting</td>
</tr>
<tr>
<td></td>
<td>3. Mechanical interference</td>
<td>3. Check for obstruction, clear service may be required by Authorized Repair Facility</td>
</tr>
<tr>
<td></td>
<td>4. Aux equipment (i.e.: Bug, Robot) not connected properly</td>
<td>4. Confirm proper setup with mode switch on Control Box, trigger and control cables</td>
</tr>
<tr>
<td></td>
<td>5. Control Cable not fully locked into Control Box</td>
<td>5. Tighten Control Cable Amphenol nut at Control Box</td>
</tr>
<tr>
<td></td>
<td>6. Faulty electrical connection</td>
<td>6. Service required by Authorized Repair Facility</td>
</tr>
<tr>
<td></td>
<td>7. Motor Failure</td>
<td>7. Service required by Authorized Repair Facility</td>
</tr>
<tr>
<td></td>
<td>8. Motor screws loose</td>
<td>8. Look through the torch window, check to see if the three screws just above the Crank appear to be fully threaded and not backed out. Service required by Authorized Repair Facility</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Corrective Action</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8. Erratic Spin (off center, slow start, intermittent)</td>
<td>1. Electrical interference</td>
<td>1. (a) Move Control Box and weld cable away from sources of electrical noise, e.g. high frequency TIG &lt;br&gt; (b) Use short Control Cable, don't exceed 15 ft. (3m) &lt;br&gt; (c) use shorter welding cable &lt;br&gt; (d) verify grounding pin in place on Control Box input power cable</td>
</tr>
<tr>
<td></td>
<td>2. Loose Flexure nuts</td>
<td>2. Tighten Inner and Outer Flexure Nuts</td>
</tr>
<tr>
<td></td>
<td>3. Damaged Flexure</td>
<td>3. Replace the Flexure</td>
</tr>
<tr>
<td></td>
<td>4. Control Cable not fully locked into Control Box</td>
<td>4. Tighten Control Cable Amphenol nut at Control Box</td>
</tr>
<tr>
<td></td>
<td>5. Faulty electrical connection</td>
<td>5. Service by Authorized Repair Facility</td>
</tr>
<tr>
<td>9. Arc does not start</td>
<td>1. Faulty trigger cable or connection</td>
<td>1. (a) Replace the TC-15 trigger cable, if in use &lt;br&gt; (b) Test welder with manual gun to verify welding power source and wire feeder &lt;br&gt; (c) Service by Authorized Repair Facility</td>
</tr>
<tr>
<td>10. Excessive vibration or noise</td>
<td>1. Damaged Flexure</td>
<td>1. Replace Flexure</td>
</tr>
<tr>
<td></td>
<td>2. Improper Flexure Installation</td>
<td>2. Replace Flexure</td>
</tr>
<tr>
<td></td>
<td>3. Worn Bearing Assembly</td>
<td>3. Service by Authorized Service Facility</td>
</tr>
<tr>
<td></td>
<td>4. Bend Motor shaft</td>
<td>4. Service by Authorized Service Facility</td>
</tr>
<tr>
<td>11. Spin Start issue (delayed or hesitant)</td>
<td>1. Damaged Flexure</td>
<td>1. Replace Flexure</td>
</tr>
<tr>
<td></td>
<td>2. Spin delay knob set high</td>
<td>2. Set to zero for no delay</td>
</tr>
<tr>
<td></td>
<td>3. Faulty electrical connection</td>
<td>3. Service by Authorized Repair Facility</td>
</tr>
<tr>
<td></td>
<td>4. Worn Bearing Assembly</td>
<td>4. Service by Authorized Repair Facility</td>
</tr>
<tr>
<td>12. Spin Diameter variation</td>
<td>1. Excessive wire cast</td>
<td>1. Install wire straightener at feeder wire inlet</td>
</tr>
<tr>
<td></td>
<td>2. Damaged Flexure</td>
<td>2. Replace Flexure</td>
</tr>
<tr>
<td></td>
<td>4. Loose Spin Shaft bushing</td>
<td>4. Replace Spin Shaft Assembly</td>
</tr>
<tr>
<td></td>
<td>5. Worn Bearing Assembly</td>
<td>5. Service by Authorized Service Facility</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Corrective Action</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>13. Arc initiates and stops abruptly</td>
<td>1. Wire feeding issue</td>
<td>1. See #1 above</td>
</tr>
<tr>
<td></td>
<td>2. Trigger circuit closed by auxiliary equipment (e.g., bug) or during power up of weld power source</td>
<td>2. On Aux. equipment, turn weld start to OFF. Turn OFF welding power source. Restart welder.</td>
</tr>
<tr>
<td></td>
<td>3. Welding power source equipment failure</td>
<td>3. Contact welding power source manufacturer</td>
</tr>
</tbody>
</table>

Any service beyond the routine maintenance defined in this manual must be performed at the factory or by an Authorized Service Facility. Disassembly of the torch or opening the Control Box voids the warranty. Please contact our Customer Service Team at +1-832-585-1244 for assistance.

**FAQ**

**On warranty repairs, who pays for shipping?**
Weld Revolution will cover freight costs within the United States for the torch body and/or Control Box if the warranty claim is approved. Shipment of welding cable is not included and is not covered by warranty. Authorization and an RMA is required (see “Freight Costs” under warranty section).

**Can I replace the Power Stud?**
Yes, it unscrews from the outside using an open-end wrench.

**Can I replace the Bearings in the Crank?**
The Crank is designed to have the Bearing Assembly replaced by an Authorized Service Facility.

**Is the Flexure a consumable item?**
Yes, the Flexure (Part # 1032) is a consumable item that will wear over time. It must be replaced occasionally and if cracked, damaged, or bent.

**Should I cycle power off when disconnecting the torch from the weld cable?**
It is recommended to cycle power off when disconnecting the torch Control Cable, but the Control Box will recognize the disconnection and protect itself, however, the spin toggle switch must be cycled to the off position before spinning again.

**Can I weld without spinning?**
Yes. There are two different scenarios that make this possible. If you are not using the aux cable circuit to trigger arc start, you can place the spin toggle switch to off and weld. If you are using the aux circuit to initiate arc start, then place the spin toggle in the remote position and turn the RPM control knob to zero before welding. This will enable the Control Box to activate arc start without spinning.

**Can I spin and weld without connecting the aux equip cable?**
Yes. Place the spin toggle switch to “Spin” and the torch will start spinning. This is effectively putting the control in manual mode. Arc start must be initiated by other means while unit is in manual mode and the spinning action will continue until the toggle switch is turned off.
Limited Warranty

Statement of Limited Liability
Weld Revolution LLC warrants to the end user of all new products that it will be free of defects in workmanship and material. This warranty is void if the equipment has been subjected to improper installation, improper care or abnormal operations. The Control Box warranty is void if enclosure has been opened.

Warranty Period
Weld Revolution will assume both the parts and labor expense of correcting defects during the warranty period. The warranty period starts from the date of purchase to the end-user or from the date of manufacture if proof of purchase is not available and is as follows:

180 Days
- All SpinArc® welding systems, including the MA-400. This includes the originally supplied Control Box and torch body.
- Consumables, welding cable, control cables and replacement parts are NOT COVERED under this warranty. This includes contact tips, nozzles, O-rings, grommets, liners, bolts, nuts, flexure and all other replacement parts.

Conditions of Warranty to Obtain Warranty Coverage
The purchaser must contact Welding Revolution directly at +1-832-585-1244. An authorized RMA is required. Do not return the product without written approval via Weld Revolution's RMA form.

Warranty Repair
If Weld Revolution or an authorized service facility confirms the existence of a defect covered by this warranty, the defect will be corrected by repair of replacement at Weld Revolution’s option. At Weld Revolution’s request, the purchaser must return, to Weld Revolution any “Goods” claimed defective under Weld Revolution’s warranty.

Freight Costs
Weld Revolution will cover freight costs within the United States for the torch body and/or Control Box if the warranty claim is approved. A warranty claim and written authorization is required prior to any authorized warranty repairs. A RMA issued by Weld Revolution is required prior to the return of any product for any reason. Shipment of welding cable is not included and is not covered by warranty.

WARRANTY LIMITATIONS
WELD REVOLUTION WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR REPAIRS MADE OUTSIDE OF A WELD REVOLUTION AUTHORIZED SERVICE FACILITY. WELD REVOLUTION’S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE COST OF CORRECTING THE DEFECT OF THE WELD REVOLUTION PRODUCT. WELD REVOLUTION WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF BUSINESS, ETC.) CAUSED BY THE DEFECT OR THE TIME INVOLVED TO CORRECT THE DEFECT. THIS WRITTEN WARRANTY IS THE ONLY EXPRESS WARRANTY PROVIDED BY WELD REVOLUTION WITH RESPECT TO ITS PRODUCTS. WARRANTIES IMPLIED BY LAW SUCH AS THE WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY FOR THE EQUIPMENT INVOLVED. THIS WARRANTY GIVES THE PURCHASER SPECIFIC LEGAL RIGHTS. THE PURCHASER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Service
Any service beyond the routine maintenance or troubleshooting defined in this manual must be performed at the factory or by a factory authorized service facility. Disassembly of the torch beyond removing the upper or lower end caps voids the warranty. Opening the Control Box voids the warranty. Please contact our Customer Service Team at +1-832-585-1244 or service@weldrevolution.com for assistance.
Customer Assistance Policy

Weld Revolution LLC does not warrant or guarantee or assume any liability with respect to any information or advice given. Our employees are not in a position to verify the information provided or to evaluate the engineering requirements for any customer. Additionally, the provision of any information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed. The selection and use of specific products sold by the Company is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of the Company affect the results obtained in applying these types of fabrication methods and service requirements.

Warranty Authorization

All warranty repairs must be conducted by Weld Revolution or an Authorized Warranty Repair Facility. All warranty work requires written authorization from Weld Revolution prior the commencement of any repair or replacement of parts. Contact the Weld Revolution Service Department to submit a Warranty Claim Form.
EU Declaration of Conformity

Original EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Manufacturer:
Weld Revolution LLC
19511 Wied Road, Suite E
Spring, TX 77388 USA

Product Name: MA-400™ SpinArc® Welding System

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:


References to the relevant harmonized standards used or references to the other technical specifications in relation to which conformity is declared:

- Degrees of Protection Provided by Enclosure (IP Code), IEC 60529 Ed. 2.1

This declaration ceases to be valid in case of a modification of the device without our authorization.

Scott Funderburk
Chief Operating Officer
September 1, 2016
All return shipments must have an RMA #.