FIRSTESS MP200 TFT

IGBT INVERTER DIGITAL 5-IN-1 WELDER&CUTTER (MIG, FLUX CORE, LIFT TIG, STICK, PLASMA CUTTING)

May, 2022

OPERATPOR'S MANUAL

YESWELDER®

To help us serve you better, go to www.yeswelder.com

FIRSTESS MP200 User Guide

bit.ly/3sBGuOj

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THANK YOU FOR SELECTING A QUALITY PRODUCT BY YESWELDER.

PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

SAFETY DEPENDS ON YOU

YESWELDER arc welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part. **DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.** And, most importantly, think before you act and be careful.

⚠ WARNING

This statement appears where the information must be followed exactly to avoid serious personal injury or loss of life.

⚠ CAUTION

This statement appears where the information must be followed to avoid minor personal injury or damage to this equipment.

KEEP YOUR HEAD OUT OF THE FUMES.

DON'T get too close to the arc. Use corrective lenses if necessary to stay a reasonable distance away from the arc.
READ and obey the Safety Data Sheet (SDS) and the warning label that appears on all containers of welding materials.
USE ENOUGH VENTILATION or exhaust at the arc, or both, to keep the fumes and gases from your breathing zone and the general area.
IN A LARGE ROOM OR OUTDOORS, natural ventilation may be adequate if you keep your head out of the fumes (See below).
USE NATURAL DRAFTS or fans to keep the fumes away from your face.

If you de velop unusual symptoms, see your supervisor. Perhaps the welding atmosphere and ventilation system should be checked.

WEAR CORRECT EYE, EAR & BODY PROTECTION

PROTECT your eyes and face with welding helmet properly fitted and with proper grade of filter plate (See ANSI Z49.1).
PROTECT your body from welding spatter and arc flash with protective clothing including woolen clothing, flame-proof apron and gloves, leather leggings, and high boots.
PROTECT others from splatter, flash, and glare with protective screens or barriers.
IN SOME AREAS, protection from noise may be appropriate.
BE SURE protective equipment is in good condition.
Also, wear safety glasses in work area
AT ALL TIMES.

SPECIAL SITUATIONS
DO NOT WELD OR CUT containers or materials which previously had been in contact with hazardous substances unless they are properly cleaned. This is extremely dangerous.
DO NOT WELD OR CUT painted or plated parts unless special precautions with ventilation have been taken. They can release highly toxic fumes or gases.
Additional precautionary measures.
PROTECT compressed gas cylinders from excessive heat, mechanical shocks, and arcs; fasten cylinders so they cannot fall.
BE SURE cylinders are never grounded or part of an electrical circuit.
REMOVE all potential fire hazards from welding area.
ALWAYS HAVE FIRE FIGHTING EQUIPMENT READY FOR IMMEDIATE USE AND KNOW HOW TO USE IT.

WARNINGS

CALIFORNIA PROPOSITION 65 WARNINGS

WARNING: Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects, or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an exposed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65 warnings.ca.gov/diesel

WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code § 25249.5 et seq.)

WARNING: Cancer and Reproductive Harm
www.P65warnings.ca.gov

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended you download free PDF of Standard ANSI Z49.1 from the American Welding Society.
https://www.aws.org/library/doclib/AWS-Z49-2021.pdf

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

FOR ENGINE POWERED EQUIPMENT.

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.

1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.

1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.

1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.

1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.

ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS

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

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. Do not place your body between the electrode and workcables. If the electrode cable is on your right side, the work cable should also be on your right side.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.

ELECTRIC SHOCK CAN KILL.

3.a. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.

3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (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, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.

3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.

3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.

3.e. Ground the work or metal to be welded to a good electrical (earth) ground.

3.f. Maintain the electrode stringer, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.

3.g. Never dip the electrode in water for cooling.

3.h. Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.

3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.

3.j. Also see It ems 6.c. and 8.

ARC RAYS CAN BURN.

4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87. I standards.

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

4.c. Protect other nearby personnel with suitable, nonflammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

FUMES AND GASES CAN BE DANGEROUS.

5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone. **When welding hardfacing (see instructions on container or SDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation unless exposure assessments indicate otherwise. In confined spaces or in some circumstances, outdoors, a respirator may also be required. Additional precautions are also required when welding on galvanized steel.**

5.b. The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

5.d. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.

5.e. Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the Safety Data Sheet (SDS) and follow your employer’s safety practices. SDS forms are available from your welding distributor or from the manufacturer.

5.f. Also see item 1.b.

WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION.

6.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.

6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to “Safety in Welding and Cutting” (ANSI Standard Z49.1) and the operating information for the equipment being used.

6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.

6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure 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 (see address above).

6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.

6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless 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.

6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.

6.h. Also see item 1.c.

6.I. Read and follow NFPA 51B “Standard for Fire Prevention During Welding, Cutting and Other Hot Work”, available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, MA 022690-9101.

6.j. Do not use a welding power source for pipe thawing.

CYLINDER MAY EXPLODE IF DAMAGED.

7.a. 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.

7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

7.c. Cylinders should be located:
- Away from areas where they may be struck or subjected to physical damage.
- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.

7.d. Never allow the electrode, electrode stringer or any other electrically “hot” parts to touch a cylinder.

7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.

7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-l, “Precautions for Safe Handling of Compressed Gases in Cylinders,” available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

FOR ELECTRICALLY POWERED EQUIPMENT.

8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.

8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer’s recommendations.

8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer’s recommendations.

GENERAL DESCRIPTION

GENERAL FUNCTIONAL DESCRIPTION

The YesWelder MP200 is an inverter welder based on IGBT inverter technology. This makes the machine lightweight and allows for multiple advanced functions. Before we move on to a detailed explanation of how to set up the welder, let's explain some of its features and their purpose.

Synergic MIG welding automatically adjusts the voltage and wire feeding speed based on the amperage or the metal thickness selection. This makes the MIG welding process easier for beginners so that they don't have to manually adjust the wire feed speed and the voltage settings.

Another notable feature is the auto smart memory function. It allows you to store up to 10 different voltage and current settings for each welding type. You can recall the previously used settings at any time and save yourself the hassle of adjusting the process to your preferences.

If the welder ever gets overheated, it will activate its self-protection mechanism by shutting down in order to cool down, prolonging its life span. However, thanks to the advanced IGBT technology, the MP200 has a 60% duty cycle at 200A output when welding, and a 60% duty cycle at 40A when plasma cutting, giving you 6 out of 10 minutes intervals of working time.

This welder outputs DC current. So, it can weld mild steel and stainless steel. It cannot weld aluminum because it doesn't support AC TIG output or a spool gun. However, our YesWelder 250A AC/DC TIG and YesWelder 250A MIG are suitable for welding aluminum with TIG or MIG spool gun.

Like any arc welding machine, the MP200 requires you to correctly set up the polarities to initiate the arc in a closed electric circuit. This means that to run any of its five processes, you must connect the work clamp to the metal and use the MIG/TIG/Stick/Plasma torch to close the circuit. It also requires a shielding gas for MIG and TIG processes and pressurized air for the plasma cutting process. So let's get started with an explanation of each.

RECOMMENDED PROCESSES

FIRSTESS® MP200 is designed for SMAW, GTAW (LFIT TIG), GMAW, FCAW and Plamsa cutting.

WELD MODE	PROCESS	COMMON MATERIALS	COMMON ELECTRODES
GTAW	LIFT TIG	STEEL	
SMAW	STICK	STEEL	6010, 6011, 7018
GMAW	MIG/MAG	STAINLESS, STEEL	ER70S-6 ER308L
FCAW	FLUX CORE	STEEL	E71T-GS
PLASMA CUTTING	CUT	STEEL, STAINLESS, Aluminum	

INSTALLATION

TECHNICAL SPECIFICATIONS: MP200

INPUT-SINGLE PHASE ONLY	
Standard Voltage/Frequency	Input Current
220V±10% 50/60Hz	$I_{1\ max}$=29A, $I_{1\ Ieff}$=22.4A
110V±10% 50/60Hz	$I_{1\ max}$=45A, $I_{1\ Ieff}$=34.8A

RATED OUTPUT – DC ONLY				
Voltage	Mode	Duty Cycle	Current	Volts at Rated Current
220V	GMAW	60%	200A	24V
		100%	154A	21.7V
	SMAW	60%	200A	28V
		100%	154A	26.1V
	GTAW	60%	200A	18V
		100%	154A	16.1A
	Plasma Cutting	60%	40A	96V
		100%	30A	92V
110V	GMAW	60%	160A	22V
		100%	123A	20.1V
	SMAW	60%	160A	26.4V
		100%	123A	24.9V
	GTAW	60%	160A	16.4V
		100%	123A	14.9V
	Plasma Cutting	60%	30A	92V
		100%	23A	89.2V

OUTPUT RANGE				
Voltage	Mode	Open Circuit Voltage	Welding Current Range	Welding Voltage Range
220V	GMAW	72V	40A~200A	16V~24V
	SMAW		20A~200A	20.8V~28V
	GTAW		20A~200A	10.8V~18V
	Plasma Cutting	290V	20A~40A	88V~96V
110V	GMAW	72V	40A~160A	16V~22V
	SMAW		20A~160A	20.8V~26.4V
	GTAW		20A~160A	10.8V~16.4V
	Plasma Cutting	290V	20A~30A	88V~92V

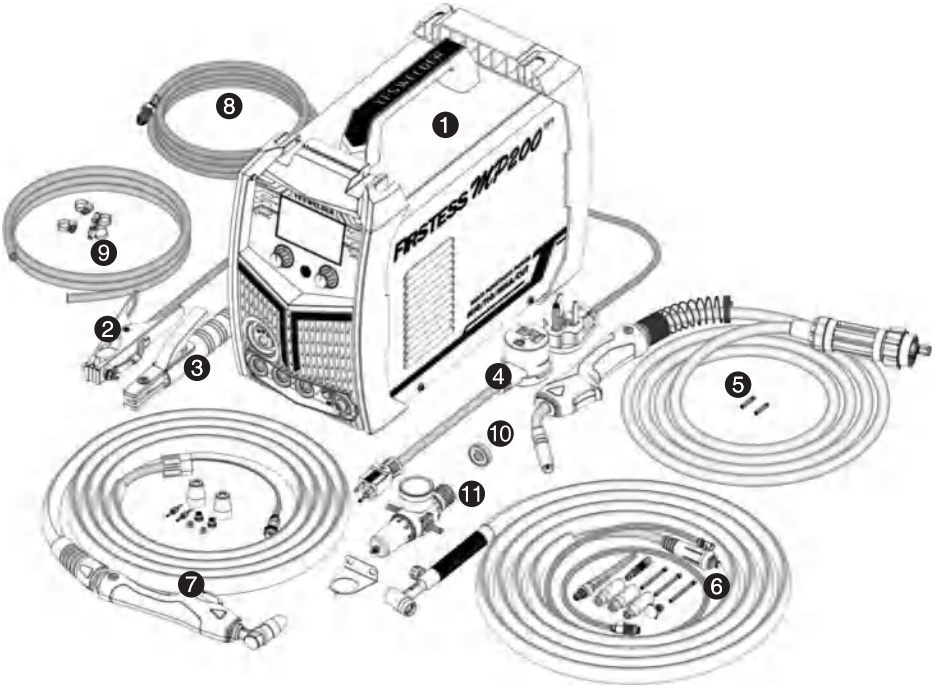
OTHER PARAMETERS				
Machine	Power Factor	Efficiency	Protection Class	Insulation Class
FIRSTESS MP200	1	≥80%	IP21S	F

PHYSICAL DIMENSIONS				
Machine	Length	Width	Height	Weight
FIRSTESS MP200	20.87 inch(530mm)	11.02 inch(280mm)	22.4 inch(569mm)	48.17 lbs(21.85kg)

TEMPERATURE RANGE	
Operating Temperature Range	-10°C~+40°C(14°F~104°F)
Storage Temperature Range	-25°C~+55°C(-13°F~131°F)

INSTALLATION

INCLUDED COMPONENTS

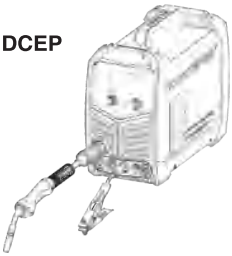


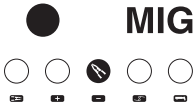
1. FIRSTESS MP200 Welder
2. Work Clamp
3. Electrode Holder
4. 220V~110V Adapter
5. MIG Gun With Consumables
6. TIG Torch With Consumables
7. Plasma Cutting Torch With Consumables
8. Gas Hose For Welding
9. Gas Hose For Plasma Cutting
10. Driver Roll
11. Air Filter Regulator

INSTALLATION

CONNECTION DIAGRAM

DCEP

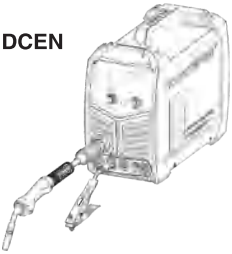


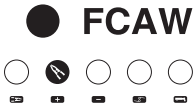


MIG/MAG(GMAW) WELDING CONNECTION DIAGRAM

Turn the power switch “OFF”. Connect the MIG Gun into the EURO Connect Socket, Ensure the gun is fully seated into the brass receptacle .Connect the work clamp to the Negative Output Receptacle(-) and turn clockwise to tighten.

DCEN

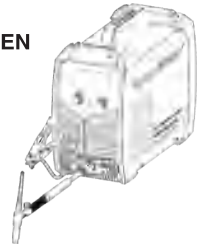


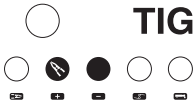


MIG/MAG(GMAW) WELDING CONNECTION DIAGRAM

Turn the power switch “OFF”. Connect the MIG Gun into the EURO Connect Socket, Ensure the gun is fully seated into the brass receptacle .Connect the work clamp to the Positive Receptacle(+) and turn clockwise to tighten.

DCEN

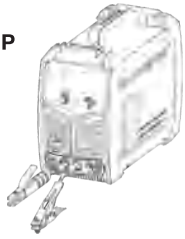


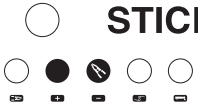


LIFT TIG(GTAW) WELDING CONNECTION DIAGRAM

Turn the power switch “OFF”. Connect the LIFT TIG Torch Twist-Mate to the Negative Output Receptacle(-) and turn clockwise to tighten. Connect the work clamp to the Positive Receptacle(+) and turn clockwise to tighten.

DCEP

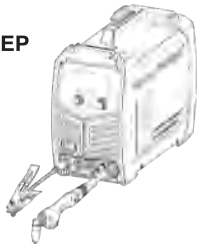


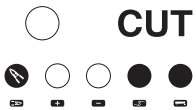


STICK (SMAW) WELDING CONNECTION DIAGRAM

Turn the power switch “OFF”. Connect the electrode holder Twist-Mate to the Positive Receptacle(+) and turn clockwise to tighten. Connect the work clamp to Negative Output Receptacle(-) and turn clockwise to tighten.

DCEP





PLASMA CUTTING CONNECTION DIAGRAM

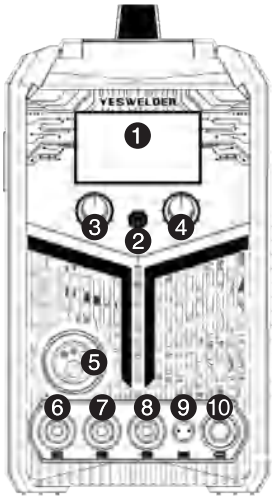
Turn the power switch “OFF”. Connect the plasma cutting torch to the Plasma Cutting Torch Connection, Connect the 2-pin connector present on torch to the receptacle. Connect the work clamp to Work Clamp Receptacle for Plasma Cutting and turn clockwise to tighten.

OPERATION

CASE FRONT CONTROLS

(See Figure 2)

FIGURE 2

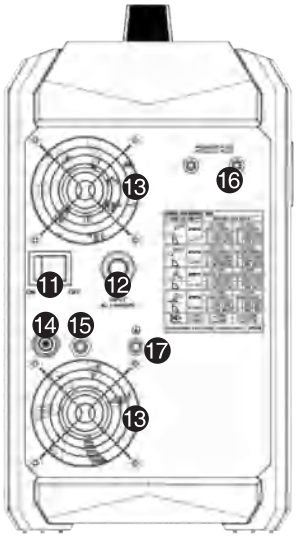


1. **Color LED Screen –** Permits visualization of welding process and parameters.
2. **Home Button –** Returns the user to the Home Screen. At the Home Screen, the user can select a welding process or the display settings can be configured.
3. **Back Button –** Returns the user to the main page.
4. **Main Adjustment Knob –** Permits selecting items by rotating the knob to the desired icon. Pressing the knob will select an item.
5. **MIG Gun Connection(EURO Connect) –** Permits attachment of a MIG welding gun. Ensure the gun is fully seated into the brass receptacle.
6. **Work Clamp Receptacle for Plasma Cutting**.
7. **Positive Output Receptacle –** Permits attaching a work lead, electrode stinger. Rotate clockwise to lock into place.
8. **Negative Output Receptacle –** Permits attaching a work lead, electrode stinger. Rotate connector clockwise to lock into place.
9. **Two Pin Trigger Receptacle for Plasma Cutting Torch –** Permits triggering the machine for Plasma Cutting. Connect the 2-pin connector present on the plasma cutting torch to the receptacle.
10. **Plasma Cutting Torch Connection –** Permits attachment of a plasma cutting torch. Ensure the torch is fully seated into the brass receptacle.

CASE BACK CONTROLS

(See Figure 3)

FIGURE 3



11. **Power Switch –** Permits turning the machine on or off.
12. **Input Power Cable**
13. **Double Fans –** Provides machine cooling. When the machine is switched ON, the fan runs continuously.
14. **Gas Inlet for Welding –** Shielding gas connects to this inlet
15. **Gas Inlet for Plasma Cutting –** Air compressor gas connects to this inlet
16. **Air Filter Regulator –** Install the air filter & regulator for plasma cutting
17. **Protective Ground**

HOW TO SET UP FOR MIG WELDING

To have a successful MIG welding experience, you will need to set up the shielding gas, polarity, wire feeding mechanism, and settings on the digital display. Before we go through each of these, let's take a look at MP200's specs for MIG.

Important Parameters For MIG Welding:

- Output Current 110V: 40-160A, 220V: 40~200A
- Wire feeding speed: Approx. 2.2 yd/min~16.4 m/min
- Duty cycle: 60% at 160A@110V,60% at 200A@220V
- Voltage range: 16~24V

Shielding Gas For MIG Welding

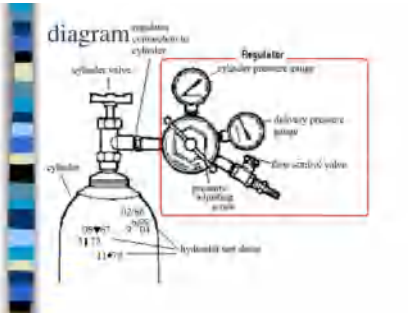
To MIG weld, you need to use either 100% CO2, or the most popular mixture of 75% Argon (Ar) and 25% CO2. Using 100% CO2 is cheaper, but the arc is more erratic and produces more spatter. The 75% Ar gas provides the most stable arc, but it's more expensive and provides much better looking welds. Most home hobbyists use a 75/25 mixture, but you can also use different ratios and add helium or oxygen depending on your needs.

Argon/CO2 mixtures produce a hotter, more fluid weld pool, and support spray transfer. When MIG welding with this mixture, the penetration will be broader but less deep than with 100% CO2, making it a better choice for thin metal.

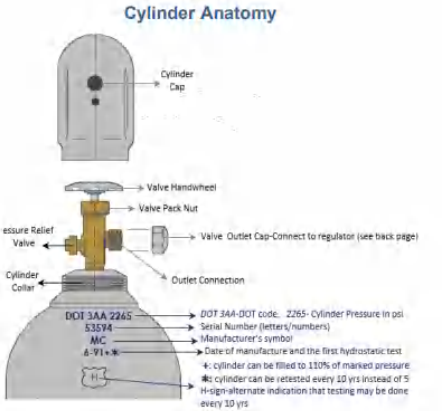
MIG welding mild steel with 100% argon gas is not recommended. Many home hobbyists who have TIG welded before may have a 100% Ar gas tank, but unfortunately, this is not a recommended gas for MIG. The arc will be erratic, have a horrible cutting out sound, and there will be a lot of soot around the weld.

Attaching Your Gas Bottle To Yeswelder MP200

Once you have purchased or rented your desired shielding gas cylinder, it's time to attach the gas flow regulator to it and connect it with the MP200.



The gas regulator is not included with the MP200, so make sure you buy a proper regulator for the 75/25 mix. If you plan on using a 100% CO2 shielding gas, be aware that it requires a CO2 supporting regulator. Not all Ar/CO2 regulators can work with a 100% CO2 gas because of differences in inlets and the regulators' proclivity to freeze up with 100% CO2. We recommend using MP200 with a 75/25 mixture and a standard 75/25 gas regulator, because that way, you are unlikely to make a mistake.



Before attaching a gas regulator to the gas bottle, first remove the protective cap, and then crack the gas bottle for just a fraction of the second. This removes any hidden dust found in the vent of the bottle. Next, the regulator is attached by threading on the gas bottle valve by hand, and tightened by a wrench.

YesWelder MP200 includes an 8-foot gas hose with 5/8"-18 RH fitting. This gas hose is connected at the back of the unit, where the gas inlet is labeled "MIG GAS." The other end of the hose is connected to your gas regulator, which you have previously attached to the gas bottle. Make sure these connections are tight so that there is no gas leakage.

After everything is connected, you should slowly release the gas from the bottle. Don't open the valve quickly because if something is wrong with the regulator, it could come off, and the extreme pressure from the bottle could harm you. Pressurized gas cylinders are dangerous, and you should abide by all safety measures to prevent hazards.

Never move the gas bottle with a regulator on it. Instead, remove the regulator, screw back the protective cap, and only then move the bottle according to the OSHA safety standards.

HOW TO SET UP FOR MIG WELDING

Attaching The MIG Gun And The Work Clamp

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing MIG gun and the work clamp.

To successfully MIG weld, you have to use a DCEP polarity, which means that your MIG welding wire is positive, and your work clamp is negative. Inside the welder, there is a screw-on busbar connection to switch the polarity between positive and negative. You need to use the positive polarity for welding MIG, but when welding Flux core, you have to use negative. So if the unit on the inside is already connected with the busbar to the positive side, you don't have to do anything to weld MIG.

The MIG gun only connects one way to the large Euro MIG gun connector on the front of the machine. After you line up the connections, push the MIG gun connection into the unit and tighten the threaded collar to make an air-tight connection.

Since the MIG gun is DCEP when welding MIG, the work clamp needs to be negative. So, take the work clamp's Dinse connector, and connect it with the center port marked with the "minus" sign. The Dinse plugs work by pushing and twist-locking after aligning the lip on the brass plug to the socket on the welder.

Installing A Solid MIG Welding Wire In The Welder

ENSURE GAS AND ELECTRICAL SUPPLIES ARE DISCONNECTED. Before proceeding, remove the nozzle and the contact tip from the gun.

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing wire. When the gun trigger is depressed, the drive rolls, spool of wire, wire being fed, and electrode are all electrically live (hot).

After the shielding gas and the MIG gun are set up, the wire feeder and the solid MIG wire spool are next to prepare. The wire feeder is located inside the unit. So, pull on the latch and open the side doors by pulling them downwards.

Installing The Appropriate Wire Drive Roller

The YesWelder MP200 comes with a .030" & .035" V-Groove and a .030" & .035" W-Groove roller. The V-groove is used for solid MIG wire feeding, while the W-Groove is used for flux-cored wire. You will recognize the V-Groove roller by the smooth grooves, while the W-Groove has knurled grooves in it.

The entire wire feeding mechanism is located in the bottom right on the inside of the welder, and it's housed in a cast aluminum body. It consists of three main parts: a feed tensioner, idler arm, and a feed roller knob.

HOW TO SET UP FOR MIG WELDING

To install a V-Groove drive roller, you need to loosen the feed tensioner, pull it down, and as a result, the idler arm will move up on its own. Now your feed roller knob is accessible. Unthread the black plastic cap by hand, and remove/change the wire drive roller. For MIG, we want to use the V-Groove roller, so align it with the post on the shaft, thread the black plastic knob back on, and the appropriate wire roller is installed.

Installing The Welding Wire

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing wire. When the gun trigger is depressed, the drive rolls, spool of wire, wire being fed, and electrode are all electrically live (hot).

To install the MIG wire spool, first remove the big plastic spool knob/collar. Then place the spool of wire over the built-in adapter so that the pin on the adapter aligns with the hole on the MIG wire spool (all MIG wire spools have this hole).

The MIG wire spool should be installed to unwind counterclockwise, and feed the wire from under the spool.

Once the wire spool is in place, detach the end of the wire and firmly hold the wire not to unravel on its own by keeping tension on it. Next, cut off the end of the wire to have a clean, straight wire end. By holding the wire with one hand, push it through the first wire inlet liner, and all the way through so that it enters the MIG welding gun liner.

HOW TO SET UP FOR MIG WELDING

The idler arm also contains a built-in roller wheel that applies pressure on the welding wire from the feed tensioner. So, after the wire has entered the MIG gun, put the idler arm down, lift the tensioner up and increase the pressure of the tensioner by turning it.

Now you will need to remove the MIG gun's nozzle and the tip. Next, turn on the machine, enter the MIG mode, and pres-hold the left knob on the front panel. This will feed the wire through the lead to your MIG gun's tip. At this point, slide the tip over the wire, thread it back in, and put the nozzle back on.

The MIG Welding Process Settings

Upon entering the MIG welding mode in the main menu on display, you will see your current and voltage settings, the polarity, and the upper row with additional settings.

MIG/MAG SETUP PROCESS

Rotate knob to process selection
Press knob to select

Rotate knob to gas selection
Press knob then rotate to select

METAL	RECOMMEND GAS
Mild Steel	CO_2 100% Argon 80%, CO_2 20% Argon 75%, CO_2 25%
Stainless Steel	Argon 98%, CO_2 2%

HOW TO SET UP FOR MIG WELDING

Rotate knob to wire selection
Press knob then rotate to select

Rotate knob to output control selection
Press knob then rotate to select

2T/4T- Normal welding mode(2T) provides weld power only while the trigger switch is depressed. 4T Trigger interlock mode eliminates the need to hold the gun trigger while welding

Rotate knob to thickness selection
Press knob then rotate to select

Rotate knob to time of burn back selection
Press knob then rotate to modify

The burn-back setting allows you to modify the time the wire is energized after releasing the trigger. So, if your wire is burning back to the tip, you can tune this value and adjust it to your style.

HOW TO SET UP FOR FLUX-CORED WELDING

The flux-cored welding process is similar to the MIG welding process, except that it doesn't use a shielding gas. Instead, the shielding action comes from the flux located inside the core of the wire.

To successfully perform flux-cored welding, you will need to use the correct polarity, install the flux-cored wire, and set the settings on display. So, let's go through each of these.

Attaching The MIG Gun And The Work Clamp

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing MIG gun and the work clamp.

Unlike the MIG welding process, the FCAW requires the DCEN polarity. This means that the busbar on the inside of the welder needs to be reversed from positive to negative. To do this, unscrew the connection on the positive side marked red and with the "plus" above it, rotate the metal busbar to the negative, black side, marked with the "minus," and screw it in.

The FCAW process uses the same MIG gun as the GMAW, so the installation process is identical as described for the MIG process above. However, the work clamp needs to be plugged in the positive port marked with the "plus" sign on the front of the machine.

The flux-cored wire installation process is identical to the solid MIG wire installation process described earlier, with one crucial difference. Unlike solid wire, the flux-cored wire requires the W-Groove roller.

So, just as when setting up the MIG, loosen the feed tensioner and pull it downwards. This releases the idler arm and grants you access to the feed roller. Unthread the black cap, remove the V-Groove used for MIG, and install the W-Groove (knurled) roller for flux core wire.

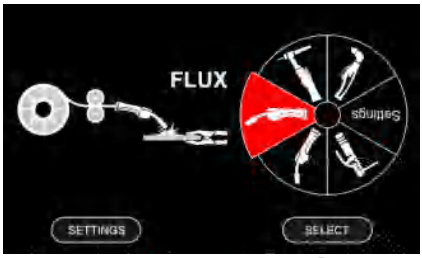
Next, remove the big plastic spool knob/collar, and install the flux-core wire spool so that its hole aligns with the pin on the adapter.

Proceed by releasing the tip of the wire from the spool and cutting the end off while firmly holding the wire on the spool to prevent it from unraveling on its own. Push the freshly made tip into the wire feeding mechanism all the way through to enter the MIG gun. Afterward, put down the idler arm and lock it in with the feed tensioner.

Now you are ready to power up the machine. Choose the FCAW process in the menu, and press-hold the left knob to feed the wire through the liner and into the MIG gun.

The Flux-Cored Welding Process Settings

The menu settings for the FCAW welding process are completely the same as with the MIG welding process, except for the shielding gas setting because the flux-cored process doesn't need the protective gas.



Rotate knob to process selection
Press knob to select

HOW TO SET UP FOR FLUX-CORED WELDING

Rotate knob to wire diameter selection
Press knob then rotate to select

Rotate knob to thickness selection
Press knob then rotate to select

Rotate knob to output control selection
Press knob then rotate to select

2T/4T- Normal welding mode(2T) provides weld power only while the trigger switch is depressed. 4T Trigger interlock mode eliminates the need to hold the gun trigger while welding.

Rotate knob to time of burn back selection
Press knob then rotate to modify

The burn-back setting allows you to modify the time the wire is energized after releasing the trigger. So, if your wire is burning back to the tip, you can tune this value and adjust it to your style.

HOW TO SET UP FOR TIG WELDING

To successfully perform a TIG welding process, you need to set up the shielding gas, polarity, TIG torch, and the settings on display. But before we explain each of these, let's look at MP200 specifications for TIG.

Important Parameters For TIG Welding:

- DC TIG welding only
- Lift start TIG
- Output Current 110V: 20-160A, 220V: 20-200A
- Duty cycle: 60% at 160A@110V,60% at 200A@220V
- Voltage range: 10.8-18V

Shielding Gas For TIG Welding

To TIG weld mild steel or stainless steel, you need to use a 100% argon shielding gas. You cannot use the 75/25 mixture with the CO2 typically used for MIG welding.

You can also use an argon/helium mixture for improved penetration and travel speed, but helium is more expensive, and so is the mixture.

Attaching Your Gas Bottle To The TIG Torch

Unlike the MIG welding process, the MP200 requires the shielding gas bottle to be connected directly to the supplied WP-17V TIG Torch.

The process of attaching the shielding gas regulator to the gas cylinder is completely the same as previously described for the MIG welding process. The difference is that instead of connecting the bottle-mounted gas regulator to the back of the MP200, you will connect it with the TIG torch.

The TIG lead has a built-in gas hose that connects to the regulator on the shielding gas. Take the end of this hose and thread it in the regulator manually, and then tighten it with a wrench to make a tight connection.

Before you start welding, you need to open the valve on the TIG torch to release the shielding gas. Make sure you keep the torch a few seconds over the completed weld to shield it as it cools down, and then tighten the valve to stop the gas flow.

Assembling The TIG Torch

Aside from the connection with the shielding gas, the TIG torch consumables must be assembled appropriately. This includes selecting and installing a ceramic cup, collet body, collet, tungsten, and the back cap.

In short, the bare torch needs the back cap on the rear, and the collet body, collet, tungsten, and a ceramic cup on the front, and in that order.

The MP200 comes with two different back caps. The short one is used when you are welding in a tight space and need to limit the size of your torch, but it also limits the size of your tungsten. The long back cap lets you use the full length of your tungsten, so you don't have to cut it apart.

To assemble the front part of the TIG torch, select the appropriate size collet for your tungsten and slide it over the tungsten electrode so that the tip of the tungsten enters on the side of the two slits of the collet. Next, place the collet and the tungsten inside the collet body and thread the collet body to the TIG torch head. Before you tighten it with your hand, adjust the length of the protruding tungsten by sliding it back and forward.

HOW TO SET UP FOR TIG WELDING

After you set the desired tungsten electrode stick out, take the ceramic cup and thread it by hand over the collet body. The MP200 comes with different cup sizes. The size of the cup determines the amount of gas coverage you can have over the weld, but also the necessary rate of gas flow.

If you use a smaller cup size, you can save some gas, but this is possible only if the weld area is not large. For example, if you are welding a wide joint, you will need as much shielding gas as you can get. Additionally, small cup sizes are helpful if you want to reach a tight space and the larger cup just can't fit.

Tungsten Electrode Selection

There are many tungsten electrodes, which causes quite confusion with the TIG welding beginners. Tungsten electrodes are classified according to their principal oxide and its percentage of the total electrodes' mass.

Commonly used tungsten electrodes are: pure tungsten, thoriated, lanthanated, ceriated, zirconated, and the rare earth mix tungsten electrodes. For DC TIG welding mild steel and stainless steel with the MP200, it's recommended to use the thoriated and ceriated tungsten electrodes. They handle steel welding well and work great with the DC TIG welding process.

The thoriated tungsten is radioactive, so you should take caution when grinding its tip and abide by the manufacturer's safety instructions. The ceriated tungsten is not radioactive, but it doesn't handle very high amperage, making it a good choice for welding thin sections.

Attaching The TIG Torch And The Work Clamp

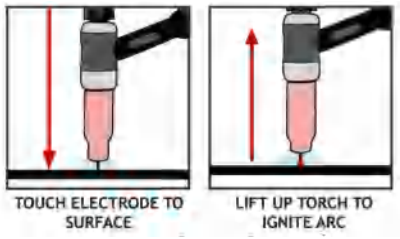
WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing TIG torch and the work clamp.

Once the shielding gas is connected to the gas bottle and the torch is assembled. You need to attach the TIG torch and the work clamp to the welder with the correct polarity.

The TIG welding process is done with DCEN, meaning that the TIG torch needs to be plugged into the negative terminal marked with the "minus" sign, and the work clamp is plugged into the positive terminal marked with the "plus" sign.

The Lift TIG Arc Start

The YesWelder Firstess MP200 supports a lift TIG arc start, which is a relatively clean process compared to the scratch start.

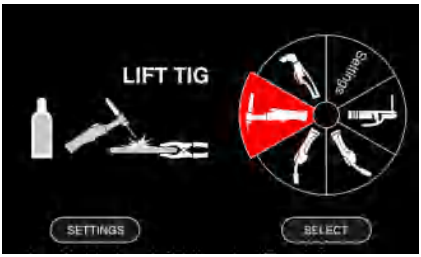


To initiate the arc, bring the tungsten electrode tip down to the metal piece to touch it lightly, and then quickly lift the torch upwards to draw the arc between the tungsten tip and the metal. Don't scratch the tungsten over the surface of the metal, it's unnecessary, damages the tungsten tip, and it can contaminate the weld with the residue from the tungsten electrode.

HOW TO SET UP FOR TIG WELDING

The TIG Welding Process Settings

Selecting the TIG welding process on the MP200's digital display allows you to start welding TIG, shows you the correct polarity for attaching the torch and work clamp, and lets you modify the amperage output.



Rotate knob to thickness selection
Press knob then rotate to select

HOW TO SET UP FOR STICK WELDING

The stick welding process is quite different from the previously described welding methods, but it's the most effortless process to set up with the MP200. You need to attach the leads with the correct polarity, and set the settings on the digital display in the stick mode. But before we discuss these in detail, make sure you check the MP200's specifications for welding with the SMAW process.

Important Parameters For Stick Welding:

- DC stick welding
- Output Current 110V: 20~160A, 220V: 20~200A
- Duty cycle: 60% at 160A@110V,60% at 200A@220V
- Voltage range: 20.8~28V
- Supports all standard electrodes for mild steel like: E7018, E6011, and E6010
- Maximum electrode diameter 110V: 1/8" (3.2mm), 220: 13/16" (5mm)

Connecting The Stick Electrode Holder And The Work Clamp

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing electrode holder and the work clamp.

The stick welding process works with the DCEP or DCEN polarity, and its selection is primarily influenced by the desired results and the stick electrode. The DCEP provides a more stable arc when stick welding, and achieves deeper penetration. Still, the DCEN is great when welding thinner materials or if you don't want to input maximum heat into the metal, like when performing surfacing welds.

Every electrode has a specified polarity it will work with. You can get this information from the stick electrode package, or by contacting the manufacturer. But typically, the polarities of common electrodes are as shown below:

- E6010 - DCEN
- E6011 - DCEN
- E6012 - DCEN
- E6013 - DCEN
- E7015 - DCEP
- E7016 - DCEP
- E7018 - DCEP

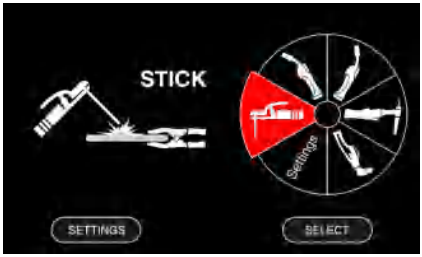
To set your stick welding process in the DCEP mode, attach your electrode holder to the positive terminal marked with the "plus" sign, and your work clamp to the negative terminal marked with the "minus" sign on the front of the MP200.

To set the stick welding in the DCEN mode, reverse the connections. The electrode holder is connected to the negative terminal, while the work clamp to the positive.

Just like with the TIG, the SMAW leads have the Dinse connectors. So, just align the lip on the brass plug with the socket on the welder, twist and lock it in.

The Stick Welding Process Settings

The SMAW welding menu of the MP200 lets you select the 60 or 70 series welding electrodes and the electrode diameter. The electrode selection shows the required polarity on display, and you can modify the amperage output just like with the TIG by turning the left knob.



Rotate knob to process selection
Press knob to select

HOW TO SET UP FOR STICK WELDING

Rotate knob to electrode rod selection
Press knob to select

Rotate knob to diameter selection
Press knob to select

HOW TO SET UP FOR PLASMA CUTTING

Performing a plasma cutting process successfully requires properly setting the air filter, pressurized airflow, plasma torch, and plasma cutting settings. The plasma cutting specifications are below:

Important Parameters For Plasma Cutting:

- Output Current 110V: 20~30A, 220V: 20~40A
- Duty cycle: 60% at 30A@110V,60% at 40A@220V
- Voltage range: 88~96V
- Max clean cut 110V: 0.19" (5mm) at 30A, 220V: 0.27" (7mm) at 40A
- Max severance cut 110V: 0.31" (8mm) at 30A, 220V: 0.5" (12.7mm) at 40A
- Recomennded air pressure: 58~72 PSI

How To Set Up The Compressed Air Flow

Plasma cutting requires the use of an external air compressor. We recommend an air compressor with an output of 9~12CFM @ 78 PSI. Use only clean, dry, compressed air for plasma cutting. Never use oxygen, acetylene, carbon dioxide, combustible gases, or any other bottled gas because this can cause an explosion and serious injuries or death. The plasma cutter outputs high heat and can only be used with compressed air.

Before you connect your air compressor with the MP200, you need to assemble the air filter on the back of the machine.

Installing The Air Filter (Oil-water Separator)

The MP200 comes with an air filter. Its purpose is to separate the water from the air, which makes plasma arc better and conserves the life of the consumables. The copper consumables are exposed to severe heat, much higher than their melting point. If the moisture from the air enters the torch, the hydrogen and oxygen will erode consumables faster. The air filter traps the moisture from the air, and as a result, the purified air is supplied to the plasma cutting torch.

The air filter needs to be mounted at the back of the MP200, connected with the air compressor and the MP200 air inlet. The air from the compressor goes into the water separator (air-filter), gets filtered, and the purified air enters the MP200.

The arrow on the air filter points in the direction of the airflow. So, you need to thread the air compressor inlet connection and the brass barb for the air outlet according to the designated airflow. The inlet receives the air from the compressor and is the side where the flow begins, while the outlet provides it to the MP200 and the side where the air exits.

You also need to thread the pressure gauge on the front of the air filter. All three threaded fittings need to be wrapped with the supplied tape to make the air-tight connection.

Once all of the three elements are threaded and tightened with the wrench, it's time to hook the assembled air filter to the back of the machine.

In the package, you will see the bracket with a circular hole and a small lip on the front. Unscrew the two nuts located at the back of the welder above the wording "air filter installing place," and install this bracket with its bent lip facing downwards.

Next, take the assembled air filter and place it in the bracket from underneath so that the lip from the bracket matches the indentation on the regulator. Afterward, take the red plastic ring and install it from above on the threads of the regulator by tightening with a hand.

Connecting The Air Supply

After the air filter is assembled and installed, you need to connect the air compressor to the installed inlet on the regulator and use the supplied air hose to direct the airflow from the outlet to the air inlet valve at the back of the welder.

Take a supplied hose clamp and put it over the end of the supplied air hose, and slide the hose over the brass barb (air out). Tighten the hose clamp firmly with a wrench or a socket but not too tight to damage the hose.

HOW TO SET UP FOR PLASMA CUTTING

Repeat the same process with the other end of the air hose and the air inlet on the back of the welder with the wording "CUT GAS." Use the hose clamp and tighten everything firmly. Ensure that the hose is not kinked before you tighten connections on both sides.

Supplying The Air

Once you power up and get your air compressor ready according to its manufacturer's instructions, attach it to the air filter's inlet side.

Next, gently pull up the plastic knob on the top of the air filter until it clicks and elevates, rotate it clockwise to set the desired air pressure, and push it down to lock in place.

Assembling The Plasma Cutting Torch

The plasma cutting torch comes already assembled, but when replacing the consumables, you will need to disassemble the head and put it back together.

The torch head consists of a swirl ring, electrode, cutting tip, and a shielding cap. To put everything together, place the electrode inside the torch head and mount the swirl ring over the electrode. Next, place the cutting tip over the two and thread the shielding cap over everything to the threads on the outside of the torch head.

Connecting The Plasma Torch And The Work Clamp

WARNING: ELECTRIC SHOCK CAN KILL! Always turn the ON/OFF SWITCH to the OFF position and unplug the welder's INPUT POWER CABLE from the AC power source before installing plasma torch and the work clamp.

Connecting the plasma torch and the work clamp is straightforward because they have dedicated sockets on the front of the machine. You don't have to worry about the polarity because it can't be reversed.

Plasma Arc Start

To initiate the plasma arc, you need to press the trigger on the torch to release the air, come in contact with the metal, and lift the tip slightly. This will initiate the arc, and by dragging the torch, you will be slicing through metal.

Adjust your cutting speed to the thickness of the metal you are cutting. Thicker metals need a slower travel speed while thinner gauge is faster to cut.

HOW TO SET UP FOR PLASMA CUTTING

The Plasma Cutter Settings

The plasma cutter menu lets you modify the cutting amperage output, pre-flow and post-flow duration, 2T/4T, and the stored memory settings.

Rotate knob to process selection
Press knob to select

Rotate knob to pre-flow selection
Press knob then rotate to modify

Pre-flow: sets the time in seconds that shielding gas will flow prior to arc-start initiation.

Rotate knob to post-flow selection
Press knob then rotate to modify

Post-flow: sets the time in seconds shielding gas will flow after the arc is terminated.

Rotate knob to output control selection
Press knob then rotate to select

2T/4T- Normal welding mode(2T) provides weld power only while the trigger switch is depressed. 4T Trigger interlock mode eliminates the need to hold the gun trigger while welding.

HOW TO SET UP FOR MEMORY SAVING AND LOADING

Setup For Memory Saving And Loading

The Memory function allows to store the voltage, current settings and other welding parameter that match the suitable welding setting under memory channel.

The memory channel can be recalled to reveal and use the weld parameters stored, and weld parameters can be further adjusted and stored as required. Up to 10 memory options for welding can be memorized and stored for recall.

How To Save Memory

1. Enter the Home page to choose the welding mode MIG/Flux/Stick Welding and Plasma Cutting

2. Enter the Main Adjustment Knob, and select the Memory menu.

3. Press and rotate to set the memory option to store from 1~10 (Select option when in Red, automatically confirm in Blue)

4. Set the welding parameters with the best welding effect in practicing.

How To Load Memory

1.Enter the Home page to choose the welding mode MIG/Flux/Stick Welding and Plasma Cutting

2. Enter the Main Adjustment Knob, and select the Memory menu

3. Press and rotate to set the memory option to recall from 1-10.(Selecting in Red, automatically confirming in Blue)

4.The memorized welding parameters will be loaded.

Eg. Select the Memory Option 2, adjust the parameter with 75%Ar 25% CO2, Steel .030" wire, 4T mode, burn back time 5s, Amp 120A. The parameter will be automatically saved in the Memory Option 2. Select the Memory Option 4, adjust the parameter with 80%Ar 20% CO2, Steel .035" wire, 2T mode, burn back time 0s, Amp 140A. The parameter will be automatically saved in the Memory Option 4. When enter the Main Adjustment Knob and select Memory option 2, the welder will come with recalled stored parameter with 75%Ar 25% CO2, Steel .030" wire, 4T mode, burn back time 5s, Amp 120A. If select Option 4, the system will recall parameter with 80%Ar 20% CO2, Steel .035" wire, 2T mode, burn back time 0s, Amp 140A.

Note: The parameter will automatically save in the data. The data will be covered with the newest parameter with the same memory option.

MAINTENANCE

GENERAL MAINTENANCE

This welder has been engineered to need minimal service providing that a few very simple steps are taken to properly maintain it.

1. Keep the cabinet cover closed at all times unless the wire needs to be changed or the drive pressure needs adjusting.

2. Keep all consumables (contact tips, nozzles, and liner) clean and replace when necessary. See "Consumable Maintenance" (below) and "Troubleshooting" (page 25) for detailed information.

3. Replace INPUT POWER CABLE, ground cable, work clamp, or gun assembly when damaged or worn.

4. Avoid directing grinding particles towards the welder. These conductive particles can build up inside the machine and cause severe damage.

5. Periodically clean dust, dirt, grease, etc. from your welder. Every six months or as necessary, remove the side panels from the welder and use compressed air to blow out any dust and dirt that may have accumulated inside the welder.

6. If available, use compressed air to periodically clean the liner, especially when changing wire spools

WARNING: DISCONNECT FROM POWER SOURCE WHEN CARRYING OUT THIS OPERATION.

7. The wire feed drive roller will eventually wear during normal use. With the correct pressure, the idler roller must feed the wire without slipping. If the grooves in the wire feed drive roller are worn deep enough that the idler roller and the wire feed drive roller make contact when the wire is in place between them, the wire feed drive roller must be replaced.

8. Check all cables periodically. They must be in good condition and not cracked.

WARNING: ELECTRIC SHOCK CAN KILL! Be aware that the ON/OFF SWITCH, when OFF, does not remove power from all internal circuitry in the welder. To reduce the risk of electric shock, always unplug the welder from its AC power source and wait several minutes for electrical energy to discharge before removing side panels.

CONSUMABLE MAINTENANCE

IT IS VERY IMPORTANT TO MAINTAIN THE CONSUMABLES TO AVOID THE NEED FOR PREMATURE REPLACEMENT OF THE GUN ASSEMBLY.

MAINTAINING THE CONTACT TIP:
The purpose of the CONTACT TIP is to transfer welding current to the welding wire while allowing the wire to pass through it smoothly.
Always use a contact tip stamped with the same diameter as the wire it will be used with.

1. If the wire burns back into the tip, remove the tip from the gun and clean the hole running through it with an oxygen-acetylene torch tip cleaner or tip drill. If the burned-back wire cannot be removed, the tip will have to be replaced.
2. With extended use over time, this hole will become worn. Increased wear on the hole causes increased resistance in the transfer of welding current from the contact tip to the wire. This will result in less stable arc characteristics and difficult arc starting.

CAUTION: KEEP THE NOZZLE CLEAN!
During the welding process, spatter and slag will build up inside the nozzle and must be cleaned out periodically. Failure to clean and/or replace the nozzle in a timely fashion will cause damage to the front end of the gun assembly, which is not replaceable. The results of the inaction may require the replacement of the entire gun assembly.
Failure to keep the nozzle adequately cleaned can result in the following problems:
A shorted nozzle results when spatter buildup bridges across the insulation in the nozzle allowing welding current to flow through it as well as the contact tip. When shorted, a nozzle will steal welding current from the wire whenever it contacts the grounded workpiece. This causes erratic welds and reduced penetration. In addition, a shorted nozzle overheats the end of the gun which can damage the front-end of the gun.

TESTING FOR A SHORTED NOZZLE
Arcing between the nozzle and the workpiece always means the nozzle is shorted, but this can be hard to detect through the lens of a welding helmet. The following testing method is another way to tell if a nozzle is shorted.
With the welder unplugged from the AC power source, touch the probes of an ohmmeter or continuity tester to the end of the contact tip and the outside of the nozzle. If there is any continuity at all, the nozzle is shorted. Clean or replace as needed.

TROUBLESHOOTING

HOW TO USE TROUBLESHOOTING GUIDE

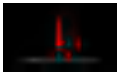
This Troubleshooting Guide is provided to help you locate and repair possible machine malfunctions. Simply follow the three-step procedure listed below.

Step 1. LOCATE PROBLEM (SYMPTOM).
Look under the column labeled "PROBLEM (SYMPTOMS)". This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting.

Step 2. POSSIBLE CAUSE.
The second column labeled "POSSIBLE CAUSE" lists the obvious external possibilities that may contribute to the machine symptom.

Step 3. RECOMMENDED COURSE OF ACTION
This column provides a course of action for the possible cause, If you do not understand or are unable to perform the Recommended Course of Action safely, contact YESWELDER support@yeswelder.com.

OBSERVE ALL SAFETY GUIDELINES DETAILED THROUGHOUT THIS MANUAL

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
	Air Pressure Warning.	Air pressure needs to be checked before you can use.
	Overheat.	1.Thermal protector engaged.--Allow welder to cool at least 10 minutes with machine ON.The LED should turn off after the machine has cooled. 2.Insufficient air flow--Check for obstructions blocking air flow and ensure that there are 12 inches of clearance between any obstacles and the vents on all sides of the machine.
	Over Current.	Check the input connection.
Frequent circuit breaker Trips.	Machine is drawing too much amperage due to use of larger size electrode.	Use a smaller electrode.
	Machine is not the only piece of electrical equipment on the circuit.	Make sure the welder is on a dedicated circuit or is the only thing plugged into a circuit.
	Circuit breaker is incorrect/insufficient for use with this machine.	Verify that the circuit breaker for the circuit is a 35A breaker for 110V and 30A for 220V. If it is not, have a qualified electrician install the proper breakers.
All LEDs OFF, No output power, Fan not operating.	No input power.	Connect machine to proper input power source.
		Verify that circuit breaker has not been tripped in your main power panel. Reset if needed.
		Wire loose connection.
	POWER SWITCH is OFF.	Ensure POWER SWITCH(rear) is on the ON position.

TROUBLESHOOTING

MIG WELDING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
No arc or wire feed. Fan operates normally (can be heard).	Gun trigger is not being pulled or is not making contact.	Pull the trigger while in contact with the workpiece. The machine does not arc unless the trigger is pulled. Depress the trigger ALL THE WAY until the trigger stops moving into the gun.
	Exceeded duty cycle; thermal protector engaged.	Allow welder to cool at least 10 minutes with machine ON (observe and maintain proper duty cycle). OVERHEAT INDICATOR should turn off after the machine has cooled.
	Insufficient air flow causing machine to overheat before reaching duty cycle.	Check for obstructions blocking air flow and ensure that there are 12 inches of clearance between any obstacles and the vents on all sides of the machine.
No arc or wire feed. Fan does NOT operate (cannot be heard).	No voltage or incorrect voltage supplied to welder.	Make sure the machine is plugged in. Check the status of your INPUT VOLTAGE INDICATOR LED. It should be illuminated. Check the voltage of your outlet. If it is 10% more or less than optimal, call a qualified electrician.
	ON/OFF SWITCH is in the OFF position.	Turn the ON/OFF SWITCH to the ON position.
	Circuit breaker has been tripped.	Make sure the circuit breaker has been reset.
Feed motor operates but wire will not feed.	Insufficient feed drive roller pressure.	Adjust drive roller pressure.
	Burr on end of wire.	Re-cut wire so it is square with no burr.
	Liner blocked or damaged.	Clear with compressed air or replace liner.
	Despooler tension too high.	Adjust despooler tension.
Wire feeds but no arc.	Bad ground or loose ground connection.	Check connection of the ground cable to the work clamp. Tighten cable connection to work clamp if needed. Ensure that the connection between the work clamp and workpiece is good and is on clean, bare (not painted or rusted) metal.
	Trigger not pulled while wire is in contact with workpiece.	Pull the trigger while in contact with the workpiece. The machine does not arc unless the trigger is pulled.
Poor quality welds.	Insufficient gas at weld area.	Check that the gas is not being blown away by drafts and, if so, move to a more sheltered weld area. If not, check gas cylinder contents,gauge, regulator setting, and operation of gas valve.
	Rusty, painted, oily or greasy workpiece	Ensure workpiece is clean and dry.
	Poor ground connection or torch/electrode connection.	Check work clamp/workpiece connection and all connections to the machine.
	Incorrect settings.	Check welding parameters and polarity.

TROUBLESHOOTING

MIG WELDING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
Arc works but not feeding wire.	No pressure on the drive roller; insufficient or excessive pressure on the drive roller.	Adjust the drive pressure.
	Wire spool is empty.	Check if wire is in place and replace if necessary.
Wire is "bird-nesting" at the drive roller or jamming.	Too much pressure on drive roller.	Adjust the drive pressure.
	Contact tip is clogged or damaged.	Replace contact tip.
	Worn guides or drive roll alignment.	Replace parts.
Low output or non-penetrating weld.	Weld parameters too low.	Adjust welding parameters.
	Wrong type or size wire.	Use .030" (0.8mm) - .035" (0.9mm) wire.
	Poor ground connection or gun connection.	Reposition clamp and check cable to clamp connection. Check connection of ground cable, gun, and Wire Polarity Drive Lead.
	Wrong size or worn contact tip	Use .030" (0.8mm) or 0.035" (0.9mm) contact tip with the corresponding wire. Replace contact tip if worn.
	Input power too low.	Have a qualified electrician verify the voltage at your outlet. If the voltage is appropriate, verify that the circuit wiring is sufficient for the circuit breaker size.
	Stick out too long.	Decrease stick out (the amount the wire extends past the contact tip).
Work clamp, ground cable, and/or welding cable get hot.	Bad ground or loose ground connection.	Check the connection of the work clamp and gun to the machine. Check the connection of the MIG Gun Connection. Check connection of the ground cable to the work clamp. Tighten cable connection to work clamp if needed. Ensure the connection between the work clamp and workpiece is good and on clean, bare (not painted or rusted) metal. Make sure cable is not damaged.
Gun nozzle arcs to work surface.	Spatter or Slag build-up inside nozzle or nozzle is clogged.	Clean or replace nozzle as needed.
Wire burns back to contact tip.	Wire feed speed is set too low for voltage setting being used.	Increase wire feed speed (turn left knob clockwise).
	Stick-out too short.	Increase stick-out (the amount the wire extends past the contact tip).
	Wrong size contact tip.	Use correct size contact tip.
	Contact tip is clogged or damaged.	Replace contact tip.

TROUBLESHOOTING

TIG WELDING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
Poor starting.	Poor work clamp connection.	Check and secure work connection.
	Start current is too low.	Increase Start current.
Black area along weld bead.	Oily or organic contamination on work	Clean work piece.
	Tungsten electrode may be contaminated.	Grind to clean electrode.
	Leaks in gas line or torch connection.	Check connection.
	Gas tank is near empty.	Replace the gas tank.
Unstable Arc.	Contaminated base metal.	Remove materials like paint, grease, oil, and dirt, including mill scale from base metal.
	Tungsten is contaminated.	Remove 25/64" of contaminated tungsten and re-grind the tungsten.
	Arc length too long.	Lower torch so that the tungsten is off of the work piece 5/64"-13/64"(2-5mm).
Arc wanders.	Tungsten incorrect or in poor condition.	Check that correct type of tungsten is being used. Remove tungsten 3/4" from the weld end and re-sharpen the tungsten.
	Insufficient gas shielding.	Check and set the gas flow between 20-30cfh flow rate.
	Contaminated gas or leaks in gas line, torch, or connections.	Check gas line & connections.
	Poorly prepared tungsten.	Grind marks should run lengthwise with tungsten, not circular. Use proper grinding method and wheel.
	Contaminated base metal.	Remove contaminating materials like paint, grease, oil, and dirt, including mill scale from base metal.
	Contaminated/Incorrect filler.	Check the filler wire and remove all grease, oil, or moisture from filler metal.

TROUBLESHOOTING

TIG WELDING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
Lift TIG does not initiate an arc.	No gas, incorrect gas flow.	Check the gas is connected and cylinder valve open, check hoses, gas valve and torch are not restricted. Set the gas flow between 20-30 cfh flow rate.
	Poor work clamp connection.	Check & secure work clamp.
	Contaninated Tungsten.	Grind to ctean Tungsten.
	Loose connection.	Check all connectors and tighten.
	Earth clamp not connected to work.	Connect the work clamp directly to the work piece wherever possible.
Tungsten burning away quickly.	Incorrect Gas/Inadequate gas flow.	Check the gas cylinder contains pure Argon gas and is connected and the torch gas valve is open. Set the gas flow between 20-30cfh flow rate.
	Back cap not fitted correctly.	Make sure the torch back cap is fitted so that the o-ring is inside the torch body.
	Incorrect tungsten being used.	Check and change the tungsten type if necessary.
Contaminated tungsten.	Touching tungsten into the weld pool.	Keep tungsten from contacting weld puddle. Raise the torch so that the tungsten is off of the work piece 1/8-1/4.
	Touching the filler wire to the tungsten.	Keep the filler wire from touching the tungsten during welding, feed the filler wire into the leading edge of the weld pool in front of the tungsten.
	Tungsten melting into the weld pool.	Check that correct type of tungsten is being used. Too much current for the tungsten size so reduce the amps or change to a larger tungsten.

TROUBLESHOOTING

STICK WELDING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
Poor starting.	Poor work clamp connection.	Check and secure work connection
Stick electrode "blasts off" when arc is struck.	Current may be set too high for etedrode size.	Adjust current.
Electrode "stick" in weld puddle.	Current may be set too low for electrode size.	Adjust current.
Porosity – small cavities or holes resulting from gas pockets in weld metal.	Arc length too long.	Reduce arc length.
	Damp electrode.	Use dry electrode.
	Workpiece dirty.	Remove all grease, oil, moisture, rust, paint, coatings, slag, and dirt from work surface before welding.
Excessive Spatter – scattering of molten metal particles that cool to solid form near weld bead.	Amperage too high for electrode.	Decrease amperage or select larger electrode.
	Arc length too long or voltage too high.	Reduce arc length or voltage.
Incomplete Fusion – failure of weld metal to fuse completely with base metal or a preceeding weld bead.	Insufficient heat input.	Increase amperage. Select larger electrode and increase amperage.
	Improper welding technique.	Place stringer bead in proper location at joint during welding.
		Adjust work angle or widen groove to access bottom during welding.
		Momentarily hold arc on groove side walls when using weaving technique.
		Keep arc on leading edge of weld puddle.
	Workpiece dirty.	Remove all grease, oil, moisture, rust, paint, coatings, slag, and dirt from work surface before welding.
Lack Of Penetration – shallow fusion between weld metal and base metal.	Improper joint preparation.	Material too thick. Joint preparation and design must provide access to bottom of groove.
	Improper weld technique.	Keep arc on leading edge of weld puddle.
	Insufficient heat input.	Increase amperage. Select larger electrode and increase amperage.
		Reduce travel speed.
Burn Through– weld metal melting completely through base metal resulting in holes where no metal remains.	Excessive heat input.	Select lower amperage. Use smaller electrode.
		Increase or maintain steady travel speed.

TROUBLESHOOTING

CUTTING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
The arc does not transfer to the workpiece.	Insufficient work clamp contact with the workpiece.	Clean the area where the work clamp attaches to the workpiece to ensure a good metal to metal connection.
		Inspect the work clamp and its lead for damage, repair or replace as necessary.
	Improper cutting technique.	1. Brace the cutting hand to steady cutting hand, provides freedom of movement in all directions and helps maintain a constant 1/16"to 1/8" standoff. 2. Place the torch close and start cut from the edge of the metal with a roll 45-to-90 degree roll in case the sparks blow up into the torch.
	Plasma torch may not be in contact with the workpiece.	Be sure to physically drag the cutting nozzle on the workpiece as you cut.
Poor cut quality.	Improper use of Plasma torch.	Review operating instructions.
	Plasma torch parts are worn out.	Examine the consumables for wear and replace worn parts with new YesWelder consumable parts.
	Moisture or oil in air supply.	Excessive humidity or oil from the compressor may be contaminating the air supply. Install a moisture filter in the air supply line prior to machine.
Insufficient cut penetration.	Cutting speed too fast.	Decrease your torch travel speed.
	Plasma torch is too tilted.	Ensure that Plasma torch head is perpendicular to the workpiece.
	Workpiece is too thick.	Choose thinner workpiece material within the operational limits of the plasma cutting machine.
	Cutting current too low.	Turn current setting up.
		Ensure plasma cutting machine has proper input power.
		If used, eliminate or reduce length of extension cord.
	Plasma torch parts are worn out.	Examine the consumables for wear and replace worn parts with new YesWelder consumable parts.
	Non-genuine manufacturer's parts.	Use only genuine YesWelder consumables for optimum performance.
	Insufficient air flow or pressure.	Check for obstructions blocking air flow and ensure that there are 12 inches of clearance between any obstacles and the vents on all sides of the machine.

TROUBLESHOOTING

CUTTING ISSUES

PROBLEM	POSSIBLE CAUSE	COURSE OF ACTION
Excessive dross.	Cutting speed too slow (bottom dross).	Increase your torch travel speed.
	Cutting speed too fast (top dross).	Decrease your torch travel speed.
	Cutting current too low.	Ensure plasma cutting machine has proper input power.
		If used, eliminate or reduce length of extension cord.
	Plasma torch parts are worn out.	Examine the consumables for wear and replace worn parts with new YesWelder consumable parts.
	Non-genuine manufacturer's parts.	Use only genuine YesWelder consumables for optimum performance.
Excessive wear of the cutting nozzle or electrode.	Air pressure too low.	Inspect air compressor, air lines, and filters for proper operation.
		Inspect consumables for obstructions and proper installation.
	Exceeding plasma cutting machine capability (material too thick).	Choose thinner workpiece material within the operational limits of the plasma cutting machine.
	Moisture or oil in air supply.	Excessive humidity or oil from the compressor may be contaminating the air supply. Install a moisture filter in the air supply line prior to machine.
	Improperly assembled or loose Plasma torch consumables	Check Plasma torch consumables for proper installation.
	Damaged Plasma torch consumable.	Check plasma torch consumables for damage and replace if damaged.
	Non-genuine manufacturer's parts.	Use only genuine YesWelder consumables for optimum performance.
Tilted cut edge angle (not perpendicular).	Plasma torch position not correct.	Ensure that plasma torch head is perpendicular to the workpiece.
	Workpiece thickness is near the capacity of the machine.	Cut thinner material. 15/32" thick material cuts will not have a clean cut edge.
	Asymmetric wear of cutting nozzle hole or wrong assemblage of the plasma torch parts.	Check plasma torch consumables for wear and proper installation.
		Examine the consumables for wear and replace worn parts with new YesWelder consumable parts.

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