



MIG 175

Item# 164612

OPERATOR'S MANUAL



Read carefully and understand RULES FOR SAFE OPERATION and instructions before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

MIG 175
Item# 164612
Operation Instructions

For technical questions and replacement parts, please call 1-800-222-5381.

Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., product. For future reference, please complete the owner's record below:

Model:_____ Purchase Date:_____

Save the receipt, warranty information and this owner's manual. It is important that you read the entire manual to become familiar with this product before using it.

This machine is designed for certain applications only. Northern Tool + Equipment strongly recommends that this machine not be modified and/or used for any application other than that for which it was designed. If you have questions relative to a particular application, DO NOT use the machine before you contact Northern Tool + Equipment to determine if it can be performed on the product.

Before using this welding unit, please read the following instructions carefully.

SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly (if any), operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your receipt and this manual in a safe and dry place for future reference.

Operator's Manual

Read and save these instructions.

Do not use your welder before reading this manual.

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Dear Owner:

Thank you for purchasing the MIG 175 wire feed welder. It is designed to provide years of service for you.

This manual is designed to help you safely and effectively operate your welder.

1. General Welding Safety



WARNING!

*Welding can cause serious injury or death. Only qualified people should operate, repair or install this welder. Read this manual before use of the welder.



WARNING!

1.1 Your Welding Environment

- Keep the environment you will be welding in free from flammable materials.
- Always keep a fire extinguisher accessible to your welding environment.
- Always have a qualified person install and operate this equipment.
- Make sure the area is clean, dry and ventilated. Do not operate the welder in humid, wet or poorly ventilated areas.
- Always have your welder maintained by a qualified technician in accordance with local, state and national codes.
- Always be aware of your work environment. Be sure to keep other people, especially children, away from you while welding.
- Keep harmful arc rays shielded from the view of others.
- Mount the welder on a secure bench or cart that will keep the welder secure prevent it from tipping over or falling.

1.2 Your Welder's Condition

- Check all cables, power cord and MIG gun to be sure the insulation is not damaged. Always replace or repair damaged components before using the welder.

- Check all components to ensure they are clean and in good operating condition before use.



1.3 Use of Your Welder

DANGER

Do not operate the welder if the MIG gun, wire or wire feed system is wet. Do not immerse gun or wire in water. These components and the welder must be completely dry before attempting to use it.

- Follow the instructions in this manual.
- Keep welder in the off position when not in use.
- Connect ground lead as close to the area being welded as possible to ensure a good ground.
- Do not allow any body part to come in contact with the welding wire if you are in contact with the material being welded, ground or electrode from another welder.
- Do not weld if you are in an awkward position. Always have a secure stance while welding to prevent accidents. Wear a safety harness if working above ground.

- Do not drape cables over or around your body.
- Wear a full coverage helmet with shade (see ANSI Z87.1 safety standard) and safety glasses while welding.
- Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.
- Do not overuse or overheat your welder. Allow proper cooling time between duty cycles.
- Keep hands and fingers away from moving parts and stay away from the drive rolls.
- Do not point MIG gun at any body part of yourself or anyone else.
- Always use this welder in the rated duty cycle to prevent excessive heat and failure.

1.4 Specific Areas of Danger, Caution or Warning

1.4A Electrical Shock



Electric arc welders can produce a shock that can cause injury or death. Touching electrically live parts can cause fatal shocks and severe burns. While welding, all metal components connected to the wire are electrically hot. Poor ground connections are a hazard, so secure the ground lead before welding.

- Wear dry protective apparel: coat, shirt, gloves and insulated footwear.
- Insulate yourself from the work piece. Avoid contacting the work piece or ground.
- Do not attempt to repair or maintain the welder while the power is on.
- Inspect all cables and cords for any exposed wire and replace immediately.
- Use recommended replacement cables and cords.
- Always attach ground clamp to the work piece work table as close to the weld area as possible.
- Do not touch the welding wire and the ground or grounded work piece at the same time.
- Do not use a welder to thaw frozen pipes.

1.4B Fumes and Gases



Fumes emitted from the welding process displace clean air and can result in injury or death.

-Do not breathe in fumes emitted by the welding process. Make sure your breathing air is clean and safe.

-Work only in a well-ventilated area or use a ventilation device to remove welding fumes from the environment where you will be working.

-Do not weld on coated materials (galvanized, cadmium plated or containing zinc, mercury or barium). They will emit harmful fumes that are dangerous to breathe. If necessary use a ventilator, respirator with air supply or remove the coating from the material in the weld area.

-The fumes emitted from some metals when heated are extremely toxic. Refer to the material safety data sheet for the manufacturer's instructions.

-Do not weld near materials that will emit toxic fumes when heated. Vapors from cleaners, sprays and degreasers can be highly toxic when heated.

1.4C UV and IR Arc Rays



WARNING



The welding arc produces ultraviolet (UV) and infrared (IR) rays that can cause injury to your eyes and skin. Do not look at the welding arc without proper eye protection.

-Always use a helmet that covers your full face from the neck to top of head and to the back of each ear.

-Use a lens that meets ANSI standards and safety glasses. For welders under 160 Amps output, use a shade 10 lens; for above 160 Amps, use a shade 12. Refer to the ANSI standard Z87.1 for more information.

-Cover all bare skin areas exposed to the arc with protective clothing and shoes. Flame-retardant cloth or leather shirts, coats, pants or coveralls are available for protection.

-Use screens or other barriers to protect other people from the arc rays emitted from your welding.

-Warn people in your welding area when you are going to strike an arc so they can protect themselves.

1.4D Fire Hazards



WARNING



Do not weld on containers or pipes that contain or have had flammable, gaseous or liquid combustibles in them. Welding creates sparks and heat that can ignite flammable and explosive materials.

-Do not operate any electric arc welder in areas where flammable or explosive materials are present.

-Remove all flammable materials within 35 feet of the welding arc. If removal is not possible, tightly cover them with fireproof covers.

-Take precautions to ensure that flying sparks do not cause fires or explosions in hidden areas, cracks or areas you cannot see.

-Keep a fire extinguisher close in the case of fire.

-Wear garments that are oil-free with no pockets or cuffs that will collect sparks.

-Do not have on your person any items that are combustible, such as lighters or matches.

-Keep work lead connected as close to the weld area as possible to prevent any unknown, unintended paths of electrical current from causing electrical shock and fire hazards.

-To prevent any unintended arcs, cut wire back to ¼" stick out after welding.

1.4E Hot Materials



WARNING



Welded materials are hot and can cause severe burns if handled improperly.

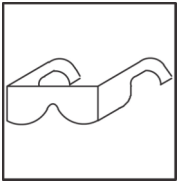
Do not touch welded materials with bare hands.

Do not touch MIG gun nozzle after welding until it has had time to cool down.

1.4F Sparks/Flying Debris



WARNING



Welding creates hot sparks that can cause injury. Chipping slag off welds creates flying debris.

- Wear protective apparel at all times: ANSI-approved safety glasses or shield, welder's hat and ear plugs to keep sparks out of ears and hair.

1.4G Electromagnetic Fields



WARNING



Electromagnetic fields can interfere with various electrical and electronic devices such as pacemakers.

- Consult your doctor before using any electric arc welder or cutting device
- Keep people with pacemakers away from your welding area when welding.

- Do not wrap cable around your body while welding.
- Wrap MIG gun and ground cable together whenever possible.
- Keep MIG gun and ground cables on the same side of your body.

1.4H Shielding Gas Cylinders Can Explode

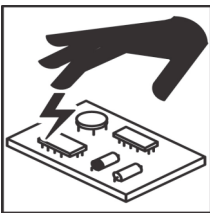


High pressure cylinders can explode if damaged, so treat them carefully.

- Never expose cylinders to high heat, sparks, open flames, mechanical shocks or arcs.
- Do not touch cylinder with MIG gun.
- Do not weld on the cylinder.

- Always secure cylinder upright to a cart or stationary object.
- Keep cylinders away from welding or electrical circuits.
- Use the proper regulators, gas hose and fittings for the specific application.
- Do not look into the valve when opening it.
- Use protective cylinder cap whenever possible.

1.4I Proper Care, Maintenance And Repair



-Always have power disconnected when working on internal components.

-Do not touch or handle PC board without being properly grounded with a wrist strap. Put PC board in staticproof bag to move or ship.



Do not put hands or fingers near moving parts such as drive rolls or fan.

1.4J Proposition 65 Warnings

Welding and cutting equipment 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 section 25249.5 et seq.)

2. Product Description

The MIG 175 welder is ready to weld with or without shielding gas. Flux cored arc welding (FCAW) uses a welding wire with flux contained on the inside of the wire. MIG or Gas Metal Arc Welding (GMAW) uses an external supply (cylinder) of shielding gas to shield the arc puddle from the atmosphere. Gases include CO₂ and C-25 (75% Argon/25%CO₂) for mild steel, a triple mix of Argon, CO₂ and Helium for stainless steel and Argon, used for aluminum. In the welding process, an arc is created between the welding wire and work piece, melting the two materials and joining them together. The welding wire is continuously fed through the gun to the work piece, allowing the operator to concentrate on stick out (distance between the end of the wire and the work piece) and travel speed. The MIG 175 is designed to weld mild steel materials from 26 gauge to 3/16" and performs best using .023", .030" or .035" solid wire with C25 shielding gas or .030" and .035" flux cored or self shielding wire. It can weld stainless steel materials from 18 gauge to 11 gauge (1/8") and aluminum materials from 16 gauge to 11 gauge (1/8").

Features of the MIG 175 wire feed welder:

- Compact design includes the welder and wire feeder that fit in a small case for easy transport.
- Popular 230 Volt power input for maximum convenience.
- Ready to weld with or without shielding gas. Includes sample spool of flux cored wire to allow operator to weld out of the box.
- Low heat affected area when used with C25 and .023" wires for reduced distortion.
- Welds thinner materials (26 gauge) with .023" wire and C25 shielding gas.
- Welds up to 3/16" materials with .035" flux cored wires.
- Tweco style replacement nozzle, contact tips and adaptor for easy access to replacement parts.

We reserve the right to change specifications without notification.

3. Technical Specifications

3.1 Proper Environment for Welder

- * The ambient temperature range: when welding: -14°F–104°F,
during transport or in storage: -13F–131°F
- * Relative humidity: when at 104°F: ≤50%,
when at 68°F: ≤90%.
- * The dust, acid and erodible materials in the air can not exceed the amount required by the norm (apart from the emissions from the welding process). No violent vibrations at the job site.
- * Do not use in the rain or other wet conditions.

3.2 Required Power Supply

- * Input voltage should not exceed more than ±10% of the rated voltage.

3.3 Standards for Welder

MIG 175 is listed according to the following standard:

3.4 MIG Gun Illustration

The MIG gun is composed of three components: Gun handle, cable and connector.

Connector is the end that connects into the drive system and interfaces with the wire feeder and gas connection.

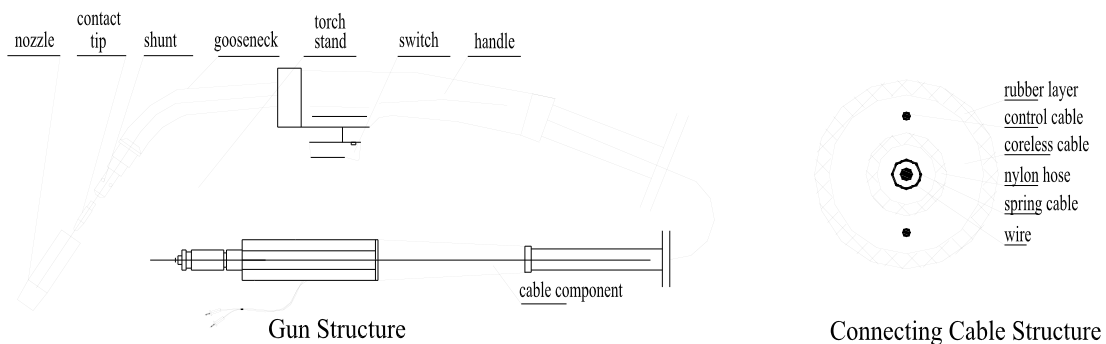
Cable is covered with a nylon tube with a liner in the center of the hollow cable. The center section of the liner is where the welding wire is fed through. The space between liner and center of the cable is the passage for shielding gas. The wire in the cable carries the electrical current from the drive housing connector point to the contact tip.

The welding gun handle has a curved gooseneck between the handle and the adaptor/nozzle/contact tip. Use nozzle gel to prevent buildup of slag on the inside of the nozzle. Do not hit gun nozzle on a solid object to remove slag buildup. Remove nozzle and scrape out or use a MIG gun pliers with specially designed tip to scrape out slag. The gas flows from the cylinder through the gas valve to the connecting point where the gun is connected with the cable to the contact tip. The gas is released through the gas valve when the gun trigger is engaged. The gas disperses through the adaptor into the nozzle to cover the molten weld puddle. In windy conditions, user must either block the wind or use flux core wire.

Keep the MIG gun extended as straight as possible. Sharp turns in the gun cable will restrict wire feeding and affect the welding performance.


Warning: * Power must be off when assembling or disassembling the gun to the drive housing or when replacing the nozzle, adaptor or contact tip.

- * Contact tips wear because of the wire passing through them and arcing, caused by electrical contact of the wire to the contact tip.
- * The liner should be replaced if dirty and causing friction to the wire feeding. If cable has been crushed or cut, it must be replaced.



3.5 Symbol Explanations

 Ground

 Single phase

 DC

X: Duty Cycle

I_1 : Rated Input Current

I_2 : Rated Welding Current

P_1 : Rated Input Power

U_0 : Rated No-Load Voltage

U_1 : Rated Input Voltage

U_2 : Rated Welding Voltage

60Hz: AC, Rated Frequency 60Hz

V: Voltage (V)

A: Current (A)

KVA: Power (KVA)

%: Continuous Loading Rate

IP21S: Case Protection Class. 'IP' is the code of International Protection. '2' means preventing user's finger from touching dangerous parts; preventing solid material with a diameter no less than 12.5mm into the box. '1' means preventing water falling vertically, which is harmless. 'S' means waterproof test is conducted while the movable parts are stationary.

4. Welder Specifications

4.1 Main Technical Data (See Table 1)

Item		MIG 175
Input Power	V	230 (220~240)
Frequency	Hz	60
Phase No.		1
Rated No-Load Voltage	V	35
Rated Input Current	A	20
Rated Input Capacity	KVA	2.3
Rated Duty Cycle	%	20
Rated Output Current/ Voltage	A/V	130/20.5
Output Current Adjustment Range	A	22~175
Cooling Type		Fan-Cooled
External Dimension: L x W x H	Inch	17.3" x 10.2" x 14.4"
Carton Dimension: L x W x H	Inch	20.5" x 12.2" x 16.1"
Weight	Lb.	49

4.2 Structure of Welder

The MIG 175 portable wire feed welder case contains all the components of the welder.

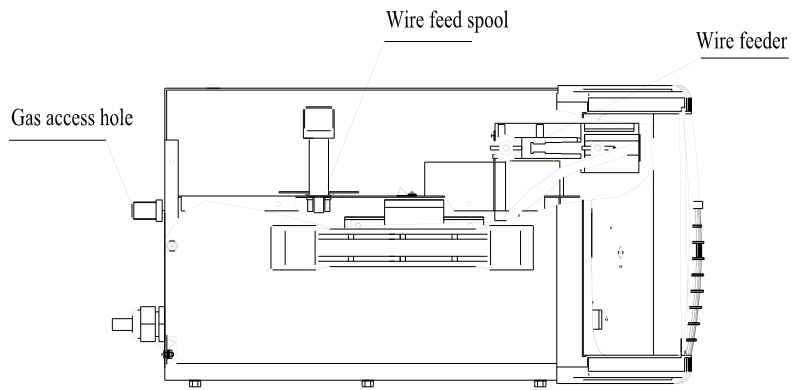
The right side has the wire feed assembly, spool hub, gun trigger connections and polarity connections.

The left side houses the electrical components: transformer, reactor, current capacitor, cooling fan, controlling transformer, PCB, heat radiator and the rectifier bridge.

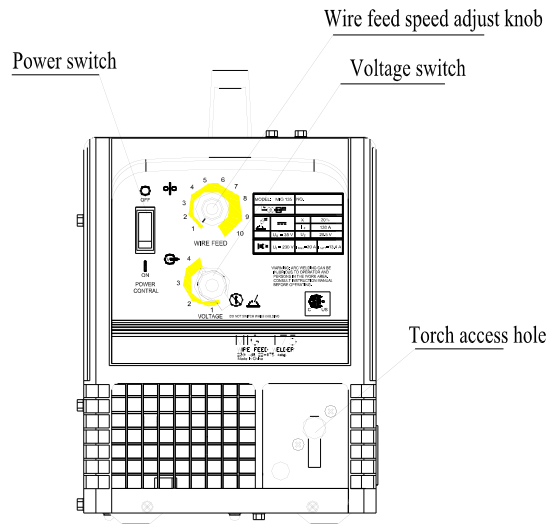
The front panel contains the voltage and wire feed speed (amperage) control knobs, on/off switch, opening for the gun connection, cooling openings, ground cable and gun trigger connections.

The back panel consists of the power cord, cooling opening and gas valve connection interface. (See the Chart below)

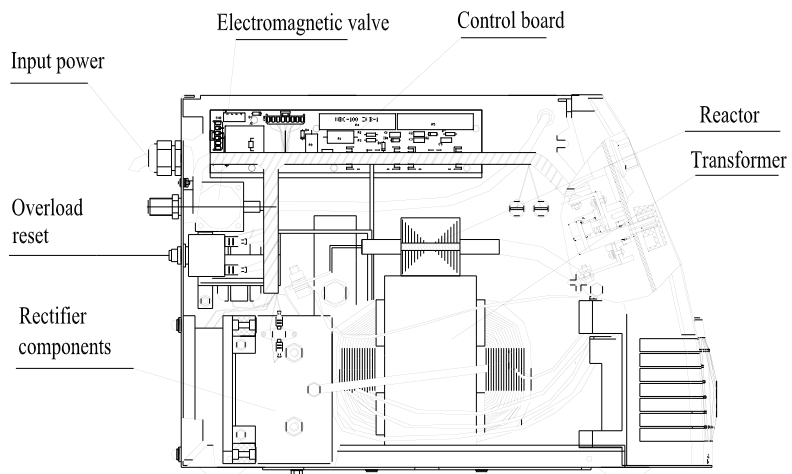
Top View



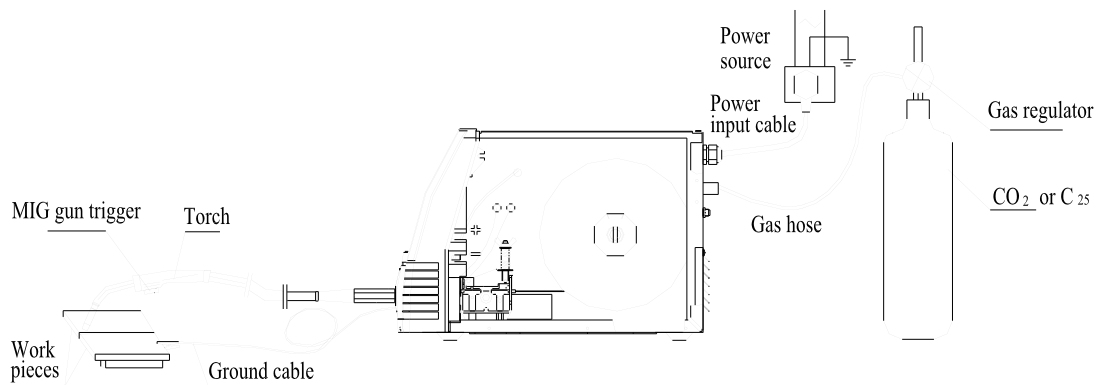
Front View



Left View



4.3 Illustration Of Complete Assembly



5. Setup/Assembly

ATTENTION: The protection class of the MIG 175 Portable Wire Feed Welder is IP21S. Do not insert any object that is less than 12.5 mm (especially a metal bar) into the welder. The case is not designed to be stood on or to have heavy objects placed on top of it.

WARNING! Do not switch voltage while welding. Only the operator should adjust the welding parameters.

WARNING! The welder must be grounded before using. Do not remove the ground earth clamp while welding or you may get an electric shock. When multiple welders are using a common grounding device, they must have a parallel connection and must not connect in series. The welder's ground cable sectional area should not be smaller than the input power cable.

- ◆ Weld only in areas free from dust, chemicals, flammable or explosive gases and other similar substances.
- ◆ This welder is designed for use and storage indoors or in a covered area at 10°F–105°F. If used outside, unit should not be exposed to rain or high humidity.
- ◆ Only weld in a well-ventilated area where smoke and fumes can be avoided. Use a smoke ventilation device if necessary.

5.1 Electrical Power

* Plug in power cord to a 230 Volt 15 amp circuit..

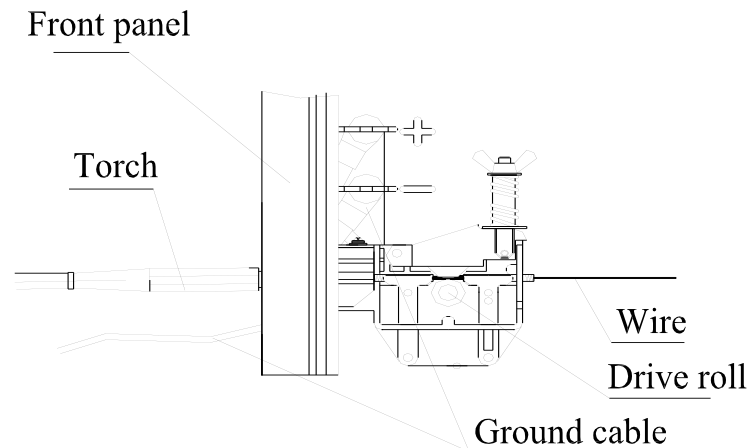
5.2 Shielding Gas Connection.

* Read Gas Bottle Safety Section on proper care and handling of compressed gases.

* Install regulator to gas bottle and connect the gas line between the regulator and the gas solenoid valve found in the back of the welder.

* Secure gas hose with clamps to ensure there are no leaks.

5.3 Installation and Connection for Wire Feeder System (See Chart)



- * Select the proper wire for your welding application (see parameter chart). The wire diameter must match the drive roll groove, gun liner and contact tip.
- * Open drive system compartment and load spool of wire on wire spindle with wire coming off the bottom of the spool going towards the drive system. The adaptor is used for 8" spools. Remove adaptor and put 4" spools directly onto the spindle. Check the spool to see if it turns easily. Spool should freewheel without any binding on the shaft. If too tight, apply a small amount of light oil to the spindle to reduce friction.
- * Put the wing nut back on the spindle and tighten so there is a slight drag on the spool. If the screw is too tight, it will affect the feeding of the wire. It needs to be just tight enough to stop the spool from turning when the gun trigger is released.
- * Release the top drive roll and flip it up to expose the drive roll. Insert the wire into the wire guide tube on the drive system, feed the wire across the top of the drive roll into the liner on the gun side of the drive roll. Align the wire with proper drive roll groove. Tighten the set screw on the drive roll when it is properly aligned.

5.4 Connection Between Drive System and Torch

- * Loosen the set screw on top of the connection block, insert the end of the torch into the torch access hole and push into the connection block until it is all the way in. Tighten the set screw on the connection block.

5.5 Connection of the Gun Trigger Leads and Ground Cable

- * Feed the trigger leads through the hole for the ground cable and plug the trigger leads into the trigger receptacle. Polarity does not make a difference.
- * Connect the ground clamp cable with the lug on it through the wire access hole on the panel.
- * Polarity: For solid wires the electrode (gun) must be connected to the "+" polarity stud and the ground lead on the negative connection. For flux cored wires reverse the polarity and put the electrode (gun) on the negative stud and the ground cable on the "+" positive stud.

6. Operation

Notice: * Turn off power and close regulator valve when you finish welding or temporarily leave the jobsite.

* Always wear:

- 1) A full helmet to protect your eyes from UV and IR light. The helmet also protects your face and neck from sparks and flying debris.
- 2) Long sleeve shirt
- 3) Full length pants

4) Gloves

5) Socks and shoes

Protective clothing is available in flame-retardant materials.

* Use welding screens to protect others from exposure to IR and UV rays

6.1 Work Piece Cleaning before Welding

Clean the weld groove and surrounding area of rust, grease, dirt and paint before welding. It is essential to have a clean weld area for the MIG process.

6.2 Adjustment and Test before Welding

* The cooling fan indicates that the switch is on.

* The cylinder valve must be open before the gauges will indicate information.

* To adjust gas flow, open the valve of gas regulator (rotate clockwise), disengage drive roll idle arm, press torch trigger and adjust gas flow to meet the welding requirements.

* Make sure wire is in the correct drive roll groove, tighten idle arm on drive system, adjust wire feed speed to #10, remove contact tip, straighten torch, press torch trigger and feed the wire to torch head. **WARNING:** do not look into the end of the torch as wire coming out the end of the gun could damage your eyes or other facial features.

* The wire feed speed should be consistent. If it is not, check the drive roll tension. Proper adjustment will result in even flow of wire.

* When flux-core welding, over-tightening the drive roll arm can cause damage to the wire and affect smooth wire feeding.

6.3 Welding

* Check parameter chart for initial setting of the voltage and wire feed. Adjustment may be necessary for your application and style of welding.

* Warning: Do not adjust the voltage setting while welding. MIG gun trigger must be released.

6.4 Maintenance and Service

* Proper maintenance and service are required to assure proper performance and prolong the life of your welder. Normal wear items include: MIG gun components (i.e., contact tips, nozzle, adaptor, liner, drive rolls, gas hose, and contactor).

* If used in a dusty environment, the internal components will need to be cleaned with high-pressure air. Cleaning is recommended annually unless used in high dust environments.

* Only qualified personnel are allowed to repair components that require the removal of the case. When in question, call the technical help number listed on the cover of this manual.

* This welder is designed for use and storage indoors or in a covered area at 10°F–105°F. If used outside it should not be exposed to rain or high humidity.

* The ambient temperature range: when welding: -14°F–104°F
during transport or in storage: -13°F–131°F

* Relative humidity: when at 104°F: ≤50%,
when at 68°F: ≤90%.

* Not for use in high vibration conditions.

* Do not use in the rain or other wet environments.

* Make sure all cable connections are tight to assure proper connections.

* Check shielding gas system for leaks around connections.

* If there is abnormal noise from moving parts turn off, unplug and take to a qualified repair center.

* Keep MIG gun cable as straight as possible when welding to reduce friction when wire is feeding through the gun.

- * Regularly remove the spatter from the inside of the nozzle to prevent a short circuit. Use nozzle gel to minimize spatter buildup in the nozzle.
- * Use appropriate wire listed on the parameter chart. Do not use rusty or dirty wire.
- * Clean the dust and metal filings from the liner with compressed air. The dust is accumulated by friction between wire and liner, drive rolls and magnetic attraction of the wire to metal debris. If wire feeding is uneven this may be the problem.
- * Do not over tighten the drive roll idler are, it will increase resistance, friction and possible deform the wire.

7. Troubleshooting

7.1 Troubleshooting (See Table)

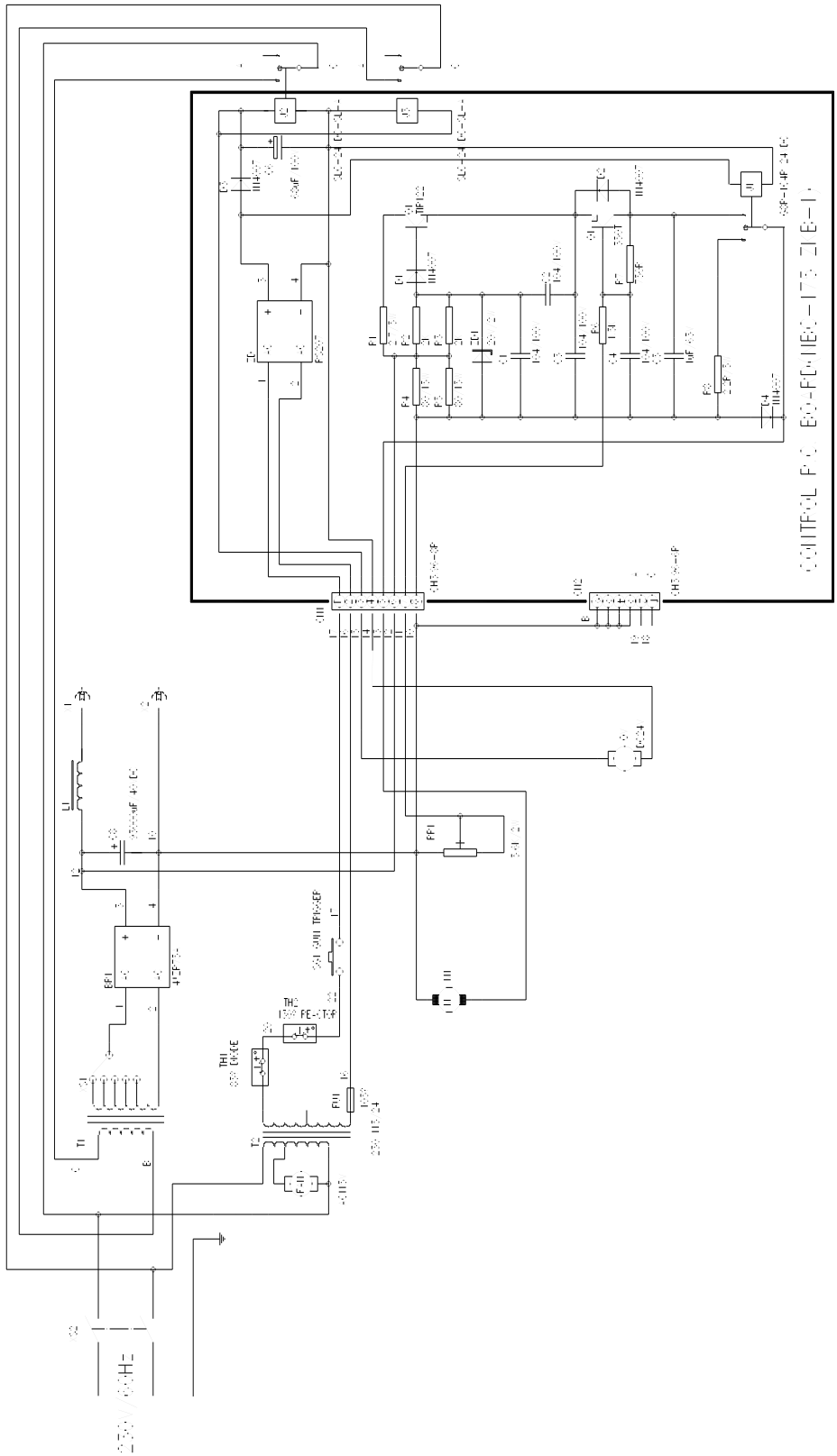
No.	Problem	Possible Causes	Solutions
1	No wire feeding function when MIG gun trigger is depressed.	Input fuse/breaker blown or tripped	Change fuse, reset breaker
		Power not connected	Check and turn on power
		MIG gun trigger leads or switch not working	Change trigger leads and MIG gun switch
2	Wire feeding motor doesn't work	Potentiometer not set high enough	Change potentiometer
		Wire stuck in contact tip	Change contact tip
		Drive idle arm too loose or wire is not in groove.	Tighten drive idle arm and check to see if the wire is in the proper drive roll gear.
3	Arc is unstable and produces excess spatter	Too large or worn contact tip results in unstable arc.	Change contact tip to match the wire diameter
		Long light-duty gauge extension cord	Use 12 gauge or heavier extension cord
		Too low input voltage	Check input power for sufficient voltage
		Wire feed resistance is too high	Clean or replace the liner and use the MIG gun extended straight
4	No Arc	Ground clamp not connected or damaged	Connect or replace ground lead
		Dirty work piece where ground clamp is attached, preventing a proper ground	Remove rust, paint or other contaminants that prevent a good ground connection
5	No shielded gas	MIG gun O-ring or hose broken	Replace O-ring or gas hose in gun
		External gas hose pinched or not connected	Check gas system
		Solenoid or internal gas line not functioning or disconnected	Replace or secure gas hose connections, replace solenoid.
6	Others		Call customer service

7.2 Common Weld Defects (See Table)

No.	Seam defect	Possible Causes
1	Gas holes	Wire and workpiece have excessive oil, rust or water.
		Insufficient shielding gas coverage (low flow); silicon and manganese content are insufficient; nozzle is blocked up.
2	Crackle	Wire and work piece have excessive oil, rust and water.
		Current and voltage are not matched well.
		Melting depth is excessive; the carbon content of master material's welding seam is too high.
		The first welding seam is too small when multi-layer welding; the welding sequence is wrong and the water content of gas is excessive.
3	Bite side	Arc length is too short and welding speed is too fast.
		Welding position is not correct; welding current is too low and the impression of pad is too deep.
4	Excessive spatter	Welding current and voltage are not matched well.
		Wire and work piece are not clean.
		Contact tip diameter is too little or large, stick out is too long.
5	Melting depth is too shallow	Welding current is too low; wire stick out is too long. Poor fit up; angle and gap are too small
6	Others	Contact customer service

8. Circuit Chart

MIG 175 Series Portable Wire Feed Welder Circuit Chart (see below)



The circuit chart of MIG 175 Series. (Only for reference, no notification will be given if there are any changes.)

9. Packing List

Complete Set Specifications for MIG Series (See Table)

* MIG 175 Portable Wire Feed Welder	1 unit
* Product Certificate	1
* Warranty Card	1
* Operator's Manual	1
* Regulator	1
* Flux Core and solid wire samples	
* MIG Gun	1
* Shielding gas hose	1
* Ground Cable and Clamp	1
* Extra Contact Tips	1

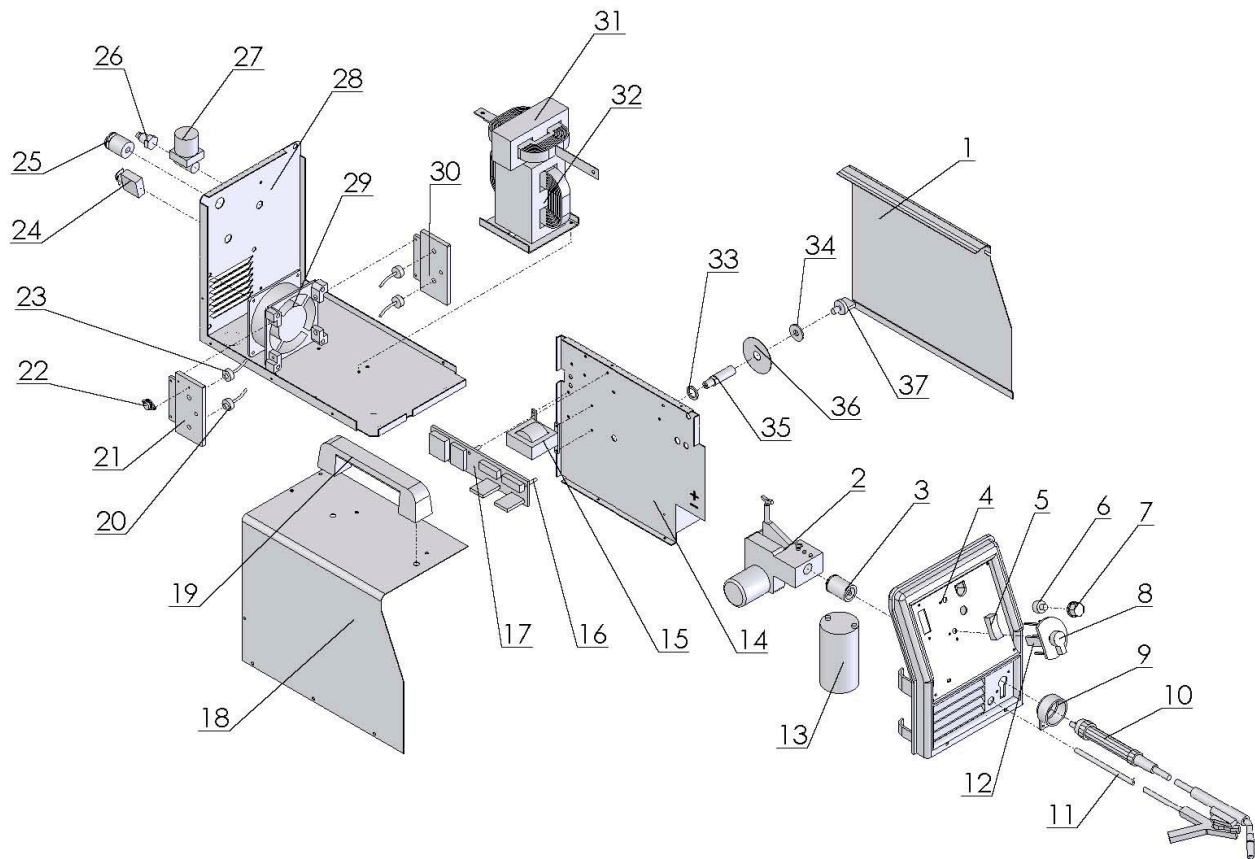
10. Transport & Storage

- * The welder should not be exposed to rain and snow during transportation and storage. Store in a clean dry facility free from corrosive gas, excess dust and high humidity. Temperature range from 10°F–120°F and the relative humidity not be more than 90%.
- * When transporting or storing the welder after use, it is recommended to repack the product as it was received for protection. (Cleaning is required before storage and you must seal the plastic bag in the box for storage.)

11. Quality Guarantee

Users are advised to operate in compliance with the guidelines in this manual. Proper care and use will ensure many years of welding performance. See warranty on back cover.

12. Illustrated Parts List



1	Wire Feed Door	20	Diode
2	Wire Feeder	21	Diode Assembly Board (2)
3	MIG Gun Receptacle	22	Temperature Relay
4	Front Panel	23	Diode
5	On-off Switch	24	Breaker
6	Wire Feed Potentiometer	25	Waterproof Cable Connector
7	Wire Feed Potentiometer Knob	26	Gas Valve Connector
8	Voltage Switch Knob	27	Gas solenoid Valve DF2-3
9	Insulating Flange	28	Back Panel
10	MIG Gun	29	Axle-shaped Fan
11	Ground Cable	30	Diode Assembly Board
12	Voltage Switch	31	Reactor Assembly
13	Electric Capacitor	32	Transformer Assembly
14	Center Baffle	33	Spring on Wire Coil
15	Small Control Transformer	34	Plate on Wire Coil
16	Flat-Bottomed Isolated Inset	35	Wire Coil Locked Cover
17	Circuit Control Board	36	Support for Wire Coil
18	Cover	37	Wire Coil Big Cover
19	Handle	38	Wing Nut

Warranty

Northern Tool + Equipment

Effective Jan 1, 2007

Limited Warranty

This warranty applies to the original purchaser and is subject to the terms and conditions listed below. This Limited Warranty is for new equipment sold after the above date, providing coverage for defects in material and workmanship at the time it is shipped from the factory.

Limited to the warranty periods listed below, Northern Tool + Equipment will repair or replace the item under warranty that fails due to defects in material and workmanship. Northern Tool + Equipment must be notified within 30 days of the failure, so as to provide instructions on how to proceed with the repair of your welder and warranty claim processing. Warranty period begins at the time the welder is purchased from Northern Tool + Equipment.

Warranty Periods

Limited Warranty is divided into four categories: No warranty, 6 months, 1 year, 3 year.

No Warranty

Normal wear items, MIG gun parts (contact tips, nozzle, adapter, MIG gun liner), drive roll, contactor, plasma torch parts (electrode, shield), TIG torch parts (tungsten, collet, back caps), electrode holder, are not covered under warranty.

6 Months

Parts and labor performed by authorized repair center with original equipment repair parts

1 Year

Contactor, MIG gun parts (except those listed under normal wear items), Plasma torch (except those listed under normal wear items), TIG torch (except those listed under normal wear items), cables, remote amperage controls, regulator.

3 Year

Includes: transformer, reactor, rectifier, solenoid valve, PC board, switches, controls, gas valve, drive motor, drive system.

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