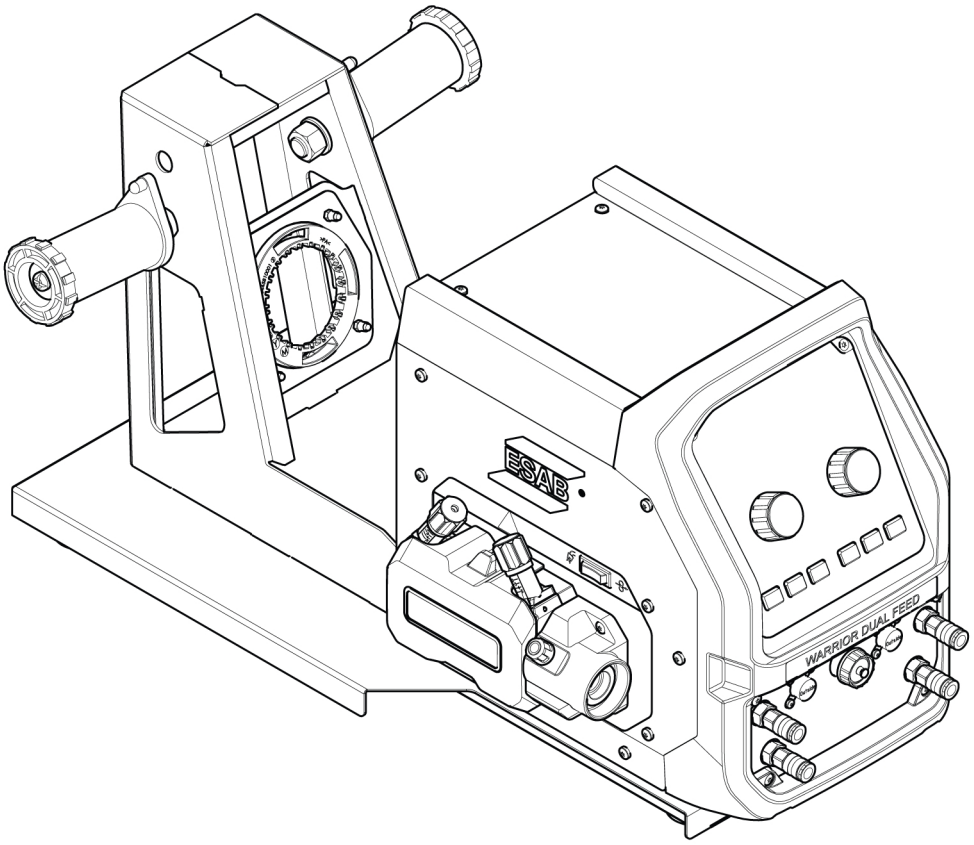
Warrior™ DualFeed



Instruction manual

A000 101 458_AA US 20260119

Valid for: Serial number:
OP531YYXXXXXX

1 SAFETY

1.1 Meaning of symbols

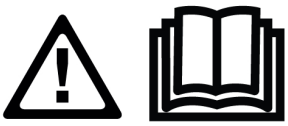
As used throughout this manual: Means Attention! Be Alert!

DANGER!
Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.

WARNING!
Means potential hazards which could result in personal injury or loss of life.

CAUTION!
Means hazards which could result in minor personal injury.

WARNING!
Before use, read and understand the instruction manual and follow all labels, employer´s safety practices and Safety Data Sheets (SDSs).



1.2 Safety Precautions

WARNING!
These Safety Precautions are for your protection. They summarize precautionary information from the references listed in the Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.

PROTECT YOURSELF AND OTHERS

Some welding, cutting and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching.
2. Always wear safety glasses with side shields in any work area, even if welding helmets, face shields and goggles are also required.
3. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to watch the arc and not to expose themselves to the rays of the electric-arc or hot metal.
4. Wear flameproof gauntlet type gloves, heavy long-sleeve shirt, cuffless trousers, high-topped shoes and a welding helmet or cap for protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
5. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned and open pockets eliminated from the front of clothing.
6. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
7. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly far. Bystanders should also wear goggles over safety glasses.

FIRES AND EXPLOSIONS

Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Protect yourself and others from flying sparks and hot metal.
2. Remove all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings paper, etc.
3. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal.
4. Do not weld, cut or perform other hot work until the work piece has been completely cleaned so that there are no substances on the work piece which might produce flammable or toxic vapors. Do not do hot work on closed containers, they may explode.
5. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.
6. Do not use equipment beyond its ratings. For example, an overloaded welding cable can overheat and create a fire hazard.
7. After completing operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. Use fire watchers when necessary.

ELECTRICAL SHOCK

Contact with live electrical parts and ground can cause severe injury or death. DO NOT use AC welding current in damp areas, if movement is confined, or if there is danger of falling. Therefore:

1. Be sure the power source frame (chassis) is connected to the ground system of the input power.
2. Connect the workpiece to a good electrical ground.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/electrode holder and power source.
6. Make sure that all parts of your body are insulated from both the work piece and from the ground.
7. Do not stand directly on metal or the earth while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 for specific grounding recommendations. Do not mistake the work lead for a ground cable.

ELECTRIC AND MAGNETIC FIELDS

May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders with pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.

3. Welders should use the following procedures to minimize exposure to EMF:
   a) Route the electrode and work cables together. Secure them with tape when possible.
   b) Never coil the torch or work cable around your body.
   c) Do not place your body between the torch and work cables. Route cables on the same side of your body.
   d) Connect the work cable to the workpiece as close as possible to the area being welded.
   e) Keep welding power source and cables as far away from your body as possible.

FUMES AND GASES

Fumes and gases can cause discomfort or harm, particularly in confined spaces. Shielding gases can cause asphyxiation. Therefore:

1. Keep your head out of the fumes. Do not breathe the fumes and gases.
2. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead, beryllium or cadmium unless positive mechanical ventilation is provided. Do not breathe fumes from these materials.
3. Do not operate near degreasing and spraying operations. The heat or arc can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
4. If you develop momentary eye, nose or throat irritation while operating, this is an indication that ventilation is not adequate. Stop work and take necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
5. Refer to ANSI/ASC Standard Z49.1 for specific ventilation recommendations.

CYLINDER HANDLING

Cylinders, if mishandled, can rupture and violently release gas. A sudden rupture of cylinder valve or relief device can injure or kill. Therefore:

1. Locate cylinders away from heat, sparks and flames. Never strike an arc on a cylinder.
2. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adapters. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.
3. Always secure cylinders in an upright position by chain or strap to suitable hand trucks, undercarriages, benches, wall, post or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
4. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks.

MOVING PARTS

Moving parts, such as fans, rotors and belts can cause injury. Therefore:

1. Keep all doors, panels, guards and covers closed and securely in place.
2. Have only qualified people remove covers for maintenance and troubleshooting as necessary.
3. Keep hands, hair, loose clothing and tools away from moving parts.
4. Reinstall panels or covers and close doors when service is finished and before starting the unit.

WARNING!
FALLING EQUIPMENT CAN INJURE

- Only use lifting eye to lift unit. Do NOT use running gear, gas cylinders or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.
- Keep cables and cords away from moving vehicles when working from an aerial location.

WARNING!
EQUIPMENT MAINTENANCE

Faulty or improperly maintained equipment can cause injury or death. Therefore:

1. Always have qualified personnel perform the installation, troubleshooting and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, earthing wire, connections, power cord and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.

CAUTION!
ADDITIONAL SAFETY INFORMATION

For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of “Precautions and Safe Practices for Arc Welding, Cutting and Gouging”, Form 52-529.

The following publications are recommended:

- ANSI/ASC Z49.1 - “Safety in Welding and Cutting”
- AWS C5.5 - “Recommended Practices for Gas Tungsten Arc Welding”
- AWS C5.6 - “Recommended Practices for Gas Metal Arc welding”
- AWS SP - “Safe practices” - Reprint, Welding Handbook
- ANSI/AWS F4.1 - “Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances”
- OSHA 29 CFR 1910 - "Safety and health standards"
- CSA W117.2 - "Code for safety in welding and cutting"
- NFPA Standard 51B, “Fire Prevention During Welding, Cutting, and Other Hot Work"
- CGA Standard P-1, “Precautions for Safe Handling of Compressed Gases in Cylinders”
- ANSI Z87.1, "Occupational and Educational Personal Eye and Face Protection Devices"

1.3 User responsibility

Users of ESAB equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the equipment must be familiar with:
   - its operation
   - location of emergency stops
   - its function
   - relevant safety precautions
   - welding and cutting or other applicable operation of the equipment
2. The operator must ensure that:
   - no unauthorized person is stationed within the working area of the equipment when it is started up
   - no-one is unprotected when the arc is struck or work is started with the equipment
3. The workplace must:
   - be suitable for the purpose
   - be free from drafts
4. Personal safety equipment:
   - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
   - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns
5. General precautions:
   - Make sure the return cable is connected securely
   - Work on high voltage equipment **may only be carried out by a qualified electrician**
   - Appropriate fire extinguishing equipment must be clearly marked and close at hand
   - Lubrication and maintenance must **not** be carried out on the equipment during operation

WARNING!
Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.

ELECTRIC SHOCK - Can kill

- Install and ground the unit in accordance with instruction manual.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from work and ground.
- Ensure your working position is safe

ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health

- Welders with pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
- Exposure to EMF may have other health effects which are unknown.
- Welders should use the following procedures to minimize exposure to EMF:
  - Route the electrode and work cables together on the same side of your body. Secure them with tape when possible. Do not place your body between the torch and work cables. Never coil the torch or work cable around your body. Keep welding power source and cables as far away from your body as possible.
  - Connect the work cable to the workpiece as close as possible to the area being welded.

FUMES AND GASES - Can be dangerous to health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to take fumes and gases away from your breathing zone and the general area.

ARC RAYS - Can injure eyes and burn skin

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

NOISE - Excessive noise can damage hearing

Protect your ears. Use earmuffs or other hearing protection.

MOVING PARTS - Can cause injuries

- Keep all doors, panels, guards, and covers closed and securely in place.
- Have only qualified people remove covers for maintenance and troubleshooting as necessary.

- Keep hands, hair, loose clothing and tools away from moving parts.
- Reinstall panels or covers and close doors when service is finished and before starting the unit.

FIRE HAZARD

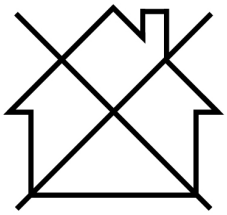
- Sparks (spatter) can cause fire. Make sure that there are no inflammable materials nearby.
- Do not use on closed containers.

HOT SURFACE - Parts can burn

- Do not touch parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or insulated welding gloves to prevent burns.

CAUTION!
This product is solely intended for arc welding.

CAUTION!
Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.

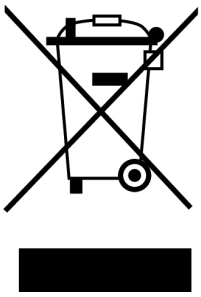


NOTE!
Dispose of electronic equipment at the recycling facility!

In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical and/or electronic equipment that has reached the end of its life must be disposed of at a recycling facility.

As the person responsible for the equipment, it is your responsibility to obtain information on approved collection stations.

For further information contact the nearest ESAB dealer.



1.4 California proposition 65 warning

WARNING!
Welding or cutting equipment produces fumes or gases which contain chemicals known in the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

WARNING!
This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after use.

For more information, go to **www.P65Warnings.ca.gov**.

ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.

2 INTRODUCTION

The **Warrior™ DualFeed** wire feed unit is intended for MIG/MAG/FCAW-welding together with welding power sources:

- Warrior™ 400i CC/CV
- Warrior™ 500i CC/CV
- Warrior™ 350i MV CC/CV
- Warrior™ 400i MV CC/CV
- Warrior™ 750i CC/CV
- Warrior™ 400i ECHO CC/CV
- Warrior™ 500i ECHO CC/CV
- Warrior™ 350i MV ECHO CC/CV
- Warrior™ 400i MV ECHO CC/CV
- Warrior™ 750i ECHO CC/CV

The wire feeding units are sealed and contain two four-wheel feed PreciDrive mechanisms along with control electronics.

The wire feed unit can be used with marathon packs or wire spools (standard Ø 8 in, Ø 12 in and Ø 17 in).

ESAB accessories for the product can be found in the "ACCESSORIES" chapter of this manual.

2.1 Equipment

The Warrior™ DualFeed wire feed unit is supplied with:

- Gas splitter
- Gas hose with connector
- Left, Marathon Pac™ kit
- Right, Marathon Pac™ kit
- Gas adaptor (2)
- Instruction manual
- Quick Start Guide

3 TECHNICAL DATA

Warrior™ DualFeed	
Power supply voltage	42 V AC, 50–60 Hz
Power requirement	181 VA
Rated supply current I_1	4.3 A
Torch connection	Tweco 4
Max. diameter wire spool hub	17 in (440 mm)
Wire dimension:	
Fe	0.023–5/64 in. (0.6–2.0 mm)
Ss	0.023–1/16 in. (0.6–1.6 mm)
Al	0.040–1/16 in. (1.0–1.6 mm)
Cored wire	0.035–3/32 in. (0.9–2.4 mm)
Weight (without spool)	63.9 lbs (29 kg)
Dimensions (l × w × h)	28.6 × 17.3 × 15.6 in. (727 × 441× 397 mm)
Operating temperature	-4° to +131 °F (-20° to +55 °C)
Transport and storage temperature	-40° to +176 °F (-40° to +80 °C)
Maximum gas pressure	73 psi (5 bar)
Coolant	ESAB's ready mixed coolant
Maximum coolant pressure	73 psi (5 bar)
Permissible load at +104 °F:	
50% duty cycle	550 A
60% duty cycle	500 A
100% duty cycle	400 A
Enclosure class	IP2X

Duty cycle
The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a specified load without overloading.

Enclosure class
The **IP** code indicates the enclosure class, i.e. the degree of protection against penetration by solids or liquids.

Equipment marked **IP2X** is intended for indoor use and can withstand vertical falling water drops.

4 INSTALLATION

The installation must be carried out by a professional.

WARNING!
When welding in an environment with increased electrical danger, only power sources intended for this environment shall be used. These power sources are marked with the symbol S.

CAUTION!
This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the user's responsibility to take adequate precautions.

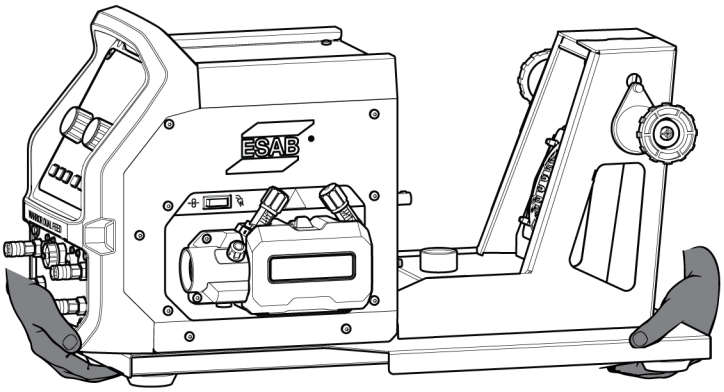
4.1 Lifting instructions

CAUTION!
Risk of crushing when lifting the wire feeder. Protect yourself and warn bystanders of the risk.

CAUTION!
To avoid personal injury and / or equipment damage, lift using method and lift points shown here.

CAUTION!
Mechanical lifting is not recommended for this feeder.

NOTE!
Remove the spools and cable connections from the feeder before lifting it.

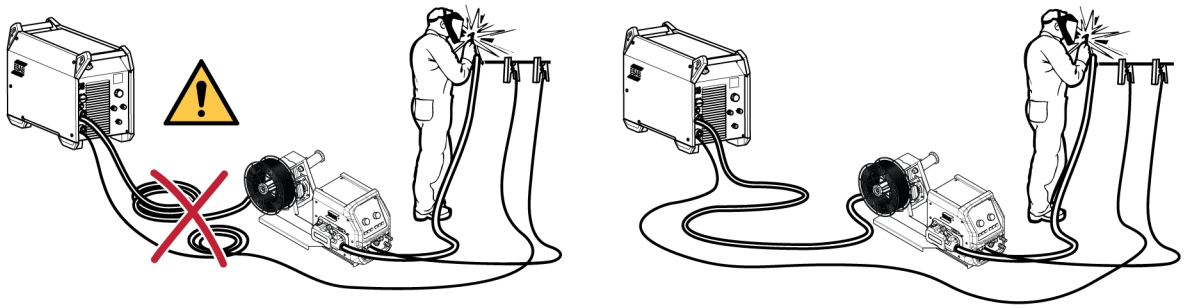


5 OPERATION

General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!

WARNING!
To avoid shock, do not touch the electrode wire or parts in contact with it, or uninsulated cable or connections.

NOTE!
When moving the equipment, use the recommended lifting positions for transportation. Never pull the equipment by the welding torch.

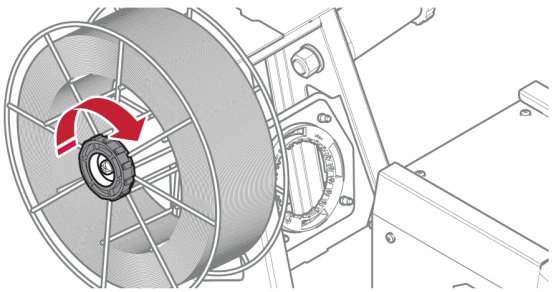


WARNING!
Assure that the wire drive mechanism cover is closed during operation.

WARNING!
Rotating parts can cause injury, take great care.

WARNING!
Secure the equipment, especially if used on an uneven or sloping surface.

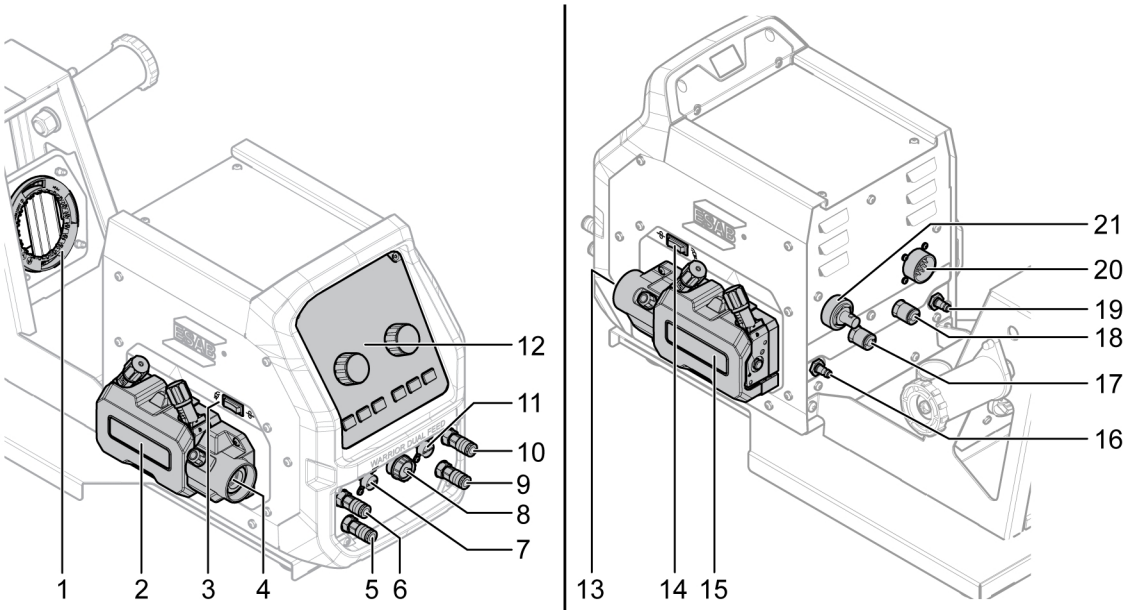
WARNING!
To prevent the reel from sliding off the brake hub, lock the reel by tightening the brake hub screw!



CAUTION!
Before threading welding wire, make sure the chisel point and burrs have been removed from the end of the wire to prevent the wire from jamming in the torch liner.

NOTE!
Replace the brake hub screw and the brake hub sleeve if they are worn out and don´t lock properly.

5.1 Connections



1. Interconnection strain relief.
2. Wire feeder mechanism, side A.
3. Wire inch/gas purge switch, side A.
4. Torch connection, TWECO #4, side A.
5. Coolant connection (red) - coolant flowing from the torch to the cooling unit, side A.
6. Coolant connection (blue) - coolant flowing to the torch from the cooling unit, side A.
7. Trigger cable connection, side A.
8. USB receptacle.
9. Coolant connection (red) - coolant flowing from the torch to the cooling unit, side B.
10. Coolant connection (blue) - coolant flowing to the torch from the cooling unit, side B.
11. Trigger cable connection, side B.
12. Control panel (see the "CONTROL PANEL" chapter).
13. Torch connection, TWECO #4, side B.
14. Wire inch/gas purge switch, side B.
15. Wire feeder mechanism, side B.
16. Shielding gas connection, side B.
17. Coolant connection (red) - coolant flowing from the torch to the cooling unit, side A and/or side B.
18. Coolant connection (blue) - coolant flowing to the torch from the cooling unit, side A and/or side B.
19. Shielding gas connection, side A.
20. Control cable connection from power source.
21. Weld cable connection from power source (OKC).

5.2 Connecting welding and return cable

The power source has two outputs, a positive terminal (+) and a negative terminal (-), for connecting welding and return cables.

Connect the return cable to the negative terminal on the power source. Secure the return cable's contact clamp to the work piece.

- For MIG / MAG / GMAW and MMA / SMAW / Stick welding, the welding cable can be connected to the positive welding terminal (+) or negative welding terminal (-), depending on the type of electrode used. The connection polarity is stated on the electrode packaging.
- For TIG / GTAW welding, the negative welding terminal (-) is used for the welding torch and the positive welding terminal (+) is used for the return cable.

1) Connect the return cable to the other output on the power source.

2) Secure the return cable's contact clamp to the workpiece and make sure that there is a good contact between the workpiece and the output for the return cable on the power source.

5.3 Weld cable size selection

The total cable length in the welding circuit (see Table) is the sum of the lengths of both welding cables.

For example, if the power source is positioned 100 ft (30 m) from the workpiece, the total cable length is 200 ft (60 m), i.e. 2 × 30 m (100 ft). Refer to the 200 ft (60 m) column to select the appropriate cable size.

This table is intended as a general guideline and may not be suitable for all applications. If the weld cable overheats, select the next larger cable size.

Weld cable size AWG (mm^2) is determined based on either a maximum voltage drop of 4 V or a minimum current density of 300 circular mils per ampere.

For cable lengths exceeding those shown, see AWS Fact Sheet No. 39, Welding Cables, available from the American Welding Society at **https://www.aws.org**.

Weld cable size and total cable length in weld circuit								
	30 m (100 ft) or less		**150 ft (45 m)**	**200 ft (60 m)**	**250 ft (70 m)**	**300 ft (90 m)**	**350 ft (105 m)**	**400 ft (120 m)**
Welding amperes	**10 - 60% Duty Cycle AWG (mm^2)**	**60 - 100% Duty Cycle AWG (mm^2)**	**10 - 100% Duty Cycle AWG (mm^2)**					
100	20 (4)	20 (4)	20 (4)	30 (3)	35 (2)	50 (1)	60 (1/0)	60 (1/0)
150	30 (3)	30 (3)	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	95 (3/0)
200	30 (3)	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	120 (4/0)
250	35 (2)	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×70 (2×2/0)
300	50 (1)	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×95 (2×3/0)	2×95 (2×3/0)
350	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×95 (2×3/0)	2×95 (2×3/0)	2×120 (2×4/0)
400	60 (1/0)	70 (2/0)	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×95 (2×3/0)	2×120 (2×4/0)	2×120 (2×4/0)
500	70 (2/0)	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×95 (2×3/0)	2×120 (2×4/0)	3×95 (3×3/0)	3×95 (3×3/0)
600	95 (3/0)	120 (4/0)	2×70 (2×2/0)	2×95 (2×3/0)	2×120 (2×4/0)	3×95 (3×3/0)	3×120 (3×4/0)	3×120 (3×4/0)

5.4 Water connection

When connecting a water-cooled welding torch, the main power supply switch of the power source must be in the OFF (0) position, and the cooling unit power switch must be in the OFF (0) position.

5.5 Starting procedure

When the trigger is activated, wire feeding starts, and the power source generates welding output (V/A).

If a valid arc is not detected within the first three seconds, the feeder responds as follows:

- **2T mode:** After three seconds, the open-circuit voltage (OCV) is disabled while wire feeding continues.
- **4T mode:** After three seconds, both the open-circuit voltage (OCV) and wire feeding are disabled.

5.6 Spool hub brake

The spool hub brake force should be increased just enough to prevent wire feed overrun. The actual brake force needed depends on the wire feed speed and the size and weight of the spool hub spool. Do not overload the spool hub brake. Too high a brake force may overload the motor and reduce the welding result.

The spool hub brake force is adjusted using the #3 Phillips head screw in the middle of the brake hub screw.

5.7 Installing wire

1) Open drive roll cover, side A or side B.
2) Remove brake hub nut.
3) Install the new wire spool on to the spool hub.
4) Reinstall brake hub nut.
5) Release the tensioner arm by pulling the tensioner arm up out of its detent and rotating it outward. The feed roll pressure arm will spring up.
6) Install rollers for selected wire size.
7) With a clean-cut wire, pull the wire from the wire spool and feed it into the wire inlet guide across the rear feed roll; through the center wire guide; across the front feed roll and into the wire outlet guide. Thread enough wire that it will extend past the front of the wire feed unit.
8) Close the drive roll pressure arms and secure the rear and front tensioner arms to secure wire in place.
9) Connect the torch assembly to the unit by inserting the end of the wire into torch connector and secure the torch in the drive assembly with the torch retention thumb screw.

10) Turn on power source.

11) With the torch cable laid out straight, feed the wire through the torch cable until the wire is visible at the end of the torch by pressing the wire inch switch or trigger switch on the torch.

12) Set and verify the wire feed tension for correct wire feed pressure, see the "Setting feed roll pressure" chapter.

13) After completion, close drive roll cover, side A or side B.

5.8 Configuring wire spool hub

Warrior™ DualFeed spool hub is configured to support 12 in. (300 mm) spools from the factory. The spool hub can be configured to support 17 in. (440 mm).

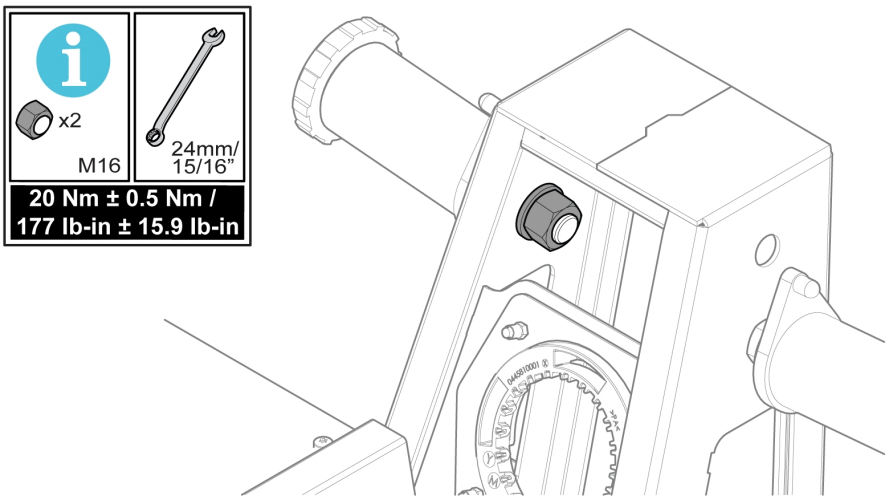
1) Remove spindle nut from spool hub assembly.

2) Remove spool hub assembly from the wire spool stand and reposition up or down to match the spool diameter selected.

3) Reinstall spindle nut.

NOTE!
Warrior™ DualFeed will support a small spool on one side and larger spool on the other side, two large spools or two small spools.

NOTE!
Replace the brake hub nut and the brake hub sleeve if they are worn out and don't lock properly.



5.9 Setting feed roll pressure

NOTE!
Over tension of the brake will cause rapid wear of mechanical feeder parts, overheating of electrical components and possibly more incidences of contact tips burnback.

The roller pressure should be adjusted separately on each tensioner unit, depending on use wire material and diameter.

1) The feed roll pressures should be adjusted independently, determined by the wire type and diameter. The front feed roll pressure should be slightly higher than the rear feed roll pressure.

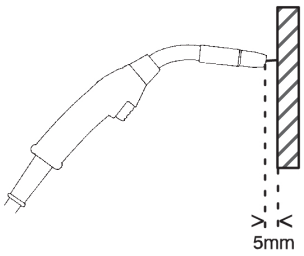


Figure A

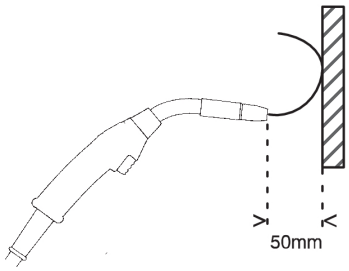


Figure B

2) To check that the feed pressure is set correctly, feed the wire against a non-conductive surface. e.g. a piece of wood.

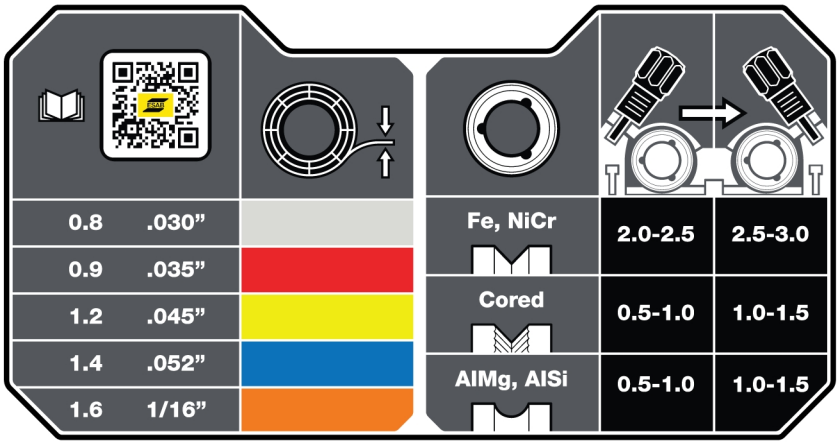
   While holding the welding torch approximately 3/16 in (5 mm) from the piece of wood (figure A) the feed rolls should slip.

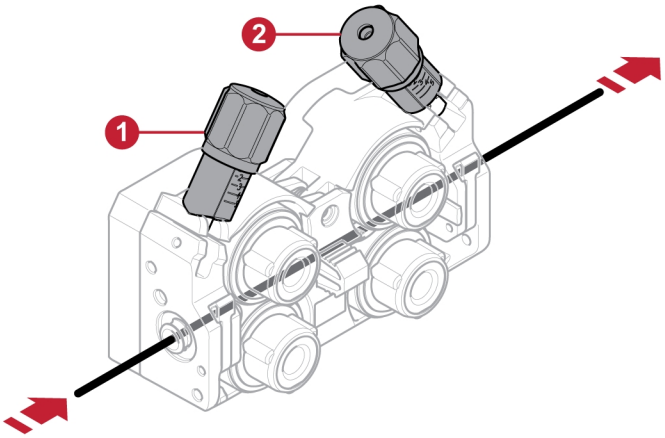
   While holding the welding torch approximately 2.0 in (50 mm) from the piece of wood, the wire should feed out and bend (figure B).

   The image below serves as a guideline showing approximate roller pressure settings for standard conditions with correct spool hub brake force. If the torch cables are long, dirty or worn, the pressure setting may need to be increased. Always check the roller pressure setting on a case-by-case basis by feeding out the wire against an insulated object as described above.

   A table showing approximate settings can be found on the inside of the left door of the wire drive covers.

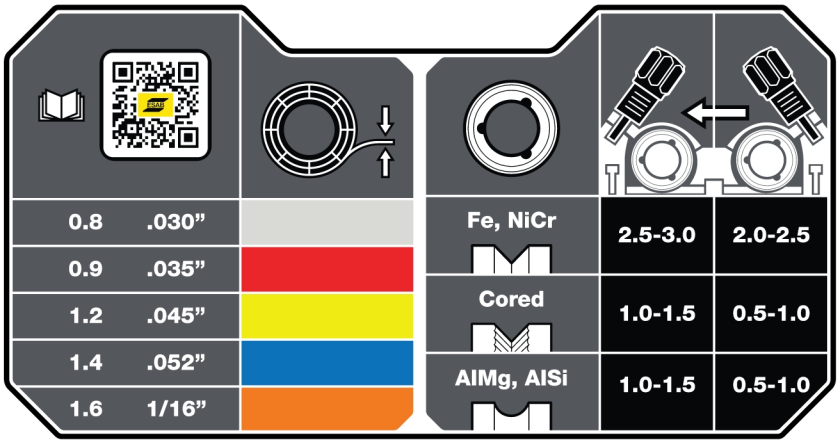
Wire feeder mechanism (Side A):





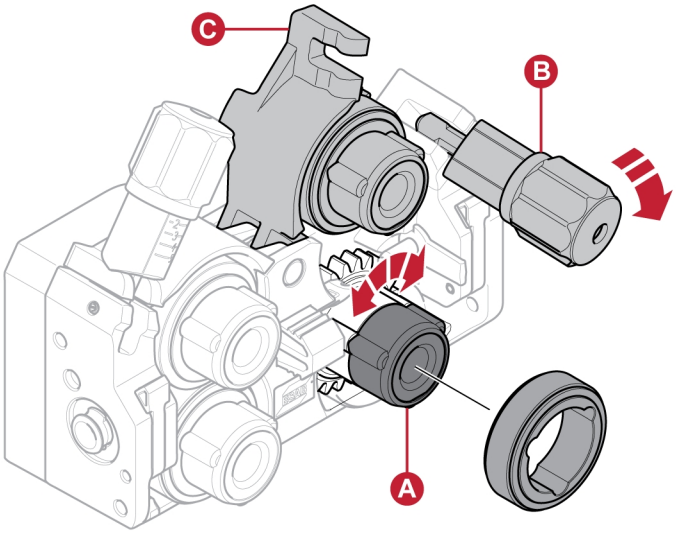
1. Tensioner unit 1
2. Tensioner unit 2

Wire feeder mechanism (Side B):



5.10 Changing the feed rolls

When changing to a different wire, the feed rolls should also be changed to match the new wire type or diameter. For more information about correct feed rolls see "WEAR PARTS" in the appendix.



1) Open drive roll cover, side A or side B.

2) Unlock the feed rolls by rotating the feed roll quick lock (A) for each feed roll.

3) Remove the pressure from the feed roll pressure arms (C) by rotating the wire tensioner arm outward.

4) Remove the feed rolls and install the new ones.

5) Reapply pressure to the feed rolls, by pushing the feed roll pressure arms (C) down and secure them with the tensioner arms (B).

6) Lock the feed rolls by rotating the feed roll quick locks (A).

7) Close drive roll cover, side A or side B.

NOTE!
When installing the feed rolls, ensure that the wire guides do not interfere with the feed roll. If this occurs, adjust the wire guide and continue installing the feed roll.

5.11 Changing the wire feed guides

NOTE!
The wire outlet guides must be selected to match the wire diameter and wire type.

There are three wire guides: wire inlet guide, center wire guide, and wire outlet guide. The wire inlet guide and center wire guide are common for all wire types and diameters.

When changing to a different type of wire, the wire guides may need to be changed to match the new type of wire. For information about the correct wire guides depending on wire diameter and type, see "WEAR PARTS" in the appendix.

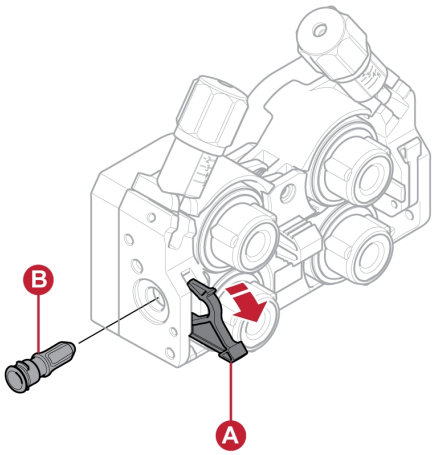
Wire inlet guide

1) Unlock the wire inlet guide quick lock (A) by folding it out.

2) Remove the wire inlet guide (B).

3) Fit the correct wire inlet guide (see "WEAR PARTS" in the appendix).

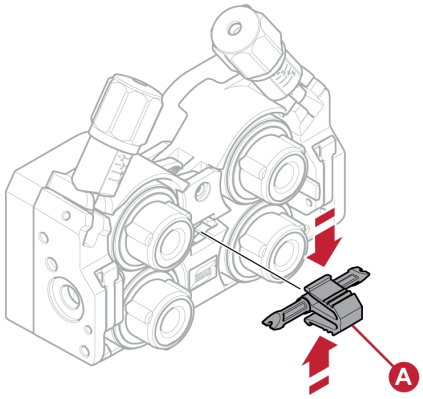
4) Lock the new wire inlet guide into place using the wire guide quick lock (A).



Center wire guide

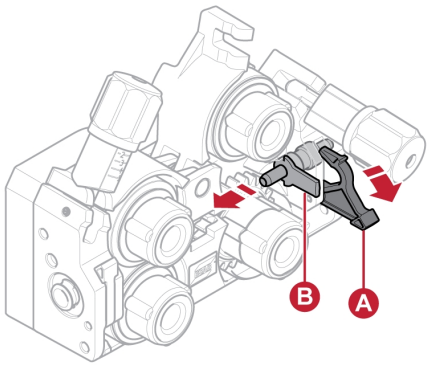
1) To remover the center wire guide, pinch the center of the wire guide and pull out the guide (A).

2) To install the center wire guide, pinch the guide and push it into place. The clips will lock the guide into place.



Outlet wire guide

1) To remove the wire outlet guide, release the pressure on the front feed roll pressure arm by rotating the front tensioner arm outward.
2) Remove the lower front feed roll.
3) Remove the center wire guide.
4) Unlock the wire outlet guide quick lock (A) by folding it out.
5) Remove the wire outlet guide (B).
6) Install the new wire outlet guide.
7) Lock the new wire outlet guide into place using the wire guide quick lock (A).
8) Reinstall the center wire guide.
9) Reinstall the lower front feed roll.

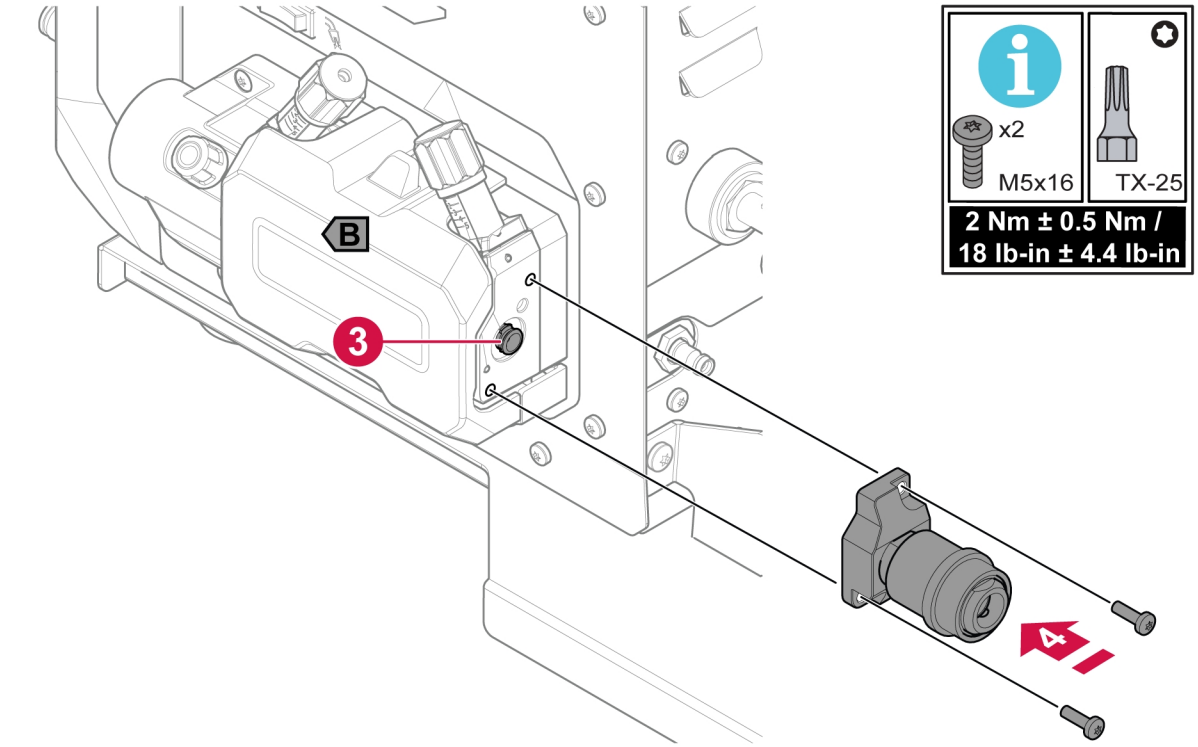


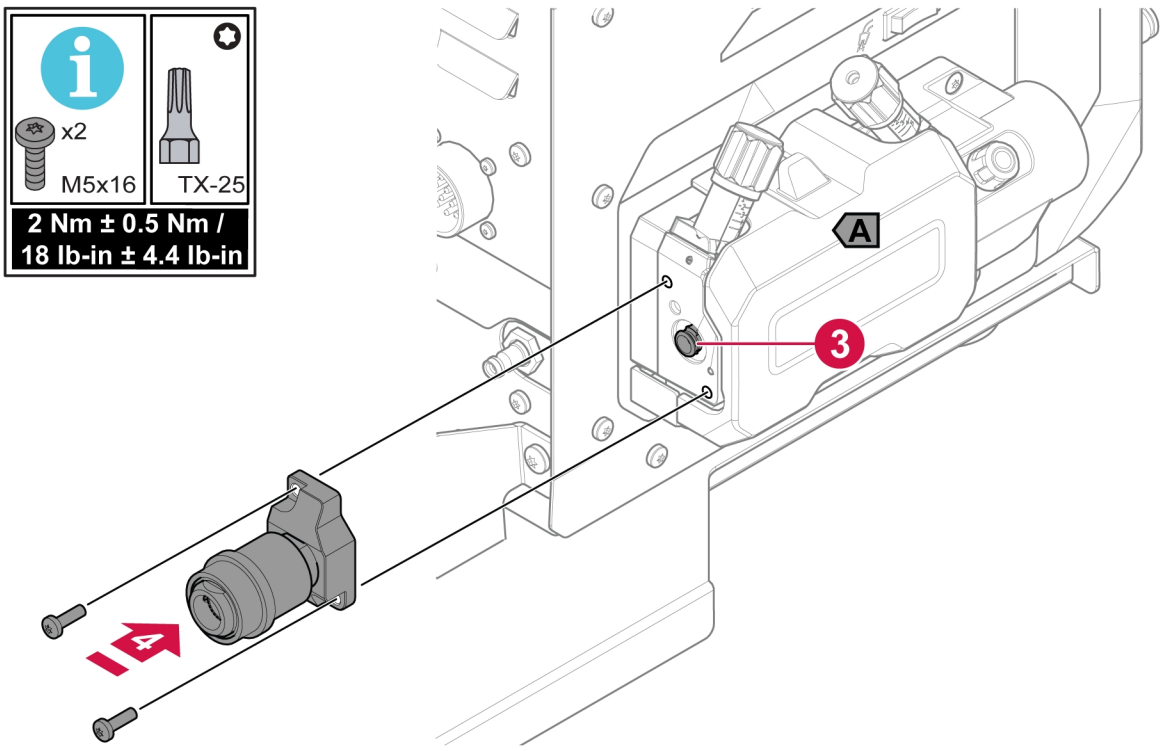
5.12 Installing Marathon Pac™

1) Remove the existing wire inlet guide from the desired side that the Marathon Pac is to be installed on, side A or side B, according to the "Changing the wire feed guides" chapter.
2) For DualFeed, there are two Marathon Pac™ kits available (see "ACCESSORIES" in the appendix).

3) Install new wire inlet guide (included with Marathon Pac kit) on the desired side that the Marathon Pac is to be installed on, side A or side B, according to the "Changing the wire feed guides" chapter.

4) Install the MPac kit to the respective wire feed mechanism, side A and/or side B.



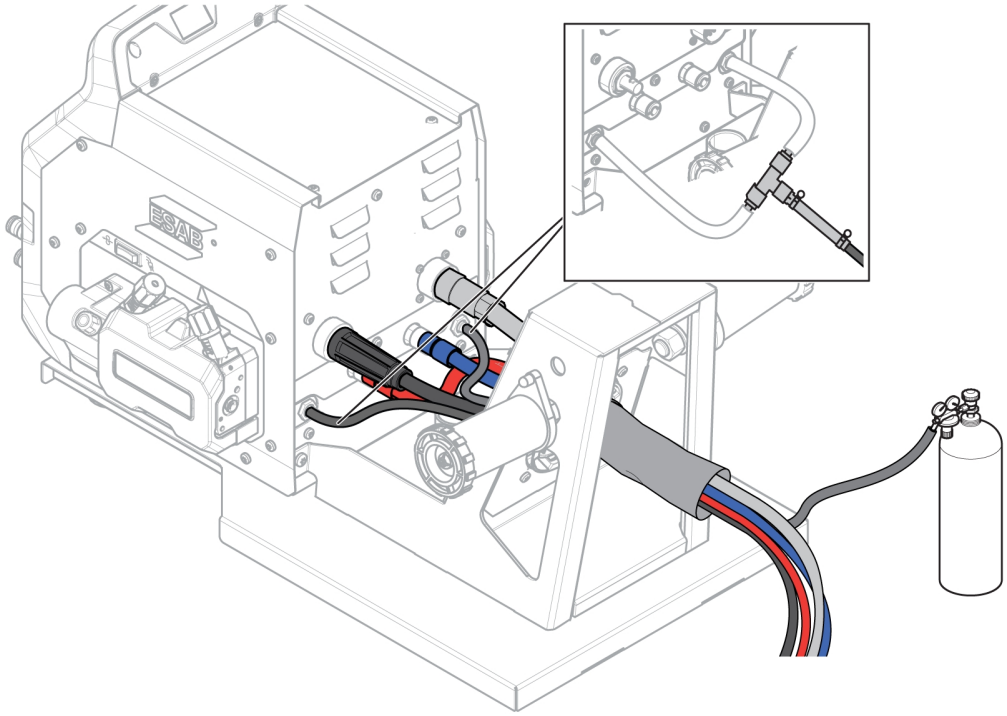


5.13 Gas supply connection

The Warrior™ DualFeed has two independent wire drive mechanisms (side A and side B) that are supported by two independent gas solenoids (side A and side B). Both sides can be supplied with the same shielding gas or supplied independently with different shielding gases.

Single shielding gas set up:

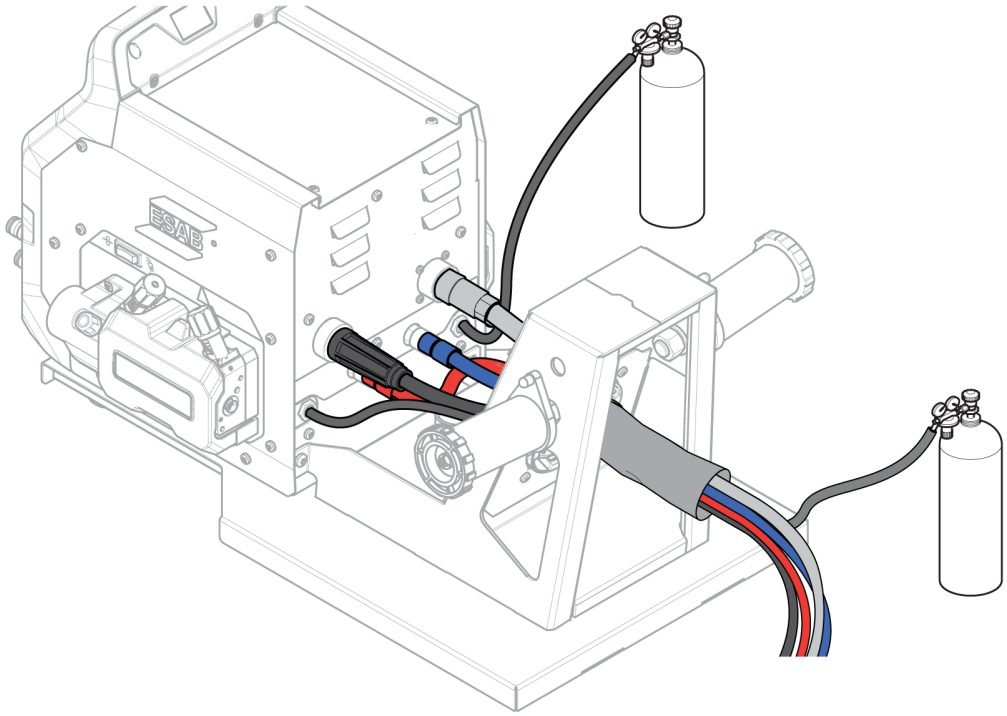
- Connect gas hose from interconnect set to gas supply near power source.
- Connect gas hose from interconnect set at feeder to the gas splitter with the male/female quick connects.
- Connect the female quick connector to the rear of the feeder.



Dual shielding gas set up:

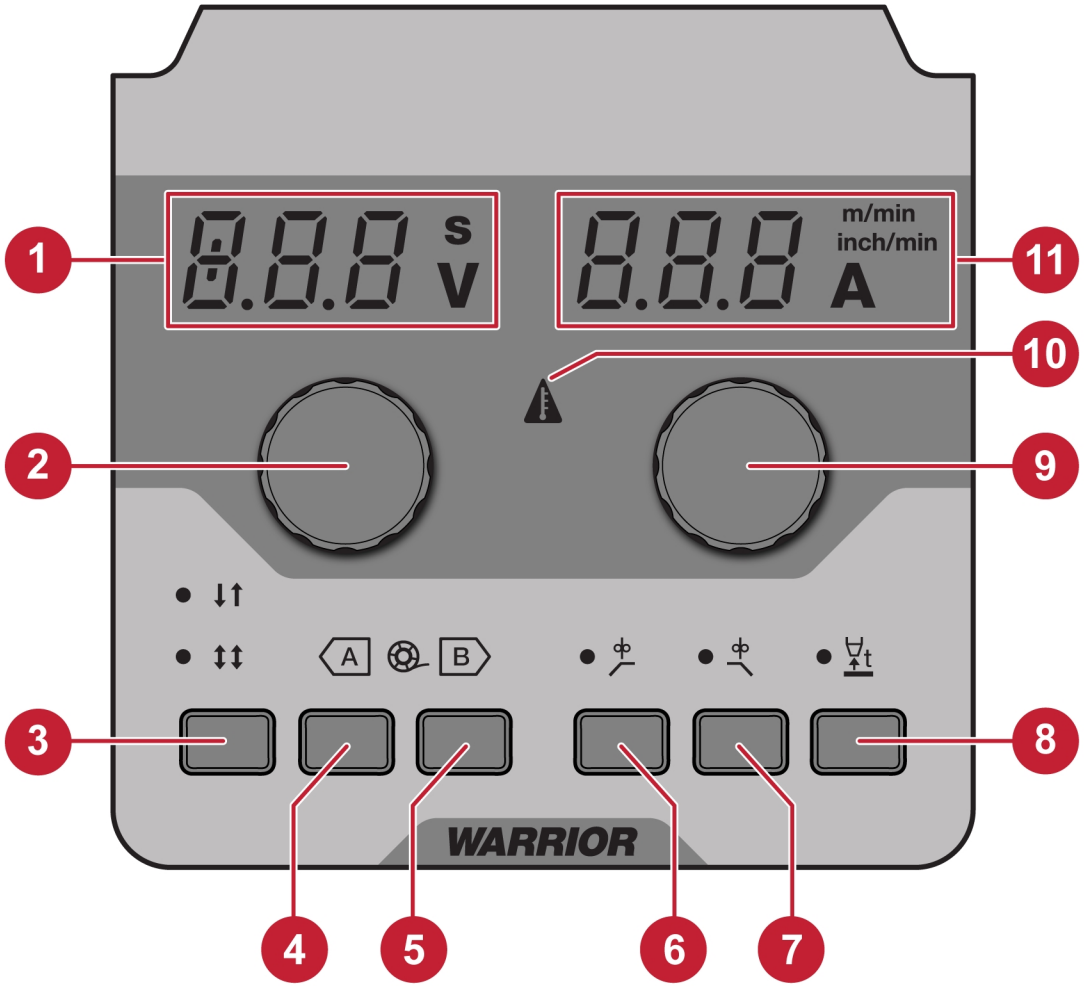
- Connect gas hose from interconnect set to the first gas supply near power source.
- Connect gas hose from interconnect set at feeder to the male panel mounted quick connector to side A or side B.
- Connect the first end of the separate gas hose to the second gas supply near power source.

- Connect the second end of the separate gas hose to the male panel mounted quick connector to side A or side B.



6 CONTROL PANEL

6.1 Navigation and functions



1. Display - Voltage and time
2. Encoder - Voltage and time adjust
3. Push button - 2-stroke/4-stroke select
4. Push button - Side A select
5. Push button - Side B select
6. Push button - Creep start enable/disable
7. Push button - Crater fill enable/disable
8. Push button - Burnback enable/disable
9. Encoder - Wire feed speed or amperage adjust
10. Over temperature indicator
11. Display - Wire feed speed and amperage

Push button functions

Push buttons	2-stroke/4-stroke	A	B	Creep start	Crater fill	Burnback
Single press	2-stroke / 4-stroke selection	Feeder A selection	Feeder B selection	Enable / disable	Enable / disable	Enable / disable
Press and hold for at least 1.5 seconds	-	-	-	-	Crater fill voltage, wire feed speed and time setting	Burnback time setting
Press and hold for at least 3 seconds	-	-	-	Metric / imperial settings	-	-

6.2 Hidden functions

6.2.1 Setting unit of measurement (metric/imperial)

The unit of measurement in the wire feed unit is factory set to imperial (inch/min). Wire feed unit can be set to metric per the table above. The unit of measurement can be set via a "hidden function". To change the unit of measurement from imperial to metric or vice versa, see the following:

1) To access this function, press and hold the creep start button for at least 3 seconds.

   The left display will show a flashing "C" letter (which denotes the unit of measurement) and a value ("0" or "1"). At the same time, the selected unit ("m/min" or "inch/min") will light up on the right display.

2) Set the preferred unit of measurement (metric or imperial) by rotating the left encoder knob.

3) To exit this function, press and hold the creep start button for at least 3 seconds or wait for at least 10 seconds to save and exit.

Function letter	Function
C	Unit of measurement 0 = inch/min, 1 = m/min

6.2.2 Switching between side A or side B

To switch from side A to side B or vice versa there are three options.

1) Press the push button (A or B) on the control panel.

2) Press the torch trigger of the respective wire feeder mechanism (side A or side B).

3) Press the wire inch / gas purge switch of the respective wire feeder mechanism (side A or side B).

The first activation of the torch trigger or wire inch/gas purge switch will switch the unit to side A or side B.

The second activation of the same switch will be considered as the intended function of that switch.

WARNING!
Do not touch side A torch to side B torch or vice versa while welding. Both torches are electrically live.

Ensure that the torch not in use is stored in a safe location to prevent accidental arcing of the wire. It remains live and may cause an electric shock.

6.2.3 Verifying current software version

1) To verify software version, press the wire inch button three times quickly on side A.

   The software version will appear in the front display of the wire feeder.

6.2.4 Crater fill setting

1) Press and hold the crater fill button for approximately 1.5 seconds to set the crater fill voltage, wire feed speed and single-press again to set the time using the left encoder.

2) To exit crater fill setting mode, press and hold the crater fill button for 1.5 seconds or wait 10 seconds. If either torch trigger is pressed, the system will exit crater fill setting mode.

6.2.5 Burnback setting

1) Press and hold the burnback button for approximately 1.5 seconds to set the burnback time using the left encoder.

2) To exit burnback setting mode, press and hold the burnback button for 1.5 seconds or wait 10 seconds. If either torch trigger is pressed, the system will exit burnback setting mode.

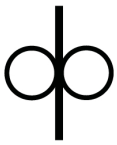
6.3 Explanation of functions

Gas purging

Used to set gas flow, measuring gas flow at the nozzle, or to purge the gas lines of atmosphere or moisture. Gas purging will continue as long as the switch is depressed. No weld output is present during gas purging.

Wire inching

Used to load the torch liner with wire. Wire will feed as long as the switch is pressed. No weld output is present during inching.



Wire feed speed

This function sets requested wire feed speed of the filler wire. The selected wire feed speed is shown in the right hand display and a text ”m/min” or ”inch/min” is illuminated next to the display showing unit of measure.

Wire feed speed can be set from 32 in./min (0.8 m/min) to 984 in./min (25.0 m/min).

2-stroke

When the torch trigger is pressed the pre-gas will flow and weld output begins. Releasing the torch trigger the weld output stops and post gas starts.

4-stroke

When the torch trigger is pressed the pre-gas will flow, wire feed and weld output will start when the trigger is released. Welding will continue until the trigger is pressed again, wire will stop, weld output stops and post gas flow until the trigger is released.

Creep start

Creep start is a fixed wire feed speed at 59 in./min (1.5 m/min) that starts when the trigger is pulled and will continue until the wire makes electrical contact with the workpiece.

Crater filling

Crater filling helps to avoid end crater pipes, thermal cracking and crater formation in the weld once welding is completed. When activating crater filling, also select the preferred crater filling time, using the setting encoder knob on the control panel.

When crater filling is selected, the welding voltage and the wire feed speed will be reduced during the selected time (0.5 to 15 seconds), before entering burn back.

Crater fill voltage can be set from 8 to 44 V.

Crater fill wire feed speed can be set from 32 in./min (0.8 m/min) to 984 in./min (25.0 m/min).

If crater fill voltage or wire feed speed exceeds the weld voltage and the wire feed speed, the crater fill values will match the weld values.

The functionality differs somewhat depending on whether 2-stroke or 4-stroke is selected. When 2-stroke is selected, crater filling always continues for the selected time. In 2-stroke, crater fill timings can be set from 0.1 to 5 seconds at a step count of 0.1 seconds.

When a 4-stroke is selected, crater filling continues unless the trigger is released.

Burnback time

Burnback time is a delay between the time when the wire starts to brake until the time when the power source switches off the welding voltage. Too short a burnback time results in a long wire stickout after finishing the welding, with a risk of the wire catching in the solidifying weld pool. Too long a burnback time results in a shorter stickout, with increased risk of the arc striking back to the contact tip.

Burnback timings can be set from 0.01 to 0.5 seconds at a step count of 0.01 seconds.

If burnback is not enabled, the default burnback time setting will be 0.03 seconds.

Pre-gas flow

Pre-gas flow controls the duration for which the shielding gas flows for 0.01 seconds before the arc is struck.

Post-gas flow

Post-gas flow controls the duration for which the shielding gas flows for 1.2 seconds after the arc is extinguished.

6.4 Overtemperature indicator

The overheating protection has two levels:

Warning	When the overtemperature indicator lights up, it indicates that the wire feeder is **approaching** the critical temperature level. The weld that is already in progress may be completed, but a new weld cannot be started until the overtemperature warning disappears.
Error	The overtemperature indicator lights up, and the text "Err" appears in the display to indicate that the wire feeder **has reached** a critical temperature level. This will stop the ongoing weld. The error is automatically cleared once the wire feeder has cooled down and is ready for use again.

6.5 Measured values

V

Measured voltage
Measured value in the display for arc voltage V is the average calculated value.

A

Measured current
Measured value in the display for welding current A is an average calculated value.

7 MAINTENANCE

7.1 Inspection, cleaning and replacement

Wire feed mechanism
Regularly check that the wire feed unit is not clogged with dirt.

- Cleaning and replacement of the worn parts in the wire feed mechanism should take place at regular intervals in order to achieve trouble-free wire feed. Note that if pre-tensioning is set too high, this can result in abnormal wear on the pressure roller, feed roller and wire guide.
- Clean the liners and other mechanical parts of the wire feed mechanism, using compressed air, at regular intervals or if the wire feed seems irregular.
- Changing nozzles.
- Checking driving-wheel.
- Changing the cog-wheel package.

Spool hub holder
- Inspect at regular intervals that the brake hub sleeve and the brake hub nut are not worn out and that they lock properly. Replace if necessary.

Welding torch
- The wear parts of the welding torch should be cleaned and replaced at regular intervals in order to achieve trouble-free wire feed. Regularly blow the wire guide clean and clean the contact tip.

7.2 Calibration and validation of measured values

The wire feeder displays the measured values, arc voltage and welding current, as rectified arithmetic mean values (measure value formation).

- The wire feed speed is set on the feeder control panel, and the set speed is presented on the display, in units of m/min or in./min.
- The welding power source used together with the feeder (see the "INTRODUCTION" chapter) measures and calculates the mean value of arc voltage and welding current. The measured values are transferred from the welding power source to the feeder via a digital bus.

It is recommended that the accuracy of the set and measured values is periodically calibrated and validated to verify whether the values are within the accepted deviation. Calibration and validation should be performed by a trained service technician possessing sufficient training in welding and measurement technology. Guiding principles for calibration/validation and the accepted deviation for each displayed parameter can be found in the service manual.

8 TROUBLESHOOTING

Perform these checks and inspections before sending for an authorized service technician.

Fault symptom	Fault description and corrective actions
The overheating protection trips frequently: More precisely the overtemperature indicator on the front panel is illuminated but the "Err" text is **not** visible on the display. ⚠	**Overtemperature warning** — The wire feeder is approaching a critical temperature level. Completion of the ongoing weld is possible but start of a new weld is prevented as long as the overtemperature warning remains (for more information about the overheating protection, see the "CONTROL PANEL" chapter). **Corrective actions:** • Check the liner, clean using pressurized air and replace the liner if it is damaged or worn. • Check the wire pressure setting and adjust if needed. • Check the drive rolls for wear and replace if needed. • Ensure that the filler metal spool can rotate without too much resistance. Adjust the brake hub if needed. • If the fault persists despite performing these actions, try replacing the torch. • If the fault persists despite replacing the torch, contact an ESAB authorized service technician.
The overheating protection trips frequently: More precisely the overtemperature indicator on the front panel is illuminated **and the text "Err" is visible in the display**. Err ⚠	**Overtemperature error** — The wire feeder has reached a critical temperature level and the ongoing weld is suspended. For more information about the overheating protection, see the "CONTROL PANEL" chapter. **Corrective actions:** • Check the liner, clean using pressurized air and replace the liner if it is damaged or worn. • Check the wire pressure setting and adjust if needed. • Check the drive rolls for wear and replace if needed. • Ensure that the filler metal spool can rotate without too much resistance. Adjust the brake hub if needed. • Restart the wire feeder. • If the fault persists, check the liner, clean using pressurized air and replace the liner if it is damaged or worn. • If the fault persists despite performing these actions, try replacing the torch. • If the fault persists despite replacing the torch, contact an ESAB authorized service technician.
The wire feed is slow/stiff when moving through the wire feed mechanism.	**Corrective actions:** • Clean the liners and other mechanical parts of the wire feed mechanism using pressurized air.
If MIG mode is not selected in the power source, the feeder will show “---” on the display.	**Corrective actions:** Select the MIG mode in the power source and proceed further.
During MIG welding, if the weld process is changed to any other mode in between, the feeder will show “**Err**” on the display and the welding stops.	**Corrective actions:** Restart the power source and select the MIG mode to proceed further.

9 ORDERING SPARE PARTS

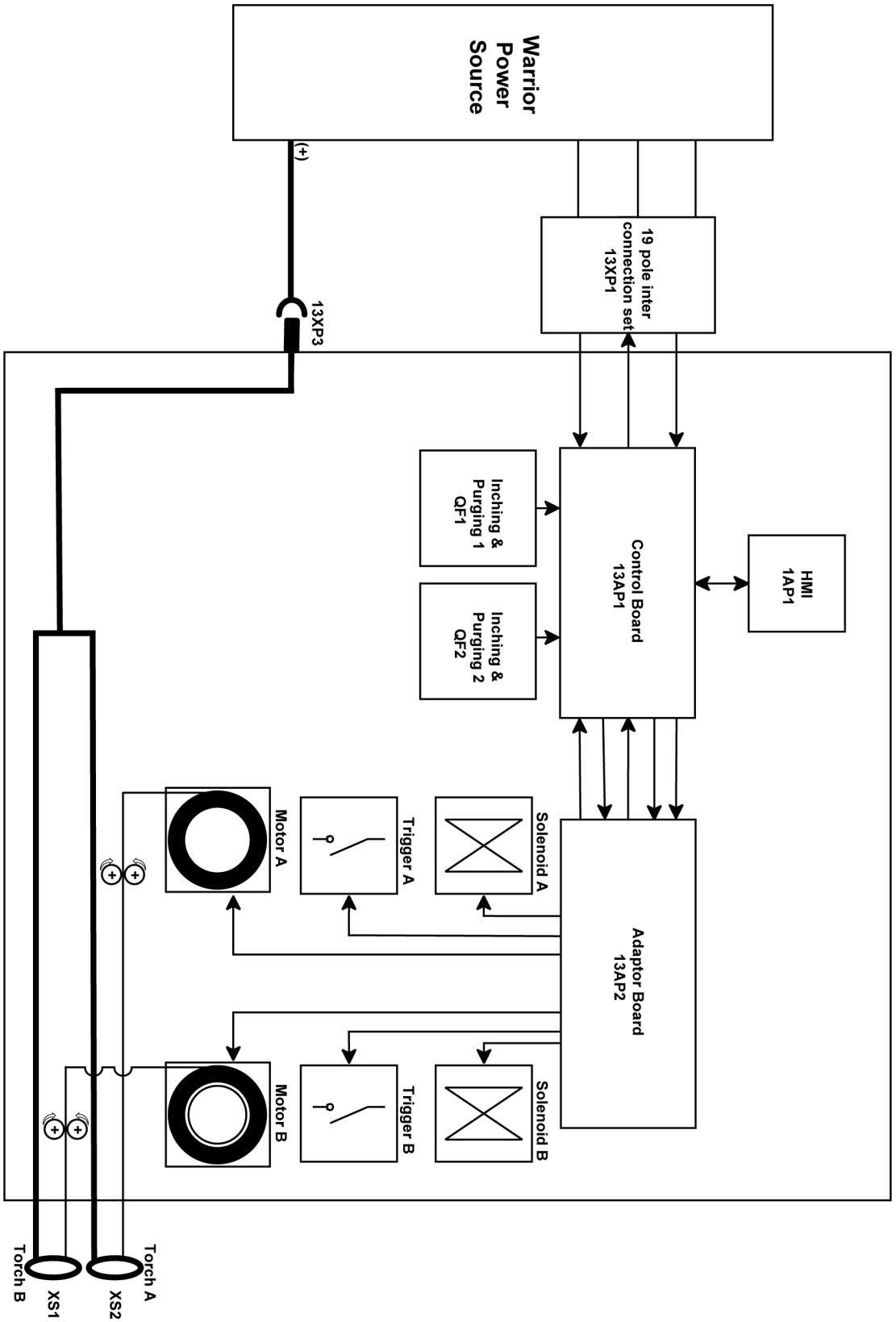
CAUTION!
Repair and electrical work should be performed by an authorized ESAB service technician.
Use only ESAB original spare and wear parts.

The **Warrior™ DualFeed** is designed and tested in accordance with international and Canadian standard **CAN/CSA-E60974-5** and US standard **ANSI/IEC 60974-5**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see **esab.com**. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

APPENDIX

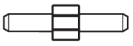
BLOCK DIAGRAM



WEAR PARTS

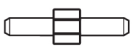
Fe, Ss and cored wire

Wire diameter (in.) (mm)	**.023** 0.6	**.030** 0.8	**.040** 0.9/1.0	**.045** 1.2	**.052** 1.4	**1/16** 1.6	**.070** 1.8	**5/64** 2.0	**Feed roller**
V-groove 	**X**	**X**							0445 850 001
		X	**X**						0445 850 002
			X						0445 850 003
			X	**X**					**0445 850 004**
				X					0445 850 005
					X	**X**			0445 850 006
								X	0445 850 007

Inlet wire guide 	**Middle wire guide** 	**Outlet wire guide** 
0445 822 001 (2 mm)	0446 080 882	0445 830 883

Cored wire – Different wire guides dependent on wire diameter!

Wire diameter (in.) (mm)	**.040** 0.9/1.0	**.045** 1.2	**.052** 1.4	**1/16** 1.6	**.070** 1.8	**5/64** 2.0	**3/32** 2.4	**Feed roller**
V-K-knurled 	**X**	**X**						0445 850 030
		X						0445 850 031
		X	**X**					0445 850 032
				X				0445 850 033
					X			0445 850 034
						X		0445 850 035
							X	0445 850 036

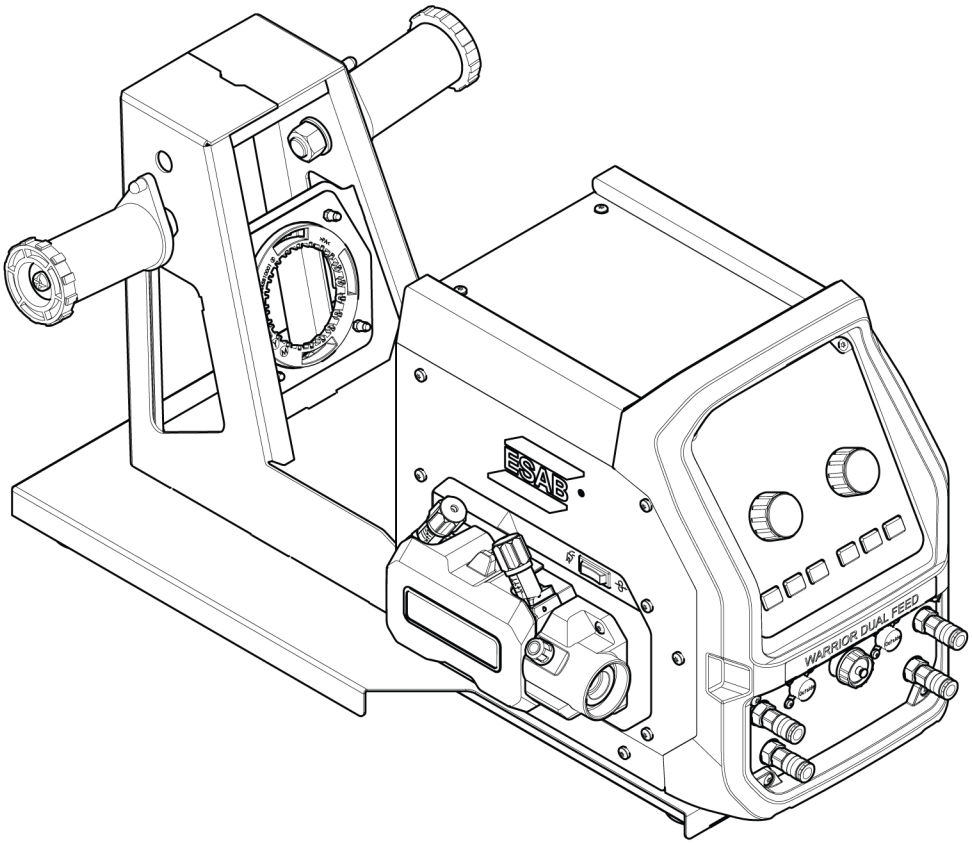
	Inlet wire guide 	**Middle wire guide** 	**Outlet wire guide** 
Wire diameter 0.040–1/16 in. 0.9–1.6 mm	0445 822 001 (2 mm)	0446 080 882	0445 830 883
Wire diameter 0.070–3/32 in. 1.8–2.4 mm	0445 822 002 (3 mm)	0446 080 883	0445 830 884

Al wire

Wire diameter (in.) (mm)	**.023** 0.6	**.030** 0.8	**.040** 0.9/1.0	**.045** 1.2	**.052** 1.4	**1/16** 1.6	**.070** 1.8	 **Feed roller**
U-groove 		**X**	**X**					0445 850 050
			X	**X**				0445 850 051
				X		**X**		0445 850 052

Inlet wire guide 	**Middle wire guide** 	**Outlet wire guide** 
0445 822 001 (2 mm)	0446 080 881	0445 830 886

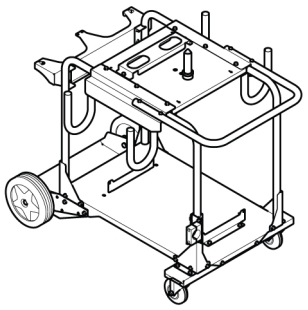
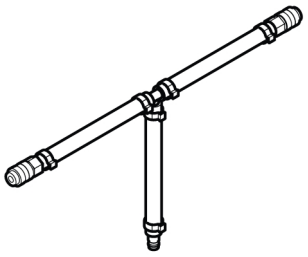
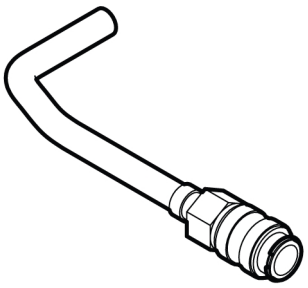
ORDERING NUMBERS

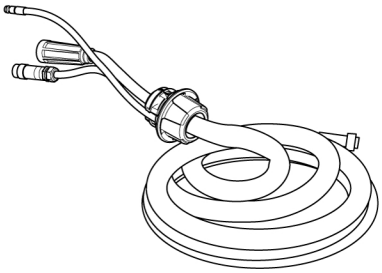
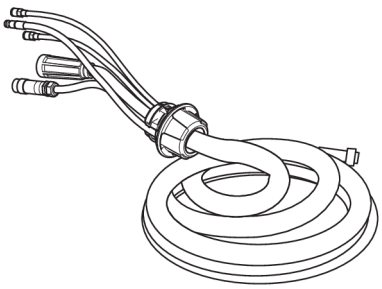


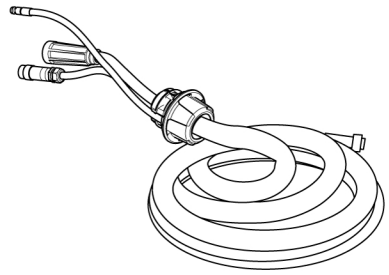
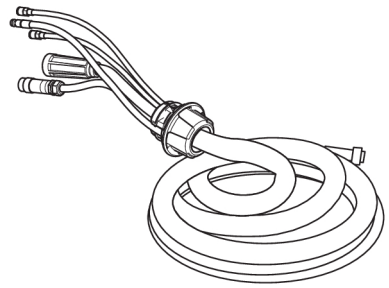
Ordering number	Denomination	Type	Notes
0448 900 880	Warrior™ DualFeed		CSA

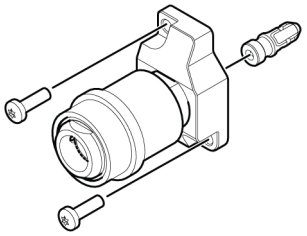
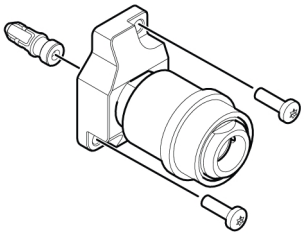
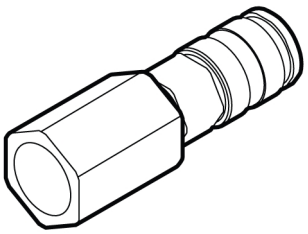
Technical documentation is available on the Internet at: **www.esab.com**

ACCESSORIES

0448 910 880	**Dual cylinder trolley**	
A000 101 408	**Gas splitter** (1 piece included in the DualFeed package)	
0349 312 105	**Gas hose with connector** (1 piece included in the DualFeed package)	

Interconnection cable with pre-assembled strain relief, Air cooled, 70 mm²		
0446 160 880	2 m (7 ft.)	
0446 160 881	5 m (16 ft.)	
0446 160 882	10 m (33 ft.)	
0446 160 883	15 m (49 ft.)	
0446 160 884	25 m (82 ft.)	
0446 160 885	35 m (115 ft.)	
0446 160 887	20 m (66 ft.)	
Interconnection cable with pre-assembled strain relief, Liquid cooled, 70 mm²		
0446 160 890	2 m (7 ft.)	
0446 160 891	5 m (16 ft.)	
0446 160 892	10 m (33 ft.)	
0446 160 893	15 m (49 ft.)	
0446 160 894	25 m (82 ft.)	
0446 160 895	35 m (115 ft.)	

Interconnection cable with pre-assembled strain relief, Air cooled, 95 mm²		
0446 160 980	2 m (7 ft.)	
0446 160 981	5 m (16 ft.)	
0446 160 982	10 m (33 ft.)	
0446 160 983	15 m (49 ft.)	
0446 160 984	25 m (82 ft.)	
0446 160 985	35 m (115 ft.)	
Interconnection cable with pre-assembled strain relief, Liquid cooled, 95 mm²		
0446 160 990	2 m (7 ft.)	
0446 160 991	5 m (16 ft.)	
0446 160 992	10 m (33 ft.)	
0446 160 993	15 m (49 ft.)	
0446 160 994	25 m (82 ft.)	
0446 160 995	35 m (115 ft.)	

A000 101 141	**Left, Marathon Pac™ kit** (Inlet guide, 0446541001 included)	
A000 101 142	**Right, Marathon Pac™ kit** (Inlet guide, 0446541001 included)	
A000 101 536	**Gas adaptor** (2 pieces included in the DualFeed package)	

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