



ROBUSTFEED PRO



Instruction manual

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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 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.

1.3 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.

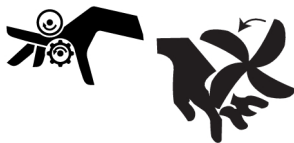
3. Do not operate near degreasing and spraying operations. The heat or arc can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
4. If you develop momentary eye, nose or throat irritation while operating, this is an indication that ventilation is 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"

1.4 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 and covers closed and securely in place. Have only qualified people remove covers for maintenance and troubleshooting as necessary. Reinstall panels or covers and close doors when service is finished and before starting engine.



- Stop engine before installing or connecting unit.
- Keep hands, hair, loose clothing and tools away from moving parts.



FIRE HAZARD

- Sparks (spatter) can cause fire. Therefore, 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.

MALFUNCTION - Call for expert assistance in the event of malfunction.

PROTECT YOURSELF AND OTHERS!



CAUTION!

This product is solely intended for arc welding.

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 RobustFeed PRO wire feed unit is intended for GMAW-welding together with the following welding power sources:

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

The wire feed unit comes in different versions (see the "ORDERING NUMBERS" appendix).

The wire feed units are sealed and contain four-wheel drive wire feed mechanisms as well as control electronics.

They can be used together with wire on ESAB's Marathon Pac™ or on wire bobbin (standard Ø 200 mm and Ø 300 mm).

The wire feed unit can be placed on a trolley, suspended above the workplace or on the floor (standing up or laying down and with or without a wheel set).

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

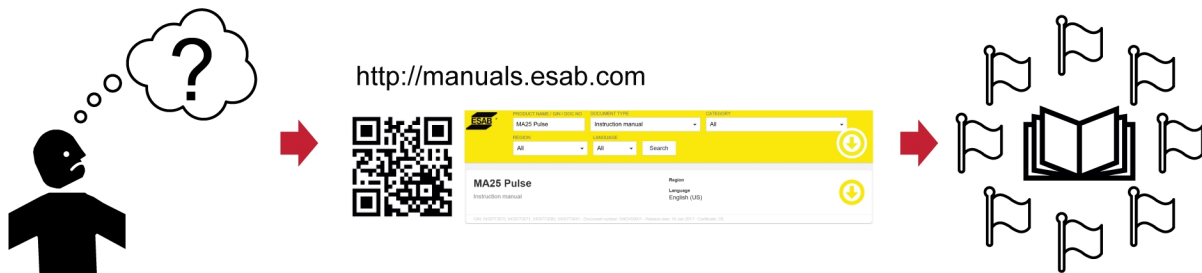
2.1 Equipment

RobustFeed PRO is supplied with:

- Instruction manual
- Quick start guide
- Safety instruction

Instruction manuals in other languages can be downloaded from the Internet:

manuals.esab.com



3 TECHNICAL DATA

| RobustFeed PRO, Valid from serial no. OP422-xxx-xxxx | |
|---|-------------------------------------|
| Power Supply voltage | 42 V AC, 50–60 Hz |
| Power requirement | 181 VA |
| Rated supply current I_s | 4.3 A |
| Settings data: | |
| Wire feed speed | 32–984 in./min (0.8–25.0 m/min) |
| Creep start | OFF or ON |
| 2/4-stroke | 2-stroke or 4-stroke |
| Wire selection | Solid or Cored |
| Crater fill | From 0 s (OFF) to 5 s |
| Torch connection | EURO, Tweco #4, Tweco #5 |
| Max. diameter wire spool hub | 12 in. (300 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: | |
| RobustFeed PRO | 37.1 lb. (16.9 kg) |
| RobustFeed PRO, Water | 37.8 lb. (17.2 kg) |
| RobustFeed PRO Offshore | 38.1 lb. (17.3 kg) |
| RobustFeed PRO Offshore, Water | 38.7 lb. (17.6 kg) |
| RobustFeed PRO, Tweco | 37.1 lb. (16.9 kg) |
| RobustFeed PRO Offshore, Tweco | 38.1 lb. (17.3 kg) |
| Maximum weight wire spool | 40.8 lbs (18.5 kg) |
| Dimensions (l×w×h) RobustFeed PRO | 23.4×9.8×16.9 in. (595×250×430 mm) |
| Operating temperature | -20° to +55 °C (-4° to +131 °F) |
| Transport and storage temperature | -40° to +80 °C (-40° to +176 °F) |
| Shielding gas | All types intended for GMAW welding |
| Maximum gas pressure | 5 bar (0.5 MPa) |
| Coolant (for "RobustFeed PRO, Water" and "RobustFeed PRO Offshore, Water") | ESAB's ready mixed coolant |
| Maximum coolant pressure | 5 bar (0.5 MPa) |
| Permissible load at +40°C: | |
| 50% duty cycle | 550 A |
| 60% duty cycle | 500 A |
| 100% duty cycle | 400 A |
| Permissible load at +55 °C: | |
| 50% duty cycle | 550 A |

| RobustFeed PRO, Valid from serial no. OP422-xxx-xxxx | |
|---|-------|
| 60% duty cycle | 500 A |
| 100% duty cycle | 400 A |
| Enclosure class | IP44 |

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 certain load without overloading.

Enclosure class


The **IP** code indicates the enclosure class, i.e. the degree of protection against penetration by solid objects or water.

Equipment marked **IP44** is intended for indoor and outdoor use and can withstand splashing water from all directions.

4 INSTALLATION

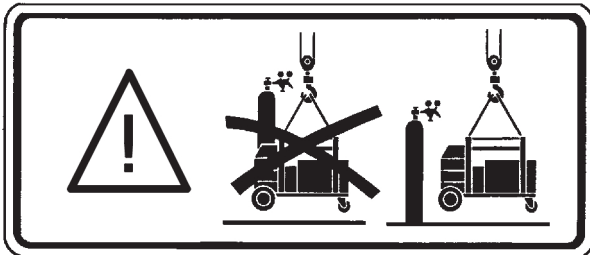
The installation must be carried out by a professional.

**WARNING!**

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

**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.



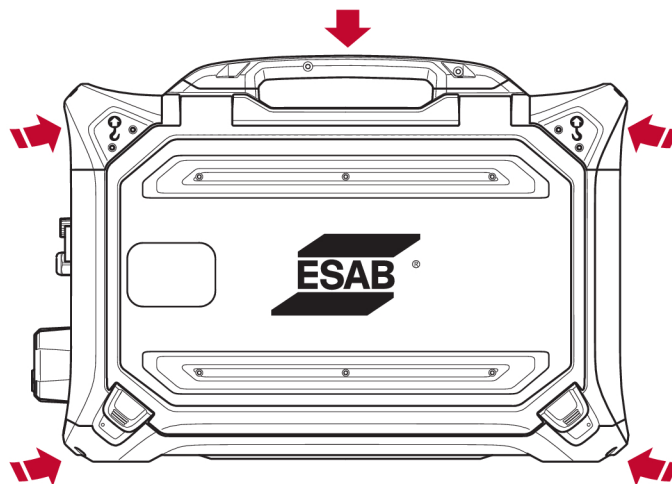
4.1 Lifting instructions

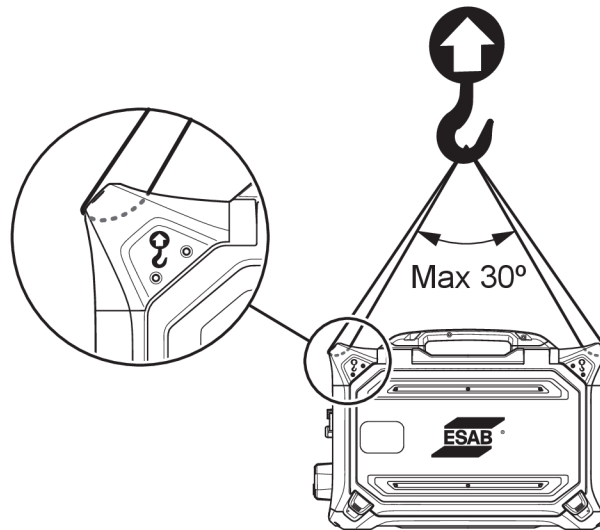
**CAUTION!**

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

**CAUTION!**

To avoid personal injury and damage to the equipment, lift using the methods and attachment points detailed below.





CAUTION!

Do not place heavy objects on the wire feeder when lifting. Objects should not be secured. The lifting points are rated for a **maximum total weight of 40 kg/90 lb** when lifted using the two outer upper lifting handles in accordance with the illustration above.

The 40 kg/90 lb approved weight includes the wire feeder and any accessories (the standard feeder weight is 17.6 kg/38.7 lb). For all weights, please see the TECHNICAL DATA chapter.

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!



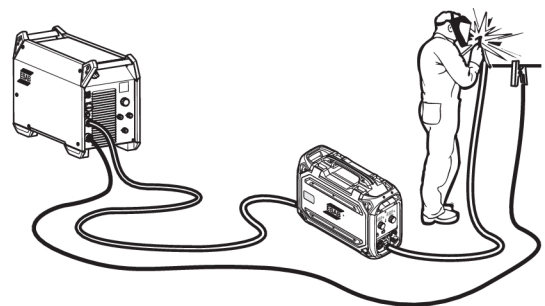
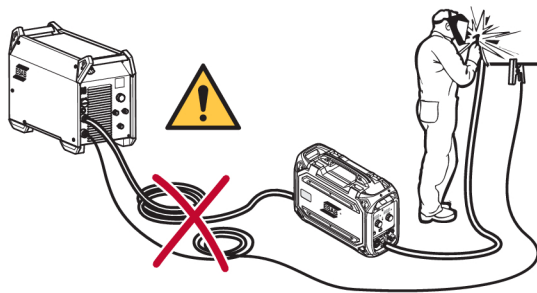
WARNING!

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 handle intended for transportation. Never pull the equipment by the welding torch.



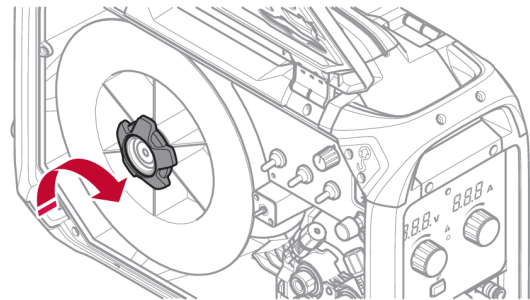
WARNING!

Make sure the side panels are closed during operation.



WARNING!

To prevent the reel from sliding off the brake hub, lock the reel in place by tightening the brake hub nut.



NOTE!

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



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.



WARNING!

Rotating parts can cause injury, take great care.



**WARNING!**

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

5.1 Recommended maximum current values for connection cables set

At an ambient temperature of +25 °C and normal 10 minutes cycle:

| Cable area | Duty cycle | | Voltage loss/10 m |
|--------------------|------------|-----|-------------------|
| | 100% | 60% | |
| 70 mm ² | 360 | 400 | 0.25 V/100 A |
| 95 mm ² | 430 | 500 | 0.19 V/100 A |

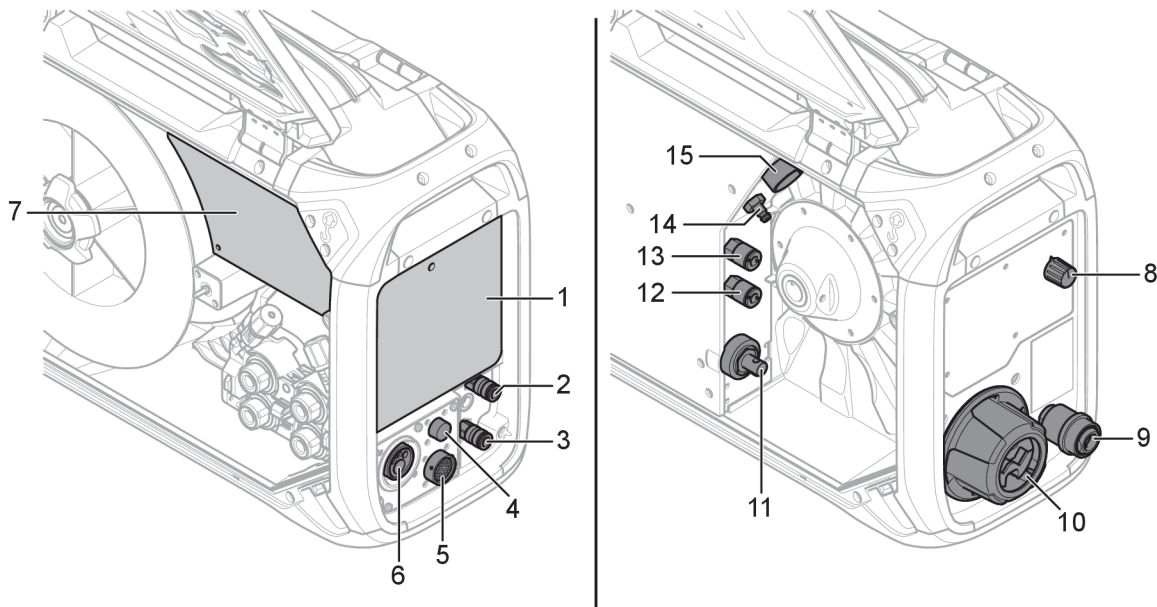
At an ambient temperature of +40 °C and normal 10 minutes cycle:

| Cable area | Duty cycle | | Voltage loss/10 m |
|--------------------|------------|-----|-------------------|
| | 100% | 60% | |
| 70 mm ² | 310 | 350 | 0.27 V/100 A |
| 95 mm ² | 370 | 430 | 0.20 V/100 A |

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 certain load without overloading.

5.2 Connections and control devices



- | | |
|---|--|
| <ol style="list-style-type: none"> 1. External control panel (see the "CONTROL PANEL" chapter) 2. Connection BLUE for cooling liquid to the welding torch ¹⁾ 3. Connection RED for cooling liquid from the welding torch ¹⁾ 4. Connection for the Tweco trigger cable (only in combination with Tweco torch) 5. Connection for the remote control unit (optional) 6. Connection for the welding torch (Euro or Tweco type) 7. Internal control panel (see the "CONTROL PANEL" chapter) 8. Heat kit switch (Offshore versions) | <ol style="list-style-type: none"> 9. Wire inlet for use with Marathon Pac™ (optional) 10. Interconnection strain relief for cables from power source 11. Connection for welding current from power source (OKC) 12. Connection RED for cooling liquid to the power source (the cooling unit) ¹⁾ 13. Connection BLUE for cooling liquid from the power source (the cooling unit) ¹⁾ 14. Connection for shielding gas 15. Connection for control cable from power source |
|---|--|



NOTE!

¹⁾ Cooling liquid connections only available on certain models.



WARNING!

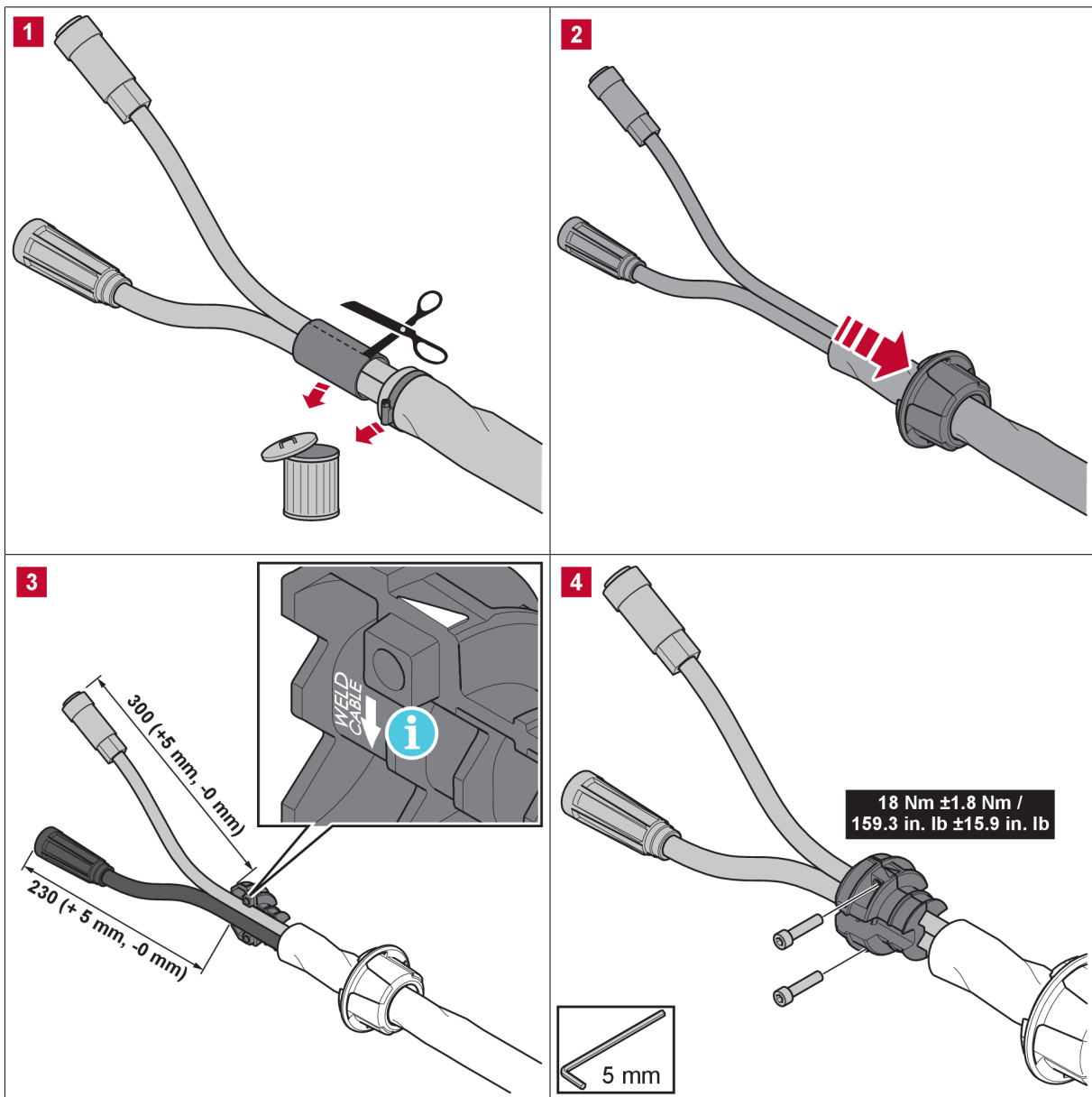
The right and left side doors of the wire feed unit must be closed and locked when welding and/or wire feeding occurs. Never weld or feed the wire unless both doors are closed.

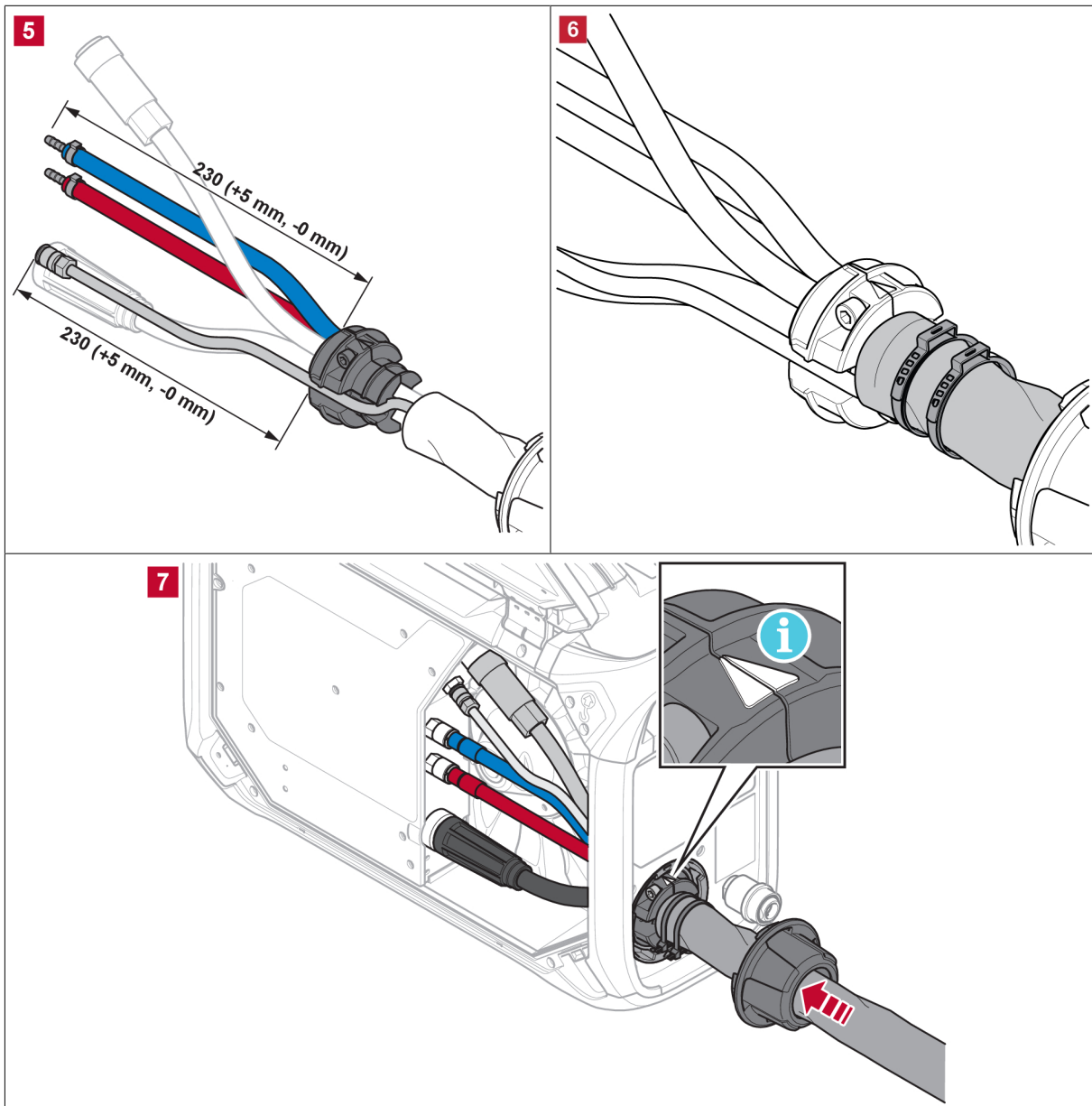
5.3 Cooling liquid connection

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

A liquid cooling kit can be ordered as an accessory (see the "ACCESSORIES" appendix).

5.4 Retrofitting an interconnection strain relief kit





The diagram above illustrates the retrofitting of the interconnection strain relief kit (order no. 0446 050 880) where the welding current and control cables, in addition to the cooling liquid and shielding gas hoses (if applicable) are routed through the strain relief device.

Using a pre-assembled interconnection cable kit, which includes the strain relief, is also an option (see the "ACCESSORIES" appendix).

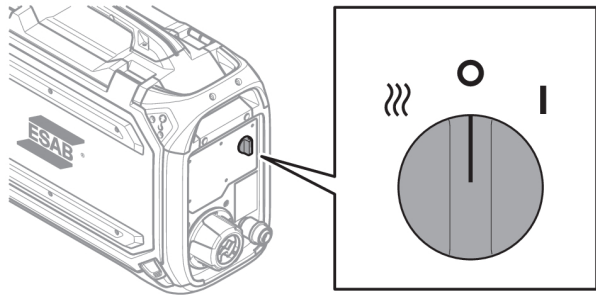


NOTE!

- The interconnection strain relief should be clamped onto clean cables.
- Locate the welding current cable in the larger (2) of the two holes in the strain relief clamp.
- Ensure that the cable ties wrapped around the insulating sleeve (9) are securely tightened.

5.5 Heat kit switch (Offshore versions only)

- Welding OFF
- ┃ Welding ON
- ⋈ Heat ON and welding OFF
The bobbin area is heated to keep the welding wire dry. Heating the bobbin area is highly advantageous in environments with high levels of humidity or where the temperature fluctuates throughout the day.



5.6 Starting procedure

When the wire feed starts, the power source generates the welding voltage. If there is no welding current flow within three seconds, the power source switches the welding voltage off. The wire feed continues until the welding torch's switch is switched to off.



NOTE!

It is important that the power source used together with the feeder is set to GMAW (MIG/MAG) mode when the system is powered on! This is to ensure that calibration is made between the feeder and the power source before any welding can be done. If the power source is set to another welding method at power on, the voltage settings on the feeder panel **cannot** be guaranteed! If this happens, switch off the power source, set the mode switch to GMAW (MIG/MAG) and restart the power source again!

5.7 Lighting inside the wire feed unit

Lights are fitted inside the cabinet of the wire feed unit. The lights automatically switch on when the feeder is started, when any of the parameters on the internal control panel are changed, when wire inching is performed and after welding tasks. The lights automatically switch off after a few minutes.

5.8 Cooling liquid connection

ELP (ESAB Logic Pump)

The cooling unit is equipped with a detection system called ELP (ESAB Logic Pump) which checks that the coolant hoses are connected. When a liquid-cooled torch is connected, cooling starts.

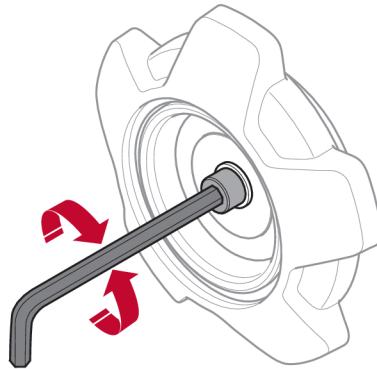
When connecting a liquid-cooled welding torch, the main power supply switch of the power source must be in the OFF position.

5.9 Bobbin brake

The bobbin brake force should be increased just enough to prevent wire feed overrun. The actual brake force required depends on the wire feed speed and the size and weight of the bobbin spool.

Do not overload the bobbin brake. If the brake force is too high, it may overload the motor, resulting in a lower-quality welding result.

The bobbin brake force is adjusted using the 6-mm hexagon Allen screw in the middle of the brake hub nut.



5.10 Changing and loading wire

1. Open the left door of the wire feeder.
2. Untighten and remove the brake hub nut and remove the old wire spool.
3. Insert a new wire spool into the feeder unit and straighten out the new welding wire 10–20 cm. File away burrs and sharp edges from the end of the wire before inserting it into the feeder mechanism.
4. Lock the wire spool onto the brake hub by tightening the brake hub nut.
5. Thread the wire through the feeder mechanism (according to the illustration on the inside of the feeder unit).
6. Close and lock the left door of the wire feeder.



NOTE!

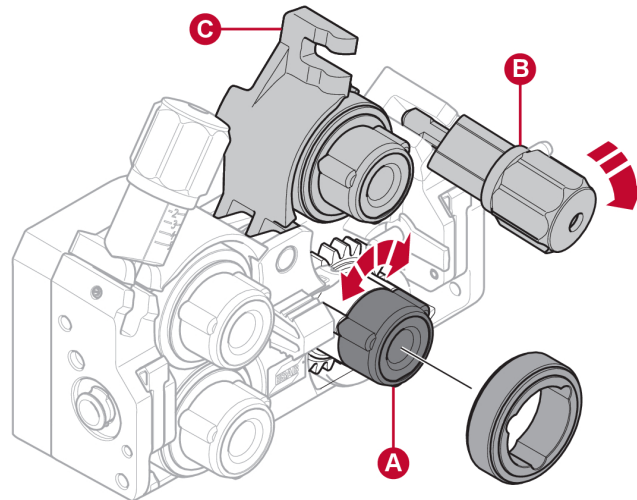
Replace the brake hub nut and the brake hub sleeve if they are worn out and don't lock properly.

5.11 Changing feed rollers

When changing to a different type of wire, the feed rollers should also be changed to match the new type of wire. For more information about correct feed rollers depending on wire diameter and type, see the WEAR PARTS appendix. For tips about easy access to essential wear parts, see the "Wear parts storage compartment" section in this manual.

1. Open the left door of the wire feeder.
2. Unlock the feed rollers to be swapped by rotating the roller quick lock (A) for each roller.

3. Relieve the pressure on the feed rollers by folding the tensioner units (B) down, which in turn releases the swing arms (C).



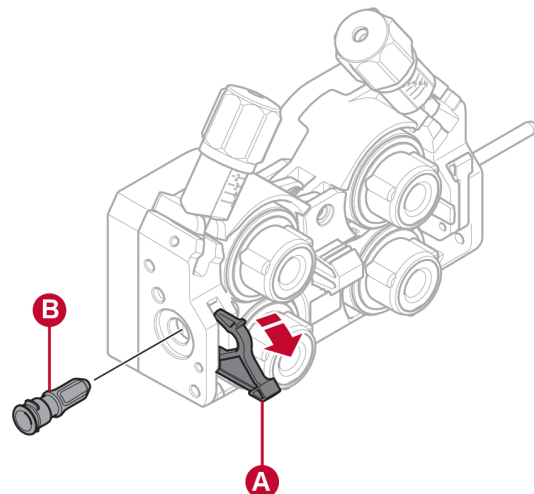
4. Remove the feed rollers and install the correct ones (according to the WEAR PARTS appendix).
5. Reapply pressure to the feed rollers by pushing the swing arms (C) downward and secure them using the tensioner units (B).
6. Lock the rollers into place by rotating the roller quick locks (A).
7. Close and lock the left door of the wire feeder.

5.12 Changing the wire guides

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 the WEAR PARTS appendix. For tips about easy access to essential wear parts, see the "Wear parts storage compartment" section in this manual.

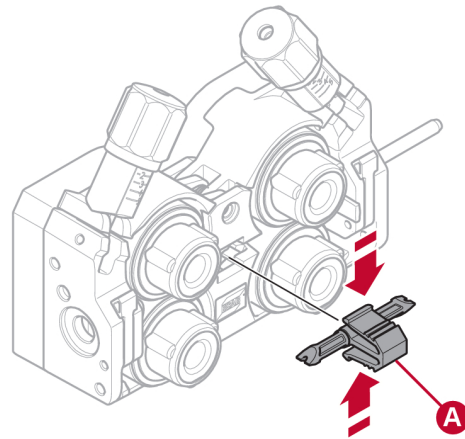
5.12.1 Inlet wire guide

1. Unlock the inlet wire guide quick lock (A) by folding it out.
2. Remove the inlet wire guide (B).
3. Fit the correct inlet wire guide (according to the WEAR PARTS appendix).
4. Lock the new inlet wire guide into place using the wire guide quick lock (A).



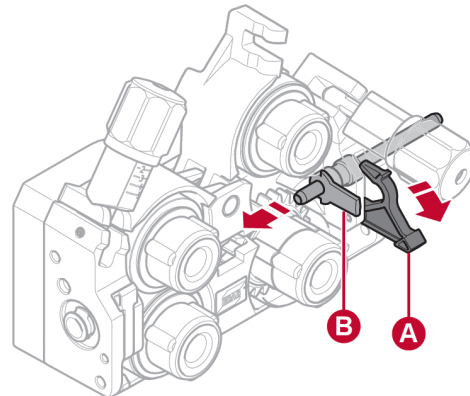
5.12.2 Middle wire guide

1. Apply a small amount of pressure to the middle wire guide clip and remove the middle wire guide (A).
2. Push in the correct type of wire guide (according to the WEAR PARTS appendix). The clip automatically locks the wire guide when in the correct position.



5.12.3 Outlet wire guide

1. Remove the lower right feed roller (see the "Changing feed rollers" section).
2. Remove the middle wire guide (see the "Middle wire guide" section).
3. Unlock the outlet wire guide quick lock (A) by folding it out.
4. Remove the outlet wire guide (B).
5. Install the correct outlet wire guide (according to the WEAR PARTS appendix).
6. Lock the new outlet wire guide into place using the wire guide quick lock (A).
7. Reattach the second pair of feed rollers and reapply the roller pressure (see the "Changing feed rollers" section).



5.13 Roller pressure

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

Start by making sure that the wire moves smoothly through the wire guide. Then set the pressure of the wire feeder's pressure rollers. It is important that the pressure is not too high.

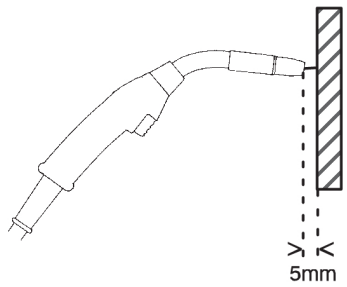


Figure A

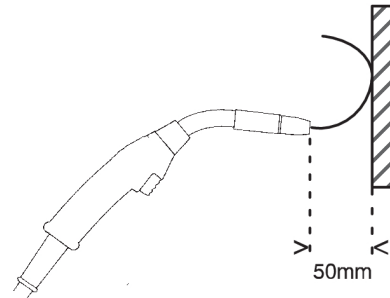


Figure B

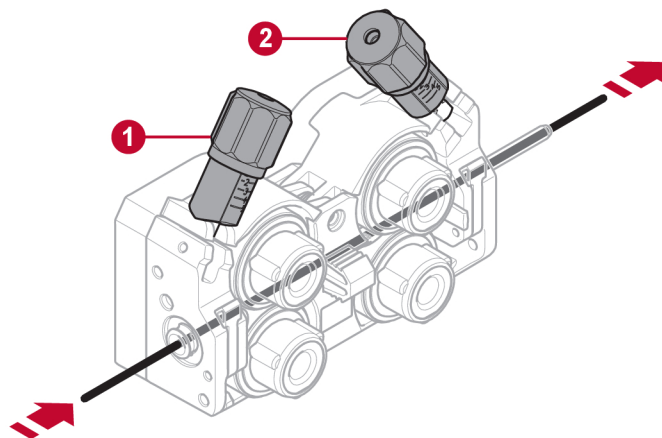
To check that the feed pressure is set correctly, you can feed out the wire against an insulated object, e.g. a piece of wood.

When you hold the welding torch approx. 0.2 in. (5 mm) from the piece of wood (figure A) the feed rollers should slip.

If you hold the welding torch approx. 2 in. (50 mm) from the piece of wood, the wire should feed out and bend (figure B).

The table below serves as a guideline showing approximate roller pressure settings for standard conditions with correct bobbin 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 also be found on the inside of the left door of the wire feeder.

| | | Wire diameter (in.) (mm) | | .023 | .030 | .040 | .045 | .052 | 1/16 | .070 | 5/64 | 3/32 |
|---------------|--------|-----------------------------|-------|------|-------|------|------|------|------|------|------|------|
| | | | | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 | 2.4 |
| | | Pressure setting | | | | | | | | | | |
| Wire material | Fe, Ss | Tensioner unit 1 | 2.5 | | | | | | | | | |
| | | Tensioner unit 2 | 3–3.5 | | | | | | | | | |
| | Cored | Tensioner unit 1 | | | 2 | | | | | | | |
| | | Tensioner unit 2 | | | 2.5–3 | | | | | | | |
| | Al | Tensioner unit 1 | | 1 | | | | | | | | |
| | | Tensioner unit 2 | | 2–3 | | | | | | | | |

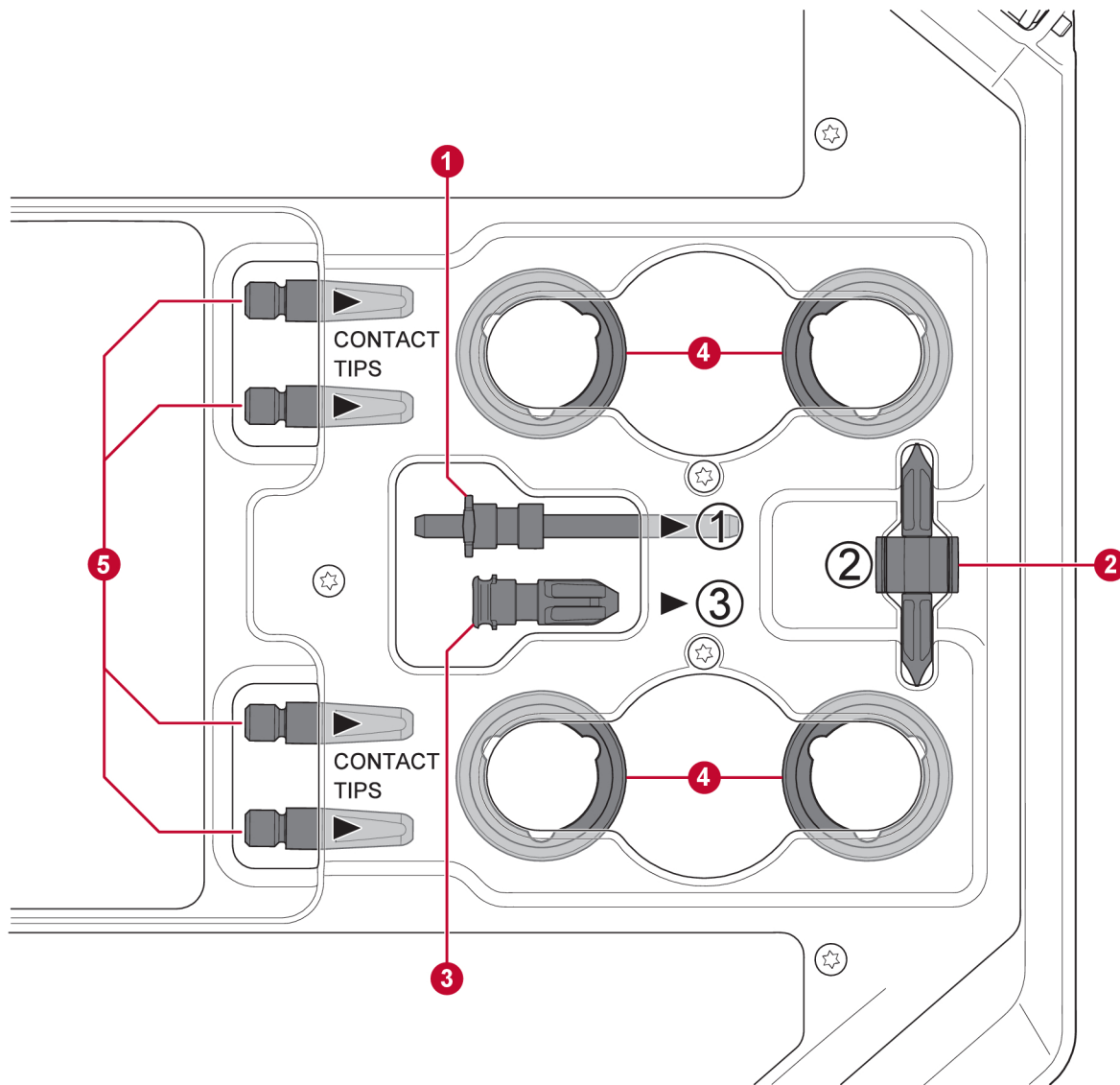


1. Tensioner unit 1

2. Tensioner unit 2

5.14 Wear parts storage compartment

A wear parts storage compartment is located on the inside of the left door of the wire feeder, providing easy access to an extra set of rollers and wire guides.



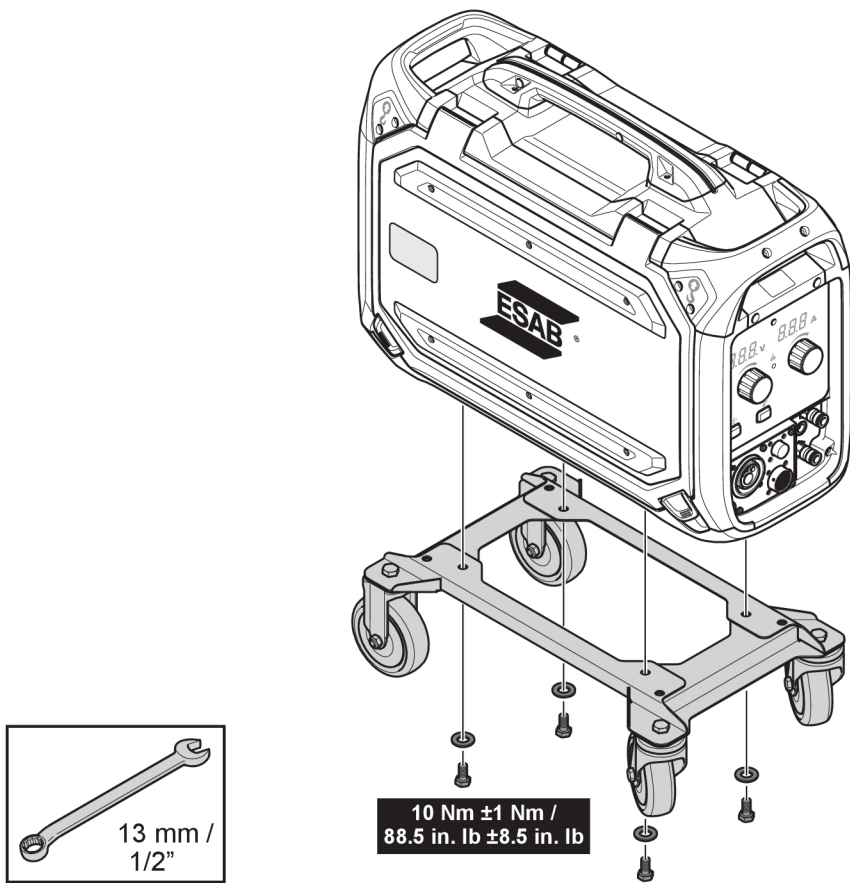
- | | |
|----------------------|---|
| 1. Inlet wire guide | 4. Feed rollers (×4 pcs.) |
| 2. Middle wire guide | 5. Contact tips for the welding torch (×4 pcs.) |
| 3. Outlet wire guide | |

5.15 Attaching the wheel kit

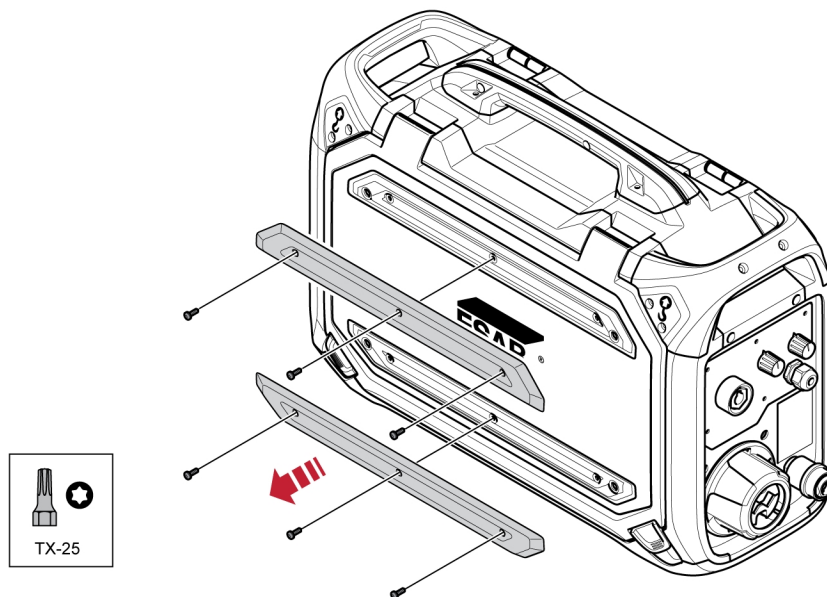
5.15.1 Attaching the wheels to the wheel kit frame

Before the wire feed unit is attached to the wheel kit, fasten the wheels to the frame by means of the M12 screws, washers and nuts, using a tightening torque of 40 ± 4 Nm (354 ± 35.4 in. lb). The fixed wheels at the rear end should be positioned parallel to the frame.

5.15.2 Wire feed unit in vertical position

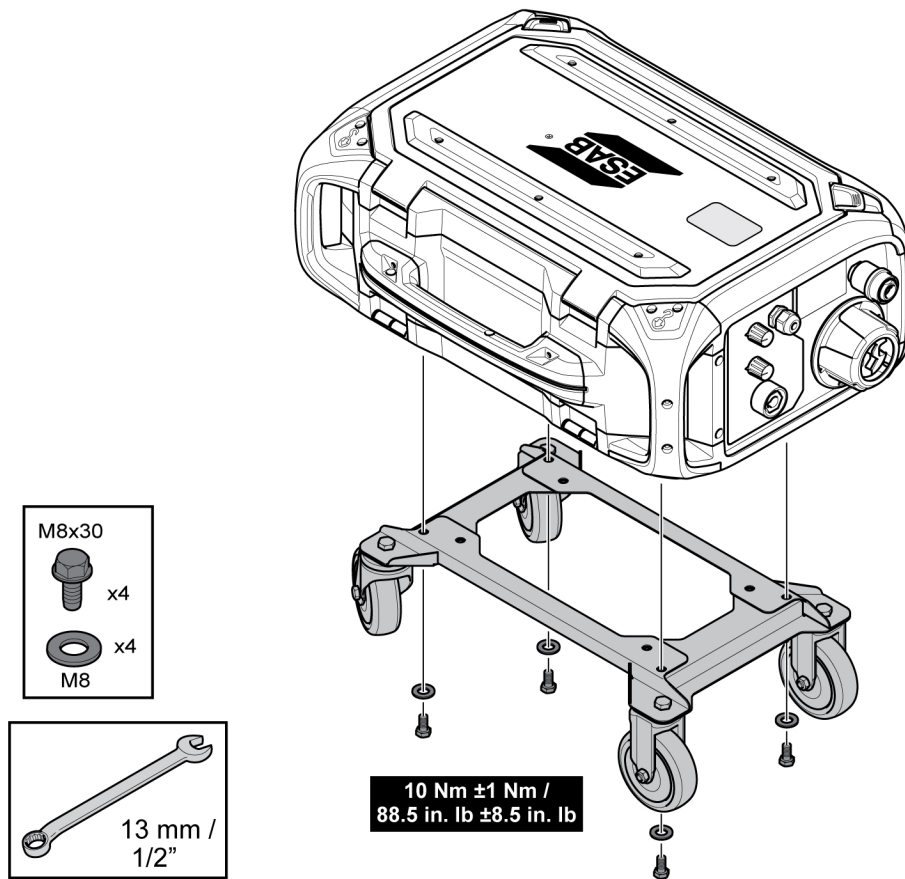


5.15.3 Wire feed unit in horizontal position



NOTE!

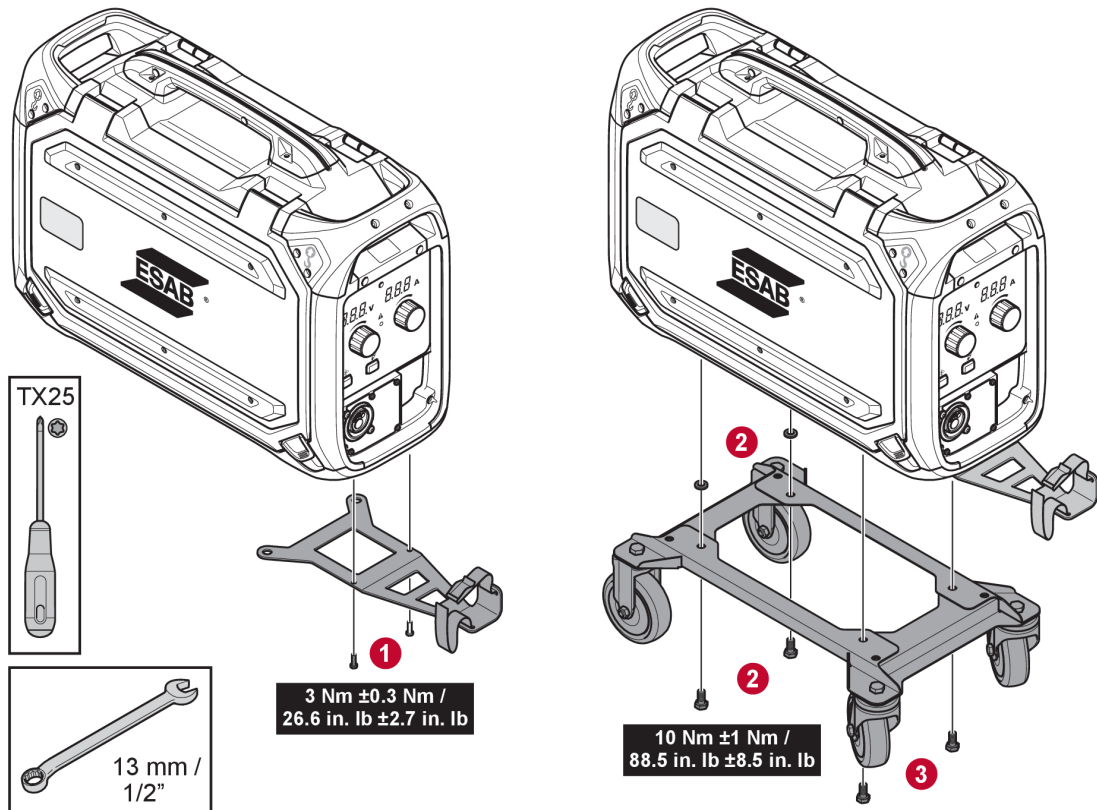
In order to attach the wire feeder to the wheel kit in the horizontal position, the two bumpers on the wire feeder door must be removed.



5.16 Attaching both the wheel kit and the torch strain relief accessory

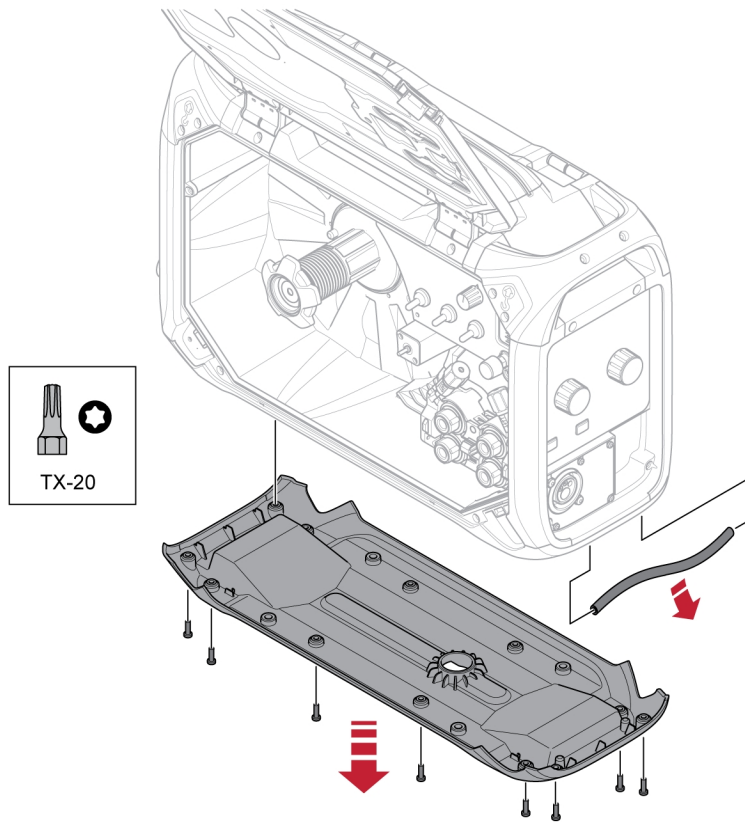
If the torch strain relief accessory is to be used with the wheel kit when it is fitted in the vertical position, the assembly steps below must be completed in the following order:

1. Attach the torch strain relief to the wire feed unit, using the two Torx 5 screws.
2. Attach the wheel kit to the wire feeder using the two screw joints near the rear end of the wire feeder. Ensure that the two distance washers are inserted between the wheel kit and the wire feeder.
3. Fasten the wheel kit **and** the torch strain relief to the wire feeder using the two screw joints located closer to the front end of the wire feeder.

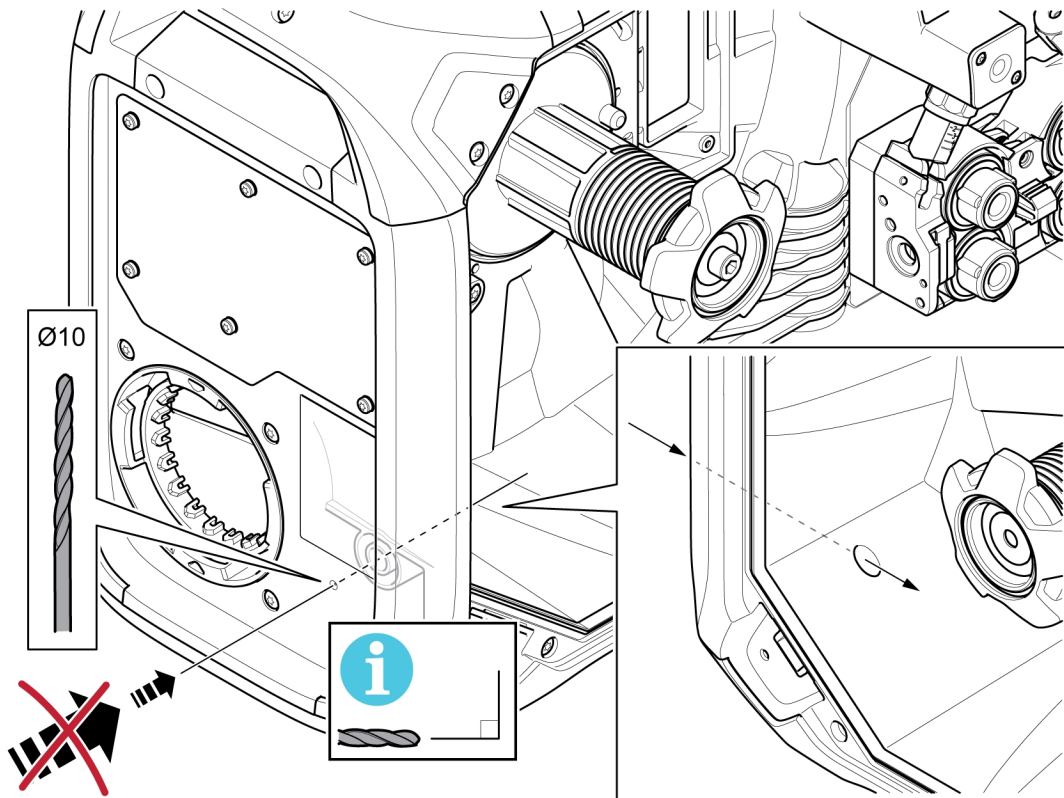


5.17 Marathon Pac™ installation

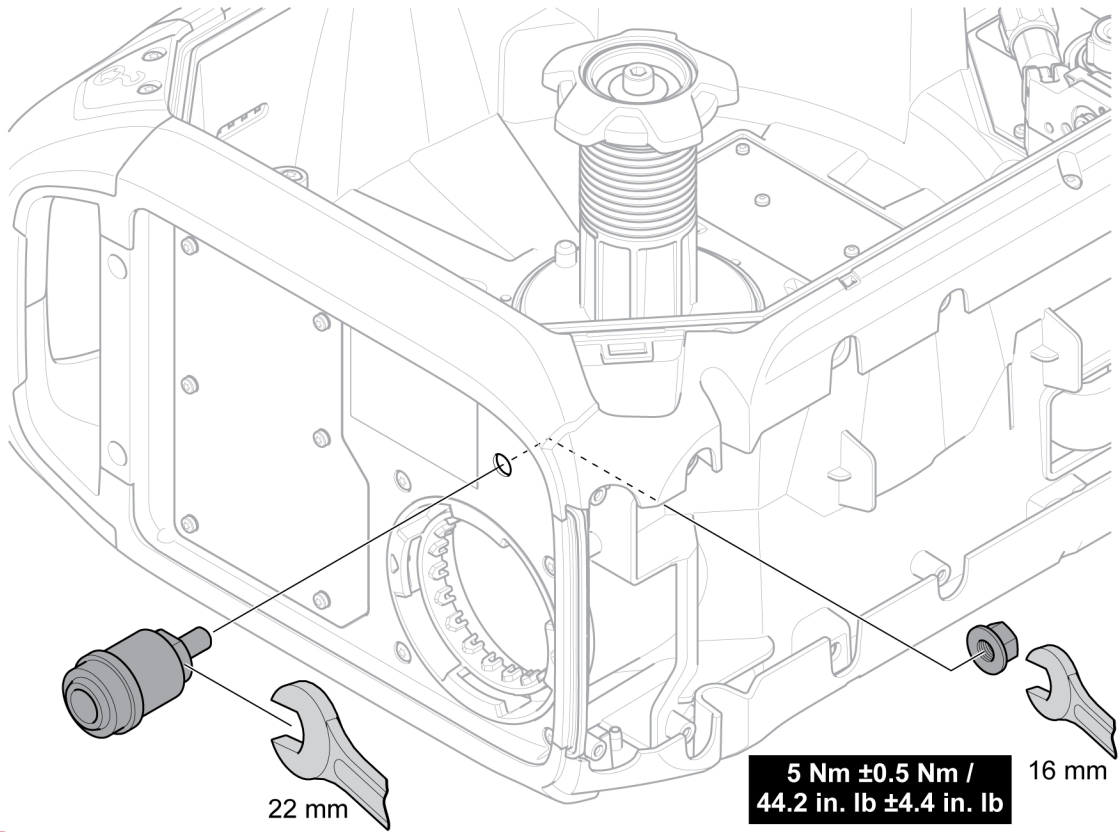
1



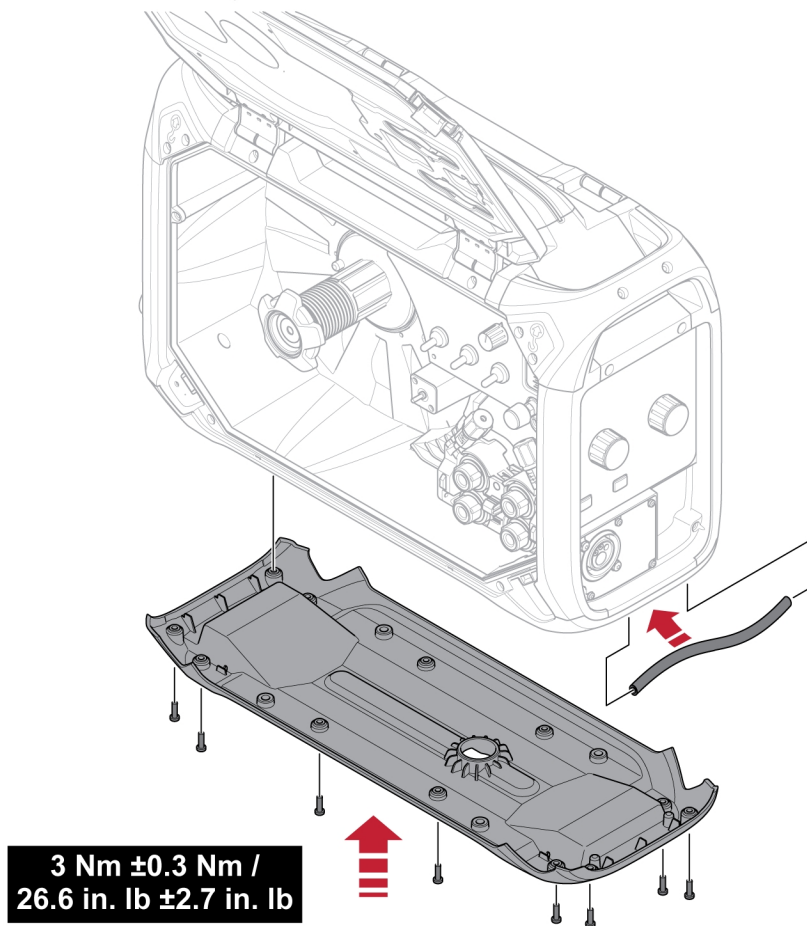
2



3



4



6 CONTROL PANEL

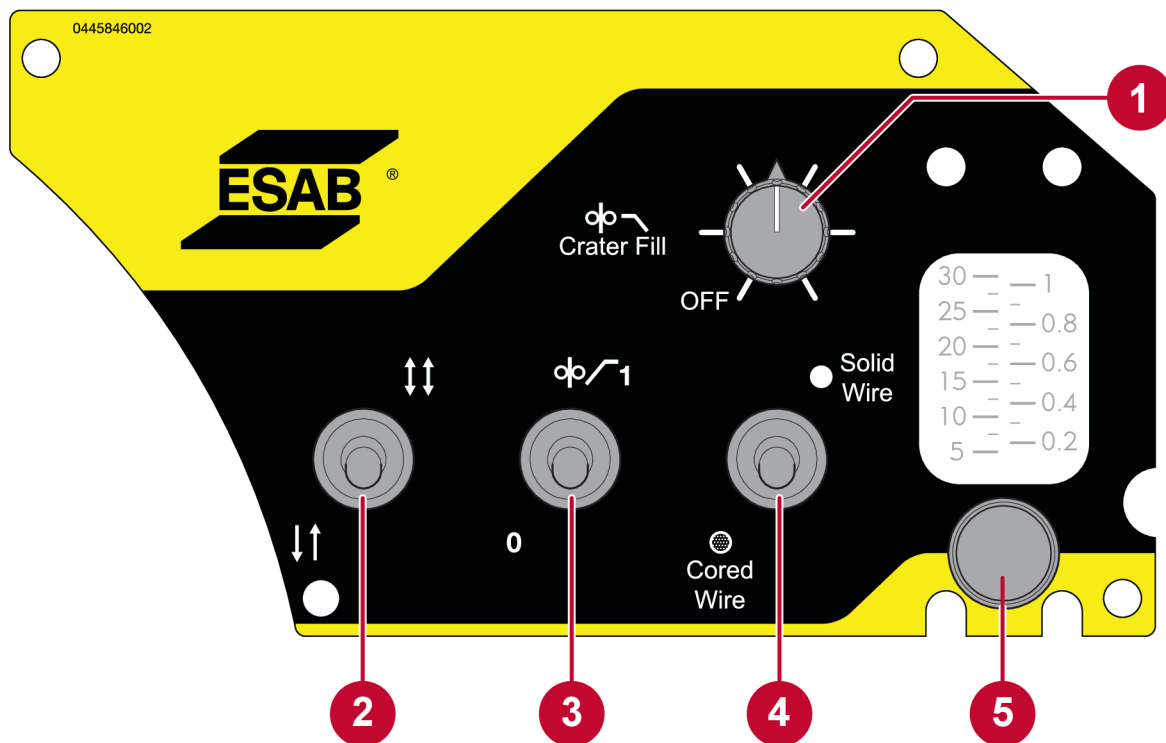
6.1 Pro

6.1.1 External control panel



- | | |
|--|---|
| 1. Display, shows set or measured value | 4. Overtemperature indicator, illuminated when the temperature of the wire feeder is approaching a critical level or has already reached the critical level |
| 2. Knob for setting the voltage (V) | 5. Push button for wire inching |
| 3. Knob for setting the wire feed speed (m/min or in./min) | 6. Push button for gas purge |

6.1.2 Internal control panel



1. Knob for continuous adjustment of the crater fill time from zero (OFF) to five seconds
2. Switch for the selection of 2-stroke or 4-stroke
3. Switch for the selection of creep start
4. Switch for the selection of solid (SCT ON) or cored (SCT OFF) wire
5. Knob for setting the gas flow rate (optional)

6.2 Setting the speed unit of measurement (metric/imperial)

The unit of measurement for the wire feed unit is set to metric (m/min) or imperial (inch/min) in the factory, depending on the country/region. The unit of measurement may also be set via a so-called "hidden function". To change the unit of measurement from metric to imperial or vice versa, proceed as follows:

1. Access the hidden functions by keeping the wire inching and gas purging buttons pressed down simultaneously for three 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 currently selected speed unit ("m/min" or "inch/min") will light up to the right of the right display.



2. Set the preferred unit of measurement (metric or imperial) by turning the voltage control knob.
3. Save the selected speed unit setting, leave the hidden functions and return to the default panel view by keeping the gas purge button pressed down for three seconds.

Function letter Function

- C** Unit of measurement
0 = inch/min, 1 = m/min

6.3 Explanation of functions

Open the door to access the 2-stroke/4-stroke, the solid/cored wire, the creep start and the crater fill functions, as well as the knob for setting of the gas flow rate (optional).



Gas purging

Gas purging is used when measuring the gas flow, or to flush any air or moisture from the gas hoses before welding starts. Gas purging takes place for as long as the button is held depressed and takes place without voltage or wire feed starting.



Wire inching

Wire inching is used when feeding wire without applying a welding voltage. The wire is fed as long as the button is depressed.

Wire feed speed

This function sets the required feed speed of the filler wire. The selected wire feed speed is shown on the display and the text "m/min" or "inch/min" provided next to the display shows the unit that is in use.



2-stroke

With 2-stroke gas, pre-flow starts when the welding torch trigger switch is pressed. The welding process then starts. Releasing the trigger switch stops welding entirely and starts gas post-flow.



4-stroke

With 4-stroke, the gas pre-flow starts when the welding torch trigger switch is pressed. The wire feed starts when the switch is released. The welding process continues until the switch is pressed again. The wire feed then stops and welding is suspended. The gas post-flow starts when the switch is released.

Wire selection – Cored wire



When cored wire is selected, a constant burnback time is automatically used when the trigger is released to adapt to welding with cored wire.

Wire selection – Solid wire



When solid wire is selected, Short Circuit Termination (SCT) behavior is automatically used when the trigger is released to adapt to welding with solid wire.

SCT is a way to stop the welding with some small short circuits to reduce the end crater and oxidation. It also gives the advantage of a good start performance with solid wire.



Creep start

Creep starting feeds out the wire at 1.5 m/min (59 in./min) until it 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 knob located on the internal control panel.

When crater filling is selected, the welding voltage and the wire feed speed will be reduced during the selected time (zero to five seconds), before entering SCT or burnback.

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.

When 4-stroke is selected, crater filling continues for the selected time **unless the trigger is released**. If the trigger is released **before** the set time has expired, crater filling will be interrupted when the trigger is released.

6.4 Overtemperature indicator



The overheating protection has two levels:

Warning When the overtemperature indicator is illuminated, this indicates that the wire feeder is **approaching** a 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 is illuminated and the text "Err" appears on 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

The measured value on the display for arc voltage V is the arithmetic average value.

A

Measured current

The measured value on the display for welding current A is the arithmetic average value.

6.6 Setting the gas flow



The gas flow is adjusted using the knob on the internal control panel. The present gas flow rate is given on the gas flow meter above the knob.



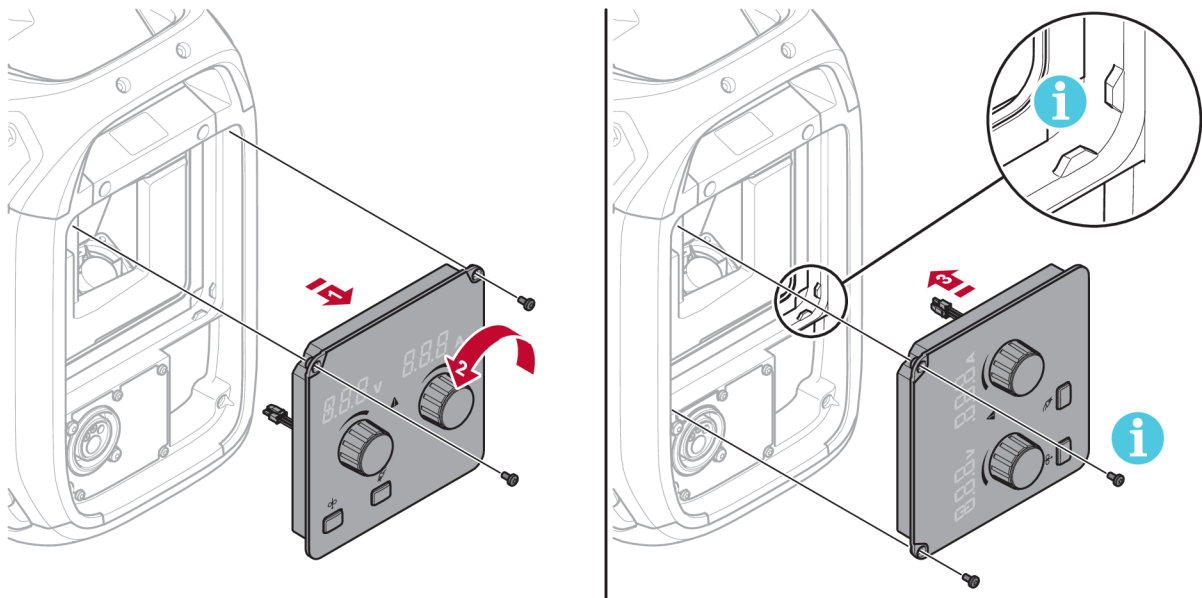
NOTE!

The reading on the flow meter scale will only be correct if the wire feeder is in **upright** position.

6.7 Rotating the control panel

To use the wire feeder in the horizontal position, the external control panel may be rotated 90°.

1. Remove the two screws for the control panel and remove the panel.
2. Rotate the control panel 90° counter-clockwise.
3. Attach the control panel, ensuring that the small tabs are in the correct position.
4. Fasten the screws.



7 MAINTENANCE



NOTE!

Regular maintenance is important for safe and reliable operation.



CAUTION!

All warranty undertakings from the supplier cease to apply if the customer attempts any work to rectify any faults in the product during the warranty period.

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 worn parts in the mechanism of the wire feed should take place at regular intervals in order to achieve trouble-free wire feeding. Note that if pretensioning is set too hard, this can result in abnormal wear on the pressure roller, feed roller, and wire guide.
- Cleaning of the liners and other mechanical parts of the wire feed mechanism should be carried out at regular intervals or if the wire feed seems slow. Use compressed air for this task.
- Changing nozzles
- Checking the driving wheel
- Changing the cog-wheel package

Bobbin 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



RobustFeed PRO 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 **RobustFeed PRO** control panel and the set speed is presented on the display, in units of m/min or in./min.
- The Warrior™ **welding power source** used together with RobustFeed PRO (see the "INTRODUCTION" chapter in the instruction manual) measures and calculates the mean value of **arc voltage and welding current**. The measured values are transferred from the Warrior™ welding power source to RobustFeed PRO 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 with 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 contacting an authorized service technician.

| Fault symptom | Fault description and corrective actions |
|--|--|
| <p>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.</p>  | <p>Overtemperature warning — The wire feeder is approaching a 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. For more information about the overheating protection, see the "CONTROL PANEL" chapter.</p> <p>Corrective actions:</p> <ul style="list-style-type: none"> • 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. |
| <p>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.</p> <p>Err</p>  | <p>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.</p> <p>Corrective actions:</p> <ul style="list-style-type: none"> • 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. |
| <p>The wire feed is slow/stiff when moving through the wire feed mechanism.</p> | <p>Corrective actions:</p> <ul style="list-style-type: none"> • Clean the liners and other mechanical parts of the wire feed mechanism using pressurized air. |

9 ORDERING SPARE PARTS



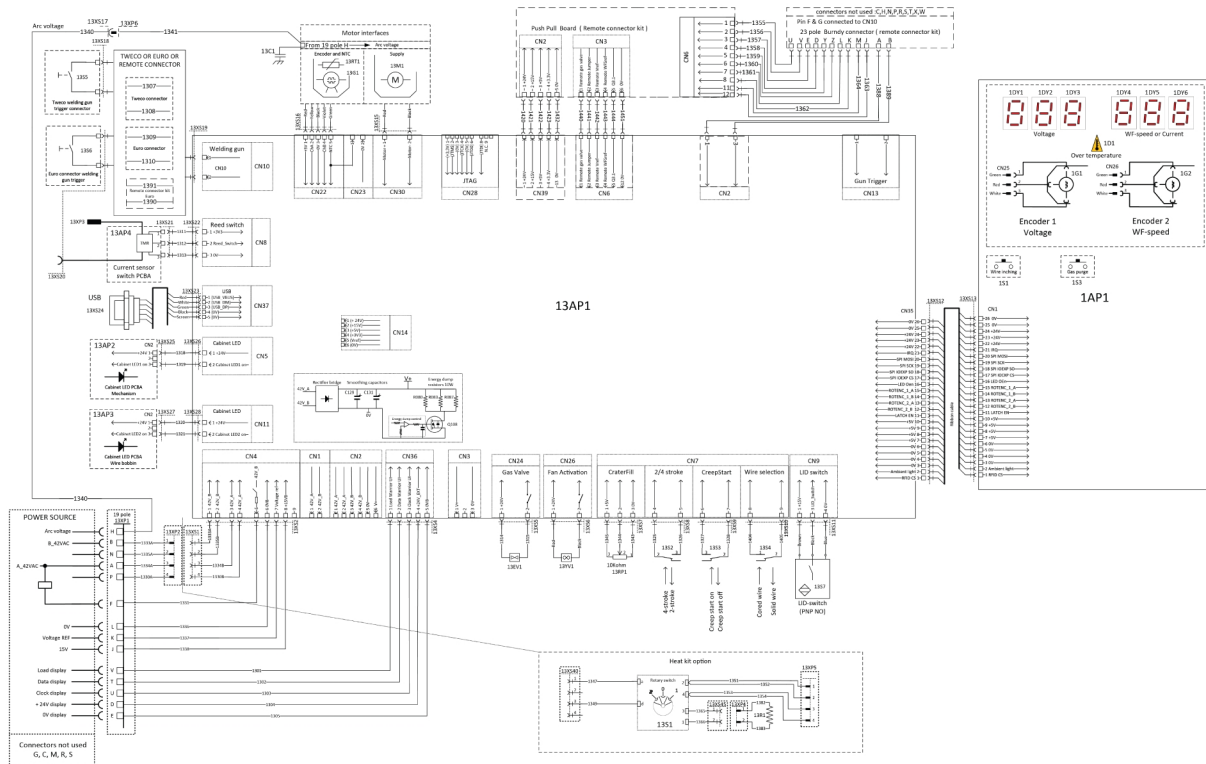
CAUTION!

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

RobustFeed PRO is designed and tested in accordance with the international and European standards **IEC/EN 60974-5** and **IEC/EN 60974-10 Class A**, Canadian standard **CAN/CSA-E60974-5** and US standard **ANSI/IEC 60974-5**. It is the obligation of the service unit which carried out the service or repair work to make sure that the product still conforms to these standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see the back cover of this document. 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.

DIAGRAM




ORDERING NUMBERS






| Ordering number | Denomination | Note |
|-----------------|--------------------------------|---|
| 0445 800 880 | RobustFeed PRO | With EURO connector |
| 0445 800 881 | RobustFeed PRO, Water | With EURO connector and including torch cooling system |
| 0445 800 882 | RobustFeed PRO Offshore | With EURO connector, incl. gas flow meter and heater |
| 0445 800 883 | RobustFeed PRO Offshore, Water | With EURO connector and including torch cooling system, incl. gas flow meter and heater |
| 0445 800 884 | RobustFeed PRO, Tweco | With Tweco 4 connector |
| 0445 800 885 | RobustFeed PRO Offshore, Tweco | With Tweco 4 connector, incl. gas flow meter and heater |
| 0463 659 001 | Spare parts list | RobustFeed PRO |
| 0463 660 001 | Service manual | RobustFeed PRO |


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 (Tweco) 0445 830 881 (Euro) |

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 (Tweco) 0445 830 881 (Euro) |
| Wire diameter 0.070–3/32 in. 1.8–2.4 mm | 0445 822 002 (3 mm) | 0446 080 883 | 0445 830 884 (Tweco) 0445 830 882 (Euro) |

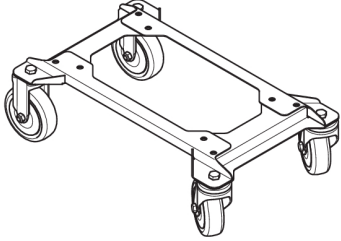
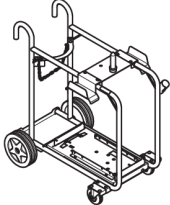
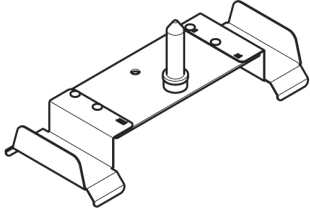
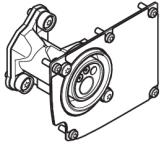
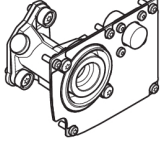
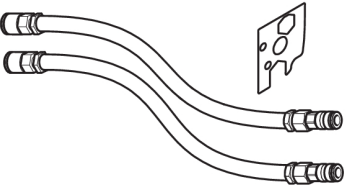

Al wire

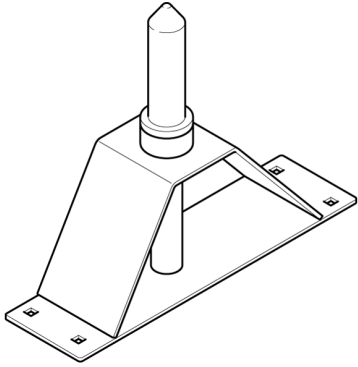
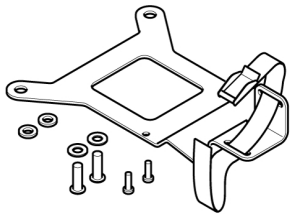
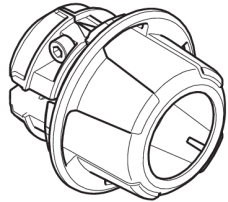
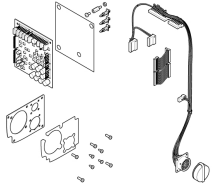
| Wire diameter (in.) (mm) | .023 0.6 | .030 0.8 | .040 0.9/1.0 | .045 1.2 | .052 1.4 | 1/16 1.6 | .070 1.8 | ○ Feed roller |
|--|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|------------------|
| U-groove  | | X | X | | | | | 0445 850 050 |
|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

WEAR PARTS

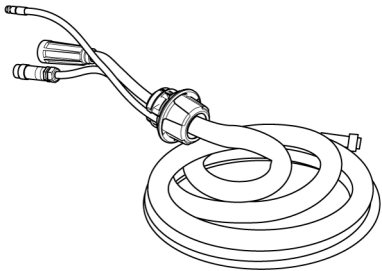
| Inlet wire guide  | Middle wire guide  | Outlet wire guide  |
|--|---|---|
| 0445 822 001 (2 mm) | 0446 080 881 | 0445 830 886 (Tweco) |
| | | 0445 830 885 (Euro) |

ACCESSORIES- CSA

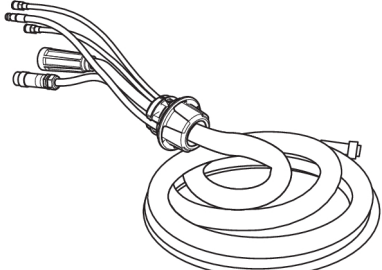
| | | |
|--------------|---|---|
| 0446 081 880 | Wheel kit |  |
| 0349 313 450 | Trolley (compatible with RobustFeed and Warrior™ Feed 304) |  |
| 0349 313 100 | RF retrofit kit (for use with existing Warrior™ trolley with ordering no. 0465 510 880) |  |
| 0446 120 880 | Euro connector including front plate |  |
| 0446 120 882 | Tweco 4 connector including front plate |  |
| 0446 120 884 | Tweco 5 connector including front plate | |
| 0446 123 880 | Liquid cooling kit |  |
| F102 440 880 | Quick connector Marathon Pac™ |  |

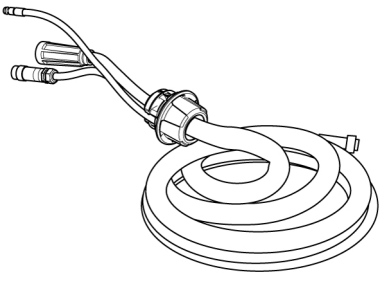
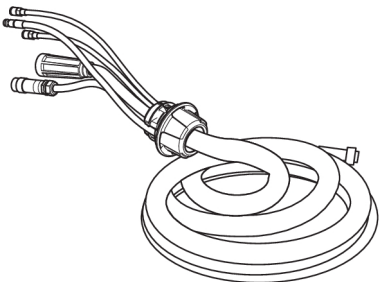
| | | |
|--------------|---|---|
| 0465 508 880 | Guide pin extension kit |  |
| 0446 082 880 | Torch strain relief |  |
| 0446 050 880 | Interconnection strain relief kit (for update of cables without strain relief) |  |
| 0446 056 880 | Remote connector kit - EURO |  |
| 0446 056 881 | Remote connector kit - Tweco | |

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, 70 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.) | |



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