



Robust Feed PRO



Instruction manual



EU DECLARATION OF CONFORMITY

According to
The Low Voltage Directive 2014/35/EU
The EMC Directive 2014/30/EU
The RoHS Directive 2011/65/EU

Type of equipment

Welding wire feeder

Type designation

Robust Feed Pro, from serial number 904 xxx xxxx
Robust Feed Pro Offshore, from serial number 904 xxx xxxx

Robust Feed Pro and Robust Feed Pro Offshore can be equipped with Euro type or Tweco 4 type welding torch connectors.

Robust Feed Pro and Robust Feed Pro Offshore can include welding torch-cooling connections.

Brand name or trademark

ESAB

Manufacturer or his authorised representative established within the EEA**Name, address, and telephone No:**

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Phone: +46 31 50 90 00, www.esab.com

The following harmonised standard in force within the EEA has been used in the design:

EN 60974-5:2013, Arc Welding Equipment – Part 5: Wire feeders
EN 60974-10:2014 Arc Welding Equipment – Part 10: Electromagnetic Compatibility (EMC) requirements

Additional Information:

Restrictive use, Class A equipment, intended for use in location other than residential

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Date

Gothenburg

2019-05-15

Signature

Pedro Muniz

Position

Standard Equipment Director

CE 2019

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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 Safety precautions

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 unauthorised 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!**

Wire feeders are intended to be used with power sources in MIG/MAG mode only.

If used in any other welding mode, such as MMA, the welding cable between wire feeder and power source must be disconnected, or else the wire feeder becomes live or energized.

**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 without having closed both doors!

**WARNING!**

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

**ELECTRIC SHOCK - Can kill**

- 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 having 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. Make sure therefore that there are no inflammable materials nearby
- Do not use on closed containers.

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

PROTECT YOURSELF AND OTHERS!



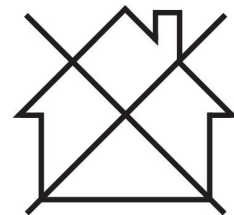
CAUTION!

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.





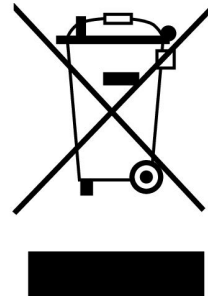
NOTE!

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.



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 Robust Feed PRO wire feed unit is intended for MIG/MAG-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 variants (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 from ESAB's Marathon Pac™ or from 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

Robust Feed PRO is supplied with:

- Instruction manual

3 TECHNICAL DATA

Robust Feed PRO, Valid from serial no. 904-xxx-xxxx	
Power Supply voltage	42 V AC, 50–60 Hz
Power requirement	181 VA
Rated supply current I₁	4.3 A
Settings data:	
Wire feed speed	0.8–25.0 m/min (32–984 in./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 bobbin	300 mm (12 in.)
Wire dimension:	
Fe	0.6–2.0 mm (0.023–5/64 in.)
Ss	0.6–1.6 mm (0.023–1/16 in.)
Al	1.0–1.6 mm (0.040–1/16 in.)
Cored wire	0.9–2.4 mm (0.035–3/32 in.)
Weight:	
Robust Feed PRO	16.9 kg (37.1 lb.)
Robust Feed PRO, Water	17.2 kg (37.8 lb.)
Robust Feed PRO Offshore	17.3 kg (38.1 lb.)
Robust Feed PRO Offshore, Water	17.6 kg (38.7 lb.)
Robust Feed PRO, Tweco	16.9 kg (37.1 lb.)
Robust Feed PRO Offshore, Tweco	17.3 kg (38.1 lb.)
Maximum weight wire spool	18.5 kg (40.8 lbs)
Dimensions (l×w×h) Robust Feed PRO	675×265×418 mm (26.6×10.4×16.5 in.)
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 MIG/MAG welding
Maximum gas pressure	5 bar (0.5 Mpa)
Coolant (for "Robust Feed PRO, Water" and "Robust Feed 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

Robust Feed PRO, Valid from serial no. 904-xxx-xxxx	
60% duty cycle	500 A
100% duty cycle	400 A
Enclosure class	IP44

*) Maximum speed is guaranteed on the whole speed range for all wires. For 2.0 mm solid and 2.4 mm cored wire, speed is guaranteed in the speed range 0.8–8.0 m/min (32–315 in./min). The Robust Feed PRO will be able to achieve higher feeding speed above the 8.0 m/min (315 in./min) but with higher tolerances.

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 rain from all directions.

4 INSTALLATION

The installation must be carried out by a professional.



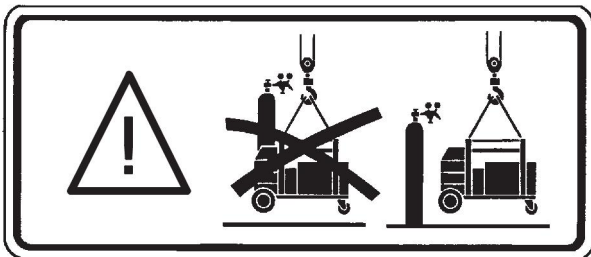
WARNING!

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



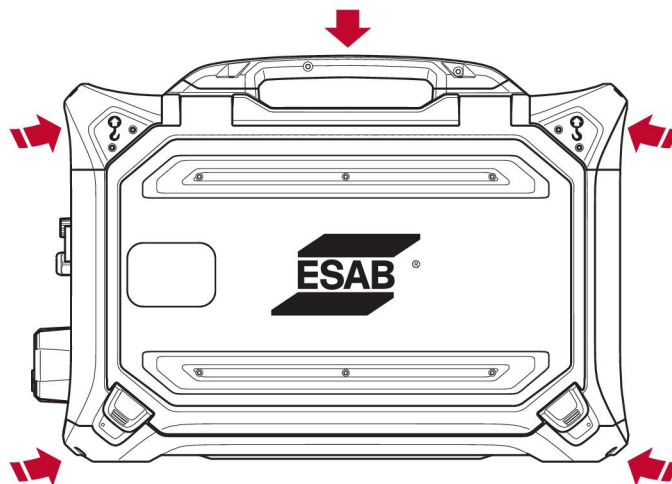
CAUTION!

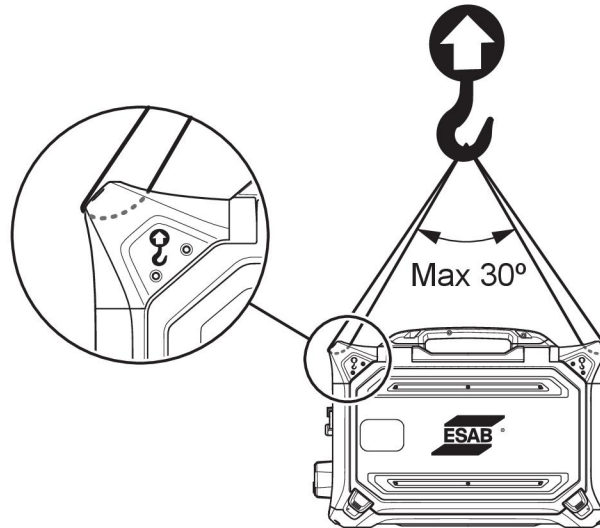
Risk of crushing when lifting the wire feeder. Protect yourself and warn bystanders of the risk.



CAUTION!

To avoid personal injury and damage of equipment, lift using methods and attachment points presented below.





CAUTION!

Do not place heavy objects on or attached to the wire feeder when lifting. The lifting points are rated for a **maximum total weight of 40 kg / 90 lb.** when lifted in the two outer upper lifting handles according to the graphic above!

The 40 kg / 90 lb. approved weight consists of wire feeder plus accessories (standard feeder weight is 17.6 kg / 38.7 lb., for all weights 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!



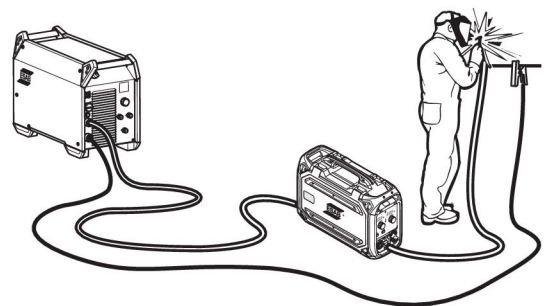
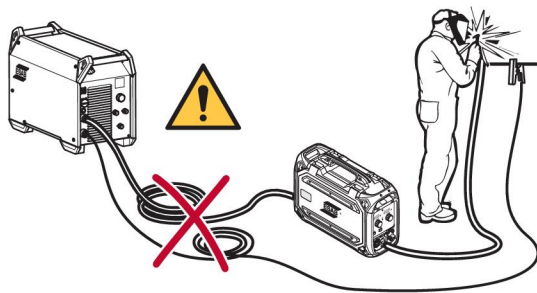
WARNING!

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



NOTE!

When moving the equipment, use handle intended for transportation. Never pull the equipment by the welding torch.



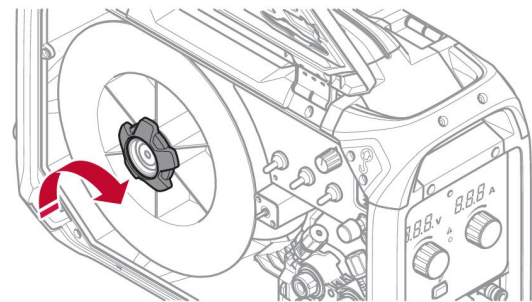
WARNING!

Assure that the side panels are closed during operation.



WARNING!

To prevent the reel from sliding off the brake hub, lock the reel 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:

I_{\max}	Cable area	Cable length	Note
400 A (60% duty cycle)	70 mm ²	2–35 m	19 pole, 19 pole with coolant
350 A (100% duty cycle)			
500 A (60% duty cycle)	95 mm ²	2–35 m	19 pole, 19 pole with coolant
400 A (100% duty cycle)			

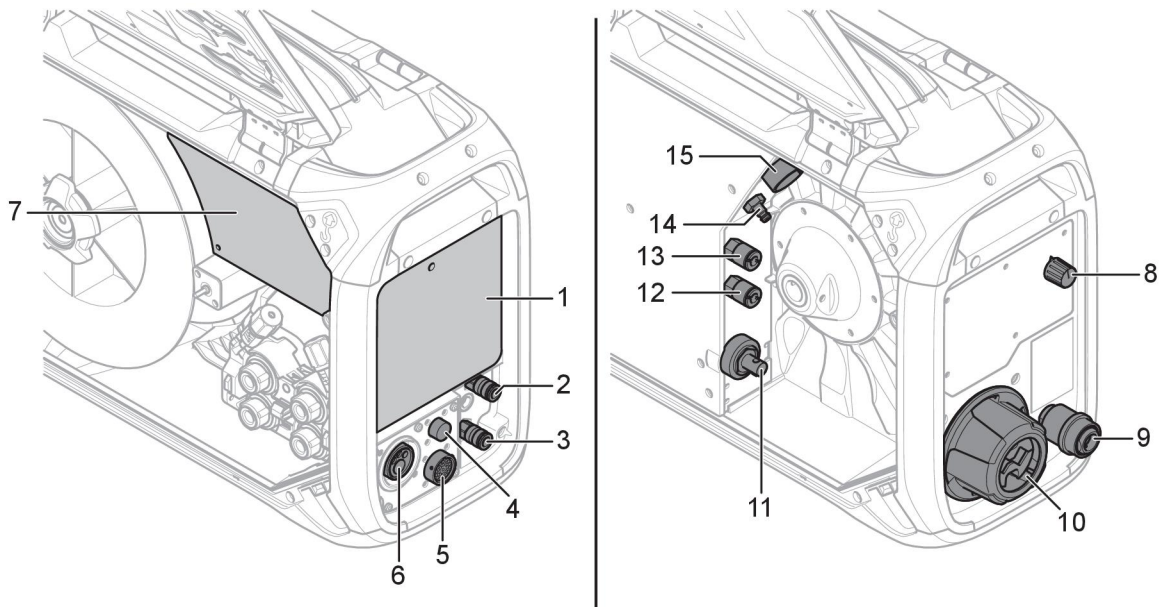
At an ambient temperature of +40 °C and normal 10 minutes cycle:

I_{\max}	Cable area	Cable length	Note
350 A (60% duty cycle)	70 mm ²	2–35 m	19 pole, 19 pole with coolant
300 A (100% duty cycle)			
430 A (60% duty cycle)	95 mm ²	2–35 m	19 pole, 19 pole with coolant
375 A (100% duty cycle)			

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 Tweco trigger cable (only in combination with Tweco torch) 5. Connection for 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 variants) | <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!

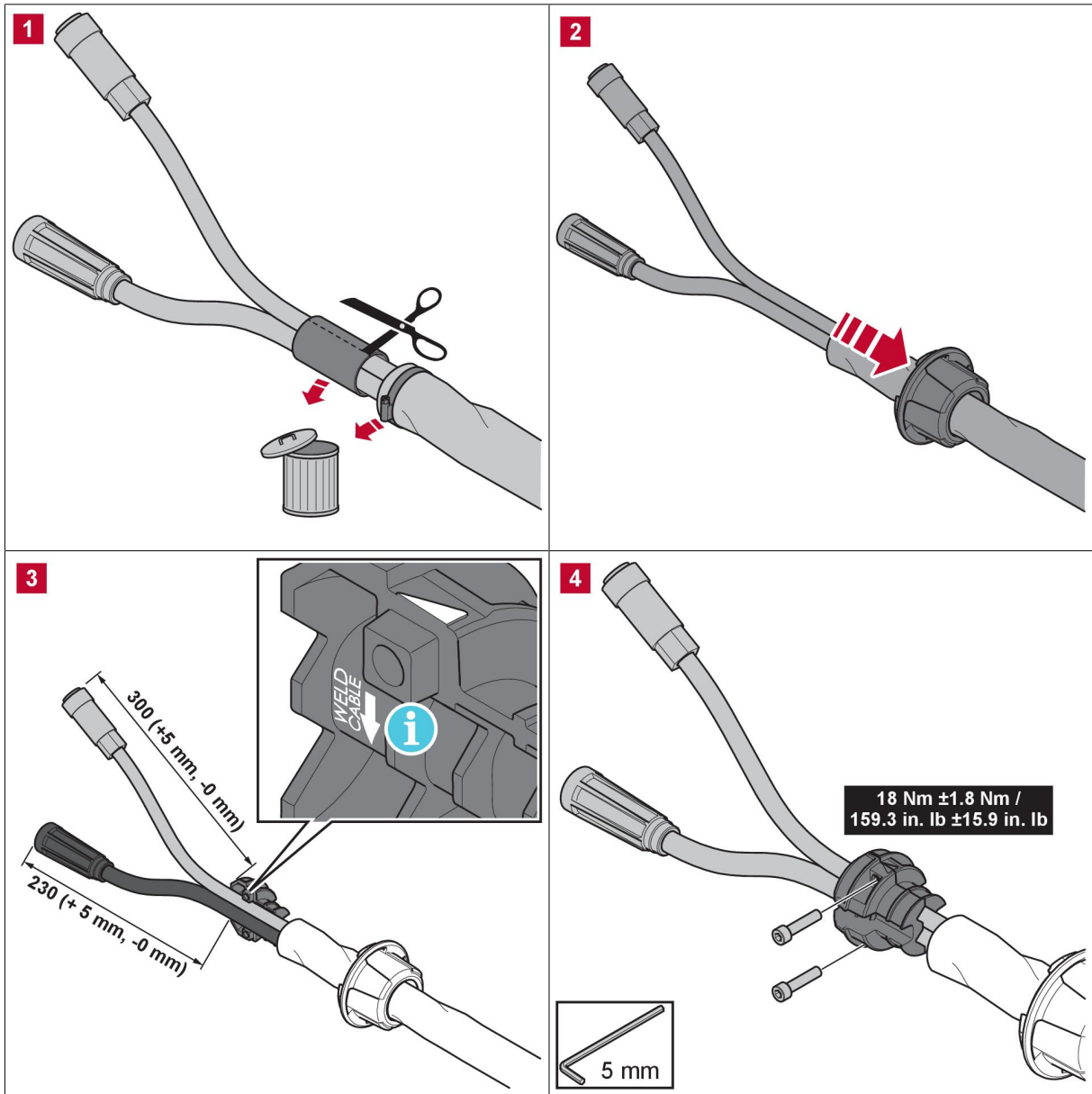
The right and left side doors of the wire feed unit must be closed and locked when welding and/or wire feeding occurs. Never weld or feed the wire without having closed both doors!

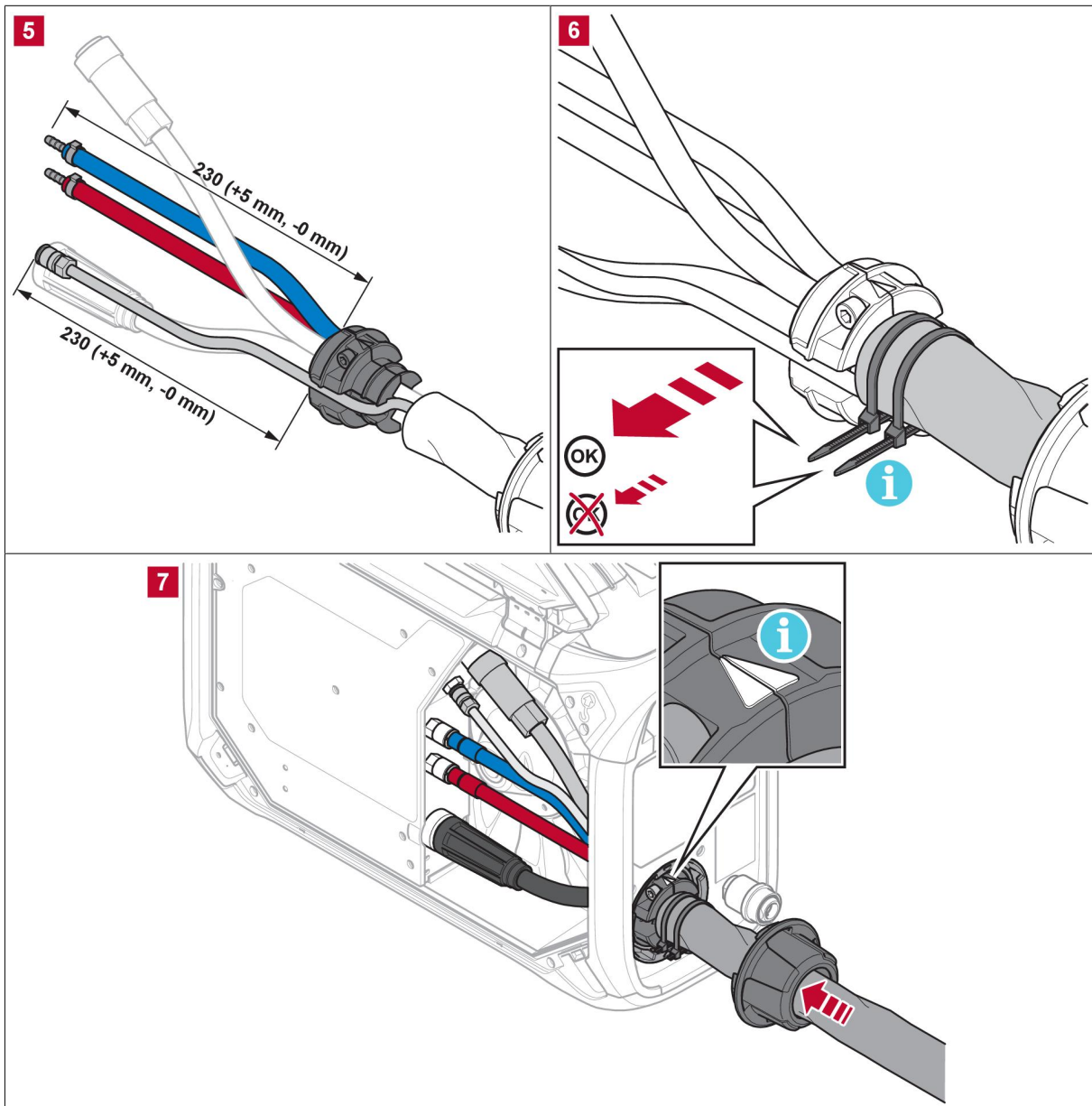
5.3 Cooling liquid connection

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 Retrofit of interconnection strain relief kit





The graphic above shows retrofit of the interconnection strain relief kit (ordering no. 0446 050 880) where the welding current and control cables and, if applicable, also the cooling liquid and shielding gas hoses are routed through the strain relief device.

There is also the possibility to use a pre-assembled interconnection cable kit, including strain relief (see the "ACCESSORIES" appendix).

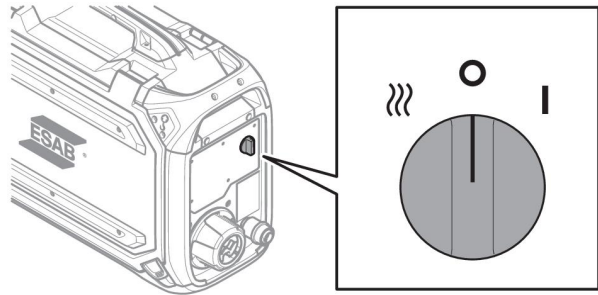


NOTE!

- The interconnection strain relief should be clamped to 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 around the insulating sleeve (9) are tightened properly!

5.5 Heat kit switch (Offshore variants only)

- Welding OFF
- | Welding ON
- ⏏ Heat ON and welding OFF
The bobbin area is heated so that the welding wire is kept dry. Heating of the bobbin area is of great advantage in high humidity or when temperature changes throughout the day.



5.6 Starting procedure

When the wire feed starts, the power source generates 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 off.



NOTE!

It is important that the power source used together with the feeder is set to GMA (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 GMA (MIG/MAG) and restart the power source again!

5.7 Lighting inside the wire feed unit

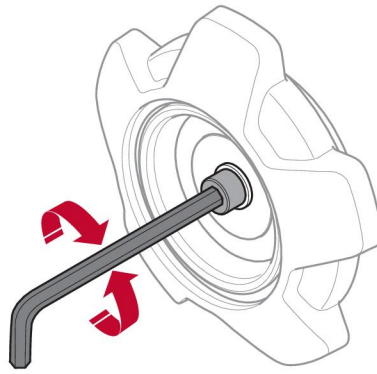
The wire feed unit is equipped with lights inside the cabinet. The lights are turned on automatically when the feeder is started, when any of the parameters on the internal control panel is changed, when wire inching is performed and also after welding. The lights are automatically turned off after a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

5.8 Bobbin brake

The bobbin brake force should be increased just enough to prevent wire feed overrun. The actual brake force needed, is dependent of the wire feed speed and the size and weight of the bobbin spool.

Do not overload the bobbin brake! A too high brake force may overload the motor and reduce the welding result.

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



5.9 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 at the inside of the feeder unit).
6. Close and lock the left door of the wire feeder.



NOTE!

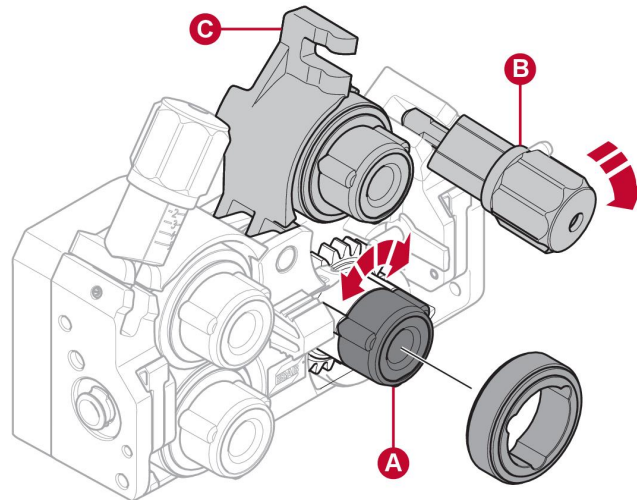
Replace the brake hub nut and the brake hub sleeve if they are worn out and don't lock properly.

5.10 Changing feed rollers

When changing to a different type of wire, the feed rollers should be changed to match the new type of wire. For information about correct feed roller depending on wire diameter and type, see the WEAR PARTS appendix. (For a tip about easy access to necessary 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 exchanged, 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 and thereby releasing the swing arms (C).



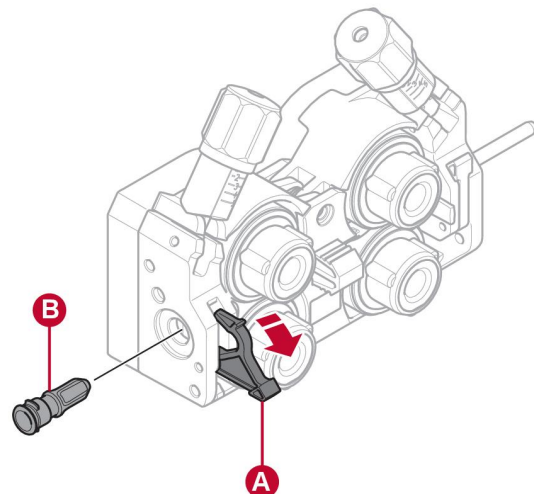
4. Remove the feed rollers and install the correct ones (according to the WEAR PARTS appendix).
5. Reapply the pressure on the feed rollers, by pushing the swing arms (C) down and secure them using the tensioner units (B).
6. Lock the rollers by rotating the roller quick locks (A).
7. Close and lock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

5.11 Changing the wire guides

When changing to a different type of wire, the wire guides may have 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 a tip about easy access to necessary wear parts, see the "Wear parts storage compartment" section in this manual.)

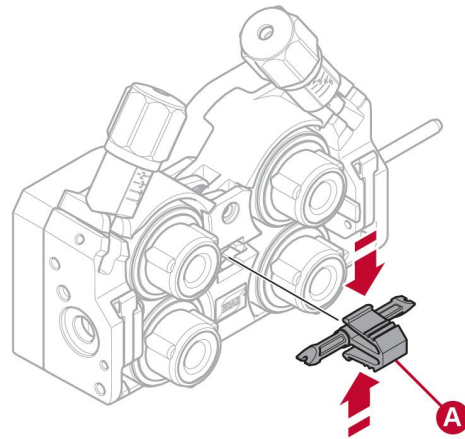
5.11.1 Inlet wire guide

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



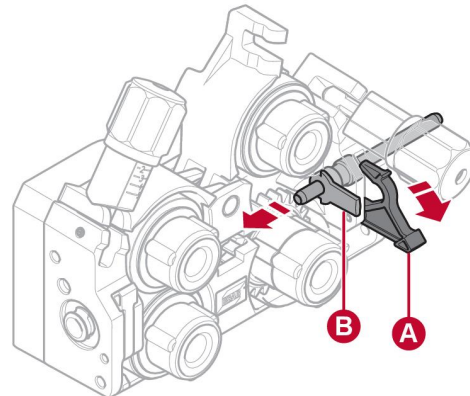
5.11.2 Middle wire guide

1. Apply a little pressure on the middle wire guide clip and pull out 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.



5.11.3 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 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).



5.12 Roller pressure

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

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.

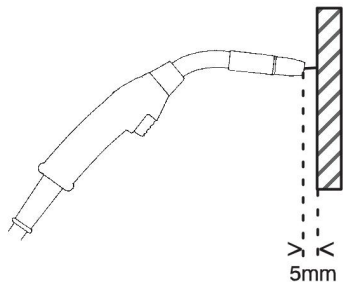


Figure A

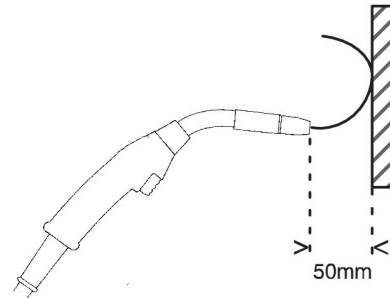


Figure B

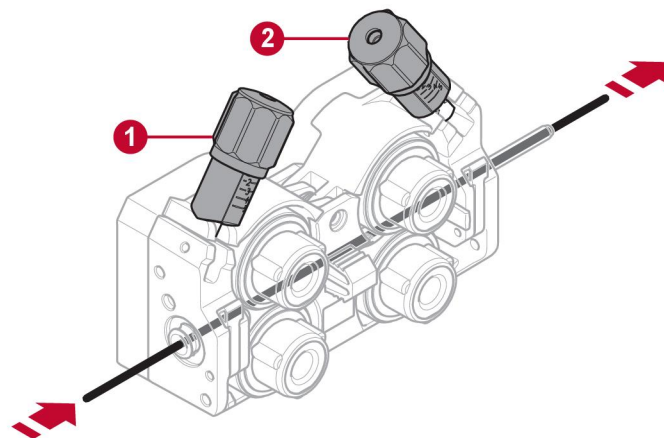
To check that the feed pressure is set correctly, you can feed out the wire against an insulated object, e.g. a piece of wood.

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

If you hold the welding torch approx. 50 mm from the piece of wood, the wire should be fed 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. In case of long, dirty or worn torch cables, the pressure setting may have to be increased. Always check the roller pressure setting in each specific case 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.)		.023	.030	.040	.045	.052	1/16	.070	5/64	3/32	
		(mm)		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									

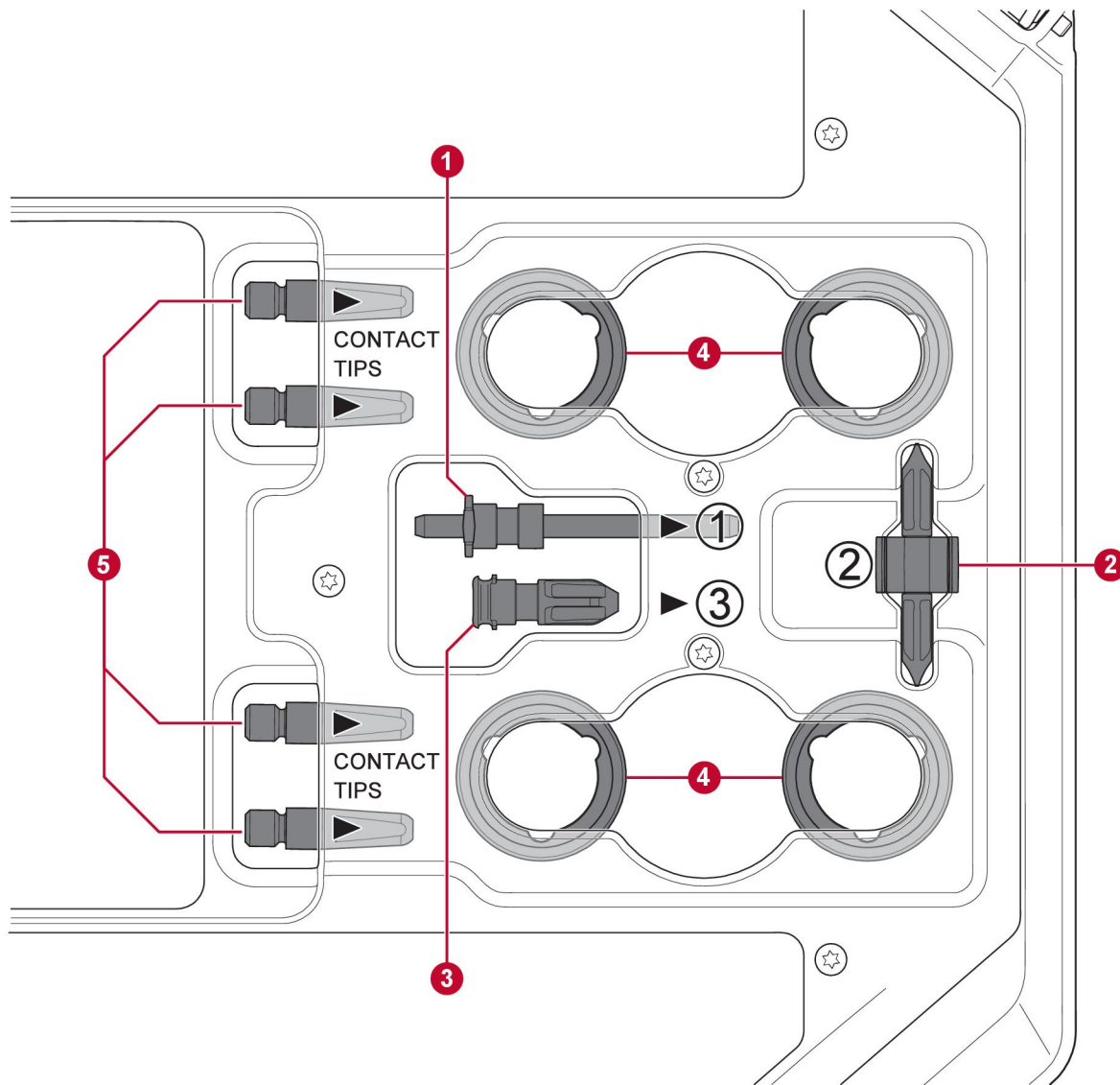


1. Tensioner unit 1

2. Tensioner unit 2

5.13 Wear parts storage compartment

A wear parts storage compartment can be found on the inside of the left door of the wire feeder, for easy access to an extra set of rollers and wire guides.



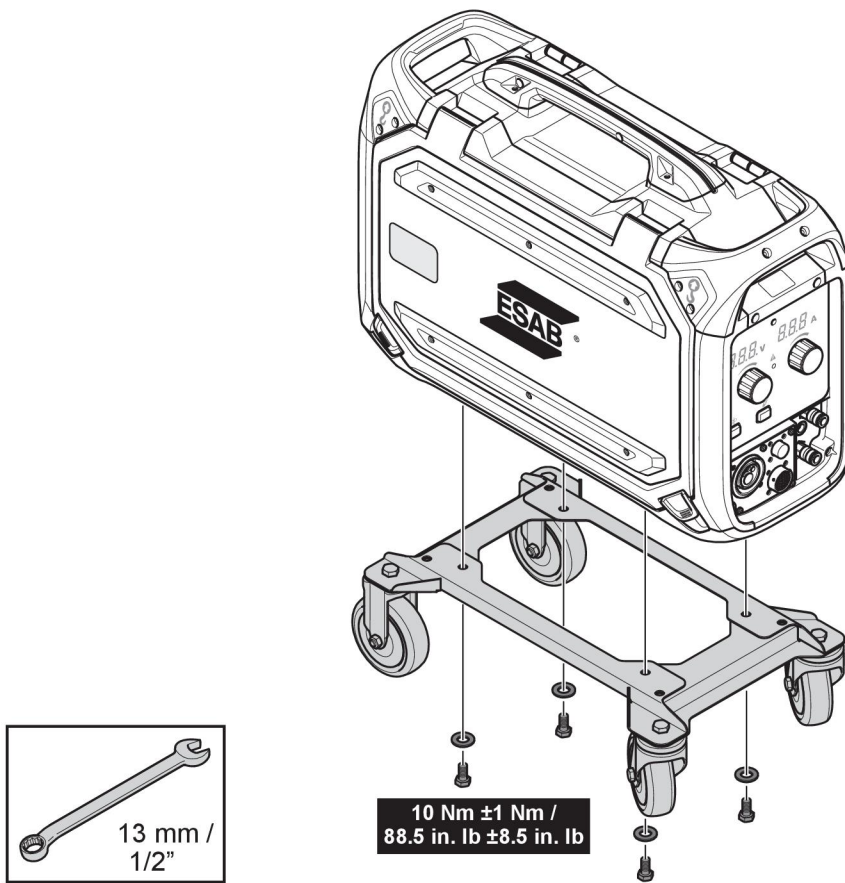
- | | |
|----------------------|--|
| 1. Inlet wire guide | 4. Feed rollers (×4 pcs) |
| 2. Middle wire guide | 5. Contact tips for the welding torch (×4 pcs) |
| 3. Outlet wire guide | |

5.14 Attachment of wheel kit

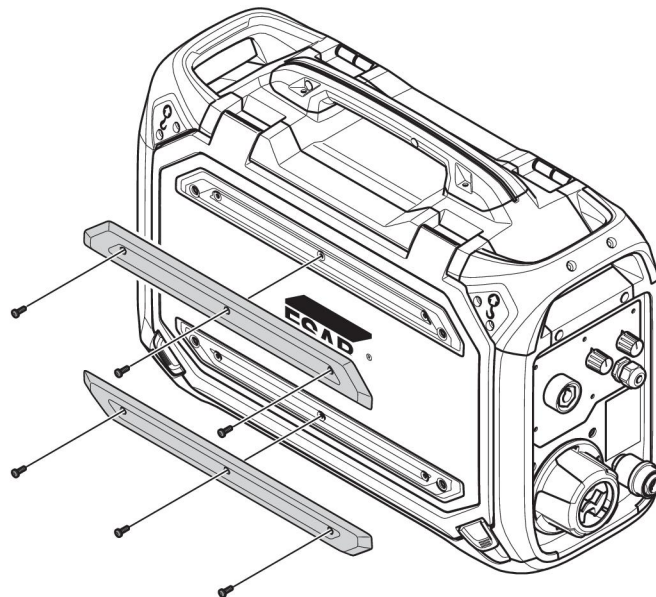
5.14.1 Attachment of the wheels to the wheel kit frame

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.

5.14.2 Wire feed unit in vertical position

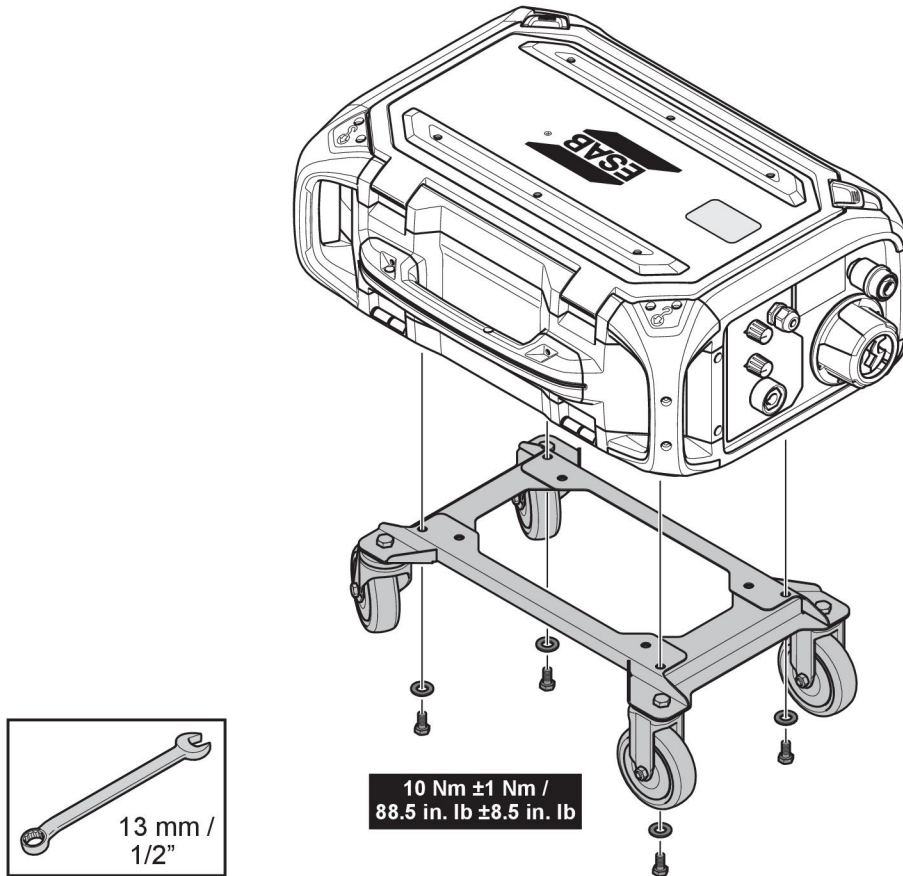


5.14.3 Wire feed unit in horizontal position



NOTE!

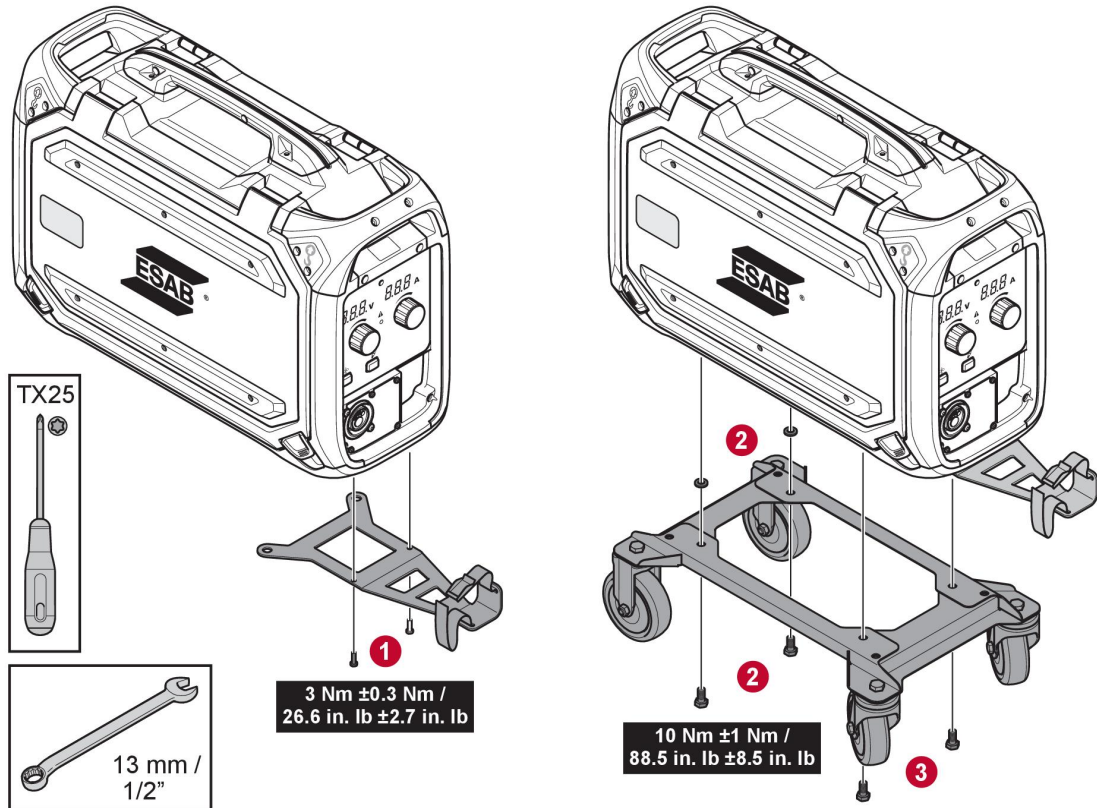
To be able to attach the wire feeder in horizontal position on the wheel kit, the two bumpers on the wire feeder door must be removed!



5.15 Attachment of both wheel kit and the torch strain relief accessory

If the torch strain relief accessory are to be used in connection to the wheel kit being attached in vertical position, the assembly has to be made 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. Make sure 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 closer to the front end of the wire feeder.



6 CONTROL PANEL

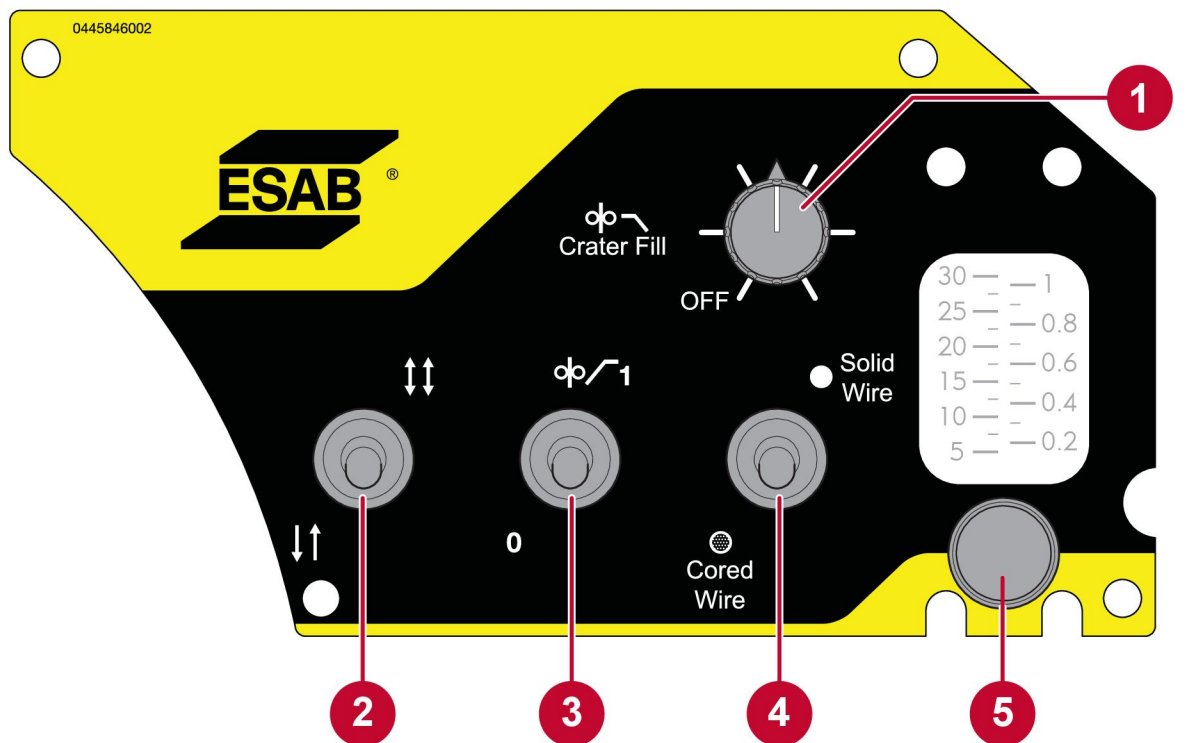
6.1 Pro

6.1.1 External control panel



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

6.1.2 Internal control panel



1. Knob for continuously adjustment of crater fill time from 0 (OFF) to 5 seconds
2. Switch for selection of 2-stroke or 4-stroke
3. Switch for selection of creep start
4. Switch for 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 in the wire feed unit is factory set to metric (m/min) or imperial (inch/min), dependent on country/region. There is also a possibility to set the unit of measurement via a so-called "hidden function". To change the unit of measurement from metric to imperial or vice versa, do as follows:

1. Access the hidden functions by keeping the wire inching and the gas purging buttons depressed simultaneously for 3 seconds. The left display will show a flashing "C" letter (which denotes 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 depressed during 3 seconds.

Function letter Function

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

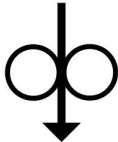
6.3 Function explanations

Open the door for access to the 2-stroke/4-stroke, the solid/cored wire, the creep start and the crater fill functions and also 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 occurs for as long as the button is held depressed and occurs without voltage or wire feed starting.



Wire inching

Wire inching is used when one needs to feed wire without welding voltage being applied. 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 presented on the display and a text "m/min" or "inch/min" next to the display shows the used unit.



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 terminates 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 and 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 the welding terminates. When the switch is released the gas post-flow starts.

Wire selection – Cored wire



When cored wire is selected, a constant burn back 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 when welding terminates. 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 (0–5 seconds), before entering SCT or burn back.

The functionality differs somewhat depending on if 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 lit, it indicates that the wire feeder is **getting near** to 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.

Error The overtemperature indicator is lit 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 cleared automatically when the wire feeder has cooled down and is ready for use again.

6.5 Measured values

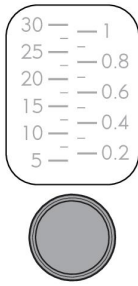
**Measured voltage**

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

**Measured current**

Measured value in the display for welding current A is 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 presented on the gas flow meter above the knob.



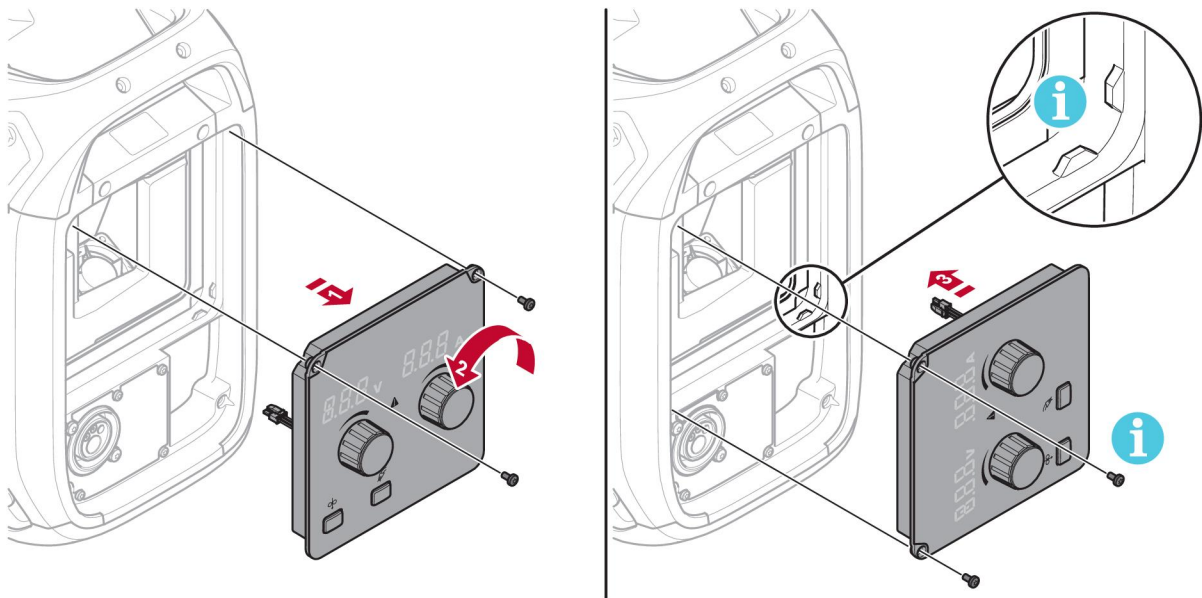
NOTE!

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

For use of the wire feeder in horizontal position there is a possibility to rotate the external control panel 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 making sure 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

Check regularly that the wire feed unit is not clogged with dirt.

- Cleaning and replacement of the wire feed unit mechanism's worn parts should take place at regular intervals in order to achieve trouble-free wire feed. Note that if pre-tensioning is set too hard, 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 slow.
- Changing nozzles
- Checking 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. Blow the wire guide clean regularly and clean the contact tip.

7.2 Calibration and validation of measured values


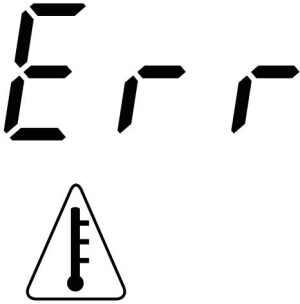
Robust Feed PRO displays the measured values, arc voltage and welding current, as **rectified arithmetic mean values** (measure value formation).

- The **wire feed speed** is set on the **Robust Feed 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 Robust Feed 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 Robust Feed PRO via a digital bus.

The accuracy of the set and measured values is recommended to be calibrated and validated periodically, to check if 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 accepted deviation for each displayed parameter can be found in the service manual.

8 TROUBLESHOOTING

Perform these checks and inspections before sending for an authorised 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 lit but there is no "Err" text on the display.</p> 	<p>Overtemperature warning – The wire feeder is getting near to 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.)</p> <p>Corrective actions:</p> <ul style="list-style-type: none"> • Check the liner, clean using pressurized air and replace the liner if damaged or worn out. • Check the wire pressure setting and adjust if needed. • Check the drive rolls for wear and replace if needed. • Make sure 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 replacement of the torch, contact an ESAB authorised service technician.
<p>The overheating protection trips frequently, more precisely the overtemperature indicator on the front panel is lit and the text "Err" is visible in the display.</p> 	<p>Overtemperature error – The wire feeder has reached a critical temperature level and the ongoing weld is stopped. (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 damaged or worn out. • Check the wire pressure setting and adjust if needed. • Check the drive rolls for wear and replace if needed. • Make sure 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 damaged or worn out. • If the fault persists despite performing these actions, try replacing the torch. • If the fault persists despite replacement of the torch, contact an ESAB authorised service technician.
<p>The wire feed is slow/stiff 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



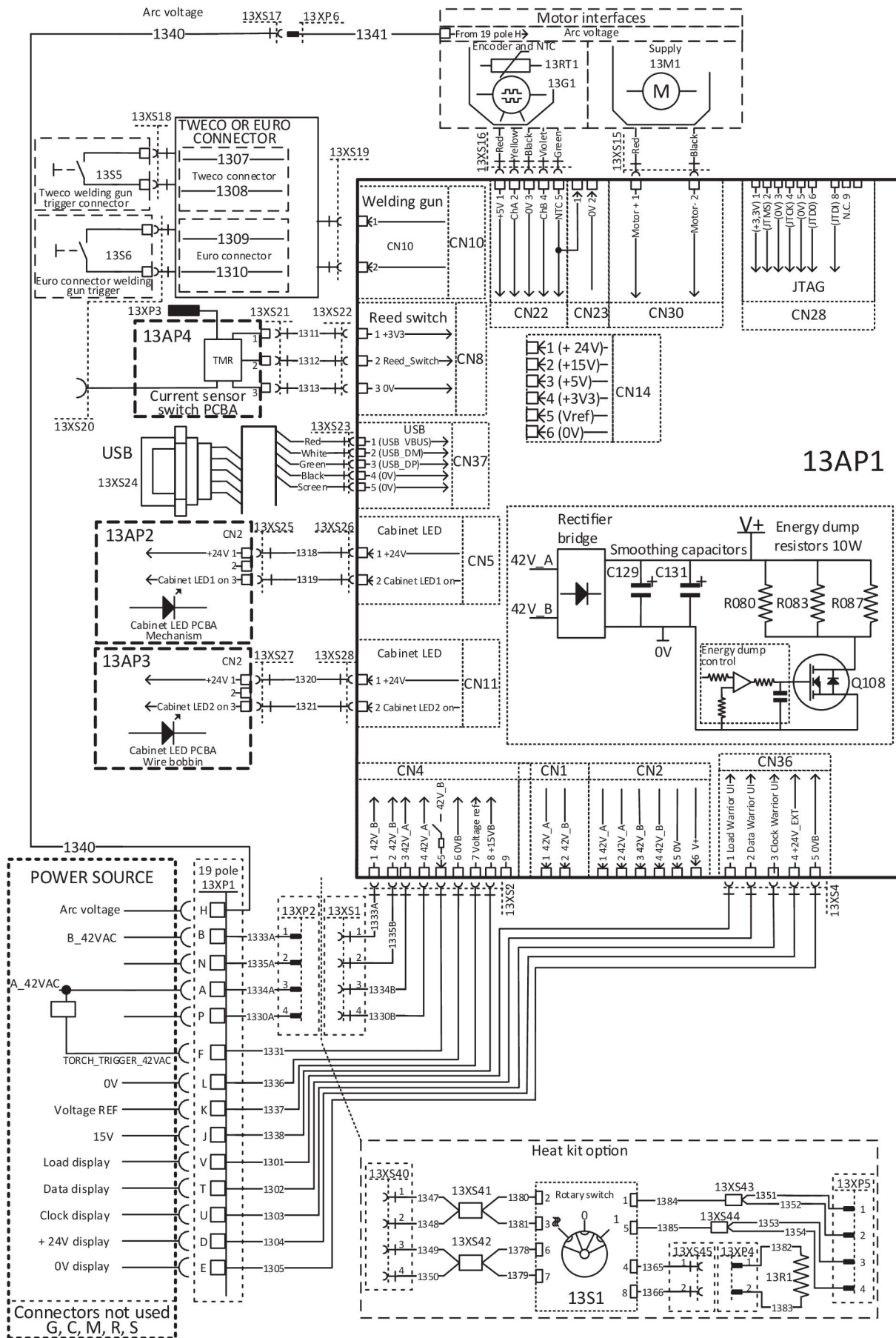
CAUTION!

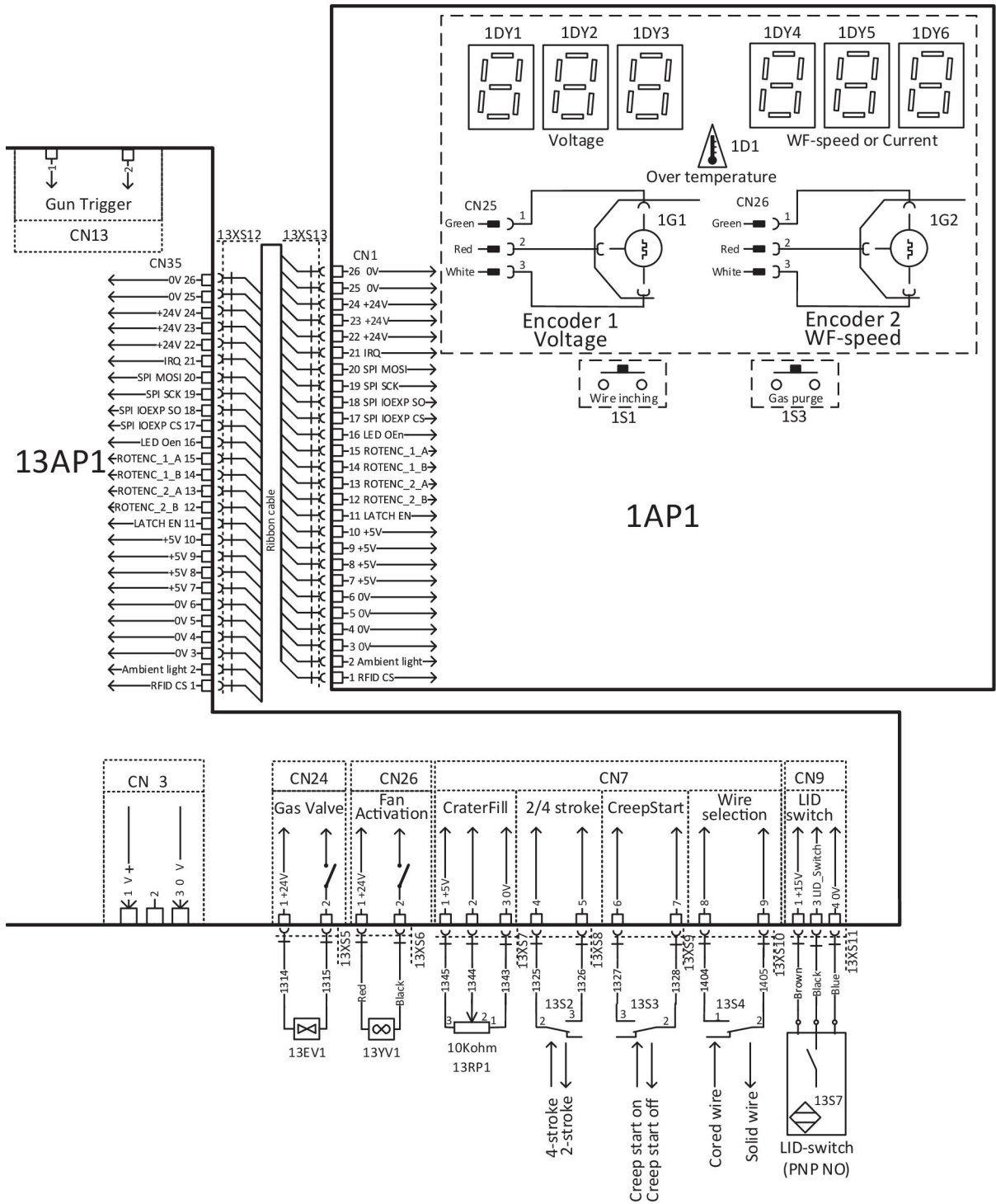
Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

Robust Feed 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 has carried out the service or repair work to make sure that the product still conforms to the mentioned 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.

DIAGRAM







ORDERING NUMBERS






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

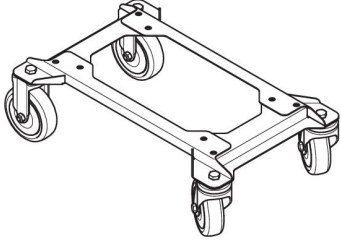
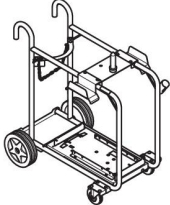
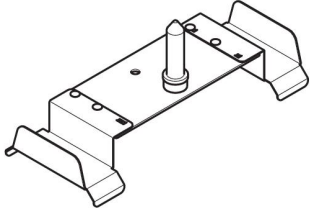
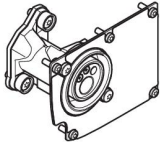
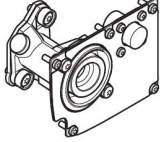
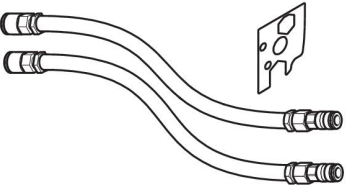

Wire diameter (in.) (mm)	.040 0.9/1.0	.045 1.2	.052 1.4	1/16 1.6	.070 1.8	5/64 2.0	3/32 2.4	 Feed roller
V-K-knurled 	X	X						0445 850 030
		X						0445 850 031
		X	X					0445 850 032
				X				0445 850 033
					X			0445 850 034
						X		0445 850 035
							X	0445 850 036

	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)

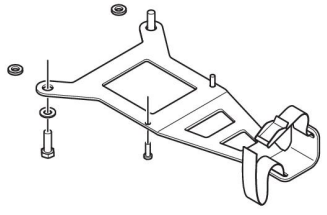
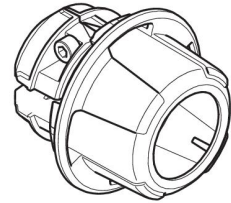
Al wire

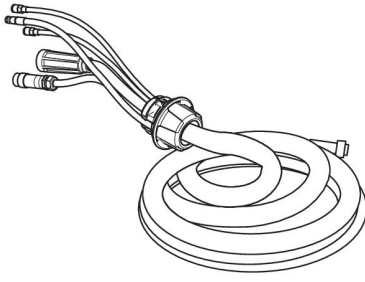
Wire diameter (in.) (mm)	.023 0.6	.030 0.8	.040 0.9/1.0	.045 1.2	.052 1.4	1/16 1.6	.070 1.8	 Feed roller
U-groove 		X	X					0445 850 050
			X	X				0445 850 051
				X		X		0445 850 052
Inlet wire guide 	Middle wire guide 			Outlet wire guide 				
0445 822 001 (2 mm)	0446 080 881			0445 830 886 (Tweco) 0445 830 885 (Euro)				

ACCESSORIES

0446 081 880	Wheel kit	
0349 313 450	Trolley (compatible with Robust Feed 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™	

ACCESSORIES

0446 082 880	Torch strain relief	
0446 050 880	Interconnection strain relief kit (for update of cables without strain relief)	

Interconnection cable with pre-assembled strain relief		
0446 160 880	70 mm ² , gas cooled, 2.0 m	
0446 160 881	70 mm ² , gas cooled, 5.0 m	
0446 160 882	70 mm ² , gas cooled, 10.0 m	
0446 160 883	70 mm ² , gas cooled, 15.0 m	
0446 160 884	70 mm ² , gas cooled, 25.0 m	
0446 160 885	70 mm ² , gas cooled, 35.0 m	
0446 160 887	70 mm ² , gas cooled, 20.0 m	
0446 160 890	70 mm ² , liquid cooled, 2.0 m	
0446 160 891	70 mm ² , liquid cooled, 5.0 m	
0446 160 892	70 mm ² , liquid cooled, 10.0 m	
0446 160 893	70 mm ² , liquid cooled, 15.0 m	
0446 160 894	70 mm ² , liquid cooled, 25.0 m	
0446 160 895	70 mm ² , liquid cooled, 35.0 m	
0446 160 980	95 mm ² , gas cooled, 2.0 m	
0446 160 981	95 mm ² , gas cooled, 5.0 m	
0446 160 982	95 mm ² , gas cooled, 10.0 m	
0446 160 983	95 mm ² , gas cooled, 15.0 m	
0446 160 984	95 mm ² , gas cooled, 25.0 m	
0446 160 985	95 mm ² , gas cooled, 35.0 m	
0446 160 990	95 mm ² , liquid cooled, 2.0 m	
0446 160 991	95 mm ² , liquid cooled, 5.0 m	
0446 160 992	95 mm ² , liquid cooled, 10.0 m	
0446 160 993	95 mm ² , liquid cooled, 15.0 m	
0446 160 994	95 mm ² , liquid cooled, 25.0 m	
0446 160 995	95 mm ² , liquid cooled, 35.0 m	



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