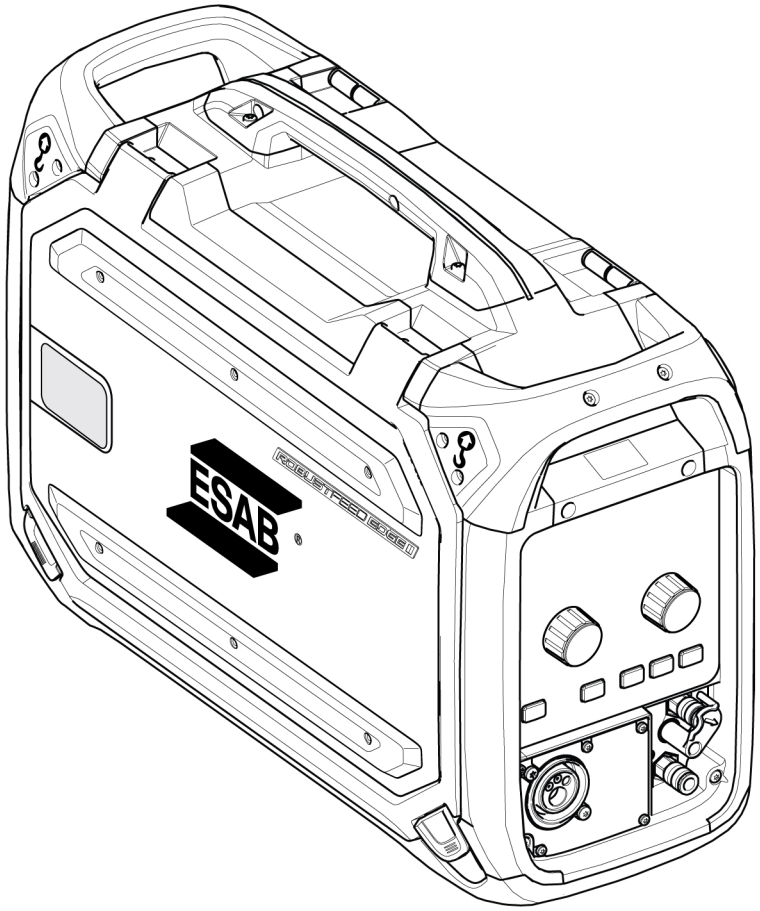
ROBUSTFEED EDGE



Instruction manual

0463 773 001 GB 20240418

Valid for: Serial number:
OP138YY-XXXXXX

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
Arc welding wire feeder

Type designation
RobustFeed Edge, from serial number OP 138 YY XX XXXX
X and Y represents digits, 0 to 9 in the serial number, where YY indicates year of production.

Brand name or trademark
ESAB

Manufacturer or his authorised representative established within the EEA
ESAB AB
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden
Phone: +46 31 50 90 00, www.esab.com

The following EN standards and regulations in force within the EEA has been used in the design:

EN IEC 60974-5:2019	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 locations 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 and environmental requirements stated above.

Place/Date
Göteborg
2021-10-07

Signature
Pedro Muniz
Standard Equipment Director

CE

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

If equipped with ESAB cooler
Use ESAB approved coolant only. Non-approved coolant might damage the equipment and jeopardize product safety. In case of such damage, all warranty undertakings from ESAB cease to apply.

For ordering information, see the "ACCESSORIES" chapter in the instruction manual.

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.

HOT SURFACE - Parts can burn

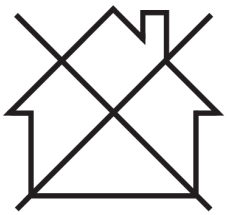
- Do not touch parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or insulated welding gloves to prevent burns.

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

PROTECT YOURSELF AND OTHERS!

CAUTION!
This product is solely intended for arc welding.

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.

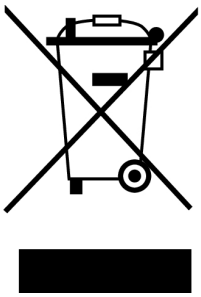


NOTE!
Dispose of electronic equipment at the recycling facility!

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

2.1 Overview

The **RobustFeed Edge** wire feeder units is intended for MIG/MAG welding together with Warrior Edge 500.

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

The wire feed unit is sealed and contains a four-wheel drive wire feed mechanism as well as control electronics.

It can be used together with standard Ø 200 mm and Ø 300 mm wire bobbin or with ESAB's Marathon Pac™ with a wire adapter to feed the wire.

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.

2.2 Equipment

RobustFeed Edge is supplied with:

- 2 admin cards
- 3 user cards
- Drive rolls:
  - 0.9/1.0 mm (0.040 in.)
  - 1.2 mm (0.045 in.)
- Wire guides: 0.6-1.6 mm (0.023-1/16 in.)
- Instruction manual
- Quick start guide

3 TECHNICAL DATA

ROBUSTFEED EDGE	
Power Supply voltage	60 VDC
Power requirement	234 W
Rated supply current I_1	3.9 A
Torch connection	EURO, Tweco #4
Wire feed speed	0.8–25.0 m/min (32–984 in./min)
Max. diameter wire bobbin	300 mm (12 in.)
Weight:	
RobustFeed Edge BX	16.8 kg (37 lb.)
RobustFeed Edge CX	17.5 kg (38.6 lb.)
Maximum weight wire spool	20 kg (44 lb.)
Dimensions (l×w×h)	595 × 250 × 430 mm (23.4 × 9.8 × 16.9 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
Gas flow range for RobustFeed Edge BX	5-35 l/min (11-74 CFH)
Gas pressure for RobustFeed Edge CX	3-5 bar (43-73 psi)
Coolant	ESAB's ready mixed coolant
Maximum coolant pressure	5 bar (73 psi)
Permissible load	
60% duty cycle	500 A
100% duty cycle	400 A
Enclosure class	IP54

Duty cycle
The duty cycle refers to the time as a percentage of a ten-minute period that you can weld 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.

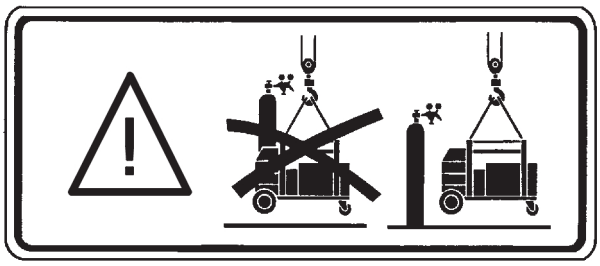
Equipment marked **IP54** is designed for indoor and outdoor applications. It is protected in all directions against the dust accumulation and water exposure either through splashing or dripping.

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 S.

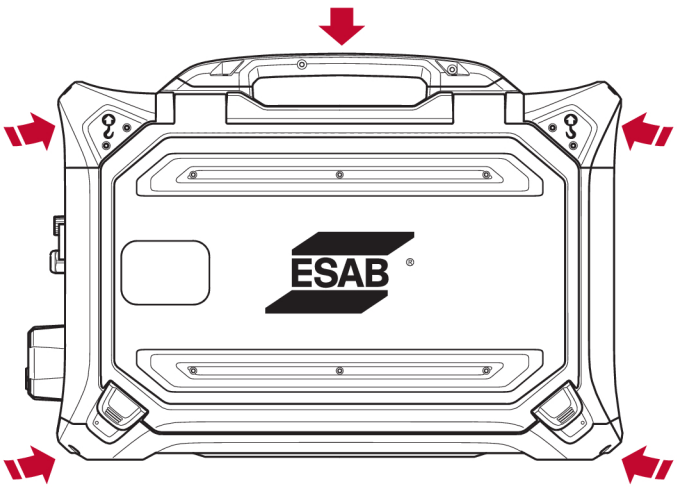
CAUTION!
This product is intended for industrial use. In a domestic environment this product may cause radio interference. It is the user's responsibility to take adequate precautions.

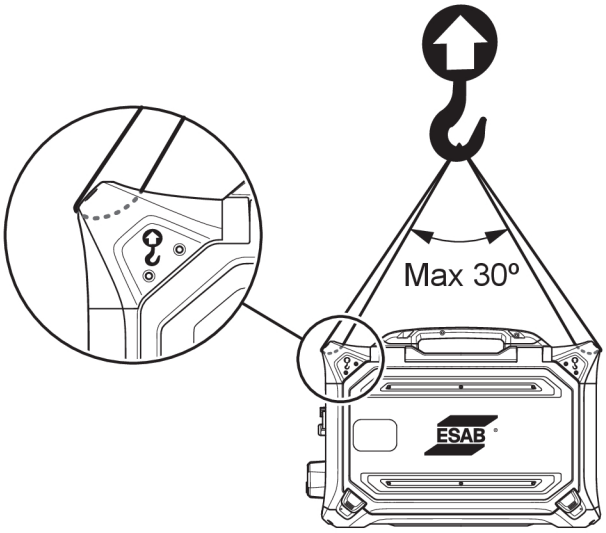


4.1 Lifting instructions

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

CAUTION!
To avoid personal injury and 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!

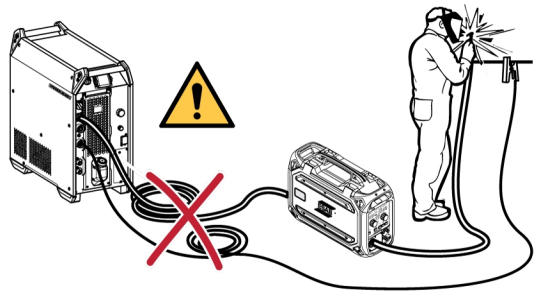
The 40 kg / 90 lb. approved weight consists of wire feeder plus accessories (standard feeder weight is 17.5 Kg / 38.6 lb., for all weights see the TECHNICAL DATA chapter).

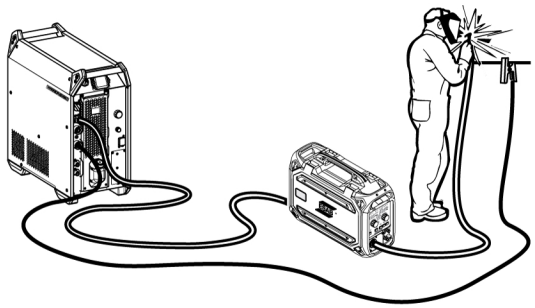
5 OPERATION

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!

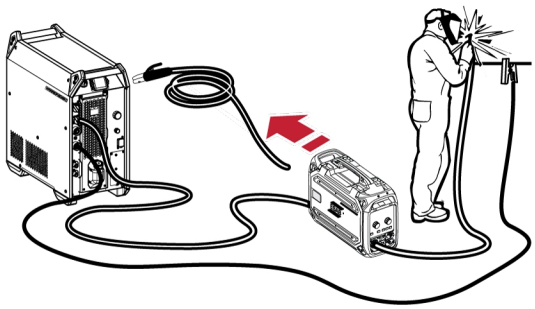
WARNING!
To avoid shock, do not touch electrode wire or parts in contact with it, or uninsulated cable or connections.

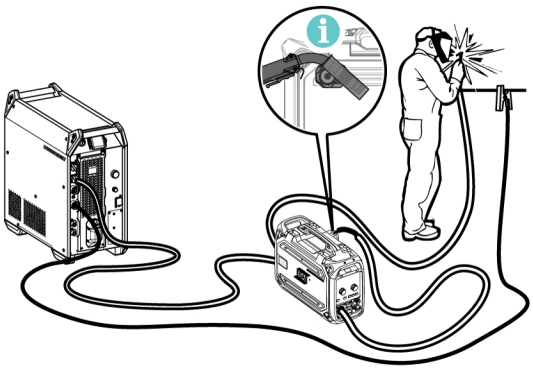
NOTE!
When moving the equipment, use handle intended for transportation. Never pull the equipment by the welding torch.





WARNING!
Wire feeders are intended to be used with power sources in MIG/MAG and MMA mode. If used in MIG/MAG, the MMA holder must be disconnected from the wire feeder and the OKC must be covered. If used in MMA, the MIG/MAG torch becomes energized, the torch must be kept in the torch holder (if available) or disconnected.





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:

Cable area	Duty cycle		Voltage loss / 10 m
	100%	60%	
50 mm²	290	320	0.35 V / 100 A
70 mm²	360	400	0.25 V / 100 A
95 mm²	430	500	0.19 V / 100 A

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

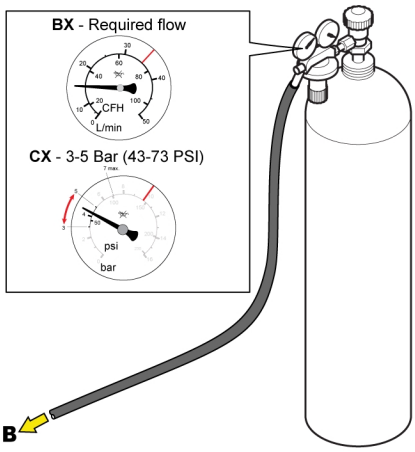
Cable area	Duty cycle		Voltage loss / 10 m
	100%	60%	
50 mm²	250	280	0.37 V / 100 A
70 mm²	310	350	0.27 V / 100 A
95 mm²	370	430	0.20 V / 100 A

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

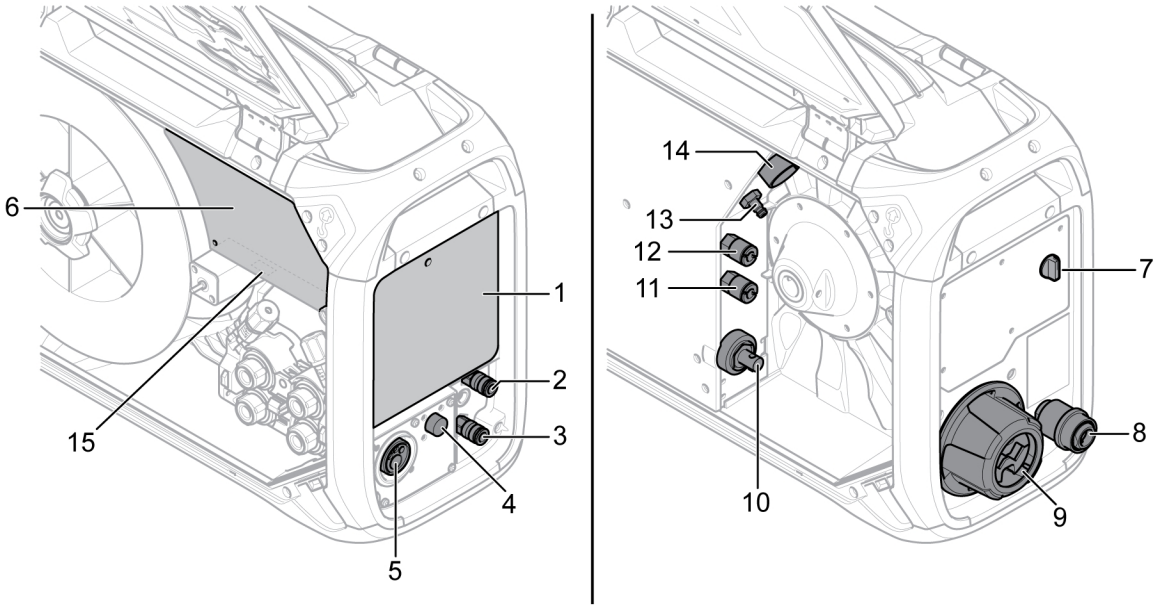
5.2 Recommended gas regulators

RobustFeed BX
The gas cylinder should be equipped with a flow regulator. The required flow should be set on the flow regulator to perform the welding.

RobustFeed CX
The gas cylinder should be equipped with a pressure regulator. Set the pressure regulator in the range of 3-5 bar (43-73 psi). The pressure should not exceed 5 bar (73 psi) and the flow should be adjusted on the internal control panel.



5.3 Connections and control devices



1. External control panel (see the "CONTROL PANEL" chapter)
2. Connection for cooling liquid to the welding torch
3. Connection for cooling liquid from the welding torch
4. Connection for Tweco trigger cable (only in combination with Tweco torch)
5. Connection for the welding torch (Euro or Tweco type)
6. Internal control panel (see the "CONTROL PANEL" chapter)
7. Heater/Feeder on-off switch
8. Wire inlet adapter to use with Marathon Pac™
9. Interconnection strain relief for cables from power source
10. Connection for welding current from power source (OKC)
11. Connection for cooling liquid to the power source
12. Connection for cooling liquid from the power source
13. Connection for shielding gas
14. Connection for control cable from power source
15. USB port

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!

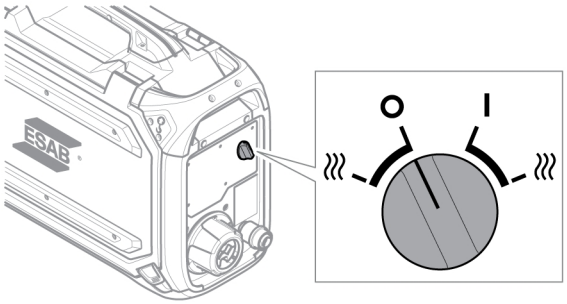
5.4 Cooling liquid connection

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.

5.5 Heater/Feeder ON-OFF switch



Indicator	Description	Indicator	Description
O	**Feeder OFF**	I	**Feeder ON**
)))	**Heat ON and feeder 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.	)))	**Heat ON and feeder ON**

5.6 Lighting inside the wire feed unit

The wire feed unit is equipped with lights inside the cabinet.

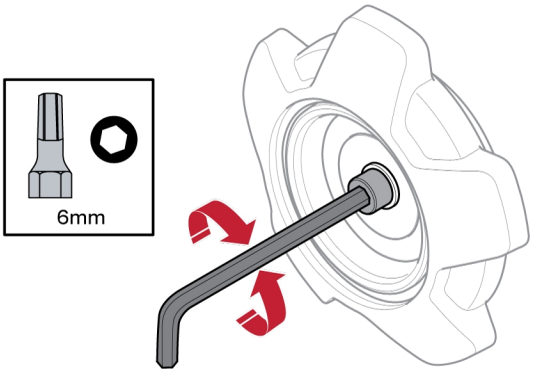
1. The feeder mechanism light turns on and off when the door is opened and closed respectively.
2. The wire bobbin light turns on when the door is opened and live welding is in progress. It turns off when the welding has been stopped or the door has been closed.

5.7 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.



5.8 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).

> **NOTE!**
> Replace the brake hub nut and the brake hub sleeve if they are worn out and do not lock properly.

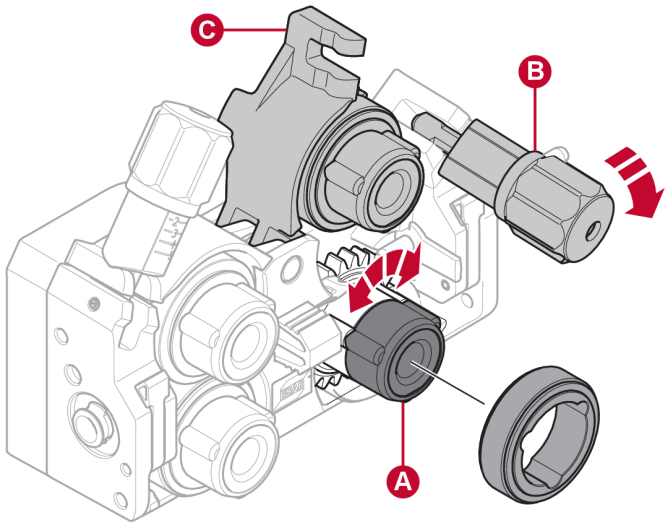
6) Close and lock the left door of the wire feeder

5.9 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).

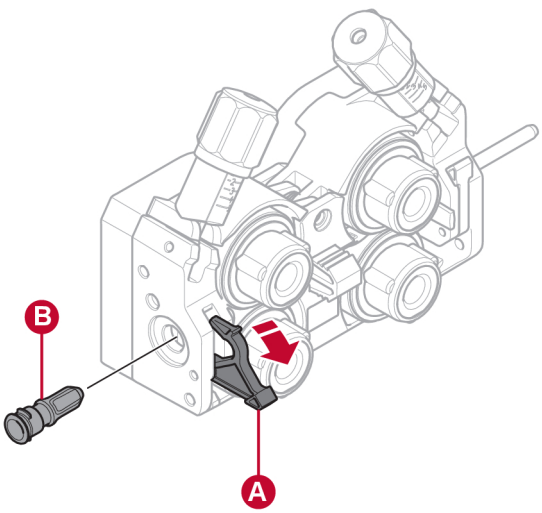
6) Lock the rollers by rotating the roller quick locks (A).

7) Close and lock the left door of the wire feeder.

5.10 Changing the wire guides

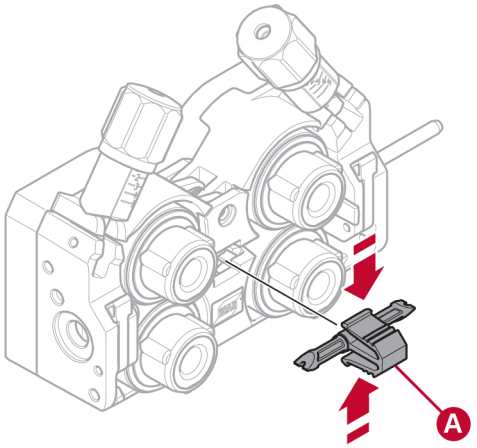
When changing to a different type of wire, the wire guides may have to be changed to match the new type of wire. For information about the correct wire guides depending on wire diameter and type, see the WEAR PARTS appendix. (For a tip about easy access to necessary wear parts, see the "Wear parts storage compartment" section in this manual.)

5.10.1 Inlet wire guide



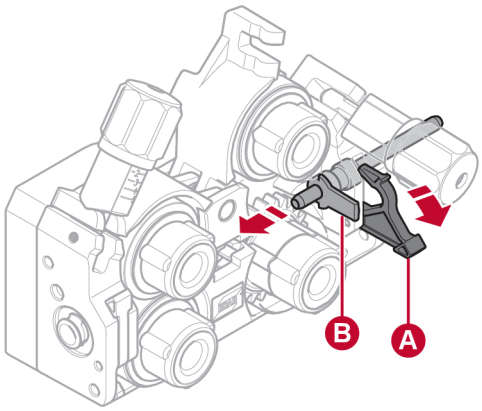
1) Unlock the inlet wire guide quick lock (A) by folding it out.
2) Remove the inlet wire guide (B).
3) Install the correct inlet wire guide (according to the WEAR PARTS appendix).
4) Lock the new inlet wire guide using the wire guide quick lock (A).

5.10.2 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.

5.10.3 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).

5.11 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.

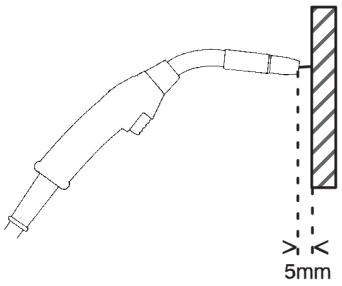


Figure A

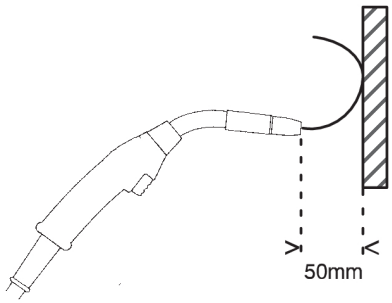


Figure B

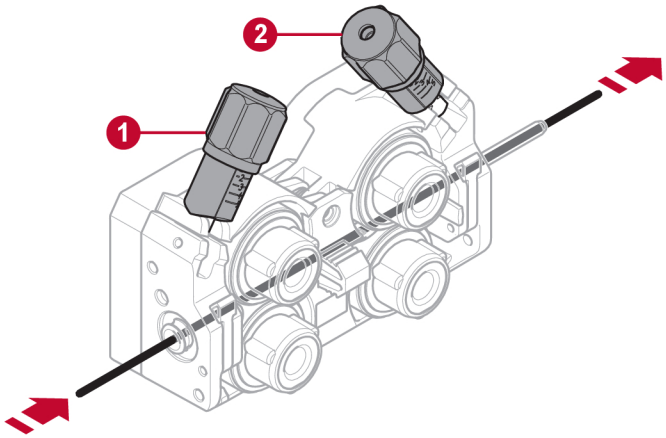
To check that the feed pressure is set correctly, you can feed out the wire against an insulated object, e.g. a piece of wood.

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.

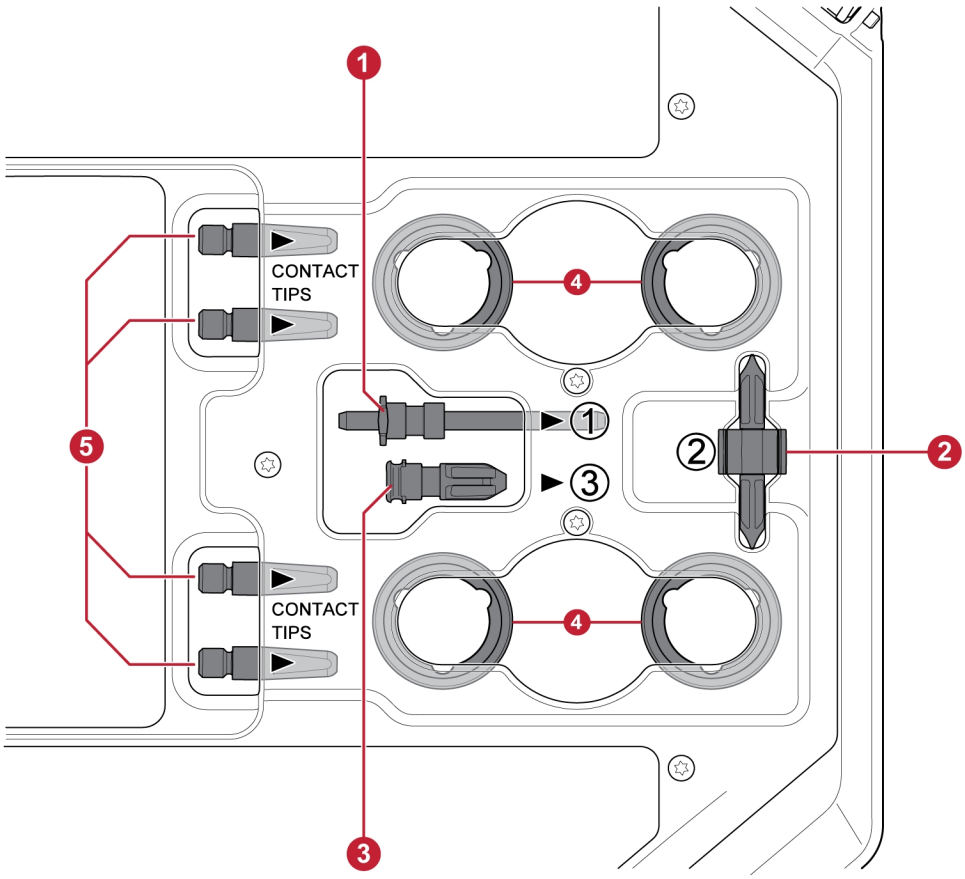
			Wire diameter (in.) (mm)	**.023** 0.6	**.030** 0.8	**.040** 1.0	**.045** 1.2	**.052** 1.4	**1/16** 1.6	**.070** 1.8	**5/64** 2.0	**3/32** 2.4
				Pressure setting								
Wire material	Fe, Ss	Tensioner unit 1			2.5							
		Tensioner unit 2			3–3.5							
	Cored	Tensioner unit 1				2						
		Tensioner unit 2				2.5–3						
	Al	Tensioner unit 1			1–1.5							
		Tensioner unit 2			2–3							



1. Tensioner unit 1
2. Tensioner unit 2

5.12 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.



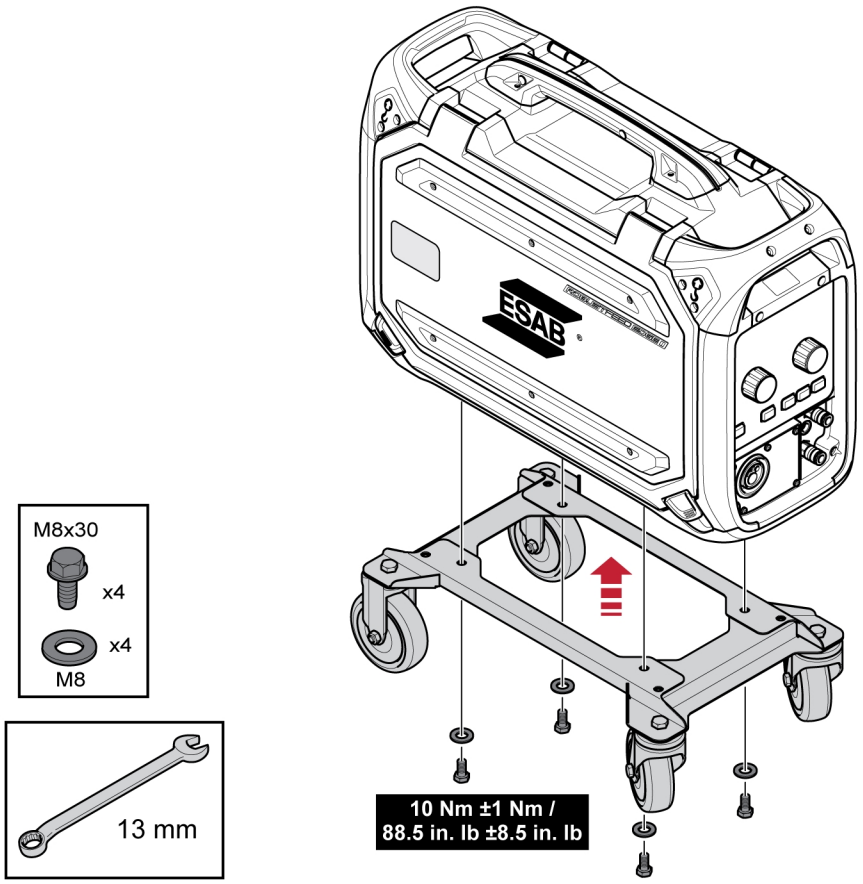
1. Inlet wire guide
2. Middle wire guide
3. Outlet wire guide
4. Feed rollers (×4 pcs)
5. Contact tips for the welding torch (×4 pcs)

5.13 Attachment of wheel kit

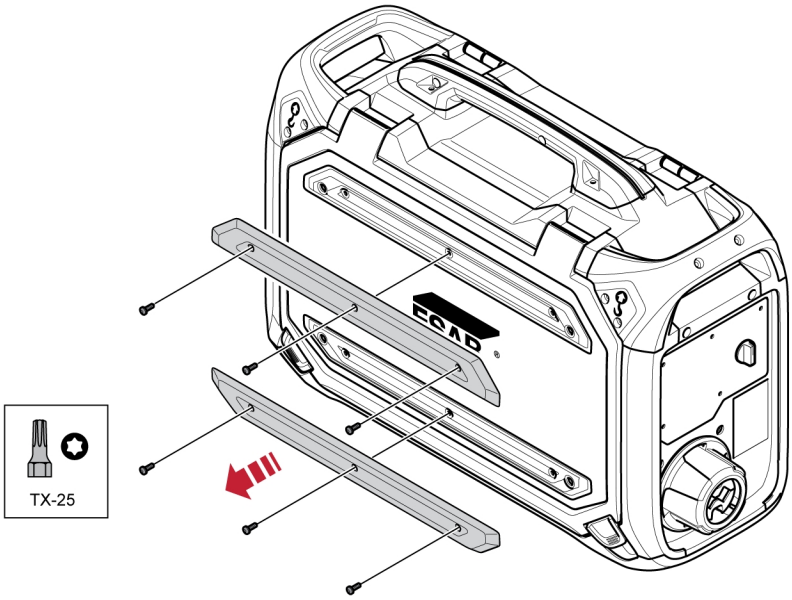
5.13.1 Attachment of the wheels to the wheel kit frame

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.

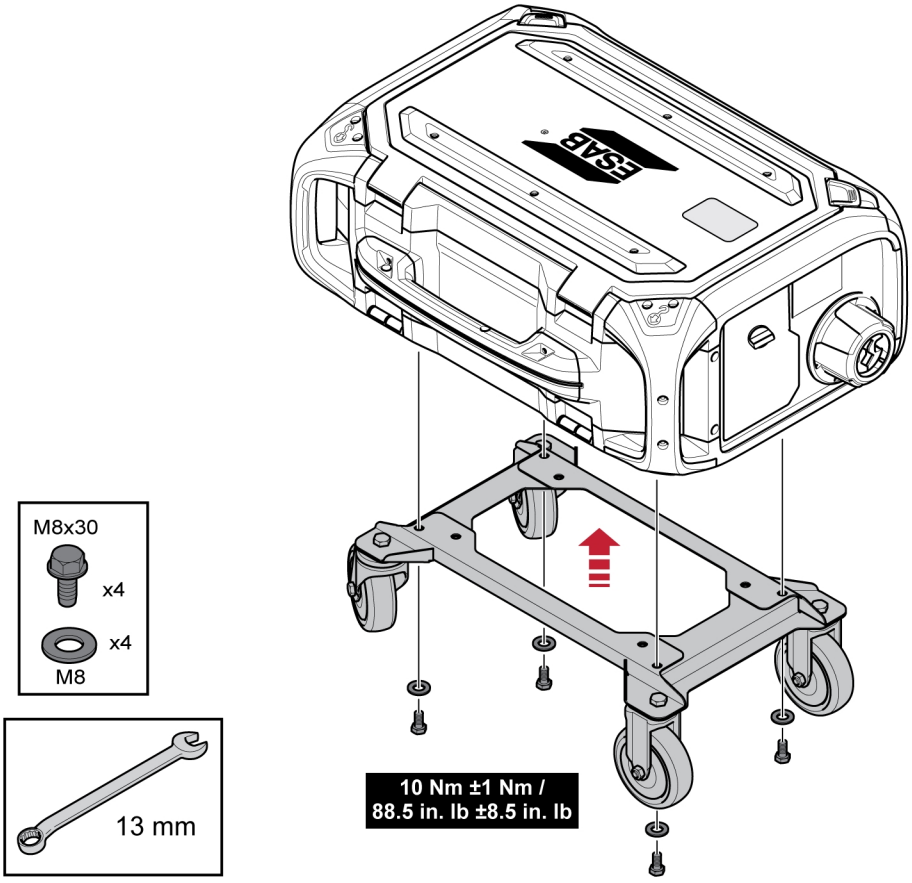
5.13.2 Wire feed unit in vertical position



5.13.3 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!



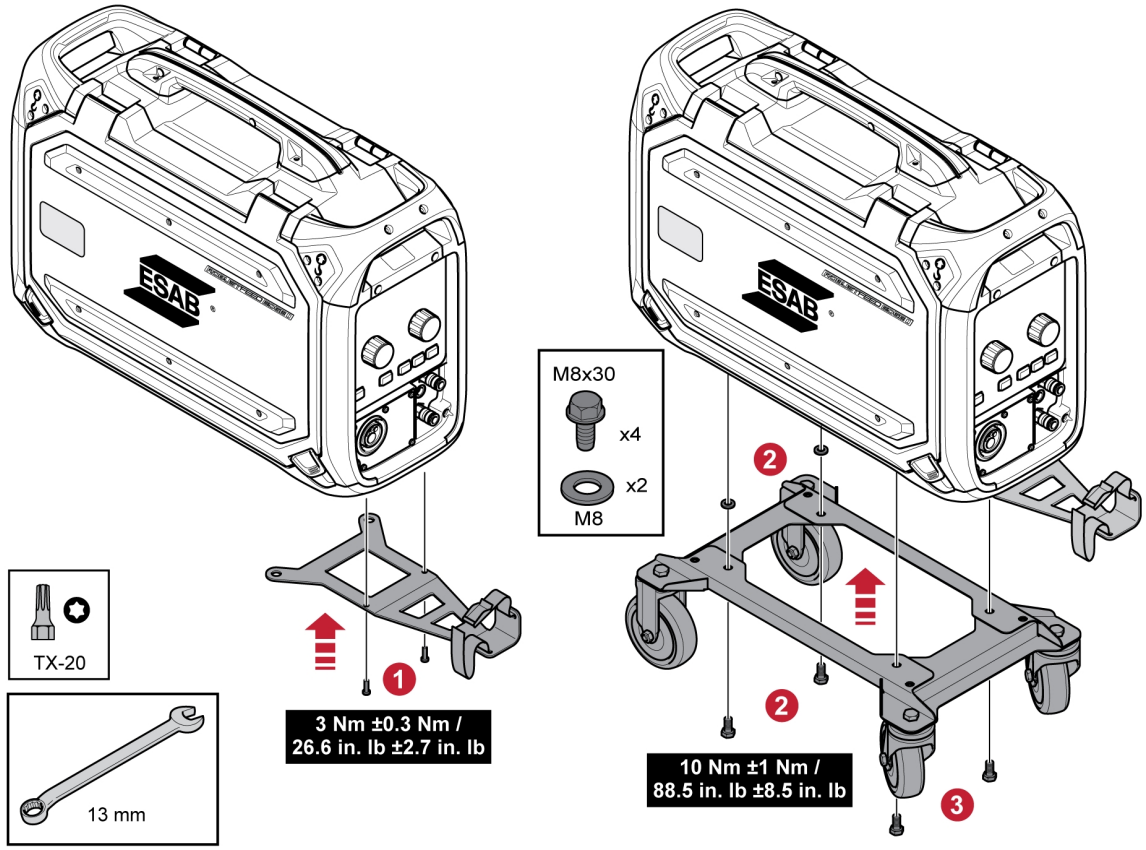
5.14 Attachment of both wheel kit and the torch strain relief accessory

1) 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:

   Attach the torch strain relief to the wire feed unit, using the two Torx 5 screws.

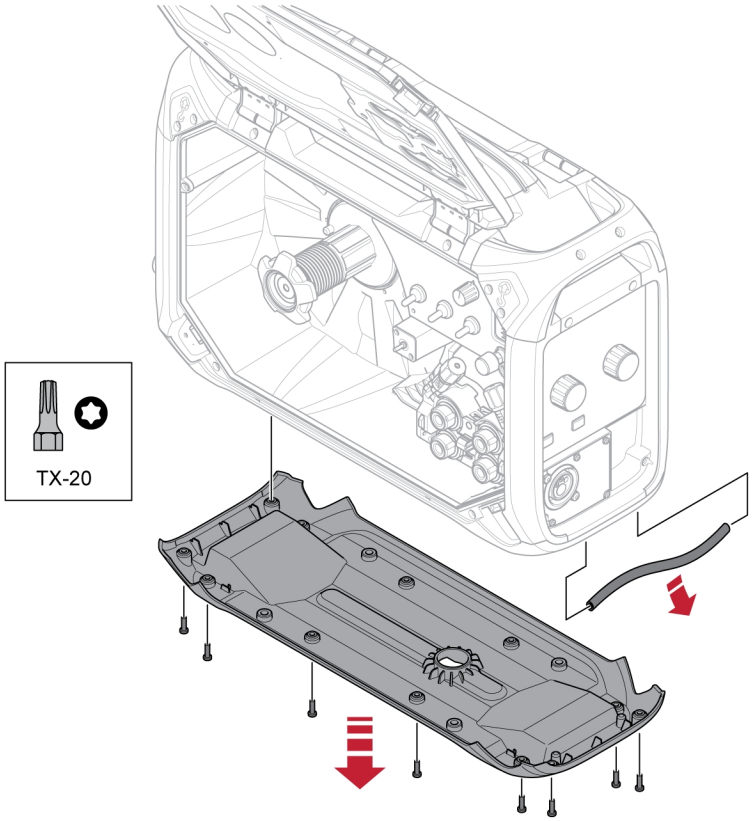
   Attach the wheel kit to the wire feeder, using the two screw joints near the rear end of the wire feeder. Make sure the two distance washers are inserted between the wheel kit and the wire feeder!

   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.

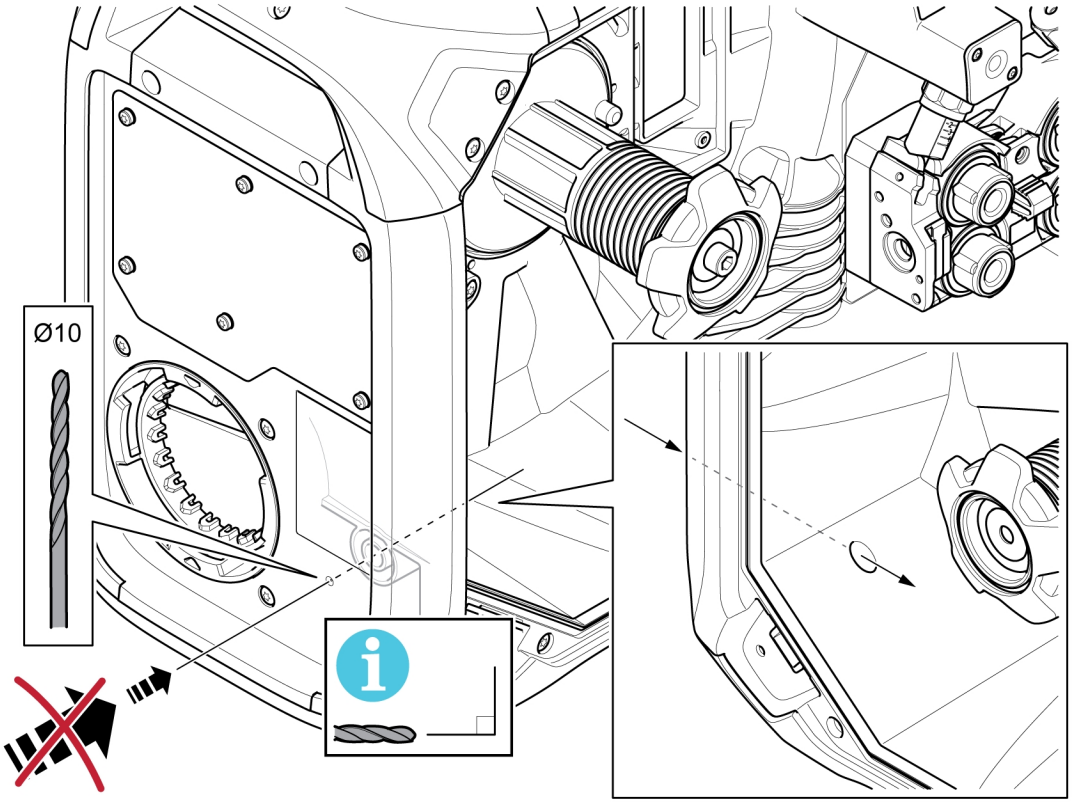


5.15 Marathon Pac™ installation

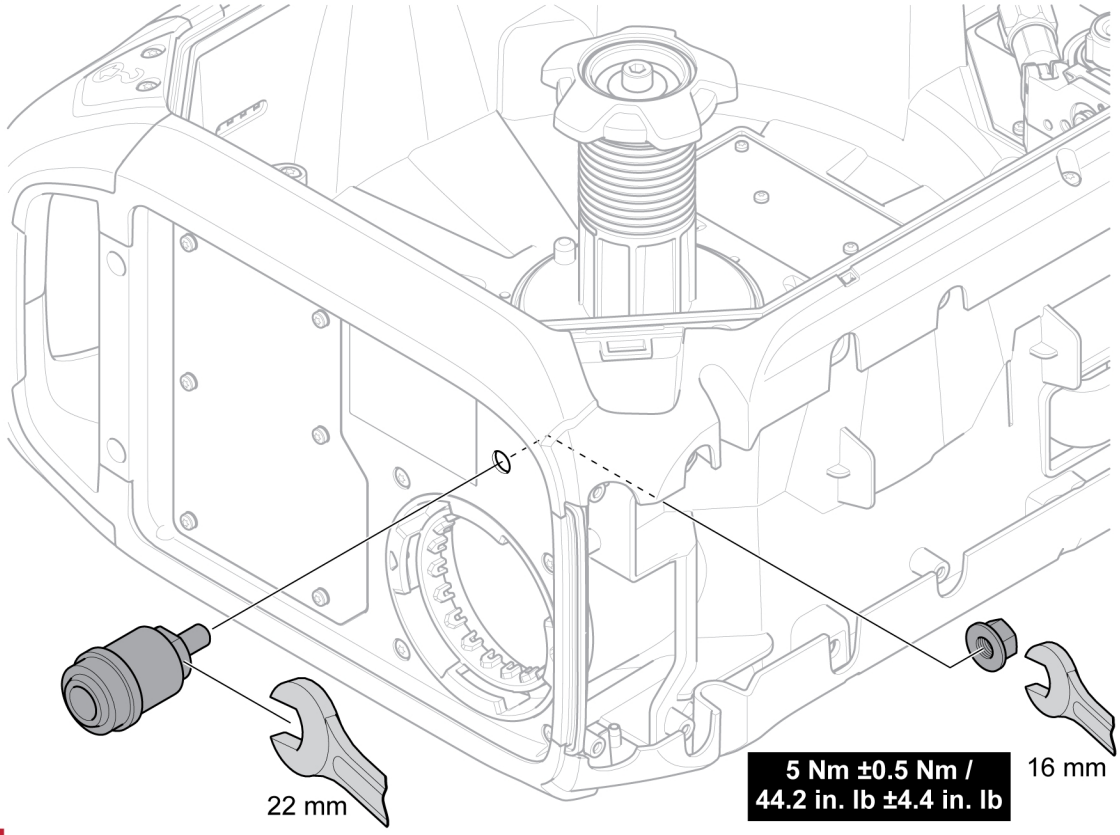
1



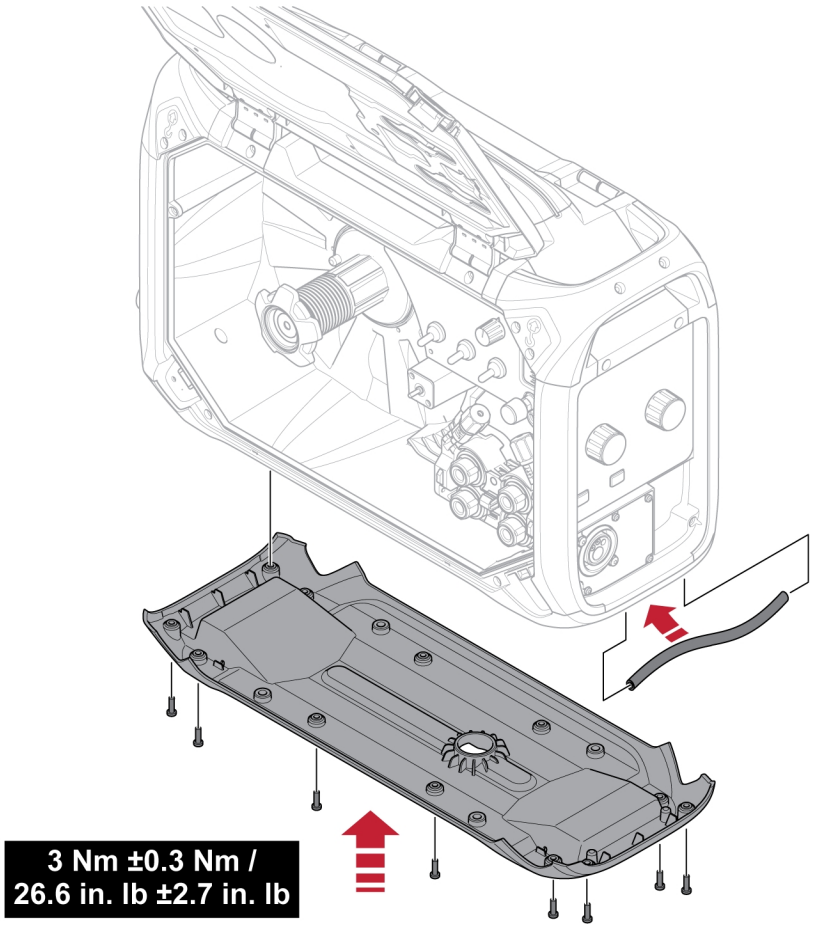
2



3

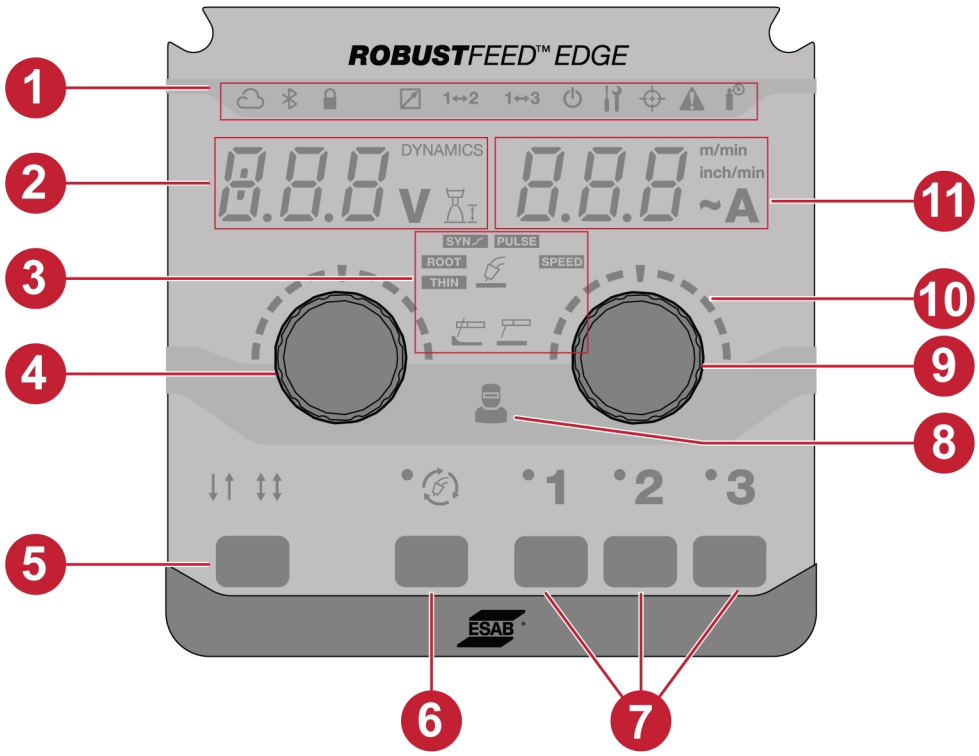


4



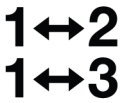
6 CONTROL PANEL

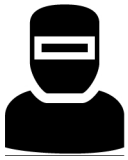
6.1 External control panel



1. LED indicators
2. Display, shows set or measured value (voltage / dynamics / arc length)
3. Welding applications
4. Push encoder knob to change dynamics, voltage and arc length
5. Trigger modes – 2T / 4T
6. Weld mode selection button
7. JOBs
8. Operator management indicator
9. Push encoder knob to change wire feed speed / amperage
10. Scales
11. Display – shows set or measured value (wire feed speed / amperage)

6.1.1 LED indicators description

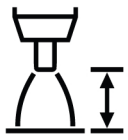
Indicator	Description
	**WeldCloud™** An online management system that connects welding power supplies to a software platform that manages data to be analysed for maximum productivity. WeldCloud productivity provides the production manager tools to improve welding productivity and increase traceability by keeping track of each weld, operator, part number and more. The indicator is lit in green when it is connected and during data transfer it blinks. If it is configured and not connected, the indicator is lit in red. To activate your WeldCloud Fleet license, refer to **manual.indusuite.com/activate-fleet-license** To set up ESAB Edge WeldCloud, refer to **manual.indusuite.com/esab-edge**
	**Bluetooth** Bluetooth is used to wirelessly connect to mobile device networks. The indicator is lit in green when it is connected.
	**Lock** Green - This indicates when the system has limited access or Job limits are active. Red - This indicates the system is locked, and to be able to use the system, it is required to unlock. Red (blink) - This indicates when the user is trying to access the restricted features.
	**Trigger JOB Shift** This function allows changing between different jobs when the trigger of the welding torch is pressed. The indicator is lit based on the Trigger JOB shift function selected on the control panel. For more information, see section "System settings".
	**TRUEARC compensate** To achieve a good welding result, the arc voltage is a crucial factor. In MIG/MAG welding, the power source is prepared to sense the arc voltage in the wire feeder. Prerequisite for this functionality is that an ESAB wire feeder and an ESAB interconnection cable is used. In compensation mode, when the torch is triggered on workpiece, it measures the inductance and resistance to compensate for the voltage drop in the interconnection cable, torch and return cable. The indicator is lit in yellow when compensation is required and it blinks during the compensation process. If the compensation is success, the indicator is lit in green.
	**Gas indicator** The indicator is lit when there is a shielding gas warning and error.

Indicator	Description
	**Warning/Error** • Warning The indicator blinks yellow when there is a warning in the system. The completion of an ongoing weld is possible, but the start of a new weld is prevented as long as the warning remains. • Error The indicator blinks in red when there is an error in the system. The ongoing welding is stopped as long as the error remains.
	**Operator management** Green - This indicates when the operator is logged in with a user card or admin card successfully. Red (blink) - This indicates an unsuccessful login.

6.1.2 Push encoder knobs

Push encoder knob for setting voltage, dynamics and arc length (4)
This knob increases or decreases the value of voltage, arc length and dynamics depending on the selected application.

For MIG/MAG, press the knob to switch between voltage and dynamics.

Indicator	Description
DYNAMICS	**Arc dynamics** Supplementary function for correction of dynamic arc behavior. The influence of dynamics is depending on the selected welding method and application mode used. The indicator is lit when dynamics value is displayed in the display (2). This function is inactive by default in the external control panel but can be activated in the internal control panel. For more information, see section "Front panel functionality".
	**Arc length** This parameter provides the possibility of arc length adjustment from a shorter arc using a negative offset to a longer arc using a positive offset setting.
V	**Measured voltage** Measured value in the display for welding voltage V is an average numerical value which is calculated during the welding excluding the weld termination.

Push encoder knob for setting wire feed speed / A / ~A (9)
This knob increases or decreases the value of wire feed speed, amperage and estimated amperage depending on the selected application.

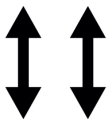
Indicator	Description
m/min inch/min	**Wire feed speed** To set a unit of wire feed speed, use “System settings” in the internal control panel. This indicator is lit based on the selection and displays the value (11).
A	**Measured amperage** Measured value in the display for welding current A is an average numerical value which is calculated during the weld excluding the weld termination.
~A	**Estimated amperage** Estimated value of current to be delivered during welding. Condition of the distance from contact tip to work piece will affect the correspondence between the estimated value and the actual measured amperage value during welding. This function is inactive by default in the external control panel but can be activated in the internal control panel. For more information, see section "Front panel functionality".

6.1.3 Buttons

2T / 4T button (5)
This button is used for changing between 2-stroke and 4-stroke mode in MIG/MAG applications.

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 in and the wire feed starts when it is released. The welding process continues until the switch is pressed in again, the wire feed then stops and when the switch is released the gas post-flow starts.

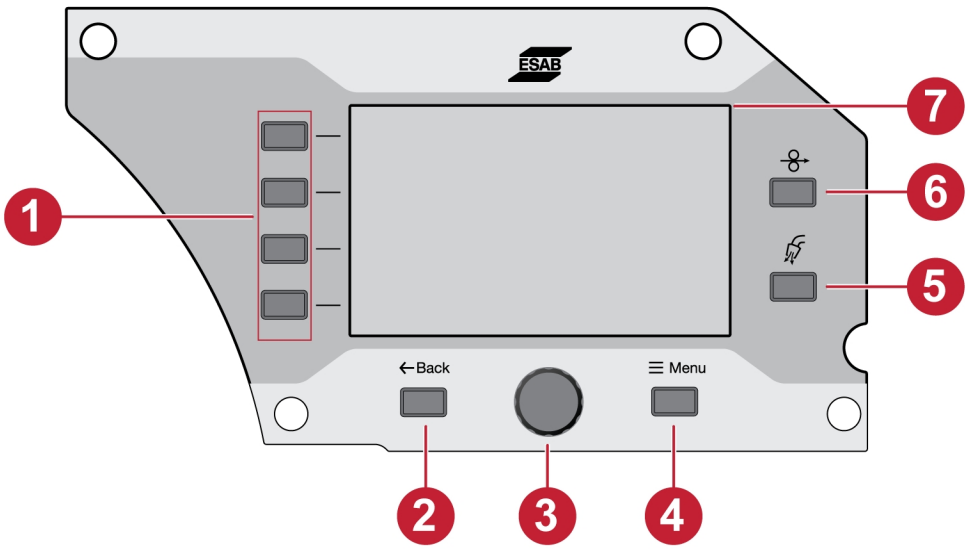
Weld mode selection button (6)
The weld mode button is used for changing the applications (3). Weld mode selection is available from the internal control panel as well.

Indicator	Description
	**MIG/MAG Manual** Constant voltage control process is where the set voltage and the wire feed speed are set independent of each other.
	**MIG/MAG SYNERGIC** A process with synergic voltage and arc dynamics control, in relation to wire feed speed using predetermined synergic line programs providing stable arc performance. The process operates through short circuit, globular and spray droplet transfer mode.

Indicator	Description
	**MIG/MAG PULSE** The process applies a pulsed current waveform with controlled droplet transfer.
	**MIG/MAG SPEED** The process provides a concentrated arc function for superior weld control and stability in the range of high welding speeds.
	**MIG/MAG THIN** The process employs controlled short circuit arc, particularly suitable for welding thin materials.
	**MIG/MAG ROOT** The process employs controlled short circuit arc with superior stability and handling in root welding applications.
	**MMA** MMA welding may also be referred to as welding with coated electrodes. Striking the arc melts the electrode, and its coating forms protective slag.
	**Gouging** The gouging process is referred as the large amount of gas which is generated to eject the molten metal.

JOBs buttons (7)
The JOB buttons are used to save and activate weld setting parameters. Press the JOB button (1, 2, or 3) for two seconds to save and activate the weld setting parameters to the respective JOB position. The respective LED's blink and lit in green once the current JOB is saved and activated. If the JOB contains any previous weld setting parameters, they are replaced with the new weld setting parameters.

6.2 Internal control panel



1. Function buttons
2. Back button
3. Push encoder knob
4. Menu button
5. Gas purge button
6. Wire inch button
7. Display

6.2.1 Buttons

Function button (1)
These buttons are used according to the functions shown on the left side panel of the display (7).

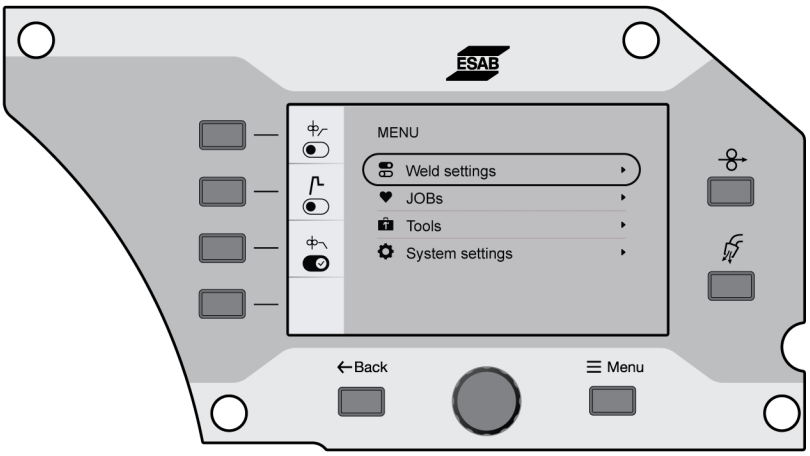
Back button (2)
Press the back button once to navigate to the previous step.

Push encoder knob (3)
Rotate the knob to navigate in the menus and press the push encoder to select/change the parameter.

Gas purge button (5)
Gas purging is used while measuring the gas flow or for flushing any air or moisture from the gas hoses before welding starts. Gas purging occurs for 20 seconds when the gas purge button or torch trigger is pressed or until it is pressed again. Gas purge occurs without voltage or wire feed start.

Wire inch button (6)
Wire inching is used to feed wire without welding voltage being applied. The wire is fed as long as the button is pressed.

6.2.2 Menu selection



6.3 Weld settings

In the Weld setting menu, preview the parameters for the selected welding application.

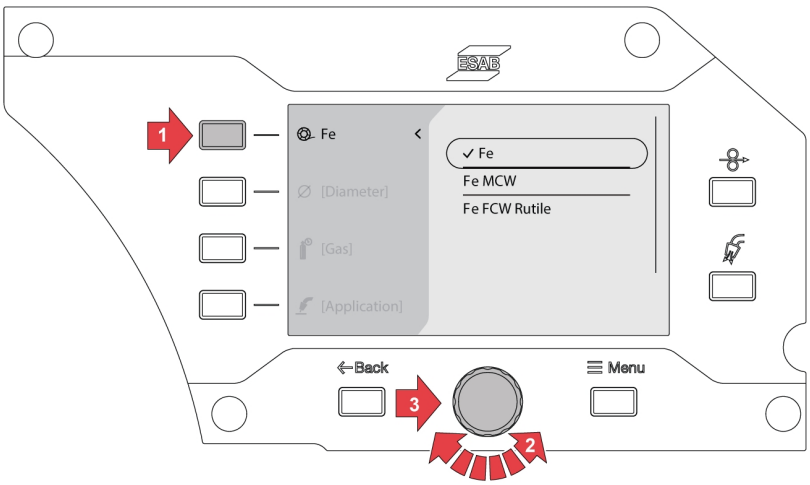
See section "WELDING", for setting range and functional explanation.

6.4 JOBs

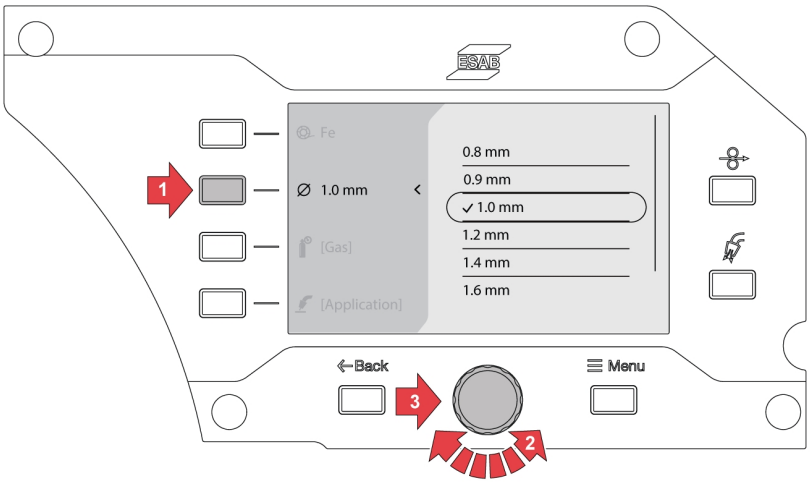
In the JOBs menu, the weld setting parameter can be stored and activated for quick access. Up to 20 jobs are displayed in the jobs list, in which the first three jobs can also be activated by the JOBs button (1, 2 and 3) in the external control panel.

6.4.1 Setting up a new JOB in the internal control panel

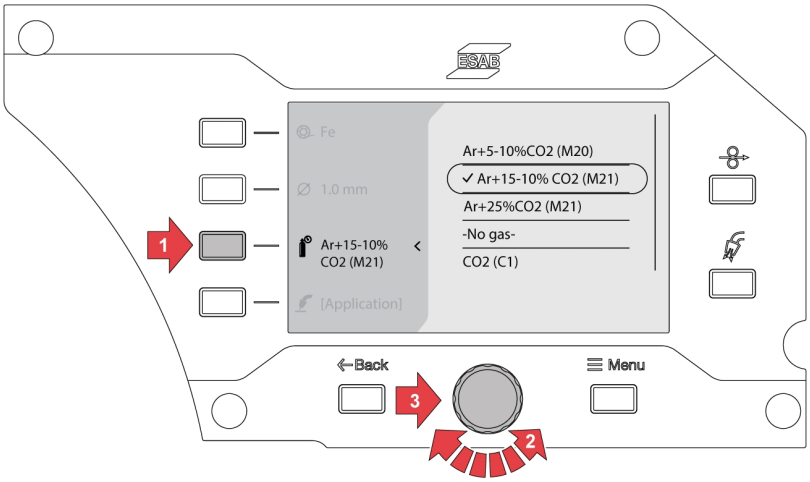
1) Press the material button and select the desired material parameters by turning the push encoder knob.



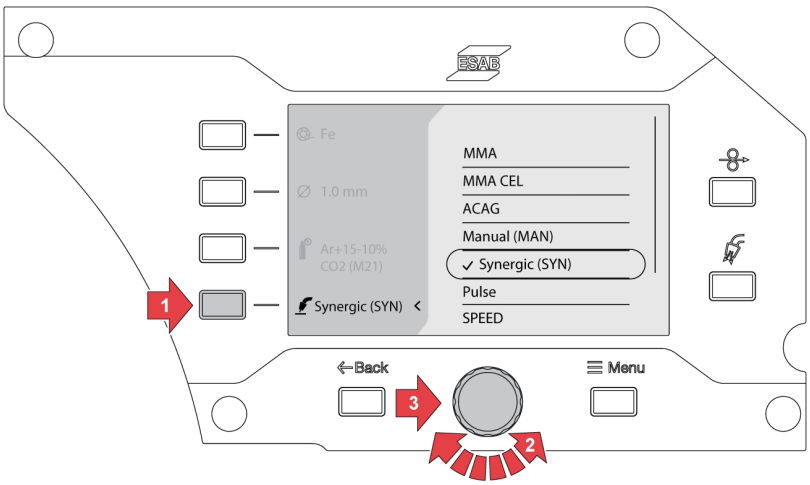
2) Press the wire diameter button and select the desired wire diameter by turning the push encoder knob.



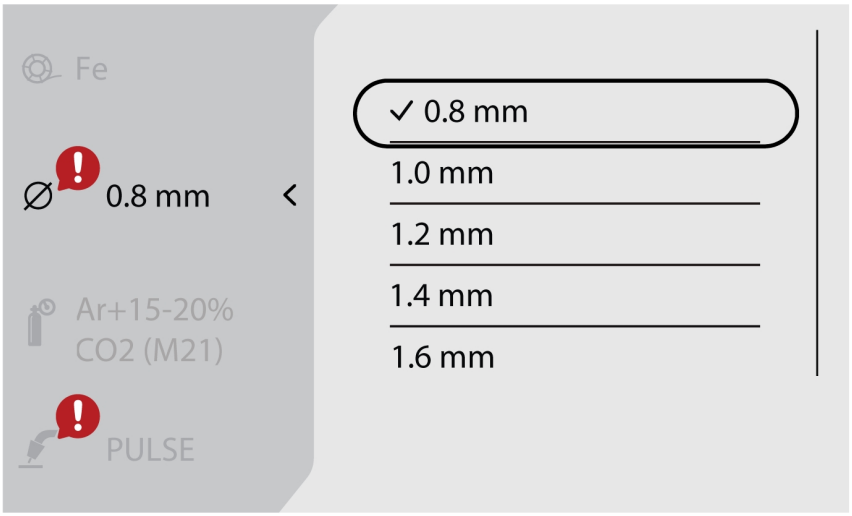
3) Press the gas button and select the desired gas by turning the push encoder knob.



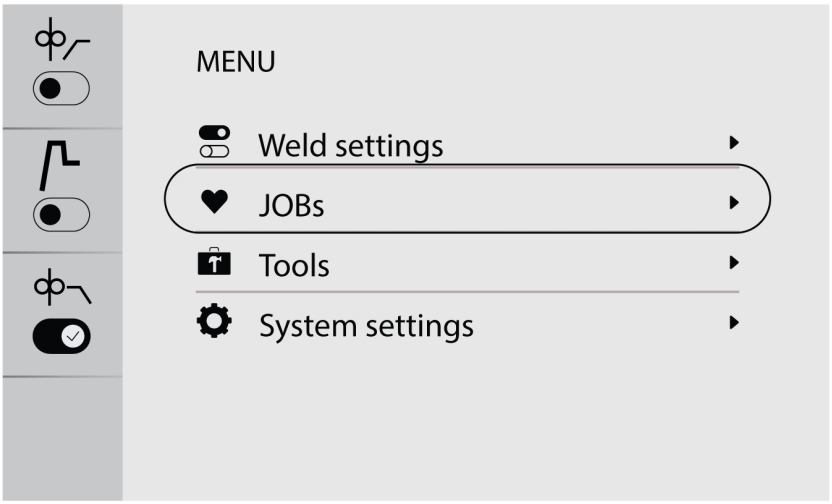
4) Press the weld mode selection button and select the desired application by turning the push encoder knob.



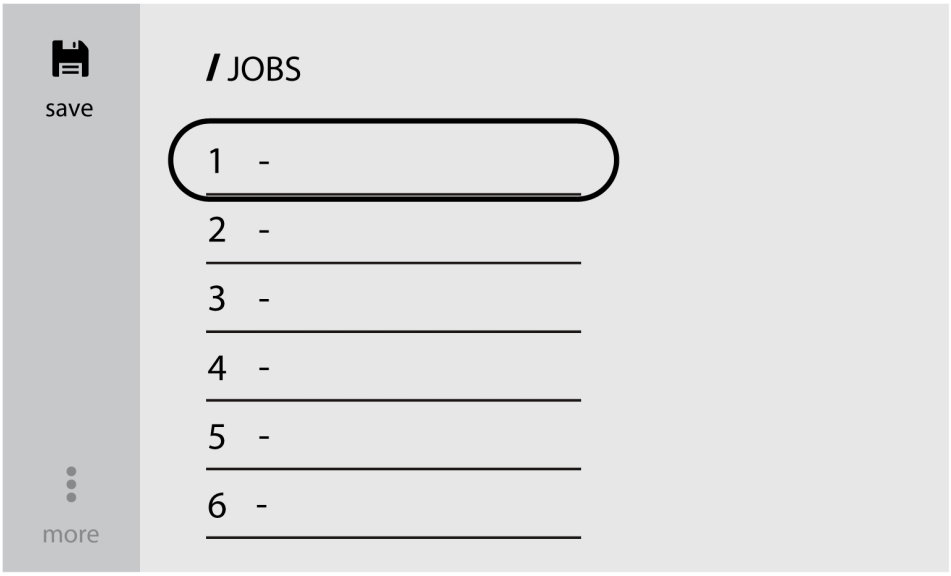
5) If the material, dimension or gas option is changed after welding mode selection, synergic line error for the current welding selection may pop-up.



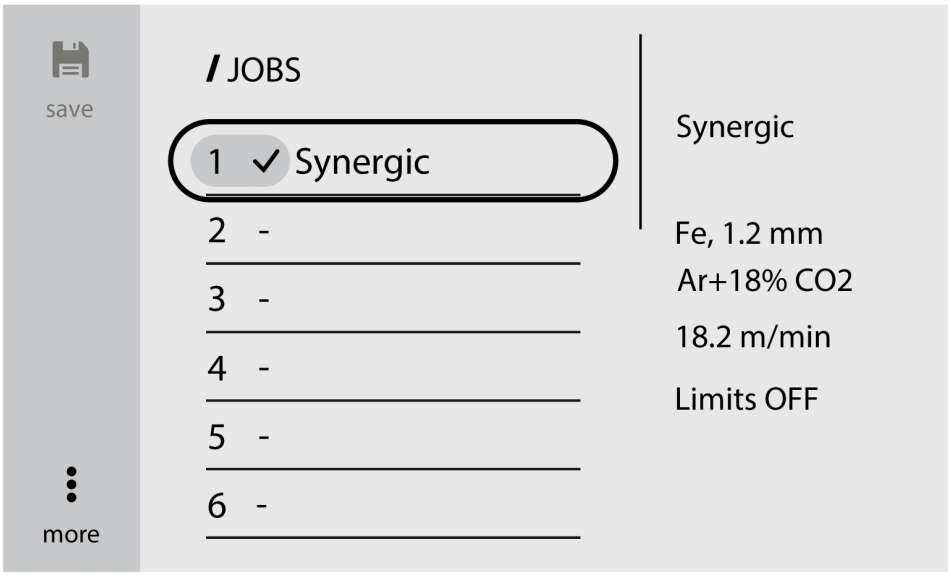
6) Navigate to the *Menu* button and select *JOBs*.



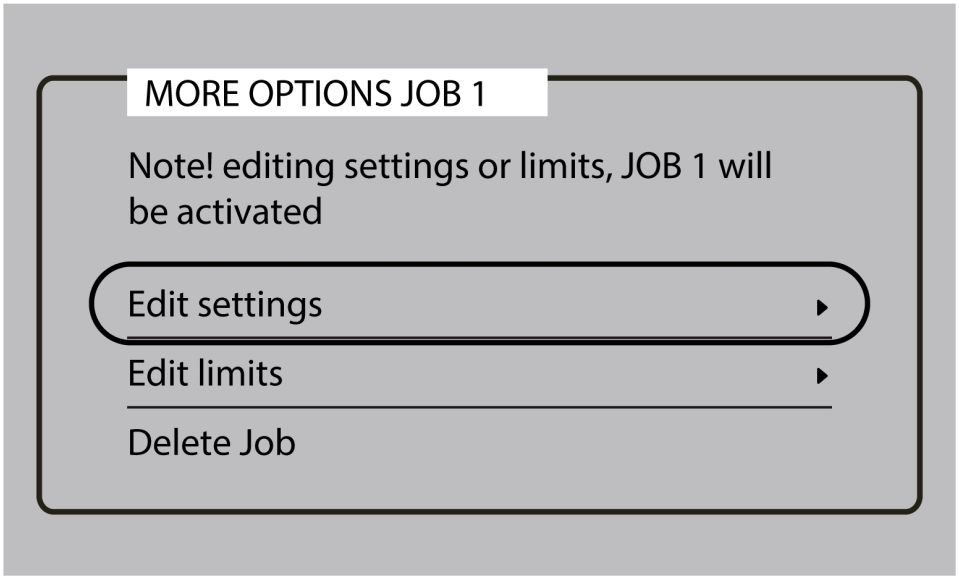
7) Select the desired job position and press the save button on the top left to save and activate. The selected application will appear on the screen.

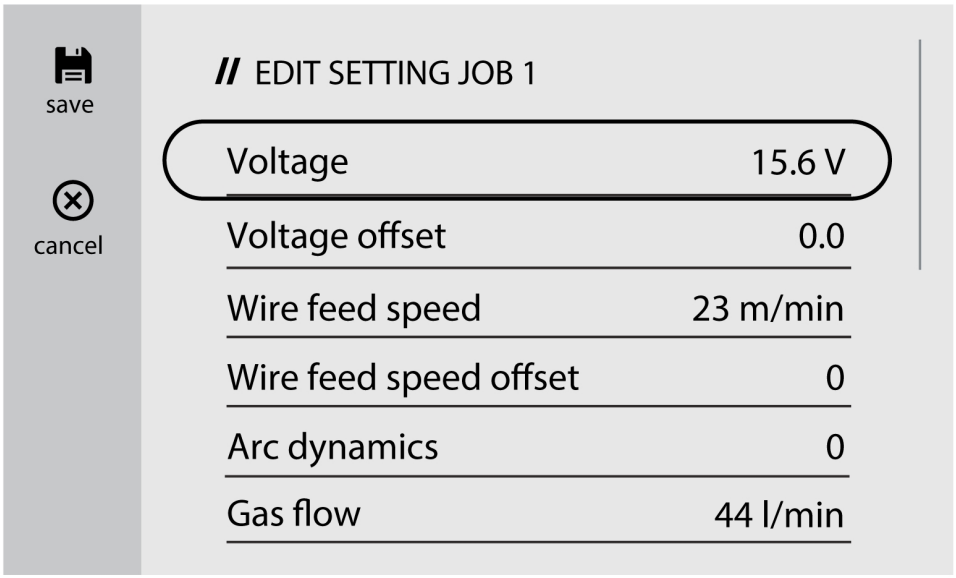


8) To edit the jobs, select the pre-saved job and navigate to *more* (on the bottom left).

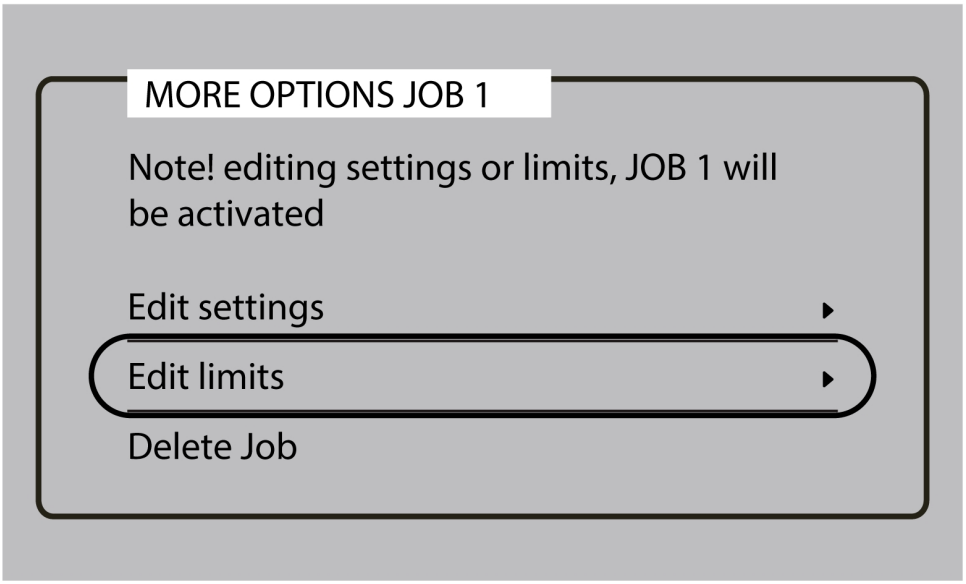


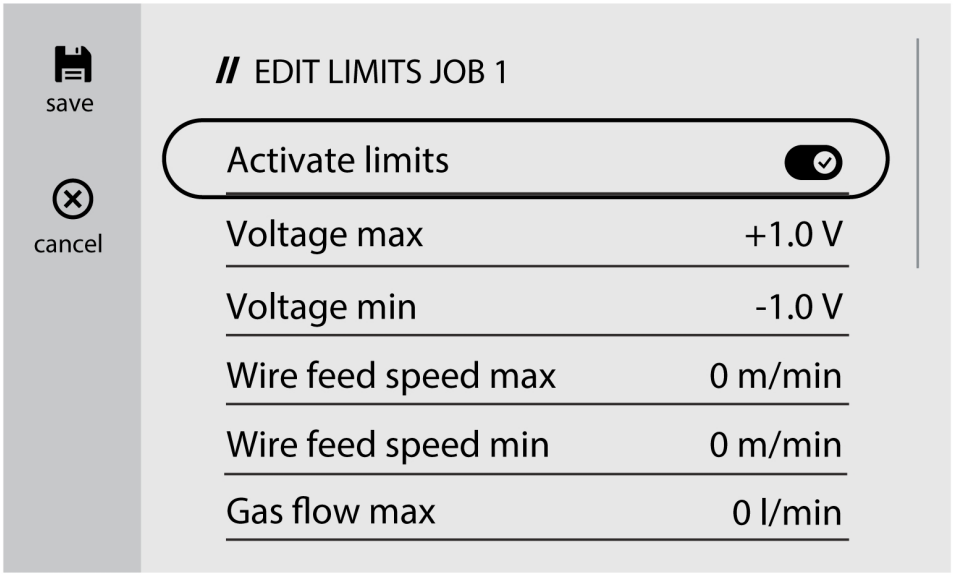
9) Select the *Edit settings* to edit the job parameters.





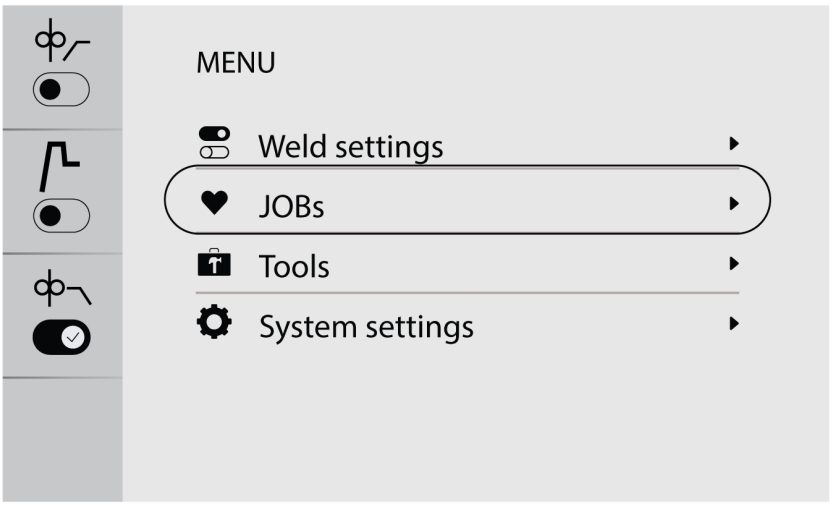
10)Navigate to *Edit limits* and enable the *Activate limits* option to vary the limits.



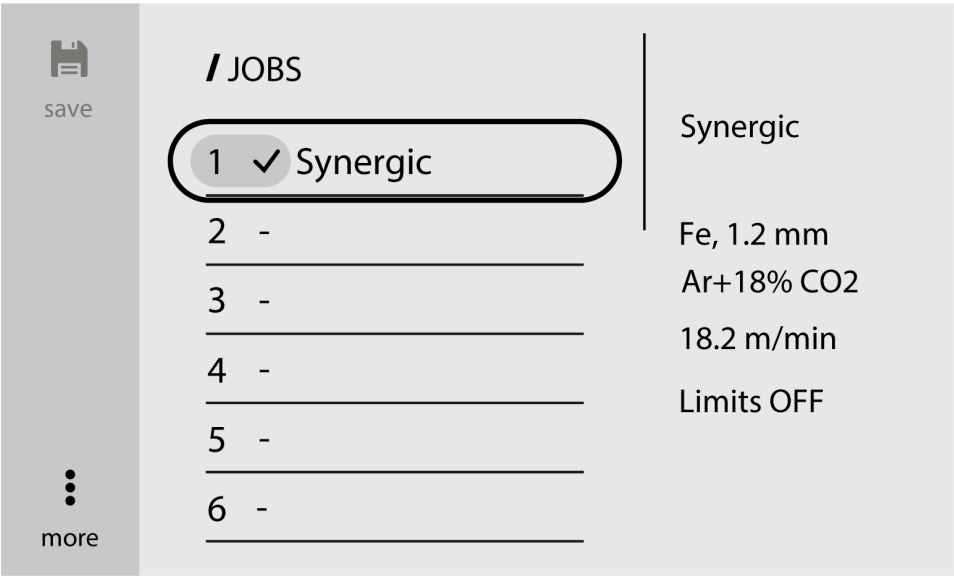


6.4.2 Copy a JOB

1) Navigate to the *Menu* button and select *JOBs*

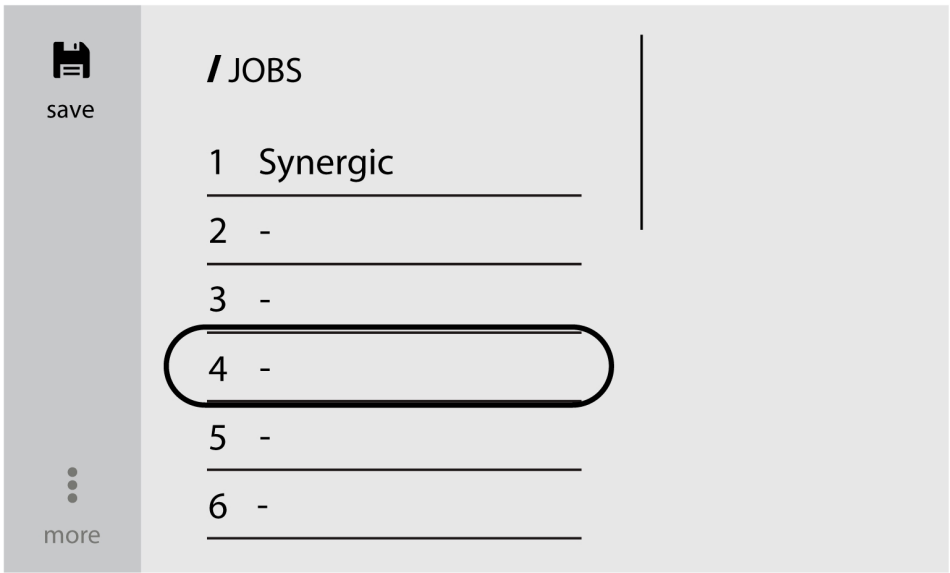


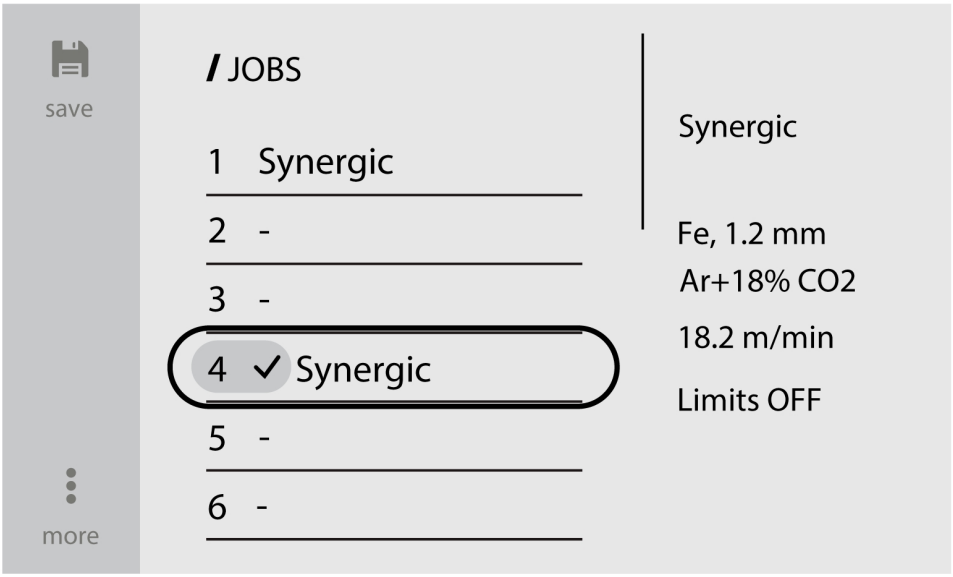
2) To copy or duplicate a job, navigate to the desired job to activate it on the screen.



3) Select the desired job number and press the save button on the top left to copy or duplicate.

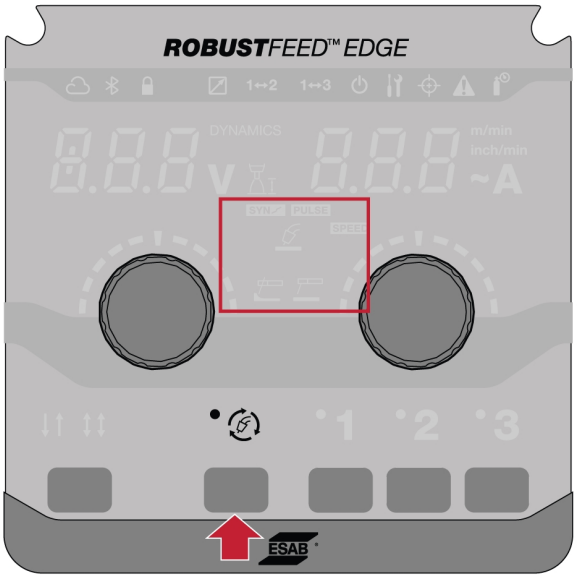
NOTE!
While saving a job, if the existing job number with presaved data is selected, it will overwrite the new weld parameters.



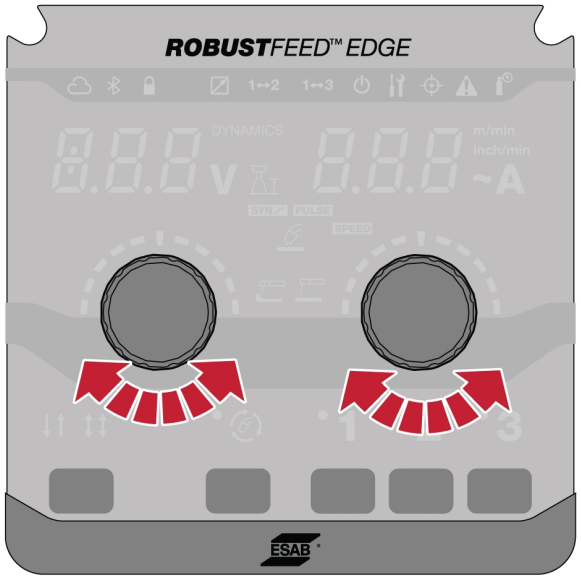


6.4.3 Setting up a new job in the external control panel

1) Select the desired welding application.

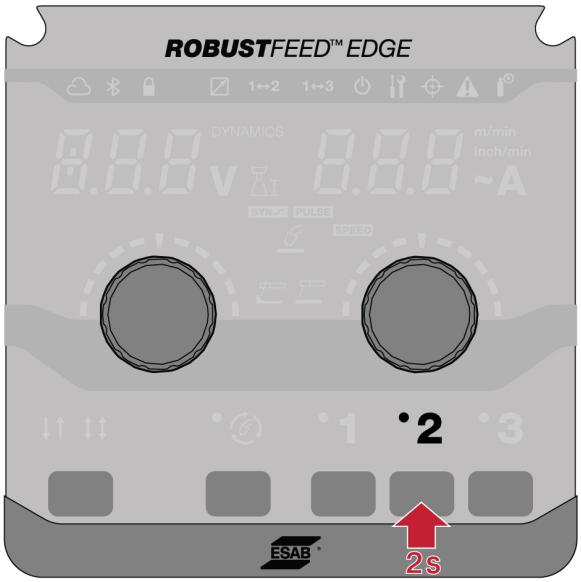


2) Set the weld parameters based on the weld application selected.



3) Press the desired job numbers (1, 2 or 3) in the panel for 2 seconds.

NOTE!
While saving a job, if the existing job number with presaved data is selected. It will overwrite the new weld parameters.



6.5 Tools

6.5.1 Error logs

The error log shows history and active errors. Press the push button for the corresponding error to view the incident description and time.

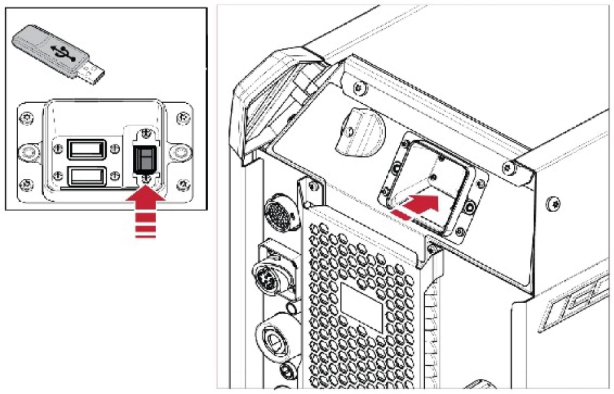
6.5.2 USB import and export

The import/export can be done in two ways; using tool settings or direct connect to the USB.

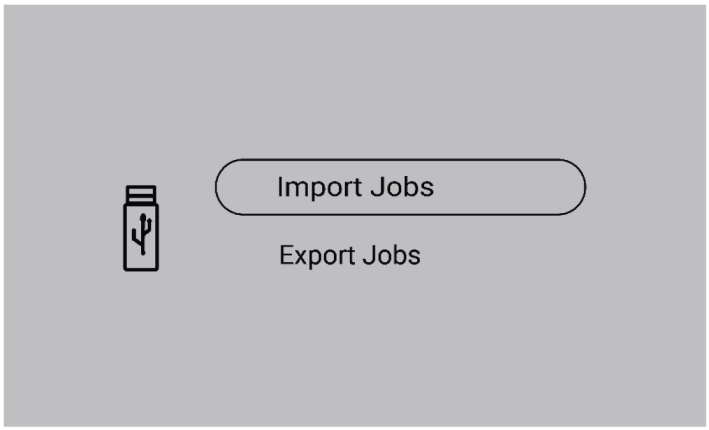
Using tools settings

1) Go to *Tools* and select *USB import and export*.

2) Insert a USB drive into the power source according to the prompt on the screen.

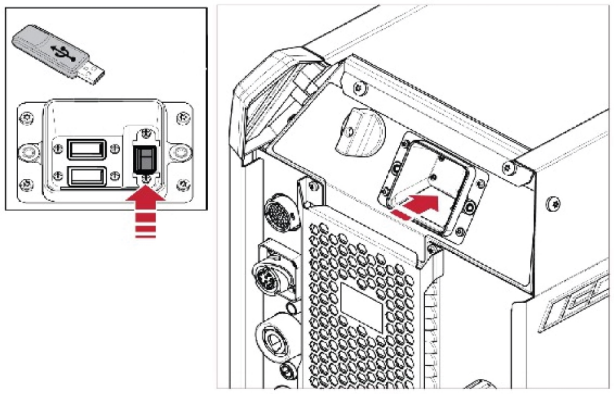


3) Select *Import Jobs* or *Export Jobs*.

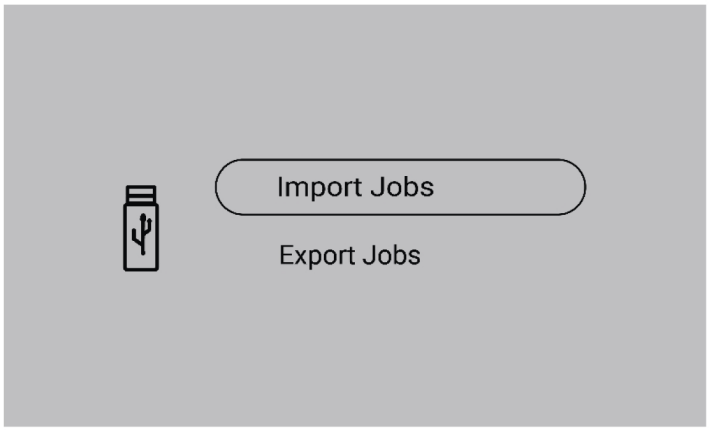


Direct connect to the USB

1) Insert a USB drive into the power source.

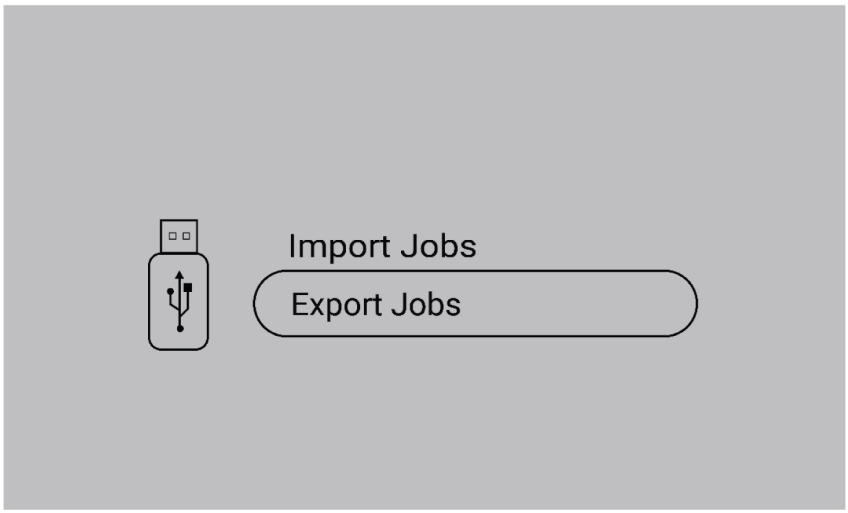


2) Select *Import Jobs* or *Export Jobs*.



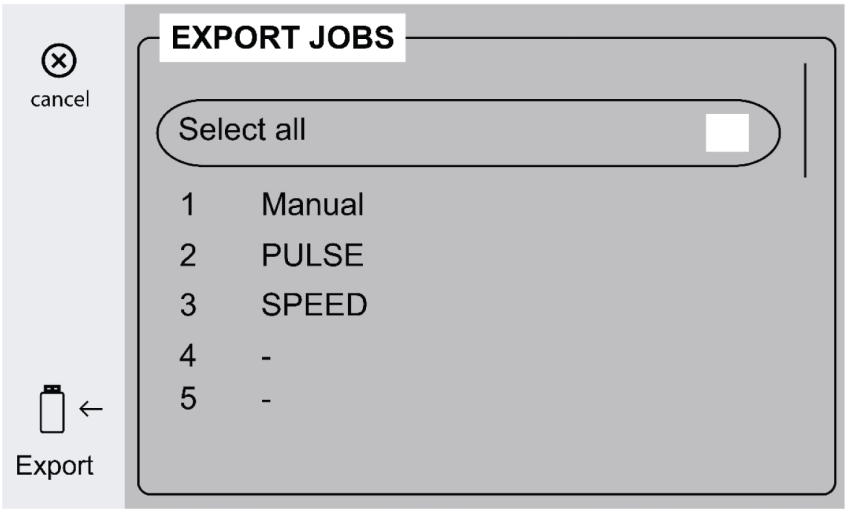
6.5.3 Export Jobs

1) Select *Export Jobs*.



2) Press *Select all*.

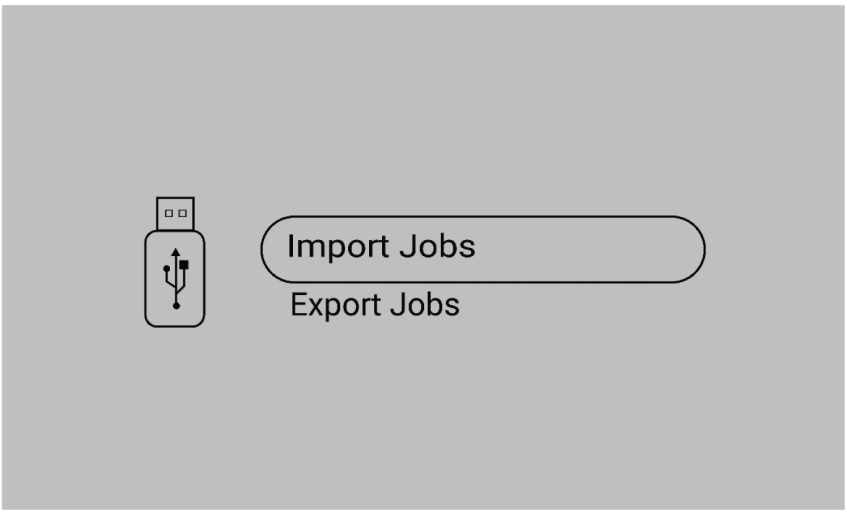
3) Press *Export* to export the Jobs to the USB drive.



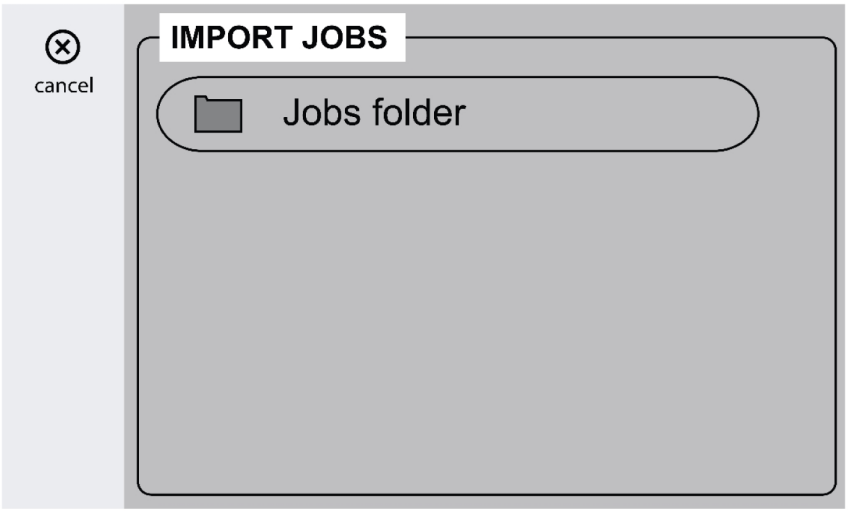
4) The following prompt is displayed once all jobs are exported.

6.5.4 Import Jobs

1) Select *Import Jobs*.

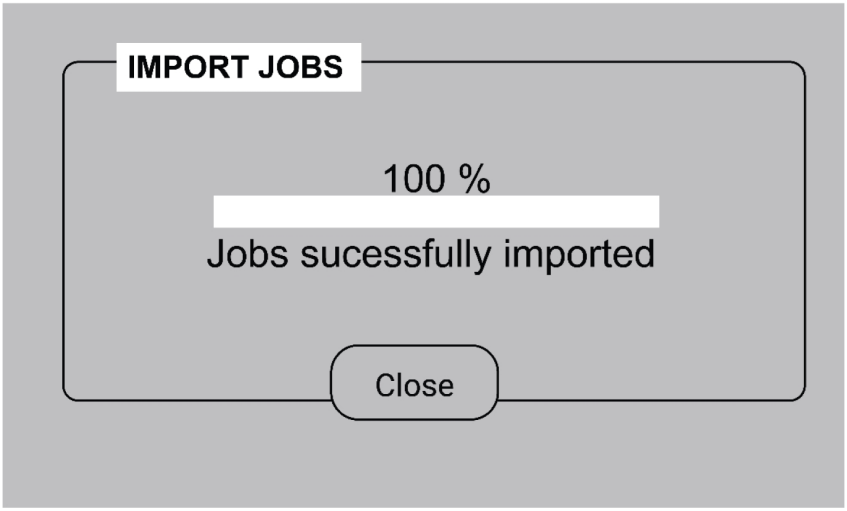


2) Select the Jobs folder which contains the jobs.



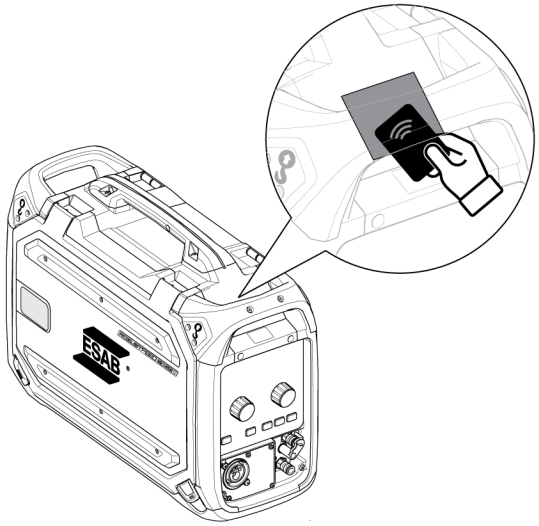
3) Select *Confirm* to overwrite the existing Jobs.

4) The following prompt is displayed once all Jobs are imported.



6.5.5 Operator management

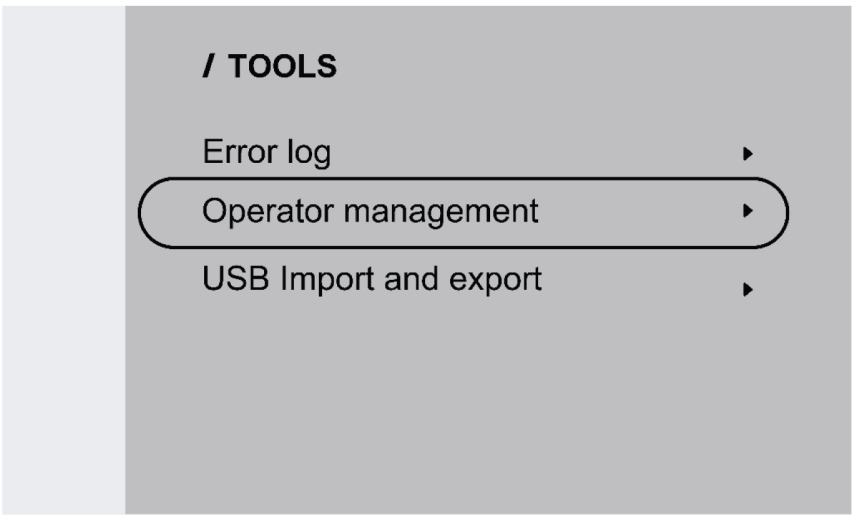
Activate Operator Management to restrict unauthorised usage of the system. Use the access cards to identify different users.



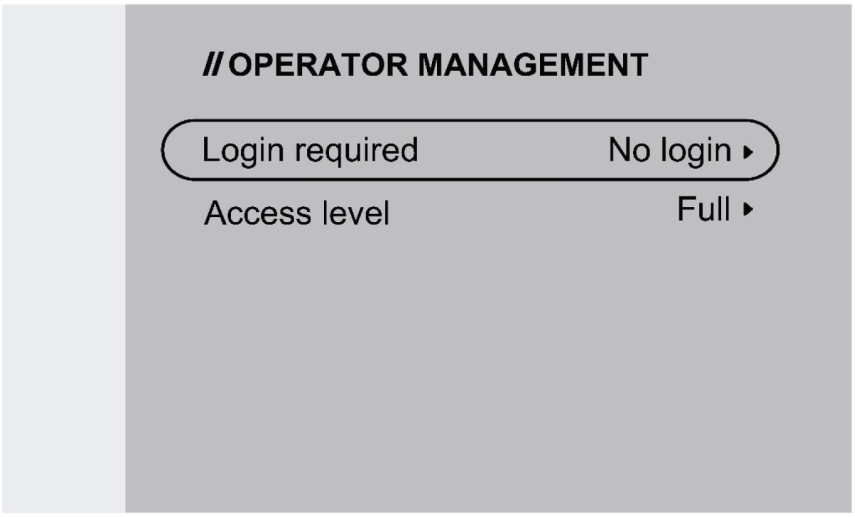
Admin card
The admin card enables logging in as an administrator and activating operator management.

1. By default, *Operator management* option is disabled.

2. Use the admin card to enable *Operator management*.

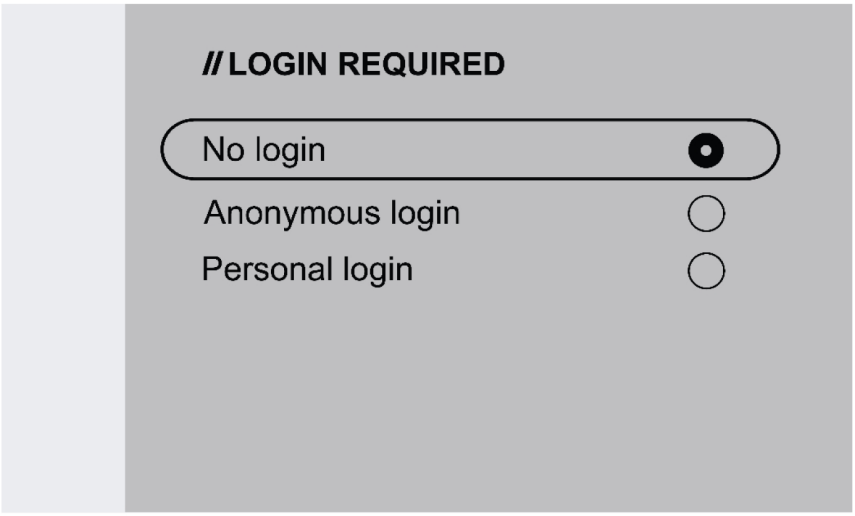


3. Administrator can set *Login required* and *Access level* in operator management.

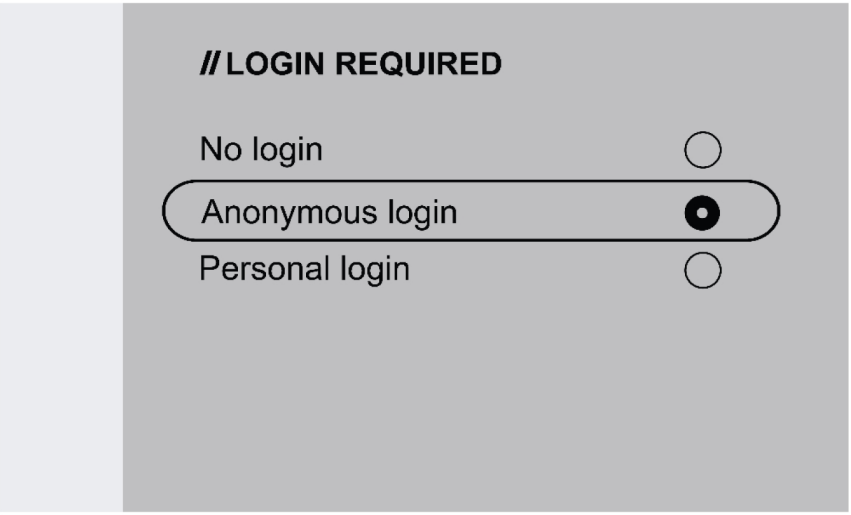


Login required

1. No login: no card is required to lock/unlock the system.

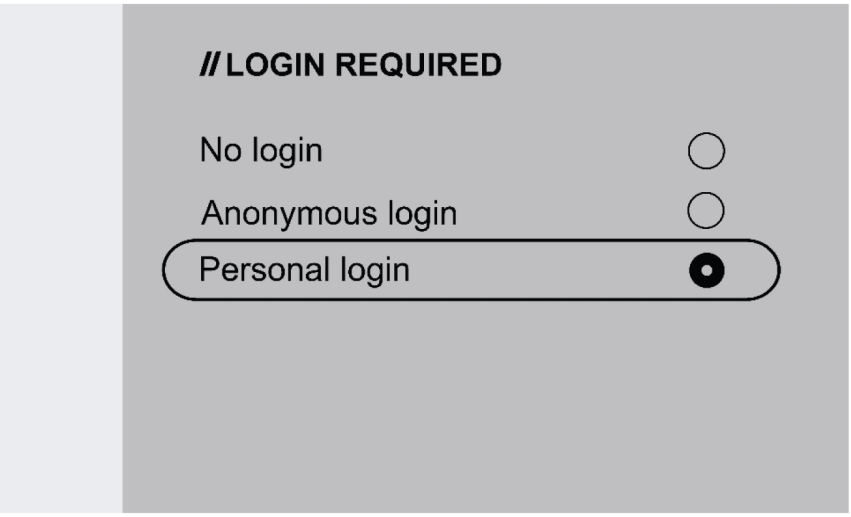


2. Anonymous login: A user card is needed to lock/unlock the system.



NOTE!
The user card can access both anonymous login and personal login.

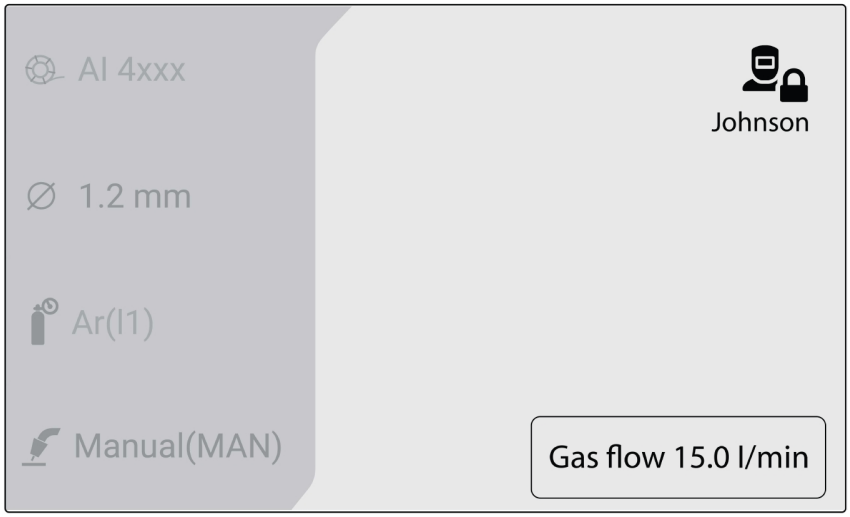
3. Personal login: The user card is needed to lock/unlock the system.



For personal login, the user card must be configured in WeldCloud Fleet with the unique serial number printed on the user card.

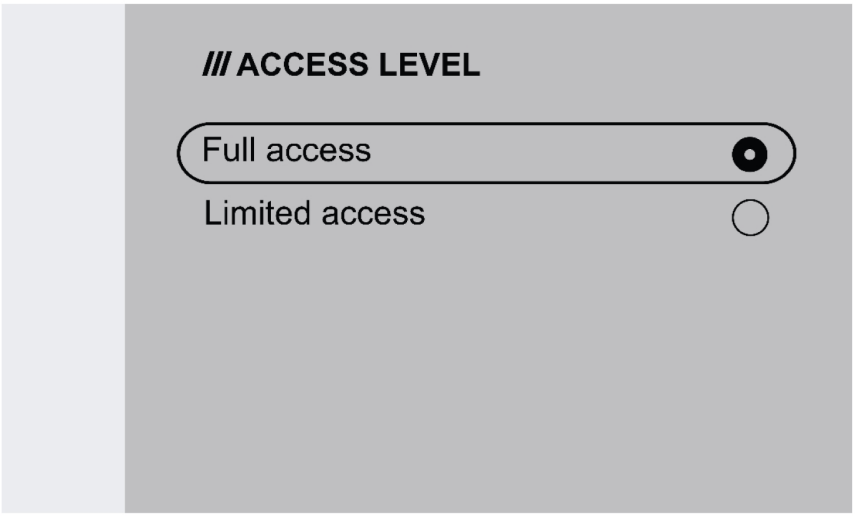
4. Refer to the step-by-step procedure on the configuration process in the InduSite Helpdesk: **manual.indusuite.com/edge-personal-login**. Additionally, utilize InduSuite's online chat support (Chat with us) for further information.

5. When using the user card in Personal login, the username is displayed.

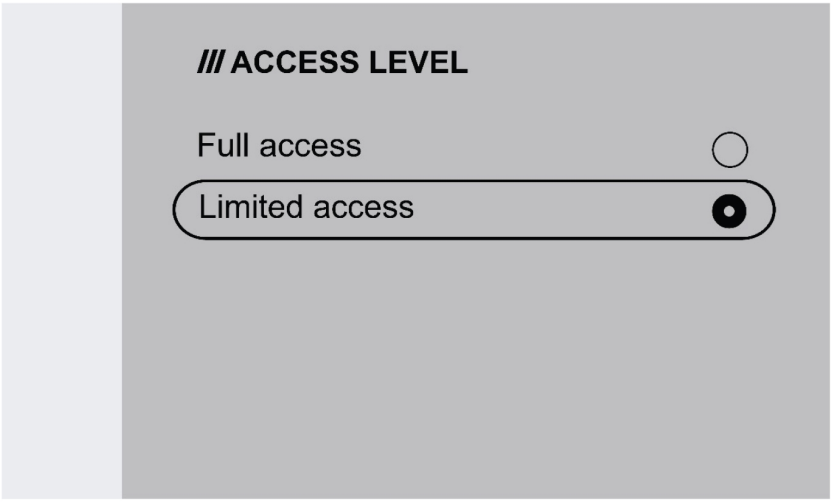


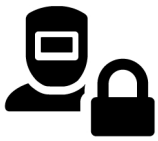
Access level
Access levels are set by the administrator.

1. Full access - The user can access all system functions except Operator management.



2. Limited access - The user can access only the below functions:
   - Quick JOBs (1-3)
   - 2/4 stroke
   - Wire inching
   - Gas purging
   - Active error acknowledgement
   - Cable length compensation when prompted - TRUEARC compensate
   - Trigger shift (if activated by the administrator)



Symbols	Description
	The icon appears in the inner HMI when the administrator is logged in.
	The icon appears in the inner HMI when the user is logged in with full access.
	The icon appears in the inner HMI when the user is logged in with limited access.
	The icon appears in the inner HMI when the system is locked.

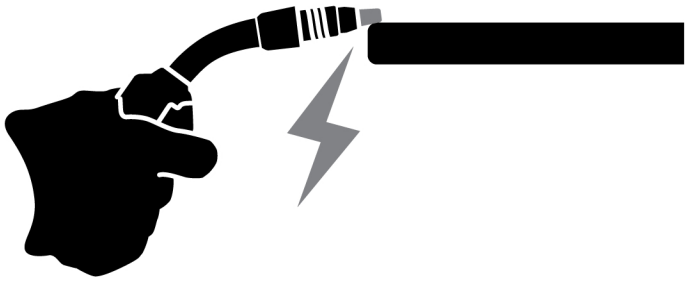
6.6 System settings

6.6.1 TRUEARC compensate

The system recognizes the deviation from the welding circuit if the cables are changed and this can affect the welding performance. It is recommended to do the TRUEARC compensation if any change in the torch, interconnection cable, and return cable.

TRUEARC compensation should be performed with the full system. Follow the below steps to perform the compensation in the internal control panel.

1. Remove the gas nozzle and cut the wire.
2. Press the side of the contact tip against a clean spot on the workpiece.
3. Press the trigger / respective function button in the panel.



6.6.2 Front panel functionality

This function enables access to the dynamics parameter for the push encoder knob (4) and the estimated amperage for the push encoder knob (9) in the external control panel. Press the push button to switch between voltage and dynamics..

The default setting of this function is deactivated to simplify the front panel operations.

6.6.3 Trigger JOB shift

This function enables changing between different jobs when the trigger of the welding torch is pressed. To change without welding, press the trigger quickly. If the trigger is held pressed for longer, the welding starts.

Changing job during welding with 2-stroke
During ongoing welding, the welding torch trigger is pressed. To change a job, release the trigger and press it quickly.

Changing welding data during welding with 4-stroke
During ongoing welding with 4-stroke, the welding torch trigger is released. To change a job, press the trigger and release it quickly.

6.6.4 Torch remote configuration

The ESAB CX torch remote can be configured by any one of the following functions:

1. JOBs
2. Voltage/Arc length
3. Wire feed speed
4. 2/4-stroke

The configuration can be done even if there is no torch remote connected to the system. If the torch remote is connected, configured modification can have a direct impact.

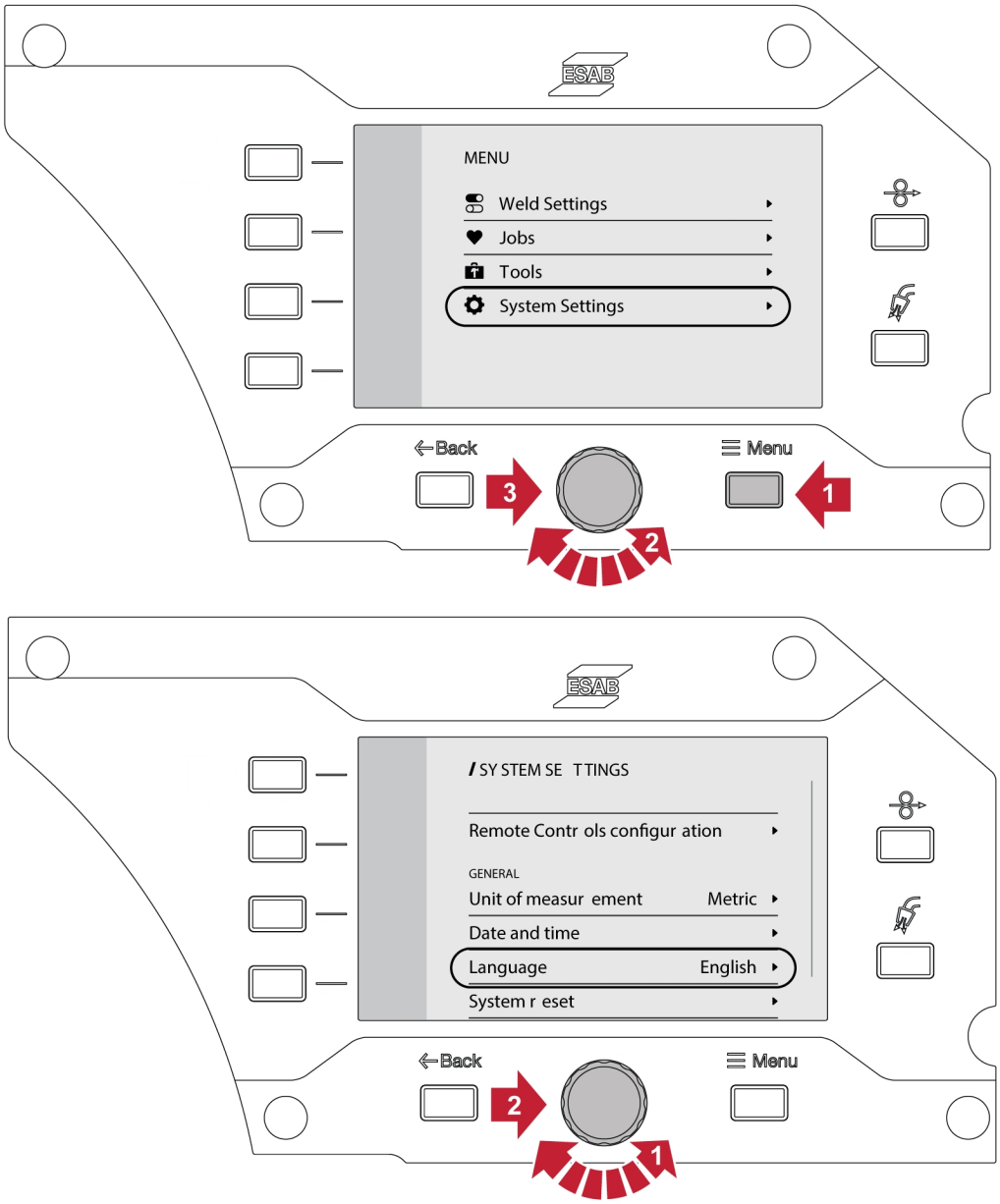
6.6.5 Hot start mode in 4-stroke

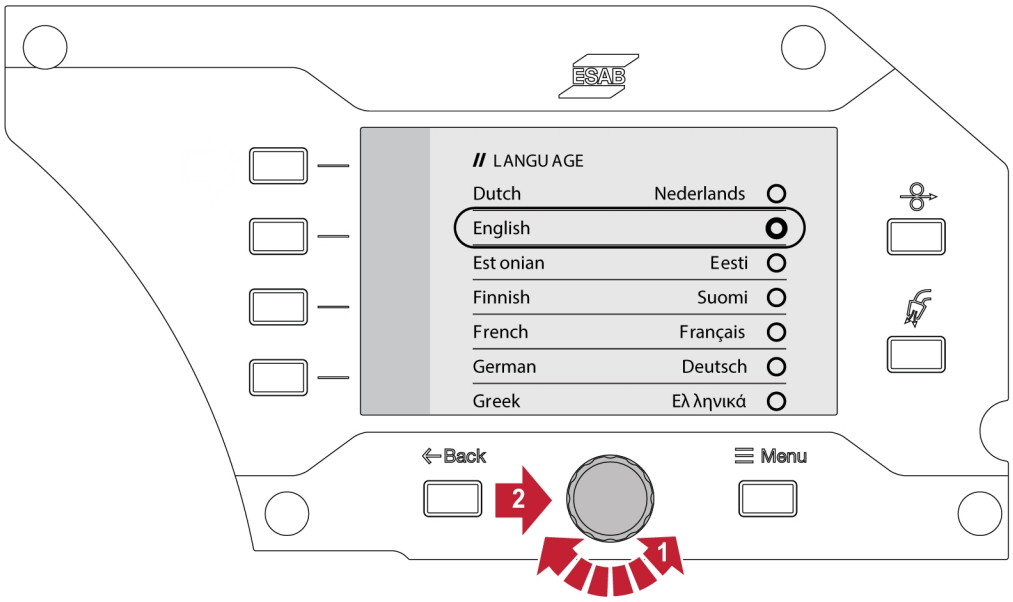
This function allows you to control the hot start in a timed or trigger-controlled manner.

- Time controlled - The hot start is performed for the defined time. The time is set in *Menu* **»** *Weld settings* **»** *Hot start*.
- Trigger controlled - The hot start process continues until the trigger is released.

6.6.6 Languages

This function enables choosing the language of the display. To choose the desired language, navigate to *Menu* **»** *System settings* **»** *Languages*





6.6.7 Unit of measurement

This function enables switching the units between the metric and imperial.

6.6.8 Date and time

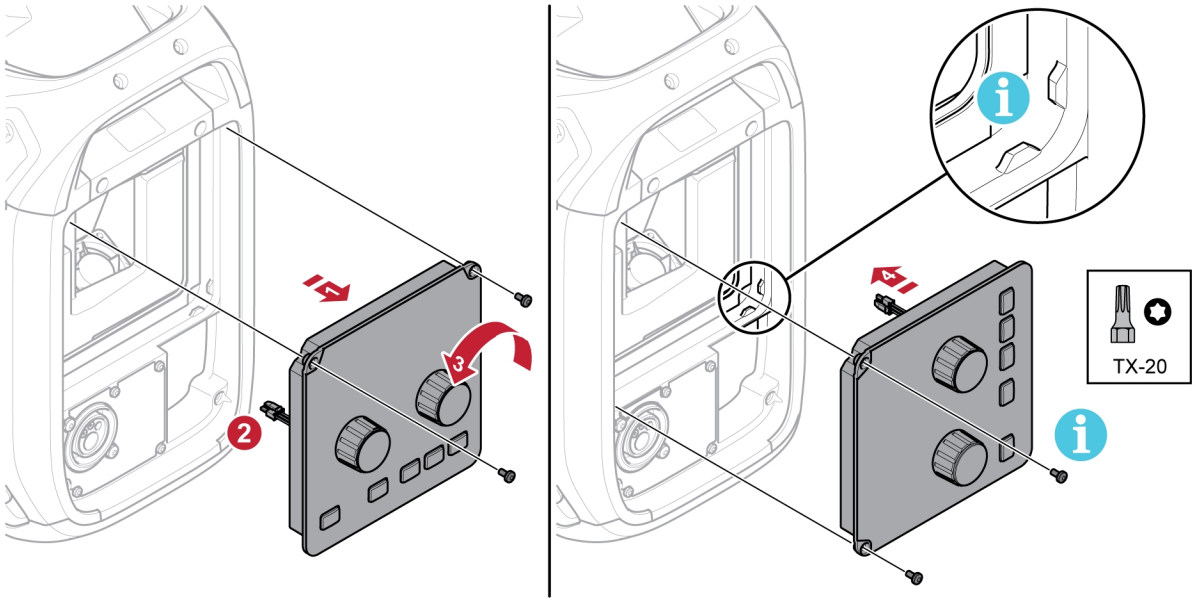
This function enables viewing / setting the date and time.

6.6.9 About

This function enables viewing the software versions of the connected subsystem.

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) Disconnect the panel harness.

3) Rotate the control panel 90° counter-clockwise.

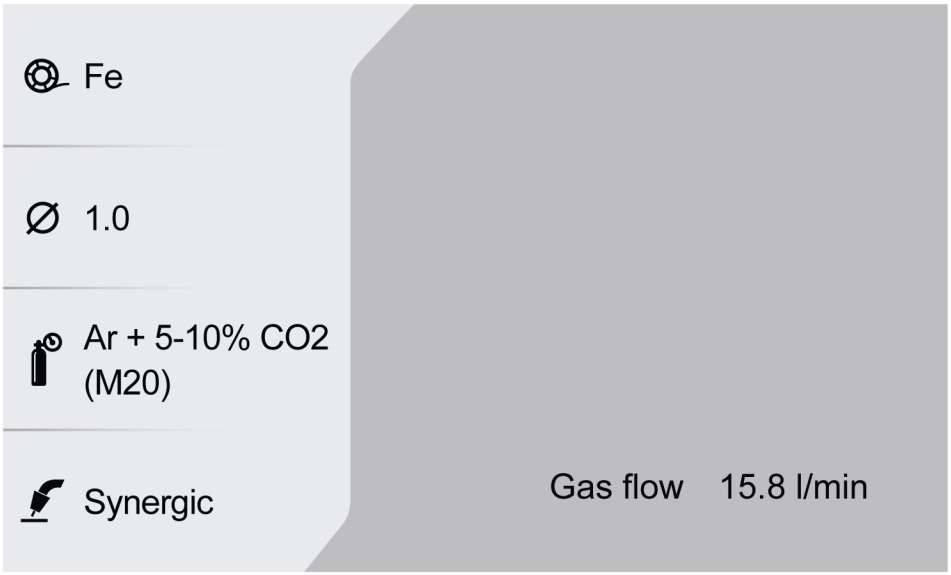
4) Attach the control panel making sure the small tabs are in the correct position.

5) Fasten the screws.

7 WELDING

7.1 MIG/MAG welding

MIG/MAG welding melts a continuously supplied filler wire, with the weld pool protected by shielding gas.



7.1.1 Setting range for Manual and Synergic

The table below shows the setting range for the manual and synergy application:

Parameter	Setting step	Unit	Range	Default
Voltage	0.1	V	8.0–44.0	8.0 V
Voltage offset (syn)	0.1		-9.9 – +9.9	0.0
Wire feed speed	0.1	m/min	0.8–25.0[1)]	0.8 m/min[1)]
	1	in./min	32–984[1)]	32 in./min[1)]
Estimated Amperage (syn)	1	A	Dependent on WFS value	
Gas flow	0.5	l/min	5.0–35.0	15 l/min
	1	CFH	11–74	32 CFH
Arc dynamics	1		-9–+9	0 (50%) for manual
Hot start			ON/OFF	OFF
Hot start time	0.1	s	0.0–10	1.2 s
Hot start V	0.1	V	Vmin-Vmax	14.5 V / 0.0 V offset
Hot start wire feed speed	1	%	50–150	115%
Gas pre-flow	0.1	s	0.0–25.0	0.1 s
Gas post-flow	0.1	s	0.0–25.0	1.5 s
Creep start			ON/OFF	ON
Crater fill			ON/OFF	OFF

Parameter	Setting step	Unit	Range	Default
Crater fill time	0.1	s	0.0–10.0	2.5 s
Crater fill V	0.1	V	8.0–44.0	14.5 V / 0.0 V offset
Crater fill wire feed speed %	1	%	0–100	25%
End method			SCT/Burnback	SCT (Burnback for core wires)
Burnback time	0.01	s	0.00–0.50	0.06 s
Burnback pinch-off pulse %	1	%	1–200	60%
Job limits			ON/OFF	OFF

[1] Depends on the selected synergic line.

7.1.2 Setting range for PULSE

The table below shows the setting range for pulse application:

Parameter	Setting step	Unit	Range	Default
Arc length offset	0.1		-9.9 – +9.9	0.0
Wire feed speed	0.1	m/min	0.8–25.0[1]	0.8 m/min[1]
	4	in./min	32–984[1]	32 in./min[1]
Estimated Amperage	1	A	Dependent on WFS value	
Gas flow	0.5	l/min	5.0–35.0	15 l/min
	1	CFH	11–74	32 CFH
Hot start			ON/OFF	OFF
Hot start time	0.1	s	0.0–10	1.2 s
Hot start arc length offset	0.1	V	-9.9 – +9.9	0.0 V offset
Hot start wire feed speed %	1	%	50–150	115%
Gas pre-flow	0.1	s	0.0–25.0	0.1 s
Gas post-flow	0.1	s	0.0–25.0	1.5 s
Creep start			ON/OFF	ON
Crater fill			ON/OFF	OFF
Crater fill time	0.1	s	0.0–10.0	2.5 s
Crater fill wire feed speed %	1	%	0–100	25%
Crater fill arc length offset	0.1	V	-9.9 – +9.9	0.0 V offset
End method			SCT/Burnback	SCT (Burnback for core wires)
Burnback time	0.01	s	0.00–0.50	0.08 s
Job limits			ON/OFF	OFF

[1] Depends on the selected synergic line.

7.1.3 Setting range for SPEED

Parameter	Setting step	Unit	Range	Default
Voltage	0.1	V	8.0–44.0	8.0 V
Voltage offset	0.1		-9.9 – +9.9	0.0 offset
Wire feed speed	0.1	m/min	0.8–25.0[1)]	0.8 m/min[1)]
	4	in./min	32–984[1)]	32 in./min[1)]
Estimated Amperage	1	A	Dependent on WFS value	
Gas flow	0.5	l/min	5.0–35.0	15 l/min
	1	CFH	11–74	32 CFH
Arc dynamics	1		-9 – +9	0
Hot start			ON/OFF	OFF
Hot start time	0.1	s	0.0–10	1.2 s
Hot start V	0.1	V	-9.9 – +9.9	0.0 V offset
Hot start wire feed speed	1	%	50–150	115%
Gas pre-flow	0.1	s	0.0–25.0	0.1 s
Gas post-flow	0.1	s	0.0–25.0	1.5 s
Creep start			ON/OFF	ON
Crater fill			ON/OFF	OFF
Crater fill time	0.1	s	0.0–10.0	2.5 s
Crater fill V	0.1	V	-9.9 – +9.9	0.0 V offset
Crater fill wire feed speed %	1	%	0–100	25%
End method			SCT/Burnback	SCT (Burnback for core wires)
Burnback time	0.01	s	0.00–0.50	0.06 s
Burnback pinch-off pulse %	1	%	1–200	60%
Job limits			ON/OFF	OFF

[1)] Depends on the selected synergic line.

7.1.4 Setting range for ROOT – pipe and THIN

Parameter	Setting step	Unit	Range	Default
Arc length	0.1		-9.9 – +9.9	0 V
Wire feed speed	0.1	m/min	0.8–25.0[1)]	0.8 m/min[1)]
	1	in./min	32–984[1)]	32 in./min[1)]
Estimated Amperage	1	A	Dependent on WFS value	
Gas flow	0.5	l/min	5.0–35.0	15 l/min
	1	CFH	11–74	32 CFH
Arc dynamics	1		-9 – +9	0
Hot start			ON/OFF	OFF
Hot start time	0.1	s	0.0–10	1.2 s

Parameter	Setting step	Unit	Range	Default
Hot start V	0.1	V	-9.9 – +9.9	0.0 V offset
Hot start wire feed speed	1	%	50–150	115%
Gas pre-flow	0.1	s	0.0–25.0	0.1 s
Gas post-flow	0.1	s	0.0–25.0	1.5 s
Creep start			ON/OFF	ON
Crater fill			ON/OFF	OFF
Crater fill time	0.1	s	0.0–10.0	2.5 s
Crater fill V	0.1	V	-9.9 – +9.9	0.0 V offset
Crater fill wire feed speed %	1	%	0–100	25%
Crater fill arc length offset	0.1		-9.9 – +9.9	0.0 V offset
End method			SCT/Burnback	SCT (Burnback for core wires)
Burnback time	0.01	s	0.00–0.50	0.06 s
Burnback pinch-off pulse %	1	%	1–200	60%
Job limits			ON/OFF	OFF

[1] Depends on the selected synergic line.

7.1.5 Function explanations for settings

Voltage
Higher voltage increases the arc length and produces a hotter, wider weld pool.

The voltage setting differs between synergy and non synergy modes. In synergy mode, the voltage is set as a positive or negative offset from the synergic line of the voltage. In non synergy mode, the voltage value is set as an absolute value.

Wire feed speed
This sets the required feed speed of the filler wire in m/minute or inch/minute.

Arc dynamics
Supplementary function for correction of dynamic arc behavior. The influence of dynamics is depending on the selected welding method and application mode used.

Estimated amperage
This is an estimated value of current to be delivered during welding. The condition of the distance from the contact tip to the workpiece will affect the correspondence between the estimated value and the actual measured amperage value during welding.

Arc length
This parameter provides the possibility of arc length adjustment from a shorter arc using a negative offset to a longer arc using a positive offset setting.

Hot start
Hot start increases the wire feed speed and the voltage for an adjustable time at the start of the welding process. The main purpose of this is to provide more energy when starting welding, which reduces the risk of poor fusion at the beginning of the welding.

The hot start wire feed speed can be set as a percentage (50-150%) of the set wire feed speed (for example, if the set wire feed speed is 10 m/min and the hot start wire feed speed is set to 50%, the output will be 5 m/min). The voltage parameter is voltage for MIG/MAG manual, voltage offset for Synergy, and arc length offset for Pulse respectively.

Pre-flow
Pre-flow controls the time during which shielding gas flows before the arc is struck.

Creep start
Creep start feeds out the wire at a low wire feed speed until it makes electrical contact with the workpiece.

Crater fill
Crater filling makes a controlled reduction in the heat and size of the weld pool possible when completing the weld. This makes it easier to avoid pores, thermal cracking and crater formation in the weld joint.

The crater fill wire feed speed can be set as a percentage (0-100%) of the set wire feed speed. The minimum wire feed speed percentage will change depending on the set wire feed speed. The voltage parameter is voltage for MIG/MAG manual, voltage offset for Synergy, and arc length offset for Pulse respectively.

Post-flow
This controls the time during which shielding gas flows after the arc is extinguished.

Termination method

SCT
SCT is a function that gives small repeated short circuits at the end of welding until the wire feeding has totally stopped and contact with the workpiece has been broken.

SCT shall not be used with cored wire.

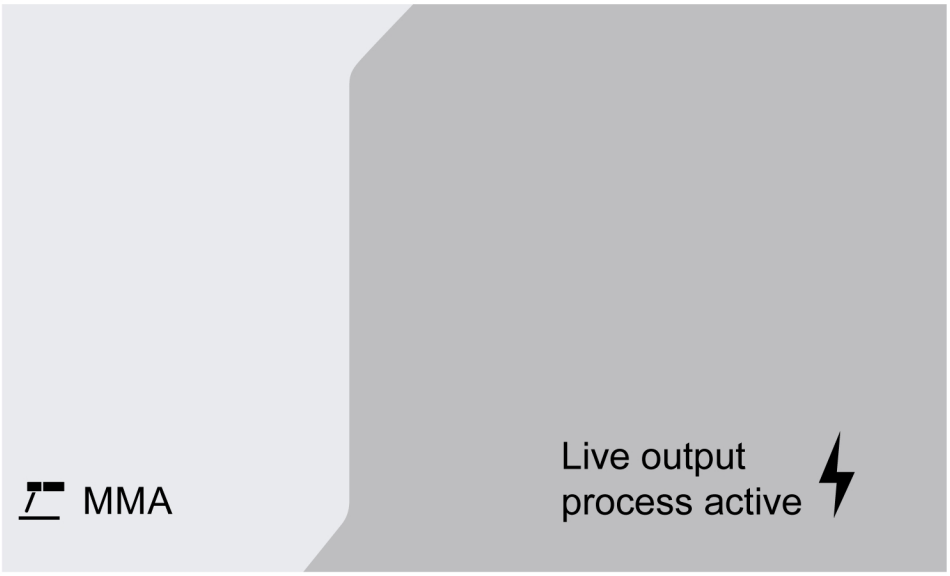
Burnback
Burnback time is a delay between the time when the wire starts to brake until the time when the power source switches off the welding voltage.

Too short burnback time results in a long wire stick out after completion of welding, with a risk of the wire being caught in the solidifying weld pool.

Too long a burnback time results in a shorter stick out, with increased risk of the arc striking back to the contact tip.

7.2 MMA welding

MMA welding may also be referred to as welding with coated electrodes. Striking the arc melts the electrode and its coating forms protective slag. When the MMA application is selected, there is a 5 s delay to protect from unintentional arc strike.



Setting range
The table below shows setting range for the MMA application.

Parameter	Setting step	Unit	Range	Default
Amperage	1	A	0 – 999	100
Dynamics (arc force)	1		-9 – +9	
Hot start			ON/OFF	ON
Hot start A%	1	%	100 – 150	115%

7.2.1 Function explanations for settings

Current

A higher current produces a wider weld pool, with better penetration into the workpiece.

Arc force

The arc force is important in determining how the current changes in response to a change in the arc length. A lower value gives a calmer arc with less spatter.

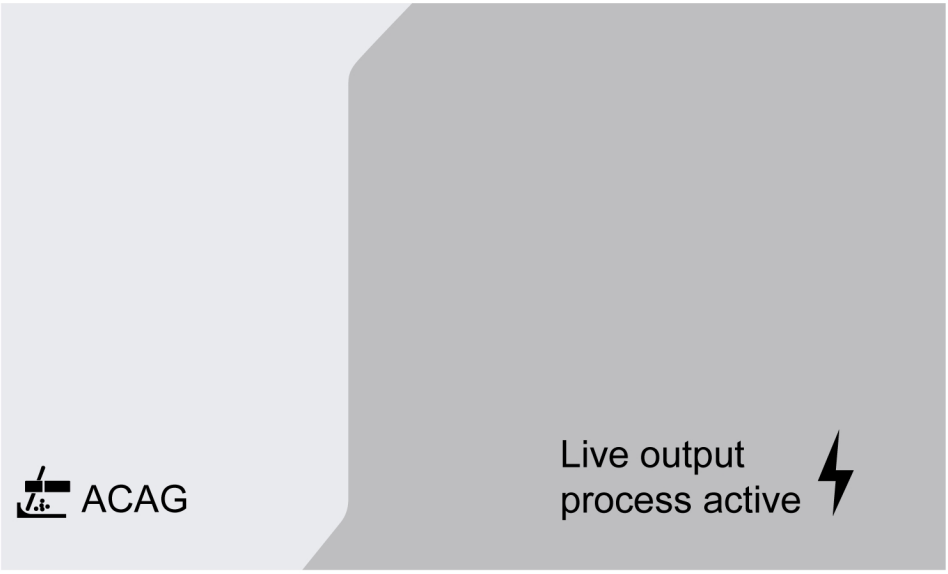
Hot start

Hot start increases the weld current for an adjustable time at the start of welding, thus reducing the risk of poor fusion at the beginning of the joint.

7.3 Gouging

With arc air gouging, a special electrode comprising a carbon rod with a copper casing is used. An arc is formed between the carbon rod and the workpiece, which melts the material. Air is supplied so that the melted material is blown away.

When the Gouging application is selected, there is a 5 s delay to protect from unintentional arc strike.



Setting range
The table below shows setting range for the gouging application.

Parameter	Setting step	Unit	Range	Default
Voltage	0.1	V	35.0 – 54.0	35.0

Recommended voltage setting for gouging electrodes

Electrode size	in	1/8	5/32	3/16	1/4	5/16	3/8
	mm	3.2	4.0	4.8	6.4	7.9	9.5
Voltage	V	35-38	36-40	38-42	40-46	44-50	46-54

7.3.1 Function explanations for settings

Voltage

A higher voltage produces a wider weld pool, with better penetration into the workpiece. The voltage is set in the measure screen, weld data setting or fast mode menus.

7.4 TIG welding

TIG welding melts the metal of the workpiece, with an arc initiated from a non-consuming tungsten electrode. The weld pool and electrode are protected by shielding gas.

For TIG welding, the feeder shall be supplemented with:

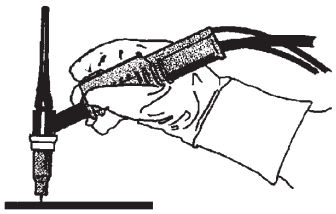
- a TIG torch with gas valve
- an argon gas cylinder
- an argon gas regulator
- a tungsten electrode
- a control cable

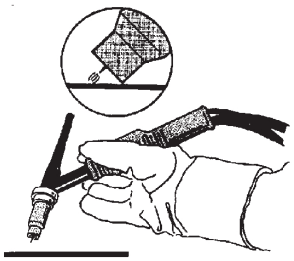
The system performs **Live TIG start (TIG Live)**.

The tungsten electrode is placed against the workpiece. When lifted away from workpiece the arc is struck at a limited current level.

WARNING!
Disconnect all the cables in the interconnection from the power source except for the control cable.

The return cable should be connected to positive, and the weld cable should be connected to negative.





8 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.

8.1 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.

9 EVENT CODES

Event codes are used in order to indicate and identify an error in the equipment. Event codes provide information about the equipment.

Fault log
All faults that occur when using the welding equipment are documented as error messages in the fault log. When the fault log is full, the oldest message will automatically erase when the next fault occurs.

The most recent fault message is displayed on the control panel. The entire fault log as well as corrective action can be read on the internal control panel.

List of event codes
The control panel displays an event code with three digits and the first digit indicates the type of event. The type of event (first digit of the event code) are as follows:

0 = System
1 = Communication
2 = Power source
3 = Wire feed unit
4 = Cooling unit
6 = Gas unit
7 = External

NOTE!
The last two digits indicate the event description at which the user can take corrective action. If the error code persist or any other code is shown, contact a service technician.

The example presented in the graphic to the left, indicates that the Supply voltage fault in the power source.

x01 Application fault

This event code is displayed due to one of the following:

- 001 - Application checksum error.

1. Acknowledge by pressing any buttons on the control panel.
2. Restart the system.

x05 Supply voltage fault

This event code is displayed due to one of the following:

- 205 - Mains over/under voltage or phase error.

1. Make sure that the supply voltage is stable.
2. Restart the system.

x06 Temperature fault

This event code is displayed due to one of the following:

- 406 - Return coolant temperature warning/error.
- 206 - Overtemperature.
- 306 - High wire motor temperature warning/error.

For 406 and 206

1. Make sure that the cooling air inlets or outlets are not blocked or clogged by dirt.
2. Check that the duty cycle is used in order for the equipment not being overloaded.
3. Wait until temperature cools down.

For 306

1. Check the liner, clean using pressurised air and replace the liner if damaged or worn out.
2. Check the wire pressure setting and adjust if needed.
3. Check the drive rolls for wear and replace if needed.
4. Make sure the filler metal spool can rotate without much resistance. Adjust the brake hub if needed.
5. Restart the system.
6. If the error persists despite performing these actions, try replacing the torch.

x08 Battery warning

This event code is displayed due to one of the following:

- 208 - RTC/SRAM battery low warning.

1. Make sure that the polarity (+, - terminals) of the battery is right.
2. Contact authorised service technician to replace the battery.

x09 Internal voltage error

This event code is displayed due to one of the following:

- 209 - Internal over/under voltage error.

1. Restart the system.
2. Contact authorised person to check the main inputs.

x11 Wire feed speed fault

This event code is displayed due to one of the following:

- 311 - Wire saturation warning/error.
- 311 - Wire motor start/work current error.

1. Check the correct liners/contact tip/torch used for types of welding wires.
2. Check the torque tension in the break hub.

3. Make sure that the wire feed speed control is dust free and rotate.
4. Acknowledge by pressing any buttons on the control panel.
5. Contact service technician to check drive motor.

x14 Communication fault

This event code is displayed due to one of the following:

- 114 - Weld control communication error.
- 114 – TCP/LIN communication layer warning.
- 114 - Connection to main control lost.
- 114 - FieldBus interface lost / Connection lost FieldBus master.
- 114 – TCP/UDP communication error.

1. Check that all the equipment is correctly connected.
2. Acknowledge by pressing any buttons on the control panel.
3. Do not turn OFF the system and contact service technician.

x15 Short circuit detected

This event code is displayed due to one of the following:

- 215 - Weld contact detected at startup.

1. Make sure that the welding cables are properly installed of the weld terminals.
2. Acknowledge by pressing any buttons on the control panel.
3. Contact service technician.

x16 High open circuit voltage fault

This event code is displayed due to one of the following:

- 216 - Voltage sensor lost.
- 216 - OCV level is too high.
- 216 - Current brake module lost.
- 216 - Current brake function error.

1. In case of voltage sensor lost, contact service technician. Otherwise restart the system.

x17 Lost contact with another unit

This event code is displayed due to one of the following:

- 017 - Mandatory node missing.
- 017 - Critical node lost.

1. Check the cable connections between the subsystem (wire feeder and power source).

2. Acknowledge by pressing any buttons on the control panel.
3. Contact service technician.

x18 Internal memory fault

This event code is displayed due to one of the following:

- 018 - Partition data storage warning.

1. Make sure that network connection is stable with WeldCloud and acknowledge.

x19 Memory fault

This event code is displayed due to one of the following:

- 019 - Parameter memory read/write error.
- 019 - Log read/write error.

1. Restart the system.
2. Contact service technician.

x20 User management fault

This event code is displayed due to one of the following:

- 020 - No valid job available.

1. Make sure that the predefined jobs are saved by admin.

x21 Import/export fault

This event code is displayed due to one of the following:

- 021 - Wrong version WeldMode package.

1. Make sure that the correct software is uploaded by admin.

x25 Incompatible units

This event code is displayed due to one of the following:

- 025 - System communication version mismatch warning/error.
- 025 - Power converter control module version not valid.
- 025 - Power converter control module power capacity unknown.

1. Contact service technician.
2. Make sure that the software version should be similar for each connected nodes.
3. Connect the correct wire feed unit and restart.

x26 Timing fault

This event code is displayed due to one of the following:

- 026 - Watchdog timeout.
- 026 - Process control error.

1. Restart the system.
2. Acknowledge by pressing any buttons on the control panel.
3. Contact service technician.

x29 No coolant flow

This event code is displayed due to one of the following:

- 429 - ELP off during welding.
- 429 – No flow in water cooling sensor.
- 429 – Cooling preconditions error.

1. Check the coolant hose connections and acknowledge.
2. Wait until temperature cools down.

x31 Gas pressure fault

This event code is displayed due to one of the following:

- 631 - Gas input pressure warning/error.

1. If flow only regulator is used, ensure it is set at maximum level.
2. Check that the gas pressure input to the feeder is between 3-5 bar. If not, adjust the gas pressure to the recommended level.
3. Check that the gas hoses connected to the feeder are not being strangulated and ensure there is no gas leakage.
4. Acknowledge the shown error(s) by pressing any button on the control panel.
5. Select the appropriate gas flow setting in the control panel.
6. Contact service technician.

x32 Gas flow fault

This event code is displayed due to one of the following:

- 632 - Gas saturation warning/error.
- 632 - No gas out error.

1. Perform the inspections listed in X31 (Gas pressure fault) 1 to 5.
2. Check that the torch gas hose is not strangulated.

3. Check that the gas pressure input to the feeder is between 3-5 bar. If not, adjust the gas pressure to the recommended level.

4. Disconnect the torch and press the gas purge button. If the error does not appear, replace the torch.

x33 USB fault

This event code is displayed due to one of the following:

- 033 - USB high current.
- 033 - USB read/write error.

1. Make sure that the USB is in good working condition and configured properly.

2. Contact service technician.

x35 Software runtime fault

This event code is displayed due to one of the following:

- 035 - Message allocation error.
- 035 - Driver message allocation error.
- 035 - Event queue overflow.
- 035 - Failed to start microservices.

1. Restart the system.

2. Contact service technician.

10 TROUBLESHOOTING

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

Fault symptom	Fault description and corrective actions
The wire feed is slow/stiff through the wire feed mechanism.	**Corrective actions:** Clean the liners and other mechanical parts of the wire feed mechanism, using pressurized air. Clean and adjust the roller pressure as per the table on the decal on the left side door.

11 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.

RobustFeed Edge is designed and tested in accordance with the international and European standards **EN IEC 60974-5** and **EN IEC 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.

12 CALIBRATION AND VALIDATION

WARNING!
Calibration and validation should be performed by a trained service technician, possessing sufficient training in welding and measurement technology. The technician should have knowledge of hazards that may occur during welding and measurement and should take necessary protective actions!

12.1 Measurement methods and tolerances

When calibrating and validating, the reference measuring instrument must use the same measuring method in the DC range (averaging and rectification of the measured values). A number of measurement methods are used for reference instruments, e.g. TRMS (True Root Mean Square), RMS (Root-Mean-Square) and rectified arithmetic mean. Warrior Edge 500 uses the rectified arithmetic mean value and should therefore be calibrated against a reference instrument using the rectified arithmetic mean value.

In the field application it will occur that a measuring device and a Warrior Edge 500 may display different values even though both systems are validated and calibrated. This is due to the measurement tolerances and the method of measurement of the two measurement systems. This can result in a total deviation up to the sum of both measurement tolerances. If the measurement method differ (TRMS, RMS or rectified arithmetic mean), significantly larger deviations are to be expected!

The ESAB Warrior Edge 500 welding power source presents the measured value in rectified arithmetic mean and should therefore not show any significant differences compared to other ESAB welding equipment, due to the measurement method.

12.2 Requirements, specifications and standards

Warrior Edge 500 is designed to meet the accuracy for indication and meters required by IEC/EN 60974-14, by definition Standard grade.

Calibration accuracies of displayed value - Standard grade

Arc voltage	**±1.5 V** (Umin–U2) under load, resolution 0.1 V (Theoretical measuring range in a Warrior Edge 500 system is 0.1–199 V.)
Welding current	**±2.5%** of I2 max according to rating plate of the unit under test, resolution 1 A. The measuring range is specified by the rating plate on the used Warrior Edge 500 welding power source.

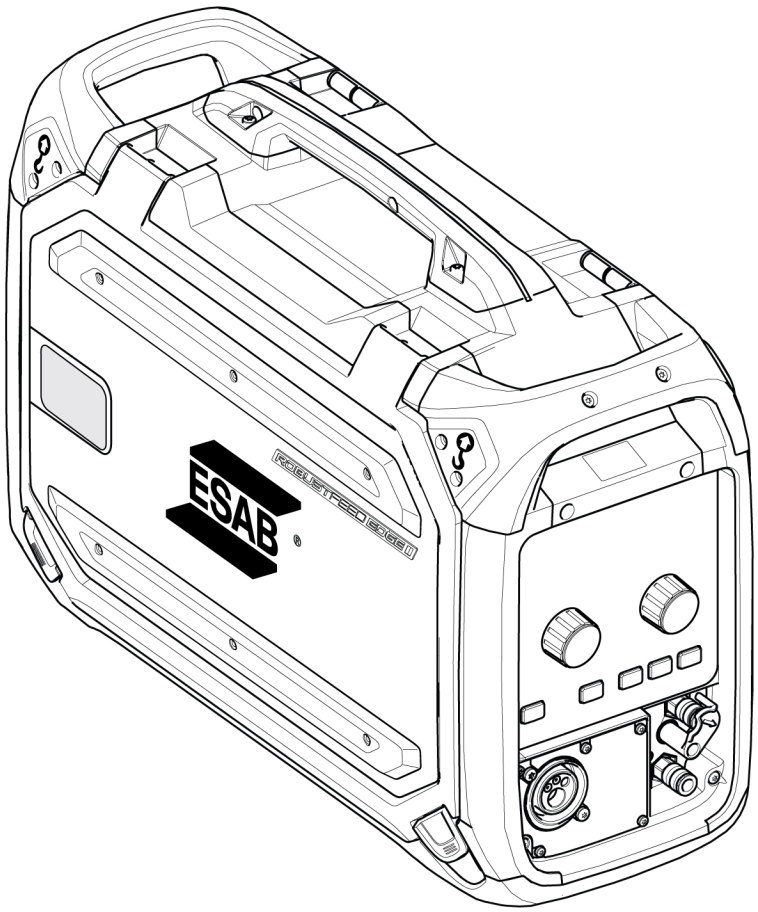
Calibration accuracies of displayed value - Precision grade

Arc voltage	**±0.6 V** (Umin–U2) under load, resolution 0.1 V (Theoretical measuring range in a Warrior Edge 500 system is 0.1–199 V.)
Welding current	**±1.0%** of I2 max according to rating plate of the unit under test, resolution 1 A. The measuring range is specified by the rating plate on the used Warrior Edge 500 welding power source.

Recommended method and applicable standard
ESAB recommends calibration to be executed according to the manufacturer specification for Precision grade, using ESAT EDGE. Standard grade can be executed according to IEC/EN 60974-14(:2018) in CV-Mig/Mag manual mode or in CC-MMA mode.

APPENDIX

ORDERING NUMBERS

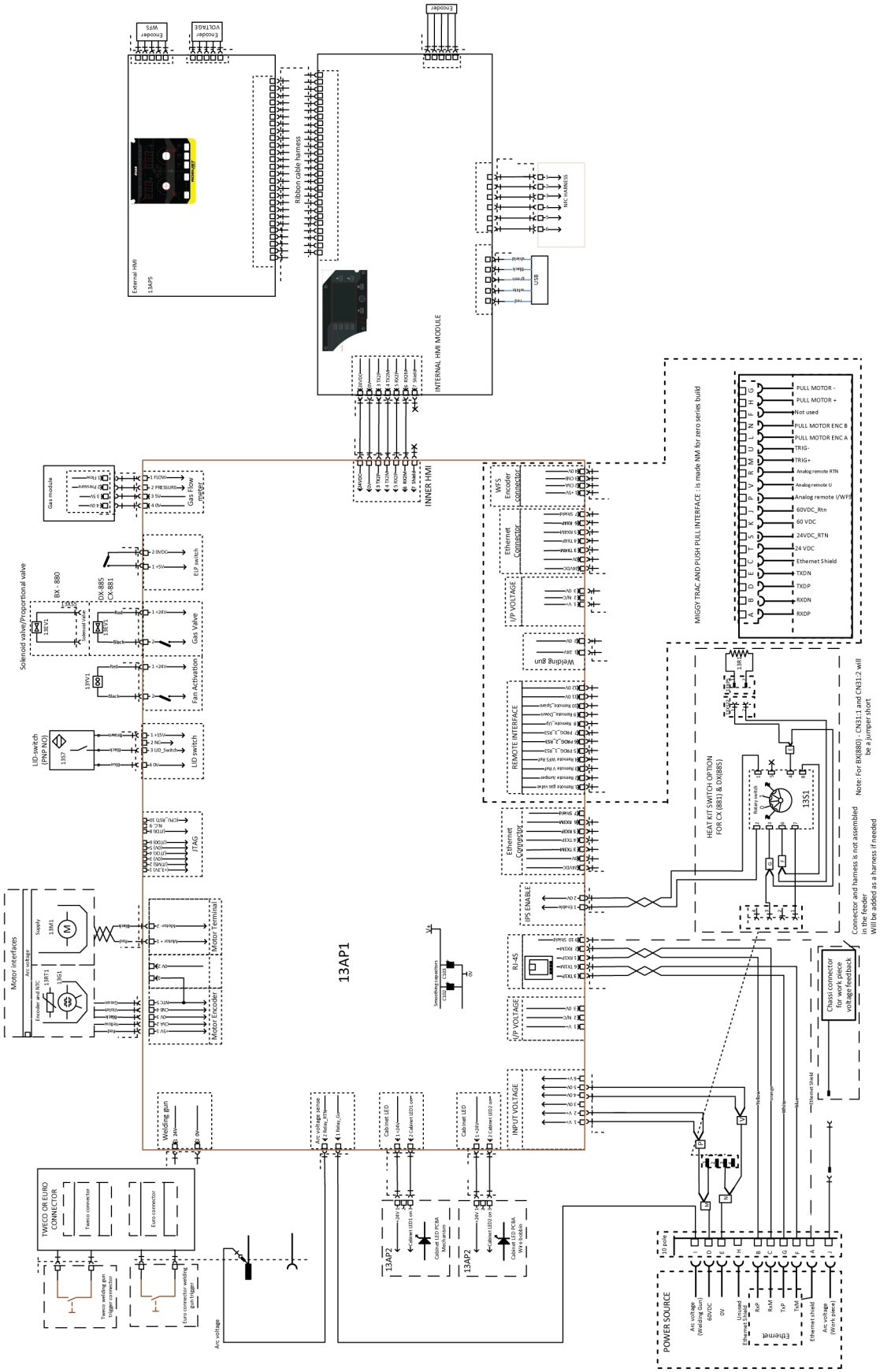


Ordering no.	Denomination	Notes
0446 600 880	RobustFeed Edge BX	With EURO connector, torch cooling system and NFC.
0446 600 881	RobustFeed Edge CX	With EURO connector, torch cooling system, NFC, heater and TrueFlow digital gas control
0446 600 885	RobustFeed Edge DX Tweco	With Tweco connector, MMA outlet, torch cooling system, NFC, heater and TrueFlow digital gas control
0463 773 *	Instruction manual	RobustFeed Edge
0463 787 001	Spare parts list	RobustFeed Edge
0463 845 001	Service manual	RobustFeed Edge

The three last digits in the document number of the manual show the version of the manual. Therefore they are replaced with * here. Make sure to use a manual with a serial number or software version that corresponds with the product, see the front page of the manual.

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

WIRING DIAGRAM



WEAR PARTS

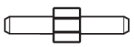
Fe, Ss and cored wire

Wire diameter (mm) (in.)	**0.6** .023	**0.8** .030	**0.9/1.0** .040	**1.2** .045	**1.4** .052	**1.6** 1/16	**1.8** .070	**2.0** 5/64	**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 830 881 (Euro)
		0445 830 883 (Tweco)

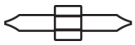
Cored wire – Different wire guides dependent on wire diameter

Wire diameter (mm) (in.)	**0.9/1.0** .040	**1.2** .045	**1.4** .052	**1.6** 1/16	**1.8** .070	**2.0** 5/64	**2.4** 3/32	**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

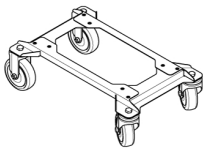
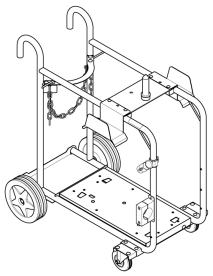
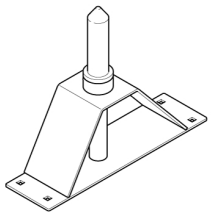
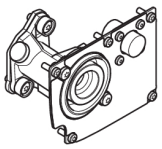
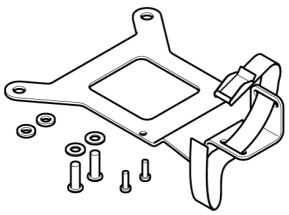
	Inlet wire guide 	**Middle wire guide** 	**Outlet wire guide** 
Wire diameter 0.9–1.6 mm 0.040–1/16 in.	0445 822 001 (2 mm)	0446 080 882	0445 830 881 (Euro)
			0445 830 883 (Tweco)
Wire diameter 1.8–2.4 mm 0.070–3/32 in.	0445 822 002 (3 mm)	0446 080 883	0445 830 882 (Euro)
			0445 830 884 (Tweco)

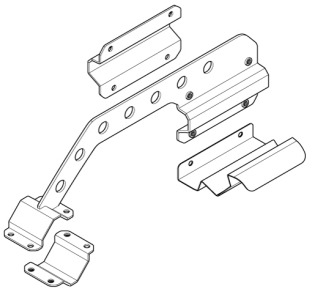
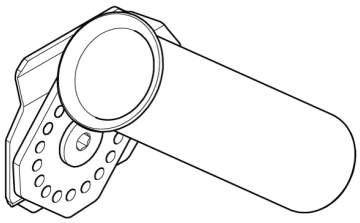
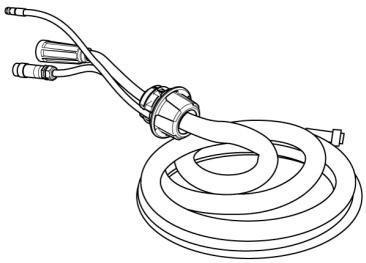
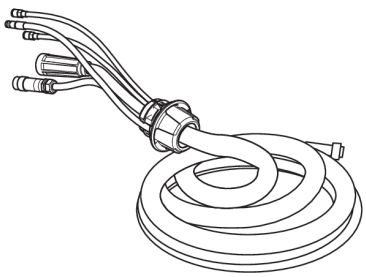
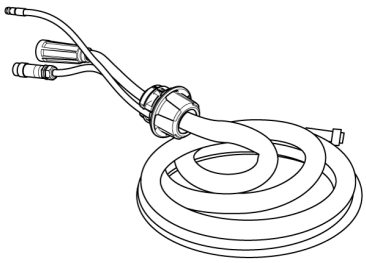
Al wire

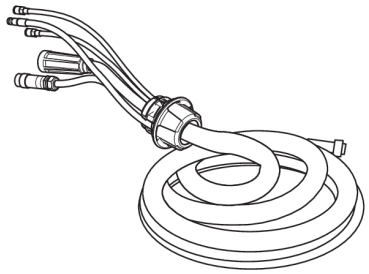
Wire diameter (mm) (in.)	**0.6** .023	**0.8** .030	**0.9/1.0** .040	**1.2** .045	**1.4** .052	**1.6** 1/16	**1.8** .070	 **Feed roller**
U-groove 		**X**	**X**					0445 850 050
			X	**X**				0445 850 051
				X		**X**		0445 850 052

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

ACCESSORIES

0447 776 880	**NFC Admin card kit** • 5 Admin cards	
0447 776 881	**NFC User card kit** • 5 User cards	
0446 081 880	**Wheel kit**	
0349 313 450	**Trolley**, compatible with RobustFeed Edge and Warrior Edge 500	
0465 508 880	**Guide pin extension kit** For the feeder assembled with the wheel kit	
0446 120 882	**Tweco 4 connector** including front plate	
F102 440 880	**Quick connector Marathon Pac™**	
0446 082 880	**Torch strain relief**	

0446 956 880	**Boom adaptor kit** including a stopper for RobustFeed door For assembly instructions, refer to the Boom adaptor assembly instruction manual	
0446 958 880	**Torch holder** For assembly on the RobustFeed For assembly instructions, refer to the Torch holder assembly instruction manual	
Interconnection cable with pre-assembled strain relief, Air cooled, 70 mm²		
0446 310 880	2.3 m (7 ft)	
0446 310 881	5 m (16 ft)	
0446 310 882	10 m (33 ft)	
0446 310 883	15 m (49 ft)	
0446 310 884	20 m (66 ft)	
0446 310 885	25 m (82 ft)	
0446 310 886	35 m (115 ft)	
0446 310 887	50 m (164 ft)	
Interconnection cable with pre-assembled strain relief, Liquid cooled, 70 mm²		
0446 310 890	2.3 m (7 ft)	
0446 310 891	5 m (16 ft)	
0446 310 892	10 m (33 ft)	
0446 310 893	15 m (49 ft)	
0446 310 894	20 m (66 ft)	
0446 310 895	25 m (82 ft)	
0446 310 896	35 m (115 ft)	
Interconnection cable with pre-assembled strain relief, Air cooled, 95 mm²		
0446 310 980	2.3 m (7 ft)	
0446 310 981	5 m (16 ft)	
0446 310 982	10 m (33 ft)	
0446 310 983	15 m (49 ft)	
0446 310 984	20 m (66 ft)	
0446 310 985	25 m (82 ft)	
0446 310 986	35 m (115 ft)	
0446 310 987	50 m (164 ft)	
Interconnection cable with pre-assembled strain relief, Liquid cooled, 95 mm²		

0446 310 990	2.3 m (7 ft)	
0446 310 991	5 m (16 ft)	
0446 310 992	10 m (33 ft)	
0446 310 993	15 m (49 ft)	
0446 310 994	20 m (66 ft)	
0446 310 995	25 m (82 ft)	
0446 310 996	35 m (115 ft)	

A **WORLD** OF **PRODUCTS** AND **SOLUTIONS.**

For contact information visit http://esab.com

ESAB AB, Lindholmsallén 9, Box 8004, 402 77 Gothenburg, Sweden, Phone +46 (0) 31 50 90 00

manuals.esab.com