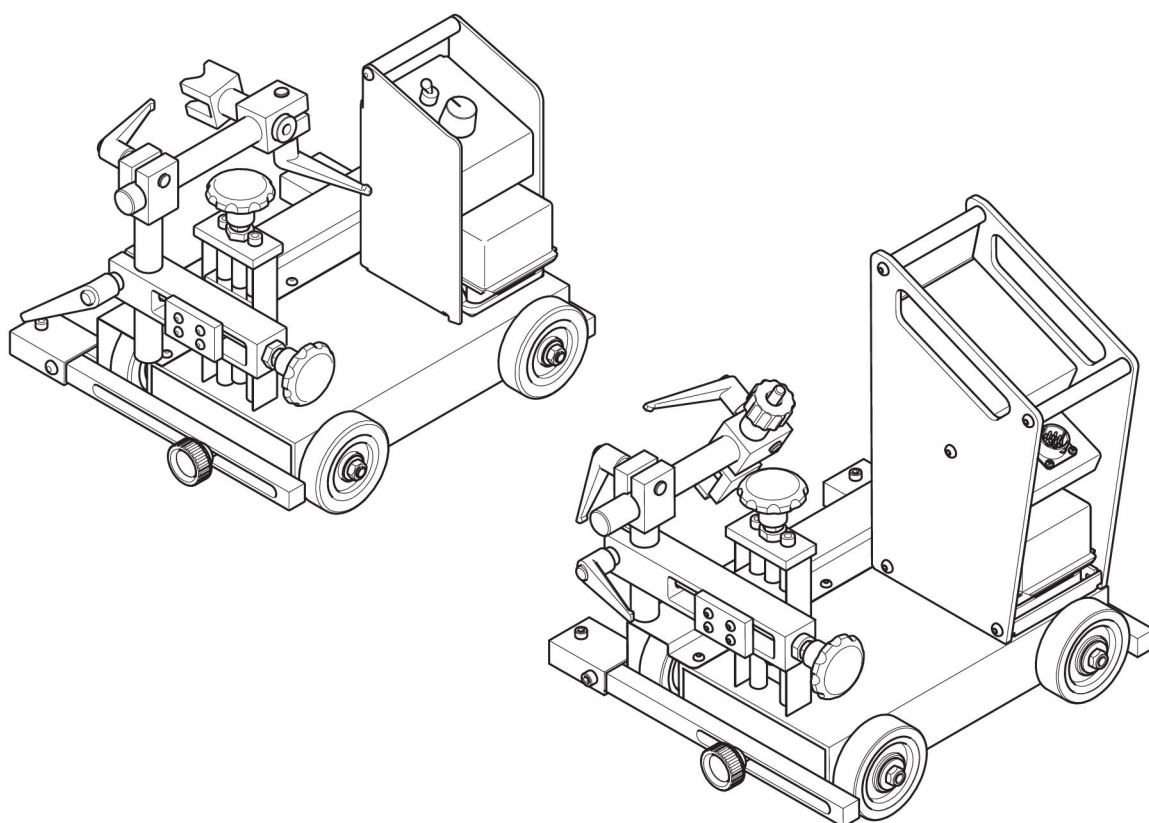




Miggytrac™ B501, ***Miggytrac™ B5001***



Instruction manual



EU DECLARATION OF CONFORMITY

According to
The Machinery Directive 2006/42/EU, entering into force 29 December 2009
The EMC Directive 2014/30/EU, entering into force 20 April 2016
The RoHS Directive 2011/65/EU, entering into force 2 January 2013

Type of equipment

Welding carriage

Type designation

Miggytrac B501, Serial number: 1525 xxxx

Brand name or trademark

ESAB

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

ESAB AB
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden
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 12100:2010, Safety of machinery - General principles for design. Risk assessment and risk reduction
EN 60204-1:2006/AC2010, Safety of machinery - Electrical equipment of machines. Part 1: General requirements
EN 61000-6-2:2005/AC:2005 Electromagnetic compatibility (EMC). Part 6-2: Generic standards. Immunity for industrial environments.
EN 61000-6-3:2007/A1:2011 Electromagnetic compatibility (EMC). Part 6-3: Generic standards. Emission standard for residential, commercial and light-industrial environments

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

2018-10-15

Signature

Edward Hansen

Position

Global Director, Flexible Automation

CE 2018



EU DECLARATION OF CONFORMITY

According to
The Machinery Directive 2006/42/EU, entering into force 29 December 2009
The EMC Directive 2014/30/EU, entering into force 20 April 2016
The RoHS Directive 2011/65/EU, entering into force 2 January 2013

Type of equipment

Welding carriage

Type designation

Miggytrac B5001, Serial number: 1810 xxxx

Brand name or trademark

ESAB

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

ESAB AB
Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden
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 12100:2010,	Safety of machinery - General principles for design. Risk assessment and risk reduction
EN 60974-10:2014	Arc welding equipment - Part 10: Electromagnetic compatibility (EMC) requirements
EN 61000-6-2:2005/AC:2005	Electromagnetic compatibility (EMC). Part 6-2: Generic standards. Immunity for industrial environments.
EN 61000-6-4:2007/A1:2011	Electromagnetic compatibility (EMC). Part 6-4: Generic standards. Emission standard for industrial environments

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.

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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).



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!**

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

**ELECTRIC SHOCK - Can kill**

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

**ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health**

- Welders 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 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.



WARNING!

If the maximum operating temperature of the battery (+60 °C) is exceeded, there is a high risk of explosion!



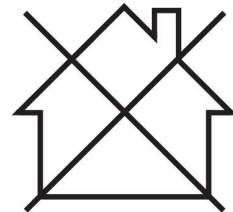
WARNING!

Do not use the power source for thawing frozen pipes.



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.



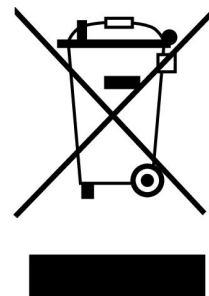
NOTE!

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 Miggytrac™ B501 and Miggytrac™ B5001 are designed for MIG/MAG welding of plates and beams.

The Miggytrac™ B501 and Miggytrac™ B5001 are compact tractors on which a welding torch can be fitted. Both tractors can be powered with 18 V DC from a lithium-ion battery. The Miggytrac™ B5001 can also be powered with 42 V AC from a welding power source. The tractors are equipped with four wheel drive for good traction and a high torque stepper motor for stable welding speed. The Miggytrac™ is intended for welding with 4-stroke control mode.

As an option there is an easy fit magnet kit. The magnet kit can be attached at the bottom of the tractor to further stabilize the movement when welding slopes up to 45°.

A battery and a battery charger are not included in the delivery, refer to the "ACCESSORIES" chapter in this manual.

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

3 TECHNICAL DATA

Miggytrac™ B501 and Miggytrac™ B5001, from serial no. 1847 xxxx		
	Miggytrac™ B501	Miggytrac™ B5001
Battery voltage (lithium-ion)	18 V DC	
External supply voltage	–	20–50 V AC 24–70 V DC
Battery operating time	6–8 hours	4–6 hours
Motor type	Stepper motor	
Welding speed	10–130 cm/min (4–51 in./min)	2–170 cm/min (1–66 in./min)
Travel speed step welding	–	250 cm/min (99 in./min)
Length step welding	–	1–99 cm (0.1–19.9 in.)
Crater pause	–	0–5.0 s
Backfill	–	0–50 mm (0–2.0 in.)
Preheat	–	0–5.0 s
Remote volt and wire feed speed	–	10–95%
Mechanical adjustments:		
Horizontal slide	±32 mm (±1.3 in.)	
Vertical slide	±40 mm (±1.6 in.)	
Guide wheel arms	±40 mm (±1.6 in.)	
Maximum operating temperature:		
Battery	+60 °C (140 °F)	
Carriage	+80 °C (176 °F)	
Drive wheels	+150 °C (302 °F)	
Horizontal tensile force:		
Without magnets	12 kg (26 lb)	
With magnets	25 kg (55 lb)	
Vertical tensile force at 45° with magnet	11 kg (24 lb)	
Maximum drive angle with magnet kit	45°	
Dimensions (l×w×h)	310×290×250 mm (12.2×11.4×9.84 in.)	310×290×340 mm (12.2×11.4×13.4 in.)
Weight	12 kg (26 lb)	13 kg (29 lb)

4 INSTALLATION

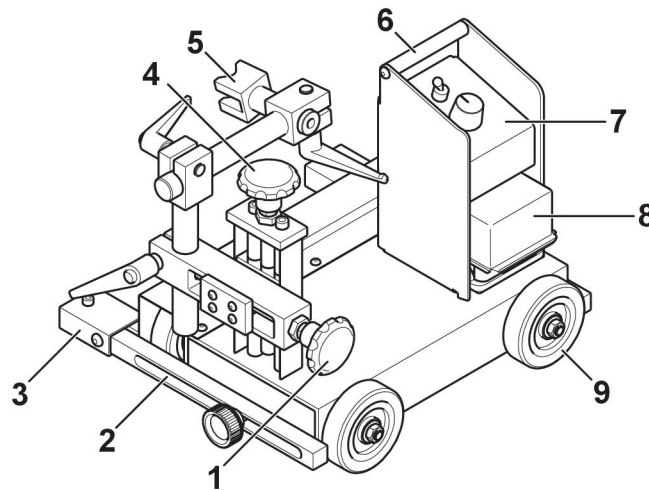
The installation must be carried out by a professional.



NOTE!

The graphics in this chapter show the Miggytrac™ B501 tractor. However all installation and adjustments are performed in the same way on the Miggytrac™ B5001 tractor, unless others are stated.

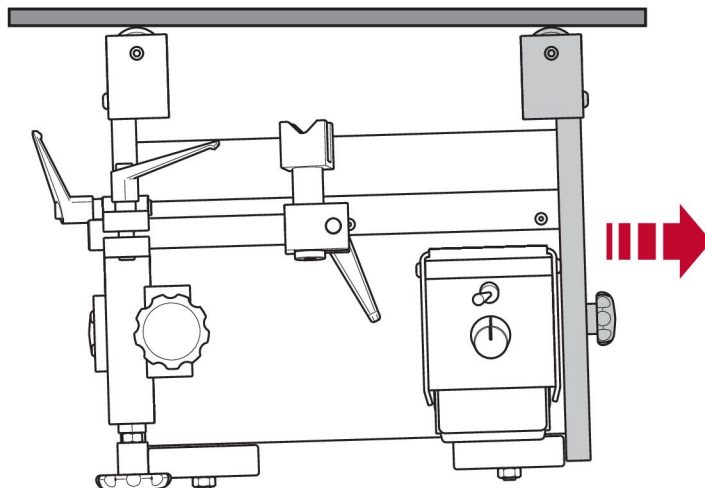
4.1 Assembly

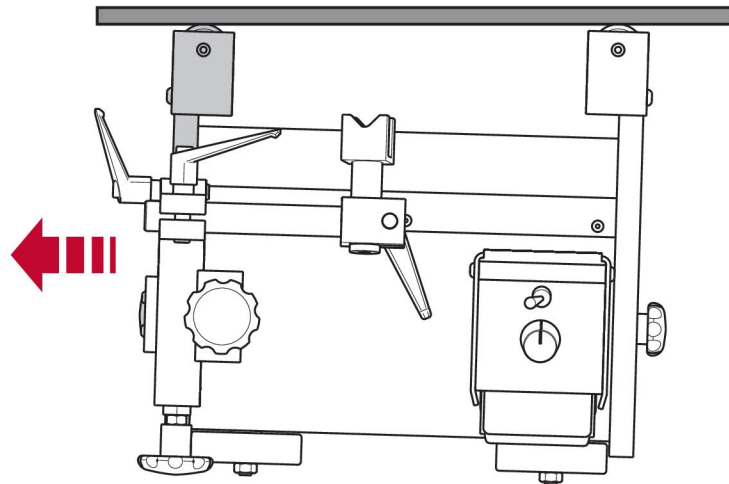


- | | |
|--------------------------------|-------------------|
| 1. Knob, horizontal adjustment | 6. Handle |
| 2. Adjustable arm | 7. Control panel |
| 3. Support wheel | 8. Battery |
| 4. Knob, vertical adjustment | 9. Driving wheels |
| 5. Connection welding torch | |

4.2 Adjust the front arm

Adjust the front arm to be 10 mm shorter than the rear arm, in order to make the Miggytrac™ go diagonally along the plate. This provides positive traction against the guiding structure and the tractor maintains the desired path.





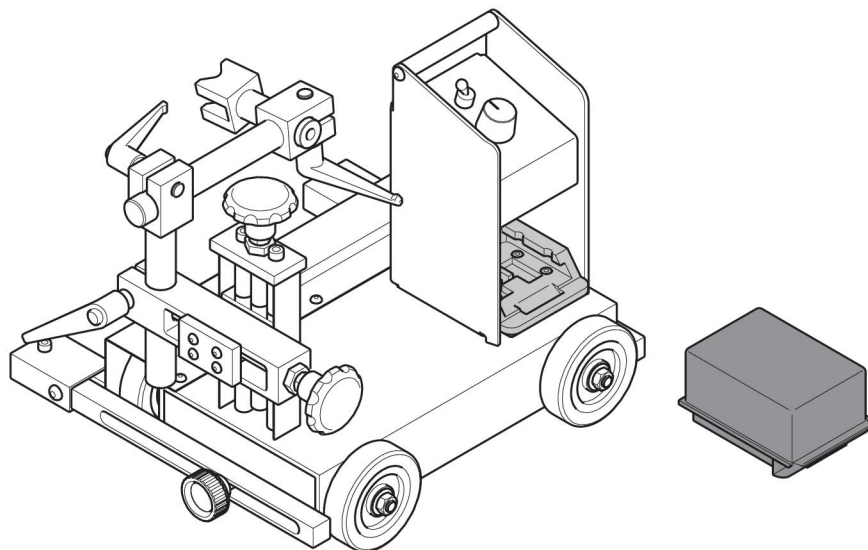
4.3 Install the battery

The Miggytrac™ is designed for an 18 V battery with a capacity of 4 Ah or 5 Ah.



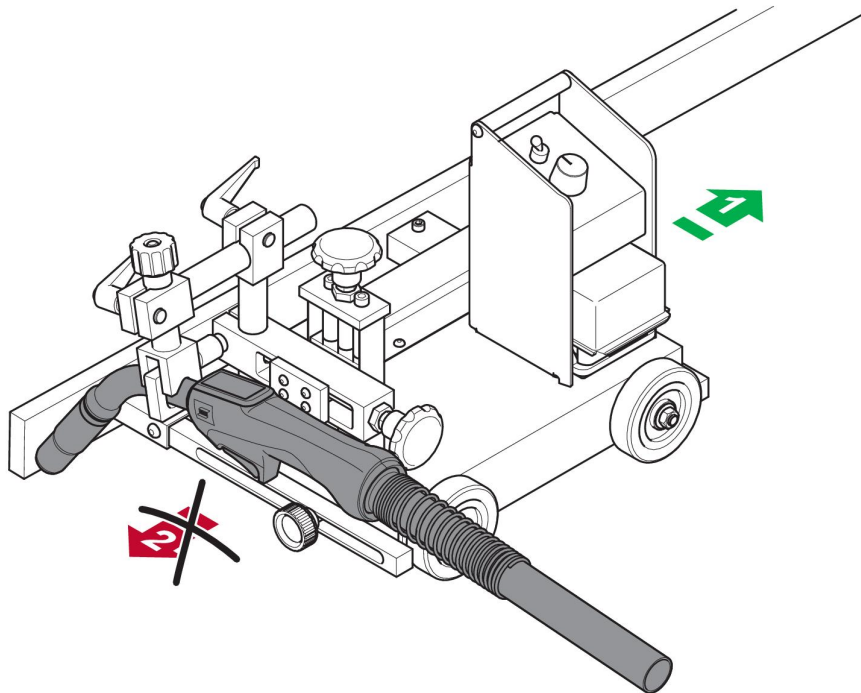
NOTE!

Charge the battery with an approved battery charger before use.



4.4 Torch mounting

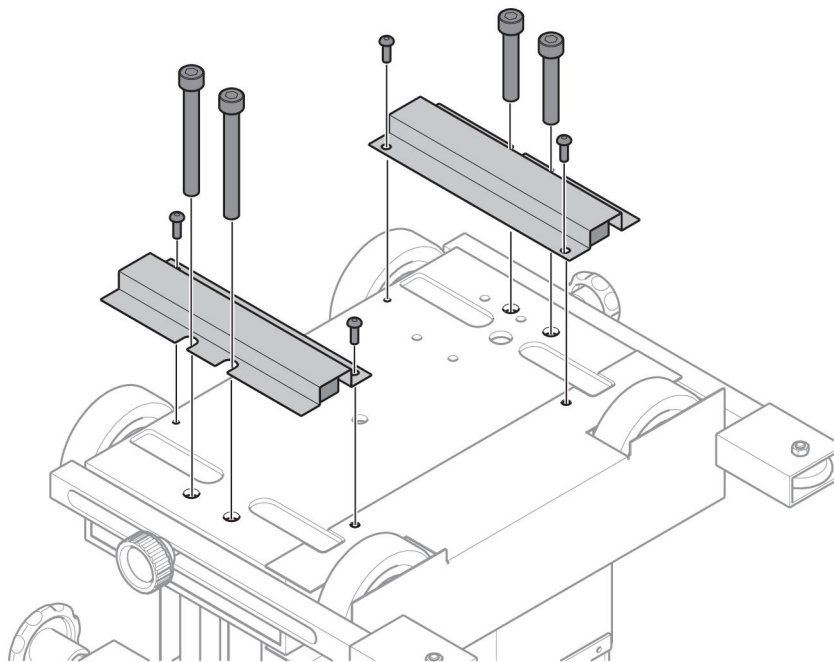
- Fit the welding torch to the tractor according to the graphic below.



1. Correct drive direction in combination with the current torch position
2. Wrong drive direction in combination with the current torch position

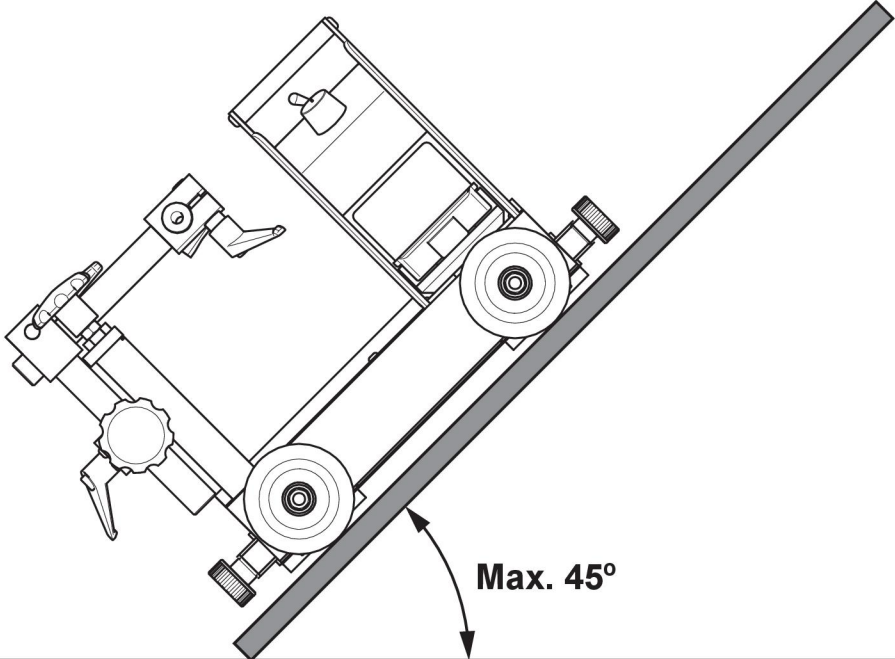
4.5 Install the magnet kit (optional)

A magnet kit can be installed at the bottom of the tractor to further stabilize the movement and increase the friction between the drive wheels and the foundation.



CAUTION!

The maximum slope of the foundation is set to 45° for safety reasons.



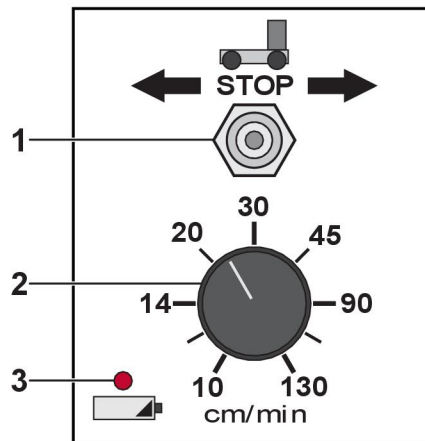
5 OPERATION

5.1 Weld operation

The tractor shall be used for welding with 4-stroke control mode.

Refer to the applicable documentation for the equipment you intend to connect.

5.2 Start and stop of the Miggytrac™ B501 tractor



Start and stop the tractor with the switch (1).

Adjust the tractor travel speed with the travel speed knob (2).

The LED (3) indicates the battery charge level:

Indication	Charge level
Green light	100%
Yellow light	60%
Yellow blinking light	30%
Red light	15%
Red blinking light	7%
Red rapidly blinking light	0%



NOTE!

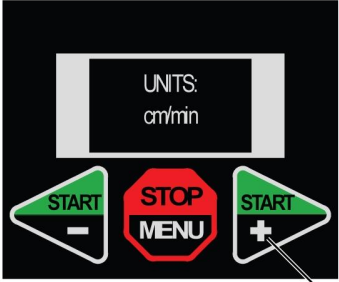
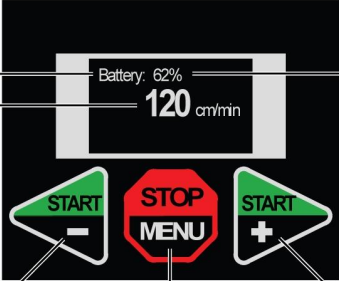
Charge the battery after each working day.



NOTE!

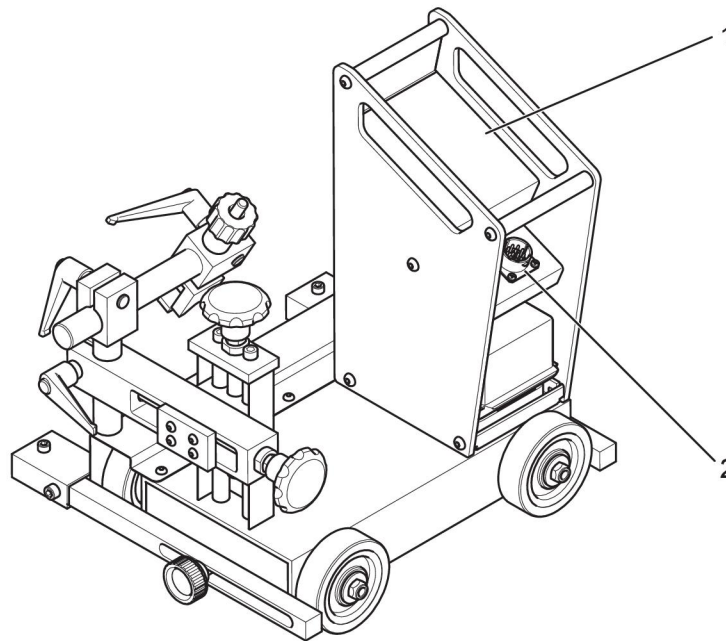
Make sure to have at least two charged batteries as back-up if welding in two shifts.

Digital control unit (from serial no. 2025xxxx)

 <p>1</p>	<p>1 Units</p>	<p>To choose units, cm or inch, hold down the button for 2 s at power up.</p>
 <p>1 2 6 3 5 4</p>	<p>1 Battery info</p> <p>2 Battery level</p> <p>3 Start Right</p> <p>4 Menu</p> <p>5 Start Left</p> <p>6 Speed</p>	<p>Displays "Low" or "Replace".</p> <p>After start, the menu is set to <i>Speed</i> automatically.</p> <p>Adjust speed when the menu is set to <i>Speed</i> or after start. To set speed in 3 units/s steps press and hold the key for more than 1 s.</p> <p>Speed scale metric: 10-150 cm/min</p> <p>10 – 50 cm/min in step of 1 cm</p> <p>50 – 70 cm/min in step of 2 cm</p> <p>70 – 150 cm/min in step of 5 cm</p> <p>Speed scale inch: 4.0-60 in./min</p> <p>4.0 – 15.0 in./min in step of 0,5 in.</p> <p>15 – 38 in./min in step of 1 in.</p> <p>38 – 60 in./min step of 2 in.</p>

5.3 Operation of the Miggytrac™ B5001 tractor

5.3.1 Connections and control devices



1. Menu based setting panel consisting of a graphical colour display and push buttons
2. 12-pin connector for connection to the remote control outlet of the wire feeder. For installation of remote adapters, see the instruction manual for the wire feeder in question.

5.3.2 Setting panel including colour display

	1 Colour display	Graphical and digital information
	2 Menu Button is locked 10 s after it was depressed latest.	Before start: Selections for programming of all parameters After start: Selections for programming of certain parameters A LED indicates the selected parameter.
	3 Start left	One click: Start left without welding Double-click: Start left welding One click after start: Reducing the speed In the menu: Reducing the value
	4 Stop	Stop tractor/welding In the menu: Locks the menu
	5 Start right	One click: Start right without welding Double-click: Start right welding One click after start: Increasing the speed In the menu: Increasing the value

5.3.3 Menu selection

	Stop	Run with step	Run without step
Welding speed	X	X	X
Step welding off/on	X		
Weld length	X	X	
Distance between welds	X	X	
Crater time ¹⁾	X	X	
Backfill length ²⁾	X	X	
Preheat ³⁾	X	X	X
Voltage % ⁴⁾		X	X
Wire feed speed % ⁴⁾		X	X

- 1) Pause time when the tractor stands still at the end of a step weld for power sources equipped with crater functionality
- 2) Reverses at the end of a step weld to fill up a crater
- 3) Delayed start of the tractor compared to welding start
- 4) Remote control of voltage or wire feed speed respectively, if an ESAB wire feeder with adapter is connected. These parameters are not available when the tractor is powered from a battery.

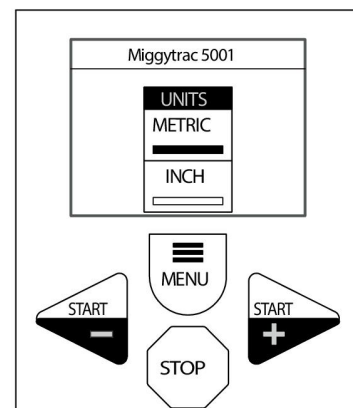
5.3.4 Selection of units of measure

On Miggytrac™ B5001 there is an option to select metric (mm and cm) or imperial/US (inch) units of measure.

The selection is made in the **UNITS** menu, by first holding the Menu button depressed for 4 seconds, then selecting the preferred units by clicking the Menu button repeatedly.

A LED for "METRIC" or "INCH" respectively in the display indicates the current selection.

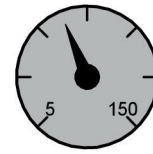
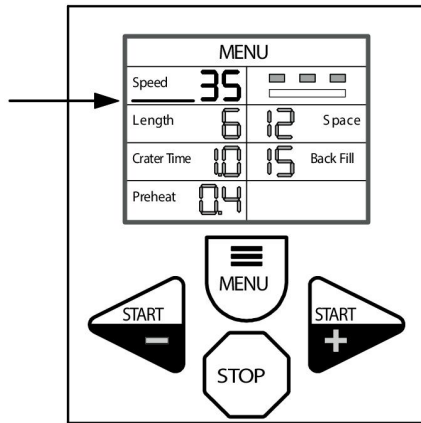
The menu is automatically locked after 10 seconds.



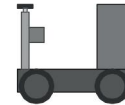
5.3.5 Setting of functions

Speed

Welding speed carriage

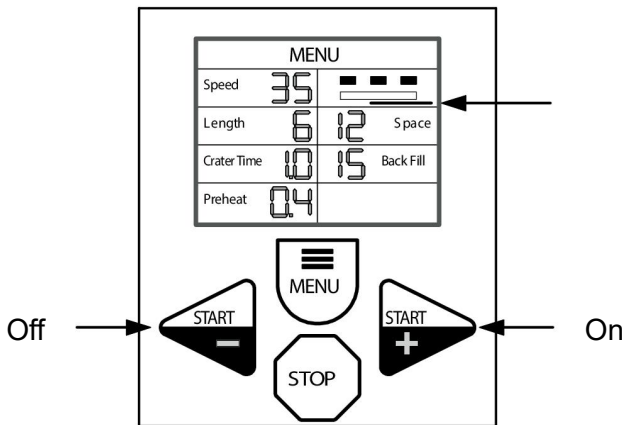


cm or inch per minute



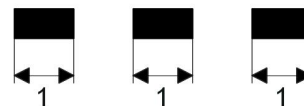
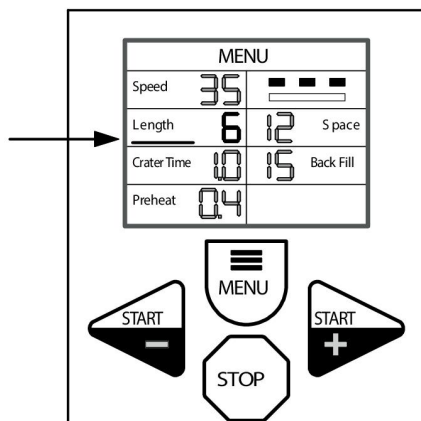
Stitch welding

On/Off



Length

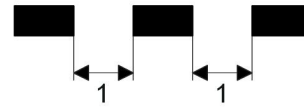
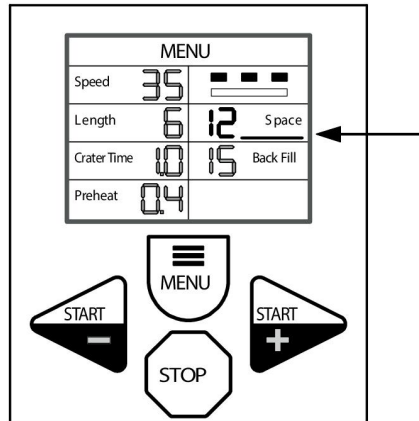
Bead length when stitch welding



1. Length (cm)

Space

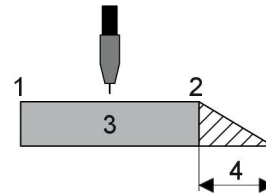
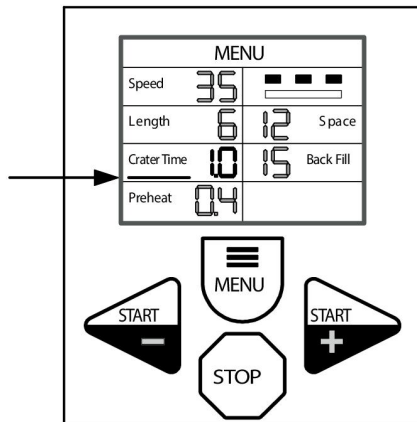
Space between each weld when stitch welding



1. Space (cm)

Crater time

The time the carriage is stationary for the power source to perform a crater function
Can also be used as a cooling time before a "backfill"

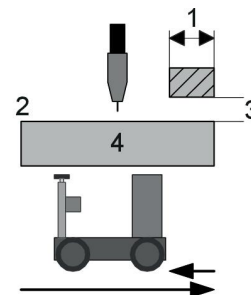
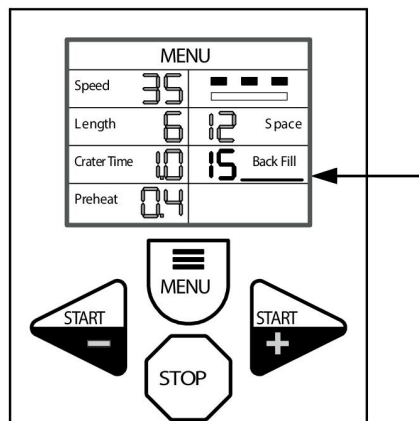


1. On
2. Off
3. Welding
4. Crater time (seconds)

Backfill

An alternative if the used power source is without crater function
Reverses at the end of the weld to fill in a crater

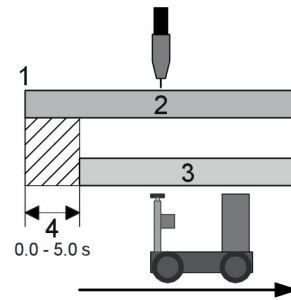
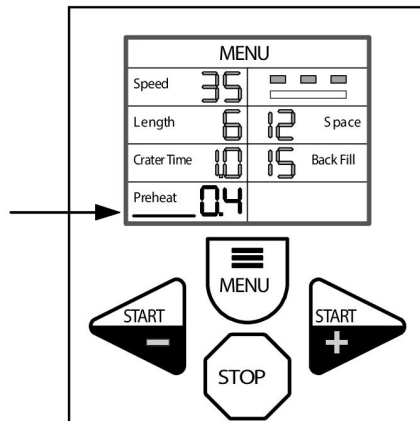
You can add a cooling time before the reversal, welding off, by using the crater time.



1. Backfill (mm)
2. On
3. Crater time (seconds) => Welding off
4. Welding

Preheat

Delayed start of carriage



1. Start
2. Welding
3. Carriage
4. Preheat

5.3.6 Installation of wire feeder

The installation must be carried out by a professional.

Miggytrac™ B5001 can be connected to one of the following wire feed units: Origo™ Feed 304, Origo™ Feed 484 or Warrior™ Feed 304

For necessary adaptation between Miggytrac™ B5001 and the used wire feed unit (including choice of control cable), see the "ORDERING NUMBERS" appendix to this manual.

Universal feeder connection

For the operation of Miggytrac™ B5001 from other wire feeders (none ESAB), use transformer unit and control cable according to the "ORDERING NUMBERS" appendix.

6 MAINTENANCE



CAUTION!

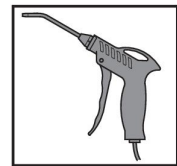
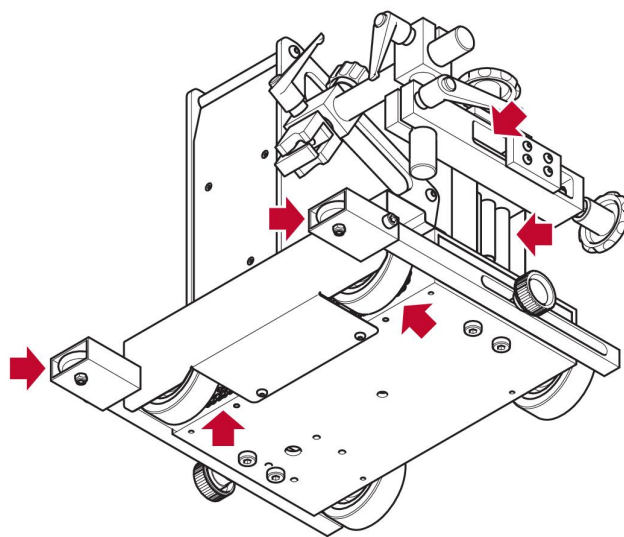
All warranty undertakings from the supplier cease to apply if the customer attempts any work to rectify any faults in the product during the warranty period.

6.1 Daily maintenance

- Charge the battery after each working day.
- Check the drive wheels and the guide wheels for welding spatter.

6.2 Weekly maintenance

- Clean the drive chain, the drive wheels, the guide wheels, the slide screws and the bottom of the Miggytrac™ using compressed air.



- Lubricate the chain using a dry PTFE (Polytetrafluoroethylene) based grease or spray.



NOTE!

Use a small amount of lubrication! Too much lubrication makes the outside surface of the chain sticky and will attract dust and dirt.



7 ORDERING SPARE PARTS



CAUTION!

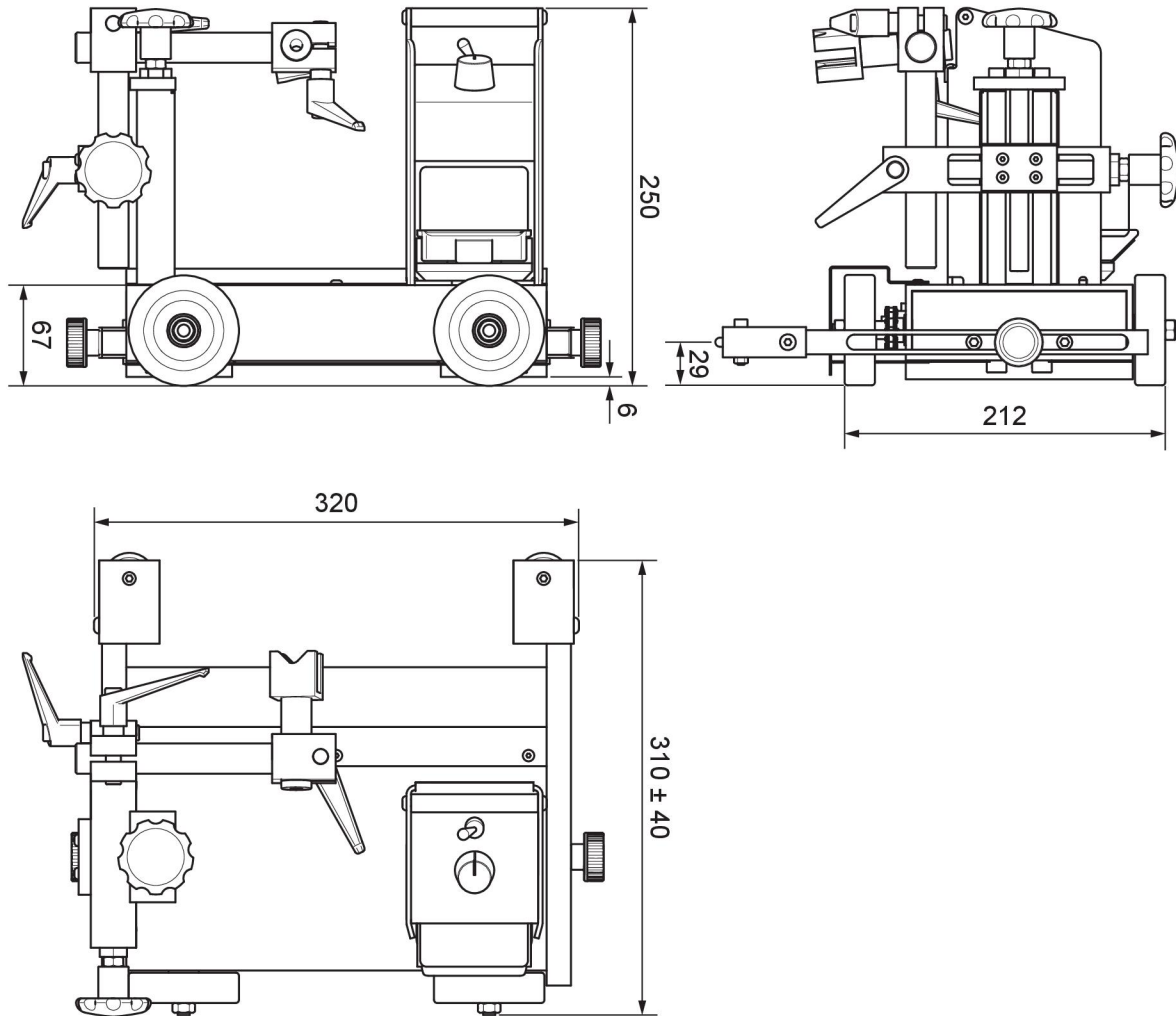
Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

The Miggytrac™ B501 and Miggytrac™ B5001 are designed and tested in accordance with international and european standards **IEC/EN 60204-1**, **ISO/EN 12100-2** and **IEC/EN 60974-10**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standard.

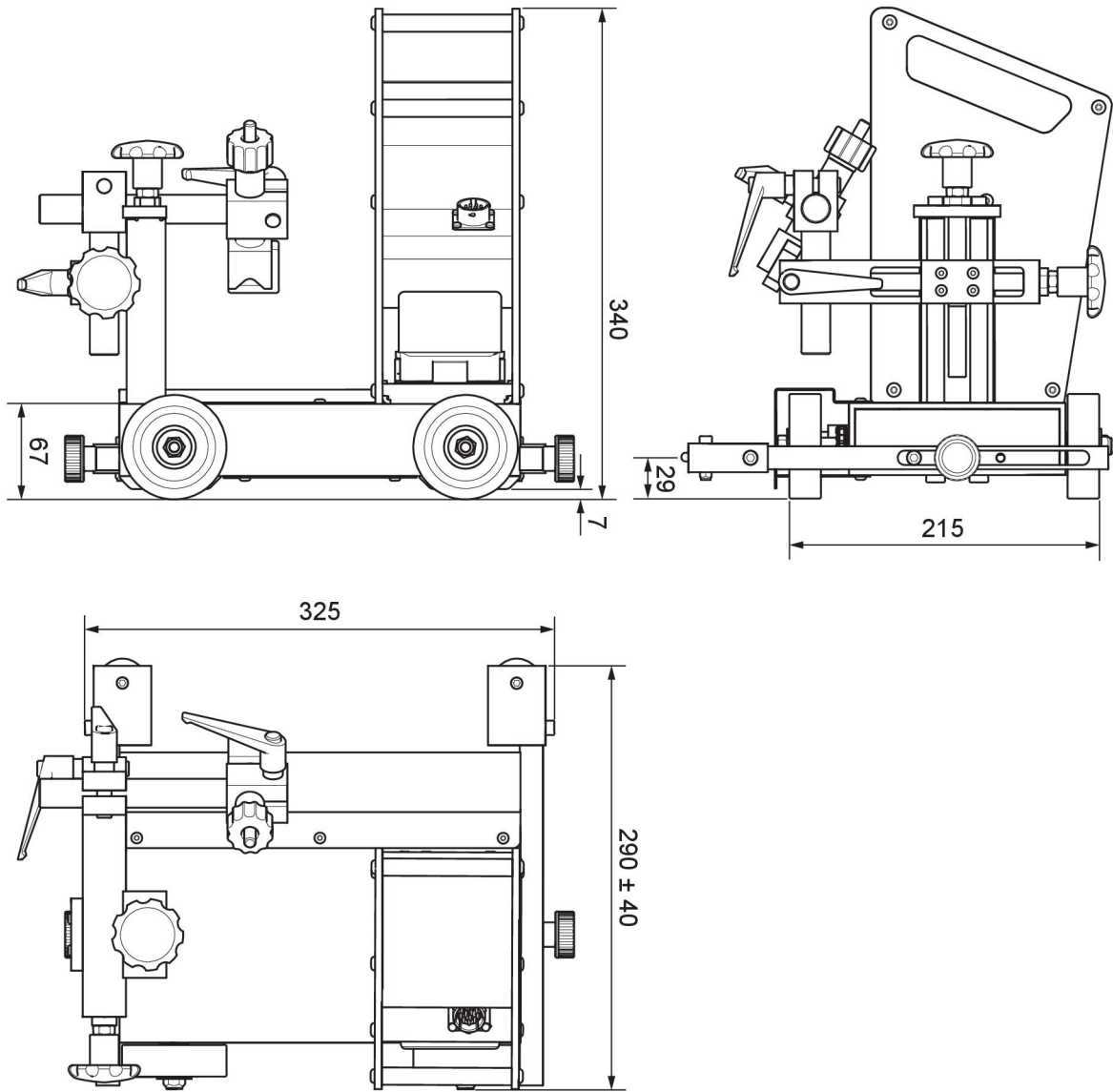
Spare parts and wear parts can be ordered through your nearest ESAB dealer, see esab.com. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

DIMENSION DRAWING

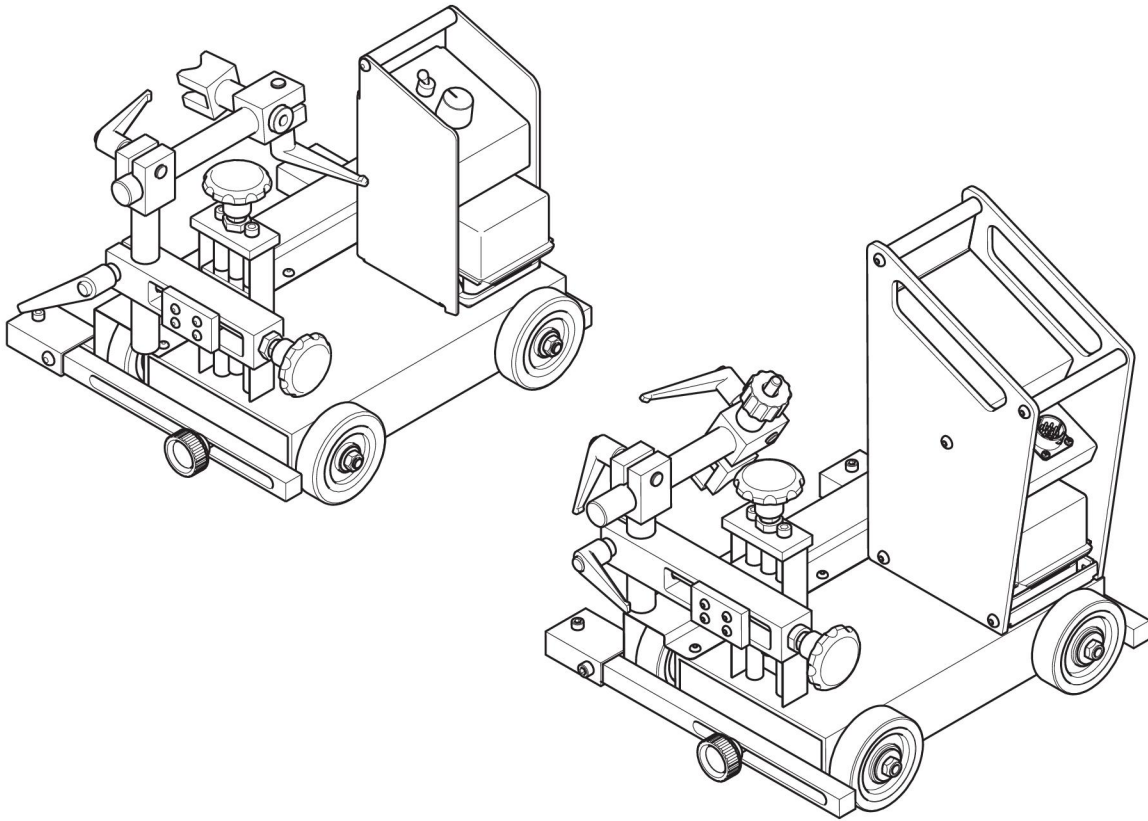
Miggytrac™ B501



Miggytrac™ B5001



ORDERING NUMBERS



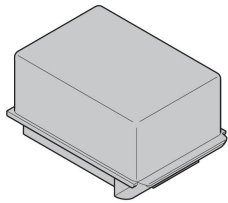
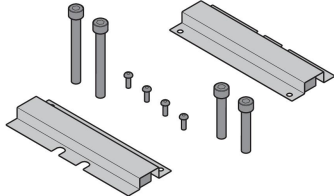

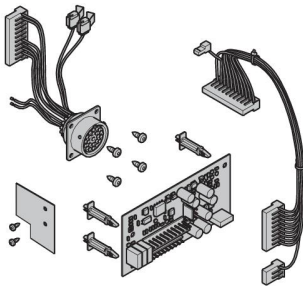
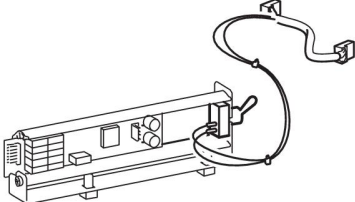
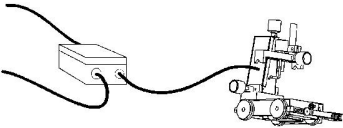
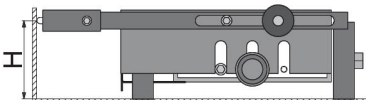
Ordering numbers	Denomination	Type	Notes
0457 357 882	Miggytrac™ B501		Battery excluded
0459 990 645	Miggytrac™ B5001		Battery excluded

Cable key function diagram Miggytrac™ B5001

Feeder, control panel	Origo™ Feed 304/484, M12	Origo™ Feed 304/484, M13	Origo™/ Aristo™ Feed, all panels	Warrior™ Feed 304	Universal feeder (any none Esab)
Cable 0457 360 880	X	X	X	X	
Control cable 0457 360 886					X
Battery 5 Ah 0457 468 074					X ¹
Remote adapter kit 0465 451 881				X	
Remote adapter kit 0459 681 880			X		
Transformer 230 V AC 0457 467 880					X ²
Transformer 115 V AC 0457 467 882					X ³

1, 2 and 3: Alternatives if the Miggytrac™ tractor **cannot** be powered from a welding power source

ACCESSORIES

0457 468 074 0457 468 072 0457 468 073	Battery, Makita 18V 5 Ah Battery charger, Makita Battery (18 V) and battery charger kit, Makita	
0457 357 131	Magnet kit	
0457 360 880	Control cable Miggytrac™/Railtrac 5 m. Suitable for all ESAB feeders.	
0457 360 886	Connection cable universal (only with 12-pin). Only for use with NON ESAB feeders.	
0465 451 881	Remote adapter kit Miggytrac™/Railtrac for Warrior™ Feed 304.	
0459 681 880	Remote adapter kit RA 23 CAN Miggytrac™/Railtrac for Aristo and Origo™ Feed 3004/4804 - MA23, MA24, MA25, U6.	
0457 467 880	Transformer kit 230 V AC. Only for use with NON ESAB feeders.	
0457 467 882	Transformer kit 115 V AC. Only for use with NON ESAB feeders.	
0398 145 106	Torch holder Ø20–30 mm	
0457 357 171	Adjustable guide wheel kit Miggytrac™, Adjustable height (H): 52–75 mm (2.0–3.0 in.)	



A WORLD OF PRODUCTS AND SOLUTIONS.



For contact information visit esab.com

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<http://manuals.esab.com>

