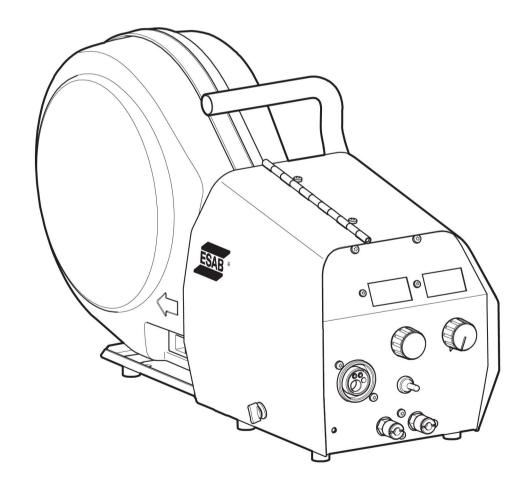


Warrior™ Feed 304, Warrior™ Feed 304w



Instruction manual

0463 363 001 GB 20170831

Valid for: serial no. 324-xxx-xxxx, 526-xxx xxxx



DECLARATION OF CONFORMITY

According to

The Low Voltage Directive 2006/95/EC, entering into force 16 January 2007

The EMC Directive 2004//108/EC, entering into force 20 July 2007

The RoHS Directive 2011/65/EC, entering onto force 2 January 2013

Type of equipment

Welding wire feeder

Type designation

Warrior[™] Feed 304 and Warrior[™] Feed 304w, from serial number 324 xxx xxxx (2013 w24)

Brand name or trade mark

ESAB

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

ESAB AB Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden

Phone: +46 31 50 90 00, Fax: +46 584 411 924

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

EN 60974-1, Arc Welding Equipment – Part 5: Wire Feeders EN 60974-10, 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 requirements stated above.

Date

Gothenburg 14-June-2013 Signature

Stephen Argo

Clarification

Position

Global Director Equipment

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1 SAFETY

1.1 Meaning of symbols

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



DANGER!

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



WARNING!

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



CAUTION!

Means hazards which could result in minor personal injury.



WARNING!

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





1.2 Safety precautions

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

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

- 1. Anyone who uses the equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding and cutting or other applicable operation of the equipment
- 2. The operator must ensure that:
 - no unauthorised person is stationed within the working area of the equipment when it is started up
 - no-one is unprotected when the arc is struck or work is started with the equipment
- 3. The workplace must:
 - be suitable for the purpose
 - be free from drafts

- 4. Personal safety equipment:
 - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
 - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns
- 5. General precautions:
 - Make sure the return cable is connected securely
 - Work on high voltage equipment may only be carried out by a qualified electrician
 - Appropriate fire extinguishing equipment must be clearly marked and close at hand
 - Lubrication and maintenance must **not** be carried out on the equipment during operation



WARNING!

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

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



WARNING!

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

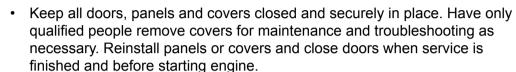


NOISE - Excessive noise can damage hearing

Protect your ears. Use earmuffs or other hearing protection.



MOVING PARTS - Can cause injuries





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



FIRE HAZARD

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

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

PROTECT YOURSELF AND OTHERS!



CAUTION!

This product is solely intended for arc welding.



CAUTION!

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





NOTE!

Dispose of electronic equipment at the recycling facility!

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

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

For further information contact the nearest ESAB dealer.





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

2 INTRODUCTION

2.1 Overview

The **Warrior Feed 304**, **Warrior Feed 304w** wire feed unit is intended for MIG/MAG-welding together with welding power sources:

- Warrior 400i CC/CV
- Warrior 500i CC/CV

They come in different variants, see chapter "Order Number".

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

They can be used together with wire from ESAB's MarathonPac, or from wire bobbin (standard Ø 200 mm, Ø 300 mm and accessory Ø 440 mm).

The wire feed unit can be placed on a trolley, suspended above the workplace with a lifting eye, on a counter balance or on the floor with or without wheel set.

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

2.2 Equipment

The Warrior Feed 304, Warrior Feed 304w wire feed unit is supplied with:

- Instruction manual
- Sticker with recommended wear parts

3 TECHNICAL DATA

Warrior Feed 304, Warrior Feed 304w		
Power Supply voltage	42 V AC, 50–60 Hz	
Power requirement	252 VA	
Rated supply current I ₁	6 A	
Settings data		
Wire feed speed	1.5–25.0 m/min (4.9–82 ft/min)	
Creep start	OFF or ON	
2/4 stroke	2 stroke or 4 stroke	
Wire selection	Solid or Cored	
Torch connection	EURO	
Max. diameter wire bobbin	300 mm (*440 mm), 12 inch (*17 inch)	
Wire dimension		
Fe	0.6-1.6 mm (0.023 - 1/16 inch)	
SS	0.8-1.6 mm (0.030 - 1/16 inch)	
Al	1.0 & 1.6 mm (0.40 & 1/16 inch)	
Cored wire	0.9–1.6 mm (0.035 – 1/16 inch)	
Weight		
WF 304 with bobbin cover	14.4 kg (31.7 lbs)	
WF 304w with bobbin cover	14.7 kg (32.4 lbs)	
Weight wire spool (ESAB standard)		
Ø 200 mm	5 kg (11.0 lbs)	
Ø 300 mm	18 kg (39.7 lbs)	
Ø 440 mm	30 kg (66.1 lbs)	
Dimensions (I × w × h) basic	675 × 265 × 418 mm (26.6 × 10.4 × 16.5 inch)	
Operating temperature	-10° to +40°C (+14° to +104°F)	
Transport and storage temperature	-20° to +55°C (-4° to +131°F)	
Shielding gas max pressure	All types intended for MIG/MAG welding 5 bar (0.5 Mpa)	
Coolant (Warrior Feed 304w) max pressure	ESAB's ready mixed coolant 5 bar (0.5 Mpa)	
Permissible load at		
60% duty cycle	500 A	
100% duty cycle	400 A	
Enclosure class with the Ø 440 mm (Ø 17 inch) bobbin and/or	IP23	
the counter balance device	IP2X	

^{*} See the "ACCESSORIES" chapter in the instruction manual.

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading. The duty cycle is valid for 40°C.

Enclosure class

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

Equipment marked IP23 is intended for indoor and outdoor use.

Equipment marked **IP2X** is intended for indoor use.

4 INSTALLATION

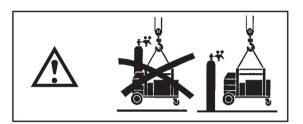
4.1 Overview

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 \fbox{S} .



4.2 Lifting Instructions



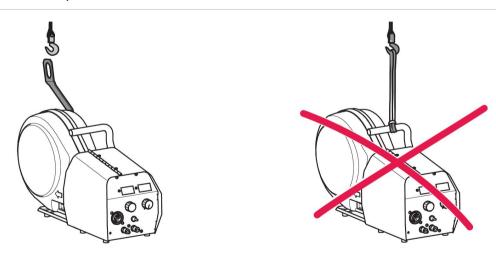
CAUTION!

Risk of crushing when lifting the wire feeder. Mounting a large wire bobbin (\emptyset 440 mm), may change the centre of gravity of the wire feeder and increase the risk of tipping and crushing. Protect yourself and warn bystanders of the risk.



CAUTION!

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



Ordering number for the lifting eye can be found in chapter "Order Number".



NOTE

If another mounting device is used, this should be insulated from the wire feed unit.

5 OPERATION

5.1 Overview

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



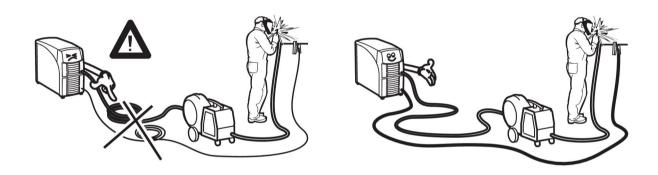
WARNING!

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



NOTE!

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





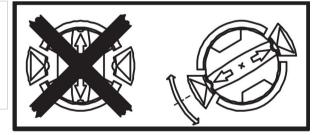
WARNING!

Assure that the side panels are closed during operation.



WARNING!

To prevent the reel from sliding off the hub: Lock the reel in place by turning the red knob as shown on the warning label attached next to the hub.





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!

There is a risk of tipping if the wire feed unit is fitted with a counterbalance arm. Secure the equipment, especially if used on an uneven or sloping surface.

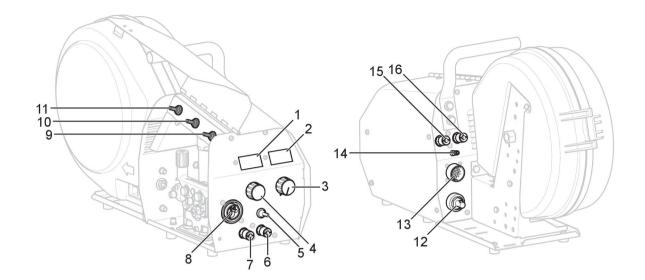
Recommended maximum current values for connection set cables

I _{max}	Cable area	Cable length	Note	
450 A (60% duty cycle)	70 mm ²	2 - 35 m	10 polo	
350 A (100% duty cycle)	70 1111112	2 - 35 111	19 pole	
550 A (60% duty cycle)	95 mm ²	2 - 35 m	10 polo	
430 A (100% duty cycle)	95 111112	2 - 35 111	19 pole	
450 A (60% duty cycle)	70 mm ²	2 - 35 m	10 polo water	
350 A (100% duty cycle)	70 1111112	2 - 35 111	19 pole, water	
550 A (60% duty cycle)	95 mm ²	2 - 35 m	19 pole, water	
430 A (100% duty cycle)	95 111112	2 - 35 111	i a pole, water	

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading. The duty cycle is valid for 40 °C / 104 °F, or below.

5.2 Connections and control devices



- 1. Display voltage (V)
- 2. Display current (A)
- 3. Knob for setting the wire feed speed
- 4. Knob for setting the voltage
- 5. Switch for wire inching or gas purge
- 6. Connection RED for cooling water from welding torch *)
- 7. Connection BLUE for cooling water to the 15. Connection BLUE for cooling water from welding torch *)
- 8. Connection for the welding torch

- 9. Switch for 4 stroke / 2 stroke (inside)
- 10. Switch for Cored wire / Solid wire (inside)
- 11. Switch for Creep start (inside)
- 12. Connection for welding current from power source (OKC)
- 13. Connection for control cable from power source
- 14. Connection for shielding gas
- power source (cooling unit) *)
- 16. Connection RED for cooling water to power source (cooling unit) *)



NOTE!

*) Cooling water connections only available on certain models.

5.3 Water connection

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

A water connection kit can be orderred as accessory, see chapter "Accessories".

5.4 Starting procedure

When the wire feed starts, the power source generates welding voltage.

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

5.5 **Function explanations**

Open the lid for access to the 4 stroke/2 stroke, the Cored/Solid wire and the Creep start functions.



2-stroke

With 2-stroke gas pre-flow (if used) 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 (if selected).



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 (if selected).



Wire selection - Cored wire

A constant burnback time is selected when the trigger is released to adapt to welding with cored wire.



Wire selection - Solid wire

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

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



Creep start

Creep starting feeds out the wire at 9 m/min (29.5 ft/min) until it makes electrical contact with the workpiece.



Wire inching

Wire inching is used when one needs to feed wire without welding voltage being applied. The wire is fed as long as the button is depressed.



Gas purging

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

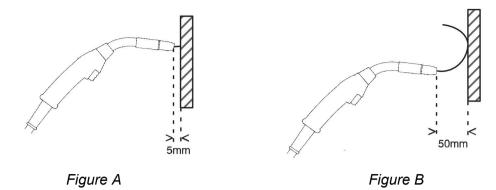


Wire feed speed

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

5.6 Wire feed pressure

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.



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).

5.7 Changing and loading wire

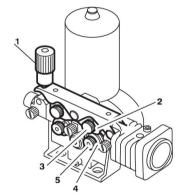
- · Open the side panel.
- Disconnect the pressure sensor by folding it backwards, the pressure rollers slide up.
- Straighten out the new wire 10-20 cm. File away burrs and sharp edges from the end of the wire before inserting it into the wire feed unit.
- Make sure that the wire goes properly into the feed roller's track and into the outlet nozzle or wire guide.
- Secure the pressure sensor.
- · Close the side panel.

5.8 Changing feed rollers

- · Open the side panel.
- Disconnect the pressure sensor (1) by folding it backwards.
- Disconnect the pressure rollers (2) by turning the axle (3) 1/4 turn clockwise and pulling out the axle.

The pressure rollers disconnect

 Disconnect the feed rollers (4) by unscrewing the nuts (5) and pulling out the rollers.



During installation, repeat the above in the reverse order.

Choice of track in the feed rollers

Turn the feed roller with the dimensioning mark for the required track towards you.

6 MAINTENANCE

6.1 Overview



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.

6.2 Inspection and cleaning

Wire feed unit

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.

The brake hub

The hub is adjusted when delivered, if readjustment is required, follow the instructions below. Adjust the brake hub so that wire is slightly slack when wire feed stops.

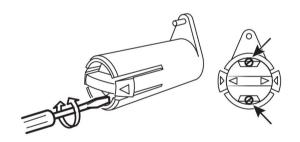
Adjusting the braking torque:

- Turn the red handle to the locked position.
- Insert a screwdriver into the springs in the hub.

Turn the springs clockwise to reduce the braking torque.

Turn the springs counter-clockwise to increase the braking torque.

Note: Make sure you turn both springs the same amount.



Welding torch

• Cleaning and replacement of the welding torch's wear parts should take place at regular intervals in order to achieve trouble-free wire feed. Blow the wire guide clean regularly and clean the contact tip.

7 ORDERING SPARE PARTS



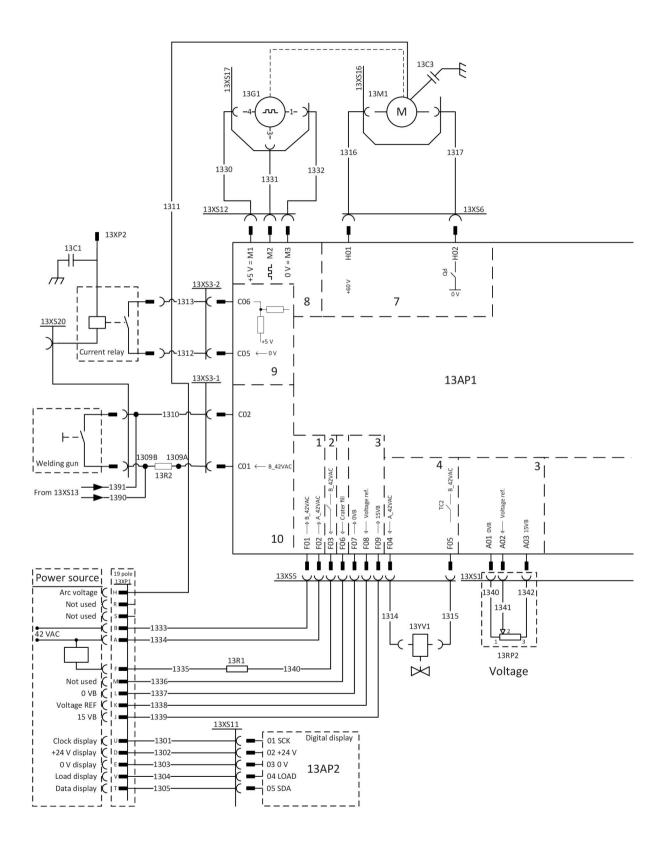
CAUTION!

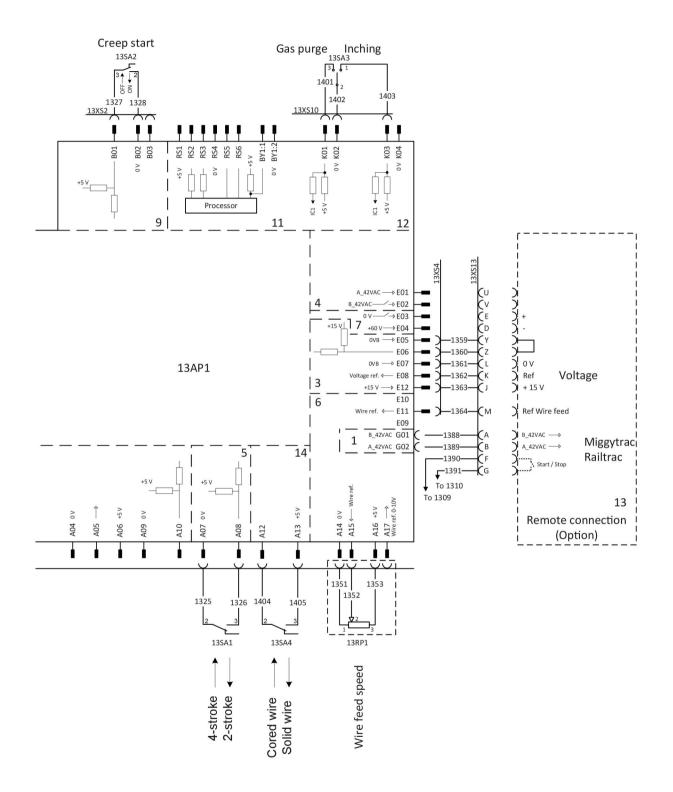
Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

The Warrior Feed 304 is designed and tested in accordance with international and European standards IEC/EN 60974-5 and IEC/EN 60974-10, Canadian standard CAN/CSA-E60974-5 and US standard ANSI/IEC 60974-5. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

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

DIAGRAM



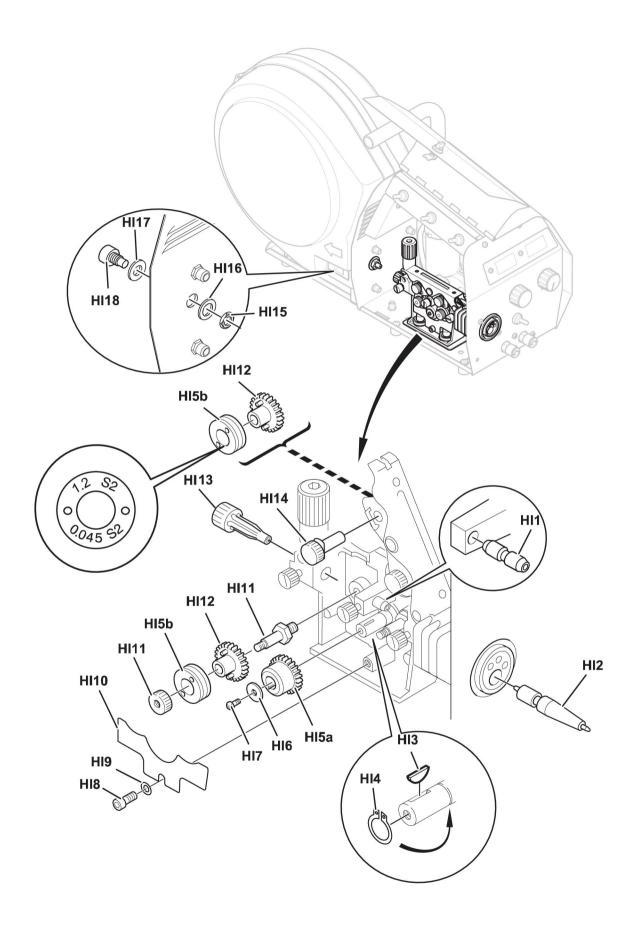


WEAR PARTS

Item	Ordering number	Denomination	Wire type	Wire dimensions
HI 1	0455 072 002 0456 615 001	Intermediate nozzle Intermediate nozzle	l '	Ø 2.0 mm steel for 0.6-1.6 mm Ø 2.0 mm plastic for 0.8-1.6 mm
HI 2	0469 837 880 0469 837 881	Outlet nozzle Outlet nozzle	Fe, Ss & cored Al	Ø 2.0 mm steel for 0.6-1.6 mm Ø 2.0 mm plastic for 0.8-1.6 mm
HI 3	0191 496 114	Key		
HI 4	0215 701 007	Locking washer		
HI 5a	0459 440 001	Motor gear euro, drive gear		

Item	Ordering number	Denomination	Wire type	Wire dimen- sions (mm)	Groove type	Roller markings
HI 5b	0459 052 001	Feed/pressure rollers	Fe, Ss & cored	Ø 0.6 & 0.8	V	0.6 S2 & 0.8 S2
	0459 052 002	Feed/pressure rollers	Fe, Ss & cored	Ø 0.8 & 1.0	V	0.8 S2 & 1.0 S2
	0459 052 003	Feed/pressure rollers	Fe, Ss & cored	Ø 0.9/1.0 & 1.2	V	1.0 S2 & 1.2 S2
	0459 052 013	Feed/pressure rollers	Fe, Ss & cored	Ø 1.4 & 1.6	V	1.4 S2 & 1.6 S2
	0458 825 001	Feed/pressure rollers	Cored	Ø 0.9/1.0 & 1.2	V- knurled	1.0 R2 & 1.2 R2
	0458 825 010	Feed/pressure rollers	Cored	Ø 1.2 & 1.2	V- knurled	1.2 R2 & 1.2 R2
	0458 825 002	Feed/pressure rollers	Cored	Ø 1.2 & 1.4	V- knurled	1.2 R2 & 1.4 R2
	0458 825 003	Feed/pressure rollers	Cored	Ø 1.6	V- knurled	1.6 R2 & 2.0 R2
	0458 824 001	Feed/pressure rollers	Al	Ø 0.8 & 0.9/1.0	U	0.8 A2 & 1.0 A2
	0458 824 002	Feed/pressure rollers	Al	Ø 1.0 & 1.2	U	1.0 A2 & 1.2 A2
	0458 824 003	Feed/pressure rollers	Al	Ø 1.2 & 1.6	U	1.2 A2 & 1.6 A2

Only use pressure and feed rollers marked **A2**, **R2** or **S2**. The rollers are marked with wire dimension in mm, some are also marked with inch.

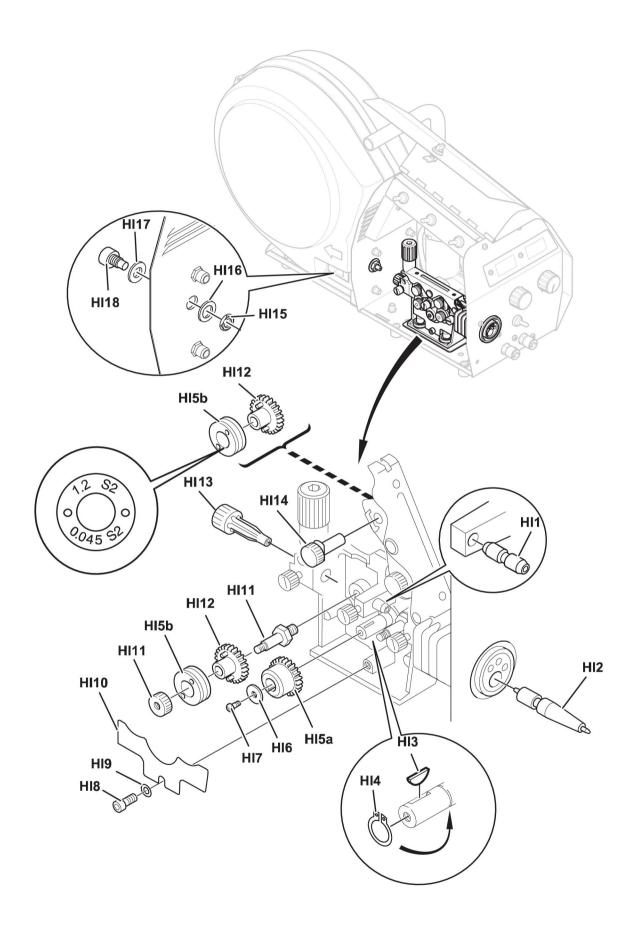


Item	Ordering number	Denomination	Notes
HI 6		Washer	Ø 16/5×1
HI 7		Screw	M4×12
HI 8		Screw	M6×12
HI 9		Washer	Ø 16/8.4×1.5
HI 10	0469 838 001	Cover	
HI 11	0458 722 880	Axle and Nut	
HI 12	0459 441 880	Gear adapter	
HI 13	0455 049 001	Inlet nozzle	Ø 3mm for 0.6-1.6mm Fe, Ss, Al and cored wire
	0460 007 001	Inlet nozzle	Long-life for Fe, Ss and cored wire
HI 14	0458 999 001	Shaft	
HI 15		Nut	M10
HI 16	0458 748 002	Insulating washer	
HI 17	0458 748 001	Insulating bushing	

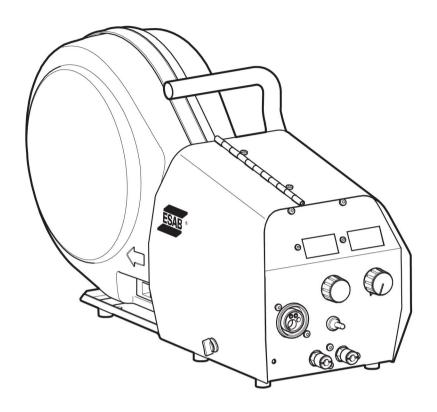
Item	Ordering number	Denomination	Wire type	Wire dimensions
HI 18	0156 602 001	Inlet nozzle	Ø 16/5×1	Ø 2 mm plastic for 0.6 - 1.6 mm

Welding with aluminium wire

In order to weld with aluminium wire, U-shaped rollers, nozzles and liners for aluminium wire **must** be used. It is recommended to use 3 m long welding torch for aluminium wire, equipped with appropriate wear parts.



ORDERING NUMBERS



Ordering Number	Denomination	Туре
0465 250 880	Warrior ™ Feed 304	
0465 250 881	Warrior ™ Feed 304w	with water cooling
0459 839 085	Spare parts list	

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

ACCESSORIES

0458 674 880	Bobbin cover kit, plastic Ø 300 mm	
0458 707 880	Wheel kit	
0458 707 881	Wheel kit	
0459 233 880	Adapter for Ø 440 mm bobbin Note! IP23 not valid for wire feeder with Ø 17,32 Inch (400 mm) bobbin.	
0458 706 880	Lifting eye	

0457 341 881	Strain relief for welding torch	
F102 440 880	Quick connector MarathonPac™	
0459 234 880	Strain relief bracket for connection set	
0465 451 880	Remote kit	
0459 491 895	Remote control unit M1 MIG/MAG: wire feed speed and voltage	
0465 510 880	Trolley	

0465 508 880	Trolley guide pin extension kit Used together with the trolley when the wire feed unit is equipped with wheel kit	
0459 553 880	Remote cable 23 pole - 8 pole 5 m	
0409 000	Remote cable 23 pole - 6 pole 3 m	
0465 276 881	Water kit	
0458 705 880	Counter balance device (includes mast and counter balance) Note! IP23 not valid for wire feeder with counterbalance arm.	
0465 451 881	Remote Kit Railtrac / Miggytrac	
Welding torch M	IXH 400w PP Note! MXH PP only recommend	ed for Feed304/3004/L3004
0700 200 015	6 m	
0700 200 016	10 m	
0700 200 019	10 m, 45°	

Welding torch MXH 300w PP Note! MXH PP only recommended for Feed304/3004/L3004			
0700 200 017	6 m		
0700 200 018	10 m		
0700 200 010	10 m, 45°		
0700 200 020	10 111, 43		
Connection set,	70 mm², 19 poles		
0459 836 880	2 m		
0459 836 881	5 m		
0459 836 882	10 m		
0459 836 883	15 m		
0459 836 884	25 m		
0459 836 885	35 m		
Connection set	water, 70 mm², 19 poles	,	
0459 836 890	2 m		
0459 836 891	5 m		
0459 836 892	10 m		
0459 836 893	15 m		
0459 836 894	25 m		
0459 836 895	35 m		
Connection set,	95 mm², 19 poles		
0459 836 980	2 m		
0459 836 981	5 m		
0459 836 982	10 m		
0459 836 983	15 m		
0459 836 984	25 m		
0459 836 985	35 m		
Connection set	water, 95 mm², 19 poles		
0459 836 990	2 m	The state of the s	
0459 836 991	5 m		
0459 836 992	10 m		
0459 836 993	15 m		
0459 836 994	25 m		
0459 836 995	35 m		

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