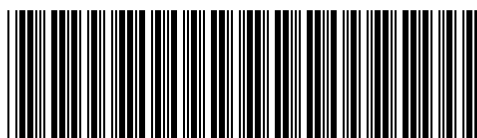
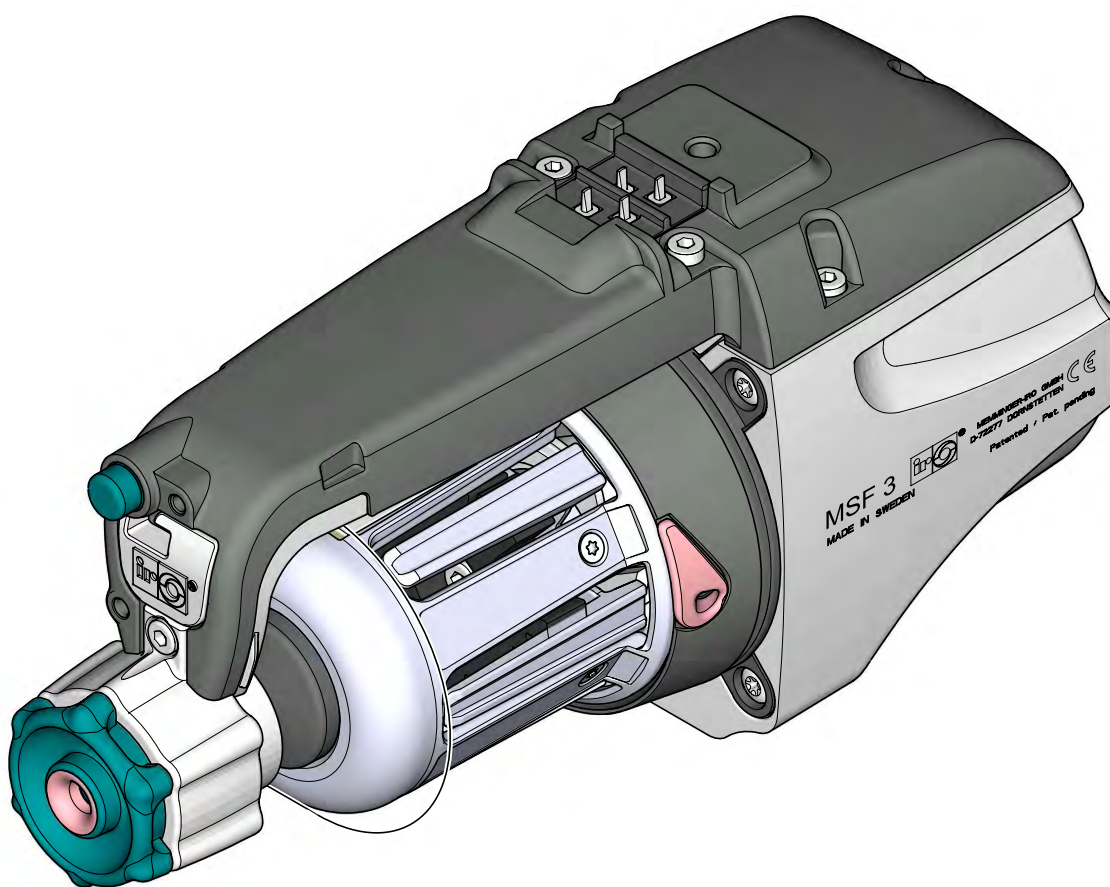

English translation of the original
German instruction manual

MSF 3



Introduction

Congratulations and thank you for choosing a quality product from MEMMINGER IRO. To ensure that you get the optimum performance from this product you should be fully familiar with all its features and functions.

For this reason we ask you to read this instruction manual carefully before starting to use the product. This manual contains important information and instructions, which must be observed when using this equipment. Keep this manual for future reference.

Contents

Introduction.....	1
Contents	1
Safety.....	2
Permitted Uses	2
Safety Precautions	2
Warranty.....	2
Disposal.....	2
Symbols used in this manual.....	2
General Description	3
Unit components.....	3
Function.....	3
Features	3
Installation.....	4
Connecting the contact cable	4
Fitting the flat ring holder	4
MEMMINGER-IRO GMBH Power Supply Units	5
Fitting the round tube holder.....	5
Function check	5
Installing the input tensioner (optional).....	6
Fit the compensation tensioner (optional)	6
Fit the brush tensioner (optional).....	6
Fitting the output stop device (optional).....	7
Operation.....	8
Switching on	8
Switching off	8
Threading	8
Adjusting the yarn tension at the outlet	9
Yarn changeover	9
Calibrating the unit.....	10
Servicing	11
Changing the magnetic tensioner.....	11
Cleaning the yarn sensors.....	11
Cleaning the remaining parts of the unit.....	11
Dimensions	12
Technical Data	12
Troubleshooting	13
Declaration of incorporation and conformity	14

Permitted Uses

The MSF 3 storage feeder is designed solely for feeding yarn to textile machines. Any other uses are not permitted. The manufacturer will not accept any liability for damages resulting from non-permitted uses. The user is liable for damages resulting from non-permitted uses.

Safety Precautions

The safety risks inherent in the equipment must be reevaluated once it has been installed in the final unit.

This equipment must only be operated by suitably qualified and authorised personnel. Operators must receive detailed instructions in the use of the equipment. Operators must be informed of any hazards related to the use of the equipment and the protective measures necessary.

The operator is responsible for ensuring that all instructions regarding the electrical installation, fitting, operation and maintenance are implemented.

Caution is advised in the immediate vicinity of the device. Do not touch the equipment when it is running. The moving parts can cause injury. Turn off the unit before working in this area. In the normal operating mode the unit can start to operate without warning.

For your own safety wear safety footwear, a hair net, ear protectors and close-fitting clothing. Due to the increased risk of injury, please do not wear loose hanging clothing, such as ties, scarves, long hair, rings or other jewellery.

Only operate the device when it is problem-free.

Check the device for damage and other changes once every shift. The device should not be operated if it is damaged.

Do not carry out any cleaning when the knitting machine is running. Before maintenance or servicing, switch off and lock out the knitting machine. Take precautions to prevent accidental or unauthorised start-up. The main switch can be secured with a padlock so that it cannot be switched back on.

Only qualified electricians working in accordance with current electrical engineering practices and regulations are permitted to perform installation and servicing.

Check that the operating voltage is within the permitted range of the device and that there is a high speed (HS) protection fuse for the knitting machine.



The device has electronic components which are sensitive to interference from electrostatic charges. Before you open the unit casing, you should take precautions to prevent electrostatic charges. You can discharge any electrostatic charges beforehand by touching a metal surface (e.g. the machine or the knitting cylinder).

The power supply for the device must be taken from the circular knitting machine. The power supply to the device must be switched on and off from the main switch of the circular knitting machine. This means that it can only receive power when the machine is switched on.

You must disconnect the knitting machine from the power supply before moving it, however small the distance. Reconnect the power supply before restarting.

The unit complies with the EMC Directive for use in industrial environments.

The device should not be used in an area where there is a risk of fire or an area classed under European Directive 94/9/EC. Please contact MEMMINGER-IRO GMBH, if you would like a product for this type of environment.

We operate a policy of continuous improvement and reserve the right to make product changes without prior notice. Functions and compatibility remain unchanged.

Only use original spare parts and accessories.

Warranty

Failure to follow the instructions in this manual will void your warranty. The manufacturer will not accept any liability for damages or operating faults resulting from failure to follow the instructions in this manual.

Disposal

Decommission and dispose of old equipment in compliance with the current regulations for the disposal of electrical equipment with electronic parts.

Symbols used in this manual



CAUTION!

This symbol marks important instructions where failure to follow the instructions can cause personal injury or damage to the equipment.

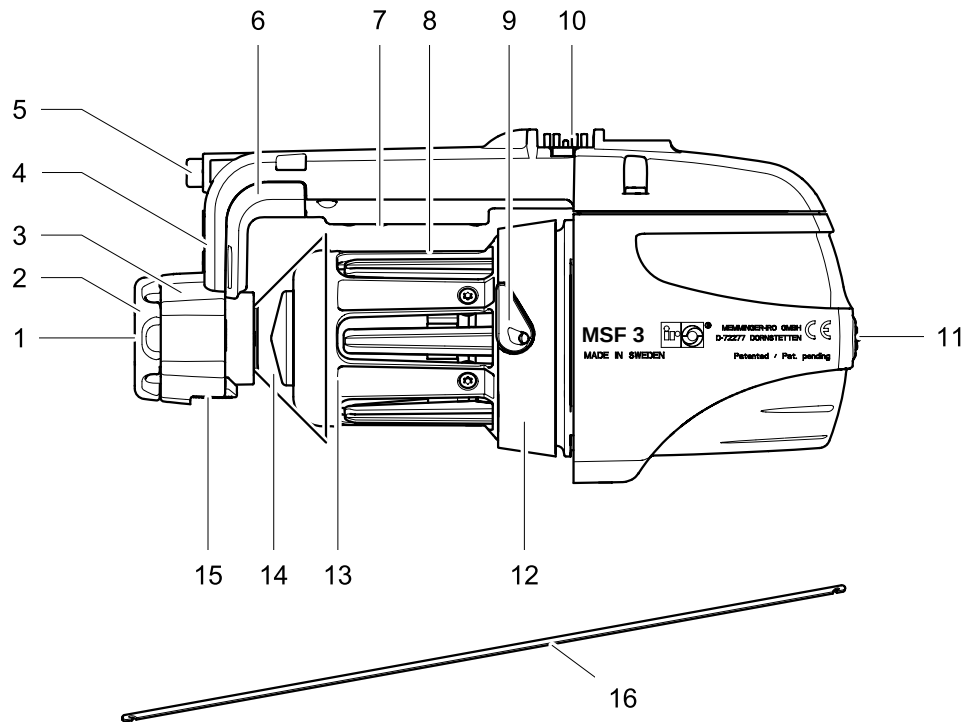


NOTE!

This symbol marks useful information which will help you to get the best from the equipment.

Unit components

- 1 - Outlet eyelet
- 2 - Tension selector knob
- 3 - Tensioner
- 4 - Cover
- 5 - ON/OFF button
- 6 - Light cover lens
- 7 - Sensors
- 8 - Reflector
- 9 - Ceramic eyelet
- 10 - Contact pins
- 11 - Inlet eyelet
- 12 - Winding plate
- 13 - Winding reel
- 14 - Tension cone
- 15 - Yarn tension scale
- 16 - Threading needle



Function

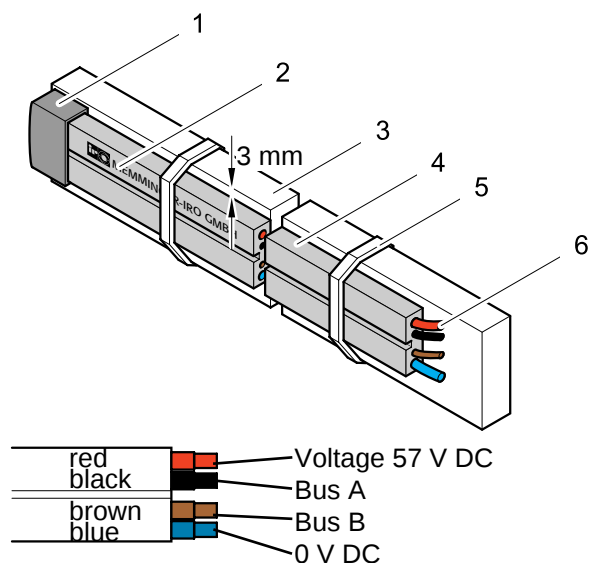
The reeling device within the winding reel transports and separates the yarn windings making it possible to process even the most difficult yarns.

The conical magnetic tensioner ensures a constant yarn tension at the output.

The high-performance, brushless DC motor is microprocessor controlled. Sensors on the winding reel monitor and calculate the average yarn usage rate and adjust the motor speed to the yarn usage accordingly.

Features

- Yarn control on the winding reel using contactless sensors to prevent yarn tension peaks. The MSF 3 operates continuously, without starting and stopping.
- The stationary winding reel eliminates the need for extra yarn windings and can operate at higher yarn speeds than those possible with rotary winding reels. The yarn separation is 1 mm.
- The adjustable conical magnetic tensioner at the yarn outfeed is a new, patented development, which makes it possible to work with a wide range of yarn tensions and which can be used for all yarn types.



Connecting the contact cable

- Fix the contact cable (4) with cable ties (5) to the feeder support ring (3) (3 to 10 mm thick, 25 to 30 mm wide).

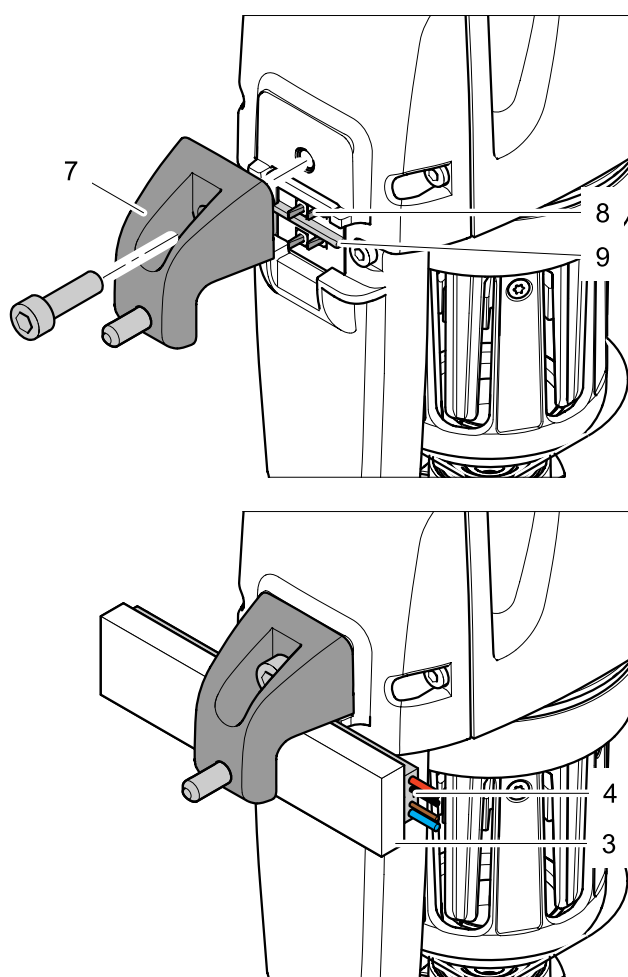
The red wire (6) of the contact cable must be at the top. The text (2) on the contact cable must be visible.

The contact cable must be positioned 3 mm below the top edge of the feeder ring.

- Switch on the power supply. Use a voltmeter to check that the contact cable has been installed correctly.

For standard units, the voltage measured between the red and blue wires must be 57 V DC $\pm 10\%$ when the knitting machine is switched on. For reduced powered units the voltage tested should be 35 V DC $\pm 10\%$.

- Ensure that the polarity is correct.
- Insulate the ends of the cables using MEMMINGER-IRO GMBH insulating caps 000-721-116 (1).



Fitting the flat ring holder

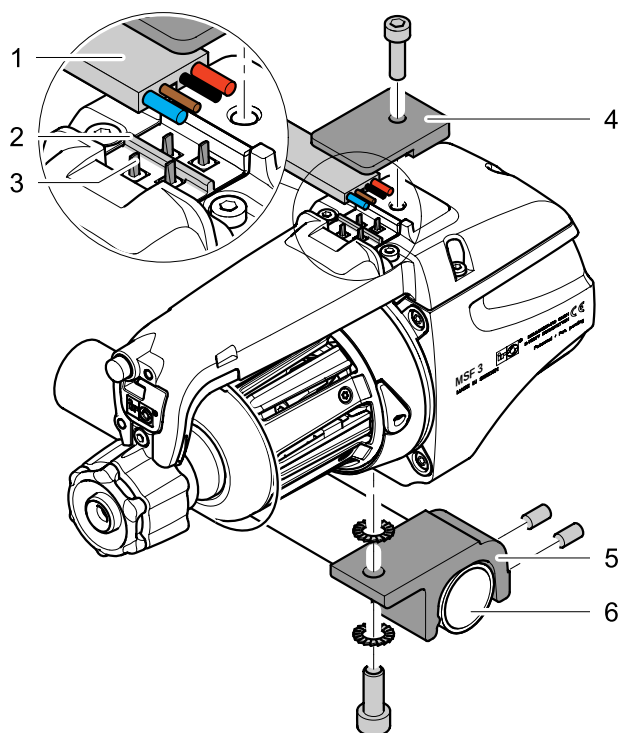
- Screw the flat ring holder (7) to the unit.
- Switch off the power supply.
- Fit the unit to the flat ring (3).

The contact cable (4) must be located in the guide (9). This is the only way of ensuring that the contact pins (8) effectively make contact with the wire in the contact cable.



NOTE!

Do not crush the contact cable during this operation.



Fitting the round tube holder

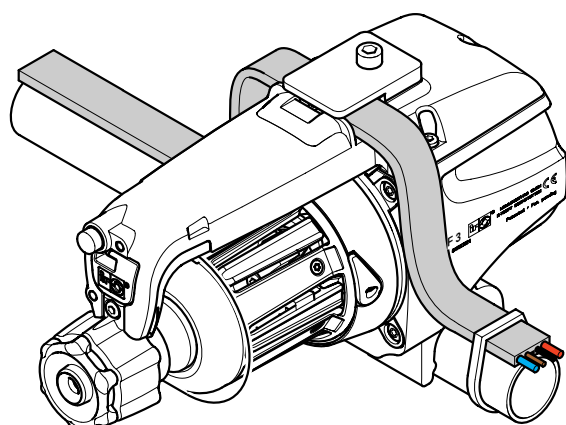
- ▶ Screw the round tube holder (5) to the unit.
- ▶ Fit the unit to the round tube (6).
- ▶ Switch off the power supply.
- ▶ Clamp the contact cable (1) to the contact base. Screw on the cable clamping plate (4).

The contact cable (1) must be located in the guide (2). This is the only way of ensuring that the contact pins (3) effectively make contact with the wire in the contact cable.



NOTE!

Do not crush the contact cable during this operation.

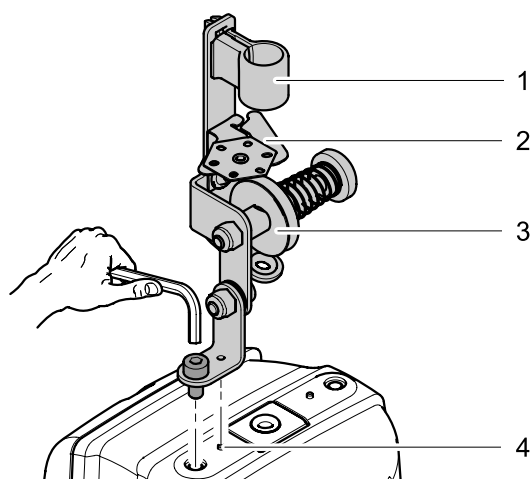


Function check

- ▶ Switch on the power supply.
- ▶ Check that the stop motion device operates efficiently.
- ▶ Switch off the power supply.
- ▶ Install the remaining units.
- ▶ Switch on the power supply at regular intervals and check the functional efficiency of up to 10 units.

MEMMINGER-IRO GMBH Power Supply Units

Max. number of MSF 3	Item no.	Power	Number of fuse units	Max. number per fuse unit
4	021-000-200	200 VA	1	4
8	021-000-205	320 VA	1	8
10	021-000-210	500 VA	1	10
30	021-000-220	924 VA	1	30
48	021-000-225	1386 VA	2	24
72	021-000-230	1980 VA	2	36
108	021-000-235	3119 VA	2	54

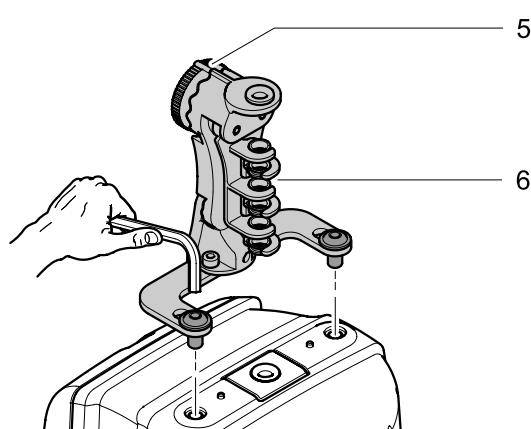


Installing the input tensioner (optional)

The input tensioner is fixed at the yarn inlet of the unit. Fit the rotation stop (4) to ensure that the input tensioner does not rotate out of position.

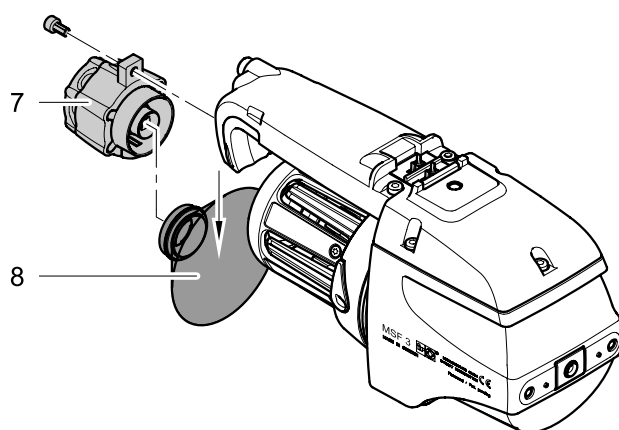
The input tensioner has the following components:

- ▶ Tube holder (1).
- ▶ Adjustable knot catcher (2).
- ▶ Cymbal tensioner (3).



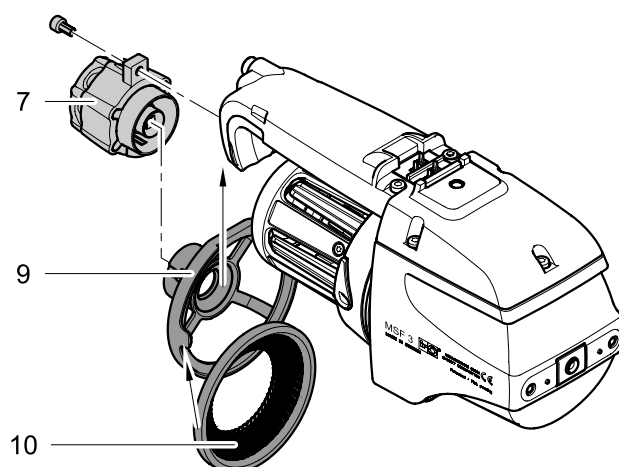
Fit the compensation tensioner (optional)

- ▶ Screw the compensation tensioner (6) to the unit.
- ▶ Set the yarn tension using the setting wheel (5).

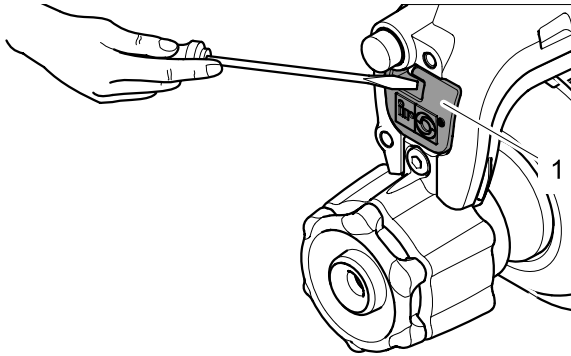


Fit the brush tensioner (optional)

- ▶ Remove the tension cone (8).
- ▶ Remove the tensioner (7) from the unit.

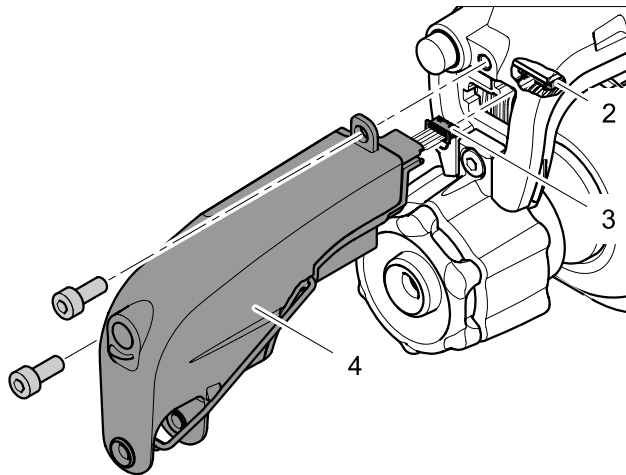


- ▶ Slide the brush tensioner (10) into the holder (9).
- ▶ Screw the tensioner with the holder and the brush tensioner to the unit.



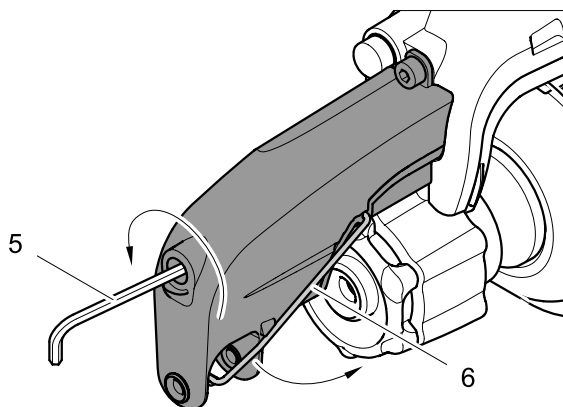
Fitting the output stop device (optional)

- Remove the cover (1).



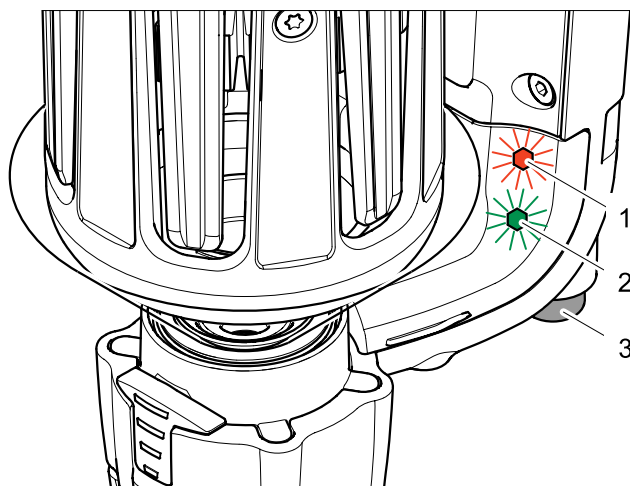
- Push the plug (3) into the contact socket (2). Ensure that the plug engages fully into the socket.
- Screw the output stop device (4) to the unit.

NOTE!
Take care not to crush the cable during this operation.



Use a 2.5mm hex key (5) to set the force of the output stop spring.

NOTE!
Check to ensure that the output stop device can detect a yarn stoppage by releasing the output sensor (6) from the catch.



Switching on

- Press the ON/OFF button (3) once.

The unit will check if there are enough yarn windings on the winding reel. If there are not enough, the missing windings will be wound onto the winding reel automatically. The red LED (1) lights up during this function.

When the unit is ready for operation, the green LED (2) lights up.

Switching off

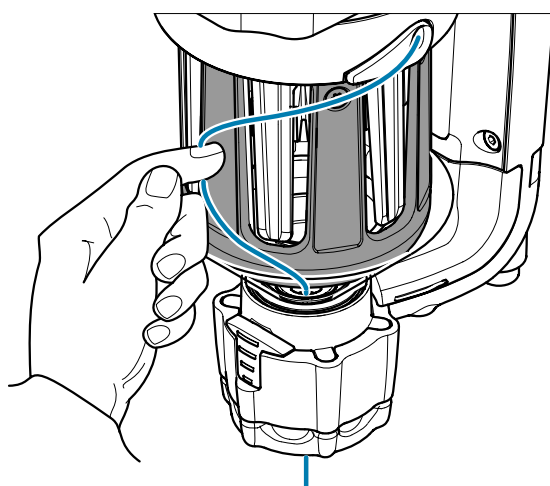
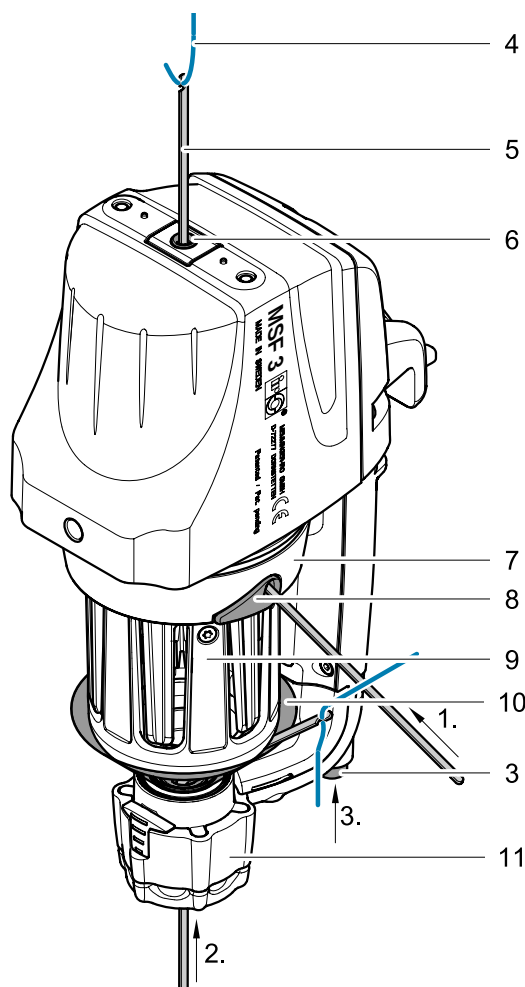
- Press and hold down the ON/OFF button for at least two seconds.

The green LED will switch off.

Threading

- Insert the threading needle (5) through the ceramic eyelet (8) on the winding plate (7) until the threading needle comes out through the inlet eyelet (6).
- Pull the yarn (4) through the unit using the threading needle.
- Push the threading needle from below through the tensioner (11) until you can see the threading needle between the winding reel (9) and the tension cone (10).
- Pull the yarn (4) through the unit using the threading needle.
- Press the ON/OFF button (3).

The unit will automatically wind the yarn onto the winding reel.

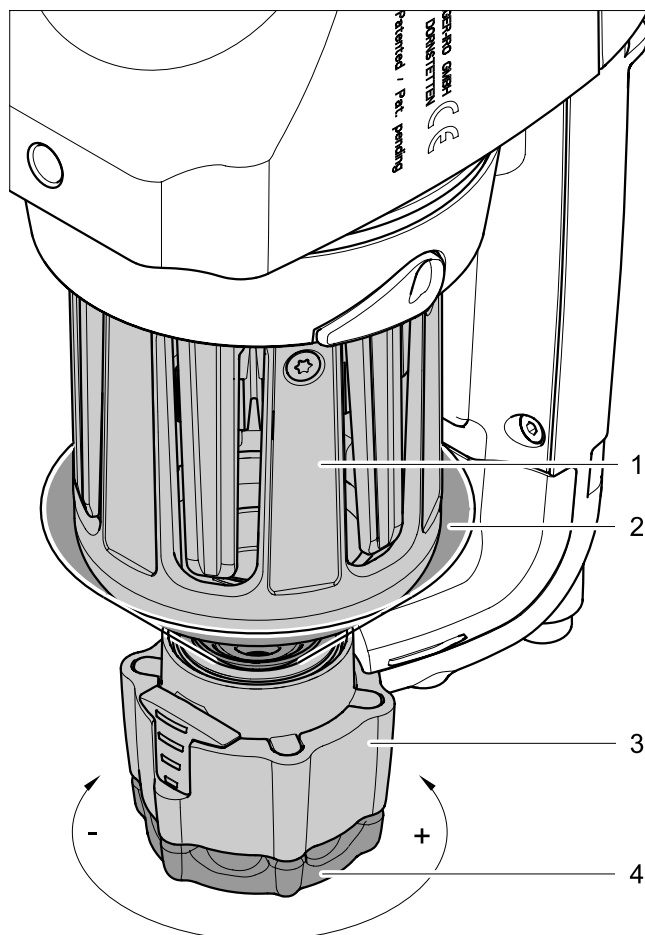


NOTE!

At low yarn tensions it is possible that no yarn will be fed out.

- Move the stationary piece of yarn away from the winding reel as shown.

The unit will then wind the yarn onto the winding reel.



Adjusting the yarn tension at the outlet

The yarn tension must be adjusted to match the yarn type and hardness.

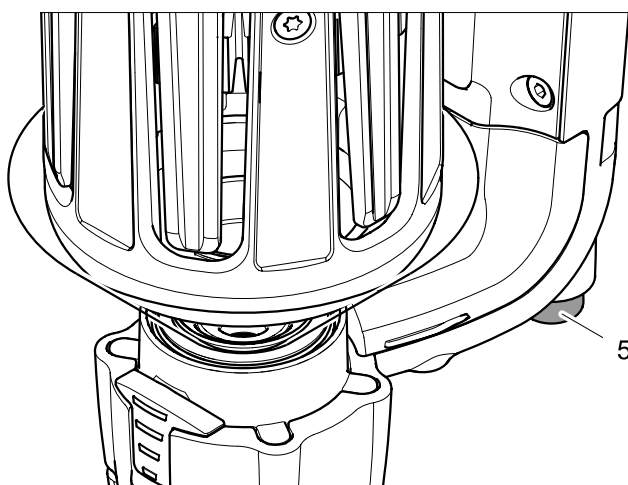
- Turn the knob (4) on the tensioner (3).

The pressure exerted by the tension cone (2) on the winding reel (1) increases or decreases depending on the direction in which the knob is rotated.



NOTE!

To ensure a uniform yarn tension, make sure that the knob engages fully with the tensioner.



Yarn changeover

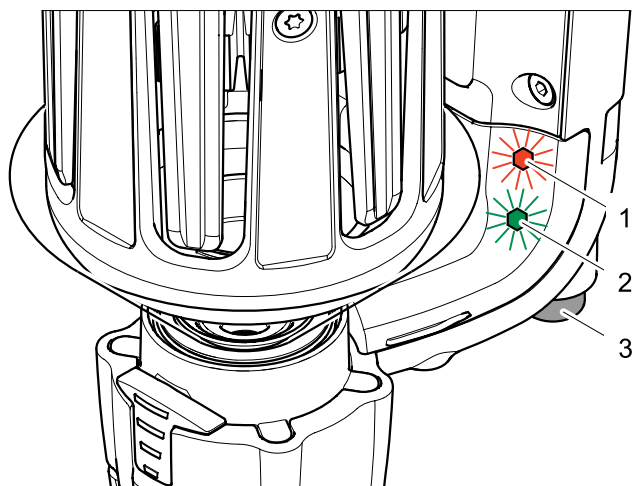
You must reset the unit when changing over to different yarn types and hardness.

- Press the ON/OFF button (5) once.



NOTE!

Where the yarn changeover involves multiple units you can reset the units centrally by simply switching the knitting machine off and on.



Calibrating the unit

The unit must be calibrated again if one of the following faults occur:

- The winding reel runs empty
- The winding reel will not wind on fully
- The winding reel is overwound

- ▶ Switch off the unit (3). Press the ON/OFF button for at least two seconds.
- ▶ Remove all the yarn from the unit.
- ▶ Press the ON/OFF button five times in quick succession.

The unit will start, the red LED (1) will light up flashing and the green LED (2) will light up for a short time. When the red LED is permanently on the unit will run continuously.

- ▶ Switch off the unit. Press and hold down the ON/OFF button for at least two seconds.

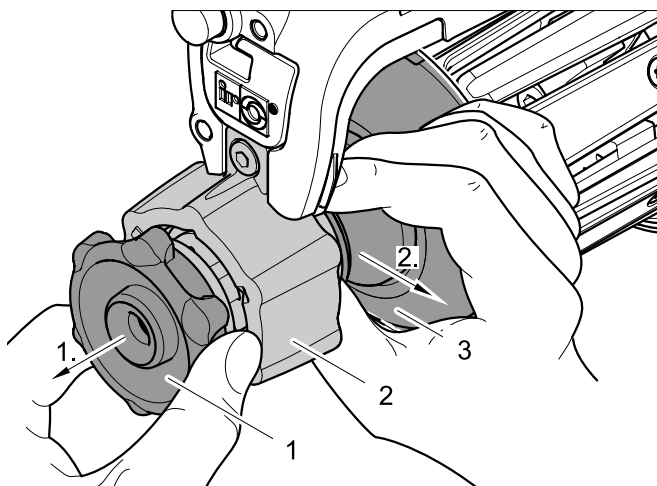
The unit is now calibrated.

- ▶ Thread the unit.
- ▶ Switch on the unit.

If calibration is not successful:

The unit starts to run, the red LED flashes slowly and the green LED lights up permanently. After this the unit continues to run.

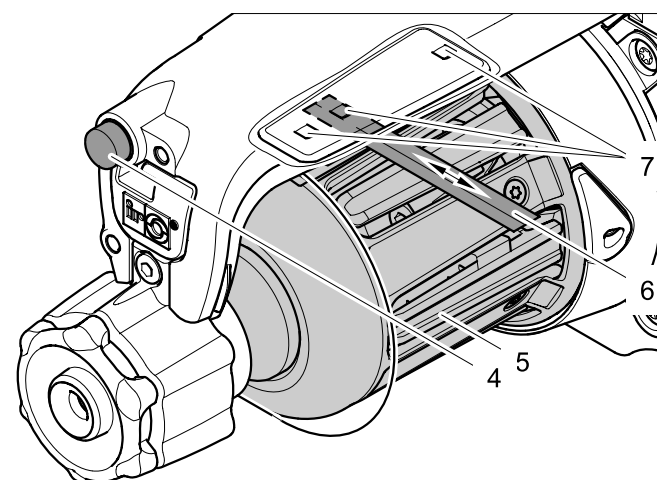
- ▶ Clean the yarn sensor.
- ▶ Calibrate the unit again.



Changing the magnetic tensioner

You can remove the tension cone for cleaning.

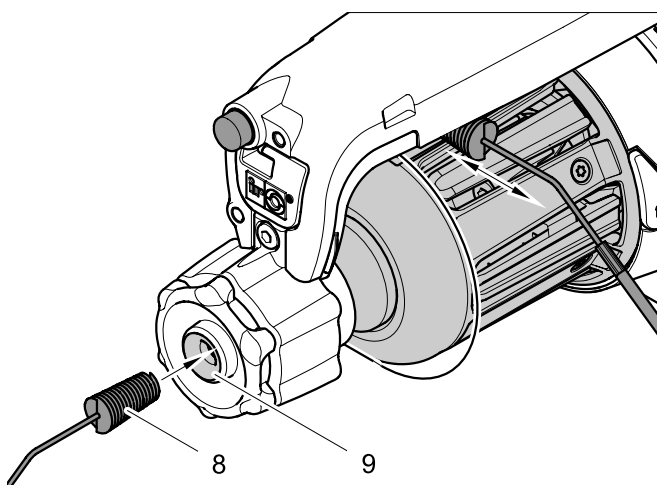
- ▶ Pull the knob (1).
- ▶ Remove the tension cone (3) from the tensioner (2).



Cleaning the yarn sensors

Only use the sensor cleaner 09-270-001 or the optional cleaning brush 000-680-098 to clean the yarn sensors.

- ▶ Switch off the unit (4).
- ▶ Remove the yarn from the unit.
- ▶ Push the sensor cleaner (6) or the cleaning brush (9) between the winding reel (5) and the yarn sensors (7).



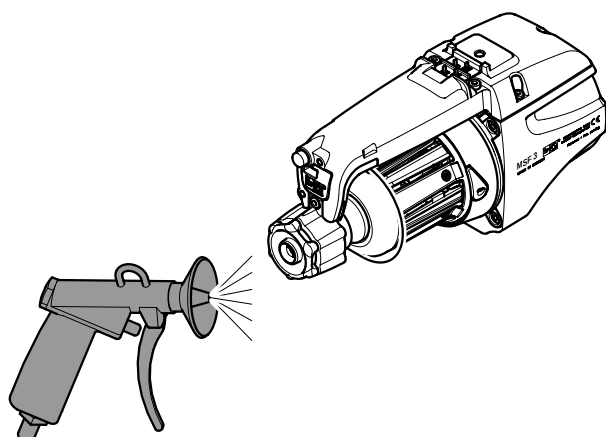
- ▶ Using the cleaning brush (8), clean the outlet eyelet (9).
- ▶ Wind the yarn on the unit.
- ▶ Switch on the unit.

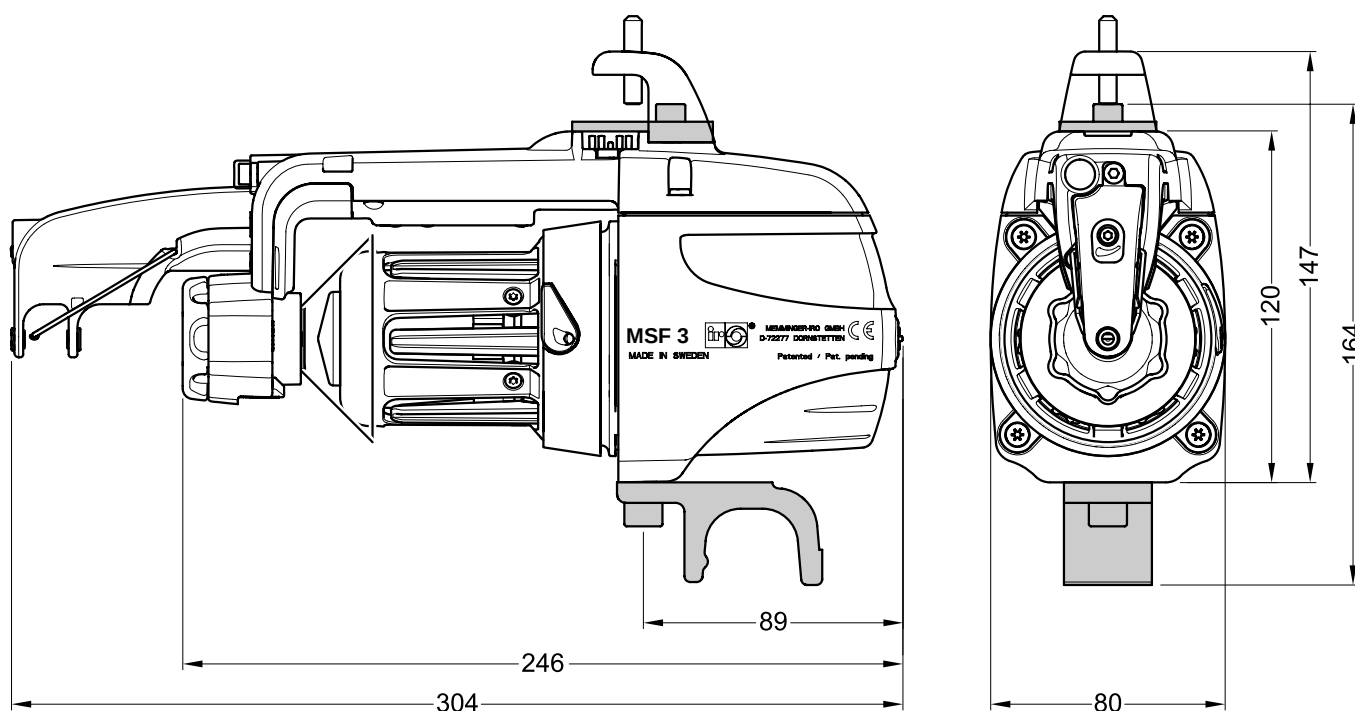


NOTE!
Do not use chemical cleaners for cleaning the yarn sensors.

Cleaning the remaining parts of the unit

- ▶ Switch off the unit.
- ▶ Blow off any fibre dust or dirt with compressed air.
- ▶ Wash off the paraffin wax and other deposits with spirits or with a soap solution.
- ▶ Switch on the unit.





Technical Data

Power supply:	57 V DC (35 V DC for reduced power version)
Average current:	0.44 A
Max. power:	85 VA (at a yarn speed of 1100 m/min)
Average power:	25 VA
Max. yarn speed:	1100 m/min (600 m/min for reduced power version)
Yarn gauge range:	17 - 500 dtex
Ambient temperature for operation and storage:	+5 °C to +45 °C
Weight:	1.9 kg

Troubleshooting

Fault after installation	Possible Cause	Solution
The unit does not operate.	The unit is switched off.	Press the ON/OFF button once. The green LED is lit when the unit is switched on.
	The power supply to the power supply unit and the unit is switched off.	Switch on the power supply to the power supply unit.
	The contact cable between the power supply unit and the unit is disconnected.	Connect the contact cable to the power supply unit (see the section, Connecting the contact cable)
	The fuses on the power supply unit have blown.	Trace and remove the cause. The contact cable may have caused a short-circuit. Change the fuses.
	There is no contact between the unit and the contact cable.	Remove the unit and check that the contact pins fit correctly into the contact cable and make a contact.
	Fault in the unit electronics.	Change the complete unit.
The unit will not operate and the stop light is flashing rapidly (0.12 seconds)	The voltage to the power supply unit is too high or too low.	Check the power supply unit.
The unit winds, but the stop light remains on.	The unit is in the time out mode.	Press the ON/OFF button once to reset the unit.
The unit will not operate and the stop light is lit.	The output sensor of the output stop motion device is in the stop position.	Check the yarn guide on the output stop motion device. Change the spring tension on the output stop motion device.

Fault / message during operating cycle	Possible Cause	Solution
The winding reel does not wind up.	The winding reel is rotated out of position. The sensors cannot scan the winding reel because the reflectors are not directly under the sensors.	Rotate the winding reel until the reflector is directly under the sensor.
	The yarn has been changed.	Press the ON/OFF button once to reset the unit.
The stop light is flashing slowly (0.5 seconds). The knitting machine continues to operate.	The sensors are dirty.	Clean the sensors. Press the ON/OFF button once to reset the unit.
The unit stops the knitting machine for no obvious reason.	A piece of yarn is jammed in the winding plate.	Remove the jammed piece of yarn.
	The yarn tension before entering the unit is too high.	Check the yarn path to the unit.
	The sensors are dirty.	Clean the sensors.
The knitting machine cannot be started after troubleshooting.	The unit stops the knitting machine from starting.	Press the ON/OFF button once to reset the unit.
There are too many windings on the winding reel.	The sensors are dirty.	Clean the reflector and the sensors.
	The yarn has been changed.	Press the ON/OFF button once to reset the unit.
The unit stops the knitting machine because the winding reel is empty.	The sensors are dirty.	Clean the reflector and the sensors.
	The tension cone is damaged.	Change the tension cone.
	The yarn demand speed is over 1100 m/min.	Reduce the yarn speed.
	The yarn has been changed.	Press the ON/OFF button once to reset the unit.
The unit stops the knitting machine and the stop light is flashing rapidly (0.12 seconds)	Voltage too low or too high.	Check the power supply.
	Software error.	Contact your sales representative.

Declaration of incorporation

In conformity with EU Machinery Directive 2006/42/EC, Annex II B

In conformity with the EU Low Voltage Directive 2006/95/EC

also

Declaration of conformity

In conformity with the EU Electro Magnetic Compatibility (EMC) Directive, 2004/108/EC

The manufacturer: MEMMINGER-IRO GMBH
Jakob-Mutz-Straße 7
72280 Dornstetten, Germany

hereby certifies that the following subassembly

Product name: MSF 3, MSF 3 CAN

conforms to the requirements of the above named directives.

The subassembly is supplied complete with an original instruction manual and original technical documentation.

The subassembly may not be put into service until the machinery into which it is to be incorporated has been declared as being in conformity with the provisions of the EU Machinery Directive 2006/42/EC, Annex II A.

A handwritten signature in black ink, appearing to be 'M. Kleindorp', written over a horizontal line.

Dornstetten, 20.02.2013

M. Kleindorp, Company Management

MEMMINGER-IRO GMBH
Postfach 1240
72277 Dornstetten - Germany
Jakob-Mutz-Straße 7
72280 Dornstetten - Germany

Tel.: +49 7443 281-0
Fax: +49 7443 281-101
E-Mail: info@memminger-iro.de
Internet: www.memminger-iro.de