



Ref. no. 40-893C-2101-01/1722

# Operating Instructions

LUNA X3 170 V, CHRONO X3 170 V

EN |

**Original language instruction**

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**This section contains important safety information. Read the manual carefully before installing, using or maintaining the weft feeder.**



**WARNING**

Indicates a possible dangerous situation which could result in serious injury or damage to the unit.



**CAUTION**

Indicates a possible dangerous situation which could result in minor/moderate injury or damage to the unit.

**NOTE**

Used in order to draw attention to important information, which facilitates operation or handling.

*ROJ Srl reserve the right to change the contents of the user's guide and technical specifications without prior notification.*

**WARNING!**

















- The power supply must be switched off at the mains before any work is carried out on the feeder, the transformer/interface or any other electrical components. The feeder and the transformer cabinet and cable covers must be fully assembled before the power supply is connected.
- The weft feeder ON/OFF-switch DO NOT cut off the main power supply. Turn off the main switch before any work is carried out on the electrical circuit.
- The feeder and transformer contain electrical components that retain an electric current up to three minutes after disconnection. DO NOT open or disconnect feeder or interface, including cables, within this time.
- All work on electrical components must be carried out by a qualified electrician.
- This product is not intended for use in potentially explosive atmospheres or in zones classified according to the European directive 94/9/ec. Please contact ROJ Srl if products for use in a potentially explosive atmosphere are required.
- Always turn off the main switch or isolate the power supply and disconnect the air supply before connecting or disconnecting the feeder, the control board or any of the circuit boards
- Routine checks for damaged or worn parts must be made before operating this equipment. Any part that is worn or damaged should be properly repaired or replaced by authorized personnel. To avoid risk of injury DO NOT operate this equipment if any component does not appear to be functioning correctly.
- Take necessary precautions to avoid injuries when interacting with the product. Use suitable respiratory and eye protection.
- Improper handling at repair, fault finding or similar may damage the feeder/interface mechanical/electrical components including cables and connectors. DO NOT perform measurements on feeder electrical components and parts. Please contact your local ROJ Srl service station for further information.

**CAUTION!**

- Caution must be taken in the close vicinity of the feeder as it contains moving parts that can cause injuries and, in normal operation, starts without prior warning.
- To comply with C.E. Regulations only replacement parts approved by ROJ Srl may be used.
- The feeder is an industrial product and therefore not approved to use household environments /in residential areas.

**NOTE**

- To ensure the selection of the most suitable feeder and associated accessories, it is recommended making weaving tests with the intended yarns.
- Please dispose of obsolete or unwanted equipment responsibly, taking into consideration any local regulations regarding the disposal and / or recycling of materials that are applicable.
- All products in this manual may not be available for your market.
- The performance of a tensioner can be affected by various factors connected to the specific yarns being used. In case of uncertainty it is recommended to carry out a weft insertion test.

	Luna X3 170 V	Chrono X3 170 V
		
	Max 1800 m/min	Max 1800 m/min
	6.5 kg	8.6 kg
	Min 5° C - Max 40° C	Min 5° C - Max 40° C
	RH max 85 %	RH max 85 %
	Sound pressure $L_{pa}$ 74 dB (A), Sound power $L_{wa}$ 88 dB (A)	Sound pressure $L_{pa}$ 74 dB (A), Sound power $L_{wa}$ 88 dB (A)
	Ø max 5 mm	Ø max 5 mm
	Input air pressure 5,5 - 7 bar	Input air pressure 5,5 - 7 bar
	Max 2,7 mm	Max 4 mm
<b>Interface</b>		
	 Power supply via loom/ weaving machine	Power supply via loom/ weaving machine
	1,4 kg	1,4 kg
<b>Extension interface</b>		
	 Power via Power Supply/ Interface connected to extension plug	Power via Power Supply/ Interface connected to extension plug
	1,4 kg	1,4 kg

**NOTE**

Subject to technical modifications.



**WARNING!**

Hearing protection must be worn when operating this equipment.

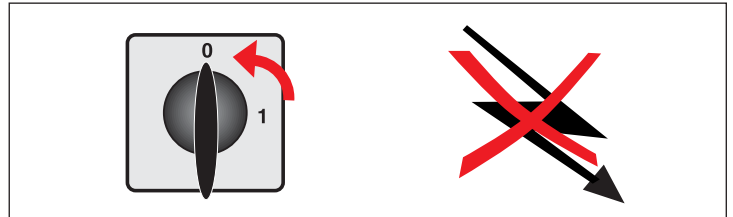
**NOTE**

Condensation can form on the weft feeder when it is moved from the cold environment of the warehouse to the warmer environment of the loom room. Make sure that the feeder is dry before switching it on.



**WARNING!**

Turn off the main switch on the loom before any work is carried out on the electrical circuit.

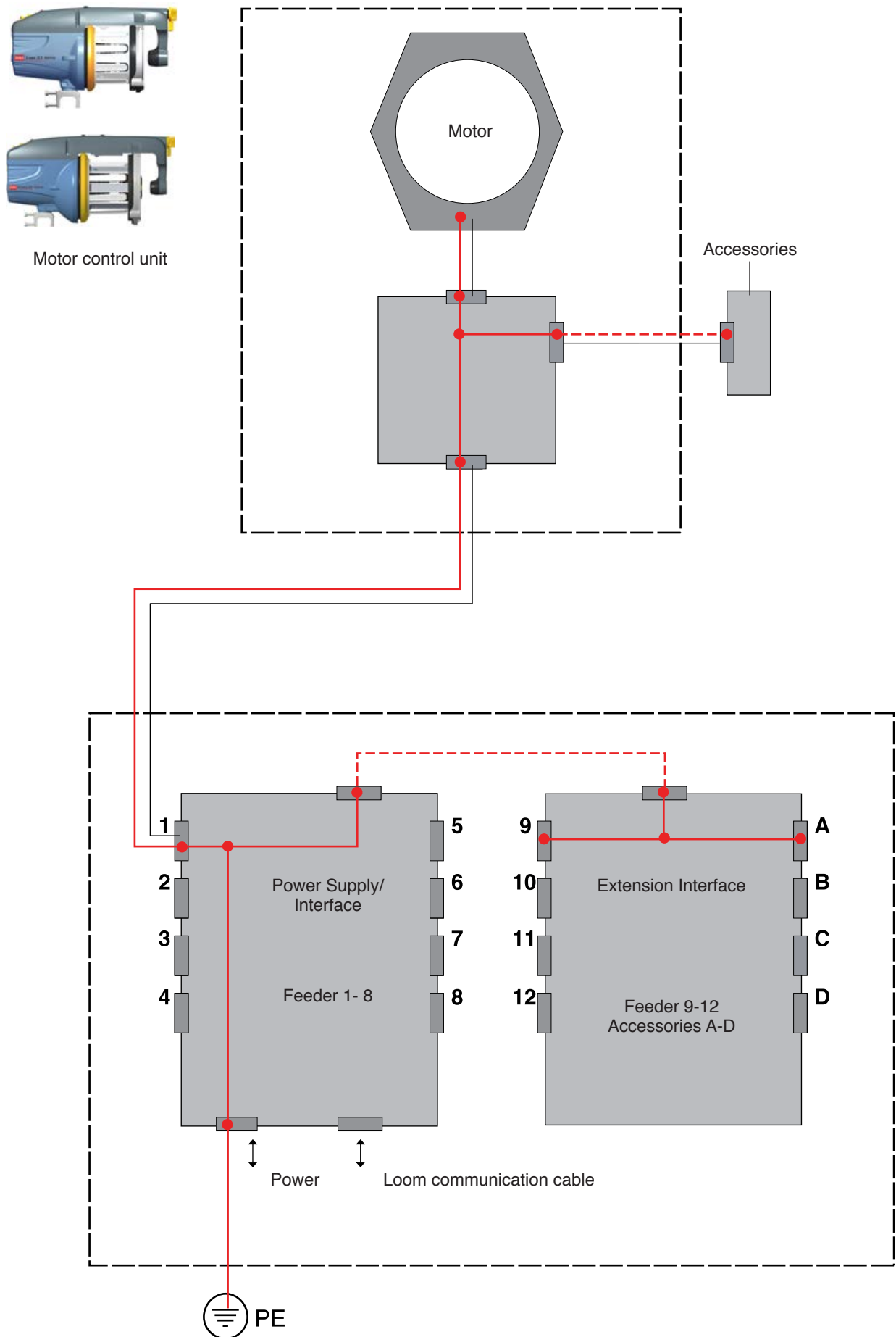


**NOTE**

Make sure that the cable covers are tight.



Luna-X3 170 V, Chrono-X3 170 V

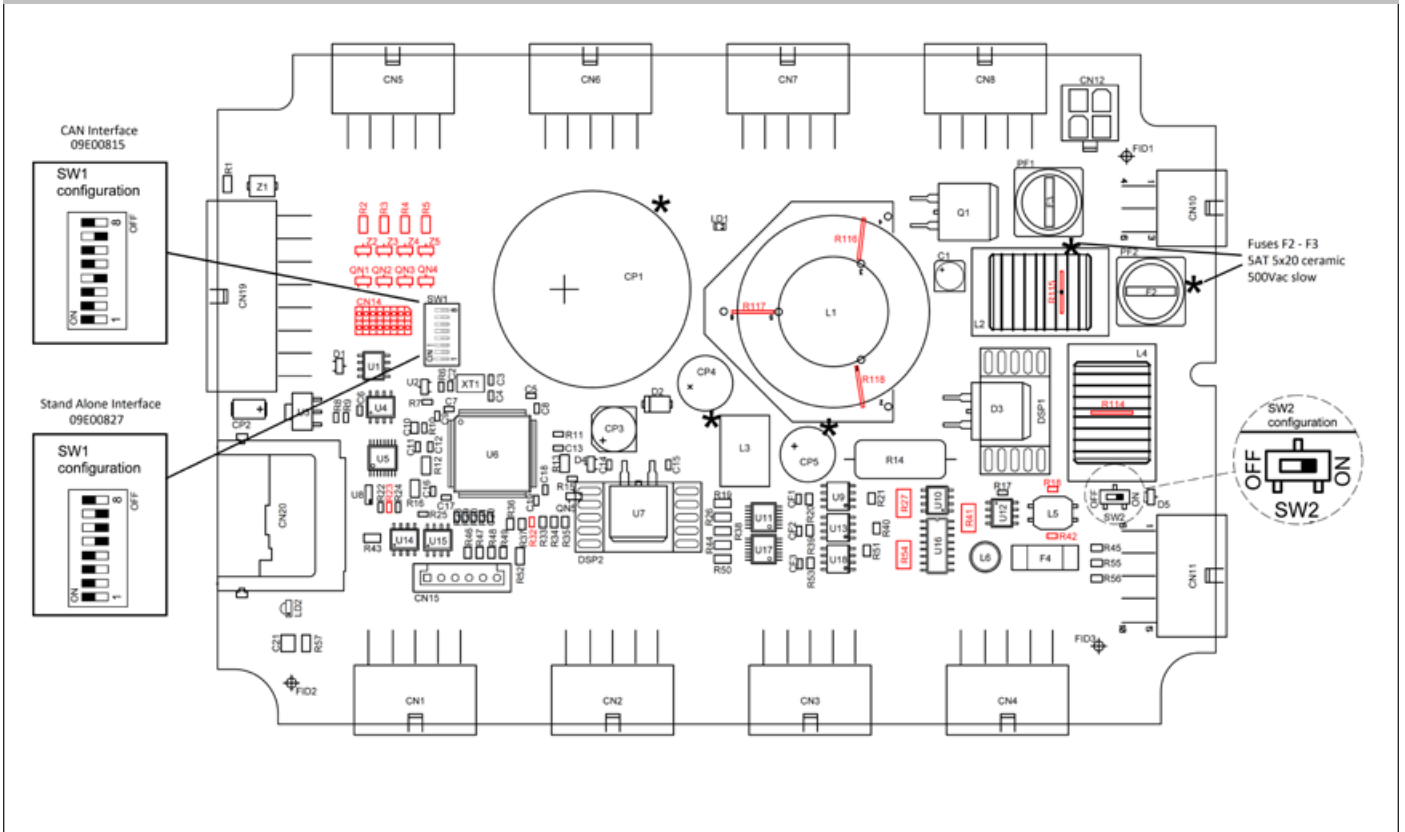


Luna-X3 170 V, Chrono-X3 170 V



Interface  
Power supplied via loom

CAN AND STAND ALONE – INTERFACE



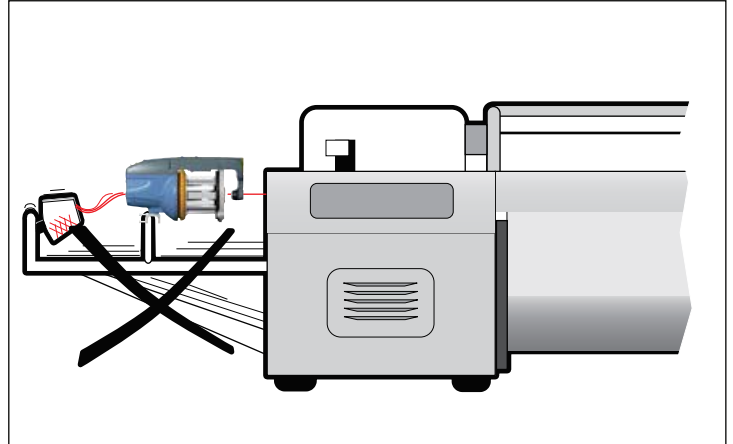
**NOTE**

Condensation can form on the weft feeder when it is moved from the cold environment of the warehouse to the warmer environment of the loom room. Make sure that the feeder is dry before switching it on.



**CAUTION!**

The unit should not be mounted directly on the weaving machine.



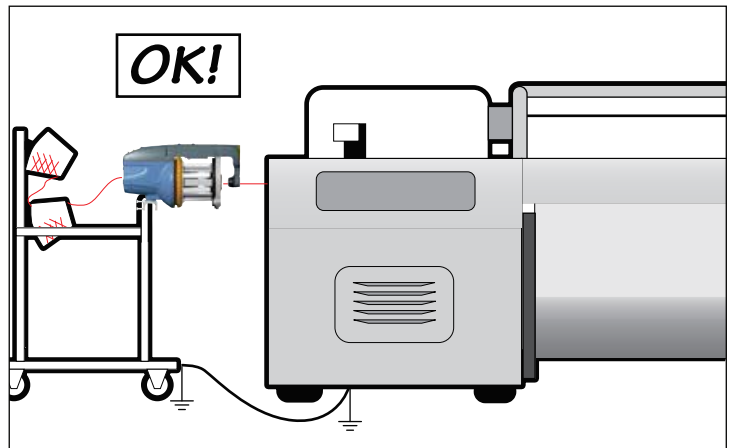
Use a separate floor stand.

**NOTE**

Feeders' stand and creel must be connected to the earth of the loom.

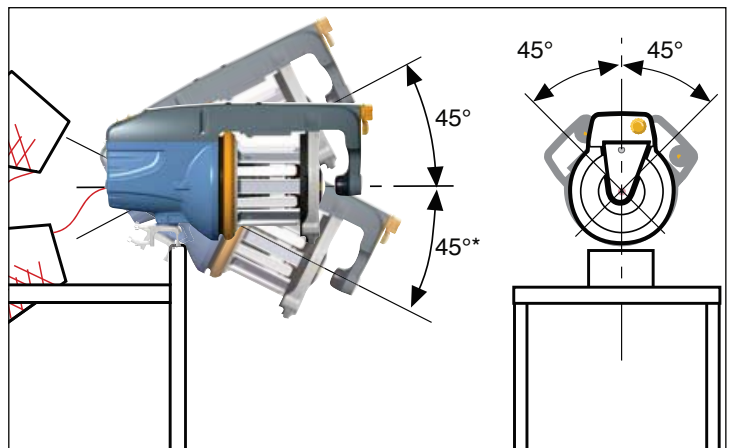
**NOTE**

Place the creel behind the feeder's stand avoiding sharp angles to the yarn path from the creel output to the feeders.

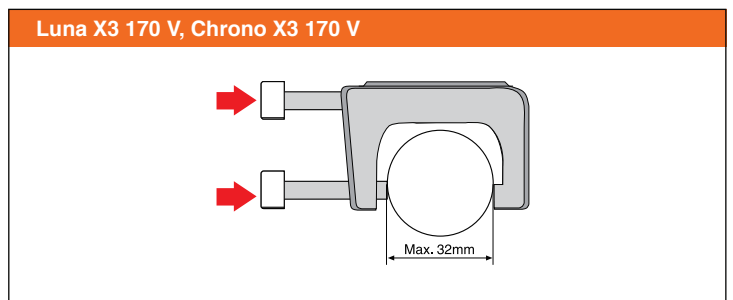


Feeders with Mechanical sensors must be mounted within 45° of the horizontal plane.

\*Max 15° with low sensor spring force.(see page 14)



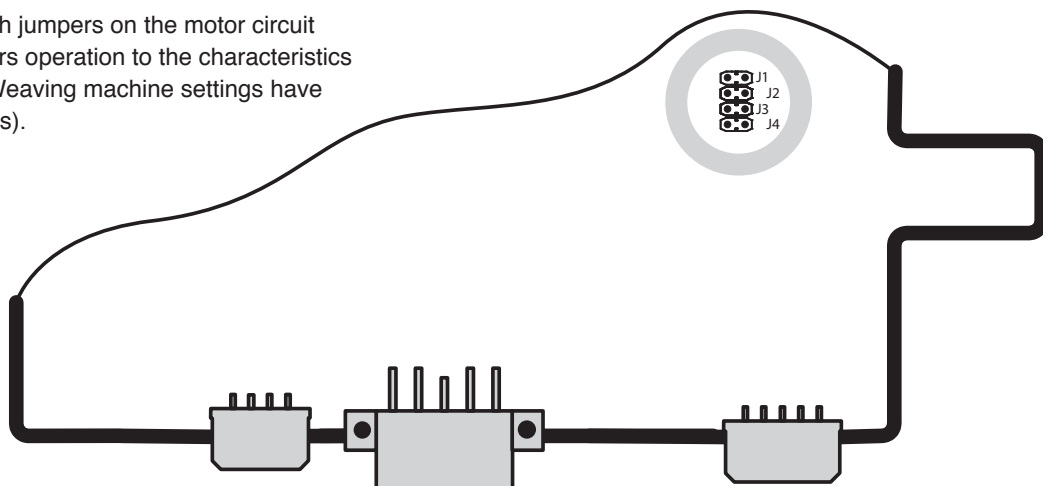
Ensure that the mount screws are correctly tightened.





Luna-X3 170 V, Chrono-X3 170 V

The feeder is equipped with jumpers on the motor circuit board that adapt the feeders operation to the characteristics of the weaving process. (Weaving machine settings have priority over jumper settings).



	Opto sensors
J1	Yarn store sensor sensitivity- LOW
J1	Yarn store sensor sensitivity- AUTO
J2	Integrated yarn break sensor- DISABLE
J2	Integrated yarn break sensor- ENABLE
J3	Winding disc positioning- DISABLE (one way bearing)
J3	Winding disc positioning- ENABLE
J4	Pattern in advance- DISABLED
J4	Pattern in advance- ENABLED

Mech. sensors
Yarn break sensor filtering- RIGID YARNS
Yarn break sensor filtering- NORMAL
Integrated yarn break sensor- DISABLE
Integrated yarn break sensor- ENABLE
Winding disc positioning- DISABLE (one way bearing)
Winding disc positioning- ENABLE
Pattern in advance- DISABLED
Pattern in advance- ENABLED

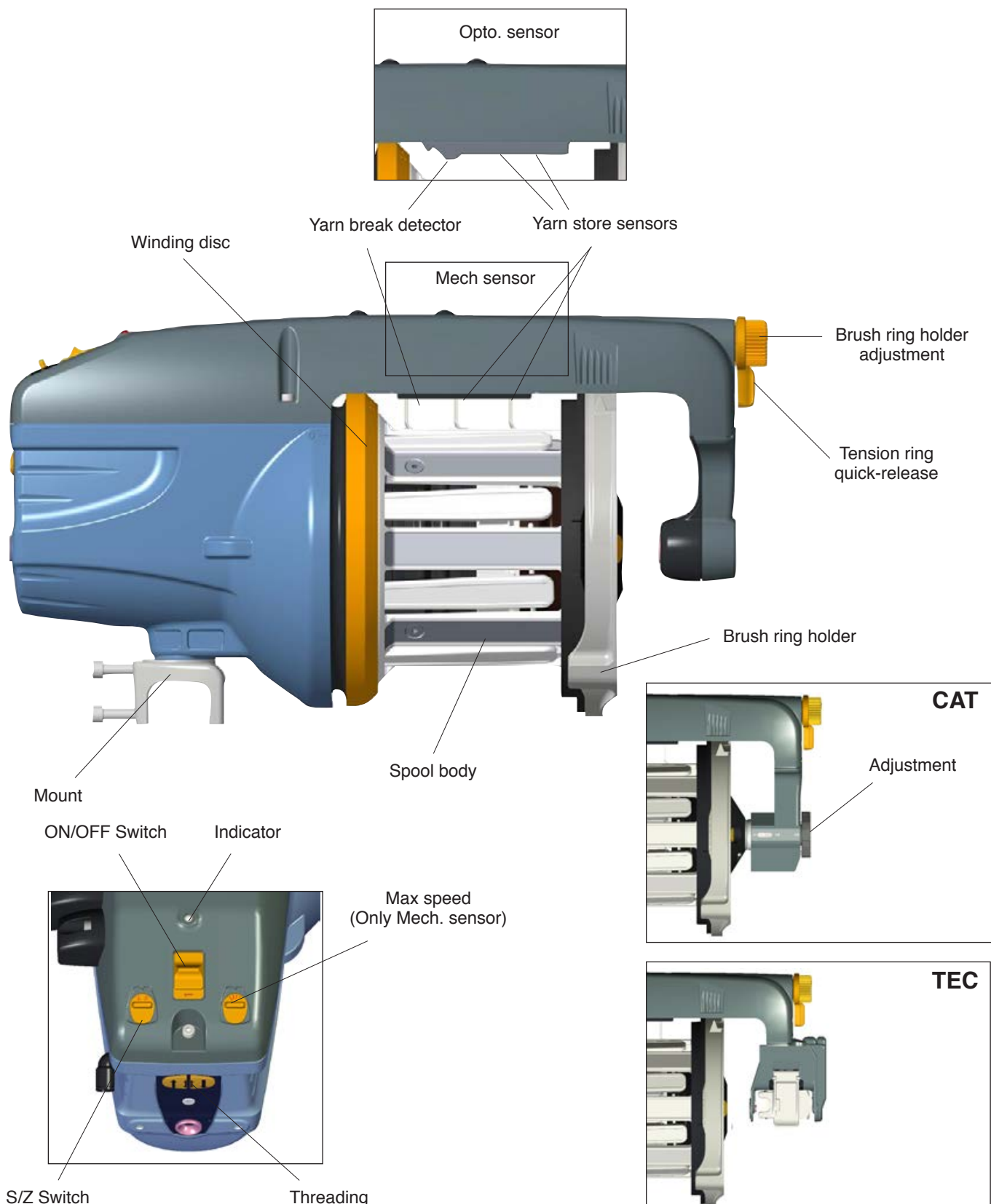
**Luna-X3 170 V, Chrono-X3 170 V**

**NOTE**

Do not expose the brush ring holder or the winding disc to external forces as this may cause damage / deformation.

Do not, for instance, carry the feeder by holding it in the brush ring holder.

Store the feeder resting on the back or top cover to avoid damaging / deforming mentioned parts.

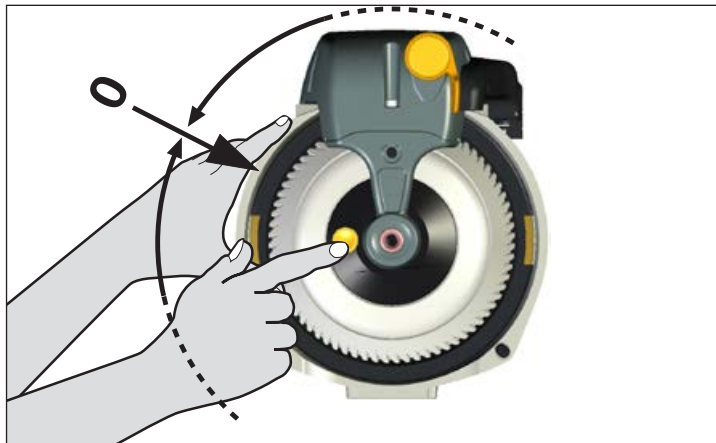


Switch off the feeder.

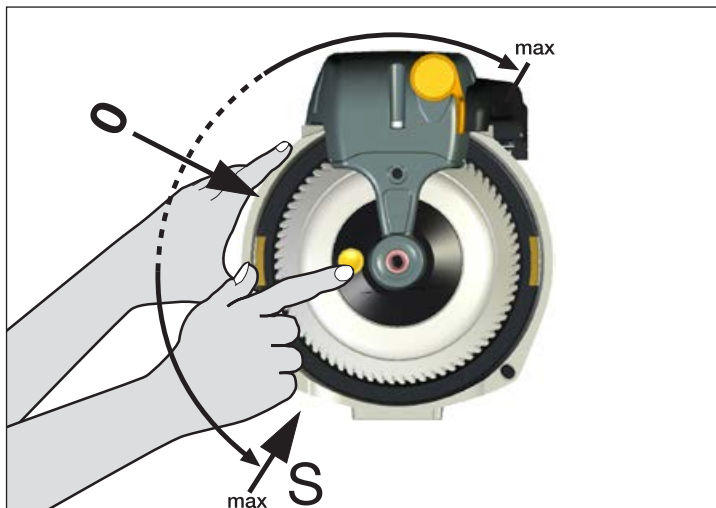
On feeders with S-flex, the S-flex must be detached for making the S/Z adjustment. See page 16-17 (Flex-brake mounting).



Grip the winding disc and, whilst pressing the orange button on the front of the spool body, rotate the disc until the button is felt to locate. Aligning the mark on the winding disc with the line on the motor house gives the zero separation position.



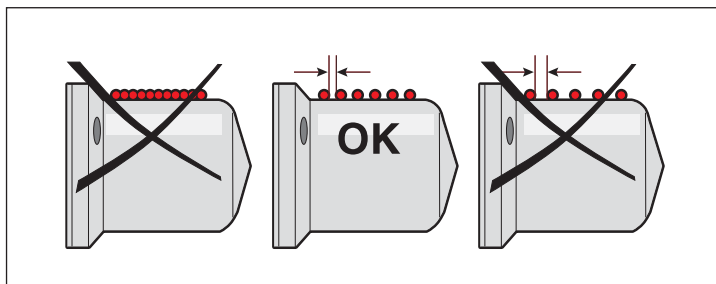
To adjust, press in the button and revolve the winding disc in the appropriate direction. The separation increases from 0 to 4 mm the more the disc is rotated.



### NOTE

Before starting the automatic sensors calibration, check the following:

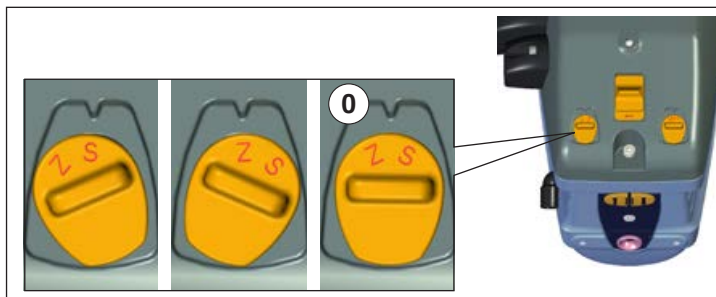
The separation must be distinct, but not excessive.



Set the direction of rotation with the switch. (The feeder is deactivated in the standby position (0))

### NOTE

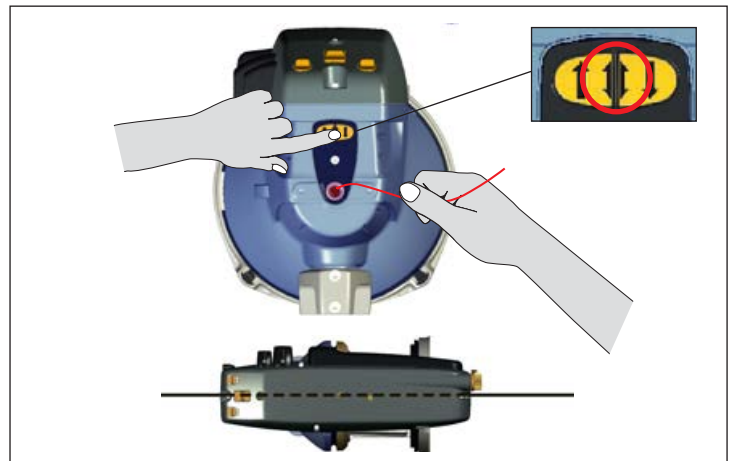
On feeders with brush, choose the correct type of brush (S, Z or Straight) depending on the direction of the rotation. See page: 16.



**Luna X3 170 V, Chrono X3 170 V**

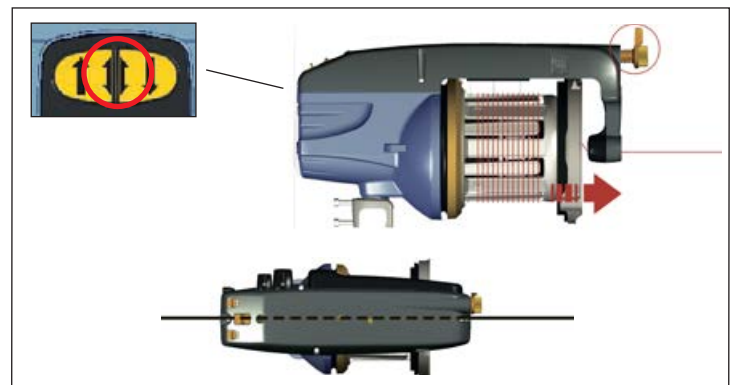
**FULL THREADING, AUTOMATIC SLIDE SHIFT**

- Restart the feeder to automatically position the winding disc (empty spool body)
- Insert the yarn into the eyelet and press both buttons, whilst lightly holding the yarn.



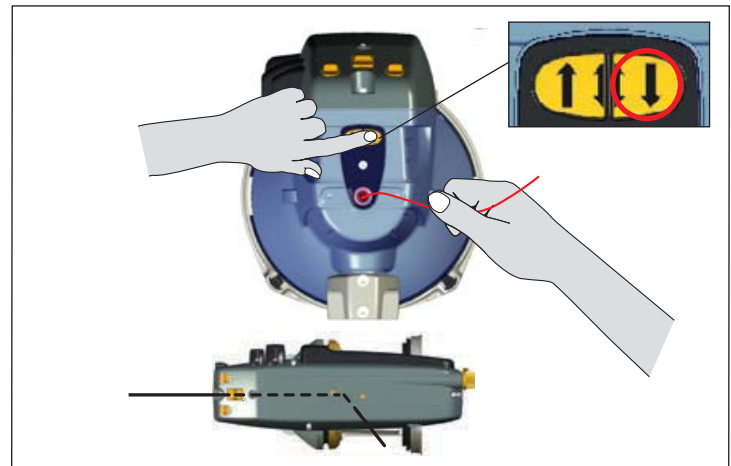
**FULL THREADING, MANUAL SLIDE SHIFT**

- Restart the feeder to automatically position the winding disc (empty spool body)
- Open the brush holder, see page 16.
- Insert the yarn into the eyelet and press both the buttons, whilst lightly holding the yarn.



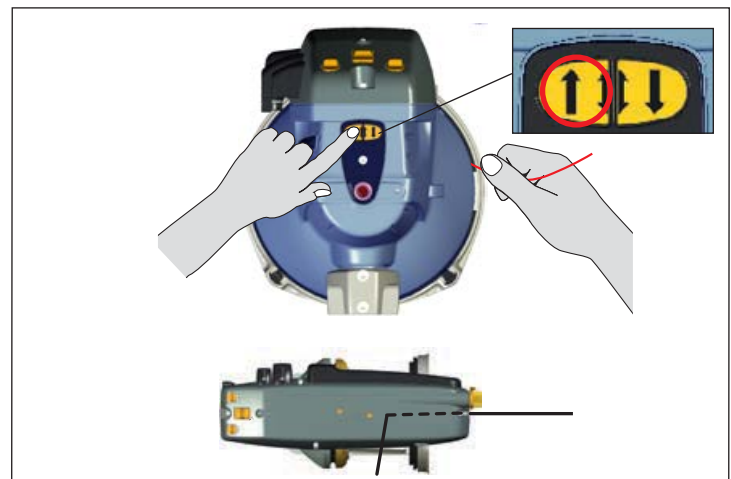
**HALF THREADING, BACK**

Insert the yarn into the eyelet and press the right button, whilst lightly holding the yarn.



**HALF THREADING, FRONT**

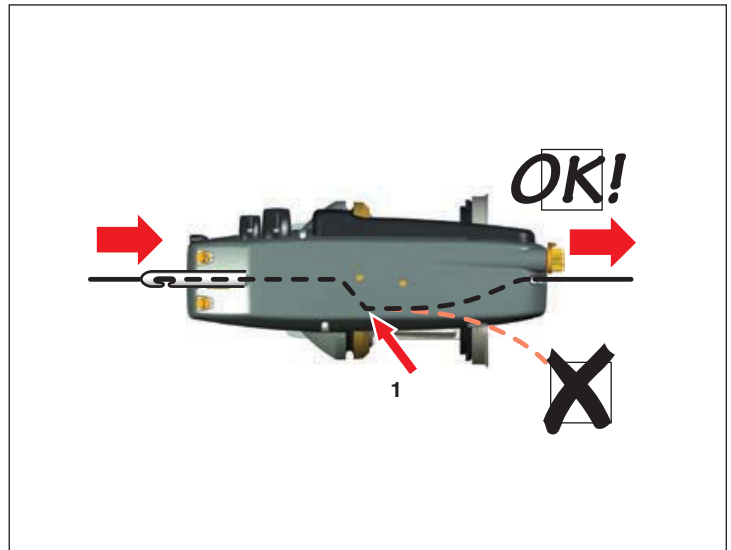
Insert the yarn into the eyelet and press the left button, whilst lightly holding the yarn.



Luna X3 170 V, Chrono X3 170 V

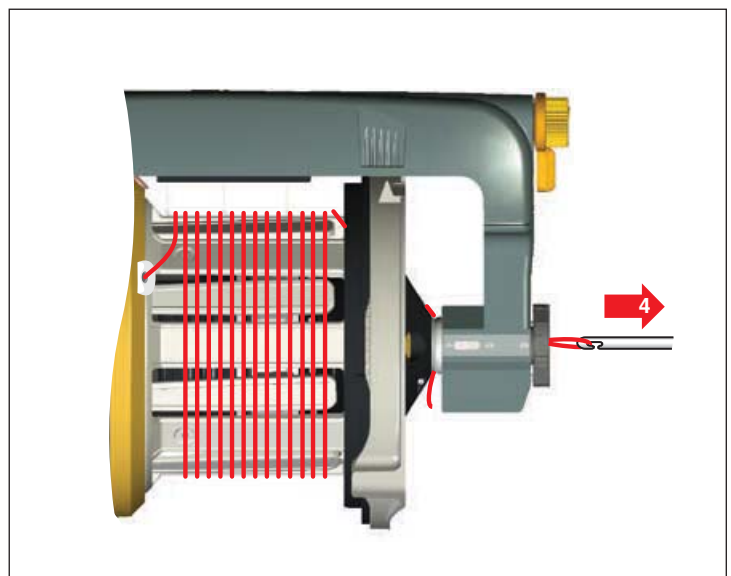
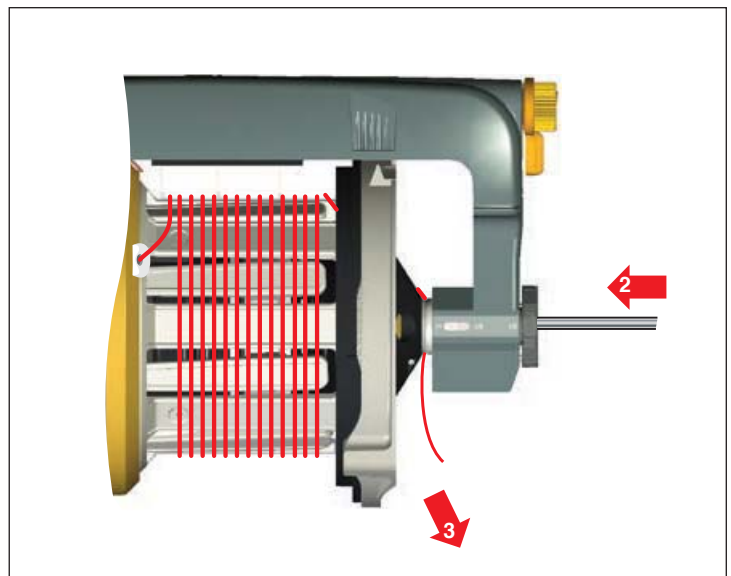
**WITHOUT CAT**

- Switch off the feeder.
- Align the winding disc eyelet (1).
- Open the brush holder (see page 16).
- Thread the needle all the way through the feeder and output eyelet.
- Pull the yarn through.
- Restart the feeder.



**WITH CAT**

- Switch off the feeder.
- Align the winding disc eyelet.
- Thread the needle through the feeder and balloon control brush.
- Start the feeder and fill the yarn store.
- Insert the threading needle into the CAT (2) as far as possible.
- Pulling the yarn (3) will cause it to wrap around the threading needle.
- When the threading needle is pulled out (4) the yarn will follow.



 **WARNING**

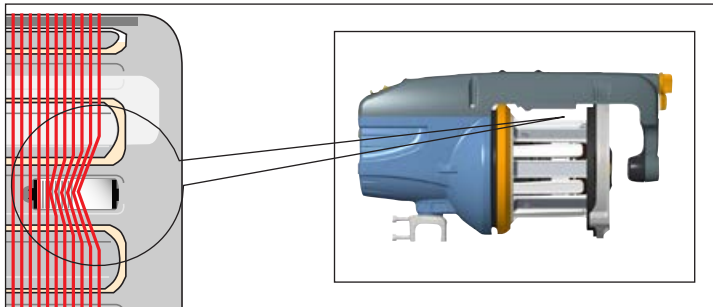
When using a threading needle, care must be taken to avoid damaging the Flex brake. Ensure that the flex holder is in the forward position before threading.

**Luna X3 170 V, Chrono X3 170 V**

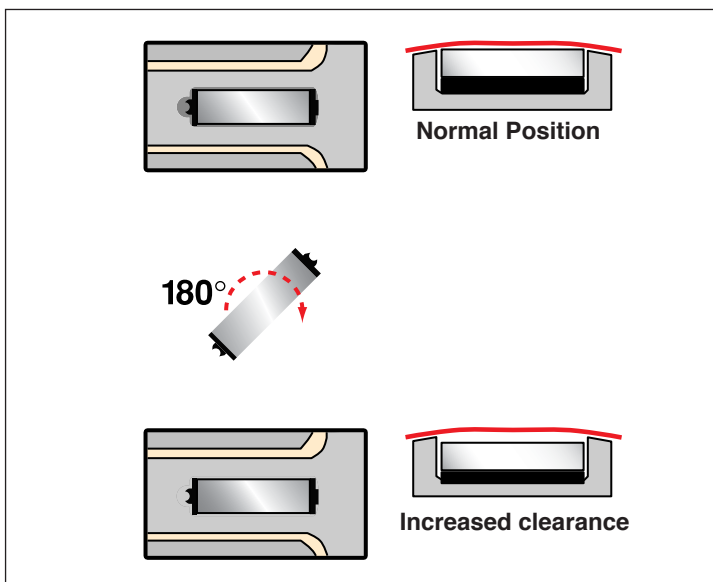
1. Ensure that the spoolbody sensor part is in the correct position

**Optical sensors**

2. Certain yarn types may stick to, or leave deposits on, the sensor mirror. In such cases the clearance between the yarn and the mirror can be increased.

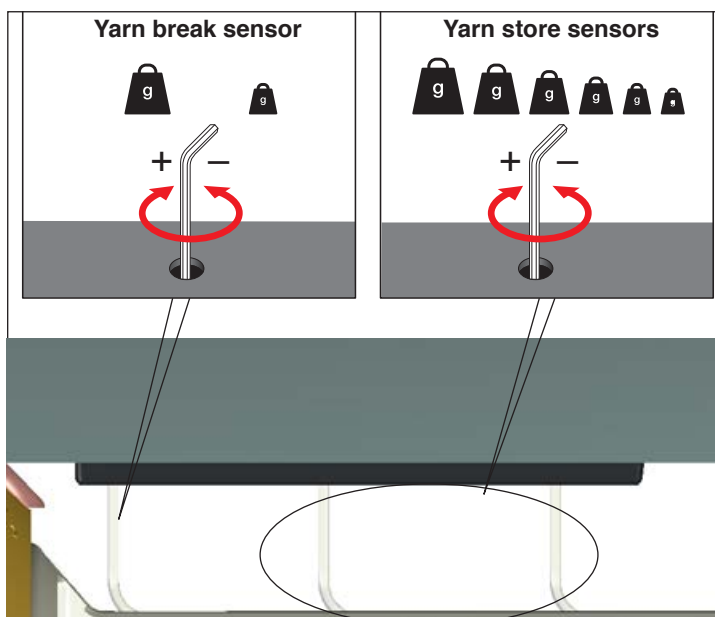


3. Adjust the clearance by rotating the mirror 180 degrees.



**Mech. sensor**

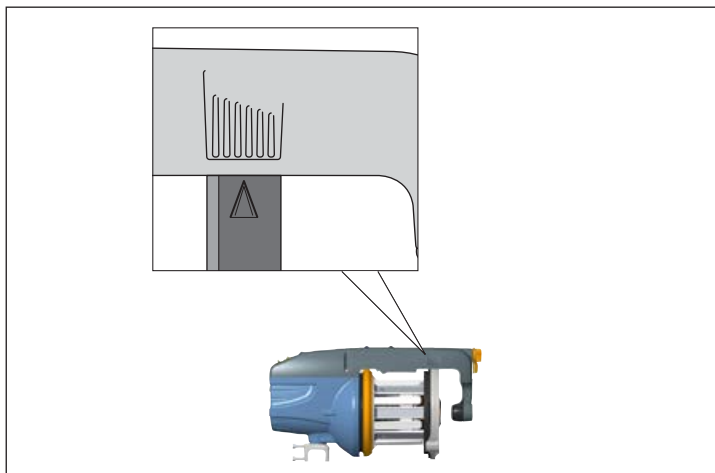
2. Certain yarns may cause excessive vibration of the sensors. This can be remedied by increasing the damper pressure.



**TENSION SETTINGS**

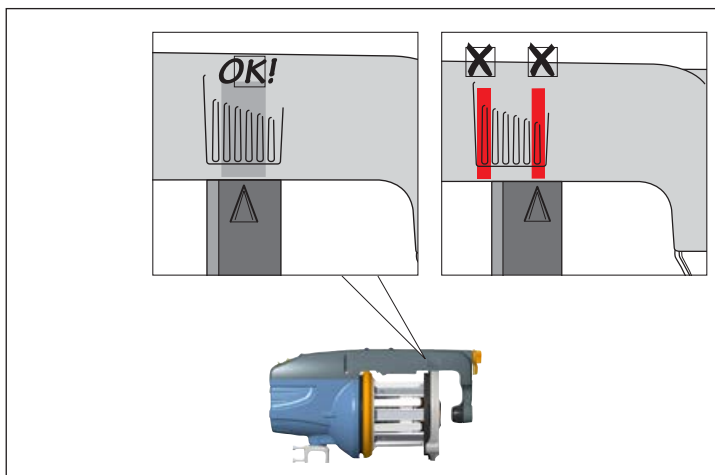
**BRUSH**

When using a brush it is possible to use the whole setting area of the brush holder ring.



**FLEX**

When using a flex it is important to keep the settings in the center of the setting area, to ensure proper tension and longer life time of the flex. Avoid to set the brush ring in the outer areas.

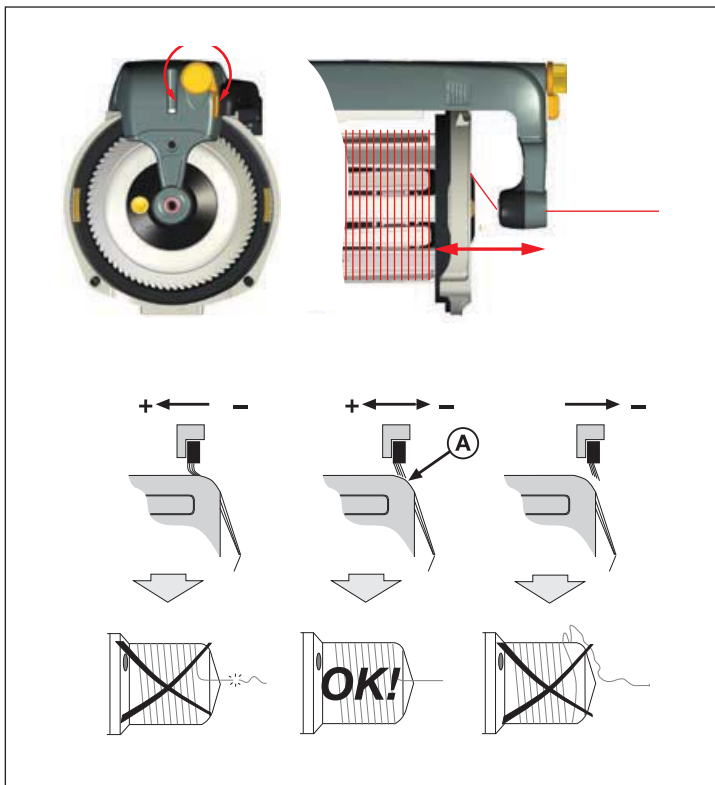


**BALLOON CONTROL**

Balloon control adjustment.

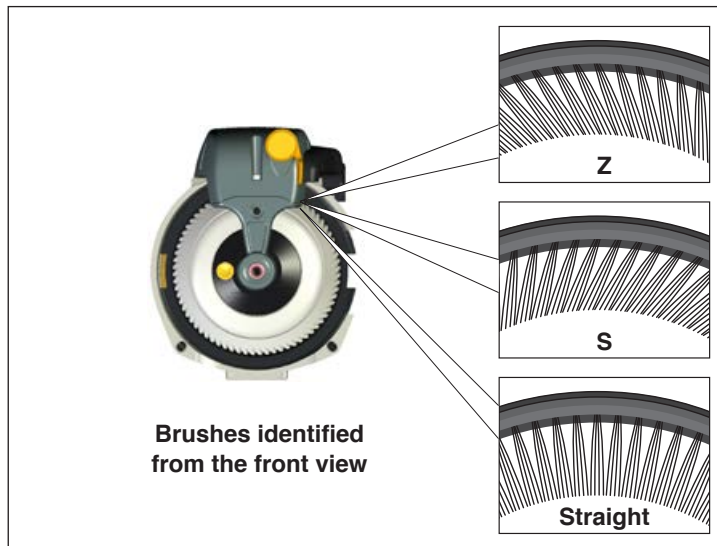
**NOTE**

Excessive brush tension will cause abnormal wear.



**BRUSH RING ALTERNATIVE**

Z for Z-rotation  
S for S-rotation  
Straight for Z and S rotation



**BRUSH MOUNTING**

Rotating the slide shift lever (1) will detach the brush holder (2) from the spool body.



Ensure that the brush ring is correctly positioned (3) when attaching.



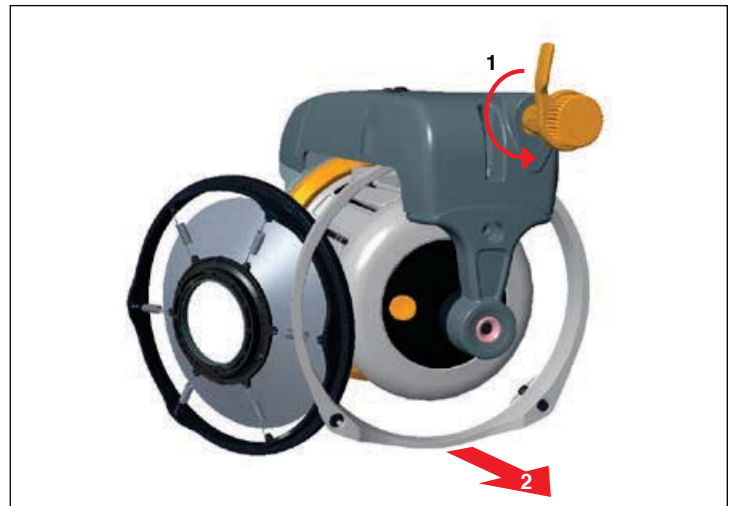


**MOUNTING**

Rotating the slide shift lever (1) will detach the brake (2) from the spool body.

**NOTE**

It is important to use a brake suited for the specific application to prevent reduced life time of the brake.

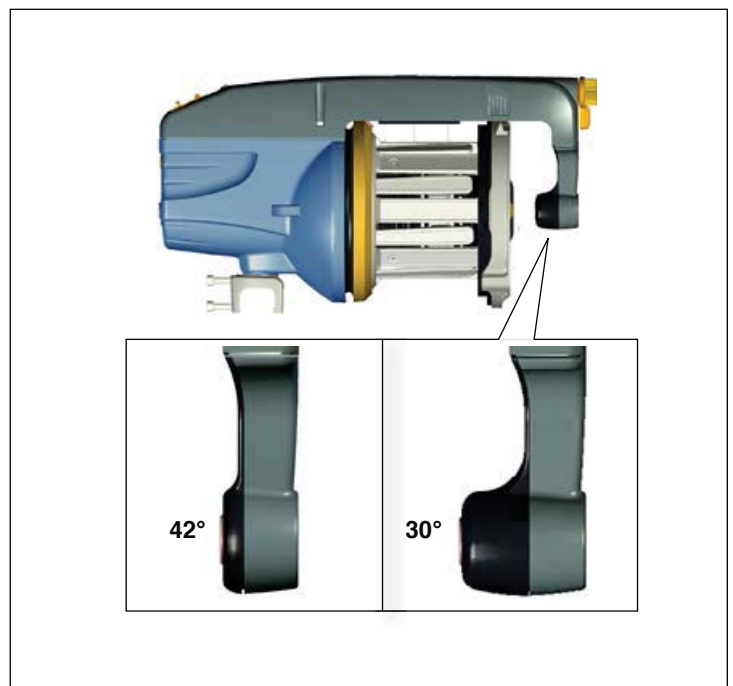


**NOSE OUTPUT: FLEX BRAKE**

Attach nose output depending on the mounted type of Flex brake to ensure function.

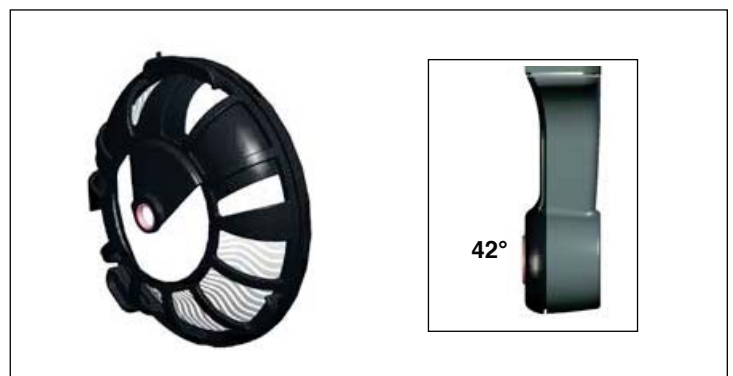
**NOTE**

The performance of a tensioner can be affected by various factors connected to the specific yarns being used. In case of uncertainty it is recommended to carry out a weft insertion test.



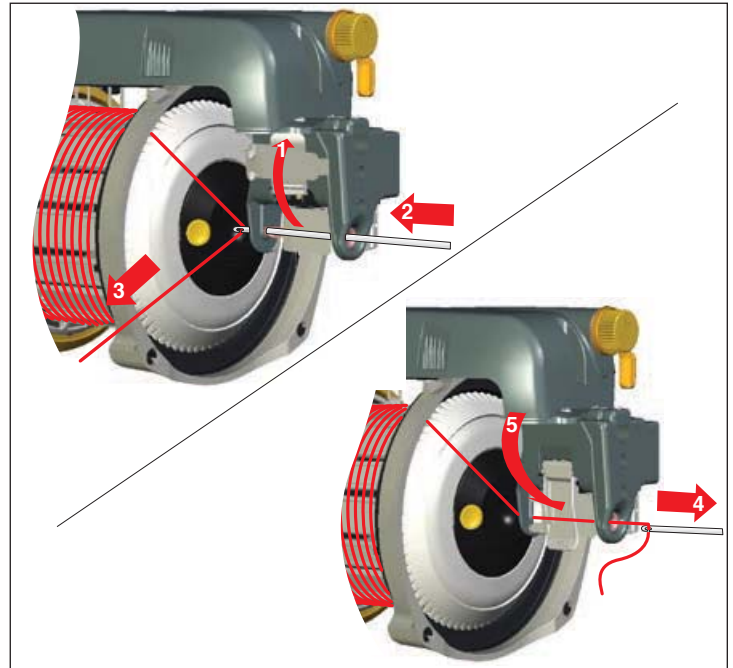
**NOSE OUTPUT: LAMELLA CAGE**

Using a Lamella cage requires a 42° nose output.



**THREADING THE TEC**

- Open the cover (1)
- Insert a threading needle (2)
- Pull on the yarn (3). The yarn will wrap itself around the needle
- Pull out the needle (4)
- Close the cover (5)

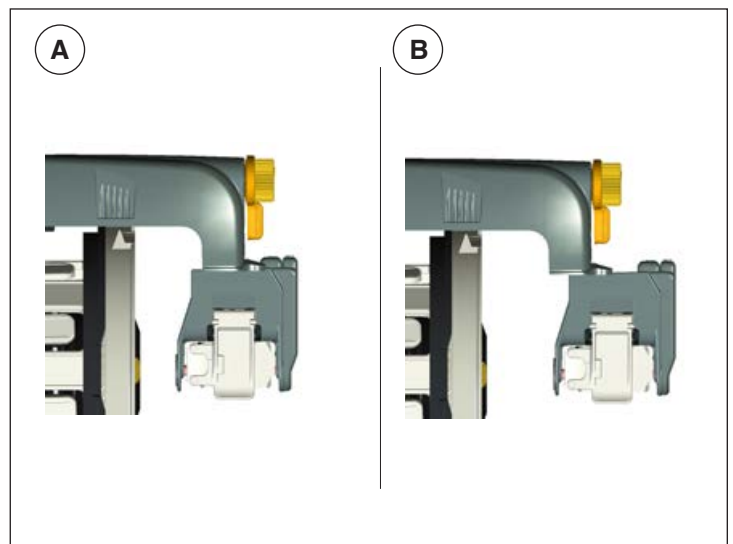


**Position A**

Using the TEC together with a 30° FlexBrake.

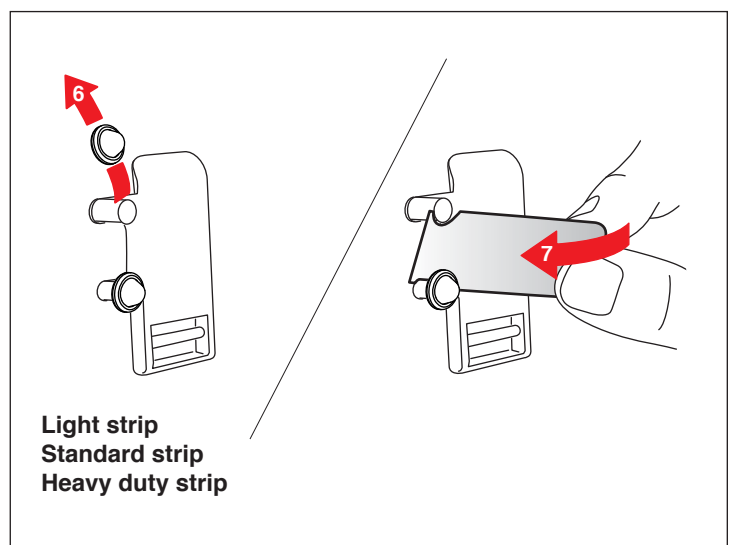
**Position B**

Using the TEC together with a 42° Flexbrake or Lamella cage.



**CHANGING THE TENSION STRIP**

- Open the cover (1)
- Remove the cap (6)
- Tilt the strip to remove (7)
- Tilt the new strip forwards to insert
- Close the cover (5)

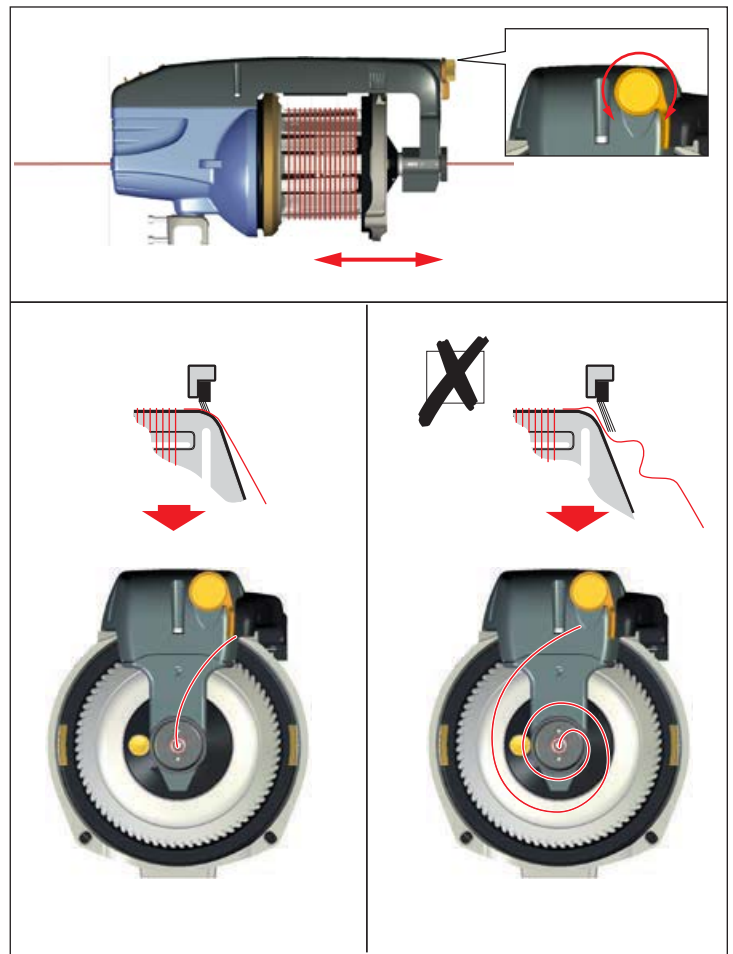


**INPUT TENSION**

Control input yarn tension to the CAT.

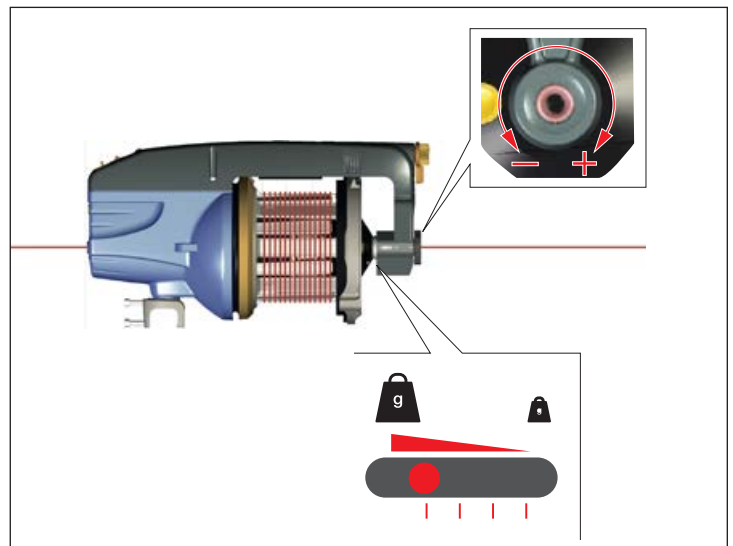
**NOTE**

The brush ring should only be used for balloon control.



**OUTPUT TENSION**

Adjustment of the output tension.

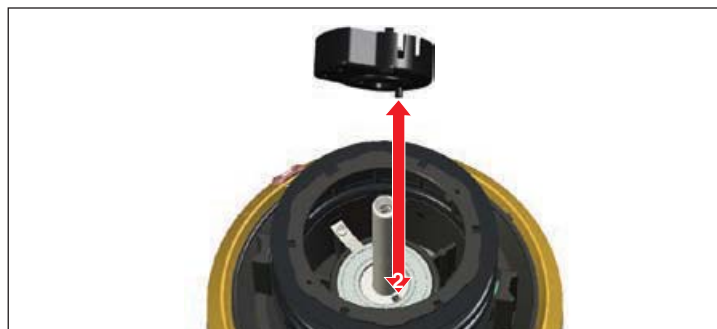


## Chrono X3 170 V

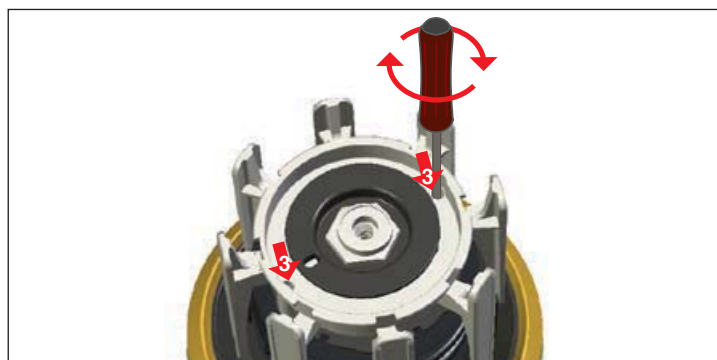
After disassembling, it is necessary to install the spool-body part by part to avoid damaging the parts. Secure the bellow properly with plastic straps (1).



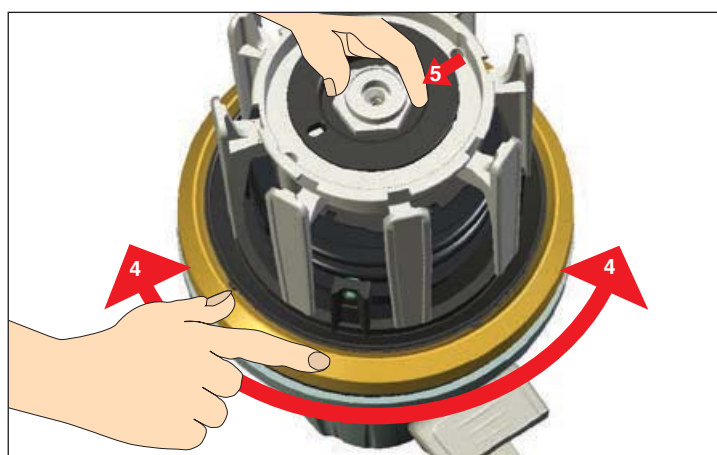
Be sure that the carrier pin fits into the keygroove in the motor shaft (2).



Insert the two screws (four screws in HD X3) for the rubber bellows (3) and be sure they are properly tightened with the correct key. (Torx T10)



Turn the winding disc (4) when holding the centre nut (5) to get the balance weight in position. When correct, the disc can easily be moved 180° only.

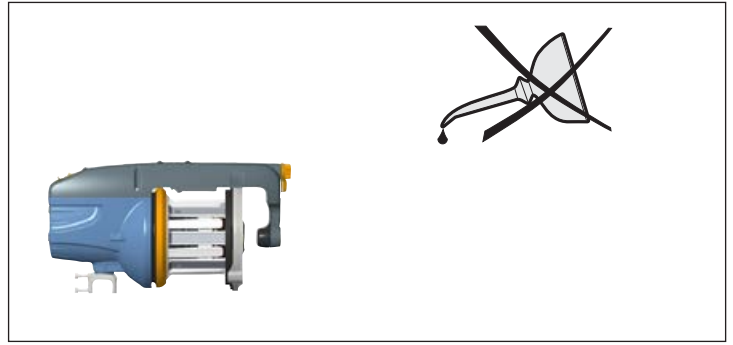


Install the centre screw, outer rubber bellows, spoolbody and cover. Set the yarn separation to a suitable position to be sure it is correctly assembled.



**LUBRICATION**

The unit requires no extra lubrication.

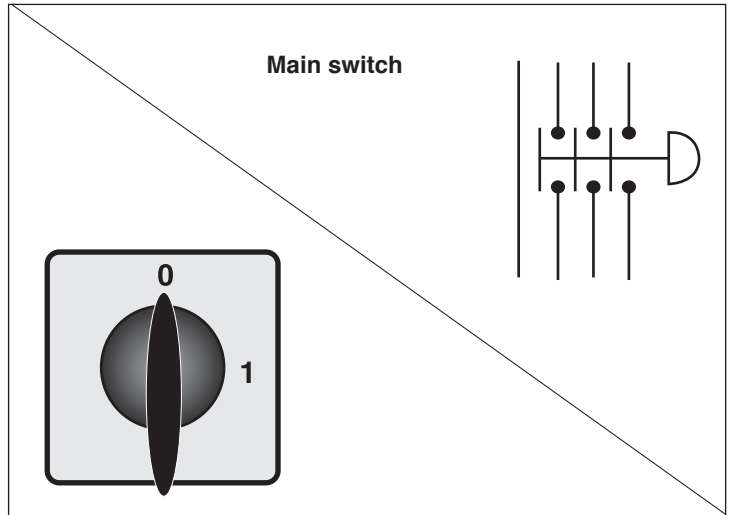


**CONNECTIONS**



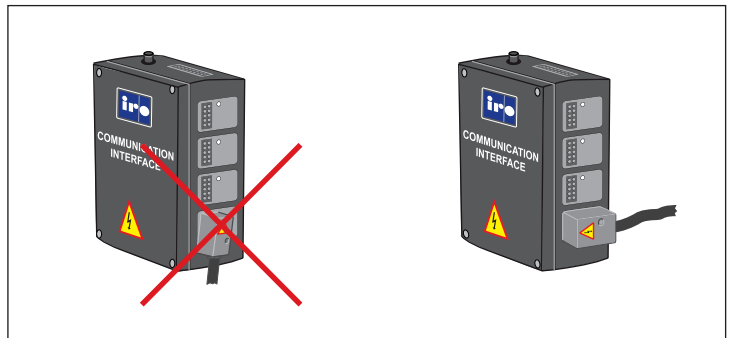
**WARNING**

Always turn off the main switch or isolate the power supply and disconnect the air supply before connecting or disconnecting the feeder, the control board or any of the circuit boards.



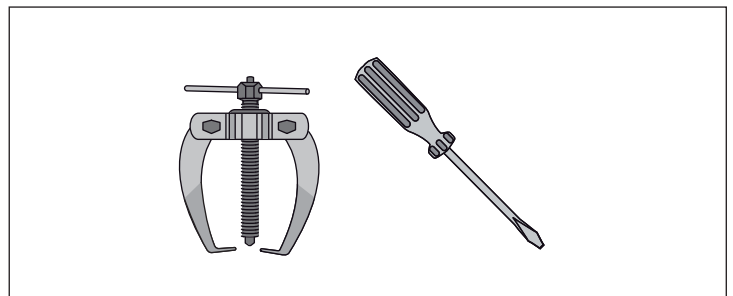
**NOTE**

The connector cover must be assembled before re-start.



**IRO/ ROJ TOOL KIT**

It is recommended to use an IRO tool kit, with specialised tools, to ensure easy and correct disassembly/ assembly of IRO feeders during maintenance work. Please contact your local IRO service station for further information.

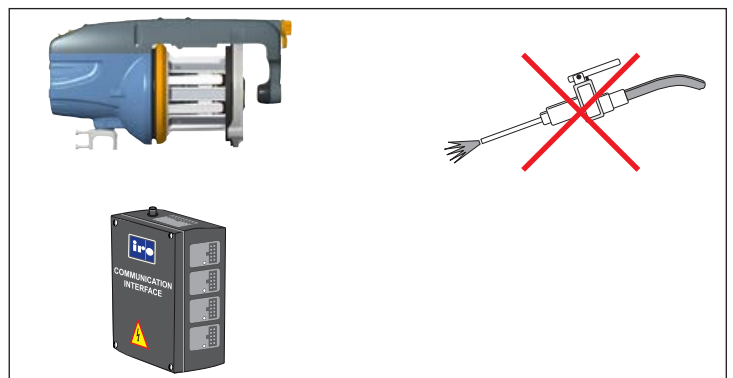


**CLEANING**

It is recommended to carry out a periodical cleaning of any lint or dust accumulation on the feeder and the control box.

**NOTE**

Avoid the use of compressed air when cleaning the feeder.



**Luna X3 170 V, Chrono X3 170 V**

Fault	Check in the following order	
	Optical sensor	Mechanical sensor
Feeder will not start	1 - 2 - 3 - 4 - 6 - 7 - 8 - 24 - 25 - 26 - 27 - 28	1 - 2 - 3 - 5 - 6 - 7 - 8 - 24 - 25 - 26 - 27 - 28
Feeder will not stop	2 - 4 - 24 - 25	9 - 13 - 5 - 15 - 24 - 25
Low or empty yarn store	4 - 3 - 13 - 9 - 8 - 21 - 14 - 24 - 25 - 26	17 - 3 - 5 - 16 - 13 - 9 - 8 - 21 - 24 - 25 - 26
Input yarn breaks frequently	22 - 10 - 13	22 - 10 - 18 - 14
Output yarn breaks frequently	11 - 20 - 12 - 19 - 23	11 - 20 - 12 - 19 - 23
Fuses blow repeatedly	25 - 28	25 - 28
Feeder warning light flashes slowly	4	9 - 13
Feeder warning light flashes rapidly	3 - 9 - 8 - 27	3 - 9 - 8 - 27
Feeder warning light continuously on	29	29

No	Possible causes	Remedies	See page
1.	Incorrect S/Z switch position	Set the S/Z switch in appropriate position	11
2.	Incorrect spoolbody position	Ensure the sensor unit is positioned upwards	14
3.	Winding disc jammed	Free and clean the winding disc	21
4.	Contaminated sensor or mirror	Clean the sensor and mirror using a mild cleaning agent	14
5.	Sensor arms jammed	Free the arms and clean the sensing unit	21
6.	Faulty cable connections	Check and rectify	5-7
7.	Fuses blown	Replace the relevant fuse	7
8.	Mains supply / primary voltage fault	Check the mains supply and connections	5-7
9.	Insufficient input tension	Increase the input tension	-
10.	Excessive input tension	Reduce the input tension	-
11.	Insufficient balloon control	Increase the balloon control	15, 19
12.	Excessive output tension	Reduce the output tension	15, 19
13.	Excessive yarn separation	Reduce the yarn separation	11
14.	Incorrect jumper J1 setting	Reposition jumper	9
15.	Excessive pressure on max sensor arm	Reduce the spring pressure	14
16.	Max sensor bouncing	Increase the spring pressure	14
17.	Insufficient max speed setting	Increase the max speed setting	9
18.	Excessive max speed setting	Reduce the max speed setting	9
19.	Insufficient yarn store	See "low or empty yarn store" under "fault"	-
20.	Damaged balloon control	Repair/replace all defective parts	3
21.	Stop signal fault between control box and weaving M/C	Check all connections/cable	7
22.	Misalignment between the bobbin and the feeder	Realign the bobbin/feeder	-
23.	Misalignment between the feeder and the machine	Realign the feeder/machine	-
24.	Defect yarn store sensor unit	Replace the relevant sensor unit	10
25.	Defective motor circuit board	Replace the relevant circuit board	6
26.	Defective fuse panel	Replace the relevant fuse panel	7
27.	Defective control box interface	Replace the relevant interface	7
28.	Defective feeder connection cable	Replace the relevant connection cable	-
29.	Yarn break	Re-thread the feeder	12-13



EC DECLARATION OF CONFORMITY

**IRO AB**  
Box 54  
SE-523 22 Ulricehamn

Guarantee that machine type:

**Luna X3 170 V, Chrono X3 170 V**

is manufactured in conformity with the provisions of the following  
EC directives and applicable amendments:

Safety of machinery	2006/42/EC	EN ISO 111 11-1
Low voltage equipment	2014/35/EC	EN ISO 111 11-1
Electromagnetic compatibility	2014/30/EC	EN ISO 111 11-1

*Pär Josefsson, Manager Product and Development department, 2017-06-08*

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