

# Operating Instructions

Luna X3, Chrono X3, XD X3, XD X2, HD X2



**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.

**WARNING!**



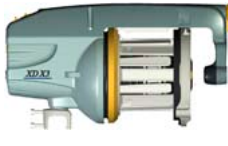


















- The power supply must be switched off at the mains before any work is carried out on the feeder, the transformer or any other electrical components. The feeder and the transformer cabinet and cable covers must be fully assembled before the power supply is connected.
- The weft feeder ON/OFF-switch does 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
- 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.

**CAUTION!**

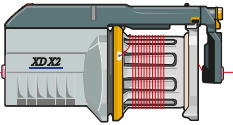









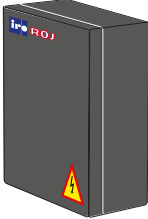



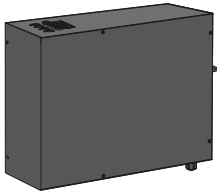







- Caution must be taken in the close vicinity of the feeder as it contains moving parts that can cause injuries and, in normal operation, starts without prior warning.
- To comply with C.E. Regulations only replacement parts approved by ROJ Srl may be used.
- The feeder is an industrial product and therefore 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.

	Luna X3	Chrono X3	XD X3
			
	Max 1800 m/min	Max 1800 m/min	Max 1800 m/min
	6.5 kg	8.6 kg	8.6 kg
	Min 5° C - Max 40° C	Min 5° C - Max 40° C	Min 5° C - Max 40° C
	RH max 85 %	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)	Sound pressure $L_{pa}$ 74 dB (A), Sound power $L_{wa}$ 88 dB (A)
	Ø max 5 mm	Ø max 5 mm	Ø max 5 mm
	Input air pressure 5,5 - 7 bar	Input air pressure 5,5 - 7 bar	Input air pressure 5,5 - 7 bar
	Max 2,7 mm	Max 4 mm	Max 4 mm
<b>Power Supply/ Interface</b>			
		200 - 575V 400VA	200 - 575V 400VA
		Max T 10A	Max T 10A
		3,3 kg	3,3 kg
<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.**

	XD X2 700 W	HD X2	
			
	Max 1600 m/min	1400 m/min (Stand alone) 1600 m/min (CAN)	
	11 kg	12.3 kg	
	Min 5° C - Max 40° C	Min 10° C - Max 40° C	
	RH max 85 %	RH max 95 %	
	83 dB	< 70 dB	
	Ø max 9 mm	Ø max 9 mm	
			
	Max 4 mm	Max 4 mm	
<b>Heavy Duty Power Supply Stand Alone</b>			
		230-575V 1000VA	230-575V 1000VA
		Max T 10A	Max T 10A
		21 kg	21 kg
<b>Heavy Duty Power Supply CAN</b>			
		380-440V 1900VA	380-440V 1900VA
		Max !	Max !
		35 kg	35 kg
<b>Power supply/Interface</b>			
		–	200 - 575V 400VA
		Max T 10A	Max T 10A
		–	3,3 kg

**NOTE**

Subject to technical modifications.

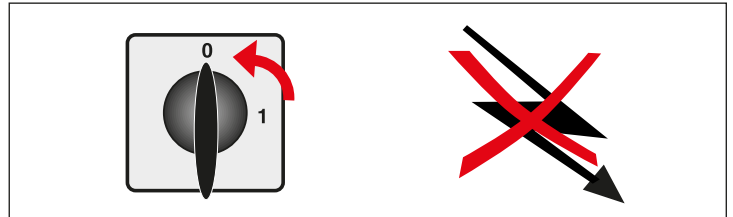
**NOTE**

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 before any work is carried out on the electrical circuit.

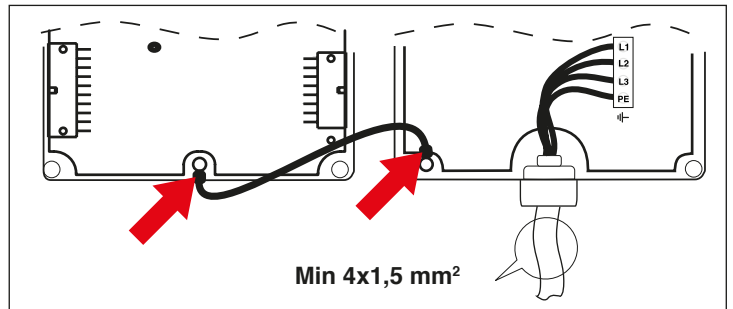


**NOTE**

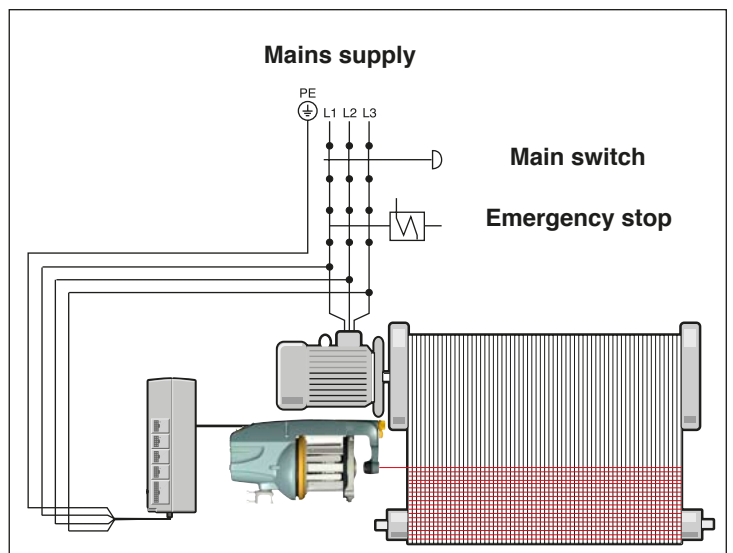
Make sure that the cable covers are tight.



Take the Voltage Supply Box out of the packing. Open the cover and connect the three-phase power cord. (4-wires cable). Make sure that the earth connection is properly made. The section of each wire cannot be less than 1,5 mm<sup>2</sup>.



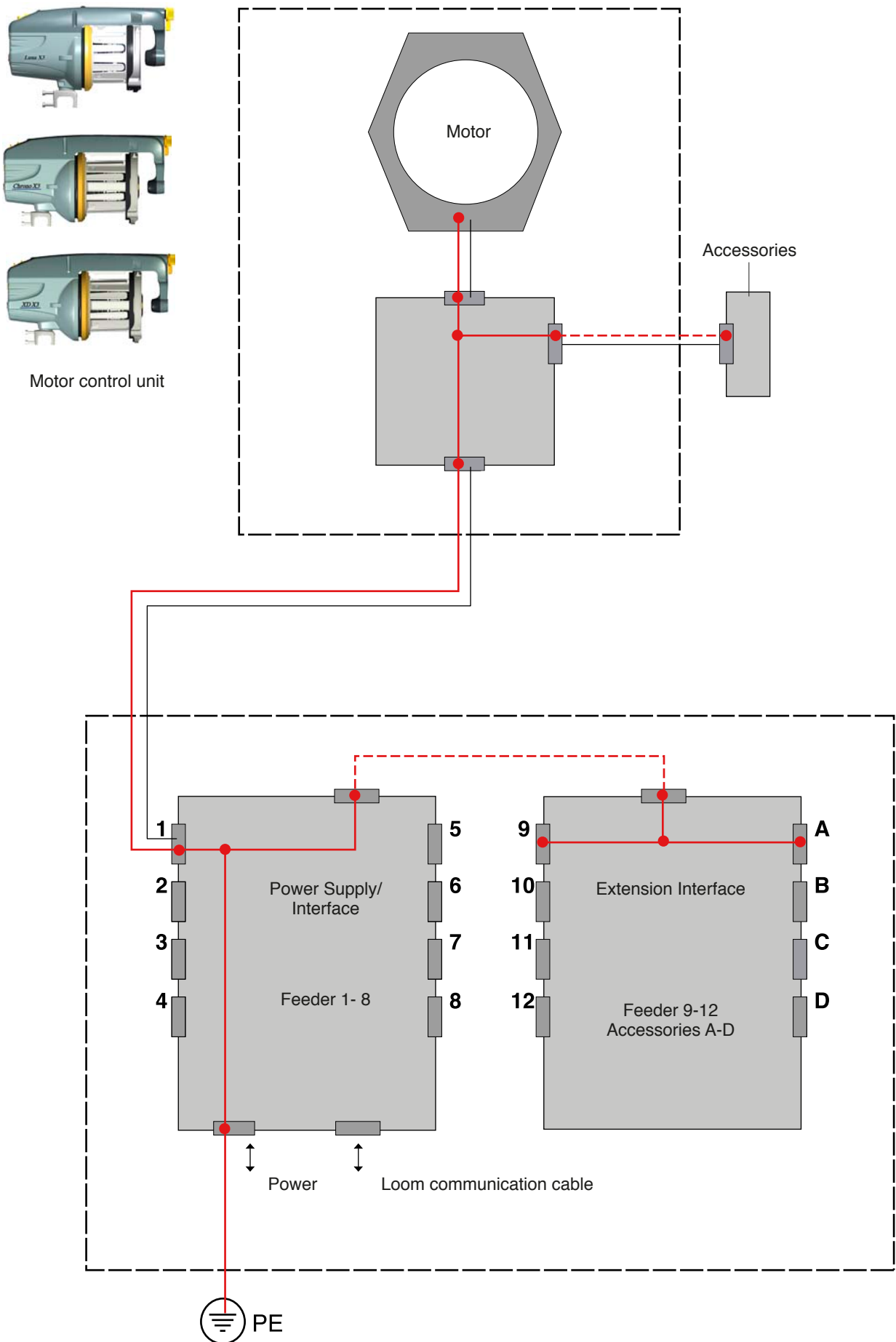
The power supply to the feeder must not be disrupted when the weaving machine stops.



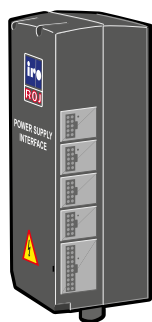
Variations in main voltage.

Nominal	Voltage	Frequency
200V - 346V	180V - 380V	50/ 60 Hz
380V - 400V	342V - 440V	50/ 60 Hz
415V - 575V	374V - 632V	50/ 60 Hz

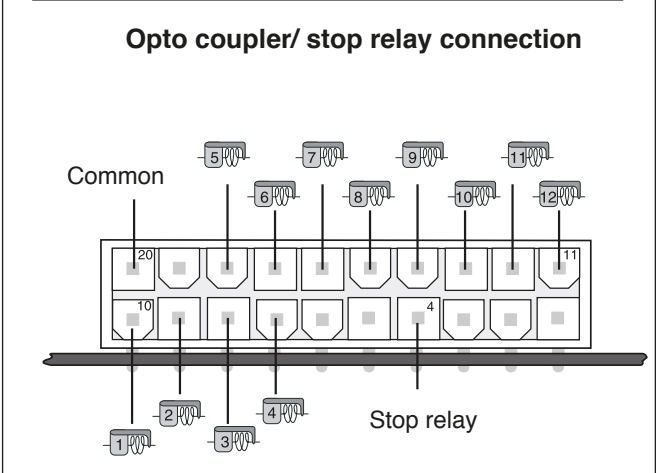
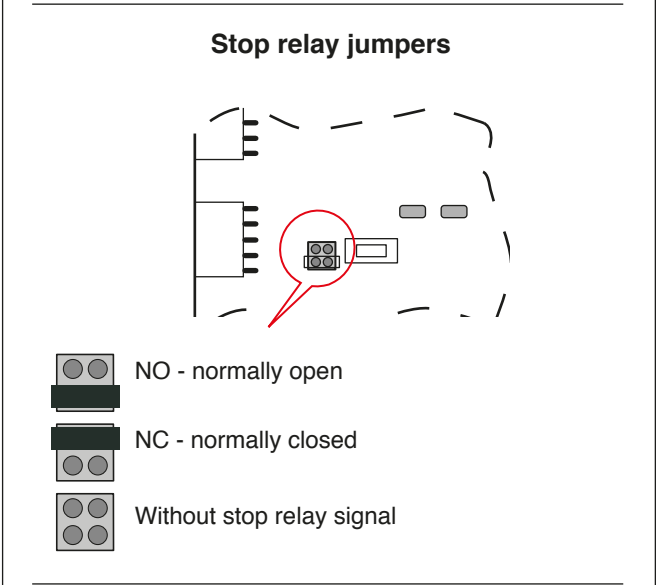
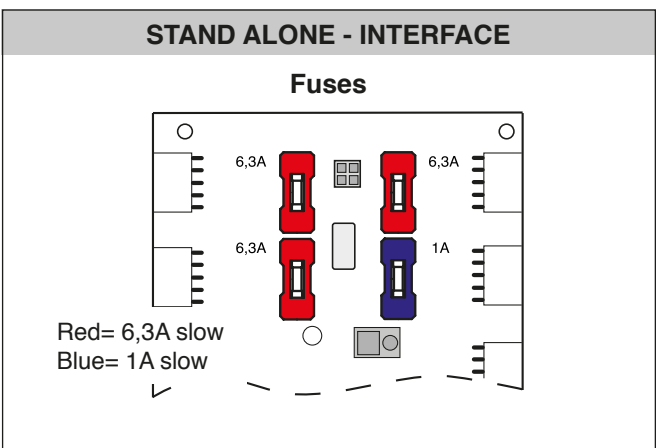
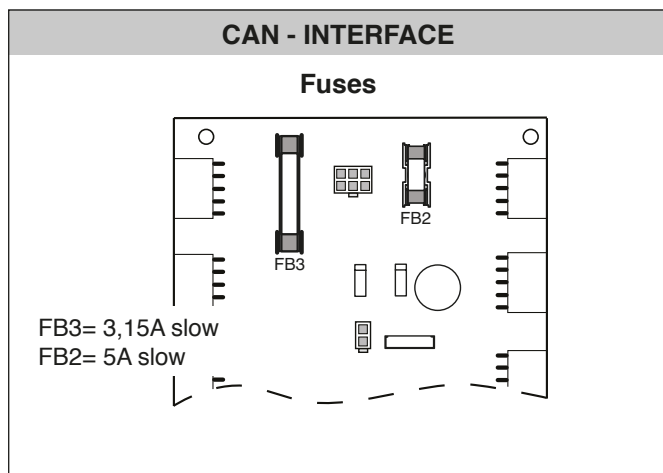
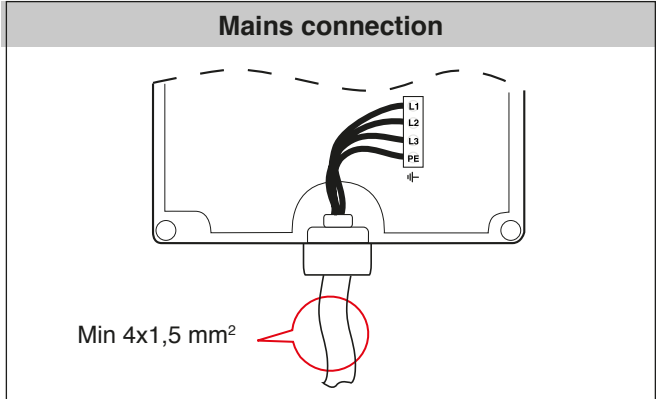
Luna-X3, Chrono-X3, XD-X3



**Luna-X3, Chrono-X3, XD-X3, HD-X2**



**Power Supply/ Interface**



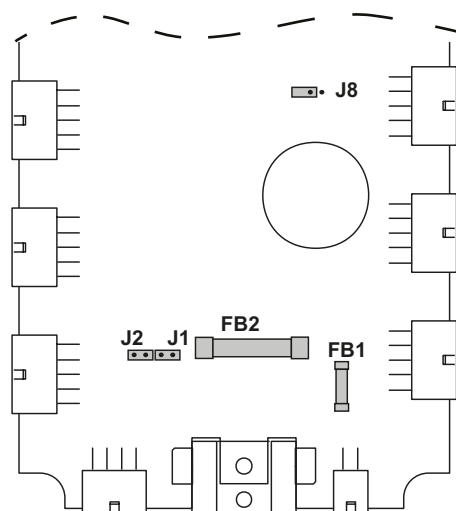


Luna-X3, Chrono-X3, XD-X3,



Interface  
Power supplied via loom

CAN - INTERFACE



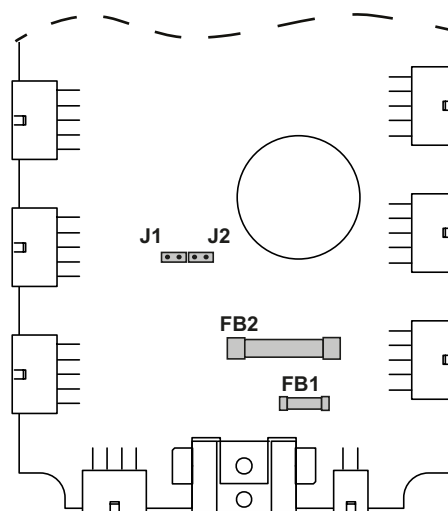
Fuses

<b>FB1</b>	T 3,15 A
<b>FB2</b>	T 5 A

Stop relay jumpers

<b>J1 + J2</b>	Open = Communication bus not terminated Closed = Communication bus terminated
<b>J8</b>	Normally open

STAND ALONE - INTERFACE



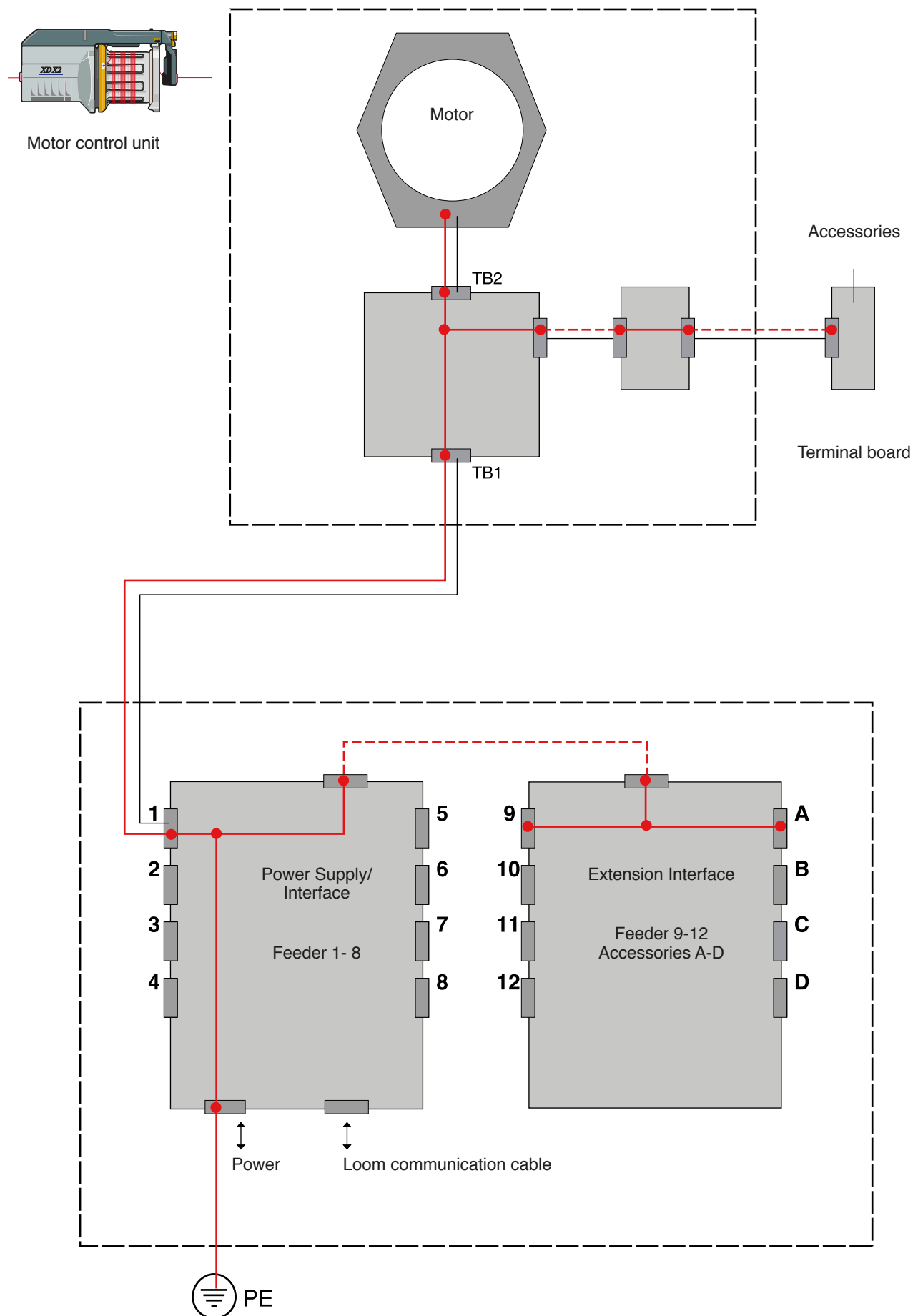
Fuses

<b>FB1</b>	T 3,15 A
<b>FB2</b>	T 5 A

Stop relay jumpers

<b>J1 + J2</b>	Open = Communication bus not terminated Closed = Communication bus terminated
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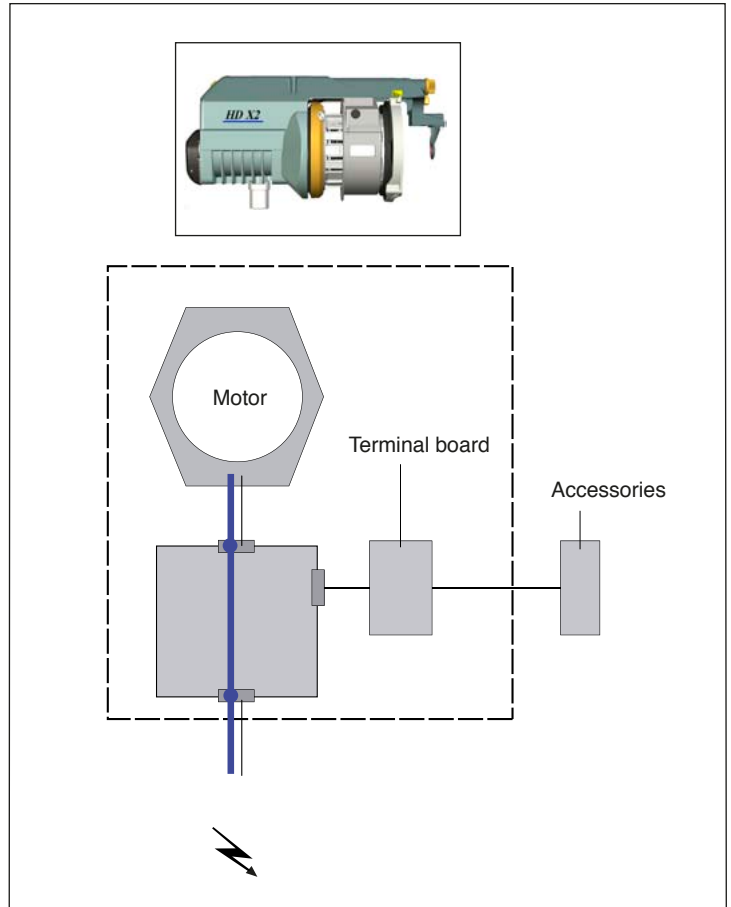
XD-X2



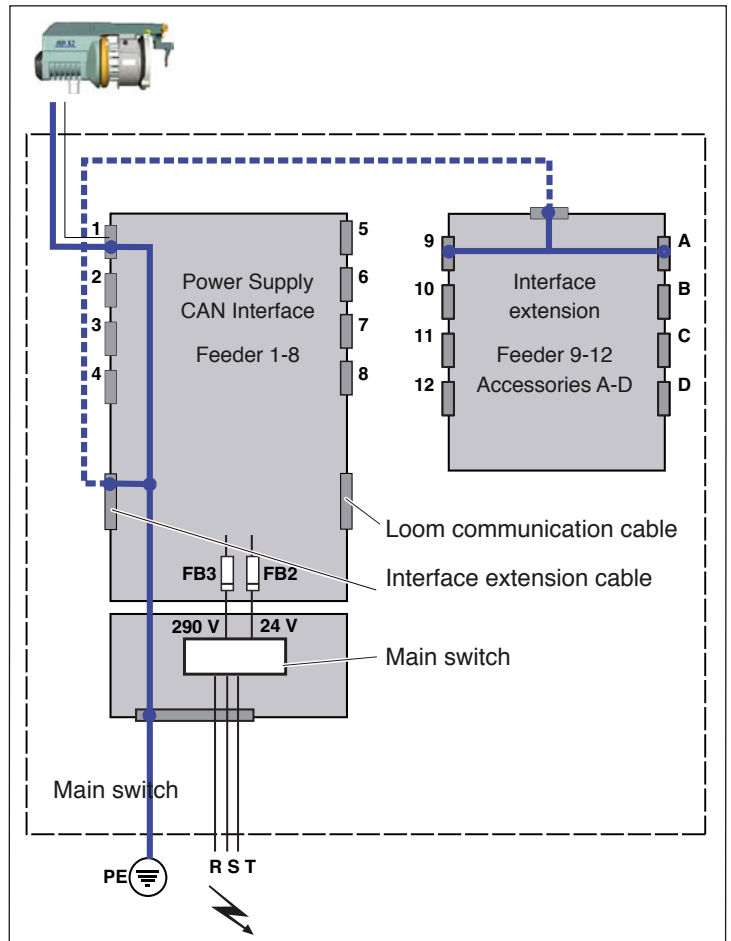
**HD-X2**

Connect the feeders' cable to the voltage supply box by following the numeric correspondence to the color selector's needles (feeder working with the weft threaded in the needle 1 must be connected to the position 1 of the voltage supply box; etc.).  
 Connect the signal cable coming from the voltage supply box to the loom.

Connect the plug of the 3-phase power cord to the socket available to the loom panel.



**POWER SUPPLY/ CAN INTERFACE**



**VOLTAGE SUPPLY BOX**

The HD X2 feeder is compatible with the standard Line of X2 voltage supply boxes (maximum 4 feeders for each control box).

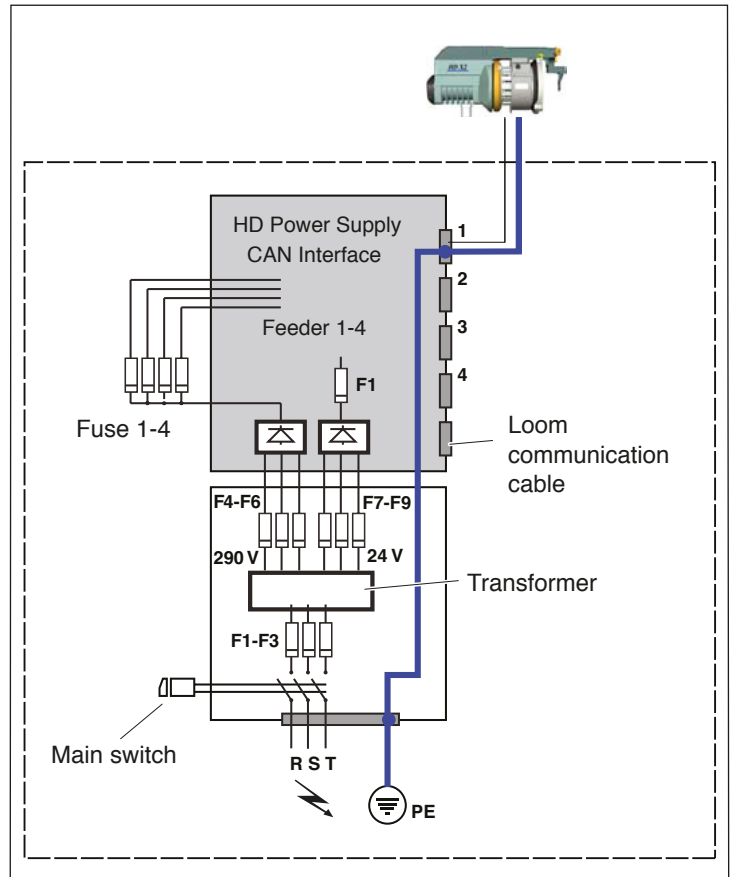


**WARNING**

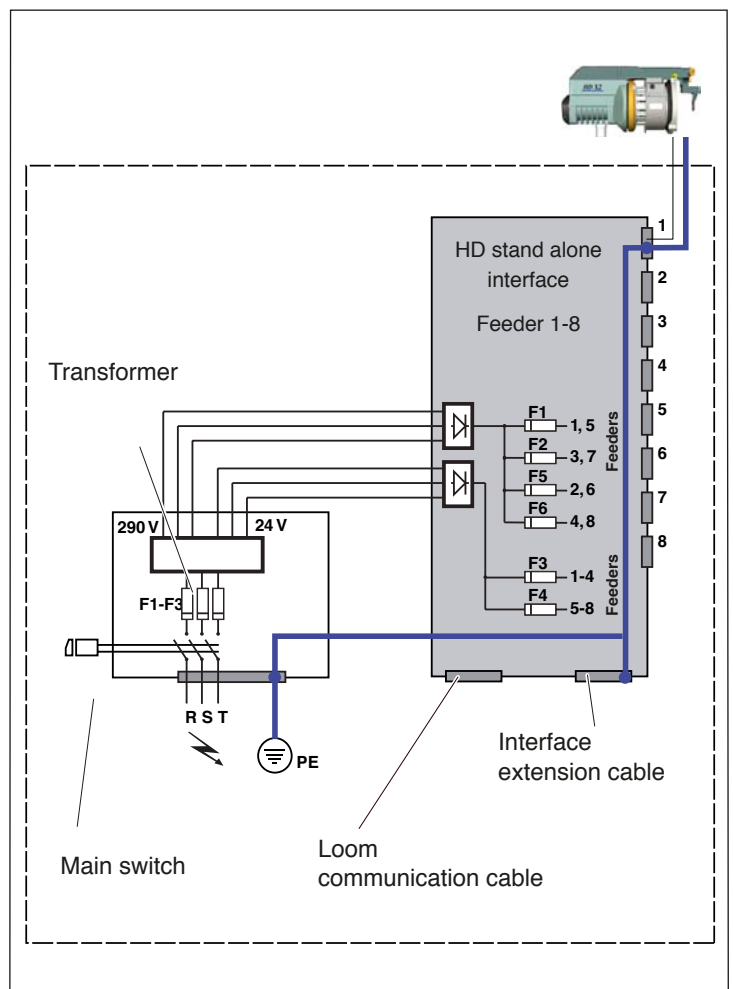
For applications with multiple insertions (two or more yarns together at the same time), it is necessary to use an X2 control box suitable for higher power consumption.

HD-X2

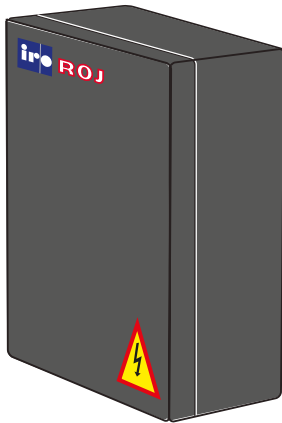
HD POWER SUPPLY /  
CAN INTERFACE



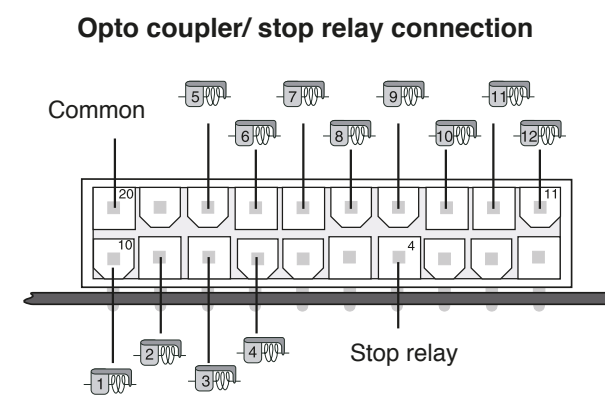
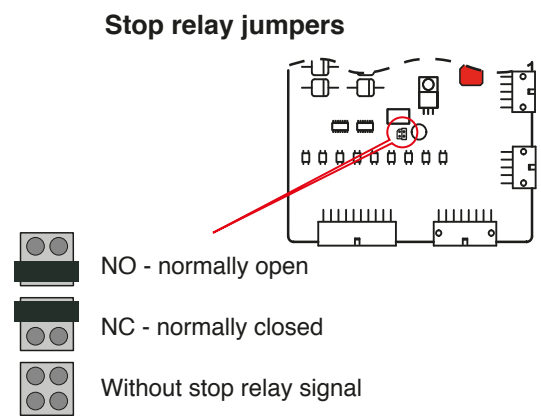
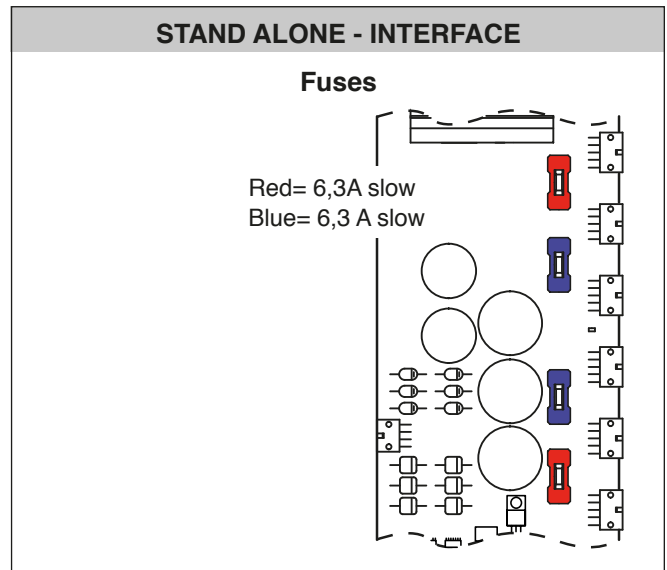
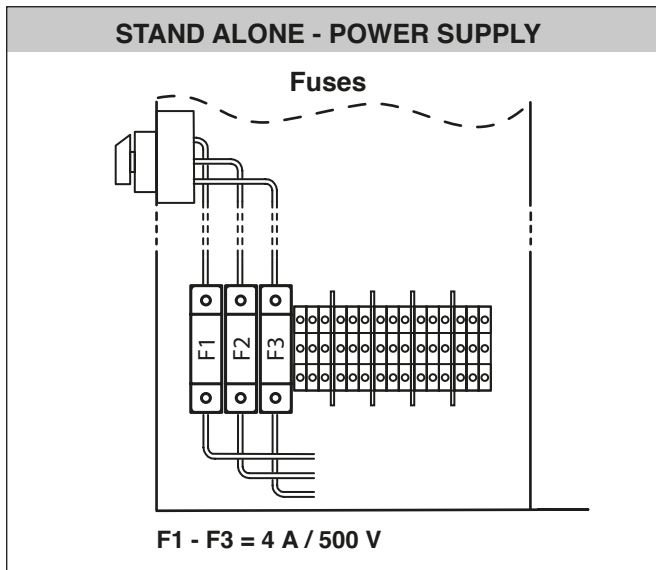
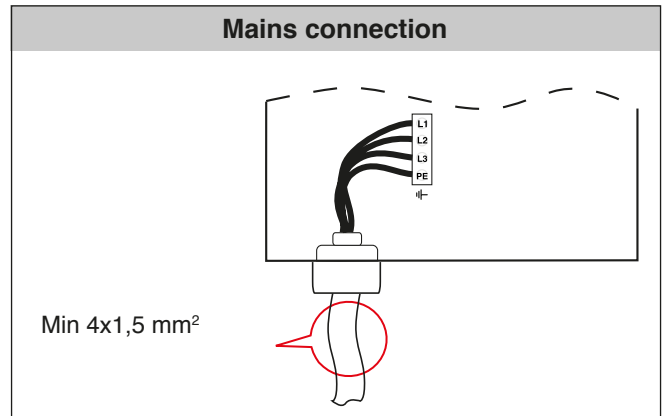
HD POWER SUPPLY /  
STAND ALONE INTERFACE



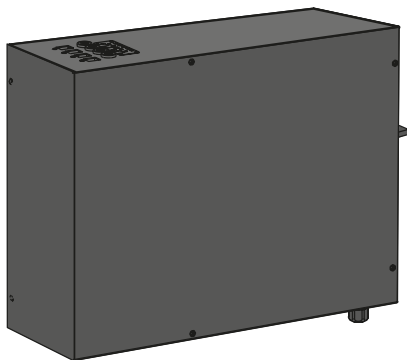
**XD X2, HD X2**



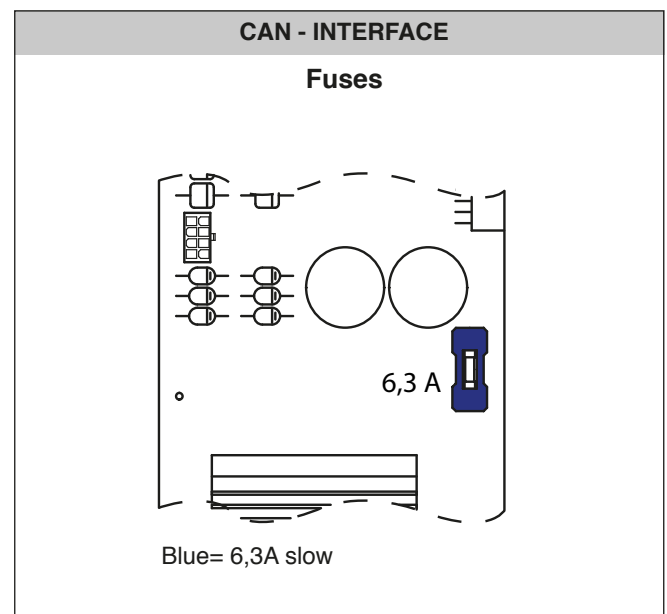
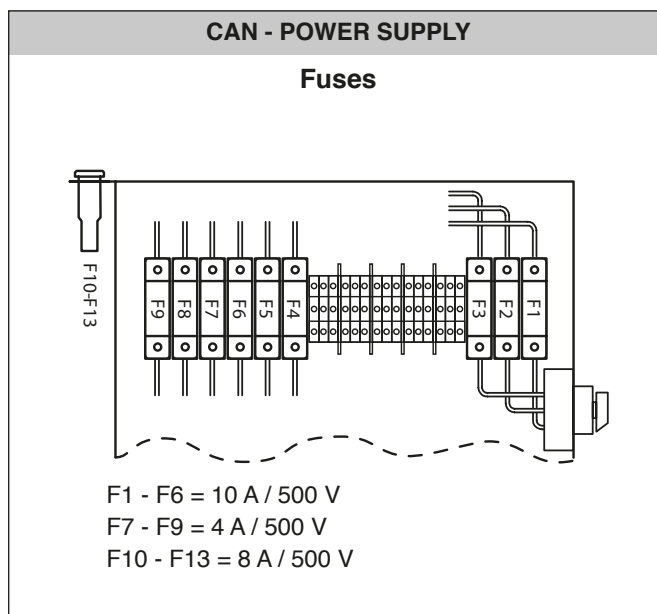
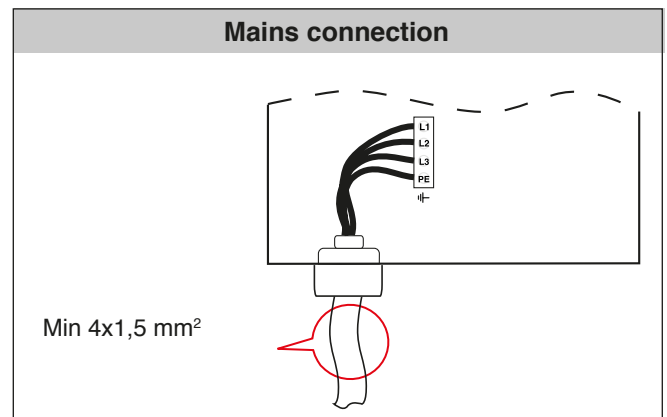
**Heavy Duty Power Supply Stand Alone**



**XD X2, HD X2**



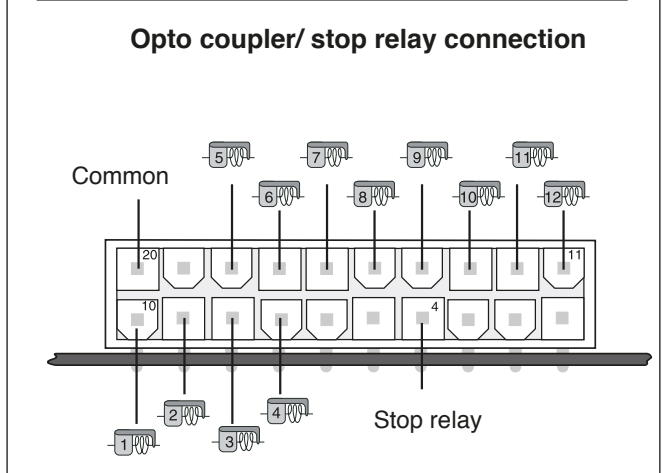
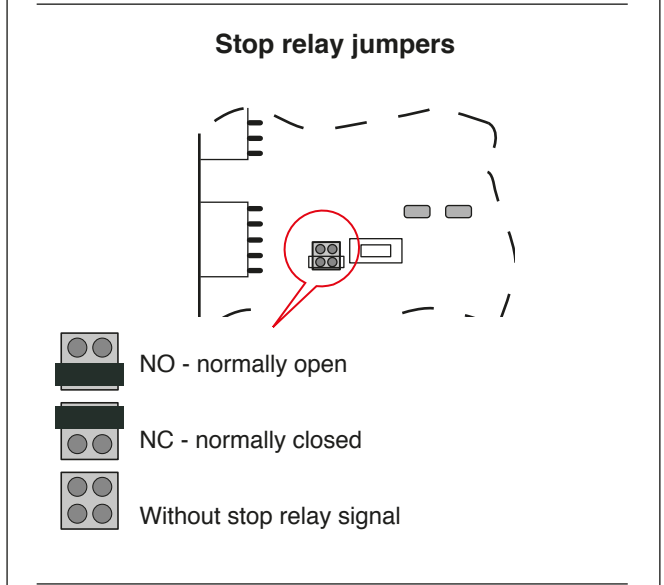
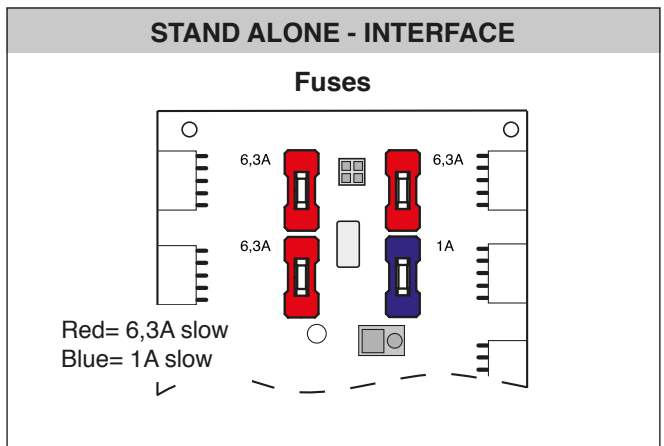
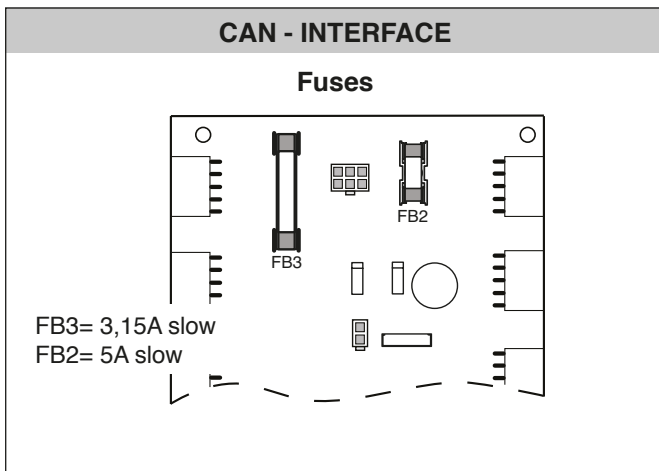
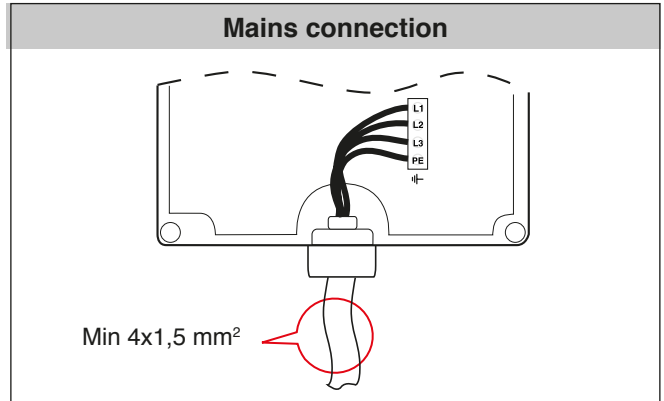
**Heavy Duty Power Supply CAN**



**XD-X3**



Power Supply/ Interface



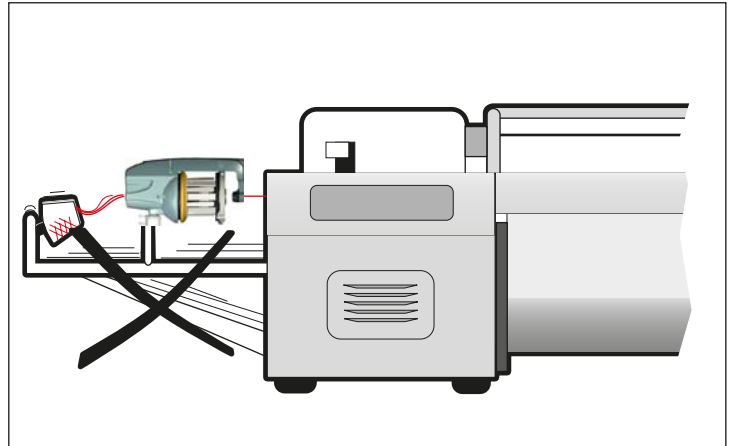
**NOTE**

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!**

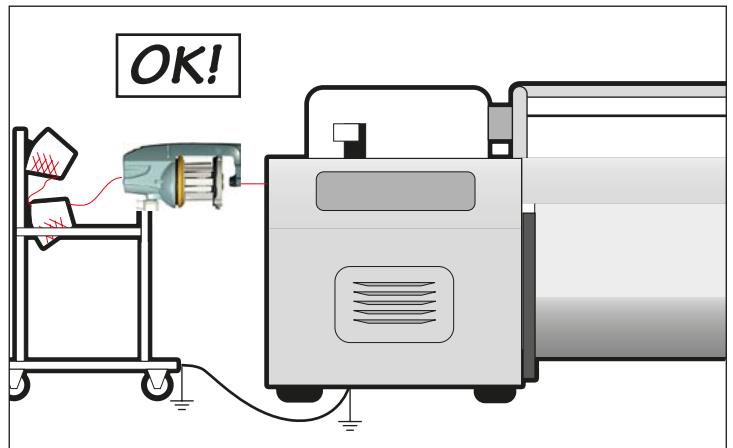
The unit should not be mounted directly on the weaving machine.



Use a separate floor stand.

**NOTE**

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

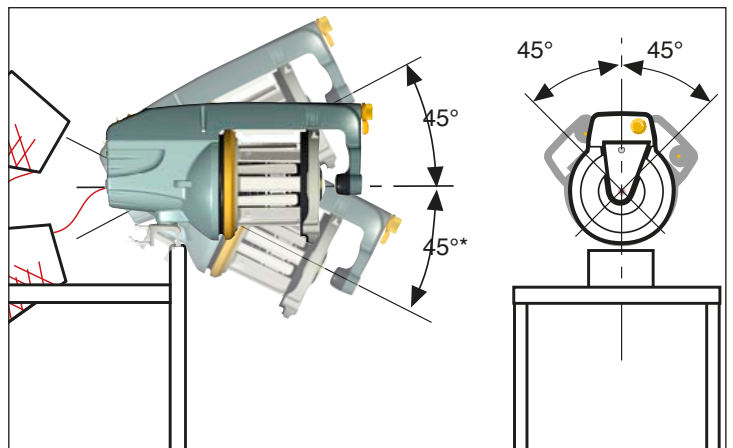


**NOTE**

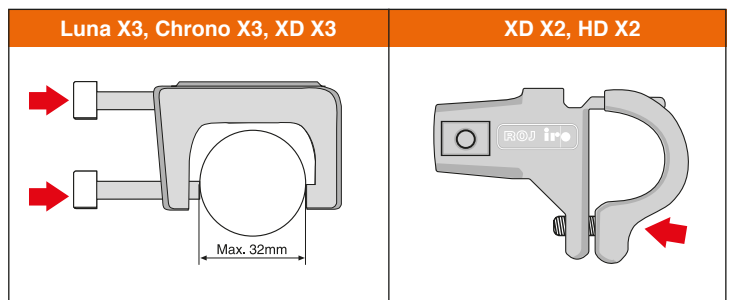
Place the creel behind the feeder's stand avoiding sharp angles to the yarn path from the creel output to the feeders.

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

\*Max 15° with low sensor spring force. (see page 19)



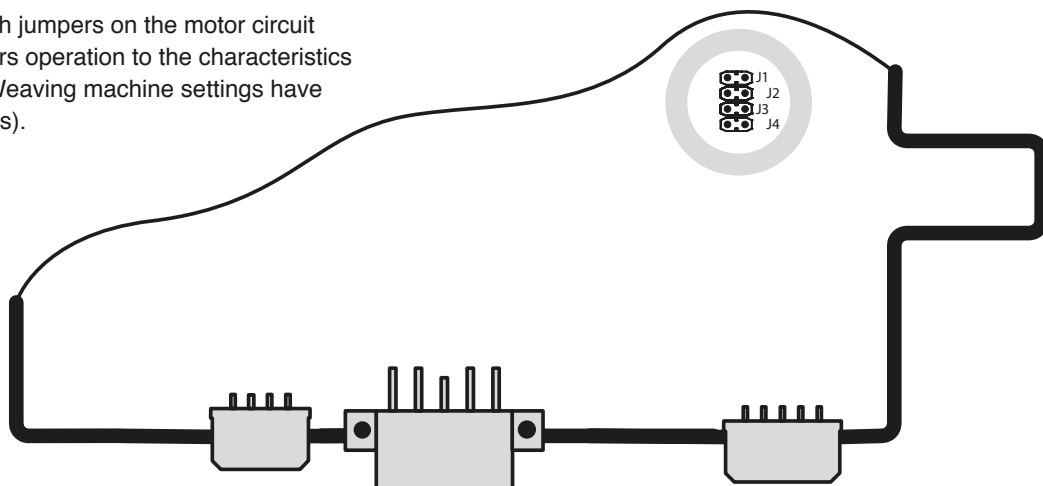
Ensure that the mount screws are correctly tightened.





Luna-X3, Chrono-X3, XD-X3

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).

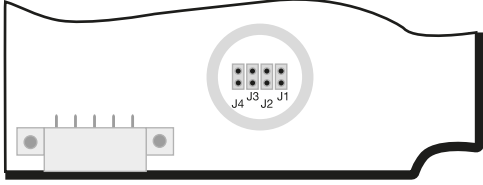
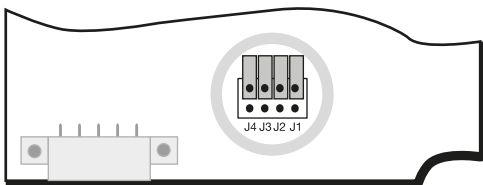










	Opto sensors
J1	Yarn store sensor sensitivity- LOW
J1	Yarn store sensor sensitivity- AUTO
J2	Integrated yarn break sensor- DISABLE
J2	Integrated yarn break sensor- ENABLE
J3	Winding disc positioning- DISABLE (one way bearing)
J3	Winding disc positioning- ENABLE
J4	Pattern in advance- DISABLED
J4	Pattern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

**XD X2, HD X2**

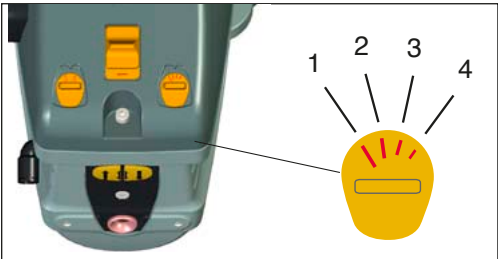
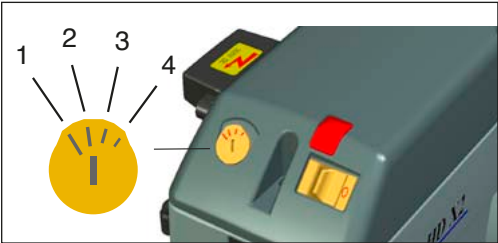
The feeder is equipped with jumpers on the motor circuit board that adapt the feeders operation to the characteristics of the weaving process. (Weaving machine settings have priority over jumper settings).

	XD X2 700 W	HD X2
		
J1 	Yarn store sensor sensitivity- LOW (Normal setting XD X2 700W)	-
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)	Pattern in advance- DISABLED
J3 	Winding disc positioning- ENABLE	Pattern in advance- ENABLED
J4 	Pattern in advance- DISABLED	Winding disc positioning- DISABLE
J4 	Pattern in advance- ENABLED	Winding disc positioning- ENABLE
		<p><b>NOTE</b></p> <p>Only for installations on CAN looms, if for test reasons it is needed to run the feeder without Pattern in advance and Start/Stop information from the loom, set Jumper J3 to closed (disabled).</p> <p><b>NOTE</b></p> <p>Whenever the electronic board or the sensors board are replaced, it is necessary to carry out the “Automatic sensor calibration procedure”.</p>

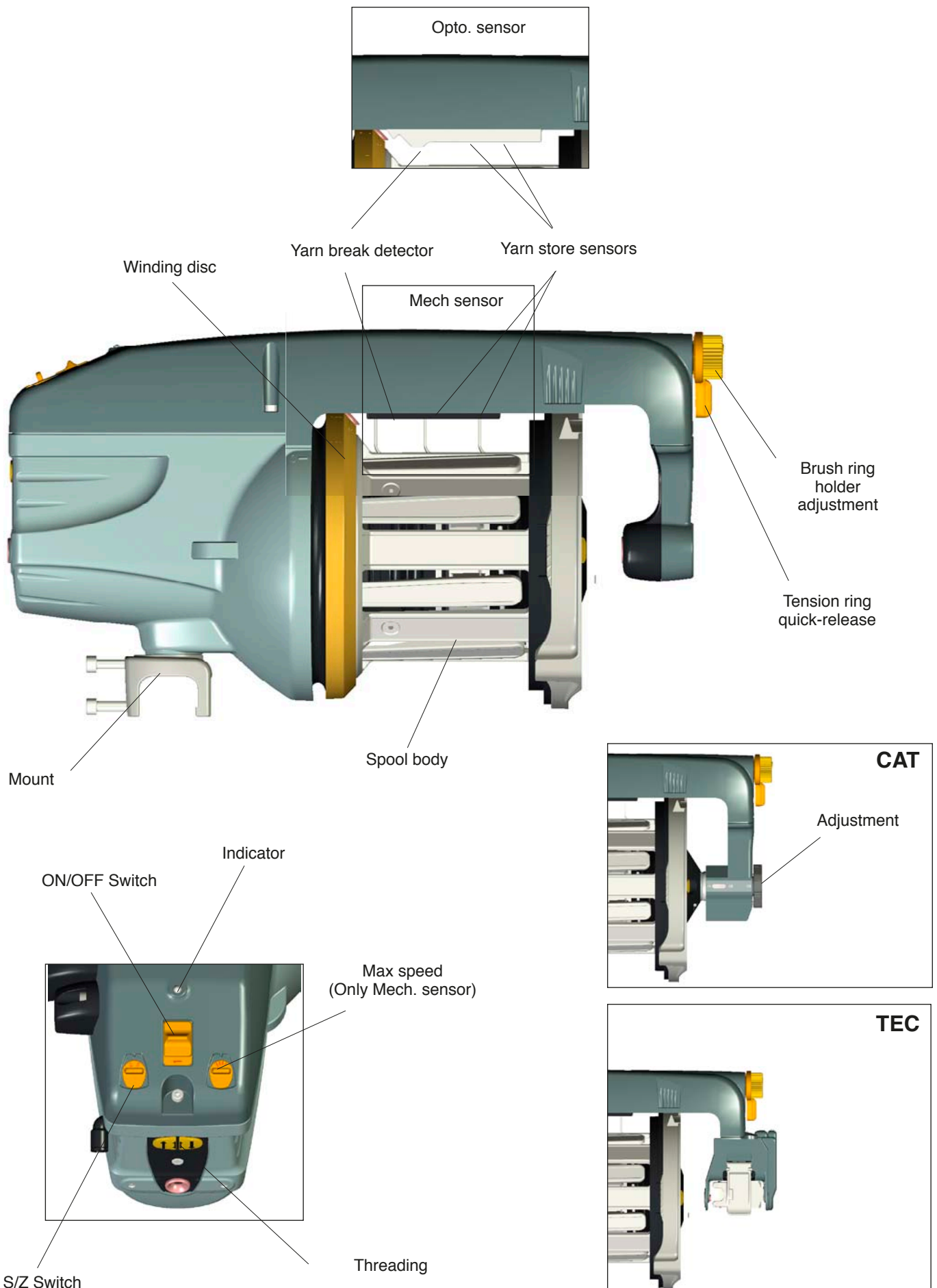
To set the maximum speed rotate the disc to the appropriate position.

**NOTE**

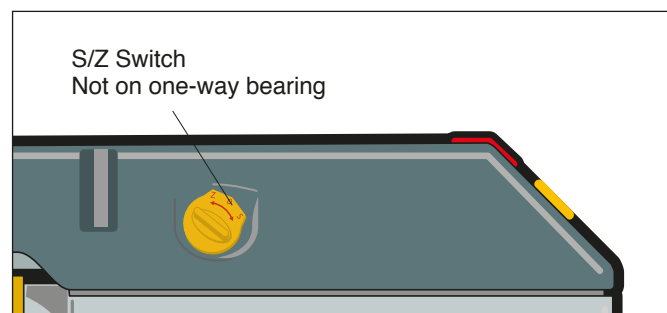
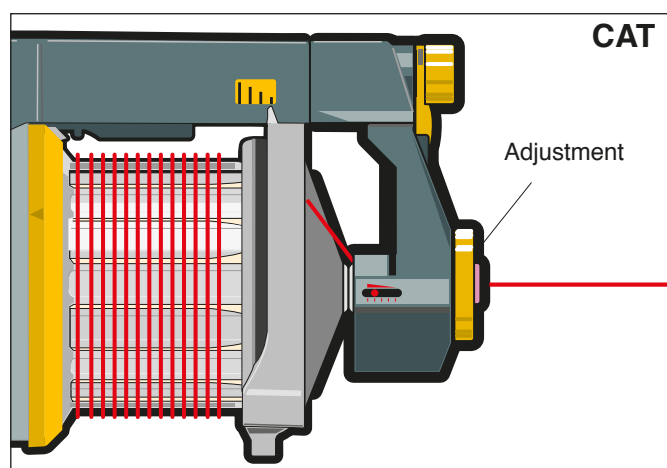
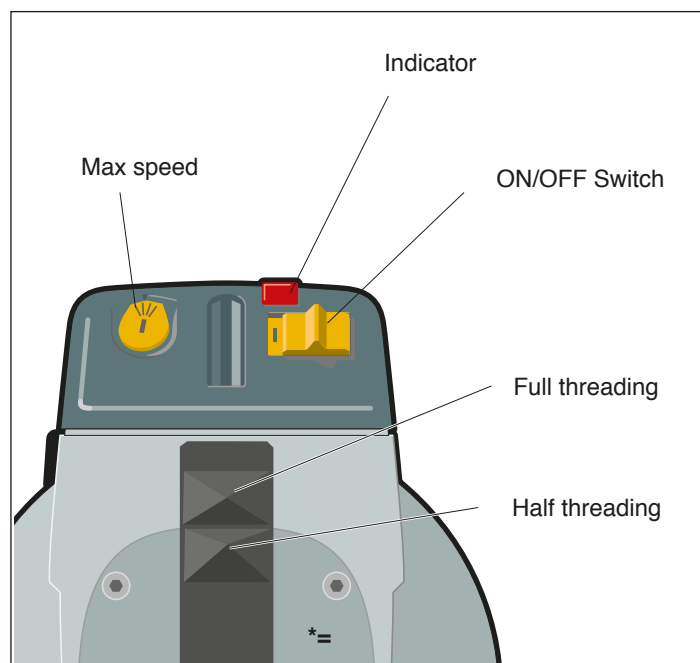
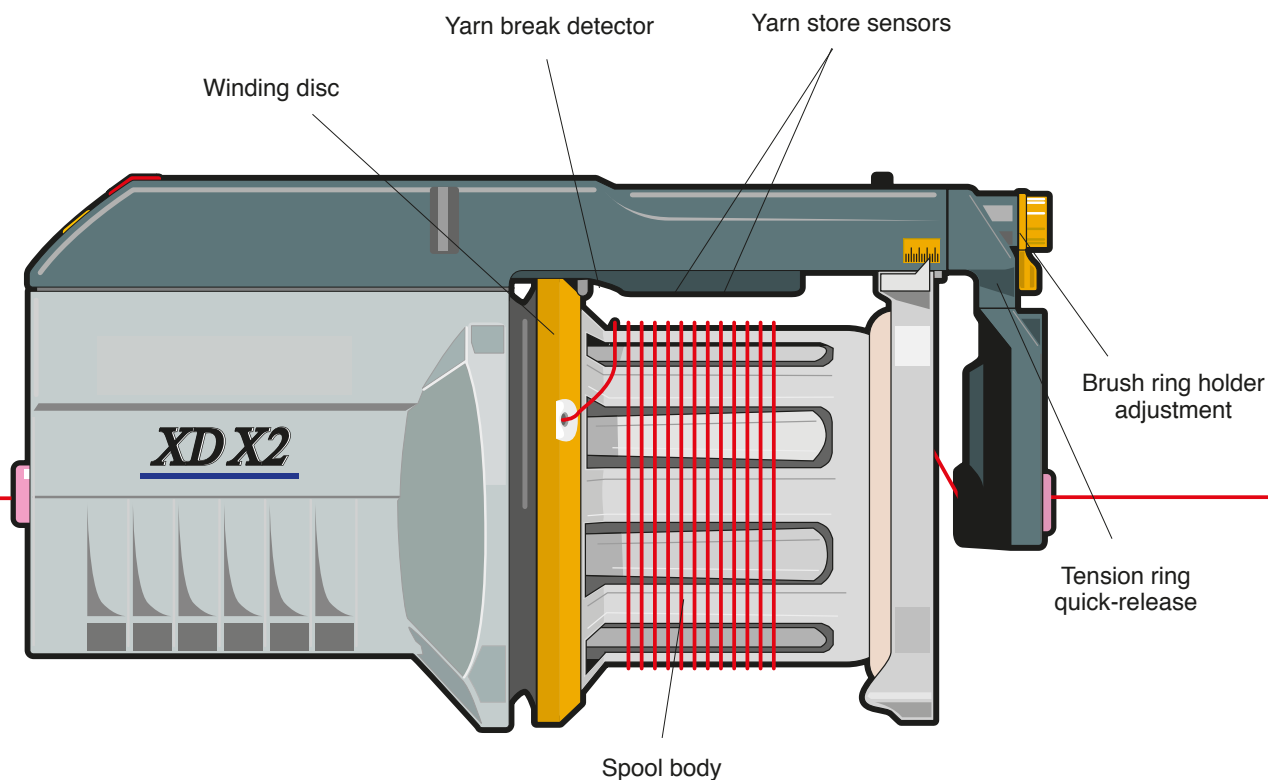
Normally the switch should be left at position 1 since the feeder automatically calculates the speed according to yarn consumption. However, with very low speeds or wide looms, it could be helpful to reduce the maximum speed in order to avoid unnecessary acceleration

	Luna X3	Chrono X3	XD X3
	<p>1 = 1500 m/min                  2 = 1200 m/min                  3 = 800 m/min                  4 = 500 m/min</p>	<p>1 = 1500 m/min                  2 = 1200 m/min                  3 = 800 m/min                  4 = 500 m/min</p>	<p>1 = 1500 m/min                  2 = 1200 m/min                  3 = 800 m/min                  4 = 500 m/min</p>
	XD X2 700 W	HD X2	
	<p>1 = 1600 m/min                  2 = 1300 m/min                  3 = 1100 m/min                  4 = 900 m/min</p>	<p><b>Stand-alone</b>                  1 = 1400 m/min                  2 = 1200 m/min                  3 = 800 m/min                  4 = 500 m/min</p> <p><b>CAN</b>                  1 = 1600 m/min                  2 = 1200 m/min                  3 = 800 m/min                  4 = 500 m/min</p>	

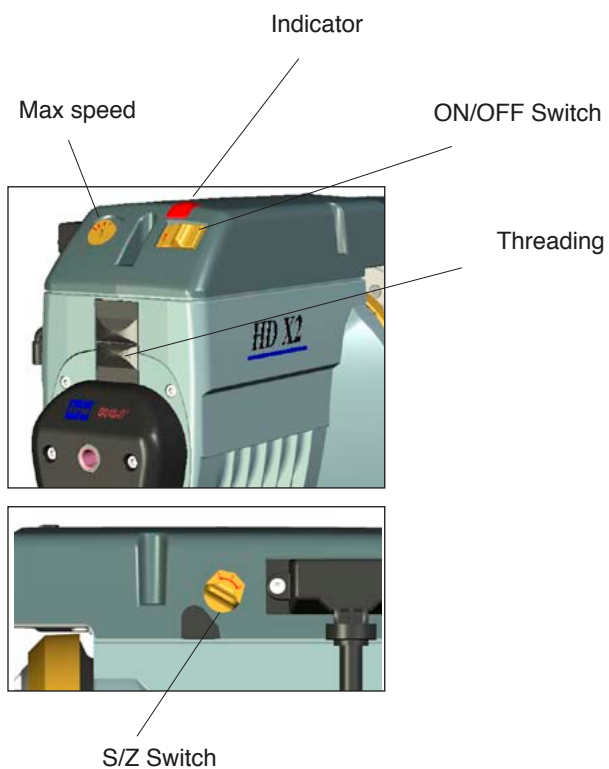
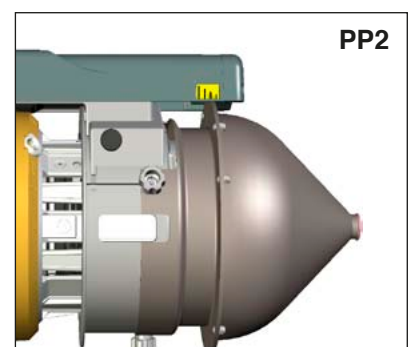
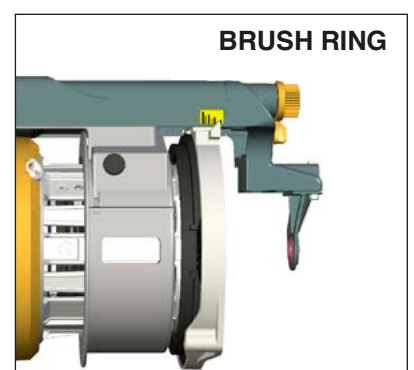
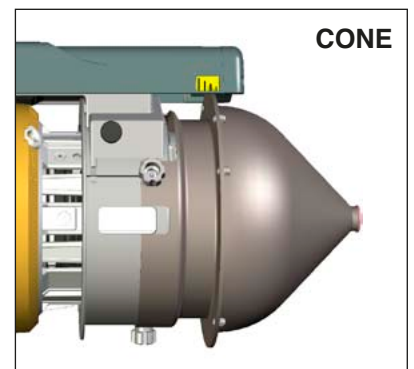
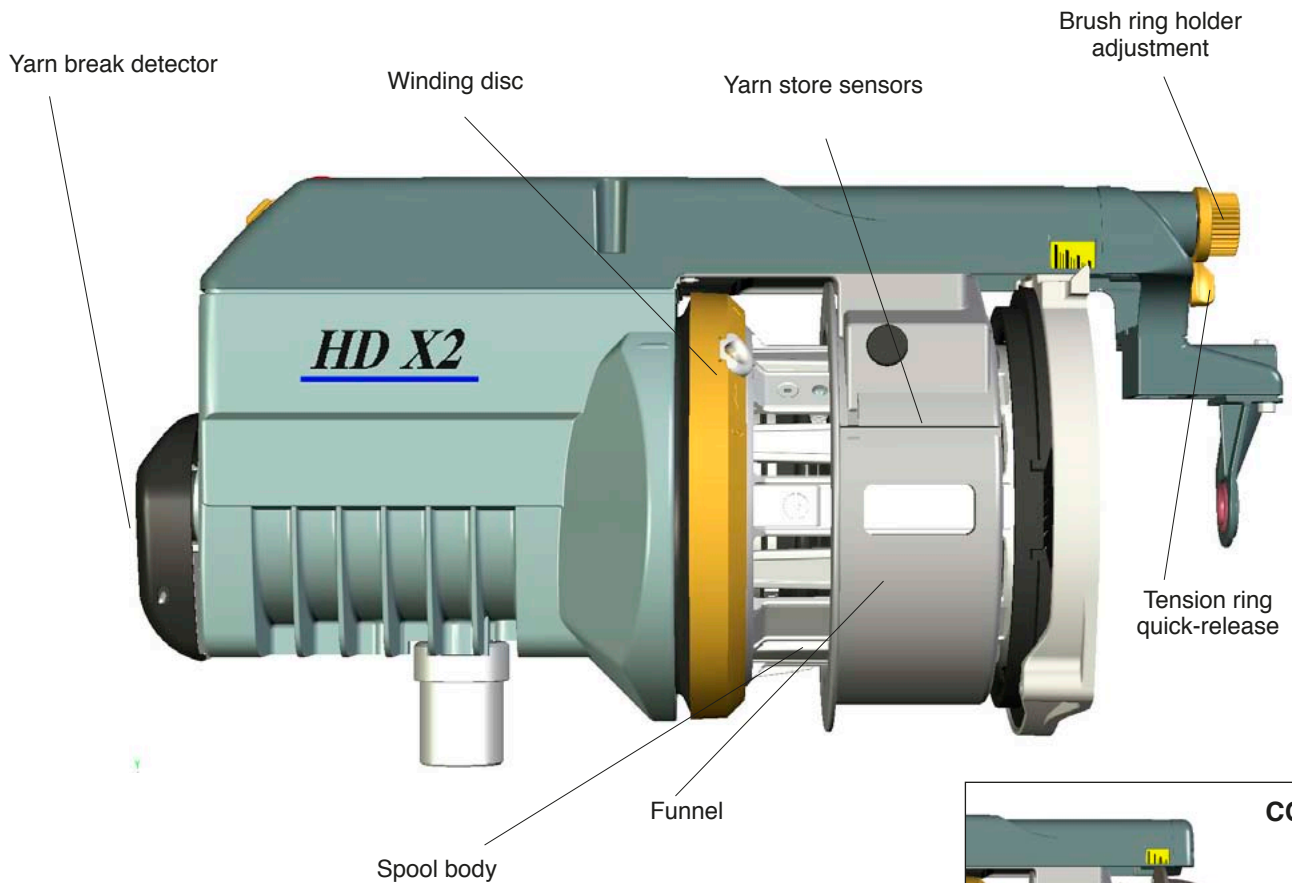
**Luna-X3, Chrono-X3, XD-X3**



**XD X2**



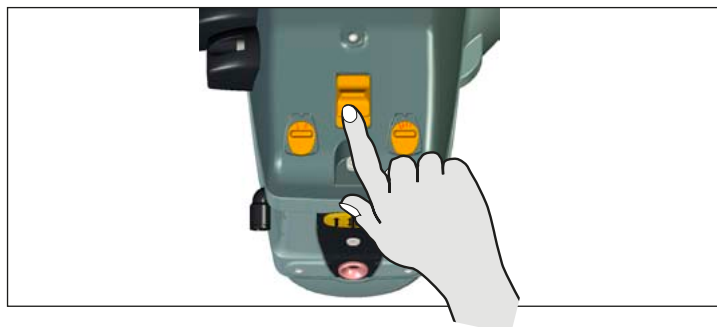
HD X2



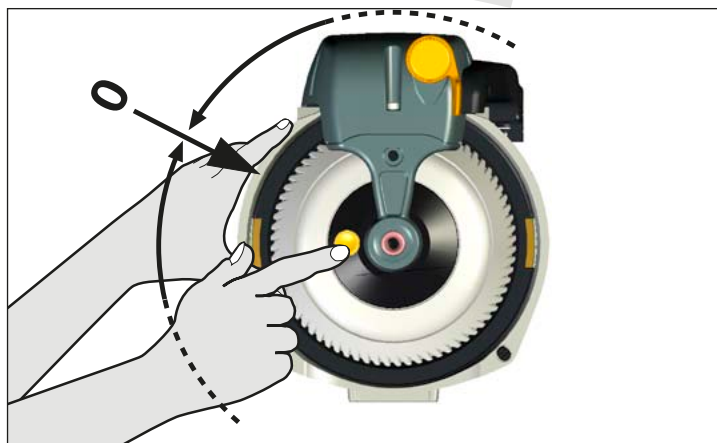
**Luna X3, Chrono X3, XDX3**

Switch off the feeder.

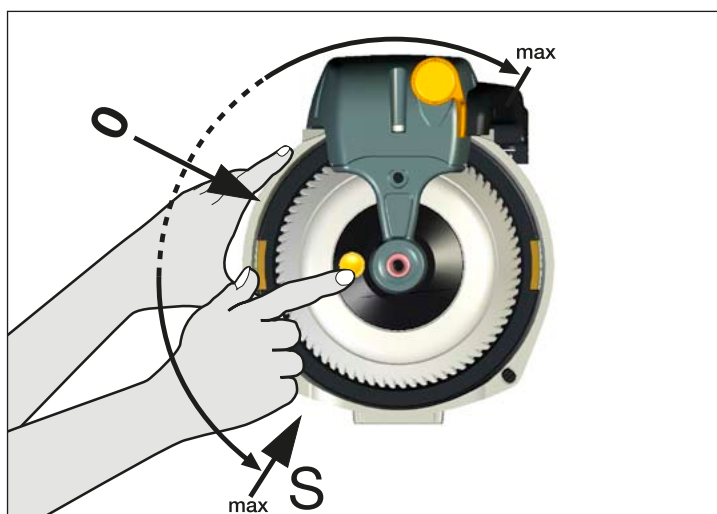
On feeders with S-flex, the S-flex must be detached for making the S/Z adjustment.  
See page 32 (Flex-brake mounting).



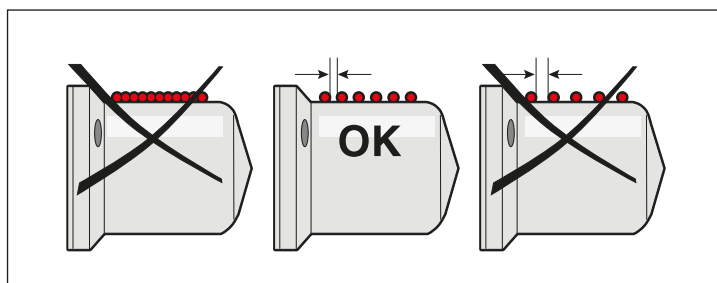
Grip the winding disc and, whilst pressing the orange button on the front of the spool body, rotate the disc until the button is felt to locate. Aligning the mark on the winding disc with the line on the motor house gives the zero separation position.



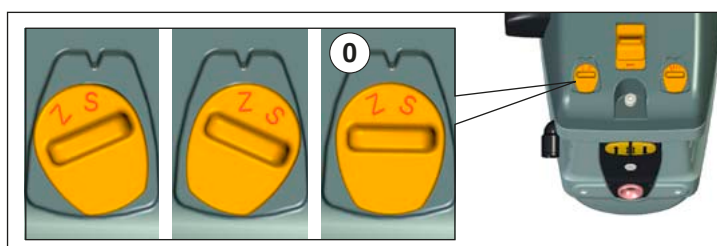
To adjust, press in the button and revolve the winding disc in the appropriate direction. The separation increases from 0 to 4 mm the more the disc is rotated.



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))



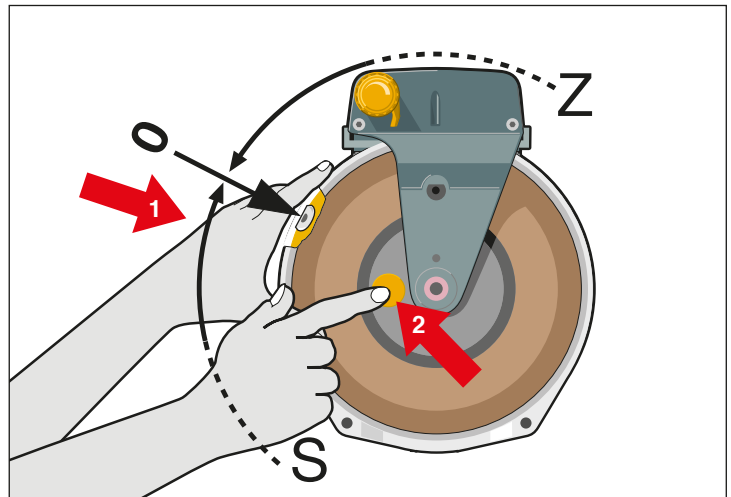
**XD X2, HD X2**

**WITH STANDARD BALL BEARING**

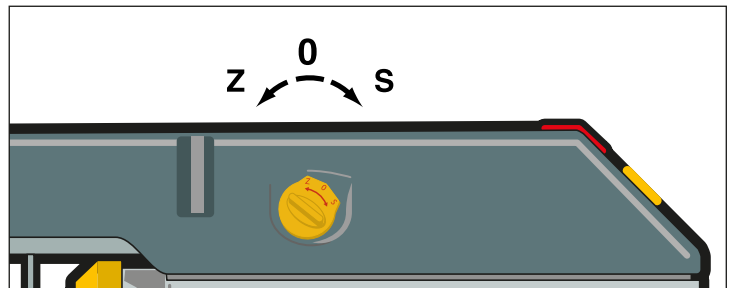
Switch off the feeder.

Grip the winding disc (1) and, whilst pressing the orange button on the front of the spool body (2), 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.



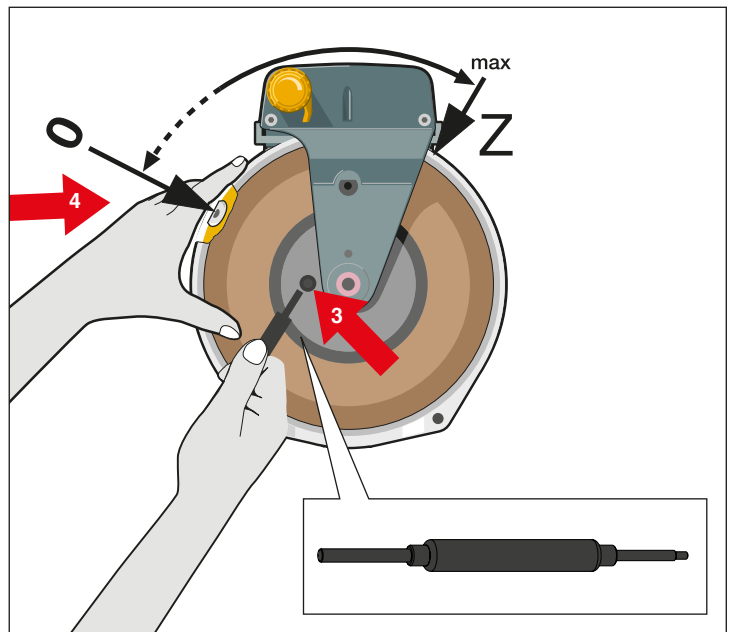
Set the direction of rotation with the switch.  
(The feeder is deactivated in the standby position (0))



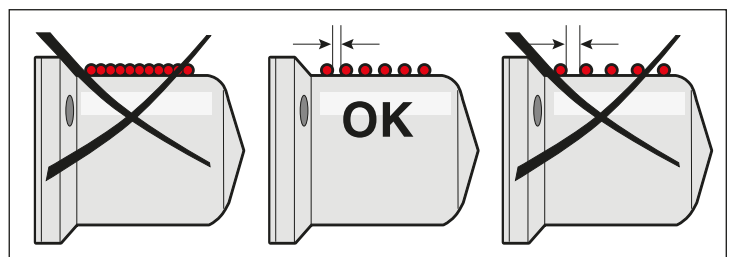
**WITH ONE WAY BALL BEARING**

Insert the tool in to the hole (3) and, whilst pressing the tool gently, rotate the winding disc until the tool is felt to locate (4).

To adjust, press with the tool and revolve the winding disc to the appropriate position between 0 and max Z.



The separation must be distinct, but not excessive.

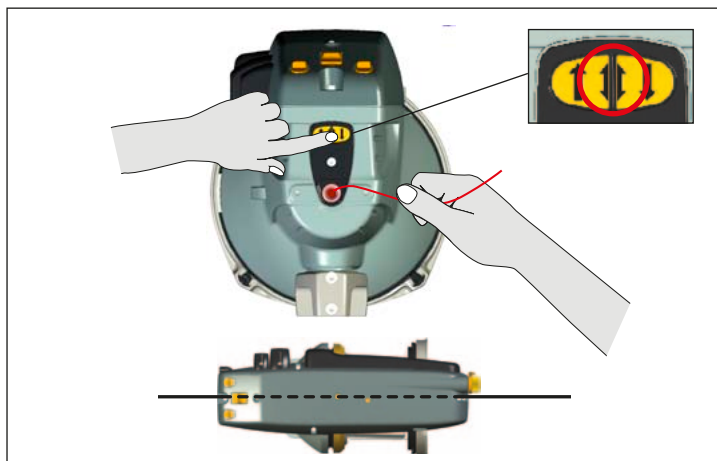




**Luna X3, Chrono X3, XDX3**

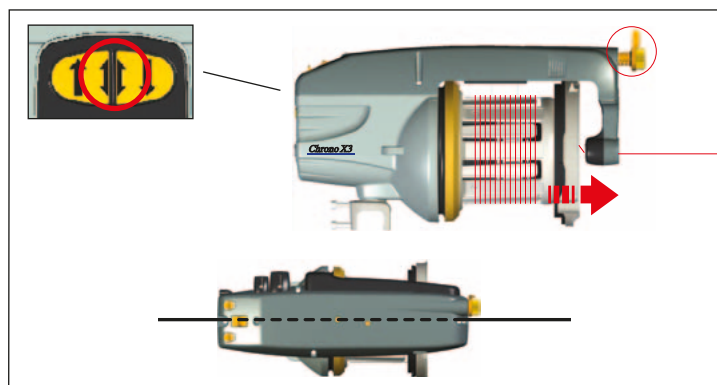
**FULL THREADING, AUTOMATIC SLIDE SHIFT**

- 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.



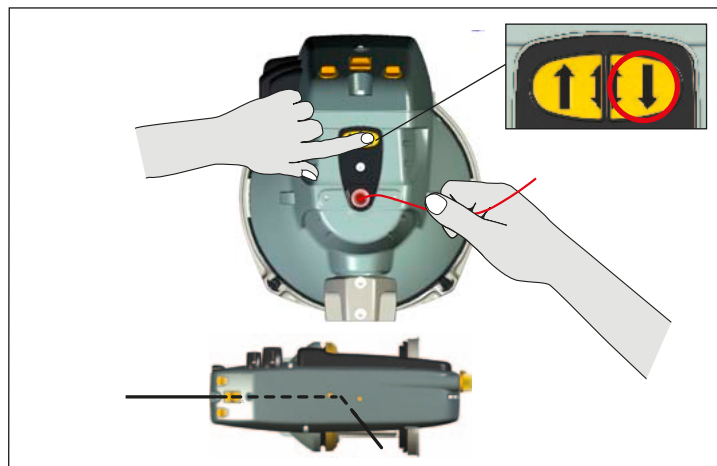
**FULL THREADING, MANUAL SLIDE SHIFT**

- Restart the feeder to automatically position the winding disc (empty spool body)
- Open the brush holder, see page 32.
- Insert the yarn into the eyelet and press both the buttons, whilst lightly holding the yarn.



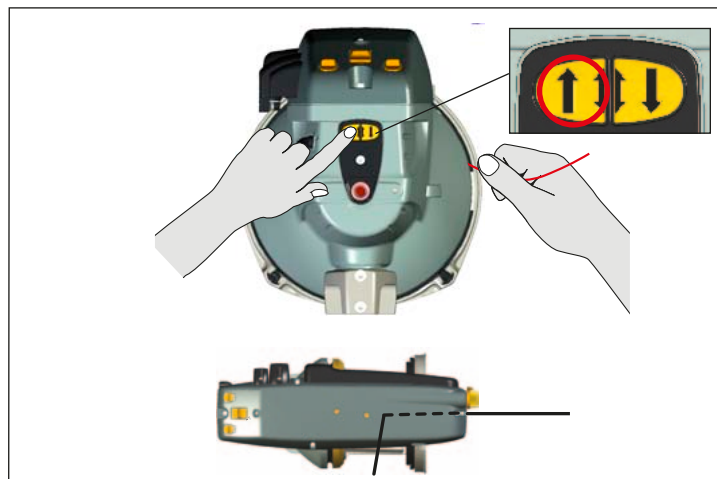
**HALF THREADING, BACK**

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



**HALF THREADING, FRONT**

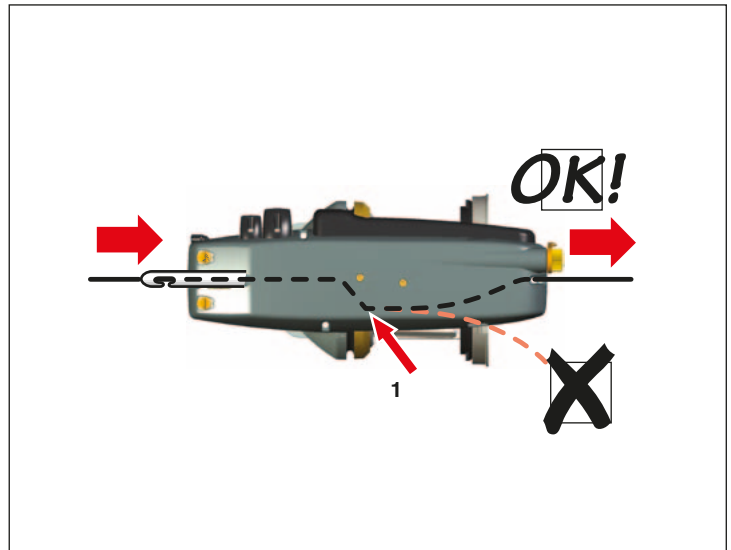
Insert the yarn into the eyelet and press the left button, whilst lightly holding the yarn.



Luna X3, Chrono X3, XD X3, XD X2

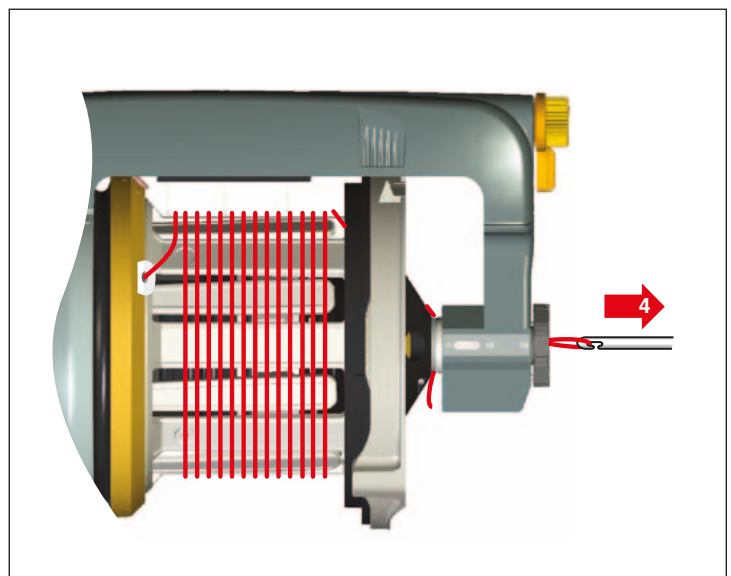
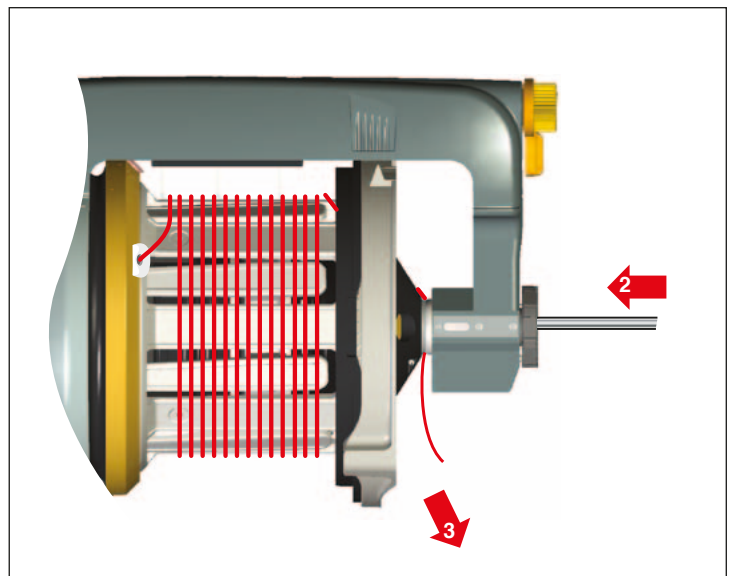
**WITHOUT CAT**

- Switch off the feeder.
- Align the winding disc eyelet (1).
- Open the brush holder (see page 32).
- 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.

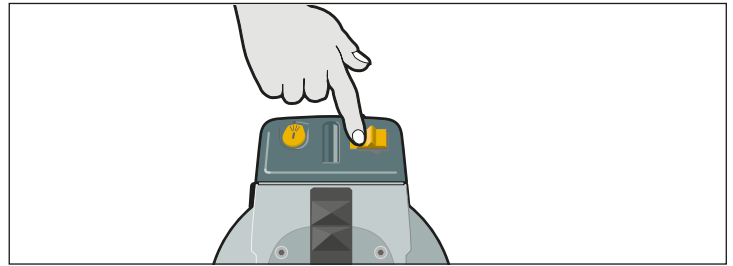


 **WARNING**

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.

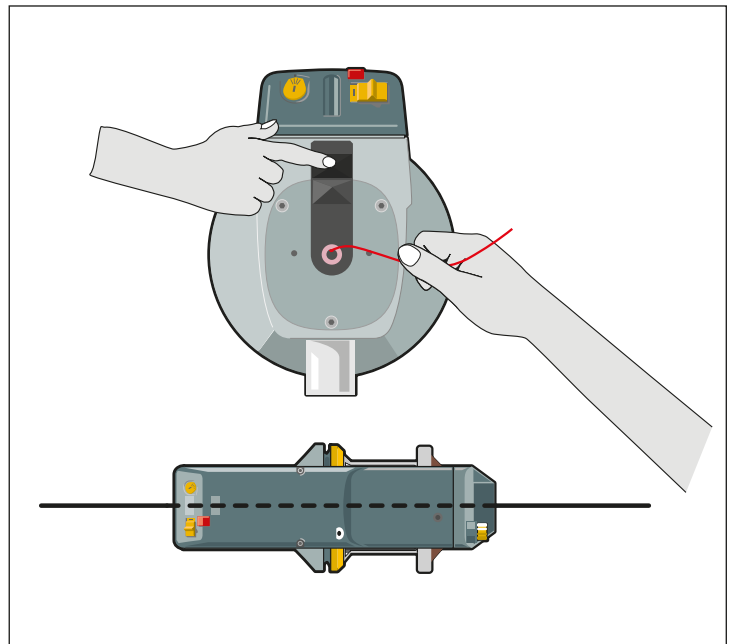
**XD X2**

Switch on the feeder.  
The winding disc will automatically position itself (empty spool body).



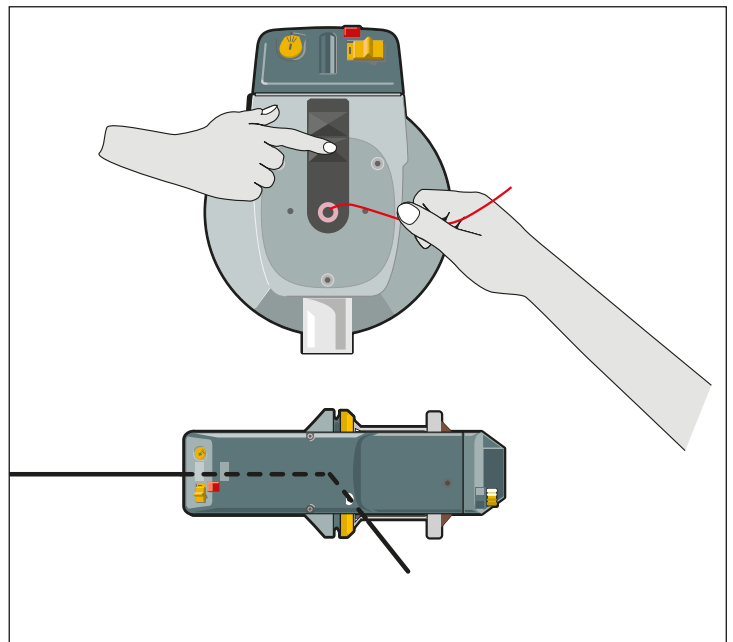
**FULL THREADING**

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



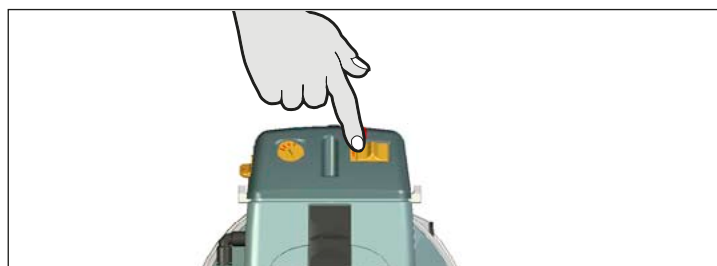
**HALF THREADING**

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



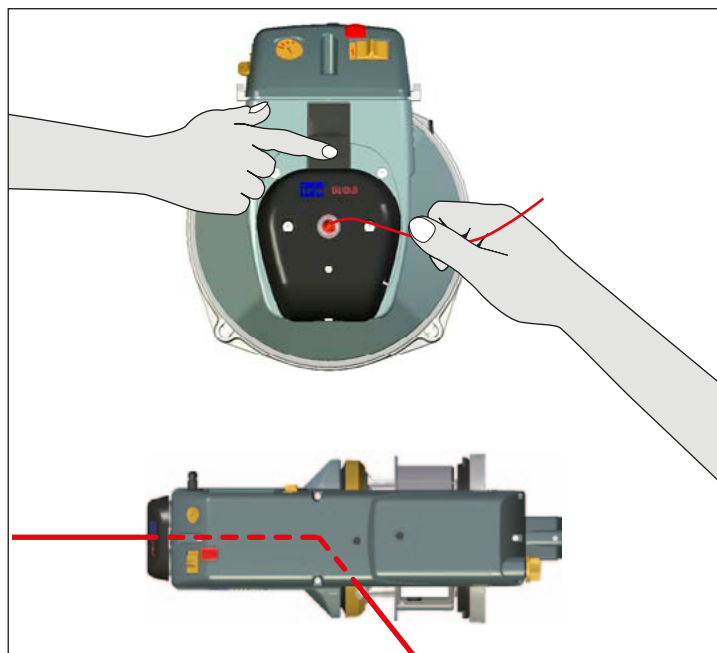
**HD X2**

Switch on the feeder.  
The winding disc will automatically position itself (empty spool body).



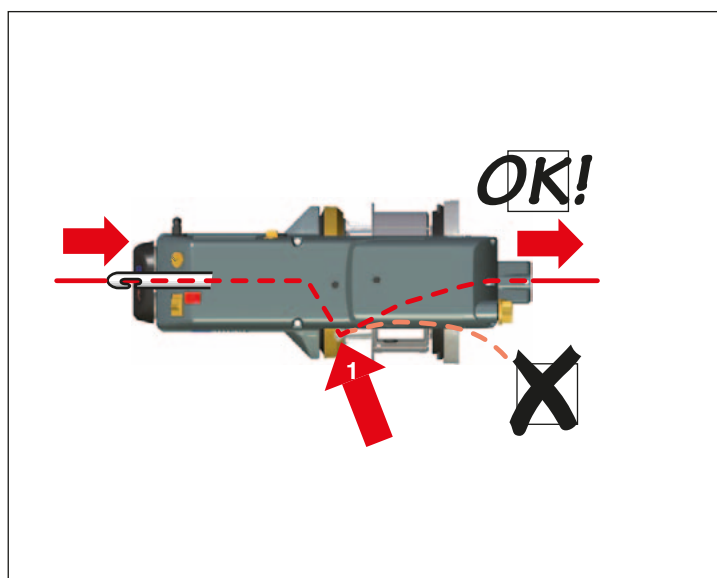
**PNEUMATIC THREADING**

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



**MANUAL THREADING**

1. Align the winding disc eyelet (1).
2. Open the brush holder (see page 36).
3. Thread the needle all the way through the feeder and output eyelet.
4. Pull the yarn through.
5. Restart the feeder.



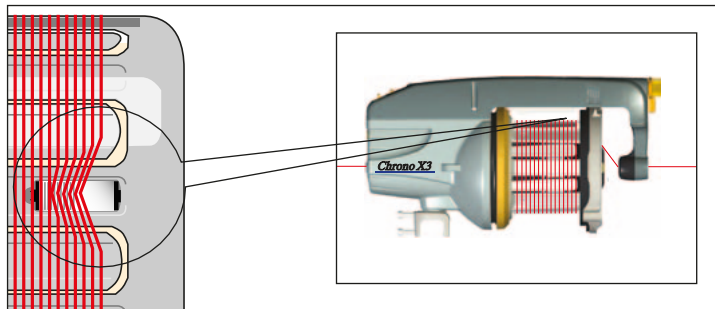
 **WARNING**

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.

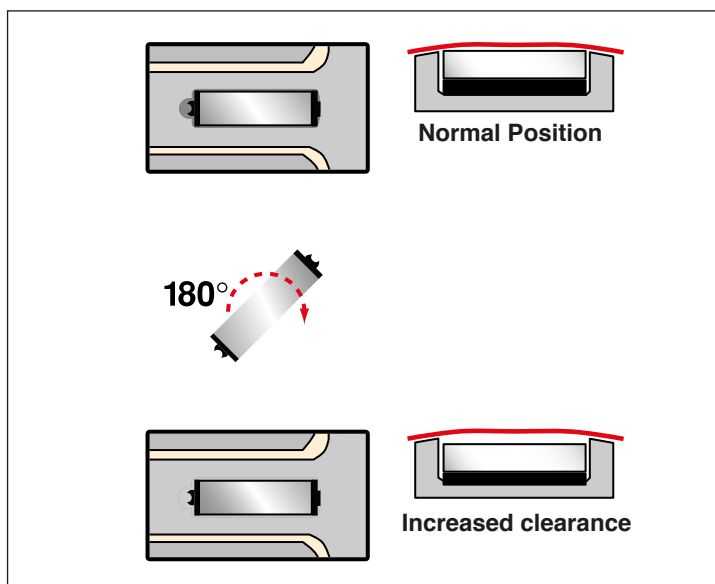
**Luna X3, Chrono X3, XD X3, XD X2**

**Optical sensors**

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.



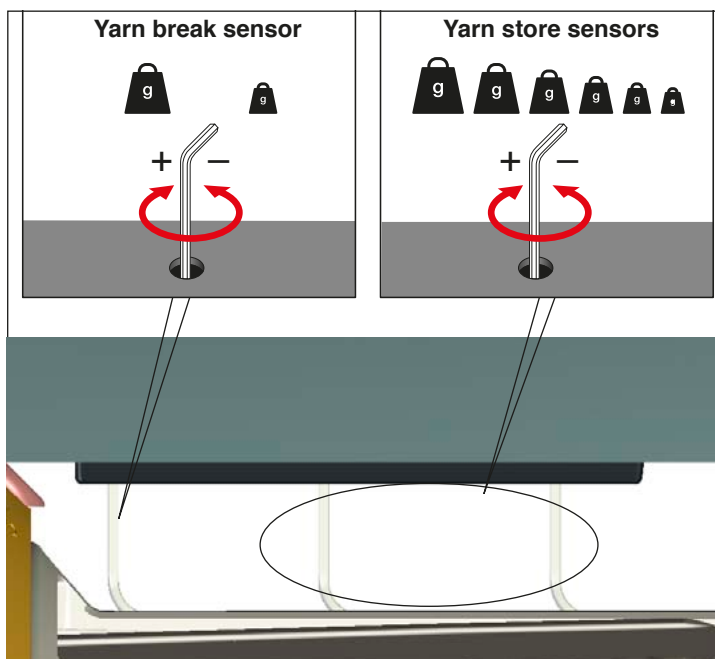
Adjust the clearance by rotating the mirror 180 degrees.



**XD X2**

**Mech. sensor**

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



## HD X2

The mechanical sensors are placed on the fixed part of the spool body.

The sensor (1) controls MAX reserve level, and the sensor (2) controls MIN reserve level.

The force needed to press down the sensors is controlled by a spring, and it is adjustable with screw (3). Turn the screw (3) anti-clockwise to increase the sensor strength, turn it clockwise to reduce it.

### AUTOMATIC CALIBRATION OF THE SENSORS

#### NOTE

**Before starting the automatic sensors calibration, check the following:**

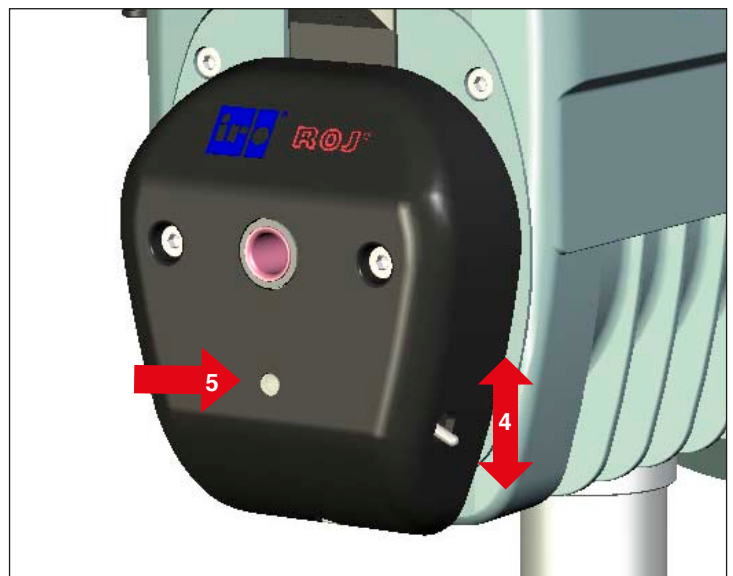
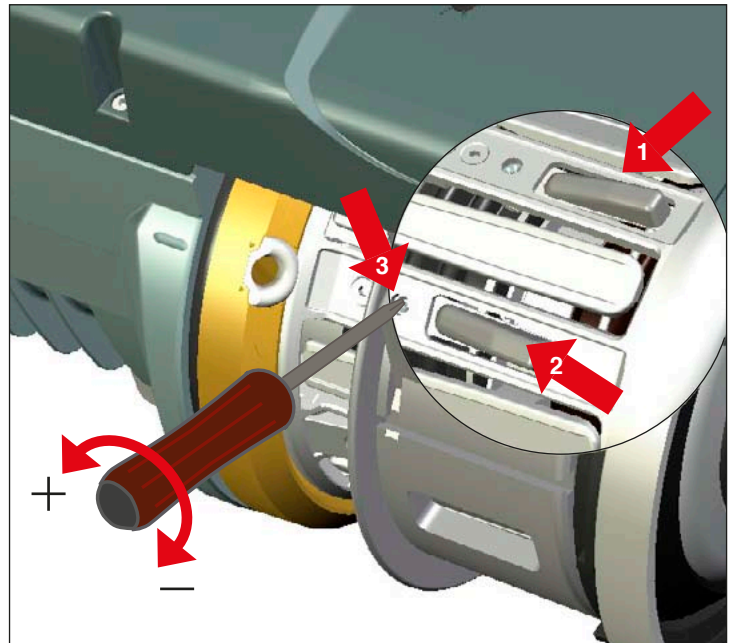
- Remove all yarn from the feeder
- The spool body must be in correct position.
- The sensors must be free to correctly move up and down.
- The sensors ring must be correctly fixed.

1. Switch OFF the feeder.
2. Disable the TFE7 by moving the switch (4) upwards. The LED of TFE7 must be steady-ON in red color.(5)
3. Switch ON the feeder and let it turn without weft for at least 50 revolutions, until the winding disk stops. (feeder red light steady ON).
4. Switch OFF the feeder, and enable the TFE7 by moving the switch down
5. Thread the yarn through the feeder (see page 15)
6. Switch ON the feeder and load a new weft reserve.

#### LED (5)

When disabled, the LED (5) is steady RED ON.

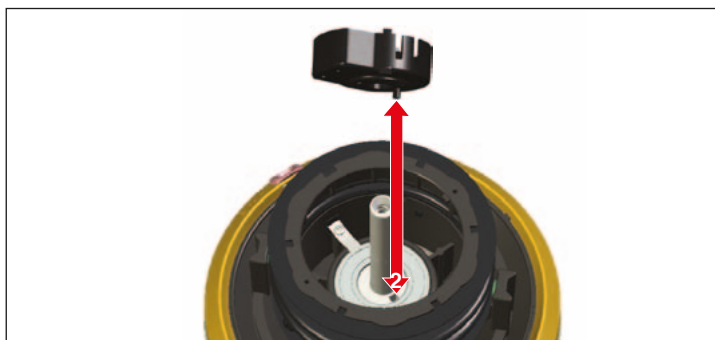
When enabled, the LED (4) is GREEN only when the yarn is creating signal, otherwise it is OFF.



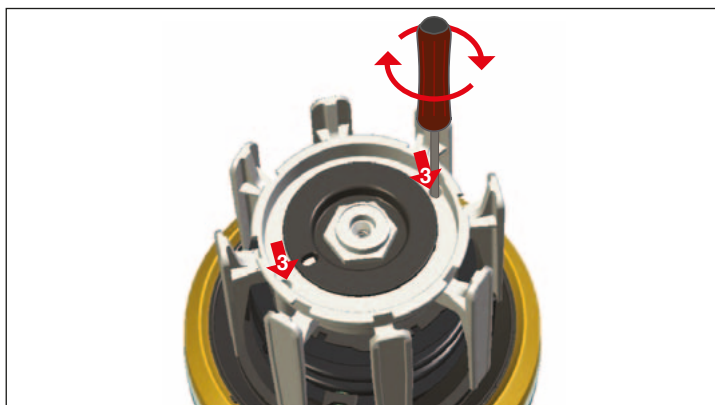
After disassembling, it is necessary to install the spool-body part by part to avoid damaging the parts. Secure the bellow properly with plastic straps (1).



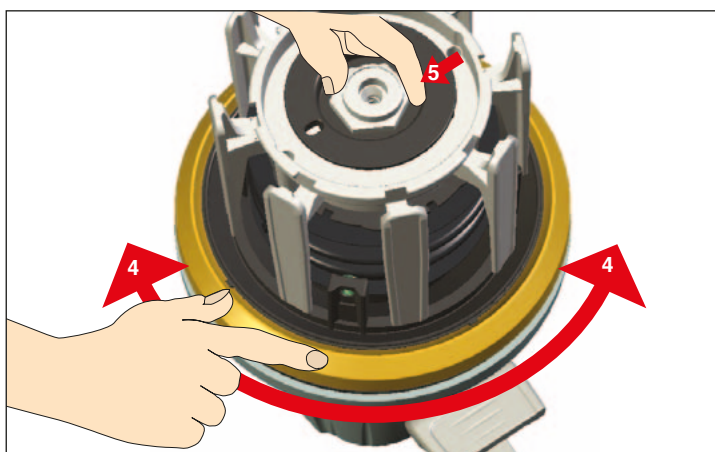
Be sure that the carrier pin fits into the keygroove in the motor shaft (2).



Insert the two screws 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.



**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).

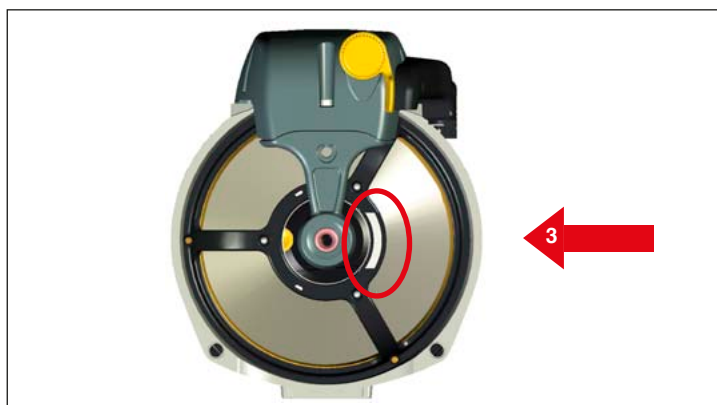


**FLEX BRAKE MOUNTING**

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



Ensure that the Flex brake is correctly positioned (3).

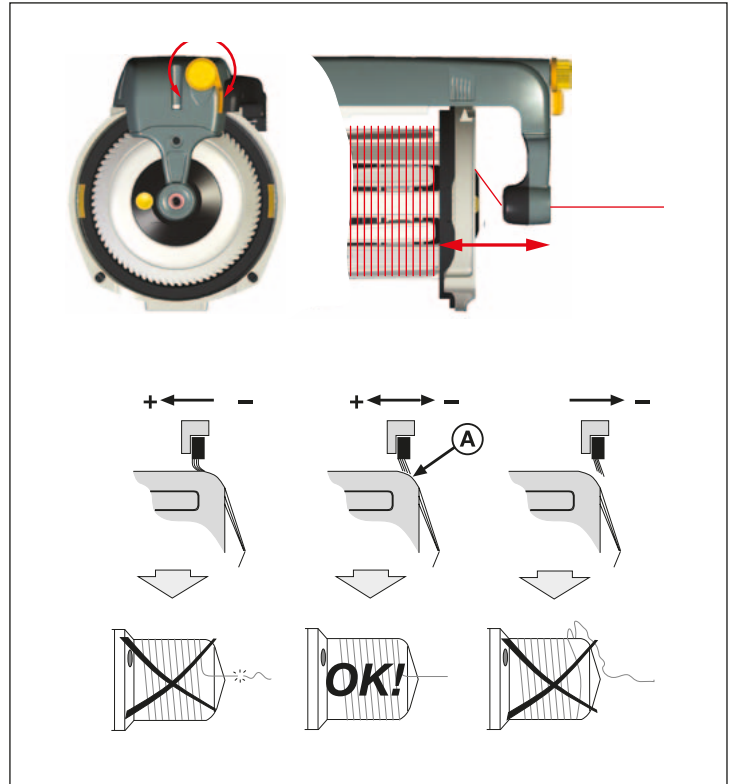




Balloon control adjustment.

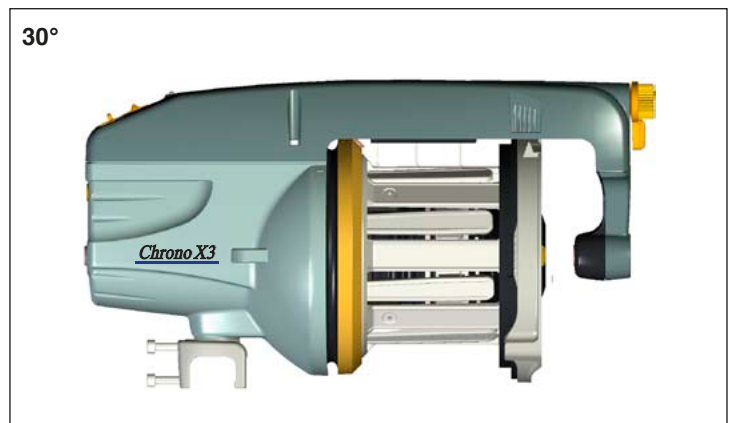
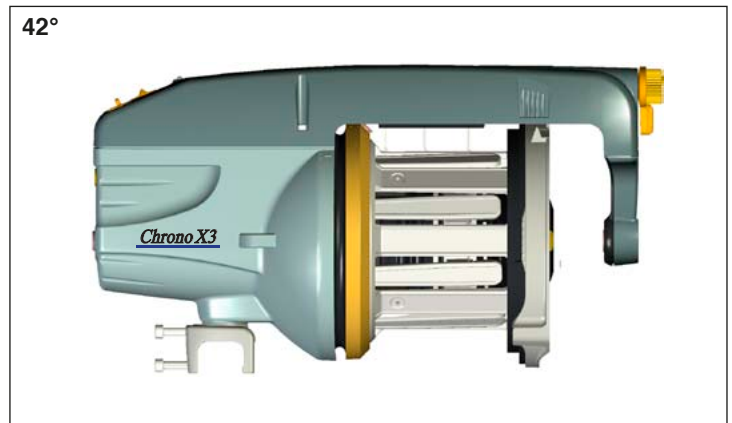
**NOTE**

Excessive brush tension will cause abnormal wear.



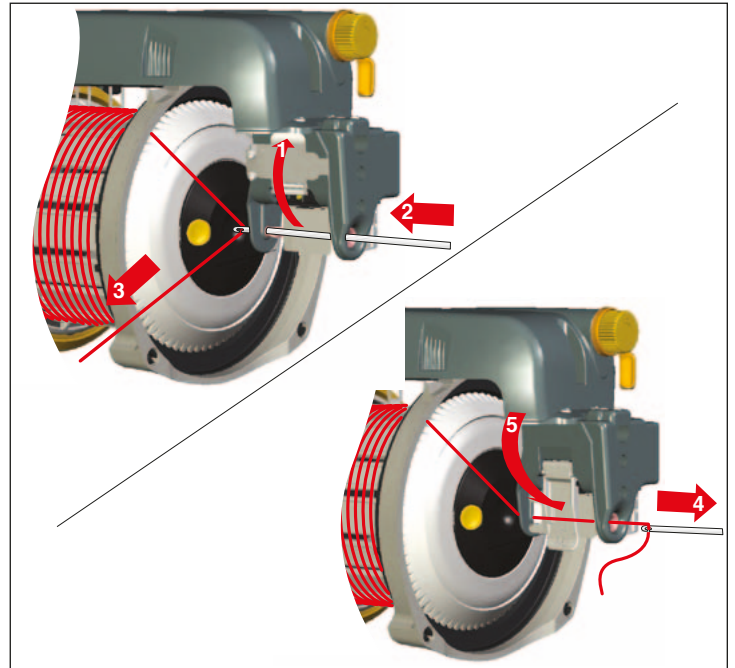
**NOSE POSITION**

Mounting position of the nose: 42° or 30°



**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)

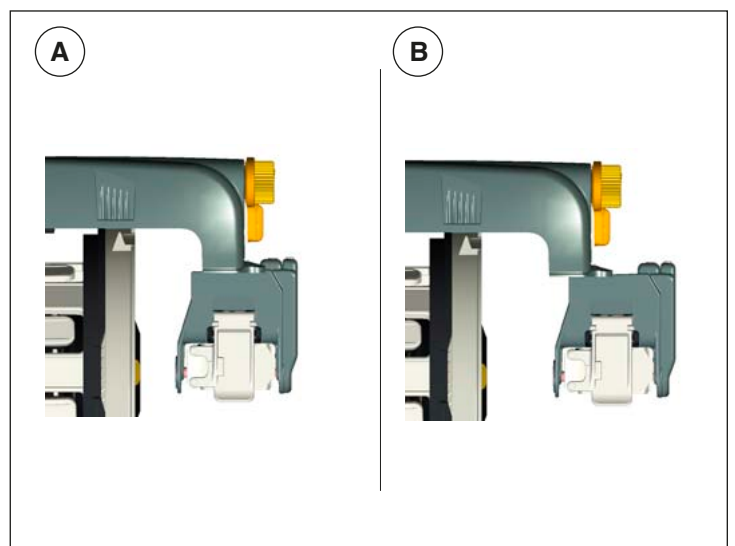


**Position A**

Recommended when using the TEC together with a 30° FlexBrake.

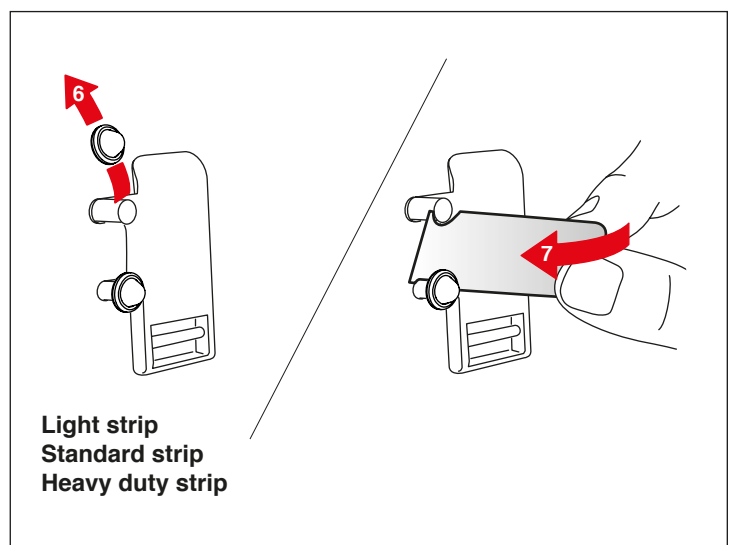
**Position B**

Recommended when using the TEC together with a Brush Ring or a 42° Flexbrake.



**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)

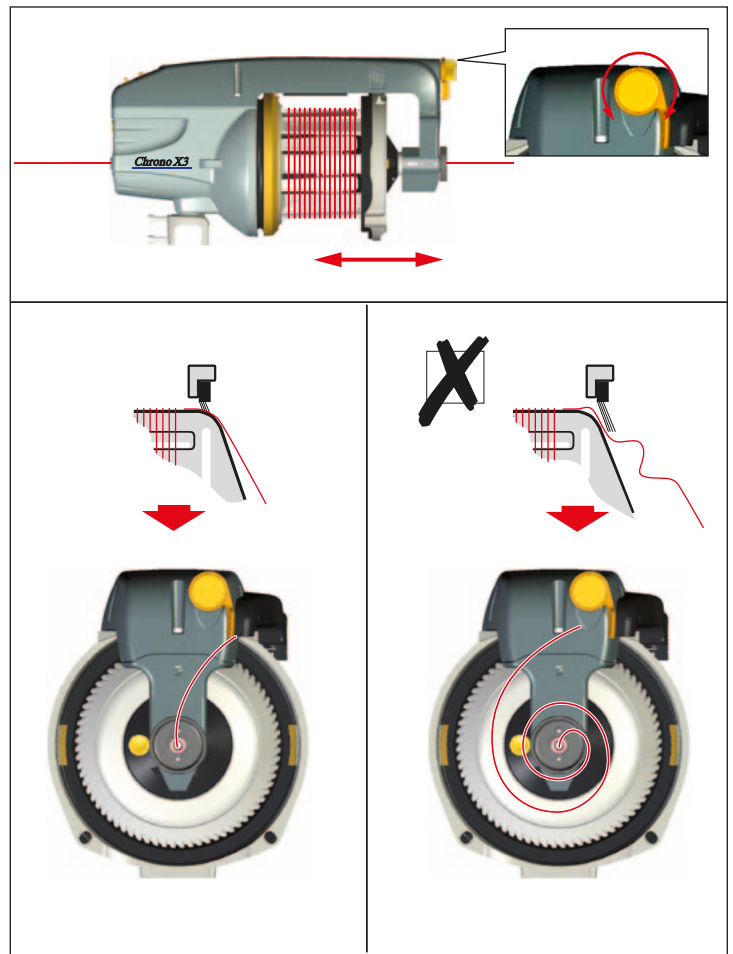


**INPUT TENSION**

Control input yarn tension to the CAT.

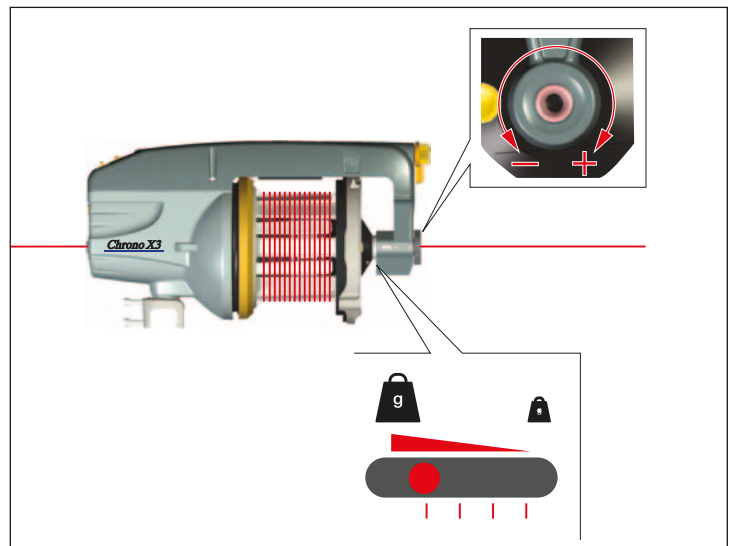
**NOTE**

The brush ring should only be used for balloon control.



**OUTPUT TENSION**

Adjustment of the output tension.



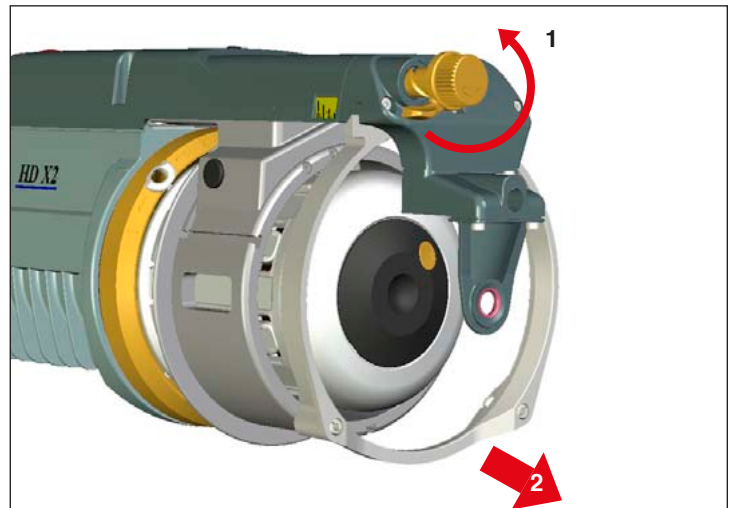
This brake is particularly suitable for rapier looms which require a constant braking tension during the weft insertion. It is also suggested with jute and monofilament. It is not recommended when flat yarns are woven.

**NOTE**

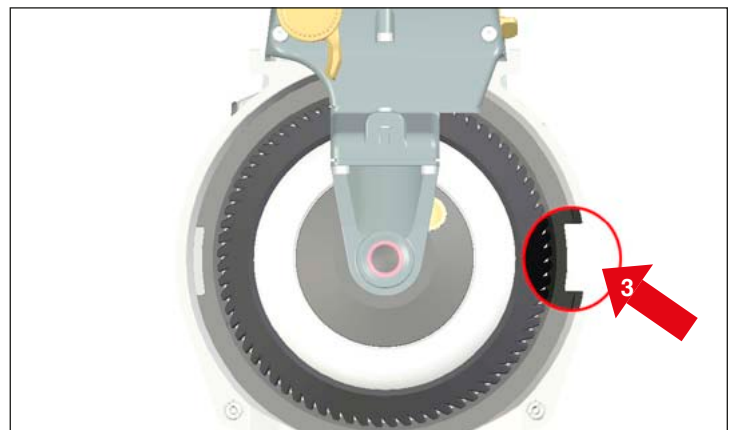
Each brake is suitable for both yarn twist (S or Z).

**BRUSH/FLEX BRAKE MOUNTING**

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



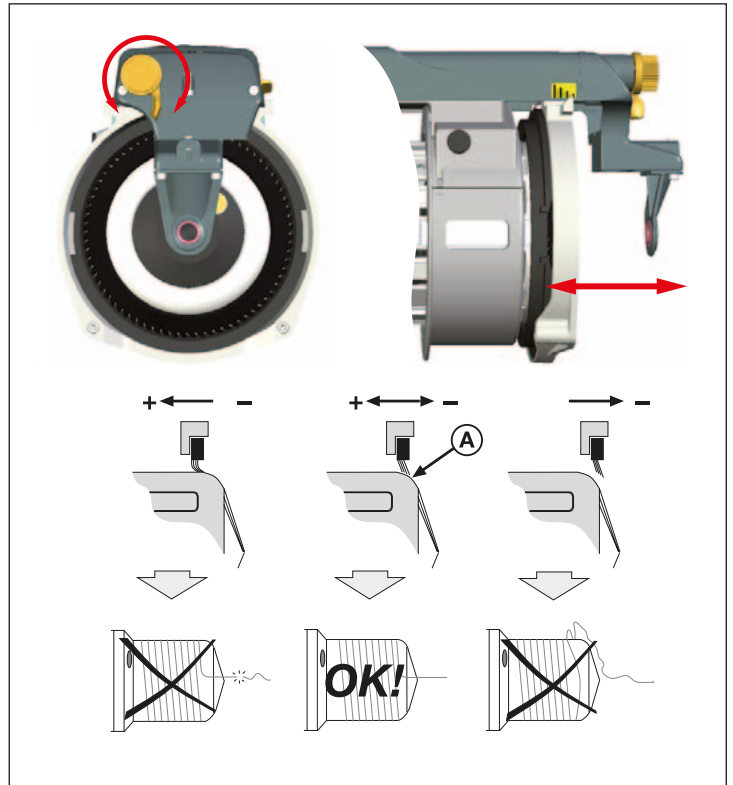
Ensure that the Brush/Flex (3) is correctly positioned.



Balloon control adjustment.

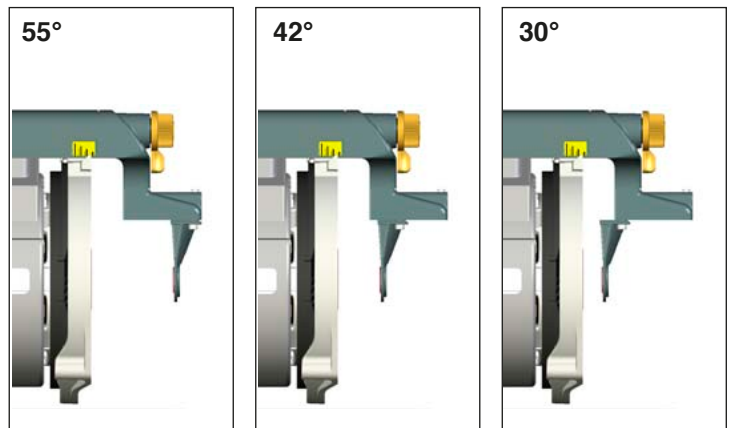
**NOTE**

Excessive brush tension will cause abnormal wear.



**NOSE POSITION**

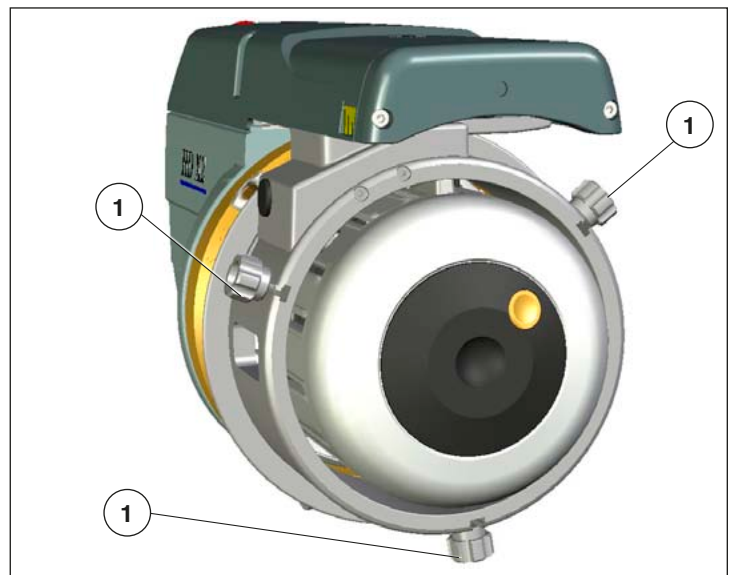
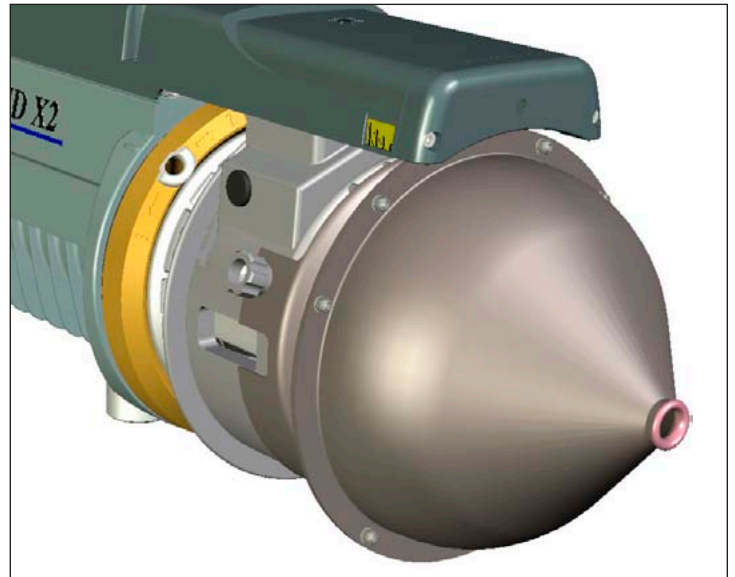
Mounting position of the nose: 30°, 42° or 55°  
(55° = standard position)



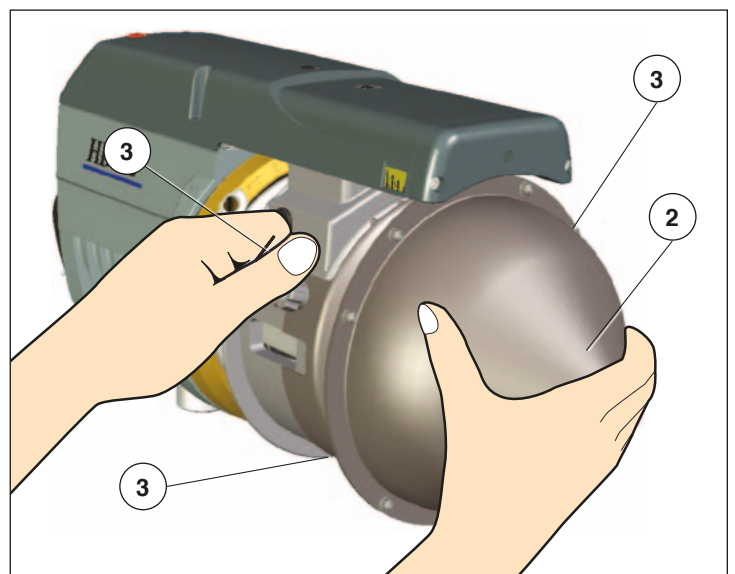
Suitable for heavy yarns which create large balloons. Suggested for polypropylene flat tape on projectile looms.

**NOTE**

There is no braking function on the yarn when the funnel is installed since it is used only to control the balloon effect during the yarn taking-off.

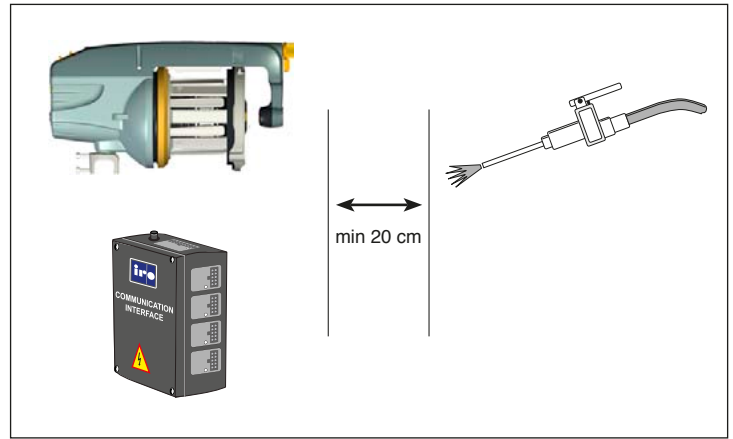
**FUNNEL FITTING**

1. Slightly screw the three nuts (1) with the screws.
2. Slide the fixing screws into the guides of the Sensor-holder ring.
3. Push the funnel completely against the Sensor-holder ring. (2)
4. Position the screws in the proper slots, then fix them with the nuts. (3)



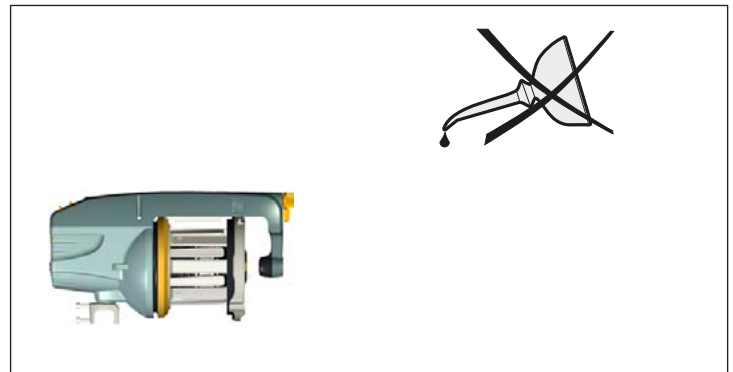
**CLEANING**

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



**LUBRICATION**

The unit requires no extra lubrication.

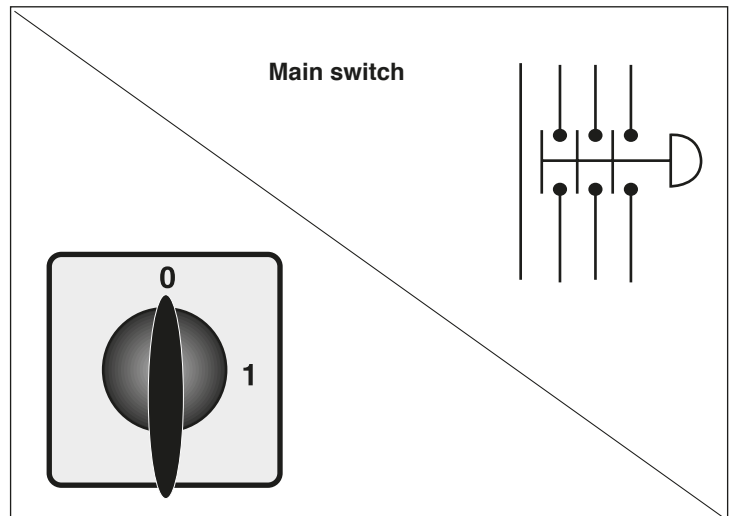


**CONNECTIONS**



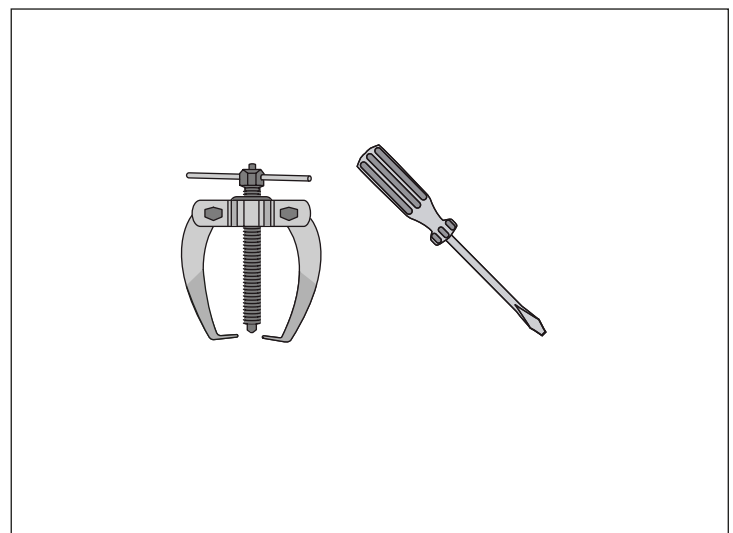
**WARNING**

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.



**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.



**Luna X3, Chrono X3, XD X3**

Fault	Check in the following order	
	Optical sensor	Mechanical sensor
Feeder will not start	1 - 2 - 3 - 4 - 6 - 7 - 8 - 24 - 25 - 26	1 - 2 - 3 - 5 - 6 - 7 - 8 - 24 - 25 - 26
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 - 24 - 25 - 27 - 26	17 - 3 - 5 - 16 - 13 - 9 - 8 - 21 - 24 - 25 - 27 - 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	23
2.	Incorrect spoolbody position	Ensure the sensor unit is positioned upwards	29
3.	Winding disc jammed	Free and clean the winding disc	39
4.	Contaminated sensor or mirror	Clean the sensor and mirror using a mild cleaning agent	29
5.	Sensor arms jammed	Free the arms and clean the sensing unit	39
6.	Faulty cable connections	Check and rectify	6-9
7.	Fuses blown	Replace the relevant fuse	8-9
8.	Mains supply / primary voltage fault	Check the mains supply and connections	6-9
9.	Insufficient input tension	Increase the input tension	see
10.	Excessive input tension	Reduce the input tension	see
11.	Insufficient balloon control	Increase the balloon control	33,35
12.	Excessive output tension	Reduce the output tension	33,35
13.	Excessive yarn separation	Reduce the yarn separation	23
14.	Incorrect jumper J1 setting	Reposition jumper	17
15.	Excessive pressure on max sensor arm	Reduce the spring pressure	29
16.	Max sensor bouncing	Increase the spring pressure	29
17.	Insufficient max speed setting	Increase the max speed setting	19
18.	Excessive max speed setting	Reduce the max speed setting	19
19.	Insufficient yarn store	See "low or empty yarn store" under "fault"	-
20.	Damaged balloon control	Repair/replace all defective parts	see
21.	Stop signal fault between control box and weaving M/C	Check all connections/cable	8-9
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	20
25.	Defective motor circuit board	Replace the relevant circuit board	7
26.	Defective fuse panel	Replace the relevant fuse panel	8-9
27.	Defective control box interface	Replace the relevant interface	8-9
28.	Defective feeder connection cable	Replace the relevant connection cable	-
29.	Yarn break	Re-thread the feeder	25-26



**XD X2**

Fault	Check in the following order	
	Optical sensor	Mechanical sensor
Feeder will not start	1 - 2 - 3 - 4 - 6 - 7 - 8 - 24 - 25 - 26	1 - 2 - 3 - 5 - 6 - 7 - 8 - 24 - 25 - 26
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 - 24 - 25 - 27 - 26	17 - 3 - 5 - 16 - 13 - 9 - 8 - 21 - 24 - 25 - 27 - 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	24
2.	Incorrect spoolbody position	Ensure the sensor unit is positioned upwards	29
3.	Winding disc jammed	Free and clean the winding disc	39
4.	Contaminated sensor or mirror	Clean the sensor and mirror using a mild cleaning agent	29
6.	Faulty cable connections	Check and rectify	6, 10, 13-15
7.	Fuses blown	Replace the relevant fuse	10, 13-15
8.	Mains supply / primary voltage fault	Check the mains supply and connections	6, 10, 13-15
9.	Insufficient input tension	Increase the input tension	see
10.	Excessive input tension	Reduce the input tension	see
11.	Insufficient balloon control	Increase the balloon control	33,35
12.	Excessive output tension	Reduce the output tension	33,35
13.	Excessive yarn separation	Reduce the yarn separation	24
17.	Insufficient max speed setting	Increase the max speed setting	19
18.	Excessive max speed setting	Reduce the max speed setting	19
19.	Insufficient yarn store	See "low or empty yarn store" under "fault"	-
20.	Damaged balloon control	Repair/replace all defective parts	see
21.	Stop signal fault between control box and weaving M/C	Check all connections/cable	10, 13-15
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	21
25.	Defective motor circuit board	Replace the relevant circuit board	10
26.	Defective fuse panel	Replace the relevant fuse panel	10, 13-15
27.	Defective control box interface	Replace the relevant interface	10, 13-15
28.	Defective feeder connection cable	Replace the relevant connection cable	-
29.	Yarn break	Re-thread the feeder	26-27

**HD X2**

Fault	Check in the following order	
	Optical sensor	Mechanical sensor
Feeder will not start	1 - 2 - 3 - 4 - 6 - 7 - 8 - 24 - 25 - 26	1 - 2 - 3 - 5 - 6 - 7 - 8 - 24 - 25 - 26
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 - 24 - 25 - 27 - 26	17 - 3 - 5 - 16 - 13 - 9 - 8 - 21 - 24 - 25 - 27 - 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	23
2.	Incorrect spoolbody position	Ensure the sensor unit is positioned upwards	29
3.	Winding disc jammed	Free and clean the winding disc	39
5.	Sensor arms jammed	Free the arms and clean the sensing unit	39
6.	Faulty cable connections	Check and rectify	6-9
7.	Fuses blown	Replace the relevant fuse	8-9
8.	Mains supply / primary voltage fault	Check the mains supply and connections	6-9
9.	Insufficient input tension	Increase the input tension	see
10.	Excessive input tension	Reduce the input tension	see
11.	Insufficient balloon control	Increase the balloon control	33,35
12.	Excessive output tension	Reduce the output tension	33,35
17.	Insufficient max speed setting	Increase the max speed setting	19
18.	Excessive max speed setting	Reduce the max speed setting	19
19.	Insufficient yarn store	See "low or empty yarn store" under "fault"	-
20.	Damaged balloon control	Repair/replace all defective parts	see
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	20
25.	Defective motor circuit board	Replace the relevant circuit board	7
26.	Defective fuse panel	Replace the relevant fuse panel	8-9
27.	Defective control box interface	Replace the relevant interface	8-9
28.	Defective feeder connection cable	Replace the relevant connection cable	-
29.	Yarn break	Re-thread the feeder	25-26
30.	Sensor out of calibration	Execute automatic sensor calibration	30



EC DECLARATION OF CONFORMITY

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

Guarantee that machine type:

**Luna X3, Chrono X3, XD X3, XD X2 and HD X2**

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	2006/ 95/ EC	EN ISO 111 11-1
Electromagnetic compatibility	2004/ 108/ EC	EN ISO 111 11-1

*Pär Josefsson, Manager Product and Development department, 2014-02-06*

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