



XD-X2

Operating Instructions



IRO AB

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

ORIGINAL LANGUAGE INSTRUCTION

IRO AB 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 or any other electrical components. The feeder and the transformer cabinet 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 IRO AB 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.

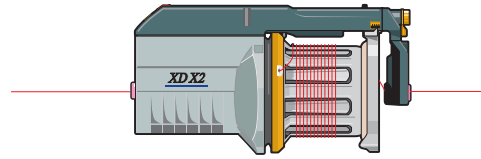
**CAUTION!**

- 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 IRO AB 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

700 W / Optical



Max 1800 m/min



11 kg



Min 5° C-Max 40° C



Max 85 %



83 dB

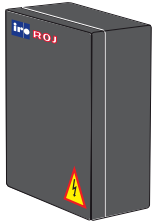


Max 9 mm



Input air pressure 5,5 - 7 bar

Heavy Duty Power Supply Stand Alone



230-575V 1000VA

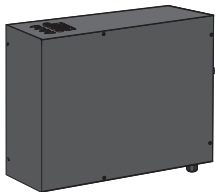


Max T 10A
Fuse



21 kg

Heavy Duty Power Supply CAN



380-440V 1900VA



Max !



35 kg

NOTE

Subject to technical modifications.



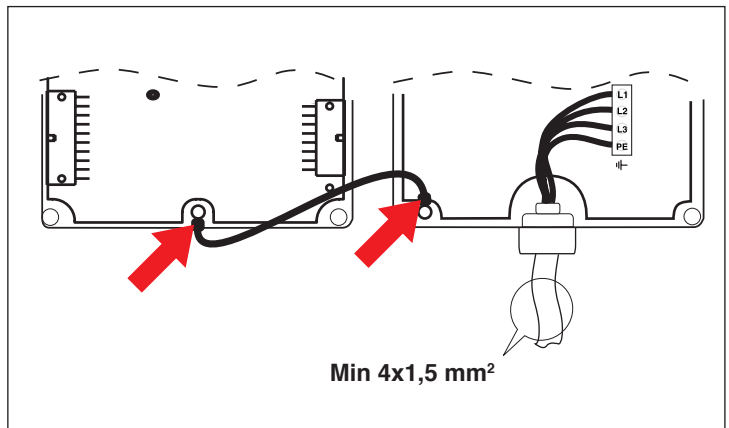
WARNING

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

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.

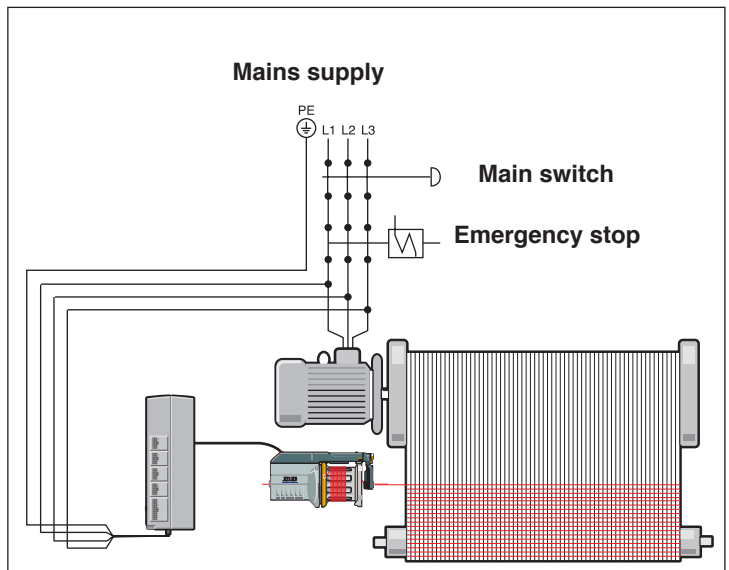
Take the Voltage Supply Box out of the packing. Open the cover and connect the three-phase power cord. (4-wires cable). Make sure that the earth connection is properly made. The section of each wire cannot be less than 1,5 mm².



WARNING

Power supply must be connected after the loom main switch and emergency stop.

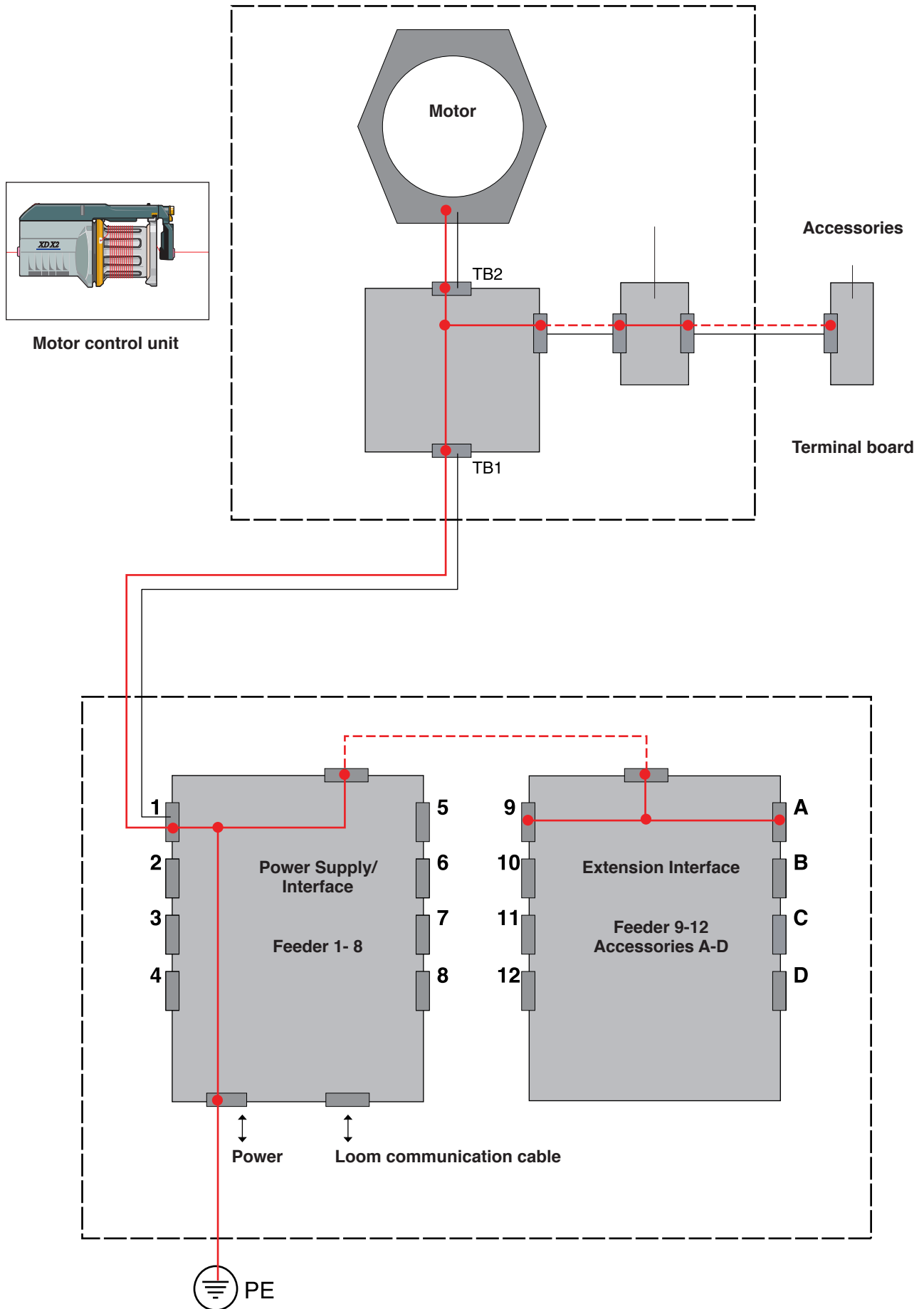
The power supply to the feeder must not be disrupted when the weaving machine stops.

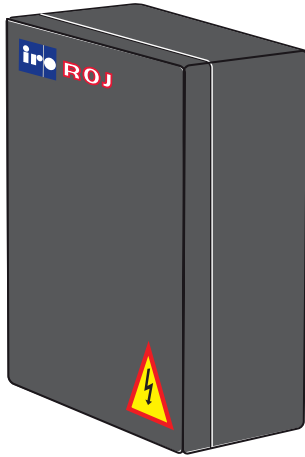


Variations in main voltage.

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

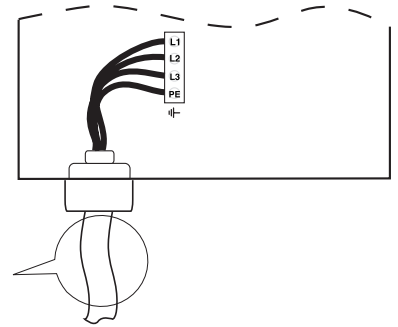
Motor control unit and fuse panel





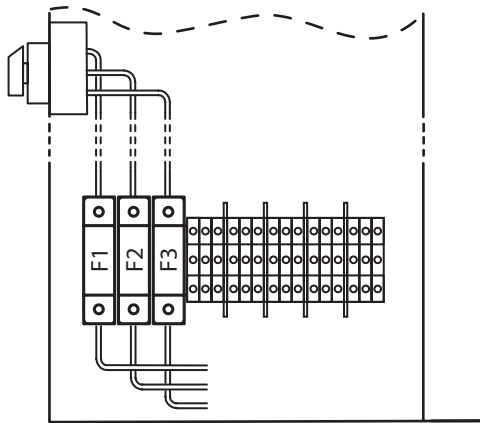
Heavy Duty Power Supply Stand Alone

Mains connection · Hauptanschluss



Min 4x1,5 mm²

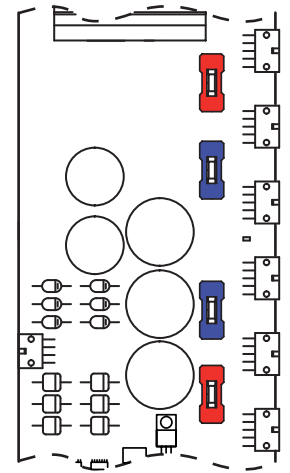
STAND ALONE - POWER SUPPLY Fuses



F1 - F3 = 4 A / 500 V

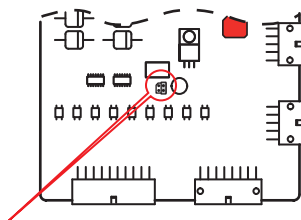
STAND ALONE - INTERFACE Fuses

Red= 6,3A slow
Blue= 6,3 A slow



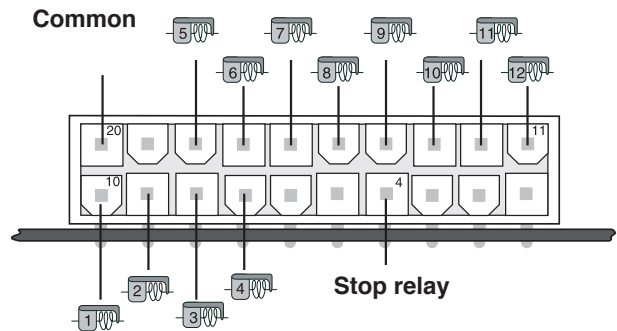
STAND ALONE - INTERFACE

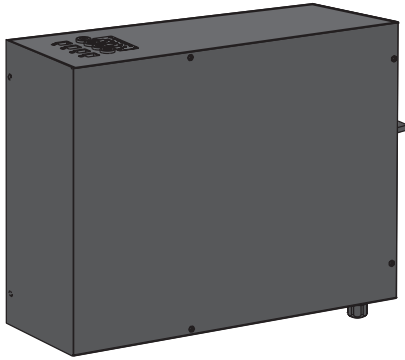
Stop relay jumpers



- NO - normally open
- NC - normally closed
- Without stop relay signal

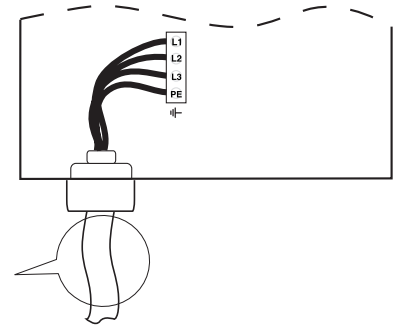
Opto coupler/ stop relay connection





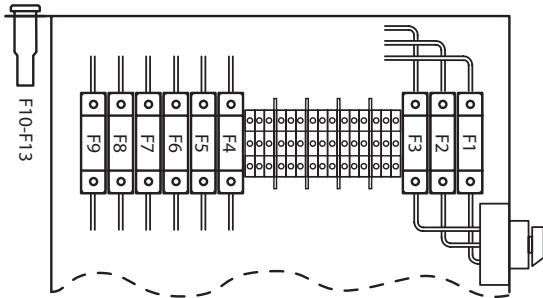
Heavy Duty Power Supply CAN

Mains connection · Hauptanschluss



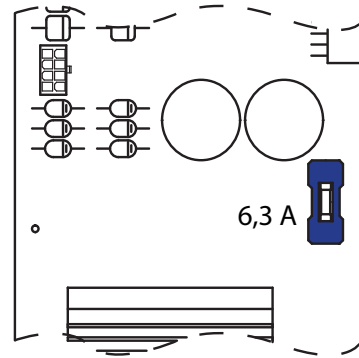
Min 4x1,5 mm²

CAN - POWER SUPPLY
Fuses



F1 - F6 = 10 A / 500 V
 F7 - F9 = 4 A / 500 V
 F10 - F13 = 8 A / 500 V

CAN - INTERFACE
Fuses

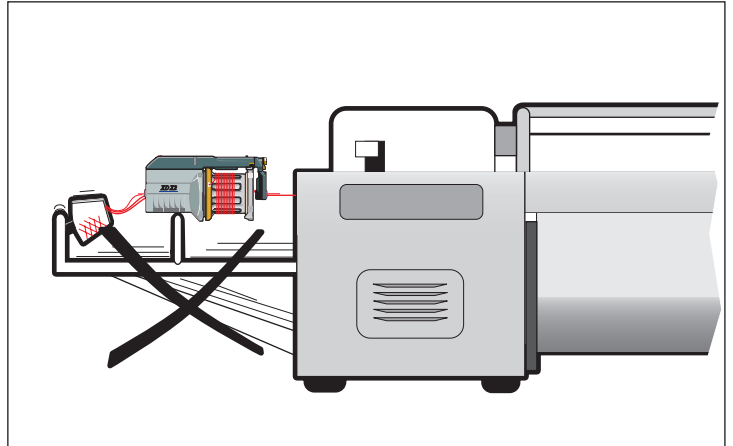


Blue= 6,3A slow



CAUTION

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

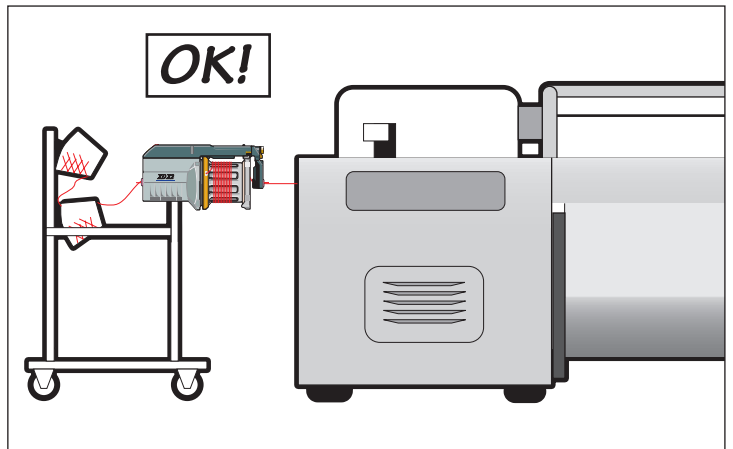


Use a separate floor stand.

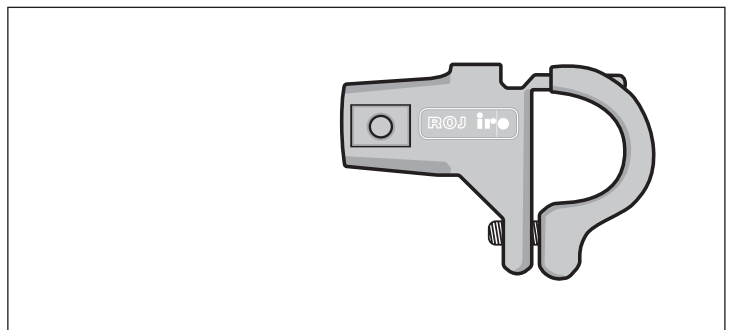
NOTE

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

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

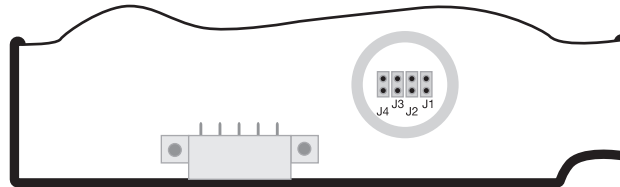










Ensure that the mount screws are correctly tightened.

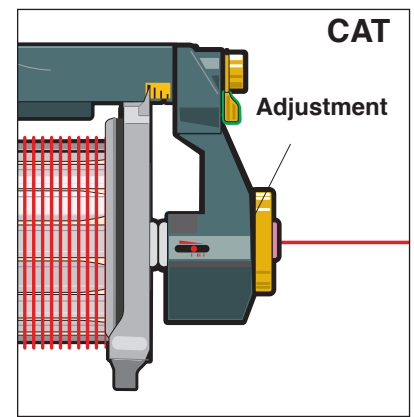
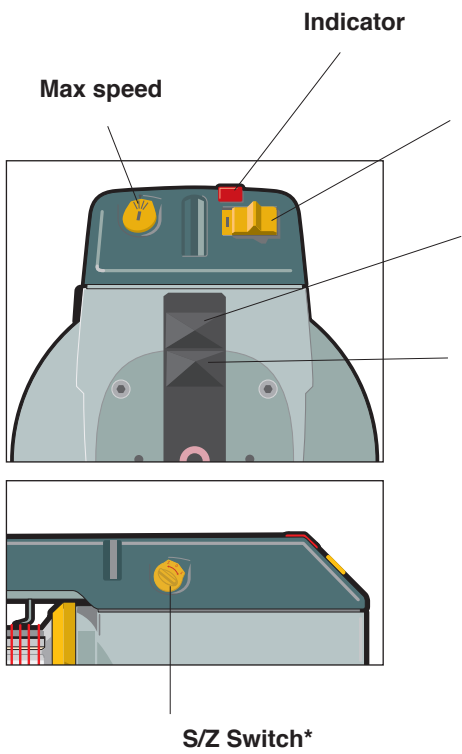
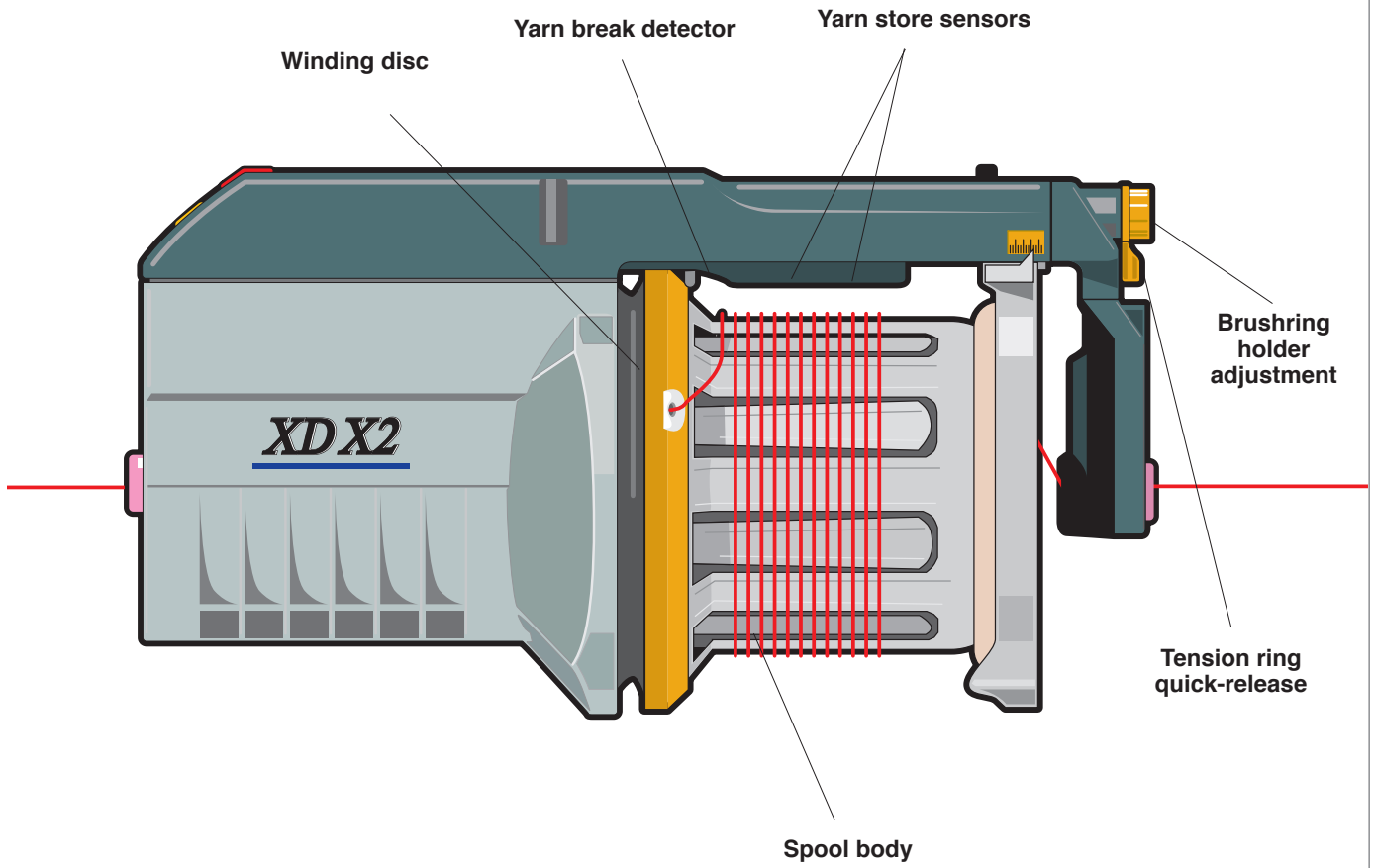


Motor circuit board jumpers

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 (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) |
| J3  | Winding disc positioning- ENABLE |
| J4  | Sensor filtering- DISABLE (continuous take off) |
| J4  | Sensor filtering- ENABLE (weaving) |



*= Not on one-way bearing

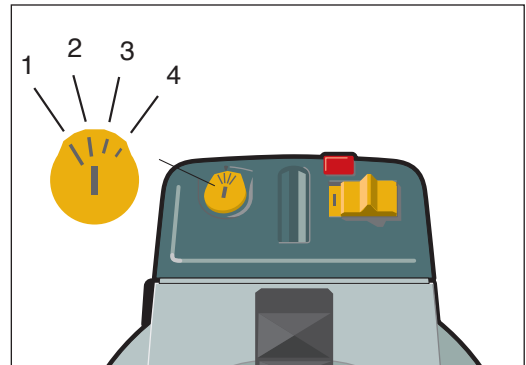
NOTE

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

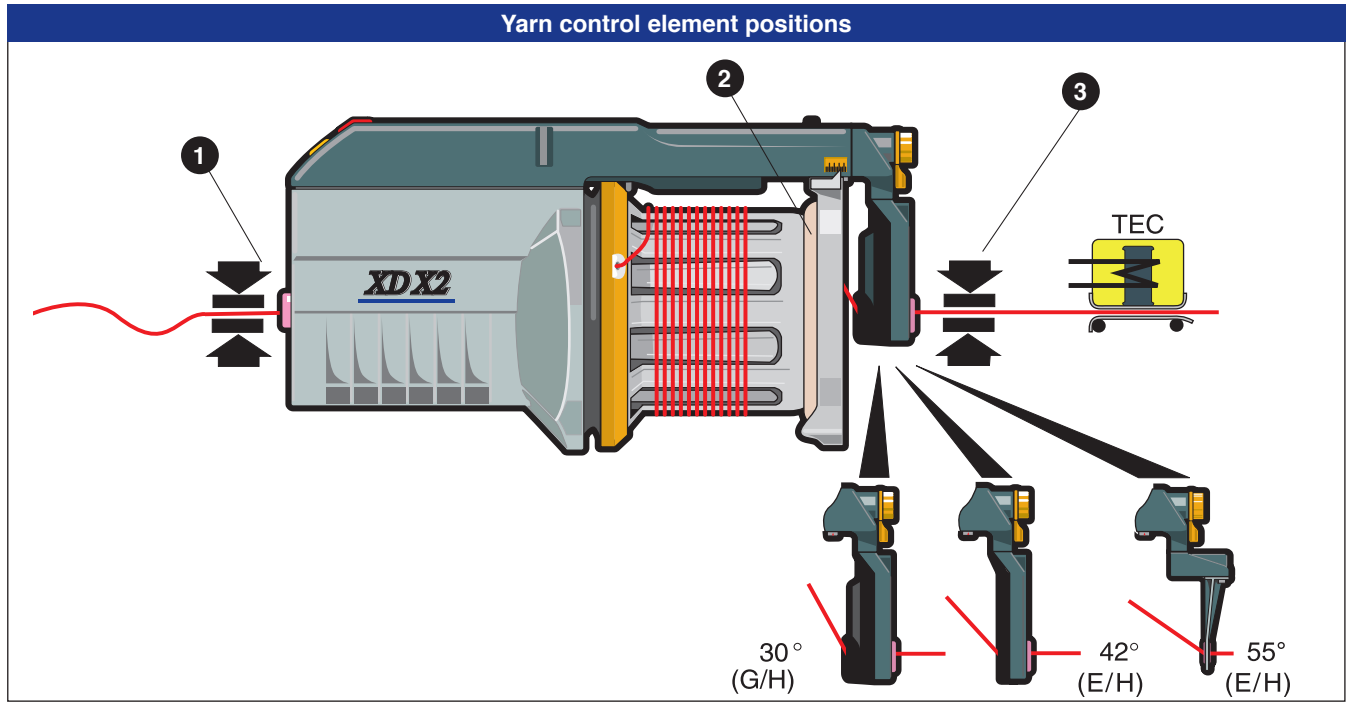
To set the maximum speed rotate the disc to the appropriate position.

OPTICAL SENSORS WITH 700W MOTOR

- 1 = 1600 m/min
- 2 = 1300 m/min
- 3 = 1100 m/min
- 4 = 900 m/min



When weaving certain types of yarn and under special weaving conditions it may be necessary to use yarn control elements in positions 1 and 3. The tables below and on the following page describe suitable combinations.



| Yarn control element – type and position | | | | | |
|--|---------|----------|--------------|----------|----------|
| ELEMENT TYPE | | POSITION | ELEMENT TYPE | | POSITION |
| A | | 1 | G | (E-flex) | 2 |
| B | | 1 3 | H | Brush | 2 |
| C | | 1 | J | (CAT) | 3 |
| D | | 1 | K | | 3 |
| E | Lamella | 2 | | | |

| Yarn | Rapier | | | | | Projectile | | | | |
|---|--------------|------------|---------|----------|--------------|------------|---------|--|--|--|
| | YARN COUNT | TENSIONERS | | | YARN COUNT | TENSIONERS | | | | |
| | | ① | ② | ③ | | ① | ② | | | |
| Spun cotton and covered elastic | Ne 74 - 35 | A | G/ I | K | Ne > 35 | A | H/ I | | | |
| | Ne 59 - 9 | A | G/ II | K | Ne 59 - 16 | A | G/ II | | | |
| | Ne 15 - 4 | A | G/ III | K | Ne 20 - 4 | A | G/ III | | | |
| | Ne 6 - 0,5 | D | G/ IIII | K | Ne 6 - 0,5 | D | G/ IIII | | | |
| Wool | Nm 120 - 60 | A | H/ I | B+B+K | Nm > 60 | A | H/ I | | | |
| | Nm 100 - 14 | A | H/ II | B+B+K | Nm 100 - 27 | A | G/ II | | | |
| | Nm 25 - 7 | A | G/ III | K | Nm 33 - 7 | A | G/ III | | | |
| | Nm 10 - 0,8 | D | G/ IIII | K | Nm 10 - 0,8 | D | G/ IIII | | | |
| Stiff yarns, Jute and Flax (linen) | Nm 120 - 30 | A | E/ II | K | Nm 120 - 27 | A | G/ II | | | |
| | Nm 35 - 20 | A | E/ III | K | Nm 33 - 7 | D | G/ III | | | |
| | Nm 26 - 7 | A | G/ III | K | Nm 10 - 0,8 | D | G/ IIII | | | |
| | Nm 10 - 0,8 | D | G/ IIII | K | | | | | | |
| Chenille | Nm 120 - 20 | A | G/ II | K | Nm 120 - 50 | A | H/ I | | | |
| | Nm 25 - 7 | A | G/ III | K | Nm 67 - 7 | A | H/ II | | | |
| | Nm 10 - 0,8 | D | G/ IIII | K | Nm 10 - 0,8 | D | H/ III | | | |
| Fancy yarns, Slub and Nub | Nm 120 - 50 | B | H/ I | B+B+K | Nm 120 - 50 | B | H/ I | | | |
| | Nm 67 - 7 | B | H/ II | B+B+K | Nm 67 - 7 | B | H/ II | | | |
| | Nm 10 - 0,8 | B | H/ III | B+B+K | Nm 10 - 0,8 | B | H/ III | | | |
| High Twist | Tex 4 - 20 | C | E/ I | K | Tex 4 - 20 | C | H/ I | | | |
| | Tex 15 - 50 | C | E/ II | K | Tex 15 - 100 | C | H/ II | | | |
| | Tex 40 - 100 | C | E/ III | B+B+K | Tex 80 - 400 | C | H/ III | | | |
| Endless Filament | Tex 4 - 20 | C | H/ I | J/ I+K | Tex 4 - 20 | C | H/ I | | | |
| | Tex 15 - 40 | C | H/ II | J/ II+K | Tex 15 - 100 | C | H/ II | | | |
| | Tex 30 - 100 | A | H/ II | J/ III+K | Tex 80 - 400 | A | H/ III | | | |
| | Tex 80 - 400 | A | H/III | B+B+K | | | | | | |

Tension rating: I=soft, II=medium, III=stiff, IIII=extra stiff

NOTE

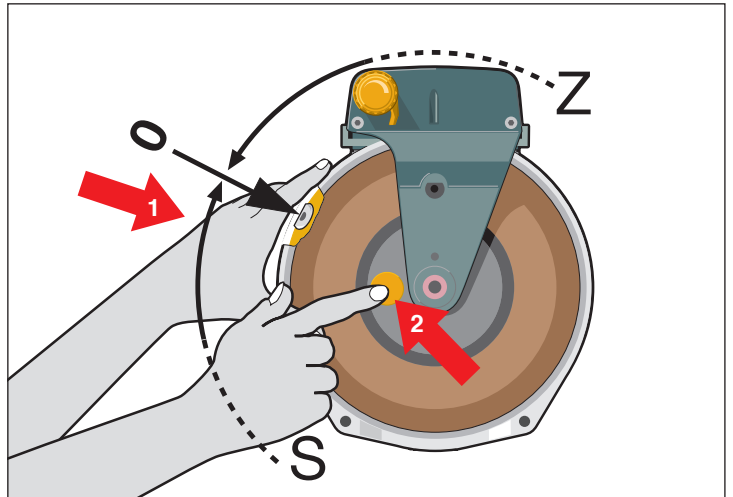
As tensioner performance can be affected by various factors connected to the specific yarns being used the above recommendations are intended purely as a guide. In case of any uncertainty it is recommended that a weft insertion test be carried out.

WITH STANDARD BALL BEARING

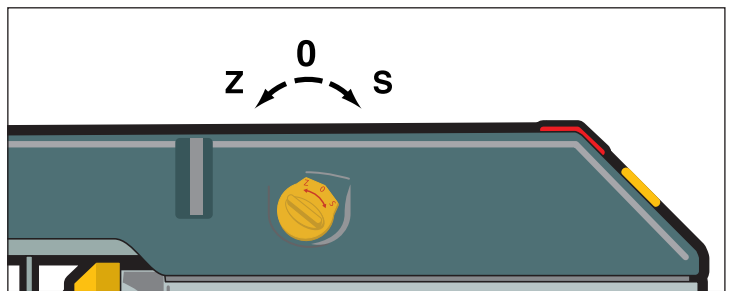
Switch off the feeder.

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.



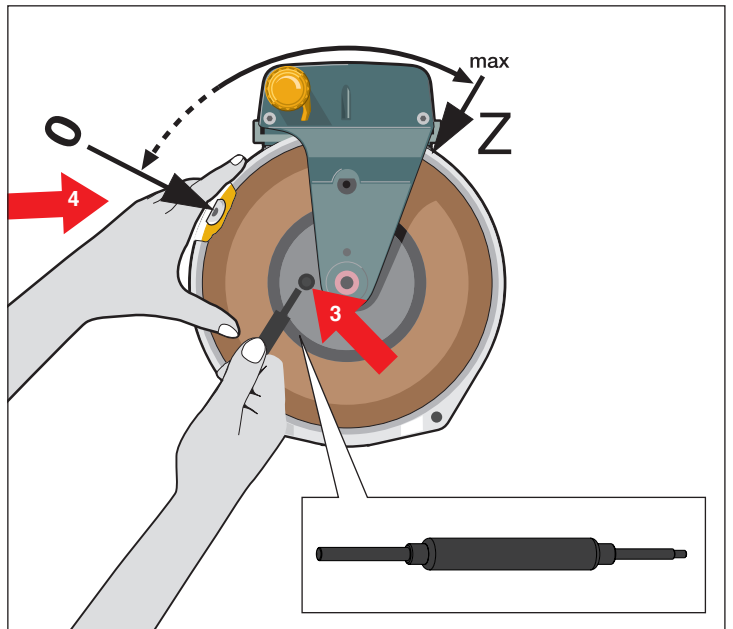
Set the direction of rotation with the switch.
(The feeder is deactivated in the standby position (0))



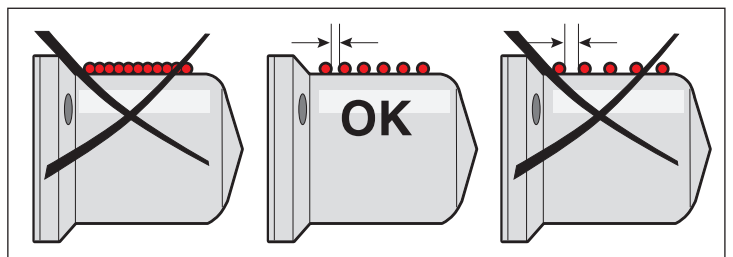
WITH ONE WAY BALL BEARING

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).

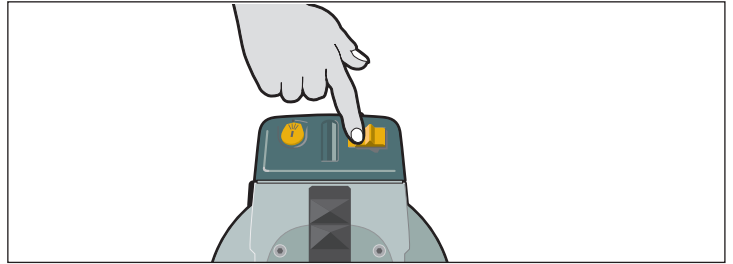
To adjust, press with the tool and revolve the winding disc to the appropriate position between 0 and max Z.



The separation must be distinct, but not excessive.

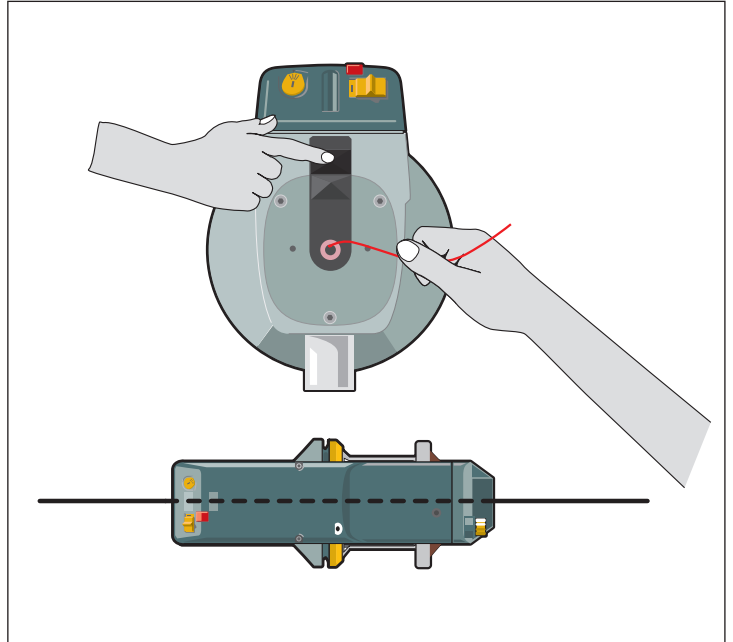


Switch on the feeder.
The winding disc will automatically position itself (empty spool body).



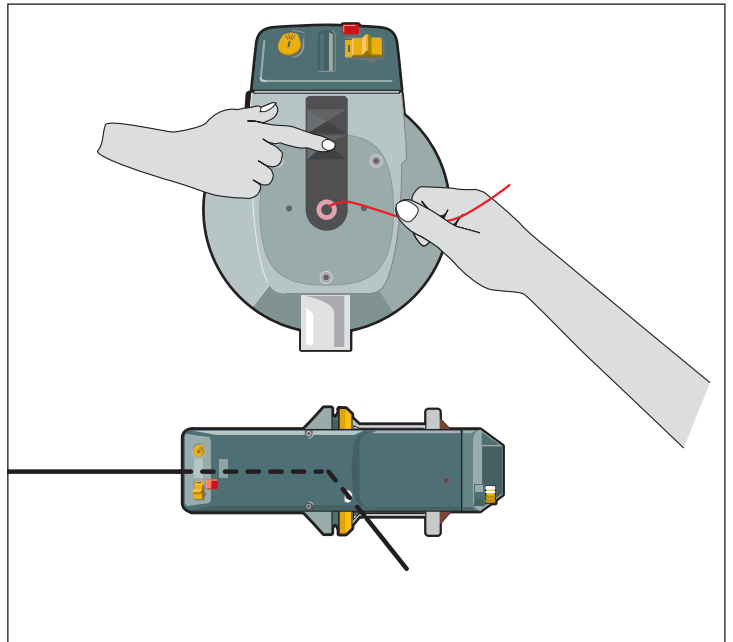
FULL THREADING

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



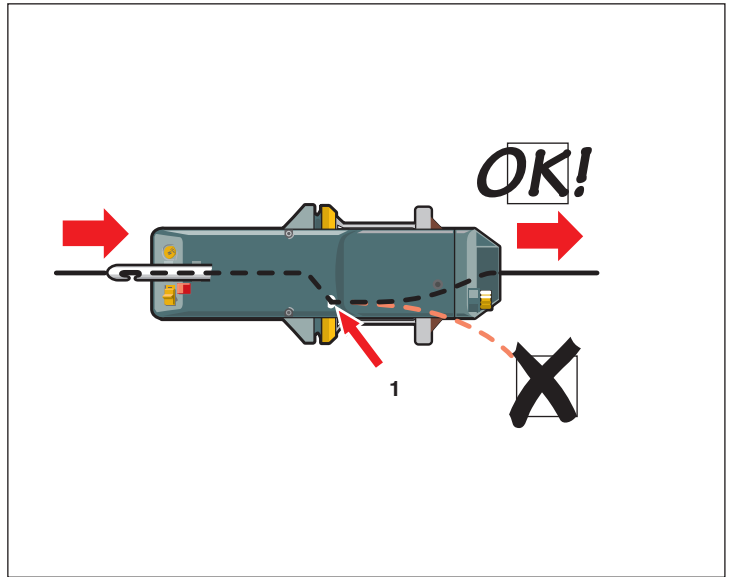
HALF THREADING

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



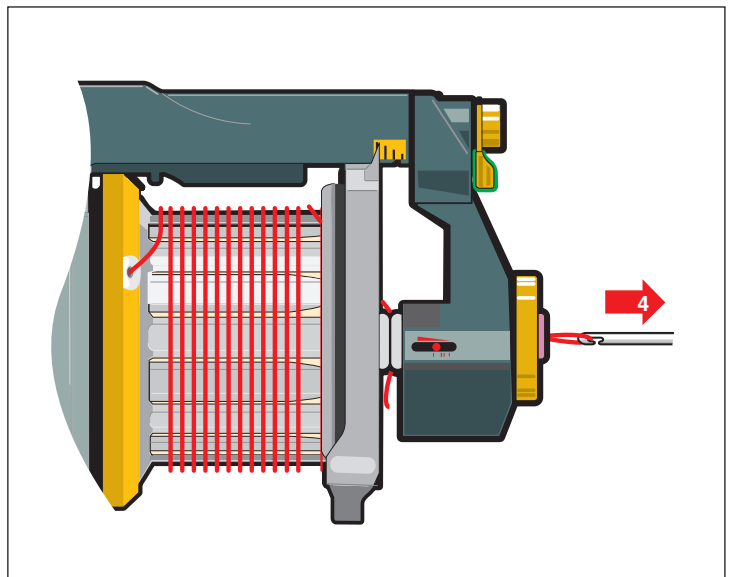
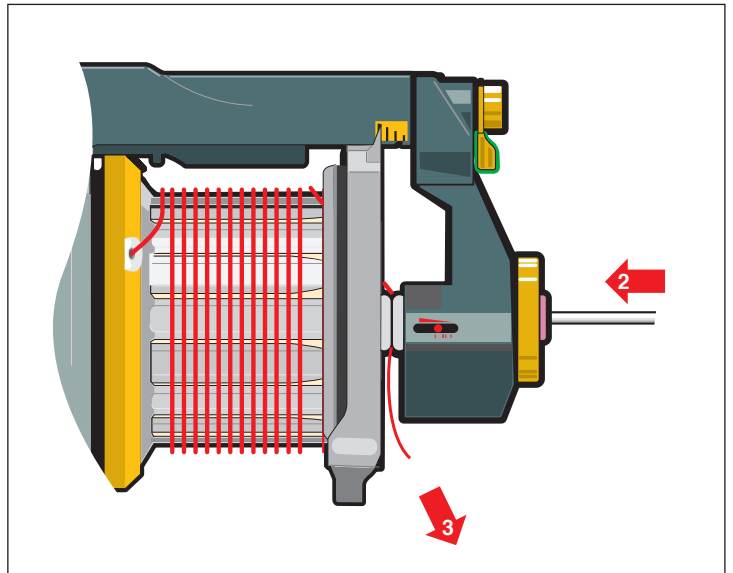
WITHOUT CAT

- Switch off the feeder.
- Align the winding disc eyelet (1).
- Open the brush holder (see page 20).
- 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.



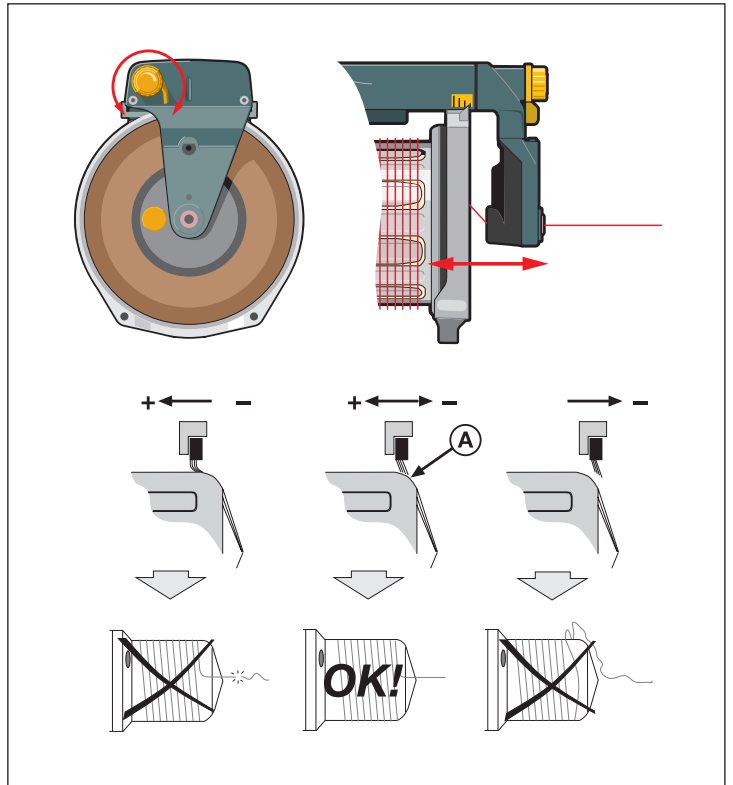
WARNING

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

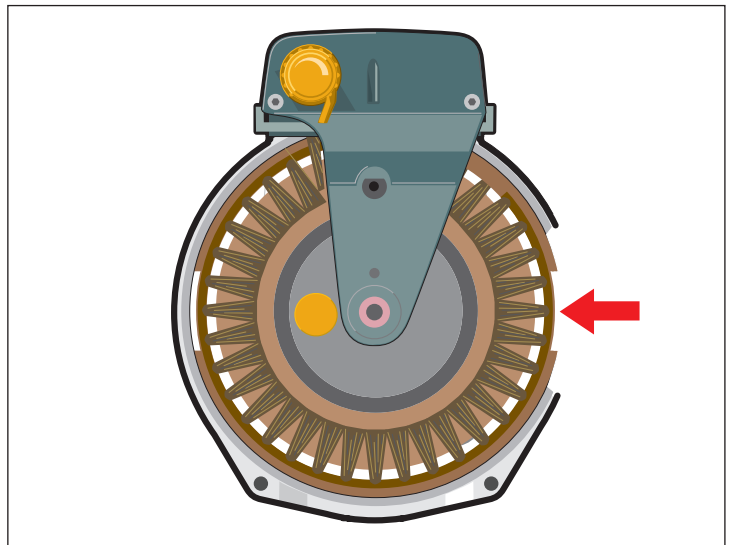
Adjust the balloon control/ E-flex tension.

NOTE

Excessive brush tension will cause abnormal wear.

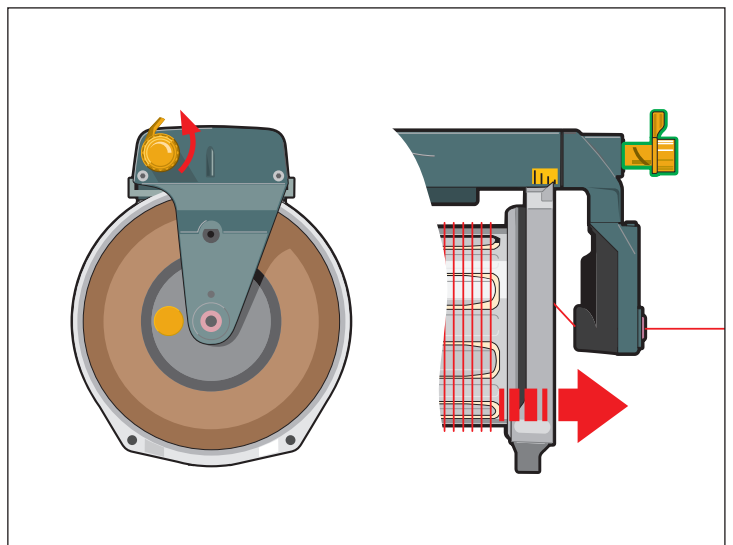


Ensure that the brush ring/ E-flex is correctly positioned.



REPLACING THE BRUSH/ E- FLEX

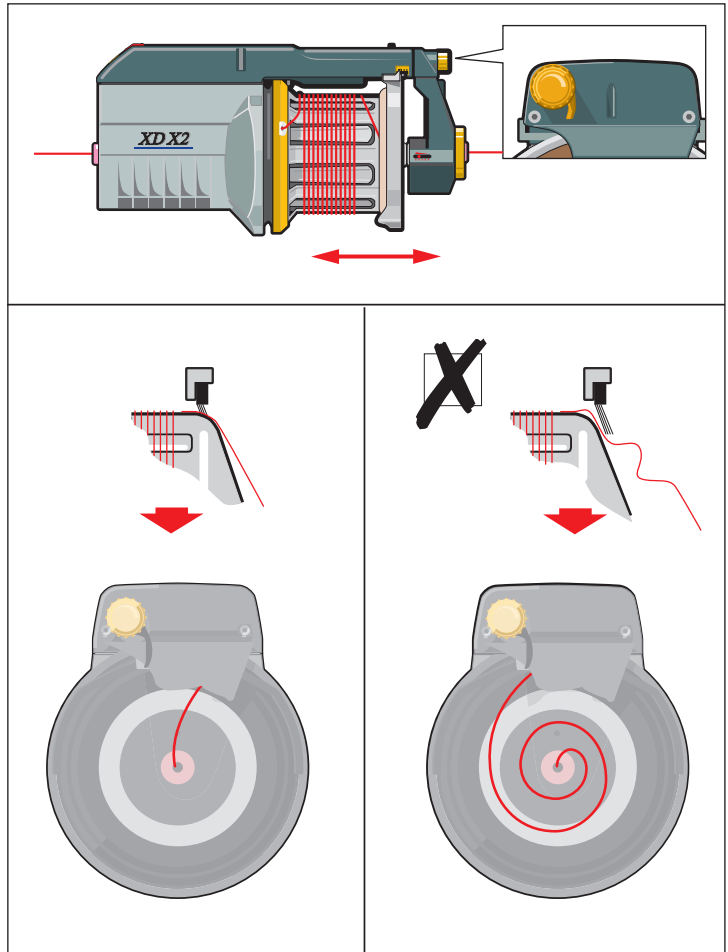
Rotating the slide shift lever will detach the brush/ E-flex from the spool body



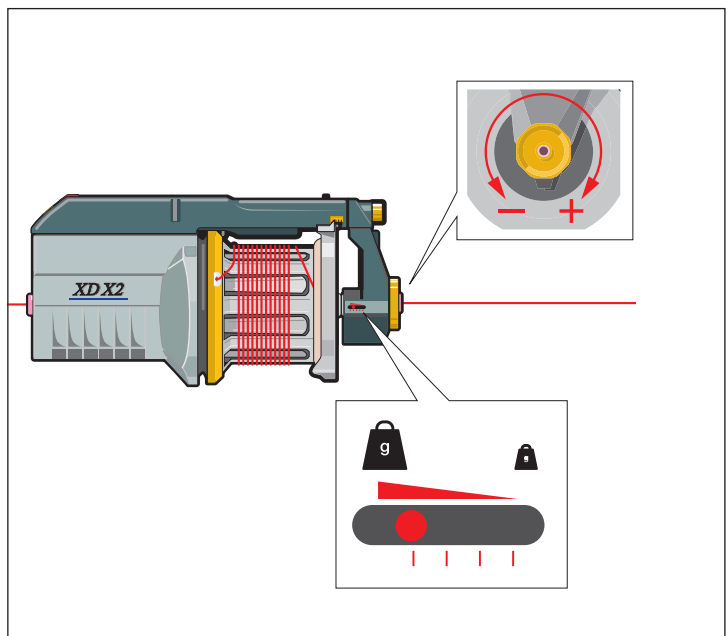
Control input yarn tension to the CAT.

NOTE

The brush ring shall only be used for balloon control.

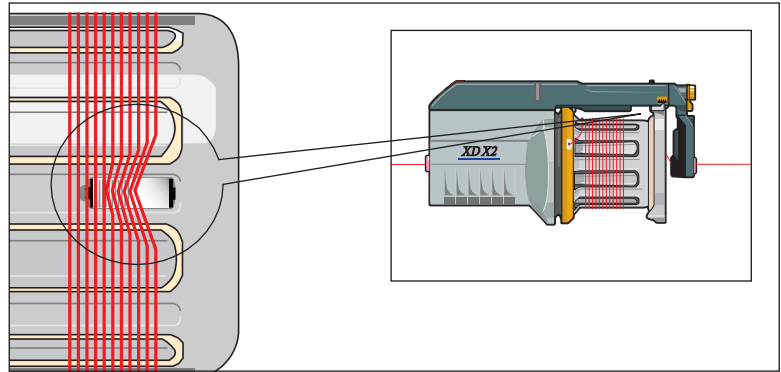


Adjustment of the output tension.

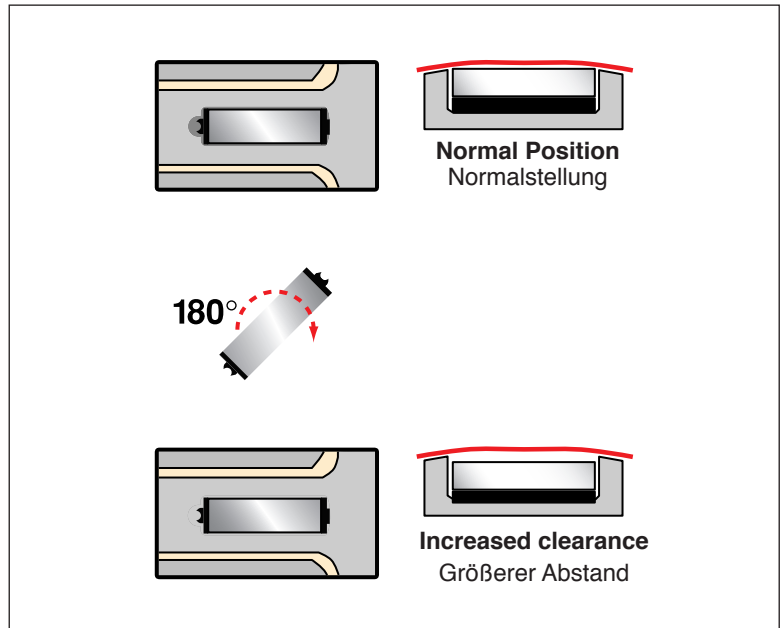


Opto sensor

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.

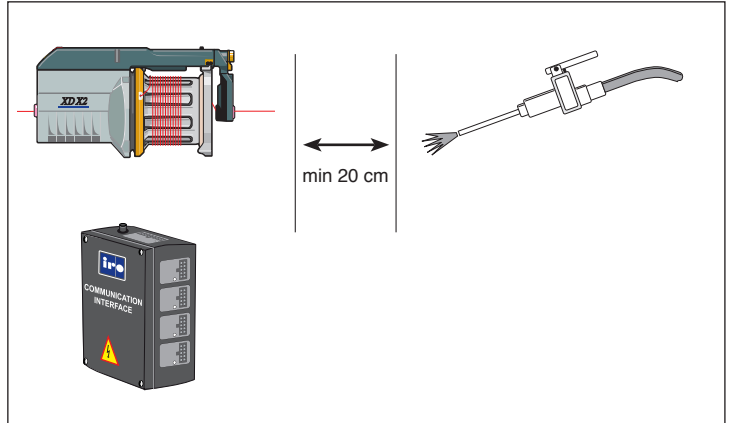


Adjust the clearance by rotating the mirror 180 degrees.



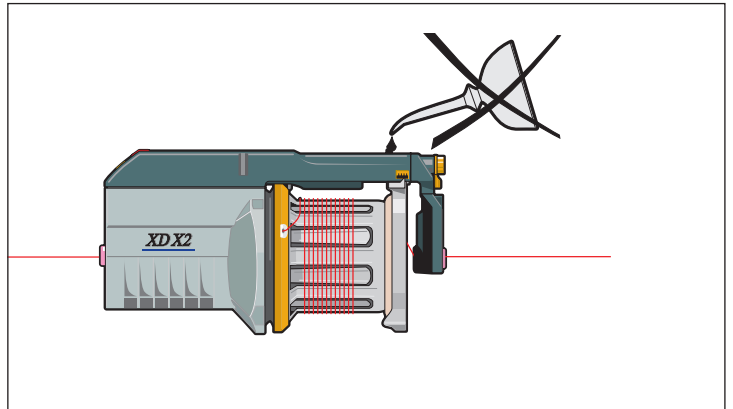
CLEANING

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.

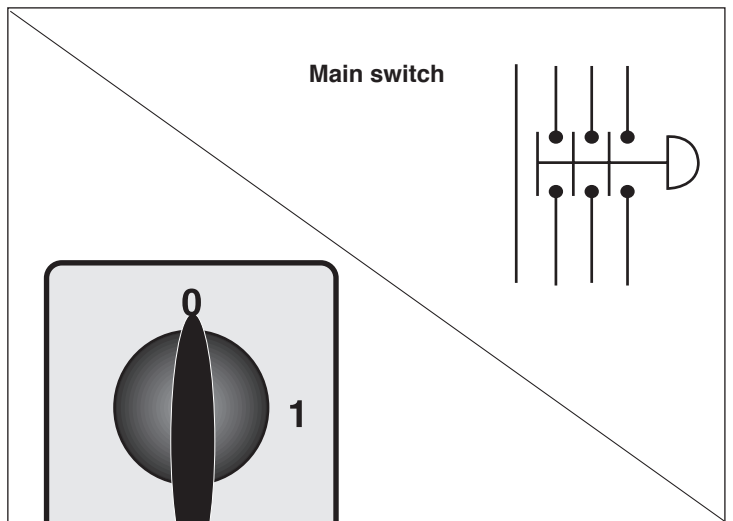


CONNECTIONS



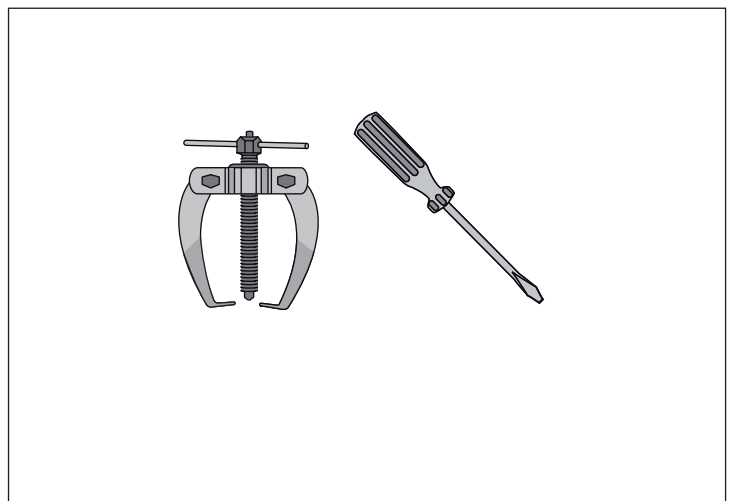
WARNING

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.

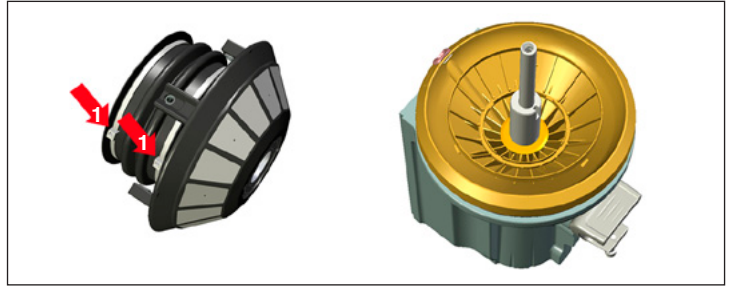


IRO/ ROJ TOOL KIT

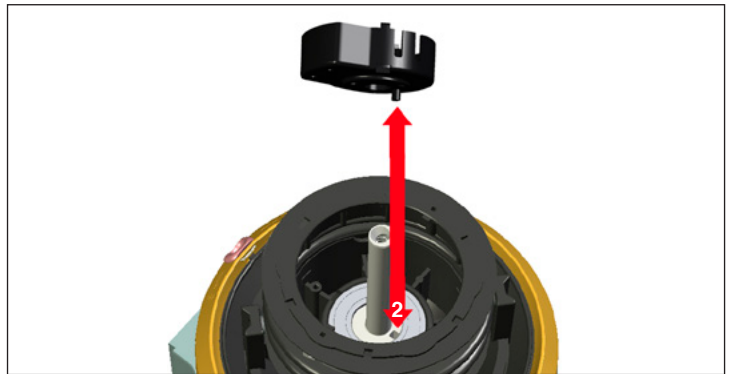
It is recommended to use IRO tool kit, with specialised tools, to ensure easy and correct disassembly/ assembly of IRO feeders during maintenance work. Please contact your local IRO service station for further information.



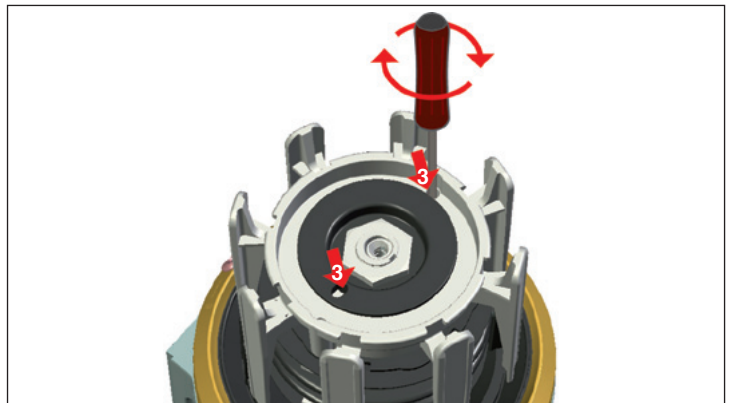
After disassembling, it is necessary to install the spool-body part by part to avoid damaging the parts. Secure the bellow properly with plastic straps (1).



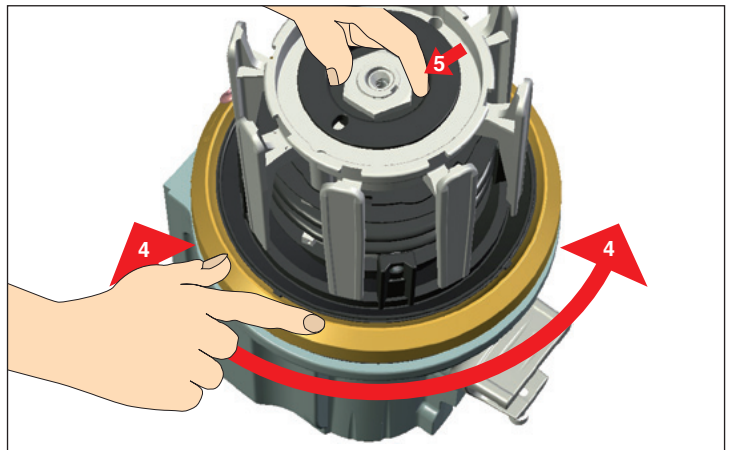
Be sure that the carrier pin fits into the keygroove in the motor shaft (2).



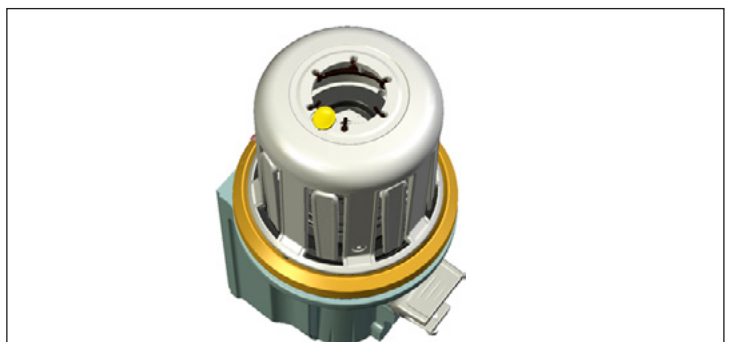
Insert the two screws for the rubber belly (3) and be sure they are properly tightened with the correct key. (Torx T10)



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.

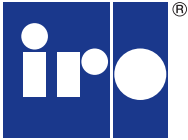


Install the centre screw, outer rubber belly, spool-body and cover. Set the yarn separation in a suitable position to be sure it is correctly assembled.



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

| No | Possible causes | Remedies | See page |
|-----|---|---|----------|
| 1. | Incorrect S/Z switch position | Set the S/Z switch in appropriate position | 14 |
| 2. | Incorrect spoolbody position | Ensure the sensor unit is positioned upwards | 19 |
| 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 | 19 |
| 6. | Faulty cable connections | Check and rectify | 4-7 |
| 7. | Fuses blown | Replace the relevant fuse | 6-7 |
| 8. | Mains supply / primary voltage fault | Check the mains supply and connections | 4-7 |
| 9. | Insufficient input tension | Increase the input tension | 12-13 |
| 10. | Excessive input tension | Reduce the input tension | 12-13 |
| 11. | Insufficient balloon control | Increase the balloon control | 17 |
| 12. | Excessive output tension | Reduce the output tension | 17 |
| 13. | Excessive yarn separation | Reduce the yarn separation | 14 |
| 17. | Insufficient max speed setting | Increase the max speed setting | 11 |
| 18. | Excessive max speed setting | Reduce the max speed setting | 11 |
| 19. | Insufficient yarn store | See "low or empty yarn store" under "fault" | - |
| 20. | Damaged balloon control | Repair/replace all defective parts | 12-13 |
| 21. | Stop signal fault between control box and weaving M/C | Check all connections/cable | 6-7 |
| 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 | 5 |
| 26. | Defective fuse panel | Replace the relevant fuse panel | 6-7 |
| 27. | Defective control box interface | Replace the relevant interface | 6-7 |
| 28. | Defective feeder connection cable | Replace the relevant connection cable | - |
| 29. | Yarn break | Rethread the feeder | 15-16 |



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**EC DECLARATION OF CONFORMITY
 EG-KONFORMITÄTSEKTLÄRUNG
 DECLARATION CE DE CONFORMITE
 DICHIARAZIONE CE DI CONFORMITA'
 DECLARACIÓN DE CONFORMIDAD CE
 DECLARAÇÃO CE DE CONFORMIDADE CE**

Guarantee that machine type:.....
Versichert dass der Maschinentyp:.....
Garantie pour machine type:.....
Garantisce che il tipo di macchina:.....
Garantia que é o tipo de máquina:.....
Garantiza de que os tipos de máquinas:....

XD-X2

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

Ist gemäss der folgenden für Maschinen geltenden EG-Richtlinien hergestellt worden (damit auch alle zusätzliche Änderungen)

Est fabriqué en conformité aux dispositions des directives CE suivantes (y compris tous les amendements):

E' costruito in conformità a quanto previsto dalle seguenti direttive UE e successive modifiche:

Està fabricado conforme con las disposiciones de las debajo mencionadas directivas CE (y sucesivas)

| | | |
|--------------------------------------|----------------------|------------------------|
| Safety of machinery | 98/ 37/ EEC | 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 |