ENGLISH

Ref. No. 40-893B-0801-01/1409

Operating Instructions

Laser G2, Star G2, Laser G2 290, Star G2 290

IRO AB Box 54 SE-523 22 Ulricehamn SWEDEN
Tel: (+46) 321 297 00 Fax: (+46) 321 298 00 info@iro.se www.iroab.com

Original language instruction

Contents

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.

IRO AB reserve the right to change the contents of the user's guide and technical specifications without prior notification.

WARNING!

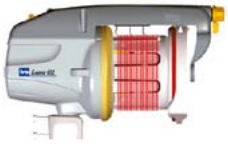
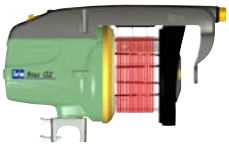
- **The power supply must be switched off at the mains before any work is carried out on the feeder, the transformer or any other electrical components. The feeder and the transformer cabinet and cable covers must be fully assembled before the power supply is connected.**
- **The weft feeder ON/OFF-switch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

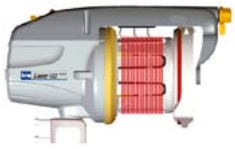
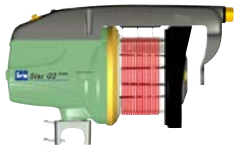
NOTE

- **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.**
- **All products in this manual may not be available for your market.**

	Laser G2	Star G2
		
m/min	Max 1400 m/min	Max 1200 m/min
kg	4,9 kg	4,7 kg
	Min 5° C - Max 40° C	Min 5° C - Max 40° C
	RH max 85 %	RH max 85 %
	Sound pressure L_{pa} 76 dB (A)	Sound pressure L_{pa} 76 dB (A)
	Ø max 5 mm	Ø max 5 mm
P	Input air pressure 5,5 - 7 bar	Input air pressure 5,5 - 7 bar
	Max 2,2 mm	Max 2,2 mm
Power Supply/ Interface		
	200 - 575V 400VA	200 - 575V 400VA
Fuse	Max T 10A	Max T 10A
kg	3,3 kg	3,3 kg

NOTE

Subject to technical modifications.

		Laser G2 290	Star G2 290
			
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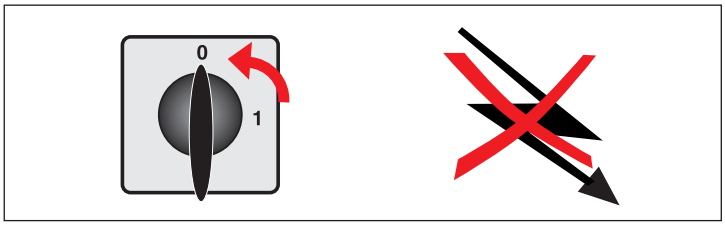
		Ø max 5 mm	Ø max 5 mm
	P	Input air pressure 5,5 - 7 bar	Input air pressure 5,5 - 7 bar
		Max 2,2 mm	Max 2,2 mm
Interface			
		Power supply via loom	Power supply via loom
	kg Fuse	1.4 kg	1.4 kg

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.



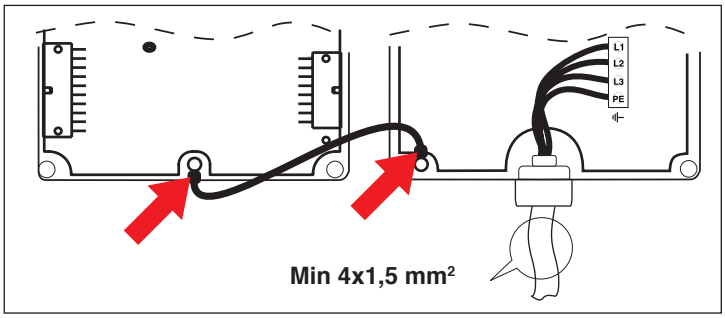
WARNING!

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

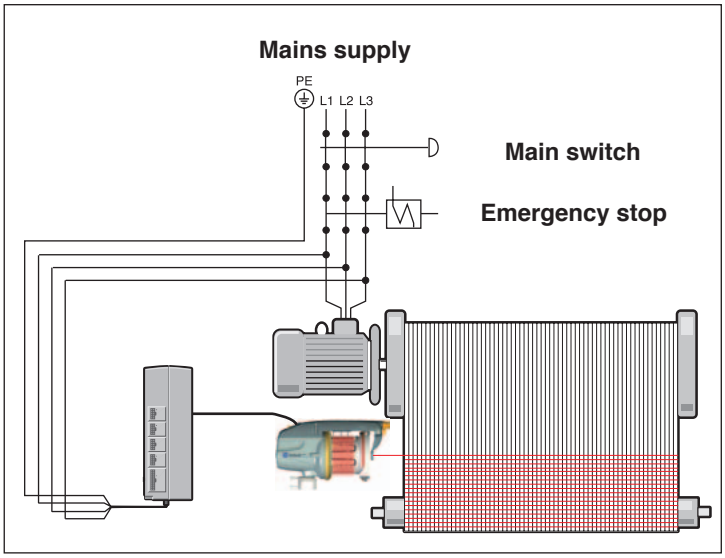
NOTE

Make sure that the cabel 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^2.



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

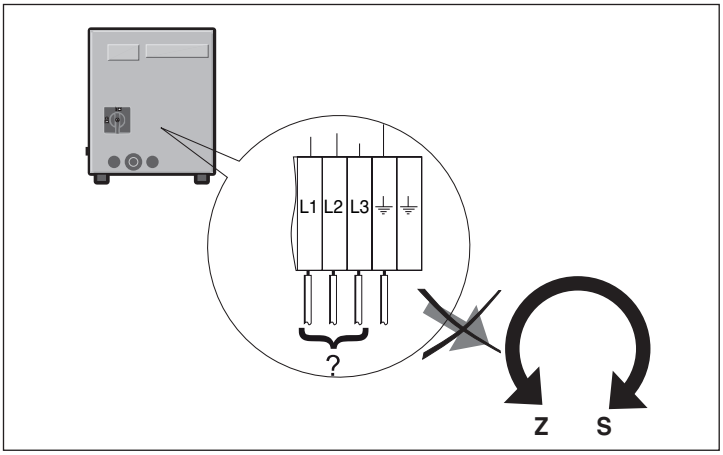


Laser G2, Star G2

Variations in main voltage.

Nominal	Voltage +/- 10%	Frequence
200 - 220 V	190 - 230 V	50/ 60 Hz
260 V	235 - 285 V	50/ 60 Hz
346 V	310 - 380 V	50/ 60 Hz
380 V	340 - 420 V	50/ 60 Hz
400/ 415 V	365 - 445 V	50/ 60 Hz
440/460 V	405 - 495 V	50/ 60 Hz
480/ 500 V	440 - 540 V	50/ 60 Hz
550/ 575/ 600 V	520 - 630 V	50/ 60 Hz

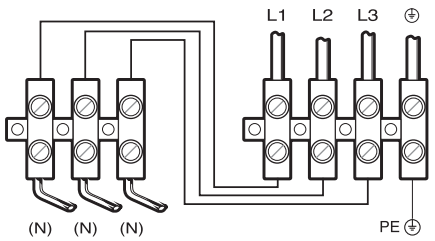
The phase sequence does not effect the direction of rotation.



Laser G2, Star G2

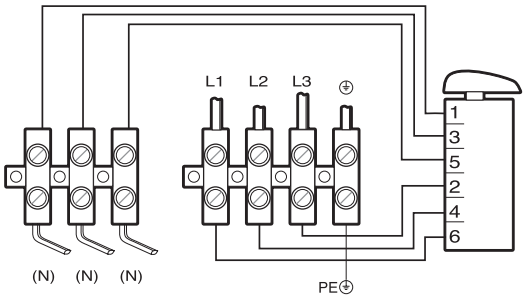
Check the wiring diagram before any connections are carried out.

Control box WITHOUT main switch

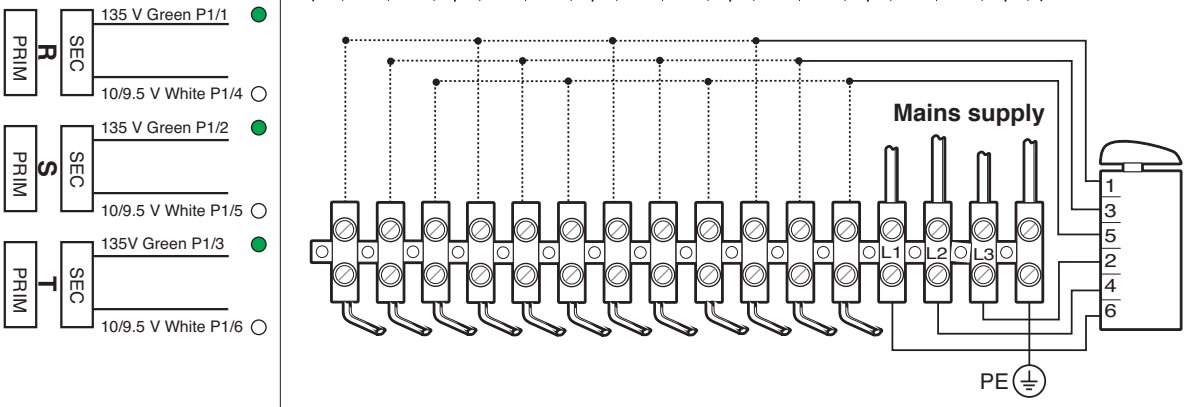


Control box WITH main switch

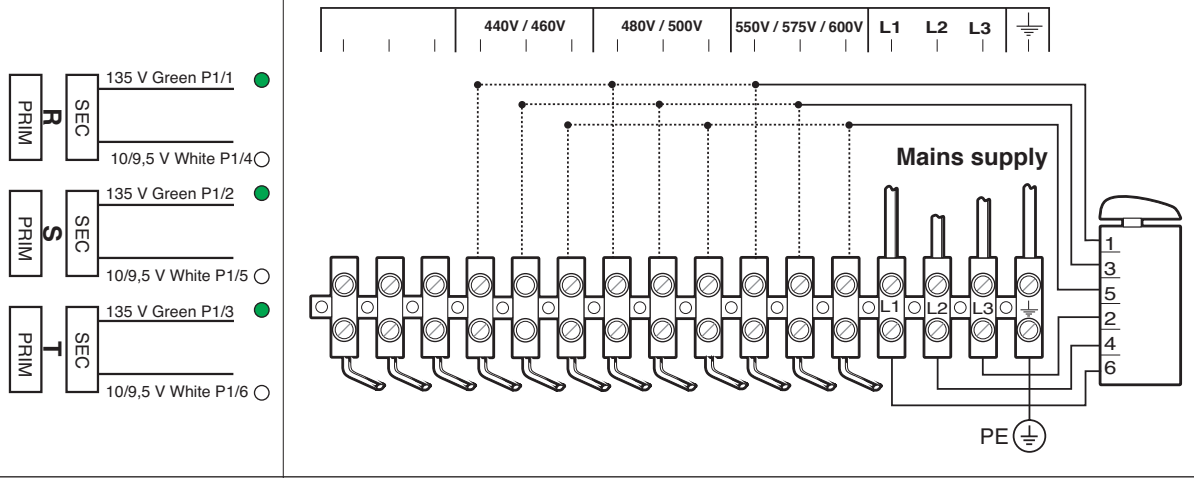
The mains supply shall be connected to L1, L2, L3 and EARTH.



200V/ 220V - 346V - 380V - 400V/ 415V



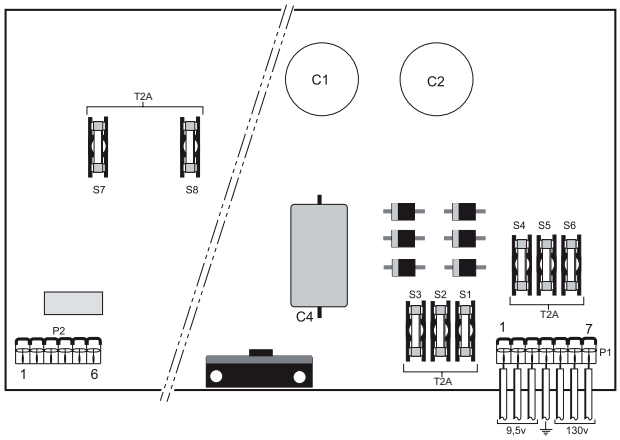
440V/ 460V - 480V/ 500V - 550V/ 575V/ 600V



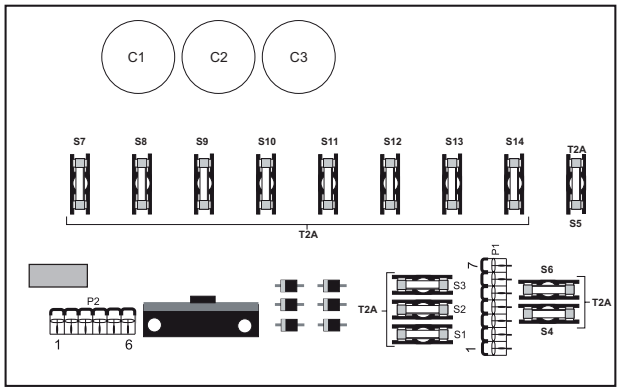
Laser G2, Star G2

Control box 4129 fuse panel

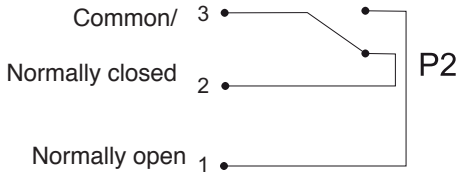
2 and 4 colour



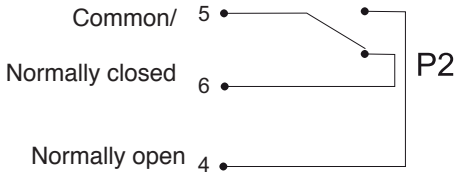
8 colour



Machine stop

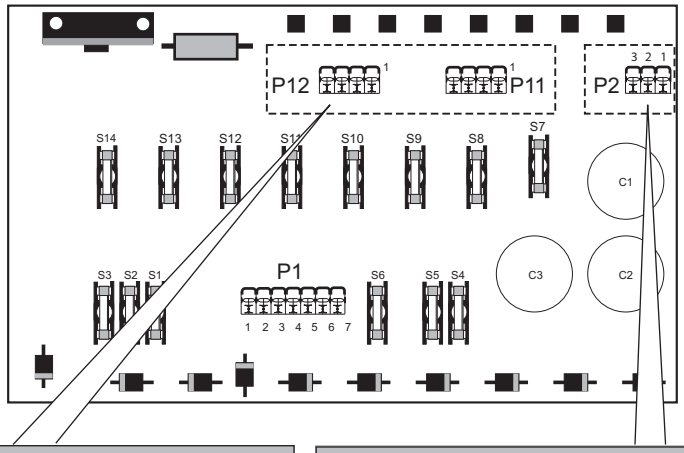


Stop indicator

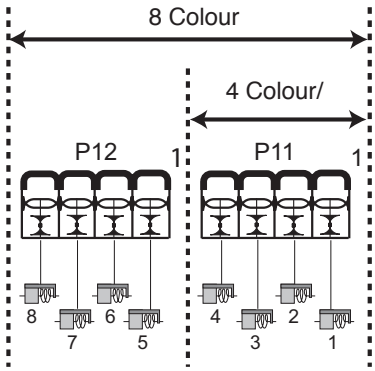


Control box 4729 fuse panel

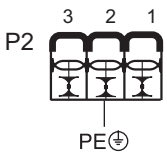
4 and 8 colour



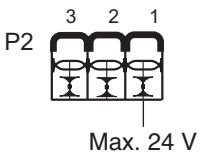
Signal to weaving machine



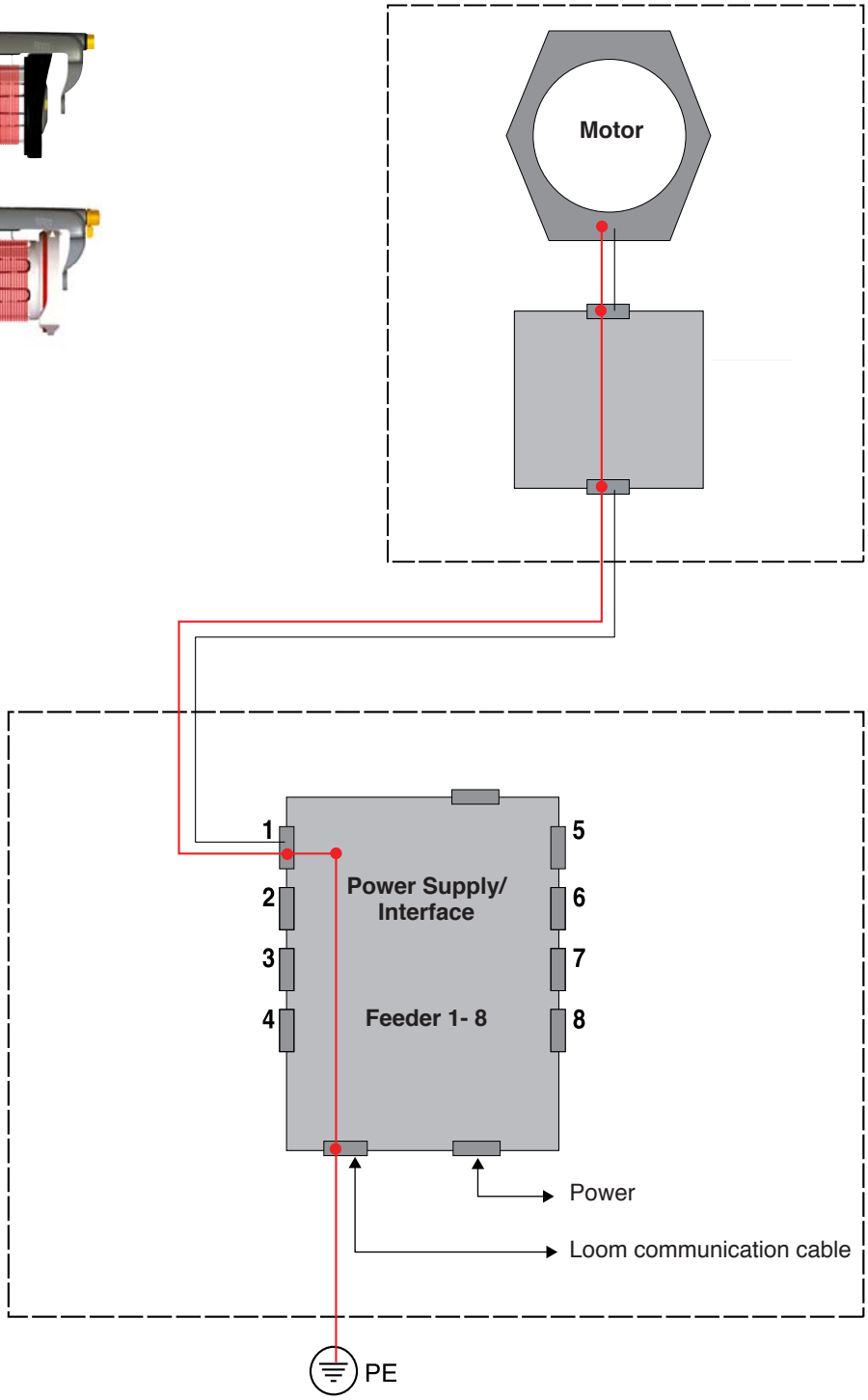
Opto coupler, low



Opto coupler, high

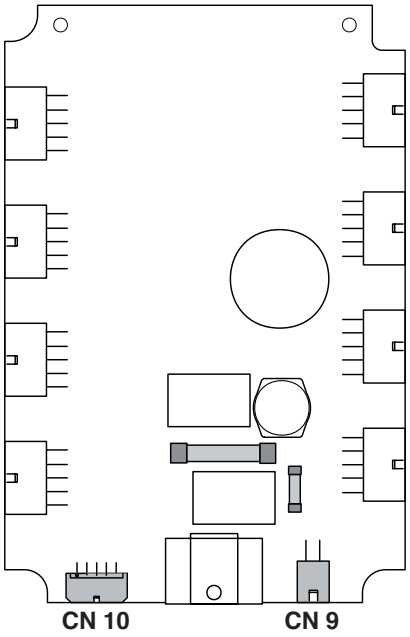


Laser G2 290, Star G2 290



Laser G2 290, Star G2 290

Interface
Power supplied via loom



Connectors			
CN 10		CN 9	
1	BBK 1	1	290V DC
2	BBK 2	2	26V DC
3	BBK 3	3	GND - PWR
4	BBK 4	4	GND - PE
5	BBK 5		
6	BBK 6		
7	BBK 7		
8	BBK 8		
9	Common loom stop		
10	Loom 26V DC		

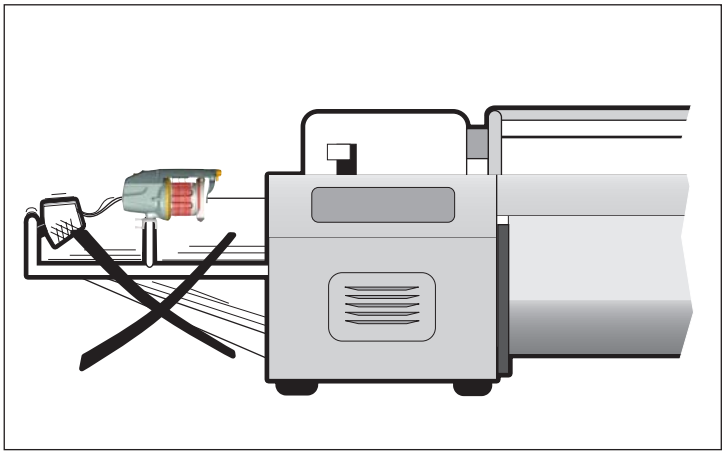
Fuses	
F1	F2
3,15A slow	5A slow

NOTE

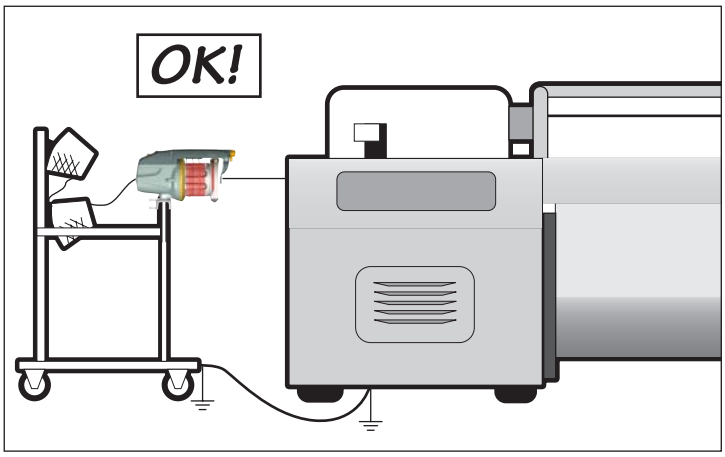
Condensation can form on the weft feeder when it is moved from the cold environment of the warehouse to the warmer environment of the loom room. Make sure that the feeder is dry before switching it on.

CAUTION!

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



Use a separate floor stand.



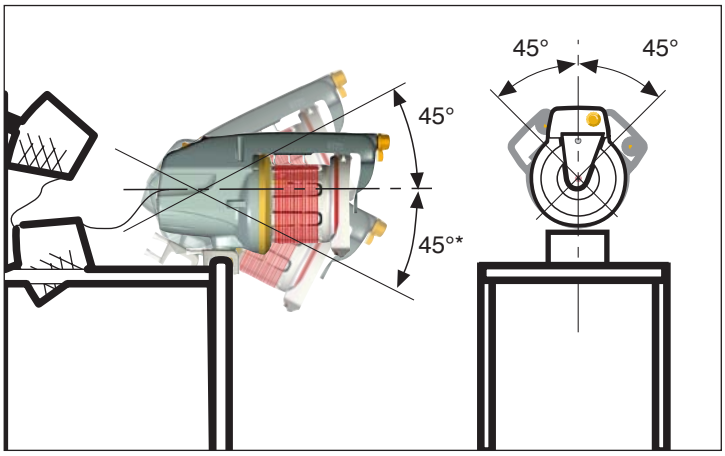
NOTE

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

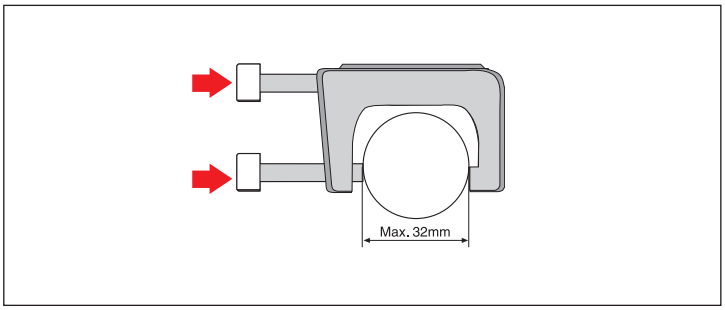
NOTE

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

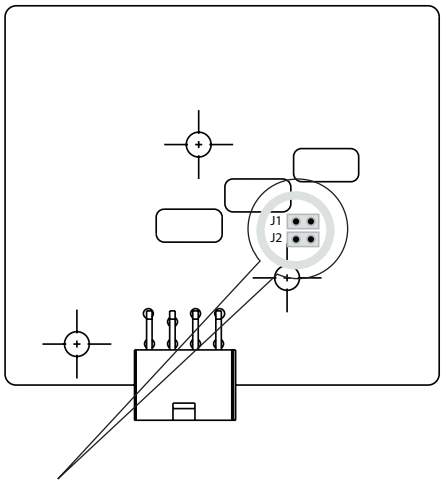
Feeders with Mechanical sensors must be mounted within 45° of the horizontal plane.
*Max 15° with low sensor spring force.(see page 19)



Ensure that the mount screws are correctly tightened.



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).

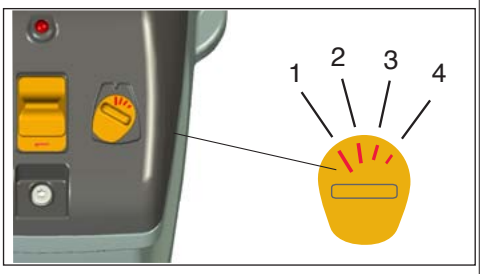


J1		Yarn break sensor filtering- RIGID YARNS
J1		Yarn break sensor filtering- NORMAL
J2		Stand-by mode - ENABLE
J2		Stand-by mode DISABLE

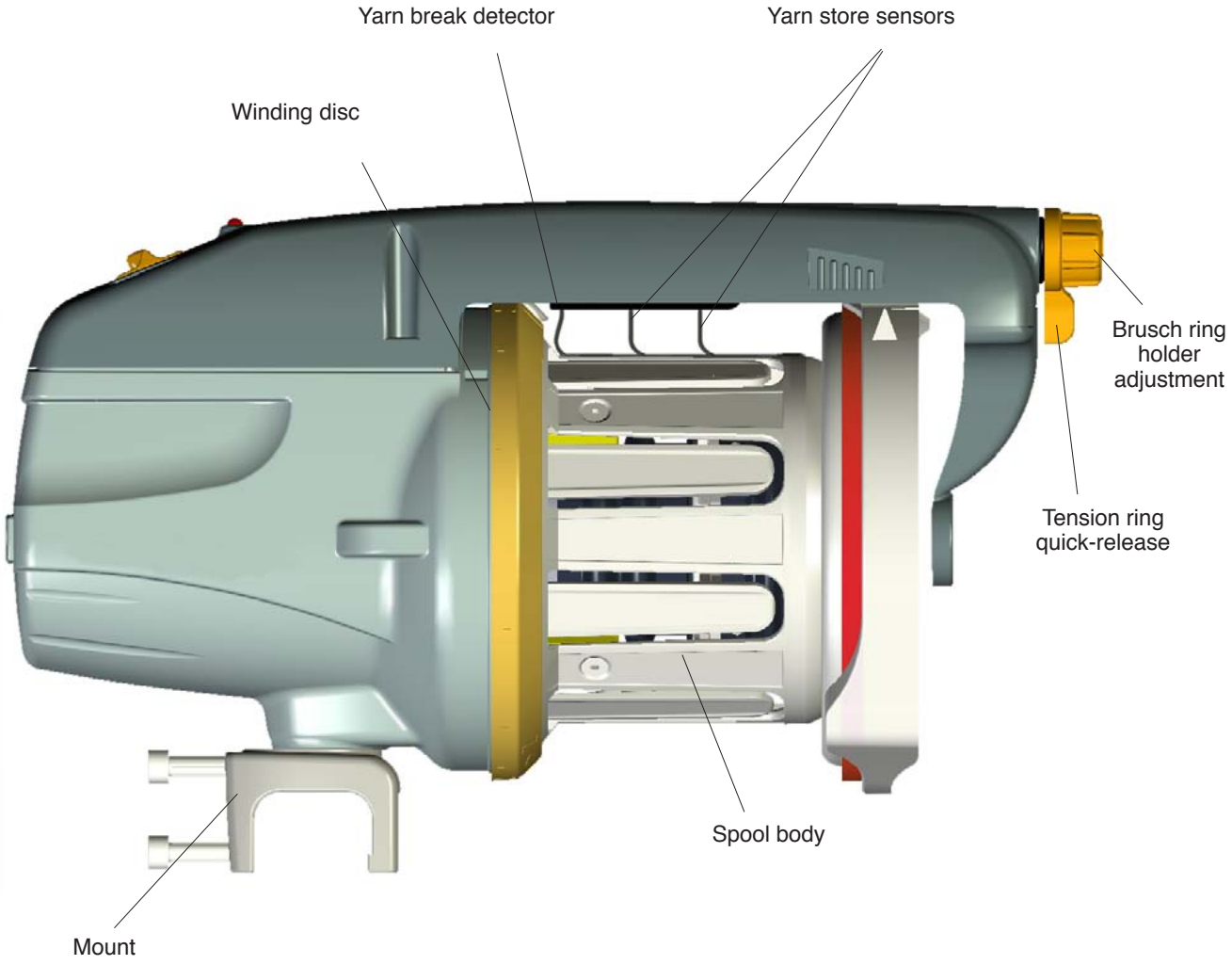
To set the maximum speed rotate the disc to the appropriate position.

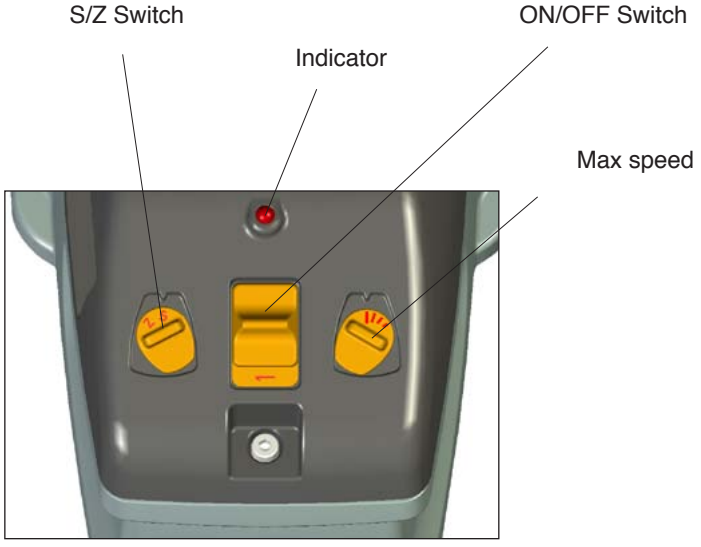
NOTE

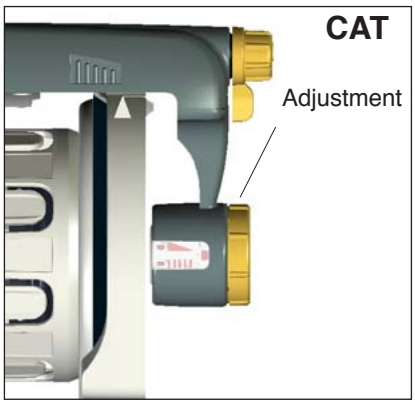
Normally the switch should be left at posistion 1 since the feeder automatically calculates the speed according to yarn consumption. However, with very low speeds or wide looms, it could be helpful to reduce the maximum speed in order to avoid unnecessary acceleration

	Laser G2	Star G2	Laser G2 290	Star G2 290
	1 = 1400 m/min 2 = 1120 m/min 3 = 750 m/min 4 = 450 m/min	1 = 1200 m/min 2 = 960 m/min 3 = 630 m/min 4 = 400 m/min	1 = 1400 m/min 2 = 1120 m/min 3 = 750 m/min 4 = 450 m/min	1 = 1200 m/min 2 = 950 m/min 3 = 650 m/min 4 = 400 m/min

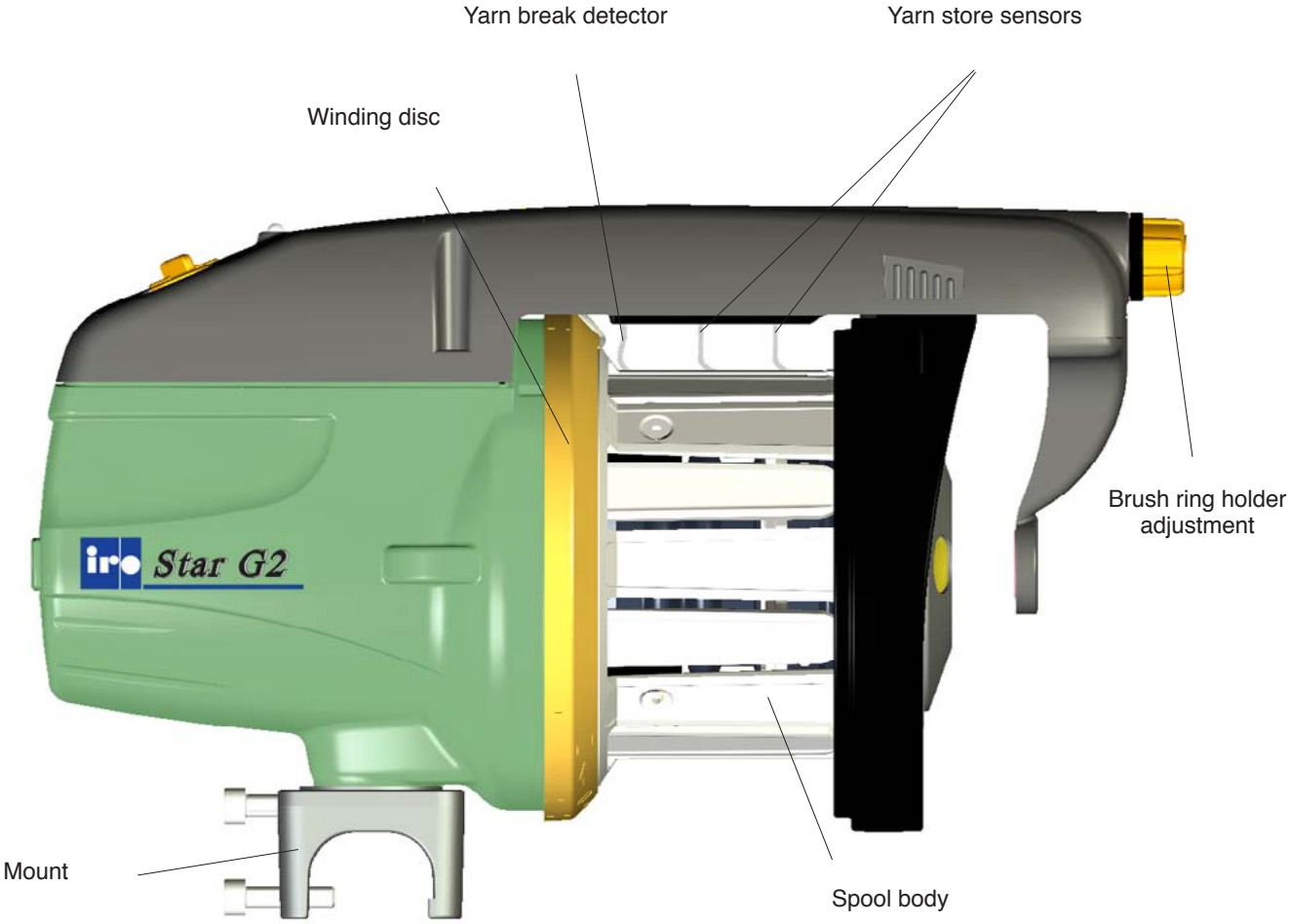
Laser G2 290, Laser G2

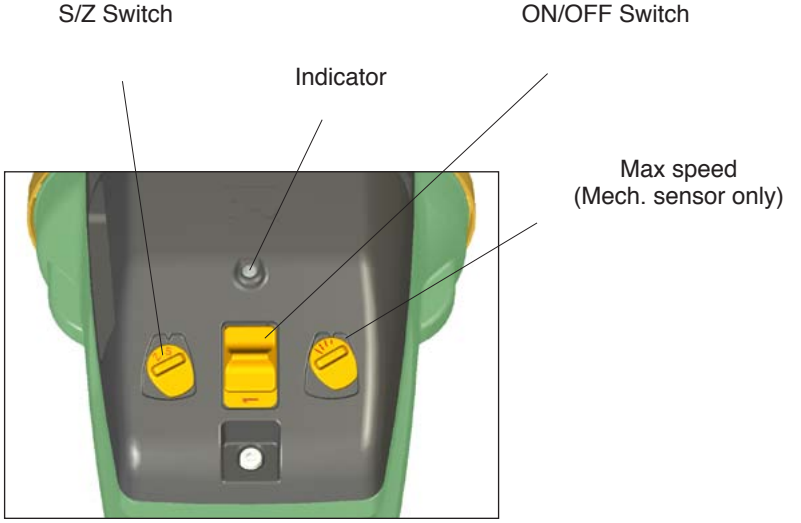


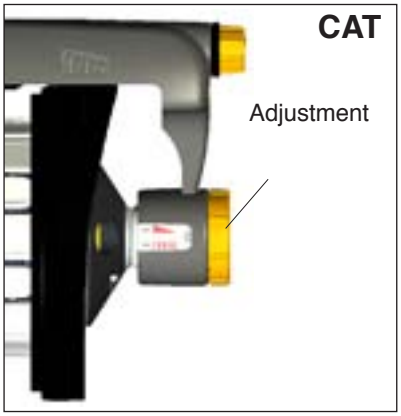




Star G2, Star G2 290

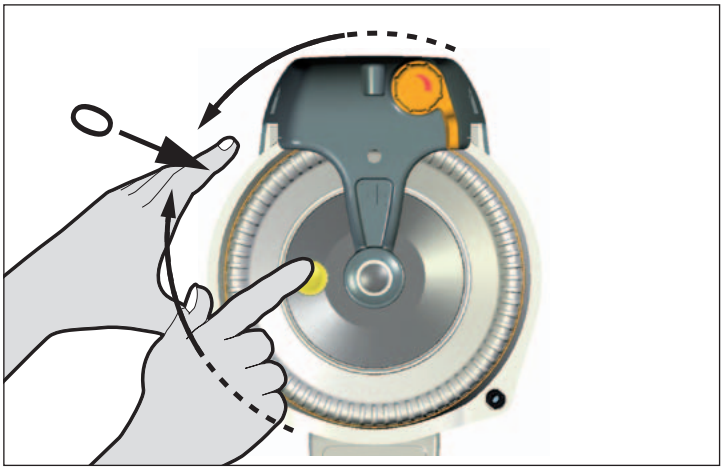




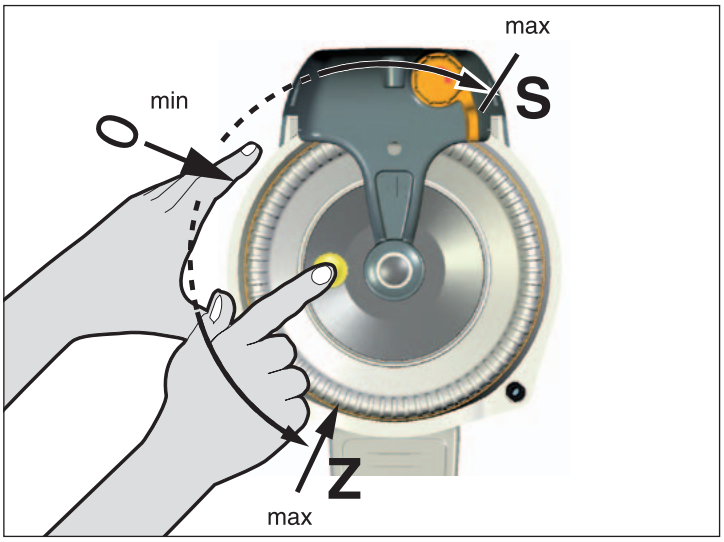


Switch off the feeder.

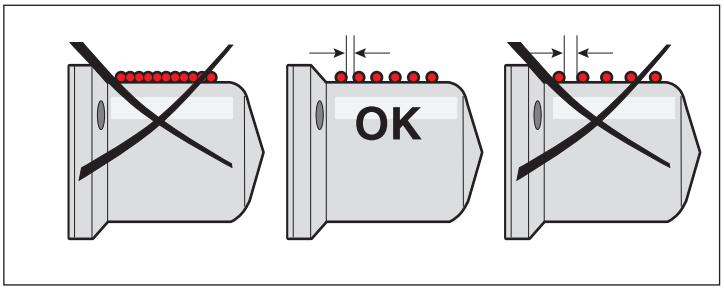
Grip the winding disc and, whilst pressing the orange button on the front of the spool body, rotate the disc until the button is felt to locate. Aligning the mark on the winding disc with the line on the motor house gives the zero separation position.



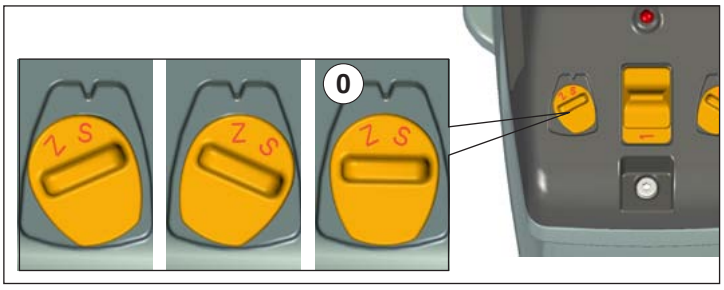
To adjust, press in the button and revolve the winding disc in the appropriate direction.
The separation increases from 0 to 2.2 mm the more the disc is rotated.



The separation must be distinct, but not excessive.

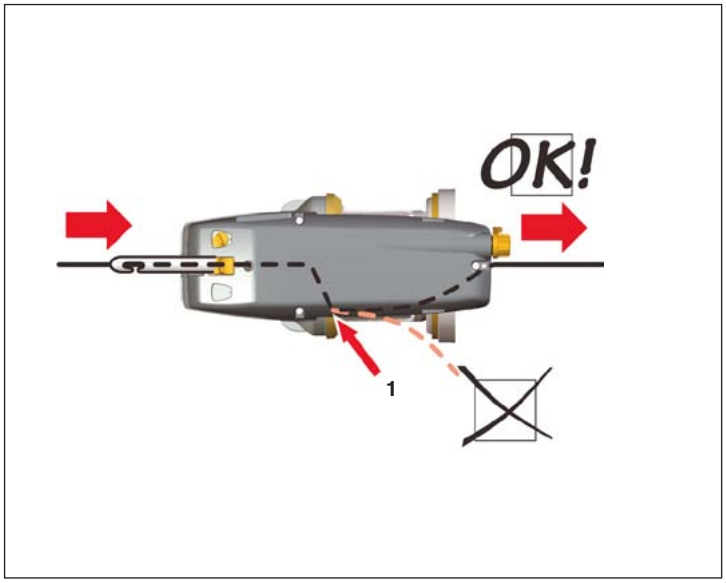


Set the direction of rotation with the switch.



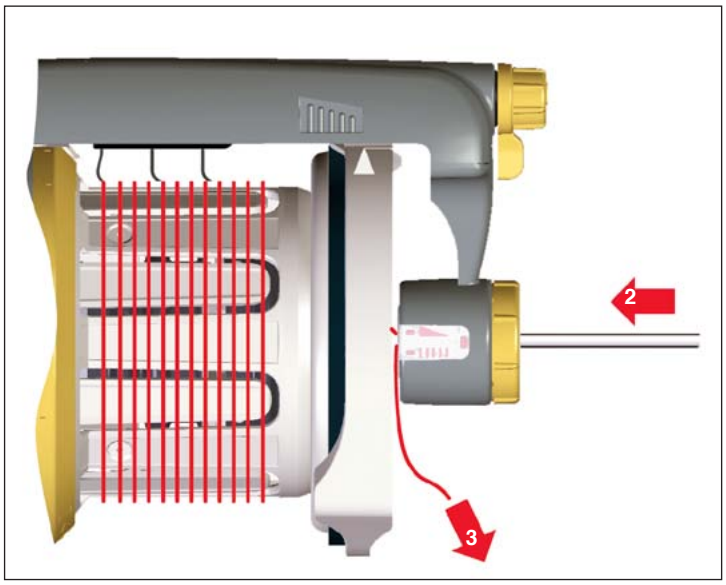
WITHOUT CAT

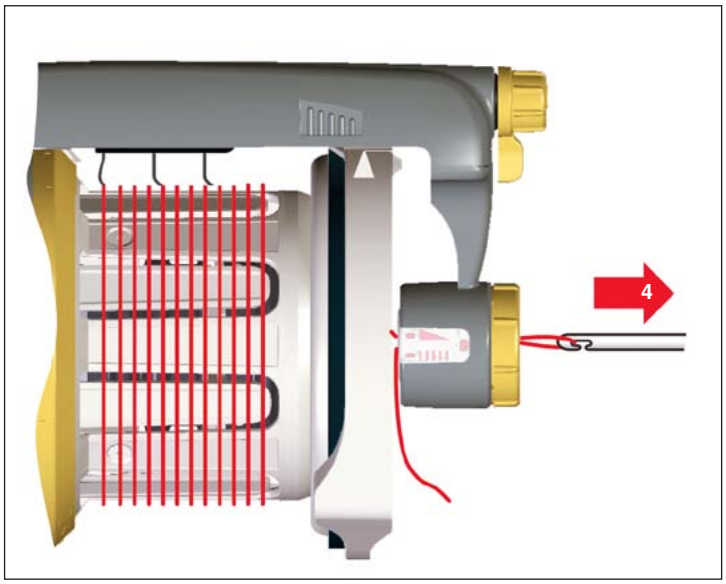
- Switch off the feeder.
- Align the winding disc eyelet (1).
- Open the brush holder (see page 32).
- Thread the needle all the way through the feeder and output eyelet.
- Pull the yarn through.
- Restart the feeder.



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.



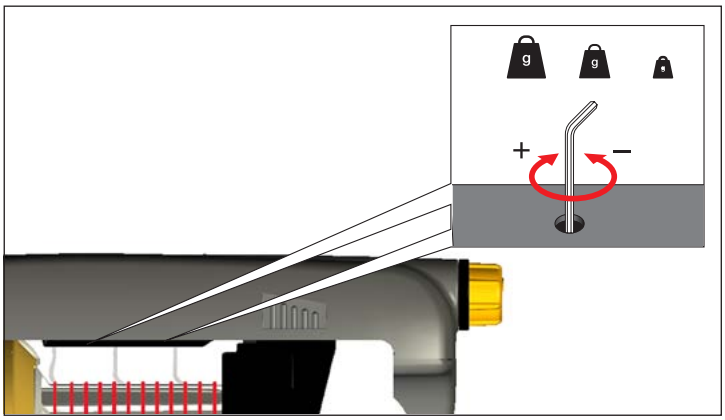


WARNING

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.

The sensors are adjustable in three stages:

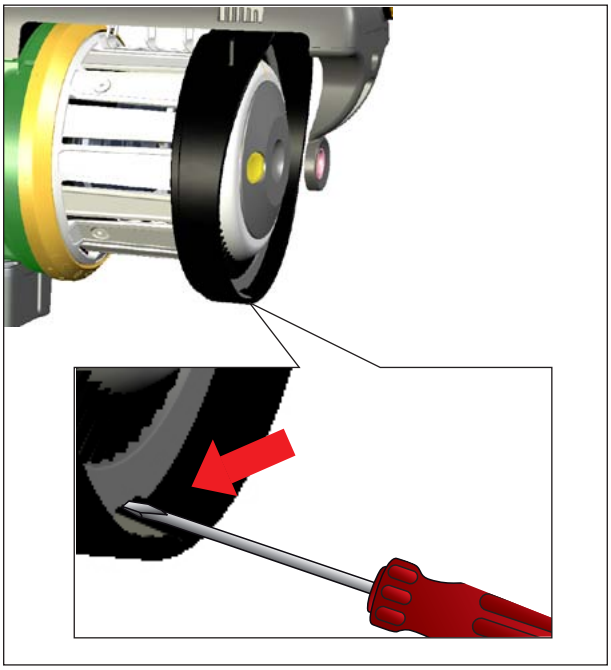
Level 1 - Very fine yarns
Level 2 - Normal setting
Level 3 - Very heavy yarns



Alternative for Star G2, Star G2 290

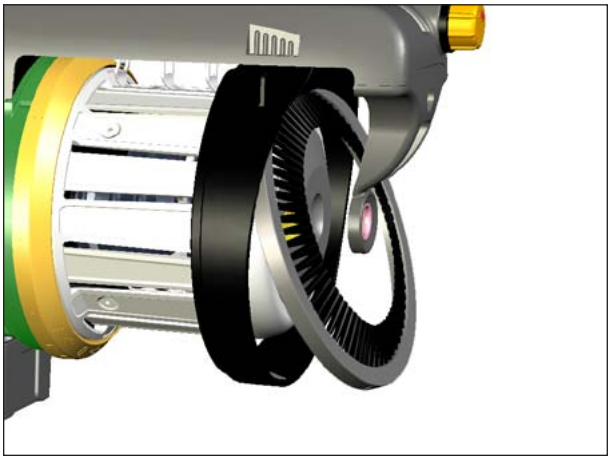
REMOVE THE BRUSH RING

Press down the lip on the slide with a screwdriver.
Pull off the brush ring.



REPLACE THE BRUSH RING

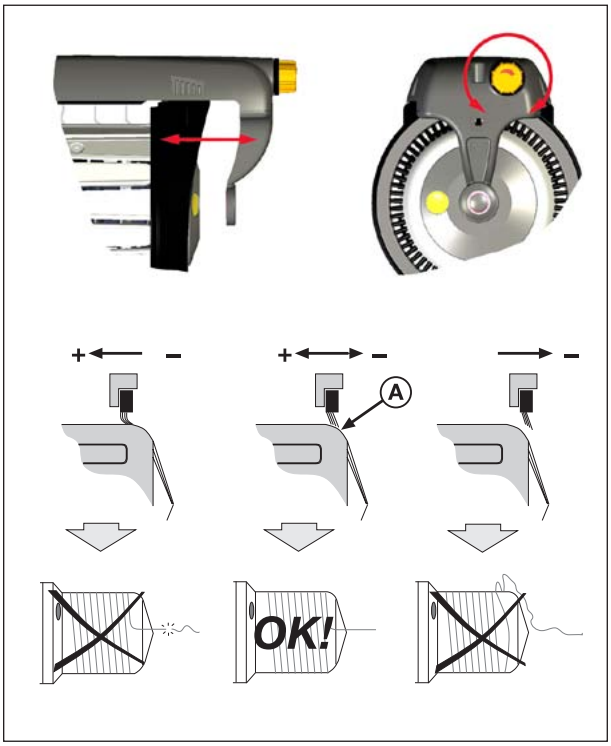
Press the brush ring on to the slide. The 'click' ensures that the brush ring is properly positioned.



ADJUST THE BALLOON CONTROL

NOTE

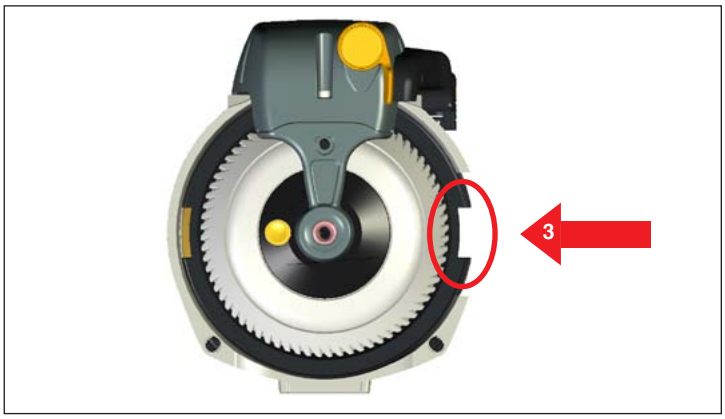
Excessive brush tension will cause abnormal wear.



FLEX/BRUSH MOUNTING

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

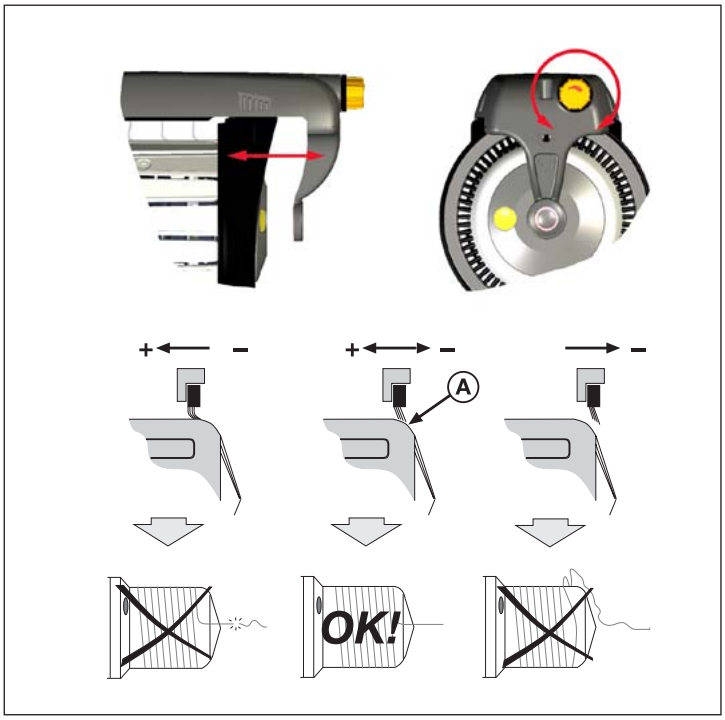
Ensure that the brush ring is correctly positioned (3).



ADJUST THE BALLOON CONTROL.

NOTE

Excessive brush tension will cause abnormal wear.

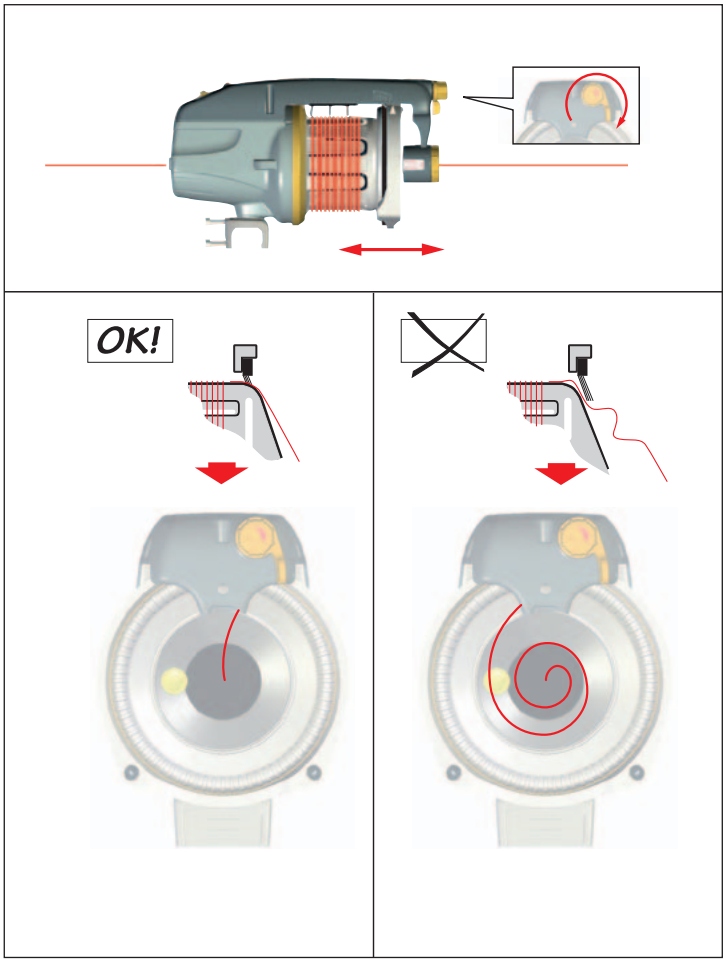


INPUT TENSION

Control input yarn tension to the CAT.

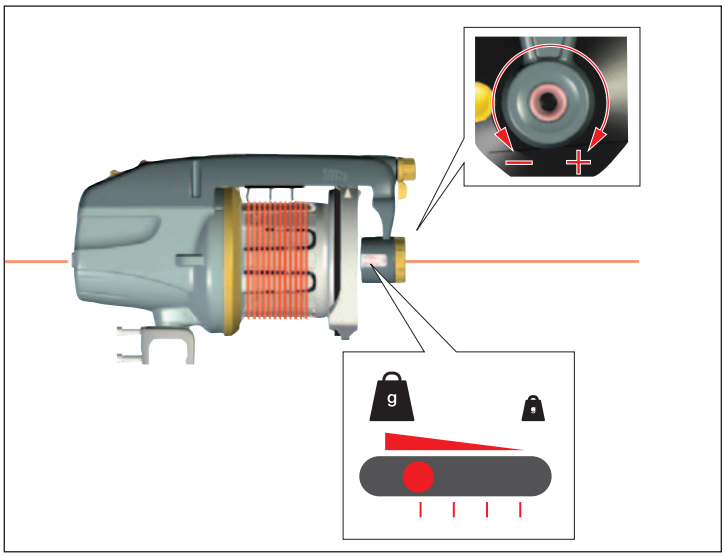
NOTE

The brush ring should only be used for balloon control.



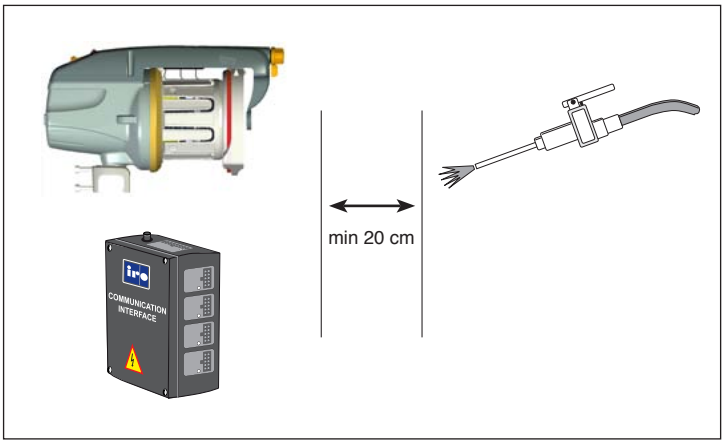
OUTPUT TENSION

Adjustment of the output tension.



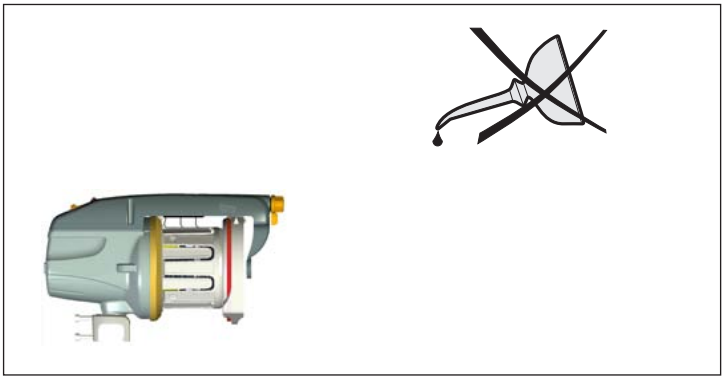
CLEANING

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



LUBRICATION

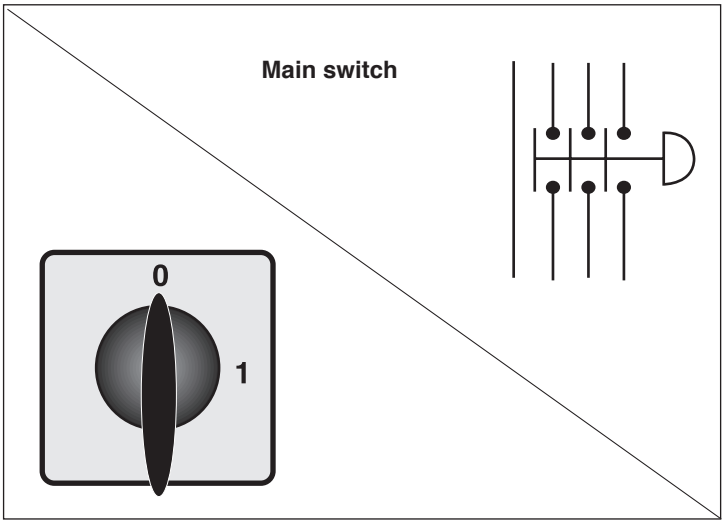
The unit requires no extra lubrication.



CONNECTIONS

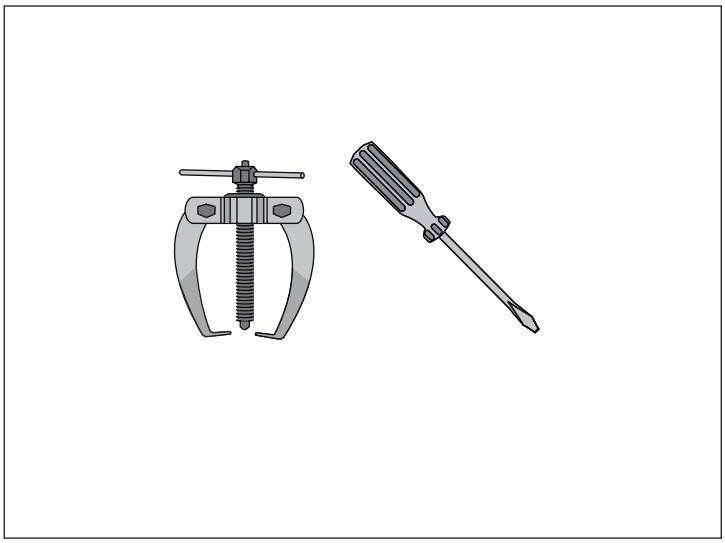
WARNING

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.



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

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

EC DECLARATION OF CONFORMITY

IRO AB
Box 54
SE-523 22 Ulricehamn

Guarantee that machine type:

Laser G2, Star G2, Laser G2 290, Star G2 290

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

Safety of machinery	2006/42/EEC	EN ISO 111 11-1
Low voltage equipment	2006/ 95/ EC	EN ISO 111 11-1
Electromagnetic compatility	2004/ 108/ EC	EN ISO 111 11-1

Pär Josefsson, Manager Product and Development department, 2007-12-01