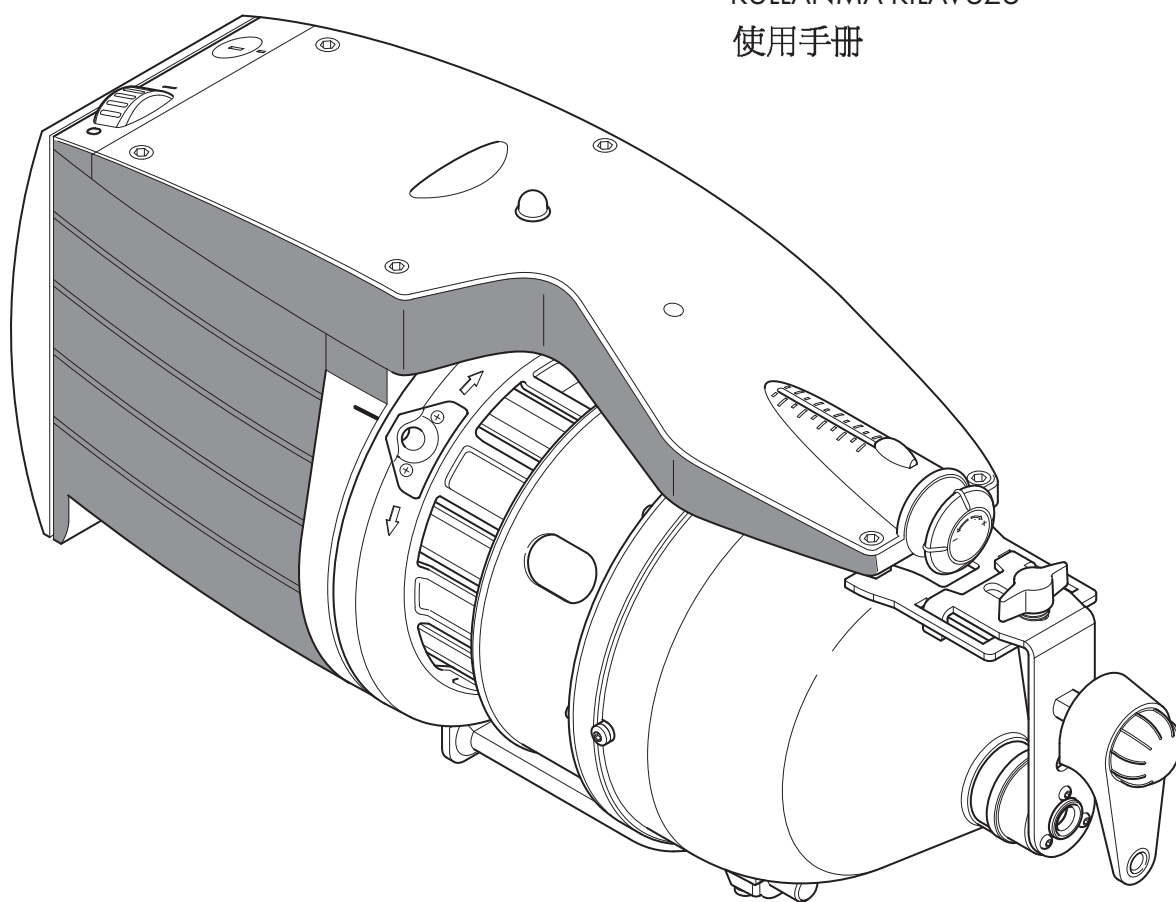




TECNICO

MANUALE DI ISTRUZIONE
INSTRUCTION MANUAL
NOTICE D'INSTRUCTIONS
BEDIENUNGSANLEITUNG
KULLANMA KILAVUZU
使用手册



ALIMENTATORE DI TRAMA A SPIRE SEPARATE REGOLABILI
WEFT ACCUMULATOR WITH SEPARATE ADJUSTABLE COILS
DELIVREUR DE TRAME A SPIRES SEPARÉES REGLABLES
VORSPULGERÄT MIT EINSTELLBAREN SEPARATEN WINDUNGEN
IPLIKLER ARASI MESAFESI AYARLANABİLİR ATKI AKÜMÜLATÖRÜ
分离线圈导纱器



Scope of supply: Design, manufacture and after sales service of yarn and weft feeders, measuring winders, stands, creels and oil systems for textile machinery.

TRADUZIONI DELLE ISTRUZIONI ORIGINALI.
TRANSLATION OF THE ORIGINAL INSTRUCTIONS.
TRADUCTIONS DES INSTRUCTIONS D'ORIGINE.
ÜBERSETZUNG DER ORIGINALANLEITUNGEN.
ORJİNAL TALİMATLARIN TERCÜMESİ.
原始使用说明书的翻译.

**LGL Electronics is gratified by your choice
and thanks you for the preference.**

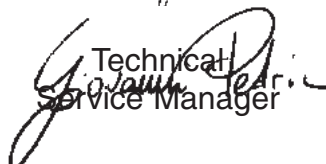
**INSTRUCTION MANUAL
weft accumulator
TECNICO**

ISSUED BY:


S. I. A.
Manager

Date: 01/02/2010

APPROVED BY:


Technical
Service Manager

Date: 01/02/2010

CAUTIONS



- 1) ***Switch off the power supply box and the weft accumulator before starting any connections, maintenance or replacements.***
- 2) ***Switch the weft accumulator off before carrying out any adjustments.***



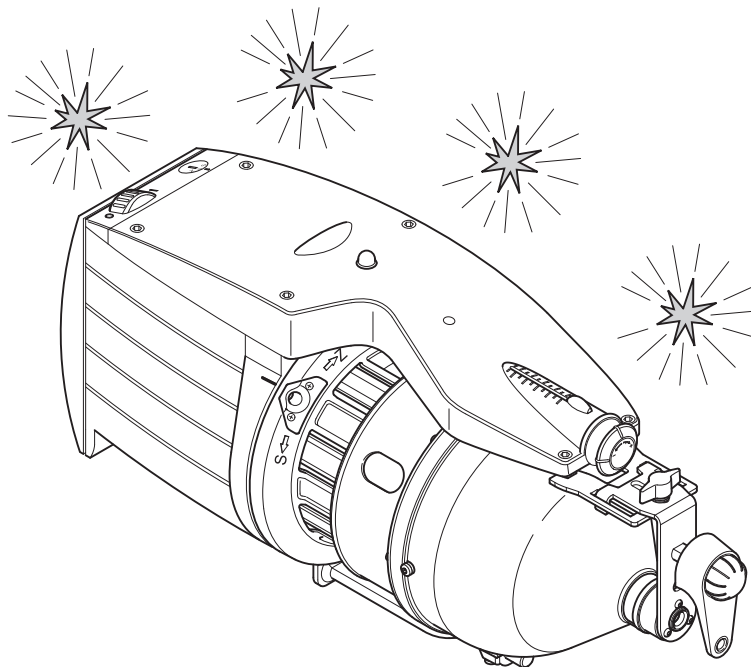
- 3) ***If the weft accumulator is fitted with a kit for pneumatic threading, discharge all the compressed air before removing the rear cover.***
- 4) ***The weft accumulator can be started, if enabled by the loom, at any time during normal operation, without forewarning.***
- 5) ***Check the feeder to ensure it is intact (flywheel, flywheel bush, moving parts).***
- 6) ***Never touch any moving parts when the equipment is running.***
- 7) ***The machine is not fit to operate in work places featuring high explosion risks.***



- 8) ***Condensation may form on a weft accumulator that has been stored in cold places when this is brought into a warm area. Wait until this is completely dry before connecting it, otherwise the electronic components could be damaged.***
- 9) ***Never take hold of the weft accumulator by the weft spool body or the weft feeler unit.***
- 10) ***Only use original L.G.L. Electronics spare parts and accessories.***
- 11) ***Electronic parts must only be repaired by suitably trained personnel authorised by L.G.L. Electronics.***

CAUTIONS

ADVICE TO ALWAYS KEEP THE FEEDER IN PERFECT WORKING ORDER AND EXTEND ITS SERVICE LIFE.



For an always satisfying performance of the weft feeder over the years, we deem it advisable to provide you with some simple tricks:

- 1. At the time of installation, passing from the store to the warm weaving environment, Condensation may form on a weft accumulator that has been stored in cold places when this is brought into a warm area. Wait until this is completely dry before connecting it, otherwise the electronic components could be damaged.*
- 2. Water and dampness may harm the electronic parts of the feeder. Operating the weft feeder for long time periods in extremely damp environments (dampness exceeding 80%) or using water-impregnated threads might quickly compromise the electronic cards. Moreover, the feeder shall not be cleaned with water or similar substances.*
- 3. Upon installation, before injecting voltage to the feeder, ensure that the round wires are all hooked-up. Any insufficient grounding may damage electronic components.*
- 4. Machines working in environments featuring a lot of dust require increased maintenance. By prevent the weaving environment clean, you avoid residual dirt and dust from compromising the performance of the machine by stressing the moving parts. The latter are protected, but the accumulation of dust might result in a more difficult movement and, as consequence, in early wear-and-tear.*
- 5. In the presence of dusty yarns, residual dust or thread may settle on the various parts of the weft feeder. A weft feeder that is particularly dirty is likely to compromise the fabric quality by leaving deposits on the threads that is introduced.*

CAUTIONS

In order to improve the fabric in quality as well as the machine overall performance, it is good rule to routinely clean the mechanical moving parts:

- By blowing compressed air from the ceramic of the flywheel, you may clean the shaft channel and remove any residual dust from the input sensor. Warning: Before using compressed air to clean the feeder, ensure you remove the thread from the drum. If you use compressed air with the thread wound up on the drum, you actually risk having the thread get in and*
 - The inlet sensor can be periodically removed and cleaned.*
 - The drum and the flywheel can be periodically dismounted to remove any residual thread and dust.*
- 6. We suggest storing feeders that are not used for long time periods in the special polystyrene boxes, which ensure the best storage.*
 - 7. When the weft feeder is being loaded, use the special heddle tool. Do not use other tools, especially if made from metal, as the inlet sensor might be damaged, along with any outlet brakes.*
 - 8. If the weft feeder is equipped with a TWM brake, always open the brake carriage when you introduce the loading heddle tool. Thus, you avoid taking the risk that the heddle tool damages the brake unit.*

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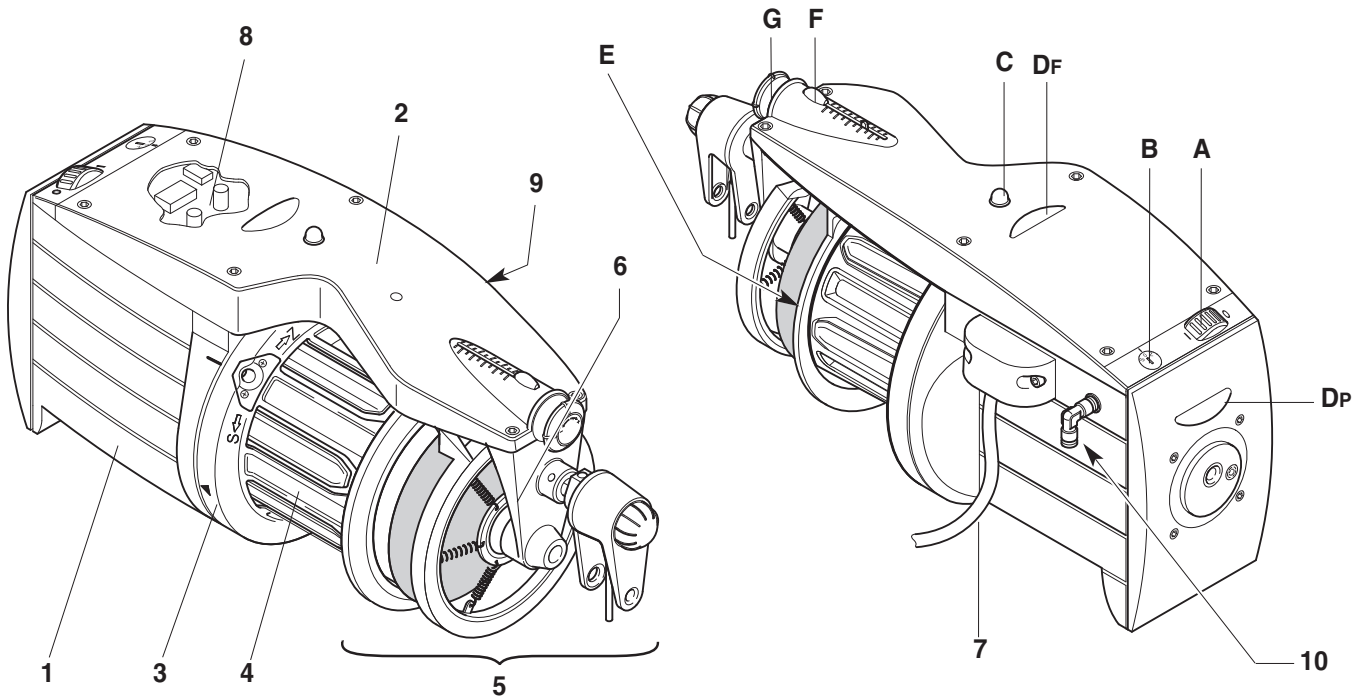
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1 - GENERAL FEATURES

1.1 MAIN PARTS; CONTROLS AND ADJUSTMENT POINTS

Main parts:

- | | |
|---------------------------|-----------------------------------|
| 1 • MOTOR | 6 • OUTPUT SENSOR |
| 2 • TOP PANEL | 7 • POWER CABLE |
| 3 • FLYWHEEL | 8 • MAIN ELECTRONIC CONTROL BOARD |
| 4 • WEFT SPOOL BODY | 9 • WEFT FEELER UNIT |
| 5 • OUTPUT TENSIONER UNIT | 10 • COMPRESSED AIR INTAKE |

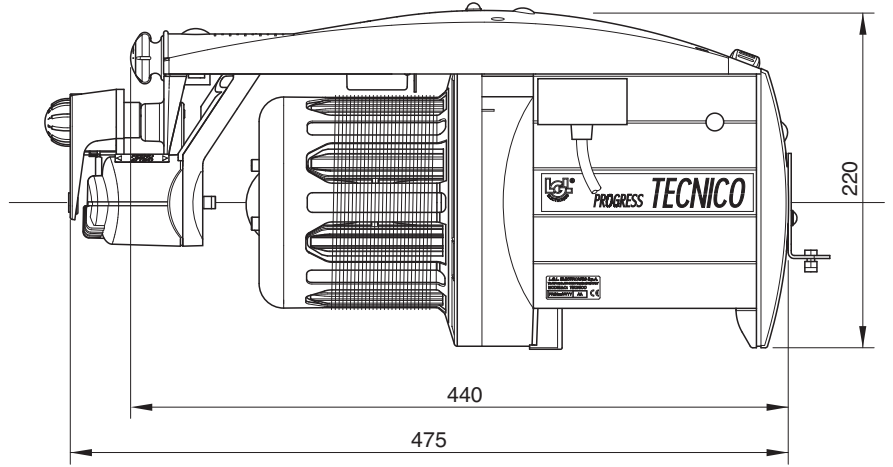
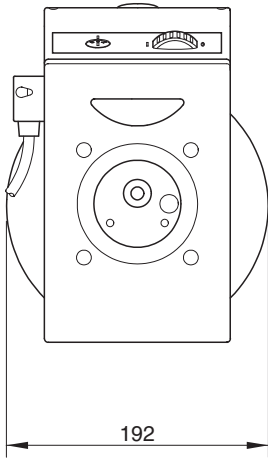


CONTROLS/ADJUSTMENTS		FUNCTION
A	SWITCH 0 - I	<ul style="list-style-type: none"> Switches the weft accumulator on and off.
B	SWITCH S - 0 - Z The switch has three positions: S, 0 (zero) and Z. Alternatively, the following item is also provided: Speed selector (L - M - H) The selector has 3 positions: L, M and H	<ul style="list-style-type: none"> For setting the direction of rotation of the motor. N.B.: <i>In cases when the "Loom Stop" function is enabled on the loom, the intermediate position 0 (zero) of the S - 0 - Z switch allows for switching off the weft accumulator that is not used without stopping the loom.</i> The selector allows the motor speed reference value to be set. The speed ranges for the selector are listed below: <ul style="list-style-type: none"> - L (Low speed): for insertion speed values ranging from 110 to 525 m/min. - M (Medium speed): for insertion speed values ranging from 220 to 920 m/min. - H (High speed): for insertion speed values ranging from 440 to 1350 m/min.
C	LED	<ul style="list-style-type: none"> This comes on and stays on if there are no faults when the accumulator is switched on. This flashes if there are malfunctions (see paragraph 8 "Trouble-shooting").
D	PNEUMATIC THREADING BUTTONS	These control the pneumatic threading. <ul style="list-style-type: none"> Button DP for partial threading (up to weft spool body). Button DF for final threading (from weft spool body to the output).
E	COIL ADJUSTMENT BUTTON	<ul style="list-style-type: none"> This is used to vary the separation of coils (see paragraph 3.8 "Setting the direction of rotation and adjusting the separation of the coils").
F	RELEASE PUSH-BUTTON	<ul style="list-style-type: none"> This is for releasing the output tensioner.
G	ADJUSTMENT KNOB	<ul style="list-style-type: none"> This is for adjusting the intensity of the output tensioner.

1 - GENERAL FEATURES

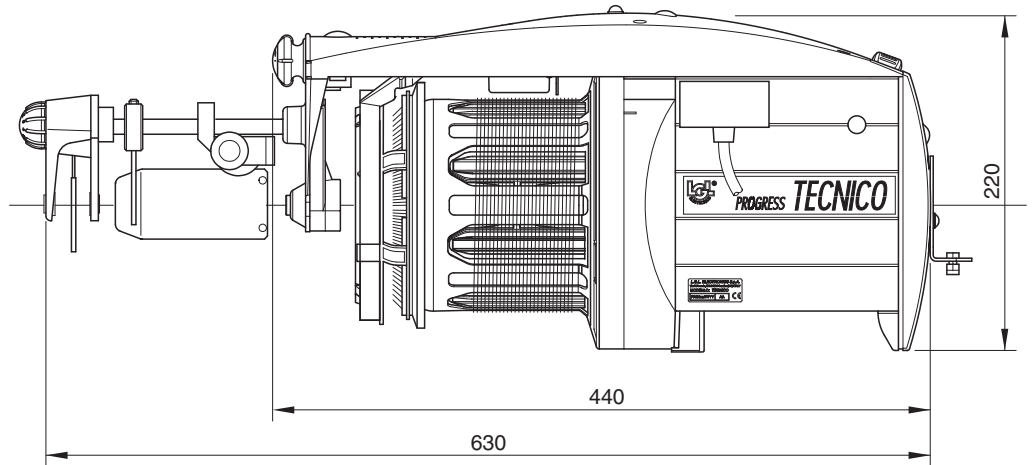
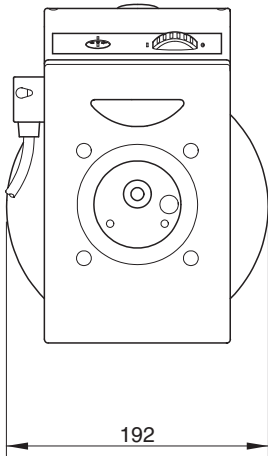
1.2 OVERALL DIMENSIONS

TECNICO WITH ATTIVO BRAKE



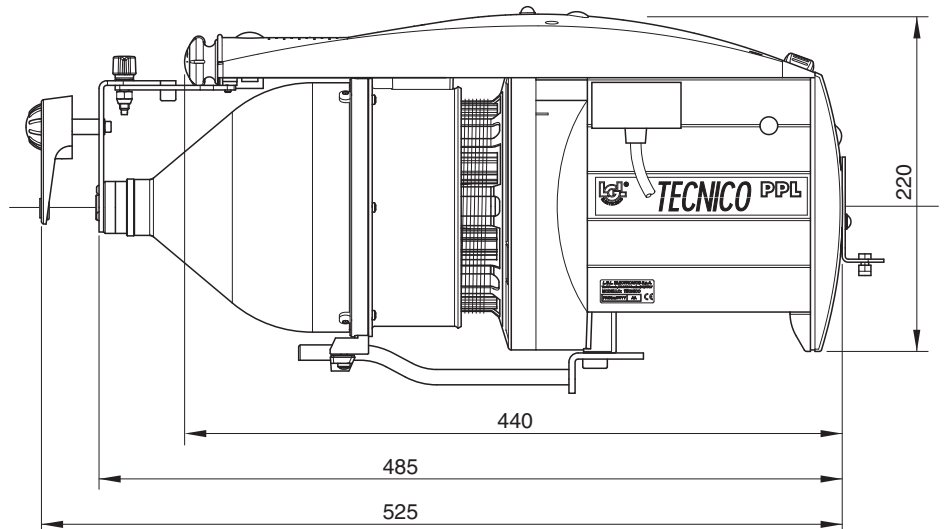
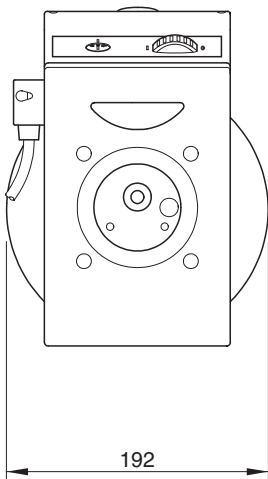
Weight 11,5 Kg

TECNICO WITH BRISTLE BRUSH TENSIONER



Weight 11,2 Kg

TECNICO WITH FUNNEL



Weight 11,5 Kg

1 - GENERAL FEATURES

1.3 INTENDED USE; MAIN FEATURES AND SPECIFICATIONS

Intended use:

TECNICO is a weft accumulator with separate adjustable coils that can be used on all gripper and projectile weaving machines.

It is equipped with specific solutions aimed at weaving new technical wefts such as polypropylene strap, jute and aggressive yarns, fibreglass, rowing, monofilament yarns.

Main features:

- Automatic speed control to suit the loom's weft quantity requirements.
- Direction of rotation can be inverted for **S** or **Z** twisted yarns.
- Weft reserve control using an magnetic/mechanical system, 100% dust, light and smear-proof.
- Pneumatic threading (optional).
- If an input sensor is fitted, the following functions can be carried out:
 - **“Loom stop”**: It stops the weft accumulator and the loom automatically if there is no weft detected at the premeasuring winder input (broken weft or end spool).
 - **“Exclusion of broken wefts”**: It excludes broken wefts automatically by stopping the accumulator but without stopping the loom if no weft is detected at the accumulator input (broken weft or end spool).
This function is only possible on weaving machines equipped for this function.
- Various tensioners can be fitted at the weft accumulator input and output to suit the yarn being woven.
- Possibility to interface-connect the feeder with the weaving machine through the can-bus protocol.

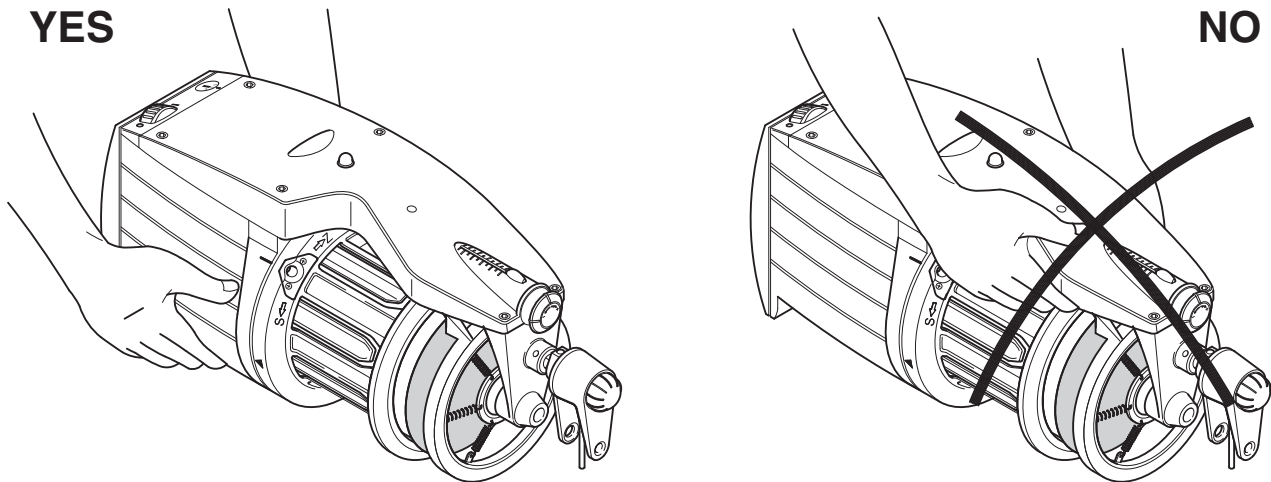
Technical specifications:

- Power supply box supplied separately by L.G.L. Electronics.
 - supply voltage: **V = 200/600** **VA = 550 - 1000** **Hz = 50/60**
- Automatic weft accumulation speed control up to max. **1,900 m/min**.
- Adjustable coil separation from **0** to **5 mm**.
- Three-phase asynchronous motor, maintenance-free.
- Acoustic pressure level **A**, at max. speed, less than **70 dB (A)**
- Pneumatic circuit pressure: min. **5 bar**; max. **8 bar**
- Operating conditions - Storing conditions:
 - Temperature: **+10** to **+40 °C**
 - Max. humidity: **80%**

1 - GENERAL FEATURES

1.4 HANDLING AND STORAGE

Never take hold of the weft accumulator by the weft spool body or weft feeler unit.



The weft accumulator is supplied with its own polystyrene casing: keep this in a safe place for future use.

1.5 INPUT SENSOR

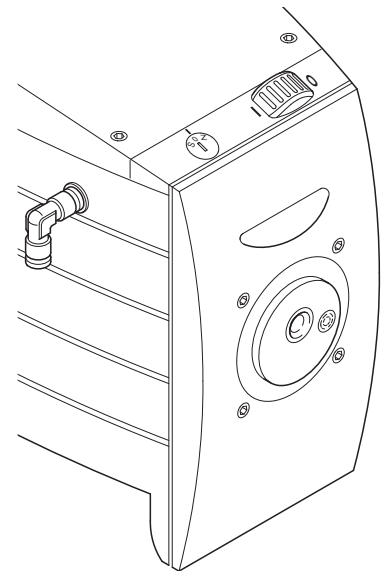
The weft accumulator can be fitted on request with an input sensor with the following functions:

- **“Loom stop”:**
It stops the weft accumulator and the loom if there is no weft detected at the accumulator input (broken weft or end spool).
- **“Exclusion of broken wefts”:**
It excludes broken wefts by stopping the accumulator but without stopping the loom if no weft is detected at the accumulator input (broken weft or end spool).

This function is only possible on weaving machines equipped for this function.

In this way, defects in the cloth can be avoided, as too can loom stops, thanks to the broken wefts exclusion function.

In order to make the electronic piezoelectric weft sensor act properly, make sure that the weft flows over the sensitive part as normally happens on all yarn flow sensor units.



N.B.: To avoid false stops, make sure that the sensor is kept clean so that the weft can flow smoothly over the sensitive part.

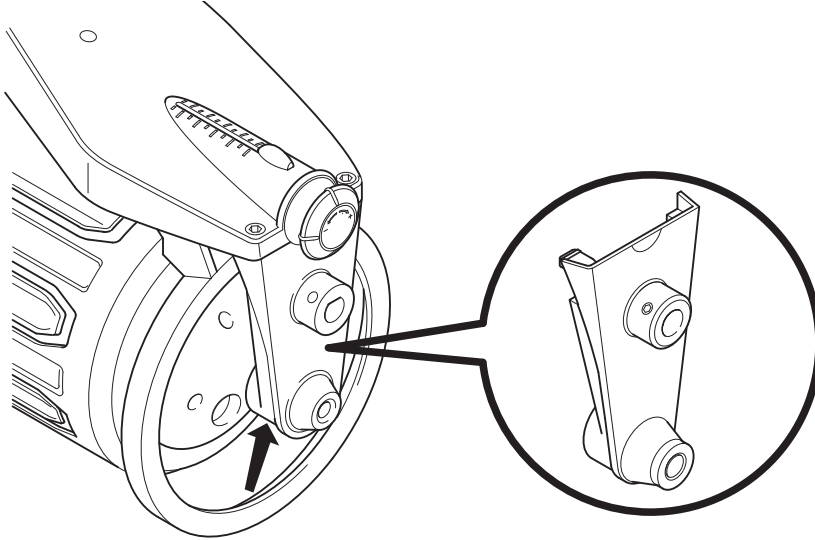
In cases when the “Loom Stop” function is enabled on the loom, the intermediate position 0 (zero) of the S - 0 - Z switch allows for switching off the weft accumulator device without stopping the loom.

1 - GENERAL FEATURES

1.6 OUTPUT SENSOR (if provided)

The output sensor on the accumulator automatically adjusts the speed to suit the amount of weft required by the loom.

There is thus no need for adjustment when weaving thick or fine yarns.

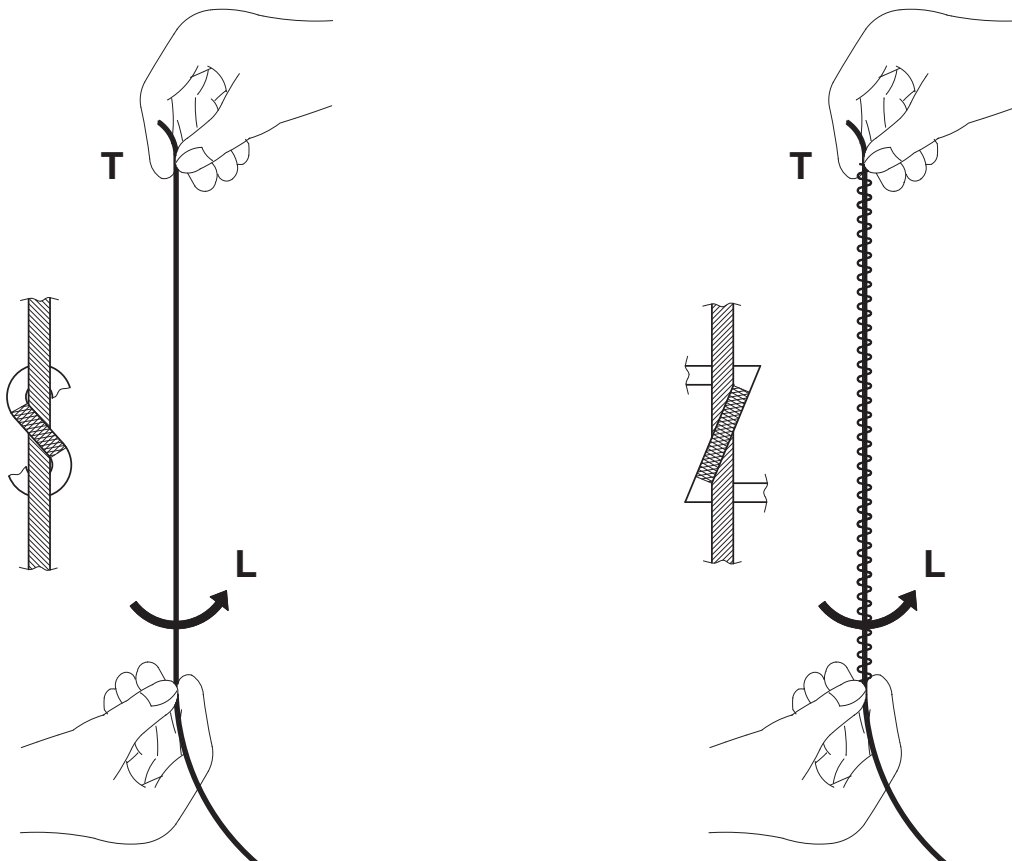


1.7 WEFT TWIST DETERMINATION

Hold weft **T** at one end, hold the other end between your thumb and forefinger and rotate in the direction indicated by arrow **L**.

If the weft acquires twist, it is “**S**”.

If the weft loses twist, it is “**Z**”.



2 - INSTALLATION AND START-UP

2.1 INSTALLATION OF THE POWER CONTROL BOX

To install the power control box, follow these steps:

1) Fix the power supply box to the support with the clamp(s) provided at least 30 cm from the ground.

2) **Check that the power supply box is set for the right supply voltage.**

See the ratings sticker on the outside of the power supply box.

If the mains voltage differs from the nominal power supply box rating, open the box and connect the wires from the switch to the correct input on the transformer.

3) Connect the power supply box cable to the three-phase mains line.

If the power supply box has been supplied without the cable, it should be connected to the three-phase line with a 4-conductor cable. The section of each conductor must not be less than 1.5 mm².

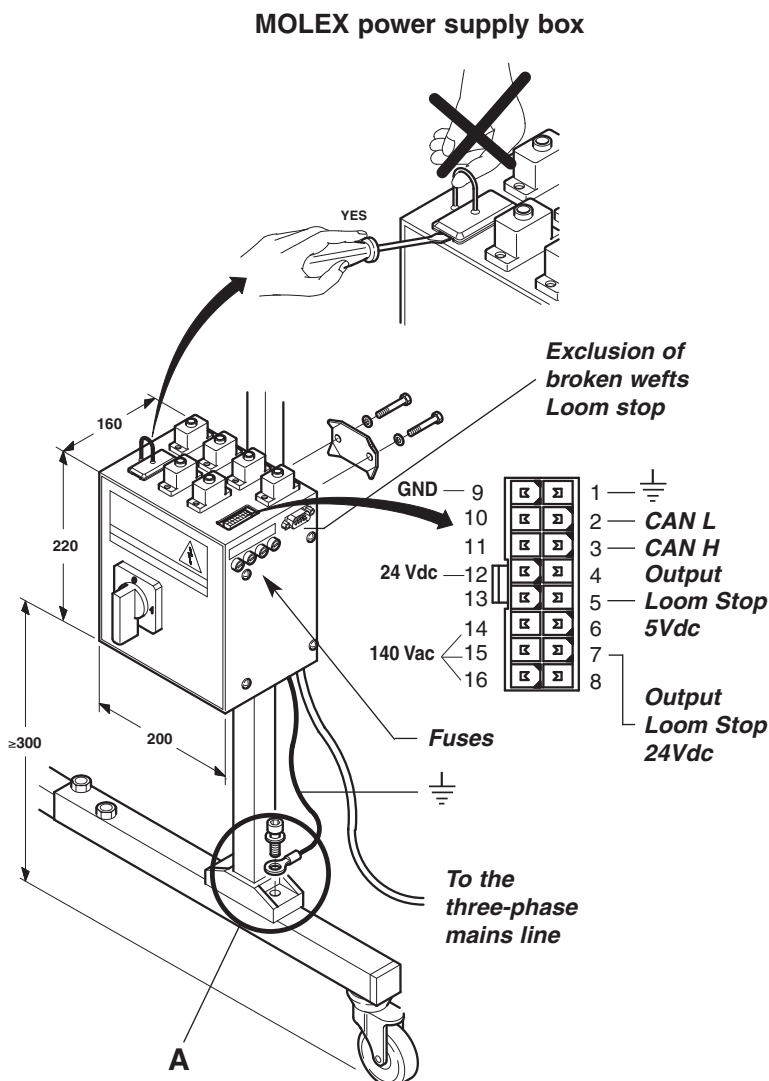
Connect the 3 phases in the mains line to terminals **L1**, **L2** and **L3**. Connect the earth wire to terminal **PE**.

For the connections, see the drawing enclosed in the box.

N.B.: Make all connections to the three-phase mains line downstream of the main switch on the loom so that it can also act as a switch for the power units on the loom.

4) Connect the power supply box earth cable to its stand base. (See detail **A** in the figure).

WARNING: Switch off the power supply box before making any connections.



2 - INSTALLATION AND START-UP

2.2 CAN-BUS FEATURE

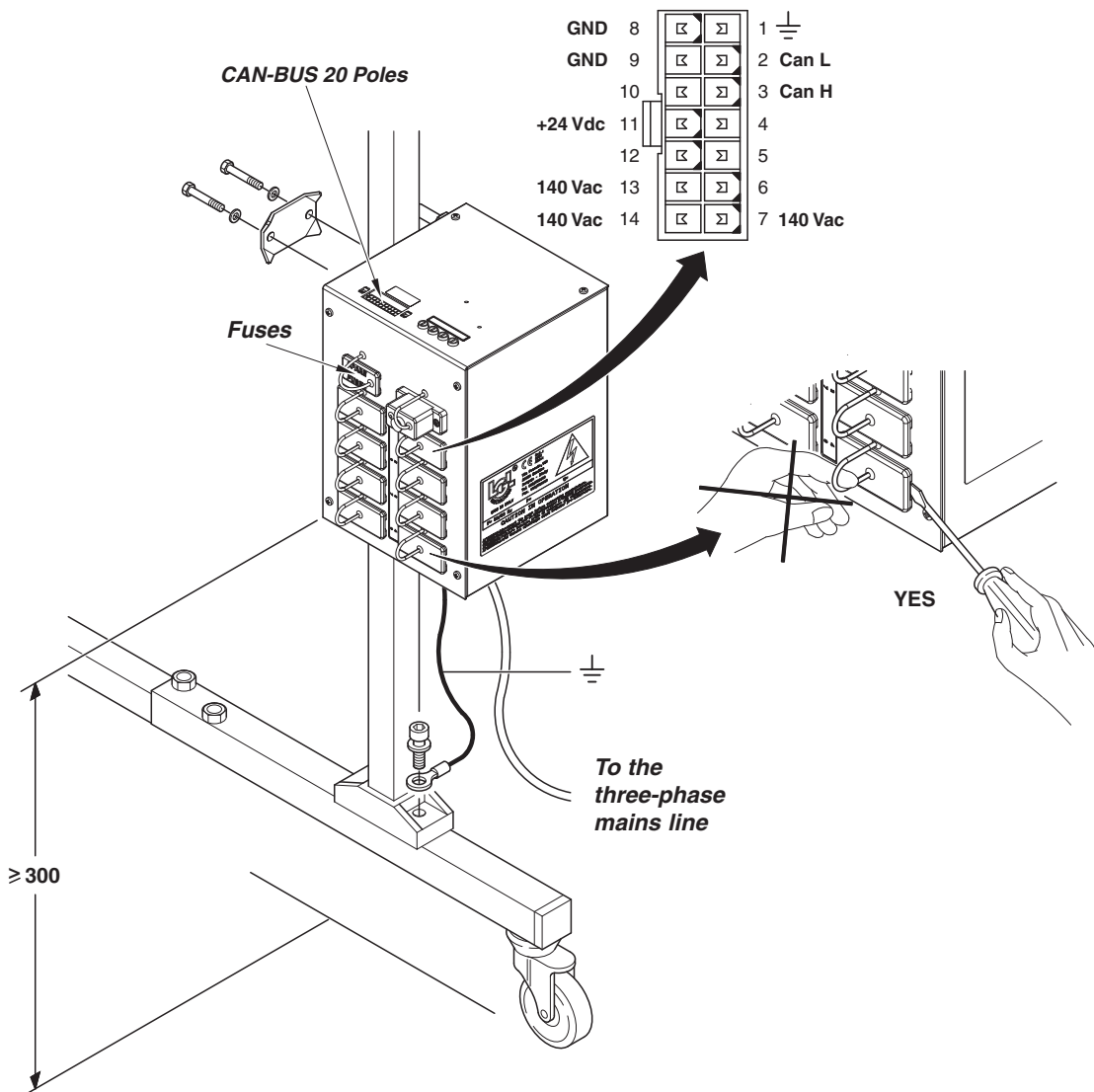
TECNICO feeders incorporate a dual communication system with the weaving machine. They can either operate with the traditional system and with the new Can-Bus protocol, provided that a dedicated Cable – Power Supply Box equipment is available.

Notably, if the feeder operates with the Can-Bus protocol, it may exchange a greater number of data with the weaving machine and hence incorporate new features.

The **PATTERN PREVIEW**, which the feeder can use to improve speed adjustment, is an instance of this improved feature.

The weaving machine communicates in advance which feeder will be selected and for how long it will operate. Then the feeder will use this information to optimize its acceleration ramp and set a dedicated winding speed in shorter time lags.

**Power supply box of the MOLEX CAN-BUS type
Feeder cable code A1N1SA504**



2 - INSTALLATION AND START-UP

2.3 INSTALLATION AND START-UP OF THE WEFT ACCUMULATOR

N.B.: Condensation may form on a weft accumulator that has been stored in cold places when this is brought into a warm area. Wait until this is completely dry before connecting it, otherwise the electronic components could be damaged.

To install and start-up the weft accumulator, follow these steps:

- 1) Fix the accumulator to its stand using the clamp provided ($\varnothing 25$, $\varnothing 30$, $\varnothing 32$).

N.B.: Make sure that the stand used to hold the weft accumulator is connected to the earth system.

- 2) Position the weft accumulator so that the weft is as straight as possible between this and the loom.
- 3) If necessary (e.g. highly twisted yarns, snarled yarns, etc.), fit the input tensioner to the weft accumulator if not already fitted on the creel.
- 4) Connect the weft accumulator to the pneumatic circuit (only if fitted with pneumatic threading).
- 5) ***Switch off the power supply box before connecting the weft accumulator.***
This is necessary in order not to damage the weft accumulator electronics.
- 6) Switch off the weft accumulator by turning its **0 - I** switch to **0**.
- 7) Connect the weft accumulator cable to a power supply box socket.

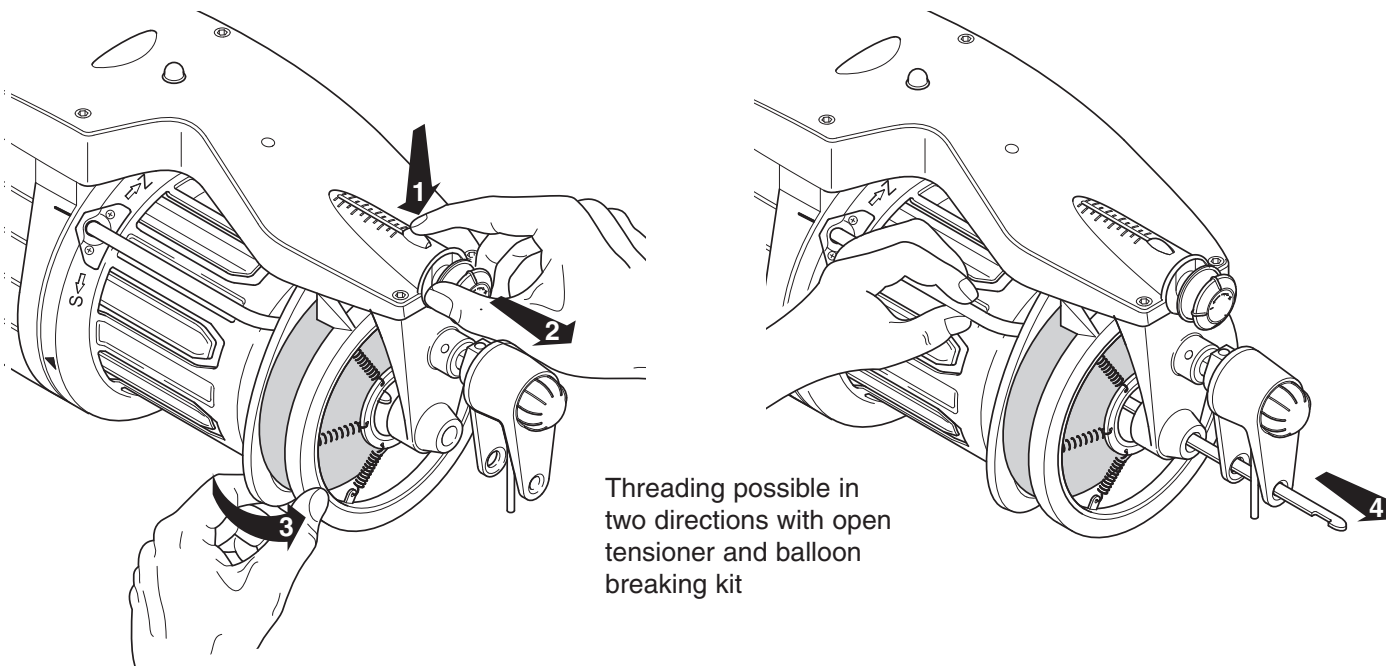
N.B.: If the box is fitted for the "Exclusion of broken wefts" function, the power supply cable must be connected to the socket marked with the same number as the finger of the loom to be fed by the weft accumulator.

- 8) Switch on the power supply box.
The green led on the accumulator top panel will flash briefly and then go off (Reset).
- 9) Set the weft accumulator direction of rotation and adjust the coil separation (see paragraph 3.7).
The default settings for the accumulators are Z rotation and 2.5 mm coil separation.
- 10) Now thread up the weft accumulator using the special weft taker provided or the pneumatic threading system, if fitted (see paragraphs 3.1, 3.2, 3.3 and 3.4).
- 11) Having threaded up the accumulator, switch it on by turning switch **0 - I** to **I** and the weft will start to be wound around the weft spool body.

3 - THREADING AND ADJUSTMENTS

3.1 THREADING OF THE WEFT ACCUMULATOR WITH TWM TENSION MODULATOR

Always switch off the accumulator before any threading operation as shown in the figures below:



To avoid damaging the TWM on the outer edge it is advisable to operate the threading with the TWM open, by taking the actions listed below:

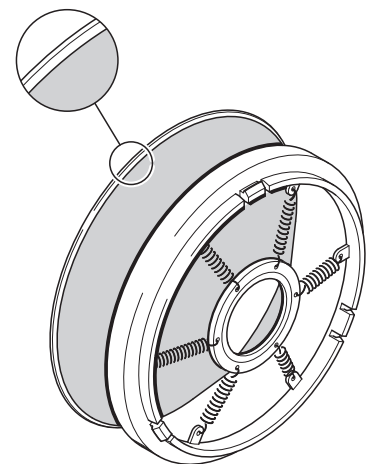
- Open the TWM by pressing the release push-button and pulling the knob;
- Push the balloon breaking ring towards the TWM to complete the opening and facilitate the insertion of the weft taker, which can take place from either direction;
- Insert the taker up to the sensor;
- Hook the thread to the taker and thread it.
- After threading, place the balloon breaking kit back in place and close the output tensioner by pressing knob (G).

To avoid damaging the TWM we recommend using weft takers in good condition and not allowing too much weft to accumulate.

Never use the iron needles normally used to thread heald heddles and the reed on the loom as these will damage the TWM.

The most recent versions of the Progress feeders are equipped with a TWM brake featuring a protective rim on the external diameter.

This rim protects the TWM during threading and operation, so as to increase the overall service life of the brake.

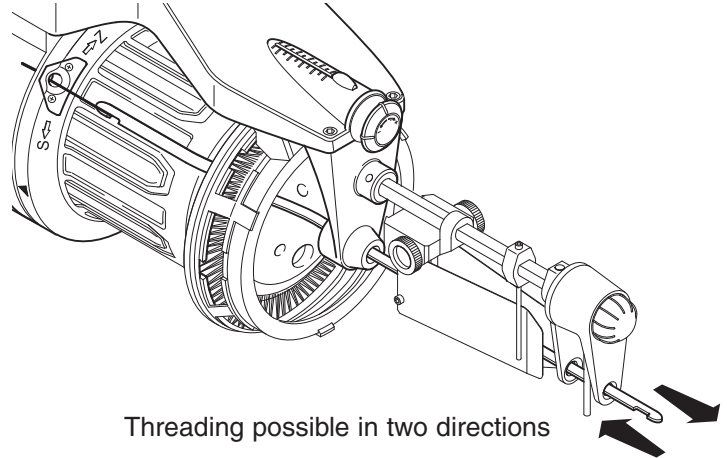


3 - THREADING AND ADJUSTMENTS

3.2 THREADING OF THE WEFT ACCUMULATOR WITH BRISTLE BRUSH TENSIONER

Always switch off the accumulator before any threading operation as shown in the figures below:

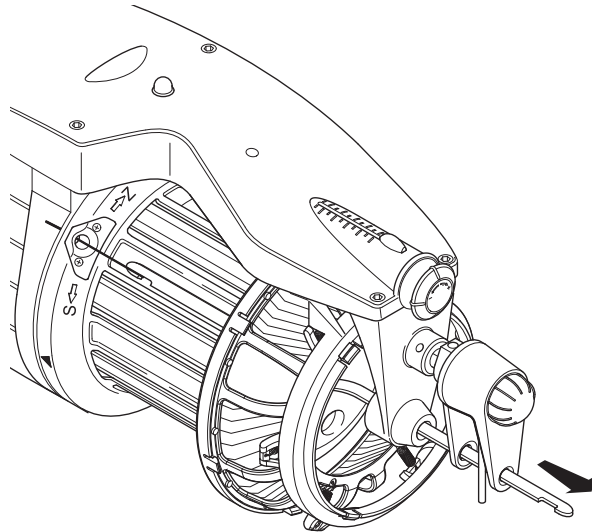
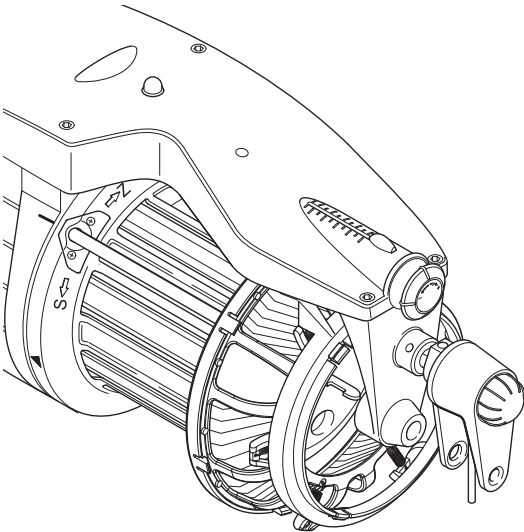
N.B.: When the accumulator is switched on again, press the brush on the weft spool body with a finger so that the weft can start winding around this.



Threading possible in two directions

3.3 THREADING OF THE WEFT ACCUMULATOR WITH METAL BRUSH TENSIONER

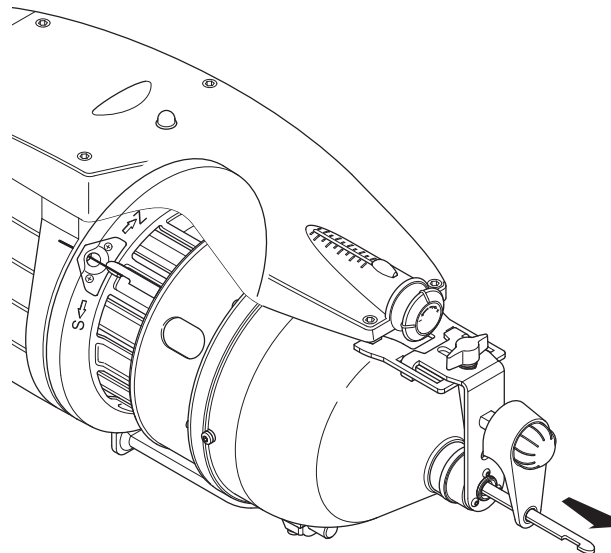
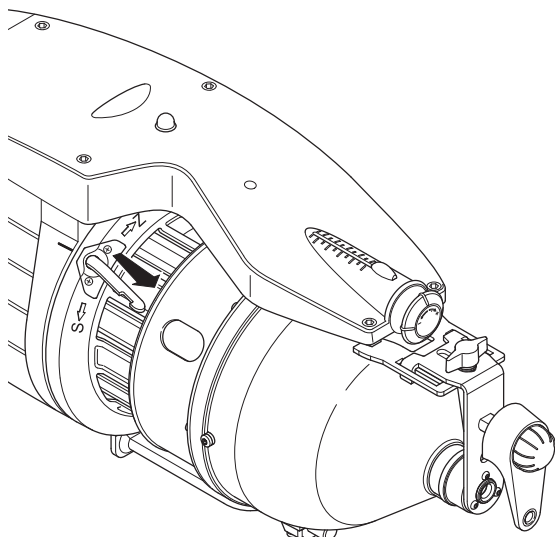
Always switch off the accumulator before any threading operation as shown in the figures below:



Threading possible in one direction only

3.4 THREADING THE FEEDER BY MEANS OF A FUNNEL

The threading shall be performed when the weft feeder is off, as illustrated by the figures:



Threading possible in one direction only

3 - THREADING AND ADJUSTMENTS

3.5 PNEUMATIC THREADING

Pneumatic threading can be:

- **PARTIAL BACK:** To thread the back of the accumulator up to the weft spool body.
- **PARTIAL+ FINAL (COMPLETE):** To thread the back of the accumulator up to the weft spool body and then on to the front, from the weft spool body to the output.

If the accumulator is fitted with a metal brush output tensioner, final threading is not possible.

Specifications:

Compressed air pressure: min. **5 bar**; max. **8 bar** (we recommend **5-6 bar**).

Air tube diameter: **6x4 mm**;

Use dry air only.

THREADING PROCEDURES:

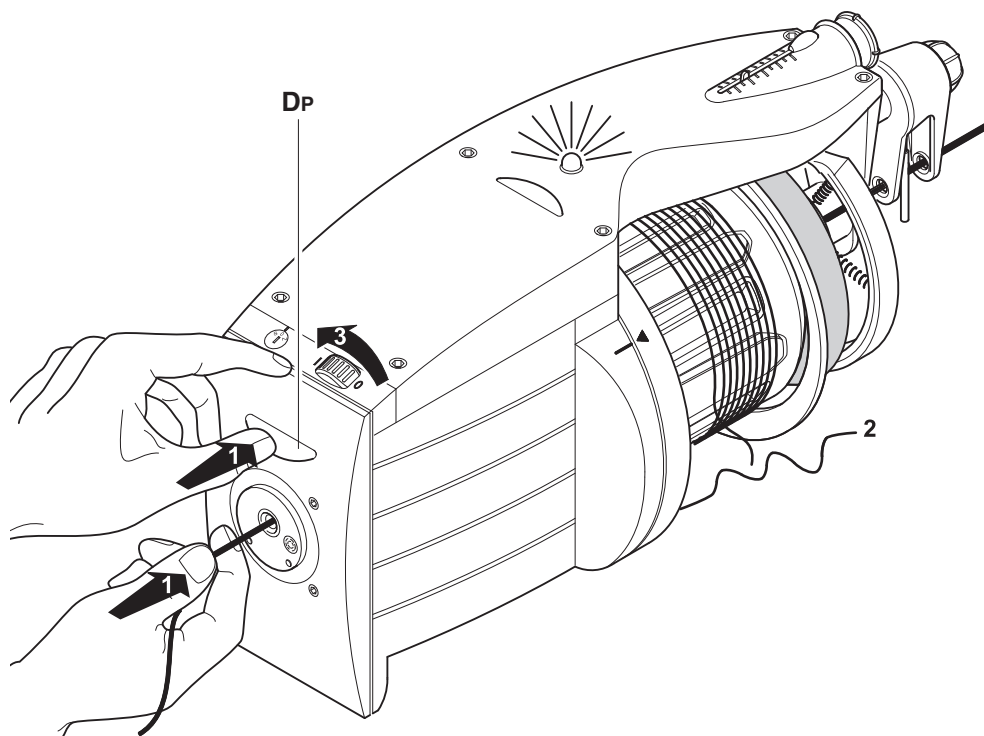
PARTIAL (up to the weft spool body)

When required:

- Accumulator in alarm (end spool);
Weft still on the front section of the weft spool body.

Threading procedure:

- 1) With one hand take the weft to ceramic bush (I) and with the other press button (**DP**).
- 2) Knot the new weft to the end of the old weft on the front section of the weft spool body.
- 3) Switch the accumulator off and then back on again for the weft to be wound as normal.



3 - THREADING AND ADJUSTMENTS

PARTIAL + FINAL (COMPLETE)

Threading procedure of accumulator with bristle brush

• First stage: “partial back” (up to the weft spool body)

1) With one hand take the weft to ceramic bush (H) and with the other press button (DP).

Switch on the accumulator, gently pressing the weft on the weft spool body to make it easier for it to start winding round the weft spool body.

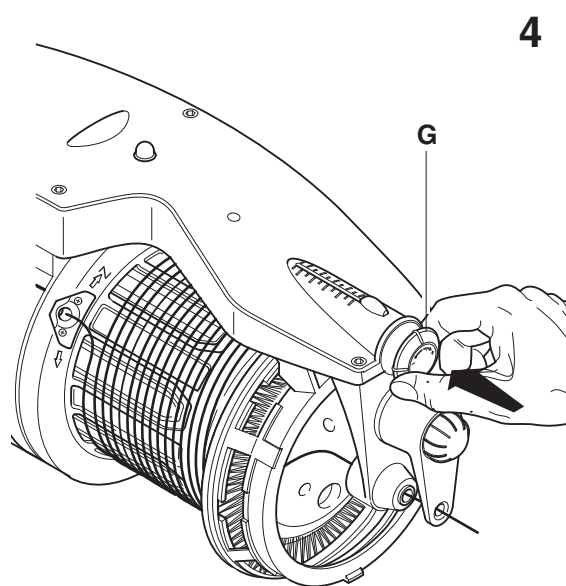
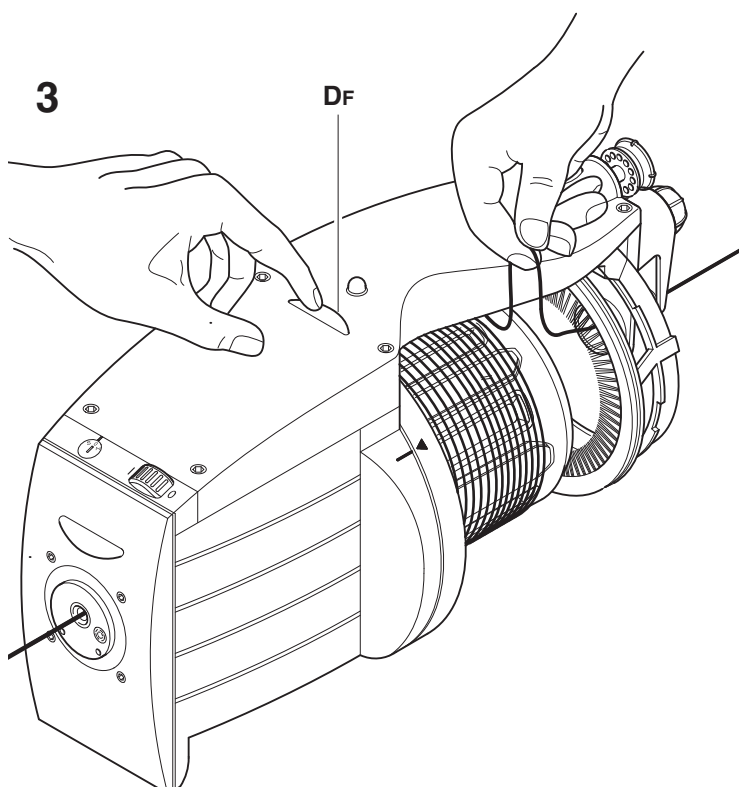
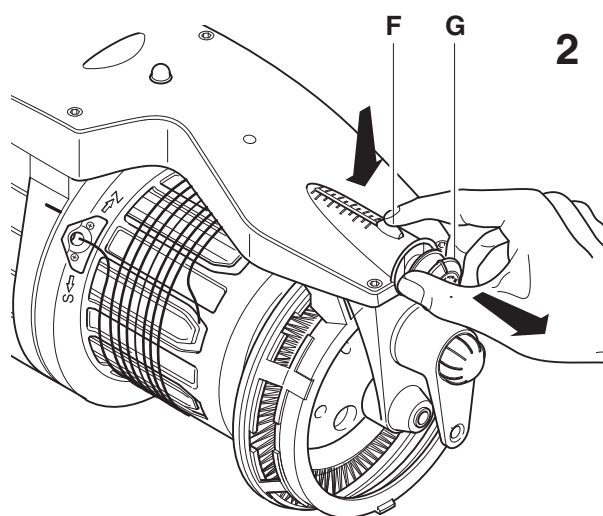
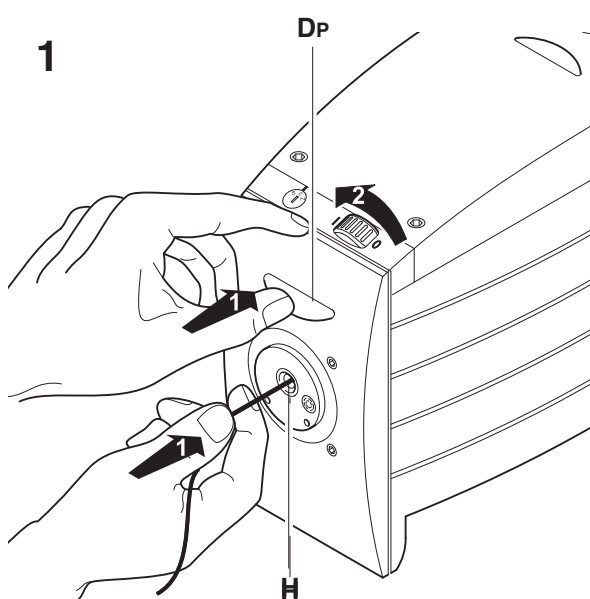
• Second stage: “final” (from the weft spool body to the output)

2) Open the output tensioner by pressing push-button (F) and pull knob (G).

3) Pull a little weft from the weft spool body and thread this between the weft spool body and the bristle brush and then press push-button (DF) until the weft moves out of the sensor.

Leave a little extra weft when pulling the weft on to the output sensor.

4) After threading the accumulator, close the output tensioner by pressing knob (G).



3 - THREADING AND ADJUSTMENTS

PARTIAL + FINAL (COMPLETE)

Threading procedure of accumulator with TWM tension modulator:

• First stage: "partial back" (up to the weft spool body)

1) With one hand take the weft to ceramic bush (H) and with the other press button (DP).

Switch on the accumulator, gently pressing the weft on the weft spool body to make it easier for it to start winding round the weft spool body.

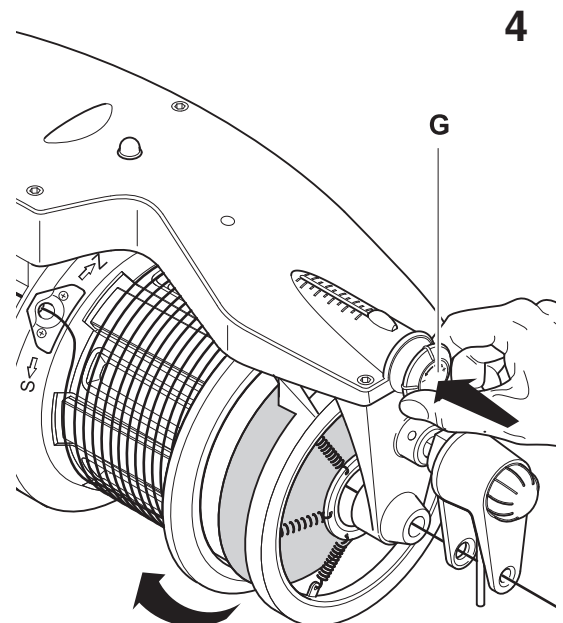
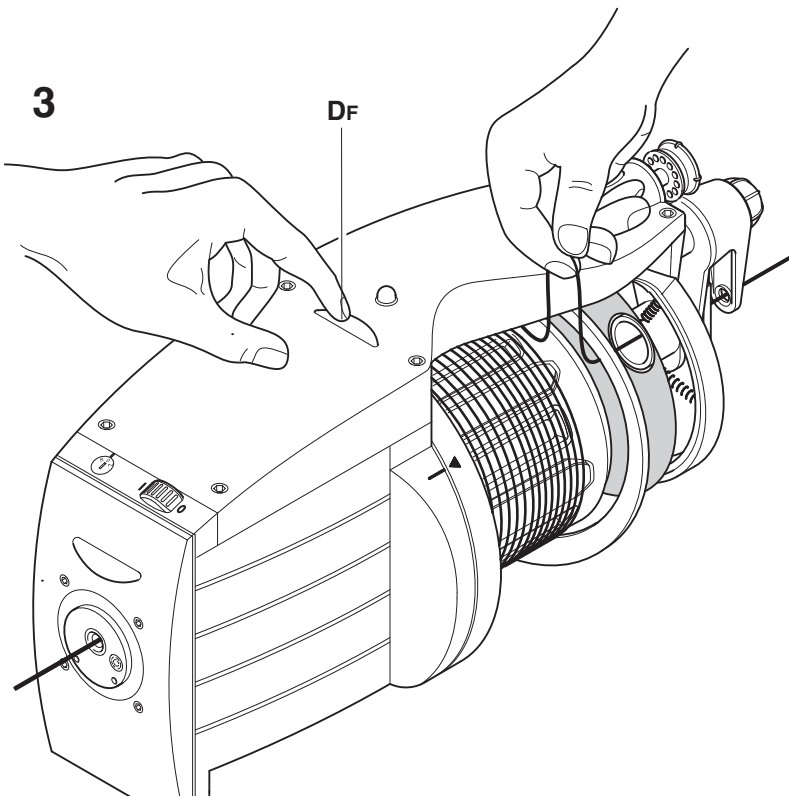
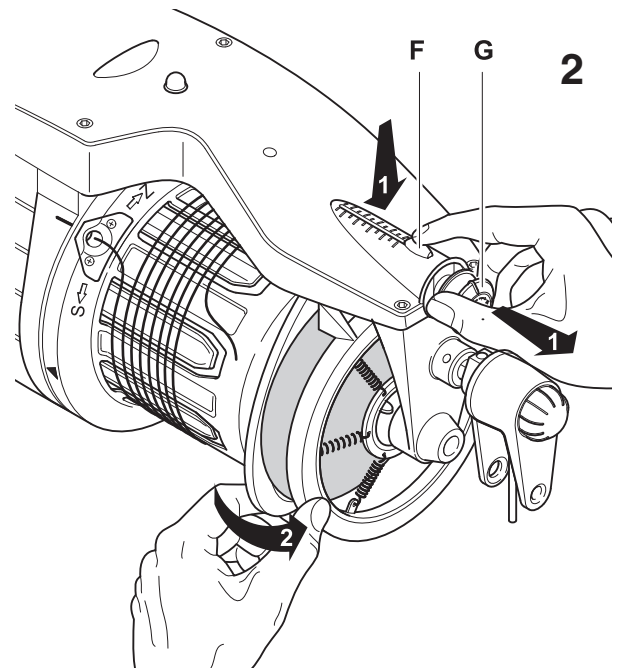
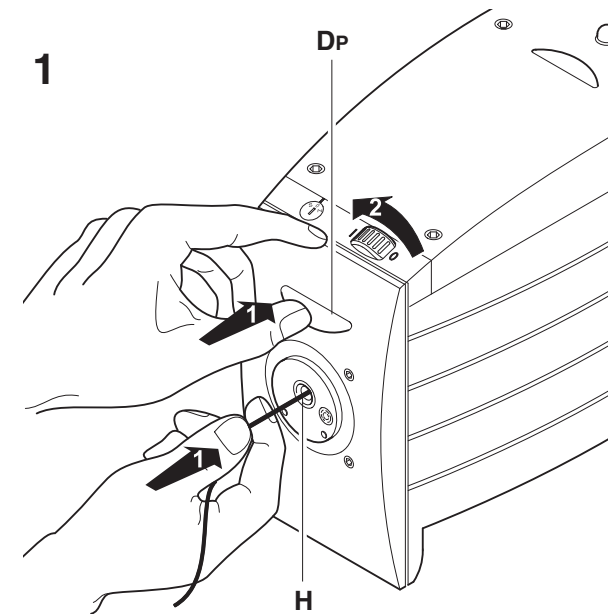
• Second stage: "final" (from the weft spool body to the output)

2) Open the output tensioner by pressing push-button (F) and pull knob (G). Push the balloon breaking kit ring towards the TWM to complete the opening and facilitate the threading. Pick up some weft from the spool body.

3) Move the weft between the spool body and the balloon breaking kit, press push-button (DF) until the weft moves out of the sensor.

Leave a little extra weft when pulling the weft on to the output sensor.

4) After threading, place the balloon breaking kit back in place and close the output tensioner by pressing knob (G).



Place the balloon breaking kit back in place

3 - THREADING AND ADJUSTMENTS

3.6 SPEED ADJUSTMENT

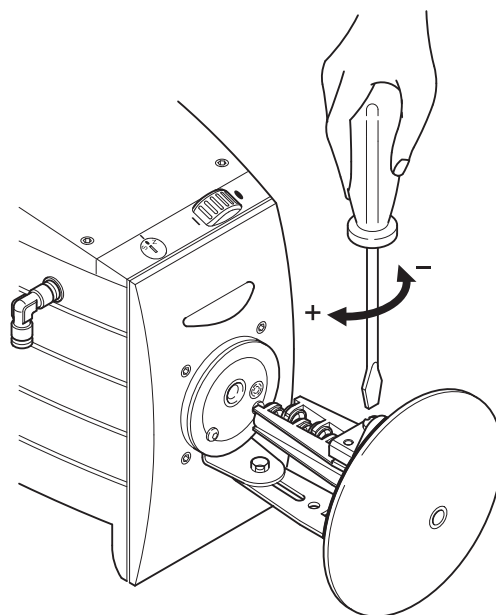
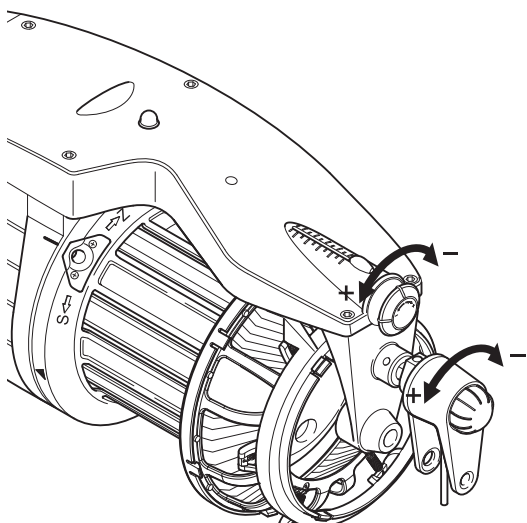
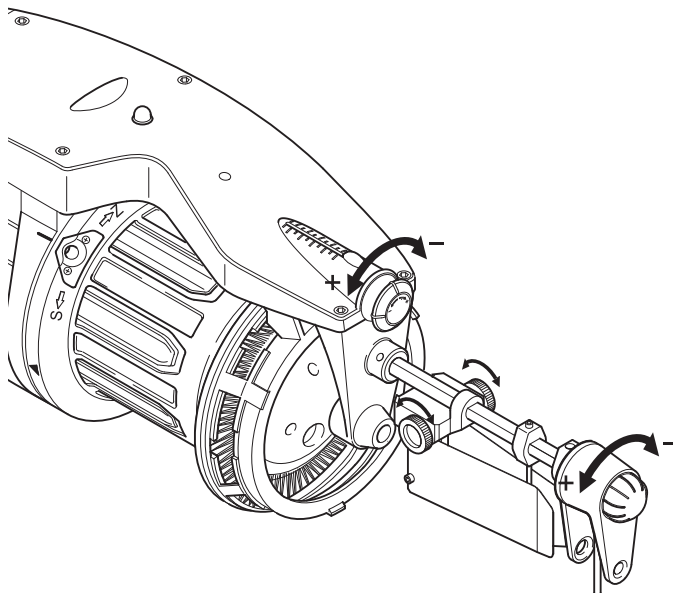
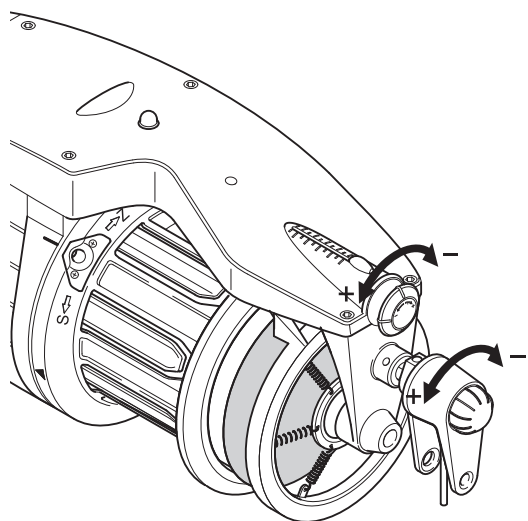
TECNICO is equipped with a microprocessor and an output sensor that **automatically adjust** the winding speed to suit the insertion speed of the loom.
Therefore the operator is not required to adjust the speed.

See paragraph 4 “Programming the operating parameters and special programs” for details of what to do in the case of special working conditions.

3.7 TENSION ADJUSTMENT

Use the output and input tensioners (the latter are not always fitted) on the accumulator to adjust the tension to suit the yarn being used.

Here are a few examples:



3 - THREADING AND ADJUSTMENTS

3.8 SETTING THE DIRECTION OF ROTATION AND ADJUSTING THE SEPARATION OF THE COILS

TECNICO allows for the adjustment of the coil separation from **0** to max. **5 mm**, regardless of whether the weft twist is **S** or **Z**.

VERSION WITH S-0-Z CHANGE-OVER SWITCH



- 1) Set the direction of rotation (**S** or **Z**) by moving switch **S - 0 - Z** to the required position and then adjust the coil separation as follows:
- 2) Push button (**E**) and hold down to make flywheel (**I**) turn until the button engages.
- 3) With the button held down, jog the flywheel (about 5 mm) in the same direction of rotation as the accumulator (set by switch **S - 0 - Z**) and then release the button.
(If the direction of rotation of the accumulator is **S**, the flywheel must also turn in the **S** direction, whereas if the direction of rotation of the accumulator is **Z**, the flywheel must also turn in the **Z** direction).
- 4) Switch on the accumulator and check the coil separation.

If the coil separation is not correct, repeat the above steps (points **2** and **3**), making the flywheel turn on the same direction as the accumulator to increase the separation and in the opposite direction to decrease.

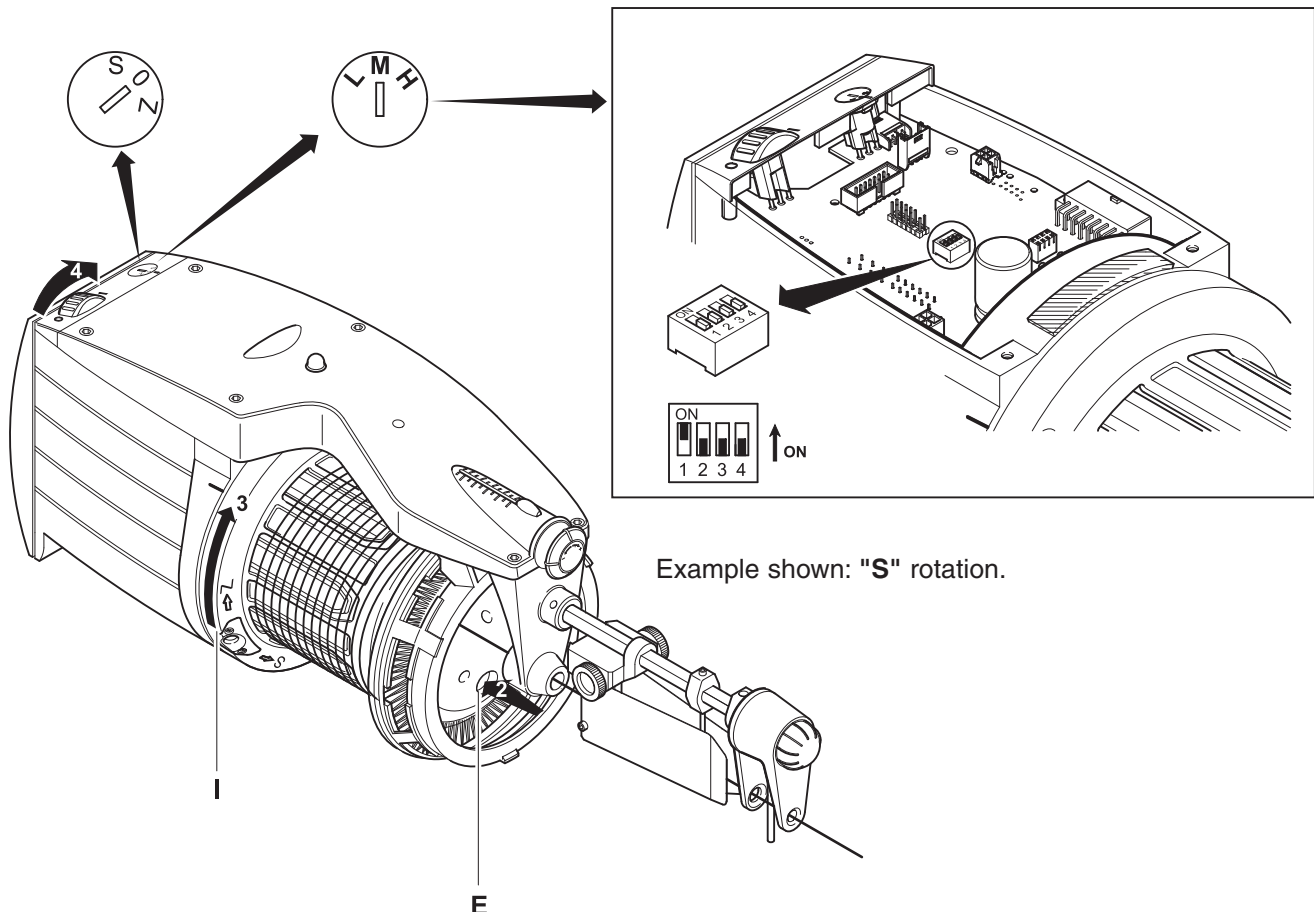
VERSION WITH L - M - H SPEED SELECTOR



If the **S - 0 - Z** change-over switch is not provided, but is replaced by the **L - M - H** selector, it is still possible to adjust the separation of the coils and the motor direction of rotation.

More specifically, in order to set the motor direction of rotation, remove the weft feeder guard (see chapter 5.3) and actuate dip switch 1.

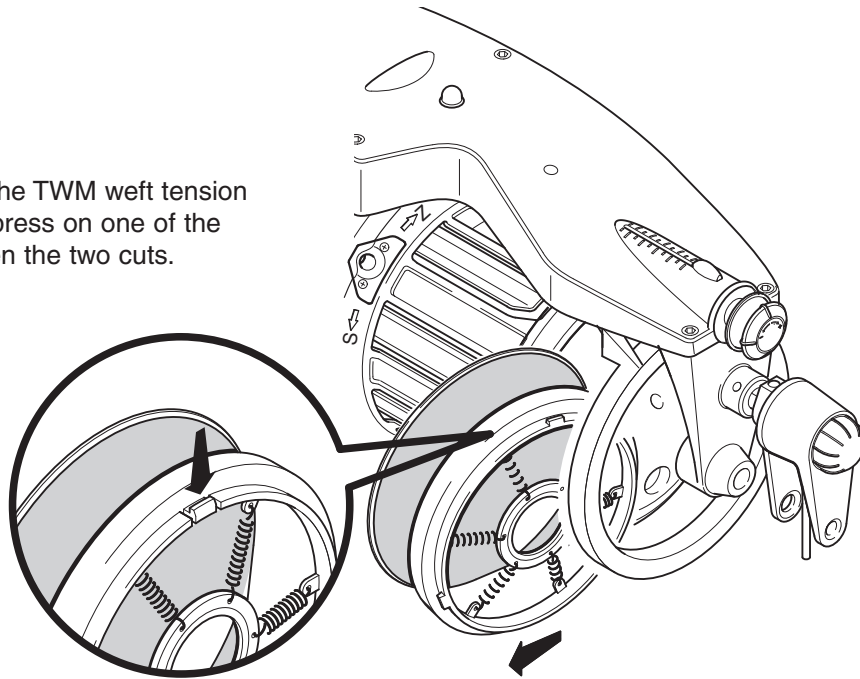
The coil separation adjustment, on the other hand, is carried out by taking the foregoing steps 2, 3 and 4.



3 - THREADING AND ADJUSTMENTS

If the accumulator is equipped with the TWM tension modulator, remove the whole kit in order to press button (E).

To remove the TWM weft tension modulator, press on one of the tabs between the two cuts.

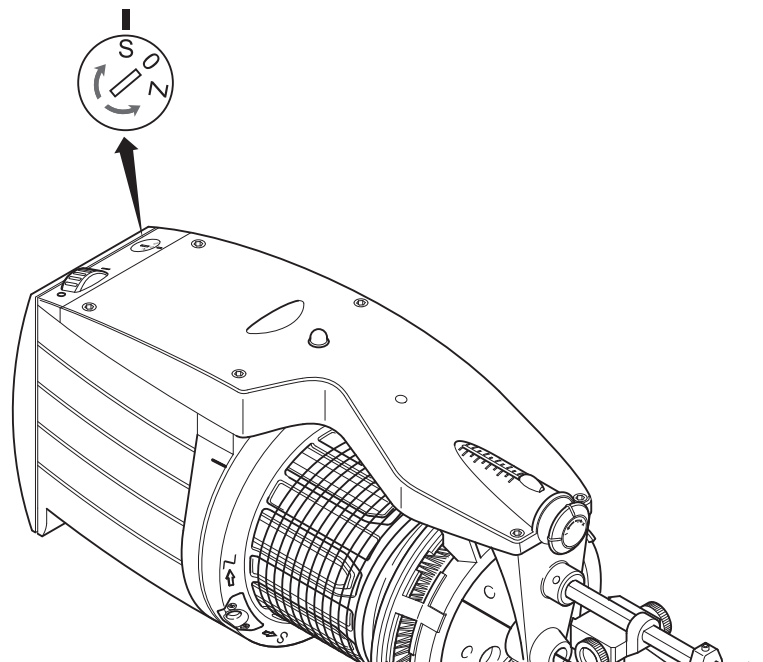


WARNING:

Always make sure that the direction of rotation has been set correctly otherwise the coils will not separate.

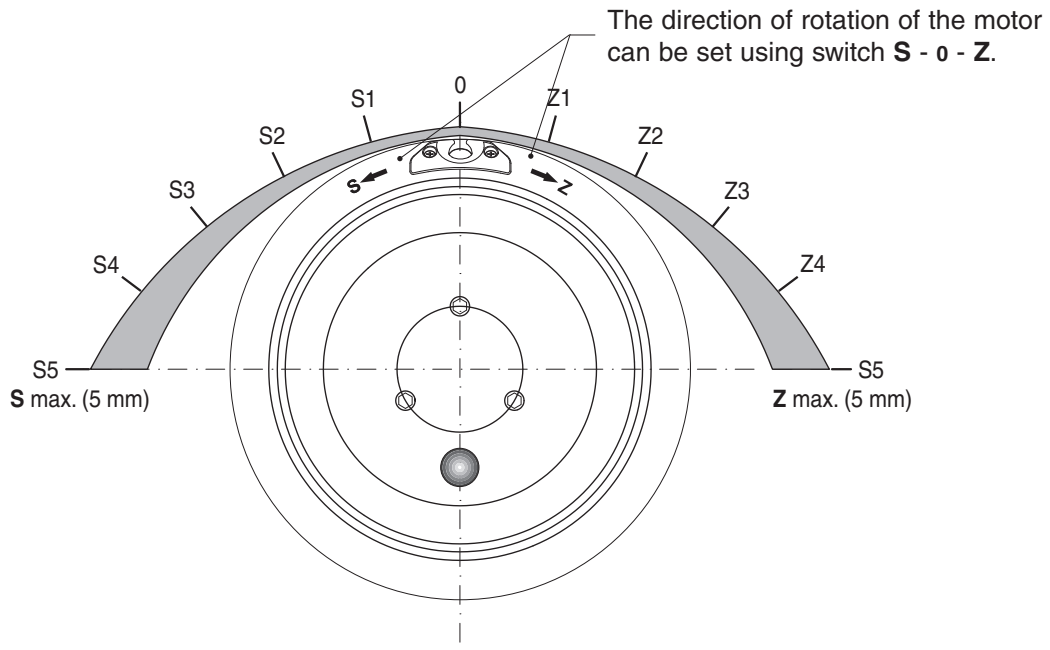
The accumulator is not used when switch **S - 0 - Z** is in position **0** (zero). In this case, the led on the top panel will flash 7 times per second, indicating an anomaly: turn the switch to either position **S** or **Z**, as required.

*In cases when the "Loom Stop" position is enabled on the loom, the intermediate position 0 (zero) of the **S - 0 - Z** switch allows for switching off the weft accumulator that is not using without turning off the loom.*



3 - THREADING AND ADJUSTMENTS

LOGIC USED FOR COIL SEPARATION ADJUSTMENT



Separation by jerks

- 1) Position **0** allows for the same separation value, equalling 1 mm, in both directions of rotation
- 2) This system allows for setting all weft accumulators to the same coil separation value as desired (e.g. all set to **Z3**).
- 3) Any time you wish to weave a given item, this system allows the weft accumulator device to be set to the best coil separation value that was used the previous time.

4 - PROGRAMMING THE OPERATING PARAMETERS AND SPECIAL PROGRAMS

4.1 PROGRAMMING THE OPERATING PARAMETERS

For looms equipped with a accumulator with CAN-BUS connection, the operating parameters and display of error messages may also be direct from the loom control panel.

4.2 SPECIAL PROGRAMS (fitted as standard on all accumulators)

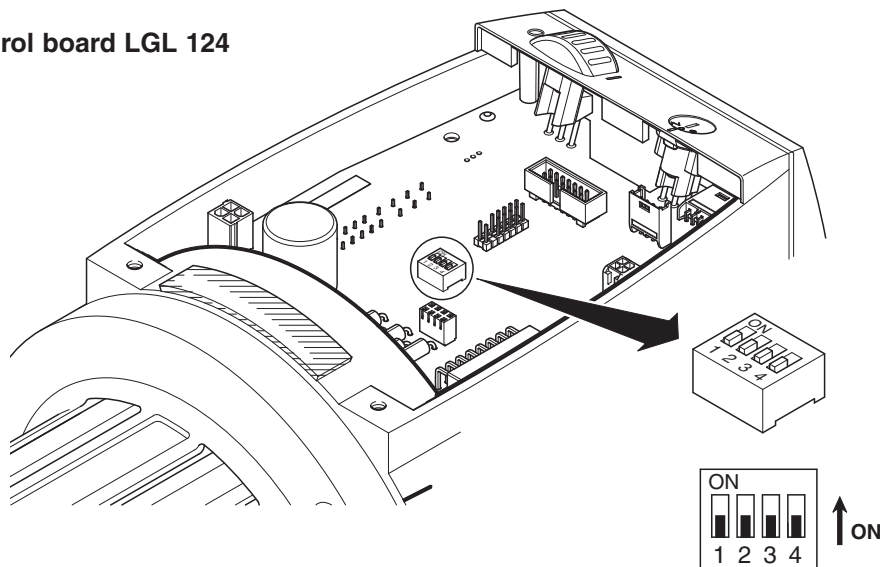
All accumulators have a series of special operating programs that can be enabled by simply changing the combination of the dip-switch on the electronic control board.



DIP-SWITCH FUNCTIONS (Board with S - 0 - Z change-over switch)		
DIP-SWITCH	ON	OFF
DS1	Special programme for yarns with weft count lower than 40 Den	Standard Programme
DS2	Reduced acceleration	Normal acceleration
DS3	Increased acceleration and maximum speed for polypropylene or for speed values greater than 1450 m/min	Normal acceleration
DS4	Option to avoid overload when the weft is manually unwound with special types of wefts. It is good rule not to set this jumper when an insertion by bands is required	Option to avoid overload. Inhibited (standard)

DIP-SWITCH FUNCTIONS (Board with L-M-H selector)		
DIP-SWITCH	ON	OFF
DS1	S ROTATION	Z ROTATION
DS2	Reduced insertion speed: - H: 110 ÷ 352 m/min. - M: 110 ÷ 264 m/min. - L: 110 ÷ 176 m/min.	Normal speed insertion: - H: 440 ÷ 1350 m/min. - M: 220 ÷ 920 m/min. - L: 110 ÷ 525 m/min.
DS3	NOT ENABLED	
DS4	NOT ENABLED	

Electronic control board LGL 124



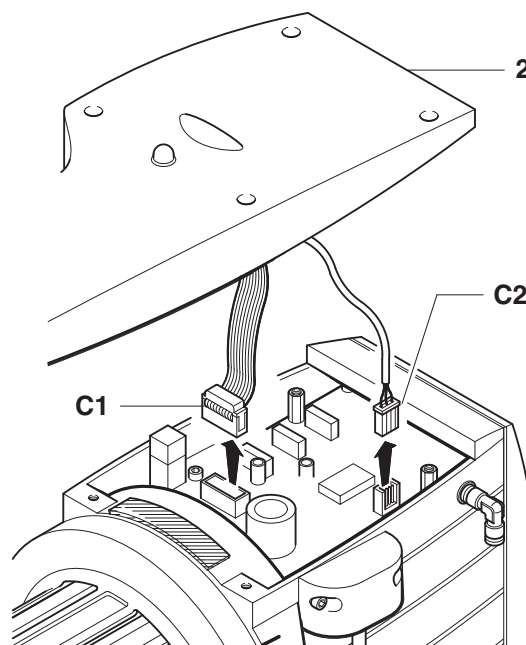
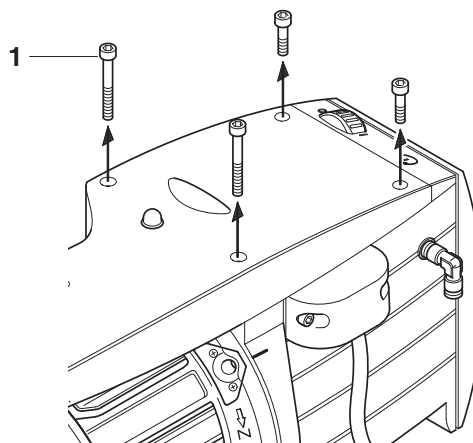
5 - MAINTENANCE AND COMPONENT REPLACEMENTS

5.1 DISASSEMBLY OF THE WEFT SPOOL BODY

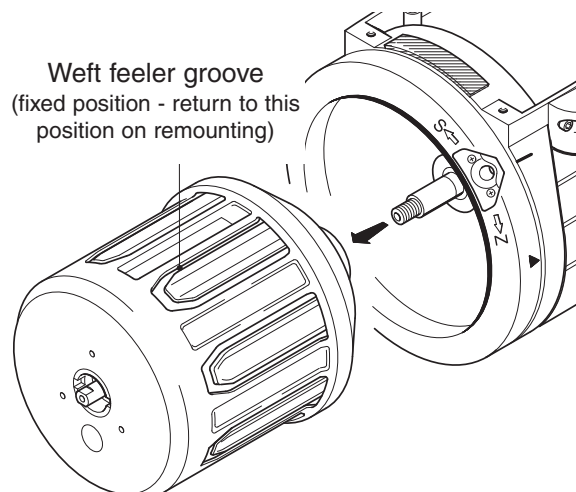
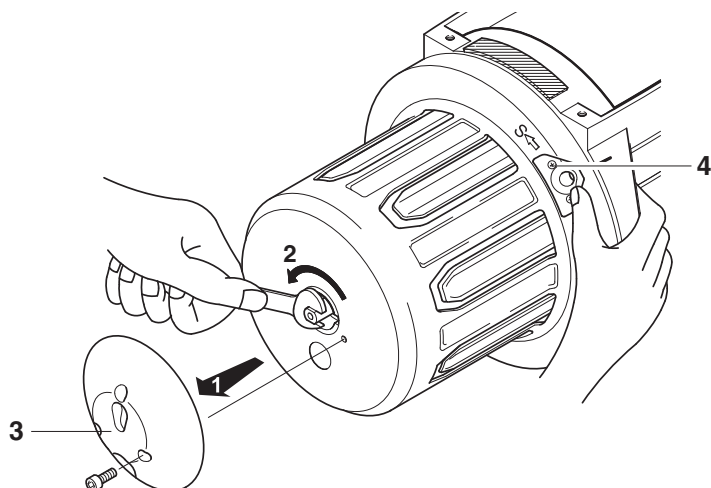
In order to remove the weft spool body, follow these steps:

- 1) Switch off the weft accumulator by turning **0 - I** switch to **0**.
- 2) Disconnect the supply cable from the power supply box and wait about two minutes before continuing so that the capacitors on the electronic boards have time to discharge.

- 3) Remove the 4 screws (1), lift top panel (2) by pulling slightly forwards, detach connector (C1) from the weft feeler unit control board and connector (C2) from the output sensor and then remove the top panel.

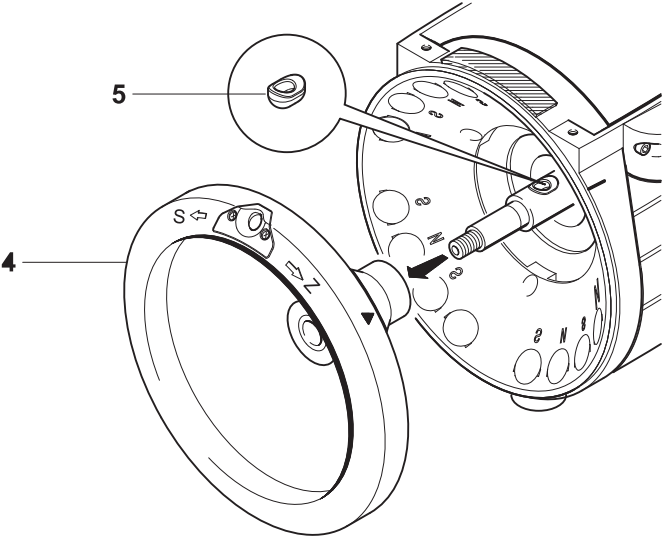


- 4) Remove cap (3), keep flywheel (4) still and use a setscrew wrench on the shaft to unscrew the weft spool body completely and then slip it out.

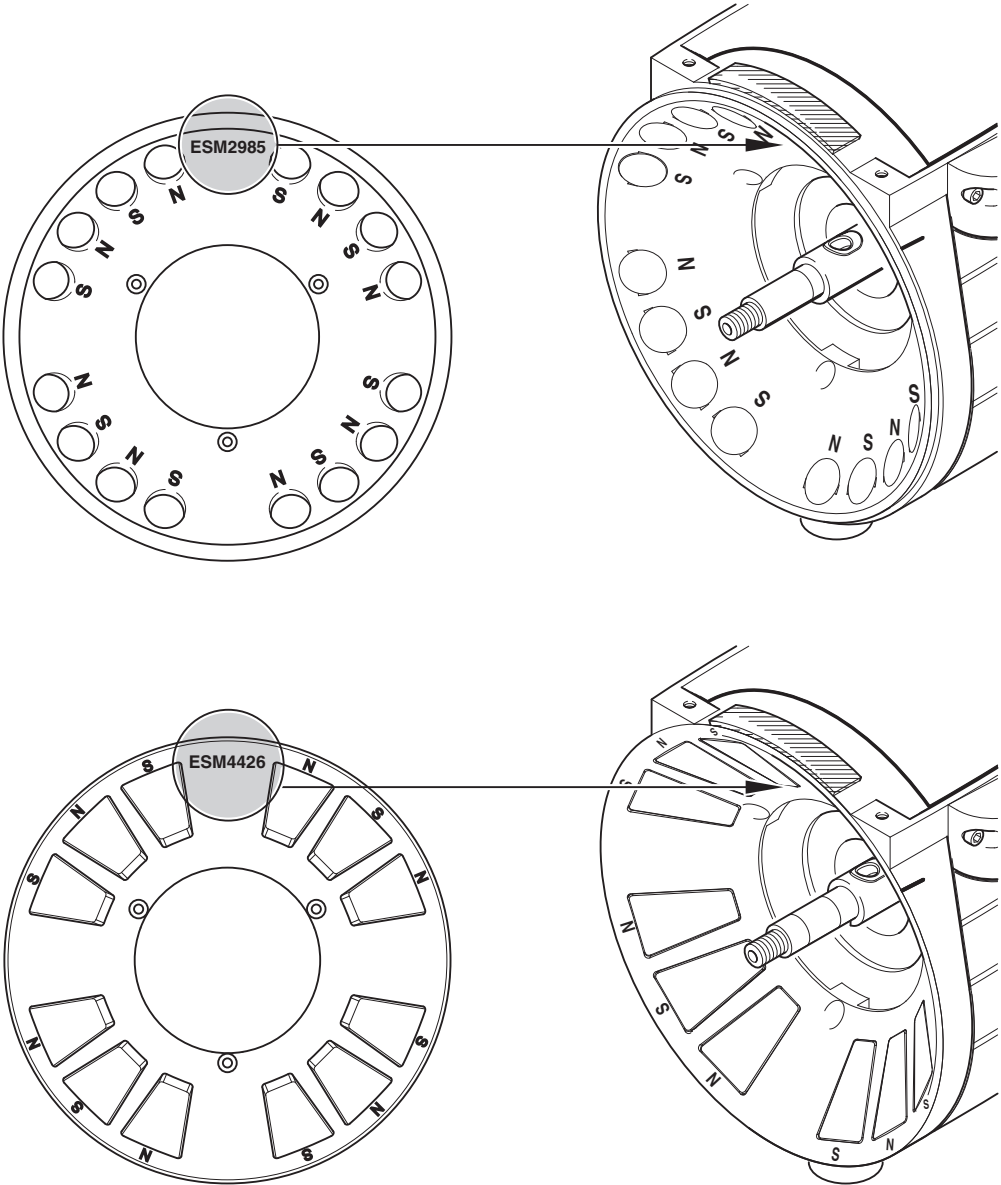


5 - MAINTENANCE AND COMPONENT REPLACEMENTS

Flywheel (4) and ceramic bush (5) on the shaft may now be removed easily.



If the magnet holder is also removed, remount this as per the drawing.



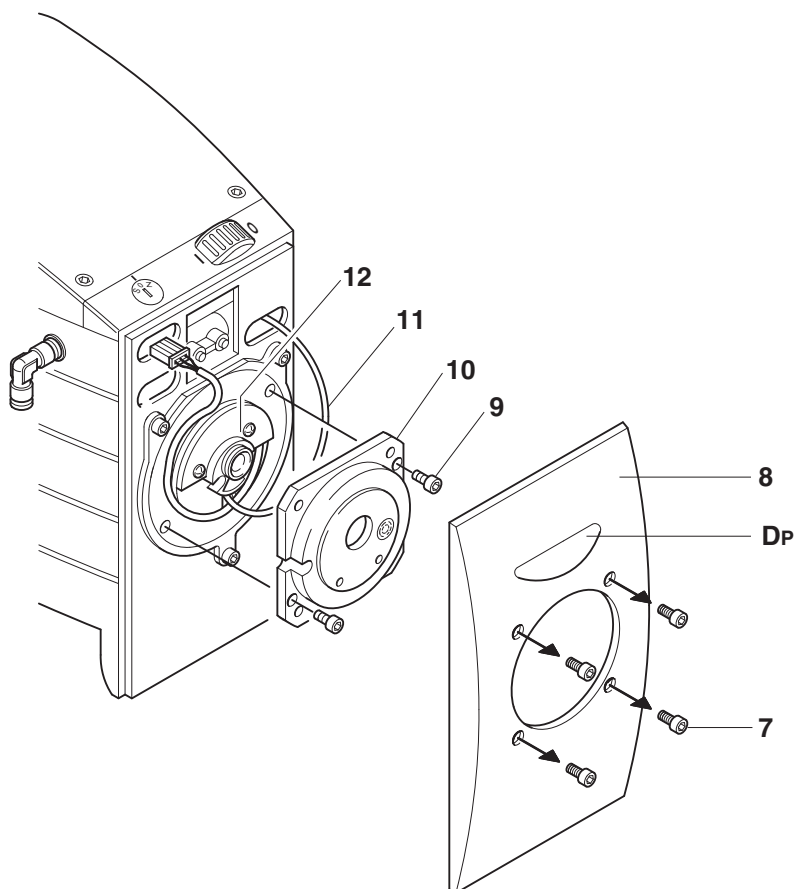
5 - MAINTENANCE AND COMPONENT REPLACEMENTS

5.2 REPLACING THE INPUT SENSOR

In order to replace the input sensor, follow these steps:

- 1) Switch off the weft accumulator by turning **0 - I** switch to **0**.
- 2) Disconnect the supply cable from the power supply box and wait for about two minutes before continuing so that the capacitors on the electronic boards have time to discharge.
- 3) Weft accumulators with pneumatic threading only: eliminate any compressed air by closing the circuit and pressing push-button (**DP**) (partial pneumatic threading).
- 4) If fitted, remove the input tensioner on the weft accumulator.
- 5) Remove the 4 screws (**7**) and remove the top cover (**8**)
- 6) Disconnect input sensor connector (**C3**).
- 7) Remove the 2 screws (**9**) and then remove sensor support (**10**).
- 8) Weft accumulator with pneumatic threading only: detach tube (**11**).
- 9) Replace sensor (**12**).

N.B.: Take care not to crush the sensor cable and the pneumatic circuit tubes when returning sensor bracket (**10**) and cover (**8**).

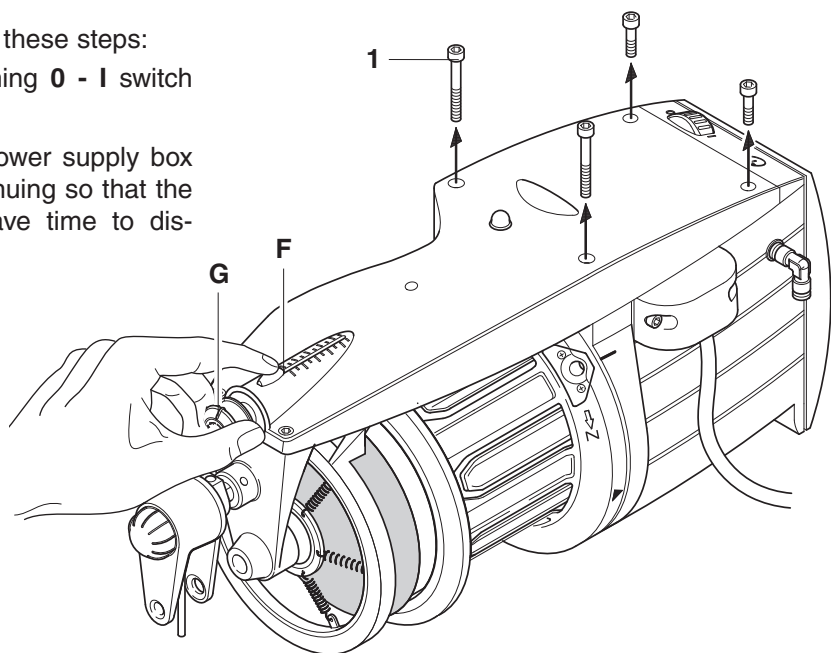
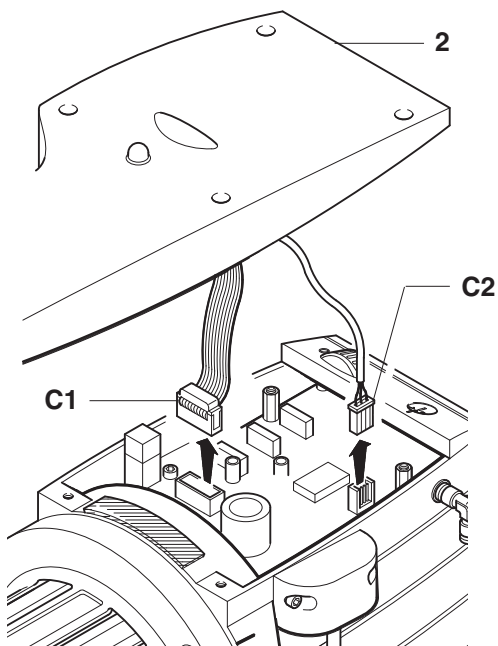


5 - MAINTENANCE AND COMPONENT REPLACEMENTS

5.3 REPLACING THE OUTPUT SENSOR (if provided)

In order to replace the output sensor, follow these steps:

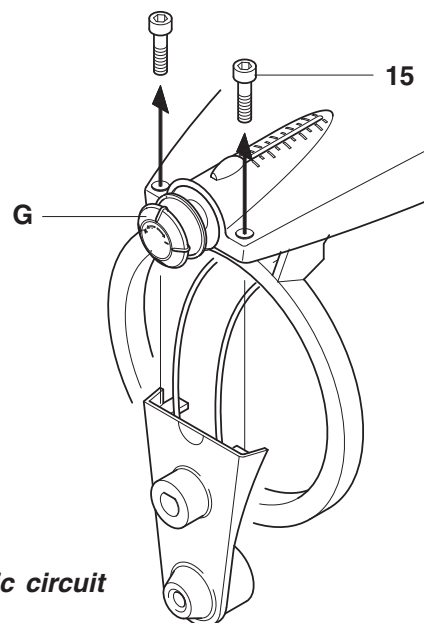
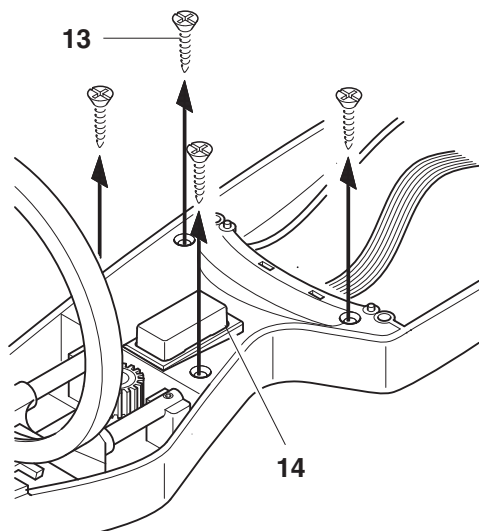
- 1) Switch off the weft accumulator by turning **0 - I** switch to **0**.
- 2) Disconnect the supply cable from the power supply box and wait about two minutes before continuing so that the capacitors on the electronic boards have time to discharge.



- 3) Move the output tensioner to the open position by acting on the special release push-button (**F**) and by pulling the knob (**G**). Unscrew the four screws (**1**), lift the top panel (**2**) by pulling slightly forwards, detach connector (**C1**) from the weft feeler unit control board and connector (**C2**) from the output sensor and then remove the top panel. Dismount the brake system (see paragraph 6).

- 4) Unscrew the four screws (**13**), and take the tensioner carriage to the end of its stroke using knob (**G**). Raise weft feeler unit (**14**) to access the output sensor cable and release the pneumatic threading tube (if any).
- 5) Remove the 2 screws (**15**) and then remove the bracket holding the output sensor.
- 6) Fit the new sensor.

N.B.: The new sensor is already fixed to its bracket.



N.B.: Take care not to crush the output sensor cable and the pneumatic circuit tubes when returning weft feeler unit (14).

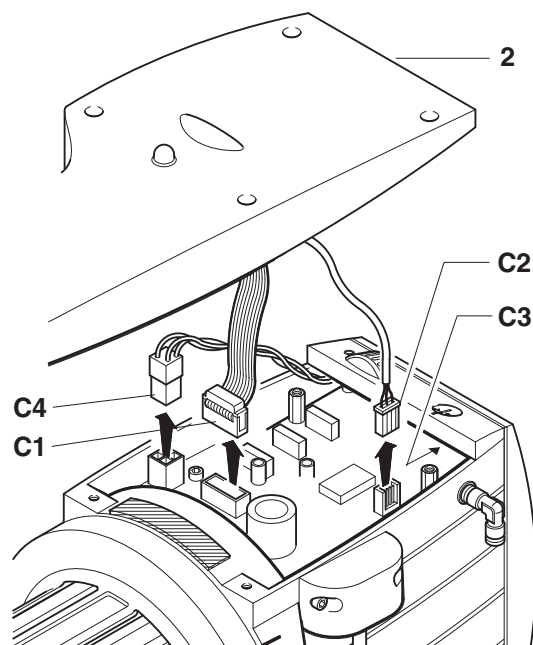
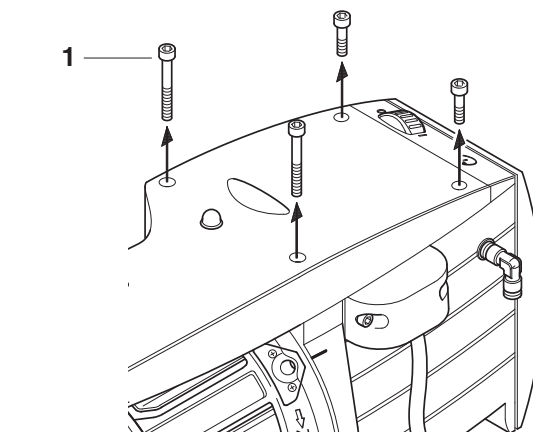
5 - MAINTENANCE AND COMPONENT REPLACEMENTS

5.4 REPLACING THE MAIN ELECTRONIC CONTROL BOARD

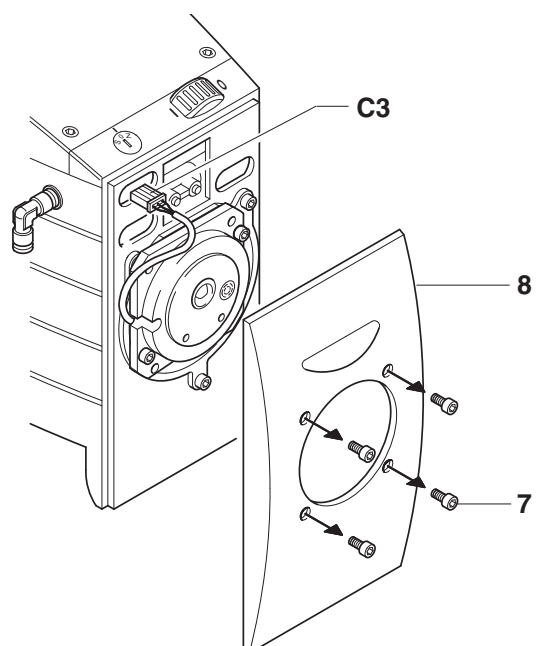
To replace the main electronic control board, follow these steps:

- 1) Switch off the weft accumulator by turning **0 - I** switch to **0**.
- 2) Disconnect the supply cable from the power supply box and wait about two minutes before continuing so that the capacitors on the electronic boards have time to discharge.

- 3) Remove the 4 screws (**1**), lift top panel (**2**) by pulling slightly forwards, detach connector (**C1**) from the weft feeler unit control board and connector (**C2**) from the output sensor (if provided) and then remove the top panel.

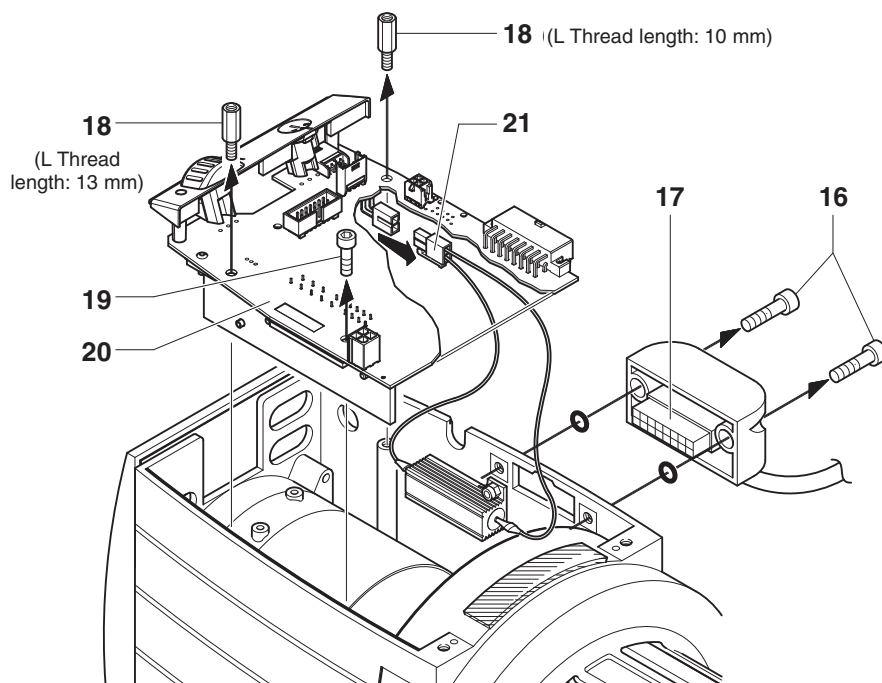


- 4) Remove the four screws (**7**) and remove the cover (**8**), detach connector (**C3**) on the input sensor and connector (**4**) of the motor.



5 - MAINTENANCE AND COMPONENT REPLACEMENTS

- 5) Remove the 2 screws (16) and then detach power supply cable connector (17).
- 6) Remove the 2 spacers (18), screw (19) and then remove the main control board (20).
- 7) Pull out the connector (21), located on the underside of the board, of the armoured resistance.
- 8) Replace with the new board.

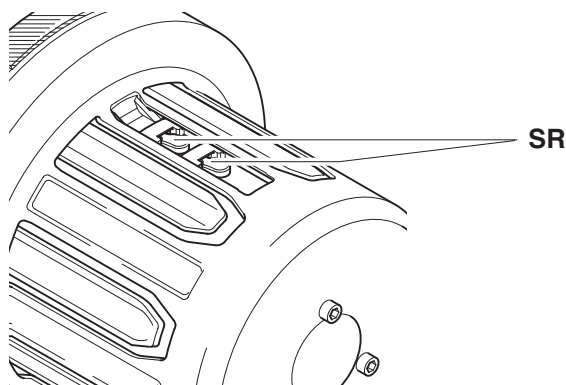


N.B.: When fitting the new board, make sure that spacers (18) and screw (19) are thoroughly tightened so that the aluminium board bracket touches the aluminium casing of the weft accumulator. Spacers shall be fitted as shown in the picture.

We recommend putting some thermo-conductive paste on the surface of the bracket at the points where this comes into direct contact with the accumulator casing. Before closing the top panel, check the setting of the jumpers.

IMPORTANT NOTE :

If the reserve sensors (SR) are provided on the drum (SR), in cases when the replacement of the control board of one of the two sensors is required, a calibration procedure shall be performed.



Hence, in case of need, proceed as follows:

- 1) Turn off the weft feeder by setting the **0 - I** selector to position **0**.
- 2) Set the **S - 0 - Z** change-over switch to **0** (or, alternatively, selector-switch **L - M - H** to position **M**).
- 3) Thread the weft feeder.
- 4) Turn the feeder on, then immediately turn it off.
- 5) In 10 seconds, set the **S - 0 - Z** change-over switch from position **0** to position **Z** and the other way round 5 times (do the same with the **L - M - H** selector switch by setting it from position **M** to position **H** and the other way round 5 times). Then set the **S - 0 - Z** change-over switch (or the **L - M - H** selector) to the position that was set in the beginning. Remove the weft that has wound from the drum and make sure the weft does not come into contact with either sensor.
- 6) Turn the feeder on. The feeder, holding the Led provided on the guard OFF, winds 40 coils round the drum. At the end of the winding, if the procedure has been successful, the LED provided on the guard will quickly blink for 2 seconds. If the blinking does not occur, repeat the foregoing procedure back from 1).

5 - MAINTENANCE AND COMPONENT REPLACEMENTS

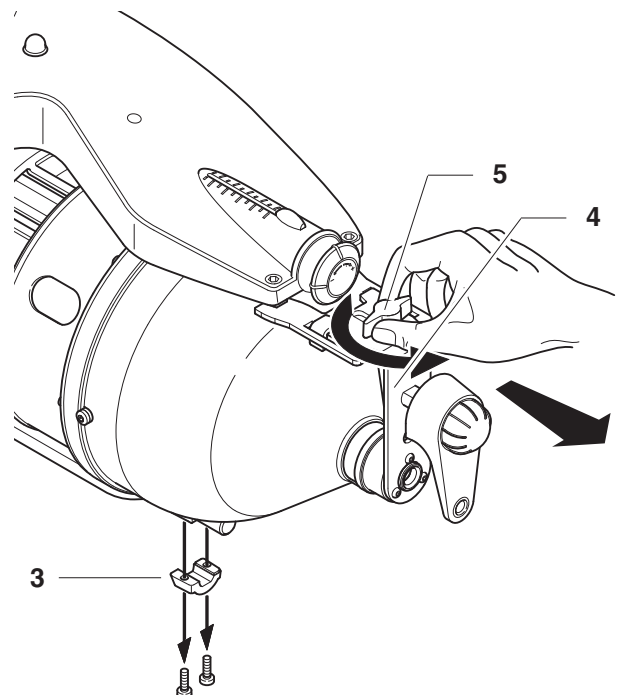
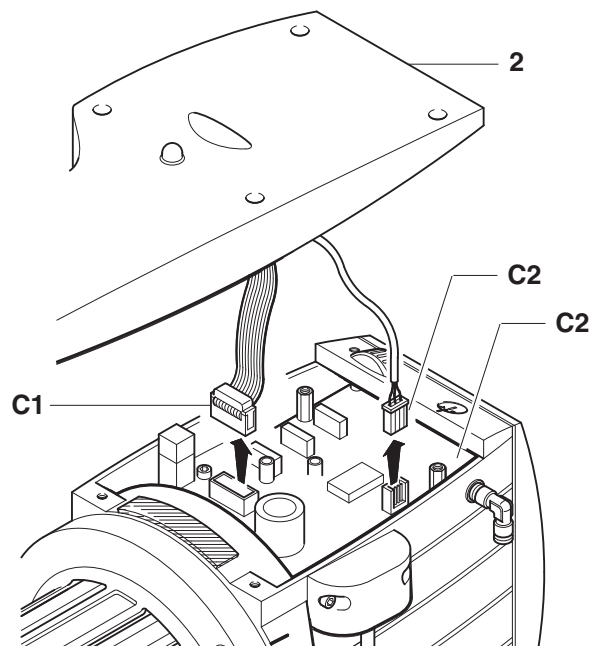
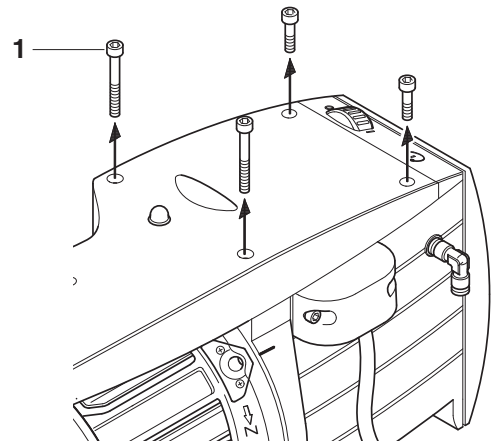
5.5 REPLACING THE WEFT FEELER UNIT ELECTRONIC CONTROL BOARD

To replace the weft feeler unit electronic control board, follow these steps:

- 1) Switch off the weft accumulator by turning **0 - I** switch to **0**.
- 2) Disconnect the supply cable from the power supply box and wait about two minutes before continuing so that the capacitors on the electronic boards have time to discharge.

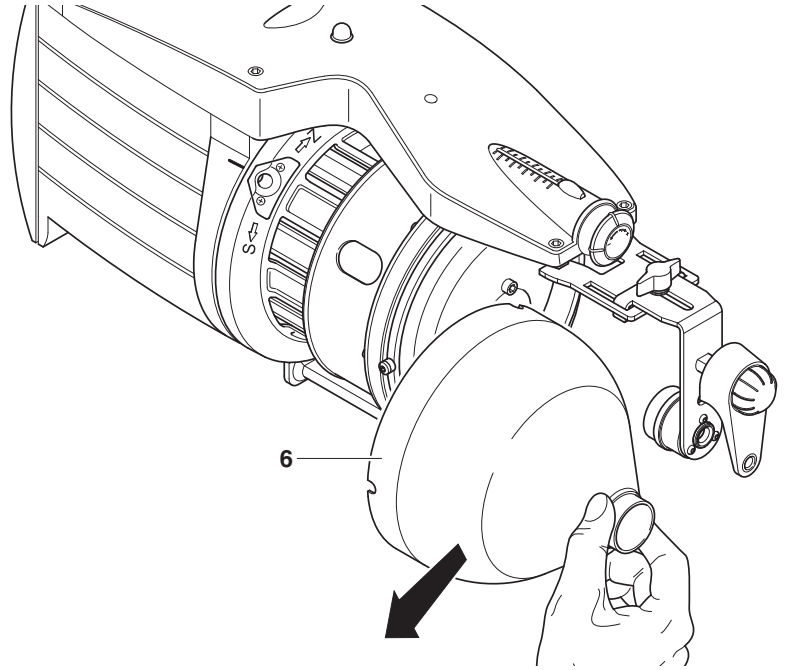
- 3) Remove the 4 screws (1), lift top panel (2) by pulling slightly forwards, detach connector (C1) from the weft feeler unit control board and connector (C2) from the output sensor and then remove the top panel.

- 4) If the funnel is provided, it shall be removed. Remove the bracket (3) that is found on the central ring of the funnel assembly and open the sliding carriage (4) by turning the related fastening knob (5).

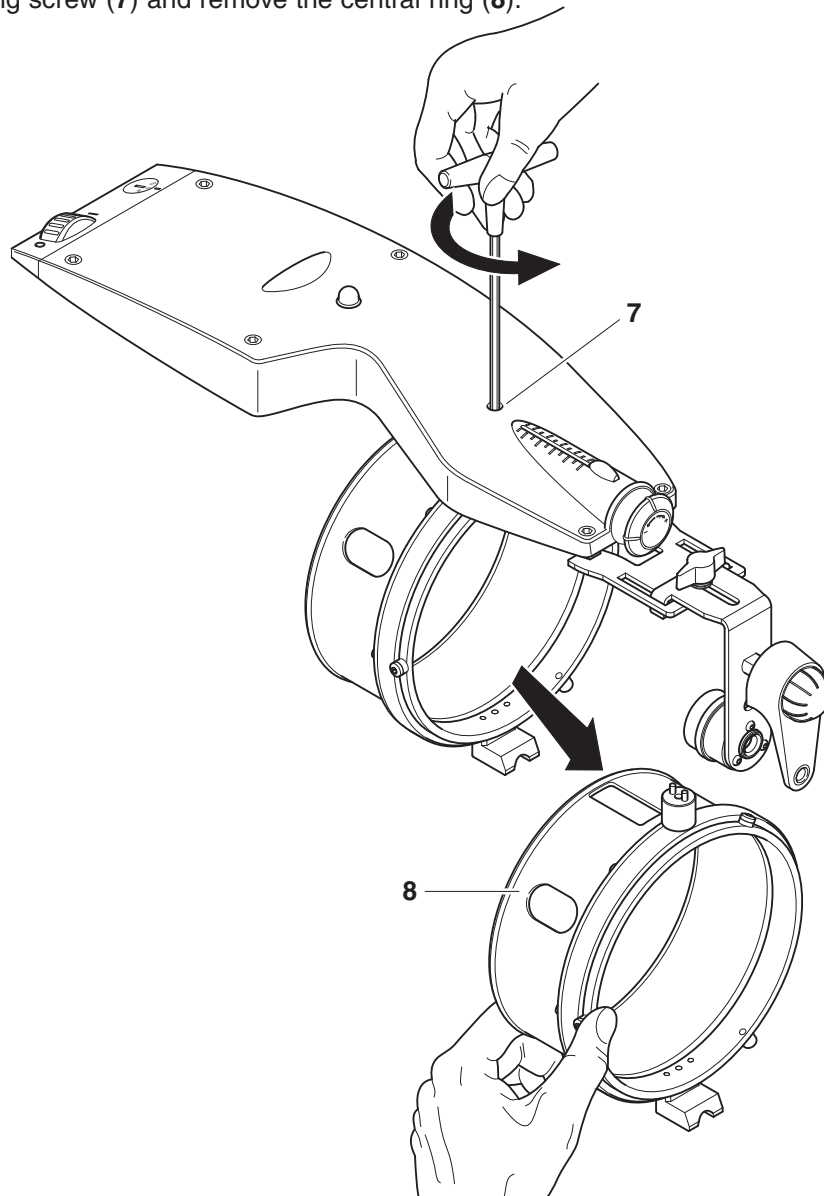


5 - MAINTENANCE AND COMPONENT REPLACEMENTS

Remove the funnel (6).
Now, the top panel can be removed.

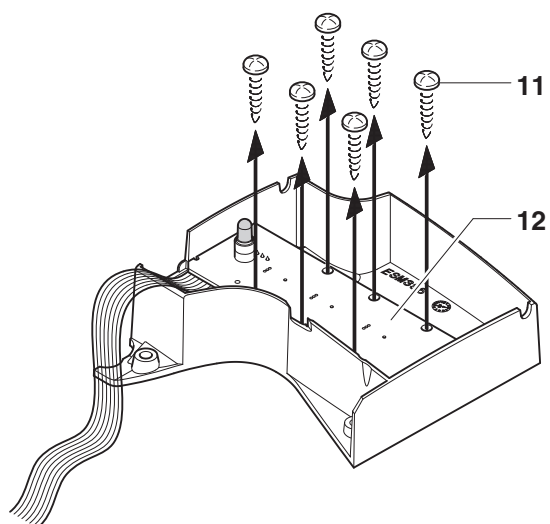
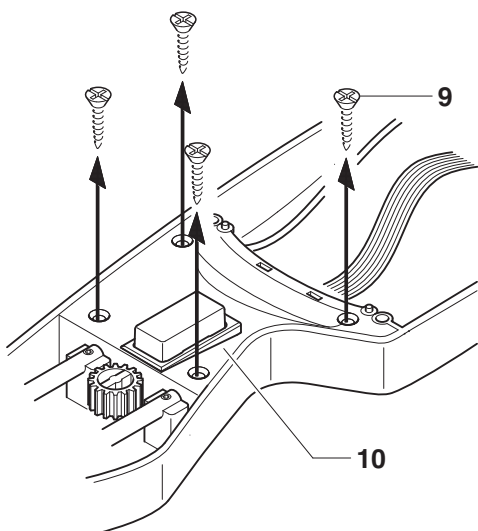


Unscrew the fastening screw (7) and remove the central ring (8).



5 - MAINTENANCE AND COMPONENT REPLACEMENTS

- 5) Remove the four screws (13) and take the tensioner carriage to the end of its stroke using knob (G) and then remove weft feeler unit (14).
- 6) Unscrew the 6 screws (23) that fasten the board LGL133-136 (24) to the weft-feeler assembly. Take care not to disassemble the mechanism of the optomechanical weft-feeler (25); possibly place it back in the correct position. Remove the board and fit the new one.



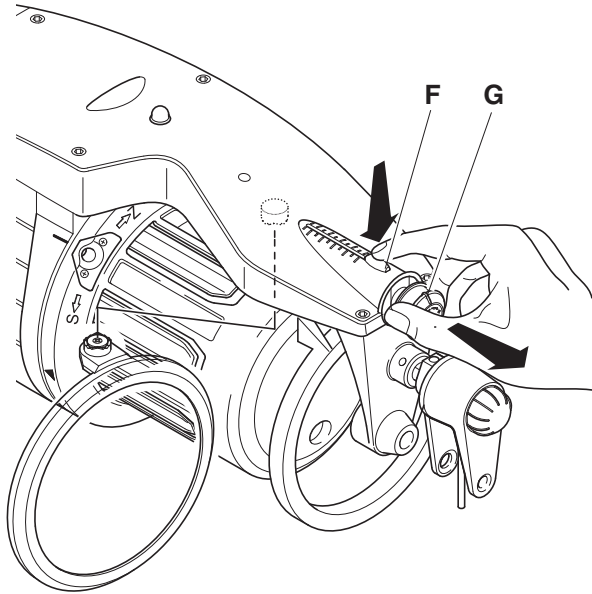
N.B.: Take care not to crush the output sensor cable and the pneumatic circuit tubes when returning weft feeler unit (14) to the top panel.

6 - MOUNTING THE TENSIONERS

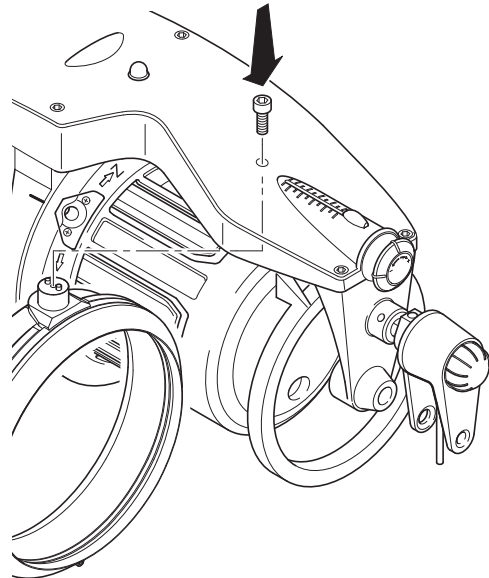
6.1 MOUNTING THE TWM TENSION MODULATOR

To mount the TWM tension modulator with its kit, follow these steps:

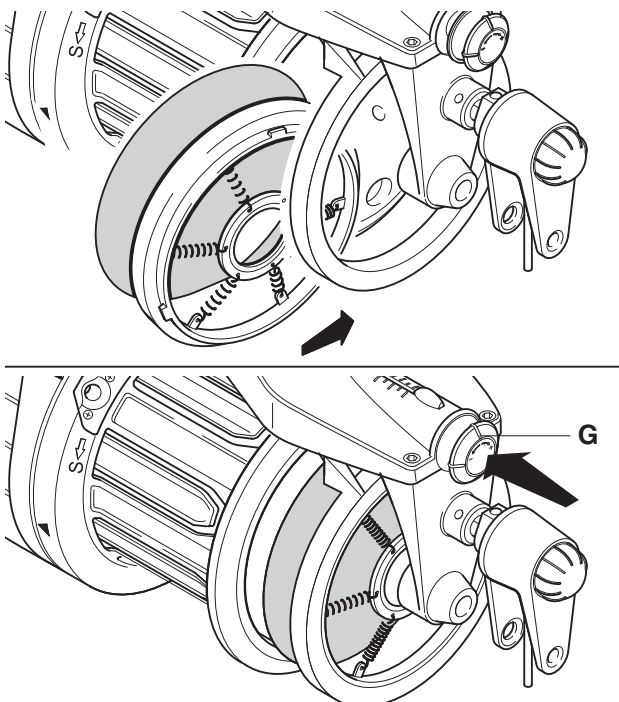
- 1) Release the tensioner carriage by pressing the release push-button (F) and by pulling the knob (G), then fix the anti-ballooning ring by inserting the magnetic part into the special seat that is found in the top panel.



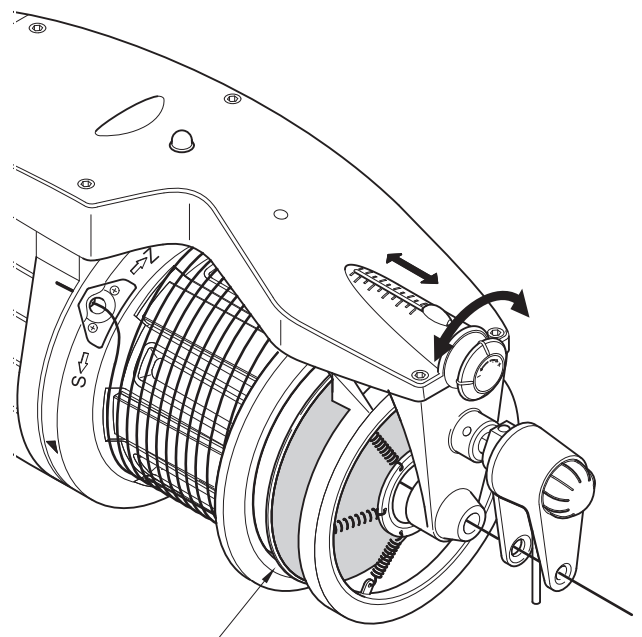
- 1/a) If the JUTA version is provided, the insertion of the ring is performed in the same manner as the traditional ring, whereas the fastening takes place by means of a screw to be introduced into a dedicated location of the guard.



- 2) Insert the TWM tension modulator on the movable stand.
- 3) Engage the tensioner carriage again by pressing knob (G).



- 4) After threading the accumulator and winding the weft around the weft spool body, adjust the tensioning as indicated in the figure.



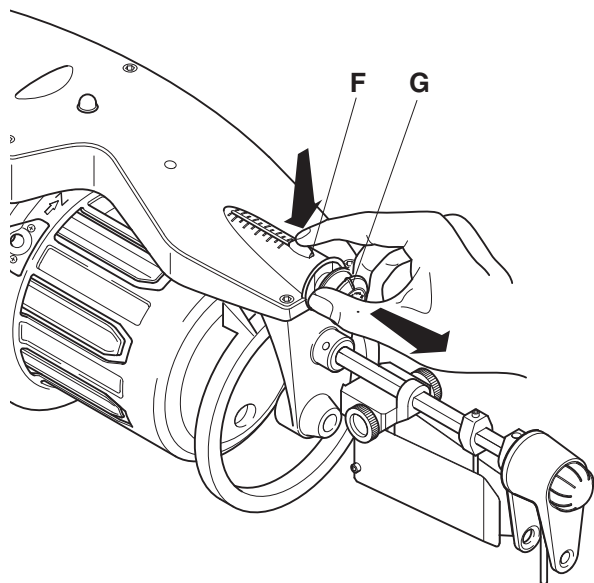
To get to know more on the rim feature, please refer to chapter 3.1.

6 - MOUNTING THE TENSIONERS

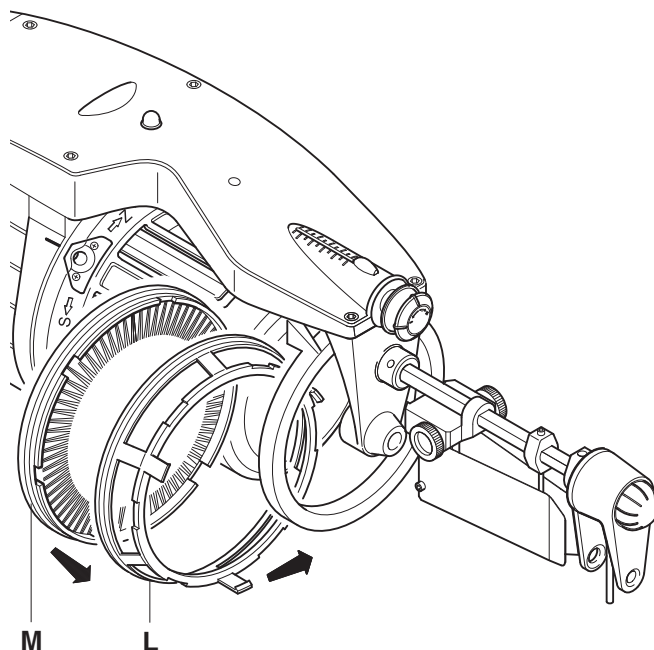
6.2 MOUNTING THE BRISTLE BRUSH

To mount the bristle brush with its kit, follow these steps:

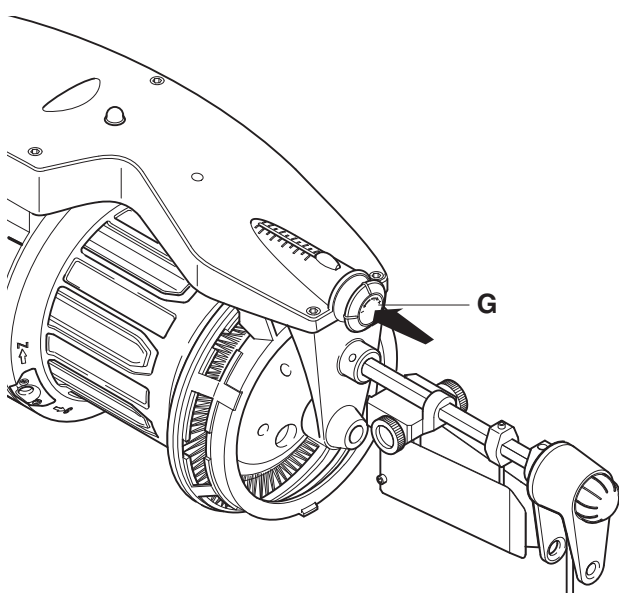
1) Release the tensioner carriage by acting on the release push-button (F) and by pulling the knob (G).



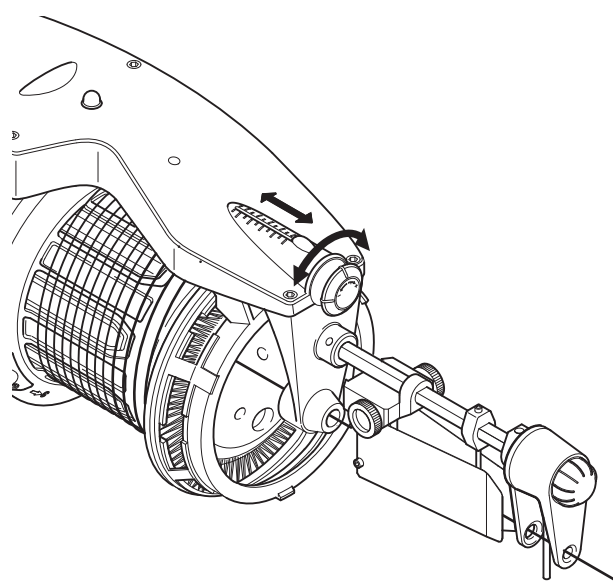
2) Insert brush holder (L) and then brush (M) on the movable stand.



3) Engage the tensioner carriage again by pressing knob (G).



4) After threading the accumulator and winding the weft around the weft spool body, adjust the tensioning as indicated in the figure.

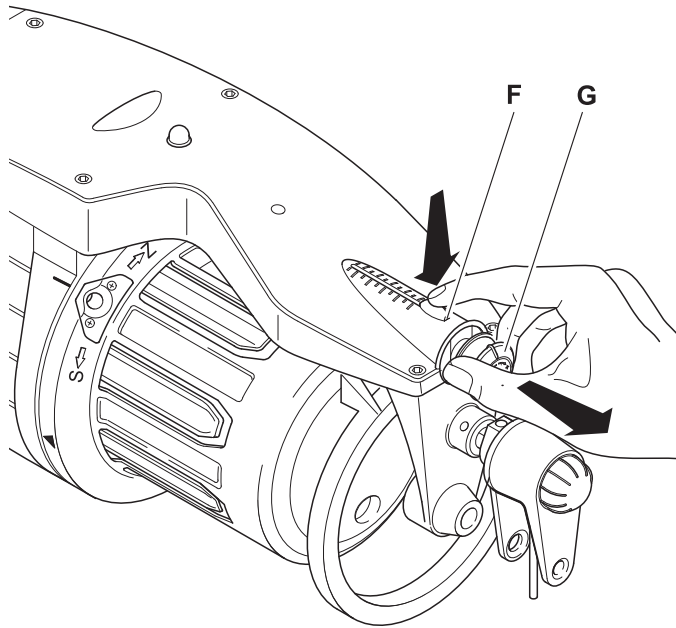


6 - MOUNTING THE TENSIONERS

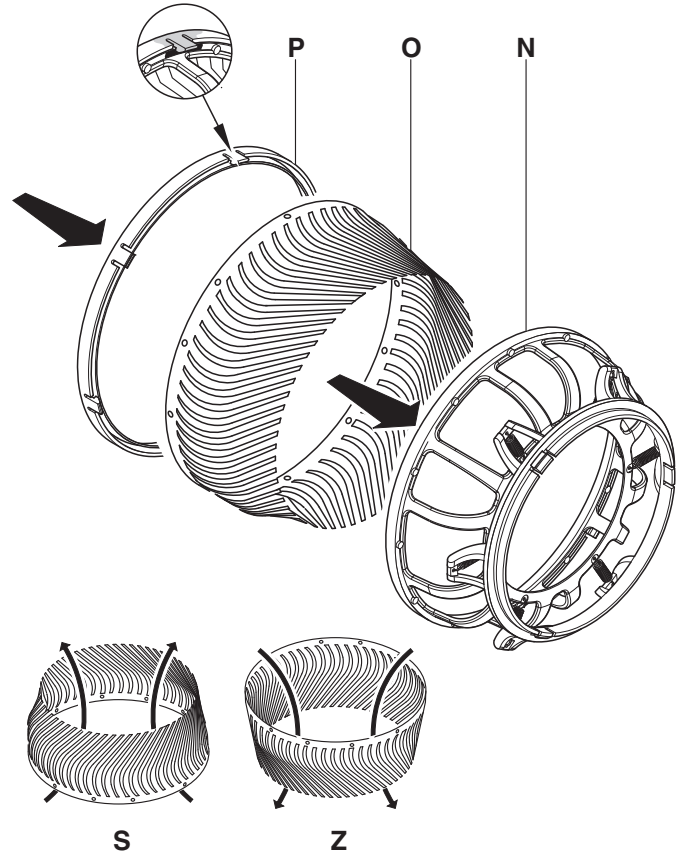
6.3 MOUNTING THE METAL BRUSH

To mount the metal brush with its kit, go through the following steps:

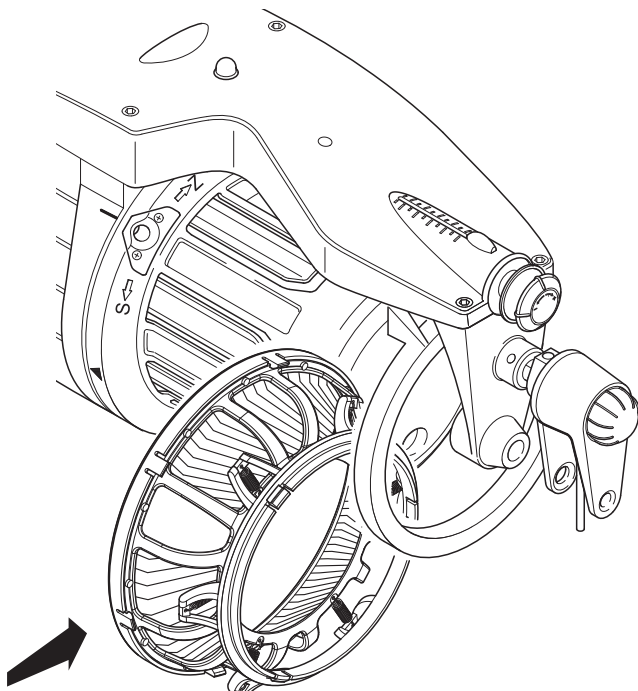
1) Release the tensioner carriage by pressing the release push-button (F) and by pulling knob (G).



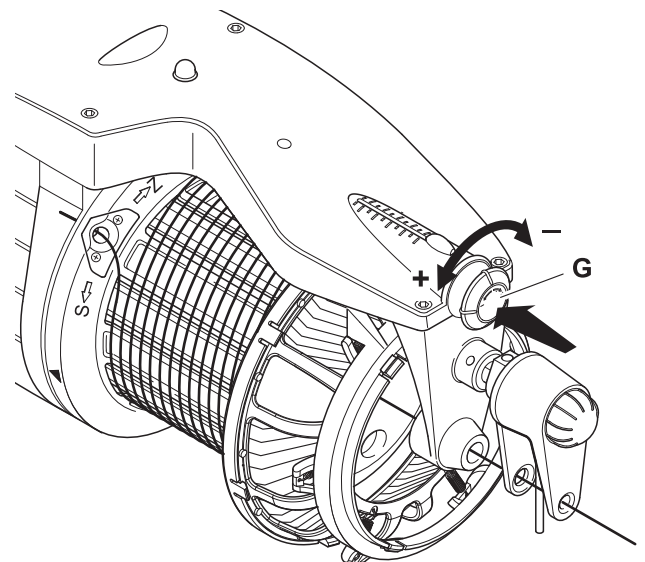
2) Insert the metal brush (O) into the dedicated support (N) and fasten it by hooking the ring nut (P) to the support by means of the special hook.



3) Hook the support to the brake holding ring.



4) Refasten the braking carriage by pressing knob (G). After the first threading of the feeder and after winding the weft on the trunk, adjust the braking as shown in the figure.

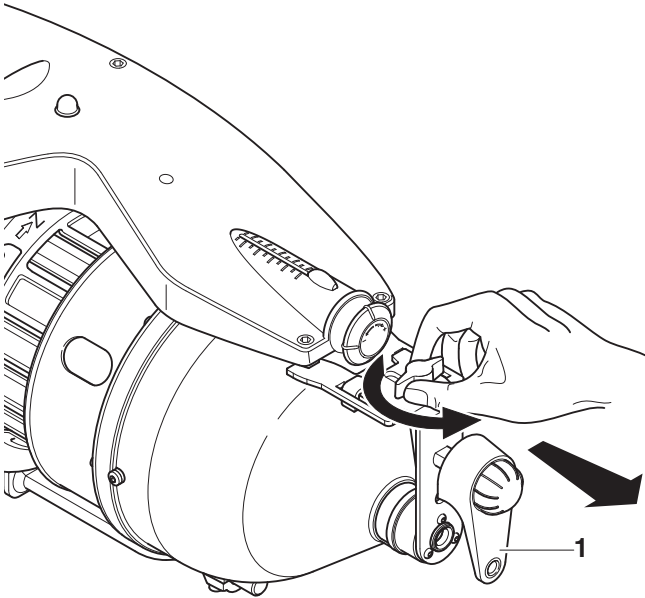


6 - MOUNTING THE TENSIONERS

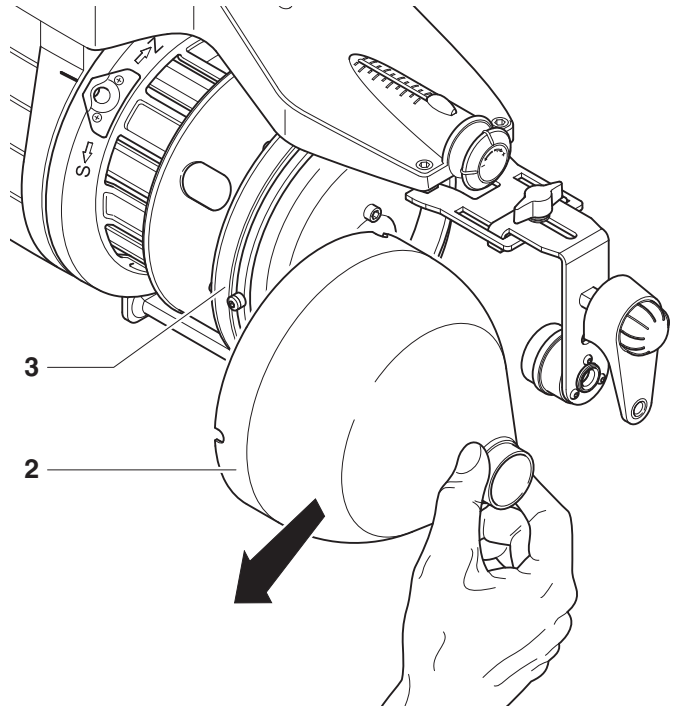
6.4 REMOVING THE FUNNEL AND ASSEMBLING THE BRUSH HOLDER

To replace the funnel with the bristle kit, take the following steps:

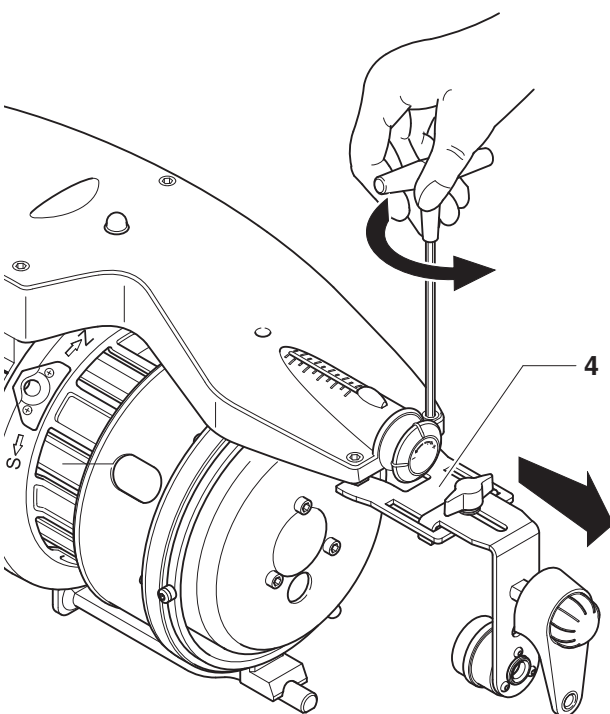
1) Open the carriage (1) by pulling it outwards after turning it by turning the related fastening knob.



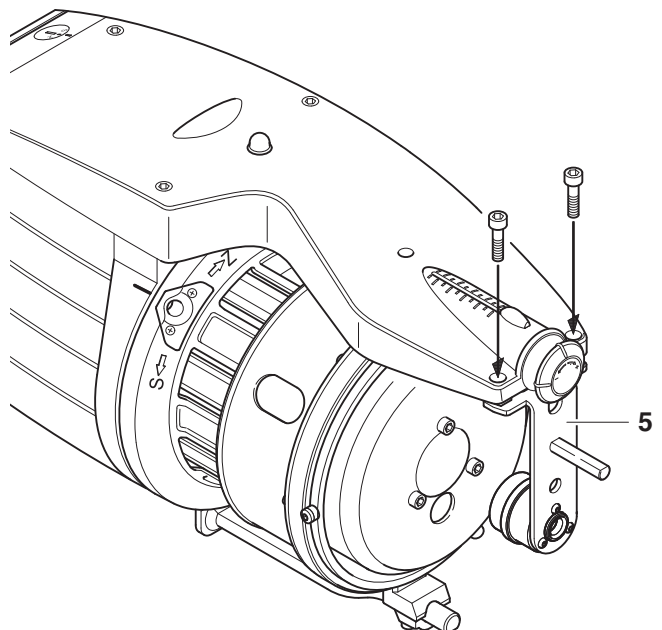
2) Pull the funnel (2) out of the ring (3).



3) Unscrew the screws that fasten the ceramic support (4) and remove the latter.

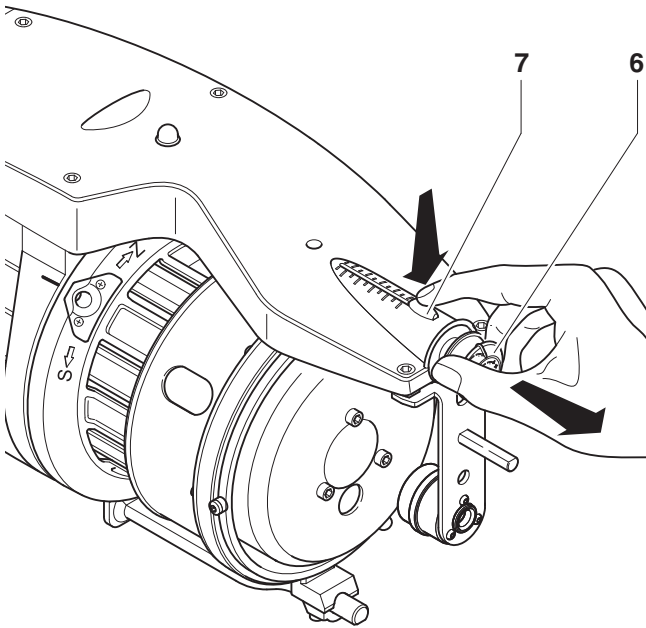


4) Fasten the bracket for the bristle kit (5).

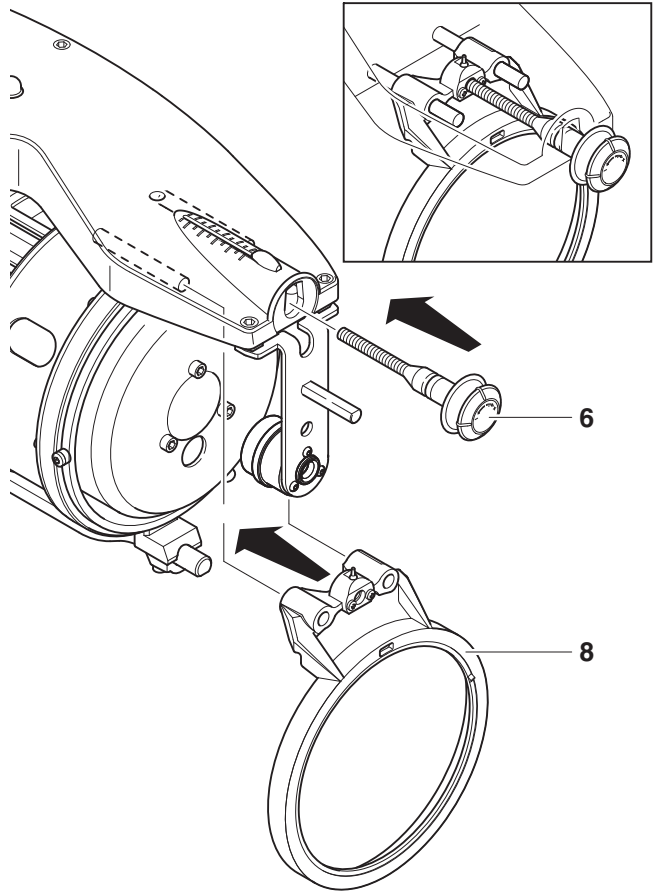


6 - MOUNTING THE TENSIONERS

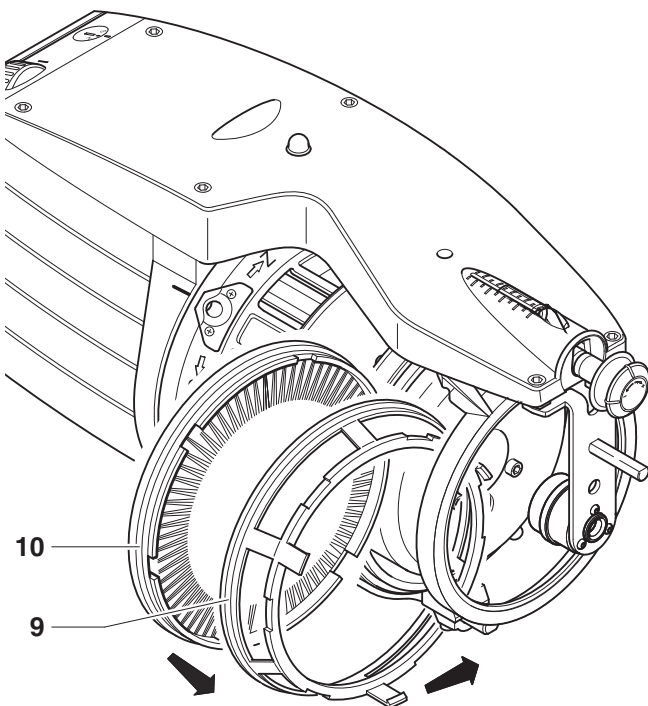
5) Remove the knob (6) from the carter, by acting on the dedicated push-button (7).



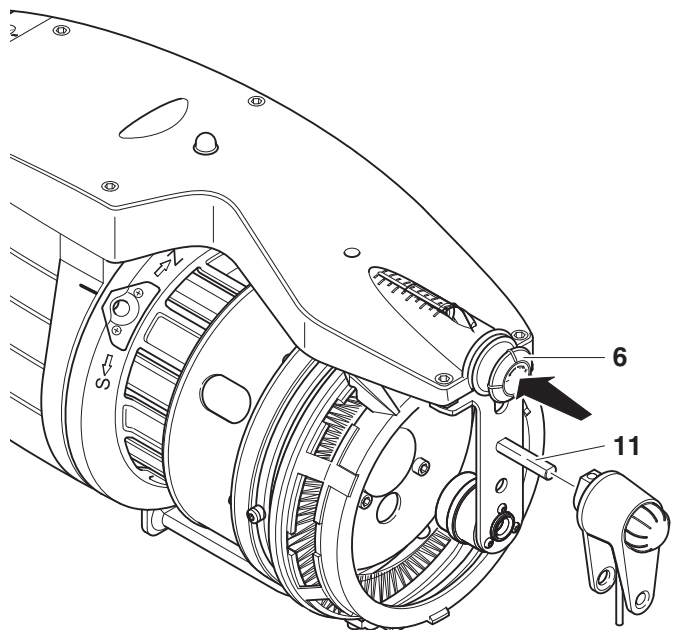
6) Insert the brush-holding ring (8) onto the dedicated pivots and screw the knob (6) into the central ring thread.



7) Hook the brush support (9) to the brush holder. Apply the desired bristle type (10) to the brush holder.

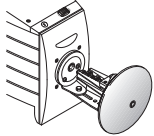
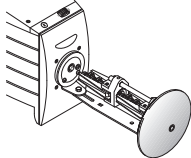
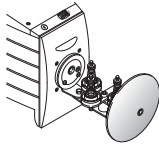
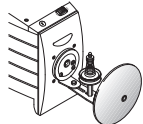
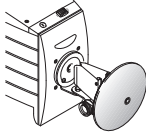
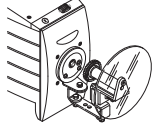
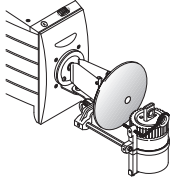



8) Hook up the braking carriage by pressing the knob (6). Apply the desired output brake (e.g. recuperator) to the pivot provided on the bracket (11).



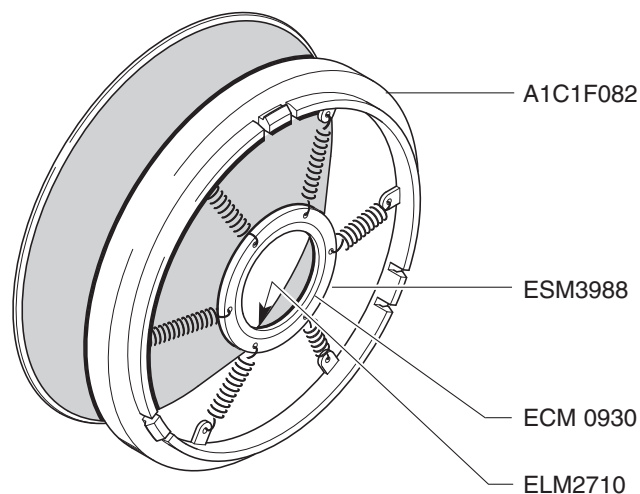
7 - APPLICATION FIELD FOR TENSIONERS

7.1 APPLICATION FIELD FOR INPUT TENSIONERS

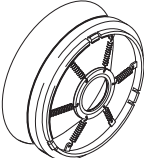
WEFT TYPE	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: Linen, Hemp, Camel hair, Jute, etc.	Viscose, Synthetic fibres
Compensator tensioner 	from Nm 12 to Nm 120	from Nm 8 to Nm 200	from Nm 15 to Nm 150	from Nm 3 to Nm 90	from Nm 9 to Nm 200
Double compensator tensioner 			from Nm 15 a Nm 150		from Nm 48 a Nm 200
Disk tensioner 	from Nm 12 to Nm 30		from Nm 15 to Nm 120		from Nm 9 to Nm 120
Disk tensioner for pneumatic threading 	from Nm 12 to Nm 120	from Nm 8 to Nm 200	from Nm 15 to Nm 120	from Nm 6 to Nm 90	from Nm 90 to Nm 120
Leaf tensioner 	from Nm 12 to Nm 30	from Nm 8 to Nm 40		from Nm 3 to Nm 50	from Nm 9 to Nm 50
Anti-snarling unit 	from Nm 20 to Nm 120	from Nm 20 to Nm 120	from Nm 15 to Nm 150		from Nm 40 to Nm 150
Oiling unit 	from Nm 8 to Nm 120	from Nm 8 to Nm 200	from Nm 15 to Nm 150	from Nm 3 to Nm 90	from Nm 9 to Nm 200
Waxing unit 	from Nm 8 to Nm 30	from Nm 8 to Nm 60	from Nm 15 to Nm 70	from Nm 3 to Nm 40	from Nm 9 to Nm 80

7 - APPLICATION FIELD FOR TENSIONERS

7.2 APPLICATION FIELD FOR THE "TWM" TENSION MODULATOR



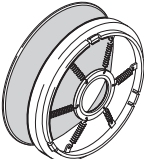
TWM type KL (code A1N1SA250BE)

SPRING FITTING OPTION	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: linen, camel hair, etc.	Viscose, synthetic fibres
 <p>Standard fitting n° 6 springs ø 0,4 22mm in length</p>	from Nm 40 to Nm 80	beyond Nm 85	from Nm 70 to Nm 200	beyond Nm 50	from Nm 80 to Nm 150

Springs supplied: no. 6 springs ø 0,4 mm - 22 mm in length - ELM 1629

N.B.: The spool body trunk is transparent.

TWM type LT05 (code A1N2S968BE)

SPRING FITTING OPTION	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: linen, camel hair, etc.	Viscose, synthetic fibres
 <p>Standard fitting no.3 springs ø 0,7 33 mm in length no.3 springs ø 0,4 22 mm in length</p>	from Nm 40 to Nm 60	from Nm 50 to Nm 110	from Nm 45 to Nm 80	from Nm 25 to Nm 50	from Nm 45 to Nm 90

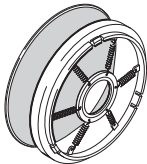
Springs supplied: no. 3 springs ø 0,7 mm - 33 mm in length - ELM 2269
no. 6 springs ø 0,4 mm - 22 mm in length - ELM 1629

N.B.: GREEN text is found on the spool body trunk.

In cases when lower tensions are required, use only no. 6 springs ø 0,4 mm - 22 mm in length - ELM 1629.

7 - APPLICATION FIELD FOR TENSIONERS

TWM type LT10 (code A1N2S969BE - T7)

SPRING FITTING OPTION	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: linen, hemp, camel hair, jute, etc.	Viscose, synthetic fibres
 <p>Standard fitting no.3 springs ø 0,7 33 mm in length n° 3 springs ø 0,4 22 mm in length</p>	from Nm 15 to Nm 50	from Nm 30 to Nm 85	from Nm 30 to Nm 70	from Nm 25 to Nm 70	from Nm 25 to Nm 90
<p>Option 2 no.3 springs ø 0,7 22 mm in length no.3 springs ø 0,7 33 mm in length</p>	from Nm 5 to Nm 15	from Nm 8 to Nm 20		For greater counts, we suggest using T.W.M. type "R-R"	For greater counts, we suggest using T.W.M. type "R-R"

Springs supplied: no. 3 springs ø 0,7 mm - 33 mm in length - ELM 2269
no. 3 springs ø 0,7 mm - 22 mm in length - ELM 1630
no. 6 springs ø 0,4 mm - 22 mm in length - ELM 1629

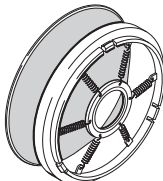
N.B.: *BLUE text is found on the spool body trunk.*

The 6 springs that are 4 mm in ø ELM1629 shall be fitted in cases when lower tensions are required.

Upon request, the following versions can be made available:

- **Fibre glass** (code A1N2S969BEL - T7).
- **Diameter 80**, for very powdery fabrics (code A1N2S967BE - T7).

TWM type R-R (code A1N2S970BE - T7)

SPRING FITTING OPTION	Wool yarn	Cotton and viscose staple fibre	Stiff yarns: linen, hemp, camel hair, jute, etc.	Viscose, synthetic fibres
 <p>Standard fitting no.6 springs ø 0,7 22 mm in length</p>	from Nm 1 to Nm 8	from Nm 1 to Nm 20	from Nm 1 to Nm 18	from Nm 1 to Nm 20

Springs supplied: no. 6 springs ø 0,7 mm - 22 mm in length - ELM 1630
no. 3 springs ø 0,7 mm - 33 mm in length - ELM 2269

N.B.: *BLUE text is found on the spool body trunk.*

In cases when lower tensions are required, use only no. 3 springs that are 0,7 mm in ø - 22 mm in length - ELM 1630 and no. 3 springs that are 0,7 mm in ø - 33 mm in length - ELM 2269

Upon request, the following versions can be made available:

- **Fibre Glass** (code A1N2S970BEL - T7).
- **Diameter 80**, for very powdery fabrics, (code A1N2S971BE - T7).
- **Fibre Glass with diameter 80** (code A1N2S971BEL - T7).
- **Jute** (code A1N2S707SL).

The TWM is not recommended for weaving lamé strip.

The use of oil and paraffin causes tension on the yarn to decrease: when working in these conditions, increase the TWM tension.

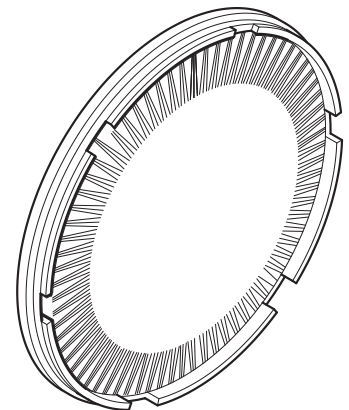
7 - APPLICATION FIELD FOR TENSIONERS

7.3 APPLICATION FIELD FOR BRISTLE BRUSH TENSIONERS

WEFT TYPE	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: Linen, Hemp, Camel hair, Jute, etc.	Viscose, Synthetic fibres
Goat hair (white)	over Nm 30	over Nm 60	over Nm 60	over Nm 30	over Nm 60
Chinese mane (brown)	from Nm 18 to Nm 60	from Nm 45 to Nm 90	from Nm 50 to Nm 90	from Nm 16 to Nm 40	from Nm 45 to Nm 80
0,20 (black)	from Nm 10 to Nm 20	from Nm 20 to Nm 50	from Nm 36 to Nm 60	from Nm 10 to Nm 30	from Nm 18 to Nm 60
0,30 (black)	from Nm 1 to Nm 12	from Nm 1 to Nm 30	from Nm 15 to Nm 40	from Nm 6 to Nm 18	from Nm 9 to Nm 20

Note: radial versions are considered as being in the same application range, but performance tend to a harder model.

BRISTLE BRUSHES		
BRISTLE TYPE	Code "S" TWIST	Code "Z" TWIST
0,20	A1C1F211	A1C1F213
0,30	A1C1F210	A1C1F212
Chinese mane	A1C1F214	A1C1F215
Goat hair	A1C1F216	A1C1F217
Radial goat hair	A1C1F231	
0,2 Radial	A1C1F222	
0,3 Radial	A1C1F229	
Radial Chinese mane	A1C1F223	



As regards the **Goat Hair** type and the **Chinese Maine** type brushes, we suggest you use output tensioner device: **2 Medium Lamella Leaf Tensioners** or, as an alternative, **Standard Leaf Tensioner**.

As regards brush type **0,20** and brush type **0,30**, we suggest using the output tensioner device: **Standard Leaf Tensioner** or, as an alternative, **2 leaf tensioners with folded lamella**.

The **Standard Leaf Tensioner + Folded Lamella Leaf Tensioner** or **1 Leaf Tensioner with medium Lamella kits** are also available.

7 - APPLICATION FIELD FOR TENSIONERS

7.4 APPLICATION FIELD FOR METAL BRUSH TENSIONERS

WEFT TYPE	Wool yarn	Cotton and viscose staple fibre	Strong twisted yarns, crêpe and silk yarns	Stiff yarns: Linen, Hemp, Camel hair, Jute, etc.	Viscose, Synthetic fibres
Type A 10 (Thickness 0,10 mm)	over Nm 45	from Nm 60 to Nm 200	over Nm 90	from Nm 40 to Nm 90	over Nm 100
Type A 15 (Thickness 0,15 mm)	from Nm 25 to Nm 50	from Nm 30 to Nm 70	from Nm 25 to Nm 90	from Nm 30 to Nm 50	from Nm 25 to Nm 90
Type A 20 (Thickness 0,20 mm)	from Nm 12 to Nm 30	from Nm 18 to Nm 34	from Nm 12 to Nm 40	from Nm 18 to Nm 45	from Nm 9 to Nm 40
Type B 10 (Thickness 0,10 mm)	from Nm 25 to Nm 50	from Nm 30 to Nm 70	from Nm 25 to Nm 90	from Nm 30 to Nm 50	from Nm 25 to Nm 90
Type B 15 (Thickness 0,15 mm)	from Nm 12 to Nm 30	from Nm 18 to Nm 34	from Nm 12 to Nm 40	from Nm 18 to Nm 45	from Nm 9 to Nm 40
Type B 20 (Thickness 0,20 mm)	from Nm 1 to Nm 15	from Nm 1 to Nm 20	from Nm 1 to Nm 15	from Nm 1 to Nm 20	from Nm 2 to Nm 10

METAL BRUSHES	
TYPE	CODE
Type A 10	EFM3904
Type A 15	EFM3905
Type A 20	EFM3906
Type B 10	EFM3907
Type B 15	EFM3908
Type B 20	EFM3909



7 - APPLICATION FIELD FOR TENSIONERS

7.5 YARN COUNT SYSTEMS CONVERSION TABLE

Nm	Ne	tex	den	Dtex	Ne _L	Nm	Ne	tex	den	Dtex	Ne _L
6.048	3,571	170	-	-	10	36.000	21,26	28	250	280	59,53
7.257	4,286	140	-	-	12	36.290	21,43	28	248	275	60
8.000	4,724	125	-	-	13,23	39.310	23,21	25	229	254	65
8.467	5	120	-	-	14	40.000	23,62	25	225	250	66,14
9.000	5,315	110	1000	1100	14,88	40.640	24	25	221	246	67,20
9.676	5,714	105	930	1033	16	42.330	25	24	212	235	70
10.000	5,905	100	900	1000	16,54	44.030	26	23	204	227	72,80
10.160	6	100	866	984	16,80	45.000	26,57	22	200	220	74,41
10.890	6,429	92	827	918	18	47.410	28	21	189	210	78,40
12.000	7,086	84	750	830	19,84	48.000	28,35	21	187	208	79,37
12.100	7,143	84	744	826	20	48.380	28,57	21	186	206	80
13.300	7,857	76	676	751	22	50.000	29,53	20	180	200	82,68
13.550	8	72	664	738	22,40	50.800	30	20	177	197	84
15.000	8,858	68	600	660	24,80	54.190	32	18	166	184	89,6
15.120	8,929	68	595	661	25	54.430	32,14	18	165	183	90
16.000	9,449	64	560	620	26,46	60.000	35,43	17	150	167	99,21
16.930	10	60	530	590	28	60.480	35,71	17	149	166	100
18.000	10,63	56	500	550	29,76	60.960	36	16	147	165	100,8
18.140	10,71	56	496	551	30	64.350	38	16	140	156	106,4
19.350	11,43	52	465	516	32	67.730	40	15	132	147	112
20.000	11,81	50	450	500	33,07	70.000	41,34	14	129	143	115,7
20.320	12	50	443	492	33,60	74.510	44	13	121	134	123,2
21.170	12,50	48	425	472	35	75.000	44,29	13	120	133	124
22.500	13,29	44	400	440	37,20	80.000	47,24	12,5	112	125	132,3
23.710	14	42	380	420	39,20	81.280	48	12,5	110	122	134,4
24.190	14,29	42	372	413	40	84.670	50	12	106	118	140
25.710	15,19	38	350	390	42,52	90.000	53,15	11	100	110	148,8
27.090	16	36	332	369	44,80	101.600	60	10	88	97	168
27.210	16,07	36	331	367	45	118.500	70	8,4	76	84	196
30.000	17,72	34	300	335	49,61	120.000	70,86	8,4	75	84	198,4
30.240	17,86	34	297	330	50	135.500	80	7,2	66	73	224
30.480	18	32	295	328	50,40	150.000	88,58	6,8	60	67	248
32.000	18,90	32	280	310	52,91	152.400	90	6,4	59	64	252
33.260	19,64	30	270	300	55	169.300	100	6	53	58	280
33.870	20	30	266	295	56	186.300	110	5,2	48	53	-
34.000	20,08	30	265	294	56,22	203.200	120	5	44	49	-

8 - ATTIVO ELECTRONIC BRAKE

8.1 ATTIVO ELECTRONIC BRAKE

The ATTIVO electronic brake is composed of two motors that move the weft feeder brake.

It can be applied to existing brakes: pile brushes, metal brushes or TWM.

The movement can only be programmable electronically, from the control panel of the weaving machine, and manually, through the adjustment knob located on the weft feeder.

1. Electronic programming. The user may decide when and how to move the brake.

When: during the 360 degrees of weft insertion.

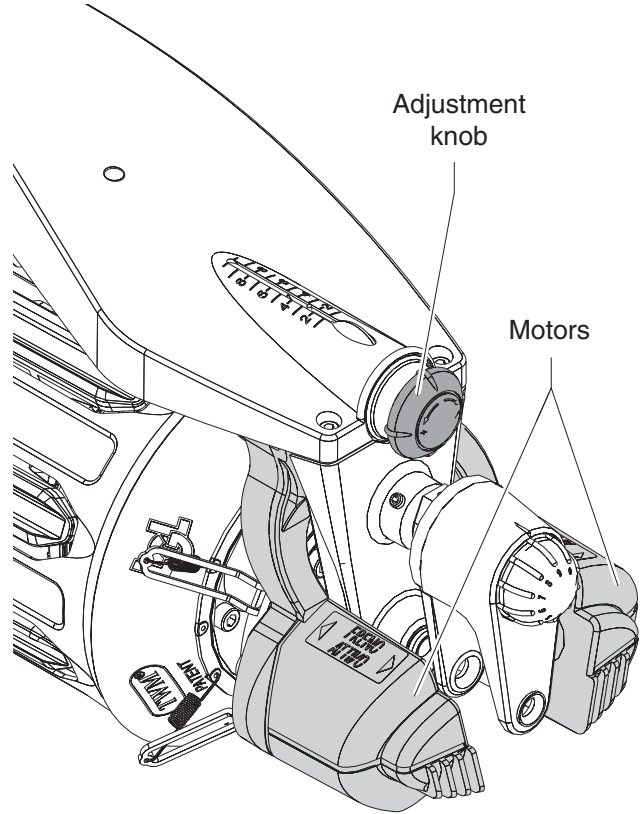
Up to 8 or 9 operating areas can be programmed, depending on the loom it is mounted on.

How much: within a 0 to 100% rate. 0% means open brake, 100% means closed brake.

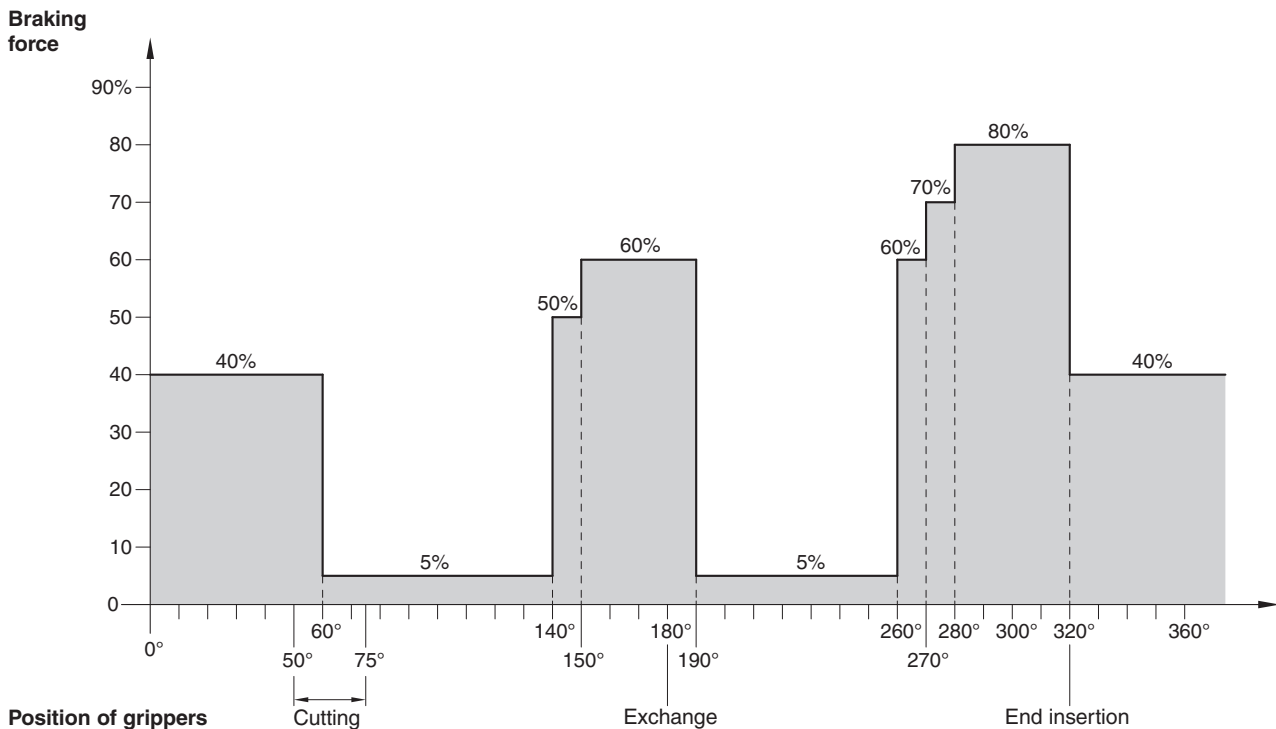
2. Manual programming. The tension is also affected by the position of the knob. The knob is required to provide a static starting tension. We suggest this tension should be as low as possible. The real braking tension will then be produced by the electronic movement of the motor only in the set insertion points.

Note: If the user wishes to try the real hand braking tension, the control panel of the loom has a dedicated item where the feeder address and the breakage percentage shall be entered (when the loom is not moving, one feeder at a time).

The brake at issue moves to the desired position and stays there for one minute, or until the time when the machine resumes its motion.



Here follows a starting electronic programming chart, which can suit several types of threads.



Note:

At first use, a brake calibration procedure shall be carried out (one brake at a time):

- Remove the yarn from the weft feeder and release the brake by acting on the dedicated pushbutton (see picture)
- Press the related pushbutton on the loom control panel.

8 - ATTIVO ELECTRONIC BRAKE

8.2 TIPS TO OPTIMIZE OPERATION OF THE ATTIVO BRAKE

BY acting on the programming table, available on the loom control panel, one can optimize operation of the ATTIVO brake.

TO START:

1. Locate a feeder and work on it. The settings found may possibly be copied onto other weft feeders at a later time.
2. Enter the braking table provided in the chart on the previous page into the loom control panel, in the page dedicated to the electronic brake,
Through the manual adjustment knob, take the braking index on the weft feeder to notch no. 3.
3. **To test the hand-set tension:** enter the number of the feeder one is working upon and, then the value 80% (the maximum braking in the table entered in 1) into the loom page related to the brake test. The ATTIVO brake reaches 80% of the braking and holds this position for one minute.
4. Pull by hand the feeder yarn, so as to feel the desired braking.
5. If this braking is too high, manually reduce it by using the adjustment knob; if it is too low, increase it, always by using the adjustment knob.
6. It is important to use the brake type that suits the yarn type (please refer to the table of use in the following paragraph).

SENSITIVE POINTS

The insertion of the weft into a gripper loom is characterized by the presence of some “sensitive” points. In these points, a precise and accurate check of yarn tension may improve the overall effectiveness of the machine. Please refer to the braking table on the graph in the previous paragraph.

Cutting and start of insertion: When the bearing gripper takes the yarn, the latter shall only be at the tension required for gripping, so as to facilitate the gripper's work. We suggest you should lower the braking percentage down to 5% ten degrees before the cutting. If, for instance, the cutting takes place at 60°, the braking of ATTIVO shall be taken to 5% at about 50°. Thus, the tension peak caused by the acceleration of the gripper will be minimized even though the correct gripping will still be guaranteed.

Exchange: The exchange takes place at 180 degrees. If the grippers do not exchange their yarns, we suggest you should increase the braking percentage before the exchange. One may possibly extend the braking area. For instance, if the braking starts at 150° with 40% and goes to 50% at 170°, one may act by taking that braking to 60% and 70%, respectively, or bring forward the degrees from 150° to 140° or 130°.

NOTE: the braking shall only be increased in the insertion points where the gripper reduces its speed. If the braking is increased in the points where the gripper accelerates (between 90° and 120°, for instance), one runs the risk of worsening the performance of the machine.

End of insertion: The braking percentage shall be set between 240° and 300° approximately, as a function of the tail one wishes to obtain.

If, for instance, the weft does not reach the bottom, one needs to decrease the braking percentage or delay the braking start degrees. If, on the contrary, the tail is too long or small buttonholes form in the right portion of the fabric, one needs to increase the braking percentage, or bring forward the braking start degrees.

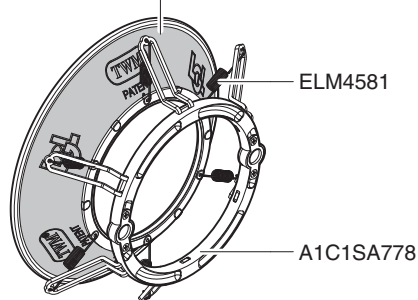
After 320°, when the insertion is over, it is advisable to leave an average braking percentage (30% or 40%) from 320° up to ten degrees before the cutting, to prevent the weft from losing tension and from being gripped upon the next-coming insertion.

8 - ATTIVO ELECTRONIC BRAKE

8.3 ATTIVO APPLICATION FIELD

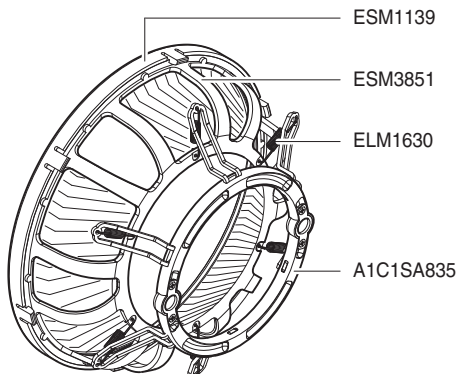
TWM Version

A1N1SA801 TWM K
 A1N1SA797BE TWM KL
 A1N1SA796BE TWM LT05
 A1N1SA798BE-T7 TWM LT10
 A1N1SA799BE-T7 TWM RR
 A1N1SA799BEL-T7 TWM RRL



A1C2SA080 - K
A1C2SA080 - KL
A1C2SA080 - LT05
A1C2SA080 - LT10
A1C2SA080 - RR
A1C2SA080 - RRL

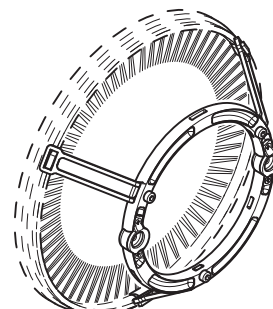
Metal Brush Version



A1C2SA110

Note:

if necessary, a bristle brush can also be mounted onto the ATTIVO tensioner, possibly matched with a leaf tensioner, by using the special support.



A1C1SA850

TWM Version

TWM Type	Wool	Linen	Chenille	Spun	Synthetic Fibres	Cotton
TWM RR N° 6 Springs Ø 0.7mm 28mm lenght Plastic edge	From Nm 2,5 to Nm 10	-	From Nm 2,5 to Nm 10	From Nm 2,5 to Nm 10	From Nm 3 to Nm 20	From Nm 2,5 to Nm 10
TWM LT10 N° 6 Springs Ø 0.7mm 28mm lenght	From Nm 5 to Nm 15	-	From Nm 7 to Nm 15	From Nm 7 to Nm 50	From Nm 10 to Nm 50	From Nm 7 to Nm 60
TWM LT05 N° 6 Springs Ø 0.7mm 28mm lenght	From Nm 10 to Nm 60	From Nm 12 to Nm 30	-	-	From Nm 40 to Nm 100	From Nm 40 to Nm 100
TWM KL N° 6 Springs Ø 0.7mm 28mm lenght	From Nm 40 to Nm 100	From Nm 20 to Nm 60	-	-	From Nm 80 to Nm 150	From Nm 80 to Nm 150

Metal Brush Version

Metal Brush Tip	Wool	Linen	Chenille	Spun	Synthetic Fibres	Cotton
Type A20 N° 6 Springs Ø 0.7mm 22mm lenght	From Nm 2,5 to Nm 10	-	From Nm 2,5 to Nm 10	From Nm 2,5 to Nm 10	From Nm 18 to Nm 45	From Nm 2,5 to Nm 10
Type A15 N° 6 Springs Ø 0.7mm 22mm lenght	From Nm 15 to Nm 60	-	From Nm 7 to Nm 15	From Nm 7 to Nm 50	From Nm 25 to Nm 90	From Nm 7 to Nm 60
Type A10 N° 6 Springs Ø 0.7mm 22mm lenght	From Nm 40 to Nm 100	From Nm 20 to Nm 60	-	-	Over Nm90	From Nm 80 to Nm 150

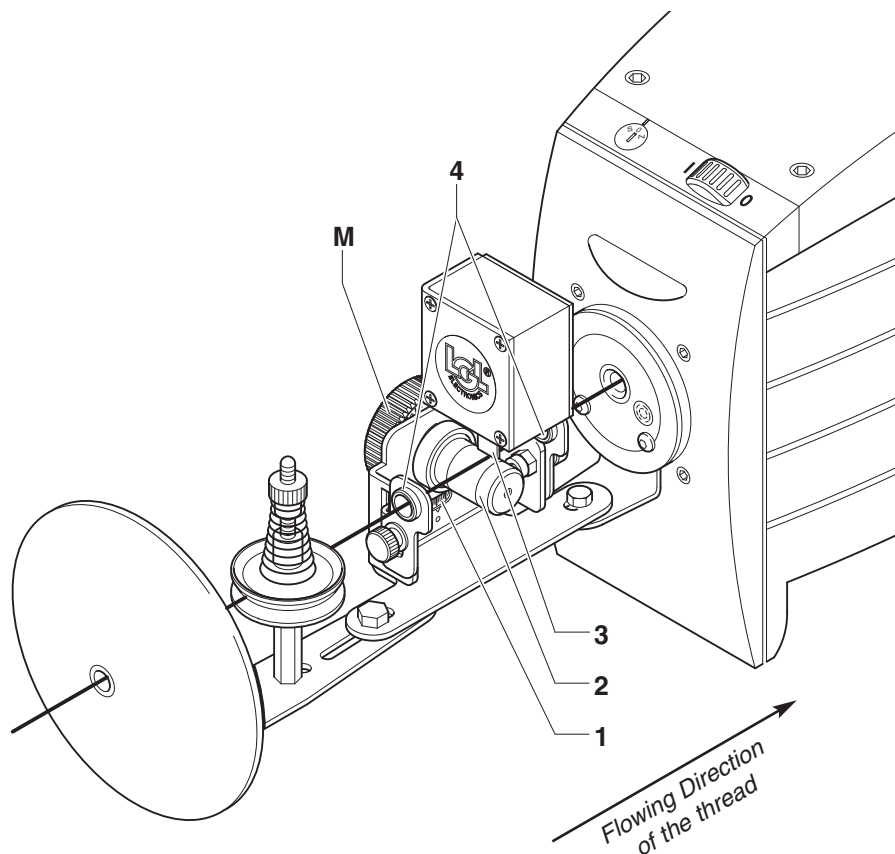
9 - SPECIAL DEVICES

9.1 KNOT DETECTOR

This device prevents the knots that are on the thread to get into the fabric.

It is handled by the feeder and can possibly be used along with dedicated software packages supplied by the machine manufacturer (in this latter case, please consult the instruction manual of the weaving machine).

Note: knot detector not available for versions equipped with **L - M - H** speed selector.



By following the graduated scale (1), act on the adjustment knob (M) so as to bring the shaped cylinder (2) to the thin blade (3). The adjustment shall be made so that the thread may freely run between the thin blade and the cylinder, whereas each knot shall touch the thin blade.

The thread-guides (4) can be adjusted in height by means of the related fastening knobs so as to allow the thread to easily flow within the device.

The knot detector operates both on traditional weaving machines and on those of the Can-Bus type.

10 - TROUBLE-SHOOTING

LED STATUS	PROBLEM	CHECK / REMEDY
Led off	The accumulator continues to turn, accumulating weft on the weft spool body.	<ul style="list-style-type: none"> Remove the top panel on the accumulator and check the connections between weft feeler board and the main control board. (Connectors C1 and C2 from board must be connected to the corresponding inputs on the main control board). Replace weft feeler board.
Led on	The accumulator continues to turn, accumulating weft on the weft spool body.	<ul style="list-style-type: none"> If working with fine weft yarns, increase the input tension and/or decrease the coil separation. Check that the photoelectric cell on weft feeler board works properly, as follows: <ul style="list-style-type: none"> Raise the weft feeler lever with a screwdriver: the accumulator should stop if the photoelectric cell is working properly. If this is not the case, the photoelectric cell is faulty and so weft feeler board LGL needs to be replaced.
Led on	The motor fails to turn when the accumulator is switched on.	<ul style="list-style-type: none"> Check that the weft feeler unit works correctly, as follows: <ul style="list-style-type: none"> Switch off the accumulator, remove the top panel and detach connectors C1 and C2 from weft feeler board from the inputs on the main control board; Switch the accumulator back on: if the motor turns, the problem lies with the weft feeler unit. Replace weft feeler.
Led flashes 3 times a second	The motor fails to turn when the accumulator is switched on.	<ul style="list-style-type: none"> Check for faulty fuses in the power supply box. Check the 6.3 A fuse on the main control board: if blown, replace the main control board.
Led remains on or off (despite using the ON/OFF switch)	The motor fails to turn when the accumulator is switched on.	<ul style="list-style-type: none"> Disconnect the accumulator cable from the power supply box and then reconnect after a few seconds. <p>If the problem persists, replace the main control board.</p>
Led remains on (despite using the ON/OFF switch)	The accumulator fails to work.	<ul style="list-style-type: none"> Check the 4 A fuse in the power supply box. Check that the power supply box is switched on. Replace the main control board.
Led flashes 3 times a second (accumulator works normally)	The 200 V CC power supply has dipped below the minimum threshold.	<ul style="list-style-type: none"> Check that the three input phases of the transformer inside the power supply box are connected to the right terminals. Check for faulty fuses in the power supply box. If none of the fuses are blown, replace the main control board.

10 - TROUBLE-SHOOTING

<p>Led flashes 3 times a second (accumulator works normally)</p>	<p>The 24 V DC power supply has dipped below the minimum threshold.</p>	<ul style="list-style-type: none"> • Check that the three input phases of the transformer inside the power supply box are connected to the right terminals. • Check for faulty fuses in the power supply box. • Check that the input sensor and output sensor cables are not frayed or crushed. <p>If the problem persists, replace the main control board.</p>
<p>The led will only stop flashing when the set voltage rate is restored.</p>		
<p>Led flashes 3 times a second</p>	<p>Main control board overheats.</p>	<ul style="list-style-type: none"> • Manually turn the flywheel and check that the motor shaft turns freely. • Wait for the accumulator to cool down. <p>If the problem persists, replace the main control board.</p> <p>N.B.: When weft insertion conditions are irregular, it is quite normal for the accumulator to overheat without this affecting its performance. The microprocessor automatically cuts the supply to the motor if the temperature of the last power stage reaches 90°C: the accumulator will only start again when the temperature drops to an acceptable level.</p>
<p>Led on for 15 seconds then flashes 3 times a second</p>	<p>The accumulator has been unable to wind the spare weft coils within the space of 15 seconds.</p>	<ul style="list-style-type: none"> • Try to load the spare wefts again, holding the thread near the weft spool body to help it. • Check for faulty fuses in the power supply box. • Manually turn the flywheel and check that the motor shaft turns freely.
<p>Led flashes 7 times a second</p>	<p>The feeder operates regularly.</p>	<ul style="list-style-type: none"> • Make sure that switch S - 0 - Z is not in the middle position 0 (zero), but either at S or Z to suit the direction of rotation (see paragraph 3.7). <p>N.B. In cases when the “Loom Stop” position is enabled on the loom, the intermediate position 0 (zero) of the S - 0 - Z switch allows for switching off the weft accumulator that is not using without turning off the loom.</p>
<p>Led flashes once a second</p>	<p>Broken weft at input.</p>	<ul style="list-style-type: none"> • Switch off the accumulator, rethread and then switch back on.
<p>Led on</p>	<p>The accumulator gradually tends to lose weft from the weft spool body. The accumulator fails to work at a constant speed when constant weft insertion is required.</p>	<ul style="list-style-type: none"> • Increase the output tension slightly. • Replace the output sensor.
<p>Led flashes once a second</p>	<p>The accumulator immediately goes into broken weft alarm mode when the loom starts, even if this is not the case.</p>	<ul style="list-style-type: none"> • Increase the input tension. • Clean the input sensor. • Replace the input sensor. <p>N.B.: If necessary, you can still work with the input sensor disconnected.</p>

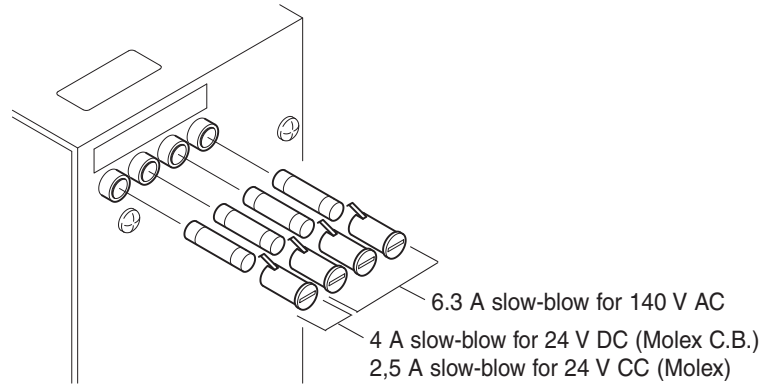
N.B: as regards operation of the Can-Bus protocol, please refer to the instruction manual issued by the manufacturer of the weaving machine.

11 - ELECTRICAL DETAILS

11.1 FUSES IN THE POWER SUPPLY BOX

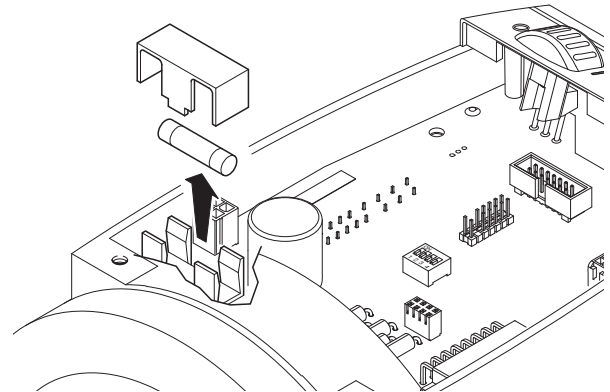
Molex power supply box and Molex can-bus:

24 V CC (Molex) protection fuse	5x20	2,5 A	slow-blow
24 V CC (Molex Can Bus) protection fuse	5x20	4 A	slow-blow
140 V CA three-phase protection fuse	5x20	6,3 A	slow-blow



11.2 FUSE IN THE WEFT ACCUMULATOR MAIN ELECTRONIC CONTROL BOARD

6.3 A fuse slow-blow.



12 SCRAPPING

The identification plates and relevant documents must be destroyed or cancelled if the machine is to be scrapped. If the machine is to be scrapped by third parties, only use authorised disposal centres for the scrapping/recovery of the consequent materials.

If the machine is to be scrapped directly by the user, it is important that the materials are split by type and then sent to authorised centres for proper disposal of each category.

Separate all metal parts, the electric motor, rubber parts and synthetic materials for recycling. The machine must be scrapped in full compliance with prevailing law in the country of use. These requirements cannot be foreseen here: the exclusive responsibility for compliance with these lies with the last owner of the machine or his appointed representative.

L.G.L. Electronics cannot be held liable for any damage or injury arising from the reuse of individual machine parts for functions or assembly situations other than the original ones for which the machine was intended.