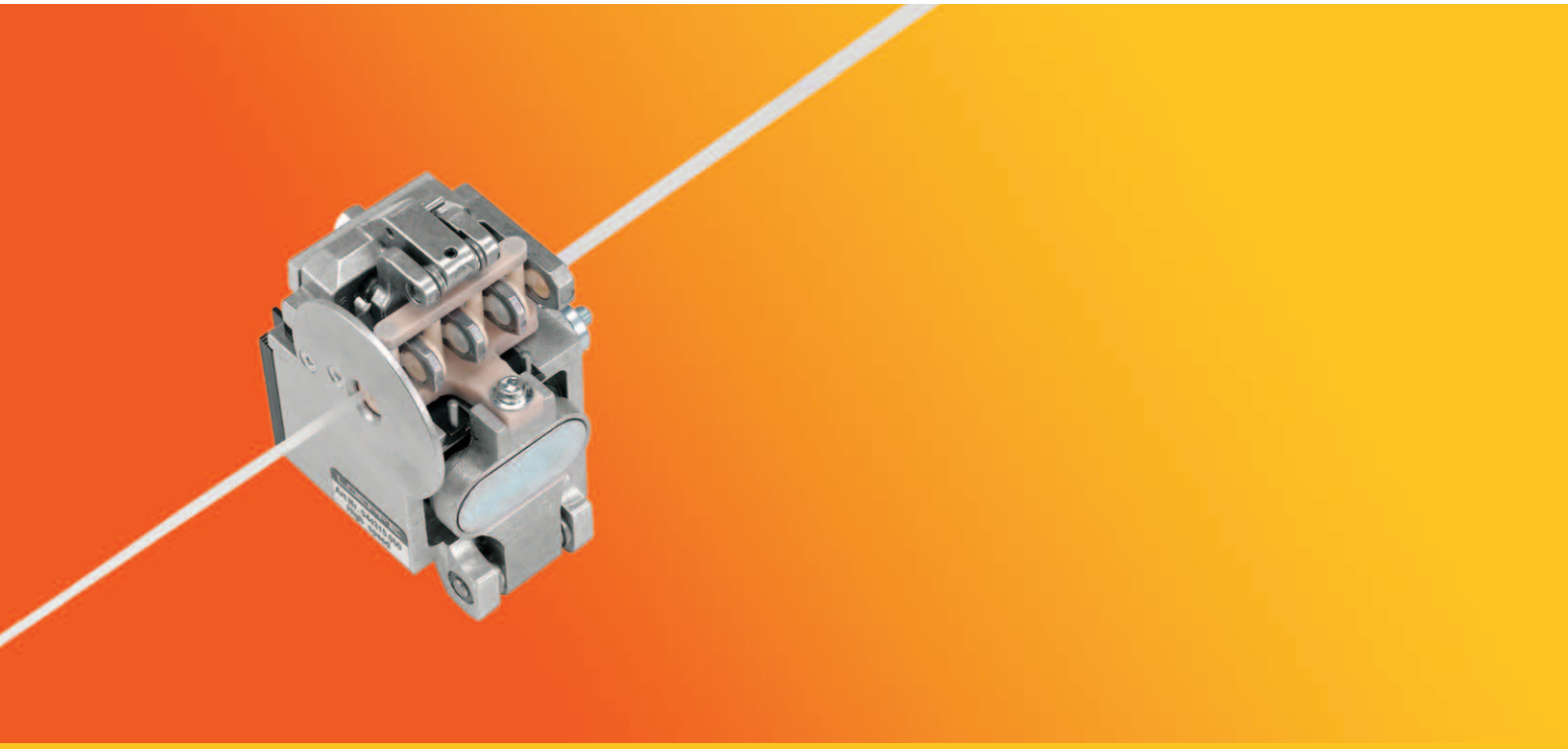
Loepfe



WEFT*MASTER*®

Weft Thread Brake SFB-L

Instruction Manual

39366003en

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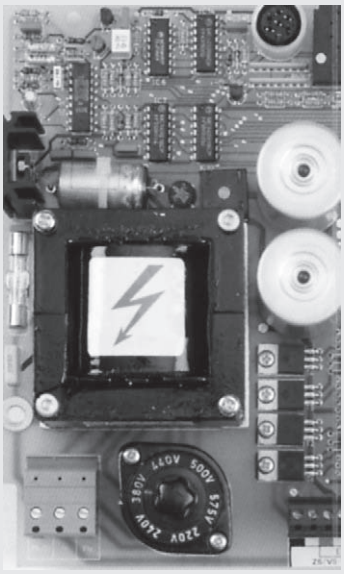
03. 2012

Weft Thread Brake

Six Reasons

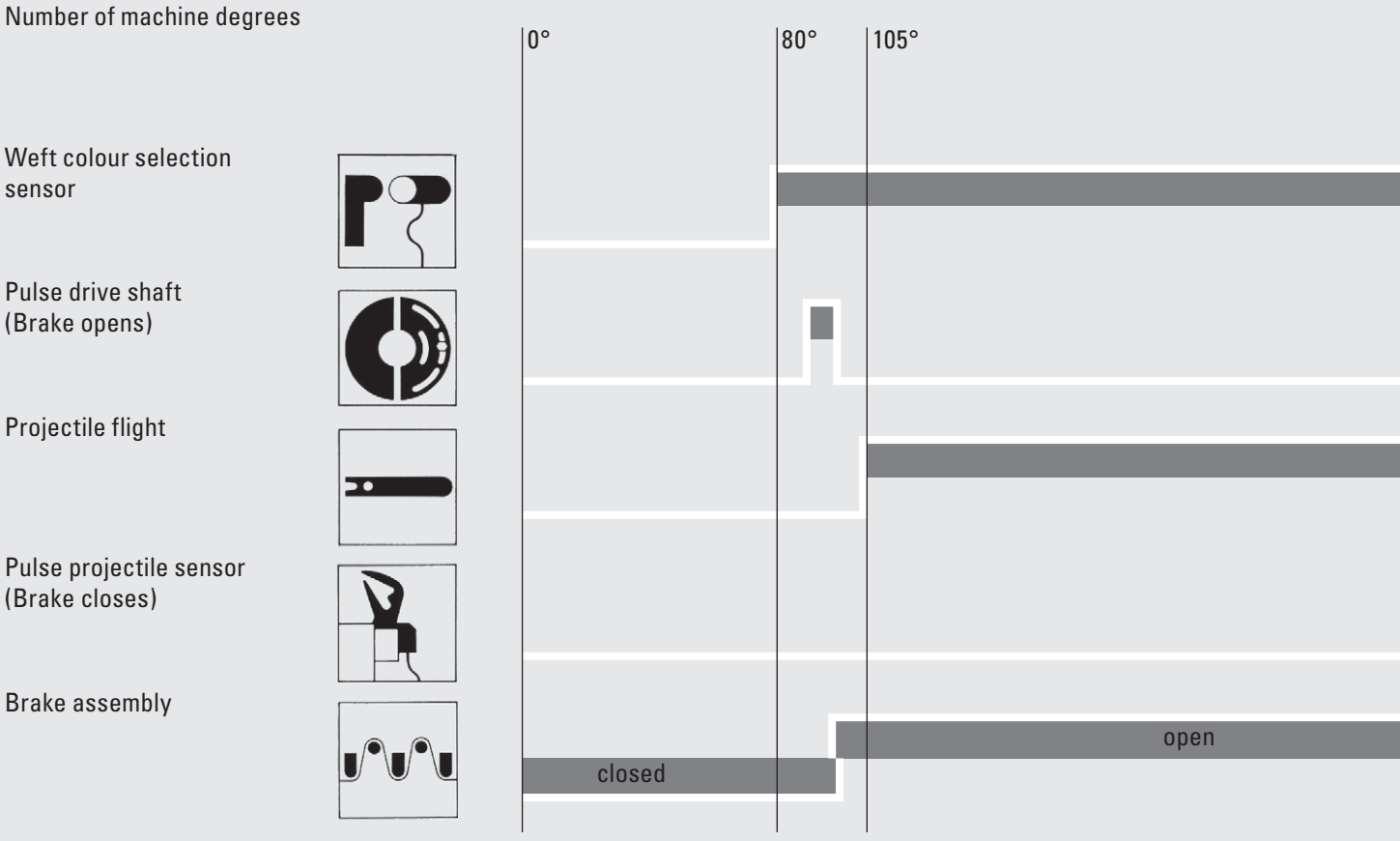
why all weft threads wish for the LOEPFE brake system:

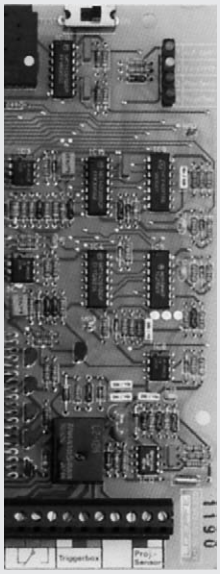
- Guarantees optimum late braking start thanks to electronic control by the patented projectile sensor. This results in minimum, uniform weft thread tension. No bright picks.
- Gentle braking of the weft threads with the patented LOEPFE brake assembly. Fewer weft breaks.
- No change in brake performance due to yarn abrasion, thanks to the self-cleaning deviation principle.
- All brake parts in contact with the thread are made of wear-resistant ceramic.
- Sturdy construction of the brake assembly with only one movable part.
- Result of all advantages = **higher machine performance Better facric quality**

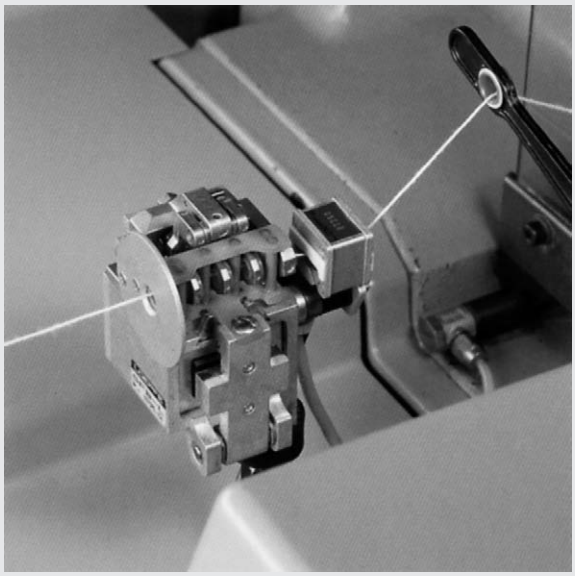


Uniform electronic control for...

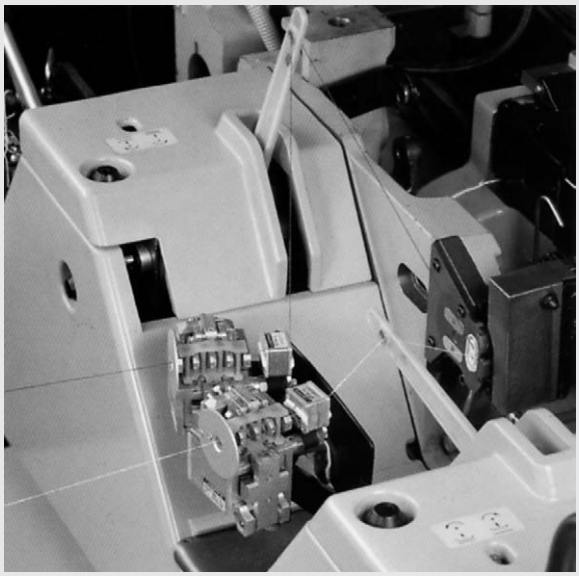
Function diagram





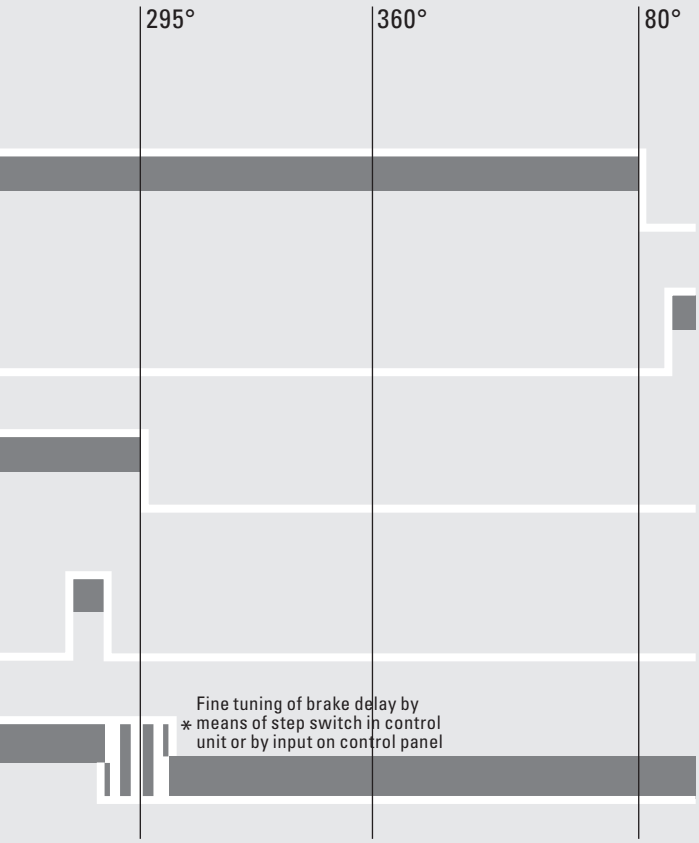


... one-colour...



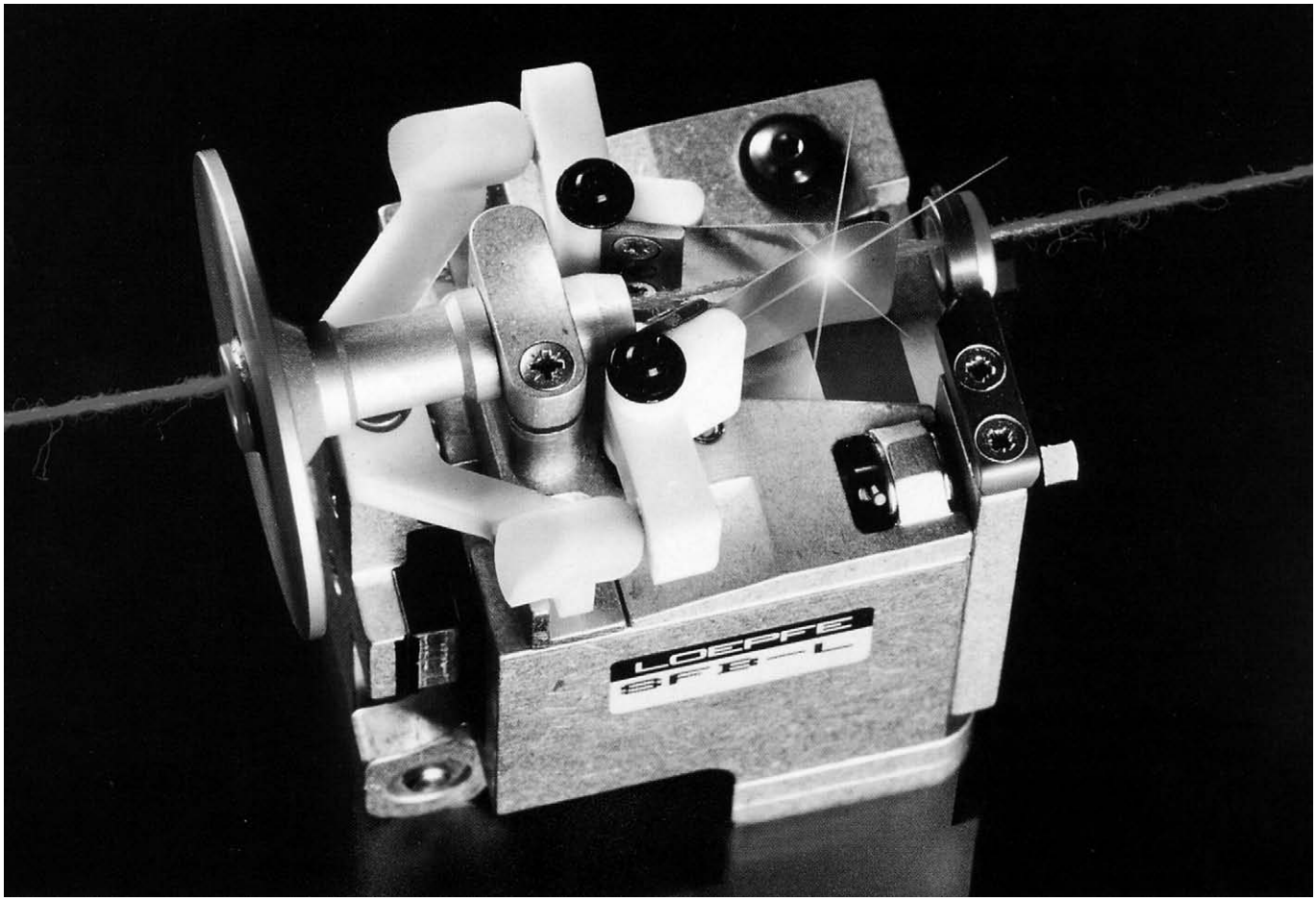
... two-colour...

... four-colour weaving machines



- For retrofitting to all SULZER RÜTI projectile weaving machines. Pilot installations and instruction by our specialised service engineers.
- Machines for heavy-duty industrial fabrics are equipped with the electronic LOEPFE weft thread brake SFB-L as standard feature by the SULZER RÜTI works. For other machine types the LOEPFE brake is available as an option.

Flat Spring Brake Assembly SFB-L



Particularly suitable in the FILAMENT SECTOR and for delicate WOOL, COTTON and LINEN weft yarn.

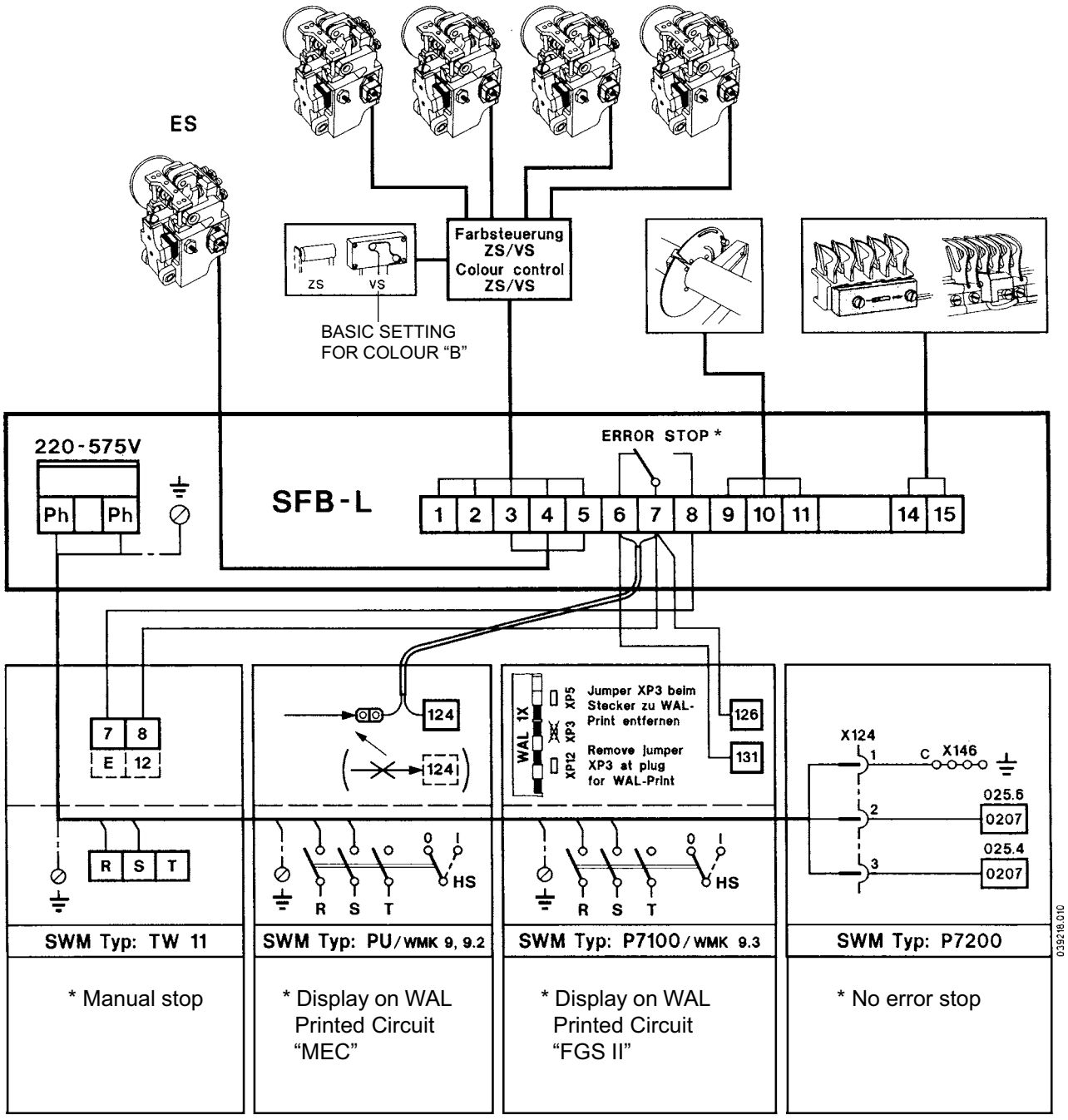
The yarn-protecting gently yielding contact pressure system requires absolutely no pre-tension of the weft, i.e. the run-off tension at the accumulator can be reduced to the minimum.

The reliable electro-mechanism of the deviation brake assembly which has been proven thousand-fold in weaving mill conditions is kept on.

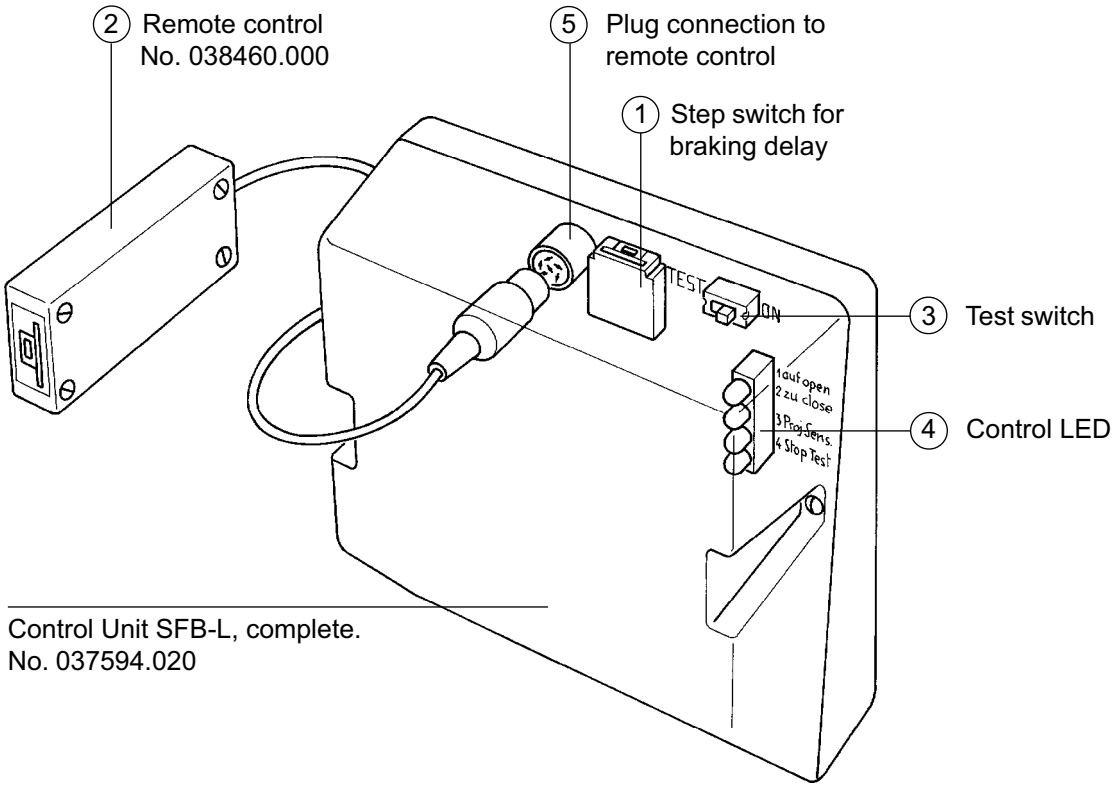
The two brake types are interchangeable and can even be mixed on multicolour machines.

The control of the optimum late braking start is taken care of by the patented projectile sensor at millisecond precision as before.

SFB-L Wiring


ES
ZS
VS
Farbsteuerung
ZS/VS
Colour control
ZS/VS
BASIC SETTING
FOR COLOUR "B"
220-575V
Ph
Ph
SFB-L
ERROR STOP *
1 2 3 4 5 6 7 8 9 10 11 14 15
7 8
E 12
124
124
WAL 1X
XP5
XP3
XP12
Jumper XP3 beim Stecker zu WAL-Print entfernen
Remove jumper XP3 at plug for WAL-Print
126
131
X124
1
2
3
C X146
025.6
0207
025.4
0207
R S T
HS
R S T
HS
SWM Typ: TW 11
SWM Typ: PU/WMK 9, 9.2
SWM Typ: P7100/WMK 9.3
SWM Typ: P7200
* Manual stop
* Display on WAL Printed Circuit "MEC"
* Display on WAL Printed Circuit "FGS II"
* No error stop
039218.010

Control Unit SFB-L



Control Unit SFB-L, complete.
No. 037594.020

Description

① **Step switch for braking delay.**
Possibility of delaying the application of the brake by 0 - 18 ms from the projectile signal (Each step corresponds to about 4-6 of cm projectile flight).

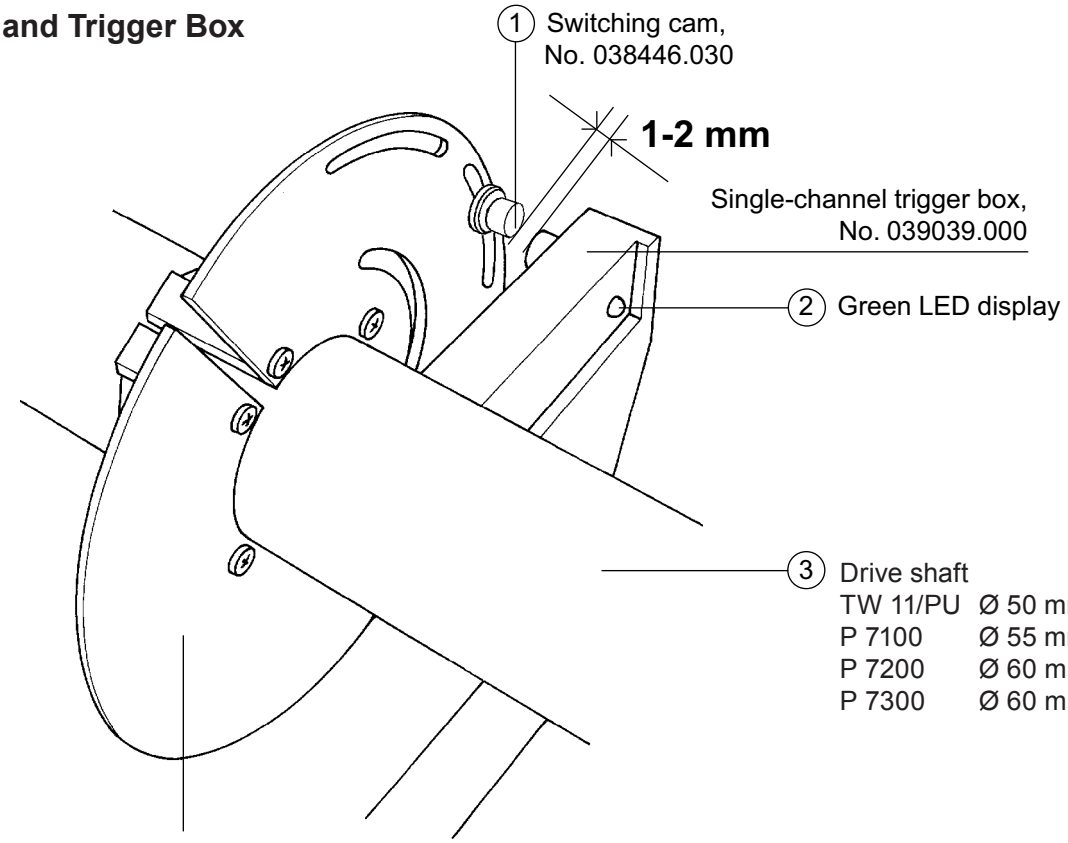
② **Remote control**
Takes over the function of the step switch ① when plugged into the plug connection ⑤ (step switch ① is automatically bridged). Provides the possibility of monitoring the right-hand selvedge and the weft thread position during the setting. The optimal delay time must be transmitted to the step switch ① before unplugging.

③ **Test switch**
ON = Operational position, TEST = permits checking the effective magnetic power in the brake assembly during machine stop. At the switch position TEST, the self-monitoring will stop the machine at every pick (red control LED ④ lights up).

④ **Control LED**

1 = green:	Lights up while brake is open
2 = yellow:	Lights up while brake is actively closed
3 = red:	Lights up in operation during projectile sensor pulse. If it lights up continuously together with the red LED ④ while the machine is at standstill, then the projectile sensor is defective.
4 = red:	Lights up when the SFB-L self-monitoring has initiated a machine stop (check unit and cable connections).

Trigger Disc and Trigger Box



Trigger disk, complete	Ø 50 mm TW 11/PU	No. 038447.000
	Ø 55 mm P 7100	No. 038988.000
	Ø 60 mm P 7200/P 7300	No. 040585.000

Setting the Trigger Disk

The setting of the trigger disk is dependent upon the rotational speed and the picking time. The switching point to be set before picking can be determined in the table below.

Example:
280 rpm, picking 110°
gives 110-36° = **Switching point 74°**

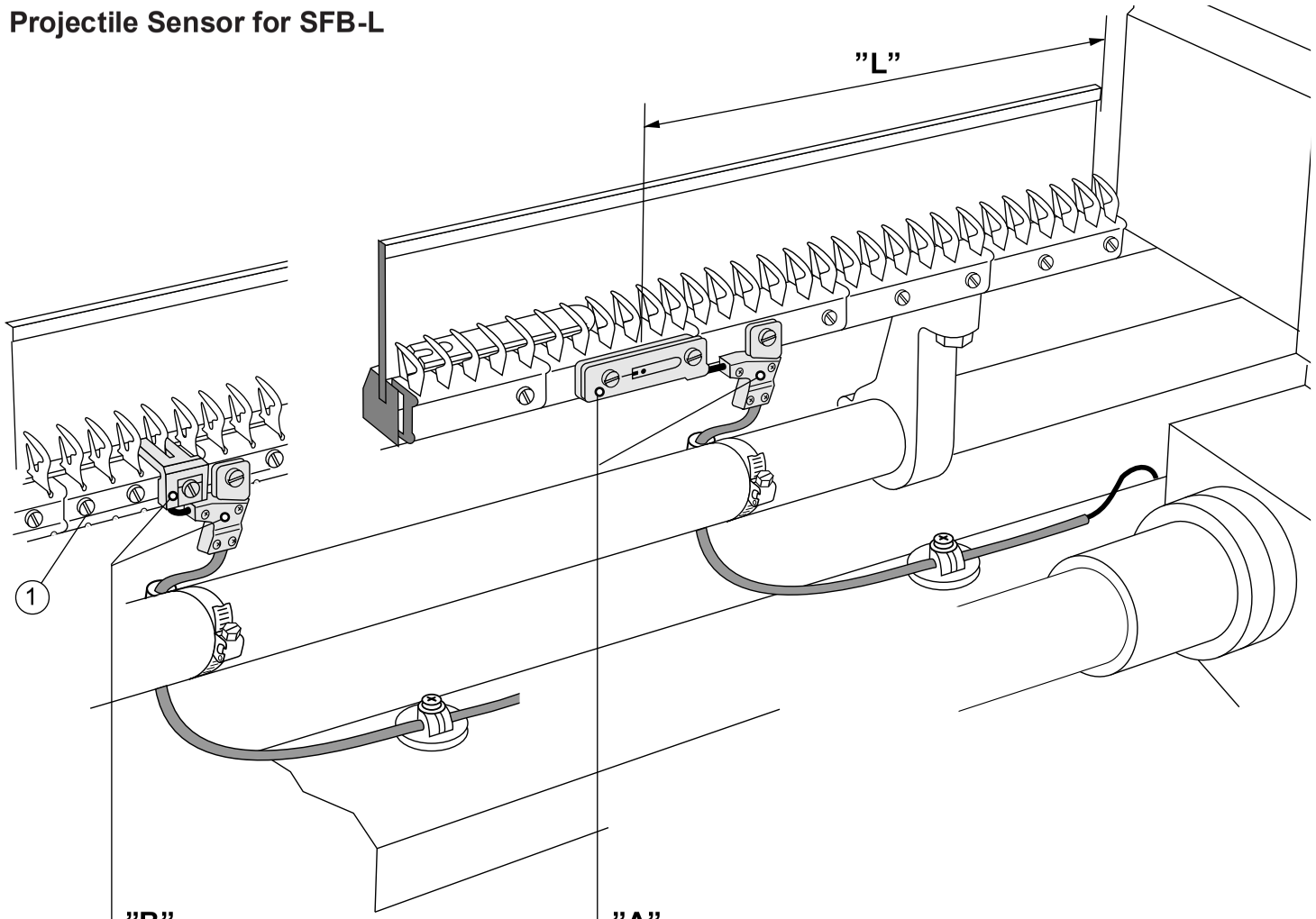
The machine must be set to the calculated number of degrees. In this position, the switching segment should be advanced in the direction of machine rotation until the green LED (2) lights up (lateral separation 2 mm). Fix disk or switch segment (1) in this position.

Determination of the switching point before picking

Speed	Degrees before picking
175-199	24°
200-224	27°
225-249	30°
250-274	33°
275-299	36°
300-324	39°

Speed	Degrees before picking
325-349	42°
350-374	45°
375-399	48°
400-424	51°
425-450	54°
450-500	57°

Projectile Sensor for SFB-L



”B”
Art.-No
043099.000
(TW11, PU, P7100, P7150)

”A”
Art.-No
043100.000 (TW11, PU, P7100)
041810.000 (P7200K)
043715.000 (P7150, P7250)

Installation of the projectile sensor ”A”

The projectile sensor must be mounted at the calculated distance (see table) on the existing guide-tooth block. It can also be fitted over two blocks.

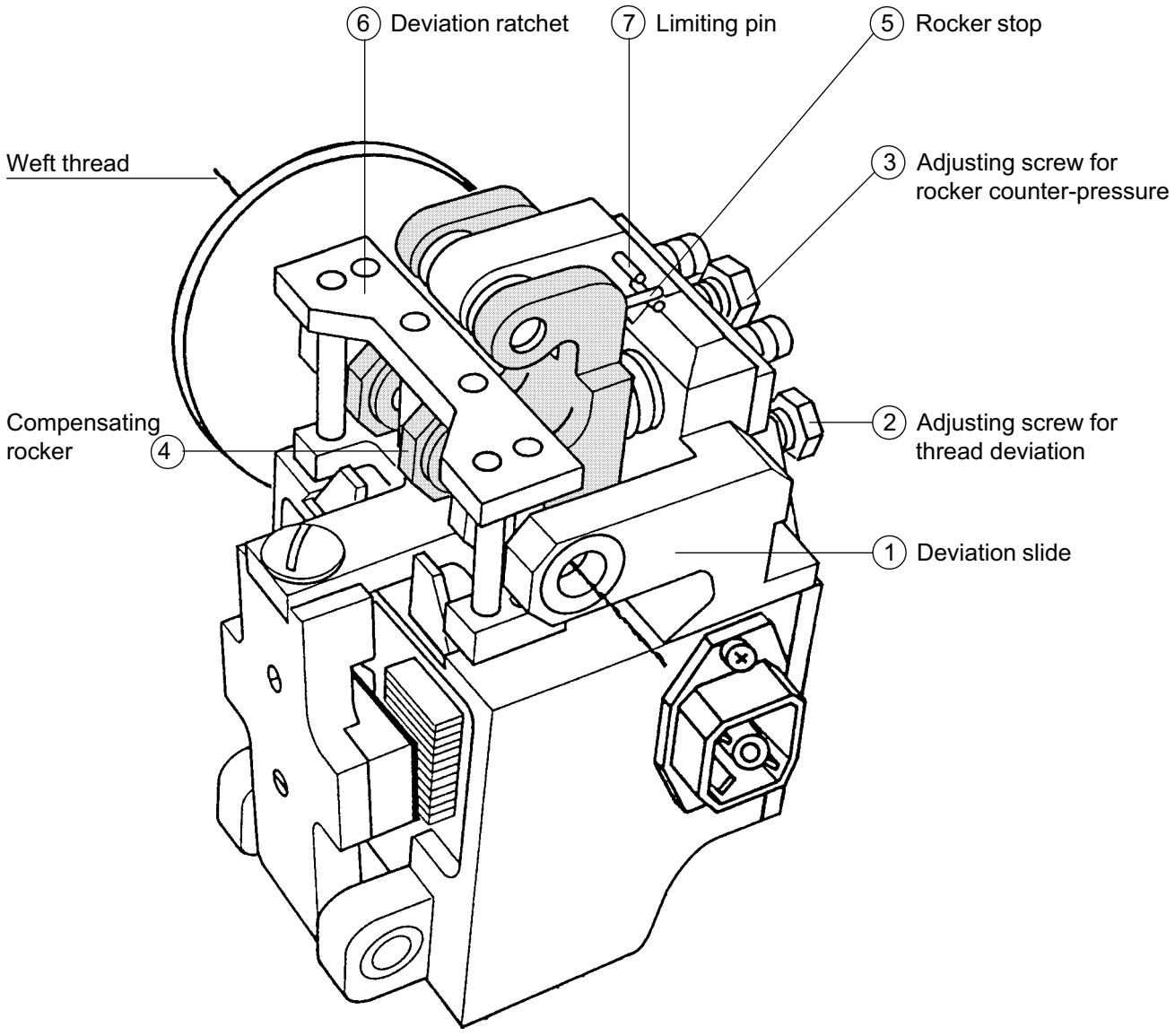
Installation of the projectile sensor Single-FZ ”B”

The projectile sensor must be mounted at the calculated distance ”L” (see table). For this purpose, about 5 screws ① on the left and right side must be loosened until the respective guide-tooth can be pulled out and re-installed through the opening in the sensor.

Determination of the distance “L” from the reed end to the projectile sensor

Weft insertion capacity (reed width in m x speed)	Picking 105-110° L =	Picking 120-125° L =	Picking 135-150° L =
500-549 m/min	35 cm	37 cm	43 cm
550-599	37 cm	40 cm	47 cm
600-649	40 cm	43 cm	50 cm
650-699	43 cm	47 cm	54 cm
700-749	46 cm	50 cm	57 cm
750-799	49 cm	53 cm	61 cm
800-849	52 cm	56 cm	65 cm
850-899	55 cm	59 cm	68 cm
900-949	57 cm	62 cm	72 cm
950-999	60 cm	65 cm	75 cm
1000-1049	63 cm	68 cm	79 cm
1050-1099	66 cm	71 cm	83 cm
1100-1149	69 cm	74 cm	86 cm
1150-1199	72 cm	77 cm	89 cm
1200-1249	75 cm	80 cm	92 cm
1250-1299	78 cm	83 cm	95 cm
1300-1349	81 cm	86 cm	98 cm
1350-1399	84 cm	89 cm	101 cm
1400-1449	87 cm	92 cm	104 cm
1450-1500	90 cm	95 cm	107 cm

SFB-L Brake Assembly

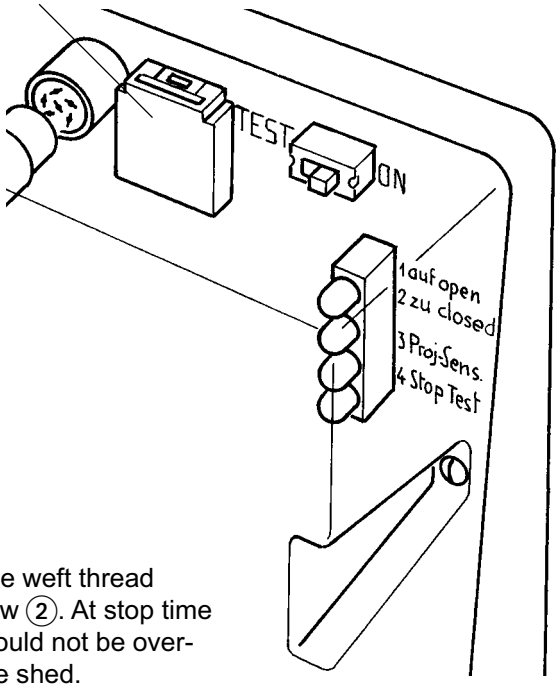


SFB-L Settings for Start-up and after a Style Change

1. The deviation slide ① should be adjusted to the third graduation mark of the setting scale using the adjusting screw ② (medium deviation). The scale is located at the top of the rear wall of the brake unit. The deviation or braking of the weft thread is **increased** if the setting screw is turned in the **clockwise** direction.

2. By turning the adjusting screw ③ **clockwise** up to the stop, the compensating rocker ④ is to be set to **maximum counter-pressure.**

3. Set braking delay time on step switch in the SFB-L control unit to 0.

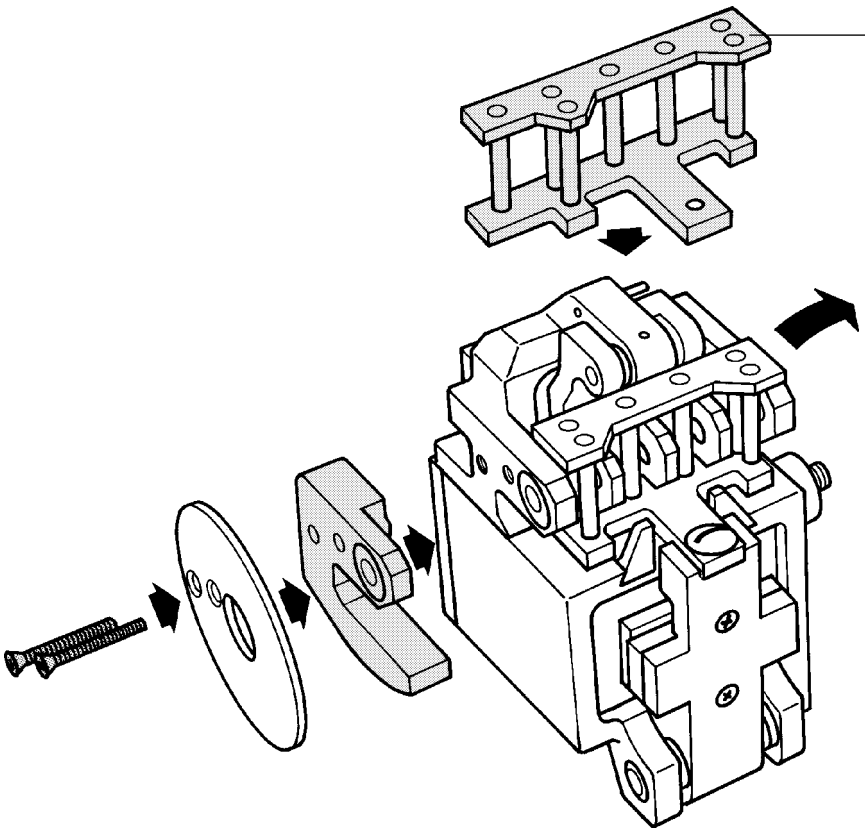


4. Start weaving machine. Optimise weft thread tension using the adjusting screw ②. At stop time point of 330° the weft thread should not be over-tensioned but lie stretched in the shed.

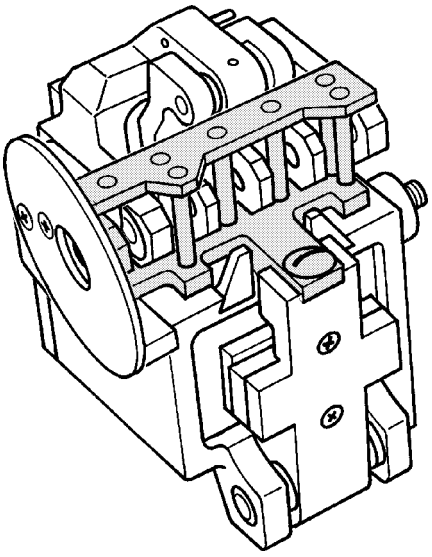
5. The counter-pressure for the compensating rocker ④ should be **reduced** by turning the adjusting screw ③ in the **anti-clockwise** direction until the rocker stop ⑤ lifts slightly in operation (about 1 mm) at closing of the deviation ratchet ⑥, but does not come into contact with the upper limiting pin ⑦ (for PP tapes and coarse monofil maximum counter-pressure is mostly used).

6. Finally, a trial can be made to slowly increase the braking delay time while the machine is running, using the remote control plugged into SFB-L control unit. While doing this, the right-hand selvedge and the weft thread position should be observed. The optimum delay step must then be transmitted from the remote control to the step switch in the control unit (with correct positioning of the projectile sensor steps 0 to 4 are generally used).

Additional Parts for Increasing the Braking Power on the SFB-L Deviation Brake Assembly



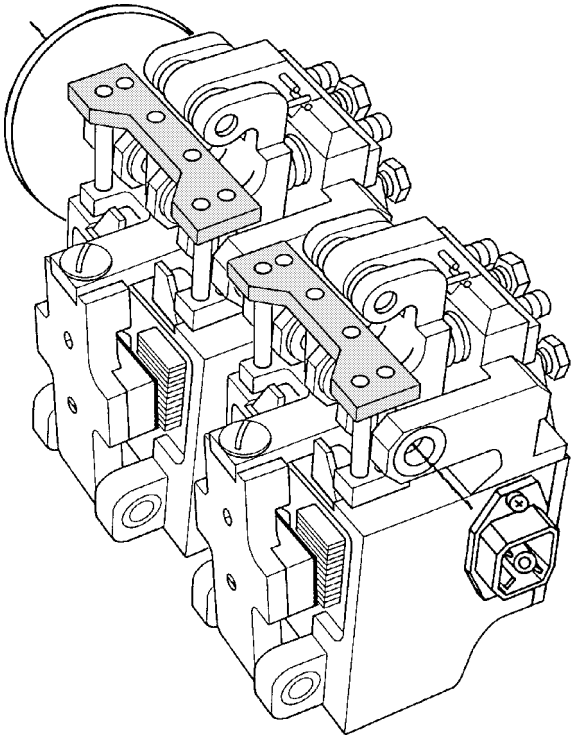
If weft materials with very smooth or soapy surfaces are inserted (e.g., polyethylene), it can happen that the braking effect is too small despite maximum deviation.
In such extreme cases, the braking effect can be increased with the **Modification Set No. 039954.000**.



complete
No. 041378.000

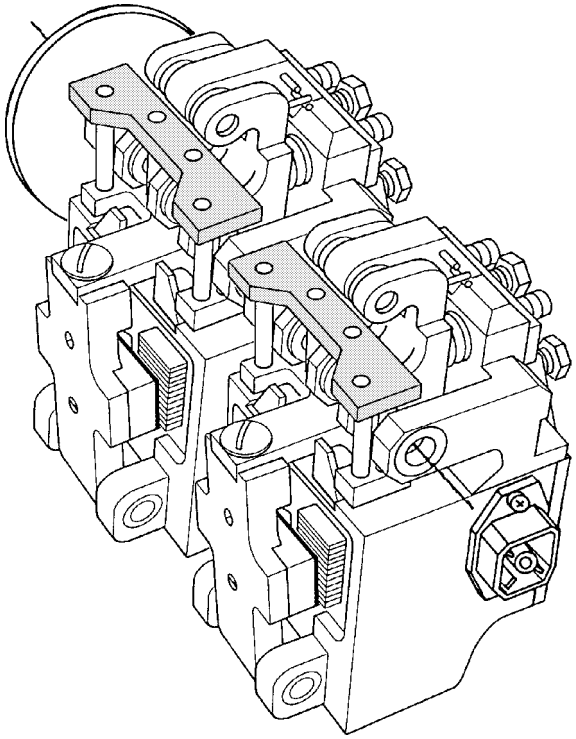
SFB-L Double Brake Assembly

"A" double brake assembly with two 4-fold deviation ratchets,
No. 040237.000

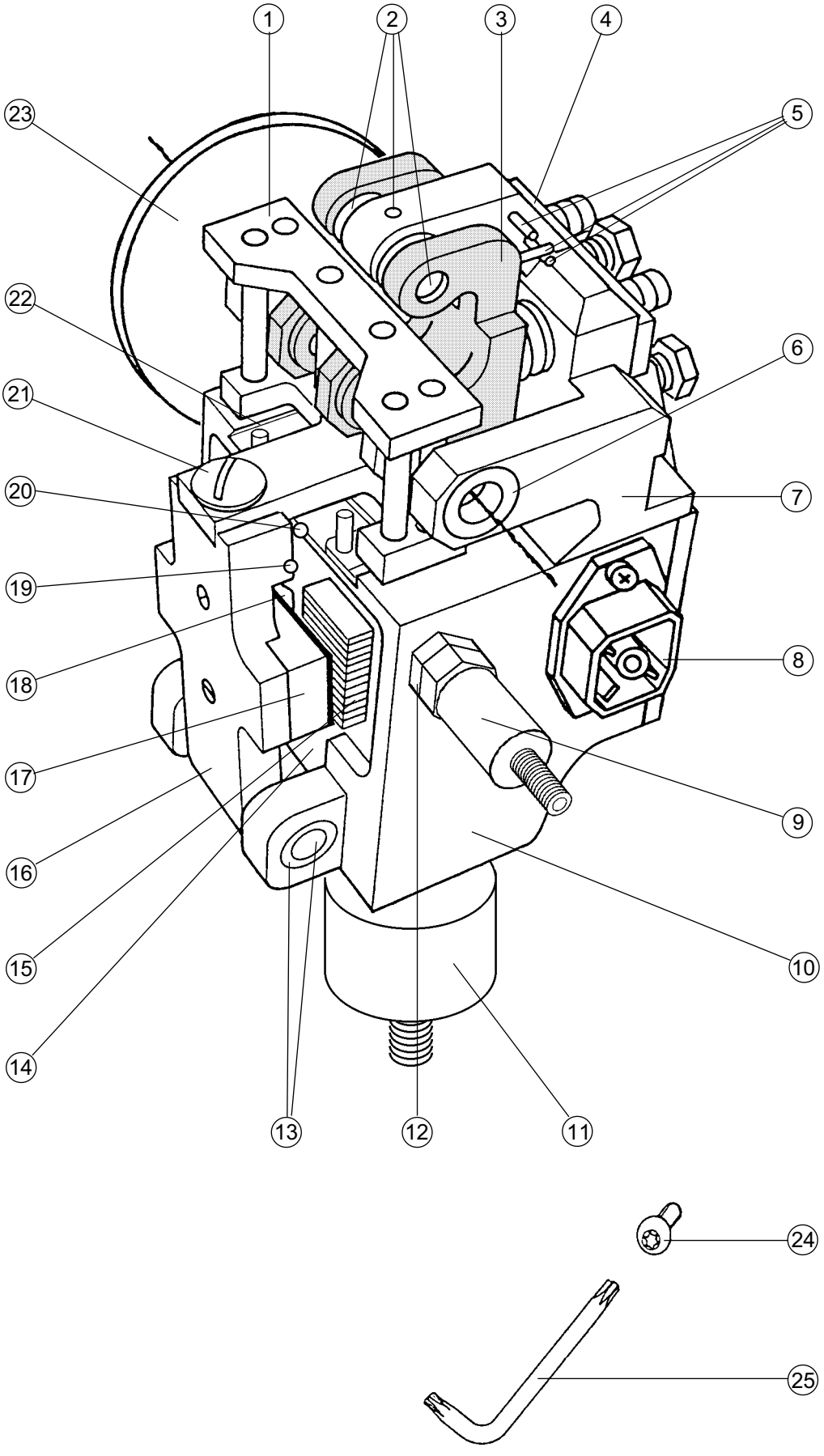


Is used if the braking power is still insufficient with 5-fold deviation ratchet (as described on Page 12).

“B” double brake assembly with two 2-fold deviation ratchets,
No. 040849.000



Is used for very stiff weft yarns, on which only small deviation can be used (monofil, glass, coarse linen etc.).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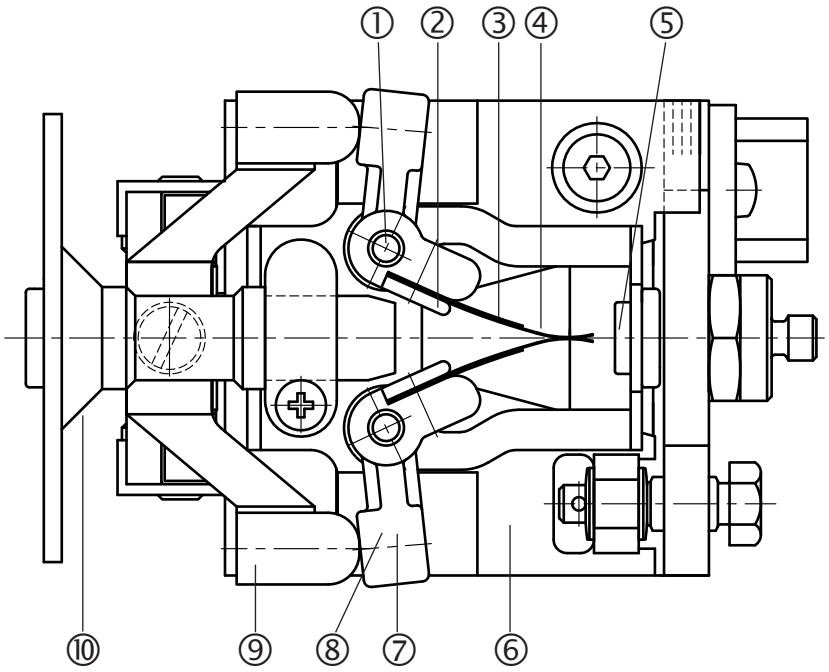
List of Spare Parts for the SFB-L Deviation Brake Assembly

Brake assembly, complete	4-fold	037595.030
Brake assembly, complete	2-fold	039820.010
Brake assembly	5-fold	041378.000
Double brake assembly	4-fold	040237.000
Double brake assembly	2-fold	040849.000

1a	Deviation ratchet 4-fold	038282.030
1b	Deviation ratchet 2-fold	039818.020
1c	Deviation ratchet 5-fold	039968.010
2	Axle/bearing 3 mm replacement set	039446.000
3	Swivel part	039793.000
4	Magnetic insert	039792.000
5	Cylinder pin Ø 2,5h6x12	039828.000
6	Thread guide	042447.000
7	Diversion slide, complete	039124.020
8	Plug on brake assembly	015276.900
8a	Plug on cable	015277.900
9	Rubber shock absorber SFW-L	007510.010
10	Brake housing with coil	039167.010
11	Rubber shock absorber SFB-L	039416.000
12	Spacing bolt	038291.000
13	Axle/bearing 5 mm replacement set	039445.000
14	Coil cover plate	039125.000
15	Coil, complete, with pre-mounted core	038301.000
16	Magnet inductor, complete, with P-magnet	039168.000
17	Magnet for magnet inductor	038299.010
18	Magnet support, including screws	039697.000
19	Cylinder pin Ø 3m6x17	039827.010
20	Support	039130.020
21	HRD Torx 4x12	016515.900
22	Stop	038290.040
23	Balloon-breaker with screw	039239.010
24	Torsion screw M4x8 for coil, (15)	015448.900
25	Key for torsion screw	015472.900

List of Spare Parts for the SFB-L Flat Spring Brake Assembly

040635.000 Brake assembly with chrome spring long
043795.000 Brake assembly with chrome spring short
042793.000 Brake assembly with ceramic spring



① Axle spring brake	040980.020
② Clamping plate	040887.010
③ Additional spring for chrome spring long	041239.000
③ Additional spring for chrome spring short and ceramic spring	042899.010
④ Flat chrome spring long for aggregate 040635.000	040707.010
④ Flat chrome spring short for aggregate 043795.000	042808.020
④ Flat ceramic spring for aggregate 042793.000	042917.000
⑤ Yarn guide long for aggregate 040635.000	043921.000
⑤ Yarn guide short for aggregate 043795.000 + 042793.000	043512.000
⑥ Slide with spring brake	040904.010
⑦ Spring retainer without spring for aggregate 040635.000	041222.000
⑦ Spring retainer without spring for aggregate 043795.000 + 042793.000	043851.000
⑧ Spring retainer with chrome spring chrom long for aggregate 040635.000	040903.000
⑧ Spring retainer with chrome spring chrom short for aggregate 043795.000	043796.000
⑧ Spring retainer with ceramic spring for aggregate 042793.000	042807.010
⑨ Magnet inductor fork	040902.000
⑩ Thread tube	040895.000

Setting the Flat Spring Brake Assembly 040635.000

1. Set delay switch in the SFB-L control unit to 0.

2. Adjust brush ring on weft accumulator so that the thread is slightly tensioned.

3. Basic setting of brake assembly to 2nd marking.

4. Set the machine into operation and check whether the thread is lying tensioned in the shed, or that no FA tails appear.
   It is important to brake as little as possible.

5. Set remote control to position 0 and plug it into control box. Increase in steps until the weft thread appears loose in the shed, tails, loops or transfer errors occur. Then set back by 2 steps and check whether the thread remains slightly tensioned.

   Transfer this setting to the step switch in the control box, and only then unplug the remote control.

Loepfe

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