

HANDLING CALIPERS
Mounting and Adjustment Instructions.

52.350 (I)
Jan.: 99 - 1/6

Rev.: 1

The components of the caliper brake, i.e. power source, disc and caliper, should be fitted and installed to the following instructions:

POWER SUPPLY

The layout, protection and connection of the power supply source and line should be carried out according to the indications given on the technical sheet.

DISC

Once the disc, with its hub or coupling, is mounted on the shaft, check that it turns evenly, with and axial movement of less than 0,2 mm measured on the rim.

The friction surface should be completely clean and it is particularly important that there are no traces of oil or grease.

CALIPER

1.-MOUNTING

The calipers are supplied with a zero airgap, that is with screw (1) fully tightened.

If the distance between the shoes is less than the disc thickness, it should be increased by means of a manual wear compensation system (2) carried out in the following way:

- Loosen the nut and the counter nut of the wear compensation screw (2), until correct separation between linings is obtained. If the caliper has automatic wear adjustment see Data Sheet 52.253.
- Place the caliper on its bed and centre it with regards to the disc so that the disc is approximately equidistant from the shoe's two lower stops (5).

The caliper should be finally aligned, with regards to the disc, using a ruler and taking as a reference the side surface of the disc and the side surface of the core which joins the coil frame to the base and the U-link.

Then check the caliper base perpendicularity with regards to the disc faces.

Insert the four screws (6) and tighten slightly.

Check centering, alignment and perpendicularity of the caliper once again and then tighten up the fixing screws.



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2.-ADJUSMENT AND REGULATION

There are four point in the brake that need to be adjusted.

2.1 SHOE CLEARANCE adjustment.

- Replace the manual unlocking screw (1) with the sealing screw (9) and firmly tighten it.
- Place the manual unlocking screw (1) in the threaded hole (A).
- Screw the wear compensation screw (2) until a separation between 0,5 and 1 mm between the shoes and disc is obtained. (If the caliper has automatic wear adjustment see Data Sheet 52.253).
- Lock the counter nut of the wear compensation screw (2) after having checked the separation between the shoes and disc, if the caliper has no automatic wear adjustment.

2.2 STOP SCREWS adjustment.

Check that the tangencial stress absortion stop screw (5) allow the shoes to slide with a maximun play of 0,1 mm and that their counter nuts are well tighten.

2.3 BRAKING TORQUE adjustment.

The caliper supplied are normally adjusted to the maximun torque.

The braking torque is regulated by changing the height of the screws (3) according to the diagrams. Once the torque is adjusted check that the lock-nut is firmly tightened.

2.4 OPEN SWITCH INDICATOR adjustment.

Carry out the electrical connection of the caliper and adjust the open switch indicator; perform several handling trials to ensure that it operates perfectly: caliper opening and overtravel of 1 mm from the contact.

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3.-MAINTENANCE

To maintain the caliper in perfect order check periodically on lining wear: when the separation between shoes and disc reaches 2 mm, wear should be compensated by adjusting the screw and nut (2) until previously mentioned initial separation is obtained.

When the lowest value of the lining thickness is 2 mm. it should be replaced following the process described.

The clearance between arms should also be periodically checked.

4.-LINING REPLACEMENT.

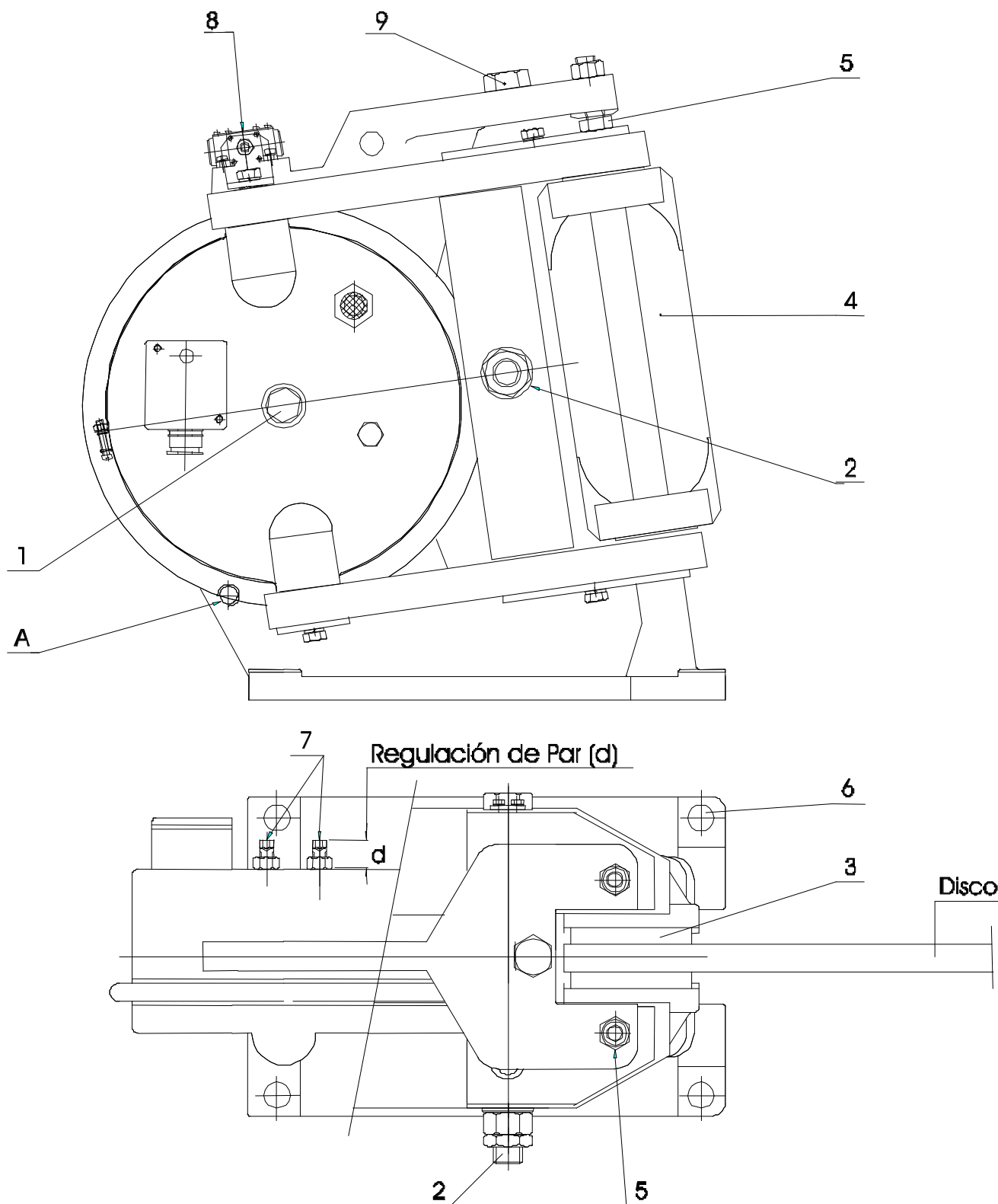
To replace worn lining (3) proceed in the following way:

- Change the sealing screw (9) for the central unlocking screw (1) and tighten it until there is no airgap.
- Tighten the manual unlocking screw (1) until the caliper is open and unscrew the manual wear compensation screw (2).
- Remove the worn lining from their housing in the shoes.
- Fit the new lining taking care to ensure that they are correctly positioned in their housing.
- Finish by adjusting the caliper according to the indications described in the "Adjustment" section.

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5.-TORQUE ADJUSTMENT TABLES.

Torques obtained in N.

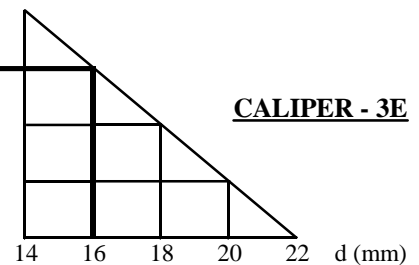
Fp: Stress on pads.

Fr: Stress on spring.

DISC

Ø 445 Ø 495 Ø 550 Ø 625 Ø 705 Ø 795 Ø 995 Fp Fr

3100	3580	4060	4740	5530	6330	8300	26465	16250
2480	2860	3250	3790	4420	5060	6640	21170	13000
1860	2140	2430	2840	3320	3790	4980	15880	9750
1240	1430	1625	1890	2210	2530	3320	10585	6500
620	710	810	940	1100	1260	1660	5295	3250

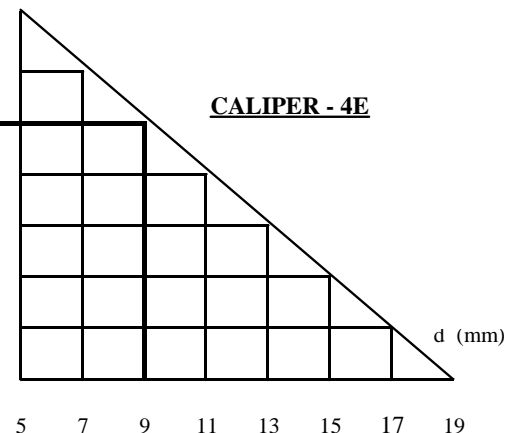


CALIPER - 3E

DISC

Ø 445 Ø 495 Ø 550 Ø 625 Ø 705 Ø 795 Fp Fr

1840	2120	2400	2790	3260	3730	15500	8700
1590	1830	2070	2400	2820	3230	13400	7500
1330	1530	1730	2000	2350	2700	11200	6300
1080	1250	1400	1640	1920	2190	9100	5100
820	930	1070	1250	1460	1670	6950	3900
570	650	740	860	1010	1150	4800	2700
310	360	410	470	550	630	2650	1500
60	70	80	100	120	130	550	300



CALIPER - 4E

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Torques obtained in N.

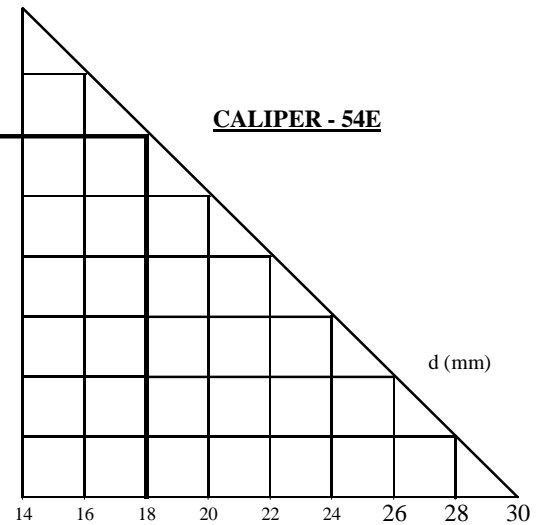
Fp: Stress on pads.

Fr: Stress on spring.

DISC

Ø 315 Ø 355 Ø 395 Ø 445 Ø 495 Ø 550 Ø 625 Fp Fr

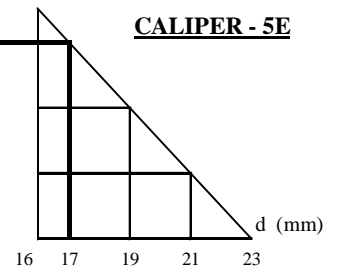
730	860	980	1140	1300	1470	1700	8700	4800
670	780	890	1040	1180	1340	1550	7900	4380
600	700	800	930	1060	1200	1400	7130	3950
540	630	720	840	950	1080	1250	6380	3530
470	550	630	730	830	950	1100	5600	3100
400	470	540	630	720	810	940	4820	2670
340	400	460	530	600	690	790	4050	2240
280	320	370	430	490	560	640	3290	1820
160	180	210	250	280	320	370	1900	1060



DISC

Ø 200 Ø 220 Ø 240 Ø 260 Ø 280 Ø 315 Ø 335 Ø 395 Ø 445 Ø 495 Ø 550 Ø 625 Fp Fr

165	170	195	205	230	255	305	350	400	470	540	625	3150	1750
150	155	175	190	205	230	275	315	360	420	485	560	2850	1570
115	120	135	145	160	180	210	245	280	325	375	435	2200	1220
80	85	95	100	115	125	150	175	200	235	270	310	1580	875
45	50	55	60	65	75	90	105	120	140	160	185	950	525



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