



CALIPER BRAKES

E – Failsafe *[Pneumatic]*

GENERAL INFORMATION
INSTALLATION
MAINTENANCE AND CARE
PERIODIC INSPECTION
SPARE PARTS

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GENERAL INFORMATION

Proper use of the product

According to the EEC directives No. 85/374 the application field boundaries are hereby defined to guarantee a safe and correct use of the product.

Design parameters

The COREMO OCMEA caliper brakes are designed to operate according to the application, conditions and technical specifications as specified in the data sheet included into the catalogue. We recommend that the maximum data shown is not exceeded.

Application selection

A correct model selection is essential to assure that performance limits are not exceeded. It is essential when selecting to take in consideration an appropriate service factor. In case of holding duties this should be not less than 2. The COREMO OCMEA technical department is available for informations, suggestions and cooperation for the correct application and use.

Use

The Mounting and Maintenance Instructions must be observed so as to prevent accidents, breakage, etc. Incorrect mounting and maintenance of the unit could also result in reduced life of the product and expensive down time. Warning: the initial torque on new unit can be 30% to 50% less than the catalogue value until the friction facing and friction disc are lapped or worn in.

Mounting and maintenance precautions

The engineers responsible are advised to wear the correct protective clothing such as gloves, safety glasses, etc.

Rotating parts

The caliper brakes are mainly linked to rotating and moving parts that must be shielded according to EEC directives No. 98/37, or the equivalent norms effective in the countries where they are used.

Spring applied failsafe brakes

Failsafe brakes must be treated with special attention because they have mechanical pre-tensioned springs. To avoid accidents, the red highlighted notes must be respected during the maintenance procedures.

Friction parts

All the COREMO OCMEA caliper brakes are supplied with non asbestos friction material which is in accordance to the health and safety regulations. Even though the linings are asbestos free you should not breathe in the dust produced from the brake linings and if in contact ensure that the hands are clean before eating or drinking.

Oils, greases and lubricating components

The lubricating materials are employed in very low quantity on our products. Anyway the use of gloves or protective creams to prevent skin allergies is highly recommended. Remember to carefully wash your hands before handle any food or beverages.

Storage

To prevent accidents during lifting and storage operations, all the safety precautions must be observed. To wear helmets, safety gloves and shoes is highly recommended. Considering the heaviness of materials, insure to use a proper lift machine during lift operations.

Displacing

All our products are manufactured with non-toxic/harmful materials. Therefore the displacement must be performed according with the industrial rules and local regulation of the country of employment.

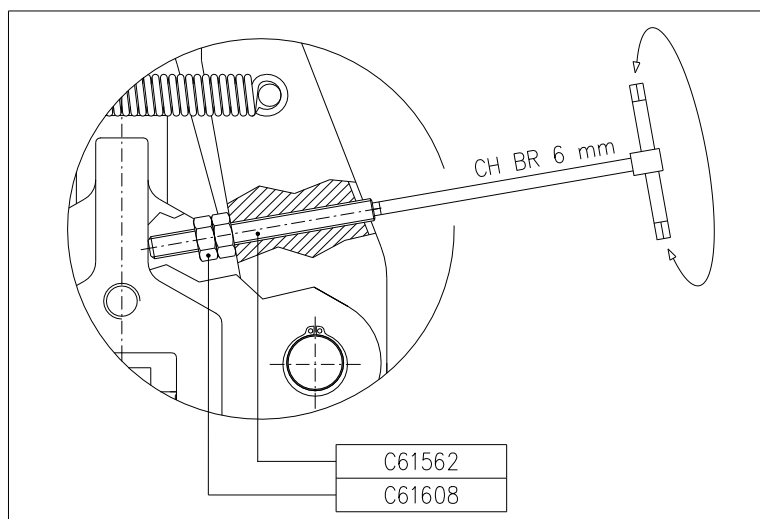
Stoking

Some type of brakes may contain rubber diaphragms and/or seals that may generate toxic gasses in case of fire. Fire fighters are advised to wear proper gas masks during extinguishing operation.

1.0 INSTALLATION

- 1.1 For a correct mounting of the brake, chose a suitable place on your machine that can withstand the tangential force generated during the braking phase:
F = 14150 N for the E3N brake
F = 26600 N for the E3.5N brake
F = 34000 N for the E3.5N/34 brake
F = 32800 N for the E4N brake
- 1.2 The brake can be mounted into any position, thanks to a thruster weight balancing and brake pad alignment system.
- 1.3 Fasten the brake's body on the chosen base using three M16 bolts, 8.8 class. Tie up the bolts with a torque of 200 Nm.
- 1.4 To balance the thruster weight, adjust the C61562 screw placed onto the leverages using a 6 mm allen key as shown in picture 1. Lock the adjusting screw using the C61608 nut, when adjustment is done.

Picture 1:



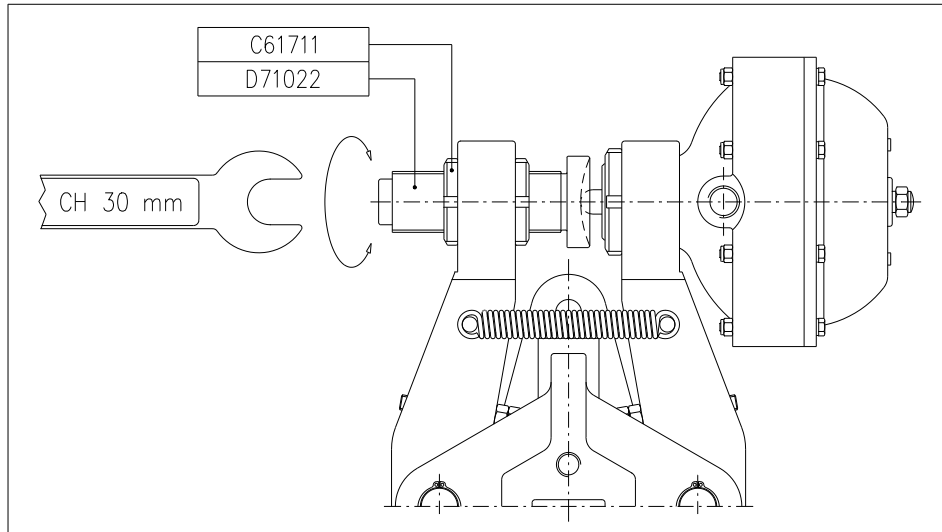
- 1.5 Using a 30 mm fix wrench adjust the optimum gap between the lining pads and the disc (see picture 2). Upon adjustment lock up the two C61711 ring nuts using the proper hook tool.

Optimum gaps beetwen disc and each lining pad:

E3N with disc thickness 25.4 mm = 1.8 mm
E3.5N with disc thickness 25.4 mm = 1 mm
E3.5N/34 with disc thickness 25.4 mm = 1 mm
E4N with disc thickness 25.4 mm = 1.8 mm

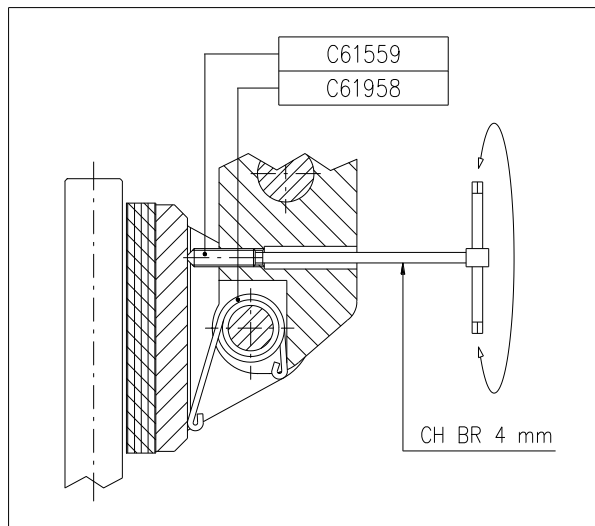
E3N with disc thickness 40 mm = 1.5 mm
E3.5N with disc thickness 40 mm = 1.5 mm
E3.5N/34 with disc thickness 40 mm = 1.5 mm
E4N with disc thickness 40 mm = 1.5 mm

Picture 2:



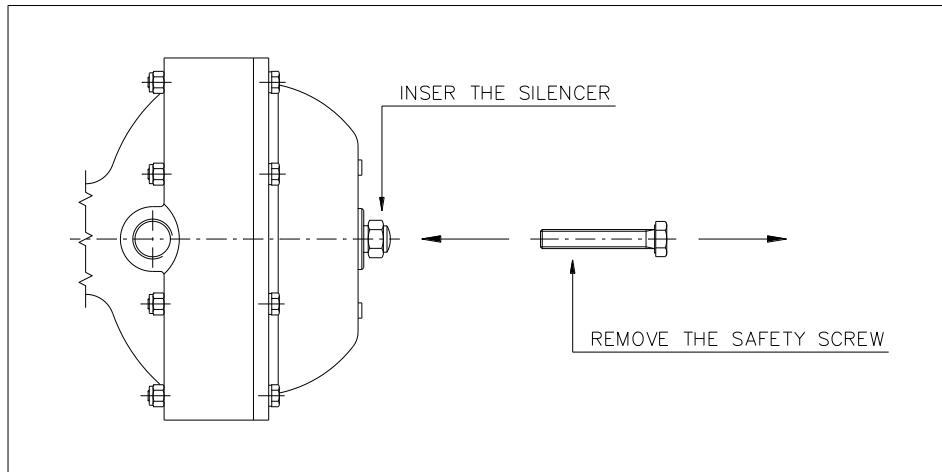
- 1.6 Using a 4 mm allen key, adjust the C61559 inner screw to align the lining pads parallel to the disc, as shown in picture 3.

Picture 3:



- 1.7 Connect the air supply line to the thruster by means of the 1/2" gas connector. Ensure to use a proper flexible hose to allow a wide movement of the thruster.
- 1.8 To allow the brake to stay open properly, the supplied pressure must be set between 6 bar (MAX pressure) and 5 bar (MIN release pressure), except for the thruster 3.5N/34 which has a minimum release pressure of 9 bar and a maximum pressure of 10 bar. The air supply should be free from oil or water; therefore a 25 micron filter should be used, fitted with automatic condensation discharger.
- 1.9 Start the air supply and replace the safety screw TE M10 with the C61126 silencer for E3N brake, or the safety screw TE M12 with the C61846 silencer for E3.5N brake, or the safety screw TE M14 with the C61846 silencer for E4N brake (see picture 4).

Picture 4:



WARNING: Do not perform braking if the disc is not correctly placed between the pads. It's otherwise possible to accidentally hurt your fingers if this caution is not respected.

2.0 MAINTENANCE AND CARE

ALL MAINTENANCE OPERATIONS MUST BE PERFORMED ONLY WHEN THE MACHINE IS STOPPED.

2.1 GAP ADJUSTMENT

- 2.1.1 Supply the thruster as explained at the point 1.8.
- 2.1.2 Loose the C61711 ring nuts using a proper hook tool.
- 2.1.3 Move clockwise the gap adjustment screw up to restore the optimum gap between the disc and each lining pad (see picture 2). See the optimum gaps list at the point 1.5.
- 2.1.4 Lock back the C61711 ring nuts.
- 2.1.5 Realign the lining pads as already explained at the point 1.6 (see picture 3).

2.2 LINING PADS REPLACEMENT

- 2.2.1 Supply the thruster as explained at the point 1.8. Replace the silencer with the safety screw.
- 2.2.2 Pull out the quick-mounting pin K90073 and remove the socket D71026 for a brake having 25.4 mm disc thickness, or the socket D71023 for 40 mm disc thickness.
- 2.2.3 Loose up the four C61171 screws, remove the exhausted pad and replace it with a new one. Apply few drops of a proper Loctite product on the screws, to prevent unwanted losing effects. Tight up the screws with a torque of 12 Nm.
- 2.2.4 Reassemble the socket into its original position following backward the point 2.2.2. Reset the C61958 spring position as shown in picture 3.
- 2.2.5 Readjust the gap between the lining pads and the disc as already explained at point 2.1.
- 2.2.6 Replace back the silencer taking out the safety screw.

2.3 FRICTION SURFACE CLEANING

- 2.3.1 Remove lining pads as already explained at the point 2.2.
- 2.3.2 Use a non-polluting cleaning product to remove oil and grease traces from the disc surface.
- 2.3.3 In case of shallow contamination of linings by any lubricant agent, the surface may be cleaned wrapping it with a fine-grained emery cloth. In case of deep contamination the full replacement of linings is suggested.

2.4 THRUSTER SPRINGS REPLACEMENT

- 2.4.1 Supply the thruster as explained at the point 1.8.
- 2.4.2 Loose up the fixing ring nuts and remove the thruster from the brake system.
- 2.4.3 Switch off the air pressure to the thruster and disconnect the pipes.
- 2.4.4 Take out the screws (C61234 for E3N brake, C61237 for E3.5N and E3.5N/34 brakes, C61236 for E4N brake) which fix the cover thruster; VERY CAREFULLY and SLOWLY loose up the screws, so that the PRE-LOADED SPRINGS will be gradually released.
- 2.4.5 Remove the cover (Z50163 for E3N brake, Z50225 for E3.5N and E3.5N/34 brakes, Z50097 for E4N brake). Replace the whole springs set, even if anyone could still appear undamaged.
- 2.4.6 Place the cover on top of springs. Align properly the mounting holes pattern by inserting the fixing screws complete with flat washers. Screw up the cover onto its housing using auto-locking nuts.
- 2.4.7 Reconnect the pipes and supply the thruster.
- 2.4.8 Reassemble the thruster on the brake and lock it up using the fixing ring nuts.
- 2.4.9 Operate the brake for several times to ensure that it has no air leakage and the piston rod is moving correctly.

2.5 SOCKET ALIGNMENT SPRINGS REPLACEMENT

- 2.5.1 Supply the thruster as explained at the point 1.8. Replace the silencer with the safety screw.
- 2.5.2 Pull out the quick-mounting pin K90073 and remove the socket D71026 for a brake having 25.4 mm disc thickness, or the socket D71023 for 40 mm disc thickness.
- 2.5.3 Remove the C61958 spring from its guide and replace it with a new one. Reset the spring position as shown in picture 3.
- 2.5.4 Reassemble the socket following backward the point 2.5.2.
- 2.5.5 Readjust the gap between the lining pads and the disc as already explained at point 2.1.
- 2.5.6 Replace back the silencer taking out the safety screw.

2.6 SEALS REPLACEMENT

- 2.6.1 Proceed as shown from point 2.4.1 up to point 2.4.4.
- 2.6.2 Remove the cover and carefully pull out the inner piston rod assy (Z50164 for E3N brake, Z50096 for E4N brake, Z50226 + C62064 for E3.5N brake, Z50264 + C62064 for E3.5N/34 brake). Remove the damaged gaskets and replace them with new ones. We suggest to replace the complete kit of seals all together at once. Lubricate gaskets before put them in place, using a lithium base grease, mineral oil or a solid lubricant. The piston rod should be also lubricated with grease or oil before place it back into the housing.
- 2.6.3 Reassemble as explained from point 2.4.6 up to point 2.4.9.

3.0 PERIODIC INSPECTIONS

WE SUGGEST TO PERFORM THE FOLLOWING CHECKS ON THE BRAKE; THE FREQUENCY OF THESE CHECKS DEPENDS ON THE FREQUENCY OF BRAKE USE. ANYWAY WE SUGGEST TO PERFORM THESE CHECKS AT LEAST EVERY 3 MONTHS.

- 3.1 Ensure that the gap between each lining pads and the disc will not exceed 3 mm. Whenever the gap is greater than 3 mm, adjust the gap properly as explained at point 2.1. Replace pads when the consumption is greater than 6 mm as explained at point 2.2.
- 3.2 Verify that no lubricant traces are found on the disc or pad surfaces. In case of contamination follow up the procedure at point 2.3.
- 3.3 Check that all the fixing screws are tightened properly.
- 3.4 Check out integrity of flexible hoses.
- 3.5 Switch on and off the air supply several times, to check up the seals integrity, springs functionality and the proper sliding of push rod.

4.0 SPARE PARTS

- 4.1 To avoid unnecessary stops of your production line, a suitable quantity of spare parts should be kept at store, according to the number of brakes in use. Here below the suggested parts are reported:

Linings:	code No. D70997 [ST11]	
	code No. D70998 [ST12]	
	code No. D71000 [ST10]	
Thruster springs:	code No. C60986 - C61945	E3N
	code No. C62074	E3.5N
	code No. C62074 - C62150	E3.5N/34
	code No. C61845 - C61844	E4N
Socket springs:	code No. C61958	
Tensioning springs:	code No. C61959	
Gaskets:	code No. C61128 - C61129	E3N
	code No. C61976 - C61129 - C62072	E3.5N
	code No. C61976 - C61129 - C62072	E3.5/34
	code No. C61840 - C61841 - C61689	E4N

- 4.2 Those spare parts should be stored in a cool and dark place, and far away from any substances that could damage their life and functionality.

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