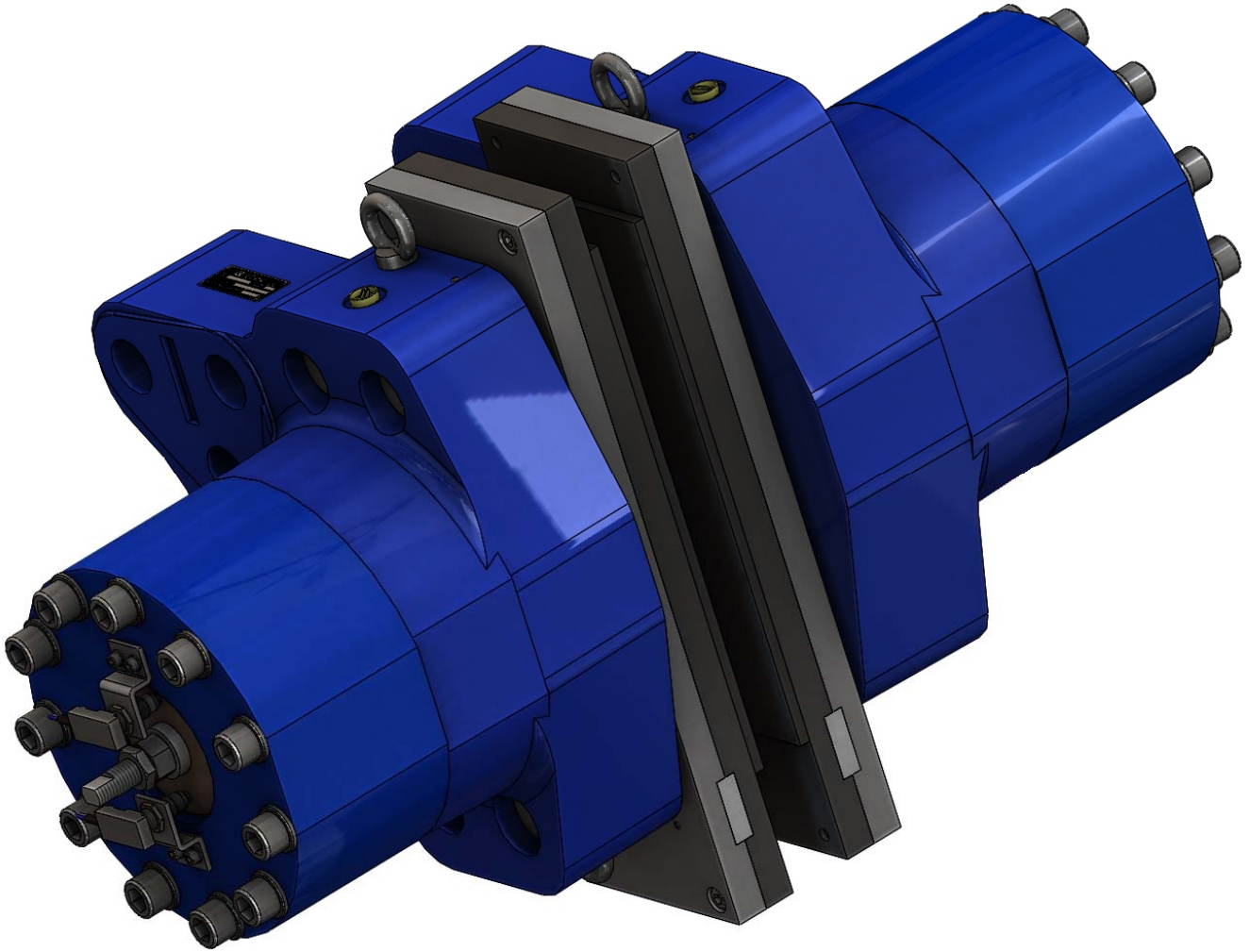


HYDRAULIC CALLIPER TYPE NHCD-2100

Instructions for assembly, adjustment and maintenance



Technical data sheet number:	BC.TDS.00093I
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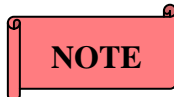
HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

1. INTRODUCTION.

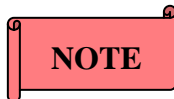
1.1. WHO IS THE TARGET AUDIENCE?

This manual has been written to aid with the installation, start-up, operation and maintenance of the brake. It is designed to help workers who are going to handle the brake, and technicians. It should therefore be made available to **everyone** who is going to work with these brakes and it must be ensured that the instructions given are followed.

This manual is intended to clarify any constructive doubts and the basic functions of the brake. We are sure that it will be an extremely useful information and reference tool for operators and technicians.



In the event of any problems or if you have any questions regarding the brake, please do not hesitate to contact the ANTEC After-Sales Service, specifying the brake model and the ANTEC order number, data that can be found on the label that each unit has.



Due to ongoing improvements to our brake designs, your brake may differ slightly from the one described in this manual. Antec reserves the right to make any changes deemed necessary.

1.2. SAFETY INSTRUCTIONS.

Various symbols appear throughout this manual, which highlight the importance of the section in question. They are usually related to safety, and therefore require special attention.



Warning: This symbol will be included at points or in paragraphs that need special attention. It usually refers to an operation in which special care must be taken.



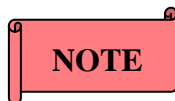
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Danger of death: This symbol will be included at points or in paragraphs that need special attention. It usually refers to an operation that might involve a death hazard.



High temperatures: This symbol will be included at points or in paragraphs that need special attention. It usually refers to an operation that might involve danger of high temperatures.



This symbol will be used to highlight an important comment or piece of information.

A number of general safety rules must be followed when handling ANTEC brakes:

1. - All workers and technicians must wear appropriate gear when handling the brake (safety clothes, boots, helmet, goggles, etc.).
2. - Always keep warning signs (if any) in good condition and respect them. During repairs or maintenance, place a card to inform other workers that an ANTEC brake is being repaired in that machine, and that the power supply has been disconnected, if applicable.
3. - Find out the exact specifications of the liquids used to ensure health and safety.
4. - Make sure electrical apparatus (if any) is properly earthed to prevent electric shocks.
5. - Respect the limits established for each brake element and for the brake itself.
6. - Before switching on any machine fitted with ANTEC brakes, ensure that the brake is fully applied and tightened with the necessary torque.
7. - ANTEC does not accept responsibility for the use and maintenance of tools that the customer uses to assemble and handle the brakes.



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Failure to comply with this point could cause irreversible damages to ANTEC brakes and workers handling them.

These damages could result in the worker's death.

1.3. GENERAL ASPECTS.



The use of ANTEC brakes for unplanned operations or the negligent use thereof could seriously damage them or severely injure people standing nearby.

NHCD-2100 brakes are negative-action brakes, which means that they brake using springs when there is no hydraulic pressure.

These callipers consist of two half-callipers mounted in a symmetrical position with respect to the disc centre line. The symmetry of both half-callipers may become broken in some cases.

The brake's clamping force depends directly on the force exerted by the springs.

The brake opening force depends directly on the hydraulic pressure. The maximum pressure to open the brake is 21 Mpa, while the minimum varies depending on the spring strength. The minimum pressure to open the brake is shown in the following table, along with other relevant information.

CALLIPER		NHCD 2125	NHCD 2130	NHCD 2135	NHCD 2145
Clamping force	N	250000	300000	350000	450000
Releasing pressure	Mpa	12	13	16	21
Maximum pressure	Mpa	21			
Release stroke	mm	2 each side			
Oil volume	cm ³	350 each side			
Pad surface	cm ²	750 each side			
Friction coefficient (μ)	-	0,4			
Braking Force ($\mu=0,4$) (Bf)	N	200000	240000	280000	360000
Approximate total weight	Kg	530			



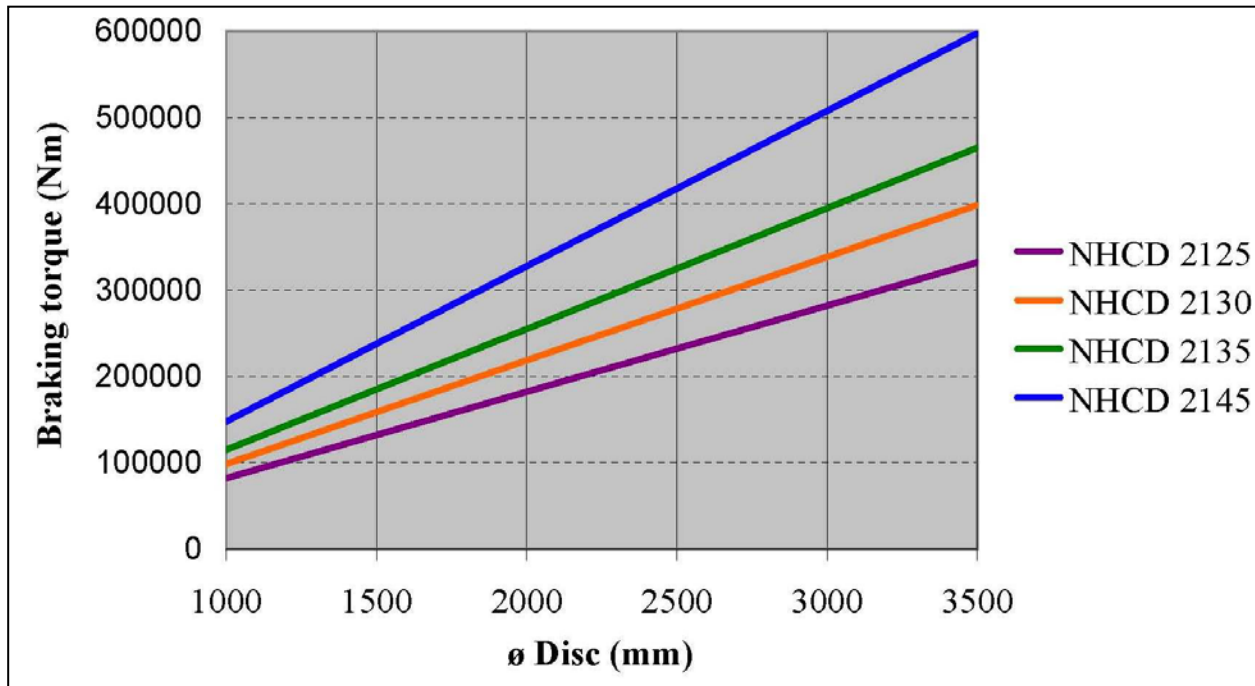


HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

The brake torque of a NHCD-2100 brake depends directly on the braking force described in the above table (for each brake) and the outer diameter of the disc on which the brake acts.

CALCULATING THE BRAKE TORQUE

$$T_{(BRAKE\ TORQUE)} (Nm) = \frac{n_{(NUMBER\ OF\ BRAKES)} \times Bf_{(BRAKING\ FORCE)} (N) \times (\phi_{(DISC\ DIAMETER)} (mm) - 180)}{2000}$$



Each half-calliper has two 3/8" G threaded connections for the hydraulic power. The bottom 3/8" G connection should be used, leaving the top one free to fit an air bleed device or should the oil need to flow through the half-calliper.

A plastic plug is fitted to the connection that will be used to install the hydraulic power.

A steel plug is fitted to the connection that will not be used to install the hydraulic power.



IMPORTANT Never apply a greater pressure through the hydraulic pressure connection than the one specified on the characteristic plate.

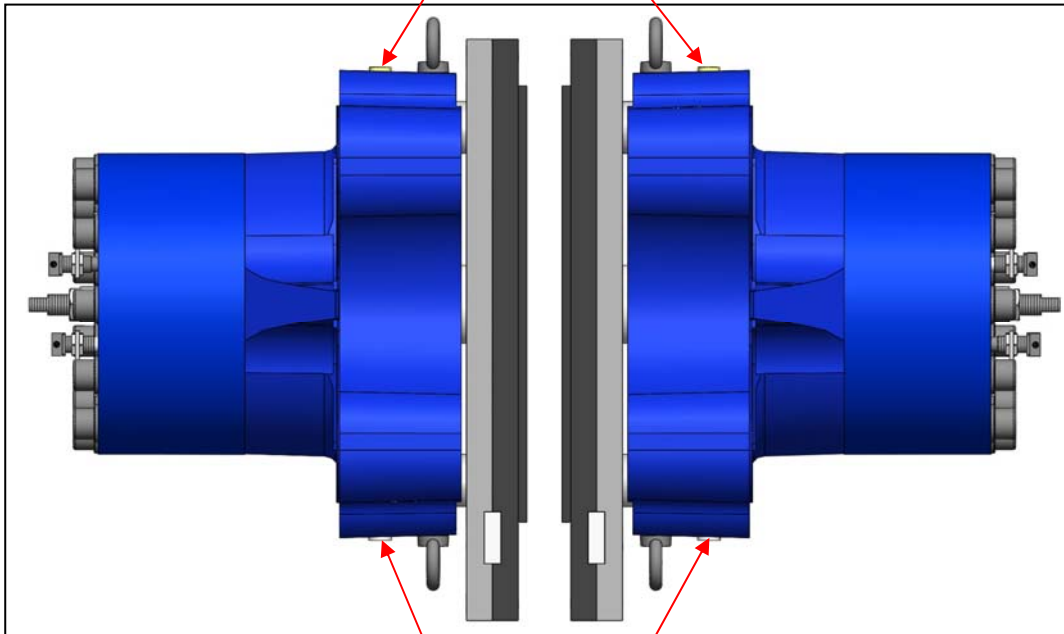
(Maximum pressure for NHCD-2100 = 21 Mpa).



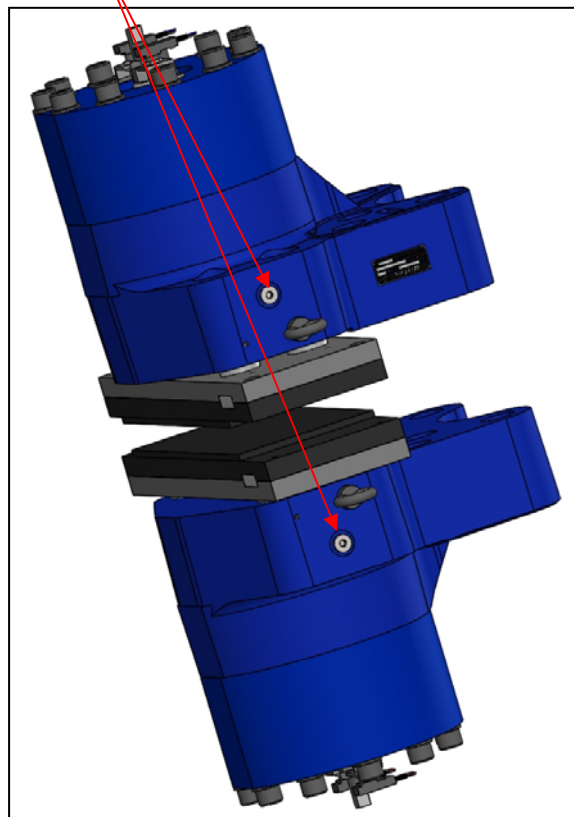
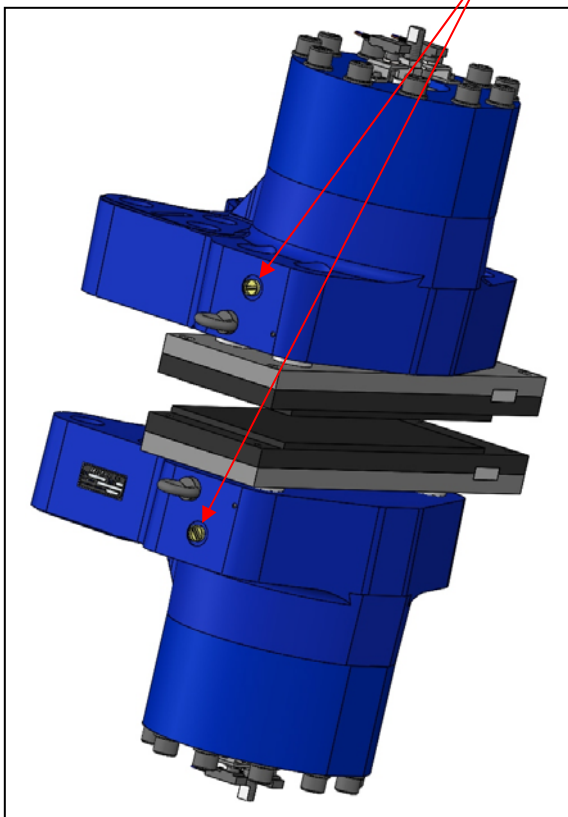
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Power 3/8" G



Power 3/8" G



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NHCD-2100 brakes comprise the parts listed below:

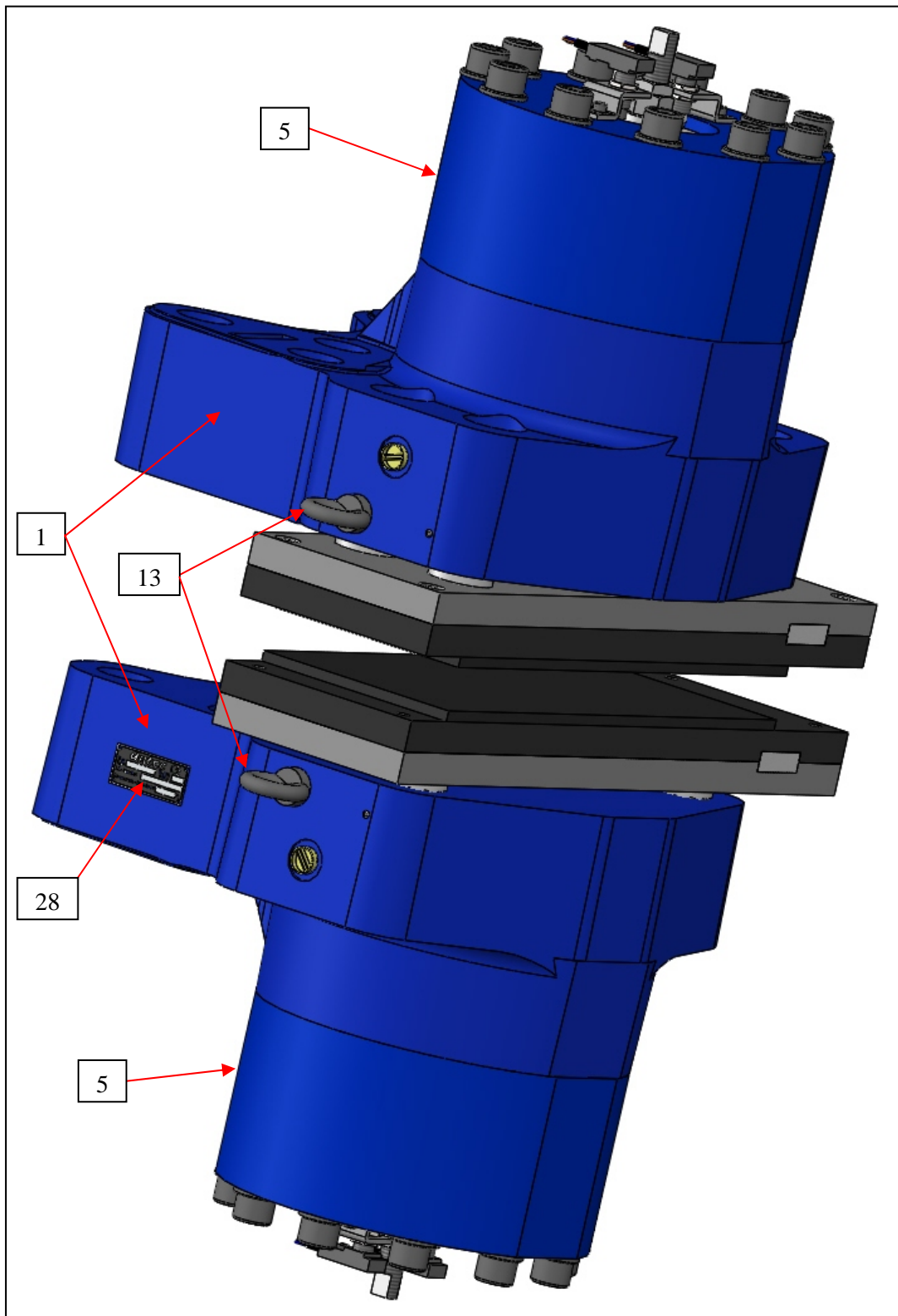
BRAKE PARTS		
NUMBER	NAME	QUANTITY
1	BODY	2
2	PAD	2
3	SPRINGS	2
4	PISTON	2
5	COVER	2
6	SHOE	2
7	PUSHER	2
8	PISTON GUIDE	2
9	END STOP	2
10	PIN	8
11	TIE ROD	2
12	PIN	2
13	EYEBOLT M12	4
14	3/8"G METALLIC PLUG	2
15	SCREW M20x180 10.9	22
16	SEAL	2
17	SEAL	2
18	GUIDE RING	2
19	GUIDE RING	2
20	SCRAPER	2
21	WASHER	22
22	SPRING WASHER	8
23	SCREW M10x25 8.8	8
24	SCREW M6x16 <i>(Only for brake with option of CSA and/or DD)</i>	8
25	SPRING WASHER <i>(Only for brake with option of CSA and/or DD)</i>	8
26	KEY	2
27	PIN	4
28	CHARACTERISTICS PLATE	2
29	DETECTOR SUPPORT <i>(Only for brake with option of CSA and/or DD)</i>	4
30	DETECTOR <i>(Only for brake with option of CSA and/or DD)</i>	4
31	PIN	8
32	O-RING	2
33	3/8"G PLASTIC PLUG	2
34	SPACER	2
35	NUT	2
36	NUT	2
37	SUPPLEMENT <i>(Optional depending on the brake model)</i>	2



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GENERAL

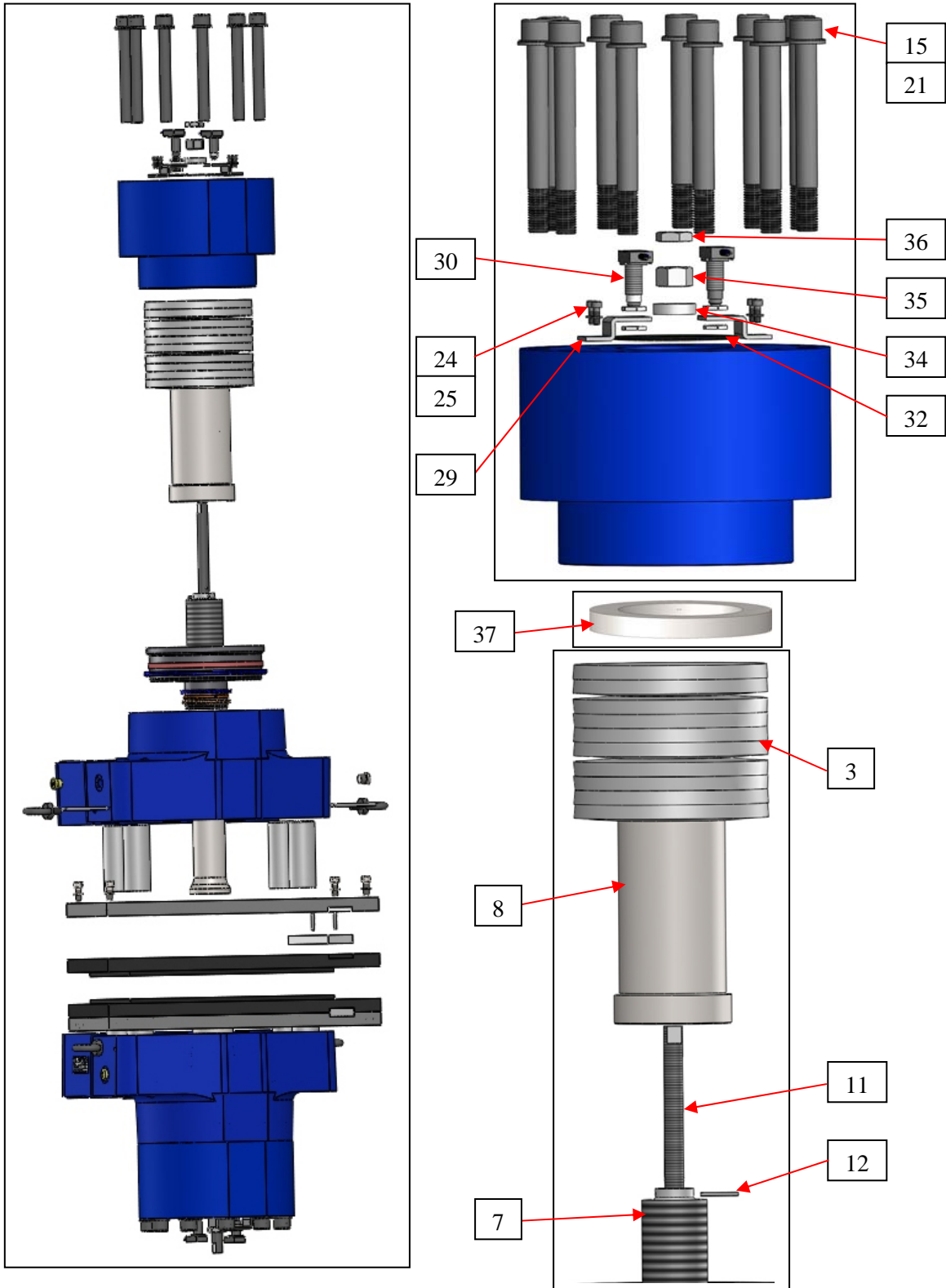




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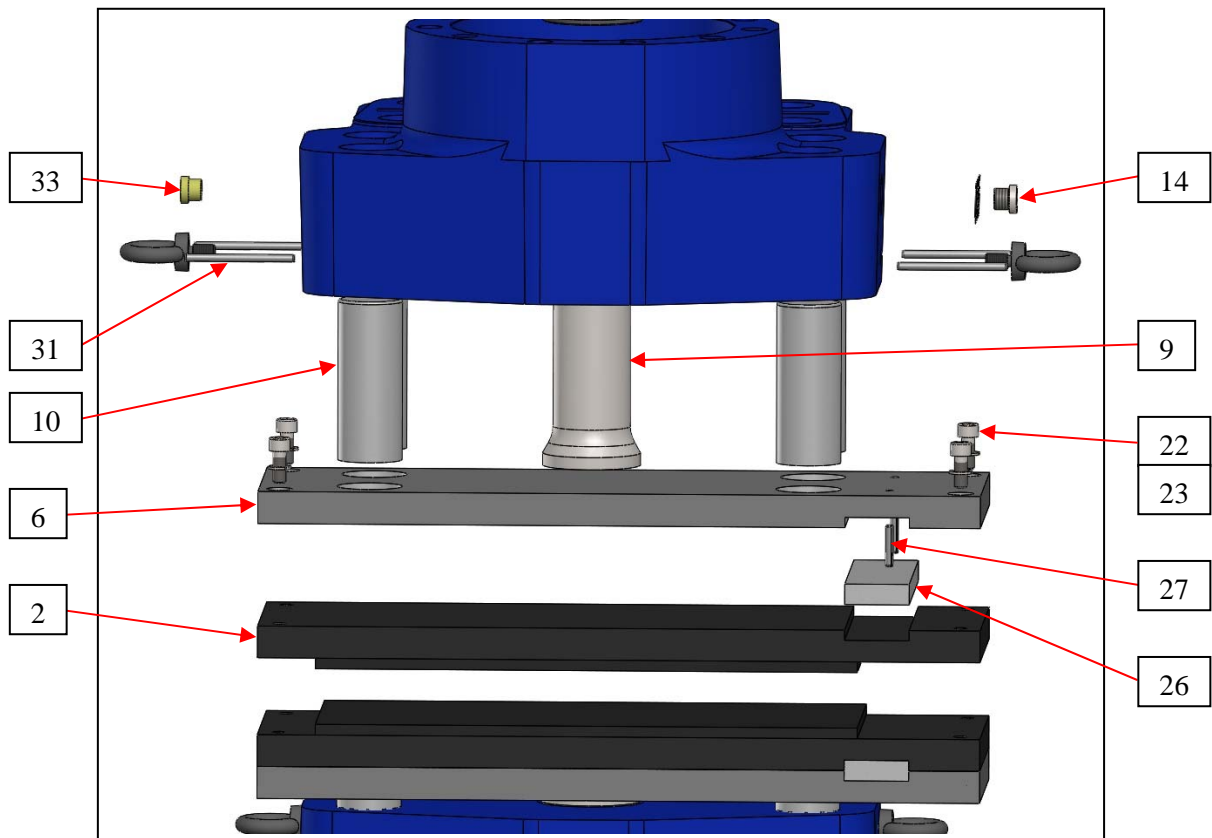
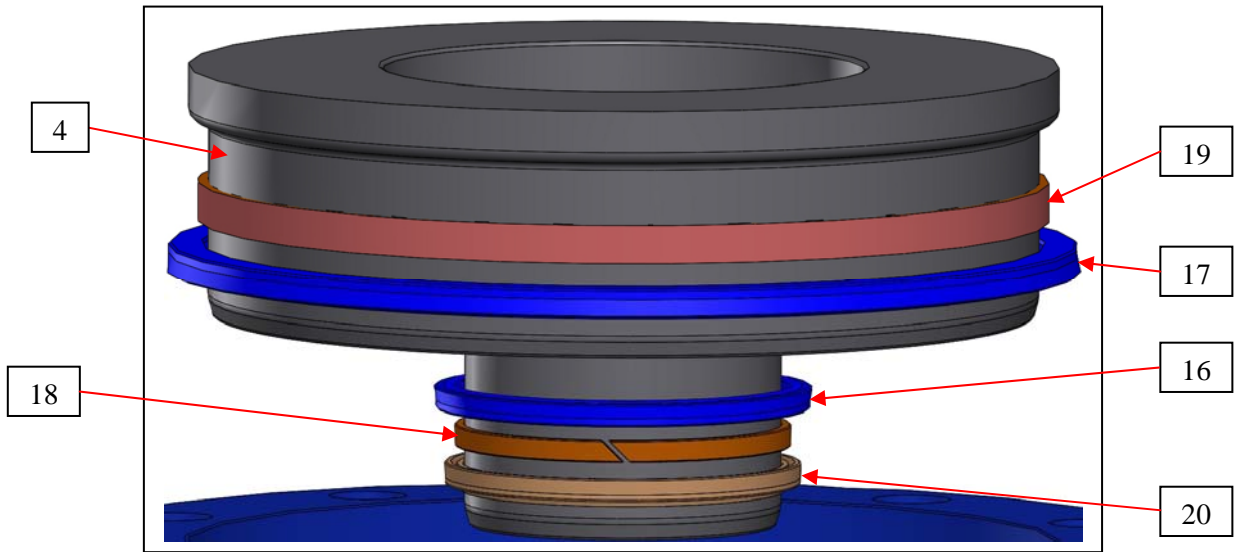
ASSEMBLY VIEW





HYDRAULIC CALLIPER TYPE NHCD-2100

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HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

ANTEC provides different options that can be used for NHCD-2100 brakes. These options are:

- Open brake switch indicator. (CSA).
- Lining wear indicator (DD).
- Hydraulic unit.
- Tubes to connect hydraulic unit to brake.
- Brake anchoring screws.
- Brake anchoring bracket.

NOTE

Any other option not mentioned above can be studied by the Antec After-Sales Department to meet any client need.

2. BRAKE DELIVERY AND ASSEMBLY.

2.1. BRAKE DELIVERY.

When the brakes leave the factory, they are always packaged to ensure maximum safety during transportation.

NHCD-2100 callipers are supplied loose. They are secured to a bracket, which the user must prepare beforehand. If supplied with a bracket or hydraulic unit, this is supplied in a different package.

NHCD-2100 callipers are supplied without pressure, with the springs completely slackened.

ANTEC certifies that NHCD-2100 brakes have been tested in the company's test bench at its facilities using the right oil.

The inside brake parts are lubricated so that the brake will not suffer corrosion while being transported to the customer's facilities and during the assembly process.

NOTE

This film of oil that prevents the inside brake parts from corrosion during transportation and assembly only lasts for a certain amount of time.

All of the brake's hydraulic power inlets are plugged during transportation.

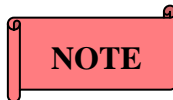




HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

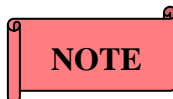
2.2. DISC AND SURFACE FOR ASSEMBLY.

Before commencing the assembly process, check that the disc is clean and dry. Any residue, whether grease, oil or particles due to disc corrosion could prevent the brake and lining from working properly.



When you clean the disc, you can use oil or diesel the first time, but after that (and this is very important) the disc must be cleaned using a solvent. Take care when using solvents. Dry the disc afterwards.

During transportation and storage, residue may build up in the brakes on surfaces in contact with brackets in the future and on the areas between the linings and the disc. We therefore recommend cleaning them thoroughly.



The brakes have been designed in accordance with the customer's specifications. Therefore, possible disc and bracket machining defects have not been taken into account. ANTEC thinks it is worth mentioning that possible flaws regarding parallelism and flatness in the brake's disc and securing bracket could reduce the contact surface area between the lining and disc. Contact between both surfaces will be restored fully after several braking actions.

2.3. ASSEMBLY PROCEDURE.

To assemble the brakes, proceed as follows:

2.3.1. - Clean the disc in which you are going to install the NHCD-2100 brake. Any particles could damage the brake and prevent it from working properly. See the first note on disc cleaning in point 2.2.

2.3.2. - Remove the brake from its packaging (do not remove plugs 14 and 33).

2.3.3. - Clean the contact surface between the brake and the bracket and between the linings and the disc. Once the brakes have been unpacked and transported to the installation point they could become dirty, which is why both surfaces need to be cleaned.

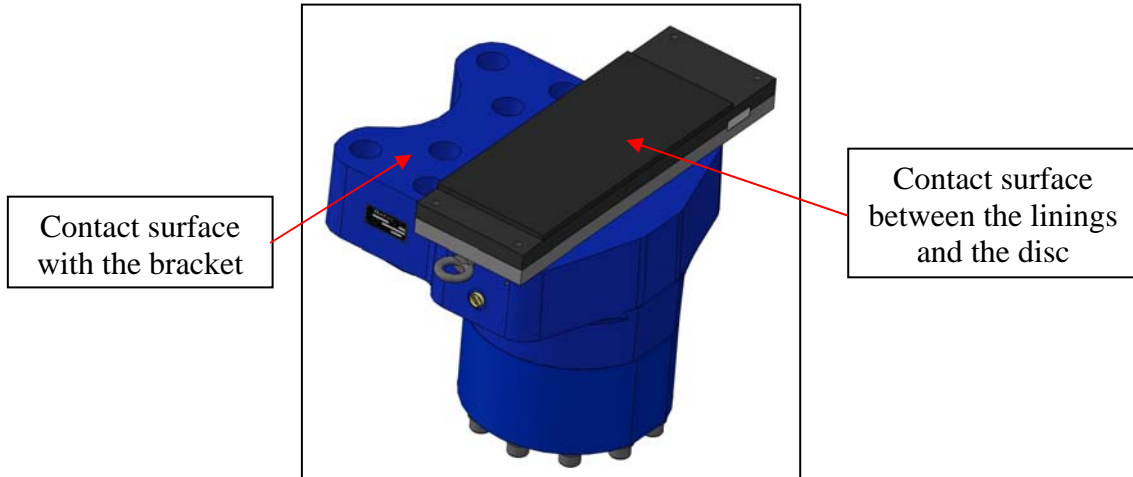


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NOTE

IMPORTANT Do not use liquid to clean these two surfaces. Clean them using a dry paper towel or cloth.



2.3.4. - If the brake is supplied with the necessary bracket, secure the brake using the anchoring screws.

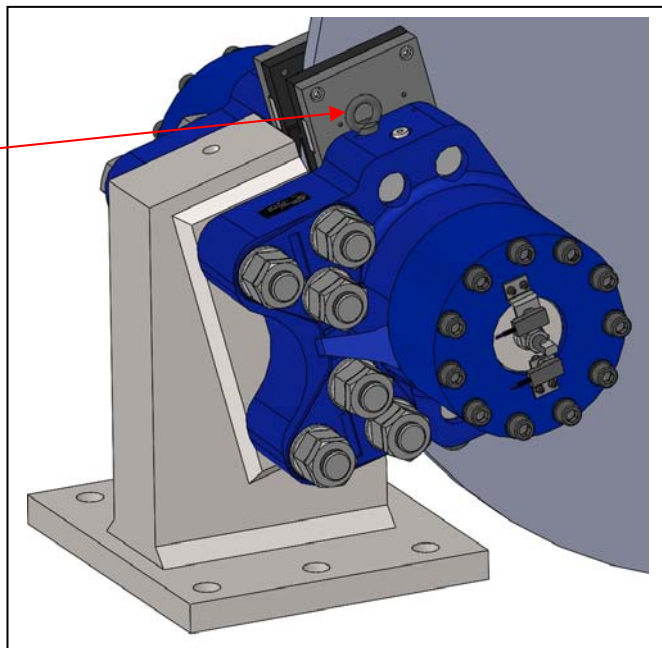
2.3.5. - Fit the screws, washers and nuts. Secure the NHCD-2100 brake to the bracket by applying the necessary torque to tighten the screws and nuts. **ANTEC recommends 10.9 screws lubricated with MoS₂.**

NOTE

The screws, washers and nuts are not supplied with the brakes if they are not requested.

The eyebolts (13) can be very useful to handle the half-callipers

RECOMMENDED TORQUE FOR M42 SCREWS 10.9 (Nm)	
Lubricated with MoS ₂	Not lubricated
4600	5609

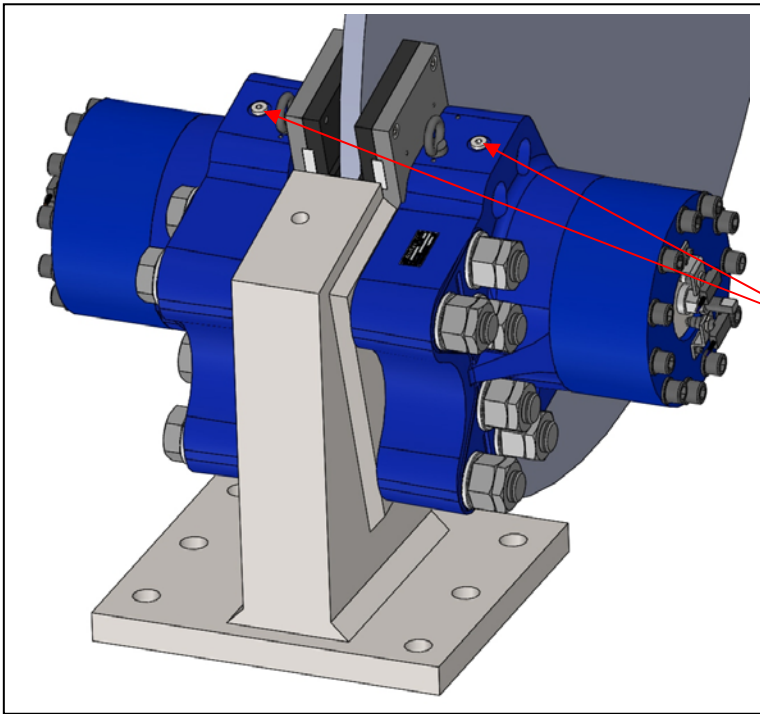




HYDRAULIC CALLIPER TYPE NHCD-2100

Instructions for assembly, adjustment and maintenance

2.3.6. - Fit the hydraulic power and drainage connections. Each half-calliper has two 3/8”G threaded connections for the hydraulic power. Remove the plugs from the 3/8”G inlets to which the hydraulic power tube is going to be connected. The bottom connection should be used, leaving the top one free to fit an air bleed device, and if there is none, leave the steel plug fitted.



Bottom 3/8”G power inlet. Opposite inlet to the one shown in the photo

2.3.7. - After fitting the hydraulic connections, apply 2 Mpa pressure to the brake to bleed the air inside it. This air bleeding must be performed through the 3/8”G inlet without hydraulic power. If a Minimess test point cannot be fitted, the air can be bled from the brake through the top power connection, by unscrewing the steel plug until oil leaks out. This means there is no air in the brake and the plug can be screwed back in place.



Important: Never apply more than 2 Mpa of pressure to the brake during the brake bleeding procedure because this could place the worker in danger.

2.3.8. - Once air has been purged from the brake, adjust the brake. Adjust the brake in accordance with point 4 of the instructions.



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3. BRAKE MAINTENANCE.

NHCD-2100 brake maintenance will consist of regularly checking the following points:

3.1. - Lining wear. When the lining thickness drops below 2 mm at the lowest point, it needs to be replaced. If the brake comes with a lining wear indicator, replace the linings when the sensor warning comes on. See point 4.2 (Adjustment of sensors) and point 5 (Replacement of the linings).

3.2. - Adjust the brake whenever it appears to have lost braking force. If the brake comes with a lining wear indicator, adjust the brake when the sensor warning comes on. See point 4.1 (Adjustment of the calliper opening).

3.3. - Check the torque in the screws fastening the brake to any bracket.

3.4. - Check there is no leak in the hydraulic connections.

4. BRAKE ADJUSTMENT.

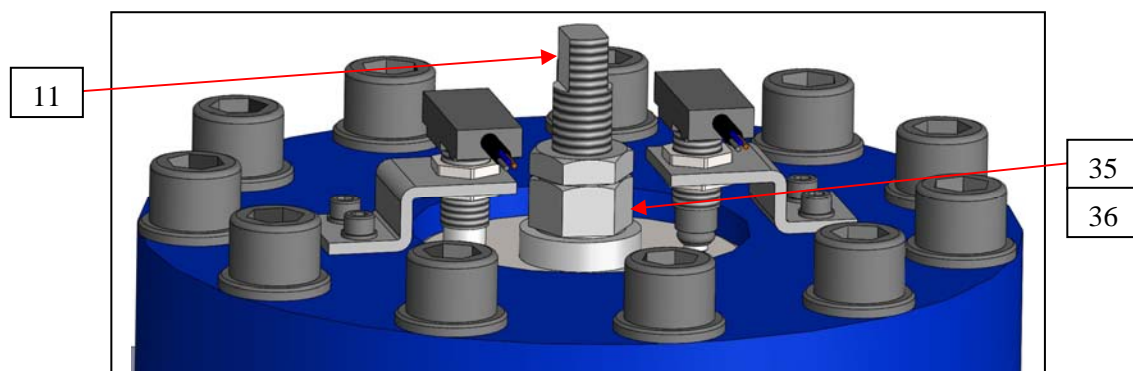
The brake has some adjustment points:

4.1. – Adjustment of the calliper opening.

The procedure to adjust the calliper opening will be explained for one of the semi-callipers (the procedure is the same for the other one).

4.1.1. - Supply the semi-calliper with the necessary hydraulic pressure for each brake, as specified in the table attached in point 1.3. of the instructions. The pressure is used to open the brake as far as it will go.

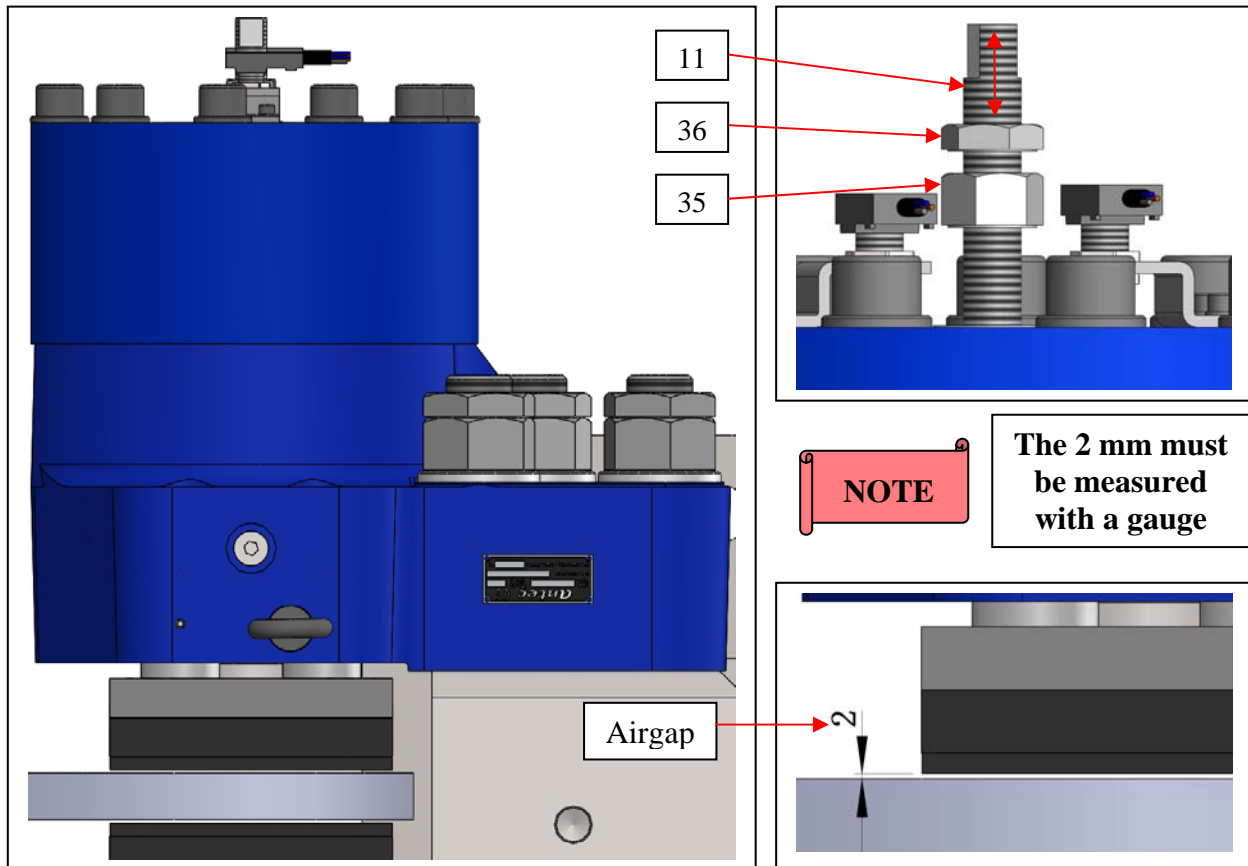
4.1.2. - Loosen the nut (35) and counter-nut (36) to release the adjustment rod (11).





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4.1.3. - Screw or unscrew the adjustment rod (11) until the distance between the lining and disc is 2 mm. This is called the airgap. The 2 mm must be measured with a gauge.



4.1.4. - Once this opening has been adjusted, lock the adjustment rod (11) in place using the nut (35) and counter-nut (36).

4.1.5. - The brake must be adjusted **WHENEVER** the brake is installed, the lining wears by 1 mm or the linings are changed.

4.1.6. - At this point, due to the action from the springs and after removing the hydraulic power, the brake will have the braking force specified in the table in point 1.3.

NOTE

The airgap must be the same on both sides of the disc. Otherwise abnormal stress might be exerted on the disc and on the bracket.

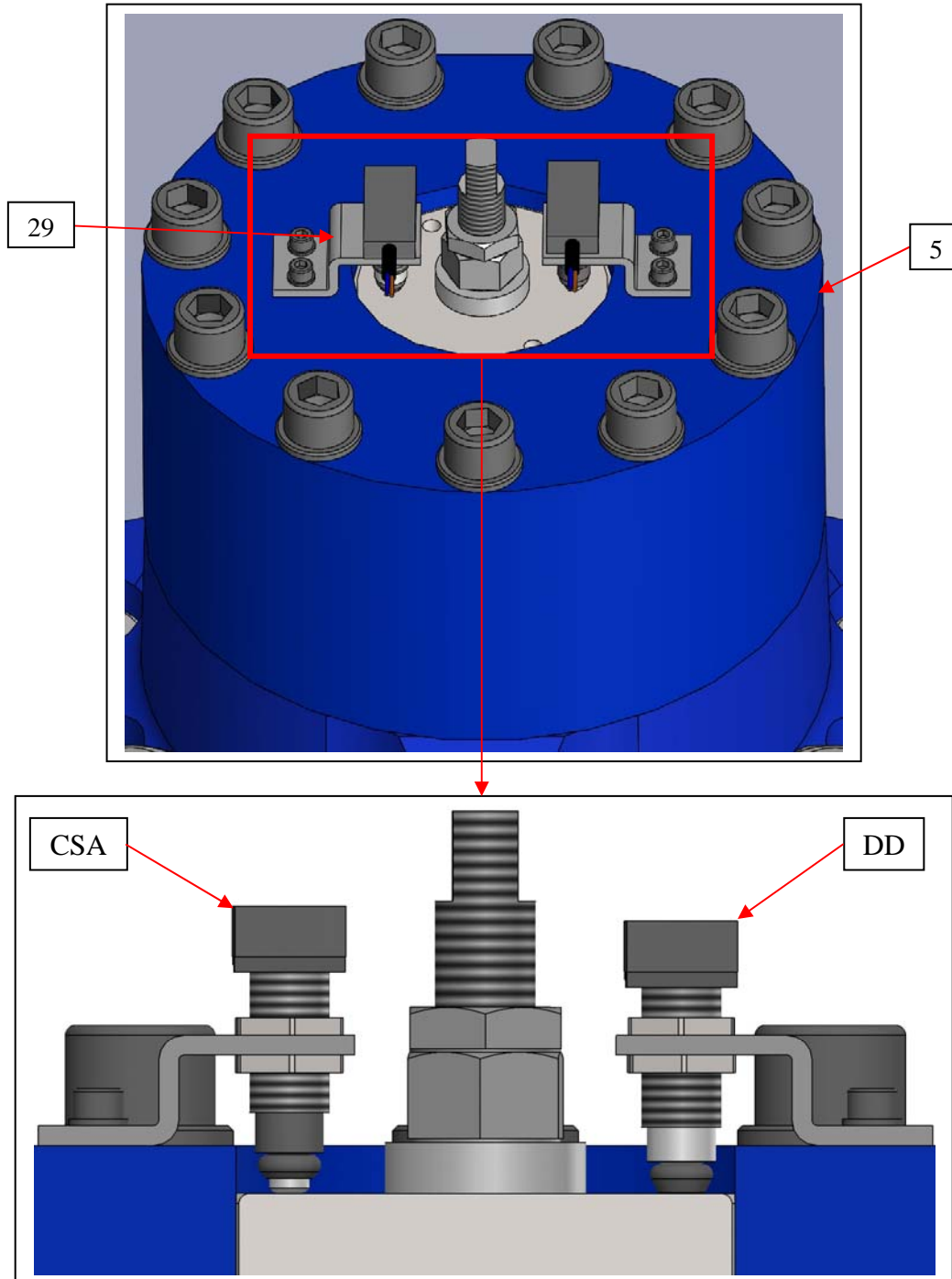
The greater the opening (>2 mm) the less the braking force and spring life.



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4.2. - Adjusting of sensors (only for brake with option of CSA and/or DD).

In the case of an ANTEC brake with lining wear indicator (DD) and/or an open brake switch indicator (CSA), they must be fitted on brackets (29) threaded to the cover (5) as described in the following illustration.





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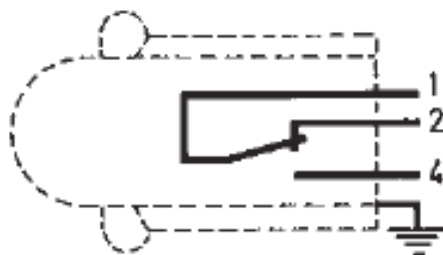
The two brake sensors fulfil the following functions:

4.2.1. - Lining wear indicator (DD): This sensor detects when the lining has worn by 1 mm.

Technical information is provided to give you a better understanding on how to adjust the lining wear indicator.

Conformity to standards	
Protection	IP 56 - IP 66 depending on type
Version	Single-pole
Function	3-terminal single break two-way contact element (form C: changeover)
Electrical characteristics	
Assigned operating current (Ie)	5 A / 250 V
Thermal current Ith (A)	12
Connections	
Cable	PVC (A05 - VV - F), length 0.50 m 3 conductors cross-section 0.75 mm ² Sheathed ext. Ø: 7.6 mm
Electrical protection	Earthing terminal for version 83 731 and 83 732
Approvals	CSA

Minimum operating force (N)	
Minimum total travel force (N)	35
Differential travel (mm)	2
Minimum operating travel (mm)	0,2
Maximum total travel (mm)	6
Mechanical life (millions of operations) mini.	10 ⁶
Operating temperature (°C)	-5 → +70
Protection °C	IP66
Weight (g)	110

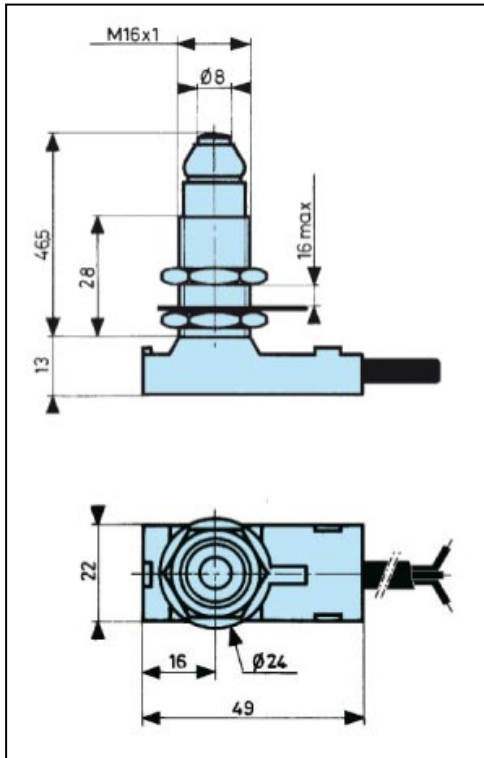


- 1 Black (common)
- 2 Brown (NC)
- 4 Grey (NO)

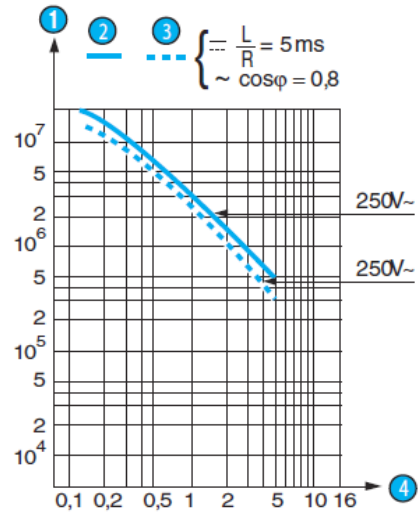


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CURVES

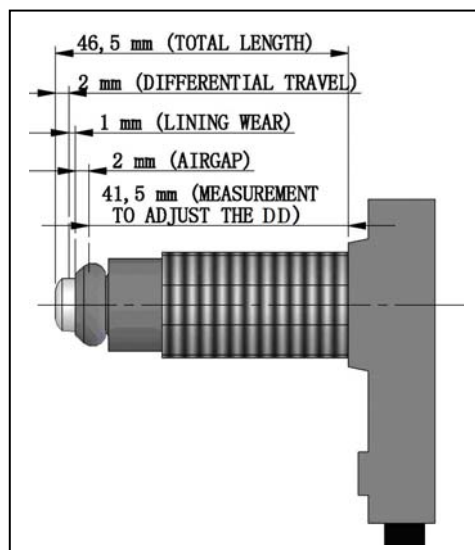


- 1 Number of operations
- 2 Resistive circuit
- 3 Inductive circuit
- 4 Current in amps

How is the lining wear indicator adjusted?

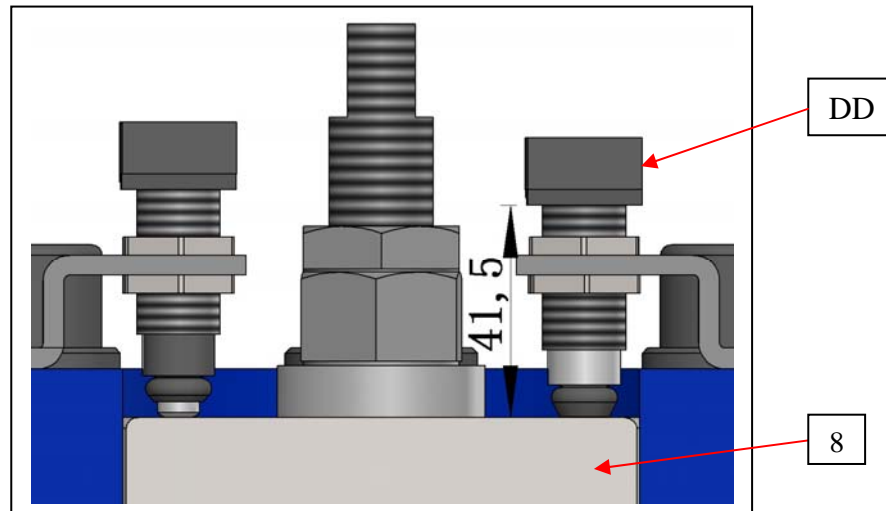
The sensor (30) continually detects the piston guide (8), which is moved together with the piston (4) mentioned above, with both the brake open and closed.

By applying the opening pressure for each brake, specified in the table in point 1.3. of the instructions, adjust the lining wear indicator (DD) to the measurement given in the following illustration (41.5 mm between sensor head and piston guide (8)).



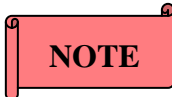


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When the sensor emits a signal, this means the following might have happened:

- The lining has worn down by 1 mm.
- The lining has worn down completely.
- Depending on how the sensor outlet cable is connected (NC or NO), it could indicate a problem with the connections.



Important:

When the lining wear indicator emits a signal, either of the following decisions must be taken:

- 1. - If the lining has not worn down completely, adjust the brake in accordance with point 4.1. of the instructions.**
- 2. - If the lining has worn down completely, replace the lining in accordance with point 5 of the instructions.**

4.2.2. - Open brake switch indicator (CSA): This sensor indicates the moment at which the brake is open (with pressure). When the sensor does not detect the brake is closed (no pressure).

The sensor is the same as the one used to detect wear with the same technical characteristics.

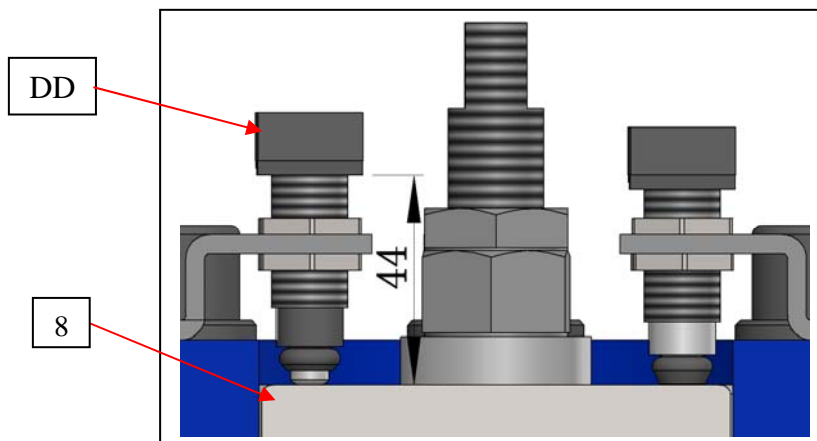
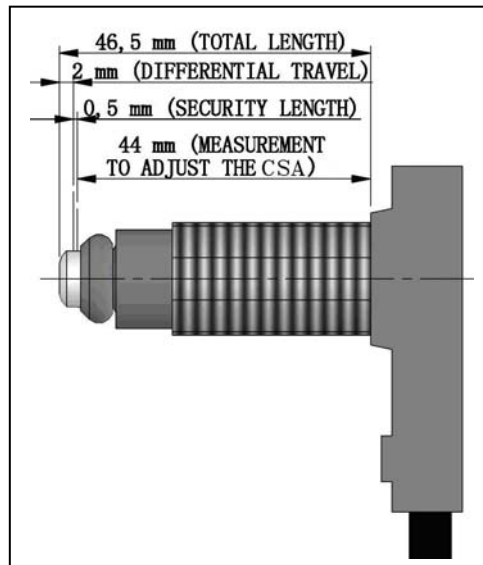


HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

How is the open brake switch indicator adjusted?

The sensor (30) continually detects the piston guide (8), which is moved together with the piston (4) mentioned above, with both the brake open and closed.

By applying the opening pressure for each brake, specified in the table in point 1.3. of the instructions, adjust the open brake switch indicator (CSA) to the measurement given in the following illustration (44 mm between sensor head and piston guide (8)).



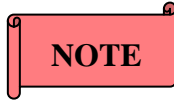
When the sensor emits a signal, this means the following might have happened:

- The brake is open; consequently oil has been inserted through the hydraulic power inlet at the pressure specified in the table in point 1.3 of the instructions.
- Depending on how the sensor outlet cable is connected (NC or NO), it could indicate a problem with the connections.



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Once the calliper opening has been adjusted and the sensors, if any, adjusted, it is time to switch the brake on. At this point the following note must be considered.

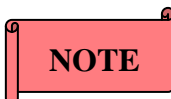
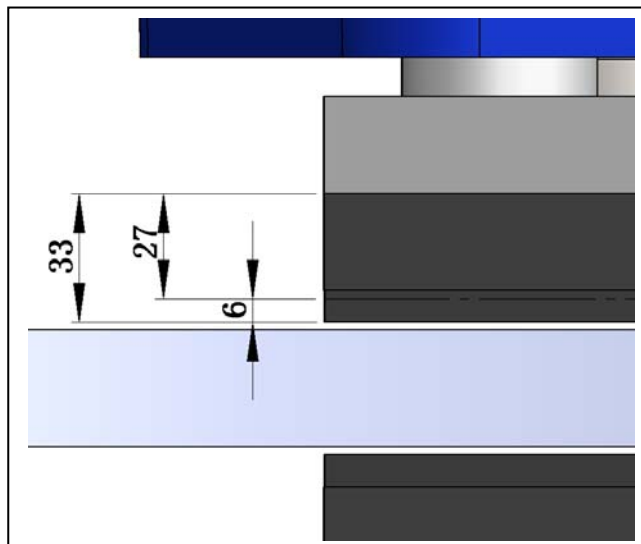


After completing points 2.3 and 4 of the instruction, do not forget to bleed the air inside the brake to avoid malfunctioning.

5. REPLACEMENT OF THE LININGS.

The linings (2) are formed by a steel plate and friction material. Their total thickness is 33 mm per lining.

When the total lining thickness has reduced to 27 mm at any point, in other words, it has worn down by 6 mm, it must be replaced.



Antec recommends always replacing both brake linings regardless of whether one or both linings have worn down.

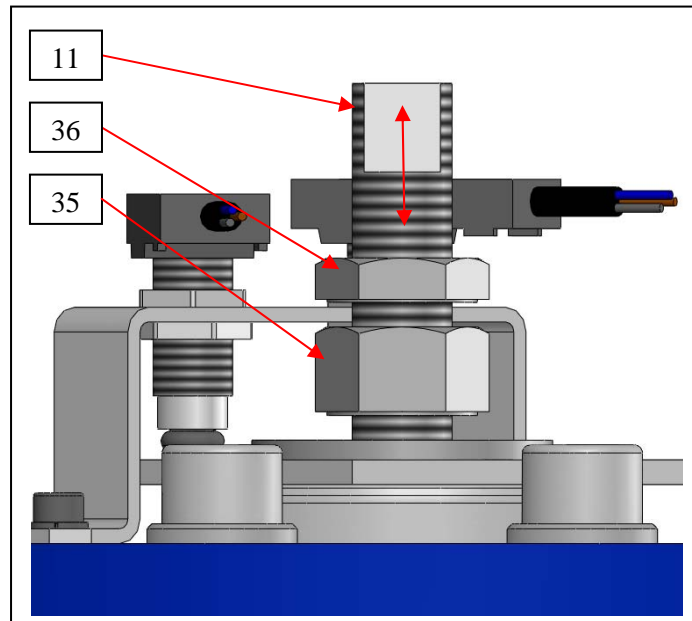
The procedure to replace the linings is as follows:

5.1. - Power the brake at the pressure specified for each brake in the table in point 1.3. of the instructions.

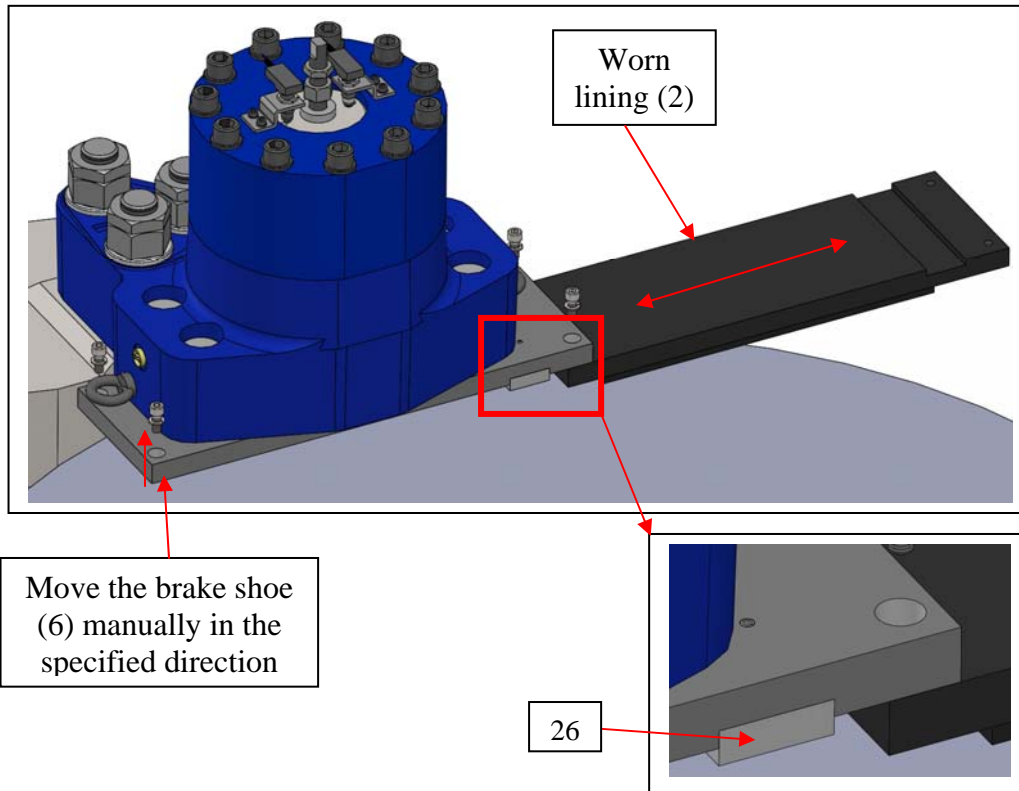
5.2. - Loosen the nut (35), counter-nut (36) and adjustment rod (11), so that once the pressure is removed the springs are freed without exerting any stress.



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5.3. - Remove the 4 screws (23) from each lining (2) with their respective washers (22) and replace the linings. When removing the lining, remember the key (26). This key means that the brake shoe (6) must be moved manually in the direction shown in the illustration in order to generate enough space to remove the worn lining (2).



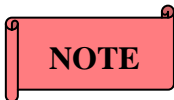


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5.4. - Fit the new lining.

5.5. - Perform the procedure in reverse order, starting from point 5.3 and including this one.

5.6. - Proceed as described in point 4 of the instructions (adjusting the brake).



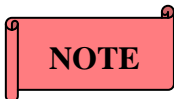
A new installed lining requires a break-in period to achieve the correct lining properties. This period cannot be reduced due to the number of different influential factors.

6. REPLACEMENT OF THE SPRINGS.



The process of changing springs is hazardous for the operator doing it, for which reason ANTEC warns of the danger and advises the client to establish a specific risk prevention protocol for this point.

To replace springs, proceed as follows (the procedure is the same for the other semi-calliper):



To replace springs, the semi-calliper does not need to be removed from its bracket.

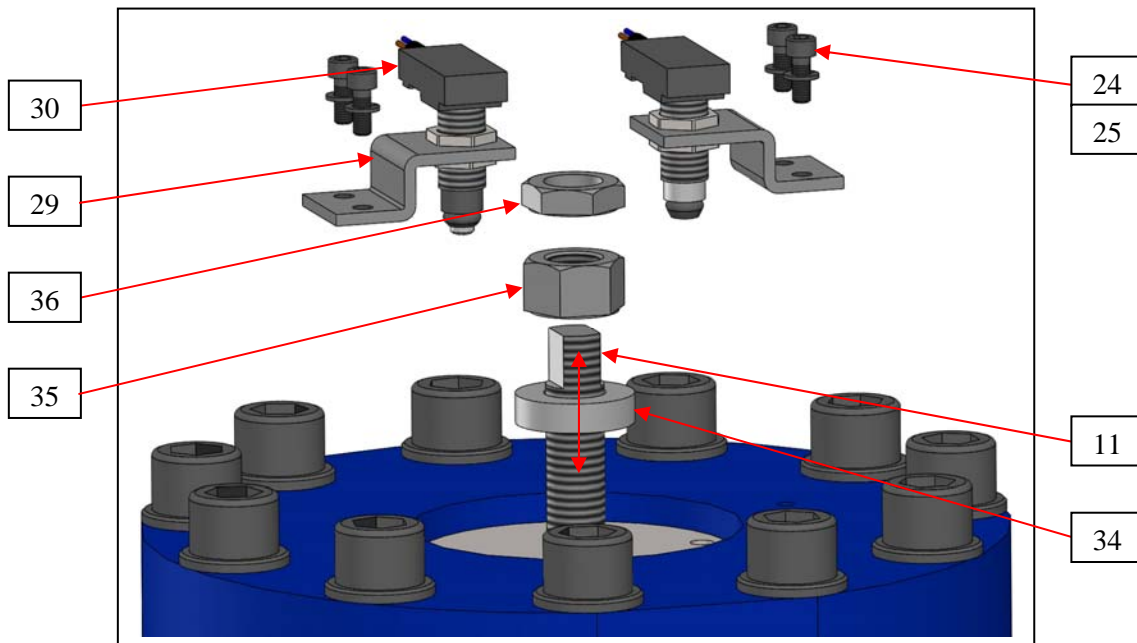
6.1. - Power the brake at the pressure specified for each brake in the table in point 1.3 of the instructions.

6.2. - Remove the sensors (30) with their supports (29) and respective screws (24) and washers (25).

Remove the nut (35) and counter-nut (36) and loosen the rod (11) as far as it will go, so that once the pressure is removed the springs are freed without exerting any stress. Next extract the spacer (34).



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6.3. - The block of springs is still compressed, which means that if the cover (5) is removed now the springs would exert stress that might be dangerous.

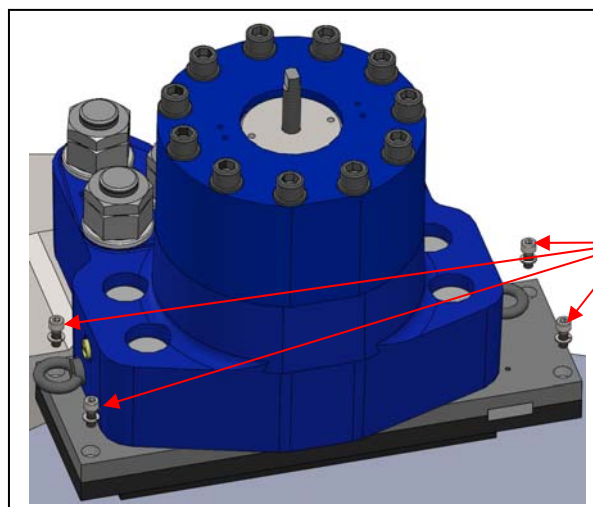
NOTE

You are advised to remove the lining (2) in order to completely decompress the spring.

6.4. - Keeping the brake powered, remove the lining (2) from the brake shoe (6) by unscrewing the screws (23) with their respective washers (22).

NOTE

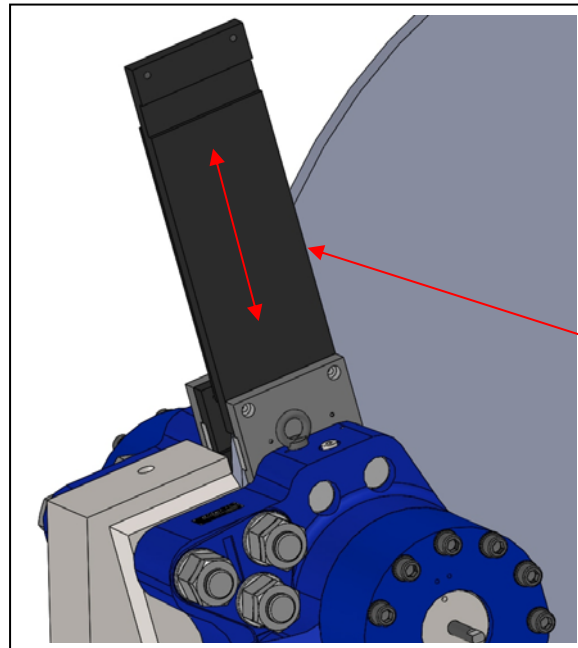
Remember that there is a key (26) between the brake shoe (6) and the lining (2) secured with two pins (27).



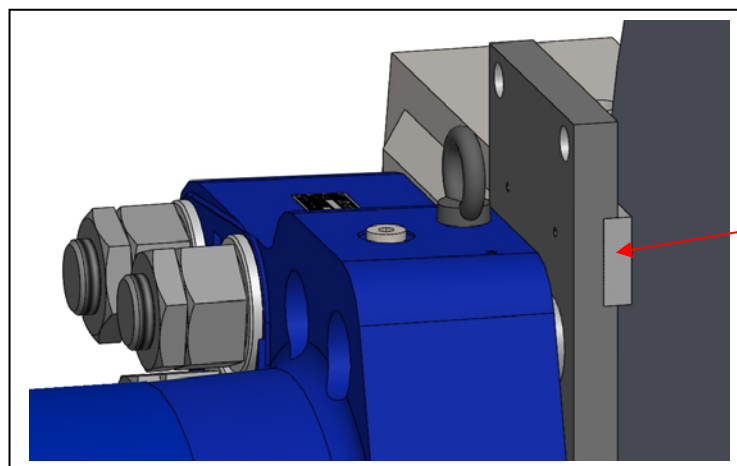
Unscrew the screws (23) and washers (22)



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Extract the lining (2)



Key (26)

6.5. - Remove the pressure.



Failure to comply with this point could cause irreversible damages to ANTEC brakes and workers handling them.

6.6. - Without any hydraulic pressure, loosen the 10 screws (15) with their washers (21) securing the cover (5).

Next remove the cover (5) and the supplement (if any) (37). Finally, remove the springs (3).



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RECOMMENDED TORQUE FOR M20 SCREWS 10.9 (Nm)	
Lubricated with MoS ₂	Not lubricated
427	578

NOTE

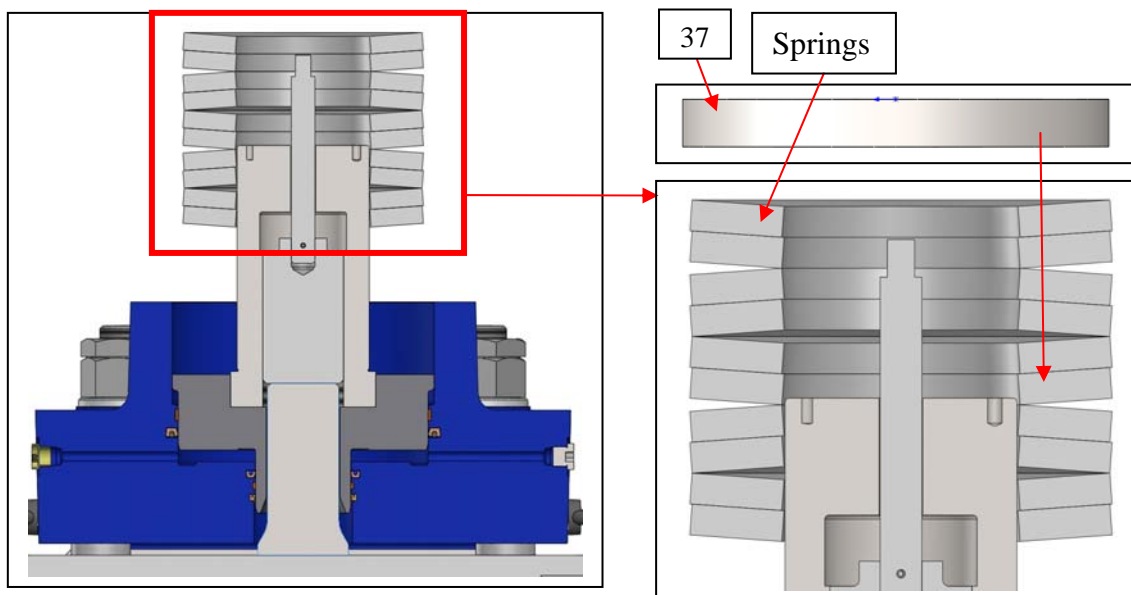
Antec recommends applying a 427 Nm torque for screws lubricated with MoS₂

21 15

5

3

6.7. - Install the new set of springs, lubricating it abundantly with green lubricant (e.g. Sopral supergras 792/2 or equivalent). Particular attention must be paid to assemble the springs in the correct position. Please refer to the set of springs in the assembly drawing, specific to each brake model. Also assemble the supplement, if any (37).





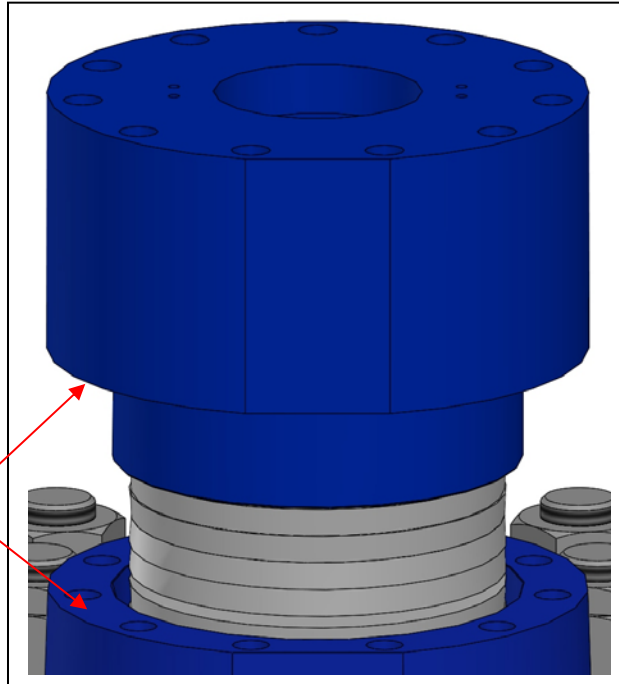
HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

6.8. - Perform the procedure in reverse order, starting from point 6.7. and including this one.

NOTE

When assembling the cover (5) (see attached assembly drawing (point 9, Attachment I)) clean it thoroughly and apply a single-use liquid silicon seal, such as Threebond TB1215 or equivalent, between this and the body (1).

Apply
TB1215
liquid silicon
seal between
the cover
and body
surfaces



6.9. - Proceed as described in point 4 of the instructions (Brake adjustment).

7. REPLACEMENT OF THE SEALS.

NOTE

The seals must be changed in the cleanest possible environment to avoid contaminating the parts inside calliper with abrasive particles.

The parts and seals must be handled as carefully as possible to avoid superficial damages that could cause oil leaks.

Check that the surface of the parts is in good condition before fitting new seals.

Once the seals have worn down or leaks appear in the brake, they need to be replaced.



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The seal kit for NHCD-2100 brakes consists of:

Number	Name	Quantity
16	SEAL	2
17	SEAL	2
18	GUIDE RING	2
19	GUIDE RING	2
20	SCRAPER	2
32	O-RING	2
BETWEEN 1-5	THREEBOND 1215 LIQUID SILICON SEAL	-



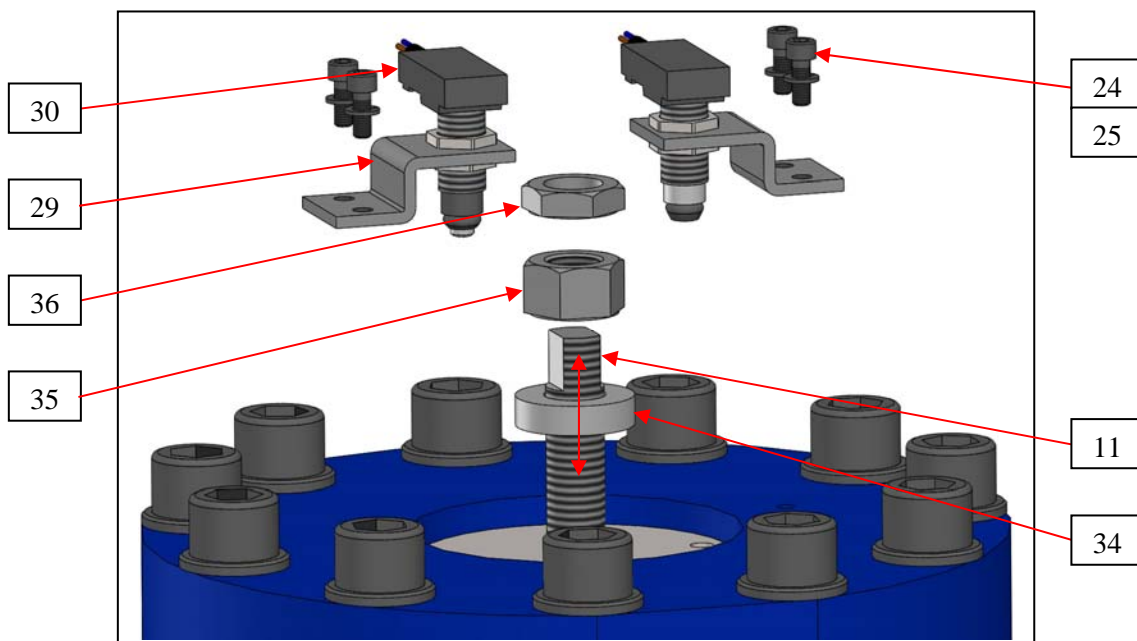
Antec recommends ALWAYS replacing the entire brake seal kit if there are any problems with any of the components.

To replace the seal kit components proceed as follows (the procedure is the same for the other semi-calliper):

7.1. - Power the brake at the pressure specified for each brake in the table in point 1.3 of the instructions.

7.2. - Remove the detectors (30) with their supports (29) and respective screws (24) and washers (25).

Remove the nut (35) and counter-nut (36) and loosen the rod (11) as far as it will go, so that once the pressure is removed the springs are freed without exerting any stress. Next extract the spacer (34).





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Instructions for assembly, adjustment and maintenance

7.3. - Remove the pressure.



Failure to comply with this point could cause irreversible damages to ANTEC brakes and workers handling them.

7.4. - Remove the hydraulic power connections.

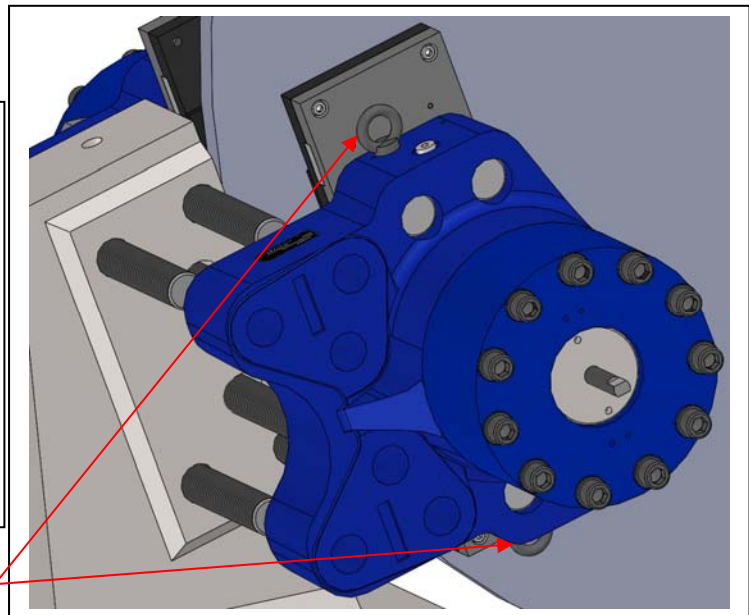
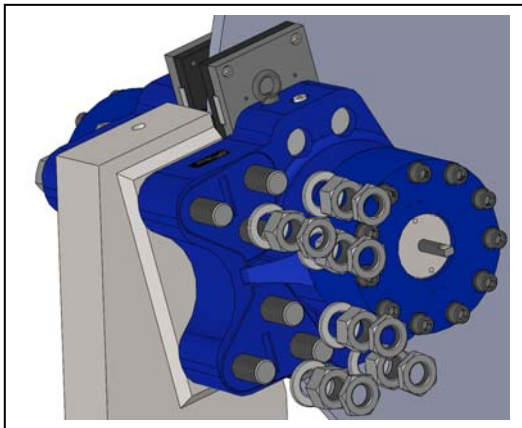
NOTE

It is not necessary to remove the hydraulic connection, but this will make handling the half-calliper easier for the worker.

7.5. - Remove the semi-calliper from its bracket and put it in a suitable place to handle it. To handle semi-callipers, the brake includes eyebolts (13).



The brake handling process is hazardous for the operator. This is why ANTEC warns of the danger and advises the client to establish a specific risk prevention protocol for this point.



Eyebolt (13)

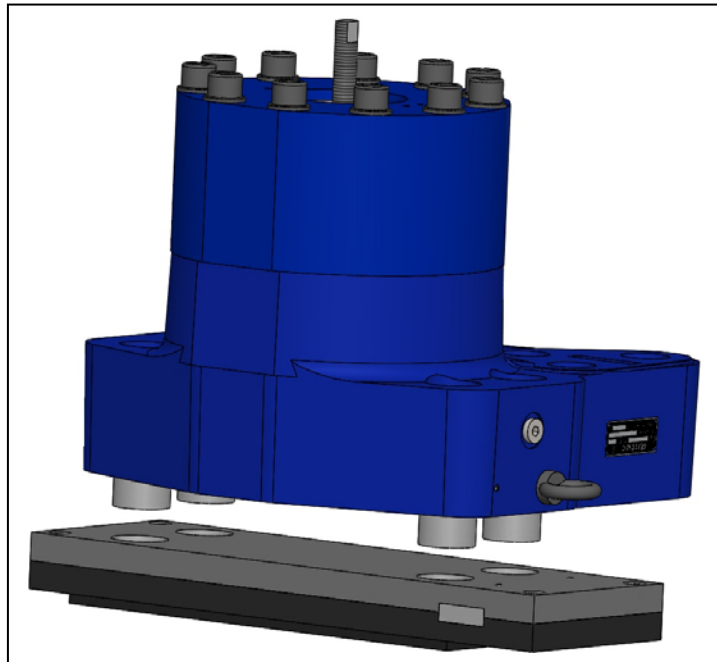
NOTE

Be careful with the lining. When the semi-calliper is moved, the weight of the lining could cause the lining to fall. Remove the lining.



HYDRAULIC CALLIPER TYPE NHCD-2100

Instructions for assembly, adjustment and maintenance



7.6. - Without any hydraulic pressure, loosen the 10 screws (15) with their washers (21) securing the cover (5).

Next remove the cover (5) and the supplement (if any) (37). Finally, remove the spring (3).

RECOMMENDED TORQUE FOR M20 SCREWS 10.9 (Nm)	
Lubricated with MoS ₂	Not lubricated
427	578

NOTE

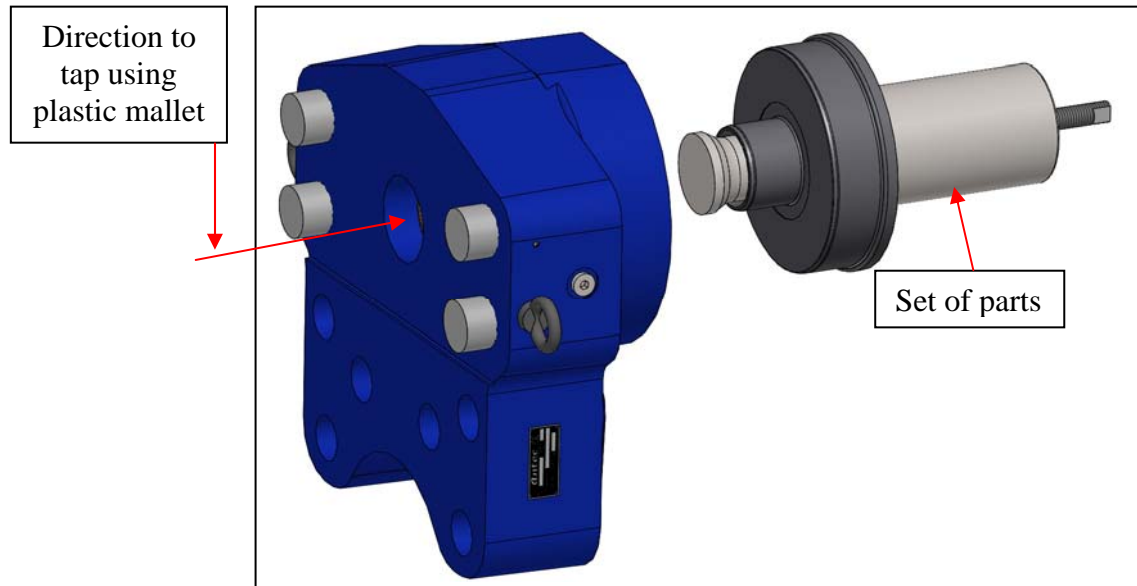
Antec recommends applying a 427 Nm torque for screws lubricated with MoS₂



HYDRAULIC CALLIPER TYPE NHCD-2100 Instructions for assembly, adjustment and maintenance

7.7. - Remove the assembly formed by the rod (11) with its pin (12), pusher (7), piston guide (8), piston (4) and end stop (9) from the body (1).

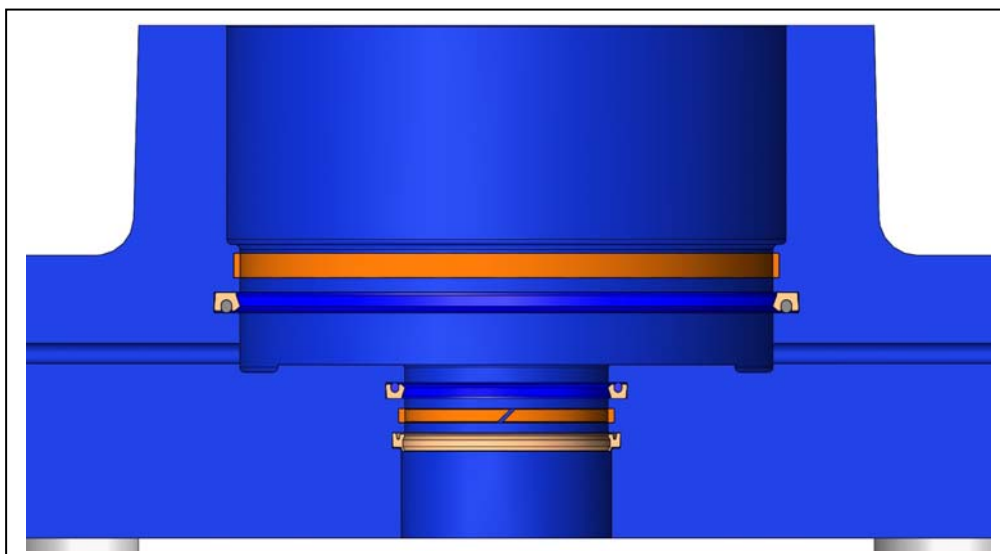
Use a plastic mallet to tap in the direction shown in the illustration to extract this assembly.



7.8. - Remove the damaged seals from their housings in the main body (1).

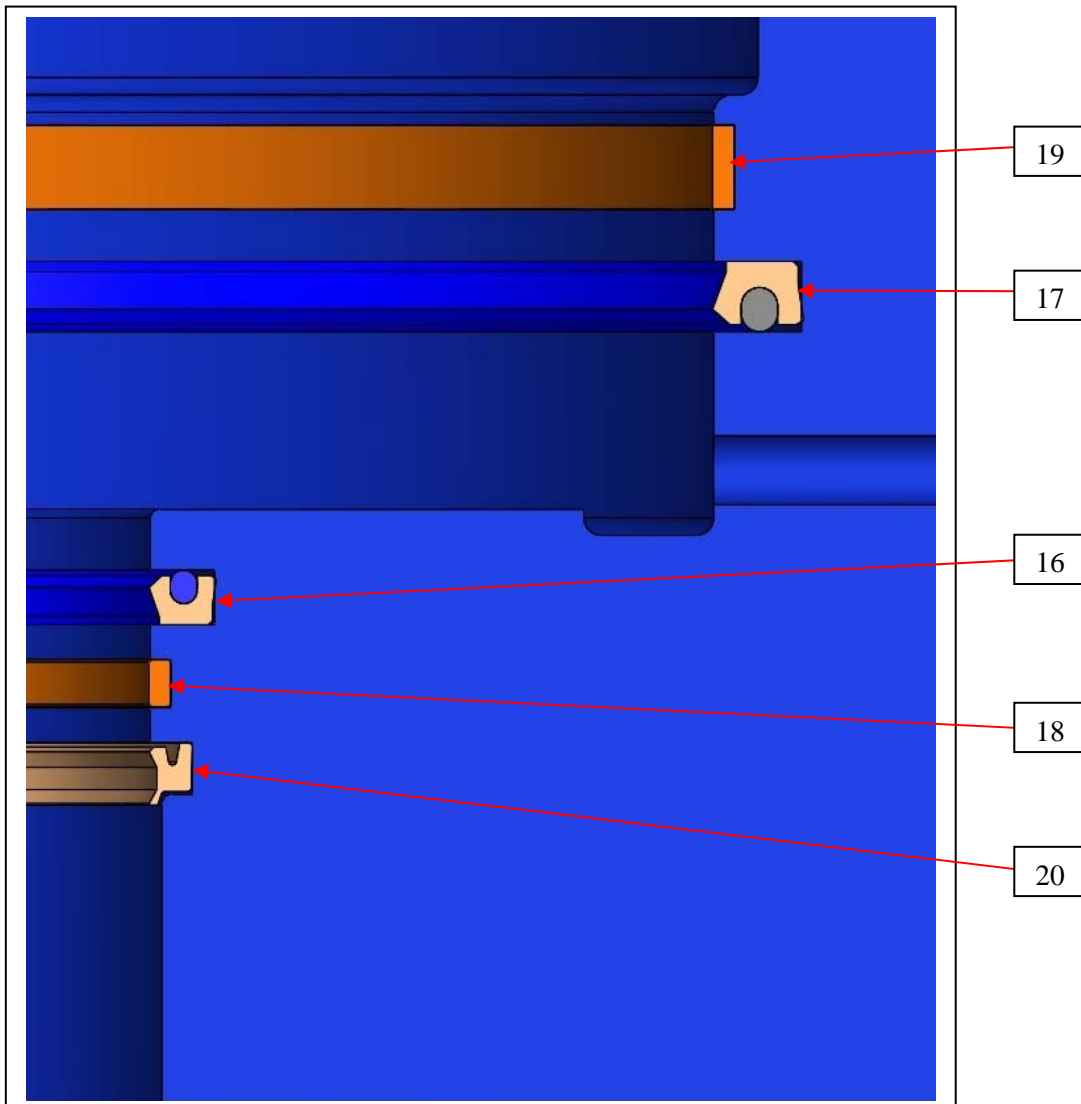
7.9. - Clean the housings and the body (1) thoroughly to remove any residue from the damaged seals.

7.10. - Position the new seals, taking care to position them properly, as shown in the diagram.





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7.11. - Before inserting the assembly of parts specified in point 7.7, inspect them thoroughly and ensure they are suitable for mounting. The most important part to ensure there are no leaks in the brake is part reference 4. Apply a small amount of oil to the side surface.

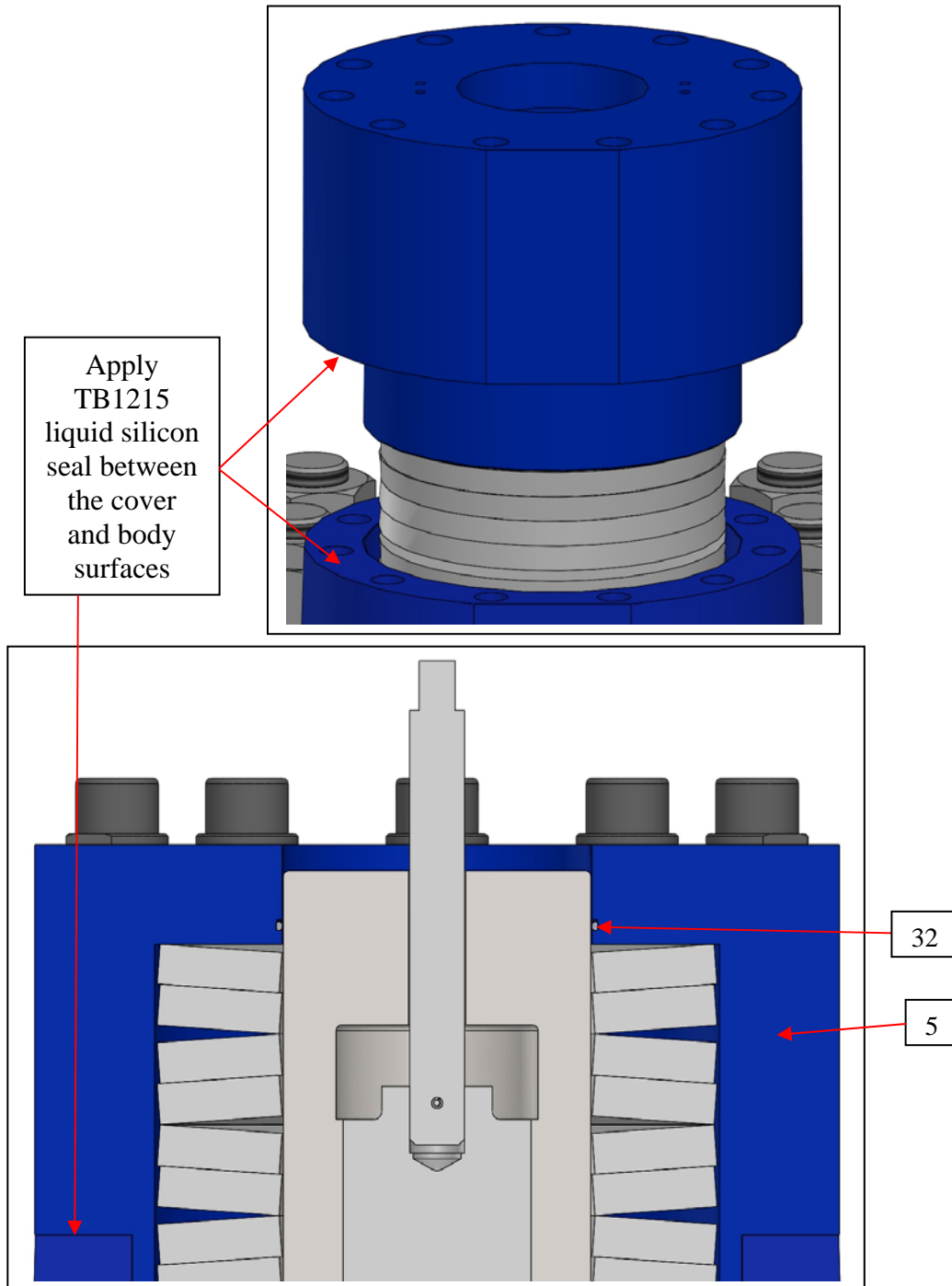
7.12. - Perform the procedure in reverse order, starting from point 7.7 and including this one.

When assembling the cover (5) (see attached assembly drawing (point 9, Appendix I)) clean it thoroughly and apply a single-use liquid silicon seal, such as Threebond TB1215 or equivalent, between this and the body (1).

Change the O-ring (32), mounted on the cover (5).



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7.13. - Follow the instructions in point 2 (Brake assembly procedure) and point 4 (Brake adjustment).



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8. SPARE PARTS.

ANTEC recommends keeping a number of spare parts on hand for any necessary repairs or when certain components come to the end of their service life. ANTEC recommends the following spare parts for these brakes:

Number	Name	Quantity
2	LINING PLATE	2
3	SPRING	2
16	SEAL	2
17	SEAL	2
18	GUIDE RING	2
19	GUIDE RING	2
20	SCRAPER	2
26	KEY	2
27	PIN	4
30	DETECTOR	4
32	O-RING	2

NOTE

If you have any questions regarding brake spare parts, please contact the ANTEC After Sales Service, specifying the brake model and serial number.

9. APPENDIX I. ASSEMBLY DRAWING.

NOTE

ANTEC will only make changes to these instructions due to amendments to the assembly drawing when these amendments are significant.

The assembly drawing provided in the instructions is for guidance purposes only and to help the worker to understand these instruction.

The customer will receive the drawing relating to their order with the documentation that the ANTEC Quality Department provides.



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10. ONGOING IMPROVEMENT PLAN.

As part of its continuous improvement process ANTEC S.A. would welcome any customer suggestions or requests, which can be sent to the Sales Department at sales@antecsa.com.

ANTEC S.A. wishes to express its gratitude for the trust that you have placed in our product and we would like to invite you to visit our Internet webpage to get to know our wide range of products.

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