



# Industrial **brakes**

## General **catalogue**

 **antec**®  
*Reliability is a must.*

# Industrial **brakes**

General **catalogue**

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***Reliability is a must.***

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**1961**

**ESTABLISHMENT OF AME**

Industrial brakes. Thrustors.  
Magnetic Separators

**1992**  
**INCORPORATION OF ANTEC**  
Superconductivity. Applications. Development.

**1990**  
**START OF ACTIVITY OF WIND TURBINE  
GENERATOR BRAKES**  
Rotor Brakes, Yaw Brakes.

**1995**  
**MERGER OF AME  
& ANTEC**  
All production continues  
under ANTEC brand.

**2007**  
**ESTABLISHMENT IN  
CHINA.**  
ANTEC BRAKING  
SYSTEMS (Tianjin).

**2015**  
**MEMBER OF windbox**  
Test an Research Laboratory for Big Wind Turbines.

**2014**  
**ESTABLISHMENT IN  
BRAZIL.**  
ANTEC EÓLICA LTDA  
(Bahia)

**2017**  
**ESTABLISHMENT IN INDIA.**  
Incorporation of ANTEC  
Wind India Private LTD in  
Chennai.

## History

ANTEC started out by designing and manufacturing industrial brakes. We are one of the world leaders in this segment due to our vast experience, wide range of products including electrohydraulic, hydraulic and electromagnetic technology, and our ability to deliver products complying with international standard (German DIN standard, French S standard and American AISE standard).

**ANTEC BRAKING SYSTEMS**

Tianjin-China

**ANTEC**

Portugalete-Spain

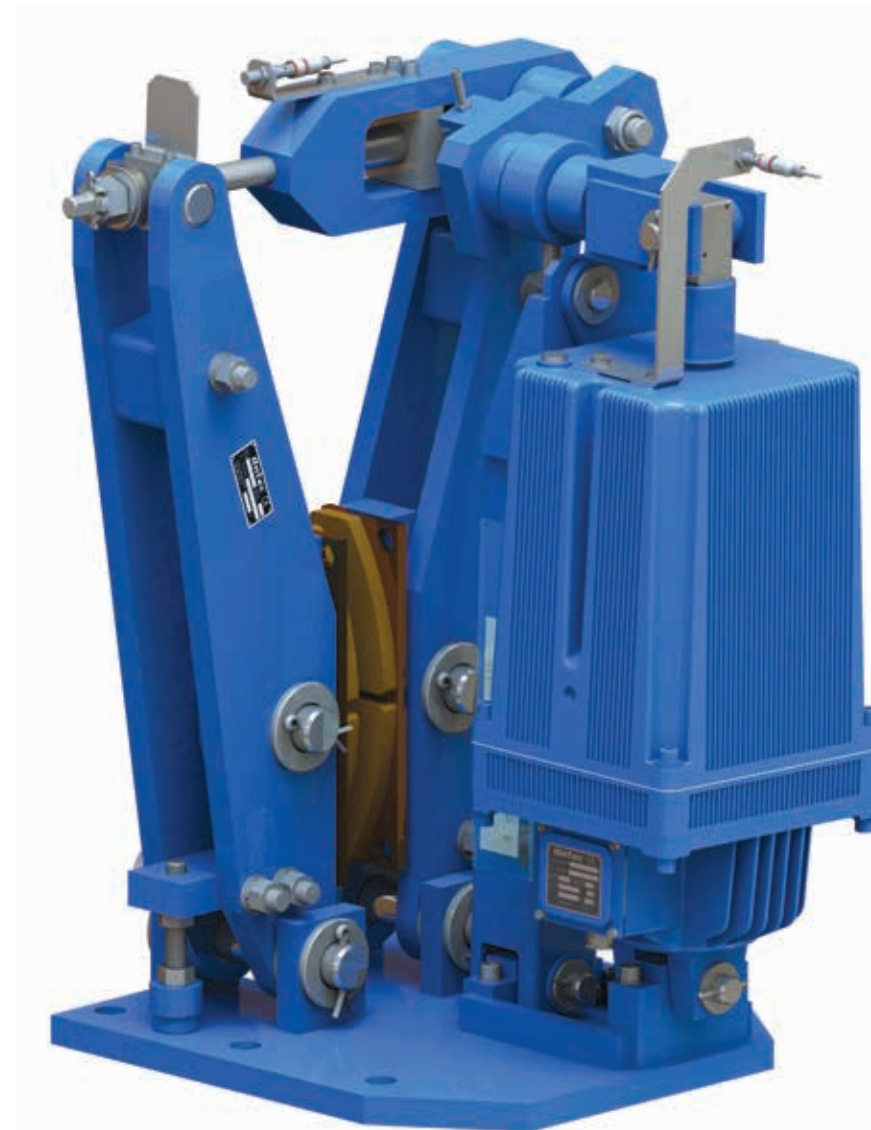
**ANTEC EÓLICA**

Camaçari-Brazil



# Electrohydraulic **disc brakes**

## GENERAL DESCRIPTION



The FPT, FBT and FDA brakes are spring applied, power released disc brakes. Brake release is achieved by a thruster.

The thruster is a three-phase AC electrohydraulic device.

Brake shoes carry asbestos free linings. The main shafts are made of stainless steel with self-lubricated bushings.

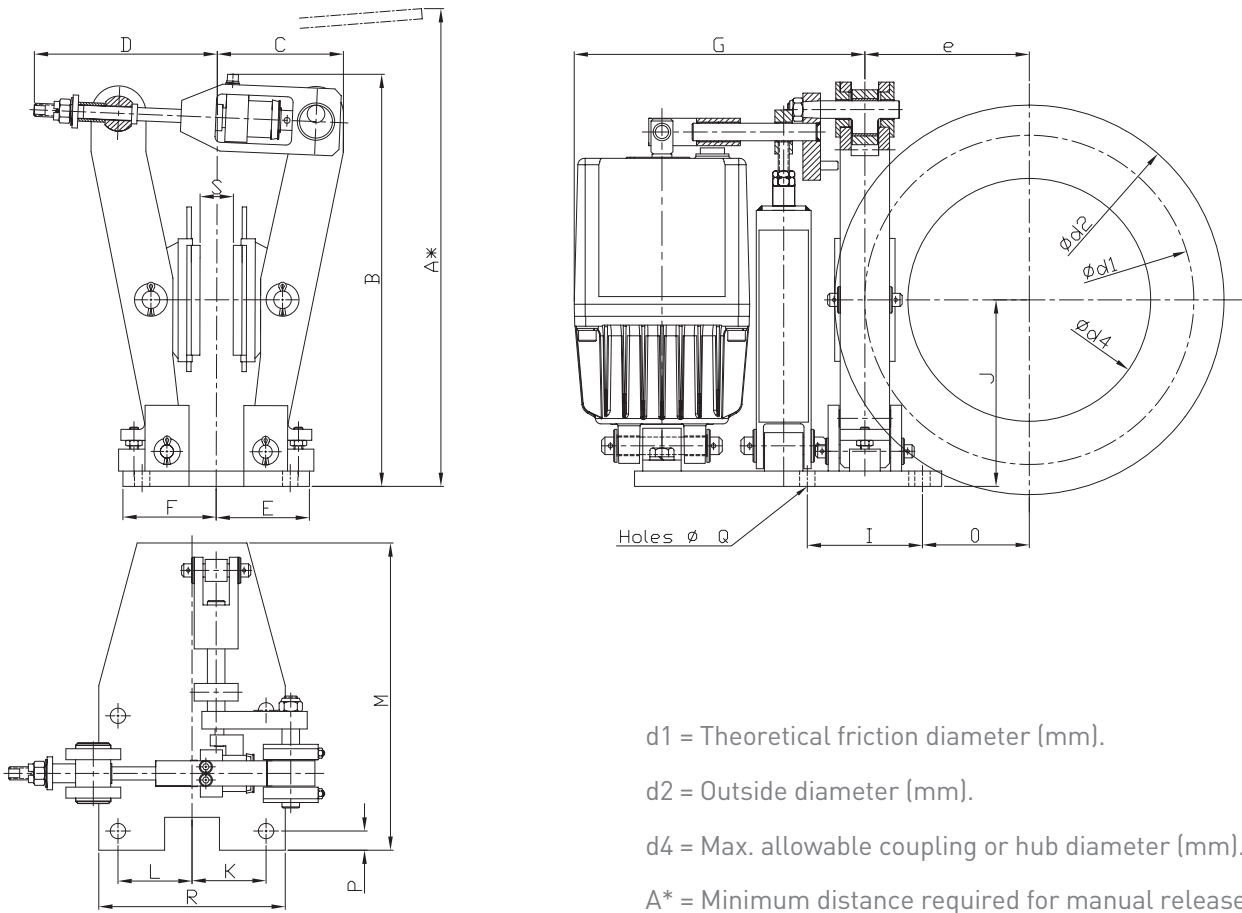
Brakes include torque scale.

Model: FBT-34 TH-III  
(1306) CSA inductive +DD  
inductive +DM +GS





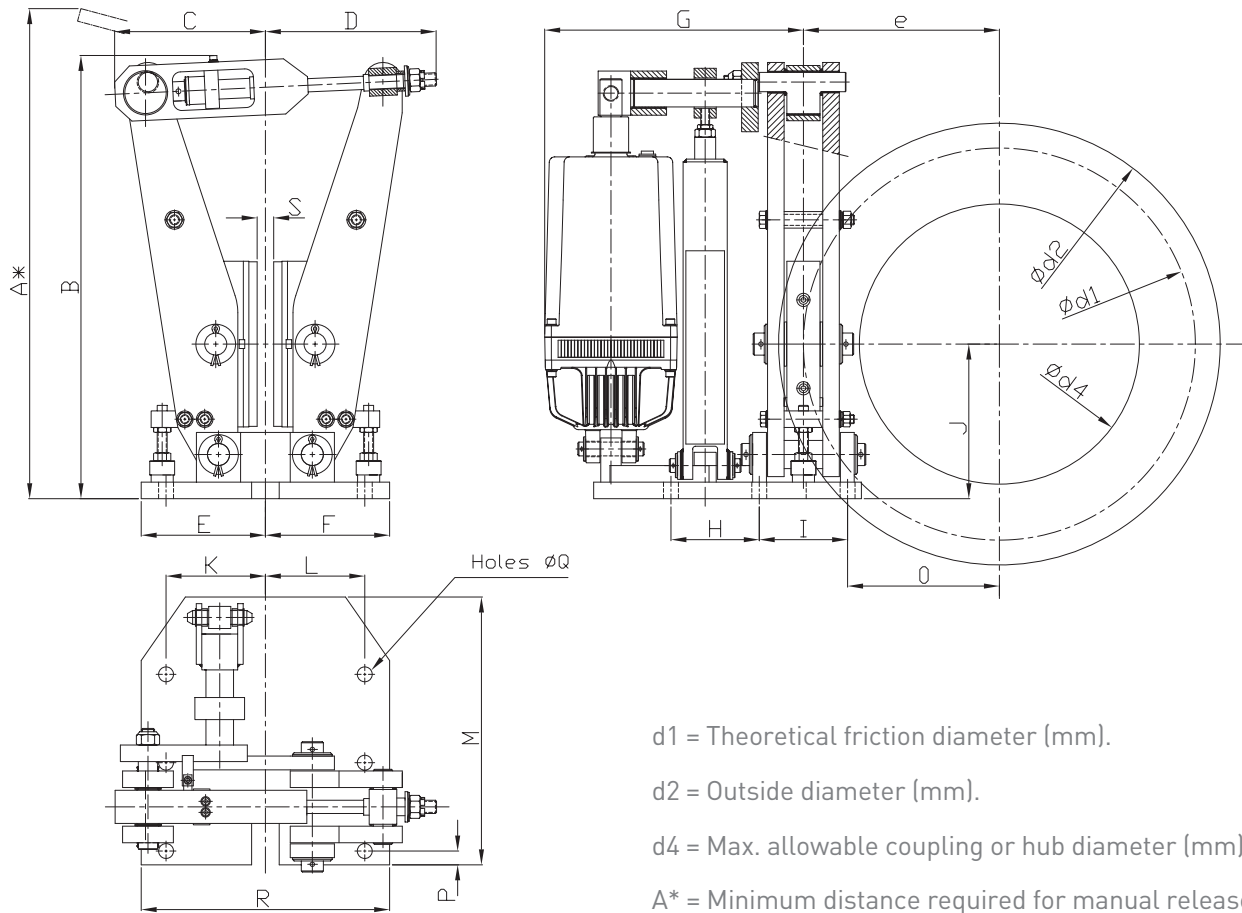
FPT-1



| A*               | B   | C   | D   | E     | F   | G    | I                  | K    | L               | M   | P               | Q  | R   | WEIGHT |
|------------------|-----|-----|-----|-------|-----|------|--------------------|------|-----------------|-----|-----------------|----|-----|--------|
| 400              | 380 | 120 | 170 | 85    | 85  | 265  | 105                | 67.5 | 67.5            | 280 | 17.5            | 14 | 170 | 28 kg  |
| Disc information |     |     |     |       |     |      | THRUSTOR type      |      |                 |     |                 |    |     |        |
|                  |     |     |     |       |     |      | TH-I (256)         |      |                 |     |                 |    |     |        |
| d2               | S   | d1  | d4  | e     | J   | O    | Clamping Force (N) |      | Min Torque (Nm) |     | Max Torque (Nm) |    |     |        |
| 200              | 30  | 145 | 55  | 72.5  | 170 | 20   |                    |      | 95              |     | 190             |    |     |        |
| 240              | 30  | 185 | 95  | 92.5  | 170 | 40   |                    |      | 120             |     | 240             |    |     |        |
| 280              | 30  | 225 | 135 | 112.5 | 170 | 60   |                    |      | 147.5           |     | 295             |    |     |        |
| 315              | 30  | 260 | 170 | 130   | 170 | 77.5 |                    |      | 170             |     | 340             |    |     |        |
| 355              | 30  | 300 | 210 | 150   | 170 | 97.5 |                    |      | 197.5           |     | 395             |    |     |        |
| 400              | 30  | 345 | 255 | 172.5 | 170 | 120  |                    |      | 227.5           |     | 455             |    |     |        |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

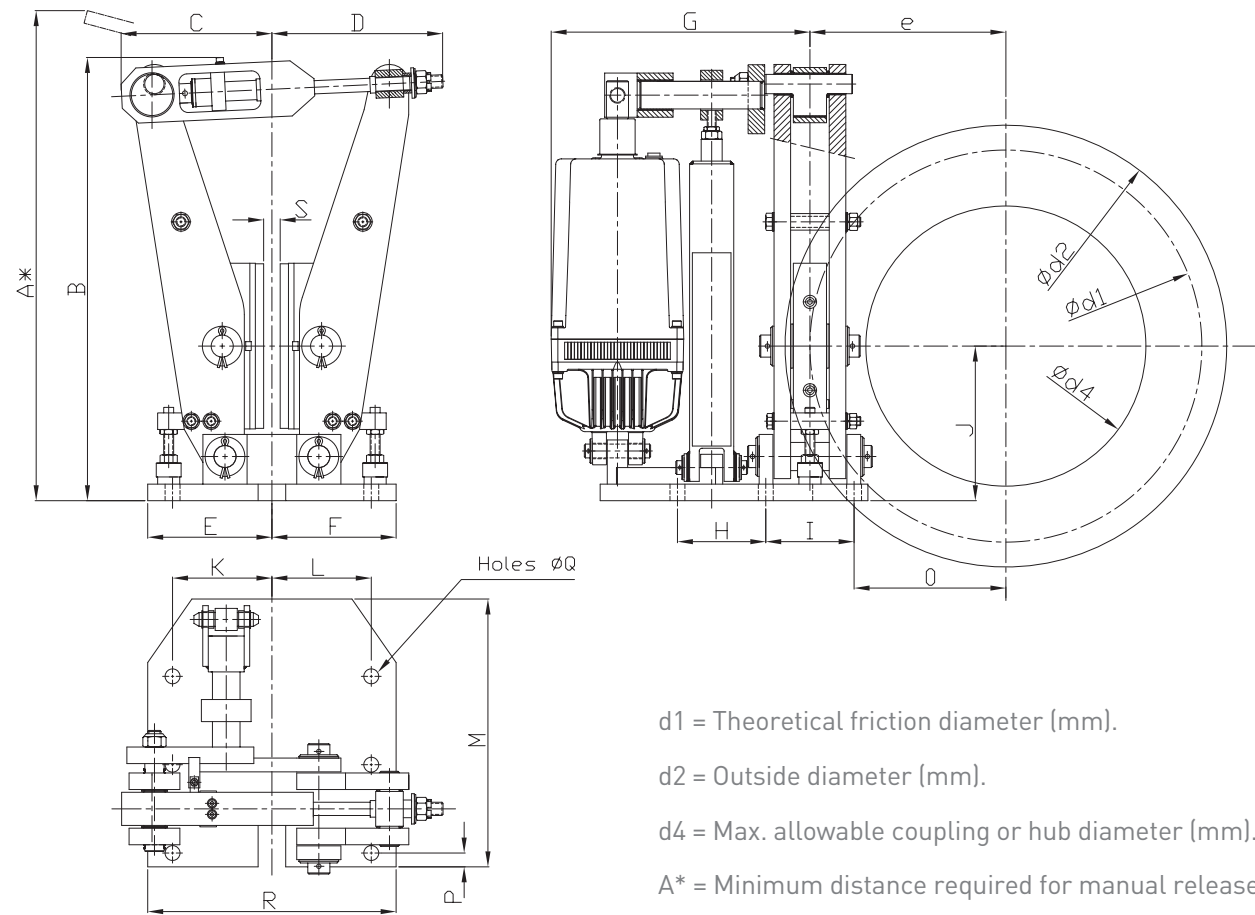
FBT-21



| A*               | B   | C   | D   | E     | F   | G    | H                  | I               | K               | L                  | M               | P               | Q                  | R               | WEIGHT          |
|------------------|-----|-----|-----|-------|-----|------|--------------------|-----------------|-----------------|--------------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| 800              | 565 | 182 | 205 | 170   | 170 | 340  | 130                | 130             | 145             | 145                | 365             | 25              | 22                 | 340             | 76 - 83 kg      |
| Disc information |     |     |     |       |     |      | Clamping Force (N) | THRUSTOR type   |                 |                    |                 |                 |                    |                 |                 |
|                  |     |     |     |       |     |      |                    | TH-I (356)      |                 | TH-II (506)        |                 |                 | TH-II (806)        |                 |                 |
| d2               | S   | d1  | d4  | e     | J   | O    | 5600               | Min Torque (Nm) | Max Torque (Nm) | Clamping Force (N) | Min Torque (Nm) | Max Torque (Nm) | Clamping Force (N) | Min Torque (Nm) | Max Torque (Nm) |
| 355              | 30  | 285 | 170 | 142.5 | 230 | 77.5 |                    | 315             | 630             | 7800               | 442.5           | 885             | 13300              | 750             | 1500            |
| 400              | 30  | 330 | 210 | 165   | 230 | 100  |                    | 365             | 730             |                    | 510             | 1020            |                    | 875             | 1750            |
| 450              | 30  | 380 | 260 | 190   | 230 | 125  |                    | 422.5           | 845             |                    | 590             | 1180            |                    | 1007.5          | 2015            |
| 500              | 30  | 430 | 310 | 215   | 230 | 150  |                    | 477.5           | 955             |                    | 667.5           | 1335            |                    | 1140            | 2280            |
| 560              | 30  | 490 | 370 | 245   | 230 | 180  |                    | 545             | 1090            | 762.5              | 1525            | 1300            | 2600               |                 |                 |
| 630              | 30  | 560 | 440 | 280   | 230 | 215  |                    | 622.5           | 1245            | 870                | 1740            | 1485            | 2970               |                 |                 |
| 710              | 30  | 640 | 520 | 320   | 230 | 255  |                    | 715             | 1430            | 998.5              | 1997            | 1702.5          | 3405               |                 |                 |
| 800              | 30  | 730 | 610 | 365   | 230 | 300  |                    | 817.5           | 1635            | 1139               | 2278            | 1942            | 3884               |                 |                 |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

FBT - 34

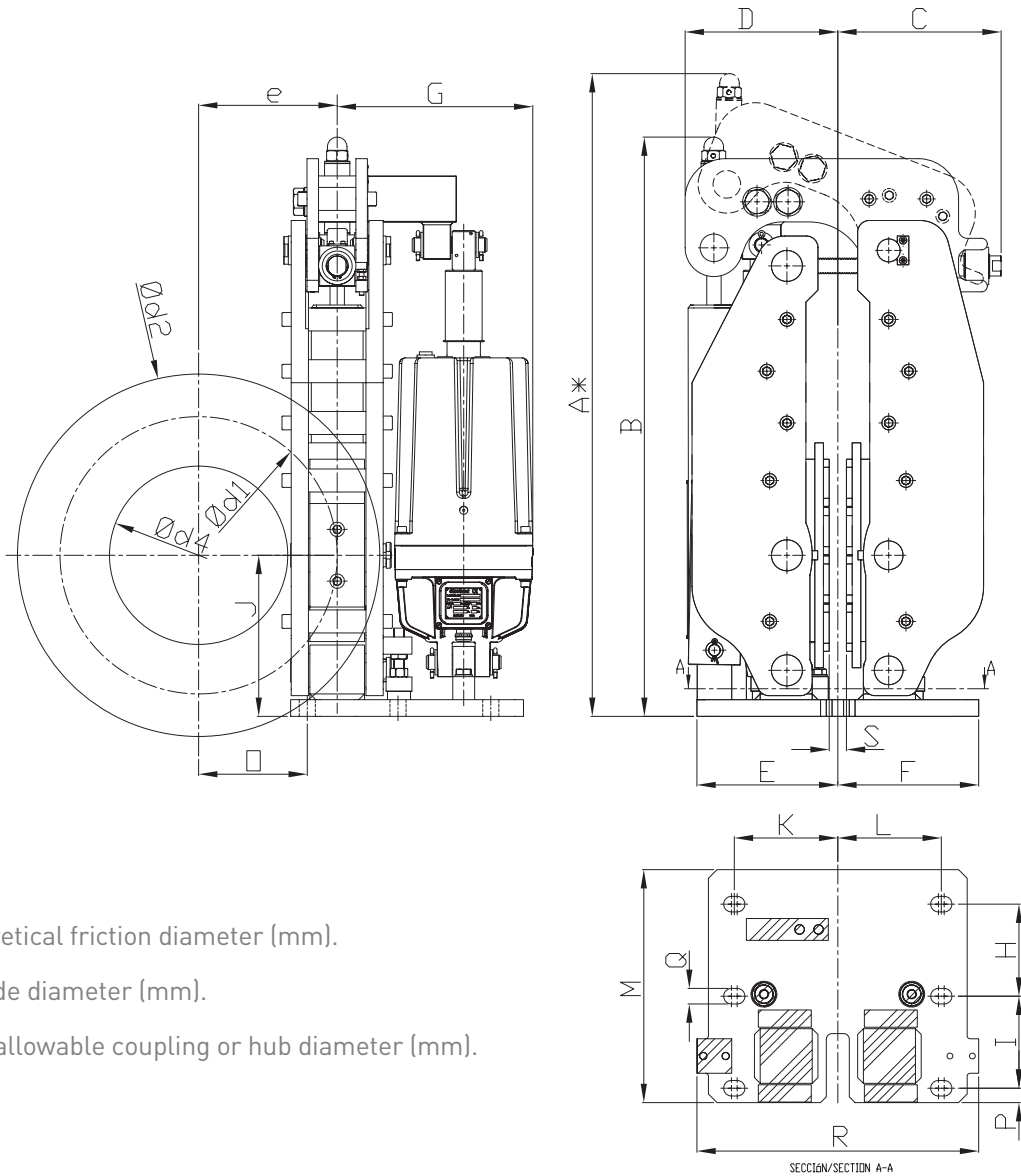


d1 = Theoretical friction diameter (mm).  
d2 = Outside diameter (mm).  
d4 = Max. allowable coupling or hub diameter (mm).  
A\* = Minimum distance required for manual release lever.

| A*               | B   | C    | D   | E   | F   | G   | H                  | I               | K               | L                  | M               | P               | Q                  | R               | WEIGHT          |
|------------------|-----|------|-----|-----|-----|-----|--------------------|-----------------|-----------------|--------------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| 1130             | 830 | 275  | 310 | 225 | 225 | 475 | 160                | 160             | 180             | 180                | 485             | 25              | 27                 | 450             | 234 kg          |
| Disc information |     |      |     |     |     |     | THRUSTOR type      |                 |                 |                    |                 |                 |                    |                 |                 |
| d2               | S   | d1   | d4  | e   | J   | Q   | Clamping Force (N) | Min Torque (Nm) | Max Torque (Nm) | Clamping Force (N) | Min Torque (Nm) | Max Torque (Nm) | Clamping Force (N) | Min Torque (Nm) | Max Torque (Nm) |
| 450              | 30  | 350  | 170 | 175 | 280 | 95  |                    | 1490            | 2980            |                    | 2288            | 4575            |                    | 3490            | 6980            |
| 500              | 30  | 400  | 220 | 200 | 280 | 120 |                    | 1695            | 3390            |                    | 2600            | 5200            |                    | 3975            | 7950            |
| 560              | 30  | 460  | 280 | 230 | 280 | 150 |                    | 1945            | 3890            |                    | 2988            | 5975            |                    | 4560            | 9120            |
| 630              | 30  | 530  | 350 | 265 | 280 | 185 |                    | 2235            | 4470            |                    | 3430            | 6860            |                    | 5225            | 10450           |
| 710              | 30  | 610  | 430 | 305 | 280 | 225 | 20700              | 2565            | 5130            | 31500              | 3940            | 7880            | 46000              | 6000            | 12000           |
| 800              | 30  | 700  | 520 | 350 | 280 | 270 |                    | 2938            | 5875            |                    | 4515            | 9030            |                    | 6850            | 13700           |
| 900              | 30  | 800  | 620 | 400 | 280 | 320 |                    | 3312            | 6624            |                    | 5040            | 10080           |                    | 7850            | 15700           |
| 1000             | 30  | 900  | 720 | 450 | 280 | 370 |                    | 3726            | 7452            |                    | 5670            | 11340           |                    | 8800            | 17600           |
| 1250             | 30  | 1150 | 970 | 575 | 280 | 495 |                    | 5175            | 10350           |                    | 7875            | 15750           |                    | 11500           | 23000           |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

FDA-92



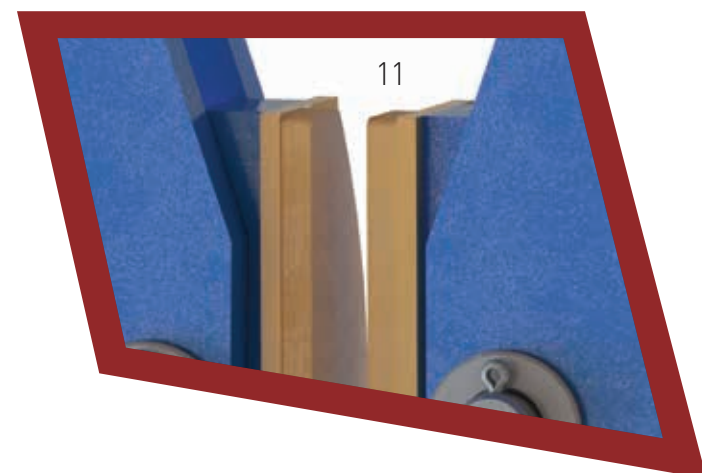
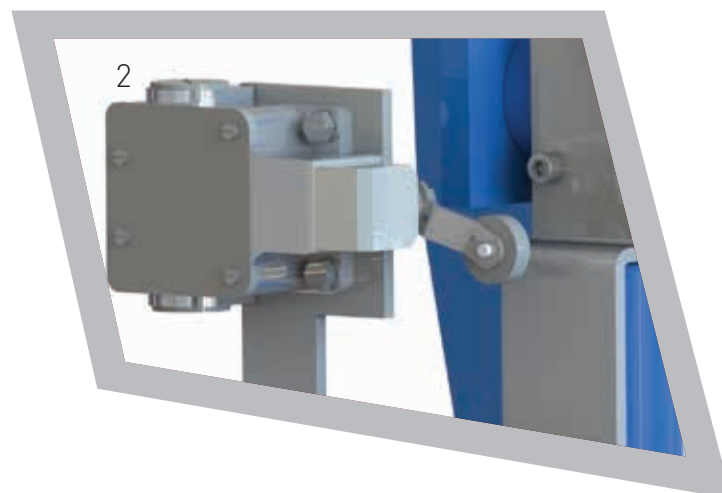
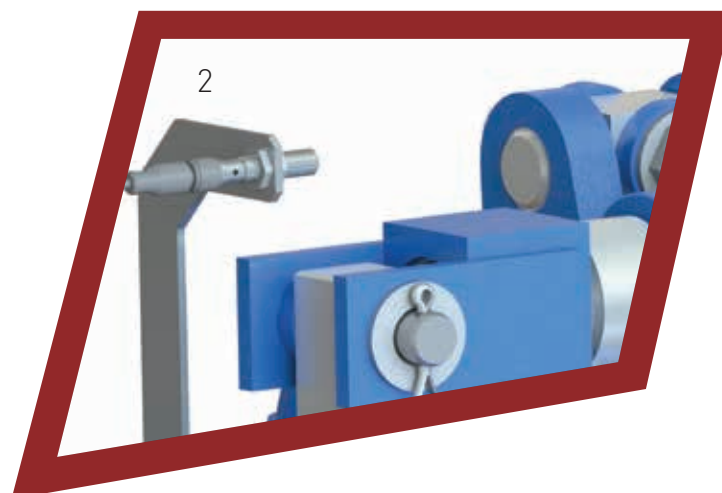
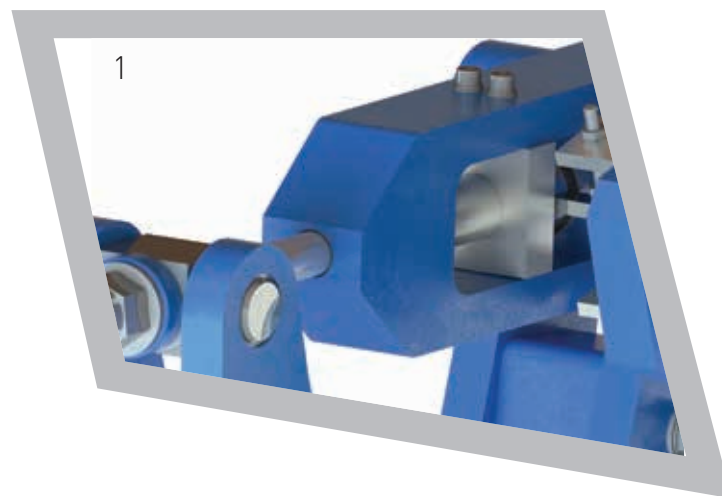
d1 = Theoretical friction diameter (mm).  
d2 = Outside diameter (mm).  
d4 = Max. allowable coupling or hub diameter (mm).

| A*               | B    | C    | D   | E     | F     | G   | H                  | I   | K             | L   | M               | P  | Q               | R   | WEIGHT |
|------------------|------|------|-----|-------|-------|-----|--------------------|-----|---------------|-----|-----------------|----|-----------------|-----|--------|
| 1117             | 1007 | 284  | 298 | 253.5 | 253.5 | 340 | 160                | 160 | 180           | 180 | 405             | 25 | 27              | 490 | 400 kg |
| Disc information |      |      |     |       |       |     | THRUSTOR type      |     |               |     |                 |    |                 |     |        |
| d2               | S    | d1   | d4  | e     | J     | Q   | Clamping Force (N) |     | TH-III (4010) |     | Min Torque (Nm) |    | Max Torque (Nm) |     |        |
| 630              | 30   | 482  | 310 | 241   | 280   | 185 |                    |     |               |     | 8869            |    | 17738           |     |        |
| 710              | 30   | 562  | 390 | 281   | 280   | 225 |                    |     |               |     | 10341           |    | 20682           |     |        |
| 800              | 30   | 652  | 480 | 326   | 280   | 270 |                    |     |               |     | 11997           |    | 23994           |     |        |
| 900              | 30   | 752  | 580 | 376   | 280   | 320 |                    |     | 92000         |     | 13837           |    | 27674           |     |        |
| 1000             | 30   | 852  | 680 | 426   | 280   | 370 |                    |     |               |     | 15677           |    | 31354           |     |        |
| 1250             | 30   | 1102 | 930 | 551   | 280   | 495 |                    |     |               |     | 20277           |    | 40554           |     |        |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

## OPTIONS

1. Automatic lining wear adjustment (RA).
2. Mechanical or inductive open brake switch indicator (CSA).
3. Standard or inductive lining wear indicator (DD).
4. Hand release lever (DM).
5. Descent valve (VD).
6. Special paint (PE).
7. Hydraulic or pneumatic release.
8. ATEX certificated thruster.
9. Special bolts (stainless steel, galvanized).
10. Thrustor's stroke linear detector (DL).
11. Sintered metal linings.



## NOTES

For further information about options, please contact ANTEC's Sales Service.



# Electrohydraulic drum brakes

## GENERAL DESCRIPTION



Model: NDT-315 TH-II (806)

The NDT, NFT, NAT, NDTV and NDTA brakes, brakes are spring applied, power released drum brakes. Brake release is achieved by a thruster. The thruster is a three-phase AC electrohydraulic thruster.

The brake wears a control scale for an easy adjustment of the torque.

Brake shoes carry asbestos free linings.

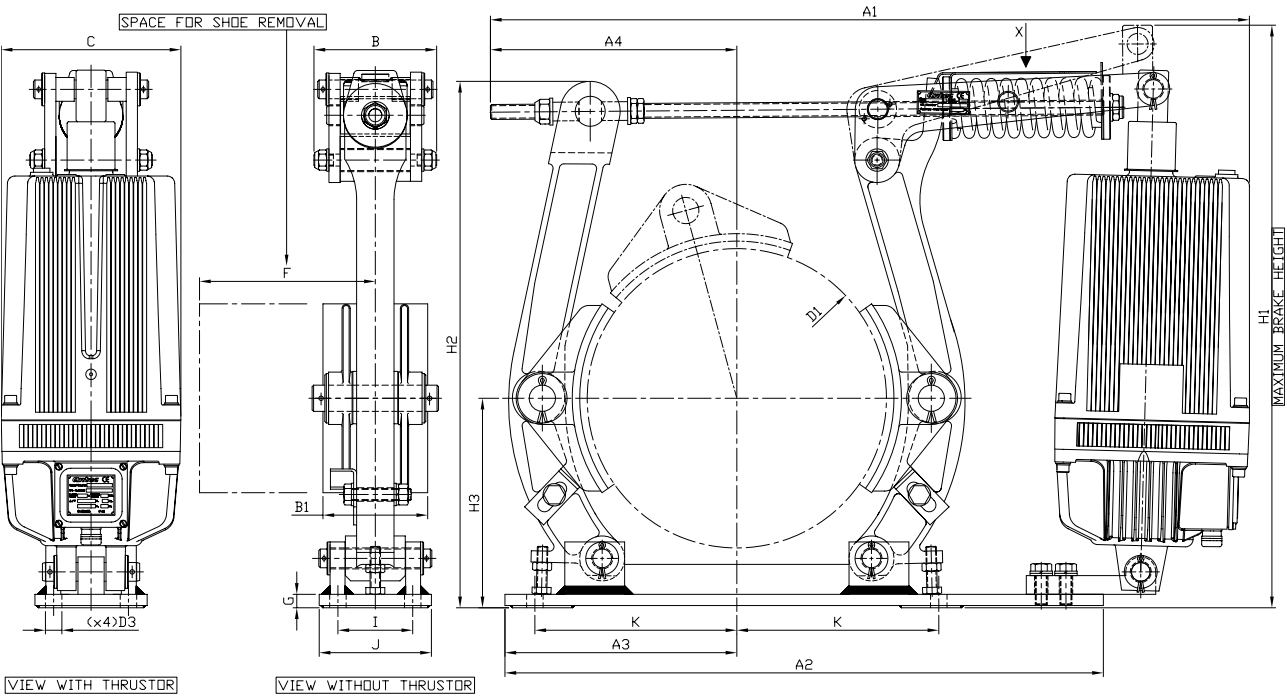
Visual scale for torque controlling included in all models.

Brakes are supplied according to the following standards.

| STANDARDS       | AISE<br>N°11 | DIN<br>15.435         | S-472A |
|-----------------|--------------|-----------------------|--------|
| Brake<br>models | NAT          | NDT<br>NDT-V<br>NDT-A | NFT    |



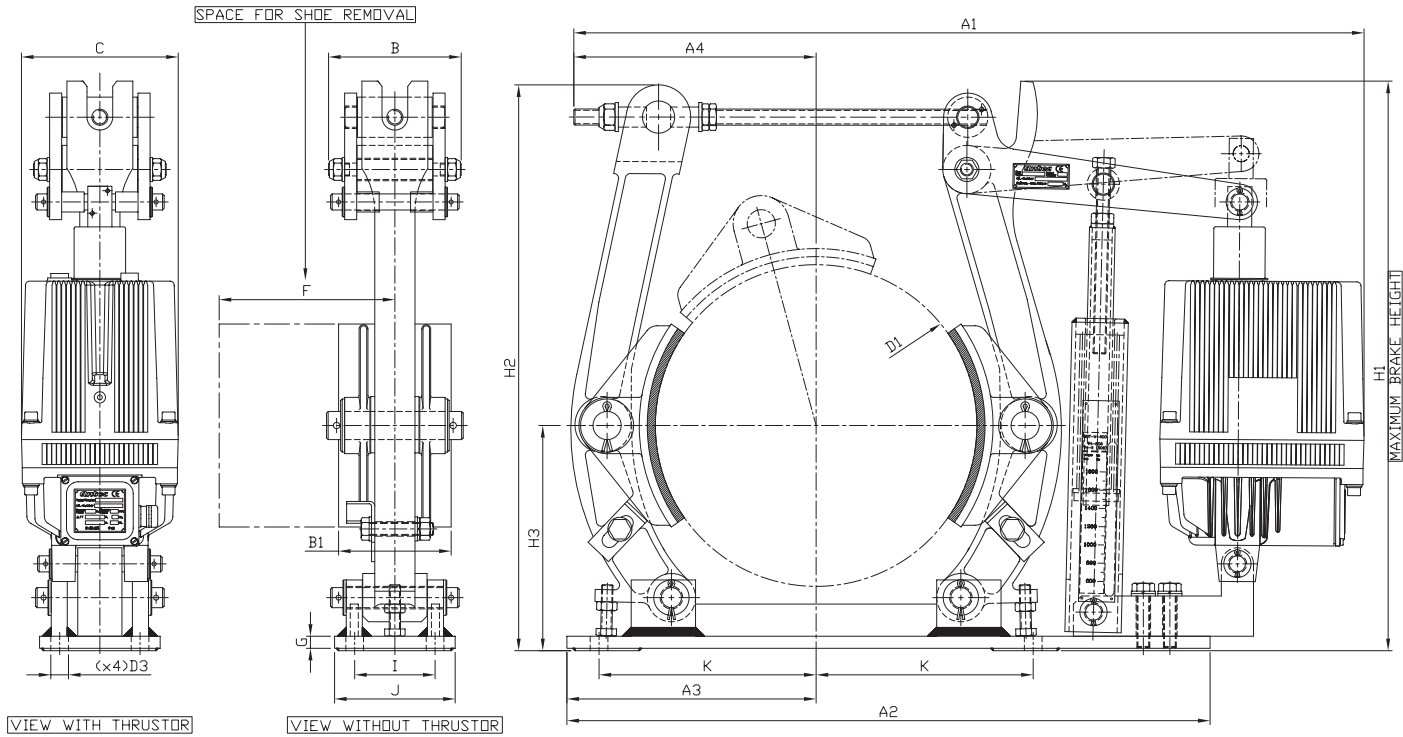
NDT BRAKES (German Standard)



| BRAKE TYPE | THRUSTOR TYPE | TORQUE (Nm) |       | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |    |     |     |     |      |      |     |     |     |     |     |     |      |      |     |     |     |     |     |     |
|------------|---------------|-------------|-------|-------------|------------|------------|------------|----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|
|            |               | min.        | max.  |             |            |            | B2         | B1 | D1  | D3  | H3  | I    | K    | A1  | A2  | A3  | A4  | B   | C   | F    | G    | H1  | H2  | J   |     |     |     |
| 160        | I-256         | 70          | 140   | 23          | 80         | 65         | 160        | 11 | 125 | 55  | 108 | 576  | 410  | 130 | 203 | 85  | 160 | 70  | 20  | 411  | 295  | 80  |     |     |     |     |     |
| 200        | I-256         | 138         | 275   | 29          | 75         | 70         | 200        | 14 | 160 | 55  | 145 | 674  | 510  | 185 | 197 | 116 | 160 | 125 | 19  | 414  | 355  | 90  |     |     |     |     |     |
|            | I-356         | 178         | 355   | 34          |            |            |            |    |     |     |     | 686  |      |     | 202 |     | 202 |     |     | 497  |      |     |     |     |     |     |     |
| 250        | I-256         | 165         | 330   | 35          | 95         | 90         | 250        | 18 | 190 | 65  | 180 | 688  | 580  | 220 | 201 | 116 | 160 | 130 | 13  | 430  | 413  | 100 |     |     |     |     |     |
|            | I-356         | 243         | 485   | 40          |            |            |            |    |     |     |     | 745  |      |     | 205 |     | 205 |     |     | 500  |      |     |     |     |     |     |     |
| 315        | I-356         | 320         | 640   | 59          | 118        | 110        | 315        | 18 | 230 | 80  | 220 | 770  | 800  | 690 | 260 | 226 | 160 | 195 | 180 | 18   | 600  | 619 | 588 | 120 |     |     |     |
|            | II-506        | 475         | 950   | 62          |            |            |            |    |     |     |     | 800  |      |     |     | 216 |     |     |     |      | 160  |     |     |     | 195 | 180 | 619 |
|            | II-806        | 725         | 1450  | 63          |            |            |            |    |     |     |     | 842  |      |     |     | 229 |     |     |     |      | 195  |     |     |     | 633 |     |     |
| 400        | II-506        | 575         | 1150  | 85          | 150        | 140        | 400        | 22 | 280 | 100 | 270 | 976  | 800  | 310 | 295 | 165 | 195 | 210 | 18  | 716  | 723  | 704 | 150 |     |     |     |     |
|            | II-806        | 750         | 1500  | 87          |            |            |            |    |     |     |     | 976  |      |     | 295 |     | 195 |     |     | 210  |      |     |     | 723 |     |     |     |
|            | III-1306      | 1225        | 2450  | 107         |            |            |            |    |     |     |     | 1015 |      |     | 329 |     | 240 |     |     | 779  |      |     |     |     |     |     |     |
| 500        | II-806        | 850         | 1700  | 125         | 190        | 180        | 500        | 22 | 340 | 130 | 325 | 1065 | 1050 | 940 | 365 | 337 | 195 | 240 | 250 | 23   | 825  | 803 | 180 |     |     |     |     |
|            | III-1306      | 1350        | 2700  | 145         |            |            |            |    |     |     |     | 1070 |      |     |     | 334 |     |     |     |      | 240  |     |     | 845 |     |     |     |
|            | III-2006      | 2150        | 4300  | 147         |            |            |            |    |     |     |     | 1214 |      |     |     | 410 |     |     |     |      | 960  |     |     |     |     |     |     |
| 630        | III-2006      | 2500        | 5000  | 242         | 236        | 225        | 630        | 27 | 420 | 170 | 400 | 1251 | 1150 | 460 | 450 | 230 | 240 | 305 | 23  | 965  | 940  | 220 |     |     |     |     |     |
|            | III-3006      | 3350        | 6700  | 244         |            |            |            |    |     |     |     | 1231 |      |     | 430 |     | 980 |     |     |      |      |     |     |     |     |     |     |
|            | III-3012      | 4400        | 8800  | 258         |            |            |            |    |     |     |     | 1363 |      |     | 440 |     | 970 |     |     |      |      |     |     |     |     |     |     |
|            | III-2006      | 2900        | 5800  | 323         |            |            |            |    |     |     |     | 1353 |      |     |     |     |     |     |     |      |      |     |     |     |     |     |     |
| 710        | III-3006      | 3850        | 7700  | 324         | 265        | 255        | 710        | 27 | 470 | 190 | 450 | 1353 | 1280 | 510 | 468 | 250 | 240 | 340 | 27  | 1082 | 1061 | 250 |     |     |     |     |     |
|            | III-3012      | 5250        | 10500 | 338         |            |            |            |    |     |     |     | 1491 |      |     |     |     |     |     |     |      |      |     |     |     |     |     |     |

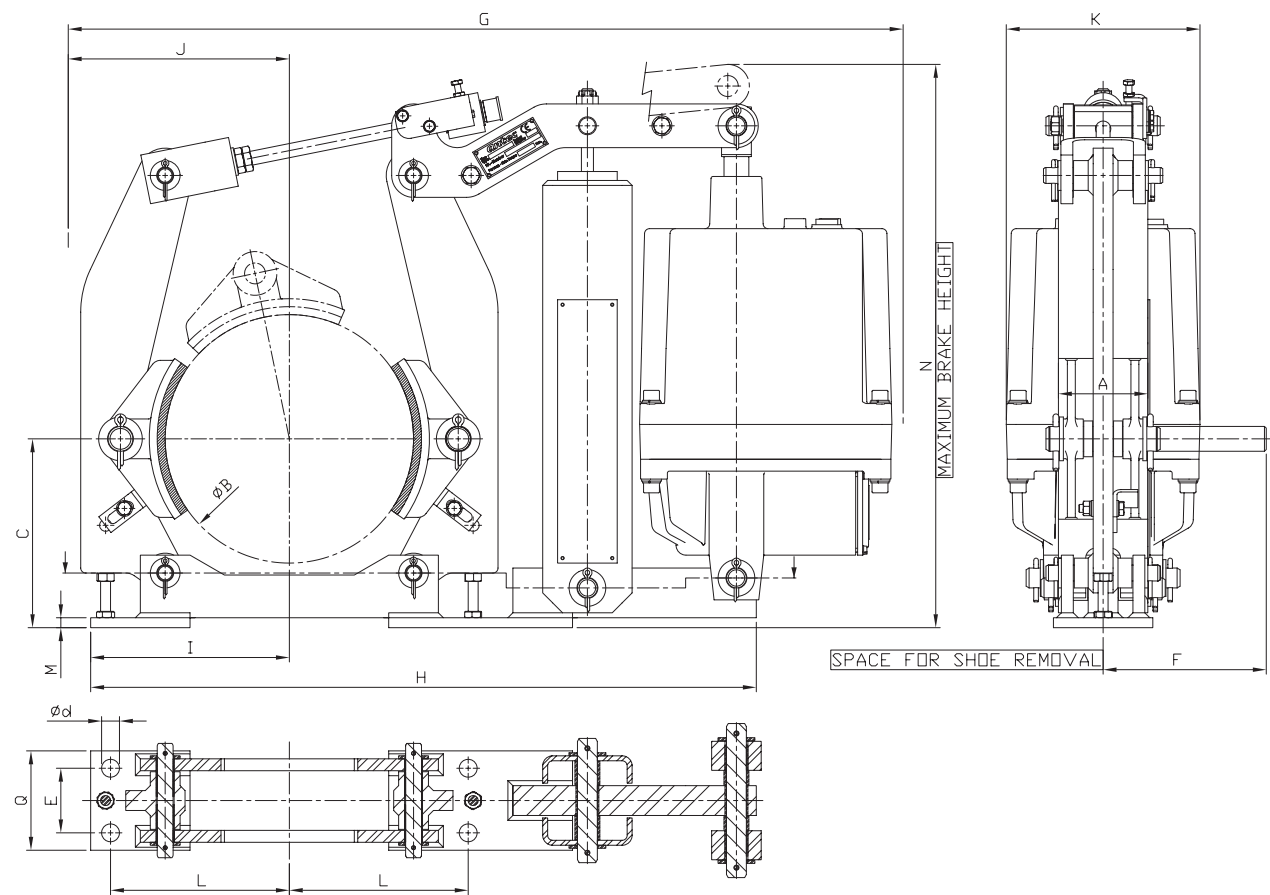
Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

NDT-V BRAKES (German Standard)



| BRAKE TYPE | THRUSTOR TYPE | TORQUE (Nm) |       | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|------------|---------------|-------------|-------|-------------|------------|------------|------------|----|-----|-----|-----|--------------|------|------|-----|-----|-----|-----|-----|------------|------------|-----|-----|
|            |               | min.        | max.  |             |            |            | B2         | B1 | D1  | D3  | H3  | I            | K    | A1   | A2  | A3  | A4  | B   | C   | F          | G          | H1  | H2  |
| 160        | I-256         | 120         | 240   | 33          | 70         | 65         | 160        | 11 | 130 | 55  | 120 | 570          | 335  | 140  | 135 | 115 | 160 | 75  | 10  | 391        | 296        | 90  |     |
| 200        | I-256         | 125         | 250   | 29          | 75         | 70         | 200        | 14 | 160 | 55  | 145 | 655<br>661   | 510  | 185  | 178 | 116 | 160 | 125 | 19  | 413<br>497 | 355        | 90  |     |
|            | I-356         | 188         | 375   | 34          |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 250        | I-256         | 128         | 255   | 35          | 95         | 90         | 250        | 18 | 190 | 65  | 180 | 690<br>745   | 580  | 220  | 204 | 116 | 160 | 130 | 13  | 423<br>496 | 413        | 100 |     |
|            | I-356         | 235         | 470   | 40          |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 315        | I-356         | 275         | 550   | 59          | 118        | 110        | 315        | 18 | 230 | 80  | 220 | 765          | 805  | 690  | 260 | 223 | 160 | 195 | 180 | 18         | 593<br>620 | 588 | 120 |
|            | II-506        | 438         | 875   | 62          |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | II-806        | 700         | 1400  | 63          |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 400        | II-506        | 450         | 900   | 85          | 150        | 140        | 400        | 22 | 280 | 100 | 270 | 983          | 800  | 310  | 301 | 165 | 195 | 210 | 18  | 708        | 704        | 150 |     |
|            | II-806        | 760         | 1520  | 87          |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | III-1306      | 1350        | 2700  | 107         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 500        | II-806        | 800         | 1600  | 125         | 190        | 180        | 500        | 22 | 340 | 130 | 325 | 1039         | 940  | 365  | 325 | 190 | 240 | 250 | 23  | 816        | 803        | 180 |     |
|            | III-1306      | 1325        | 2650  | 145         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | III-2006      | 2125        | 4250  | 147         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 630        | III-1306      | 1450        | 2900  | 240         | 236        | 225        | 630        | 27 | 420 | 170 | 400 | 1240         | 1240 | 1150 | 460 | 435 | 230 | 240 | 305 | 23         | 955        | 940 | 220 |
|            | III-2006      | 2325        | 4650  | 242         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | III-3006      | 3725        | 7450  | 244         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | III-3012      | 3875        | 7750  | 258         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 710        | III-2006      | 2875        | 5750  | 323         | 265        | 255        | 710        | 27 | 470 | 190 | 450 | 1403         | 1280 | 510  | 468 | 250 | 240 | 340 | 29  | 1082       | 1067       | 250 |     |
|            | III-3006      | 4300        | 8600  | 324         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
|            | III-3012      | 4950        | 9900  | 338         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |
| 800        | III-3006      | 4900        | 9800  | 350         | 300        | 290        | 800        | 33 | 520 | 210 | 505 | 1420<br>1540 | 1375 | 575  | 495 | 250 | 240 | 370 | 59  | 1135       | 1095       | 290 |     |
|            | III-3012      | 5575        | 11150 | 364         |            |            |            |    |     |     |     |              |      |      |     |     |     |     |     |            |            |     |     |

NDT-V BRAKES – HIGH TORQUE MODELS  
(German Standard)

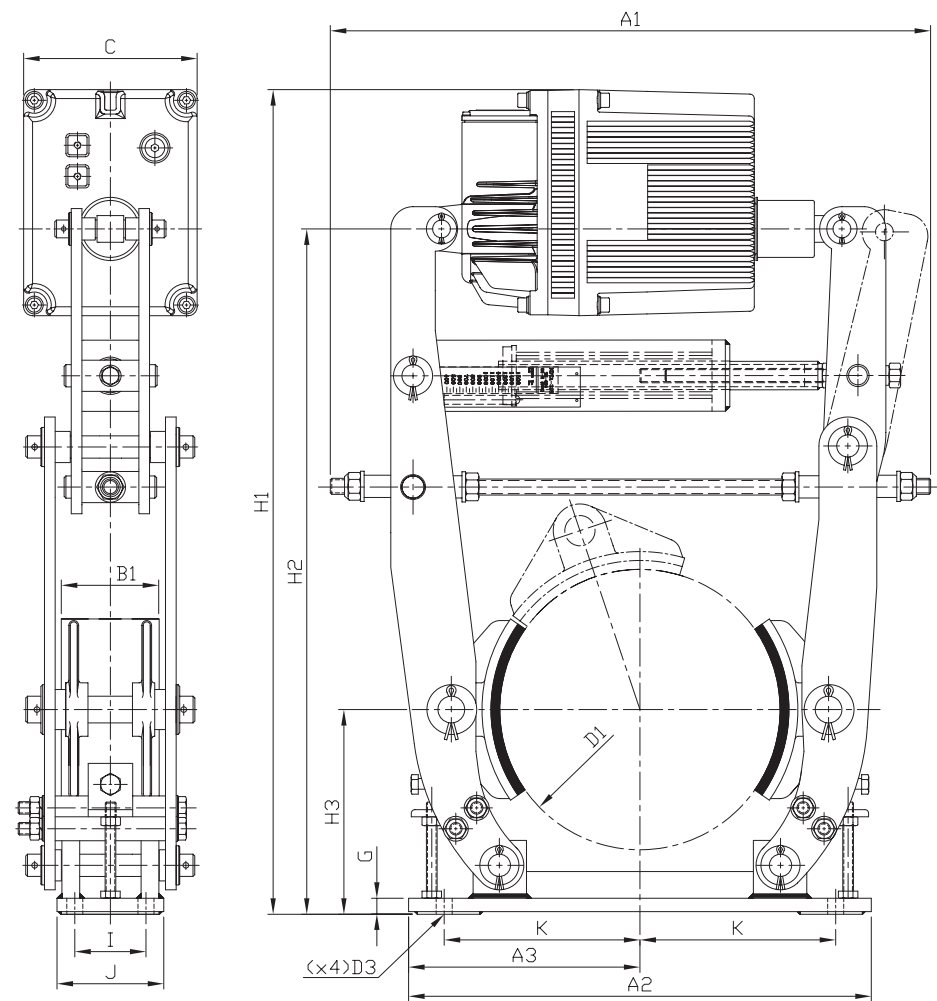


| BRAKE TYPE | THRUSTOR TYPE | TORQUE (Nm) |      | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |     |    |    |     |     |     |     |     |     |     |    |     |     |
|------------|---------------|-------------|------|-------------|------------|------------|------------|-----|----|----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|
|            |               | min.        | max. |             |            |            | -          | A   | B  | C  | d   | E   | F   | G   | H   | I   | J   | K  | L   | M   |
| NDTV-250   | TH-II(506)    | 150         | 850  | 64          | 95         | 90         | 250        | 190 | 18 | 65 | 125 | 817 | 670 | 200 | 210 | 195 | 180 | 10 | 564 | 100 |
| NDTV-315   | TH-II(806)    | 300         | 1800 | 95          | 118        | 110        | 315        | 230 | 18 | 80 | 150 | 944 | 790 | 243 | 260 | 195 | 220 | 18 | 675 | 110 |

|          |              |      |      |     |     |     |     |     |    |     |     |      |     |     |     |     |     |    |     |     |  |  |
|----------|--------------|------|------|-----|-----|-----|-----|-----|----|-----|-----|------|-----|-----|-----|-----|-----|----|-----|-----|--|--|
| NDTV-400 | TH-III(1306) | 1150 | 2900 | 149 | 150 | 140 | 400 | 280 | 22 | 100 | 185 | 1010 | 890 | 300 | 305 | 240 | 270 | 18 | 795 | 140 |  |  |
|----------|--------------|------|------|-----|-----|-----|-----|-----|----|-----|-----|------|-----|-----|-----|-----|-----|----|-----|-----|--|--|

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

NDT-A BRAKES (German Standard)

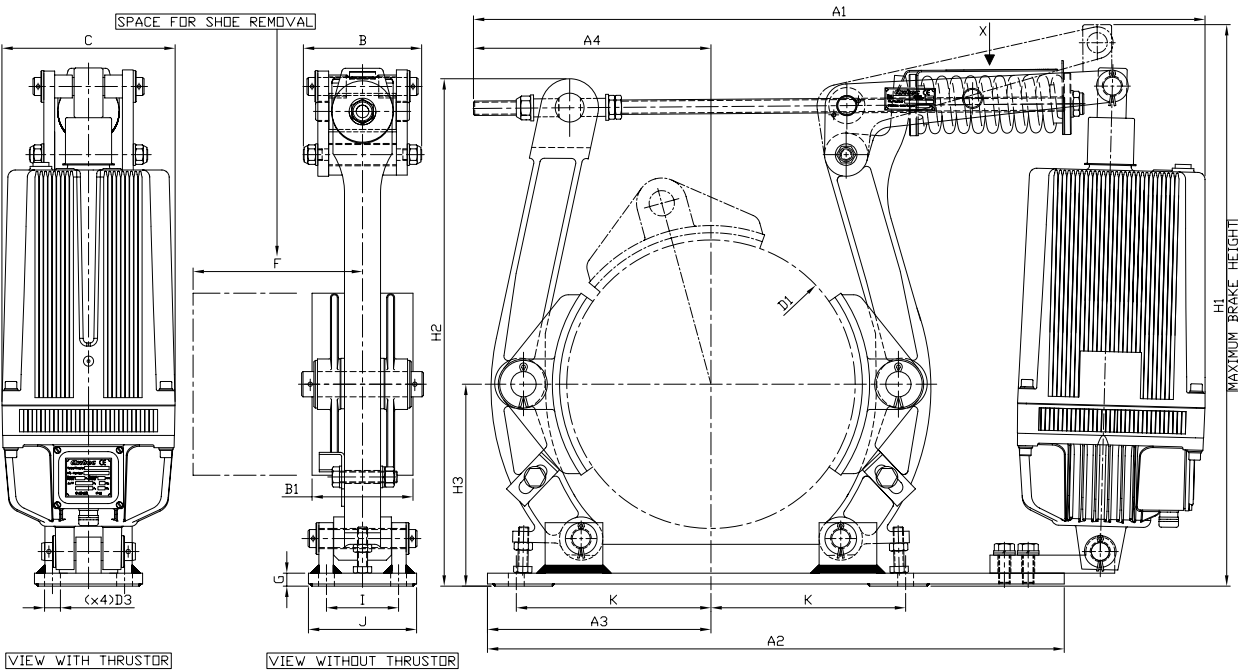


| BRAKE TYPE | THRUSTOR TYPE | TORQUE (Nm) |      | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
|------------|---------------|-------------|------|-------------|------------|------------|------------|----|-----|-----|-----|-----|-----|-------|-----|-----|----|------|------|-----|----|
|            |               | min.        | max. |             |            |            | B2         | B1 | D1  | D3  | H3  | I   | K   | A1    | A2  | A3  | A4 | C    | G    | H1  | H2 |
| 160        | I-256         | 60          | 150  | 30          | 80         | 65         | 160        | 11 | 125 | 55  | 108 | 445 | 275 | 137.5 | 218 | 160 | 10 | 548  | 428  | 80  |    |
| 200        | I-256         | 90          | 230  | 30          | 75         | 70         | 200        | 14 | 160 | 55  | 145 | 487 | 370 | 185   | 250 | 160 | 19 | 638  | 518  | 90  |    |
|            | I-356         | 110         | 330  | 36          |            |            |            |    |     |     |     | 548 |     |       | 272 |     |    |      |      |     |    |
| 250        | I-256         | 90          | 290  | 37          | 95         | 90         | 250        | 18 | 190 | 65  | 180 | 545 | 440 | 220   | 277 | 160 | 13 | 756  | 638  | 100 |    |
|            | I-356         | 90          | 410  | 42          |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
| 315        | I-356         | 230         | 570  | 62          | 118        | 110        | 315        | 18 | 230 | 80  | 220 | 675 | 520 | 260   | 348 | 195 | 18 | 927  | 770  | 120 |    |
|            | II-506        | 310         | 780  | 65          |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
|            | II-806        | 500         | 1300 | 66          |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
| 400        | II-506        | 350         | 870  | 89          | 150        | 140        | 400        | 22 | 280 | 100 | 270 | 870 | 620 | 310   | 443 | 195 | 18 | 1063 | 906  | 150 |    |
|            | II-806        | 580         | 1450 | 91          |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
|            | III-1306      | 950         | 2450 | 112         |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
| 500        | II-506        | 450         | 1150 | 131         | 190        | 180        | 500        | 22 | 340 | 130 | 325 | 850 | 730 | 365   | 445 | 195 | 23 | 1180 | 1050 | 180 |    |
|            | II-806        | 700         | 1750 | 152         |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
|            | III-1306      | 1200        | 3000 | 154         |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |
|            | III-2006      | 1800        | 4700 | 252         |            |            |            |    |     |     |     |     |     |       |     |     |    |      |      |     |    |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.



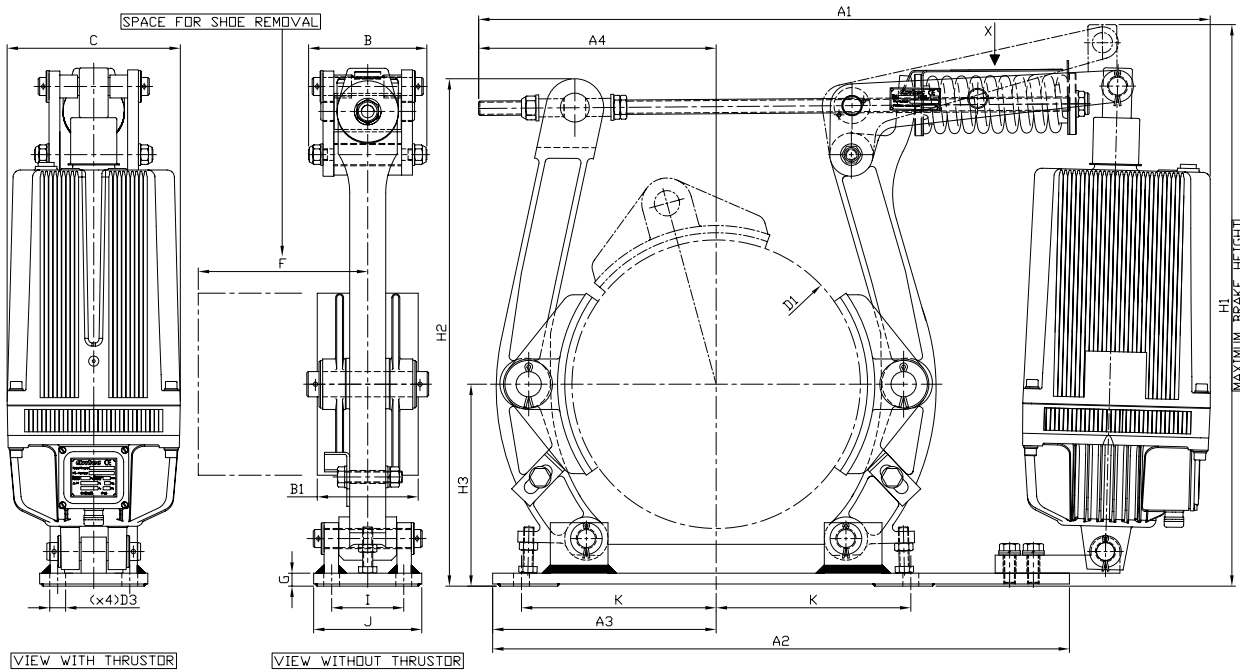
NAT BRAKES (Amercian Standard)



| BRAKE<br>TYPE | THRUSTOR<br>TYPE | TORQUE<br>(ft-lb) |      | WEIGHT<br>(lb) | DRUM<br>WIDTH | SHOE<br>WIDTH | DIMENSIONS |     |      |      |      |      |      |      |      |     |     |      |      |      |      |      |      |      |
|---------------|------------------|-------------------|------|----------------|---------------|---------------|------------|-----|------|------|------|------|------|------|------|-----|-----|------|------|------|------|------|------|------|
|               |                  | min.              | max. |                |               |               | B2         | B1  | D1   | D3   | H3   | I    | K    | A1   | A2   | A3  | A4  | B    | C    | F    | G    | H1   | H2   | J    |
| 6" [152]      | I-256            | 48                | 96   | 53             | 2.75          | 2.1           | 6.0        | 0.4 | 4.7  | 3.0  | 4.0  | 22.7 | 16.9 | 5.4  | 7.9  | 3.3 | 6.3 | 3.9  | 0.6  | 16.0 | 13.6 | 3.9  |      |      |
| 8" [203]      | I-256            | 103               | 206  | 71             | 3.25          | 3.0           | 8.0        | 0.7 | 7.0  | 5.7  | 3.2  | 26.6 | 20.1 | 7.3  | 7.6  | 4.6 | 6.3 | 4.9  | 0.7  | 16.7 | 14.7 | 7.5  |      |      |
|               | I-356            | 135               | 270  | 82             |               |               |            |     |      |      |      | 27.0 |      |      |      |     |     |      |      | 20.0 |      |      |      |      |
| 10" [254]     | I-256            | 124               | 248  | 84             | 3.75          | 3.5           | 10.0       | 0.7 | 8.4  | 6.3  | 4.0  | 28.0 | 22.8 | 8.7  | 8.7  | 4.6 | 6.3 | 5.1  | 0.7  | 17.6 | 17.2 | 7.9  |      |      |
|               | I-356            | 181               | 362  | 95             |               |               |            |     |      |      |      | 30.4 |      |      |      |     |     |      |      | 20.3 |      |      |      |      |
| 13" [330]     | I-356            | 254               | 508  | 139            | 5.75          | 5.5           | 13.0       | 0.8 | 9.9  | 9.0  | 5.7  | 32.0 | 27.2 | 10.2 | 9.6  | 6.3 | 7.1 | 1.1  | 24.3 | 24.2 | 11.0 |      |      |      |
|               | II-506           | 369               | 738  | 146            |               |               |            |     |      |      |      | 34.0 |      |      |      |     |     |      | 10.0 |      |      | 7.7  | 25.4 |      |
|               | II-806           | 572               | 1144 | 148            |               |               |            |     |      |      |      | 34.9 |      |      |      |     |     |      | 9.8  |      |      | 7.7  | 25.9 |      |
| 16" [406]     | II-506           | 406               | 812  | 198            | 6.75          | 6.5           | 16.0       | 1.1 | 12.1 | 10.7 | 7.5  | 39.4 | 31.5 | 12.2 | 12.4 | 7.7 | 8.3 | 1.3  | 28.9 | 28.7 | 13.0 |      |      |      |
|               | II-806           | 553               | 1106 | 205            |               |               |            |     |      |      |      | 39.4 |      |      | 11.6 |     |     |      | 6.5  |      |      | 7.7  | 28.9 |      |
|               | III-1306         | 904               | 1808 | 251            |               |               |            |     |      |      |      | 39.8 |      |      | 12.6 |     |     |      | 9.4  |      |      | 31.9 |      |      |
| 19" [482]     | II-806           | 627               | 1254 | 295            | 8.75          | 8.5           | 19.0       | 1.1 | 13.2 | 13.0 | 9.3  | 42.7 | 37.0 | 14.4 | 14.0 | 7.7 | 9.4 | 9.4  | 1.2  | 32.2 | 31.7 | 15.4 |      |      |
|               | III-1306         | 996               | 1992 | 342            |               |               |            |     |      |      |      | 42.2 |      |      | 14.0 |     |     |      |      | 7.5  |      |      | 9.4  | 32.2 |
|               | III-2006         | 1567              | 3134 | 346            |               |               |            |     |      |      |      | 44.8 |      |      | 15.9 |     |     |      |      | 9.4  |      |      | 32.5 |      |
|               | III-1306         | 1125              | 2250 | 540            |               |               |            |     |      |      |      | 47.9 |      |      | 16.9 |     |     |      |      |      |      |      | 37.4 |      |
| 23" [584]     | III-2006         | 1770              | 3540 | 545            | 11.25         | 11.0          | 23.0       | 1.3 | 15.9 | 16.0 | 11.7 | 49.5 | 45.3 | 18.1 | 18.5 | 9.1 | 9.4 | 11.4 | 1.0  | 37.4 | 36.8 | 18.9 |      |      |
|               | III-3006         | 2360              | 4720 | 551            |               |               |            |     |      |      |      | 47.3 |      |      | 16.3 |     |     |      |      | 37.5 |      |      |      |      |
|               | III-3012         | 3172              | 6344 | 584            |               |               |            |     |      |      |      | 54.3 |      |      | 18.1 |     |     |      |      | 37.8 |      |      |      |      |
|               | III-2006         | 2305              | 4610 | 732            |               |               |            |     |      |      |      | 56.3 |      |      | 20.5 |     |     |      |      |      |      |      |      |      |
| 30" [762]     | III-3006         | 3061              | 6122 | 734            | 14.25         | 14.0          | 30.0       | 1.6 | 20.7 | 19.0 | 15.0 | 55.1 | 50.4 | 20.1 | 19.3 | 9.8 | 9.4 | 13.0 | 1.9  | 44.9 | 44.1 | 22.0 |      |      |
|               | III-3012         | 4204              | 8408 | 765            |               |               |            |     |      |      |      | 60.6 |      |      | 19.3 |     |     |      |      |      |      |      |      |      |

Friction coefficient μ=0,4. Dimensions are in inches.

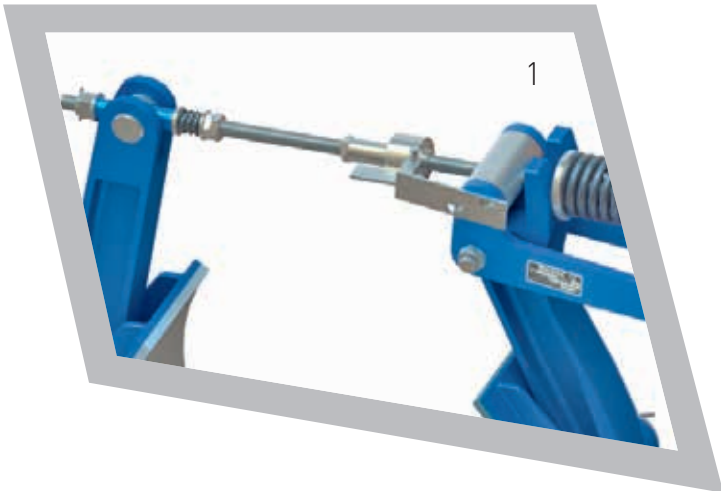
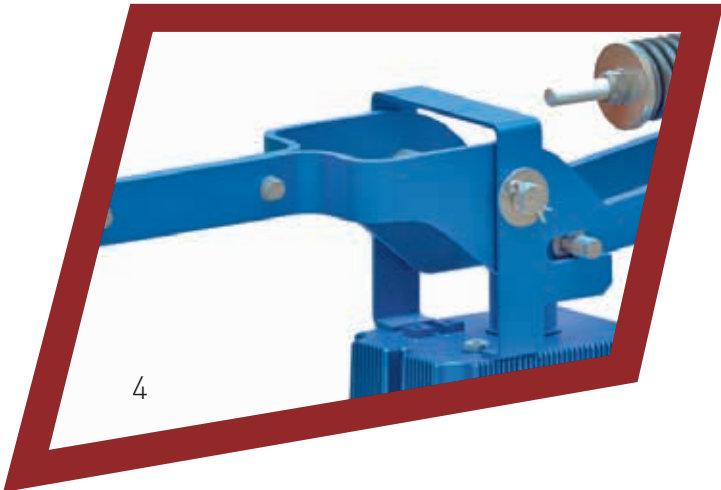
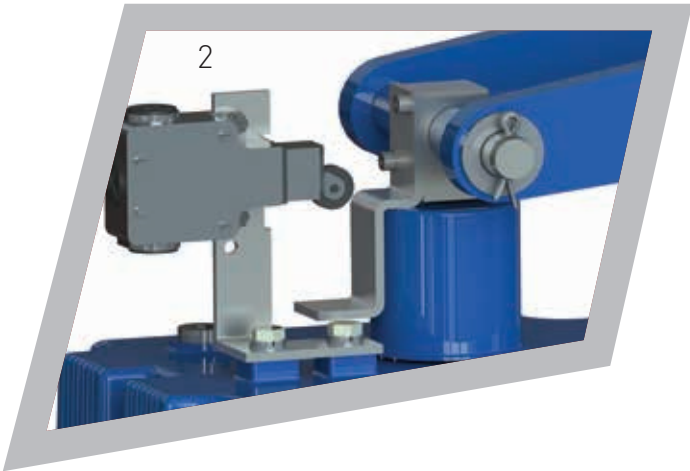
NFT BRAKES (French Standard)



| BRAKE TYPE | THRUSTOR TYPE | TORQUE (Nm) |       | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |      |     |     |     |      |      |      |     |     |     |     |     |     |      |      |     |     |      |     |     |     |     |
|------------|---------------|-------------|-------|-------------|------------|------------|------------|------|-----|-----|-----|------|------|------|-----|-----|-----|-----|-----|-----|------|------|-----|-----|------|-----|-----|-----|-----|
|            |               | min.        | max.  |             |            |            | B2         | B1   | D1  | D3  | H3  | I    | K    | A1   | A2  | A3  | A4  | B   | C   | F   | G    | H1   | H2  | J   |      |     |     |     |     |
| 150        | I-256         | 65          | 130   | 24          | 80         | 65         | 150        | 11   | 125 | 135 | 90  | 577  | 400  | 120  | 201 | 85  | 160 | 70  | 10  | 411 | 296  | 160  |     |     |      |     |     |     |     |
| 200        | I-256         | 135         | 270   | 30          | 80         | 70         | 200        | 15   | 161 | 130 | 75  | 675  | 510  | 185  | 197 | 116 | 160 | 125 | 9   | 413 | 355  | 160  |     |     |      |     |     |     |     |
|            | I-356         | 175         | 350   | 35          |            |            |            |      |     |     |     | 686  |      |      |     |     |     |     |     |     |      |      | 201 | 497 |      |     |     |     |     |
| 250        | I-256         | 165         | 330   | 36          | 90         | 90         | 250        | 18   | 181 | 130 | 94  | 688  | 580  | 220  | 201 | 116 | 160 | 130 | 9   | 423 | 413  | 160  |     |     |      |     |     |     |     |
|            | I-356         | 250         | 500   | 41          |            |            |            |      |     |     |     | 742  |      |      |     |     |     |     |     |     |      |      | 205 | 505 |      |     |     |     |     |
| 350        | I-356         | 325         | 650   | 61          | 130        | 110        | 350        | 20.5 | 250 | 180 | 145 | 855  | 690  | 260  | 263 | 160 | 195 | 180 | 28  | 614 | 613  | 230  |     |     |      |     |     |     |     |
|            | II-506        | 500         | 1000  | 64          |            |            |            |      |     |     |     | 910  |      |      |     |     |     |     |     |     |      |      | 278 | 195 | 180  | 644 |     |     |     |
|            | II-806        | 800         | 1600  | 65          |            |            |            |      |     |     |     | 952  |      |      |     |     |     |     |     |     |      |      | 291 | 195 | 659  |     |     |     |     |
| 450        | II-506        | 625         | 1250  | 88          | 170        | 160        | 450        | 23   | 300 | 220 | 190 | 1048 | 800  | 310  | 336 | 165 | 195 | 190 | 29  | 728 | 724  | 270  |     |     |      |     |     |     |     |
|            | II-806        | 850         | 1700  | 90          |            |            |            |      |     |     |     | 1048 |      |      |     |     |     |     |     |     |      |      | 800 | 310 | 336  | 165 | 195 | 190 | 728 |
|            | III-1306      | 1375        | 2750  | 110         |            |            |            |      |     |     |     | 1078 |      |      |     |     |     |     |     |     |      |      | 360 | 240 | 803  |     |     |     |     |
| 530        | II-806        | 925         | 1850  | 131         | 195        | 180        | 530        | 25   | 355 | 240 | 235 | 1142 | 940  | 365  | 396 | 190 | 240 | 240 | 23  | 833 | 823  | 290  |     |     |      |     |     |     |     |
|            | III-1306      | 1475        | 2950  | 151         |            |            |            |      |     |     |     | 1143 |      |      |     |     |     |     |     |     |      |      | 396 | 240 | 833  |     |     |     |     |
|            | III-2006      | 2325        | 4650  | 153         |            |            |            |      |     |     |     | 1144 |      |      |     |     |     |     |     |     |      |      | 381 | 240 | 844  |     |     |     |     |
| 600        | III-1306      | 1575        | 3150  | 242         | 210        | 190        | 600        | 28   | 400 | 254 | 272 | 1174 | 1150 | 460  | 394 | 230 | 240 | 290 | 22  | 947 | 929  | 310  |     |     |      |     |     |     |     |
|            | III-2006      | 2450        | 4900  | 244         |            |            |            |      |     |     |     | 1207 |      |      |     |     |     |     |     |     |      |      | 424 | 947 |      |     |     |     |     |
|            | III-3006      | 3275        | 6550  | 246         |            |            |            |      |     |     |     | 1204 |      |      |     |     |     |     |     |     |      |      | 424 | 949 |      |     |     |     |     |
|            | III-3012      | 4400        | 8800  | 260         |            |            |            |      |     |     |     | 1327 |      |      |     |     |     |     |     |     |      |      | 424 | 957 |      |     |     |     |     |
| 750        | III-2006      | 3025        | 6050  | 328         | 230        | 210        | 750        | 31   | 475 | 290 | 338 | 1372 | 1371 | 1280 | 510 | 470 | 255 | 240 | 330 | 34  | 1084 | 1071 | 350 |     |      |     |     |     |     |
|            | III-3006      | 4000        | 8000  | 329         |            |            |            |      |     |     |     | 1371 |      |      |     |     |     |     |     |     |      |      |     | 470 | 1084 |     |     |     |     |
|            | III-3012      | 5475        | 10950 | 343         |            |            |            |      |     |     |     | 1540 |      |      |     |     |     |     |     |     |      |      |     | 504 | 1084 |     |     |     |     |

OPTIONS

- 1. Automatic lining wear adjustment (RA).
- 2. Mechanical or inductive open brake switch indicator (CSA).
- 3. Lining wear indicator (DD).
- 4. Hand release lever (DM).
- 5. Descent valve (VD).
- 6. Special paint (PE).
- 7. Reduced torque (PR).
- 9. Hydraulic or pneumatic release.
- 10. ATEX certificate.
- 11. Special bolts (stainless steel, galvanized).
- 12. Thrustor's stroke linear detector (DL).



NOTES

For further information about options, please contact ANTEC's Sales Service.

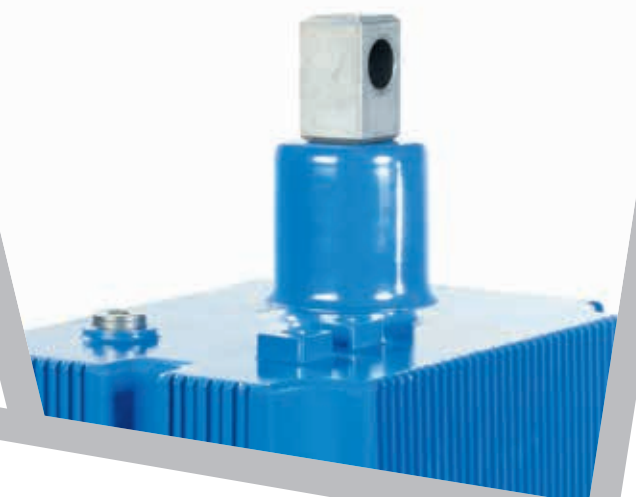
# Thrustors

## DESCRIPTION

The thrustor is an electrohydraulic operating device, built to generate a linear force along a stroke. All the thrustors are designed according to DIN 15.430 Standard in terms of force, stroke, fastenings and general dimensions.

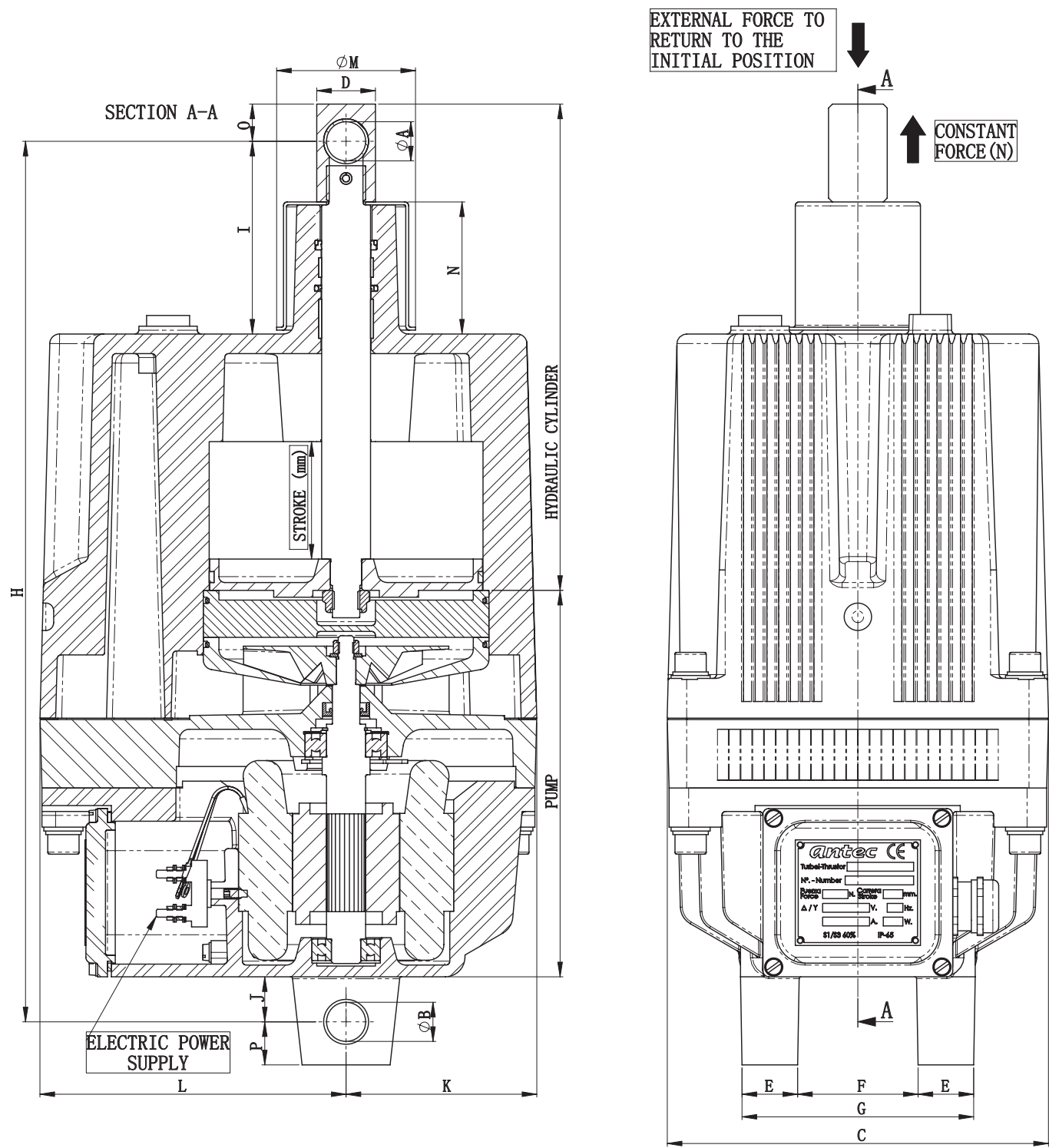


Model: TH-III (1306) CSA +VD





GENERAL DESCRIPTION



| TYPE TH                                  |      | I   |     | II    |       |      |       |       | III  |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------|------|-----|-----|-------|-------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| MODEL                                    |      | 256 | 356 | 506   | 512   | 806  | 812   | 1306A | 1306 | 1310 | 1312 | 2006 | 2012 | 3006 | 3010 | 3012 | 4006 | 4008 | 4010 | 4012 |
| NOMINAL FORCE                            | [N]  | 250 | 350 | 500   |       | 800  |       | 1300  | 1300 |      |      | 2000 |      | 3000 |      |      | 4000 |      |      |      |
| NOMINAL STROKE                           | [mm] | 60  |     | 60    | 120   | 60   | 120   | 60    | 60   | 100  | 120  | 60   | 120  | 60   | 100  | 120  | 60   | 80   | 100  | 120  |
| DIMENSIONS                               | A    | 12  | 16  | 20    |       |      |       |       | 25   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | B    | 16  |     | 20    |       |      |       |       | 25   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | C    | 160 |     | 195   |       |      |       |       | 240  |      |      |      |      |      |      |      |      |      |      |      |
|                                          | D    | 20  | 25  | 30    |       |      |       |       | 40   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | E    | 20  |     | 30    |       |      |       |       | 25   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | F    | 40  |     | 60    |       |      |       |       | 40   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | G    | 80  |     | 120   |       |      |       |       | 90   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | H    | 286 | 370 | 435   | 515   | 450  | 530   | 450   | 645  | 705  | 705  | 645  | 705  | 645  | 705  | 645  | 645  | 705  | 705  |      |
|                                          | I    | 23  | 36  | 83,5  | 114,5 | 98,5 | 129,5 | 98,5  | 117  | 177  | 177  | 117  | 177  | 117  | 177  | 117  | 177  | 117  | 177  |      |
|                                          | J    | 20  |     | 23    |       |      |       |       | 35   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | K    | 80  |     | 97,5  |       |      |       |       | 120  |      |      |      |      |      |      |      |      |      |      |      |
|                                          | L    | 120 |     | 156,5 |       |      |       |       | 140  |      |      |      |      |      |      |      |      |      |      |      |
|                                          | M    | *   |     | 53    | 49    | 71   | 49    | 71    | 71   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | N    | 3   | 6   | 52,5  | 83,5  | 67,5 | 98,5  | 67,5  | 73   | 133  | 133  | 73   | 133  | 73   | 133  | 133  | 73   | 73   | 133  | 133  |
|                                          | O    | 12  | 15  | 19    |       |      |       |       | 25   |      |      |      |      |      |      |      |      |      |      |      |
|                                          | P    | 16  |     | 22    |       |      |       |       | 25   |      |      |      |      |      |      |      |      |      |      |      |
| STANDARD CURRENT CONSUMPTION 400 V 50 Hz | [A]  | 0,4 | 0,5 | 0,7   |       | 0,8  |       | 1,0   | 1,0  |      |      | 1,1  |      | 1,4  |      |      | 1,9  |      |      |      |
| OIL VOLUME                               | [L]  | 2   | 3,2 | 5     | 5,5   | 5    | 5,5   | 5     | 10   |      |      |      |      |      |      |      |      |      |      |      |
| WEIGHT WITH OIL                          | [kg] | 13  | 16  | 26    | 30    | 26   | 30    | 26    | 45   | 46   | 46   | 45   | 46   | 45   | 46   | 46   | 45   | 45   | 46   | 46   |
| DUSTGUARD                                | -    | NO  |     | NO    | NO    | YES  | NO    | YES   | YES  |      |      |      |      |      |      |      |      |      |      |      |

The standard current consumption values at 400V 50Hz are considered at a room temperature of 20°C and after the thruster has performed several operations. These values are measured with the piston at the mechanical end position after the maximum stroke has been performed. During the travel of the piston the current consumption increases. At low temperatures these consumption values increase. Dimension values are in mm. We reserve the right to modify measures or construction.

ELECTRICAL FEATURES

|                          |                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motor                    | VAC Motors. 2-pole three-phase asynchronous motor designed according to CEI-34/1. Class H insulation.                                                            |
| Voltages and Frequencies | Standard thruster: 230/400V-50Hz. 3 Phases. Possible voltages: 185-760V at 50Hz, 200-910V at 60Hz.                                                               |
| Terminal Box             | Connector with 6 or 9 poles as needed / Screws M4 for power connection / Screws M5 for grounding connection / Standard input of M25x1.5 / IP65 Protection.       |
| Service                  | Continuous service S1 (100% Ed). / Intermittent service S3 (60% Ed).<br>/ For room temperatures over 50°C the technical values change so a query is recommended. |
| Circuit breaker          | If the power supply to the motor is protected with a circuit breaker, this must be set to twice the nominal value of the current.                                |

MECHANICAL FEATURES

| Assembly position of the thruster                                       |                                                                               |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Vertical assembly: The piston rod in the upper position of the thruster | Horizontal assembly: Terminal board box in the upper position of the thruster |
| Hydraulic fluid for operation of the thruster                           |                                                                               |

The thrusters are supplied with mineral oil for operating in a range of room temperatures between - 25°C and + 50°C (standard oil load). For room temperatures between - 40°C and + 70°C, the thrusters are supplied with a special oil load.

| Characteristics of the oils used: |            | Standard oil | Special oil |
|-----------------------------------|------------|--------------|-------------|
| Colour                            |            | Light Brown  | Red         |
| Density at 15°C, kg/L             |            | 0.856        | 0.850       |
| Cinematic viscosity at:           | 40°C, cSt  | 10           | 14.33       |
|                                   | 100°C, cSt | 2.7          | 3.53        |
| Ingition point                    |            | +150°C       | +220°C      |
| Freezing point                    |            | -39°C        | -55°C       |

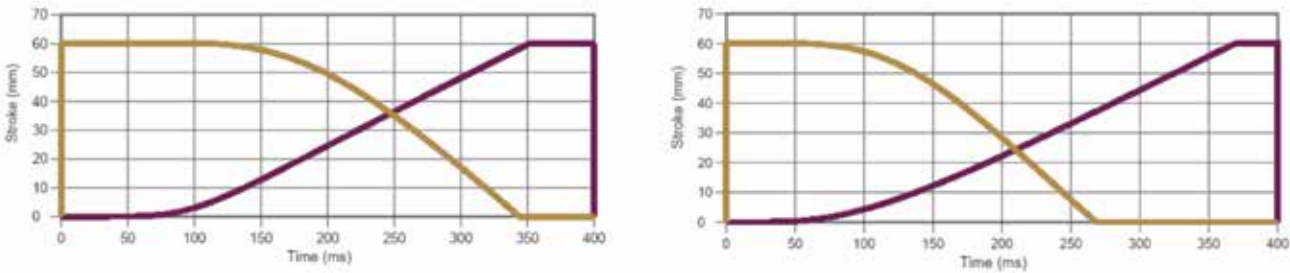
# TIME-STROKE DIAGRAMS

The diagrams obtained are the result of applying the nominal load to the thruster at a room temperature of 20°C.  
Diagram legend:

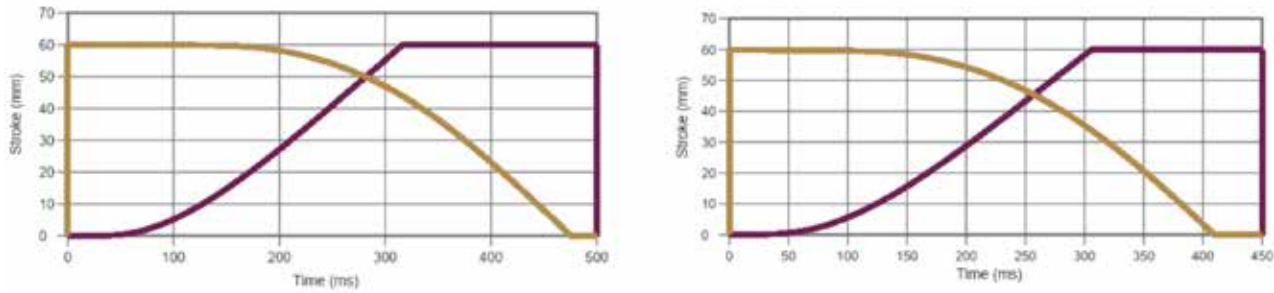
Lifting

Lowering

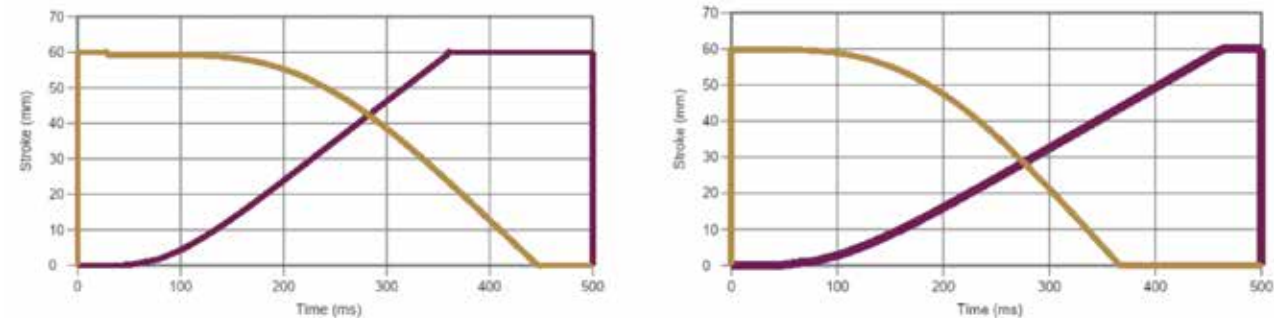
| TH-I     |          |
|----------|----------|
| TH-I-256 | TH-I-356 |



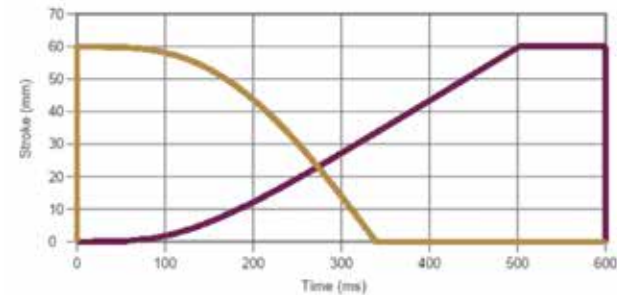
| TH-II     |           |
|-----------|-----------|
| TH-II-506 | TH-II-806 |



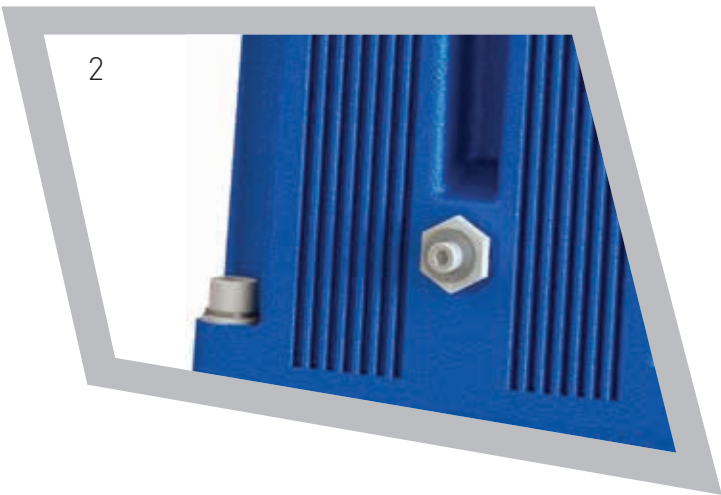
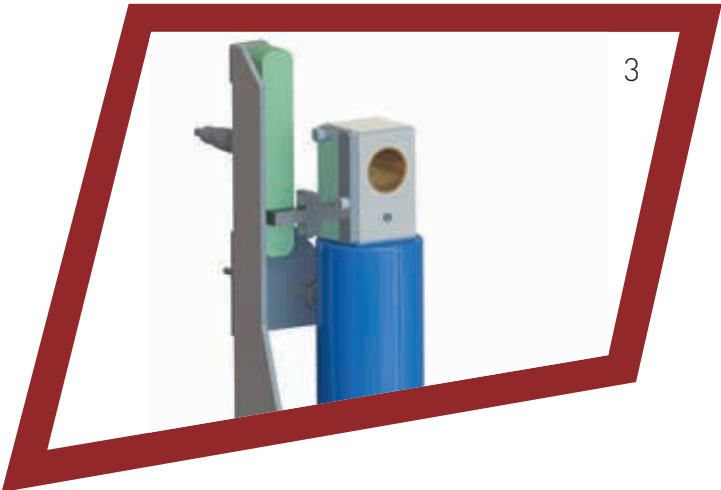
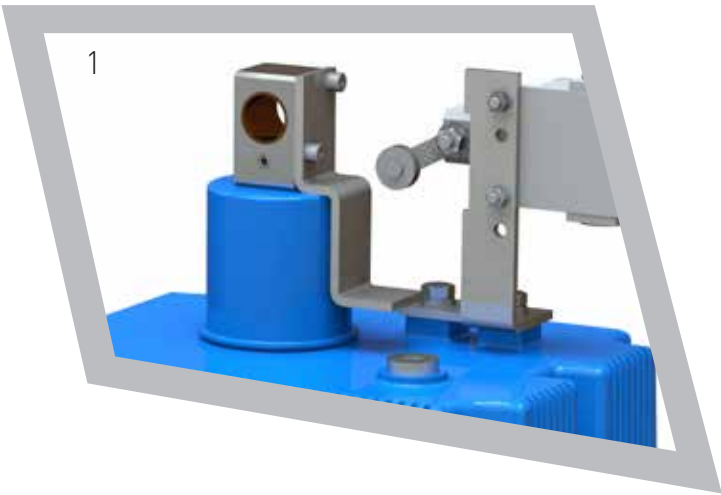
| TH-III      |             |
|-------------|-------------|
| TH-III-1306 | TH-III-2006 |



| TH-III      |  |
|-------------|--|
| TH-III-3006 |  |



# OPTIONS



- 1. Mechanical or inductive open brake switch indicator (CSA).
- 2. Descent valve (VD).
- 3. Thrustor's stroke linear detector (DL).
- 4. Inner spring (C).
- 5. ATEX certification. ( II 2D Ex t IIIC T140°C IP65 Db)
- 6. High room temperatures between +50°C and +70°C (AT).
- 7. Low room temperatures between -25°C and -40°C (BT).

For further information about options, please contact ANTEC's Sales Service

| TH-TYPE | MODEL | VOLTAGE | FREQUENCY | OPTIONS | REMARKS*                                                                                                                                                                                                                                                                                                                     |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|-------|---------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
|         |       |         |           |         | Client requests outside the standard.Example: Special operating room temperature, special paint...                                                                                                                                                                                                                           |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         | CSA: Limit Switch.<br>*DM: Mechanical detector. (Standard detector).<br>*DI: Inductive sensor<br>DL: Thrustor's stroke linear detector (DL)<br>VD: Descent valve.<br>C: Inner spring.<br>ATEX: Product with ATEX certificate.<br>AT: High room temperatures.<br>BT: Low room temperatures.                                   |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         | 50 Hz or 60 Hz.                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         | Operating voltage in triangle and star (Δ and λ).                                                                                                                                                                                                                                                                            |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         | <table><tr><td>255</td><td>256</td><td>356</td><td>506</td></tr><tr><td>806</td><td>812</td><td>1306A</td><td>1312A</td></tr><tr><td>1306</td><td>1310</td><td>1312</td><td>2006</td></tr><tr><td>2012</td><td>3006</td><td>3010</td><td>3012</td></tr><tr><td>3016</td><td>4006</td><td>4008</td><td>4012</td></tr></table> | 255 | 256 | 356 | 506 | 806 | 812 | 1306A | 1312A | 1306 | 1310 | 1312 | 2006 | 2012 | 3006 | 3010 | 3012 | 3016 | 4006 | 4008 | 4012 |
| 255     | 256   | 356     | 506       |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
| 806     | 812   | 1306A   | 1312A     |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
| 1306    | 1310  | 1312    | 2006      |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
| 2012    | 3006  | 3010    | 3012      |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
| 3016    | 4006  | 4008    | 4012      |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         | <table><tr><th>I</th><th>II</th><th>III</th></tr><tr><td></td><td></td><td></td></tr></table>                                                                                                                                                                                                                                | I   | II  | III |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
| I       | II    | III     |           |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |
|         |       |         |           |         |                                                                                                                                                                                                                                                                                                                              |     |     |     |     |     |     |       |       |      |      |      |      |      |      |      |      |      |      |      |      |

\* **REMARKS:** Any clarification made by the client outside the above specifications shall be shown on the order as a remark and will not appear in the denomination of the order unless it involves a modification in the parts that comprise the thruster.

TH-II (806) 230/400 V 50 Hz CSA + AT

ANTEC S.A.U. certifies that all the thruster have been tested on the company's test benches using the corresponding running oil.

# Electromagnetic **disc brakes**

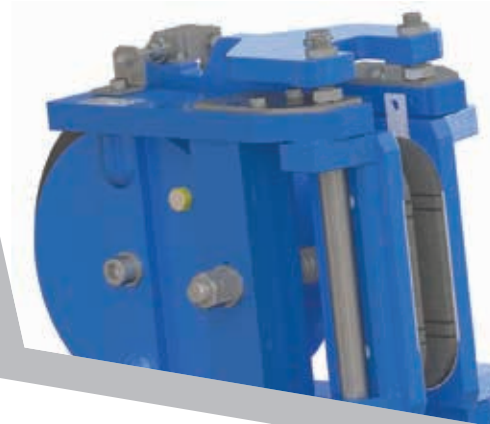
## GENERAL DESCRIPTION



The electromagnetic disc brakes types E and S are fail safe spring applied, power released disc brakes. Brake release is achieved by D.C. operated electromagnet. The E model is used as service brake and the S model as safety brake.

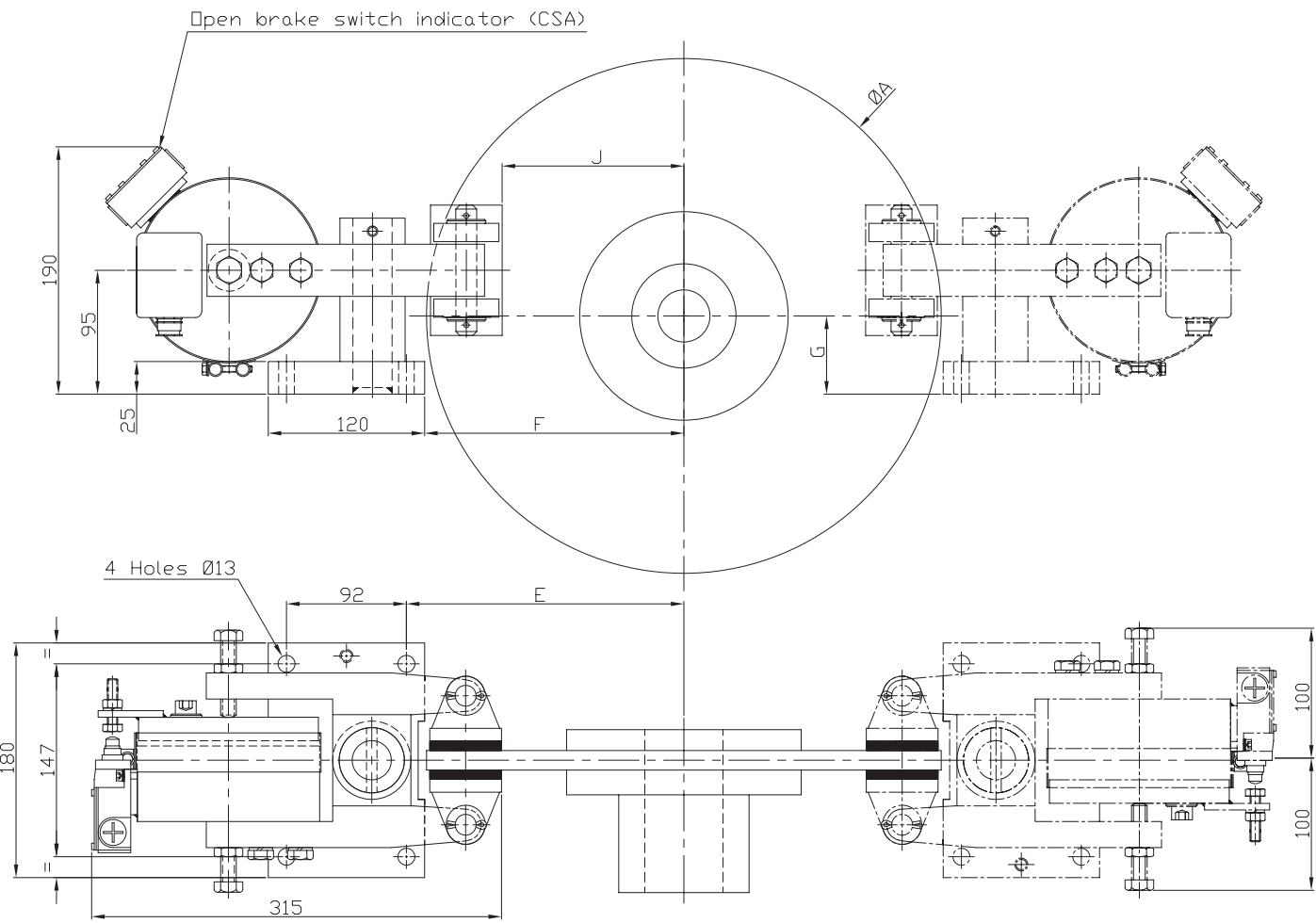
Antec supplies the electronic power units suitable for rectifying and modulating electric current and providing impulse and economy power to activate the brake. Also the power units to be connected to direct current.

Model: 54E RA +CSA





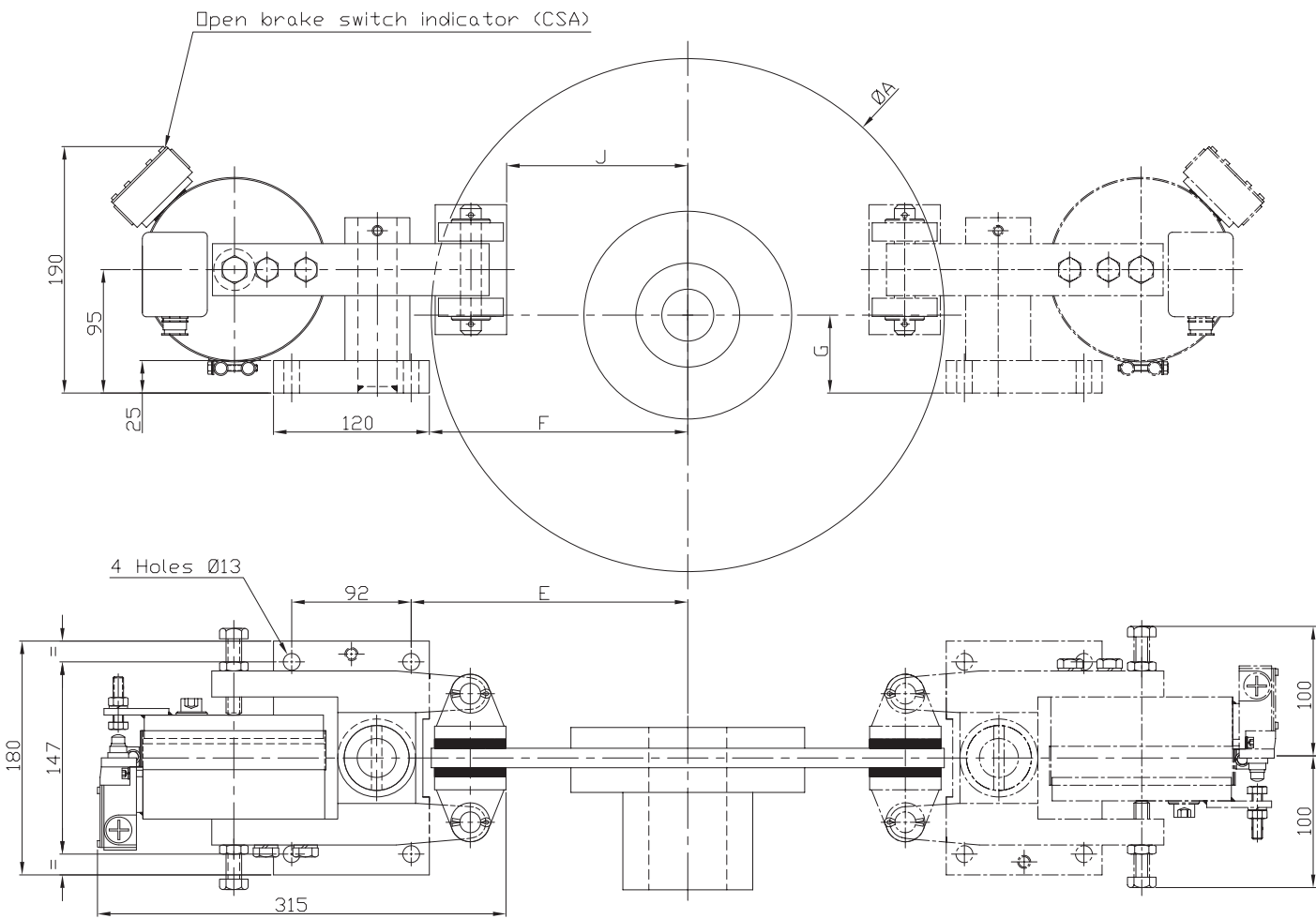
66E



| Disc size<br>[mm] | Dimensions [mm] |     |    |     | Braking torque [Nm] |         | Reaction in the shaft [N] |         | Weight [kg] |
|-------------------|-----------------|-----|----|-----|---------------------|---------|---------------------------|---------|-------------|
|                   | Ø A             | E   | F  | G   | J                   | 1 brake | 2 brakes                  | 1 brake | 2 brakes    |
| 175               | 118             | 104 | 85 | 40  | 65                  | 130     | 895                       | 125     | 18          |
| 220               | 128             | 114 | 85 | 50  | 75                  | 150     | 895                       | 110     |             |
| 260               | 143             | 129 | 85 | 65  | 85                  | 170     | 895                       | 90      |             |
| 315               | 173             | 159 | 75 | 95  | 115                 | 230     | 895                       | 140     |             |
| 355               | 192             | 178 | 70 | 115 | 135                 | 270     | 895                       | 150     |             |
| 395               | 213             | 199 | 60 | 135 | 155                 | 310     | 895                       | 185     |             |
| 445               | 238             | 224 | 50 | 160 | 175                 | 350     | 895                       | 205     |             |
| 495               | 263             | 249 | 45 | 185 | 200                 | 400     | 895                       | 200     |             |
| 550               | 293             | 279 | 45 | 215 | 225                 | 450     | 895                       | 180     |             |
| 625               | 328             | 314 | 25 | 250 | 260                 | 520     | 895                       | 215     |             |

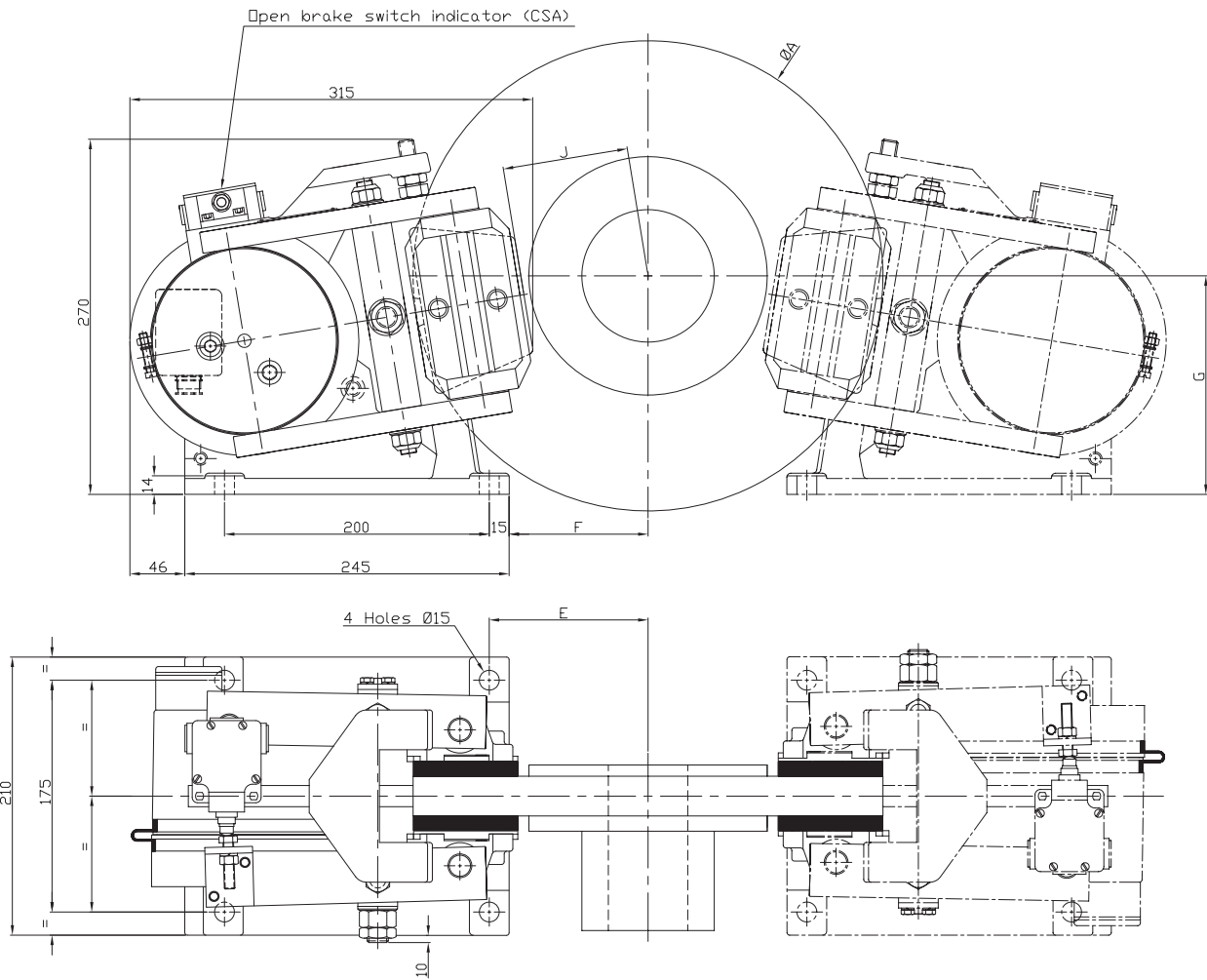
Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

65E



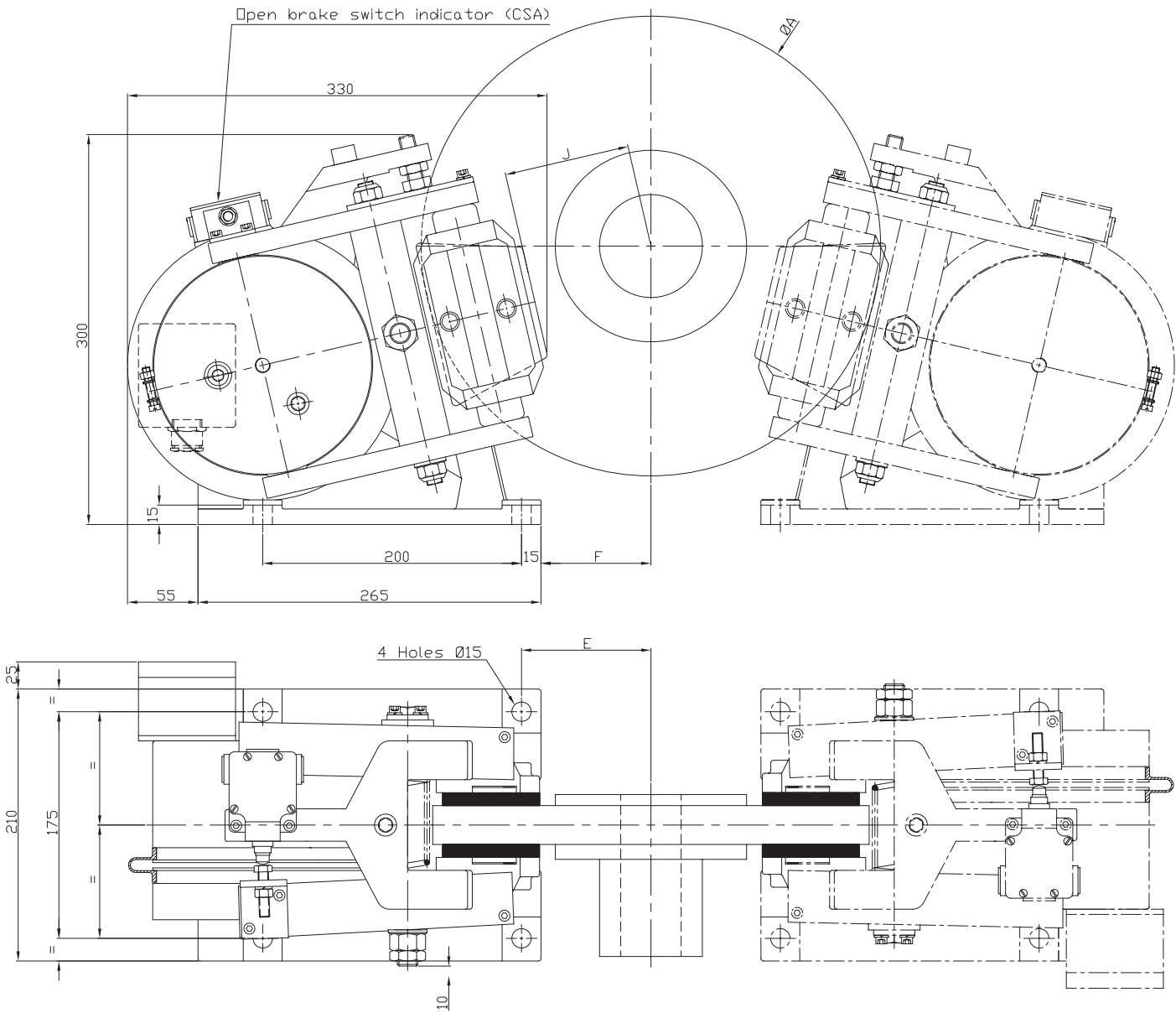
| Disc size<br>[mm] | Dimensions [mm] |     |    |     | Braking torque [Nm] |         | Reaction in the shaft [N] |         | Weight [kg] |
|-------------------|-----------------|-----|----|-----|---------------------|---------|---------------------------|---------|-------------|
|                   | Ø A             | E   | F  | G   | J                   | 1 brake | 2 brakes                  | 1 brake | 2 brakes    |
| 175               | 118             | 104 | 85 | 40  | 145                 | 290     | 1975                      | 270     | 18          |
| 220               | 122             | 108 | 85 | 50  | 165                 | 330     | 1975                      | 240     |             |
| 260               | 143             | 129 | 85 | 65  | 195                 | 390     | 1975                      | 205     |             |
| 315               | 173             | 159 | 75 | 95  | 255                 | 510     | 1975                      | 305     |             |
| 355               | 192             | 178 | 70 | 115 | 295                 | 590     | 1975                      | 335     |             |
| 395               | 213             | 199 | 60 | 135 | 340                 | 680     | 1975                      | 405     |             |
| 445               | 238             | 224 | 50 | 160 | 390                 | 780     | 1975                      | 450     |             |
| 495               | 263             | 249 | 45 | 185 | 440                 | 880     | 1975                      | 445     |             |
| 550               | 293             | 279 | 45 | 215 | 500                 | 1000    | 1975                      | 390     |             |
| 625               | 328             | 314 | 25 | 250 | 575                 | 1150    | 1975                      | 475     |             |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.



| Disc size [mm] |     | Dimensions [mm] |     |     |  | Braking torque [Nm] |          | Reaction in the shaft [N] |          | Weight [kg] |
|----------------|-----|-----------------|-----|-----|--|---------------------|----------|---------------------------|----------|-------------|
| Ø A            | E   | F               | G   | J   |  | 1 brake             | 2 brakes | 1 brake                   | 2 brakes |             |
| 200            | 60  | 45              | 155 | 25  |  | 150                 | 300      | 2050                      | 660      | 35          |
| 220            | 62  | 47              | 155 | 30  |  | 155                 | 310      | 2050                      | 640      |             |
| 240            | 72  | 57              | 157 | 40  |  | 175                 | 350      | 2050                      | 660      |             |
| 260            | 78  | 63              | 157 | 45  |  | 190                 | 380      | 2050                      | 620      |             |
| 280            | 87  | 72              | 160 | 55  |  | 205                 | 410      | 2050                      | 680      |             |
| 315            | 100 | 85              | 160 | 65  |  | 230                 | 460      | 2050                      | 610      |             |
| 355            | 120 | 105             | 165 | 85  |  | 276                 | 552      | 2050                      | 670      |             |
| 395            | 140 | 125             | 170 | 105 |  | 318                 | 636      | 2050                      | 710      |             |
| 445            | 160 | 145             | 180 | 130 |  | 362                 | 724      | 2050                      | 850      |             |
| 495            | 190 | 175             | 185 | 160 |  | 424                 | 848      | 2050                      | 830      |             |
| 550            | 220 | 205             | 195 | 190 |  | 488                 | 976      | 2050                      | 890      |             |
| 625            | 255 | 240             | 205 | 230 |  | 563                 | 1126     | 2050                      | 920      |             |

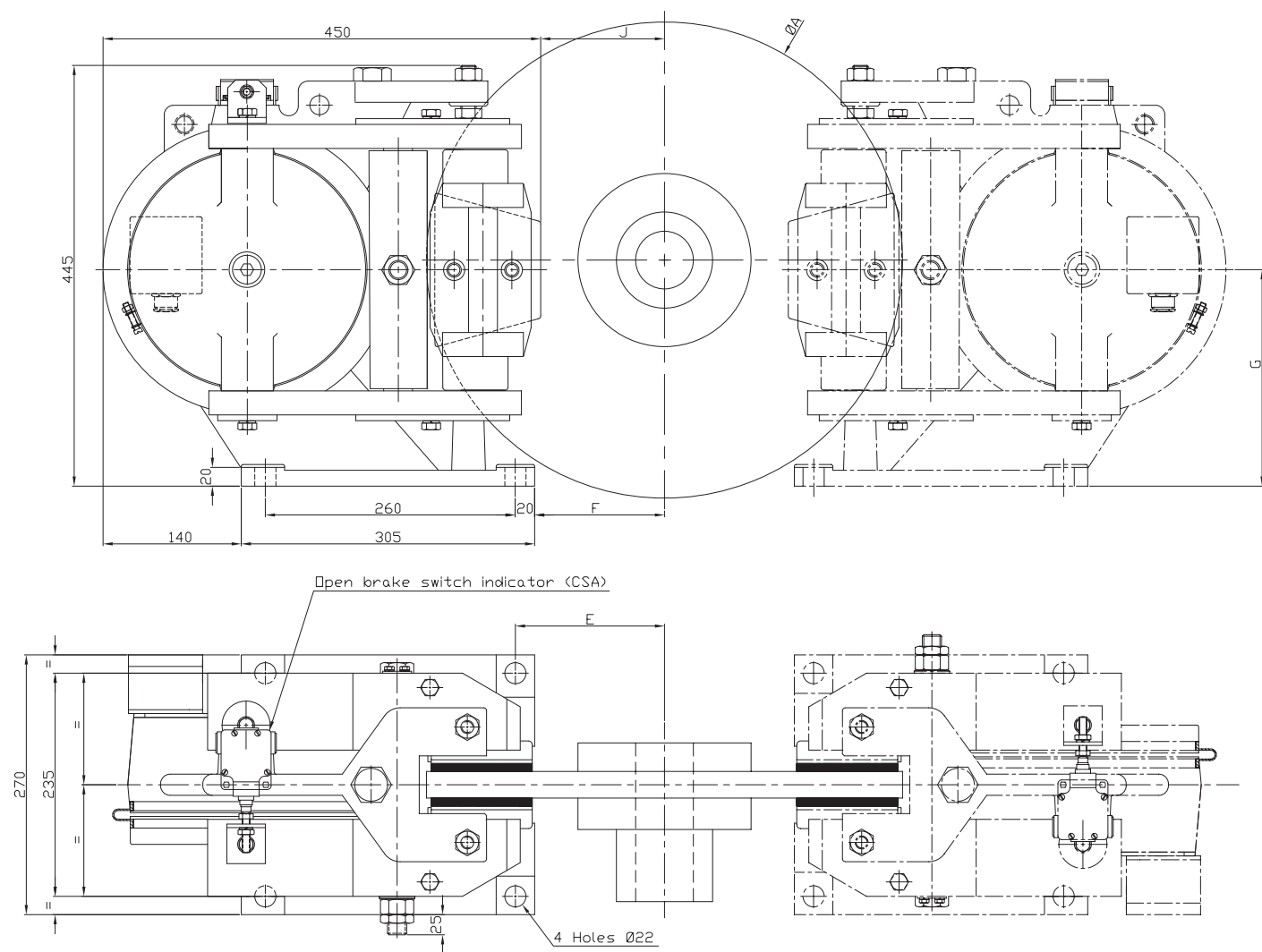
Friction coefficient  $\mu=0,4$ . Dimension values are in mm.



| Disc size [mm] |     | Dimensions [mm] |     |     |  | Braking torque [Nm] |          | Reaction in the shaft [N] |          | Weight [kg] |
|----------------|-----|-----------------|-----|-----|--|---------------------|----------|---------------------------|----------|-------------|
| Ø A            | E   | F               | G   | J   |  | 1 brake             | 2 brakes | 1 brake                   | 2 brakes |             |
| 315            | 80  | 65              | 210 | 70  |  | 490                 | 980      | 4090                      | 3250     | 46          |
| 355            | 100 | 85              | 215 | 95  |  | 570                 | 1140     | 4090                      | 3070     |             |
| 395            | 120 | 105             | 220 | 115 |  | 650                 | 1300     | 4090                      | 2940     |             |
| 445            | 145 | 130             | 225 | 140 |  | 760                 | 1520     | 4090                      | 2760     |             |
| 495            | 170 | 155             | 230 | 165 |  | 760                 | 1520     | 4090                      | 2630     |             |
| 550            | 195 | 180             | 240 | 190 |  | 970                 | 1940     | 4090                      | 2670     |             |
| 625            | 230 | 215             | 250 | 225 |  | 1120                | 2240     | 4090                      | 2620     |             |
| 795            | 314 | 299             | 260 | 310 |  | 1460                | 2920     | 4090                      | 2240     |             |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

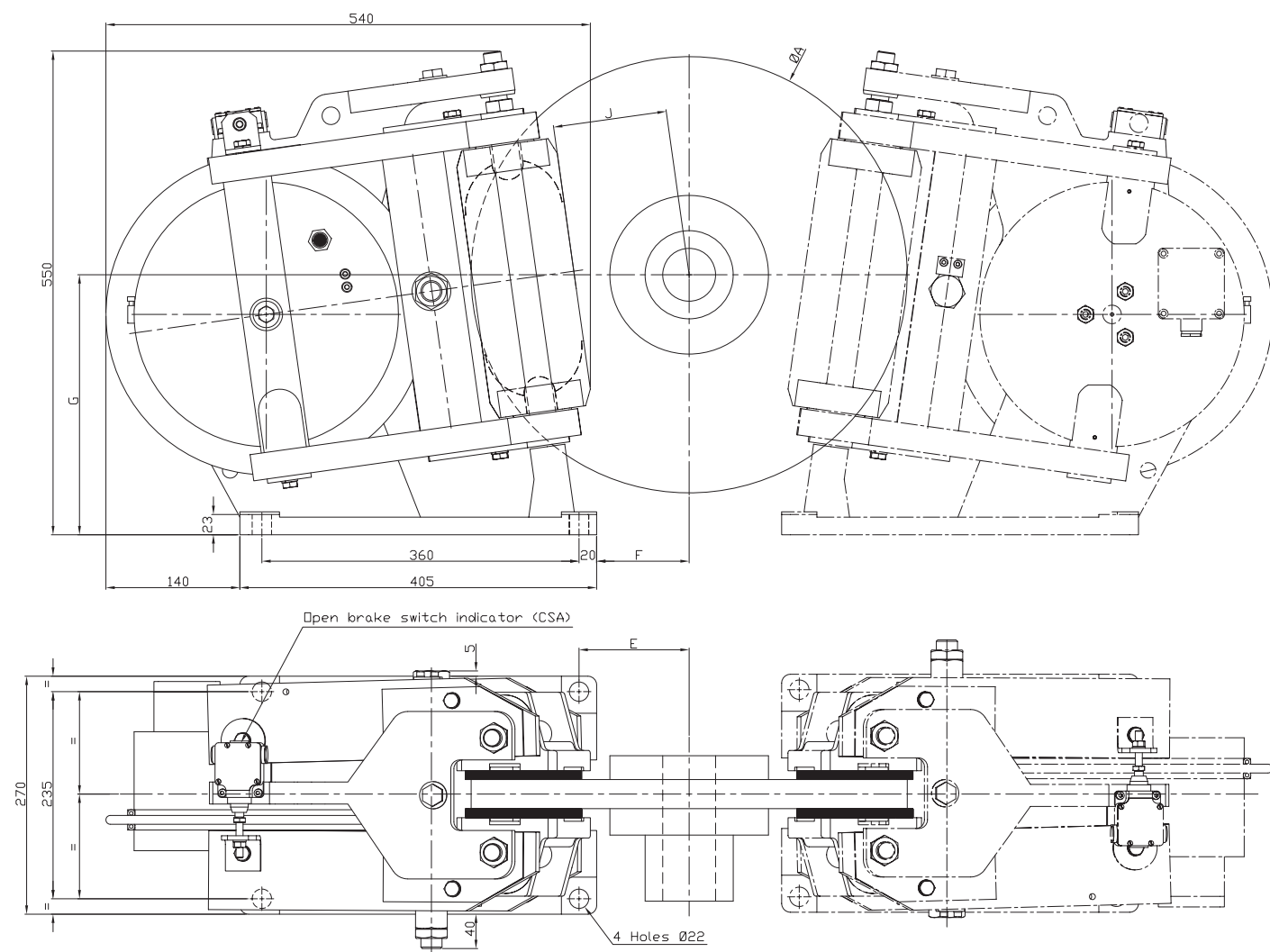
## 4E



| Disc size [mm] | Dimensions [mm] |     |     |     | Braking torque (Nm) |          | Reaction in the shaft [N] |          | Weight [kg] |
|----------------|-----------------|-----|-----|-----|---------------------|----------|---------------------------|----------|-------------|
| Ø A            | E               | F   | G   | J   | 1 brake             | 2 brakes | 1 brake                   | 2 brakes |             |
| 445            | 130             | 110 | 225 | 100 | 1350                | 2700     | 8230                      | 0        | 110         |
| 495            | 155             | 135 | 235 | 125 | 1560                | 3120     | 8230                      | 870      |             |
| 550            | 180             | 160 | 240 | 150 | 1770                | 3540     | 8230                      | 1150     |             |
| 625            | 215             | 195 | 250 | 185 | 2060                | 4120     | 8230                      | 1640     |             |
| 705            | 255             | 235 | 260 | 225 | 2400                | 4800     | 8230                      | 1980     |             |
| 795            | 295             | 275 | 275 | 265 | 2740                | 5480     | 8230                      | 2470     |             |

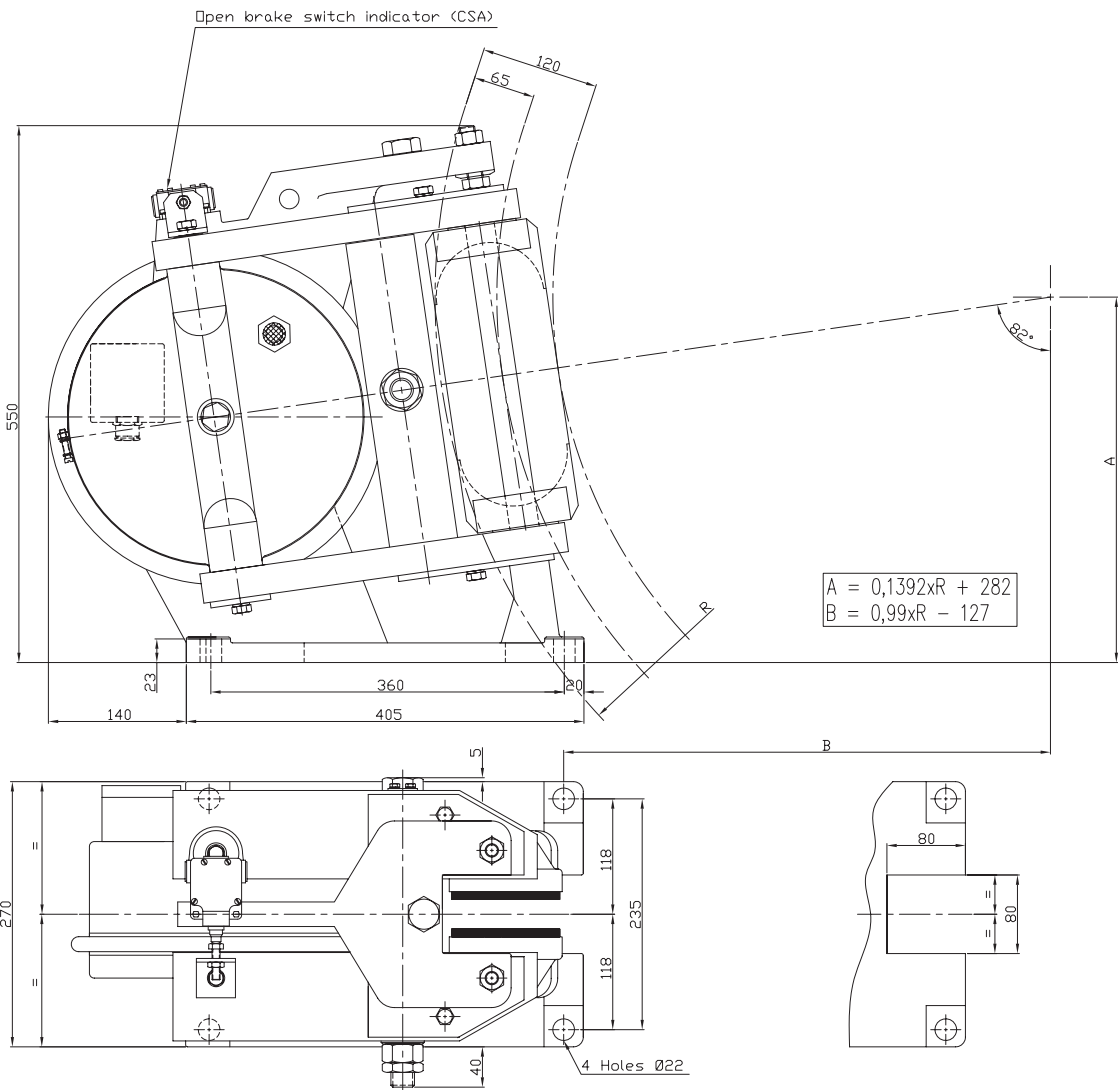
Friction coefficient  $\mu=0,4$ . Dimension values are in mm.

### 3E



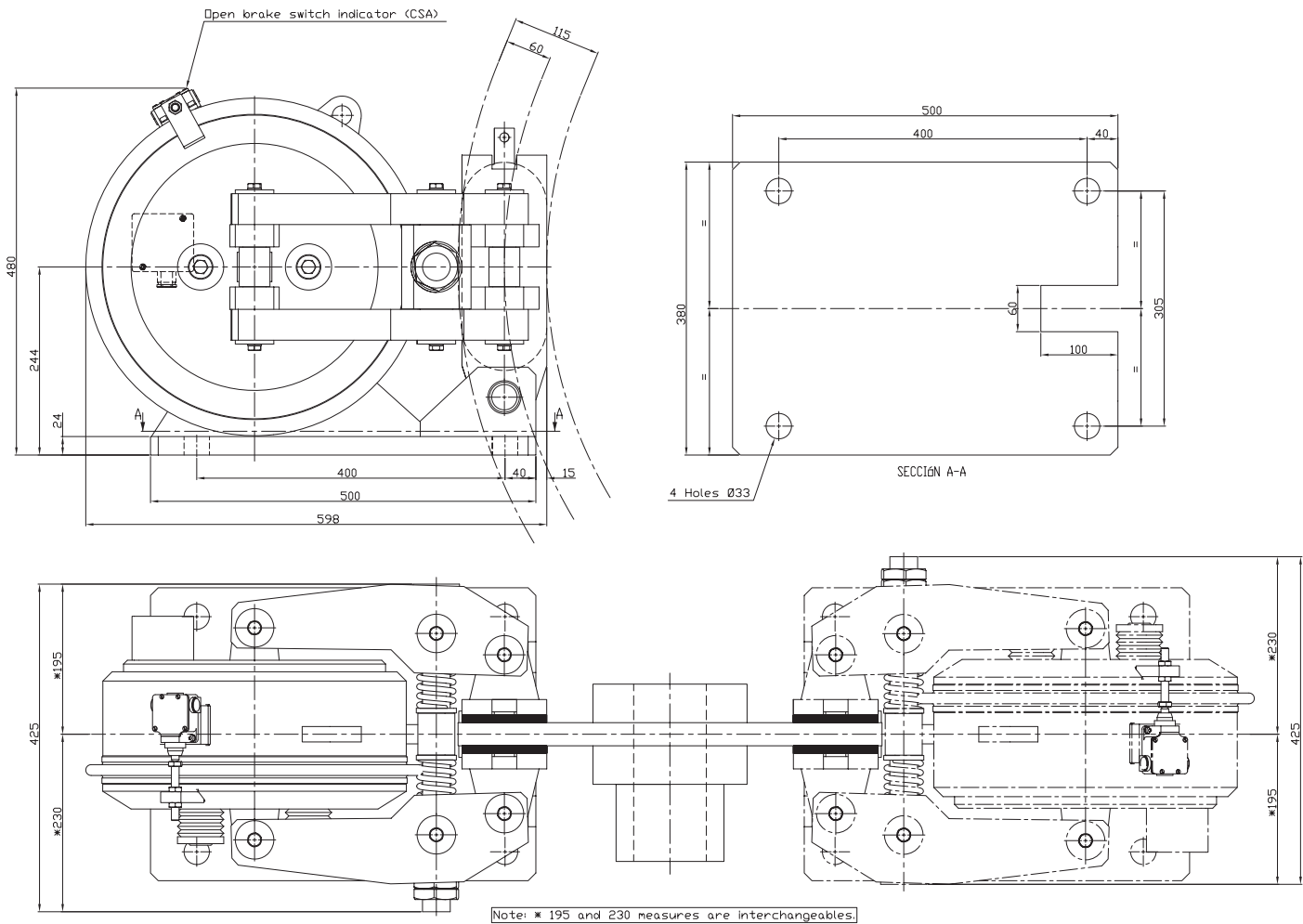
| Disc size [mm] | Dimensions [mm] |     |     |     | Braking torque [Nm] |          | Reaction in the shaft [N] |          | Weight [kg] |
|----------------|-----------------|-----|-----|-----|---------------------|----------|---------------------------|----------|-------------|
| Ø A            | E               | F   | G   | J   | 1 brake             | 2 brakes | 1 brake                   | 2 brakes |             |
| 445            | 100             | 80  | 285 | 100 | 2480                | 4960     | 15250                     | 1130     | 165         |
| 495            | 125             | 105 | 295 | 125 | 2860                | 5720     | 15250                     | 640      |             |
| 550            | 150             | 130 | 305 | 150 | 3250                | 6500     | 15250                     | 2000     |             |
| 625            | 185             | 165 | 315 | 185 | 3790                | 7580     | 15250                     | 2940     |             |
| 705            | 225             | 205 | 330 | 230 | 4420                | 8840     | 15250                     | 4090     |             |
| 795            | 265             | 245 | 345 | 270 | 5060                | 10120    | 15250                     | 4950     |             |
| 995            | 370             | 350 | 340 | 375 | 6640                | 13280    | 15250                     | 3430     |             |

Friction coefficient  $\mu=0,4$ . Dimension values are in mm.



| Disc Ø<br>[mm] | Disc Thickness<br>[mm] | Dimensions [mm] |       | Braking Force<br>[N] | Braking Torque<br>[Nm] | Power Impulse<br>[W] | Economy<br>[W] | Maximum Lineal Speed of the Disc<br>[m/s] | Weight<br>[kg] | Reaction Time [s] |       |
|----------------|------------------------|-----------------|-------|----------------------|------------------------|----------------------|----------------|-------------------------------------------|----------------|-------------------|-------|
|                |                        | A               | B     |                      |                        |                      |                |                                           |                | Release           | Brake |
| 445            | 30                     | 313,0           | 93,3  | 20000                | 3150                   | 3000                 | 80             | 30                                        | 165            | 0,6               | 0,1   |
| 495            |                        | 316,5           | 118,0 |                      | 3650                   |                      |                |                                           |                |                   |       |
| 550            |                        | 320,3           | 145,3 |                      | 4200                   |                      |                |                                           |                |                   |       |
| 625            |                        | 325,5           | 182,4 |                      | 4950                   |                      |                |                                           |                |                   |       |
| 705            |                        | 331,1           | 222,0 |                      | 5750                   |                      |                |                                           |                |                   |       |
| 795            |                        | 337,3           | 266,5 |                      | 6650                   |                      |                |                                           |                |                   |       |
| 995            |                        | 351,3           | 365,5 |                      | 8650                   |                      |                |                                           |                |                   |       |

Friction coefficient μ=0,4. Dimension values are in mm.

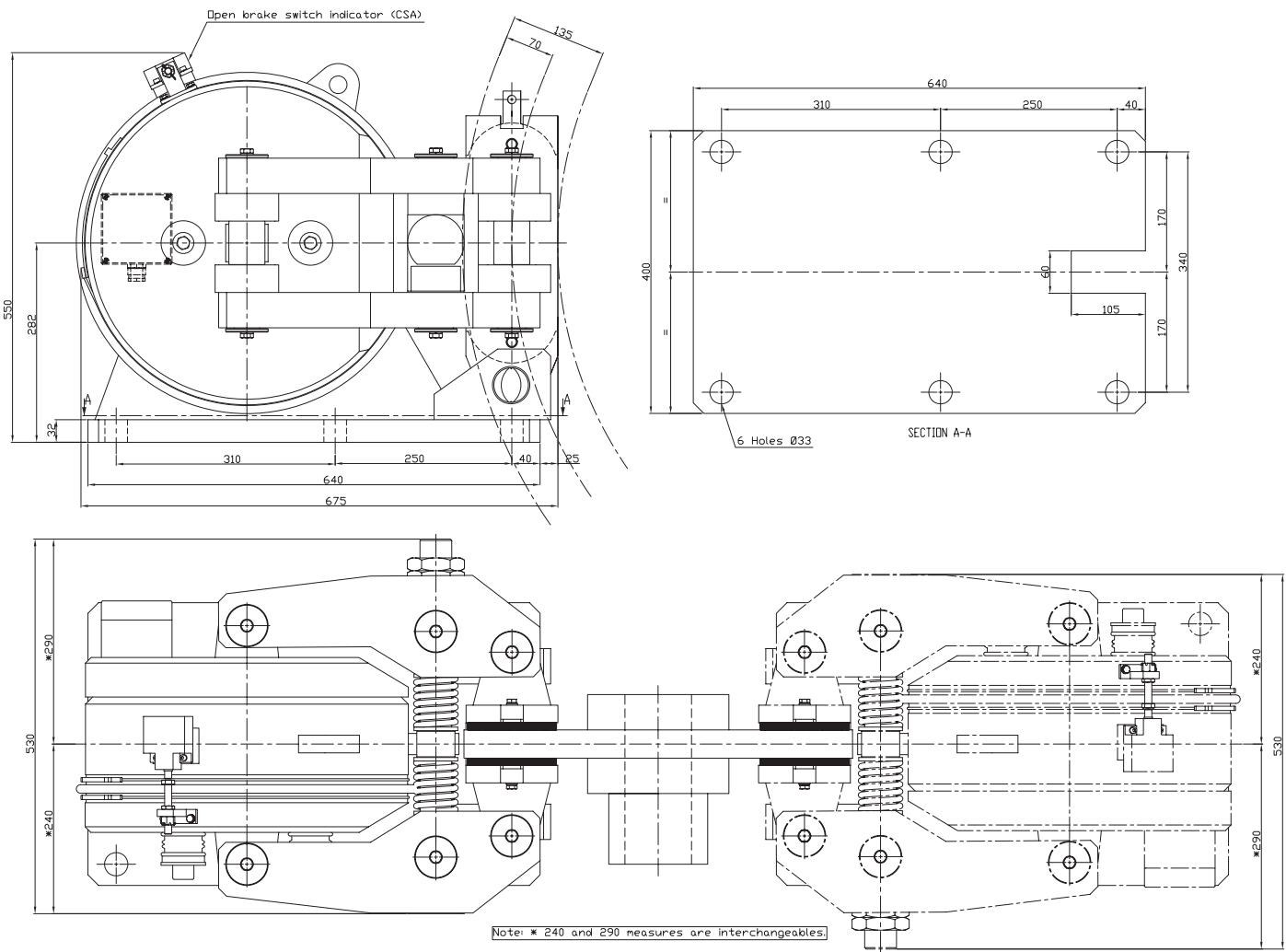


| Disc Ø<br>[mm] | Disc Thickness<br>[mm] | Braking Force [N] |          | Braking Torque [Nm] |          | Power Impulse<br>[W] | Economy<br>[W] | Maximum Lineal Speed of the Disc<br>[m/s] | Weight<br>[kg] | Reaction Time [s] |       |
|----------------|------------------------|-------------------|----------|---------------------|----------|----------------------|----------------|-------------------------------------------|----------------|-------------------|-------|
|                |                        | 1 brake           | 2 brakes | 1 brake             | 2 brakes |                      |                |                                           |                | Release           | Brake |
| 445            | 30                     | 49000             | 98000    | 7962,5              | 15925    | 5000                 | 200            | 30                                        | 208            | 0,8               | 0,2   |
| 495            |                        |                   |          | 9187,5              | 18375    |                      |                |                                           |                |                   |       |
| 550            |                        |                   |          | 10535               | 21070    |                      |                |                                           |                |                   |       |
| 625            |                        |                   |          | 12372,5             | 24745    |                      |                |                                           |                |                   |       |
| 705            |                        |                   |          | 14332,5             | 28665    |                      |                |                                           |                |                   |       |
| 795            |                        |                   |          | 16537,5             | 33075    |                      |                |                                           |                |                   |       |
| 995            |                        |                   |          | 21437,5             | 42875    |                      |                |                                           |                |                   |       |

Friction coefficient μ=0,4. Dimension values are in mm.



S-0T



CONTROL UNITS: BEC-3 AND BEP-3

DESCRIPTION AND OPERATION

- A power supply suitable for rectifying and modulating electric current and providing sufficient pulse and economy power to activate the calipers.
- Instant caliper drop and braking.
- Available in two versions: unprotected, on an IP-00 mounting plate, or presented in an IP-66 protective cabinet.

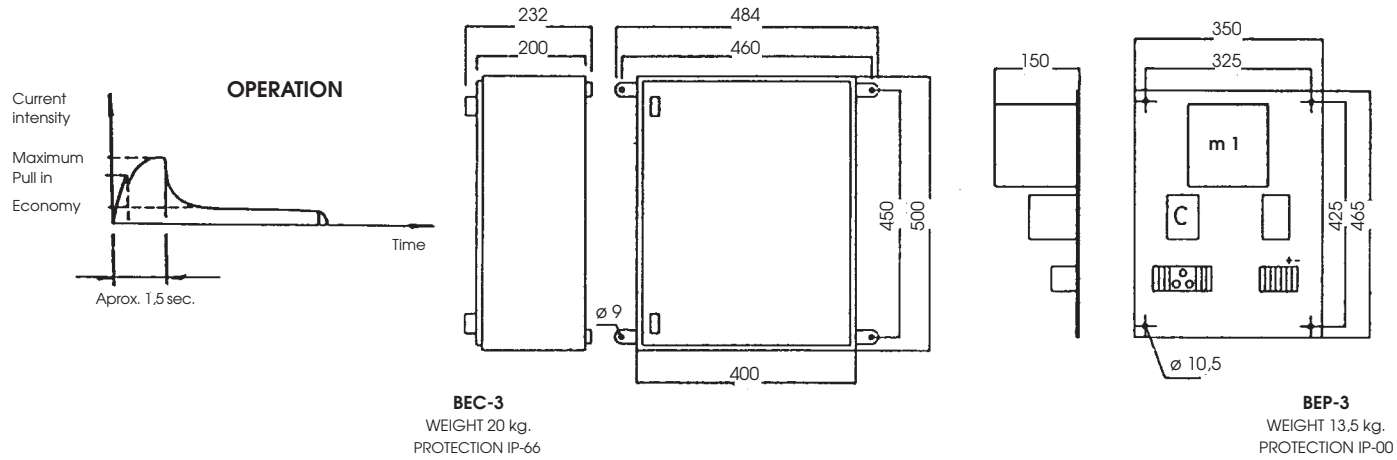
CHARACTERISTICS

- Single phase connection voltage: Normal 220 / 380 / 400 / 420 / 440 / 460 / 480 V. (50 or 60 Hz.)
- Other voltages and frecuencies upon request.
- Ambient temperature range: (-20°C ÷ +60°C.)

OPTIONS

- Temperature control.
- Voltage indicators.

SIZE, WEIGHT AND PROTECTION



| Disc Ø<br>[mm] | Disc<br>Thickness<br>[mm] | Braking Force<br>[N] |          | Braking Torque<br>[Nm] |          | Power<br>Impulse<br>[W] | Economy<br>[W] | Maximum<br>Lineal Speed<br>of the Disc<br>[m/s] | Weight<br>[kg] | Reaction Time<br>[s] |       |
|----------------|---------------------------|----------------------|----------|------------------------|----------|-------------------------|----------------|-------------------------------------------------|----------------|----------------------|-------|
|                |                           | 1 brake              | 2 brakes | 1 brake                | 2 brakes |                         |                |                                                 |                | Release              | Brake |
| 445            | 30                        | 90000                | 180000   | 13725                  | 27450    | 7000                    | 300            | 30                                              | 500            | 0,8                  | 0,2   |
| 495            |                           |                      |          | 15975                  | 31950    |                         |                |                                                 |                |                      |       |
| 550            |                           |                      |          | 18450                  | 36900    |                         |                |                                                 |                |                      |       |
| 625            |                           |                      |          | 21825                  | 43650    |                         |                |                                                 |                |                      |       |
| 705            |                           |                      |          | 25425                  | 50850    |                         |                |                                                 |                |                      |       |
| 795            |                           |                      |          | 29475                  | 58950    |                         |                |                                                 |                |                      |       |
| 995            |                           |                      |          | 38475                  | 76950    |                         |                |                                                 |                |                      |       |

APPLICATIONS

| Calipers type | Calipers<br>quantity | Max.<br>cycles/hour | Power (w) |         | Caliper supply<br>cable resistance<br>(Ω) | Primary fuses |        |
|---------------|----------------------|---------------------|-----------|---------|-------------------------------------------|---------------|--------|
|               |                      |                     | Impulse   | Economy |                                           | 220 V.        | 380 V. |
| 65 E or 5 E   | 1                    | 1500                | 900       | 30      | 0,2                                       | 6 A.          | 4 A.   |
|               | 2                    | 1000                | 1800      | 60      | 0,2                                       | 6 A.          | 4 A.   |
| 54 E OR 4 E   | 1                    | 1000                | 1200      | 40      | 0,1                                       | 10 A.         | 6 A.   |
|               | 2                    | 500                 | 2400      | 80      | 0,1                                       | 10 A.         | 6 A.   |

Friction coefficient μ=0,4. Dimension values are in mm.

CONTROL UNITS: BEC-2 AND BEP-2

DESCRIPTION AND OPERATION

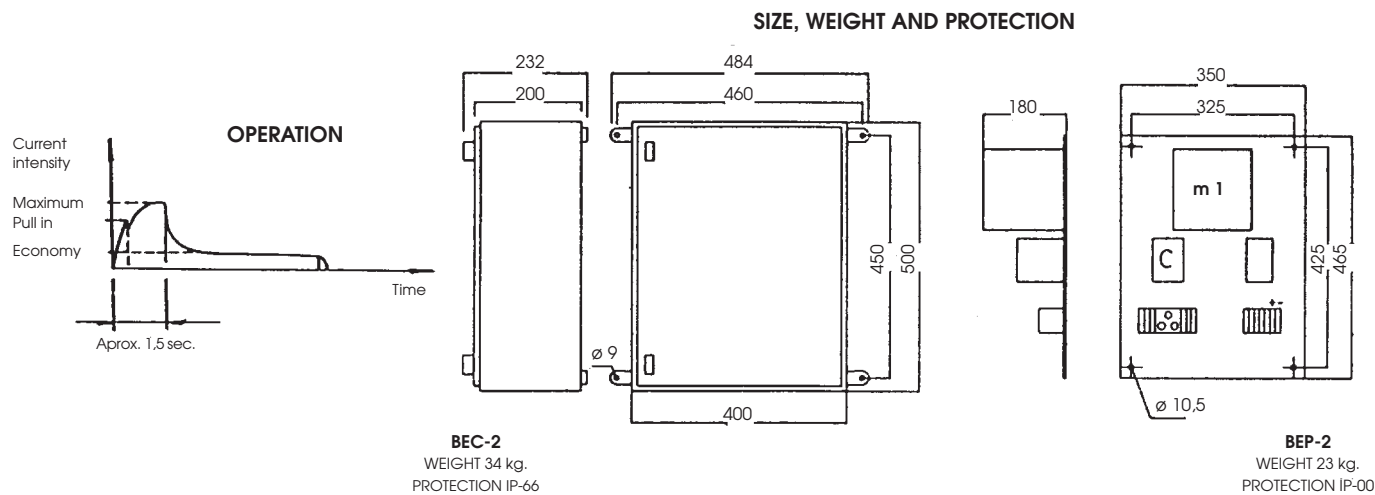
- A power supply suitable for rectifying and modulating electric current and providing sufficient pulse and economy power to activate the calipers.
- Instant caliper drop and braking.
- Available in two versions: unprotected, on an IP-00 mounting plate (BEP), or presented in an IP-66 protective cabinet (BEC).

CHARACTERISTICS

- Single phase connection voltage: Normal 220 / 380 / 400 / 420 / 440 / 460 / 480 V. (50 or 60 Hz.)
- Other voltages and frecuencies upon request.
- Ambient temperature range: [-20°C ÷ +60°C.]

OPTIONS

- Temperature control.
- Voltage indicators.



APPLICATIONS

| Calipers type | Calipers quantity | Max. cycles/hour | Power (w) |         | Caliper supply cable resistance (Ω) | Primary fuses |        |
|---------------|-------------------|------------------|-----------|---------|-------------------------------------|---------------|--------|
|               |                   |                  | Impulse   | Economy |                                     | 220 V.        | 380 V. |
| 54 E or 4 E   | 1                 | 1200             | 1200      | 40      | 0,1                                 | 10 A.         | 6 A.   |
|               | 2                 | 1000             | 2400      | 80      | 0,1                                 | 10 A.         | 6 A.   |
| 3 E OR S2     | 1                 | 750              | 3000      | 80      | 0,1                                 | 16 A.         | 10 A.  |
|               | 2                 | 360              | 6000      | 160     | 0,05                                | 25 A.         | 16 A.  |
| S1 T          | 1                 | 360              | 5000      | 160     | 0,05                                | 25 A.         | 16 A.  |

CONTROL UNITS: BEC-1 AND BEP-1

DESCRIPTION AND OPERATION

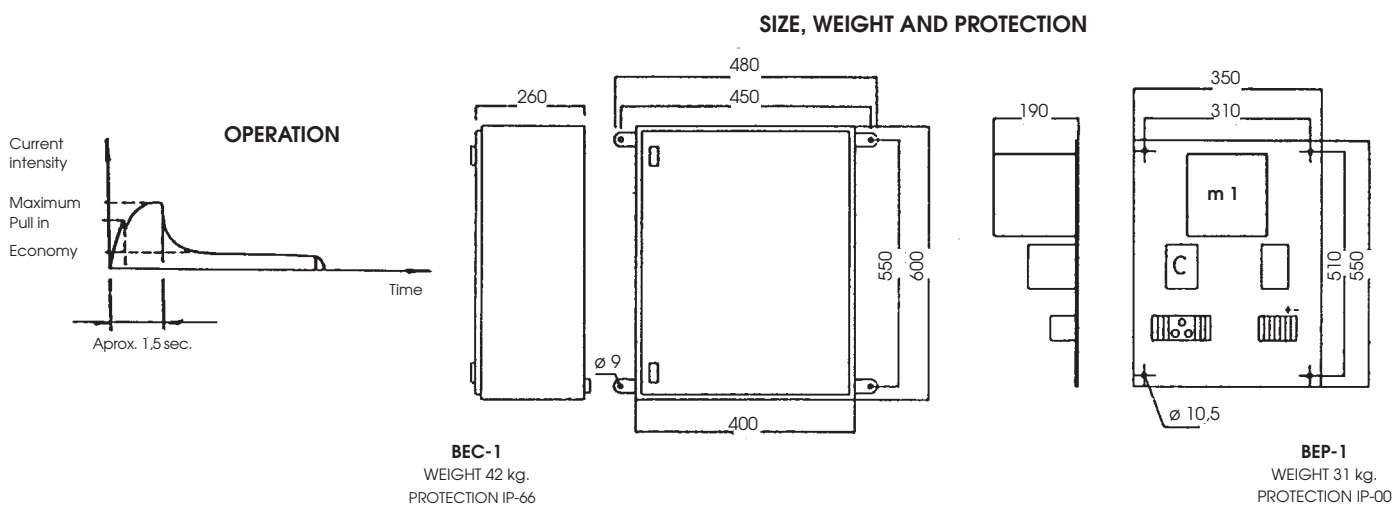
- A power supply suitable for rectifying and modulating electric current and providing sufficient pulse and economy power to activate the calipers.
- Instant caliper drop and braking.
- Available in two versions: unprotected, on an IP-00 mounting plate (BEP), or presented in an IP-66 protective cabinet (BEC).

CHARACTERISTICS

- Single phase connection voltage: Normal 220 / 380 / 400 / 420 / 440 / 460 / 480 V. (50 or 60 Hz.)
- Other voltages and frecuencies upon request.
- Ambient temperature range: [-20°C ÷ +60°C.]

OPTIONS

- Temperature control.
- Voltage indicators.



APPLICATIONS

| Calipers type | Calipers quantity | Max. cycles/hour | Power (w) |         | Caliper supply cable resistance (Ω) | Primary fuses |        |
|---------------|-------------------|------------------|-----------|---------|-------------------------------------|---------------|--------|
|               |                   |                  | Impulse   | Economy |                                     | 220 V.        | 380 V. |
| S0 T          | 1                 | 300              | 7000      | 300     | 0,1                                 | 40 A.         | 20 A.  |
|               | 2                 | 150              | 14000     | 600     | 0,05                                | 63 A.         | 40 A.  |

# CONTROL UNITS: AP-6 AND AC-6

## DESCRIPTION AND OPERATION

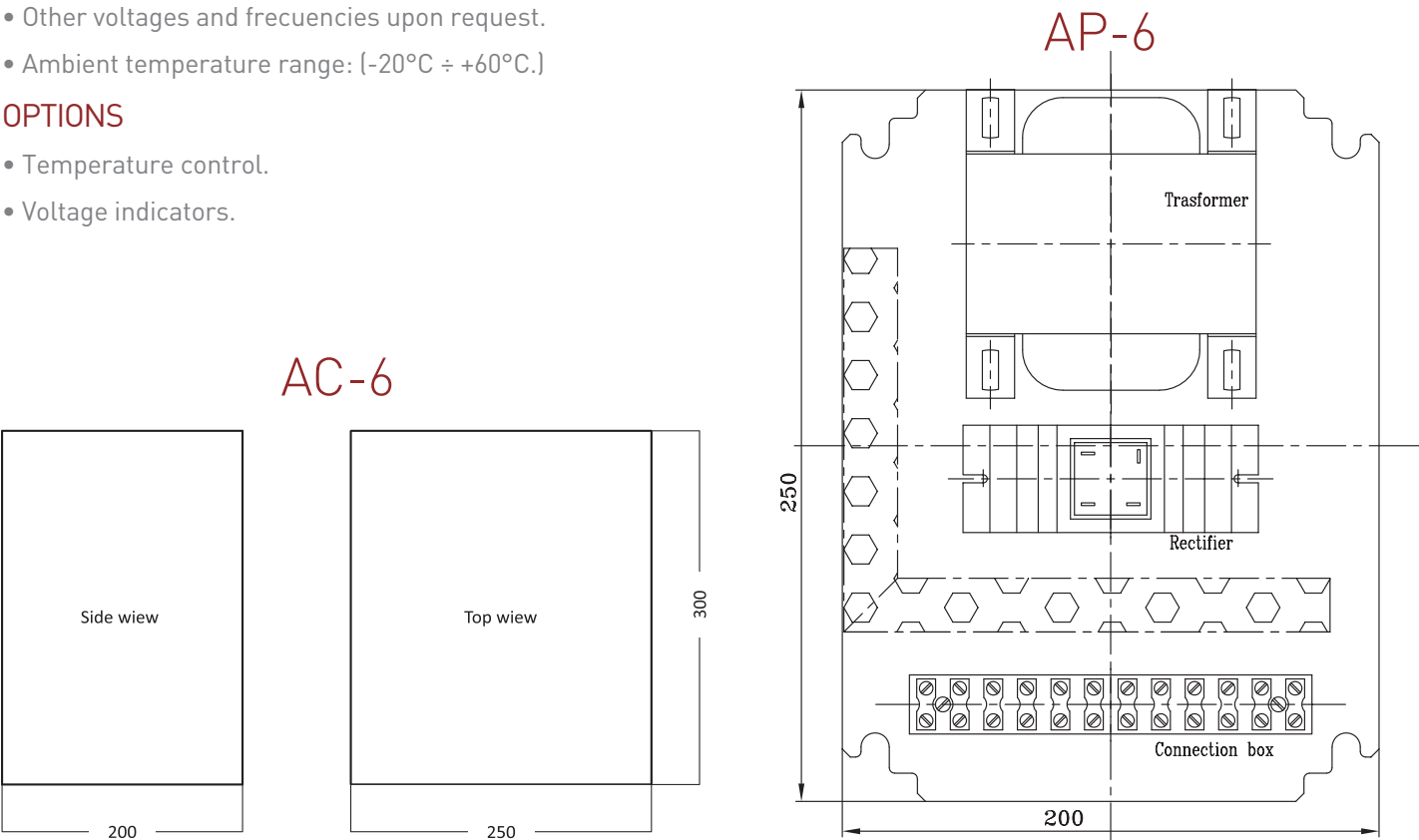
- A power supply suitable for rectifying and modulating electric current and providing sufficient pulse and economy power to activate the 66 E calipers (AC).
- Instant caliper drop and braking.
- Available in two versions: unprotected, on an IP-00 mounting plate, or presented in an IP-66 protective cabinet.

## CHARACTERISTICS

- Single phase connection voltage: Normal 220 / 380 / 400 / 420 / 440 / 460 / 480 V. (50 or 60 Hz.)
- Other voltages and frecuencies upon request.
- Ambient temperature range: [-20°C ÷ +60°C.]

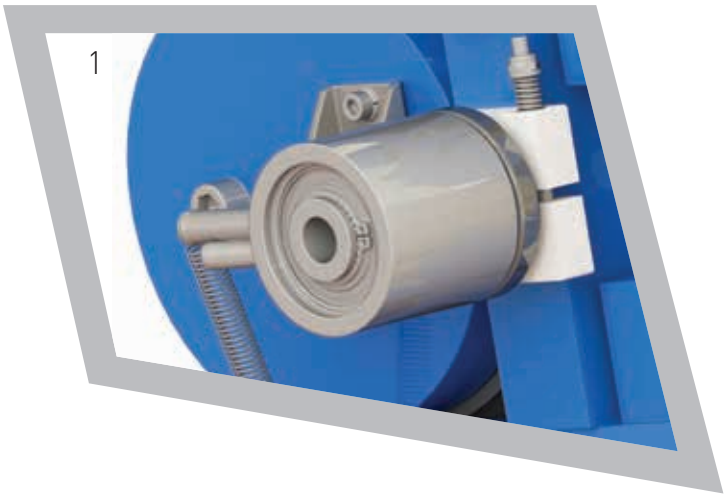
## OPTIONS

- Temperature control.
- Voltage indicators.

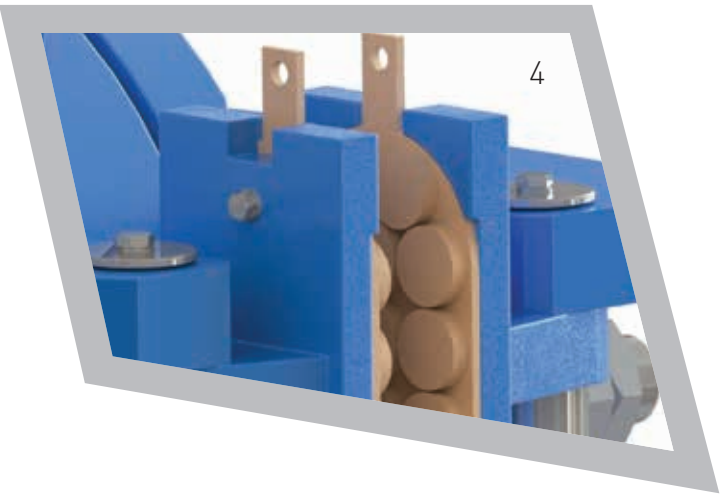
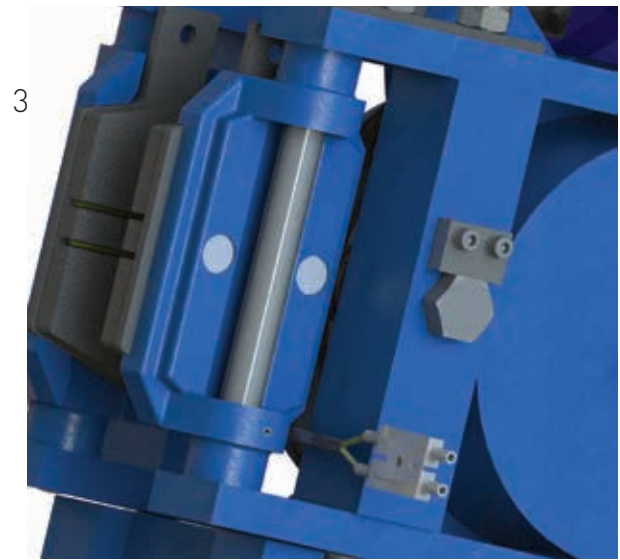
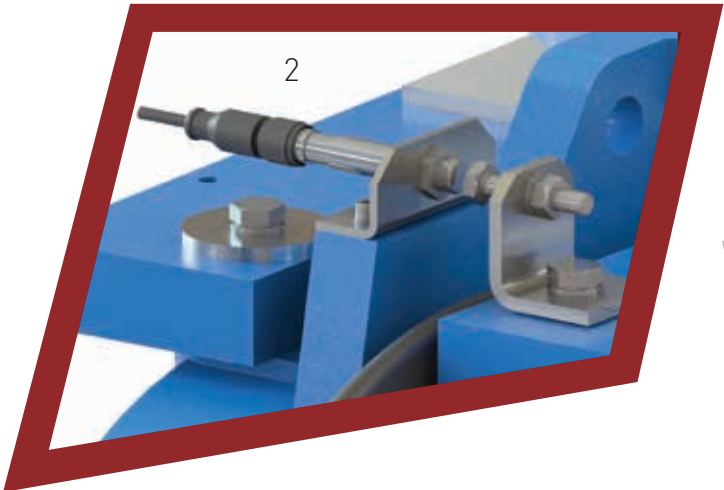


| Calipers type | Calipers quantity | Max. cycles/hour | Power (w)  | Caliper supply cable resistance (Ω) | Primary fuses |        |
|---------------|-------------------|------------------|------------|-------------------------------------|---------------|--------|
|               |                   |                  |            |                                     | 220 V.        | 380 V. |
| 66 E          | 1<br>2            | 2000             | 200<br>380 | 0,5                                 | 2,5 A.        | 1,5 A. |

# OPTIONS



1. Automatic lining wear adjustment (RA).
2. Mechanical or inductive open switch indicator (CSA).
3. Cable or inductive lining wear indicator (DD).
4. Sintered metal brake linings (GS).
5. Special paint (PE).



For further information about options, please contact ANTEC's Sales Service

# Electromagnetic drum brakes

## GENERAL DESCRIPTION



Model: LAM-16" CSA

The LDM, LAM and LFM brakes are spring applied, electrically released electromagnetic drum brakes. The brake's release is achieved by DC operated magnets. The main components of a brake set are:

- 1.** The mechanical parts, manufactured in steel. They permit the easy adjustment of the brake torque.
- 2.** The magnet, with housing and armature, made out of laminated steel. Inside the housing is the coil, which is encapsulated in epoxy resin.

These brakes are equipped with stainless steel pins and self lubricating bushes at the pivot points. Brake shoes are manufactured in cast aluminum and linings are asbestos free. The brakes are supplied according to the following standards:

DIN-15.435 = LDM brakes and related products.

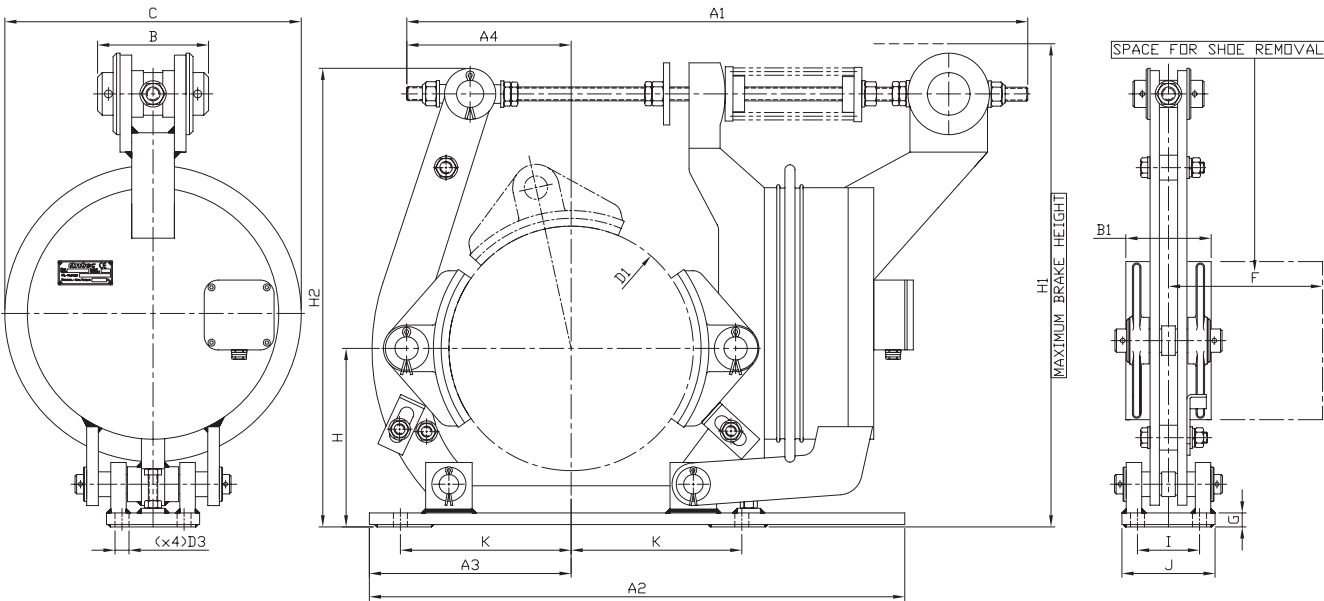
AISE N.º 11 = LAM brakes and related products.

S-472A = LFM brakes and related products.





LDM (German Standard)

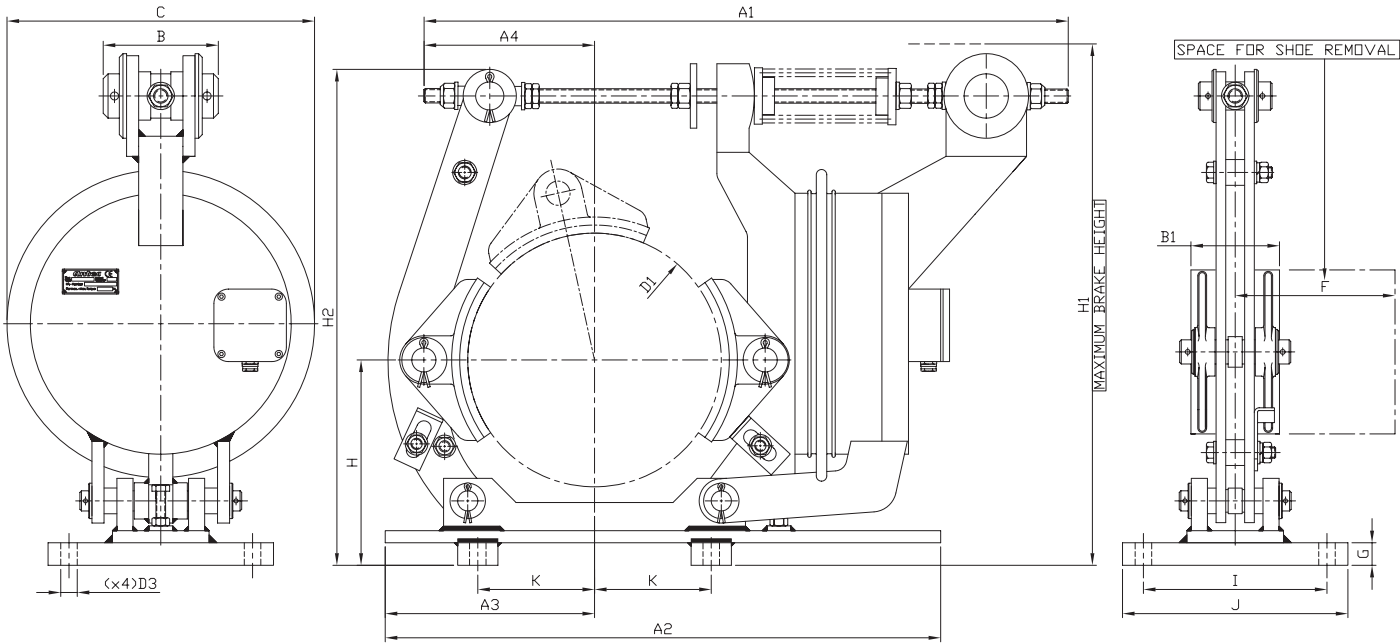


| LDM                 |                 |
|---------------------|-----------------|
| Continuous duty     | 500 cycles/hour |
| Intermittent duty   | 600 cycles/hour |
| Isolation class F   | 155 °C          |
| Protection class    | IP-65           |
| Ambient temperature | -20 °C, +40 °C  |

| BRAKE TYPE | TORQUE (Nm) | POWER (W) 0°C | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |      |     |     |     |     |     |    |     |    |     |      |      |     |     |     |  |  |
|------------|-------------|---------------|-------------|------------|------------|------------|------|-----|-----|-----|-----|-----|----|-----|----|-----|------|------|-----|-----|-----|--|--|
|            |             |               |             | B2         | B1         | A1         | A2   | A3  | A4  | B   | C   | D1  | D3 | F   | G  | H   | H1   | H2   | I   | J   | K   |  |  |
| 200        | 210         | 160           | 50          | 75         | 70         | 565        | 510  | 185 | 173 | 115 | 260 | 200 | 14 | 125 | 19 | 160 | 380  | 368  | 55  | 90  | 145 |  |  |
| 250        | 405         | 200           | 70          | 95         | 90         | 665        | 580  | 220 | 202 | 115 | 303 | 250 | 18 | 130 | 13 | 190 | 428  | 416  | 65  | 100 | 180 |  |  |
| 315        | 610         | 270           | 135         | 118        | 110        | 800        | 690  | 260 | 212 | 145 | 382 | 315 | 18 | 180 | 18 | 230 | 610  | 591  | 80  | 120 | 220 |  |  |
| 400        | 1400        | 420           | 205         | 150        | 140        | 950        | 800  | 310 | 295 | 150 | 402 | 400 | 22 | 210 | 18 | 280 | 726  | 704  | 100 | 150 | 270 |  |  |
| 500        | 2500        | 530           | 255         | 190        | 180        | 1020       | 940  | 365 | 336 | 150 | 464 | 500 | 22 | 250 | 23 | 340 | 835  | 805  | 130 | 180 | 325 |  |  |
| 630        | 4905        | 580           | 365         | 236        | 225        | 1200       | 1150 | 460 | 425 | 180 | 505 | 630 | 27 | 305 | 30 | 420 | 955  | 948  | 170 | 220 | 400 |  |  |
| 710        | 9810        | 710           | 705         | 265        | 255        | 1400       | 1280 | 510 | 490 | 185 | 554 | 710 | 27 | 340 | 27 | 470 | 1073 | 1068 | 190 | 250 | 450 |  |  |

Friction coefficient μ=0,4. Dimension values are in mm.

LAM (Amercian Standard)

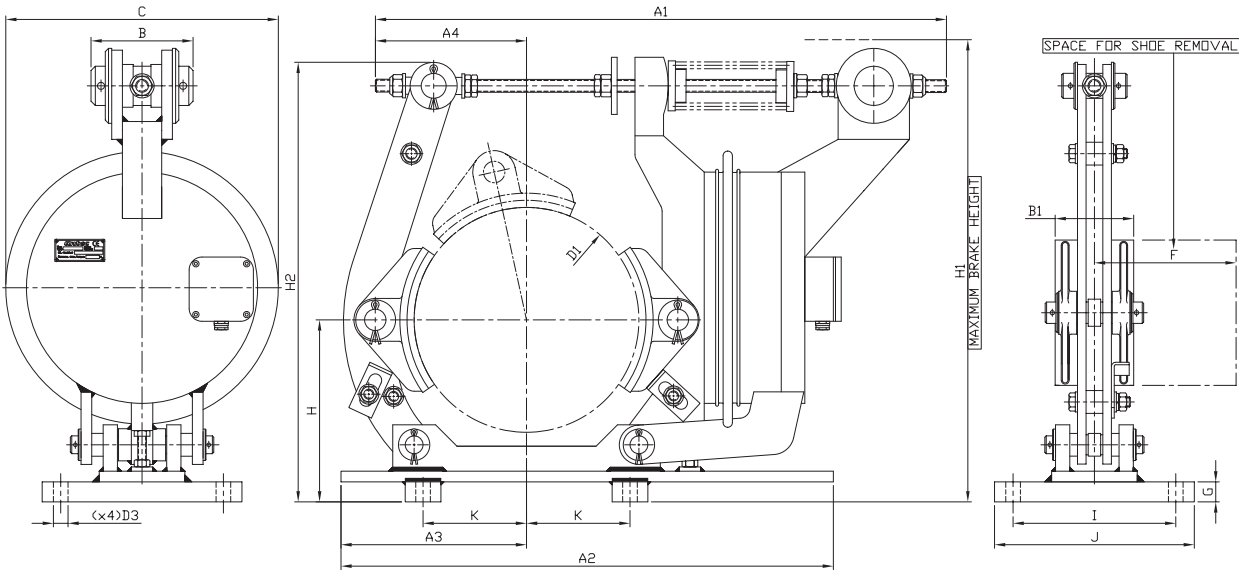


| LAM                 |                 |
|---------------------|-----------------|
| Continuous duty     | 400 cycles/hour |
| Intermittent duty   | 600 cycles/hour |
| Isolation class F   | 155 °C          |
| Protection class    | IP-65           |
| Ambient temperature | -20 °C, +40 °C  |

| BRAKE TYPE | TORQUE (ft-lb) |               | POWER (W) 0°C |               | WEIGHT (lb) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |      |      |      |     |      |    |     |      |     |      |      |      |      |      |      |
|------------|----------------|---------------|---------------|---------------|-------------|------------|------------|------------|------|------|------|-----|------|----|-----|------|-----|------|------|------|------|------|------|
|            | Shunt 1 hour   | Shunt 8 hours | Shunt 1 hour  | Shunt 8 hours |             |            |            | B2         | B1   | A1   | A2   | A3  | A4   | B  | C   | D1   | D3  | F    | G    | H    | H1   | H2   | I    |
| 8" [203]   | 100            | 75            | 160           | 120           | 110         | 3.25       | 3.0        | 22.2       | 20.1 | 7.3  | 6.7  | 4.5 | 10.2 | 8  | 0.7 | 4.9  | 0.7 | 7    | 15.6 | 15.2 | 5.7  | 7.5  | 3.3  |
| 10" [254]  | 200            | 150           | 200           | 150           | 154         | 3.75       | 3.5        | 26.6       | 22.8 | 8.7  | 8.1  | 4.5 | 11.9 | 10 | 0.7 | 5.1  | 0.7 | 8.4  | 17.6 | 17.3 | 6.3  | 7.9  | 4    |
| 13" [330]  | 550            | 400           | 380           | 280           | 298         | 5.75       | 5.5        | 32.3       | 27.2 | 10.2 | 9.1  | 5.7 | 15   | 13 | 0.8 | 7.1  | 1.1 | 9.9  | 25   | 24.3 | 9    | 11   | 5.7  |
| 16" [406]  | 1000           | 750           | 575           | 430           | 452         | 6.75       | 6.5        | 37.4       | 31.5 | 12.2 | 11.4 | 5.9 | 15.8 | 16 | 1.1 | 8.3  | 1.3 | 12.1 | 29.5 | 28.7 | 10.7 | 13   | 7.5  |
| 19" [482]  | 2000           | 1500          | 730           | 540           | 507         | 8.75       | 8.5        | 40.2       | 37   | 14.4 | 13   | 5.9 | 18.3 | 19 | 1.1 | 9.4  | 1.2 | 13.2 | 32.9 | 31.7 | 13   | 15.4 | 9.3  |
| 23" [584]  | 4000           | 3000          | 820           | 600           | 805         | 11.25      | 11.0       | 45.7       | 45.3 | 18.1 | 15.7 | 7.1 | 19.9 | 23 | 1.3 | 11.4 | 0.8 | 15.9 | 38.1 | 37.6 | 16   | 18.9 | 11.7 |
| 30" [762]  | 9000           | 6750          | 980           | 735           | 1609        | 14.25      | 14.0       | 59.1       | 50.6 | 20.1 | 21.2 | 7.3 | 21.8 | 30 | 1.6 | 13   | 1.9 | 20.7 | 44.6 | 44.3 | 19   | 22   | 15   |

Friction coefficient μ=0,4. Dimension values are in inches.

LFM (French Standard)

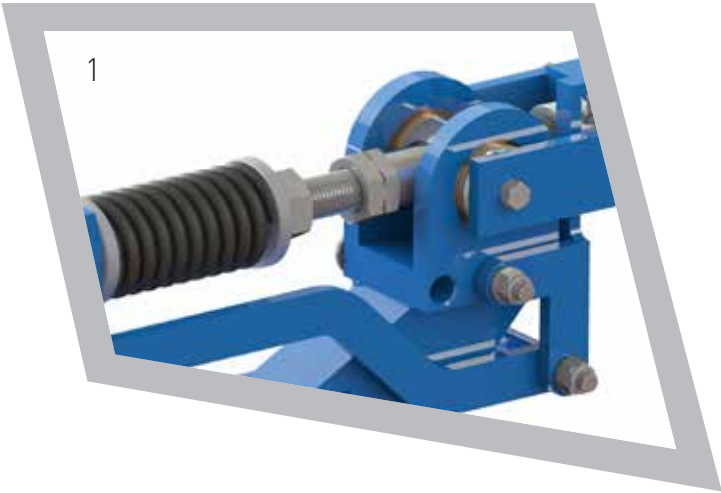


| LFM                 |                 |
|---------------------|-----------------|
| Continuous duty     | 500 cycles/hour |
| Intermittent duty   | 600 cycles/hour |
| Isolation class F   | 155 °C          |
| Protection class    | IP-65           |
| Ambient temperature | -20 °C, +40 °C  |

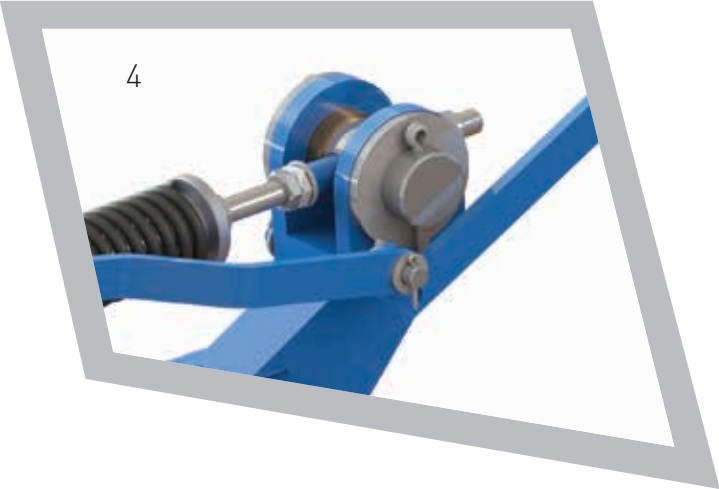
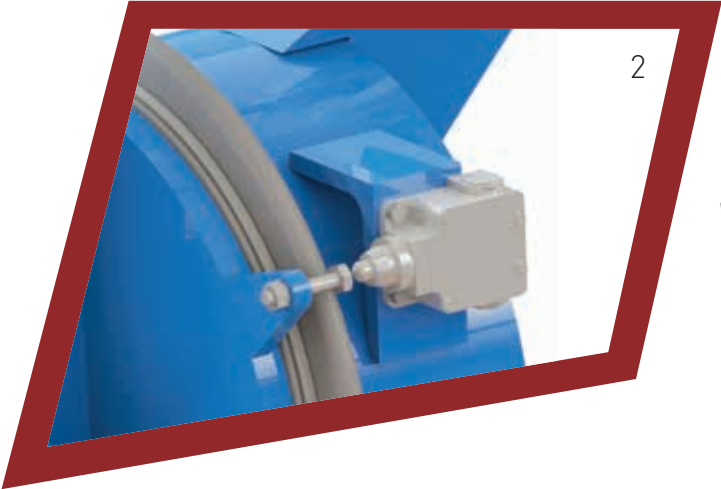
| BRAKE TYPE | TORQUE (Nm) | POWER (W) 0°C | WEIGHT (Kg) | DRUM WIDTH | SHOE WIDTH | DIMENSIONS |      |     |     |     |     |     |      |     |    |     |      |      |     |     |     |  |
|------------|-------------|---------------|-------------|------------|------------|------------|------|-----|-----|-----|-----|-----|------|-----|----|-----|------|------|-----|-----|-----|--|
|            |             |               |             | B2         | B1         | A1         | A2   | A3  | A4  | B   | C   | D1  | D3   | F   | G  | H   | H1   | H2   | I   | J   | K   |  |
| 200        | 210         | 160           | 50          | 80         | 70         | 565        | 510  | 185 | 173 | 115 | 260 | 200 | 15   | 125 | 9  | 161 | 380  | 368  | 130 | 160 | 75  |  |
| 250        | 405         | 200           | 70          | 90         | 90         | 665        | 580  | 220 | 202 | 115 | 303 | 250 | 18   | 130 | 9  | 181 | 428  | 416  | 130 | 160 | 94  |  |
| 350        | 675         | 270           | 135         | 130        | 110        | 850        | 690  | 260 | 260 | 145 | 382 | 350 | 20.5 | 180 | 28 | 250 | 635  | 616  | 180 | 230 | 145 |  |
| 450        | 1575        | 420           | 205         | 170        | 160        | 1000       | 800  | 310 | 325 | 150 | 402 | 450 | 23   | 190 | 29 | 300 | 744  | 724  | 220 | 270 | 190 |  |
| 530        | 2650        | 530           | 260         | 195        | 180        | 1080       | 940  | 365 | 360 | 150 | 464 | 530 | 25   | 240 | 23 | 355 | 840  | 825  | 240 | 290 | 235 |  |
| 600        | 4660        | 580           | 365         | 210        | 190        | 1160       | 1150 | 460 | 391 | 180 | 505 | 600 | 28   | 290 | 22 | 400 | 958  | 935  | 254 | 310 | 272 |  |
| 750        | 10350       | 710           | 710         | 230        | 210        | 1500       | 1280 | 510 | 526 | 185 | 554 | 750 | 31   | 330 | 34 | 475 | 1071 | 1066 | 290 | 350 | 338 |  |

Friction coefficient μ=0,4. Dimension values are in mm.

OPTIONS



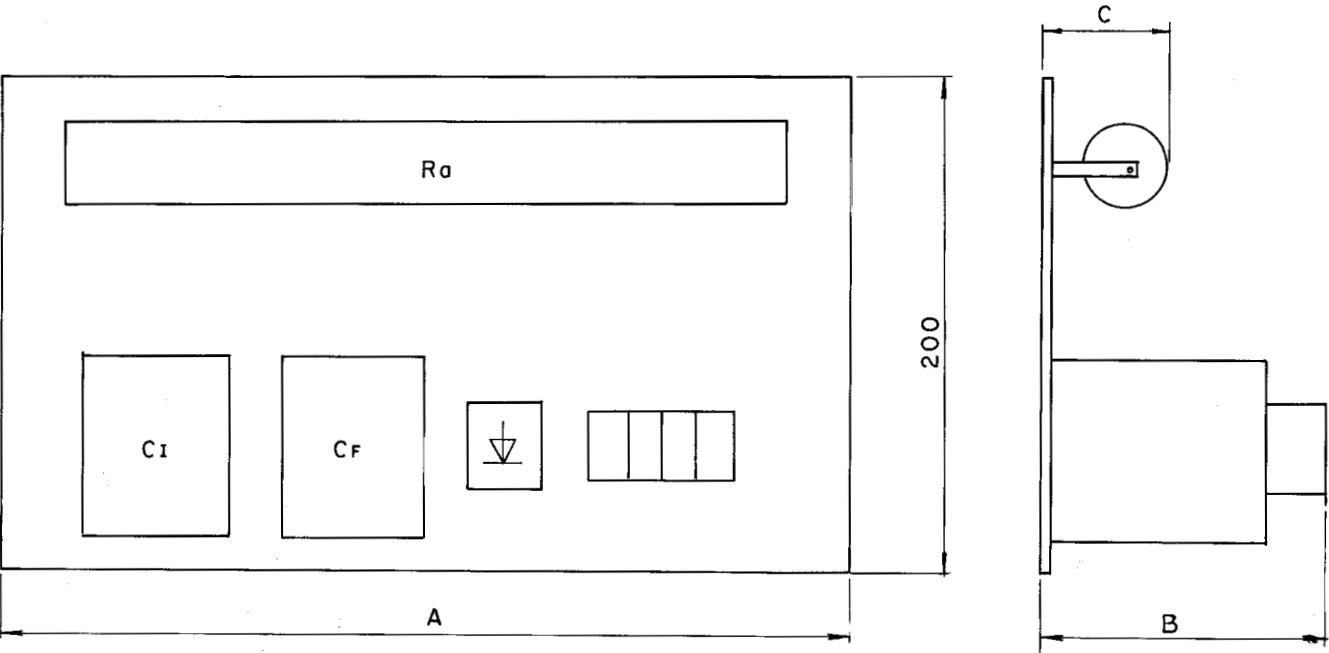
- 1. Automatic lining wear adjustment (RA).
- 2. Mechanical or inductive open switch indicator (CSA).
- 3. Cable or inductive lining wear indicator (DD).
- 4. Hand release lever (DM).
- 5. Special paint (PE).



For further information about options, please contact ANTEC's Sales Service

CONTROL UNITS

NOTES



For the control units definition, type, drum diameter, power and service have to be indicated. Note: There is the possibility of supplying in cabinet. Some models form may vary slightly from the drawing.

Control units for electromagnetic drum brakes.

| BRAKE TYPE      |           |           | DIMENSIONS |     |     |      |    |     |      |    |     |      |     |     |
|-----------------|-----------|-----------|------------|-----|-----|------|----|-----|------|----|-----|------|-----|-----|
| LAM             | LDM       | LFM       | AC-2       |     |     | AA-1 |    |     | AA-2 |    |     | AA-3 |     |     |
|                 |           |           | A          | B   | C   | A    | B  | C   | A    | B  | C   | A    | B   | C   |
| 8" - 10"        | 200 - 250 | 200 - 250 | 250        | 145 | 70  | 250  | 35 | 70  | 250  | 90 | 70  | 250  | 145 | 70  |
| 13" - 16"       | 315 - 400 | 350 - 450 | 350        | 145 | 70  | 350  | 35 | 70  | 350  | 90 | 70  | 350  | 145 | 70  |
| 19" - 23" - 30" | 500 - 710 | 530 - 750 | 350        | 145 | 140 | 350  | 35 | 140 | 350  | 90 | 140 | 350  | 145 | 140 |

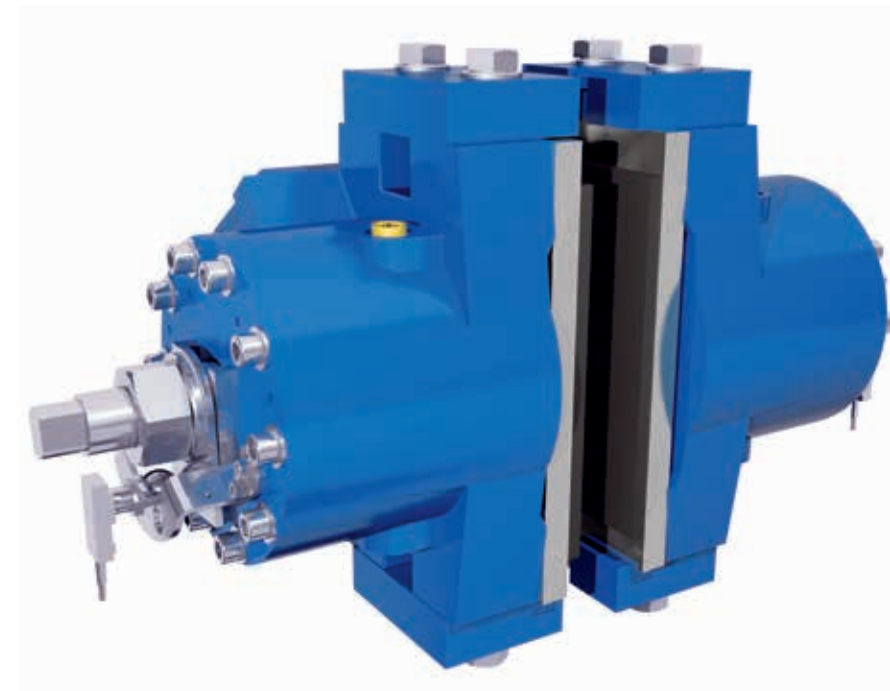
Dimension values are in mm.

# Hydraulic emergency brakes

## GENERAL DESCRIPTION

NHCD and NHC brakes are fail-safe brakes, which means that they brake using springs when there is no hydraulic pressure.

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.



Model: NHCD-1400 CSA  
(Dual Spring)

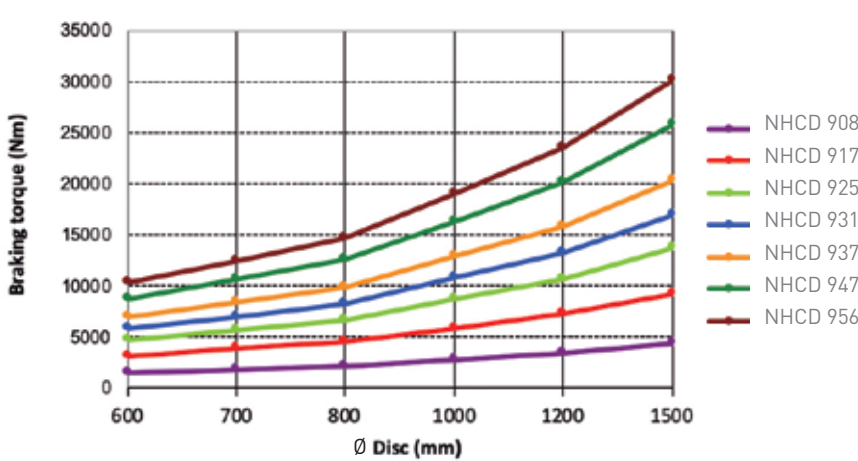
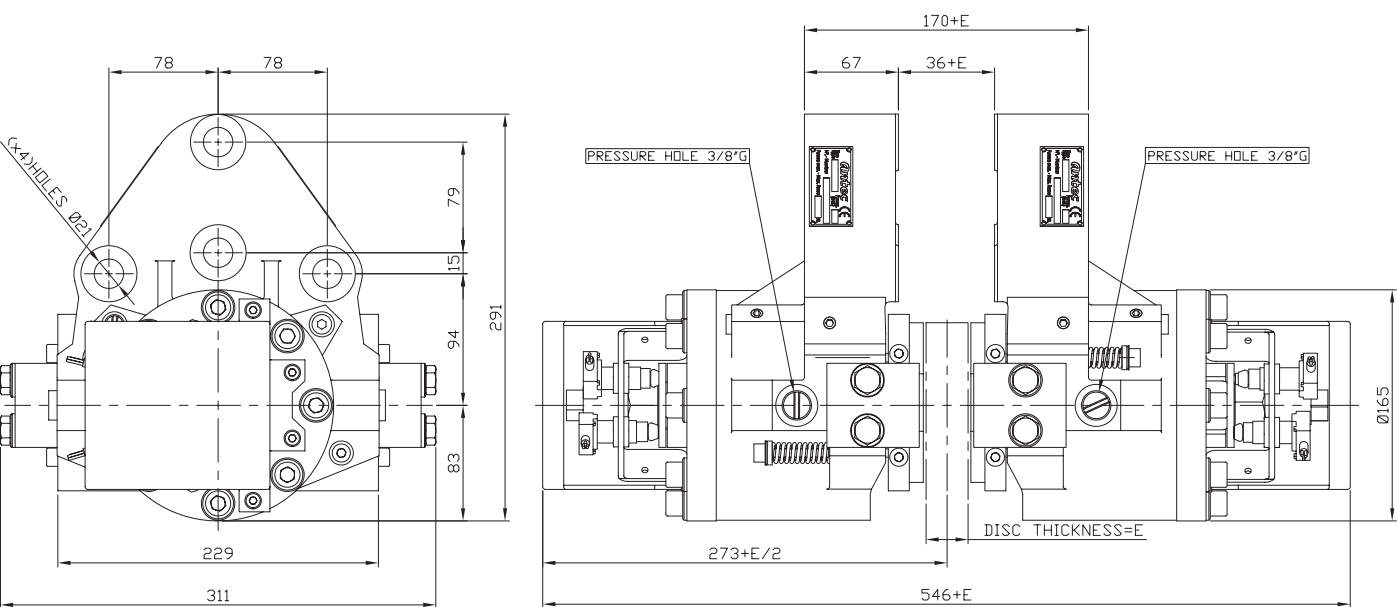


Model: NHC-900 GS + CSA + DD.  
(Mono Spring)





# NHCD 900 SERIES (DUAL SPRING)



- MAIN FEATURES**
- Spring applied braking. (Failsafe)
  - Hydraulically released.
  - Wear indicator.
  - Double spring failsafe emergency brake.
  - Organic or sintered metal linings.
  - Clamping force up to 60 KN.
  - End stops for easy lining replacement.

| CALIPER                  |     | NHCD-908      | NHCD-917 | NHCD-925 | NHCD-931 | NHCD-937 | NHCD-947 | NHCD-956 |
|--------------------------|-----|---------------|----------|----------|----------|----------|----------|----------|
| Clamping force           | N   | 8000          | 17000    | 25000    | 31000    | 37000    | 47000    | 55000    |
| Releasing pressure       | MPa | 3             | 6        | 9        | 11       | 12       | 17       | 18       |
| Maximum pressure         | MPa | 21            |          |          |          |          |          |          |
| Release stroke           | mm  | 1 each side   |          |          |          |          |          |          |
| Oil volume               | cm³ | 47 each side  |          |          |          |          |          |          |
| Pad surface              | cm² | 280 each side |          |          |          |          |          |          |
| Friction coefficient (μ) | -   | 0.4           |          |          |          |          |          |          |
| Braking Force (Bf)       | N   | 6400          | 13600    | 20000    | 24800    | 29600    | 37600    | 44000    |
| Approximate total weight | Kg  | 80            |          |          |          |          |          |          |

**BRAKING TORQUE CALCULATION:**

T = Braking torque (Nm)

n = no. of calipers

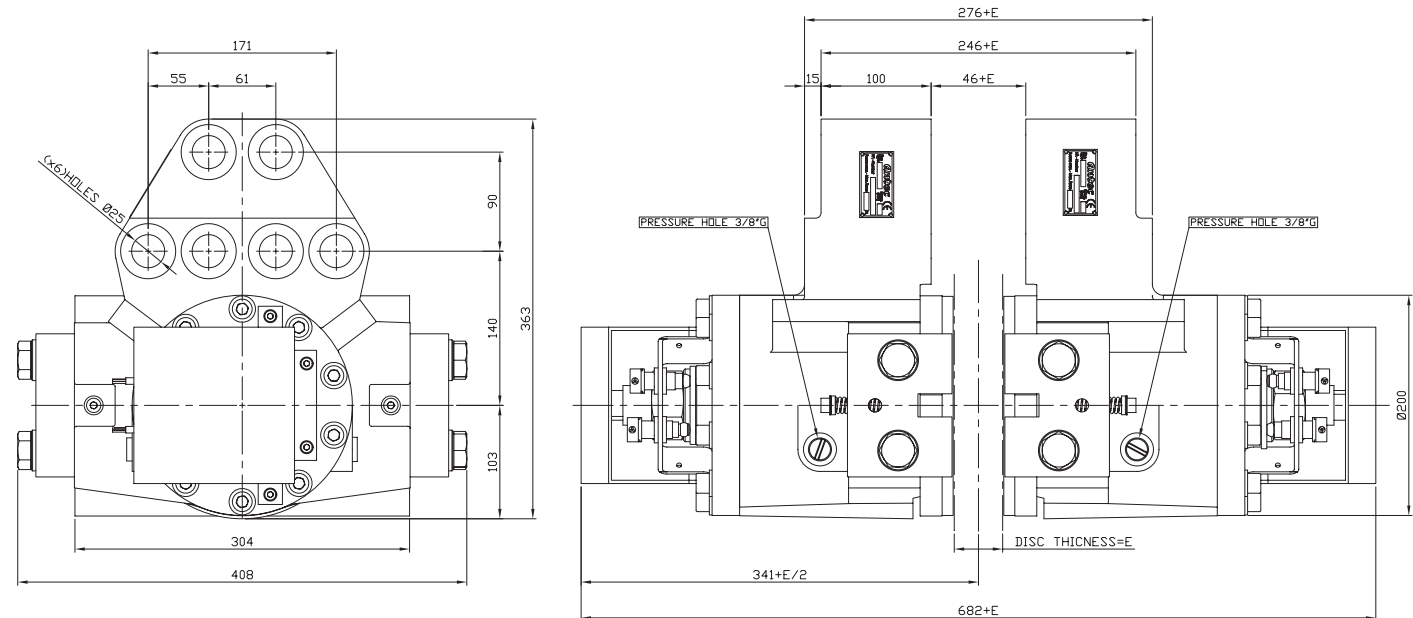
Bf = Braking force (N)

D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 130}{2000}$$

Dimension values are in mm. For other clamping forces contact us.

# NHCD 1400 SERIES (DUAL SPRING)



- MAIN FEATURES**
- Spring applied braking. (Failsafe)
  - Hydraulically released.
  - Wear indicator.
  - Double spring failsafe emergency brake.
  - Organic or sintered metal linings.
  - Clamping force up to 150 KN.
  - End stops for easy lining replacement.

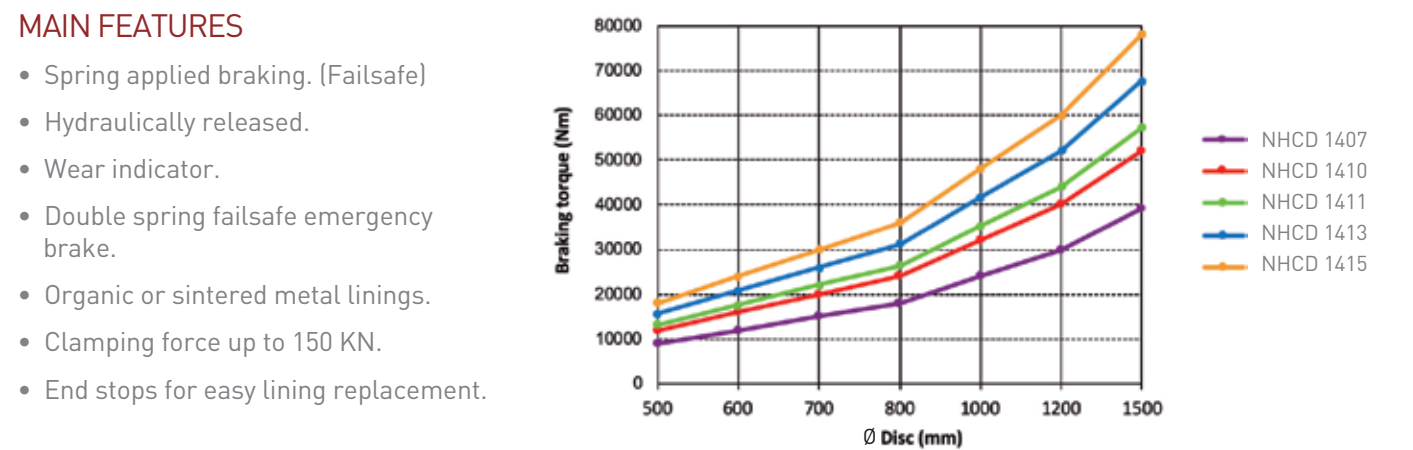
**BRAKING TORQUE CALCULATION:**

T = Braking torque (Nm)

n = no. of calipers

Bf = Braking force (N)

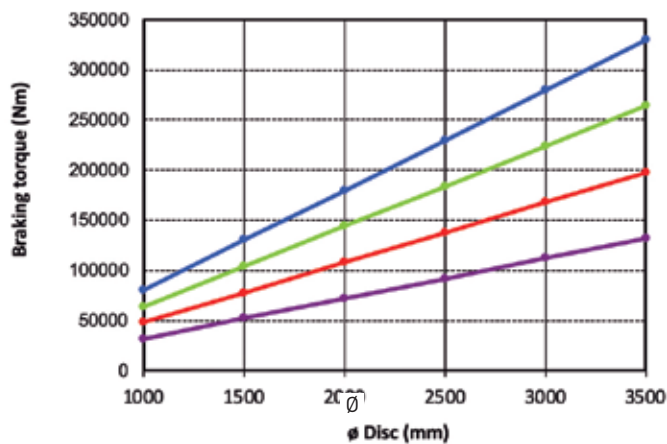
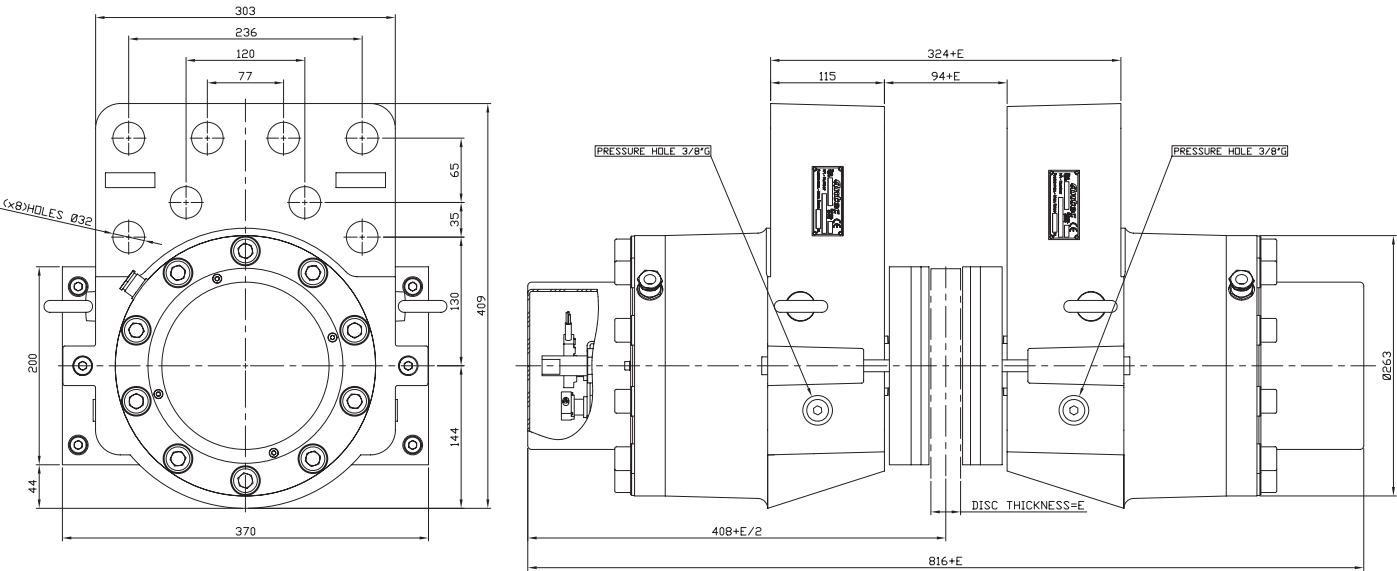
D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 200}{2000}$$


| CALIPER                  |     | NHCD-1407     | NHCD-1410 | NHCD-1411 | NHCD-1413 | NHCD-1415 |
|--------------------------|-----|---------------|-----------|-----------|-----------|-----------|
| Clamping force           | N   | 75000         | 100000    | 110000    | 130000    | 150000    |
| Releasing pressure       | MPa | 11            | 13        | 16        | 19        | 21        |
| Maximum pressure         | MPa | 21            |           |           |           |           |
| Release stroke           | mm  | 1 each side   |           |           |           |           |
| Oil volume               | cm³ | 113 each side |           |           |           |           |
| Pad surface              | cm² | 500 each side |           |           |           |           |
| Friction coefficient (μ) | -   | 0.4           |           |           |           |           |
| Braking Force (Bf)       | N   | 60000         | 80000     | 88000     | 104000    | 120000    |
| Approximate total weight | Kg  | 185           |           |           |           |           |

Dimension values are in mm. For other clamping forces contact us.

NHCD 1900 SERIES (DUAL SPRING)



MAIN FEATURES

- Spring applied braking. (Failsafe)
- Hydraulically released.
- Wear indicator.
- Double spring failsafe emergency brake.
- Organic or sintered metal linings.
- Clamping force up to 250 KN.
- Easy lining replacement.

| CALIPER                  |                 | NHCD-1910     | NHCD-1915 | NHCD-1920 | NHCD-1925 |
|--------------------------|-----------------|---------------|-----------|-----------|-----------|
| Clamping force           | N               | 100000        | 150000    | 200000    | 250000    |
| Releasing pressure       | MPa             | 8             | 11        | 15        | 18        |
| Maximum pressure         | MPa             | 21            |           |           |           |
| Release stroke           | mm              | 2 each side   |           |           |           |
| Oil volume               | cm <sup>3</sup> | 230 each side |           |           |           |
| Pad surface              | cm <sup>2</sup> | 600 each side |           |           |           |
| Friction coefficient (μ) | -               | 0.4           |           |           |           |
| Braking Force (Bf)       | N               | 80000         | 120000    | 160000    | 200000    |
| Approximate total weight | Kg              | 320           |           |           |           |

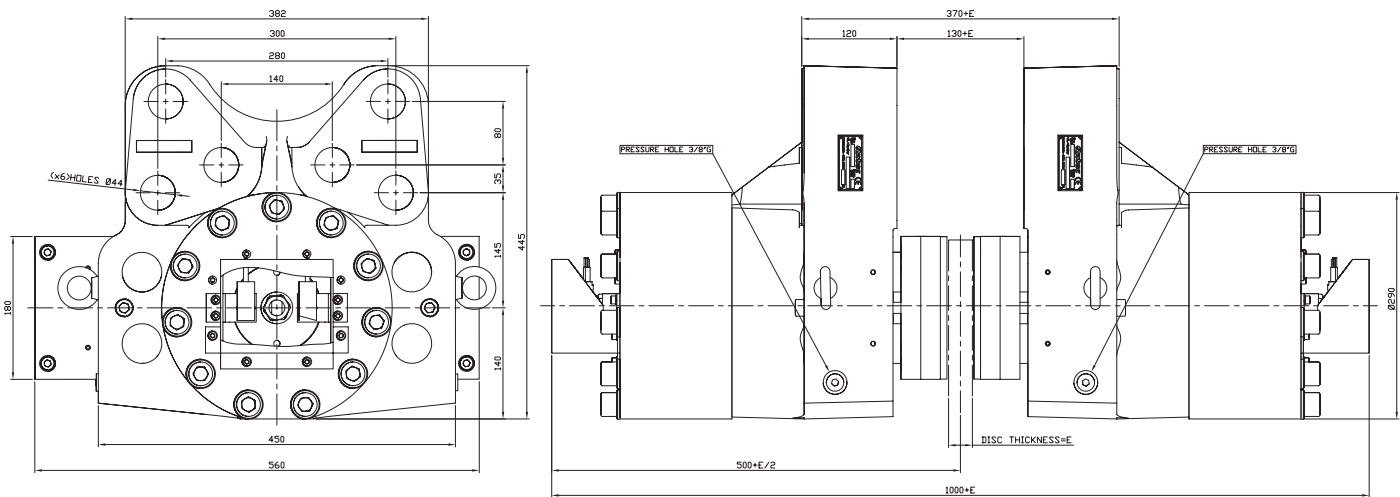
BRAKING TORQUE CALCULATION:

T = Braking torque (Nm)  
n = no. of calipers  
Bf = Braking force (N)  
D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 200}{2000}$$

Dimension values are in mm. We reserve the right to modify measures or construction.

NHCD 2100 SERIES (DUAL SPRING)



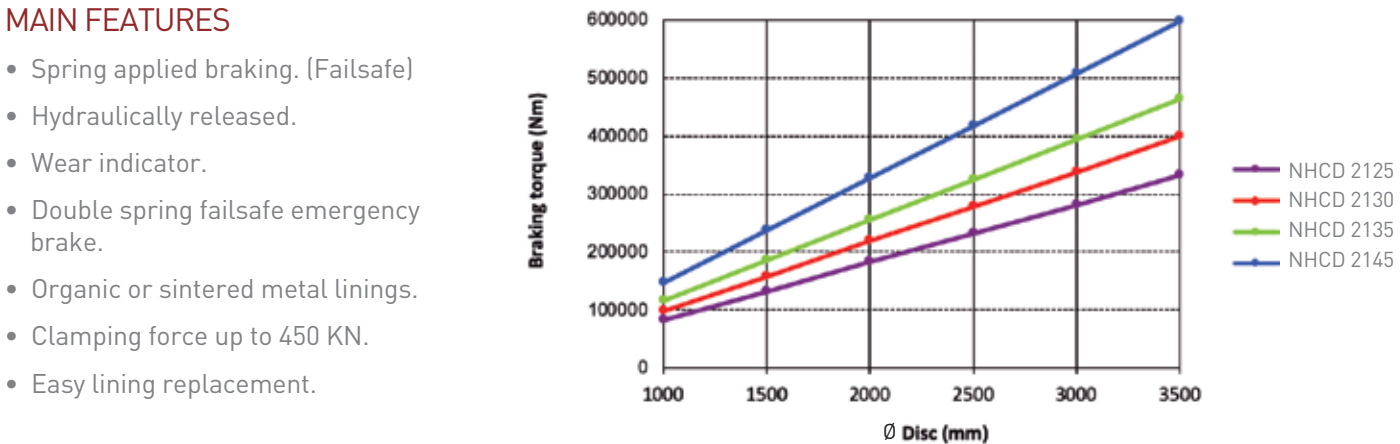
MAIN FEATURES

- Spring applied braking. (Failsafe)
- Hydraulically released.
- Wear indicator.
- Double spring failsafe emergency brake.
- Organic or sintered metal linings.
- Clamping force up to 450 KN.
- Easy lining replacement.

BRAKING TORQUE CALCULATION:

T = Braking torque (Nm)  
n = no. of calipers  
Bf = Braking force (N)  
D = Disc diameter (mm)

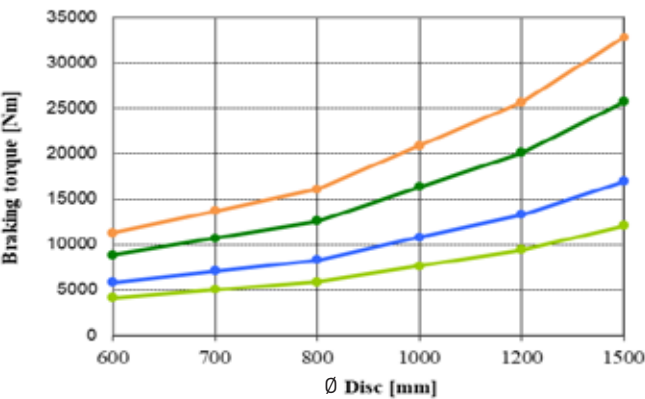
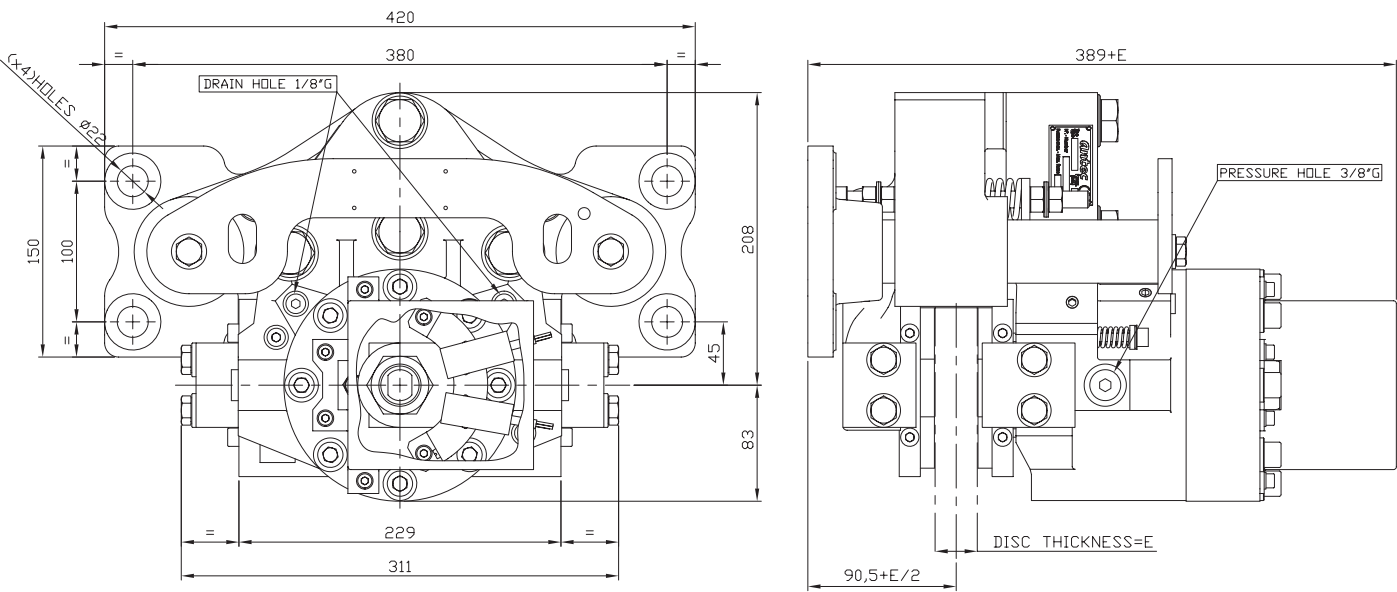
$$T = n \times Bf \times \frac{D - 180}{2000}$$



| CALIPER                  |                 | 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 <sup>3</sup> | 350 each side |           |           |           |
| Pad surface              | cm <sup>2</sup> | 750 each side |           |           |           |
| Friction coefficient (μ) | -               | 0.4           |           |           |           |
| Braking Force (Bf)       | N               | 200000        | 240000    | 280000    | 360000    |
| Approximate total weight | Kg              | 530           |           |           |           |

Dimension values are in mm. We reserve the right to modify measures or construction.

# NHC 900 SERIES (MONO SPRING)



— NHC 922  
— NHC 931  
— NHC 947  
— NHC 960

### MAIN FEATURES

- Spring applied braking. (Failsafe)
- Hydraulically released.
- Self-aligning.
- Wear indicator.
- Floating caliper.
- Organic or sintered metal linings.
- Clamping force up to 60 kN.
- End stops for easy lining replacement.

| CALIPER                  |     | NHC-922       | NHC-931 | NHC-947 | NHC-960 |
|--------------------------|-----|---------------|---------|---------|---------|
| Clamping force           | N   | 22000         | 31000   | 47000   | 60000   |
| Releasing pressure       | MPa | 7             | 11      | 17      | 20      |
| Maximum pressure         | MPa | 21            |         |         |         |
| Release stroke           | mm  | 0,5 each side |         |         |         |
| Oil volume               | cm³ | 47            |         |         |         |
| Pad surface              | cm² | 300 each side |         |         |         |
| Friction coefficient (μ) | -   | 0.4           |         |         |         |
| Braking Force (Bf)       | N   | 17600         | 24800   | 37600   | 48000   |
| Approximate total weight | Kg  | 90            |         |         |         |

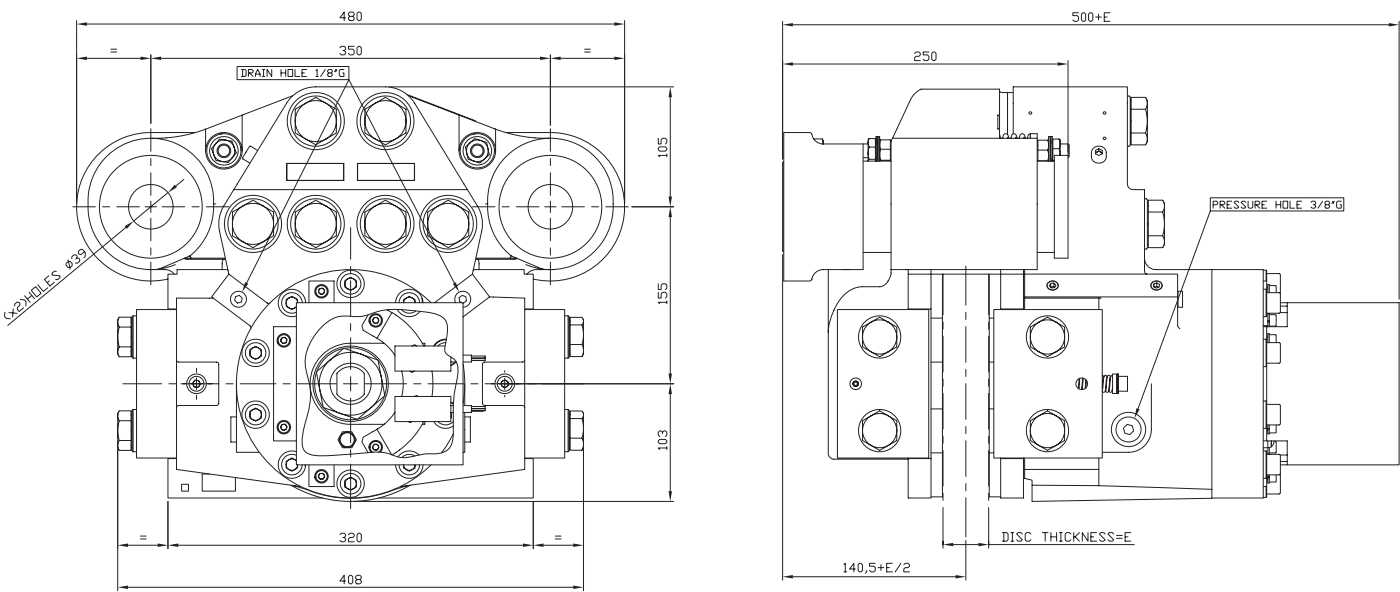
### BRAKING TORQUE CALCULATION:

T = Braking torque (Nm)  
n = no. of calipers  
Bf = Braking force (N)  
D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 130}{2000}$$

Dimension values are in mm. For other clamping forces contact us.

# NHC 1400 SERIES (MONO SPRING)



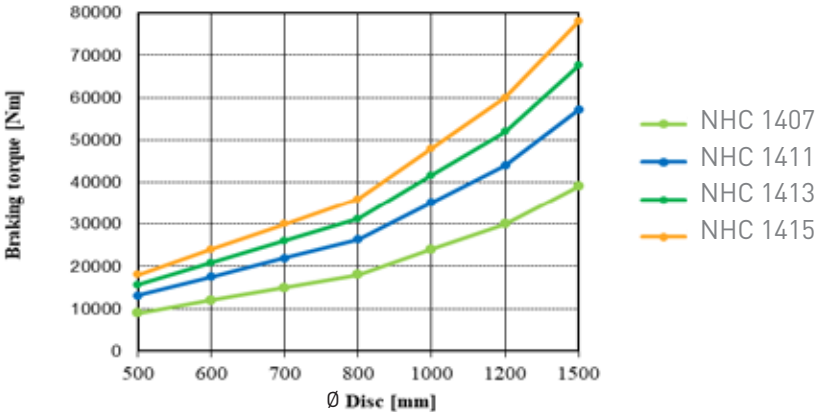
### MAIN FEATURES

- Spring applied braking. (Failsafe)
- Hydraulically released.
- Self-aligning.
- Wear indicator.
- Floating caliper.
- Organic or sintered metal linings.
- Clamping force up to 150 kN.
- End stops for easy lining replacement.

### BRAKING TORQUE CALCULATION:

T = Braking torque (Nm)  
n = no. of calipers  
Bf = Braking force (N)  
D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 200}{2000}$$



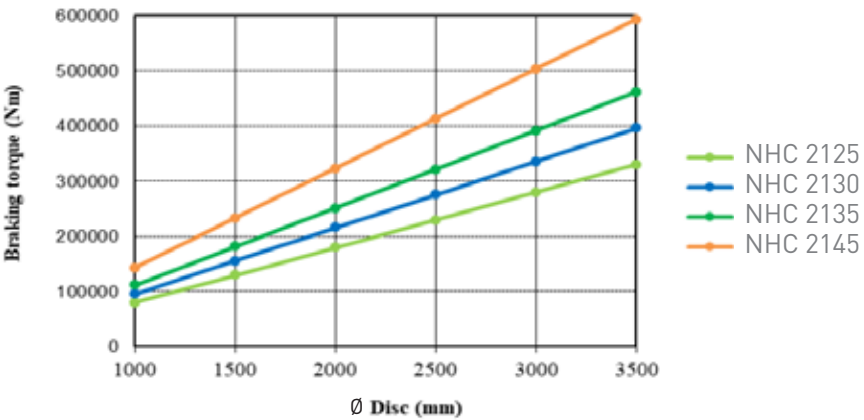
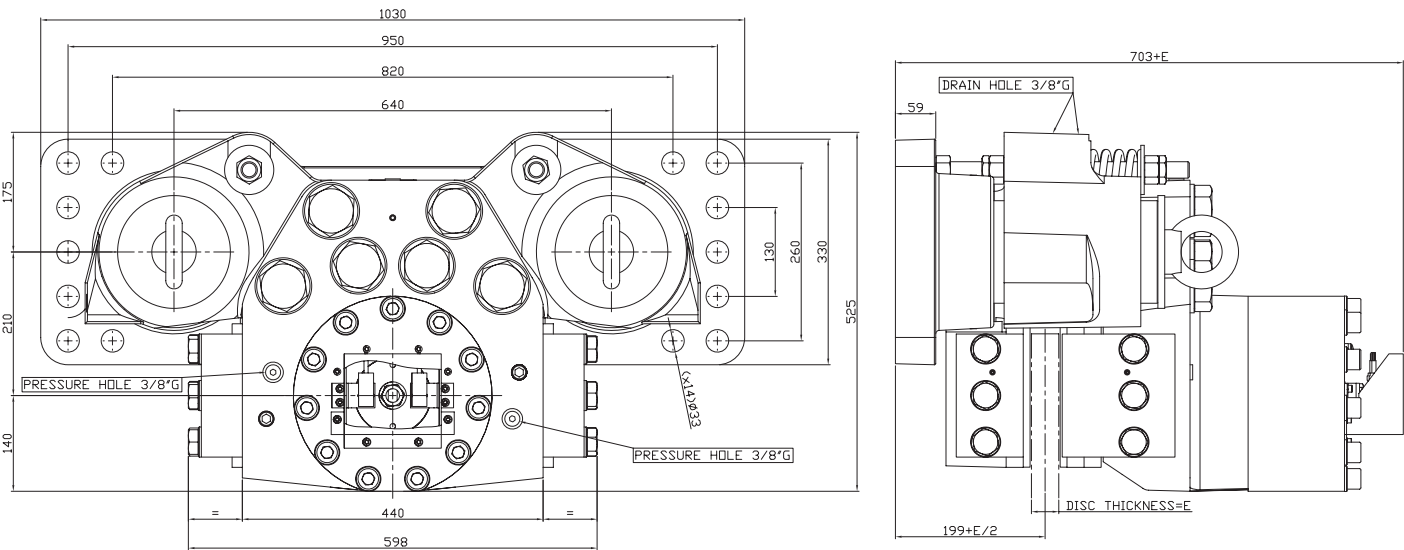
— NHC 1407  
— NHC 1411  
— NHC 1413  
— NHC 1415

| CALIPER                  |     | NHCD-1407     | NHCD-1411 | NHCD-1413 | NHCD-1415 |
|--------------------------|-----|---------------|-----------|-----------|-----------|
| Clamping force           | N   | 75000         | 110000    | 130000    | 150000    |
| Releasing pressure       | MPa | 11            | 16        | 19        | 21        |
| Maximum pressure         | MPa | 21            |           |           |           |
| Release stroke           | mm  | 0,5 each side |           |           |           |
| Oil volume               | cm³ | 113           |           |           |           |
| Pad surface              | cm² | 600 each side |           |           |           |
| Friction coefficient (μ) | -   | 0.4           |           |           |           |
| Braking Force (Bf)       | N   | 60000         | 88000     | 104000    | 120000    |
| Approximate total weight | Kg  | 200           |           |           |           |

Dimension values are in mm. For other clamping forces contact us.

NHC 2100 SERIES (MONO SPRING)

HYDRAULIC POWER UNIT



MAIN FEATURES

- Spring applied braking. (Failsafe)
- Hydraulically released.
- Self-aligning.
- Wear indicator.
- Floating caliper.
- Organic or sintered metal linings.
- Clamping force up to 450 kN.
- End stops for easy lining replacement.

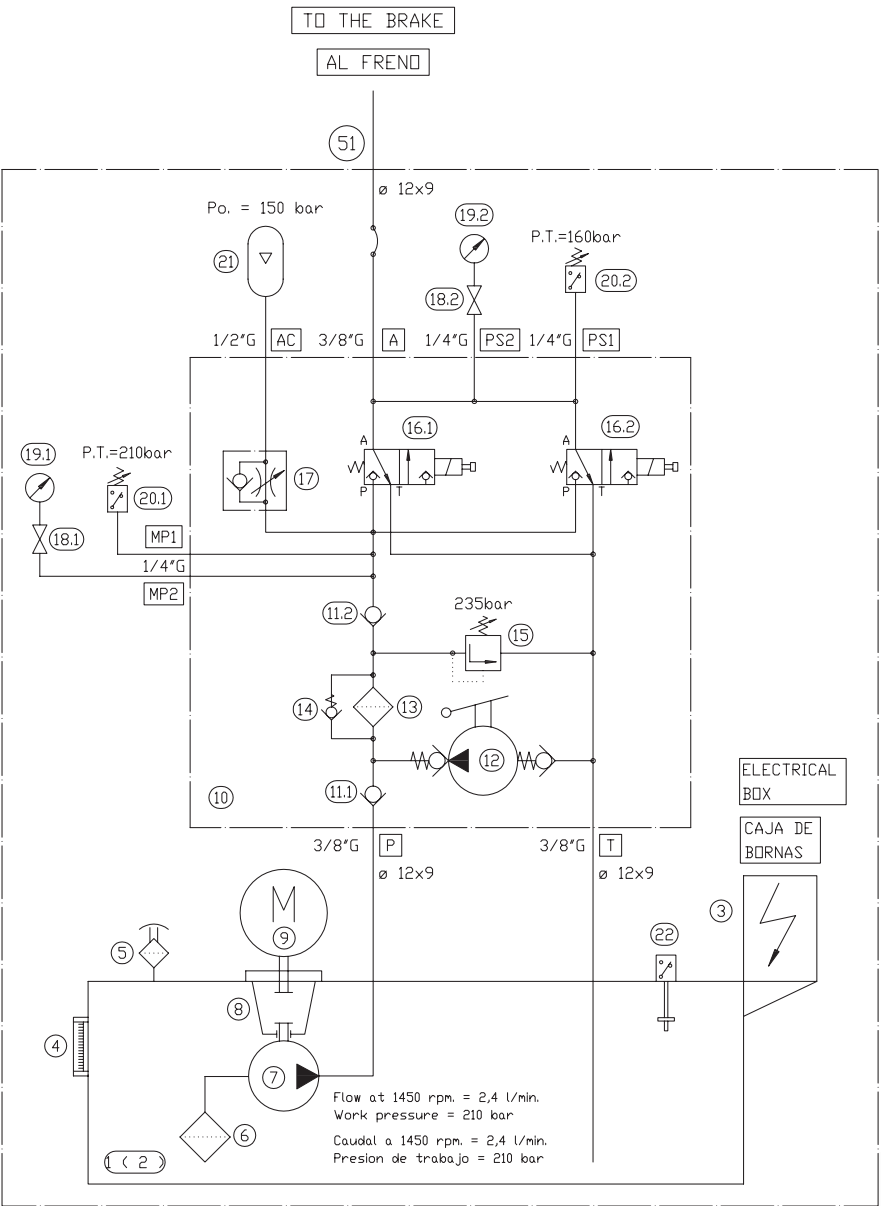
BRAKING TORQUE CALCULATION:

T = Braking torque (Nm)  
n = no. of calipers  
Bf = Braking force (N)  
D = Disc diameter (mm)

$$T = n \times Bf \times \frac{D - 210}{2000}$$

| CALIPER                  |     | NHC-2125      | NHC-2130 | NHC-2135 | NHC-2145 |
|--------------------------|-----|---------------|----------|----------|----------|
| Clamping force           | N   | 250000        | 300000   | 350000   | 450000   |
| Releasing pressure       | MPa | 12            | 13       | 16       | 20,5     |
| Maximum pressure         | MPa | 21            |          |          |          |
| Release stroke           | mm  | 2 each side   |          |          |          |
| Oil volume               | cm³ | 350 each side |          |          |          |
| Pad surface              | cm² | 900 each side |          |          |          |
| Friction coefficient (μ) | -   | 0.4           |          |          |          |
| Braking Force (Bf)       | N   | 200000        | 240000   | 280000   | 360000   |
| Approximate total weight | Kg  | 530           |          |          |          |

Dimension values are in mm. We reserve the right to modify measures or construction.



OPTIONS:

- BT = Low Temperature resistance (from -25 to -40 °C)
- PC = Protection Cover
- SP = Special painting

LEGEND

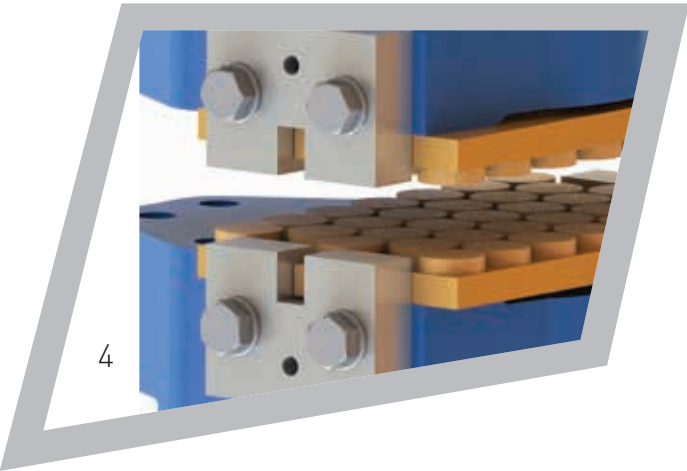
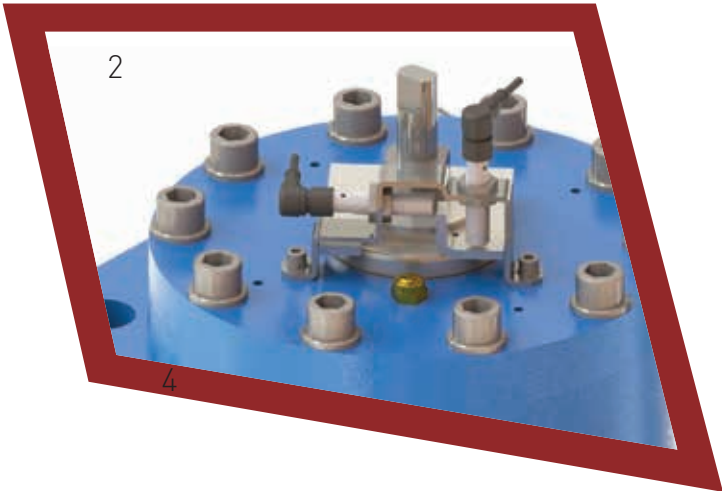
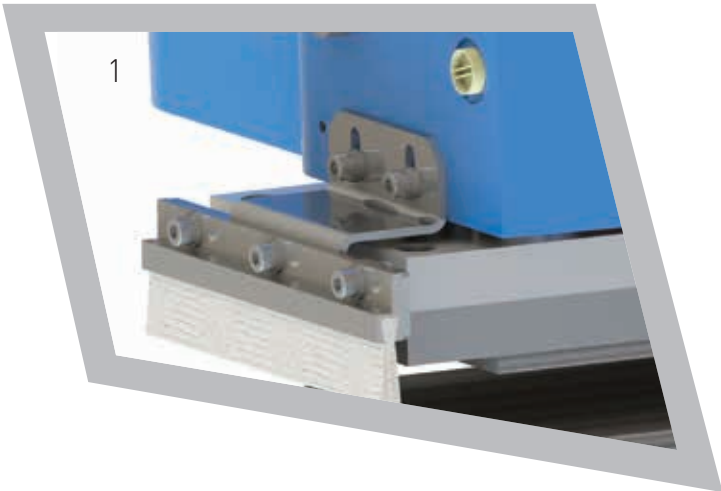
1. Aluminum tank
2. Cap
3. Electrical box
4. Level indicator
5. Air filter
6. Suction filter
7. Gear pump
8. Housing
9. Electrical motor
10. Manifold block
11. Check valve
12. Hand pump
13. Pressure line filter
14. Check valve
15. Pressure relief valve
16. 3/2 Solenoid directional valve
17. Flow control valve
18. Needle valve
19. Manometer
20. Pressure switch
21. Acumulator
22. Electric level





OPTIONS

- 1. Brushes.
- 2. Mechanical or inductive open switch indicator (CSA).
- 3. Mechanical or inductive lining wear indicator (DD).
- 4. Sintered metal brake linings (GS).
- 5. Fastening bolts.
- 6. Support.
- 7. Special paint (PE).



For further information about options, please contact ANTEC's Sales Service

NOTES

Notes section with horizontal lines for writing.



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