

# EAT•N

# Airflex

## Airflex® DBB & DBA Brakes

These spring-applied, pressure released, disc style brakes develop equal torque in either direction of rotation. Their torque and thermal capacities allow them to be used in the most demanding applications.



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## DBB Description

Model DBB brakes are spring applied, pressure released, disc style brakes. They develop equal torque in either direction of rotation. Their torque and thermal capacities allow them to be used in the most demanding applications. Brake construction and operation is shown in the figure. Pressurizing the brake compresses the brake springs and withdraws the clamping plates from the brake discs. Standard brakes are furnished with multiple discs, which are free to move axially.

Model DBB uses a conventional piston design to release the brake discs. The rotation component of the DBB style brake is a very low inertia friction disc core with riveted on friction discs. The low inertia of the rotating components coupled with the high heat sink capacity of the stationary members allow these units to provide superior performance in high cyclic applications. In applications requiring higher speed operation or where precise balance of the rotating components is required, the DBBS style is offered, which utilizes a solid rotor and stationary friction material. Similar to the DBAS design, the DBBS should only be used for applications where brake engagement is non-cyclic. Torque ratings listed are for brakes with a standard compliment of springs. The quantity of springs can be varied to customize the torque of the brake to suit a particular application. Consult the factory for brake torque of units with non-standard spring configurations.

Brake sizes are indicated by the number of brake discs and the disc diameter in inches. For instance, size 225DBB has two discs 25 inches in diameter.



### Features

#### **Low inertia friction disc assembly**

Reduces the overall inertia that must be stopped.

#### **Optional split friction discs**

Allows removal of friction discs without disturbing other components of drive system in mid-shaft brake arrangement.

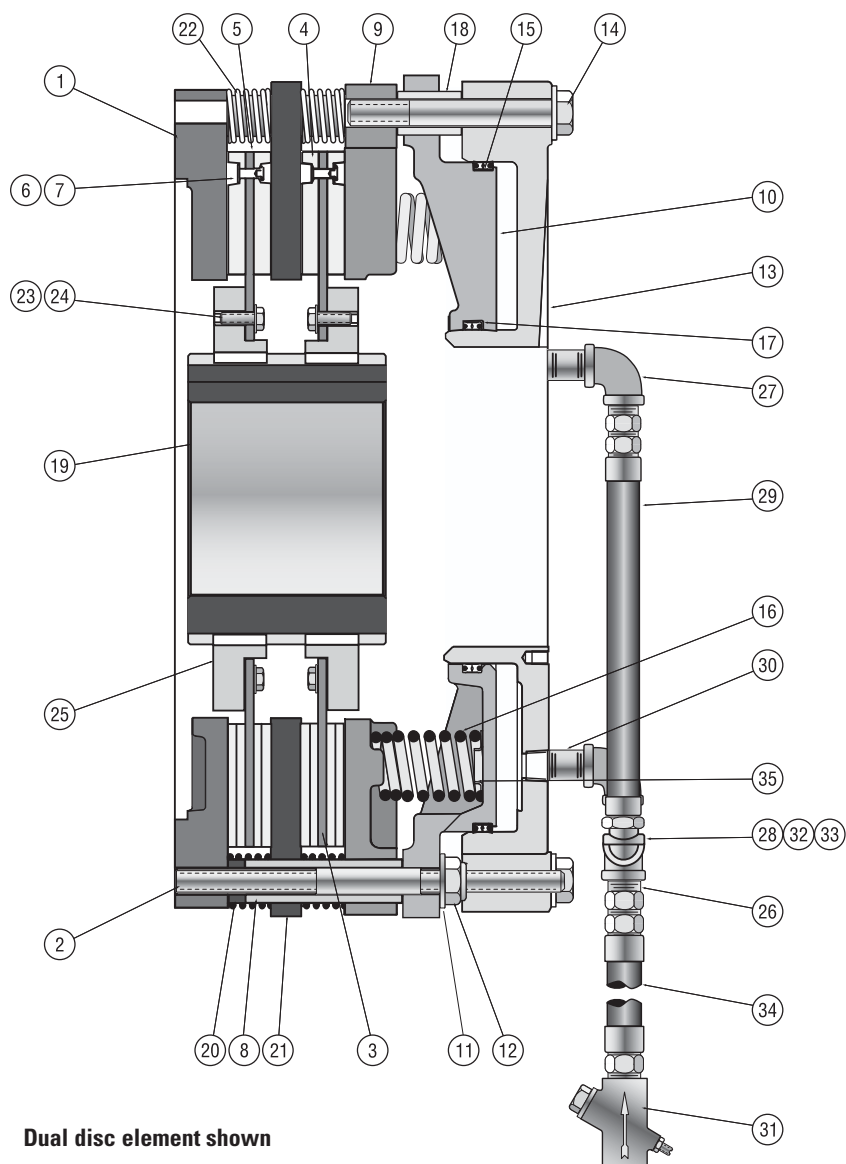
#### **Low wearing, self lubricating PolyPak® seals**

Eliminates premature twisting failure and requires no external lubrication.

### Where Used:

- Bottling Equipment
- Power Shovels
- Draglines
- Conveyors
- Shears
- Power Presses

## DBB Component Parts



| Item No. | Description                |
|----------|----------------------------|
| 1        | Mounting Flange            |
| 2        | Stud                       |
| 3        | Friction Disc Sub-Assembly |
| 4        | Friction Disc              |
| 5        | Friction Disc Core         |
| 6        | Rivet                      |
| 7        | Washer                     |
| 8        | Clamp Tube                 |
| 9        | Pressure Plate             |
| 10       | Spring Housing             |
| 11       | Flat Washer                |
| 12       | Locknut                    |

| Item No. | Description    |
|----------|----------------|
| 13       | Cylinder       |
| 14       | Hex Head Screw |
| 15       | Outer Seal     |
| 16       | Spring         |
| 17       | Inner Seal     |
| 18       | Spacer Tube    |
| 19       | Gear           |
| 20       | Wear Spacer    |
| 21       | Reaction Plate |
| 22       | Release Spring |
| 23       | Flat Washer    |
| 24       | Hex Head Screw |

| Item No. | Description          |
|----------|----------------------|
| 25       | Ring Gear            |
| 26       | Pipe Nipple          |
| 27       | Elbow                |
| 28       | Pipe Cross           |
| 29       | Hose Assembly        |
| 30       | Pipe Nipple          |
| 31       | Flow Control Valve   |
| 32       | 45 Deg. Street Elbow |
| 33       | Pipe Reducer         |
| 34       | Hose Assembly        |
| 35       | Spring Retainer      |

## DBB Elements

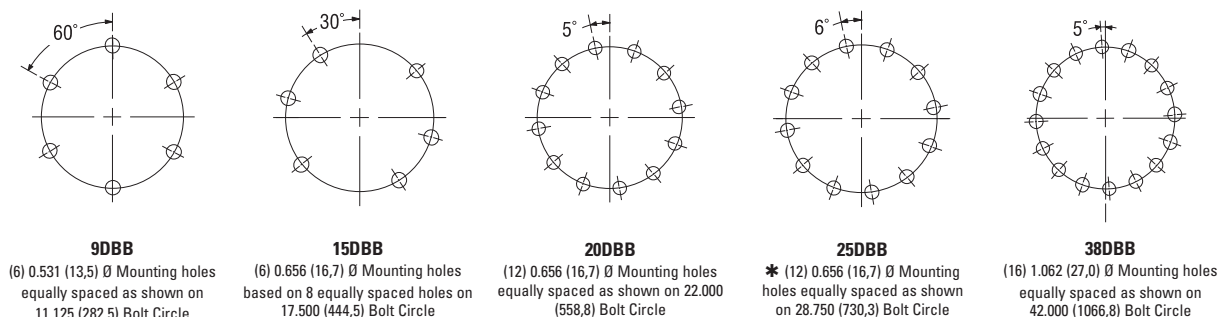
### Dimensional Data

| English                                                                                | Dimensions in inches |       |                                                                                     |                |                                                                                                  |
|----------------------------------------------------------------------------------------|----------------------|-------|-------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------|
| 109DBB                                                                                 | 1.50                 | 2.56  | 7.26                                                                                | 1.75           | 6.06                                                                                             |
| 209DBB                                                                                 | 1.94                 | 2.56  | 8.70                                                                                | 4.00           | 7.53                                                                                             |
| 309DBB                                                                                 | 2.13                 | 2.63  | 10.12                                                                               | 5.25           | 9.06                                                                                             |
| 115DBB                                                                                 | 2.50                 | 4.38  | 4.38                                                                                | 2.88           | 7.62                                                                                             |
| 215DBB                                                                                 | 3.00                 | 4.25  | 11.16                                                                               | 4.38           | 9.23                                                                                             |
| 120DBB                                                                                 | 3.00                 | 5.88  | 10.87                                                                               | 3.00           | 9.37                                                                                             |
| 220DBB                                                                                 | 3.75                 | 6.00  | 13.04                                                                               | 6.27           | 11.54                                                                                            |
| 320DBB                                                                                 | 4.25                 | 5.88  | 15.21                                                                               | 8.25           | 13.68                                                                                            |
| 420DBB                                                                                 | 4.50                 | 5.88  | 17.38                                                                               | 10.31          | 15.84                                                                                            |
| 125DBB                                                                                 | 3.88                 | 7.50  | 12.07                                                                               | 3.50           | 10.57                                                                                            |
| 225DBB                                                                                 | 4.88                 | 7.56  | 14.38                                                                               | 7.00           | 12.88                                                                                            |
| 325DBB                                                                                 | 5.50                 | 7.50  | 16.69                                                                               | 9.31           | 15.19                                                                                            |
| 425DBB                                                                                 | 5.88                 | 7.50  | 19.00                                                                               | 12.00          | 17.50                                                                                            |
| 138DBB                                                                                 | 6.00                 | 11.00 | 16.25                                                                               | 5.00           | 14.25                                                                                            |
| 238DBB                                                                                 | 7.38                 | 10.88 | 19.05                                                                               | 9.00           | 17.05                                                                                            |
| 338DBB                                                                                 | 8.38                 | 10.63 | 21.85                                                                               | 12.00          | 19.73                                                                                            |
| 438DBB                                                                                 | 9.06                 | 10.63 | 24.65                                                                               | 5.00           | 22.52                                                                                            |
| Size  | Min.                 | Max.  | D  | D <sub>1</sub> | W <sub>4</sub>  |
|                                                                                        | Bore Range           |       |                                                                                     |                |                                                                                                  |

| SI                                                                                     | Dimensions in millimeters |      |                                                                                       |                |                                                                                                    |
|----------------------------------------------------------------------------------------|---------------------------|------|---------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------|
| 109DBB                                                                                 | 38                        | 65   | 184                                                                                   | 44             | 154                                                                                                |
| 209DBB                                                                                 | 49                        | 65   | 221                                                                                   | 102            | 191                                                                                                |
| 309DBB                                                                                 | 54                        | 67   | 202                                                                                   | 133            | 230                                                                                                |
| 115DBB                                                                                 | 64                        | 111  | 242                                                                                   | 73             | 191                                                                                                |
| 215DBB                                                                                 | 76                        | 108  | 283                                                                                   | 111            | 235                                                                                                |
| 120DBB                                                                                 | 76                        | 149  | 276                                                                                   | 76             | 238                                                                                                |
| 220DBB                                                                                 | 95                        | 152  | 331                                                                                   | 159            | 292                                                                                                |
| 320DBB                                                                                 | 108                       | 149  | 386                                                                                   | 210            | 347                                                                                                |
| 420DBB                                                                                 | 114                       | 149  | 441                                                                                   | 262            | 402                                                                                                |
| 125DBB                                                                                 | 99                        | 191  | 307                                                                                   | 89             | 268                                                                                                |
| 225DBB                                                                                 | 124                       | 192  | 365                                                                                   | 178            | 327                                                                                                |
| 325DBB                                                                                 | 140                       | 191  | 424                                                                                   | 236            | 386                                                                                                |
| 425DBB                                                                                 | 149                       | 191  | 483                                                                                   | 305            | 445                                                                                                |
| 138DBB                                                                                 | 152                       | 279  | 413                                                                                   | 127            | 362                                                                                                |
| 238DBB                                                                                 | 187                       | 276  | 484                                                                                   | 229            | 433                                                                                                |
| 338DBB                                                                                 | 213                       | 270  | 555                                                                                   | 305            | 501                                                                                                |
| 438DBB                                                                                 | 230                       | 270  | 626                                                                                   | 381            | 572                                                                                                |
| Size  | Min.                      | Max. | D  | D <sub>1</sub> | W <sub>4</sub>  |
|                                                                                        | Bore Range                |      |                                                                                       |                |                                                                                                    |

| English | Dimensions in inches      |                 |                 |                 |                |                             |                  |                             |
|---------|---------------------------|-----------------|-----------------|-----------------|----------------|-----------------------------|------------------|-----------------------------|
| 9DBB    | 1.00                      | 0.25            | ①               | 3.12            | 12.125         | 8.375                       | 12.37            | 3/8-18                      |
| 15DBB   | 1.47                      | 0.38            | 0.38            | 6.00            | 18.375         | 14.375                      | 18.94            | 1/2-14                      |
| 20DBB   | 1.50                      | 0.38            | 1.00            | 8.50            | 23.250         | 18.250                      | 23.82            | 1/2-14                      |
| 25DBB   | 1.75                      | 0.25            | 0.75            | 11.50           | 30.630         | 24.375                      | 30.89            | 1/2-14                      |
| 38DBB   | 2.45                      | 0.25            | 1.25            | 16.50           | 44.750         | 36.375                      | 45.01            | 3/4-14                      |
| Size    | D <sub>31</sub>           | D <sub>44</sub> | D <sub>45</sub> | H <sub>16</sub> | J <sup>②</sup> | J <sub>1</sub> <sup>③</sup> | J <sub>2</sub> ▼ | O <sub>2</sub> <sup>④</sup> |
| 9DBB    | 25                        | 6               | ①               | 79              | 308.0          | 212.7                       | 314              | 3/8-18                      |
| 15DBB   | 37                        | 10              | 10              | 152             | 466.7          | 365.1                       | 481              | 1/2-14                      |
| 20DBB   | 38                        | 10              | 25              | 216             | 590.6          | 463.5                       | 605              | 1/2-14                      |
| 25DBB   | 44                        | 6               | 19              | 292             | 778.0          | 619.1                       | 785              | 1/2-14                      |
| 38DBB   | 62                        | 6               | 32              | 419             | 1136.7         | 923.9                       | 1143             | 3/4-14                      |
| SI      | Dimensions in millimeters |                 |                 |                 |                |                             |                  |                             |

### Mounting Bolt Circles

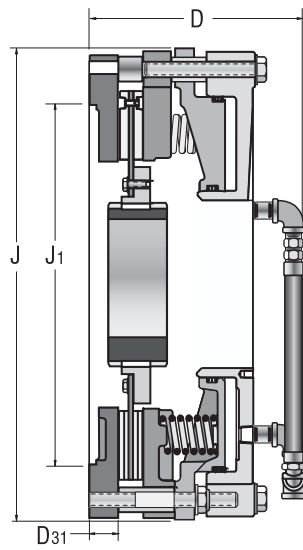


### Notes:

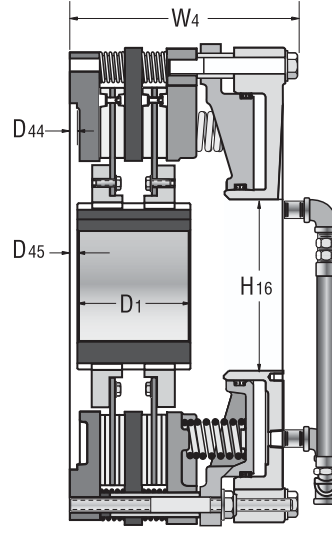
- ① 0.50 in (13 mm) for 109 DBB  
0.25 in (6 mm) for 209 DBB  
0.00 in (0 mm) for 309 DBB
- ② Tolerance +0.000/-0.003 in (+0,00/-0,08 mm)
- ③ Tolerance +0.003/-0.000 in (+0,08/-0,00 mm)
- ④ American National Pipe Thread.
- ⑤ Brake in disengaged position.
- ⑥ All DBB brakes can be supplied plumbed as shown with a flow control valve having American National Pipe thread ports of 1/2-14 for size 9DBB, 3/4-14 for sizes 15DBB, 20DBB, 25DBB and 1-11 1/2 for size 38DBB.
- ⑦ Basic part number only. Does not include gear. Gear must be ordered separately with the bore and keyway requirements.
- ⑧ Dynamic torque shown. Static torque approximately 15% greater. Torque values are for new linings. Torque decreases with lining wear. At the worn out condition, torque is approximately 0.66 of values shown.
- ⑨ Torque ratings are for units with standard complement of springs. Consult factory for torque ratings of units with non standard spring configurations.
- ⑩ Maximum allowable cylinder pressure is 120 psi (8,3 bar).
- \* (12) 0.781 (19,8) Diameter mounting holes equally spaced as shown on 28.75 (730,3) Bolt circle.
- ▲ Absolute volume of releasing cavity.
- ▼ Maximum diameter of "as cast" surfaces.
- ◆ Some high torque applications of three and four disc elements require additional support of the cylinder side of the unit. Contact your local Airflex representative for more details.

## DBB Elements

### Technical Data

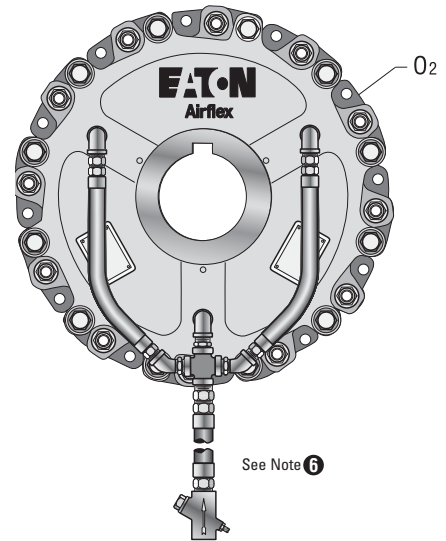


Single Disc Brake



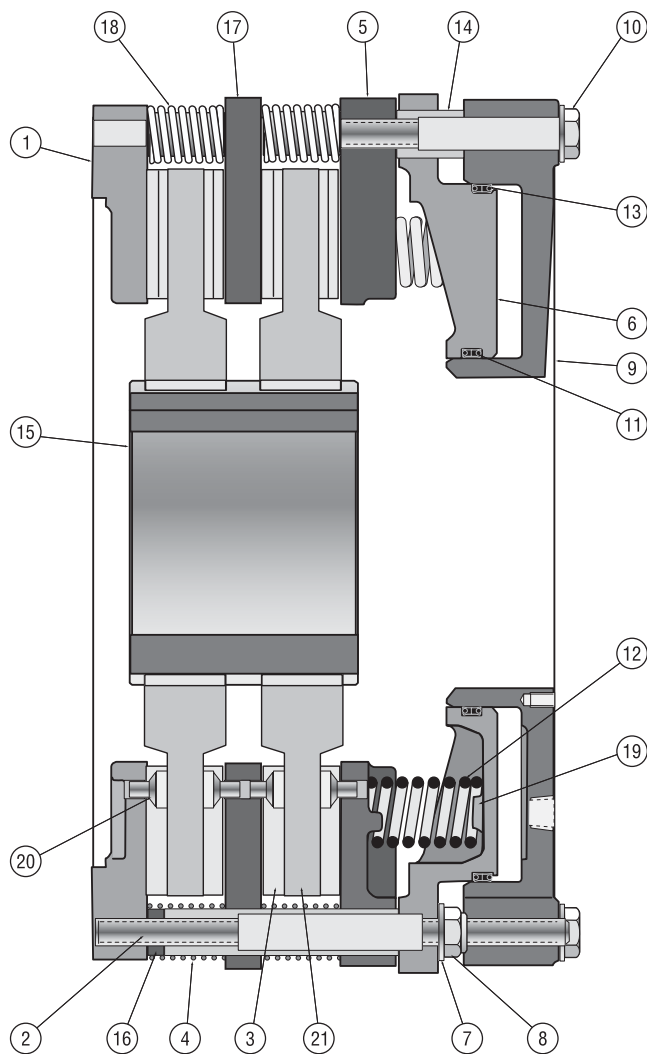
Dual Disc Brake

See Note  
on pg 4



| English |             |                  | lb•in                                | psi                               | in³                    | in²           | lb•ft²      | lb     |         | rpm           |
|---------|-------------|------------------|--------------------------------------|-----------------------------------|------------------------|---------------|-------------|--------|---------|---------------|
| 109DBB  | 146333      | 415313           | 7500                                 | 60                                | 30                     | 96            | 0.5         | 9      | 115     | 3000          |
| 209DBB  | 146334      | 415314           | 14000                                | 60                                | 30                     | 192           | 1           | 18     | 145     | 3000          |
| 309DBB  | 146380      | 416481           | 19400                                | 60                                | 30                     | 288           | 1.83        | 27     | 180     | 3000          |
| 115DBB  | 146222      | 415454           | 30000                                | 60                                | 75                     | 238           | 5           | 35     | 225     | 2400          |
| 215DBB  | 146337      | 415302           | 57000                                | 60                                | 75                     | 476           | 10          | 64     | 275     | 2400          |
| 120DBB  | 146299      | 415900           | 53500                                | 60                                | 133                    | 334           | 17          | 40     | 385     | 1850          |
| 220DBB  | 146300      | 416059           | 101500                               | 60                                | 133                    | 668           | 33          | 67     | 487     | 1850          |
| 320DBB  | 146378      | 416304           | 149000                               | 60                                | 133                    | 1002          | 49          | 213    | 590     | 1850          |
| 420DBB  | 146379      | 416471           | 180000                               | 60                                | 133                    | 1336          | 65          | 102    | 695     | 1850          |
| 125DBB  | 146315      | 416073           | 115300                               | 60                                | 259                    | 600           | 47          | 78     | 705     | 1400          |
| 225DBB  | 146327      | 416074           | 219000                               | 60                                | 259                    | 1201          | 93          | 148    | 935     | 1400          |
| 325DBB  | 146370      | 416223           | 303000                               | 60                                | 259                    | 1802          | 139         | 403    | 1120    | 1400          |
| 425DBB  | 146381      | 416477           | 390000                               | 60                                | 259                    | 2403          | 185         | 280    | 1250    | 1400          |
| 138DBB  | 146295      | 415068           | 420000                               | 60                                | 612                    | 1322          | 287         | 203    | 1955    | 950           |
| 238DBB  | 146296      | 416069           | 800000                               | 60                                | 612                    | 2644          | 562         | 340    | 2325    | 950           |
| 338DBB  | 146386      | 416241           | 1153000                              | 60                                | 612                    | 3966          | 837         | 1087   | 3280    | 950           |
| 438DBB  | 146387      | 416464           | 1470000                              | 60                                | 612                    | 5288          | 1112        | 1424   | 3850    | 950           |
| Size    | Part Number | Gear Part Number | 7<br>M <sub>r</sub><br>Torque Rating | 8 9<br>Minimum Releasing Pressure | 10<br>Releasing Volume | Friction Area | Wk²         | Weight | Housing | Maximum Speed |
|         |             |                  |                                      |                                   |                        |               | Disc & Gear |        |         |               |
|         |             |                  |                                      |                                   |                        |               | J           | Mass   |         |               |
| 109DBB  | 146333      | 415313           | 847                                  | 4,1                               | 0,49                   | 619           | 0,02        | 4      | 52      | 3000          |
| 209DBB  | 146334      | 415314           | 1581                                 | 4,1                               | 0,49                   | 1238          | 0,04        | 8      | 66      | 3000          |
| 309DBB  | 146380      | 416481           | 2192                                 | 4,1                               | 0,49                   | 1858          | 0,07        | 12     | 82      | 3000          |
| 115DBB  | 146222      | 415454           | 3387                                 | 4,1                               | 1,23                   | 1535          | 0,21        | 16     | 102     | 2400          |
| 215DBB  | 146337      | 415302           | 6435                                 | 4,1                               | 1,23                   | 3070          | 0,42        | 29     | 125     | 2400          |
| 120DBB  | 146299      | 415900           | 6040                                 | 4,1                               | 2,18                   | 2154          | 0,71        | 18     | 175     | 1850          |
| 220DBB  | 146300      | 416059           | 11459                                | 4,1                               | 2,18                   | 4309          | 1,39        | 30     | 221     | 1850          |
| 320DBB  | 146378      | 416304           | 16822                                | 4,1                               | 2,18                   | 6463          | 2,06        | 97     | 277     | 1850          |
| 420DBB  | 146379      | 416471           | 20338                                | 4,1                               | 2,18                   | 8617          | 2,73        | 46     | 315     | 1850          |
| 125DBB  | 146315      | 416073           | 13017                                | 4,1                               | 4,25                   | 3870          | 1,97        | 35     | 320     | 1400          |
| 225DBB  | 146327      | 416074           | 24725                                | 4,1                               | 4,25                   | 7746          | 3,91        | 67     | 424     | 1400          |
| 325DBB  | 146370      | 416223           | 44031                                | 4,1                               | 4,25                   | 11623         | 5,84        | 183    | 508     | 1400          |
| 425DBB  | 146381      | 416477           | 44067                                | 4,1                               | 4,25                   | 15499         | 7,77        | 127    | 567     | 1400          |
| 138DBB  | 146295      | 416068           | 47418                                | 4,1                               | 10,03                  | 8527          | 12,05       | 92     | 887     | 950           |
| 238DBB  | 146296      | 416069           | 90320                                | 4,1                               | 10,03                  | 17054         | 23,60       | 154    | 1055    | 950           |
| 338DBB  | 146386      | 416241           | 130282                               | 4,1                               | 10,03                  | 25581         | 35,15       | 493    | 1488    | 950           |
| 438DBB  | 146387      | 416464           | 166101                               | 4,1                               | 10,03                  | 34108         | 46,70       | 646    | 848     | 950           |
| SI      |             |                  | n•m                                  | bar                               | dm³                    | cm²           | kg•m2       | kg     |         | rpm           |

## DBBS Component Parts



Dual disc element shown

| Item No. | Description     |
|----------|-----------------|
| 1        | Mounting Flange |
| 2        | Stud            |
| 3        | Friction Disc   |
| 4        | Clamp Tube      |
| 5        | Pressure Plate  |
| 6        | Spring Housing  |
| 7        | Flat Washer     |
| 8        | Lock Nut        |
| 9        | Cylinder        |
| 10       | Hex Head Screw  |
| 11       | Inner Seal      |

| Item No. | Description     |
|----------|-----------------|
| 12       | Spring          |
| 13       | Outer Seal      |
| 14       | Spacer Tube     |
| 15       | Gear            |
| 16       | Wear Spacer     |
| 17       | Reaction Plate  |
| 18       | Release Spring  |
| 19       | Spring Retainer |
| 20       | Flat Head Screw |
| 21       | Disc            |

## DBBS Elements

### Dimensional Data

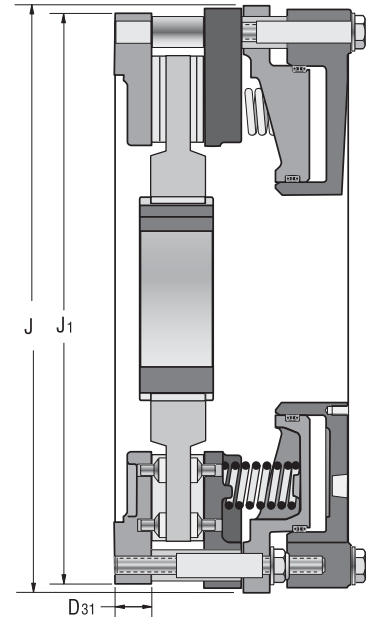
| English | Dimensions in inches      |       |       |                |
|---------|---------------------------|-------|-------|----------------|
| 120DBBS | 3.50                      | 5.63  | 10.30 | 3.00           |
| 220DBBS | 4.25                      | 5.69  | 13.48 | 6.27           |
| 320DBBS | 4.88                      | 5.75  | 16.63 | 10.31          |
| 420DBBS | 5.13                      | 5.81  | 19.81 | 12.50          |
| 125DBBS | 4.50                      | 7.00  | 11.49 | 3.50           |
| 225DBBS | 5.50                      | 7.13  | 14.73 | 7.00           |
| 325DBBS | 6.13                      | 7.38  | 17.96 | 12.00          |
| 425DBBS | 6.63                      | 7.31  | 21.19 | 15.00          |
| 138DBBS | 8.50                      | 10.06 | 15.20 | 5.00           |
| 238DBBS | 8.50                      | 10.06 | 18.97 | 9.00           |
| 338DBBS | 9.63                      | 9.88  | 22.60 | 13.00          |
| 438DBBS | 10.25                     | 10.25 | 26.34 | 18.00          |
| Size    | Min. Max.                 |       | D     | D <sub>1</sub> |
|         | ⑥ Bore Range              | ⑦     |       |                |
|         | Min.                      | Max.  |       |                |
| 120DBBS | 89                        | 143   | 262   | 76             |
| 220DBBS | 103                       | 145   | 342   | 159            |
| 320DBBS | 124                       | 146   | 422   | 262            |
| 420DBBS | 130                       | 148   | 503   | 318            |
| 125DBBS | 114                       | 177   | 292   | 89             |
| 225DBBS | 140                       | 181   | 374   | 178            |
| 325DBBS | 156                       | 187   | 456   | 381            |
| 425DBBS | 168                       | 186   | 538   | 381            |
| 138DBBS | 216                       | 256   | 386   | 127            |
| 238DBBS | 216                       | 256   | 482   | 229            |
| 338DBBS | 245                       | 251   | 574   | 330            |
| 438DBBS | 260                       | 260   | 669   | 457            |
| SI      | Dimensions in millimeters |       |       |                |

| English | Dimensions in inches      |                 |                 |                 |        |                  |                  |                  |
|---------|---------------------------|-----------------|-----------------|-----------------|--------|------------------|------------------|------------------|
| 20DBBS  | 1.50                      | 0.38            | 1.00            | 8.50            | 23.250 | 18.250           | 23.82            | 1/2-14           |
| 25DBBS  | 1.75                      | 0.25            | 1.00            | 11.50           | 30.630 | 24.375           | 30.89            | 1/2-14           |
| 38DBBS  | 2.45                      | 0.25            | 1.00            | 16.50           | 44.750 | 36.375           | 45.00            | 3/4-14           |
| Size    | D <sub>31</sub>           | D <sub>44</sub> | D <sub>45</sub> | H <sub>16</sub> | J ②    | J <sub>1</sub> ③ | J <sub>2</sub> ④ | O <sub>2</sub> ⑤ |
| 20DBBS  | 38                        | 10              | 25              | 216             | 590.6  | 463.5            | 604              | 1/2-14           |
| 25DBBS  | 44                        | 6               | 25              | 292             | 778.0  | 619.1            | 785              | 1/2-14           |
| 38DBBS  | 62                        | 6               | 25              | 419             | 1135.7 | 923.9            | 1143             | 3/4-14           |
| SI      | Dimensions in millimeters |                 |                 |                 |        |                  |                  |                  |

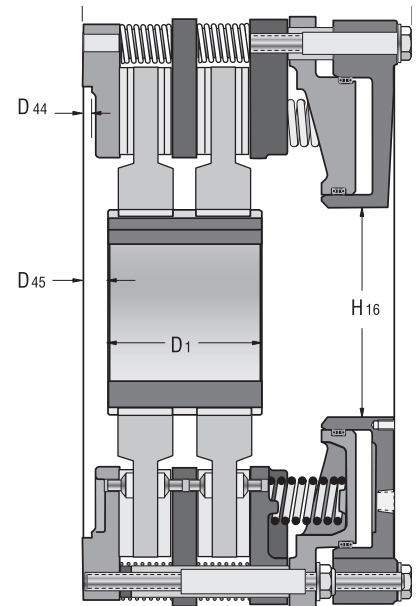
### Notes:

- ① Brake in disengaged position.
- ② Tolerance +0.000/-0.003 in. (+0.00/-0.08 mm)
- ③ Tolerance +0.003/-0.000 in (+0.08/-0.00 mm)
- ④ Maximum diameter of "as cast" surfaces.
- ⑤ American National Pipe Thread.
- ⑥ See note 4 on revised page 11
- ⑦ See note 5 on revised page 11

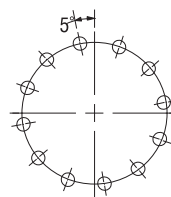
Single Disc Element



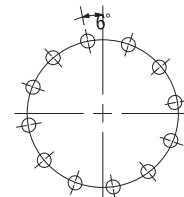
Dual Disc Element



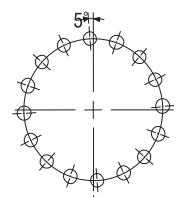
### Mounting Bolt Circles



**20DBBS**  
(12) 0.656 (16,7) Ø  
Mounting holes equally  
spaced, as shown on  
22.000 (558,8) Bolt Circle



**25DBBS**  
(12) 0.656 (16,7) Ø  
Mounting holes equally  
spaced, as shown on  
28.750 (730,3) Bolt Circle



**38DBBS**  
(16) 1.062 (27,0) Ø  
Mounting holes equally  
spaced, as shown on  
42.000 (1066,8) Bolt Circle

## DBBS Elements

### Technical Data

| English |                     |                     | lb•in                         | psi                                   | in <sup>3</sup>          | in <sup>2</sup> | lb•ft <sup>2</sup> | lb     |         | rpm              |
|---------|---------------------|---------------------|-------------------------------|---------------------------------------|--------------------------|-----------------|--------------------|--------|---------|------------------|
| 120DBBS | 146323              | 415900              | 80,000                        | 90                                    | 133                      | 346             | 33                 | 125    | 400     | 2200             |
| 220DBBS | 146322              | 416059              | 150,000                       | 90                                    | 133                      | 692             | 65                 | 232    | 550     | 2200             |
| 320DBBS | 146373              | 416471              | 224,000                       | 90                                    | 133                      | 1,038           | 120                | 357    | 720     | 2200             |
| 420DBBS | 146374              | 416472              | 270,000                       | 90                                    | 133                      | 1,384           | 159                | 464    | 914     | 2200             |
| 125DBBS | 146320              | 416073              | 173,000                       | 90                                    | 259                      | 628             | 89                 | 212    | 880     | 1700             |
| 225DBBS | 146330              | 416074              | 325,000                       | 90                                    | 259                      | 1,255           | 178                | 416    | 1,318   | 1700             |
| 325DBBS | 146382              | 416477              | 455,000                       | 90                                    | 259                      | 1,883           | 309                | 682    | 1,585   | 1700             |
| 425DBBS | 146383              | 416470              | 585,000                       | 90                                    | 259                      | 2,510           | 411                | 854    | 1,882   | 1700             |
| 138DBBS | 146328              | 416068              | 630,000                       | 90                                    | 612                      | 1,357           | 553                | 583    | 2,125   | 950              |
| 238DBBS | 146329              | 416069              | 1,200,000                     | 90                                    | 612                      | 2,714           | 1,094              | 1,100  | 3,125   | 950              |
| 338DBBS | 146384              | 416414              | 1,730,000                     | 90                                    | 612                      | 4,071           | 1,709              | 1,680  | 4,085   | 950              |
| 438DBBS | 146385              | 416461              | 2,200,000                     | 90                                    | 612                      | 5,428           | 2,285              | 2,264  | 4,975   | 950              |
| Size    | ①<br>Part<br>Number | Gear Part<br>Number | ② ③<br>M,<br>Torque<br>Rating | ④<br>Minimum<br>Releasing<br>Pressure | ⑤<br>Releasing<br>Volume | Friction Area   | Wk <sup>2</sup>    | Weight | Housing | Maximum<br>Speed |
|         |                     |                     |                               |                                       |                          |                 | Disc & Gear        |        |         |                  |
|         |                     |                     |                               |                                       |                          |                 | J                  | Mass   |         |                  |
| 120DBBS | 146323              | 415900              | 9.032                         | 6,2                                   | 2,18                     | 2.232           | 1,39               | 56     | 181     | 2200             |
| 220DBBS | 146322              | 416059              | 16.935                        | 6,2                                   | 2,18                     | 4.465           | 2,74               | 105    | 249     | 2200             |
| 320DBBS | 146373              | 416471              | 25.290                        | 6,2                                   | 2,18                     | 6.697           | 5,06               | 162    | 327     | 2200             |
| 420DBBS | 146374              | 416472              | 30.483                        | 6,2                                   | 2,18                     | 8.930           | 6,70               | 211    | 415     | 2200             |
| 125DBBS | 146320              | 416073              | 19.532                        | 6,2                                   | 4,24                     | 4.052           | 3,75               | 96     | 398     | 1700             |
| 225DBBS | 146330              | 416074              | 36.693                        | 6,2                                   | 4,24                     | 8.097           | 7,50               | 188    | 596     | 1700             |
| 325DBBS | 146382              | 416477              | 51.372                        | 6,2                                   | 4,24                     | 12.149          | 13,03              | 310    | 720     | 1700             |
| 425DBBS | 146383              | 416470              | 66.059                        | 6,2                                   | 4,24                     | 16.194          | 17,34              | 388    | 855     | 1700             |
| 138DBBS | 146328              | 416068              | 71.127                        | 6,2                                   | 10,02                    | 8.755           | 23,30              | 264    | 962     | 950              |
| 238DBBS | 146329              | 416069              | 135.480                       | 6,2                                   | 10,02                    | 17.510          | 46,10              | 498    | 1414    | 950              |
| 338DBBS | 146384              | 416414              | 195.325                       | 6,2                                   | 10,02                    | 26.265          | 72,10              | 736    | 1856    | 950              |
| 438DBBS | 146385              | 416461              | 248.391                       | 5,2                                   | 10,02                    | 35.020          | 96,41              | 1029   | 2261    | 950              |
| SI      |                     |                     | N•m                           | bar                                   | dm <sup>3</sup>          | cm <sup>2</sup> | kg•m <sup>2</sup>  | kg     |         | rpm              |

### Notes:

- ① Basic part number only. Does not include gear. Gear must be ordered separately with bore and keyway requirements.
- ② Dynamic torque shown. Static torque approximately 15% greater. Torque values are for new linings. Torque decreases with lining wear. At worn out condition, torque is approximately 0.66 of values shown.
- ③ Torque ratings are for units with a standard complement of springs. Consult factory for torque ratings of units with non-standard spring configurations.
- ④ Maximum allowable cylinder pressure is 120 psi (8,31 bar).
- ⑤ Absolute volume of releasing cavity.
- ⑥ Triple and quadruple disc units can also be supplied for each size. Consult factory for dimensional and technical data.

## DBA Description

Model DBA brakes are spring applied, pressure released, disc style brakes. They develop equal torque in either direction of rotation. Their torque and thermal capacities allow them to be used in the most demanding applications.

Brake construction and operation is shown in the figure. Pressurizing the brake compresses the brake springs and withdraws the clamping plates from the brake discs. Standard brakes are furnished with either one or two discs, which are free to move axially.

Model DBA uses a rubber diaphragm to form the releasing pressure chamber and to serve as the releasing piston. Brake friction material is attached to stationary components. Brake discs are either solid or ventilated. The disc type is indicated by an S for solid, or V, for ventilated, in the brake model designation. Solid discs are used in applications requiring a heat sink and/or where engagement is infrequent. Ventilated discs are recommended for cyclic application.

Torque ratings listed are for brakes with a standard complement of springs. The quantity of springs can be varied to customize the torque of the brake to suit a particular application. Consult the factory for brake torque of units with non-standard spring configurations.

Brake sizes are indicated by the number of brake discs and the disc diameter in inches. For instance, size 229DBA has two discs 29 inches in diameter.



## Features

### Large friction area

Allows brakes to absorb and dissipate high energy loads associated with high cyclic and high inertia stops.

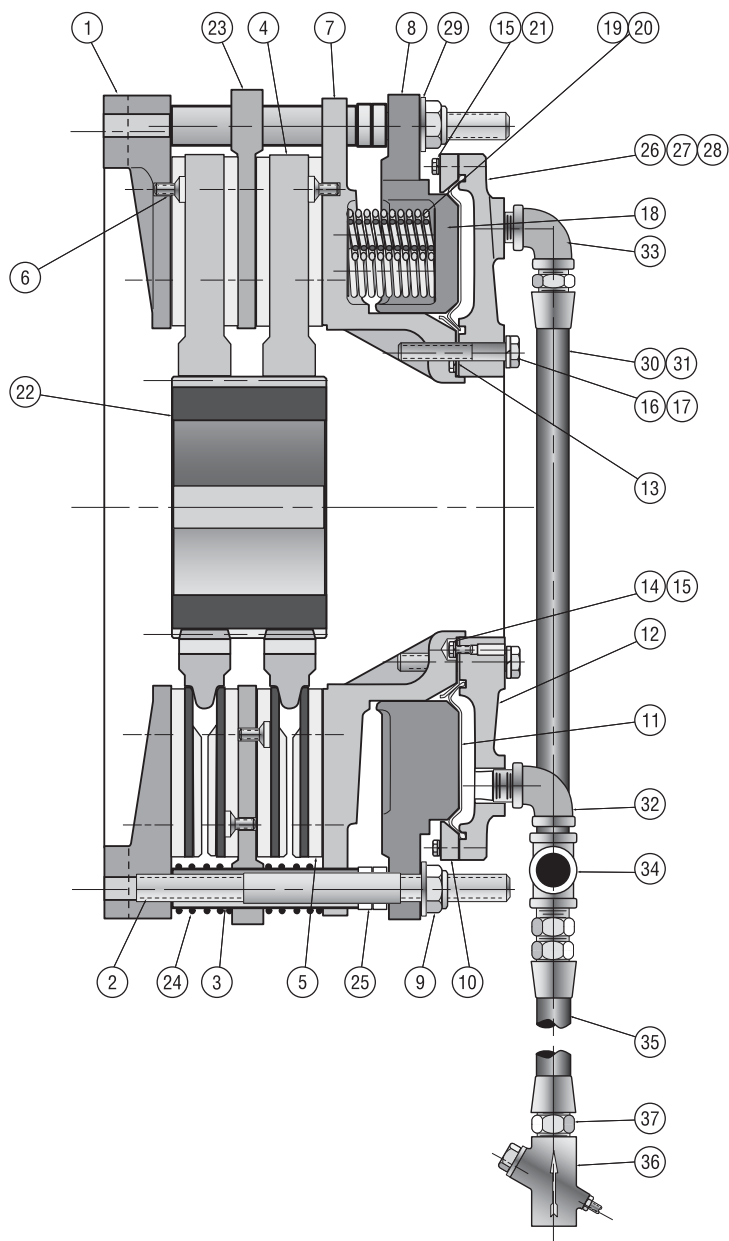
### Minimal adjustment required for lining wear

Single disc units require no wear adjustment and dual disc units require only one wear adjustment during the long life of the friction material.

## Where Used:

- Can making machines
- Draglines
- Power shovels
- Conveyors
- Power presses

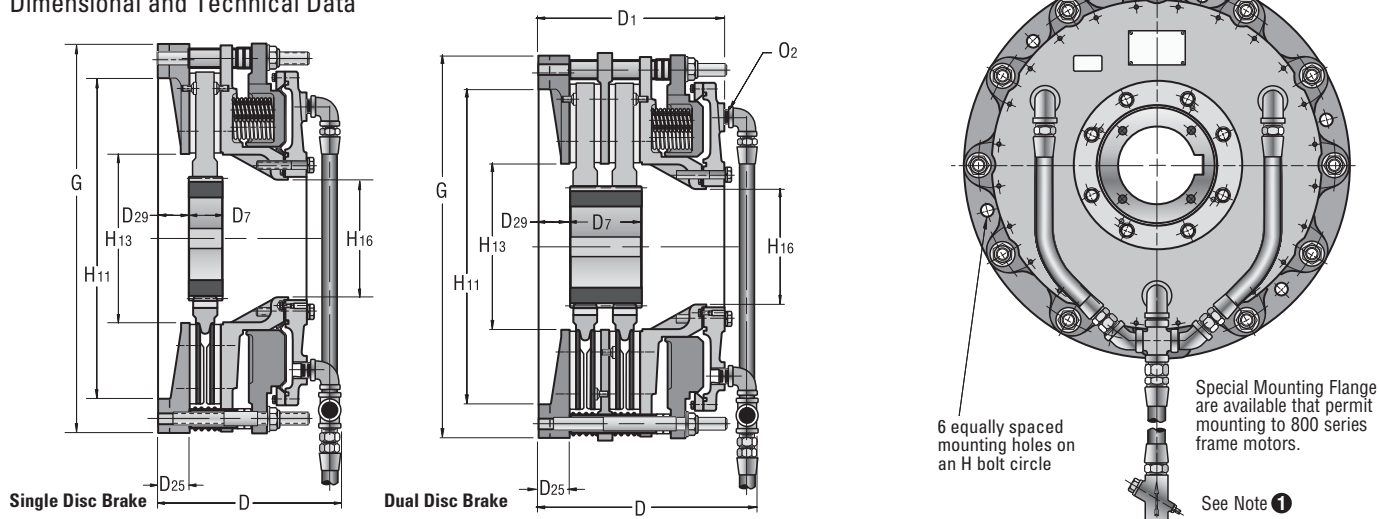
## DBA Component Parts



| Item No. | Description           |
|----------|-----------------------|
| 1        | Mounting Flange       |
| 2        | Stud                  |
| 3        | Clamp Tube            |
| 4        | Disc                  |
| 5        | Friction Disc         |
| 6        | Flat Head Screw       |
| 7        | Pressure Plate        |
| 8        | Spring Housing        |
| 9        | Locknut               |
| 10       | Outer Clamp Ring      |
| 11       | Diaphragm             |
| 12       | End Plate             |
| 13       | Inner Clamp Ring      |
| 14       | Hex Head Screw        |
| 15       | Lockwasher            |
| 16       | Hex Head Screw        |
| 17       | Lockwasher            |
| 18       | Spring Retainer Plate |
| 19       | Inner Spring          |
| 20       | Outer Spring          |
| 21       | Hex Head Screw        |
| 22       | Gear                  |
| 23       | Reaction Plate        |
| 24       | Release Spring        |
| 25       | Wear Spacer           |
| 26       | Name Plate            |
| 27       | Self Tapping Screw    |
| 28       | Warning Decal         |
| 29       | Washer                |
| 30       | Air Tube              |
| 31       | Air Tube              |
| 32       | 90 Deg. Street Elbow  |
| 33       | 90 Deg. Male Elbow    |
| 34       | Cross                 |
| 35       | Hose Assembly         |
| 36       | Flow Control Valve    |
| 37       | Bushing               |

## DBA Elements

### Dimensional and Technical Data



| English    | Dimensions in inches      |        |                 |                 |                 |        |      |                  |
|------------|---------------------------|--------|-----------------|-----------------|-----------------|--------|------|------------------|
| 29DBA      | 2.75                      | 31.000 | 28.00           | 14.75           | 10.25           | 33.998 | 1.06 | 1-11 1/2         |
| Basic Size | D <sub>25</sub>           | H      | H <sub>11</sub> | H <sub>13</sub> | H <sub>16</sub> | G 2    | L    | O <sub>2</sub> 3 |
| 29DBA      | 70                        | 787    | 711             | 375             | 260             | 863,5  | 27   | 1-11 1/2         |
| SI         | Dimensions in millimeters |        |                 |                 |                 |        |      |                  |

| English | Dimensions in inches      |      |                       |                |                |                 |                  |                |                 |
|---------|---------------------------|------|-----------------------|----------------|----------------|-----------------|------------------|----------------|-----------------|
| 129DBA  | 3.88                      | 7.13 | 15.51                 | 13.75          | 3.50           | 2.25            | 15.06            | 5.88           | 2.38            |
| 229DBA  | 4.88                      | 7.19 | 19.13                 | 17.38          | 7.12           | 2.25            | 18.06            | 7.00           | 3.12            |
| 329DBA  | 5.63                      | 6.88 | 22.93                 |                | 10.63          | 2.34            |                  |                |                 |
| Size    | Min.                      | Max. | D                     | D <sub>1</sub> | D <sub>7</sub> | D <sub>29</sub> | D                | D <sub>7</sub> | D <sub>29</sub> |
|         | ④ Bore Range              | ⑤    | Ventilated Disc Types |                |                |                 | Solid Disc Types |                |                 |
|         | Min.                      | Max. | D                     | D <sub>1</sub> | D <sub>7</sub> | D <sub>29</sub> | D                | D <sub>7</sub> | D <sub>29</sub> |
| 129DBA  | 99                        | 181  | 394                   | 349            | 89             | 57              | 383              | 149            | 60              |
| 229DBA  | 124                       | 182  | 486                   | 441            | 181            | 59              | 459              | 178            | 79              |
| 329DBA  | 143                       | 175  | 582                   |                | 270            | 59              |                  |                |                 |
| SI      | Dimensions in millimeters |      |                       |                |                |                 |                  |                |                 |

| English |             |                  | lb•in                                    | psi                        | in <sup>3</sup>  | in <sup>2</sup> | lb•ft <sup>2</sup> | lb          |         | rpm           |
|---------|-------------|------------------|------------------------------------------|----------------------------|------------------|-----------------|--------------------|-------------|---------|---------------|
| 129DBAS | 146162      | 413801           | 176700                                   | 100                        | 310              | 890             | 152                | 325         | 950     | 1500          |
| 229DBAS | 146163      | 414126           | 336200                                   | 100                        | 310              | 1780            | 292                | 520         | 1150    | 1500          |
| 129DBAV | 146162      | 413683           | 113000                                   | 60                         | 310              | 890             | 97                 | 185         | 970     | 900           |
| 229DBAV | 146163      | 413585           | 216000                                   | 60                         | 310              | 1780            | 191                | 340         | 1150    | 900           |
| 329DBAV | 146210      | 415080           | 339000                                   | 60                         | 310              | 2670            | 285                | 495         | 1549    | 900           |
| Size    | Part Number | Gear Part Number | 6 7 8<br>M <sub>r</sub><br>Torque Rating | Minimum Releasing Pressure | Releasing Volume | Friction Area   | Wk <sup>2</sup>    | Weight      |         | Maximum Speed |
|         |             |                  |                                          |                            |                  |                 | Disc & Gear        | Disc & Gear | Housing |               |
|         |             |                  |                                          |                            |                  |                 | J                  | Mass        |         |               |
| 129DBAS | 146162      | 413801           | 20000                                    | 6,9                        | 5,08             | 5741            | 6,38               | 147         | 430     | 1500          |
| 229DBAS | 146163      | 414126           | 38000                                    | 6,9                        | 5,08             | 11481           | 12,26              | 236         | 521     | 1500          |
| 129DBAV | 146162      | 413683           | 12800                                    | –                          | 5,08             | 5741            | 4,07               | 84          | 439     | 900           |
| 229DBAV | 146163      | 413585           | 24400                                    | –                          | 5,08             | 11481           | 8,02               | 154         | 521     | 900           |
| 329DBAV | 146210      | 415080           | 38400                                    | –                          | 5,08             | 17223           | 11,97              | 224         | 703     | 900           |
| SI      |             |                  | N•m                                      | bar                        | dm <sup>3</sup>  | cm <sup>2</sup> | kg•m <sup>2</sup>  | kg          |         | rpm           |

### Notes:

1 Basic part number only. Does not include gear. Gear must be ordered separately with the bore and keyway requirements. All ventilated disc brakes are furnished with an approximate 15.5 inch (394 mm) length of flexible hose and a flow control valve having a 1-11 1/2 American National Pipe Thread port.

2 Tolerance +0.000/-0,003 in (+0.00/-0,08 mm)

3 American National Pipe Thread.

4 Minimum bore based on catalog rated torque and standard spring configuration.

5 Maximum bore based on catalog rated torque and flat key.

6 Dynamic torque shown. Static torque approximately 1.15 greater. Torque values are for new linings. Torque decreases with lining wear. At the worn out condition, torque is approximately 0.66 of value shown.

7 Torque ratings are for units with a standard complement of springs. Consult factory for torque ratings of units with non-standard spring configurations.

8 Maximum allowable cylinder pressure is 120 psi (8,3 bar).

## For More Information

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