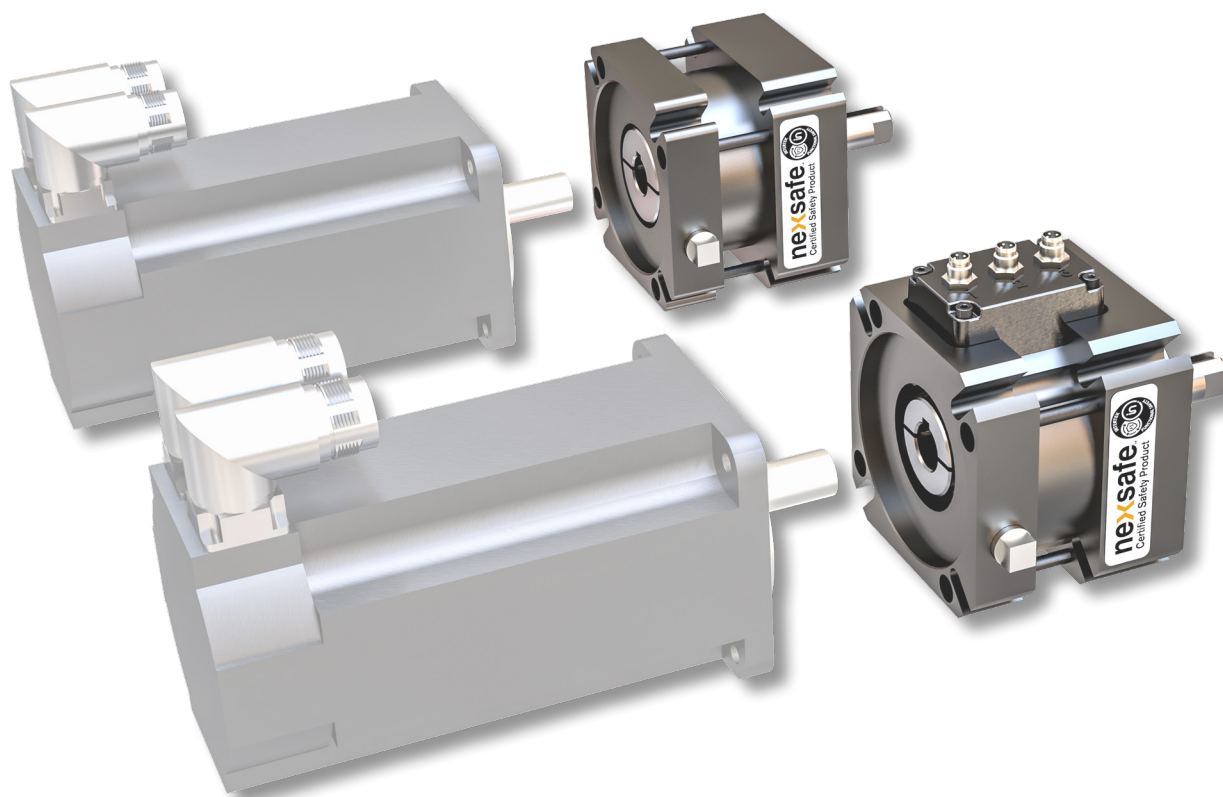


## ROTARY MOTION CONTROL

Technical Data Sheet



### Eclipse® Servomotor Brakes

- Standard Servomotor Brake (SBP)
- NexSafe™ Safety Rated Servomotor Brake (SAFE-SBP)



- ✓ CAT 4 PL e
- ✓ SIL 3

Certificate NO. FS-CRT-0008  
[intertek.com/directories/](http://intertek.com/directories/)



PATENTED

# The Nexen Eclipse® Advantage

Tracing its roots back to 1902, Nexen's long history of innovation and quality show a legacy of advancing the motion control industry through its commitment to product development.

Continually testing and improving products as well as developing new technology, Nexen's contribution to the industry is now illustrated in the expanded Eclipse® line of servomotor brakes. With over 140 models in seven bore sizes, Nexen offers an **off-the-shelf braking solution for any servo application**. These spring-engaged, air released brakes eliminate the performance problems associated with electrical brakes for consistent, long lasting performance.

## WASH-DOWN PROTECTION

Sealed housings offer environmental protection and meets IP67 dust and waterproof standards. Optional nickel plating also available.

## SMOOTH TORQUE TRANSMISSION

Double-taper facing locks down on the housing and rotor to create a zero-backlash torque transmission interface.

## ZERO BACKLASH

The easy to install, keyless split-hub shaft collar prevents backlash for smooth stopping and precision holding.

## COOL OPERATION

Air release disengagement adds no heat, providing cool operation and long life.

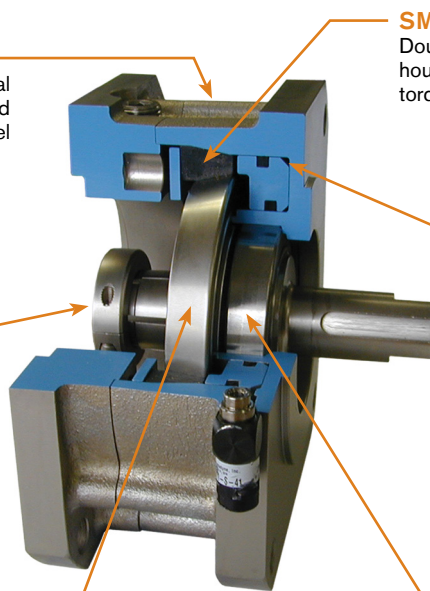
Standard electric brakes generate heat when disengaged, lowering the efficiency of the unit. The air-release design of the Eclipse® models requires no energy for operation, resulting in higher, more consistent torque capabilities.

## LOW INERTIA

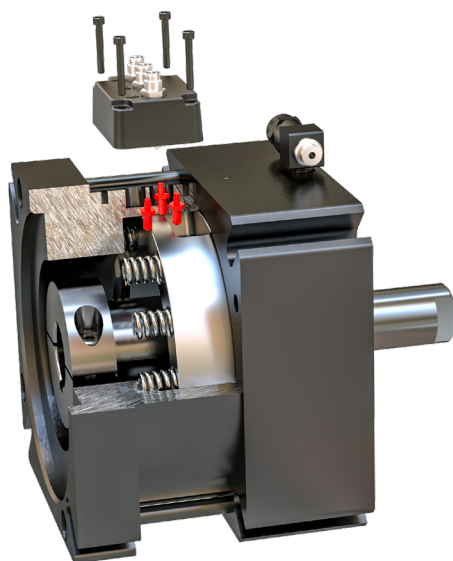
One-piece rotor/shaft assembly lowers inertia and eliminates spline for zero backlash.

## RUGGED STRENGTH

One piece, solid shaft increases torsional rigidity and overhung load capabilities.



**Certified. Dependable. Safe.**



**nexsafe™**  
Certified Safety Products



Nexen's Spring Engaged, Air Released Servomotor Brakes are available safety rated to comply with international safety standard ISO 13849-1. Category Level up to 4 and Performance Level up to e, able to be achieved using Nexsafe™ products in recommended configuration. Contact Nexen for Safety Rated Versions of Spring Engaged, Air Released Servomotor Brakes.

- Integral clamp collar with backup keyway
- Multiple engagement springs
- 3 Operating mode sensors available
- Default to lock



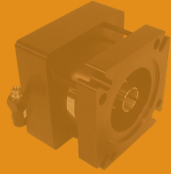
- ✓ CAT 4 PL e
- ✓ SIL 3

Certificate NO. FS-CRT-0008  
[intertek.com/directories/](http://intertek.com/directories/)

*Eclipse® Brakes offer at least 20-50% more torque than competitive brakes.*

**Standard Electric Servomotor Brake**  
limited torque capabilities

Static Torque up to 125 Nm



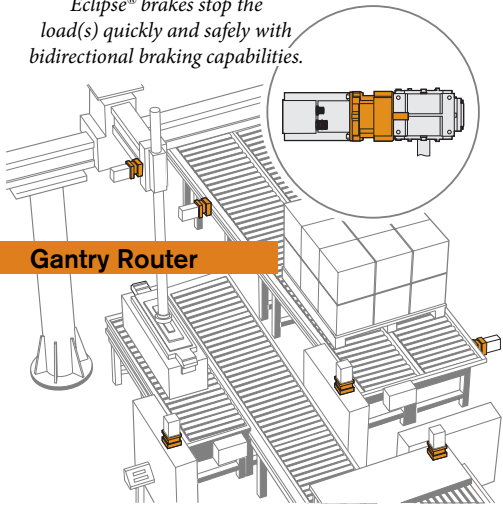
**Nexen Eclipse® Servomotor Brakes**

## Dependable Power Ensures Safety

When it comes to service factor, Nexen believes more is better. More torque and high brake stiffness mean operators and equipment are protected.

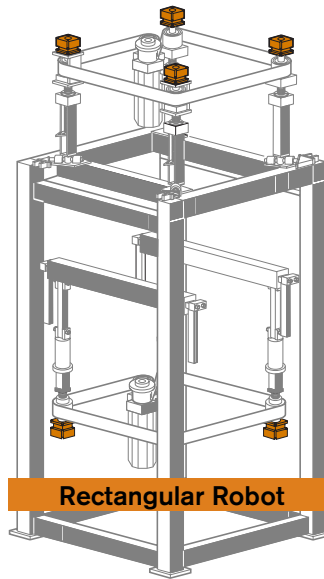
Strong enough to stall a servomotor in continuous torque mode, the high torque ratings on Eclipse® brakes provide fast response with a short stopping distance in emergency situations. In fact, Nexen's servomotor brakes deliver at least 20-50% more torque than competitive brakes.

*In emergency stopping situations, Eclipse® brakes stop the load(s) quickly and safely with bidirectional braking capabilities.*



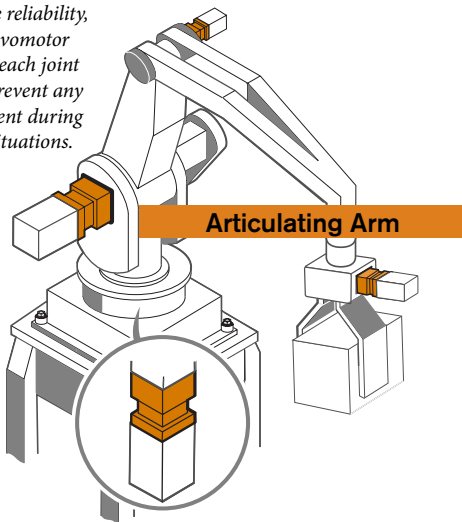
**Gantry Router**

*Able to repeatedly stop and hold in challenging cyclic operations, Nexen Servomotor Brakes also offer a safety feature to this robot: if a belt breaks, the servomotor brake(s) instantly engage to hold the load securely.*



**Rectangular Robot**

*With fail-safe reliability, Eclipse® servomotor brakes hold each joint securely to prevent any arm movement during power-off situations.*



**Articulating Arm**

## Dynamic Stopping

Medical Devices

Food Production

Automotive Parts

Renewable Energy

Semiconductors

Printing

Paper Converting

CNC Machining

Packaging

Machine Tool

Robotics

Woodworking

Conveying

## APPLICATIONS

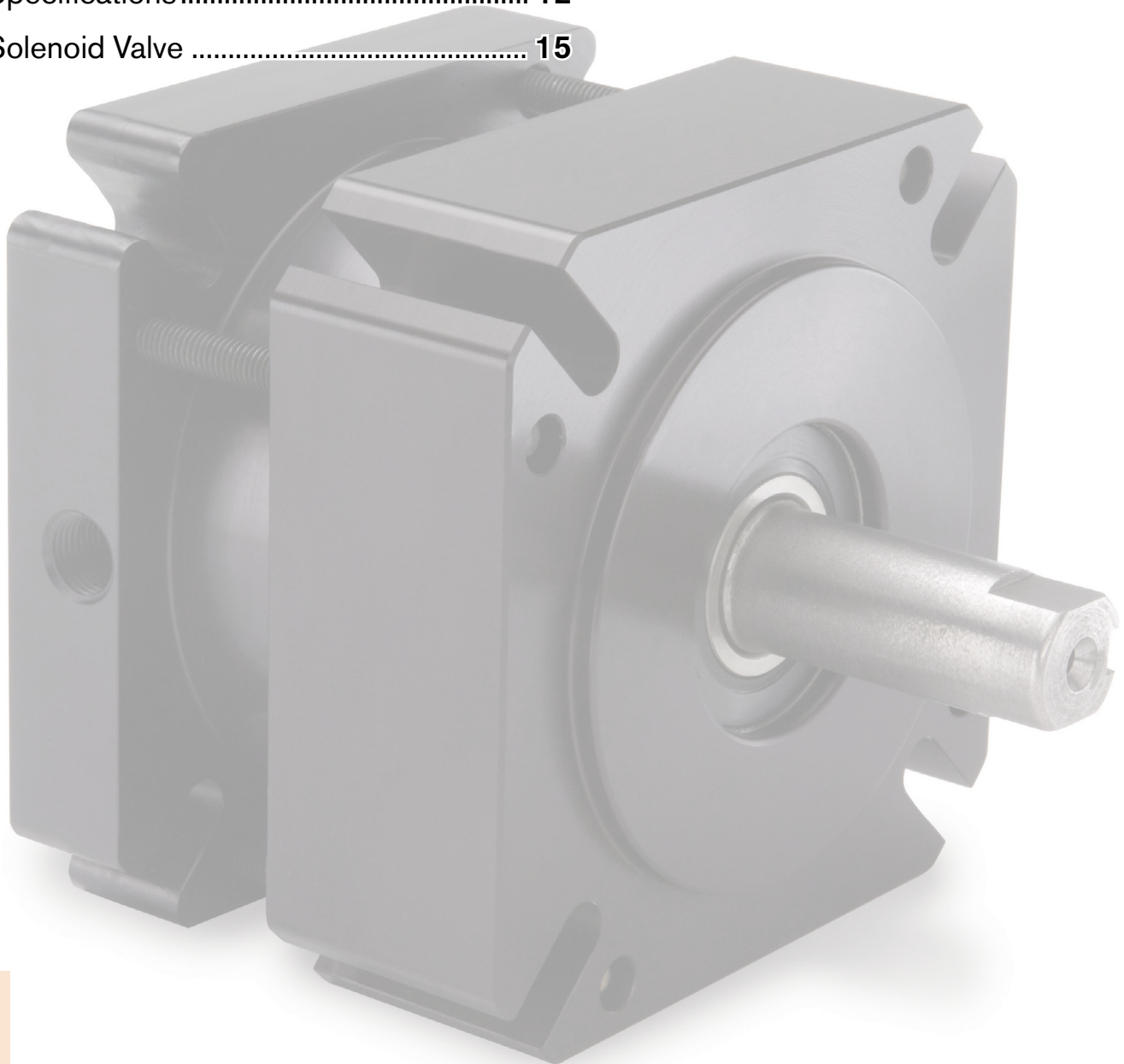
Precision Holding



## Standard Eclipse<sup>®</sup> Servomotor Brakes

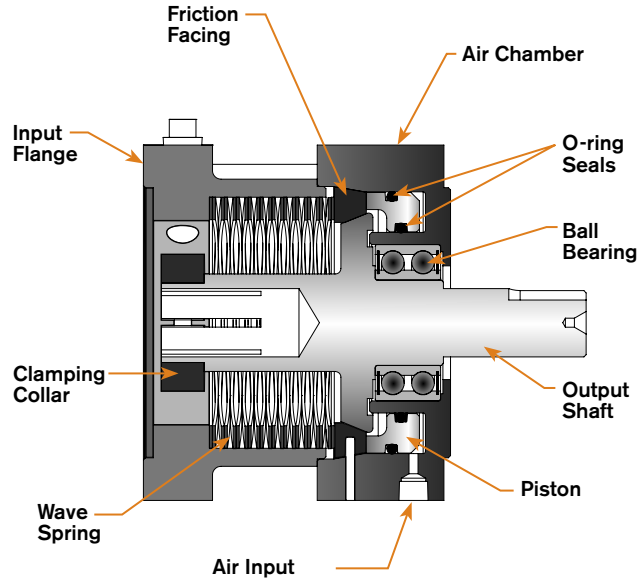
Standard Nexen Servomotor Brakes offer proven, reliable spring engaged, air released performance as an off-the-shelf solution for any servomotor application.

|                                |    |
|--------------------------------|----|
| Cross-Sectional Drawings ..... | 5  |
| Dimensions .....               | 6  |
| Specifications .....           | 12 |
| Solenoid Valve .....           | 15 |



# Eclipse® Brake Cross-Sectional Drawings

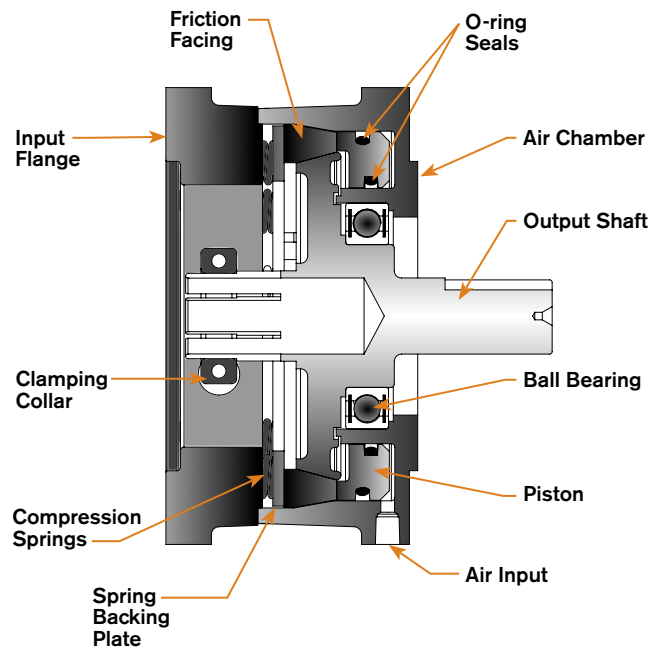
## SIZES 2, 3, 4, 5



NOTE: Size 5 contains a single row, deep groove ball bearing. Sizes 2, 3 and 4 contain a double row. Safety Rated units have compression springs instead of a wave spring.



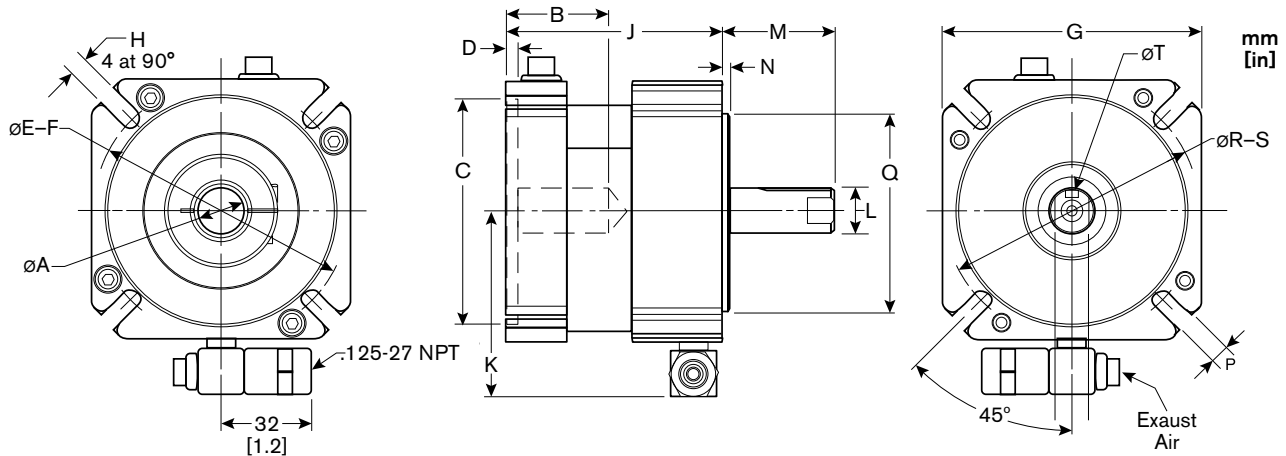
## SIZES 7, 9, 11



# Eclipse<sup>®</sup> Dimensions

The following section contains the approximate dimensions for each size of Nexen's Eclipse<sup>®</sup> Servomotor Brakes. Always verify product information with the user manual when specifying a new brake into your application. Refer to [www.nexengroup.com](http://www.nexengroup.com) for user manuals, product dimensions and specifications.

## Servomotor Brake Approximate Dimensions (NEMA Square Flange Motors)



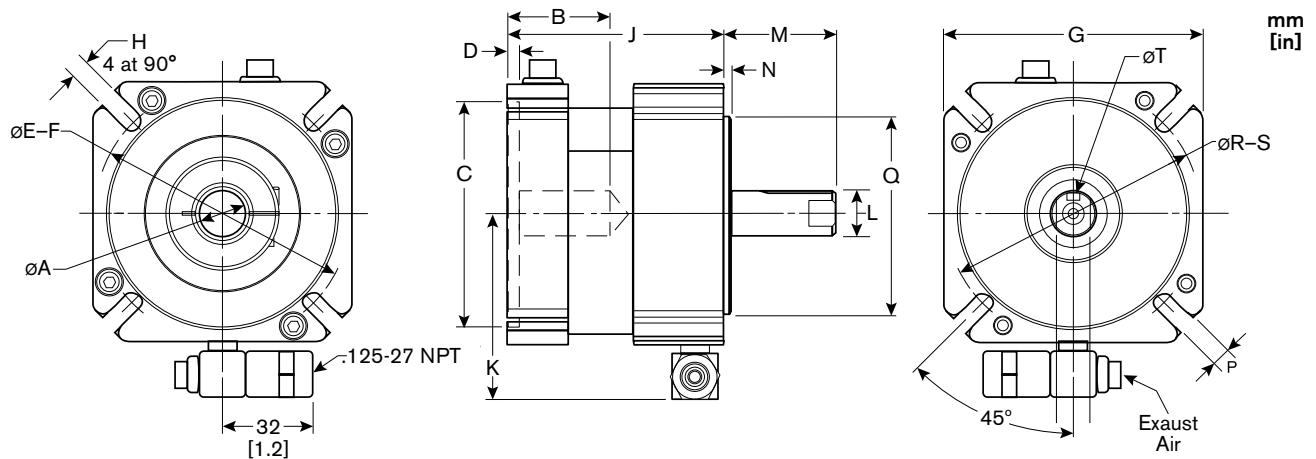
Contact Nexen if one or more of these dimensions must be modified for your application.

| NEMA Square Flange |                      | NEMA Size 23 |        |        | NEMA Size 34 |        |        |        | NEMA Size 42 |          |  |
|--------------------|----------------------|--------------|--------|--------|--------------|--------|--------|--------|--------------|----------|--|
| Nexen Model        |                      | SBP-2        |        |        | SBP-3        |        |        |        | SBP-4        |          |  |
| A                  | Bore Diameter        | 0.25         | 0.312  | 0.375  | 0.375        | 0.5    | 0.5    | 0.625  | 0.625        |          |  |
| B                  | Bore Depth           | 1.43         |        |        | 1.46         |        |        |        | 2.2          | 2.5      |  |
| C                  | Pilot (female)       | 1.5          |        |        | 2.875        |        |        |        | 4.331        | 2.189    |  |
| D                  | Pilot Depth          | 0.11 *       | 0.11   | .09 *  | 0.16         | 0.2    | 0.16   | 0.2    | 0.138        | --       |  |
| E-F                | Bolt Circle Diameter | 2.625        |        |        | 3.346-4.280  |        |        |        | 4.950-5.904  |          |  |
| G                  | Flange Width         | 2.25         |        |        | 3.62         |        |        |        | 4.92         |          |  |
| H                  | Bolt Hole            | 10-24        |        |        | 0.28         |        |        |        | 0.49         |          |  |
| J                  | Length               | 2.77         |        |        | 3.06         |        |        |        | 4.23         |          |  |
| K                  | Quick Exhaust        | 1.99         |        |        | 2.6          | 2.6    | 3.62   | 2.3    | 3.2          |          |  |
| L                  | Shaft Diameter       | 0.25         | 0.312  | 0.375  | 0.375        | 0.5    | 0.5    | 0.625  | 0.625        |          |  |
| M                  | Shaft Length         | .81          | .81    | 1.25   | 1.25         | 1.2    | 1.2    | 1.18   | 1.5          | 2.063    |  |
| N                  | Pilot Extension      | 0.095        |        |        | 0.12         | 0.12   | 0.16   | 0.12   | 0.12         | 0.18     |  |
| P                  | Bolt Hole            | 0.197        |        |        | 0.233        |        |        |        | 0.39         | 0.375-16 |  |
| Q                  | Pilot (male)         | 1.5          |        |        | 2.875        |        |        |        | 2.187        | 4.5      |  |
| R-S                | Bolt Circle Diameter | 2.625        |        |        | 3.875-4.280  |        |        |        | 4.950-5.904  | 5.875    |  |
| T                  | Keyway               | none         |        |        | none         | 0.125  | 0.125  | 0.189  | 0.189        |          |  |
| Product Number     |                      | 964606       | 964611 | 964605 | 964729       | 964728 | 964722 | 964726 | 964833       | 964835   |  |

NOTE: Dimensions for NEMA brakes are shown in inches.

\*See drawing for details on pilot depth.

## Servomotor Brake Approximate Dimensions (IEC Square Flange Motors: sizes 2 & 3)



Contact Nexen if one or more of these dimensions must be modified for your application.

### Size 2

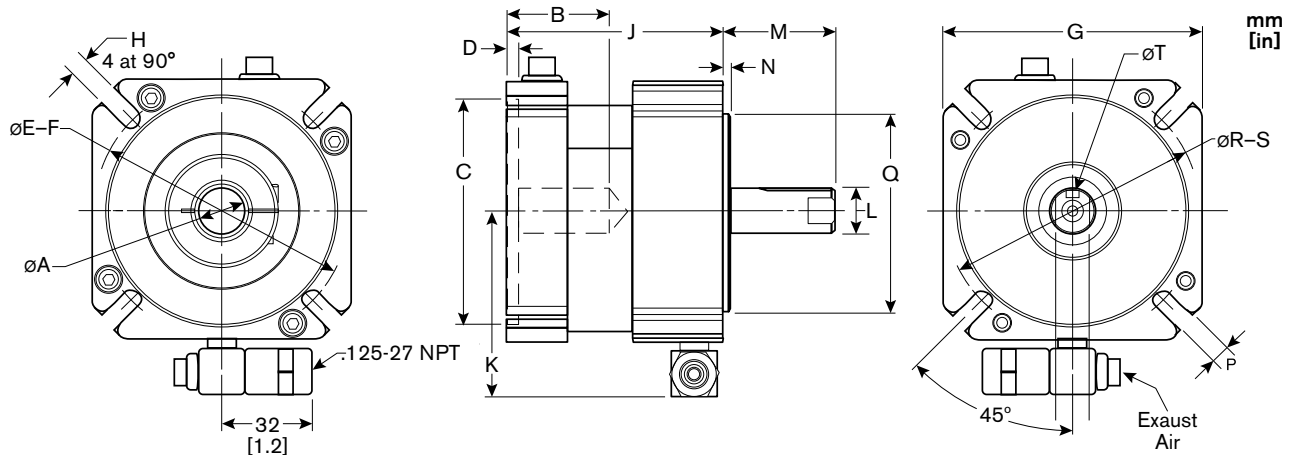
| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLE CIRCLE DIAMETER | FLANGE WIDTH | BOLE HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLE HOLE | PILOT (male) | BOLE CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 964610         | 9.0       | 35.9       | 40             | 2.4         | 63                   | 57.2         | 10-24     | 70.4   | 50.6          | 9.0        | 20           | 2.4        | 0.205"    | 40           | 63                   | no key |
| 964615         | 9.0       | 35.9       | 40             | 2.4         | 63                   | 57.2         | M4        | 70.4   | 50.6          | 9.0        | 20           | 2.4        | 0.205"    | 40           | 63                   | no key |
| 964612         | 9.0       | 37         | 50             | 3.5         | 70                   | 57.2         | M5        | 70.4   | 50.6          | 9.0        | 25           | 2.4        | 0.250"    | 50           | 63                   | no key |
| 964617         | 11.0      | 33.1       | 60             | 3.5         | 70-91.5              | 74.2         | 0.250"    | 74.5   | 57            | 11.0       | 23           | 1.5        | 6         | 60           | 75-91.5              | 4.0    |
| 964614         | 11.0      | 33.1       | 60             | 3.5         | 70-91.5              | 74.2         | 0.250"    | 74.5   | 57            | 14.0       | 30           | 1.5        | 6         | 60           | 75-91.5              | 5.0    |
| 964613         | 14.0      | 33.1       | 50             | 3.5         | 63-91.5              | 74.2         | 0.250"    | 74.5   | 56            | 14.0       | 30           | 1.5        | 6         | 50           | 70-91.5              | 5.0    |

### Size 3

| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLE CIRCLE DIAMETER | FLANGE WIDTH | BOLE HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLE HOLE | PILOT (male) | BOLE CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 964721         | 10        | 37         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 10         | 30           | 3.0        | 7.0       | 80           | 100-109              | 3.0    |
| 964717         | 13        | 37         | 2.875"         | 4           | 85-109               | 92           | 7.0       | 77.7   | 65            | 13         | 30           | 3.0        | 5.9       | 2.875"       | 100-109              | 5      |
| 964713         | 14        | 37         | 50             | 5           | 95-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 7.0       | 50           | 95-109               | 5      |
| 964714         | 14        | 37         | 70             | 4           | 85-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 7.0       | 70           | 85-109               | 5      |
| 964709         | 14        | 37         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964710         | 14        | 37         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964724         | 14        | 40         | 80             | 8           | 90-109               | 92           | 7.0       | 80.7   | 65            | 14         | 30           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964718         | 14        | 37         | 2.875"         | 4           | 85-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 5.9       | 2.875"       | 98-109               | 5.0    |
| 964725         | 14        | 37         | 60             | 4           | 85-115               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 5.9       | 2.875"       | 98-109               | 5.0    |
| 964727         | 14        | 37         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 14         | 30           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964716         | 0.625"    | 37         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 0.625"     | 30           | 3.0        | 5.9       | 2.875"       | 98-109               | .188"  |
| 964720         | 16        | 42         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 16         | 40           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964712         | 16        | 42         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 16         | 40           | 3.0        | 7.0       | 70           | 90-109               | 5.0    |
| 964711         | 16        | 45         | 80             | 5           | 90-109               | 92           | 7.0       | 69.9   | 65            | 16         | 40           | 3.0        | 7.0       | 70           | 90-109               | 5.0    |
| 964715         | 16        | 42         | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 16         | 40           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964730         | 16        | 48         | 80             | 6           | 90-109               | 92           | 7.0       | 83.7   | 65            | 16         | 40           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964732         | 19        | 51.6       | 80             | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 16         | 40           | 3.0        | 7.0       | 80           | 100-109              | 5.0    |
| 964723         | 19        | 57         | 110            | 11          | 126-150              | 125/92       | 10.0      | 88.2   | 65            | 16         | 40           | 3.0        | 7.0       | 70           | 90-109               | 5.0    |
| 964719         | 19        | 40.7       | 2.875"         | 5           | 90-109               | 92           | 7.0       | 77.7   | 65            | 16         | 40           | 3.0        | 7.0       | 70           | 90-109               | 5.0    |
| 964733         | 19        | 51         | 80             | 5           | 90-109               | 92           | 7.0       | 84.2   | 65            | 19         | 40           | 3.0        | 7.0       | 80           | 100-109              | 6.0    |

All dimensions shown in millimeters unless otherwise specified.

## Servomotor Brake Approximate Dimensions (IEC Square Flange Motors: size 4)



Contact Nexen if one or more of these dimensions must be modified for your application.

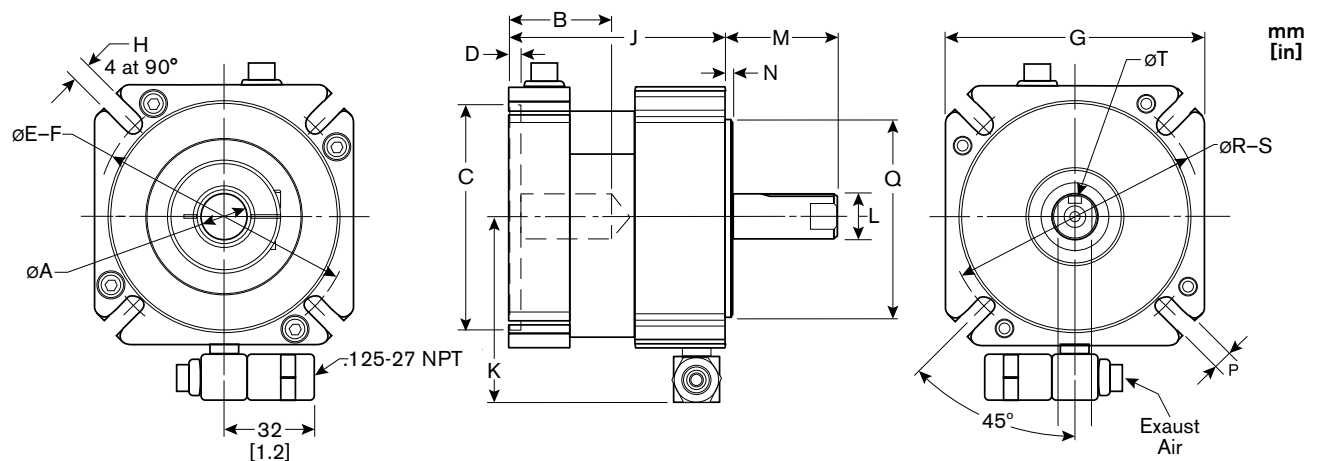
### Size 4

| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLT CIRCLE DIAMETER | FLANGE WIDTH | BOLT HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLT HOLE | PILOT (male) | BOLT CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 964865         | 14        | 36         | 80             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 14         | 20.5         | 2.3        | 10.0      | 80           | 115-150              | none   |
| 964867         | 14        | 63         | 95             | 6           | 115-150              | 125          | 10.0      | 113.2  | 82            | 14         | 36           | 2.3        | 10.0      | 95           | 115-150              | 5.0    |
| 964824         | 14        | 55.5       | 80             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 14         | 30           | 2.3        | 10.0      | 80           | 115-150              | 5.0    |
| 964852         | 16        | 56.3       | 110            | 3.5         | 126-150              | 125          | 10.0      | 105.7  | 82            | 16         | 40           | 2.3        | 10.0      | 110          | 130-150              | 5.0    |
| 964834         | 0.625"    | 56.1       | 2.500"         | 3.5         | 127-150              | 125          | 10.0      | 107.4  | 82            | 0.625"     | 2.000"       | 2.5        | 10.0      | 2.500"       | 127-150              | 0.188" |
| 964826         | 0.625"    | 56.2       | 4.500"         | 3.5         | 5.875"               | 125          | 0.405"    | 106.5  | 82            | 19         | 40           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964818         | 19        | 55.5       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 19         | 40           | 2.3        | 10.0      | 95           | 115-150              | 6.0    |
| 964823         | 19        | 55.5       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 19         | 40           | 2.3        | 10.0      | 95           | 115-150              | 6.0    |
| 964843         | 19        | 55.5       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 19         | 40           | 2.3        | 10.0      | 96           | 115-150              | 6.0    |
| 964866         | 19        | 55.6       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 70           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964864         | 19        | 55.6       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 70           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964826         | 0.625"    | 56.3       | 4.500"         | 3.5         | 5.875"               | 125          | 0.405"    | 106.5  | 82            | 19         | 40           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964837         | 19        | 56.3       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 40           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964814         | 19        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 50           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964819         | 19        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 50           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964832         | 19        | 60.5       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 19         | 55           | 2.3        | 10.0      | 95           | 115-150              | 6.0    |
| 964844         | 19        | 61.3       | 110            | 7           | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 55           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964856         | 19        | 64.5       | 110            | 16          | 126-150              | 125          | 10.0      | 115.5  | 82            | 19         | 50           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964838         | 19        | 60.5       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 20         | 62           | 2.3        | 10.0      | 95           | 115-130              | none   |
| 964849         | 19        | 60.5       | 95             | 3.5         | 115                  | 125/150      | .375-16   | 105.7  | 95            | 24         | 50           | 2.3        | 10.0      | 130          | 165-186              | 8.0    |
| 964851         | 19        | 70.3       | 110            | 16          | 126-150              | 125          | 10.0      | 115.5  | 82            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964839         | 19        | 55.6       | 95             | 3.5         | 115-150              | 125          | 10.0      | 104.8  | 82            | 0.625"     | 2.063"       | 4.1        | .375-16   | 4.500"       | 5.875"               | 0.188" |
| 964816         | 19        | 42.9       | 95             | 3           | 126-150              | 125          | 10.0      | 104    | 82            | 0.875"     | 2.125"       | 4.1        | .375-16   | 4.500"       | 5.875"               | 0.188" |
| 964820         | 22        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 105.6  | 82            | 0.625"     | 2.063"       | 4.1        | .375-16   | 4.500"       | 5.875"               | 0.188" |
| 964821         | 22        | 67.1       | 110            | 3.5         | 126-150              | 125          | 10.0      | 99.2   | 82            | 22         | 50           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964822         | 22        | 73.5       | 110            | 6.5         | 145                  | 125          | 9.0       | 124.5  | 79            | 22         | 58           | 6.0        | 10.0      | 110          | 130-150              | 6.0    |
| 964836         | 24        | 56.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 105.6  | 82            | 0.875"     | 2.125"       | 4.1        | .375-16   | 4.500"       | 5.875"               | 0.188" |
| 964815         | 24        | 55.9       | 110            | 4           | 150-186              | 150/125      | 12.0      | 105    | 82            | 0.875"     | 2.125"       | 4.1        | .375-16   | 4.500"       | 5.875"               | 0.188" |
| 964817         | 24        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 24         | 50           | 2.3        | 10        | 110          | 130-150              | 0.188" |
| 964851         | 19        | 70.3       | 110            | 16          | 126-150              | 125          | 10.0      | 115.5  | 82            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964842         | 28        | 67.1       | 110            | 7           | 126-150              | 125          | 10.0      | 106.5  | 82            | 28         | 60           | 2.3        | 10.0      | 110          | 130-150              | none   |
| 964848         | 24        | 59         | 110            | 7           | 126-150              | 125          | 10.0      | 106.5  | 82            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964853         | 24        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 19         | 35           | 2.3        | 10.0      | 110          | 130-150              | 6.0    |
| 964830         | 24        | 54.7       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 24         | 45           | 2.3        | 7.0       | 95           | 115-150              | 8.0    |
| 964825         | 24        | 54.7       | 95             | 3.5         | 115-150              | 125          | 10.0      | 105.7  | 82            | 24         | 50           | 2.3        | 10.0      | 95           | 115-150              | 8.0    |
| 964828         | 24        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 95            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964829         | 24        | 55.5       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964860         | 24        | 58.1       | 110            | 3.5         | 126-150              | 125          | 10.0      | 106.5  | 82            | 24         | 50           | 2.3        | 10.0      | 110          | 130-150              | 8.0    |
| 964855         | 28        | 85.7       | 110            | 7           | 126-150              | 125          | 10.0      | 125    | 82            | 28         | 60           | 2.3        | 10.0      | 110          | 130-150              | none   |

All dimensions shown in millimeters unless otherwise specified.



## Servomotor Brake Approximate Dimensions (IEC Square Flange Motors: size 5)



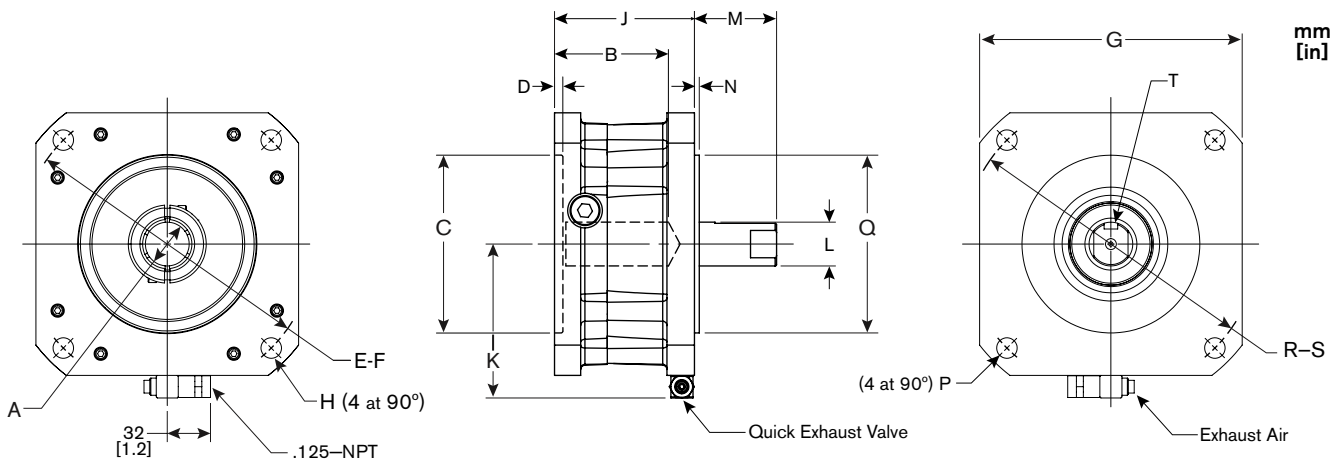
Contact Nexen if one or more of these dimensions must be modified for your application.

### Size 5

| Product Number | BORE DIA.<br>A | BORE DEPTH<br>B | PILOT (female)<br>DEPTH<br>C | PILOT DEPTH<br>D | BOLT CIRCLE DIAMETER<br>E-F | FLANGE WIDTH<br>G | BOLT HOLE<br>H | LENGTH<br>J | QUICK EXHAUST<br>K | SHAFT DIA.<br>L | SHAFT LENGTH<br>M | PILOT EXT.<br>N | BOLT HOLE<br>P | PILOT (male)<br>Q | BOLT CIRCLE DIAMETER<br>R-S | KEYWAY<br>T |
|----------------|----------------|-----------------|------------------------------|------------------|-----------------------------|-------------------|----------------|-------------|--------------------|-----------------|-------------------|-----------------|----------------|-------------------|-----------------------------|-------------|
| 964933         | 24             | 63              | 110                          | 6.2              | 130                         | 150.5             | M8             | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964934         | 24             | 63              | 110                          | 6.2              | 145                         | 150.4             | M8             | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964909         | 24             | 58              | 110                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964913         | 24             | 58              | 110                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964907         | 24             | 58              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964908         | 24             | 58              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964930         | 24/kwy         | 66.7            | 110                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964912         | 24             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964916         | 24             | 64              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 131.9       | 95                 | 0.875"          | 2.125"            | 4.1             | .375-16        | 4.500"            | 5.875"                      | 0.188"      |
| 964923         | 24             | 58              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 131.9       | 95                 | 1.062"          | 1.950"            | 4.1             | .375-16        | 4.500"            | 5.875"                      | 0.250"      |
| 964917         | 1.125"         | 60.5            | 4.500"                       | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 110               | 165-186                     | 8.0         |
| 964929         | 28             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964915         | 28             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 28              | 60                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964920         | 28             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 28              | 60                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964928         | 28             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 131.9       | 95                 | 1.062"          | 1.950"            | 4.1             | .375-16        | 4.500"            | 5.875"                      | 0.250"      |
| 964932         | 28             | 71.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 28              | 60                | 2.4             | 12.0           | 130               | 165-186                     | 8.0         |
| 964918         | 32             | 58              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 32              | 54                | 2.4             | 12.0           | 130               | 165-186                     | 10.0        |
| 964931         | 32             | 58              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 32              | 54                | 2.4             | 12.0           | 130               | 165-186                     | 10.0        |
| 964925         | 32             | 82              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 24              | 50                | 2.4             | 12.0           | 130               | 165-186                     | none        |
| 964906         | 32             | 65.7            | 130                          | 4.0              | 215                         | 178/<br>150.4     | 15.0           | 140.5       | 95                 | 0.875"          | 2.125"            | 4.1             | .375-16        | 4.500"            | 5.875"                      | 0.188"      |
| 964921         | 32             | 75.2            | 130                          | 4.0              | 215                         | 178/<br>150.4     | 15.0           | 141         | 95                 | 32              | 60                | 2.4             | 12.0           | 130               | 165-186                     | 10.0        |
| 964919         | 32             | 66.7            | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 132.5       | 95                 | 32              | 60                | 2.4             | 12.0           | 130               | 165-186                     | 10.0        |
| 964937         | 32/kwy         | 83              | 130                          | 6.2              | 150-186                     | 150.4             | 12.0           | 148.5       | 95                 | 32              | 80                | 2.4             | 12.0           | 130               | 165-186                     | 10.0        |

All dimensions shown in millimeters unless otherwise specified.

## Servomotor Brake Approximate Dimensions (IEC Square Flange Motors: size 7)



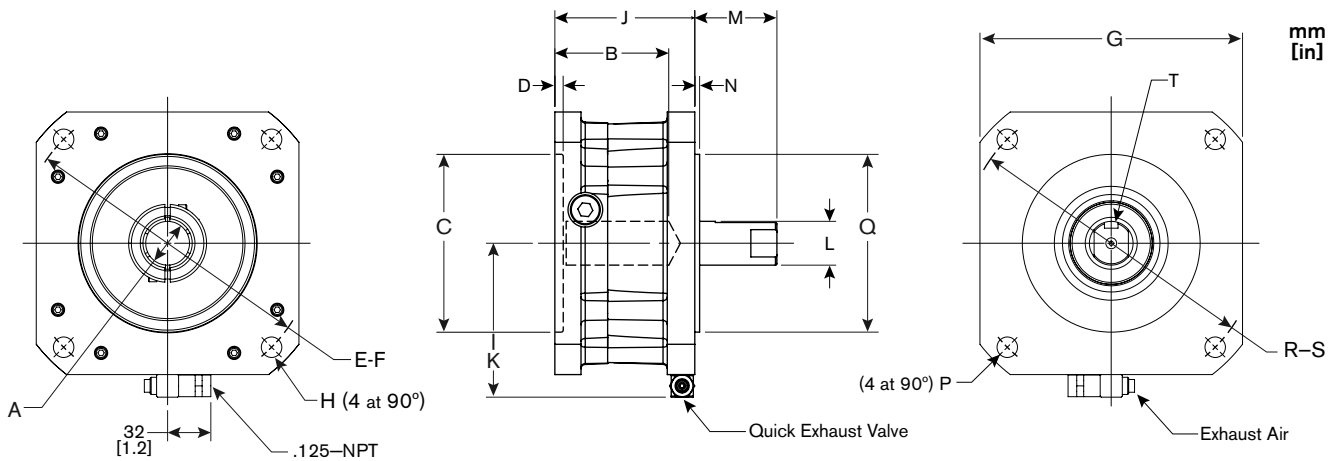
Contact Nexen if one or more of these dimensions must be modified for your application.

### Size 7

| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLE CIRCLE DIAMETER | FLANGE WIDTH | BOLE HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLE HOLE | PILOT (male) | BOLE CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 965008         | 24        | 83.2       | 130            | 6.1         | 165                  | 192          | M10       | 102.3  | 113           | 24         | 50           | 3.5        | 12.0      | 130          | 180                  | 8.0    |
| 965010         | 32        | 83.2       | 130            | 6.1         | 165                  | 192          | M10       | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 130          | 215                  | 10.0   |
| 965001         | 32        | 83.2       | 180            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 180          | 215                  | 10.0   |
| 965006         | 32        | 83.2       | 180            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 180          | 215                  | 10.0   |
| 965004         | 32        | 83.2       | 130            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 130          | 215                  | 10.0   |
| 965014         | 32        | 82         | 130            | 6.1         | 165                  | 174          | .438-14   | 102.3  | 105           | 1.250"     | 80           | 3.2        | 13.5      | 4.500"       | 200                  | 0.250" |
| 965015         | 1.375"    | 88.2       | 4.500"         | 6.1         | 200                  | 174          | .500-13   | 102.3  | 105           | 1.375"     | 3.875"       | 3.2        | 13.5      | 4.500"       | 200                  | 0.314" |
| 965011         | 1.375"    | 88.2       | 4.500"         | 6.1         | 200                  | 174          | .500-13   | 102.3  | 105           | 1.375"     | 3.875"       | 3.2        | 13.5      | 4.500"       | 200                  | 0.314" |
| 965017         | 1.375"    | 84.6       | 4.500"         | 6.1         | 7.750"               | 174          | .375-16   | 102.3  | 105           | 1.375"     | 66.5         | 3.2        | .375-16   | 4.500"       | 7.750"               | 0.314" |
| 965005         | 35        | 88.2       | 4.500"         | 6.1         | 200                  | 174          | M12       | 102.3  | 104           | 35         | 79           | 3.2        | 13.5      | 4.500"       | 200                  | 10.0   |
| 965007         | 32        | 84.9       | 180            | 6.1         | 215                  | 192          | 15.0      | 102.3  | NA            | 1.375"     | 3.37"        | 0.250"     | .500"     | 8.500"       | 7.250"               | 0.314" |
| 965012         | 32        | 83.2       | 130            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 132           | 1.125"     | 2.89"        | 0.250"     | .500-13   | 8.500"       | 7.250"               | 0.250" |
| 965013         | 32        | 83.2       | 130            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 130          | 215                  | 10.0   |
| 965000         | 32        | 83.2       | 130            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 32         | 60           | 3.5        | 15.0      | 130          | 215                  | 10.0   |
| 965026         | 32/kwy    | 82.1       | 130            | 6.1         | 215                  | 192          | .500-13   | 102.3  | 113           | 35         | 95           | 3.5        | .500-13   | 130          | 215                  | 10.0   |
| 965003         | 35        | 88.2       | 4.500"         | 6.1         | 200                  | 174          | M12       | 102.3  | 104           | 35         | 79           | 3.2        | 13.5      | 4.500"       | 200                  | 10.0   |
| 965002         | 35        | 88.2       | 4.500"         | 6.1         | 200                  | 192          | 13.0      | 102.3  | 113           | 35         | 80           | 3.5        | 13.0      | 4.500"       | 200                  | 10.0   |
| 965019         | 38        | 83.2       | 180            | 6.1         | 215                  | 192          | 15.0      | 102.3  | 113           | 38         | 80           | 3.5        | 15.0      | 180          | 215                  | 12.0   |
| 965009         | 42        | 114.1      | 4.500"         | 5.0         | 200                  | 174          | 12.8      | 128.2  | 104           | 35         | 79           | 3.2        | 13.5      | 4.500"       | 200                  | 10.0   |
| 965016         | 42        | 114.1      | 4.500"         | 5.0         | 200                  | 174          | 12.8      | 128.2  | 104           | 42         | 113          | 3.2        | 13.5      | 4.500"       | 200                  | 12.0   |
| 965021         | 1.188"    | 88.2       | 4.500"         | 6.1         | 200                  | 192/174      | 13.0      | 102.3  | 104           | 35         | 79           | 3.2        | 13.5      | 4.500"       | 200                  | 10.0   |
| 965020         | 42        | 114.1      | 4.500"         | 5.0         | 200                  | 174          | 12.8      | 128.2  | 104           | 42         | 113          | 3.2        | 13.5      | 4.500"       | 200                  | 12.0   |

All dimensions shown in millimeters unless otherwise specified.

## Servomotor Brake Approximate Dimensions (IEC Square Flange Motors: sizes 9 & 11)



Contact Nexen if one or more of these dimensions must be modified for your application.

### Size 9

| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLT CIRCLE DIAMETER | FLANGE WIDTH | BOLT HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLT HOLE | PILOT (male) | BOLT CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 965100         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 60           | 3.5        | 13.0      | 180          | 215                  | 12.0   |
| 965110         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 60           | 3.5        | 13.0      | 180          | 215                  | 10.0   |
| 965111         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 60           | 3.5        | 13.0      | 180          | 215                  | 10.0   |
| 965102         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 60           | 3.5        | 13.0      | 180          | 215                  | 12.0   |
| 965104         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 60           | 3.5        | 13.0      | 180          | 215                  | 12.0   |
| 965103         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | M14       | 102.3  | 124           | 38         | 80           | 3.5        | 11.0      | 180          | 215                  | 12.0   |
| 965107         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | 13.0      | 102.3  | 124           | 38         | 80           | 3.5        | 13.0      | 180          | 215                  | none   |
| 965101         | 38        | 83.2       | 180            | 5.0         | 215                  | 214          | M12       | 102.3  | 124           | 1.375"     | 60           | 3.5        | 13.0      | 180          | 215                  | none   |
| 965208         | 38        | 83.2       | 180            | 5.0         | 215                  | 214          | M12       | 102.3  | 124           | 38         | 80           | 3.5        | 14.0      | 180          | 215                  | 12.0   |
| 965109         | 38        | 83.2       | 180            | 4.1         | 215                  | 214          | M14       | 102.3  | 124           | 38         | 80           | 3.5        | 14.75     | 180          | 215                  | 12.0   |
| 965105         | 42        | 117.1      | 200            | 5.0         | 235                  | 220/214      | 13.5      | 136.2  | 124           | 42         | 116          | 3.5        | 13.5      | 200          | 235                  | 12.0   |
| 965106         | 55        | 117.1      | 200            | 5.0         | 235                  | 220/214      | 13.5      | 154.5  | 124           | 42         | 80.9         | 3.5        | 14.0      | 180          | 8.434"               | 12.0   |

### Size 11

| Product Number | BORE DIA. | BORE DEPTH | PILOT (female) | PILOT DEPTH | BOLT CIRCLE DIAMETER | FLANGE WIDTH | BOLT HOLE | LENGTH | QUICK EXHAUST | SHAFT DIA. | SHAFT LENGTH | PILOT EXT. | BOLT HOLE | PILOT (male) | BOLT CIRCLE DIAMETER | KEYWAY |
|----------------|-----------|------------|----------------|-------------|----------------------|--------------|-----------|--------|---------------|------------|--------------|------------|-----------|--------------|----------------------|--------|
|                | A         | B          | C              | D           | E-F                  | G            | H         | J      | K             | L          | M            | N          | P         | Q            | R-S                  | T      |
| 965201         | 35        | 92.1       | 230            | 9.1         | 265                  | 262.9        | M12       | 123.3  | 158           | 35         | 92           | 5.0        | 14.0      | 230          | 265                  | None   |
| 965202         | 42        | 110.1      | 230            | 5           | 265                  | 262.9        | 12.8      | 143.3  | 148           | 42         | 92           | 5.0        | 14.0      | 230          | 265                  | 12.0   |
| 965204         | 42/kyw    | 106.56     | 250            | 9.1         | 300                  | 262.9        | .625-11   | 123.3  | 148           | 45         | 100          | 5.0        | .625-11   | 250          | 300                  | 14.0   |
| 965200         | 48        | 91.56      | 250            | 9.1         | 300                  | 262.9        | 15.0      | 123.3  | 148           | 48         | 60           | 5.0        | 15.0      | 250          | 300                  | 14.0   |
| 965205         | 48        | 91.56      | 250            | 9.1         | 300                  | 262.9        | 15.0      | 123.3  | 148           | 48         | 60           | 5.0        | 15.0      | 250          | 300                  | 14.0   |
| 965203         | 48        | 91.56      | 250            | 9.1         | 300                  | 262.9        | 15.0      | 123.3  | 148           | 48         | 82           | 5.0        | 15.0      | 250          | 300                  | 14.0   |

All dimensions shown in millimeters unless otherwise specified.

# Eclipse® Performance

Eclipse® Servomotor Brakes Deliver: High Torque • High Torsional Rigidity • Low Inertia

## Servomotor Brake Specifications

Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe™ safety rating is required.

### NEMA Square Flange Compatible

| Product Number                       | Static Torque | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max RPM | Overhung Load   | Shaft Inertia       | Minimum Release Pressure |
|--------------------------------------|---------------|-----------------------------|--------------------|-------------|--------------|---------|-----------------|---------------------|--------------------------|
|                                      | in-lbf        | in-lbf                      | lbf-ft/rad         | msec        | msec         |         | lbf             | lbf-ft <sup>2</sup> | psi                      |
| <b>Nexen Model SBP-2 for NEMA 23</b> |               |                             |                    |             |              |         |                 |                     |                          |
| 964606                               | 20            | 20                          | 1,000              | 8           | 92           | 10,000  | Not Recommended | 0.0005              | 80                       |
| 964611                               | 20            | 20                          | 1,000              | 8           | 92           | 10,000  |                 | 0.0005              | 80                       |
| 964605                               | 20            | 20                          | 1,000              | 8           | 92           | 10,000  |                 | 0.0005              | 80                       |
| <b>Nexen Model SBP-3 for NEMA 34</b> |               |                             |                    |             |              |         |                 |                     |                          |
| 964729                               | 70            | 70                          | 3,900              | 12          | 75           | 10,000  | 240             | 0.0012              | 80                       |
| 964728                               | 70            | 70                          | 3,900              | 12          | 75           | 10,000  | 240             | 0.0012              | 80                       |
| 964722                               | 70            | 70                          | 3,900              | 12          | 75           | 10,000  | 240             | 0.0012              | 80                       |
| 964726                               | 70            | 70                          | 5,700              | 12          | 75           | 10,000  | 240             | 0.0012              | 80                       |
| <b>Nexen Model SBP-4 for NEMA 42</b> |               |                             |                    |             |              |         |                 |                     |                          |
| 964833                               | 200           | 200                         | 6,200              | 50          | 80           | 10,000  | 210             | 0.0074              | 80                       |
| 964835                               | 200           | 200                         | 6,200              | 50          | 80           | 10,000  | 210             | 0.0074              | 80                       |

### Metric Square Flange Sizes

| Product Number | Static Torque | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max RPM | Overhung Load   | Shaft Inertia     | Minimum Release Pressure |
|----------------|---------------|-----------------------------|--------------------|-------------|--------------|---------|-----------------|-------------------|--------------------------|
|                | Nm            | Nm                          | Nm/rad             | msec        | msec         |         | Newtons         | kg•m <sup>2</sup> | bar                      |
| <b>Size 2</b>  |               |                             |                    |             |              |         |                 |                   |                          |
| 964610         | 2.3           | 2.3                         | 1,000              | 8           | 92           | 10,000  | Not Recommended | 0.00002           | 5.5                      |
| 964615         | 2.3           | 2.3                         | 1,000              | 8           | 92           | 10,000  |                 | 0.00002           | 5.5                      |
| 964612         | 2.3           | 2.3                         | 1,000              | 8           | 92           | 10,000  |                 | 0.00002           | 5.5                      |
| 964617         | 2.3           | 2.3                         | 2,700              | 8           | 92           | 10,000  | 845             | 0.00002           | 5.5                      |
| 964614         | 2.3           | 2.3                         | 2,700              | 8           | 92           | 10,000  | 845             | 0.00002           | 5.5                      |
| 964613         | 2.3           | 2.3                         | 3,700              | 8           | 92           | 10,000  | 845             | 0.00002           | 5.5                      |
| <b>Size 3</b>  |               |                             |                    |             |              |         |                 |                   |                          |
| 964721         | 5.0           | 7.9                         | 1,800              | 12          | 75           | 10,000  | 400             | 0.00005           | 3.4                      |
| 964717         | 7.9           | 7.9                         | 3,900              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964713         | 5.0           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 3.4                      |
| 964714         | 7.9           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964709         | 7.9           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964710         | 5.0           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 3.4                      |
| 964724         | 5.0           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 3.4                      |
| 964718         | 7.9           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964725         | 7.9           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964727         | 7.9           | 7.9                         | 4,500              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964716         | 7.9           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964720         | 5.0           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 3.4                      |
| 964712         | 7.9           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964711         | 7.9           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964715         | 7.9           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964730         | 7.9           | 7.9                         | 5,700              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964732         | 7.9           | 7.9                         | 7,200              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964723         | 5.0           | 7.9                         | 7,200              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 3.4                      |
| 964719         | 7.9           | 7.9                         | 7,200              | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |
| 964733         | 8.0           | 8.0                         | 11,500             | 12          | 75           | 10,000  | 1,070           | 0.00005           | 5.5                      |

See appendix for specification definitions.

## Servomotor Brake Specifications (metric size 4)

Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe™ safety rating is required.

| Product Number | Static Torque | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max RPM | Overhung Load | Shaft Inertia     | Minimum Release Pressure |
|----------------|---------------|-----------------------------|--------------------|-------------|--------------|---------|---------------|-------------------|--------------------------|
|                | Nm            | Nm                          | Nm/rad             | msec        | msec         |         | Newtons       | kg•m <sup>2</sup> | bar                      |
| <b>Size 4</b>  |               |                             |                    |             |              |         |               |                   |                          |
| 964865         | 22            | 22                          | 4,300              | 50          | 80           | 10,000  | 845           | 0.00027           | 5.5                      |
| 964867         | 22            | 22                          | 4,300              | 50          | 80           | 10,000  | 845           | 0.00027           | 5.5                      |
| 964824         | 22            | 22                          | 4,300              | 50          | 80           | 10,000  | 845           | 0.00027           | 5.5                      |
| 964852         | 22            | 22                          | 6,200              | 50          | 80           | 10,000  | 1,423         | 0.00027           | 5.5                      |
| 964834         | 22            | 22                          | 6,200              | 50          | 80           | 10,000  | 934           | 0.00027           | 5.5                      |
| 964826         | 22            | 22                          | 6,200              | 50          | 80           | 10,000  | 2,334         | 0.00027           | 5.5                      |
| 964818         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964823         | 14.1          | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 3.4                      |
| 964843         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964866         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,423         | 0.00031           | 5.5                      |
| 964864         | 14.1          | 22                          | 11,800             | 50          | 80           | 10,000  | 1,423         | 0.00031           | 3.4                      |
| 964826         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964837         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964814         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 5.5                      |
| 964819         | 14.1          | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 3.4                      |
| 964832         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 5.5                      |
| 964844         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 5.5                      |
| 964856         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 5.5                      |
| 964838         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 1,780         | 0.00031           | 5.5                      |
| 964849         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964851         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964839         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 934           | 0.00031           | 5.5                      |
| 964816         | 22            | 22                          | 11,800             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964820         | 22            | 22                          | 16,300             | 50          | 80           | 10,000  | 934           | 0.00031           | 5.5                      |
| 964821         | 22            | 22                          | 16,300             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964822         | 14.1          | 22                          | 16,300             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 3.4                      |
| 964836         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964815         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964817         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964851         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964842         | 22            | 22                          | 37,000             | 50          | 80           | 10,000  | 2,334         | 0.00041           | 5.5                      |
| 964848         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964853         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964830         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964825         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964828         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964829         | 14.1          | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 3.4                      |
| 964860         | 22            | 22                          | 20,700             | 50          | 80           | 10,000  | 2,334         | 0.00031           | 5.5                      |
| 964855         | 22            | 22                          | 37,000             | 50          | 80           | 10,000  | 2,334         | 0.00041           | 5.5                      |

See appendix for specification definitions.

## Servomotor Brake Specifications (metric size 5 & 7)

Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe™ safety rating is required.

| Product Number | Static Torque | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max RPM | Overhung Load   | Shaft Inertia     | Minimum Release Pressure |
|----------------|---------------|-----------------------------|--------------------|-------------|--------------|---------|---|-------------------|--------------------------|
|                | Nm            | Nm                          | Nm/rad             | msec        | msec         |         | Newtons   | kg·m <sup>2</sup> | bar                      |
| <b>Size 5</b>  |               |                             |                    |             |              |         |   |                   |                          |
| 964933         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  | NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions. | 0.00117           | 5.5                      |
| 964934         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964909         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964913         | 28.3          | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 3.4                      |
| 964907         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964908         | 28.3          | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 3.4                      |
| 964930         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964912         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964916         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964923         | 45            | 45                          | 20,600             | 60          | 100          | 10,000  |   | 0.00117           | 5.5                      |
| 964917         | 45            | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964929         | 45            | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964915         | 28.3          | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 3.4                      |
| 964920         | 45            | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964928         | 45            | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964932         | 45            | 45                          | 40,000             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964918         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964931         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  |   | 0.00130           | 3.4                      |
| 964925         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964906         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  |   | 0.00130           | 5.5                      |
| 964921         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  | 0.00130   | 5.5               |                          |
| 964919         | 45            | 45                          | 52,400             | 60          | 100          | 10,000  | 0.00130   | 5.5               |                          |
| 964937         | 45            | 150                         | 54,200             | 60          | 100          | 10,000  | 3100  | 0.00159           | 5.5                      |
| <b>Size 7</b>  |               |                             |                    |             |              |         |   |                   |                          |
| 965008         | 100           | 100                         | 24,600             | 85          | 145          | 5,000   | NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions. | 0.00325           | 4.4                      |
| 965010         | 100           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 4.4                      |
| 965001         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965006         | 100           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 4.4                      |
| 965004         | 75            | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 3.3                      |
| 965014         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965015         | 125           | 125                         | 83,300             | 85          | 145          | 5,000   |   | 0.00346           | 5.5                      |
| 965011         | 75            | 125                         | 83,300             | 85          | 145          | 5,000   |   | 0.00346           | 3.3                      |
| 965017         | 125           | 125                         | 83,300             | 85          | 145          | 5,000   |   | 0.00346           | 5.5                      |
| 965005         | 125           | 125                         | 76,500             | 85          | 145          | 5,000   |   | 0.00346           | 5.5                      |
| 965007         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965012         | 75            | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 3.3                      |
| 965014         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965013         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965000         | 125           | 125                         | 55,300             | 85          | 145          | 5,000   |   | 0.00333           | 5.5                      |
| 965026         | 125           | 150                         | 76,500             | 85          | 145          | 5,000   |   | 0.00352           | 5.5                      |
| 965003         | 75            | 125                         | 76,500             | 85          | 145          | 5,000   |   | 0.00346           | 3.3                      |
| 965002         | 50            | 125                         | 76,500             | 85          | 145          | 5,000   |   | 0.00346           | 2.2                      |
| 965019         | 87            | 125                         | 98,700             | 85          | 145          | 5,000   |   | 0.00362           | 3.9                      |
| 965009         | 125           | 125                         | 108,600            | 85          | 145          | 5,000   |   | 0.00379           | 5.5                      |
| 965016         | 125           | 125                         | 108,600            | 85          | 145          | 5,000   | 0.00379   | 5.5               |                          |
| 965021         | 75            | 100                         | 65,800             | 85          | 145          | 5,000   | 0.0034  | 3.3               |                          |
| 965020         | 100           | 125                         | 108,600            | 85          | 145          | 5,000   | 0.00379   | 4.4               |                          |

See appendix for specification definitions.

## Servomotor Brake Specifications (metric size 9 & 11)

Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe™ safety rating is required.

| Product Number | Static Torque | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max RPM | Overhung Load   | Shaft Inertia     | Minimum Release Pressure |
|----------------|---------------|-----------------------------|--------------------|-------------|--------------|---------|---|-------------------|--------------------------|
|                | Nm            | Nm                          | Nm/rad             | msec        | msec         |         | Newtons   | kg•m <sup>2</sup> | bar                      |
| <b>Size 9</b>  |               |                             |                    |             |              |         |   |                   |                          |
| 965100         | 125           | 125                         | 114,000            | 85          | 145          | 5,000   | NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions. | 0.00362           | 5.5                      |
| 965110         | 125           | 125                         | 114,000            | 85          | 145          | 5,000   |   | 0.00362           | 5.5                      |
| 965111         | 50            | 125                         | 114,000            | 85          | 145          | 5,000   |   | 0.00362           | 2.2                      |
| 965102         | 75            | 125                         | 114,000            | 85          | 145          | 5,000   |   | 0.00362           | 3.3                      |
| 965104         | 100           | 125                         | 114,000            | 85          | 145          | 5,000   |   | 0.00362           | 4.4                      |
| 965103         | 125           | 125                         | 97,900             | 85          | 145          | 5,000   |   | 0.00362           | 5.5                      |
| 965107         | 125           | 125                         | 97,900             | 85          | 145          | 5,000   |   | 0.00362           | 5.5                      |
| 965101         | 100           | 125                         | 97,900             | 85          | 145          | 5,000   |   | 0.00362           | 4.4                      |
| 965208         | 100           | 125                         | 97,900             | 85          | 145          | 5,000   |   | 0.00362           | 4.4                      |
| 965105         | 125           | 125                         | 119,000            | 85          | 145          | 5,000   |   | 0.00379           | 5.5                      |
| 965106         | 125           | 125                         | 188,000            | 85          | 145          | 5,000   | 0.00554   | 5.5               |                          |
| <b>Size 11</b> |               |                             |                    |             |              |         |   |                   |                          |
| 965201         | 75            | 125                         | 63,600             | 85          | 145          | 5,000   | NOTE: Intended for direct mounting. Side loading is not recommended.  | 0.00346           | 3.3                      |
| 965202         | 75            | 125                         | 156,000            | 85          | 145          | 5,000   |   | 0.00379           | 3.3                      |
| 965204         | 125           | 125                         | 156,000            | 85          | 145          | 5,000   |   | 0.00379           | 5.5                      |
| 965200         | 125           | 125                         | 216,000            | 85          | 145          | 5,000   |   | 0.00404           | 5.5                      |
| 965205         | 100           | 125                         | 216,000            | 85          | 145          | 5,000   |   | 0.00404           | 4.4                      |
| 965203         | 125           | 125                         | 216,000            | 85          | 145          | 5,000   |   | 0.00411           | 5.5                      |

See appendix for specification definitions.

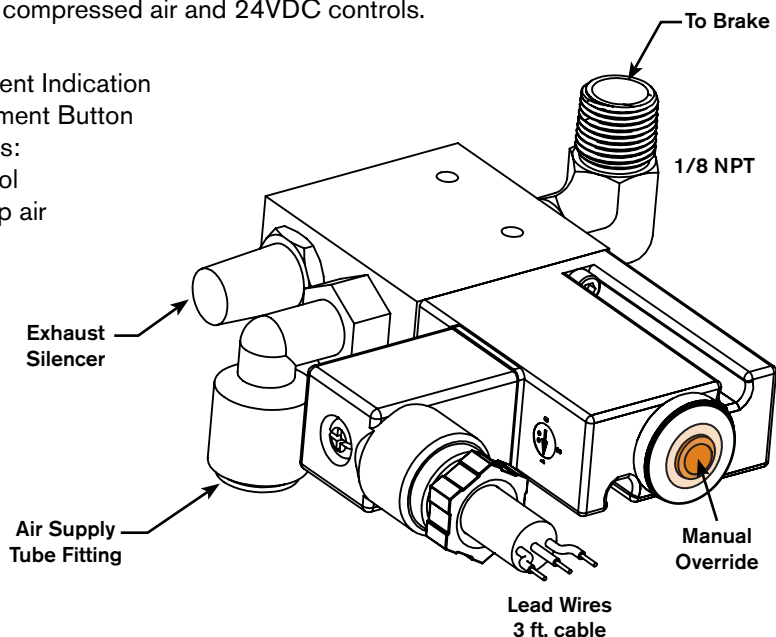
## Optional Solenoid Valve

Nexen's optional solenoid valve offers machine operators additional safety and peace of mind by allowing users to see at a glance whether or not the brake is disengaged. The manual override button provides an easy option for manual brake disengagement.

Nexen's solenoid valve mounts easily on any Eclipse® servomotor brake and operates using standard 80 PSIG compressed air and 24VDC controls.

- Visual Disengagement Indication
- Manual Disengagement Button
- Simple Connections:
  - 24VDC control
  - 80 PSIG shop air

PRODUCT NUMBER: 964650





## Safety Rated Eclipse® Servomotor Brakes



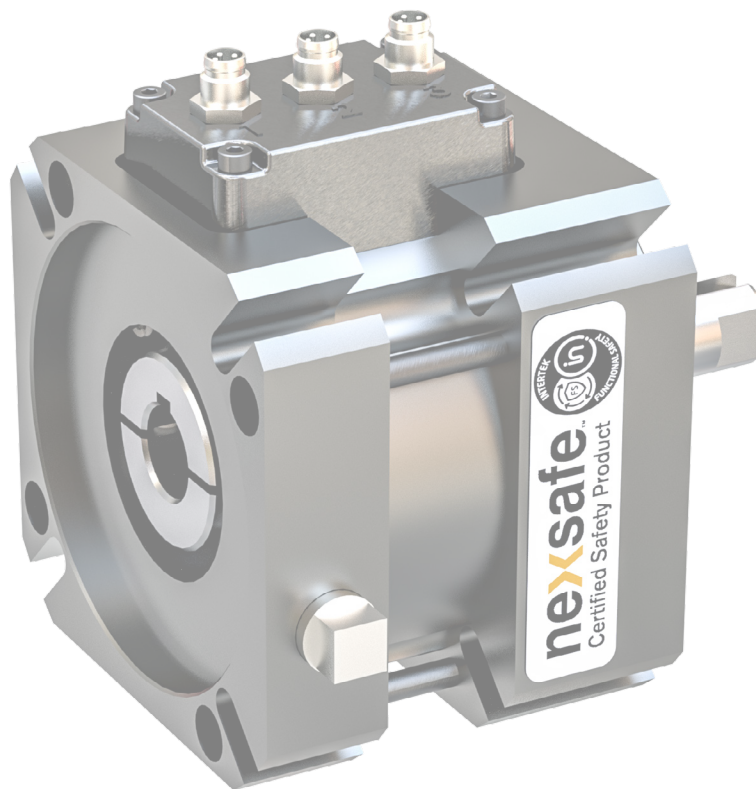
Safety Rated Nexen Servomotor Brakes are 3rd party safety rated by Intertek® to comply with international safety standard ISO 13849-1. Category Level up to 4 and Performance Level up to e, able to be achieved using Nexsafe™ products in recommended configuration. Multiple engagement springs, an integrated clamp collar with backup keyways and up to 3 operating mode sensors for feedback ensure confident, safe emergency stopping and holding.

- Specifications ..... 17
- Safety Ratings ..... 18
- Optional Operating Mode Sensors ..... 20
- Optional Sensors, Dimensions ..... 21



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## Safety Rated Specifications

# Safety Rated Servomotor Brake Specifications

### NEMA Square Flange Compatible

| Safety Rated Servomotor Brake | Available Bore/Shaft Diameters | Available Pilot Diameters | Available Bolt Circle Diameters | Static Torque ** | Transmittable Torque Rating | Torsional Rigidity | Engage Time | Release Time | Max Speed | Overhung Load                            | Shaft Inertia*  | Minimum Release Pressure** |
|-------------------------------|--------------------------------|---------------------------|---------------------------------|------------------|-----------------------------|--------------------|-------------|--------------|-----------|--|-----------------|----------------------------|
|                               | inches                         | Inches                    | Inches                          | in-lbf           | in-lbf                      | lbf-ft/rad         | msec        | msec         | RPM       | lbf                                      | lbf·ft²         | psi                        |
| Size 3                        | .375 to .750                   | 2.875                     | 3.346 to 4.280                  | 70**             | 70                          | 3,900              | 12          | 75           | 10,000    | Not Suggested, Contact Nexen if required | .0019 to .0020* | 80**                       |
| Size 4                        | .563 to 1.063                  | 2.187 to 4.500            | 4.950 to 5.904                  | 135**            | 200                         | 6,200              | 50          | 80           | 10,000    |  | .008 to .011*   |                            |

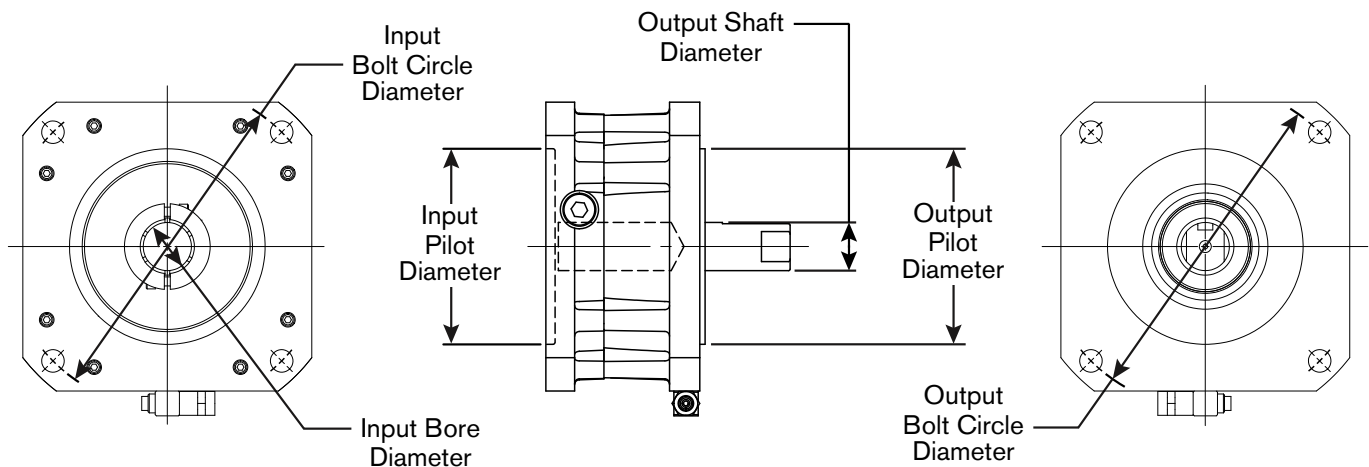
### Metric Square Flange Sizes

| Safety Rated Servomotor Brake | Available Bore/Shaft Diameters | Available Pilot Diameters | Available Bolt Circle Diameters | Static Torque ** | Transmittable Torque | Torsional Rigidity | Engage Time | Release Time | Max Speed | Overhung Load             | Shaft Inertia* | Minimum Release Pressure** |
|-------------------------------|--------------------------------|---------------------------|---------------------------------|------------------|----------------------|--------------------|-------------|--------------|-----------|---------------------------|----------------|----------------------------|
|                               | mm                             | mm                        | mm                              | Nm               | Nm                   | Nm/rad             | msec        | msec         | RPM       | Newtons                   | kg·m²          | bar                        |
| Size 3                        | 9 to 19                        | 50 to 80                  | 85 to 115                       | 7.9**            | 7.9                  | 1,800 to 11,500    | 12          | 75           | 10,000    | Not Suggested             | .00008         | 5.5**                      |
| Size 4                        | 14 to 28                       | 63.5 to 114.3             | 115 to 150                      | 15.3**           | 22                   | 4,300 to 37,000    | 50          | 80           |           |                           |                |                            |
| Size 5                        | 19 to 38                       | 110 to 130                | 149.2 to 186                    | 32.8**           | 45                   | 20,600 to 52,400   | 60          | 100          |           |                           |                |                            |
| Size 7                        | 24 to 42                       | 114.3 to 180              | 196.9 to 215                    | 88.1**           | 125                  | 24,600 to 108,600  | 85          | 145          | 5,000     | Contact Nexen if required | .005 to .006   |                            |
| Size 9                        | 32 to 55                       | 180 to 200                | 215 to 235                      | 88.1**           | 125                  | 97,900 to 188,000  | 85          | 145          |           |                           |                |                            |
| Size 11                       | 35 to 65                       | 230 to 250                | 265 to 300                      | 88.1**           | 125                  | 63,600 to 216,000  | 85          | 145          |           |                           |                |                            |

Contact Nexen if one or more of these specifications must be modified for your application.

\*Dependent on unit shaft and bore diameter.

\*\*Brakes with lower release pressures/static torques are available.



Input and output dimensions may differ if your application requires it.

# Safety Ratings

With third party certification carried out by Intertek®, Nexen's Servomotor Brakes are safety certified components capable of meeting the following ratings per safety standard ISO 13849-1:2015.

**Cycle Life (B10D)** of 2 million cycles

**Common Cause Failure (CCF)** is 75%

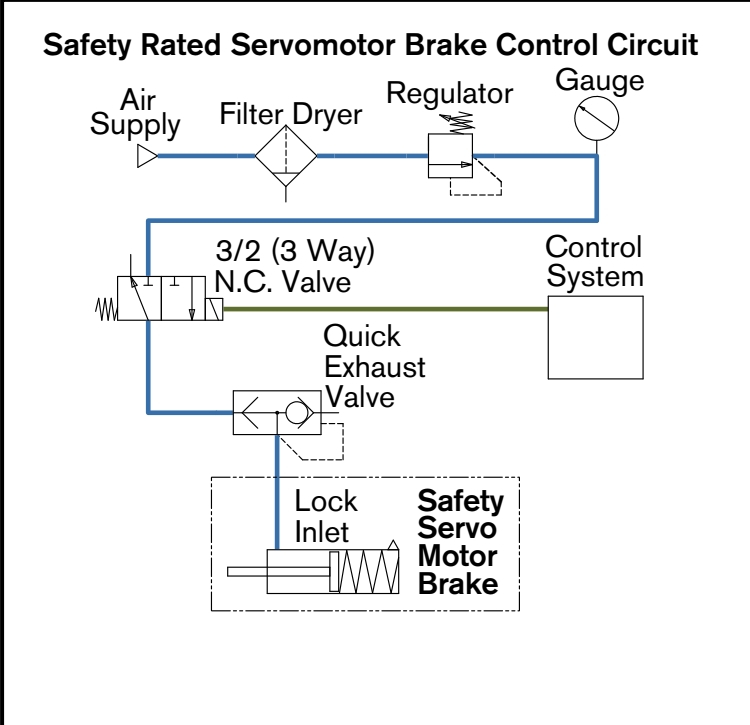
**Mission Time** is 10 Years

**Diagnostic Coverage (DC)** is dependent on brake redundancy and sensor setup:

**Mean Time to Dangerous Failure (MTTF<sub>D</sub>)** of 100 Years  
 Assumes a B10D of 2 million cycles, H(op) of 16 hours/day, a D(op) of 260 days/year, maximum cycle rate of 74.8 seconds/cycle and maximum operation time of 10 years.

| If DC is 0%                   | If DC is 60%  | If DC is 90%  | If DC is 99%   |
|-------------------------------|---|---|----------------|
| No sensor feedback necessary. | Feedback sensor shall be used to monitor the operating mode of brake. | Feedback sensor shall be used to monitor the operating mode of brake. The brake must be cycled engaged and disengaged at least this often to check for brake functionality: |                |
|                               |   | every 3 months  | once every day |

### Category B or Category 1 Example: One Brake, No Sensors Required



#### Category B

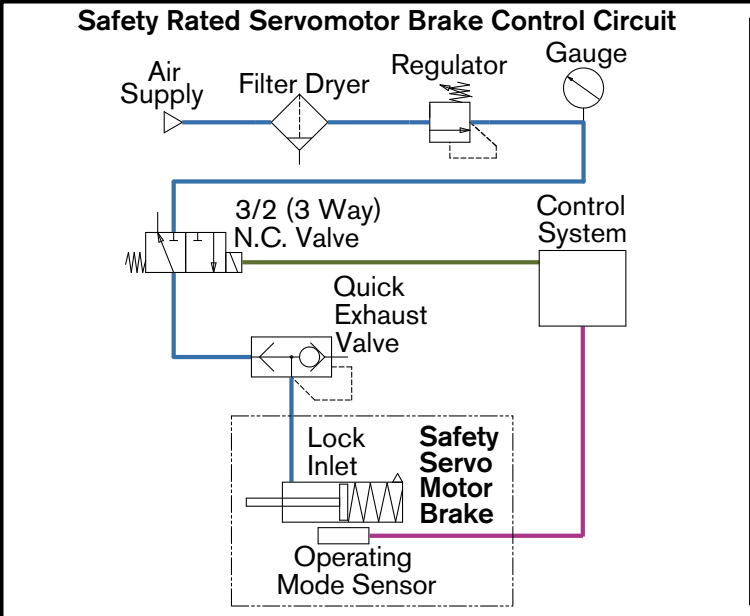
| Performance Level          |           | a   | b   |
|----------------------------|-----------|-----|-----|
| If DC is                   |           | 0%  |     |
| MTTF <sub>D</sub>          | years     | 3.1 | 13  |
| Maximum average cycle rate | sec/cycle | 2.3 | 9.7 |
| Maximum operation time     | years     | 0.3 | 1.3 |

#### Category 1

| Performance Level          |           | b    | c  |
|----------------------------|-----------|------|----|
| If DC is                   |           | 0%   |    |
| MTTF <sub>D</sub>          | years     | 31   | 40 |
| Maximum average cycle rate | sec/cycle | 23.2 | 30 |
| Maximum operation time     | years     | 3.1  | 4  |

- Air to Disengage Servomotor Brake
- Control Wiring
- Sensor Feedback Wiring

### Category 2 Example: One Brake, One Sensor



#### Category 2:

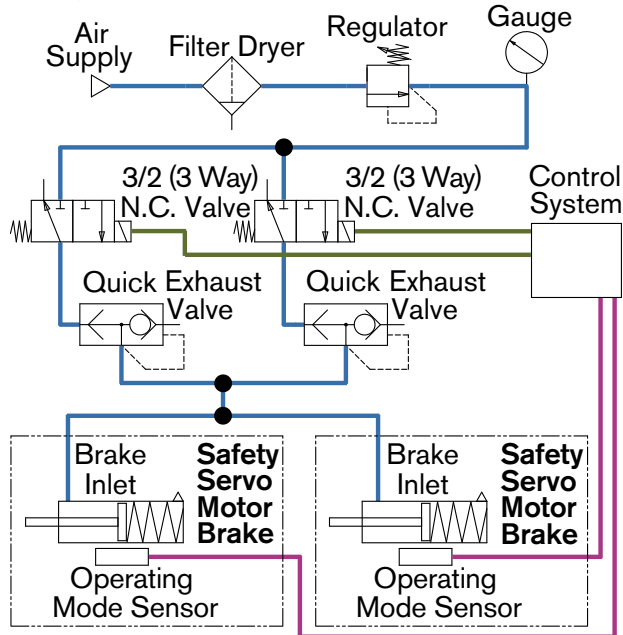
| Performance Level          |           | c    |      | d    |      |
|----------------------------|-----------|------|------|------|------|
| If DC is                   |           | 60%  | 90%  | 60%  | 90%  |
| MTTF <sub>D</sub>          | years     | 23   | 17   | 63   | 37   |
| Maximum average cycle rate | sec/cycle | 17.2 | 12.7 | 47.2 | 27.7 |
| Maximum operation time     | years     | 2.3  | 1.7  | 6.3  | 3.7  |

- Air to Disengage Servomotor Brake
- Control Wiring
- Sensor Feedback Wiring

## Safety Ratings

### Category 3 Example: Two Redundant Brakes, One Sensor on Each

#### Safety Rated Servomotor Brake Control Circuit



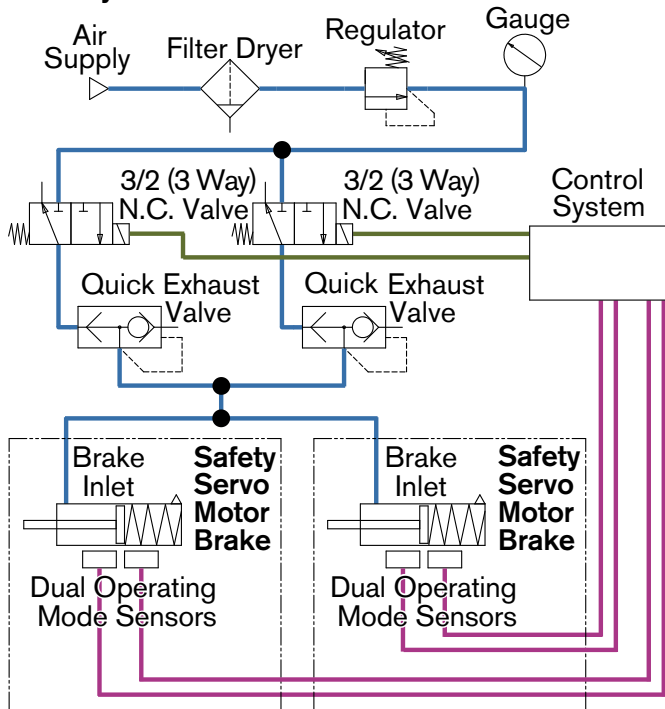
#### Category 3:

| Performance Level          | d         |      | e    |      |
|----------------------------|-----------|------|------|------|
|                            | 60%       | 90%  | 90%  |      |
| MTTF <sub>D</sub>          | years     | 25   | 14   | 63   |
| Maximum average cycle rate | sec/cycle | 18.7 | 10.5 | 47.2 |
| Maximum operation time     | years     | 2.5  | 1.4  | 6.3  |

Air to Disengage Servomotor Brake  
Control Wiring  
Sensor Feedback Wiring

### Category 4 Example: Two Redundant Brakes, Two Sensors on Each

#### Safety Rated Servomotor Brake Control Circuit



#### Category 4:

| Performance Level          | e         |      |
|----------------------------|-----------|------|
|                            | 99%       |      |
| MTTF <sub>D</sub>          | years     | 31   |
| Maximum average cycle rate | sec/cycle | 23.2 |
| Maximum operation time     | years     | 3.1  |

Air to Disengage Servomotor Brake  
Control Wiring  
Sensor Feedback Wiring

Note: Each brake must have two Nexen operating mode sensors to achieve a Category 4 Safety Rating. All 4 sensors must have their data compared by the control system before use.

# Optional Operating Mode Sensors

## SAFETY RATING COMPLIANCE

Nexen's Servomotor Brakes are Safety Rated by Intertek® and available with Operating Mode Sensors to maximize machine safety and efficiency. By using the Engagement, Disengagement and Wear operating mode sensors, system manufacturers are able to gain higher safety category ratings per ISO 13849-1. Rating of the safety function is the responsibility of the system manufacturer.

## INDUSTRY 4.0 SOLUTION

Nexen's Servomotor Brake Operating Mode Sensors for Engagement, Disengagement and Wear are Industry 4.0 compatible and can provide information to maximize machine efficiency.

*Having this information available aides with:*

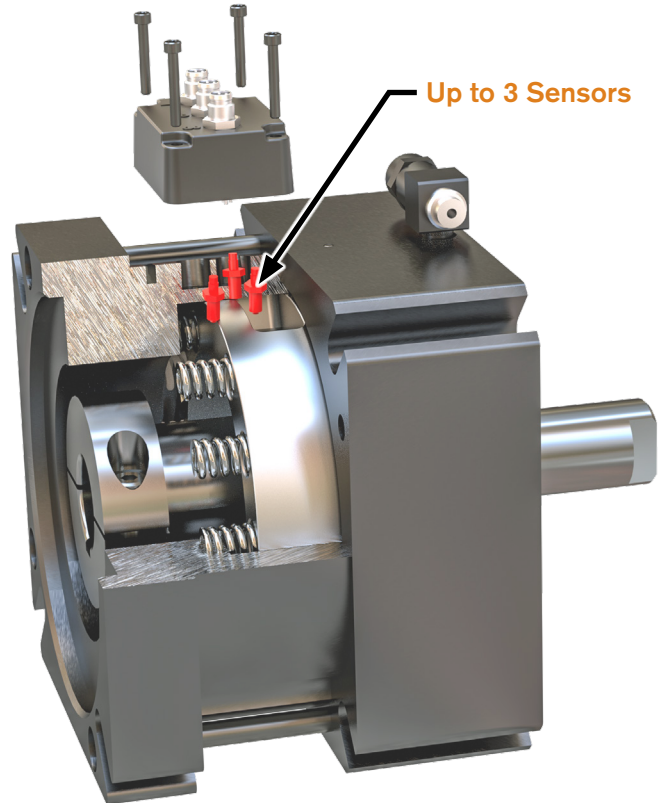
- Motor/Drive Programming
- Predictive Maintenance
- Operational Feedback

The Servomotor Brake can come equipped with up to three proximity sensors to sense the following functions of the Brake:

**DISENGAGEMENT SENSOR DEFINITION**  
 Sensor is activated when the rated air pressure is applied and the piston and facing pair move to a disengaged position.

**ENGAGEMENT SENSOR DEFINITION**  
 Sensor is activated when the piston and facing pair move out of the disengaged position into a position in which the facing will transmit torque.

**WEAR SENSOR DEFINITION**  
 Sensor is activated when product is engaged and facing is worn to a state that it should be replaced.



## OPTIONAL OPERATING MODE SENSORS

The Operating Mode Sensor(s) can be used to signal Engagement, Disengagement or Wear of the Servomotor Brake. In an effort to give the system manufacturer the most versatility, many combinations of these mode sensors, up to 3 sensors total, can be specified. The sensors are factory installed to ensure precision of the switching position.

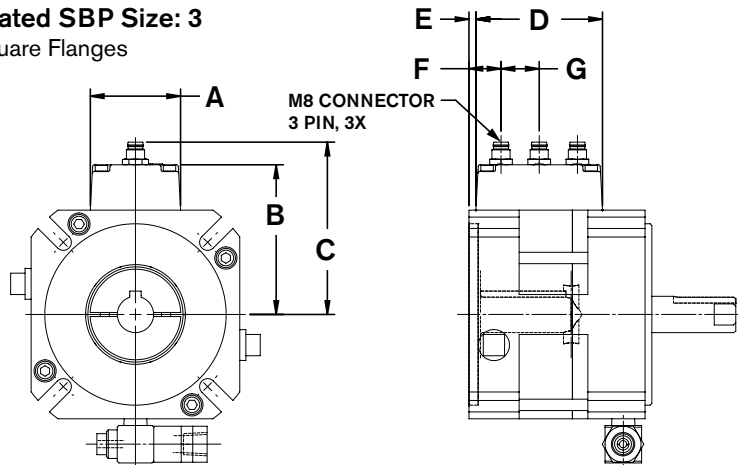
| Disengagement, Engagement and Wear Sensors |   |
|--|---|
| Operating Principal                        | Inductive Proximity Sensor                  |
| Sensor Output Options                      | PNP Normally Open                           |
|  | NPN Normally Open                           |
| Supply Voltage                             | 10 to 30 VDC                                |
| Output Current                             | 100 mA                                      |
| Ambient Temperature                        | -25 to +70°C [-13 to +158°F]                |
| Protection                                 | Short-Circuit & Voltage Reversal Protection |
| Fieldbus Connectivity *                    | IO-Link v1.0                                |
| Connector                                  | 3 Pin M8 DIN                                |

\* If using the PNP N.O. sensor version, optional IO-Link functionality is available. If connected to an IO-Link sensor hub, IO-Link is automatically enabled. If not using IO-Link, sensor defaults to standard PNP NO operation.

## Optional Sensors, Approximate Dimensions

### Safety Rated SBP Size: 3

Metric Square Flanges



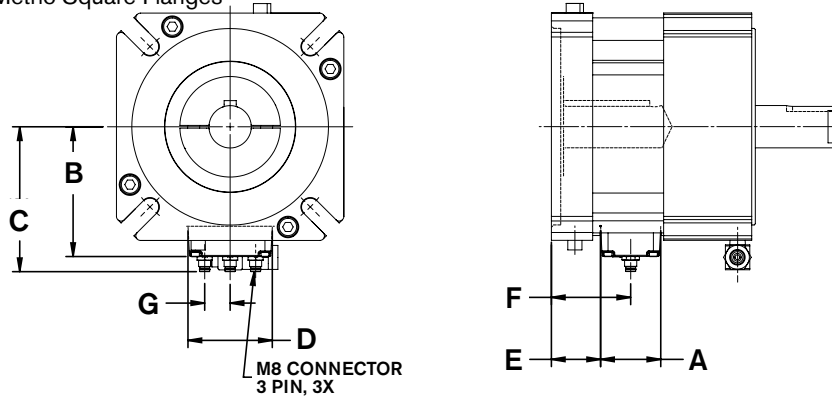
The following dimensions apply only to NexSafe™ Safety Rated Servomotor Brakes with the optional operating mode sensors.

See Standard Servomotor Brake Dimension Section on **Page 7** for all other dimensions.

Additional dimensions and tolerances are available in the drawings and CAD models on the product pages on Nexen's website, [www.nexengroup.com](http://www.nexengroup.com)

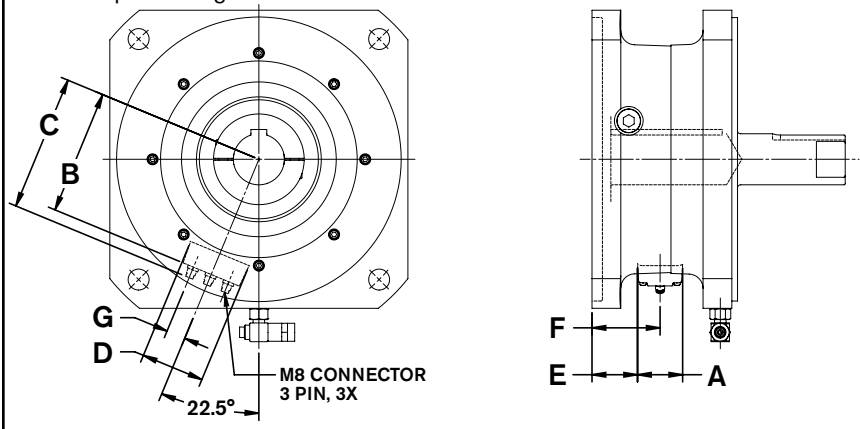
### Safety Rated SBP Sizes: 4, 5, 7 & 9

Metric Square Flanges



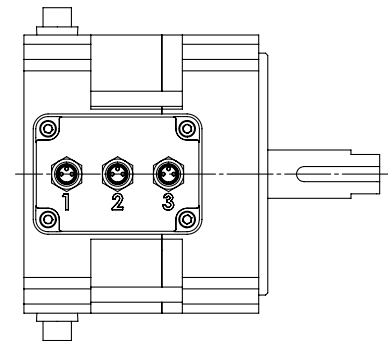
### Safety Rated SBP Size: 11

Metric Square Flanges



### Sensor Electrical Box Connections

|                    |                                     |
|--------------------|-------------------------------------|
| <b>Connector 1</b> | Engagement Sensor, Normally Open    |
| <b>Connector 2</b> | Disengagement Sensor, Normally Open |
| <b>Connector 3</b> | Wear Sensor, Normally Open          |



Approximate Dimensions: Safety Rated Units with Metric Square Flanges

All Dimensions in mm [inch]

| SBP Size | ELECTRICAL BOX WIDTH<br>A | ELECTRICAL BOX HEIGHT<br>B | ELECTRICAL CONNECTOR HEIGHT, 3X<br>C | ELECTRICAL BOX LENGTH<br>D | ELECTRICAL BOX LOCATION<br>E | ELECTRICAL CONNECTOR LOCATION<br>F | ELECTRICAL CONNECTOR SPACING, 2X<br>G |
|----------|---------------------------|----------------------------|--------------------------------------|----------------------------|------------------------------|------------------------------------|---------------------------------------|
| SBP2     | 39.8 [1.57]               | 48.6 [1.91]                | 58.6 [2.31]                          | 55.8 [2.20]                | 3.4 [.14]                    | 14.5 [.57]                         | 16.9 [.66]                            |
| SBP3     |                           | 66.0 [2.60]                | 76.0 [2.99]                          |                            | 3.1 [1.2]                    | 14.1 [.56]                         |                                       |
| SBP4     |                           | 82.5 [3.25]                | 92.5 [3.64]                          |                            | 22.7 [.89]                   | 42.6 [1.68]                        |                                       |
| SBP5     |                           | 85.8 [3.38]                | 95.8 [3.77]                          |                            | 32.5 [1.28]                  | 52.4 [2.06]                        |                                       |
| SBP7     |                           | 103.0 [4.06]               | 113.0 [4.45]                         |                            | 24.3 [.96]                   | 44.2 [1.74]                        |                                       |
| SBP9     |                           | 103.0 [4.06]               | 113.0 [4.45]                         |                            | 24.3 [.96]                   | 44.2 [1.74]                        |                                       |
| SBP11    |                           | 110.0 [4.33]               | 120.0 [4.72]                         |                            | 40.1 [1.58]                  | 60.0 [2.36]                        |                                       |

### BACKLASH

Because zero backlash is impossible to measure, industry standard maintains that anything under 3.2 microns is considered zero.

The Eclipse® line of servomotor brakes have two design features that facilitate backlash-free performance. Both the keyless, split-hub clamping collar and the one piece rotor/shaft work to create a backlash free environment. The unique rotor/shaft actually lowers inertia and minimizes moving parts.

### CORROSION RESISTANCE

Nexen offers various corrosion countermeasures that include stainless steel and various surface treatments or coatings. Nexen will convey all material and coating specifications, but it is up to the customer to determine application suitability based on this information and/or thorough sample testing. Nexen makes no corrosion resistance claims for specific applications.

### TRANSMITTABLE TORQUE RATING

Transmittable torque is the maximum rated amount of torque that can be passed from a motor through the brake and into a gearbox or other output. Transmittable torque accounts for clamp-collar holding force and output shaft strength.

### IP67 DUST & WATERPROOF STANDARDS

This international rating was developed to provide machine builders with standards by which to properly select products to operate in specific conditions. Nexen's Eclipse® line of Servomotor Brakes are completely enclosed and offer highest standard of protection against dust and water. They have been independently tested to withstand full immersion in water for up to 30 minutes at a depth of up to 1 meter and can withstand even the dirtiest environments with no degradation on efficiency, performance or life of the brake.

### LUBRICATION FREE OPERATION

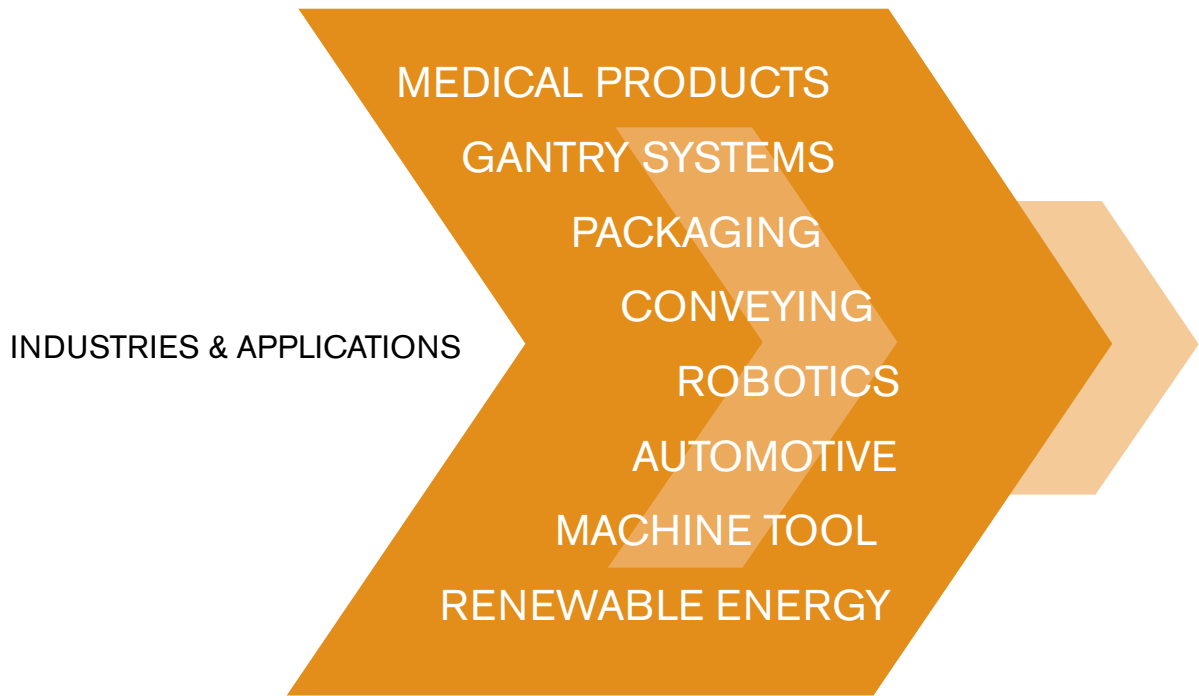
Operating without lubrication can be beneficial in food, pharmaceutical, clean room, and other applications where the grease could contaminate the environment, or applications with high levels environmental contaminants that would be attracted to the grease and accelerate the wear rate.

### OVERHUNG LOAD (also called Side Loading)

In overhung load applications the force of the load is applied to the shaft beyond the support point and is perpendicular to the shaft. Nexen ratings assume the load is applied at the shaft extension midpoint. Not all brakes are suitable for overhung loads. Refer to product specifications to determine suitability.

### TORSIONAL RIGIDITY

Nexen Eclipse® Servomotor Brakes offer high torsional rigidity, meaning they can withstand a great amount of twisting force without it affecting performance. High torsional rigidity is beneficial in any system where precision positioning is required.



[www.nexengroup.com](http://www.nexengroup.com)

In accordance with Nexen's established policy of constant product improvement, the specifications contained in this document are subject to change without notice. Technical data listed in this document are based on the latest information available at the time of printing and are also subject to change without notice. For current information, please consult [www.nexengroup.com](http://www.nexengroup.com) or contact Nexen's Technical Support Group at the location to the right.

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