

# Torque Limiting Overload Protection



## **Bibby Turboflex...**

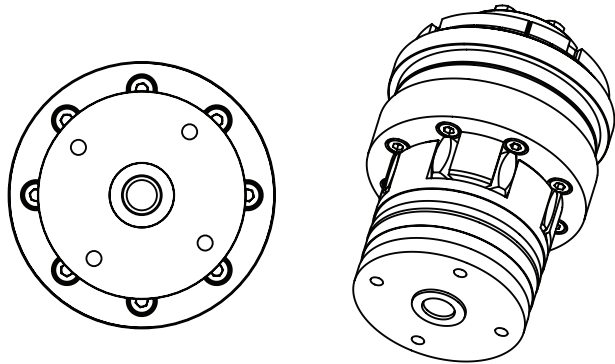
### **a leading innovator in high performance couplings and engineered torque limiting overload protection solutions for over 80 years.**

Now part of Altra Industrial Motion, with a reach covering more than 70 countries, our vision continually grows without compromising the values which led to such unrivalled success.

With roots dating back to Dr. James Bibby, inventor of the resilient grid coupling in 1917 and the development of the profile disc coupling in 1958, Bibby Turboflex has continued in the pioneering footsteps of these revolutionary leading lights.

Reliability, safety and accuracy are vital in both new and established models. We strive to increase your return on investment by virtually eliminating downtime and optimizing efficiency.

Our policy of recruiting engineers with excellent customer focus and innovative talent continuously advances our development using proven, state-of-the-art hardware and software to deliver excellence. Firmly committed to remaining ahead of market needs, we listen to customer feedback and pre-empt requirements, a focus that has consistently held Bibby Turboflex head and shoulders above our competitors.



#### **Typical Applications:**

- Steel Mill Equipment
- Conveyor Drives
- Twin Screw Extruders
- Wood Grinding Machinery
- Ball Mill Drives
- Water Treatment Equipment
- Tunnel Boring Machines
- Machine Tools
- Woodworking Equipment
- Paper Machinery
- Pumps
- Textile Machinery
- Test Rigs
- Packaging Machinery
- Quarry Machinery
- Post Office Machinery
- Bottling Equipment
- Automatic Furnaces and Ovens
- Bakery Equipment
- Printing Equipment

## Choose the torque limiting protection that's right for your specific application.



### Table of Contents

### Page

#### TL Modules

Series 2 UEP Modular Torque Limiters

2-3

Bibbigard® Torque Limiting Modules

4-5

#### Standard Disc Spring Torque Limiters

6-7



#### Standard Disc Spring Torque Limiters

Type A

8-9

Type B

10-11

Type C

12-13

Type D

14-15

#### Mini Disc Spring Torque Limiters

Type E

16-17

Type F

18-19

Type G

20-21

#### Zero Backlash Torque Limiters

22-23



#### ZBC-NBC Zero Backlash Torque Limiters

Type H

24-25

Type J

26-27

Type K

28-29

Type L

30-31

Type M

32-33

Type N

34-35

Type P

36-37

Type R

38-39

Type T

40-41



#### Bibbigard®

Bibbigard® Torque Limiters

42

Bibbigard® Torque Limiter Selection Guide

43

Bibbigard® Type AB & AB/BM

44

Bibbigard® Type AR & AF

45

Bibbigard® Type AS

46

Bibbigard® Type B

47

Bibbigard® Type BS & BF

48

Bibbigard® Type CB

49

Bibbigard® Type CS & CP

50

Bibbigard® Type CR & CF

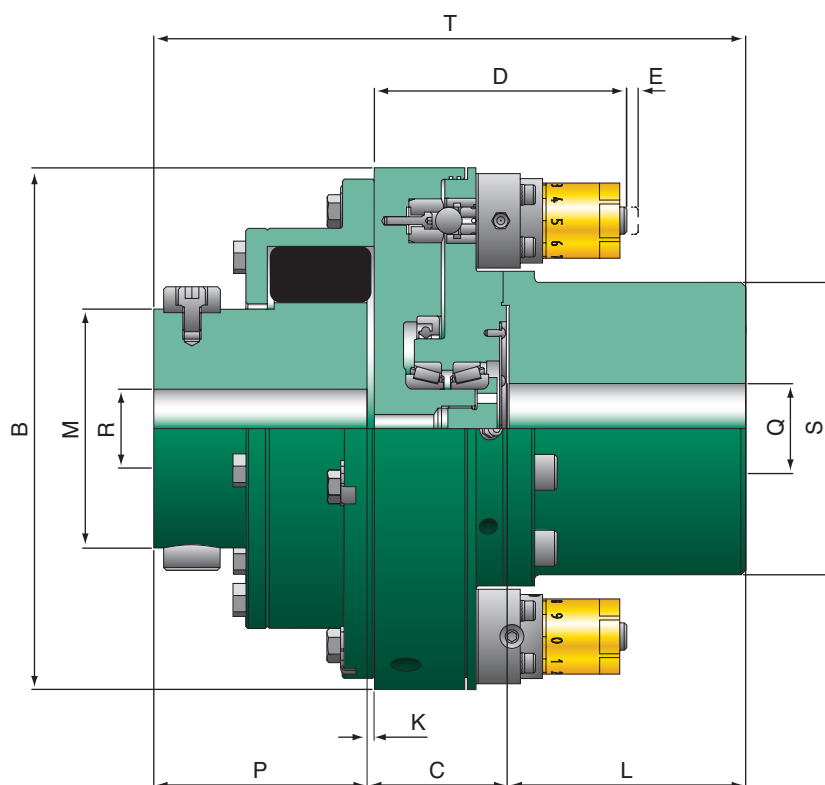
51

# UEP Modular Torque Limiters

## Series 2

Bibby Turboflex's extensive experience developed the Ultimate Extruder Protection device affording reliable protection for twin screw extruders.

Based on over 30 years experience in arduous applications particularly in the steel industry has led to the development of the Bibby Modular Torque Limiter which has become the industry standard for twin screw extruder machines.



## UEP Ratings and Dimensions

| Model Number                      | 234A  | 237A   | 238A   | 238B   | 239B   | 300C   |
|-----------------------------------|-------|--------|--------|--------|--------|--------|
| Maximum Preset Torque Nm          | 1480  | 3046   | 3577   | 6688   | 8786   | 14280  |
| Minimum Preset Torque Nm          | 148   | 493    | 579    | 1122   | 1420   | 2310   |
| Maximum Speed RPM                 | 3000  | 2800   | 2800   | 2500   | 2500   | 2200   |
| Coupling Size                     | 0.2RB | 0.37RB | 0.73RB | 0.73RB | 1.15RB | 2.15RB |
| Module Size                       | SE5   | SE10   | SE10   | SE10   | SE10   | SE10   |
| Quantity of Modules               | 2     | 2      | 2      | 4      | 4      | 6      |
| Dimensions (mm)                   |       |        |        |        |        |        |
| Outside Diameter - B              | 232   | 278    | 317    | 320    | 378    | 467    |
| Distance Between Hub Faces - C    | 62.3  | 83.5   | 83.5   | 96.7   | 96.7   | 111.5  |
| D                                 | 112   | 134    | 133    | 138    | 138    | 136    |
| E                                 | 3     | 4      | 4      | 4      | 4      | 4      |
| Overall Length - T                | 264   | 325    | 350    | 363    | 407    | 441    |
| Rigid Hub                         |       |        |        |        |        |        |
| Boss Diameter - S                 | 130   | 165    | 165    | 190    | 234    | 234    |
| Hub Length - L                    | 106   | 121    | 121    | 121    | 140    | 140    |
| Maximum Bore - Q                  | 90    | 115    | 115    | 135    | 165    | 165    |
| Minimum Bore                      | 32    | 40     | 40     | 50     | 55     | 55     |
| Flex Coupling                     |       |        |        |        |        |        |
| Gap - K                           | 3.2   | 3.2    | 3.2    | 3.2    | 3.2    | 4.8    |
| Boss Diameter - M                 | 106.4 | 128.6  | 152.4  | 152.4  | 179.4  | 219    |
| Hub Length - P                    | 95    | 120    | 145    | 145    | 170    | 190    |
| Maximum Bore - R                  | 70    | 85     | 95     | 95     | 115    | 140    |
| Minimum Bore                      | 35    | 40     | 55     | 55     | 55     | 70     |
| Mass Kg                           | 39    | 70     | 90     | 106    | 163    | 231    |
| Assembly Inertia KgM <sup>2</sup> | 0.19  | 0.48   | 0.82   | 0.98   | 2.02   | 3.85   |

Front cover photo courtesy of Coperion GmbH



### Features & Benefits

- Accurate release torque repeatability
- Simple fast manual re-engagement
- Low-cost maintenance
- The preferred protection for many extruder manufacturers

Very accurate release torque repeatability with minimal variation between static and dynamic release. Versatile installation allows for the torque limiter centre section to be removed without the need to move the motor or gearbox.

Individual modules are preset to provide the required release torque. Any maintenance of the modules is a straightforward operation. A simple removal operation allows for module recalibration without having to replace the complete unit. Holding spare modules in stock already preset to the required release torque keeps downtime to an absolute minimum.

Manual reset of the torque limiter can only be carried out when the drive is at rest. Resetting is achieved by realigning the two halves of the unit and then lightly tapping each module fitted with a soft mallet.

Lubrication of the unit is via easy access grease nipples. Proximity sensor targets are included to provide the means to switch off the drive after an overload occurs.

While each torque limiter assembly is normally factory preset, if required site adjustments can be carried out, a setting chart with instructions is provided for this purpose. Please note a security key is required and adjustment should only be carried out by an authorized person.

### Normal Operation

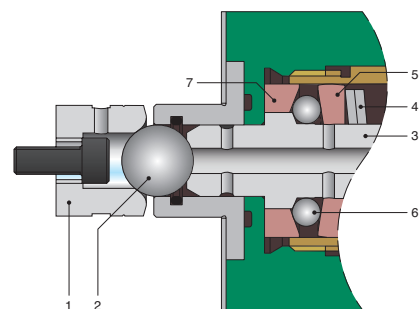
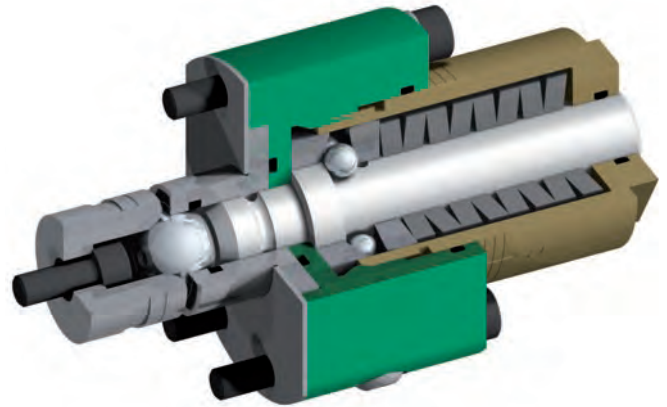
The flange connection is driven by a large steel ball (2), located in the detent pocket (1), which is retained by a plunger (3). This in turn is retained axially by means of a system of angled races (5,7) biased by pressure from the Belleville springs (4), acting on a circle of balls (6).

### Disengagement

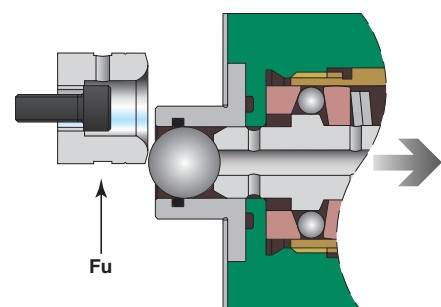
On overload, relative angular movement between the flanges imparts a tangential force ( $F_u$ ) on the large steel ball, forcing it clear of the detent pocket back against the plunger. This in turn causes the plunger to be forced through the circle of balls overcoming the spring loading on the angle races. In this position, the balls are resting on the large diameter of the plunger, and once this condition is reached the flanges are completely free to rotate independently. A suitable switch can be incorporated in the assembly to switch off the drive motor or operate a warning device when the Torque Limiting assembly disengages.

After first ensuring that the drive is isolated, resetting is a simple matter of first realigning the flanges and then tapping each module plunger back with a soft mallet to allow the circle of balls to return to their original position and the large steel ball to return to its location in the detent pocket.

**UEP Torque Limiters are not classed as machines by the 98/37/EU Directive and 2006/42/EU Machinery Directive. All installations must conform to industry standards.**



Engaged



Disengaged

# Bibbigard® Torque Limiting Modules

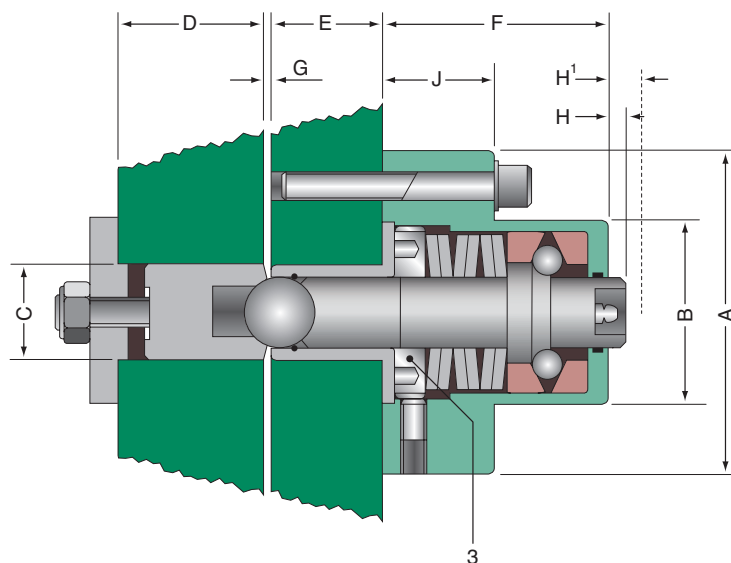
## Bibbigard® Internally Adjusted Modules

### Adjustment

Adjustment of the tangential force ( $F_u$ ), can be made by removing the unit from the mounting flange and adjusting the screw (3), so altering the spring force.

This procedure discourages tampering by unauthorised personnel.

Ensure that on assembly any clearance between the driving ball and the detent pocket is eliminated by tightening the adjusting screw located in the plate at the base of the detent pocket.



| Model Number | Tangential Force $F_u$ |         | Dimensions (mm) |     |      |    |    |      |     |     |    |    |
|--------------|------------------------|---------|-----------------|-----|------|----|----|------|-----|-----|----|----|
|              | lbf                    | N       | A               | B   | C    | D  | E  | F    | G   | H   | H' | J  |
| SE5BA        | 2,250                  | 10,000  | 56              | 36  | 19.5 | 20 | 14 | 44   | 1.8 | 2.5 | 6  | 19 |
| SE10BA       | 4,000                  | 17,800  | 66              | 40  | 25   | 25 | 16 | 54.5 | 1.5 | 20  | 24 | 30 |
| SE20BA       | 11,000                 | 48,900  | 105             | 66  | 35   | 45 | 45 | 72   | 2   | 5   | 13 | 35 |
| SE30BA       | 38,000                 | 169,000 | 170             | 120 | 70   | 45 | 45 | 130  | 3   | 9   | 23 | 40 |

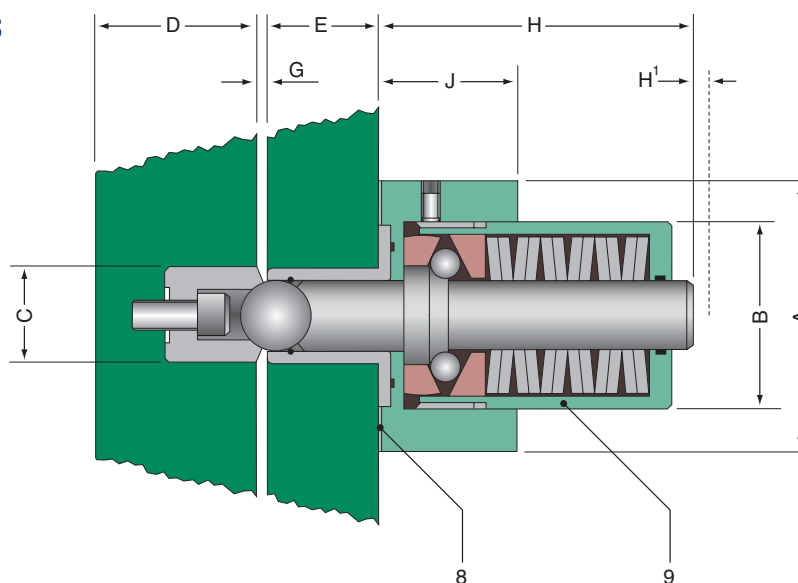
Note internal specifications may vary between sizes

## Bibbigard® Externally Adjusted Modules

### Adjustment

Adjustment of the tangential force ( $F_u$ ), can be made by adjusting the spring housing (9), so altering the spring force.

Ensure that on assembly any clearance between the driving ball and detent pocket is eliminated by adjusting the quantity of shims (8) under the clamp face of the module.



| Model Number | Tangential Force $F_u$ |        | Dimensions (mm) |    |      |    |    |   |     |     |     |    |
|--------------|------------------------|--------|-----------------|----|------|----|----|---|-----|-----|-----|----|
|              | lbf                    | N      | A               | B  | C    | D  | E  | F | G   | H   | H'  | J  |
| SE5EA        | 2,250                  | 10,000 | 56              | 50 | 19.5 | 15 | 14 | — | 1.5 | 67  | 3.5 | 20 |
| SE10EA       | 4,000                  | 17,000 | 66              | 50 | 24.5 | 20 | 16 | — | 2.5 | 77  | 4   | 37 |
| SE20EA       | 5,900                  | 26,000 | 105             | 69 | 35   | 35 | 45 | — | 2.5 | 107 | 8   | 15 |
| SE25EA       | 10,000                 | 45,000 | 105             | 74 | 35   | 35 | 45 | — | 2.5 | 115 | 8   | 10 |

Note internal specifications may vary between sizes

# Bibbigard® Torque Limiting Modules

Bibby Transmissions Torque Limiting Modules have been specifically designed to provide overload protection for applications where very high torques are transmitted, and to extend the range of manual reset Bibbigard Torque Limiters.

The modular system provides the capability for virtually unlimited torque capacity and lends itself to many transmission applications – chain, belt and gear drives, or shaft-to-shaft gear or flexible coupling drives.

The maximum release torque depends on the number and size of Torque Limiting Modules that can be incorporated, and the size of the unit that can be accommodated within the confines of the installation. Internally and externally adjusted modules provide repeatability better than 5%, however externally adjusted modules are preferred when the application is required to operate with minimal variation between static and dynamic disengagement.

## Construction

The Bibbigard Torque Limiting Module is constructed from the finest quality materials. Many of the vital components are made from high quality tool steels, through hardened to Rockwell C62, and precision ground to close tolerances.

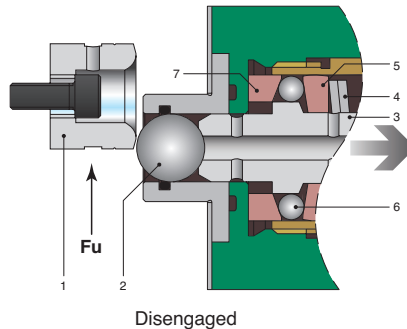
## Normal Operation

The flange connection is driven by a large steel ball (2), located in the detent

pocket (1), which is retained by a plunger (3). This in turn is retained axially by means of a system of angled races (5,7) biased by pressure from the Belleville springs (4), acting on a circle of balls (6).

## Disengagement

On overload, relative angular movement between the flanges imparts a tangential force ( $F_u$ ) on the large steel ball, forcing it clear of the detent pocket back against the plunger. This in turn causes the plunger to be forced through the circle of balls overcoming the spring loading on the angle races. In this position, the balls are resting on the large diameter of the plunger, and



once this condition is reached the flanges are completely free to rotate independently.

A suitable switch can be incorporated in the assembly to switch off the drive motor or operate a warning device when the Torque Limiting assembly disengages.

After first ensuring that the drive is isolated, resetting is a simple matter of first realigning the flanges and then tapping each module plunger back with a soft mallet to allow the circle of balls to return to their original position and the large steel ball to return to its location in the detent pocket.

## Detent Pockets

Internally and externally adjusted modules can be through-hole or blind-hole detent fixing (see diagrams on opposite page). The type of detent fixing is dependent upon the design constraints.

The mechanical clearance in the Module assembly should be eliminated by pre-loading the detent pocket (1) against the driving ball (2). This is achieved for the respective type of detent pocket under Adjustment (on the opposite page).

## Selection

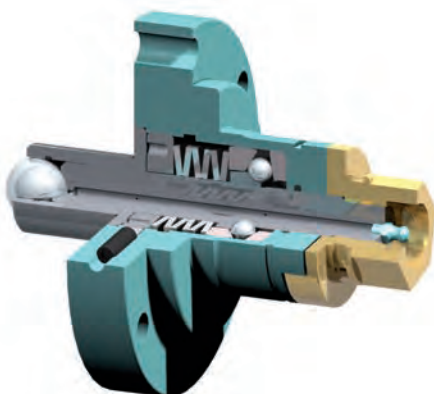
To apply the modules in the form of a torque limiter it is necessary to determine the quantity of modules needed for the required torque capacity at a specific radius from the axis of rotation.

$$\text{No. of modules} = \frac{\text{Torque (Nm)} \times 1000}{F_u \text{ (N)} \times \text{radius (mm)} \times K}$$

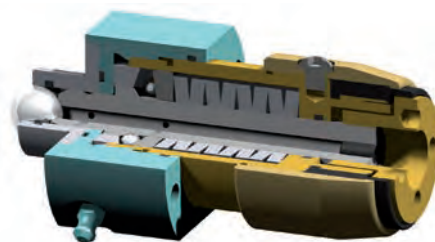
$K = 0.65$  for General Applications

$K = 0.5$  for Steelwork Applications

## Special Designs



Internally Adjusted Cam Disconnect Module



Externally Adjusted Manual Disconnect Tamper Proof Module

# Disc Spring Torque Limiters

## Standard Mini



## Heavy Duty ZBC & NBC



## General Selection

| Type          | Available Functions |             |             |            |              |                 | Torque Range Nm | Ø mm          |                  | Available Forms           | Max Speed               | Torque Accuracy | Service Life | Moment of Inertia | Surface Plating                             | Available Stop Switch | Catalog Page |
|---------------|---------------------|-------------|-------------|------------|--------------|-----------------|-----------------|---------------|------------------|---------------------------|-------------------------|-----------------|--------------|-------------------|---------------------------------------------|-----------------------|--------------|
|               | Zero Backlash       | Quick Guard | Synchronous | Continuous | Free Running | Remotely Adjust |                 | Bore + Keyway | Clamping Element |                           |                         |                 |              |                   |                                             |                       |              |
|               | ①                   | ②           | ③           | ④          | ⑤            |                 |                 |               |                  |                           |                         |                 |              |                   |                                             |                       |              |
| ZBC           | X                   | X           | X           |            |              |                 | 3-740           | 8-50          | 10-60            | H, J, K, L, M, N, P, R, T | High                    | High            | High         | Low               | Phosphatation. Chemical Nickel upon request | A, B, C               |              |
| NBC           | X                   | X           | X           |            |              |                 | .65-440         | 6 - 45        | 6 - 50           | H, J, K, L                | High                    |                 |              |                   |                                             |                       |              |
| Standard      |                     | X           | X           | X          | X            |                 | 2.5-8200        | 7 - 110*      |                  | A, B, C, D                |                         |                 |              | Medium            |                                             | D                     |              |
| Mini          |                     | X           | X           |            |              |                 | 2.5-450         | 7 - 45        |                  | E, F, G                   | See available functions |                 |              |                   |                                             |                       |              |
| ZBC Pneumatic | X                   | X           | X           |            | X            | X               | 4-530           | 8 - 55*       | Upon request     | V, W                      | Very high               |                 |              | Low               |                                             | A, B, C               |              |
| Securex       |                     |             |             |            |              |                 | .5-10000        | 5 -120        |                  | T, C                      | Low                     | Low             | Low          | Medium            | Zinc plating                                |                       |              |

\* d max with keyway seat according to DIN 6885/3

① Angular Backlash between input and output close to zero.

② Re-engage automatically in a random angular position when the overload is removed. For Medium-High Speed. Quick Guard R for high torque - low speed.

③ Synchronous Re-engage automatically after 360° in the same angular position every time. For medium speed.

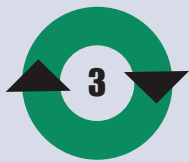
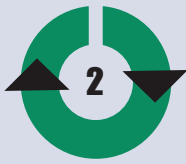
④ Continuous In case of overload the switch give a signal without interruption of the torque transmission. For very high speed.

⑤ Free Running In case of overload input and output are disconnected and output runs to idle. For very high speeds. Manual re-engagement.



# Standard Disc Spring Torque Limiters

## Selection Icons



- Very low backlash
- low moment of inertia
- Minimised dimensions & weight
- Reduced wear for longer lifetime
- ZBC for heavy duty
- NBC for light duty



### Quick Guard

1. Disengages at pre-set torque
2. Automatically re-engages as load reduces – 15 degrees of rotation



### Synchronous

1. Re-engages after 360 degrees



### Continuous

1. Drive does not fully disengage to ensure torque transmission is not interrupted
2. Micro-switch is activated
3. Manual/electronic re-set required



### Free Running

1. Drive fully disengages
2. Manual reset required to re-engage drive

During normal running torque is continuously transmitted from the hub to the flange through balls or rollers held in indentations in matching halves of a carrier flange by disc springs. As the torque exceeds a pre-set limit the balls or rollers are forced out of their indentations, allowing the flange sections to rotate separately. At this point the torque being transmitted is negligible and a limit switch is activated to signal emergency stop of the motor. In Quick Guard versions re-engagement is automatic as soon as the torque has fallen below the pre-set value. Synchronous versions also re-engage automatically but after one full revolution has been completed. In the Continuous version, the rollers are prevented from fully disengaging and a switch is activated to signal motor stop. The Free Running version also disengages the drive at a pre-set torque value but must be manually re-set to re-engage the drive.

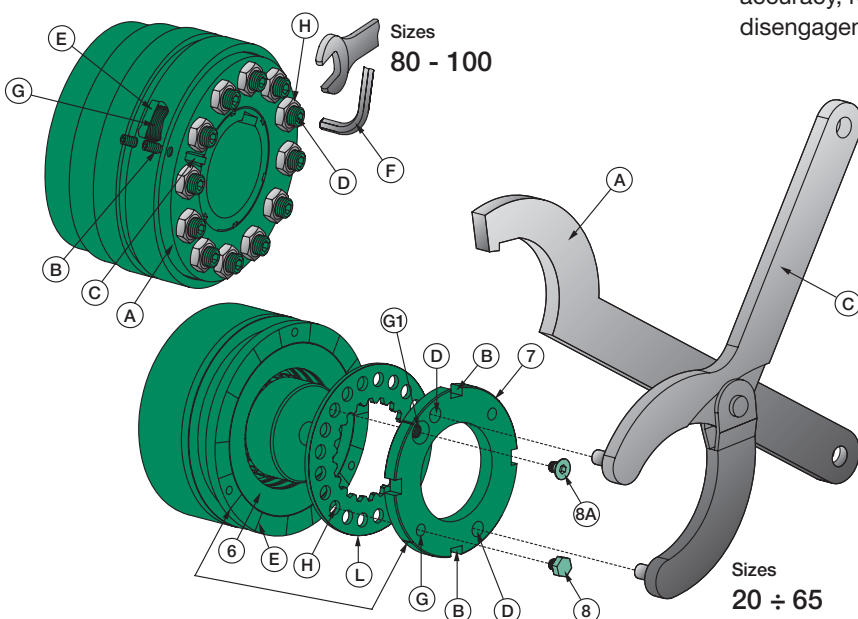
## Torque Adjustment

### Sizes 20 ÷ 65

Manually tighten the nut (7) until contacts the disc springs (6). Insert wrench (A) in to the seats (B) or the wrench (C) in to the holes (D) and tighten the nut clockwise for the number of indents (E) corresponding to the request disengagement torque (according with the torque diagram supplied together with the torque limiter). Tighten the screw (8) or (8a) in the threaded hole (G) or (G1) of the nut (7) in correspondence with one of the holes (H) on the locking washer (L).

### Sizes 80 ÷ 100

Manually turn the nut (A) up to the end of the stroke, then go back anticlockwise until the 3+3 locking screws (B), are aligned to 3 of the 6 splines (C) on the hub. Tighten the 3+3 locking screws (B), to positively secure the nut (A) to the hub. Manually tighten the adjusting screws (D) until they contact the mobile element (E). Insert the wrench (F) and uniformly tighten the adjusting screws (D) at the same level for the number of revolutions corresponding to the requested disengagement torque, according to the torque diagram of the cup springs packs (G). Secure the adjusting screws (D) by means of the lock-nuts (H). To guarantee the optimum accuracy, recheck the preset slip-torque after the first disengagements.



## Torque Adjustment

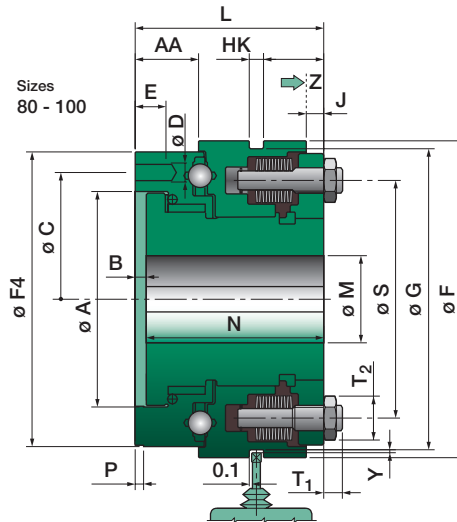
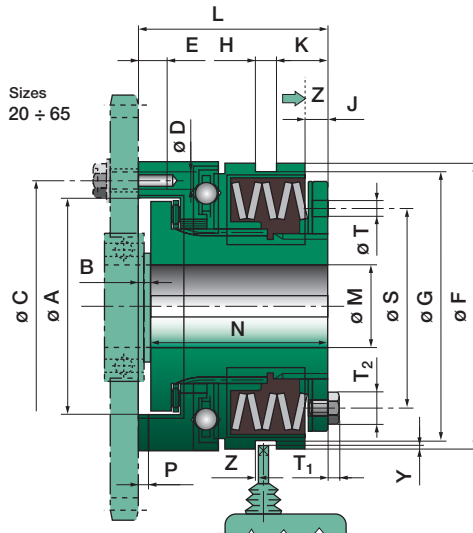
| Stock availability c/w bore H7 and keyway Js9 - DIN 6885/1 (mm) |    |    |    |    |    |    |
|-----------------------------------------------------------------|----|----|----|----|----|----|
| Grand Size<br>ø M <sup>H7</sup>                                 | 20 | 25 | 35 | 45 | 55 | 65 |
| 19                                                              | X  | X  |    |    |    |    |
| 20                                                              | X  | X  |    |    |    |    |
| 24                                                              |    | X  |    |    |    |    |
| 25                                                              |    | X  | X  |    |    |    |
| 30                                                              |    |    | X  |    |    |    |
| 35                                                              |    |    | X  | X  |    |    |
| 40                                                              |    |    |    | X  |    |    |
| 45                                                              |    |    |    | X  |    |    |
| 50                                                              |    |    |    |    | X  |    |
| 55                                                              |    |    |    |    | X  |    |
| 60                                                              |    |    |    |    |    | X  |
| 70*                                                             |    |    |    |    |    | X  |

\* Keyway seat acc. to DIN 6885/3

# Standard Disc Spring Torque Limiters – Type A

## Basic Type

For connection shaft-drive component such as gear or pulley, supported on the shaft



## Dimensions

| Size | Overall Dimensions |     |     |       |     |     |                |      |    |                 |                 |                  |     |      |                  |     |      |    |                |                |   |    |
|------|--------------------|-----|-----|-------|-----|-----|----------------|------|----|-----------------|-----------------|------------------|-----|------|------------------|-----|------|----|----------------|----------------|---|----|
|      | A                  | B   | C   | D     | E   | F   | F <sub>4</sub> | G    | H  | K               | J               | L                | M   |      | N                | P   | S    | T  | T <sub>1</sub> | T <sub>2</sub> | Y | AA |
|      |                    |     |     |       |     |     |                |      |    |                 |                 |                  | Min | Max  |                  |     |      |    |                |                |   |    |
| 20   | 41                 | 4   | 48  | 6xM5  | 6.5 | 55  | —              | 50   | 9  | 7.5             | 3               | 38.5             | 7   | 20   | 34.5             | 3.1 | 38.5 | 5  | 3              | 7              | 2 | —  |
| 25   | 60                 | 4   | 70  | 6xM5  | 8   | 82  | —              | 72.5 | 9  | 11.5            | 6               | 52               | 10  | 25   | 48               | 3.1 | 54   | 6  | 3.5            | 8              | 2 | —  |
| 35   | 78                 | 5   | 89  | 6xM6  | 10  | 100 | —              | 90.5 | 9  | 12              | 5               | 61               | 14  | 35   | 56               | 3.6 | 70   | 6  | 4              | 10             | 2 | —  |
| 45   | 90.5               | 5   | 105 | 6xM8  | 12  | 120 | —              | 112  | 10 | 21              | 8.5             | 78               | 18  | 45   | 73               | 4.1 | 84   | 6  | 4              | 10             | 2 | —  |
| 55   | 105                | 6.5 | 125 | 6xM10 | 15  | 146 | —              | 140  | 9  | 27              | 11              | 100              | 24  | 55   | 93.5             | 4.1 | 108  | 7  | 5.5            | 13             | 2 | —  |
| 65   | 120.5              | 6.5 | 155 | 6xM12 | 17  | 176 | —              | 170  | 9  | 33              | 12              | 113.5            | 30  | 70*  | 107              | 4.6 | 129  | 10 | 5.5            | 13             | 2 | —  |
| 80   | 136                | 7   | 160 | 6xM12 | 20  | 200 | 186            | 190  | 9  | 39 <sup>®</sup> | 14 <sup>®</sup> | 119 <sup>®</sup> | 40  | 80   | 112 <sup>®</sup> | 5.3 | 150  | —  | 15             | 24             | 2 | 26 |
| 100  | 168                | 8   | 200 | 6xM16 | 25  | 240 | 231            | 230  | 9  | 46 <sup>®</sup> | 15 <sup>®</sup> | 141 <sup>®</sup> | 50  | 110* | 133 <sup>®</sup> | 5.8 | 186  | —  | 21             | 30             | 2 | 30 |

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L = 134, N = 127

⑤ Free Running 100: K = 64, J = 33, L = 159, N = 151

## How to order:

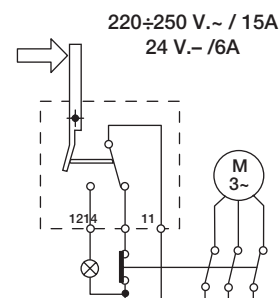
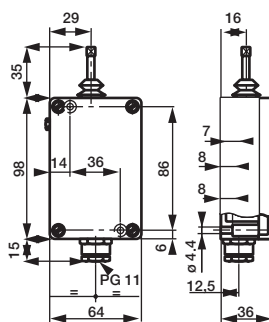
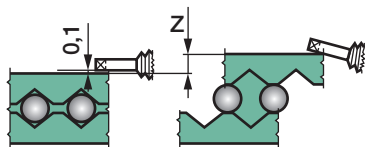
Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type A

## Basic Type

### EMERGENCY STOP SWITCH Type A



### Arrangement Possibilities

| Range         | Size | Disc Springs |       |                  |                      |
|---------------|------|--------------|-------|------------------|----------------------|
|               |      | Code         | Size  | Arrangement      |                      |
|               |      |              |       | Standard A-B-C-D | Free Running A-B-C-D |
| Quick Guard   | 20   | S-Light      | 20/65 | 6 x 1s           | 2 x 1s               |
|               |      |              | 80    | 3 Packs          |                      |
|               |      |              | 100   | 3 Packs          |                      |
| Quick Guard R | 25   | M-Medium     | 20/65 | 5 x 1m           | 2 x 1m               |
| Synchronous   | 35   |              | 80    | 6 Packs          |                      |
|               | 45   |              | 100   | 6 Packs          |                      |
| Continuous*   | 55   | L-Heavy      | 20    | 5 x 1m           | 2 x 1l               |
|               | 65   |              | 25/65 | 5 x 1l           | 2 x 1l               |
| Free Running* | 80   |              | 80    | 12 Packs         |                      |
|               | 100  | LL-R-Heavy   | 20    | 4 x 1l           |                      |
|               | 80   |              | 25/65 | 3 x 2l           |                      |
|               | 100  |              | 80    | 12 Packs         |                      |
|               | 100  |              | 100   | 12 Packs         |                      |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

### Emergency Stop Switch

| Size | Z      |        |        |        |        |
|------|--------|--------|--------|--------|--------|
|      | (1) mm | (2) mm | (3) mm | (4) mm | (5) mm |
| 20   | 1.4    | 1.2    | 0.6    | 1.6    | —      |
| 25   | 2.3    | 1.8    | 0.8    | 2.3    | —      |
| 35   | 2.4    | 2      | 1.1    | 3      | —      |
| 45   | 2.7    | 2.2    | 1.2    | 3.5    | —      |
| 55   | 3.7    | 2.5    | 1.2    | 3.8    | 2.5    |
| 65   | 4.6    | 3      | 1.6    | 4.5    | 3      |
| 80   | 5      | 3.5    | 2.5    | —      | 3.5    |
| 100  | 5.5    | 4      | 2.7    | —      | 4      |

(1) Quick Guard - (2) Synchronous - (3) Continuous - (4) Free Running - (5) Quick Guard-R

### Technical Characteristics

| Size  | Disengagement Torque |          |           |           |                                        |           |             | Maximum Speed – Standard A-B-C-D |      |                  |     |                 |      |                   |
|-------|----------------------|----------|-----------|-----------|----------------------------------------|-----------|-------------|----------------------------------|------|------------------|-----|-----------------|------|-------------------|
|       | Quick Guard Nm       |          |           |           | Synchronous-Continuous-Free Running Nm |           |             | Quick Guard n/1'                 |      | Synchronous n/1' |     | Continuous n/1' |      | Free Running n/1' |
|       | Springs Type         |          |           |           |                                        |           |             | Springs Type                     |      |                  |     |                 |      |                   |
|       | S                    | M        | L         | LL        | S                                      | M         | L           | S-M                              | L-LL | S-M              | L   | S-M             | L    | S-M-L             |
| 20    | 2.5-5                | 5-10     | 10-20     | 20-40     | 5-10                                   | 10-20     | 20-40       | 3300                             | 1800 | 1000             | 500 | 4000            | 3000 | —                 |
| 25    | 6-12                 | 12-25    | 25-55     | 55-100    | 12-25                                  | 25-50     | 50-100      | 2900                             | 1450 | 950              | 450 | 3900            | 2900 | 5000              |
| 35    | 12-25                | 25-50    | 50-120    | 120-200   | 25-50                                  | 50-100    | 100-200     | 2400                             | 1200 | 800              | 400 | 3300            | 2400 | 4000              |
| 45    | 25-50                | 50-100   | 100-250   | 200-450   | 50-100                                 | 100-200   | 200-450     | 2000                             | 1000 | 650              | 300 | 2800            | 2000 | 3500              |
| 55    | 50-100               | 100-200  | 200-500   | 400-1000  | 100-200                                | 200-400   | 400-800     | 1600                             | 850  | 550              | 250 | 2300            | 1600 | 3000              |
| 55R*  | —                    | —        | —         | 800-2000  | —                                      | —         | 800-2000**  | —                                | 90   | —                | 90  | —               | 700  | —                 |
| 65    | 85-250               | 230-600  | 300-1000  | 600-2000  | 170-450                                | 350-900   | 600-1800    | 1400                             | 700  | 400              | 150 | 1800            | 1400 | 2300              |
| 65R*  | —                    | —        | —         | 1200-3400 | —                                      | —         | 1200-3400** | —                                | 70   | —                | 70  | —               | 600  | —                 |
| 80    | 180-480              | 360-960  | 720-1950  | 1600-3300 | 300-750                                | 600-1500  | 1200-3000   | 1200                             | 600  | 150              | 80  | 1500            | 1000 | 1600              |
| 80R*  | —                    | —        | —         | 2900-5800 | —                                      | —         | 2900-5800** | —                                | 40   | —                | 40  | —               | 400  | —                 |
| 100   | 250-520              | 500-1050 | 1000-2100 | 2000-3600 | 550-1100                               | 1100-2200 | 2200-4400   | 950                              | 480  | 100              | 50  | 1300            | 800  | 1400              |
| 100R* | —                    | —        | —         | 3000-8200 | —                                      | —         | 3000-8200** | —                                | 30   | —                | 30  | —               | 300  | —                 |

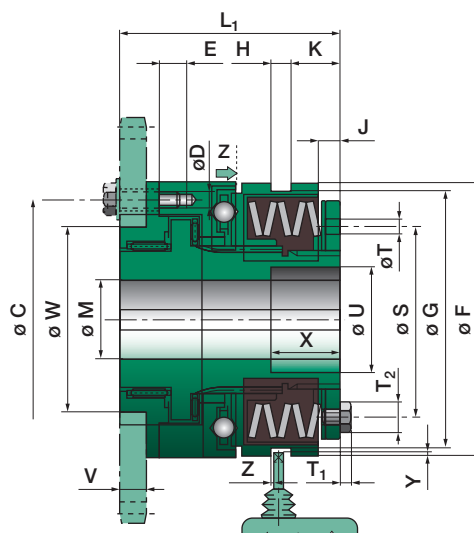
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Standard Disc Spring Torque Limiters – Type B

## with Roller Bearing Flange

With drive centering flange mounted on a roller bearing.  
Ready for mounting.



## Dimensions

| Size | Overall Dimensions |       |     |     |      |    |                 |                 |                  |     |      |      |    |                |                |     |    |                |                 |   |
|------|--------------------|-------|-----|-----|------|----|-----------------|-----------------|------------------|-----|------|------|----|----------------|----------------|-----|----|----------------|-----------------|---|
|      | C                  | D     | E   | F   | G    | H  | K               | J               | L <sub>1</sub>   | M   |      | S    | T  | T <sub>1</sub> | T <sub>2</sub> | U   | V  | W <sup>6</sup> | X               | Y |
|      |                    |       |     |     |      |    |                 |                 |                  | Min | Max  |      |    |                |                |     |    |                |                 |   |
| 20   | 48                 | 6xM5  | 6.5 | 55  | 50   | 9  | 7.5             | 3               | 51               | 7   | 20   | 38.5 | 5  | 3              | 7              | 21  | 8  | 38             | 15              | 2 |
| 25   | 70                 | 6xM5  | 8   | 82  | 72.5 | 9  | 11.5            | 6               | 70               | 10  | 25   | 54   | 6  | 3.5            | 8              | 26  | 10 | 50             | 20              | 2 |
| 35   | 89                 | 6xM6  | 10  | 100 | 90.5 | 9  | 12              | 5               | 78               | 14  | 35   | 70   | 6  | 4              | 10             | 36  | 12 | 60             | 25              | 2 |
| 45   | 105                | 6xM8  | 12  | 120 | 112  | 10 | 21              | 8.5             | 96               | 18  | 45   | 84   | 6  | 4              | 10             | 46  | 12 | 80             | 30              | 2 |
| 55   | 125                | 6xM10 | 15  | 146 | 140  | 9  | 27              | 11              | 124.5            | 24  | 55   | 108  | 7  | 5.5            | 13             | 56  | 16 | 100            | 30              | 2 |
| 65   | 155                | 6xM12 | 17  | 176 | 170  | 9  | 33              | 12              | 140              | 30  | 70*  | 129  | 10 | 5.5            | 13             | 66  | 18 | 120            | 30              | 2 |
| 80   | 160                | 6xM12 | 20  | 200 | 190  | 9  | 39 <sup>®</sup> | 14 <sup>®</sup> | 150 <sup>®</sup> | 40  | 80   | 150  | —  | 15             | 24             | 82  | 20 | 130            | 25 <sup>®</sup> | 2 |
| 100  | 200                | 6xM16 | 25  | 240 | 230  | 9  | 46 <sup>®</sup> | 15 <sup>®</sup> | 175 <sup>®</sup> | 50  | 110* | 186  | —  | 21             | 30             | 111 | 25 | 160            | 35 <sup>®</sup> | 2 |

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L<sub>1</sub> = 165, X = 40

⑤ Free Running 100: K = 64, J = 33, X = 53

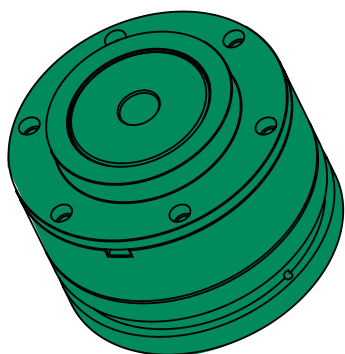
## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type B

with Roller Bearing Flange



## Arrangement Possibilities

| Range         | Size | Code       | Size  | Disc Springs     |                      |
|---------------|------|------------|-------|------------------|----------------------|
|               |      |            |       | Arrangement      |                      |
|               |      |            |       | Standard A-B-C-D | Free Running A-B-C-D |
| Quick Guard   | 20   | S-Light    | 20/65 | 6 x 1s           |                      |
|               |      |            | 80    | 3 Packs          |                      |
|               |      |            | 100   |                  |                      |
| Quick Guard R | 25   | M-Medium   | 20/65 | 5 x 1m           |                      |
|               |      |            | 80    | 6 Packs          |                      |
|               |      |            | 100   |                  |                      |
| Synchronous   | 35   | M-Medium   | 20/65 | 5 x 1m           |                      |
|               |      |            | 80    | 6 Packs          |                      |
|               |      |            | 100   |                  |                      |
| Continuous*   | 45   | L-Heavy    | 20    | 5 x 1m           |                      |
|               |      |            | 25/65 | 5 x 1ℓ           |                      |
|               |      |            | 80    | 12 Packs         |                      |
| Free Running* | 65   | LL-R-Heavy | 20    | 4 x 1ℓ           |                      |
|               |      |            | 25/65 | 3 x 2ℓ           |                      |
|               |      |            | 80    | 12 Packs         |                      |
|               |      |            | 100   |                  |                      |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

| Size  | Disengagement Torque |          |           |           |                                        |           |             | Maximum Speed – Standard A-B-C-D |      |                  |     |                 |      |                   |
|-------|----------------------|----------|-----------|-----------|----------------------------------------|-----------|-------------|----------------------------------|------|------------------|-----|-----------------|------|-------------------|
|       | Quick Guard Nm       |          |           |           | Synchronous-Continuous-Free Running Nm |           |             | Quick Guard n/1'                 |      | Synchronous n/1' |     | Continuous n/1' |      | Free Running n/1' |
|       | Springs Type         |          |           |           |                                        |           |             | Springs Type                     |      |                  |     |                 |      |                   |
|       | S                    | M        | L         | LL        | S                                      | M         | L           | S-M                              | L-LL | S-M              | L   | S-M             | L    | S-M-L             |
| 20    | 2.5-5                | 5-10     | 10-20     | 20-40     | 5-10                                   | 10-20     | 20-40       | 3300                             | 1800 | 1000             | 500 | 4000            | 3000 | —                 |
| 25    | 6-12                 | 12-25    | 25-55     | 55-100    | 12-25                                  | 25-50     | 50-100      | 2900                             | 1450 | 950              | 450 | 3900            | 2900 | 5000              |
| 35    | 12-25                | 25-50    | 50-120    | 120-200   | 25-50                                  | 50-100    | 100-200     | 2400                             | 1200 | 800              | 400 | 3300            | 2400 | 4000              |
| 45    | 25-50                | 50-100   | 100-250   | 200-450   | 50-100                                 | 100-200   | 200-450     | 2000                             | 1000 | 650              | 300 | 2800            | 2000 | 3500              |
| 55    | 50-100               | 100-200  | 200-500   | 400-1000  | 100-200                                | 200-400   | 400-800     | 1600                             | 850  | 550              | 250 | 2300            | 1600 | 3000              |
| 55R*  | —                    | —        | —         | 800-2000  | —                                      | —         | 800-2000**  | —                                | 90   | —                | 90  | —               | 700  | —                 |
| 65    | 85-250               | 230-600  | 300-1000  | 600-2000  | 170-450                                | 350-900   | 600-1800    | 1400                             | 700  | 400              | 150 | 1800            | 1400 | 2300              |
| 65R*  | —                    | —        | —         | 1200-3400 | —                                      | —         | 1200-3400** | —                                | 70   | —                | 70  | —               | 600  | —                 |
| 80    | 180-480              | 360-960  | 720-1950  | 1600-3300 | 300-750                                | 600-1500  | 1200-3000   | 1200                             | 600  | 150              | 80  | 1500            | 1000 | 1600              |
| 80R*  | —                    | —        | —         | 2900-5800 | —                                      | —         | 2900-5800** | —                                | 40   | —                | 40  | —               | 400  | —                 |
| 100   | 250-520              | 500-1050 | 1000-2100 | 2000-3600 | 550-1100                               | 1100-2200 | 2200-4400   | 950                              | 480  | 100              | 50  | 1300            | 800  | 1400              |
| 100R* | —                    | —        | —         | 3000-8200 | —                                      | —         | 3000-8200** | —                                | 30   | —                | 30  | —               | 300  | —                 |

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

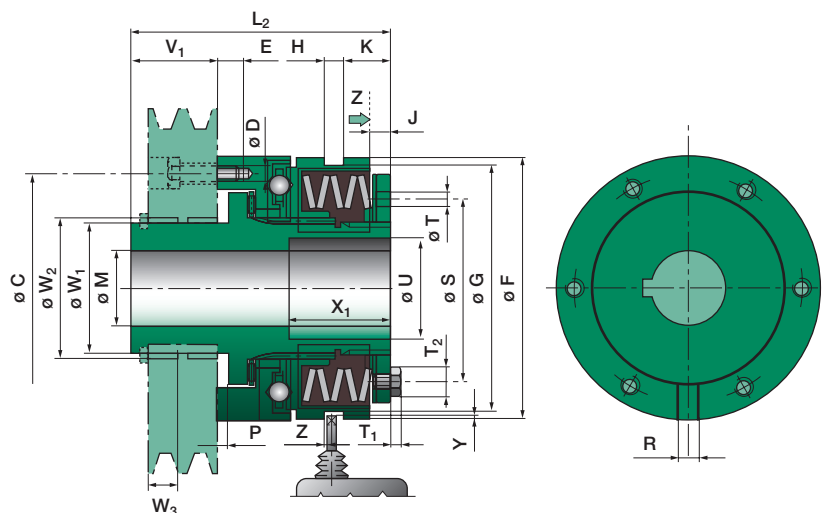
\*\* Not available in the Free Running range



# Standard Disc Spring Torque Limiters – Type C

## with Extended Hubs

Bearing or bronze bushes can be mounted on it to support large drive components



## Dimensions

| Size | Overall Dimensions |       |     |     |      |    |                 |                 |                  |     |      |                  |     |    |      |    |                |                |     |                |                             |                             |                |                 |   |
|------|--------------------|-------|-----|-----|------|----|-----------------|-----------------|------------------|-----|------|------------------|-----|----|------|----|----------------|----------------|-----|----------------|-----------------------------|-----------------------------|----------------|-----------------|---|
|      | C                  | D     | E   | F   | G    | H  | K               | J               | L <sub>2</sub>   | M   |      | N                | P   | R  | S    | T  | T <sub>1</sub> | T <sub>2</sub> | U   | V <sub>1</sub> | W <sup>r</sup> <sub>1</sub> | W <sup>k</sup> <sub>2</sub> | W <sub>3</sub> | X <sub>1</sub>  | Y |
|      |                    |       |     |     |      |    |                 |                 |                  | Min | Max  |                  |     |    |      |    |                |                |     |                |                             |                             |                |                 |   |
| 20   | 48                 | 6xM5  | 6.5 | 55  | 50   | 9  | 7.5             | 3               | 66               | 7   | 20   | 34.5             | 3.1 | 6  | 38.5 | 5  | 3              | 7              | 21  | 27.5           | 28                          | 36                          | 10             | 25.5            | 2 |
| 25   | 70                 | 6xM5  | 8   | 82  | 72.5 | 9  | 11.5            | 6               | 85               | 10  | 25   | 48               | 3.1 | 6  | 54   | 6  | 3.5            | 8              | 26  | 33             | 38                          | 45                          | 14             | 35              | 2 |
| 35   | 89                 | 6xM6  | 10  | 100 | 90.5 | 9  | 12              | 5               | 100              | 14  | 35   | 56               | 3.6 | 8  | 70   | 6  | 4              | 10             | 36  | 39             | 52                          | 60                          | 16             | 45              | 2 |
| 45   | 105                | 6xM8  | 12  | 120 | 112  | 10 | 21              | 8.5             | 125              | 18  | 45   | 73               | 4.1 | 10 | 84   | 6  | 4              | 10             | 46  | 47             | 65                          | 72                          | 21             | 59              | 2 |
| 55   | 125                | 6xM10 | 15  | 146 | 140  | 9  | 27              | 11              | 152.5            | 24  | 55   | 93.5             | 4.1 | 12 | 108  | 7  | 5.5            | 13             | 56  | 52.5           | 78                          | 85                          | 25             | 60              | 2 |
| 65   | 155                | 6xM12 | 17  | 176 | 170  | 9  | 33              | 12              | 171              | 30  | 70*  | 107              | 4.6 | 14 | 129  | 10 | 5.5            | 13             | 66  | 57.5           | 90                          | 100                         | 25             | 60              | 2 |
| 80   | 160                | 6xM12 | 20  | 200 | 190  | 9  | 39 <sup>®</sup> | 14 <sup>®</sup> | 183 <sup>®</sup> | 40  | 80   | 112 <sup>®</sup> | 5.3 | 16 | 150  | —  | 15             | 24             | 82  | 64             | 108                         | —                           | —              | 55 <sup>®</sup> | 2 |
| 100  | 200                | 6xM16 | 25  | 240 | 230  | 9  | 46 <sup>®</sup> | 15 <sup>®</sup> | 213 <sup>®</sup> | 50  | 110* | 133 <sup>®</sup> | 5.8 | 18 | 186  | —  | 21             | 30             | 111 | 72             | 135                         | —                           | —              | 70 <sup>®</sup> | 2 |

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L<sub>2</sub> = 198, N = 127, X<sub>1</sub> = 70

⑤ Free Running 100: K = 64, J = 33, L<sub>2</sub> = 231, N = 151, X<sub>1</sub> = 88

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45

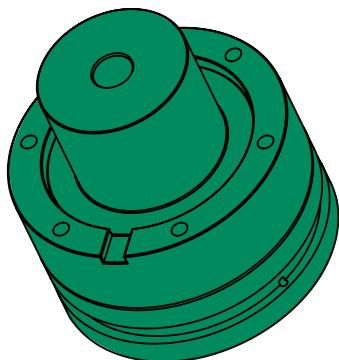
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —

Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type C

with Extended Hubs



## Arrangement Possibilities

| Range         | Size       | Disc Springs |                                                                                     |                  |                                                                                     |                                                                                     |                                                                                     |
|---------------|------------|--------------|-------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|               |            | Code         | Size                                                                                | Arrangement      |                                                                                     |                                                                                     |                                                                                     |
|               |            |              |                                                                                     | Standard A-B-C-D |                                                                                     | Free Running A-B-C-D                                                                |                                                                                     |
| Quick Guard   | 20         | S-Light      | 20/65                                                                               | 6 x 1s           |  | 2 x 1s                                                                              |  |
|               |            |              | 80                                                                                  | 3 Packs          |                                                                                     | 3 Packs                                                                             |                                                                                     |
|               |            |              | 100                                                                                 |                  |                                                                                     |                                                                                     |                                                                                     |
| Quick Guard R | 25         | M-Medium     | 20/65                                                                               | 5 x 1m           |  | 2 x 1m                                                                              |  |
|               |            |              | 80                                                                                  | 6 Packs          |                                                                                     | 6 Packs                                                                             |                                                                                     |
| Synchronous   | 35         |              | 100                                                                                 |                  |                                                                                     |                                                                                     |                                                                                     |
|               |            |              | 45                                                                                  | 20               | 5 x 1m                                                                              |  | 2 x 1ℓ                                                                              |
| Continuous*   | 55         | L-Heavy      | 25/65                                                                               | 5 x 1ℓ           |  |                                                                                     |                                                                                     |
|               |            |              | 80                                                                                  | 12 Packs         |                                                                                     | 12 Packs                                                                            |                                                                                     |
| Free Running* |            |              | 65                                                                                  | 100              |                                                                                     |                                                                                     |                                                                                     |
|               | LL-R-Heavy | 20           |                                                                                     | 4 x 1ℓ           |  |                                                                                     |                                                                                     |
| 25/65         |            | 3 x 2ℓ       |  |                  |                                                                                     |                                                                                     |                                                                                     |
| 80            |            | 12 Packs     |                                                                                     |                  |                                                                                     |                                                                                     |                                                                                     |
| 100           |            | 100          |                                                                                     |                  |                                                                                     |                                                                                     |                                                                                     |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

| Size  | Disengagement Torque |          |           |           |                                        |           |             | Maximum Speed – Standard A-B-C-D |      |                  |                 |                   |      |       |
|-------|----------------------|----------|-----------|-----------|----------------------------------------|-----------|-------------|----------------------------------|------|------------------|-----------------|-------------------|------|-------|
|       | Quick Guard Nm       |          |           |           | Synchronous-Continuous-Free Running Nm |           |             | Quick Guard n/1'                 |      | Synchronous n/1' | Continuous n/1' | Free Running n/1' |      |       |
|       | Springs Type         |          |           |           |                                        |           |             | Springs Type                     |      |                  |                 |                   |      |       |
|       | S                    | M        | L         | LL        | S                                      | M         | L           | S-M                              | L-LL | S-M              | L               | S-M               | L    | S-M-L |
| 20    | 2.5-5                | 5-10     | 10-20     | 20-40     | 5-10                                   | 10-20     | 20-40       | 3300                             | 1800 | 1000             | 500             | 4000              | 3000 | —     |
| 25    | 6-12                 | 12-25    | 25-55     | 55-100    | 12-25                                  | 25-50     | 50-100      | 2900                             | 1450 | 950              | 450             | 3900              | 2900 | 5000  |
| 35    | 12-25                | 25-50    | 50-120    | 120-200   | 25-50                                  | 50-100    | 100-200     | 2400                             | 1200 | 800              | 400             | 3300              | 2400 | 4000  |
| 45    | 25-50                | 50-100   | 100-250   | 200-450   | 50-100                                 | 100-200   | 200-450     | 2000                             | 1000 | 650              | 300             | 2800              | 2000 | 3500  |
| 55    | 50-100               | 100-200  | 200-500   | 400-1000  | 100-200                                | 200-400   | 400-800     | 1600                             | 850  | 550              | 250             | 2300              | 1600 | 3000  |
| 55R*  | —                    | —        | —         | 800-2000  | —                                      | —         | 800-2000**  | —                                | 90   | —                | 90              | —                 | 700  | —     |
| 65    | 85-250               | 230-600  | 300-1000  | 600-2000  | 170-450                                | 350-900   | 600-1800    | 1400                             | 700  | 400              | 150             | 1800              | 1400 | 2300  |
| 65R*  | —                    | —        | —         | 1200-3400 | —                                      | —         | 1200-3400** | —                                | 70   | —                | 70              | —                 | 600  | —     |
| 80    | 180-480              | 360-960  | 720-1950  | 1600-3300 | 300-750                                | 600-1500  | 1200-3000   | 1200                             | 600  | 150              | 80              | 1500              | 1000 | 1600  |
| 80R*  | —                    | —        | —         | 2900-5800 | —                                      | —         | 2900-5800** | —                                | 40   | —                | 40              | —                 | 400  | —     |
| 100   | 250-520              | 500-1050 | 1000-2100 | 2000-3600 | 550-1100                               | 1100-2200 | 2200-4400   | 950                              | 480  | 100              | 50              | 1300              | 800  | 1400  |
| 100R* | —                    | —        | —         | 3000-8200 | —                                      | —         | 3000-8200** | —                                | 30   | —                | 30              | —                 | 300  | —     |

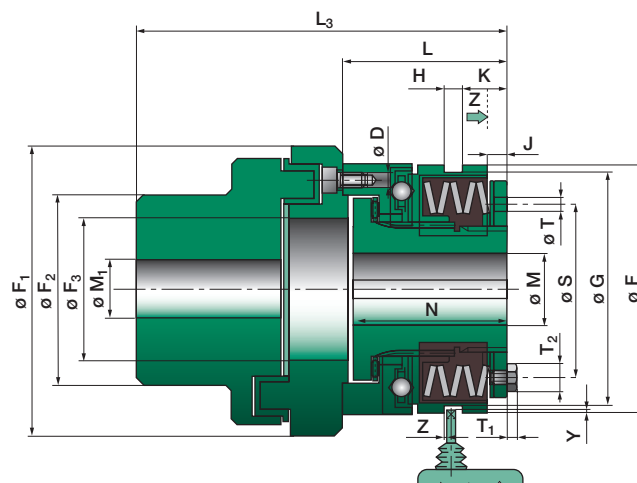
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Standard Disc Spring Limiters – Type D

## with Elastic Coupling

For connecting two coaxial shafts



## Dimensions

| Size | Overall Dimensions |     |                   |                   |                  |      |    |                 |                 |                  |                     |     |      |                       |                  |      |    |                |                |   |
|------|--------------------|-----|-------------------|-------------------|------------------|------|----|-----------------|-----------------|------------------|---------------------|-----|------|-----------------------|------------------|------|----|----------------|----------------|---|
|      | D                  | F   | F <sub>1</sub>    | F <sub>2</sub>    | F <sub>3</sub>   | G    | H  | K               | J               | L                | L <sub>3</sub>      | M   |      | M <sub>1</sub><br>Max | N                | S    | T  | T <sub>1</sub> | T <sub>2</sub> | Y |
|      |                    |     |                   |                   |                  |      |    |                 |                 |                  |                     | Min | Max  |                       |                  |      |    |                |                |   |
| 20   | 6xM5               | 55  | 67                | 46                | 33               | 50   | 9  | 7.5             | 3               | 38.5             | 86                  | 7   | 20   | 30                    | 34.5             | 38.5 | 5  | 3              | 7              | 2 |
| 25   | 6xM5               | 82  | 112               | 79                | 50               | 72.5 | 9  | 11.5            | 6               | 52               | 137.5               | 10  | 25   | 50                    | 48               | 54   | 6  | 3.5            | 8              | 2 |
| 35   | 6xM6               | 100 | 112               | 79                | 60               | 90.5 | 9  | 12              | 5               | 61               | 147                 | 14  | 35   | 50                    | 56               | 70   | 6  | 4              | 10             | 2 |
| 45   | 6xM8               | 120 | 128               | 90                | 70               | 112  | 10 | 21              | 8.5             | 78               | 176.5               | 18  | 45   | 60                    | 73               | 84   | 6  | 4              | 10             | 2 |
| 55   | 6xM10              | 146 | 148 <sup>①</sup>  | 90 <sup>①</sup>   | 70 <sup>①</sup>  | 140  | 9  | 27              | 11              | 100              | 211.5 <sup>①</sup>  | 24  | 55   | 60 <sup>①</sup>       | 93.5             | 108  | 7  | 5.5            | 13             | 2 |
| 65   | 6xM12              | 176 | 177 <sup>②③</sup> | 107 <sup>②③</sup> | 90 <sup>②③</sup> | 170  | 9  | 33              | 12              | 113.5            | 242.5 <sup>②③</sup> | 30  | 70*  | 70 <sup>②③</sup>      | 107              | 129  | 10 | 5.5            | 13             | 2 |
| 80   | 6xM12              | 200 | 225               | 180               | 113              | 190  | 9  | 39 <sup>④</sup> | 14 <sup>④</sup> | 119 <sup>④</sup> | 299.5 <sup>④</sup>  | 40  | 80   | 115                   | 112 <sup>④</sup> | 150  | —  | 15             | 24             | 2 |
| 100  | 6xM16              | 240 | 255               | 200               | 127              | 230  | 9  | 46 <sup>⑤</sup> | 15 <sup>⑤</sup> | 141 <sup>⑤</sup> | 339 <sup>⑤</sup>    | 50  | 110* | 125                   | 133 <sup>⑤</sup> | 186  | —  | 21             | 30             | 2 |

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D: M1max = 90, F1 = 198, F2 = 140, F3 = 90, L3 = 257

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D: M1max = 90, F1 = 198, F2 = 140, F3 = 90, L3 = 272

③ Quick Guard 65R-type D: M1max = 115, F1 = 225, F2 = 180, F3 = 113, L3 = 312

④ Free Running 80: K = 53, J = 29, L = 134, L3 = 314.5, N = 127

⑤ Free Running 100: K = 64, J = 33, L = 159, L3 = 357, N = 151

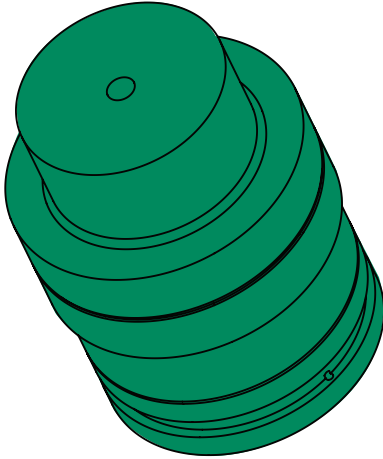
## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Limiters – Type D

with Elastic Coupling



## Arrangement Possibilities

| Range         | Size | Disc Springs |       |                  |                                                                                     |                      |                                                                                     |
|---------------|------|--------------|-------|------------------|-------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|
|               |      | Code         | Size  | Arrangement      |                                                                                     |                      |                                                                                     |
|               |      |              |       | Standard A-B-C-D |                                                                                     | Free Running A-B-C-D |                                                                                     |
| Quick Guard   | 20   | S-Light      | 20/65 | 6 x 1s           |  | 2 x 1s               |  |
|               |      |              | 80    | 3 Packs          |                                                                                     | 3 Packs              |                                                                                     |
|               |      |              | 100   | 3 Packs          |                                                                                     | 3 Packs              |                                                                                     |
| Quick Guard R | 25   | M-Medium     | 20/65 | 5 x 1m           |  | 2 x 1m               |  |
|               |      |              | 80    | 6 Packs          |                                                                                     | 6 Packs              |                                                                                     |
|               |      |              | 100   | 6 Packs          |                                                                                     | 6 Packs              |                                                                                     |
| Synchronous   | 45   | L-Heavy      | 20    | 5 x 1m           |  | 2 x 1ℓ               |  |
| Continuous*   | 55   |              | 25/65 | 5 x 1ℓ           |  |                      |                                                                                     |
| Free Running* | 65   |              | 80    | 12 Packs         |                                                                                     | 12 Packs             |                                                                                     |
|               | 80   | LL-R-Heavy   | 20    | 4 x 1ℓ           |  | 12 Packs             | 12 Packs                                                                            |
|               |      |              | 25/65 | 3 x 2ℓ           |  |                      |                                                                                     |
| 100           |      |              | 80    | 12 Packs         |                                                                                     | 12 Packs             |                                                                                     |
|               |      |              | 100   | 12 Packs         |                                                                                     | 12 Packs             |                                                                                     |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

| Size  | Disengagement Torque |          |           |           |                                        |           |             | Maximum Speed – Standard A-B-C-D |      |                  |     |                 |      |                   |
|-------|----------------------|----------|-----------|-----------|----------------------------------------|-----------|-------------|----------------------------------|------|------------------|-----|-----------------|------|-------------------|
|       | Quick Guard Nm       |          |           |           | Synchronous-Continuous-Free Running Nm |           |             | Quick Guard n/1'                 |      | Synchronous n/1' |     | Continuous n/1' |      | Free Running n/1' |
|       | Springs Type         |          |           |           |                                        |           |             | Springs Type                     |      |                  |     |                 |      |                   |
|       | S                    | M        | L         | LL        | S                                      | M         | L           | S-M                              | L-LL | S-M              | L   | S-M             | L    | S-M-L             |
| 20    | 2.5-5                | 5-10     | 10-20     | 20-40     | 5-10                                   | 10-20     | 20-40       | 3300                             | 1800 | 1000             | 500 | 4000            | 3000 | —                 |
| 25    | 6-12                 | 12-25    | 25-55     | 55-100    | 12-25                                  | 25-50     | 50-100      | 2900                             | 1450 | 950              | 450 | 3900            | 2900 | 5000              |
| 35    | 12-25                | 25-50    | 50-120    | 120-200   | 25-50                                  | 50-100    | 100-200     | 2400                             | 1200 | 800              | 400 | 3300            | 2400 | 4000              |
| 45    | 25-50                | 50-100   | 100-250   | 200-450   | 50-100                                 | 100-200   | 200-450     | 2000                             | 1000 | 650              | 300 | 2800            | 2000 | 3500              |
| 55    | 50-100               | 100-200  | 200-500   | 400-1000  | 100-200                                | 200-400   | 400-800     | 1600                             | 850  | 550              | 250 | 2300            | 1600 | 3000              |
| 55R*  | —                    | —        | —         | 800-2000  | —                                      | —         | 800-2000**  | —                                | 90   | —                | 90  | —               | 700  | —                 |
| 65    | 85-250               | 230-600  | 300-1000  | 600-2000  | 170-450                                | 350-900   | 600-1800    | 1400                             | 700  | 400              | 150 | 1800            | 1400 | 2300              |
| 65R*  | —                    | —        | —         | 1200-3400 | —                                      | —         | 1200-3400** | —                                | 70   | —                | 70  | —               | 600  | —                 |
| 80    | 180-480              | 360-960  | 720-1950  | 1600-3300 | 300-750                                | 600-1500  | 1200-3000   | 1200                             | 600  | 150              | 80  | 1500            | 1000 | 1600              |
| 80R*  | —                    | —        | —         | 2900-5800 | —                                      | —         | 2900-5800** | —                                | 40   | —                | 40  | —               | 400  | —                 |
| 100   | 250-520              | 500-1050 | 1000-2100 | 2000-3600 | 550-1100                               | 1100-2200 | 2200-4400   | 950                              | 480  | 100              | 50  | 1300            | 800  | 1400              |
| 100R* | —                    | —        | —         | 3000-8200 | —                                      | —         | 3000-8200** | —                                | 30   | —                | 30  | —               | 300  | —                 |

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

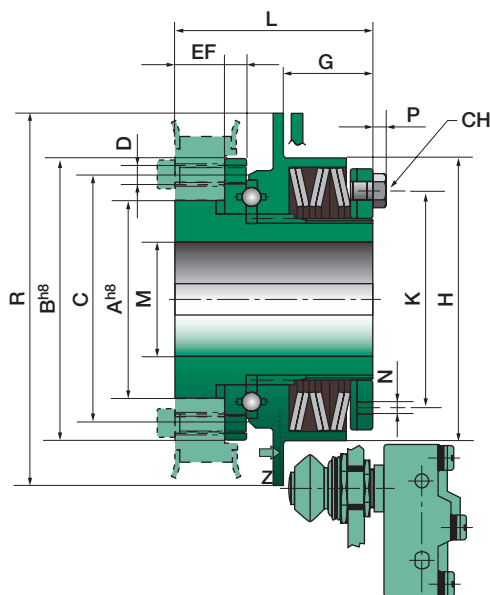
# Mini Disc Spring Torque Limiters – Type E

## Basic Type Mini

For connection shaft-drive component such as gear or pulley, supported on the shaft



For maximum speed 900 rpm,  
low radial forces. Axial forces  
are not admitted. For frequent  
interventions a bushing should  
be mounted.



## Dimensions

| Size | Overall Dimensions |                |     |      |      |     |      |      |      |    |     |     |   |     |     |    |
|------|--------------------|----------------|-----|------|------|-----|------|------|------|----|-----|-----|---|-----|-----|----|
|      | A <sup>h</sup>     | B <sup>h</sup> | C   | D    | E    | F   | G    | H    | K    | L  | M   |     | N | P   | R   | CH |
|      |                    |                |     |      |      |     |      |      |      |    | Min | Max |   |     |     |    |
| 20   | 36                 | 55             | 46  | 6xM5 | 11.5 | 5.5 | 21.7 | 50.5 | 38.5 | 50 | 7   | 20  | 5 | 2.8 | 80  | 7  |
| 25   | 46                 | 70             | 59  | 6xM5 | 16.5 | 7   | 23.2 | 70.5 | 54   | 57 | 10  | 25  | 6 | 3.5 | 100 | 8  |
| 35   | 64                 | 90             | 80  | 6xM6 | 16.5 | 7   | 29   | 88   | 70   | 65 | 14  | 35  | 6 | 4   | 120 | 10 |
| 45   | 78                 | 115            | 100 | 6xM6 | 22   | 8   | 34.5 | 110  | 84   | 81 | 18  | 45  | 6 | 4   | 150 | 10 |

## Technical Characteristics

| Size | Disengagement Torque |        |         |                                        |        |         |         | Maximum Speed – Mini E-F-G |      |                  |     |
|------|----------------------|--------|---------|----------------------------------------|--------|---------|---------|----------------------------|------|------------------|-----|
|      | Quick Guard Nm       |        |         | Synchronous-Continuous-Free Running Nm |        |         |         | Quick Guard n/1'           |      | Synchronous n/1' |     |
|      | Springs Type         |        |         |                                        |        |         |         | Springs Type               |      |                  |     |
|      | S                    | M      | L       | LL                                     | S      | M       | L       | S-M                        | L-LL | S-M              | L   |
| 20   | 2.5-5                | 5-10   | 10-20   | 20-40                                  | 5-10   | 10-20   | 20-40   | 800                        | 800  | 700              | 500 |
| 25   | 6-12                 | 12-25  | 25-55   | 55-100                                 | 12-25  | 25-50   | 50-100  | 800                        | 700  | 700              | 450 |
| 35   | 12-25                | 25-50  | 50-120  | 120-200                                | 25-50  | 50-100  | 100-200 | 800                        | 600  | 700              | 400 |
| 45   | 25-50                | 50-100 | 100-250 | 200-450                                | 50-100 | 100-200 | 200-450 | 800                        | 500  | 650              | 300 |

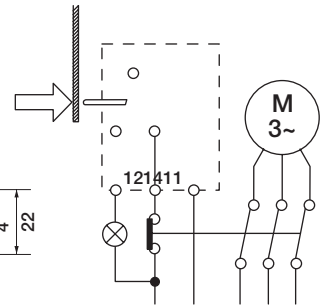
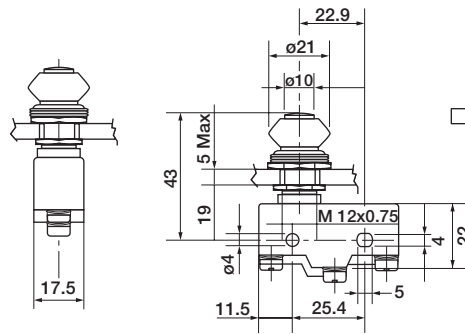
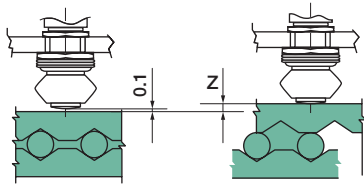
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type E

## Basic Type Mini

220÷250 V~ / 15A  
24 V.- / 6A



### Arrangement Possibilities

| Range         | Size | Disc Springs |       |                                                                                              |
|---------------|------|--------------|-------|----------------------------------------------------------------------------------------------|
|               |      | Code         | Size  | Arrangement                                                                                  |
|               |      |              |       | Mini E-F-G                                                                                   |
| Quick Guard   | 20   | S-Light      | 20/65 | 5 x 1s  |
|               |      |              | 80    |                                                                                              |
|               |      |              | 100   |                                                                                              |
|               |      | M-Medium     | 20/65 | 3 x 1m  |
|               |      |              | 80    |                                                                                              |
|               |      |              | 100   |                                                                                              |
| Quick Guard R | 25   |              | 20    | 3 x 1m  |
| Synchronous   | 35   | L-Heavy      | 25/65 | 3 x 1l  |
| Continuous*   | 45   |              | 80    |                                                                                              |
| Free Running* |      | LL-R-Heavy   | 100   |                                                                                              |
|               |      |              | 20    | 3 x 1l  |
|               |      |              | 25/65 | 3 x 2l  |
|               |      |              | 80    |                                                                                              |
|               |      |              | 100   |                                                                                              |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling,  
E-Mini basic type, F-for large transmissions, G-with elastic coupling

### Emergency Stop Switch

| Size | Z         |           |
|------|-----------|-----------|
|      | (1)<br>mm | (2)<br>mm |
| 20   | 1.4       | 1.2       |
| 25   | 1.4       | 1.2       |
| 35   | 2.4       | 1.8       |
| 45   | 2.4       | 2         |

(1) Quick Guard Mini  
(2) Synchronous Mini

### How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K



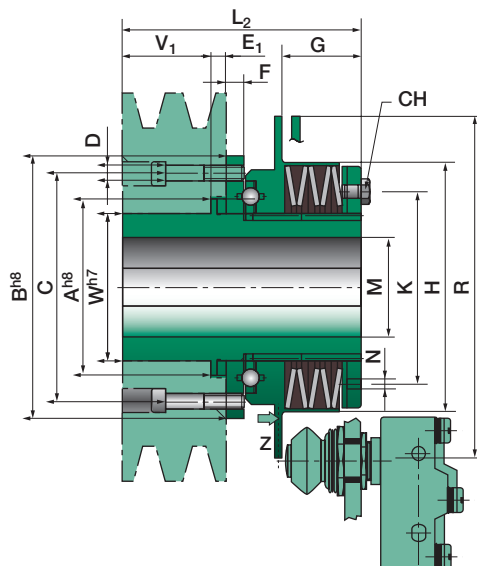
# Mini Disc Spring Torque Limiters – Type F

## Mini with Extended Hub

For connection shaft-drive component such as gear or pulley, supported on the shaft



For maximum speed 900 rpm, low radial forces. Axial forces are not admitted. For frequent interventions a bushing should be mounted.



## Dimensions

| Size | Overall Dimensions |                 |     |      |                |     |      |      |      |                |     |     |   |     |                |                 |    |
|------|--------------------|-----------------|-----|------|----------------|-----|------|------|------|----------------|-----|-----|---|-----|----------------|-----------------|----|
|      | A <sup>h8</sup>    | B <sup>h8</sup> | C   | D    | E <sub>1</sub> | F   | G    | H    | K    | L <sub>2</sub> | M   |     | N | R   | V <sub>1</sub> | W <sup>h7</sup> | CH |
|      |                    |                 |     |      |                |     |      |      |      |                | Min | Max |   |     |                |                 |    |
| 20   | 36                 | 55              | 46  | 6xM5 | 4.5            | 5.5 | 21.7 | 50.5 | 38.5 | 83.5           | 7   | 20  | 5 | 80  | 40.5           | 30              | 7  |
| 25   | 46                 | 70              | 59  | 6xM5 | 5.5            | 7   | 23.2 | 70.5 | 54   | 94             | 10  | 25  | 6 | 100 | 48             | 35              | 8  |
| 35   | 64                 | 90              | 80  | 6xM6 | 6.5            | 7   | 29   | 88   | 70   | 108            | 14  | 35  | 6 | 120 | 53             | 50              | 10 |
| 45   | 78                 | 115             | 100 | 6xM6 | 8              | 8   | 34.5 | 110  | 84   | 127            | 18  | 45  | 6 | 150 | 60             | 65              | 10 |

## Technical Characteristics

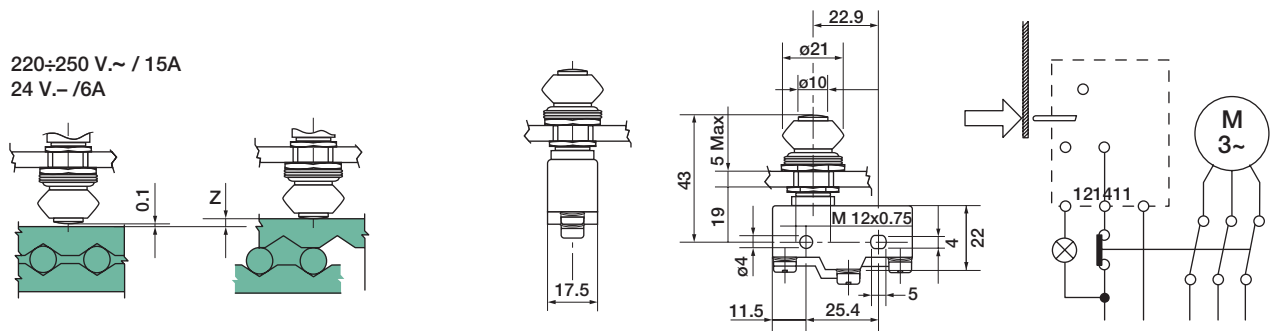
| Size | Disengagement Torque |        |         |                                        |        |         |         | Maximum Speed – Mini E-F-G |      |                  |     |
|------|----------------------|--------|---------|----------------------------------------|--------|---------|---------|----------------------------|------|------------------|-----|
|      | Quick Guard Nm       |        |         | Synchronous-Continuous-Free Running Nm |        |         |         | Quick Guard n/1'           |      | Synchronous n/1' |     |
|      | Springs Type         |        |         |                                        |        |         |         | Springs Type               |      |                  |     |
|      | S                    | M      | L       | LL                                     | S      | M       | L       | S-M                        | L-LL | S-M              | L   |
| 20   | 2.5-5                | 5-10   | 10-20   | 20-40                                  | 5-10   | 10-20   | 20-40   | 800                        | 800  | 700              | 500 |
| 25   | 6-12                 | 12-25  | 25-55   | 55-100                                 | 12-25  | 25-50   | 50-100  | 800                        | 700  | 700              | 450 |
| 35   | 12-25                | 25-50  | 50-120  | 120-200                                | 25-50  | 50-100  | 100-200 | 800                        | 600  | 700              | 400 |
| 45   | 25-50                | 50-100 | 100-250 | 200-450                                | 50-100 | 100-200 | 200-450 | 800                        | 500  | 650              | 300 |

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type F

Mini with Extended Hub



## Arrangement Possibilities

| Range         | Size | Disc Springs |       |             |                                                                                       |
|---------------|------|--------------|-------|-------------|---------------------------------------------------------------------------------------|
|               |      | Code         | Size  | Arrangement |                                                                                       |
|               |      |              |       | Mini E-F-G  |                                                                                       |
| Quick Guard   | 20   | S-Light      | 20/65 | 5 x 1s      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |
|               |      | M-Medium     | 20/65 | 3 x 1m      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |
| Quick Guard R | 25   |              | 20    | 3 x 1m      |  |
| Synchronous   | 35   | L-Heavy      | 25/65 | 3 x 1ℓ      |  |
| Continuous*   | 45   |              | 80    |             |                                                                                       |
| Free Running* |      | LL-R-Heavy   | 100   |             |                                                                                       |
|               |      |              | 20    | 3 x 1ℓ      |  |
|               |      |              | 25/65 | 3 x 2ℓ      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Emergency Stop Switch

| Size | Z      |        |
|------|--------|--------|
|      | (1) mm | (2) mm |
| 20   | 1.4    | 1.2    |
| 25   | 1.4    | 1.2    |
| 35   | 2.4    | 1.8    |
| 45   | 2.4    | 2      |

(1) Quick Guard Mini  
(2) Synchronous Mini

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

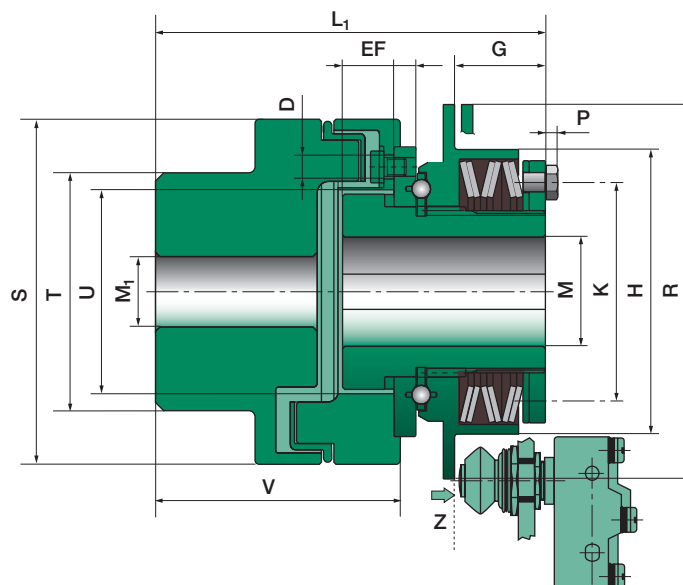
# Mini Disc Spring Torque Limiters – Type G

## Mini with Elastic Coupling

For connecting two coaxial shafts



For maximum speed 900 rpm, low radial forces. Axial forces are not admitted. For frequent interventions a bushing should be mounted.



## Dimensions

| Size | Overall Dimensions |      |     |      |      |      |                |     |     |                       |     |     |     |    |    |      |
|------|--------------------|------|-----|------|------|------|----------------|-----|-----|-----------------------|-----|-----|-----|----|----|------|
|      | D                  | E    | F   | G    | H    | K    | L <sub>1</sub> | M   |     | M <sub>t</sub><br>Max | P   | R   | S   | T  | U  | V    |
|      |                    |      |     |      |      |      |                | Min | Max |                       |     |     |     |    |    |      |
| 20   | 6xM5               | 11.5 | 5.5 | 21.7 | 50.5 | 38.5 | 84.5           | 7   | 20  | 30                    | 2.8 | 80  | 67  | 46 | 37 | 47.5 |
| 25   | 6xM5               | 16.5 | 7   | 23.2 | 70.5 | 54   | 98             | 10  | 25  | 35                    | 3.5 | 100 | 82  | 53 | 48 | 59   |
| 35   | 6xM6               | 16.5 | 7   | 29   | 88   | 70   | 132            | 14  | 35  | 50                    | 4   | 120 | 112 | 79 | 66 | 85.5 |
| 45   | 6xM6               | 22   | 8   | 34.5 | 110  | 84   | 155.5          | 18  | 45  | 60                    | 4   | 150 | 128 | 90 | 79 | 98.5 |

## Technical Characteristics

| Size | Disengagement Torque |        |         |                                        |        |         |         | Maximum Speed – Mini E-F-G |      |                  |     |
|------|----------------------|--------|---------|----------------------------------------|--------|---------|---------|----------------------------|------|------------------|-----|
|      | Quick Guard Nm       |        |         | Synchronous-Continuous-Free Running Nm |        |         |         | Quick Guard n/1'           |      | Synchronous n/1' |     |
|      | Springs Type         |        |         |                                        |        |         |         | Springs Type               |      |                  |     |
|      | S                    | M      | L       | LL                                     | S      | M       | L       | S-M                        | L-LL | S-M              | L   |
| 20   | 2.5-5                | 5-10   | 10-20   | 20-40                                  | 5-10   | 10-20   | 20-40   | 800                        | 800  | 700              | 500 |
| 25   | 6-12                 | 12-25  | 25-55   | 55-100                                 | 12-25  | 25-50   | 50-100  | 800                        | 700  | 700              | 450 |
| 35   | 12-25                | 25-50  | 50-120  | 120-200                                | 25-50  | 50-100  | 100-200 | 800                        | 600  | 700              | 400 |
| 45   | 25-50                | 50-100 | 100-250 | 200-450                                | 50-100 | 100-200 | 200-450 | 800                        | 500  | 650              | 300 |

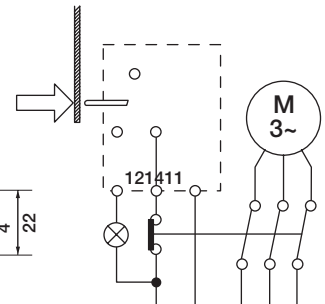
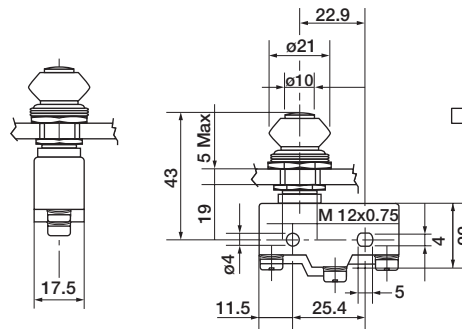
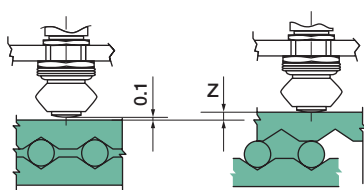
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type G

Mini with Elastic Coupling

220÷250 V.~ / 15A  
24 V.- / 6A



## Arrangement Possibilities

| Range         | Size | Disc Springs |       |             |                                                                                       |
|---------------|------|--------------|-------|-------------|---------------------------------------------------------------------------------------|
|               |      | Code         | Size  | Arrangement |                                                                                       |
|               |      |              |       | Mini E-F-G  |                                                                                       |
| Quick Guard   | 20   | S-Light      | 20/65 | 5 x 1s      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |
|               |      | M-Medium     | 20/65 | 3 x 1m      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |
| Quick Guard R | 25   |              | 20    | 3 x 1m      |  |
| Synchronous   | 35   | L-Heavy      | 25/65 | 3 x 1ℓ      |  |
| Continuous*   | 80   |              |       |             |                                                                                       |
|               | 100  |              |       |             |                                                                                       |
| Free Running* | 45   | LL-R-Heavy   | 20    | 3 x 1ℓ      |  |
|               |      |              | 25/65 | 3 x 2ℓ      |  |
|               |      |              | 80    |             |                                                                                       |
|               |      |              | 100   |             |                                                                                       |

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling,  
E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Emergency Stop Switch

| Size | Z      |        |
|------|--------|--------|
|      | (1) mm | (2) mm |
| 20   | 1.4    | 1.2    |
| 25   | 1.4    | 1.2    |
| 35   | 2.4    | 1.8    |
| 45   | 2.4    | 2      |

(1) Quick Guard Mini  
(2) Synchronous Mini

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Zero Backlash Torque Limiters

## ZBC Heavy Duty/NBC Light Duty

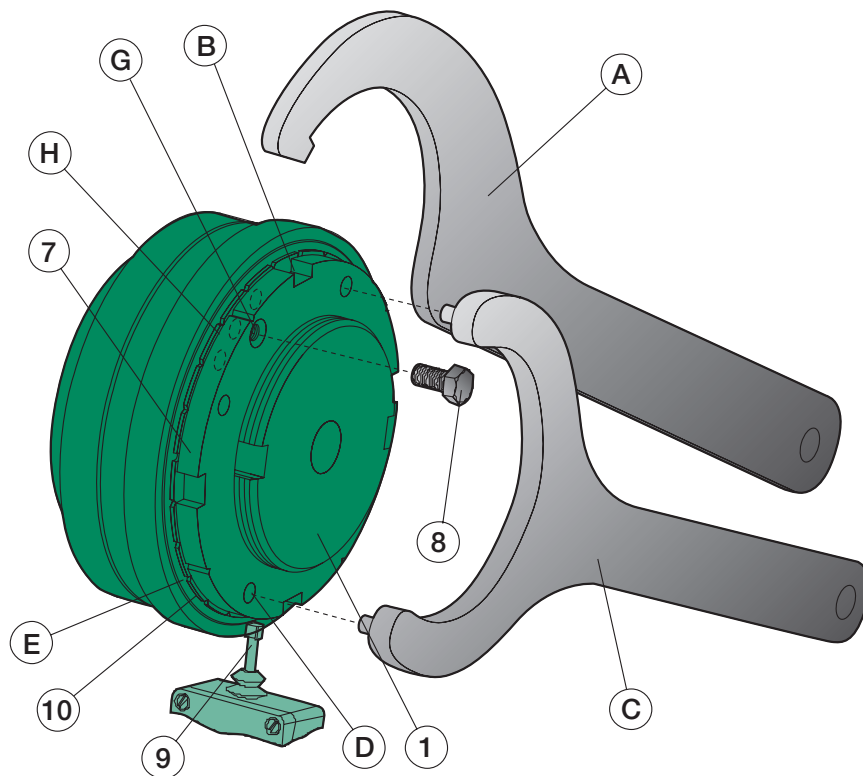
### The advantages of the system, compared to the traditional types

- Torque limiters with backlash close to zero
  - ZBC is the heavy duty series
  - NBC is the light duty series
- Lower moment of inertia, reduced dimensions and weight
- Longer lifetime, reduced wear

### TORQUE ADJUSTMENT

Insert wrench (A) into the seats (B) or the wrench (C) into the holes (D) and turn the nut clockwise up to the end of the stroke (fig.3). Then go back anticlockwise (fig.4) for only one indent (E) to avoid the blocking between the disc springs (6) and the hub (1): this is the “zero indent”, corresponding to the minimum torque. Starting from the “zero indent”, turn the nut anticlockwise (fig.5) for a number of indents (E) corresponding to the requested disengagement torque, according to the diagram on the label (F) on the outer diameter of the ZBC - NBC torque limiter.

Put soft Loctite on the securing screw (8) and tighten it (fig.6) in the threaded hole (G) of the nut (7), in correspondence to one of the holes (H) on the locking washer (10).



# Zero Backlash Torque Limiters

## How they work

During normal operations the ZBC Heavy Duty - NBC Light Duty torque limiter (fig.2) transmits the torque from the hub (1) to the flange (3) through a ball crown (4) forced by the pressure of the disc springs (6) on the moving flange (2) into the seats on the two parts (1) and (3). In case of overload, when the torque demand exceeds the pre-set value, both the parts (1) and (3) are disengaged and they transmit only a small residual torque: the balls are pressed out of the indentations of the flange (3), thus pushing the moving part (2) axially against the force of the disc springs (6), and activating the emergency stop switch of the motor (9). The re-engagement is automatic at the pre-set torque when

the torque demand drops. The synchronous type re-engages once per revolution at a reference point and keep the hub (1) and the flange (3) of the torque limiter synchronised. The disc springs are working only in the negative area of their characteristics (fig.1), so the adjustment nut (7), when tightened anticlockwise, provides an increasing axial load to the disc springs (6) and a higher disengaging torque: when the pre-set torque level is reached the nut (7) is locked in position by means of the locking screw (8).

ZBC holds 8 fixing threaded holes and a heavy duty bearing, NBC 6 fixing threaded holes and a light duty bearing.

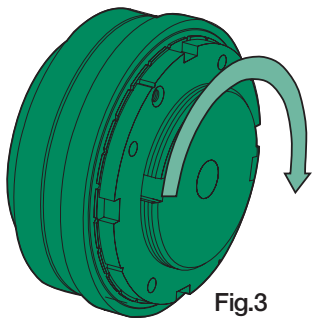


Fig.3

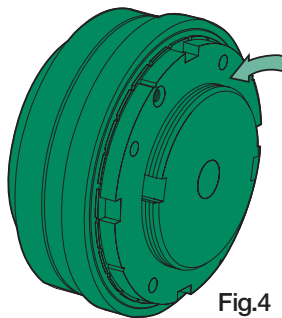


Fig.4

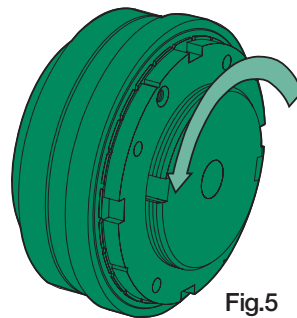


Fig.5

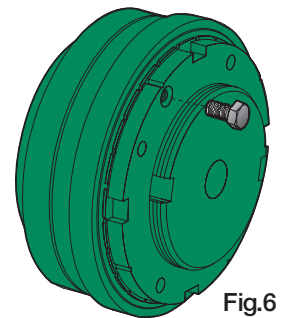


Fig.6

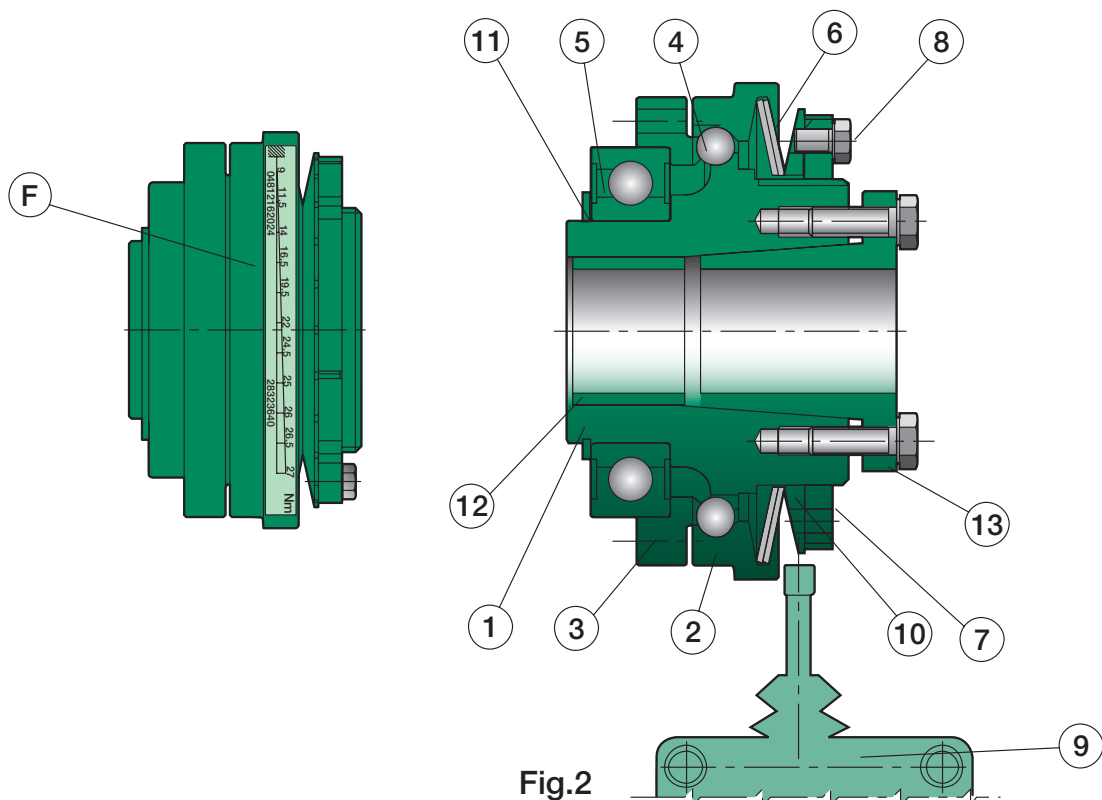


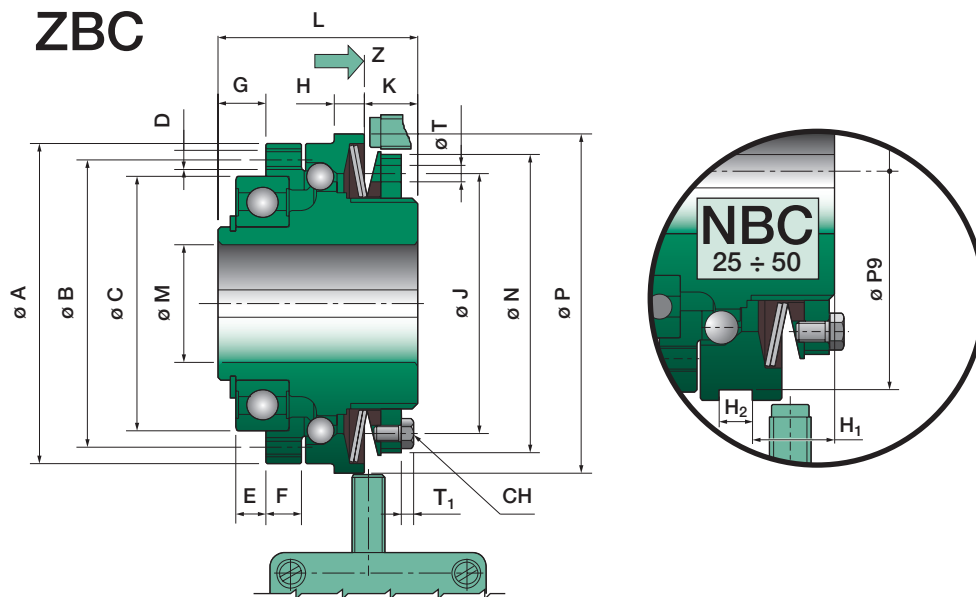
Fig.2

# ZBC-NBC Zero Backlash Torque Limiters – Type H

## Basic Form Pilot Bored



ZBC



### ZBC Dimensions

| Size | Overall Dimensions |     |                 |      |    |      |    |    |    |      |    |     |     |     |     |   |                |    |     |
|------|--------------------|-----|-----------------|------|----|------|----|----|----|------|----|-----|-----|-----|-----|---|----------------|----|-----|
|      | A                  | B   | C <sup>hd</sup> | D    | E  | F    | G  | H  | K  | J    | L  | M   |     | N   | P   | T | T <sub>1</sub> | CH | Z   |
|      |                    |     |                 |      |    |      |    |    |    |      |    | Min | Max |     |     |   |                |    |     |
| 25   | 65                 | 56  | 47              | 8xM4 | 5  | 7.5  | 8  | 7  | 12 | 54.5 | 40 | 8   | 20  | 63  | 70  | 5 | 2.8            | 7  | 1.2 |
| 30   | 80                 | 71  | 62              | 8xM5 | 7  | 8    | 11 | 8  | 14 | 69   | 48 | 10  | 30* | 77  | 85  | 5 | 2.8            | 7  | 1.5 |
| 40   | 95                 | 85  | 75              | 8xM6 | 9  | 10.5 | 14 | 9  | 16 | 77   | 59 | 14  | 35* | 88  | 100 | 5 | 3.5            | 8  | 1.8 |
| 50   | 110                | 100 | 90              | 8xM6 | 10 | 12   | 16 | 10 | 17 | 87.5 | 64 | 18  | 45* | 100 | 115 | 6 | 4              | 10 | 2.0 |
| 60   | 130                | 116 | 100             | 8xM8 | 10 | 12   | 18 | 12 | 21 | 106  | 75 | 24  | 50  | 122 | 135 | 7 | 4              | 10 | 2.2 |

\*d max with keyway seat according to DIN 6885/3

### NBC Dimensions

| Size | Overall Dimensions |     |                 |      |   |     |     |   |                |                |                   |      |    |     |     |      |     |     |   |                |     |     |
|------|--------------------|-----|-----------------|------|---|-----|-----|---|----------------|----------------|-------------------|------|----|-----|-----|------|-----|-----|---|----------------|-----|-----|
|      | A                  | B   | C <sup>AS</sup> | D    | E | F   | G   | H | H <sub>1</sub> | H <sub>2</sub> | K, K <sub>1</sub> | J    | L  | M   |     | N    | P   | P9  | T | T <sub>1</sub> | CH  | Z   |
|      |                    |     |                 |      |   |     |     |   |                |                |                   |      |    | Min | Max |      |     |     |   |                |     |     |
| 11   | 40                 | 35  | 30              | 6xM3 | 2 | 5   | 4.5 | 6 | —              | —              | 7                 | 32   | 24 | 6   | 11  | 39.5 | 45  | —   | 4 | 2.1            | 5.5 | 0.8 |
| 16   | 47                 | 42  | 37              | 6xM3 | 2 | 6   | 5   | 8 | —              | —              | 9.5               | 36.5 | 29 | 8   | 16* | 43   | 50  | —   | 4 | 2.1            | 5.5 | 1   |
| 20   | 60                 | 53  | 47              | 6xM4 | 3 | 7   | 6   | 9 | —              | —              | 9.5               | 36.5 | 33 | 9   | 20  | 43   | 65  | —   | 4 | 2.1            | 5.5 | 1.2 |
| 25   | 77                 | 69  | 62              | 6xM5 | 4 | 7.5 | 8   | — | 14.9           | 7.5            | 10.2              | 54.5 | 41 | 12  | 20  | 63   | 80  | 75  | 5 | 2.8            | 7   | 1.2 |
| 30   | 90                 | 80  | 68              | 6xM6 | 5 | 8   | 10  | — | 17.4           | 7.5            | 11                | 69   | 47 | 15  | 25  | 77   | 95  | 90  | 5 | 2.8            | 7   | 1.5 |
| 40   | 106                | 90  | 80              | 6xM6 | 5 | 9   | 10  | — | 20             | 8              | 12.6              | 77   | 52 | 22  | 35* | 88   | 110 | 105 | 5 | 3.5            | 8   | 1.8 |
| 50   | 125                | 112 | 100             | 6xM8 | 5 | 11  | 10  | — | 23.5           | 9              | 14.7              | 87.5 | 59 | 32  | 45  | 100  | 130 | 125 | 6 | 4              | 10  | 2.0 |

\*d max with keyway seat according to DIN 6885/3



# ZBC-NBC Zero Backlash Torque Limiters – Type H

## Basic Form Pilot Bored

### Arrangement Possibilities (for larger transmissions)

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                     |                          |       |      | NBC          |                                                                                      |                    |       |  |  |
|---------------------------|-----------|----------------------------|------------------|------|--------------|-------------------------------------------------------------------------------------|--------------------------|-------|------|--------------|--------------------------------------------------------------------------------------|--------------------|-------|--|--|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                     | Torque Limiter Side (mm) |       | Size | Disc Springs |                                                                                      | Min/Max. Bore (mm) |       |  |  |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                              | Min                      | Max   |      | Code         | Layout                                                                               | Min                | Max   |  |  |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 11   | S-Light      | 1  | 6                  | 11    |  |  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   |              |                                                                                     | 10                       | 30*** | 16   |              |                                                                                      | 8                  | 16    |  |  |
| NBC* Quick Guard          |           |                            |                  | 40   | M-Medium     | 2  | 12                       | 35*** | 20   | M-Medium     | 2  | 9                  | 20    |  |  |
| NBC* Synchronous          | M**       | N**-P**-R**                | with Coupling    | 50   |              |                                                                                     | 16                       | 45*** | 25   |              |                                                                                      | 8                  | 20    |  |  |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 30   | L-Heavy      | 3  | 10                 | 30*** |  |  |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 40   | LL-Heavy     | 4  | 12                 | 35*** |  |  |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 50   |              |                                                                                      | 16                 | 45*** |  |  |

### Stop Switch

| Stop Switch |                                 |
|-------------|---------------------------------|
| Type        | Description                     |
| A           | Mechanical                      |
| B           | Proximity sensor                |
| C           | Proximity sensor ext. transmitt |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

### Technical Characteristics

| ZBC                       |              |         |         |               |                          |                |                |               |          |           |                |          |           |                |          |           | NBC                       |              |        |        |         |           |           |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------|----------------|---------------|----------|-----------|----------------|----------|-----------|----------------|----------|-----------|---------------------------|--------------|--------|--------|---------|-----------|-----------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                |                |               |          |           |                |          |           |                |          |           | Disengagement Torque (Nm) |              |        |        |         | Max Speed |           |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                |                | Misalignments |          |           |                |          |           |                |          |           | Size                      | Disc Springs |        |        |         |           |           |
|                           |              |         |         |               | M-N                      | P-R 92 Shore A | P-R 98 Shore A | M-N           |          |           | P-R 92 Shore A |          |           | P-R 98 Shore A |          |           |                           |              |        |        |         |           | Max Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm             | Nm             | Δ ax mm       | Δ rad mm | Δ ang (°) | Δ ax mm        | Δ rad mm | Δ ang (°) | Δ ax mm        | Δ rad mm | Δ ang (°) | n/1'                      |              | S      | M      | L       | LL        | n/1'      |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70             | 120            | 0.4           | —        | 1         | 1.4            | 0.14     | 1         | 1.4            | 0.10     | 0.90      | 4000                      | 11           | 0.65-3 | 1.3-6  | 2-9     | 2.6-12    | 4000      |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190            | 320            | 0.5           | —        | 1         | 1.5            | 0.15     | 1         | 1.5            | 0.11     | 0.90      | 3000                      | 16           | 2-5    | 4-10   | 6-15    | 8-20      | 4000      |
| 40                        | 19-65        | 38-130  | 78-260  | 72 89         | 180 360                  | 380            | 650            | 0.5 0.6       | —        | 1         | 1.8            | 0.17     | 1         | 1.8            | 0.12     | 0.90      | 2500                      | 20           | 4-10   | 8-20   | 12-30   | 16-40     | 4000      |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530            | 900            | 0.6           | —        | 1         | 2.0            | 0.19     | 1         | 2.0            | 0.14     | 0.90      | 2000                      | 25           | 4-14   | 8-28   | 12-42   | 16-56     | 4000      |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620            | 1050           | 0.8           | —        | 1         | 2.1            | 0.23     | 1         | 2.1            | 0.16     | 0.90      | 1200                      | 30           | 9-35   | 18-70  | 27-105  | 40-140    | 3000      |
|                           |              |         |         |               |                          |                |                |               |          |           |                |          |           |                |          |           |                           | 40           | 19-65  | 38-130 | 57-195  | 78-260    | 2500      |
|                           |              |         |         |               |                          |                |                |               |          |           |                |          |           |                |          |           |                           | 50           | 35-110 | 80-220 | 120-330 | 160-440   | 2000      |

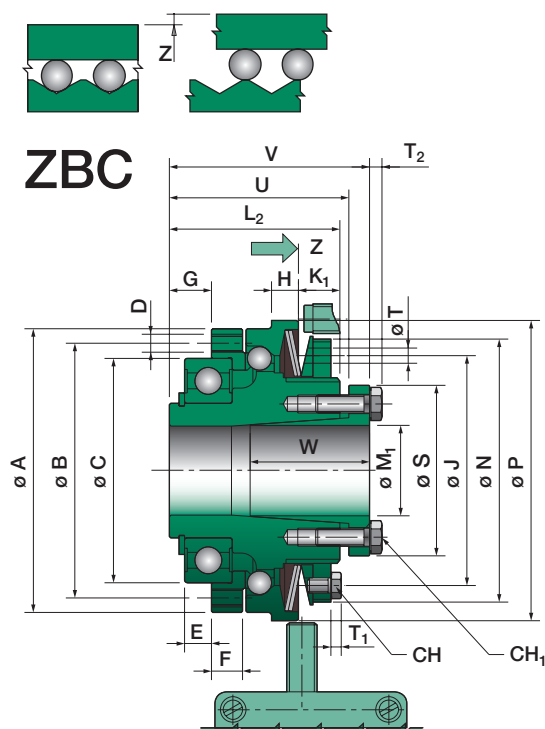
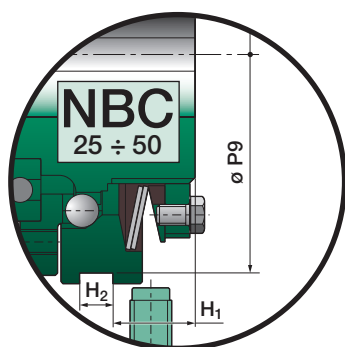
### Inertia Moments

| Type | H                    |             |          |             |
|------|----------------------|-------------|----------|-------------|
|      | Hub Side             | Flange Side | Hub Side | Flange Side |
|      | ZBC                  |             | NBC      |             |
|      | kg x cm <sup>2</sup> |             |          |             |
| 11   | —                    | —           | 0.27     | 0.08        |
| 16   | —                    | —           | 0.54     | 0.2         |
| 20   | —                    | —           | 1.8      | 0.6         |
| 25   | 2.15                 | 0.945       | 4.6      | 1.8         |
| 30   | 5.30                 | 2.351       | 11.8     | 3.9         |
| 40   | 13.68                | 6.446       | 27       | 7.7         |
| 50   | 27.62                | 13.071      | 61.5     | 17.3        |
| 60   | 66.45                | 26.523      | —        | —           |

\*Corresponding to min. bore

# ZBC-NBC Zero Backlash Torque Limiters – Type J

## Basic Form with Clamping Elements



### ZBC Dimensions

| Size | Overall Dimensions |     |                 |      |    |      |    |    |                |      |                |                |          |     |     |            |   |                |                |    |                 |            |          |            |     |
|------|--------------------|-----|-----------------|------|----|------|----|----|----------------|------|----------------|----------------|----------|-----|-----|------------|---|----------------|----------------|----|-----------------|------------|----------|------------|-----|
|      | A                  | B   | C <sup>NS</sup> | D    | E  | F    | G  | H  | K <sub>1</sub> | J    | L <sub>2</sub> | M <sub>1</sub> |          | N   | P   | S          | T | T <sub>1</sub> | T <sub>2</sub> | CH | CH <sub>1</sub> | U          | V        | W          | Z   |
|      |                    |     |                 |      |    |      |    |    |                |      |                | Min            | Max      |     |     |            |   |                |                |    |                 |            |          |            |     |
| 25   | 65                 | 56  | 47              | 8xM4 | 5  | 7.5  | 8  | 7  | 12             | 54.5 | 40             | 10<br>19       | 20<br>25 | 63  | 70  | 40.5<br>42 | 5 | 2.8            | 2.8            | 7  | 7               | 42         | 47       | 26         | 1.2 |
| 30   | 80                 | 71  | 62              | 8xM5 | 7  | 8    | 11 | 8  | 12             | 69   | 46             | 15             | 30       | 77  | 85  | 57         | 5 | 2.8            | 4              | 7  | 10              | 49         | 56       | 31         | 1.5 |
| 40   | 95                 | 85  | 75              | 8xM6 | 9  | 10.5 | 14 | 9  | 14             | 77   | 57             | 19<br>32       | 30<br>40 | 88  | 100 | 57<br>64   | 5 | 3.5            | 4<br>3.5       | 8  | 10<br>8         | 60         | 67       | 40<br>31   | 1.8 |
| 50   | 110                | 100 | 90              | 8xM6 | 10 | 12   | 16 | 10 | 16             | 87.5 | 63             | 32             | 50       | 100 | 115 | 73.5       | 6 | 4              | 4              | 10 | 10              | 66.5       | 73       | 29         | 2.0 |
| 60   | 130                | 116 | 100             | 8xM8 | 10 | 12   | 18 | 12 | 21             | 106  | 75             | 32<br>55       | 50<br>60 | 122 | 135 | 73.5<br>89 | 7 | 4              | 4              | 10 | 10              | 78.5<br>78 | 85<br>86 | 29<br>45.5 | 2.2 |

\*d max with keyway seat according to DIN 6885/3

### NBC Dimensions

| Size | Overall Dimensions |     |                 |      |   |     |     |   |                |                |                   |      |                |                |          |      |     |     |            |   |                |                |     |                 |    |          |     |
|------|--------------------|-----|-----------------|------|---|-----|-----|---|----------------|----------------|-------------------|------|----------------|----------------|----------|------|-----|-----|------------|---|----------------|----------------|-----|-----------------|----|----------|-----|
|      | A                  | B   | C <sup>NS</sup> | D    | E | F   | G   | H | H <sub>1</sub> | H <sub>2</sub> | K, K <sub>1</sub> | J    | L <sub>2</sub> | M <sub>1</sub> |          | N    | P   | P9  | S          | T | T <sub>1</sub> | T <sub>2</sub> | CH  | CH <sub>1</sub> | V  | W        | Z   |
|      |                    |     |                 |      |   |     |     |   |                |                |                   |      |                | Min            | Max      |      |     |     |            |   |                |                |     |                 |    |          |     |
| 11   | 40                 | 35  | 30              | 6xM3 | 2 | 5   | 4.5 | 6 | —              | —              | 7                 | 32   | 24             | 6              | 12       | 39.5 | 45  | —   | 25         | 4 | 2.1            | 2.1            | 5.5 | 5.5             | 29 | 13       | 0.8 |
| 16   | 47                 | 42  | 37              | 6xM3 | 2 | 6   | 5   | 8 | —              | —              | 9.5               | 36.5 | 29             | 8              | 16       | 43   | 50  | —   | 29.5       | 4 | 2.1            | 2.1            | 5.5 | 5.5             | 34 | 19       | 1   |
| 20   | 60                 | 53  | 47              | 6xM4 | 3 | 7   | 6   | 9 | —              | —              | 9.5               | 36.5 | 33             | 9              | 16       | 43   | 65  | —   | 29.5       | 4 | 2.1            | 2.1            | 5.5 | 5.5             | 38 | 19       | 1.2 |
| 25   | 77                 | 69  | 62              | 6xM5 | 4 | 7.5 | 8   | — | 14.9           | 7.5            | 10.2              | 54.5 | 41             | 10<br>19       | 20<br>25 | 63   | 80  | 75  | 40.5<br>42 | 5 | 2.8            | 2.8            | 7   | 7               | 46 | 26       | 1.2 |
| 30   | 90                 | 80  | 68              | 6xM6 | 5 | 8   | 10  | — | 17.4           | 7.5            | 11                | 69   | 47             | 15             | 30       | 77   | 95  | 90  | 57         | 5 | 2.8            | 4              | 7   | 10              | 57 | 31       | 1.5 |
| 40   | 106                | 90  | 80              | 6xM6 | 5 | 9   | 10  | — | 20             | 8              | 12.6              | 77   | 52             | 19<br>32       | 30<br>40 | 88   | 110 | 105 | 57<br>64   | 5 | 3.5            | 4<br>3.5       | 8   | 10<br>8         | 62 | 40<br>31 | 1.8 |
| 50   | 125                | 112 | 100             | 6xM8 | 5 | 11  | 10  | — | 23.5           | 9              | 14.7              | 87.5 | 59             | 32             | 50       | 100  | 130 | 125 | 73.5       | 6 | 4              | 4              | 10  | 10              | 69 | 29       | 2.0 |

\*d max with keyway seat according to DIN 6885/3

### How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40  
Order Code: R50LL40B+K

NBC Synchron Type J – Size 16 – Springs L – Ø40 – Ø 40  
Order Code: J16L14B+K

# ZBC-NBC Zero Backlash Torque Limiters – Type J

## Basic Form with Clamping Elements

### Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                     |                          |       | NBC  |              |                                                                                     |                   |       |
|---------------------------|-----------|----------------------------|------------------|------|--------------|-------------------------------------------------------------------------------------|--------------------------|-------|------|--------------|-------------------------------------------------------------------------------------|-------------------|-------|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                     | Torque Limiter Side (mm) |       | Size | Disc Springs |                                                                                     | Min/Max Bore (mm) |       |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                              | Min                      | Max   |      | Code         | Layout                                                                              | Min               | Max   |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 11   | S-Light      | 1  | 6                 | 11    |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   |              |                                                                                     | 10                       | 30*** | 16   |              |                                                                                     | 8                 | 16    |
| NBC* Quick Guard          |           |                            |                  | 40   | M-Medium     | 2  | 12                       | 35*** | 20   | M-Medium     | 2  | 9                 | 20    |
| NBC* Synchronous          | M**       | N**-P**-R**                | with Coupling    | 50   |              |                                                                                     | 16                       | 45*** | 25   |              |                                                                                     | 8                 | 20    |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 30   | L-Heavy      | 3  | 10                | 30*** |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 40   | LL-Heavy     | 4  | 12                | 35*** |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 50   |              |                                                                                     | 16                | 45*** |

Stop Switch

### Stop Switch

| Stop Switch |                                 |
|-------------|---------------------------------|
| Type        | Description                     |
| A           | Mechanical                      |
| B           | Proximity sensor                |
| C           | Proximity sensor ext. transmitt |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

### Inertia Moments

| Type | J                    |             |          |             |
|------|----------------------|-------------|----------|-------------|
|      | Hub Side             | Flange Side | Hub Side | Flange Side |
|      | ZBC                  |             | NBC      |             |
|      | kg x cm <sup>2</sup> |             |          |             |
| 11   | —                    | —           | 0.25     | 0.08        |
| 16   | —                    | —           | 0.51     | 0.2         |
| 20   | —                    | —           | 1.7      | 0.6         |
| 25   | 2.22                 | 0.945       | 4.6      | 1.8         |
| 30   | 5.58                 | 2.351       | 11.5     | 3.9         |
| 40   | 14.58                | 6.446       | 26.3     | 7.7         |
| 50   | 29.88                | 13.071      | 59.5     | 17.3        |
| 60   | 72.01                | 26.523      | —        | —           |

\*Corresponding to min. bore

### Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | NBC                       |              |        |        |         |           |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|---------------------------|--------------|--------|--------|---------|-----------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | Disengagement Torque (Nm) |              |        |        |         | Max Speed |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              | Size                      | Disc Springs |        |        |         |           |              |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              |                           |              |        |        |         |           | Max<br>Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) |                           | n/1'         | S      | M      | L       | LL        | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000                      | 11           | 0.65-3 | 1.3-6  | 2-9     | 2.6-12    | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000                      | 16           | 2-5    | 4-10   | 6-15    | 8-20      | 4000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380                  | 650                  | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500                      | 20           | 4-10   | 8-20   | 12-30   | 16-40     | 4000         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000                      | 25           | 4-14   | 8-28   | 12-42   | 16-56     | 4000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200                      | 30           | 9-35   | 18-70  | 27-105  | 40-140    | 3000         |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 40           | 19-65  | 38-130 | 57-195  | 78-260    | 2500         |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 50           | 35-110 | 80-220 | 120-330 | 160-440   | 2000         |

### Available Bore Sizes

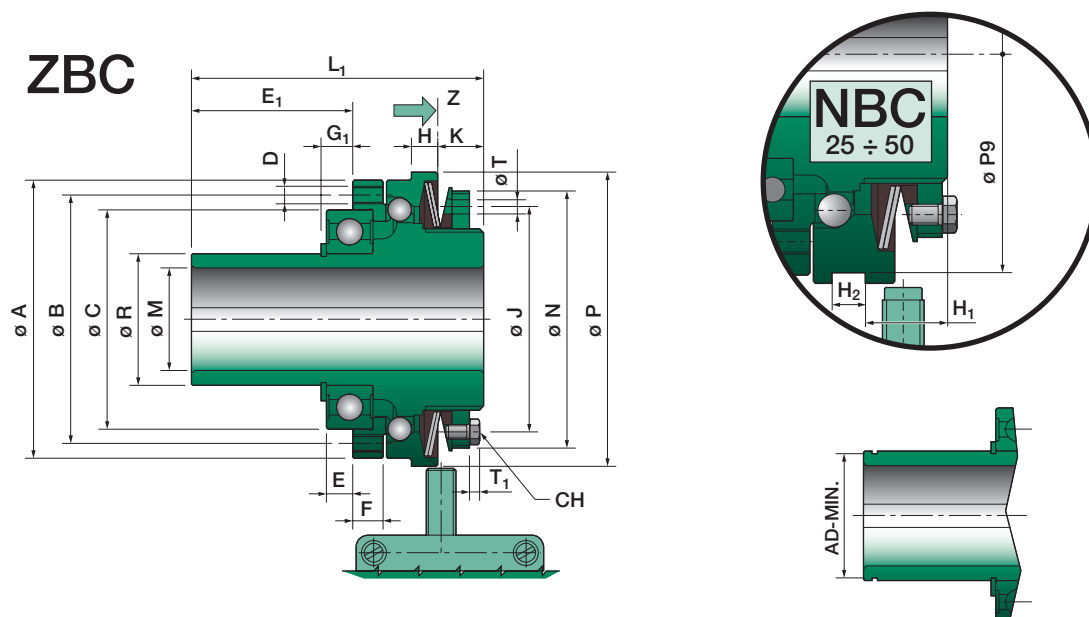
| Type J-L |     | Available Bore Sizes |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |       |
|----------|-----|----------------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-------|
| ZBC      | NBC | 6                    | 8  | 9  | 10 | 11 | 12 | 14 | 15 | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55   | 60   | Ts Nm |
| Size     |     |                      |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |       |
| —        | 11  | 13                   | 18 | 20 | 23 | 25 | 28 |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 2.2*  |
| —        | 16  |                      | 28 | 30 | 34 | 37 | 41 | 48 | 51 | 54  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1.7*  |
| —        | 20  |                      | 28 | 30 | 34 | 37 | 41 | 48 | 51 | 54  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | 1.7*  |
| 25       | 25  |                      |    |    | 65 | 70 | 75 | 90 | 95 | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |     |      |      | 3     |
| 30       | 30  |                      |    |    |    |    |    |    | 95 | 100 | 115 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |     |      |      | 10    |
| 40       | 40  |                      |    |    |    |    |    |    |    |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |     |      |      | 10    |
| 40       | 40  |                      |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |      | 5.9   |
| 50       | 50  |                      |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |      | 10    |
| 60       | —   |                      |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160 | 10    |

Ts (Nm) Clamping element screws tightening torque

\* Screws DIN 912 - 12.9

# ZBC-NBC Zero Backlash Torque Limiters – Type K

For Large Drives, Pilot Bored



## ZBC Dimensions

| Size | Overall Dimensions |     |                 |      |    |                |      |                |    |    |      |                |     |     |     |     |                 |   |                |    |     |
|------|--------------------|-----|-----------------|------|----|----------------|------|----------------|----|----|------|----------------|-----|-----|-----|-----|-----------------|---|----------------|----|-----|
|      | A                  | B   | C <sup>15</sup> | D    | E  | E <sub>1</sub> | F    | G <sub>1</sub> | H  | K  | J    | L <sub>1</sub> | M   |     | N   | P   | R <sup>16</sup> | T | T <sub>1</sub> | CH | Z   |
|      |                    |     |                 |      |    |                |      |                |    |    |      |                | Min | Max |     |     |                 |   |                |    |     |
| 25   | 65                 | 56  | 47              | 8xM4 | 5  | 33             | 7.5  | 6.5            | 7  | 12 | 54.5 | 65             | 8   | 20  | 63  | 70  | 30              | 5 | 2.8            | 7  | 1.2 |
| 30   | 80                 | 71  | 62              | 8xM5 | 7  | 43             | 8    | 8.75           | 8  | 14 | 69   | 80             | 10  | 30* | 77  | 85  | 40              | 5 | 2.8            | 7  | 1.5 |
| 40   | 95                 | 85  | 75              | 8xM6 | 9  | 55             | 10.5 | 11.5           | 9  | 16 | 77   | 100            | 14  | 35* | 88  | 100 | 45              | 5 | 3.5            | 8  | 1.8 |
| 50   | 110                | 100 | 90              | 8xM6 | 10 | 67             | 12   | 13             | 10 | 17 | 87.5 | 115            | 18  | 45* | 100 | 115 | 55              | 6 | 4              | 10 | 2.0 |
| 60   | 130                | 116 | 100             | 8xM8 | 10 | 73             | 12   | 14             | 12 | 21 | 106  | 130            | 24  | 50  | 122 | 135 | 65              | 7 | 4              | 10 | 2.2 |

\*d max with keyway seat according to DIN 6885/3

## NBC Dimensions

| Size | Overall Dimensions |     |                 |      |   |                |     |                |   |                |                |                   |      |                |     |     |      |     |     |                 |   |                |     |     |
|------|--------------------|-----|-----------------|------|---|----------------|-----|----------------|---|----------------|----------------|-------------------|------|----------------|-----|-----|------|-----|-----|-----------------|---|----------------|-----|-----|
|      | A                  | B   | C <sup>15</sup> | D    | E | E <sub>1</sub> | F   | G <sub>1</sub> | H | H <sub>1</sub> | H <sub>2</sub> | K, K <sub>1</sub> | J    | L <sub>1</sub> | M   |     | N    | P   | P9  | R <sup>16</sup> | T | T <sub>1</sub> | CH  | Z   |
|      |                    |     |                 |      |   |                |     |                |   |                |                |                   |      |                | Min | Max |      |     |     |                 |   |                |     |     |
| 11   | 40                 | 35  | 30              | 6xM3 | 2 | 20.5           | 5   | 3              | 6 | —              | —              | 7                 | 32   | 40             | 6   | 11  | 39.5 | 45  | —   | 17              | 4 | 2.1            | 5.5 | 0.8 |
| 16   | 47                 | 42  | 37              | 6xM3 | 2 | 25             | 6   | 5              | 8 | —              | —              | 9.5               | 36.5 | 49             | 8   | 16* | 43   | 50  | —   | 25              | 4 | 2.1            | 5.5 | 1   |
| 20   | 60                 | 53  | 47              | 6xM4 | 3 | 31             | 7   | 5              | 9 | —              | —              | 9.5               | 36.5 | 58             | 9   | 20  | 43   | 65  | —   | 30              | 4 | 2.1            | 5.5 | 1.2 |
| 25   | 77                 | 69  | 62              | 6xM5 | 4 | 35             | 7.5 | 5.5            | — | 14.9           | 7.5            | 10.2              | 54.5 | 68             | 12  | 20  | 63   | 80  | 75  | 35              | 5 | 2.8            | 7   | 1.2 |
| 30   | 90                 | 80  | 68              | 6xM6 | 5 | 40             | 8   | 6.5            | — | 17.4           | 7.5            | 11                | 69   | 77             | 15  | 25  | 77   | 95  | 90  | 40              | 5 | 2.8            | 7   | 1.5 |
| 40   | 106                | 90  | 80              | 6xM6 | 5 | 48             | 9   | 7              | — | 20             | 8              | 12.6              | 77   | 90             | 22  | 35* | 88   | 110 | 105 | 50              | 5 | 3.5            | 8   | 1.8 |
| 50   | 125                | 112 | 100             | 6xM8 | 5 | 60             | 11  | 7.5            | — | 23.5           | 9              | 14.7              | 87.5 | 109            | 32  | 45  | 100  | 130 | 125 | 65              | 6 | 4              | 10  | 2.0 |

\*d max with keyway seat according to DIN 6885/3

## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40  
Order Code: R50LL40B+K

NBC Synchron Type J – Size 16 – Springs L – Ø40 – Ø 40  
Order Code: J16L14B+K

# ZBC-NBC Zero Backlash Torque Limiters – Type K

For Large Drives, Pilot Bored

## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                     |                          |       | NBC  |              |                                                                                     |                   |       |
|---------------------------|-----------|----------------------------|------------------|------|--------------|-------------------------------------------------------------------------------------|--------------------------|-------|------|--------------|-------------------------------------------------------------------------------------|-------------------|-------|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                     | Torque Limiter Side (mm) |       | Size | Disc Springs |                                                                                     | Min/Max Bore (mm) |       |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                              | Min                      | Max   |      | Code         | Layout                                                                              | Min               | Max   |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 11   | S-Light      | 1  | 6                 | 11    |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   |              |                                                                                     | 10                       | 30*** | 16   |              |                                                                                     | 8                 | 16    |
| NBC* Quick Guard          |           |                            |                  | 40   | M-Medium     | 2  | 12                       | 35*** | 20   | M-Medium     | 2  | 9                 | 20    |
| NBC* Synchronous          | M**       | N**-P**-R**                | with Coupling    | 50   |              |                                                                                     | 16                       | 45*** | 25   |              |                                                                                     | 8                 | 20    |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 30   | L-Heavy      | 3  | 10                | 30*** |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 40   | LL-Heavy     | 4  | 12                | 35*** |
|                           |           |                            |                  |      |              |                                                                                     |                          |       | 50   |              |                                                                                     | 16                | 45*** |

## Stop Switch

| Stop Switch |                                 |
|-------------|---------------------------------|
| Type        | Description                     |
| A           | Mechanical                      |
| B           | Proximity sensor                |
| C           | Proximity sensor ext. transmitt |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Inertia Moments

| Type | K        |             |          |             |
|------|----------|-------------|----------|-------------|
|      | Hub Side | Flange Side | Hub Side | Flange Side |
|      | ZBC      |             | NBC      |             |
|      | kg x cm2 |             |          |             |
| 11   | —        | —           | 0.26     | 0.08        |
| 16   | —        | —           | 0.55     | 0.2         |
| 20   | —        | —           | 1.8      | 0.6         |
| 25   | 2.29     | 0.945       | 4.8      | 1.8         |
| 30   | 5.90     | 2.351       | 12.1     | 3.9         |
| 40   | 14.75    | 6.446       | 27.6     | 7.7         |
| 50   | 30.33    | 13.071      | 65.3     | 17.3        |
| 60   | 71.94    | 26.523      | —        | —           |

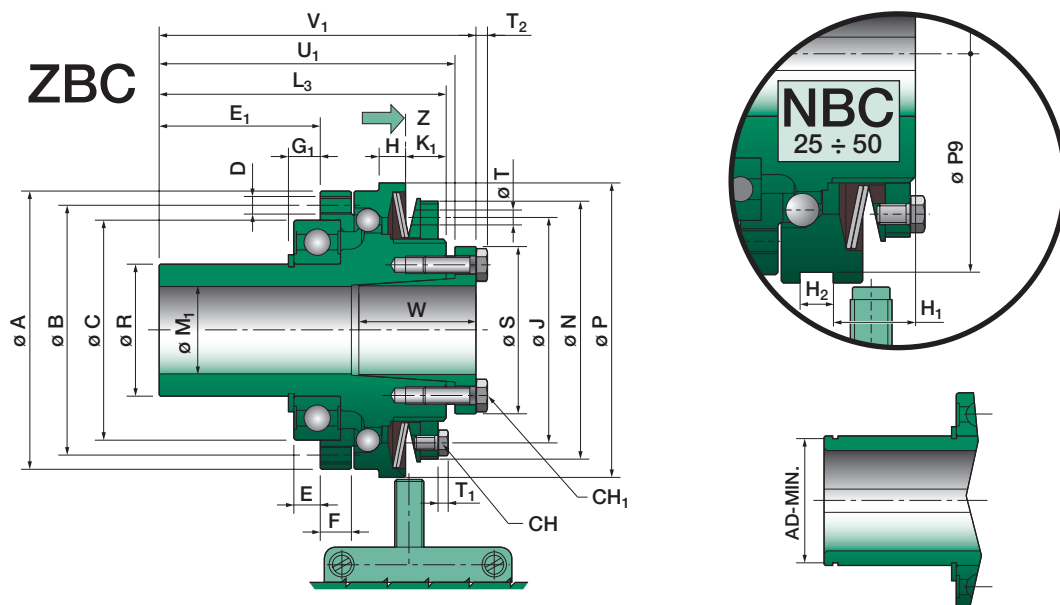
\*Corresponding to min. bore

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | NBC                       |              |        |        |         |           |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|---------------------------|--------------|--------|--------|---------|-----------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | Disengagement Torque (Nm) |              |        |        |         | Max Speed |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              | Size                      | Disc Springs |        |        |         |           |              |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              |                           |              |        |        |         |           | Max<br>Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) |                           | n/1'         | S      | M      | L       | LL        | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000                      | 11           | 0.65-3 | 1.3-6  | 2-9     | 2.6-12    | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000                      | 16           | 2-5    | 4-10   | 6-15    | 8-20      | 4000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380                  | 650                  | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500                      | 20           | 4-10   | 8-20   | 12-30   | 16-40     | 4000         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000                      | 25           | 4-14   | 8-28   | 12-42   | 16-56     | 4000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200                      | 30           | 9-35   | 18-70  | 27-105  | 40-140    | 3000         |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 40           | 19-65  | 38-130 | 57-195  | 78-260    | 2500         |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 50           | 35-110 | 80-220 | 120-330 | 160-440   | 2000         |

# ZBC-NBC Zero Backlash Torque Limiters – Type L

For Large Drives, with Clamped Element



## ZBC Dimensions

| Size | Overall Dimensions |     |                 |      |                |                |    |                |      |                |                |          |     |     |                 |            |   |                |                |                |            |
|------|--------------------|-----|-----------------|------|----------------|----------------|----|----------------|------|----------------|----------------|----------|-----|-----|-----------------|------------|---|----------------|----------------|----------------|------------|
|      | A                  | B   | C <sup>15</sup> | D    | E <sub>1</sub> | G <sub>1</sub> | H  | K <sub>1</sub> | J    | L <sub>3</sub> | M <sub>1</sub> |          | N   | P   | R <sup>16</sup> | S          | T | T <sub>2</sub> | U <sub>1</sub> | V <sub>1</sub> | W          |
|      |                    |     |                 |      |                |                |    |                |      |                | Min            | Max      |     |     |                 |            |   |                |                |                |            |
| 25   | 65                 | 56  | 47              | 8xM4 | 33             | 6.5            | 7  | 12             | 54.5 | 65             | 10<br>19       | 20<br>25 | 63  | 70  | 30              | 40.5<br>42 | 5 | 2.8            | 67             | 72             | 26         |
| 30   | 80                 | 71  | 62              | 8xM5 | 43             | 8.75           | 8  | 12             | 69   | 78             | 15             | 30       | 77  | 85  | 40              | 57         | 5 | 4              | 81             | 88             | 31         |
| 40   | 95                 | 85  | 75              | 8xM6 | 55             | 11.5           | 9  | 14             | 77   | 98             | 19<br>32       | 30<br>40 | 88  | 100 | 45              | 57<br>64   | 5 | 4<br>3.5       | 101            | 108            | 40<br>31   |
| 50   | 110                | 100 | 90              | 8xM6 | 67             | 13             | 10 | 16             | 87.5 | 114            | 32             | 50       | 100 | 115 | 55              | 73.5       | 6 | 4              | 117.5          | 124            | 29         |
| 60   | 130                | 116 | 100             | 8xM8 | 73             | 14             | 12 | 21             | 106  | 130            | 32<br>55       | 50<br>60 | 122 | 135 | 65              | 73.5<br>89 | 7 | 4              | 133.5<br>133   | 140<br>141     | 29<br>45.5 |

\*d max with keyway seat according to DIN 6885/3

## NBC Dimensions

| Size | Overall Dimensions |     |                 |      |                |                |   |                |                |                   |      |                |                |          |      |     |                |                 |            |   |                |                |          |
|------|--------------------|-----|-----------------|------|----------------|----------------|---|----------------|----------------|-------------------|------|----------------|----------------|----------|------|-----|----------------|-----------------|------------|---|----------------|----------------|----------|
|      | A                  | B   | C <sup>15</sup> | D    | E <sub>1</sub> | G <sub>1</sub> | H | H <sub>1</sub> | H <sub>2</sub> | K, K <sub>1</sub> | J    | L <sub>3</sub> | M <sub>1</sub> |          | N    | P   | P <sub>9</sub> | R <sup>16</sup> | S          | T | T <sub>2</sub> | V <sub>1</sub> | W        |
|      |                    |     |                 |      |                |                |   |                |                |                   |      |                | Min            | Max      |      |     |                |                 |            |   |                |                |          |
| 11   | 40                 | 35  | 30              | 6xM3 | 20.5           | 3              | 6 | —              | —              | 7                 | 32   | 40             | 6              | 12       | 39.5 | 45  | —              | 17              | 25         | 4 | 2.1            | 45             | 13       |
| 16   | 47                 | 42  | 37              | 6xM3 | 25             | 5              | 8 | —              | —              | 9.5               | 36.5 | 49             | 8              | 16*      | 43   | 50  | —              | 25              | 29.5       | 4 | 2.1            | 54             | 19       |
| 20   | 60                 | 53  | 47              | 6xM4 | 31             | 5              | 9 | —              | —              | 9.5               | 36.5 | 58             | 9              | 16       | 43   | 65  | —              | 30              | 29.5       | 4 | 2.1            | 63             | 19       |
| 25   | 77                 | 69  | 62              | 6xM5 | 35             | 5.5            | — | 14.9           | 7.5            | 10.2              | 54.5 | 68             | 10<br>19       | 25       | 63   | 80  | 75             | 35              | 40.5<br>42 | 5 | 2.8            | 75             | 26       |
| 30   | 90                 | 80  | 68              | 6xM6 | 40             | 6.5            | — | 17.4           | 7.5            | 11                | 69   | 77             | 15             | 30       | 77   | 95  | 90             | 40              | 57         | 5 | 4              | 87             | 31       |
| 40   | 106                | 90  | 80              | 6xM6 | 48             | 7              | — | 20             | 8              | 12.6              | 77   | 90             | 19<br>32       | 30<br>40 | 88   | 110 | 105            | 50              | 57<br>64   | 5 | 4<br>3.5       | 100            | 40<br>31 |
| 50   | 125                | 112 | 100             | 6xM8 | 60             | 7.5            | — | 23.5           | 9              | 14.7              | 87.5 | 109            | 32             | 50       | 100  | 130 | 125            | 65              | 73.5       | 6 | 4              | 119            | 29       |

\*d max with keyway seat according to DIN 6885/3

## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40  
Order Code: R50LL40B+K

NBC Synchron Type J – Size 16 – Springs L – Ø40 – Ø 40  
Order Code: J16L14B+K

# ZBC-NBC Zero Backlash Torque Limiters – Type L

For Large Drives, with Clamped Element

## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                     |                          |       |      | NBC          |                                                                                     |                   |       |      |          |
|---------------------------|-----------|----------------------------|------------------|------|--------------|-------------------------------------------------------------------------------------|--------------------------|-------|------|--------------|-------------------------------------------------------------------------------------|-------------------|-------|------|----------|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                     | Torque Limiter Side (mm) |       | Size | Disc Springs |                                                                                     | Min/Max Bore (mm) |       | Size | Type     |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                              | Min                      | Max   |      | Code         | Layout                                                                              | Min               | Max   |      |          |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 11   | S-Light      | 1  | 6                 | 11    | 11   | S-Light  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   | M-Medium     | 2  | 10                       | 30*** | 16   | M-Medium     | 2  | 8                 | 16    |      |          |
|                           |           |                            |                  | 40   |              |                                                                                     | 12                       | 35*** | 20   |              |                                                                                     | 9                 | 20    |      |          |
|                           |           |                            |                  | 50   |              |                                                                                     | 16                       | 45*** | 25   |              |                                                                                     | 8                 | 20    |      |          |
| NBC* Quick Guard          | M**       | N**P**-R**                 | with Coupling    | 60   | LL-Heavy     | 4  | 22                       | 50    | 30   | L-Heavy      | 3  | 10                | 30*** | 40   | LL-Heavy |
| NBC* Synchronous          |           |                            |                  |      |              |                                                                                     |                          |       |      |              |                                                                                     | 12                | 35*** |      |          |
|                           |           |                            |                  |      |              |                                                                                     |                          |       |      |              |                                                                                     | 16                | 45*** | 50   |          |

## Stop Switch

| Stop Switch |                                 |
|-------------|---------------------------------|
| Type        | Description                     |
| A           | Mechanical                      |
| B           | Proximity sensor                |
| C           | Proximity sensor ext. transmitt |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Inertia Moments

| Type | L                    |             |          |             |
|------|----------------------|-------------|----------|-------------|
|      | Hub Side             | Flange Side | Hub Side | Flange Side |
|      | ZBC                  |             | NBC      |             |
|      | kg x cm <sup>2</sup> |             |          |             |
| 11   | —                    | —           | 0.28     | 0.08        |
| 16   | —                    | —           | 0.58     | 0.2         |
| 20   | —                    | —           | 1.8      | 0.6         |
| 25   | 2.36                 | 0.945       | 4.9      | 1.8         |
| 30   | 6.17                 | 2.351       | 12.5     | 3.9         |
| 40   | 15.66                | 6.446       | 28.4     | 7.7         |
| 50   | 32.60                | 13.071      | 67.1     | 17.3        |
| 60   | 77.18                | 26.523      | —        | —           |

\*Corresponding to min. bore

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | NBC                       |              |        |        |         |           |           |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|---------------------------|--------------|--------|--------|---------|-----------|-----------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              | Disengagement Torque (Nm) |              |        |        |         | Max Speed |           |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              | Size                      | Disc Springs |        |        |         |           |           |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              |                           |              |        |        |         |           | Max Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) |                           | n/1'         | S      | M      | L       | LL        | n/1'      |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000                      | 11           | 0.65-3 | 1.3-6  | 2-9     | 2.6-12    | 4000      |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000                      | 16           | 2-5    | 4-10   | 6-15    | 8-20      | 4000      |
| 40                        | 19-65        | 38-130  | 78-260  | 72 89         | 180 360                  | 380                  | 650                  | 0.5 0.6       | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500                      | 20           | 4-10   | 8-20   | 12-30   | 16-40     | 4000      |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000                      | 25           | 4-14   | 8-28   | 12-42   | 16-56     | 4000      |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200                      | 30           | 9-35   | 18-70  | 27-105  | 40-140    | 3000      |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 40           | 19-65  | 38-130 | 57-195  | 78-260    | 2500      |
|                           |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |                           | 50           | 35-110 | 80-220 | 120-330 | 160-440   | 2000      |

## Available Bore Sizes

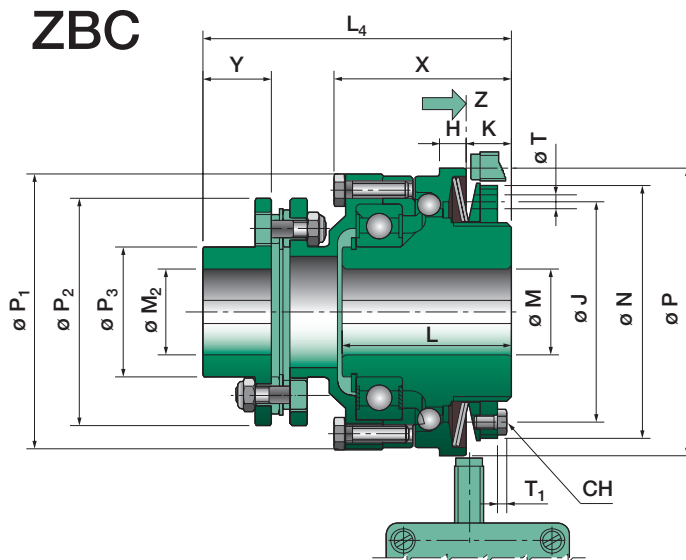
| Type J-L |     | Available Bore Sizes |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |       |    |  |  |  |     |    |  |  |    |
|----------|-----|----------------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|----|--|--|--|-----|----|--|--|----|
| ZBC      | NBC | 6                    | 8  | 9  | 10 | 11 | 12 | 14 | 15 | 16 | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55  | 60   | Ts Nm |    |  |  |  |     |    |  |  |    |
| Size     |     |                      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |       |    |  |  |  |     |    |  |  |    |
| —        | 11  | 13                   | 18 | 20 | 23 | 25 | 28 |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 2.2* |       |    |  |  |  |     |    |  |  |    |
| —        | 16  | 28                   |    | 30 | 34 | 37 | 41 | 48 | 51 | 54 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1.7*  |    |  |  |  |     |    |  |  |    |
| —        | 20  | 28                   |    | 30 | 34 | 37 | 41 | 48 | 51 | 54 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | 1.7*  |    |  |  |  |     |    |  |  |    |
| 25       | 25  |                      |    |    |    | 65 | 70 | 75 | 90 | 95 | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |     | 3    |       |    |  |  |  |     |    |  |  |    |
| 30       | 30  |                      |    |    |    |    |    |    |    | 95 | 100 | 115 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |     |      |       | 10 |  |  |  |     |    |  |  |    |
| 40       | 40  |                      |    |    |    |    |    |    |    |    |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |     |      |       | 10 |  |  |  |     |    |  |  |    |
| 40       | 40  |                      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |       |    |  |  |  | 5.9 |    |  |  |    |
| 50       | 50  |                      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |       |    |  |  |  |     |    |  |  | 10 |
| 60       | —   |                      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160  |    |  |  |  |     | 10 |  |  |    |

Ts (Nm) Clamping element screws tightening torque

\* Screws DIN 912 - 12.9

# ZBC Zero Backlash Torque Limiters – Type M

with Lamellar Coupling, Pilot Bored



## Dimensions

| Size   | Overall Dimensions |    |      |    |                |     |     |                |     |     |     |                |                |                |   |                |    |      |      |     |
|--------|--------------------|----|------|----|----------------|-----|-----|----------------|-----|-----|-----|----------------|----------------|----------------|---|----------------|----|------|------|-----|
|        | H                  | K  | J    | L  | L <sub>1</sub> | M   |     | M <sub>2</sub> |     | N   | P   | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | T | T <sub>1</sub> | CH | X    | Y    | Z   |
|        |                    |    |      |    |                | Min | Max | Min            | Max |     |     |                |                |                |   |                |    |      |      |     |
| 25-53  | 7                  | 12 | 54.5 | 40 | 87.5           | 8   | 20  | 8              | 25* | 63  | 70  | 65             | 53             | 32.5           | 5 | 2.8            | 7  | 41.5 | 24.5 | 1.2 |
| 30-72  | 8                  | 14 | 69   | 48 | 113            | 10  | 30* | 11             | 35  | 77  | 85  | 80             | 72             | 47             | 5 | 2.8            | 7  | 50   | 39.5 | 1.5 |
| 40-72  | 9                  | 16 | 77   | 59 | 126.5          | 14  | 35* | 11             | 35  | 88  | 100 | 97             | 72             | 47             | 5 | 3.5            | 8  | 62   | 39.5 | 1.8 |
| 40-89  | 9                  | 16 | 77   | 59 | 142.5          | 14  | 35* | 15             | 50* | 88  | 100 | 97             | 89             | 62.5           | 5 | 3.5            | 8  | 62   | 45   | 1.8 |
| 50-89  | 10                 | 17 | 87.5 | 64 | 145            | 18  | 45* | 15             | 50* | 100 | 115 | 111            | 89             | 62.5           | 6 | 4              | 10 | 66.5 | 45   | 2.0 |
| 60-118 | 12                 | 21 | 106  | 75 | 172.5          | 24  | 50  | 16             | 65  | 122 | 135 | 131            | 118            | 82             | 7 | 4              | 10 | 76.5 | 55   | 2.2 |

\*d max with keyway seat according to DIN 6885/3

## Available Bore Sizes

| ZBC Type N<br>Torque<br>Limiter Side | Available Bore Sizes/Transmissible Torque (mm/Nm) |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |          |  |    |    |     |
|--------------------------------------|---------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|----------|--|----|----|-----|
|                                      | 10                                                | 11 | 12 | 14 | 15  | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55   | 60   | Ts<br>Nm |  |    |    |     |
| Size                                 | 25                                                | 65 | 70 | 75 | 90  | 95  | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |      | 3    |          |  |    |    |     |
| 30                                   |                                                   |    |    |    | 120 | 130 | 150 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |     |      |      | 10       |  |    |    |     |
| 40                                   |                                                   |    |    |    |     |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |     |      |      | 10       |  |    |    |     |
| 40                                   |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |      |          |  |    |    | 5.9 |
| 50                                   |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |      |          |  |    | 10 |     |
| 60                                   |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160 |          |  | 10 |    |     |

| ZBC Type N<br>Coupling<br>Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |          |          |
|--------------------------------|-----------------------------------------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|----------|----------|
|                                | 11                                                              | 12 | 14  | 15  | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45   | 48   | 50   | 55   | 60   | Ts<br>Nm | Tc<br>Nm |
| Size                           |                                                                 |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |          |          |
| 25-53                          | 80                                                              | 87 | 102 | 108 | 116 | 130 | 138 | 145 |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      | 5        | 6        |
| 30-72                          |                                                                 |    |     | 146 | 155 | 175 | 210 | 220 | 242 | 265 | 276 | 309 | 331 |     |     |     |     |     |      |      |      |      |      | 17       | 8        |
| 40-72                          |                                                                 |    |     |     |     |     | 210 | 220 | 242 | 265 | 276 | 309 | 331 |     |     |     |     |     |      |      |      |      |      | 17       | 8        |
| 40-89                          |                                                                 |    |     |     |     |     |     |     |     | 529 | 552 | 618 | 662 | 706 | 772 | 839 | 883 | 926 |      |      |      |      |      | 17       | 14       |
| 50-89                          |                                                                 |    |     |     |     |     |     |     |     | 529 | 552 | 618 | 662 | 706 | 772 | 839 | 883 | 926 |      |      |      |      |      | 17       | 14       |
| 60-118                         |                                                                 |    |     |     |     |     |     |     |     |     |     |     |     | 706 | 772 | 839 | 883 | 926 | 1026 | 1094 | 1140 | 1250 | 1370 | 17       | 31       |

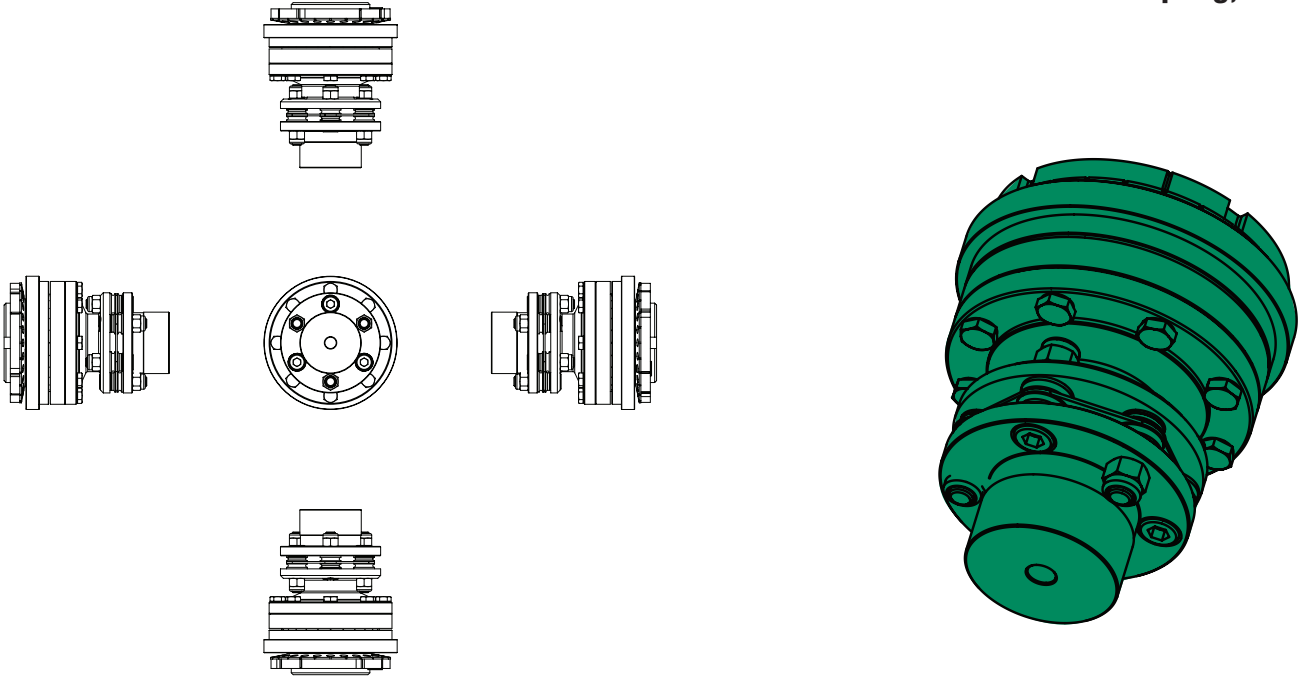
\*Ts (Nm) Clamping element screws tightening torque

\*\*Tc (Nm) Coupling screws tightening torque



# ZBC Zero Backlash Torque Limiters – Type M

with Lamellar Coupling, Pilot Bored



## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                       |                          |       |           |     |                    |       |     |     |     |     |     |     |     |     |
|---------------------------|-----------|----------------------------|------------------|------|--------------|---------------------------------------------------------------------------------------|--------------------------|-------|-----------|-----|--------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                       | Torque Limiter Side (mm) |       |           |     | Coupling Side (mm) |       |     |     |     |     |     |     |     |     |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                                | H-K-M-T                  |       | J-L-N-P-R |     | M                  |       | N   |     | P   |     | R   |     | T   |     |
|                           |           |                            |                  |      |              |                                                                                       | Min                      | Max   | Min       | Max | Min                | Max   | Min | Max | Min | Max | Min | Max | Min | Max |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 10        | 25  | 8                  | 25*** | 10  | 20  | 10  | 28  | 15  | 28  | 8   | 28  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   | M-Medium     | 2  | 10                       | 30*** | 15        | 30  | 11                 | 35    | 19  | 30  | 19  | 38  | 19  | 38  | 10  | 38  |
| NBC* Quick Guard          | M**       | N** P**-R**                | with Coupling    | 40   |              |                                                                                       | 12                       | 35*** | 19        | 40  | 11                 | 50*** | 15  | 42  | 20  | 45  | 20  | 45  | 12  | 45  |
| NBC* Synchronous          |           |                            |                  | 50   |              |                                                                                       | 16                       | 45*** | 32        | 50  | 15                 | 50*** | 24  | 42  | 28  | 48  | 28  | 50  | 14  | 55  |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 32        | 60  | 16                 | 65    | 32  | 60  | 25  | 55  | 30  | 55  | 15  | 60  |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Stop Switch

| Type | Description                     |
|------|---------------------------------|
| A    | Mechanical                      |
| B    | Proximity sensor                |
| C    | Proximity sensor ext. transmitt |

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              |              |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              | Max<br>Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380                  | 650                  | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200         |

## Inertia Momentum

| Type | M        |             |
|------|----------|-------------|
|      | Hub Side | Flange Side |
|      | ZBC      |             |
|      | kg x cm² |             |
| 11   | —        | —           |
| 16   | —        | —           |
| 20   | —        | —           |
| 25   | 2.15     | 2.42        |
| 30   | 5.30     | 6.92        |
| 40   | 13.68    | 16.55       |
| 50   | 27.62    | 34.03       |
| 60   | 66.45    | 43.52       |

\*Corresponding to min. bore

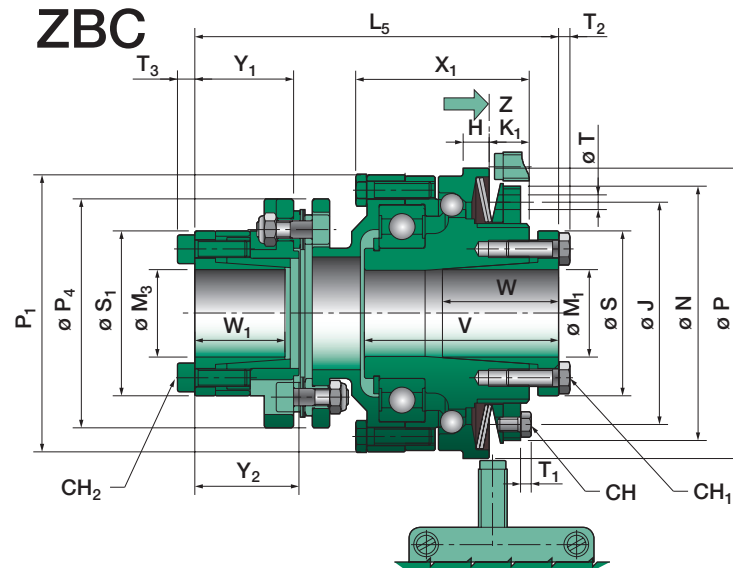
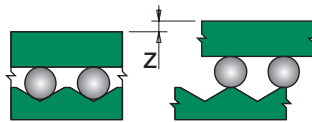
## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40 Order Code: R50LL40B+K

NBC Synchron Type J – Size 16 – Springs L – Ø40 – Ø 40 Order Code: J16L14B+K

# ZBC Zero Backlash Torque Limiters – Type N

with Lamellar Coupling and Clamping Equipment



## Dimensions

| Size   | Overall Dimensions |                |      |                |                |          |                |          |     |     |                |                |            |                |   |                |                |                |    |                 |                 |          |          |          |                |                |     |
|--------|--------------------|----------------|------|----------------|----------------|----------|----------------|----------|-----|-----|----------------|----------------|------------|----------------|---|----------------|----------------|----------------|----|-----------------|-----------------|----------|----------|----------|----------------|----------------|-----|
|        | H                  | K <sub>1</sub> | J    | L <sub>s</sub> | M <sub>1</sub> |          | M <sub>3</sub> |          | N   | P   | P <sub>1</sub> | P <sub>4</sub> | S          | S <sub>1</sub> | T | T <sub>1</sub> | T <sub>2</sub> | T <sub>3</sub> | CH | CH <sub>1</sub> | CH <sub>2</sub> | V        | W        | W1       | Y <sub>1</sub> | Y <sub>2</sub> | Z   |
|        |                    |                |      |                | Min            | Max      | Min            | Max      |     |     |                |                |            |                |   |                |                |                |    |                 |                 |          |          |          |                |                |     |
| 25-53  | 7                  | 12             | 54.5 | 95.5           | 10<br>19       | 20<br>25 | 10             | 20       | 63  | 70  | 65             | 53             | 40.5<br>42 | 42             | 5 | 2.8            | 2.8            | 4              | 7  | 7               | 3               | 47       | 26       | 26.5     | 25.5           | 27.5           | 1.2 |
| 30-72  | 8                  | 12             | 69   | 114.5          | 15             | 30       | 19             | 30       | 77  | 85  | 80             | 72             | 57         | 58             | 5 | 2.8            | 4              | 6              | 7  | 10              | 5               | 56       | 31       | 31       | 33             | —              | 1.5 |
| 40-72  | 9                  | 14             | 77   | 128            | 19             | 40       | 19             | 30       | 88  | 100 | 97             | 72             | 57         | 58             | 5 | 3.5            | 4              | 6              | 8  | 10              | 5               | 67       | 40       | 31       | 33             | —              | 1.8 |
| 40-89  | 9                  | 14             | 77   | 150            | 19             | 40       | 24             | 42       | 88  | 100 | 97             | 89             | 64         | 72             | 5 | 3.5            | 3.5            | 6              | 8  | 8               | 5               | 67       | 31       | 45       | 44.5           | 45.5           | 1.8 |
| 50-89  | 10                 | 16             | 87.5 | 153.5          | 32             | 50       | 24             | 42       | 100 | 115 | 111            | 89             | 73.5       | 72             | 6 | 4              | 4              | 6              | 10 | 10              | 5               | 73       | 29       | 45       | 44.5           | 45.5           | 2.0 |
| 60-118 | 12                 | 21             | 106  | 162.5<br>172.5 | 32<br>55       | 50<br>60 | 32<br>55       | 50<br>60 | 122 | 135 | 131            | 118            | 73.5<br>89 | 79<br>92       | 7 | 4              | 4              | 6              | 10 | 10              | 5               | 85<br>86 | 29<br>44 | 29<br>44 | 35<br>44       | —<br>46        | 2.2 |

\*d max with keyway seat according to DIN 6885/3

## Available Bore Sizes

| ZBC Type N<br>Torque<br>Limiter Side | Available Bore Sizes/Transmissible Torque (mm/Nm) |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |          |    |    |    |     |
|--------------------------------------|---------------------------------------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|----------|----|----|----|-----|
|                                      | 10                                                | 11 | 12 | 14 | 15 | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55   | 60   | Ts<br>Nm |    |    |    |     |
| Size                                 | 25                                                | 65 | 70 | 75 | 90 | 95  | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |      |      | 3        |    |    |    |     |
| 30                                   |                                                   |    |    |    |    | 120 | 130 | 150 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |      |      |          | 10 |    |    |     |
| 40                                   |                                                   |    |    |    |    |     |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |      |      |          | 10 |    |    |     |
| 40                                   |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |      |          |    |    |    | 5.9 |
| 50                                   |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |      |          |    |    | 10 |     |
| 60                                   |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160 |          |    | 10 |    |     |

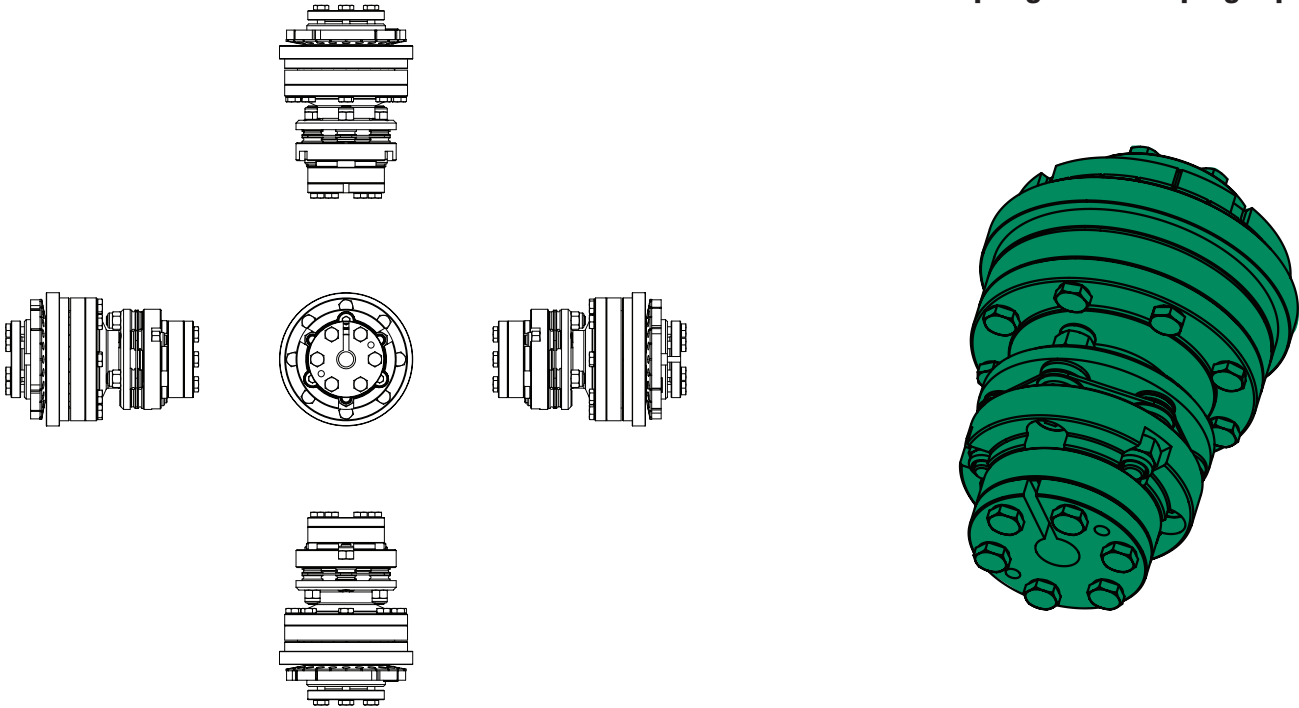
| ZBC Type N<br>Coupling<br>Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |          |          |
|--------------------------------|-----------------------------------------------------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|----------|----------|
|                                | 11                                                              | 12 | 14 | 15  | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45   | 48   | 50   | 55   | 60   | Ts<br>Nm | Tc<br>Nm |
| Size                           | 25-53                                                           | 80 | 87 | 102 | 108 | 116 | 130 | 138 | 145 |     |     |     |     |     |     |     |     |     |      |      |      |      |      | 5        | 6        |
| 30-72                          |                                                                 |    |    |     | 146 | 155 | 175 | 210 | 220 | 242 | 265 | 276 | 309 | 331 |     |     |     |     |      |      |      |      |      | 17       | 8        |
| 40-72                          |                                                                 |    |    |     |     |     |     | 210 | 220 | 242 | 265 | 276 | 309 | 331 |     |     |     |     |      |      |      |      |      | 17       | 8        |
| 40-89                          |                                                                 |    |    |     |     |     |     |     |     | 529 | 552 | 618 | 662 | 706 | 772 | 839 | 883 | 926 |      |      |      |      |      | 17       | 14       |
| 50-89                          |                                                                 |    |    |     |     |     |     |     |     | 529 | 552 | 618 | 662 | 706 | 772 | 839 | 883 | 926 |      |      |      |      |      | 17       | 14       |
| 60-118                         |                                                                 |    |    |     |     |     |     |     |     |     |     |     |     | 706 | 772 | 839 | 883 | 926 | 1026 | 1094 | 1140 | 1250 | 1370 | 17       | 31       |

\*Ts (Nm) Clamping element screws tightening torque

\*\*Tc (Nm) Coupling screws tightening torque

# ZBC Zero Backlash Torque Limiters – Type N

with Lamellar Coupling and Clamping Equipment



## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                       |                          |       |           |       |                    |       |     |     |     |     |     |     |     |     |
|---------------------------|-----------|----------------------------|------------------|------|--------------|---------------------------------------------------------------------------------------|--------------------------|-------|-----------|-------|--------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                       | Torque Limiter Side (mm) |       |           |       | Coupling Side (mm) |       |     |     |     |     |     |     |     |     |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                                | H-K-M-T                  |       | J-L-N-P-R |       | M                  |       | N   |     | P   |     | R   |     | T   |     |
|                           |           |                            |                  |      |              |                                                                                       | Min                      | Max   | Min       | Max   | Min                | Max   | Min | Max | Min | Max | Min | Max | Min | Max |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 10        | 25    | 8                  | 25*** | 10  | 20  | 10  | 28  | 15  | 28  | 8   | 28  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   | M-Medium     | 2  | 10                       | 30*** | 15        | 30    | 11                 | 35    | 19  | 30  | 19  | 38  | 19  | 38  | 10  | 38  |
| NBC* Quick Guard          | M**       | N**·P**·R**                | with Coupling    | 40   |              |                                                                                       | 12                       | 35*** | 19        | 40    | 11                 | 50*** | 15  | 42  | 20  | 45  | 20  | 45  | 12  | 45  |
| NBC* Synchronous          |           |                            |                  | 50   | 16           | 45***                                                                                 | 32                       | 50    | 15        | 50*** | 24                 | 42    | 28  | 48  | 28  | 50  | 14  | 55  |     |     |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 32        | 60    | 16                 | 65    | 32  | 60  | 25  | 55  | 30  | 55  | 15  | 60  |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Stop Switch

| Type | Description                     |
|------|---------------------------------|
| A    | Mechanical                      |
| B    | Proximity sensor                |
| C    | Proximity sensor ext. transmitt |

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                   |                   |               |             |              |                   |             |              |                   |             |              |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|-------------------|-------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                   |                   |               |             |              |                   |             |              |                   |             |              |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                   |                   | Misalignments |             |              |                   |             |              |                   |             |              |              |
|                           |              |         |         |               | M-N                      | P-R<br>92 Shore A | P-R<br>98 Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              | Max<br>Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                | Nm                | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                | 120               | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190               | 320               | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380               | 650               | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530               | 900               | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620               | 1050              | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200         |

## Inertia Momentum

| Type | N        |             |
|------|----------|-------------|
|      | Hub Side | Flange Side |
|      | ZBC      |             |
|      | kg x cm² |             |
| 11   | —        | —           |
| 16   | —        | —           |
| 20   | —        | —           |
| 25   | 2.22     | 2.47        |
| 30   | 5.58     | 7.06        |
| 40   | 14.58    | 16.88       |
| 50   | 29.88    | 34.71       |
| 60   | 72.01    | 44.39       |

\*Corresponding to min. bore

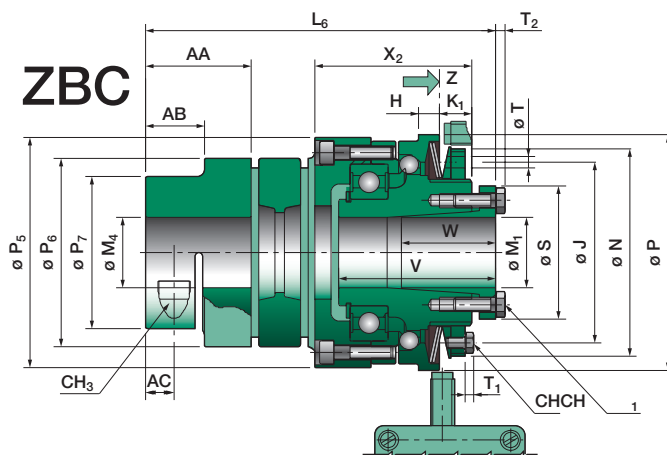
## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40 Order Code: R50LL40B+K

NBC Sychron Type J – Size 16 – Springs L – Ø40 – Ø 40 Order Code: J16L14B+K

# ZBC Zero Backlash Torque Limiters – Type P

with Flexible Coupling and Clamping Hub



## Dimensions

| Size | Overall Dimensions |                |      |                |                |          |                |     |     |                |                |                |            |   |                |                |    |                 |                 |          |            |                |     |    |    |      |
|------|--------------------|----------------|------|----------------|----------------|----------|----------------|-----|-----|----------------|----------------|----------------|------------|---|----------------|----------------|----|-----------------|-----------------|----------|------------|----------------|-----|----|----|------|
|      | H                  | K <sub>1</sub> | J    | L <sub>6</sub> | M <sub>1</sub> |          | M <sub>4</sub> |     | N   | P <sub>5</sub> | P <sub>6</sub> | P <sub>7</sub> | S          | T | T <sub>1</sub> | T <sub>2</sub> | CH | CH <sub>1</sub> | CH <sub>3</sub> | V        | W          | X <sub>2</sub> | Z   | AA | AB | AC   |
|      |                    |                |      |                | Min            | Max      | Min            | Max |     |                |                |                |            |   |                |                |    |                 |                 |          |            |                |     |    |    |      |
| 25   | 7                  | 12             | 54.5 | 102            | 10<br>19       | 20<br>25 | 10             | 28  | 63  | 70             | 55             | —              | 40.5<br>42 | 5 | 2.8            | 2.8            | 7  | 7               | 5               | 47       | 26         | 47             | 1.2 | 30 | —  | 10.5 |
| 30   | 8                  | 12             | 69   | 119.5          | 15             | 30       | 14             | 38  | 77  | 85             | 65             | —              | 57         | 5 | 2.8            | 4              | 7  | 10              | 6               | 56       | 31         | 54.5           | 1.5 | 35 | —  | 11.5 |
| 40   | 9                  | 14             | 77   | 146            | 19<br>32       | 30<br>40 | 15             | 45  | 88  | 100            | 80             | —              | 57<br>64   | 5 | 3.5            | 4<br>3.5       | 8  | 10<br>8         | 6               | 67       | 40<br>31   | 67             | 1.8 | 45 | —  | 15.5 |
| 50   | 10                 | 16             | 87.5 | 159            | 32             | 50       | 20             | 48  | 100 | 115            | 95             | 85             | 73.5       | 6 | 4              | 4              | 10 | 10              | 8               | 73       | 29         | 73             | 2   | 50 | 28 | 18   |
| 60   | 12                 | 21             | 106  | 181<br>182     | 32<br>55       | 50<br>60 | 25             | 55  | 122 | 135            | 105            | 95             | 73.5<br>89 | 7 | 4              | 4              | 10 | 10              | 10              | 85<br>86 | 29<br>45.5 | 87             | 2.2 | 56 | 32 | 21   |

## Available Bore Sizes

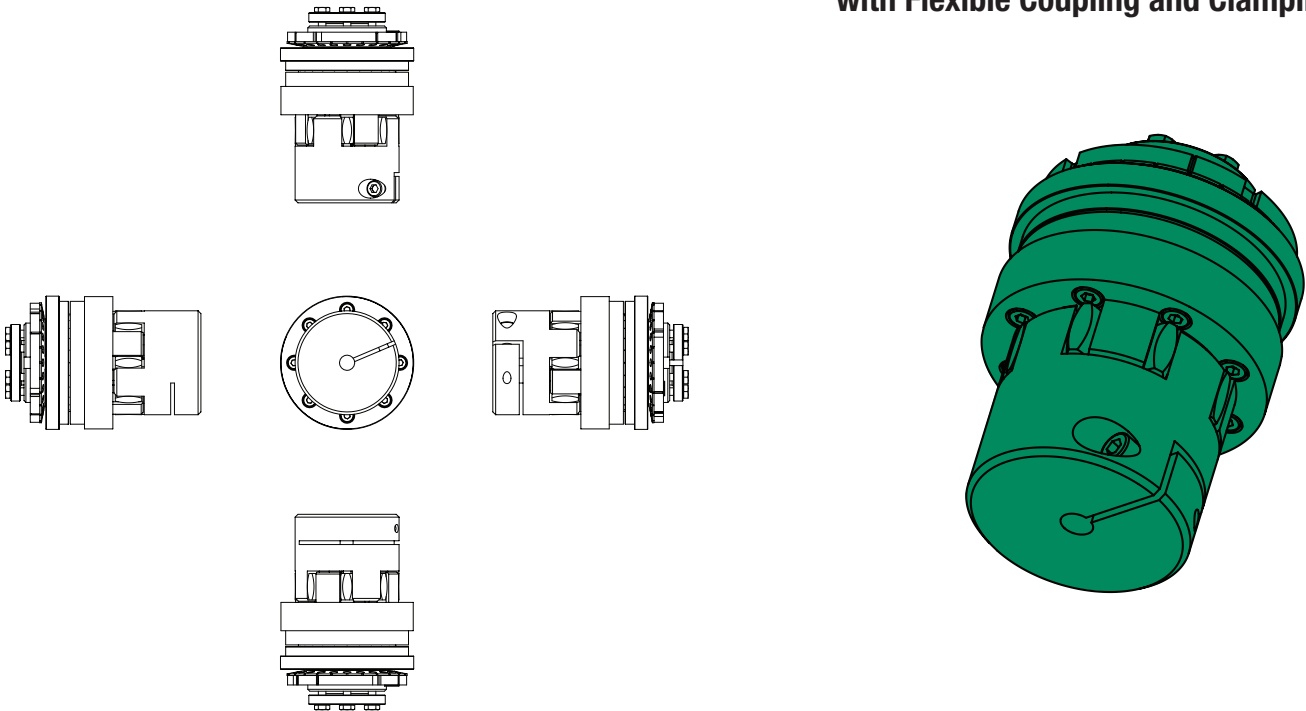
| ZBC Type P-R<br>Torque<br>Limiter Side | Available Bore Sizes/Transmissible Torque (mm/Nm) |    |    |    |    |    |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |     |
|----------------------------------------|---------------------------------------------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|-----|
|                                        | 10                                                | 11 | 12 | 14 | 15 | 16 | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55  |
| Size                                   | 25                                                | 65 | 70 | 75 | 90 | 95 | 100 | 115 | 120 | 130 | 140 | 150 | 160 | —  | —  | —  | —  | —  | —  | —  | —  | —  | —   |
| 25                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 3   |
| 30                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 10  |
| 40                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 10  |
| 40                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 5.9 |
| 50                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 10  |
| 60                                     | —                                                 | —  | —  | —  | —  | —  | —   | —   | —   | —   | —   | —   | —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | 10  |

| ZBC Type P<br>Coupling<br>Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |
|--------------------------------|-----------------------------------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|
|                                | 8                                                               | 10 | 11 | 14 | 15 | 16 | 19 | 20 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 60 | 65   |
| Size                           | 25                                                              | 34 | 35 | 36 | 38 | 39 | 39 | 41 | 43 | 45 | 46 | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | 10.5 |
| 30                             | —                                                               | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | 25   |
| 40                             | —                                                               | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | 25   |
| 50                             | —                                                               | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | 69   |
| 60                             | —                                                               | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  | 120  |

\*Ts (Nm) Clamping hub screw tightening torque

# ZBC Zero Backlash Torque Limiters – Type P

with Flexible Coupling and Clamping Hub



## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                       |                          |       |           |       |                    |       |     |     |     |     |     |     |     |     |
|---------------------------|-----------|----------------------------|------------------|------|--------------|---------------------------------------------------------------------------------------|--------------------------|-------|-----------|-------|--------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                       | Torque Limiter Side (mm) |       |           |       | Coupling Side (mm) |       |     |     |     |     |     |     |     |     |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                                | H-K-M-T                  |       | J-L-N-P-R |       | M                  |       | N   |     | P   |     | R   |     | T   |     |
|                           |           |                            |                  |      |              |                                                                                       | Min                      | Max   | Min       | Max   | Min                | Max   | Min | Max | Min | Max | Min | Max | Min | Max |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 10        | 25    | 8                  | 25*** | 10  | 20  | 10  | 28  | 15  | 28  | 8   | 28  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   | M-Medium     | 2  | 10                       | 30*** | 15        | 30    | 11                 | 35    | 19  | 30  | 19  | 38  | 19  | 38  | 10  | 38  |
| NBC* Quick Guard          | M**       | N** P** R**                | with Coupling    | 40   |              |                                                                                       | 12                       | 35*** | 19        | 40    | 11                 | 50*** | 15  | 42  | 20  | 45  | 20  | 45  | 12  | 45  |
| NBC* Synchronous          |           |                            |                  | 50   | 16           | 45***                                                                                 | 32                       | 50    | 15        | 50*** | 24                 | 42    | 28  | 48  | 28  | 50  | 14  | 55  |     |     |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 32        | 60    | 16                 | 65    | 32  | 60  | 25  | 55  | 30  | 55  | 15  | 60  |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Stop Switch

| Type | Description                     |
|------|---------------------------------|
| A    | Mechanical                      |
| B    | Proximity sensor                |
| C    | Proximity sensor ext. transmitt |

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                   |                   |               |             |              |                   |             |              |                   |             |              |           |
|---------------------------|--------------|---------|---------|---------------|--------------------------|-------------------|-------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|-----------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                   |                   |               |             |              |                   |             |              |                   |             |              |           |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                   |                   | Misalignments |             |              |                   |             |              |                   |             |              |           |
|                           |              |         |         |               | M-N                      | P-R<br>92 Shore A | P-R<br>98 Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              | Max Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                | Nm                | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | n/1'      |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                | 120               | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000      |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190               | 320               | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000      |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380               | 650               | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500      |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530               | 900               | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000      |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620               | 1050              | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200      |

## Inertia Momentum

| Type | P                    |             |
|------|----------------------|-------------|
|      | Hub Side             | Flange Side |
|      | ZBC                  |             |
|      | kg x cm <sup>2</sup> |             |
| 11   | —                    | —           |
| 16   | —                    | —           |
| 20   | —                    | —           |
| 25   | 2.22                 | 4           |
| 30   | 5.58                 | 10          |
| 40   | 14.58                | 20          |
| 50   | 29.88                | 50          |
| 60   | 72.01                | 114         |

\*Corresponding to min. bore

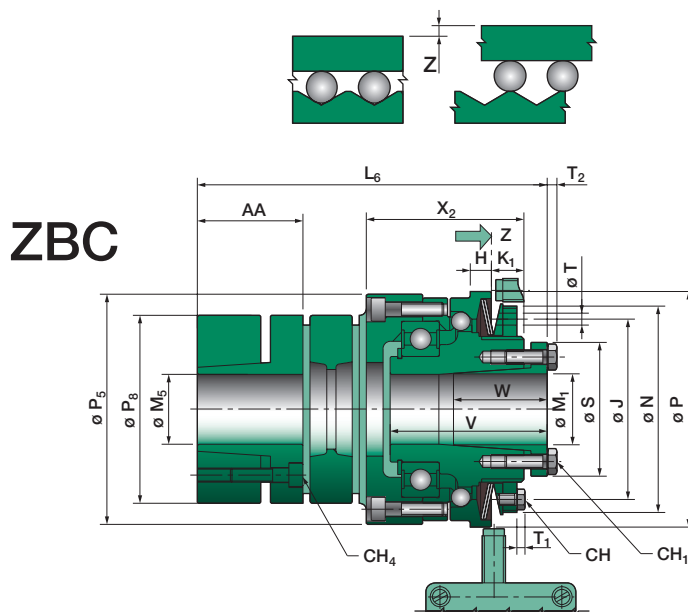
## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40 Order Code: R50LL40B+K

NBC Sychron Type J – Size 16 – Springs L – Ø40 – Ø 40 Order Code: J16L14B+K

# ZBC Zero Backlash Torque Limiters – Type R

with Flexible Coupling and Shrink Disc



## Dimensions

| Size | Overall Dimensions |                |      |                |                |          |                |     |     |     |                |                |            |                |                |    |                 |                 |          |            |
|------|--------------------|----------------|------|----------------|----------------|----------|----------------|-----|-----|-----|----------------|----------------|------------|----------------|----------------|----|-----------------|-----------------|----------|------------|
|      | H                  | K <sub>1</sub> | J    | L <sub>6</sub> | M <sub>1</sub> |          | M <sub>5</sub> |     | N   | P   | P <sub>5</sub> | P <sub>8</sub> | S          | T <sub>1</sub> | T <sub>2</sub> | CH | CH <sub>1</sub> | CH <sub>4</sub> | V        | W          |
|      |                    |                |      |                | Min            | Max      | Min            | Max |     |     |                |                |            |                |                |    |                 |                 |          |            |
| 25   | 7                  | 12             | 54.5 | 102            | 10<br>19       | 20<br>25 | 15             | 28  | 63  | 70  | 70             | 55             | 40.5<br>42 | 2.8            | 2.8            | 7  | 7               | 4               | 47       | 26         |
| 30   | 8                  | 12             | 69   | 119.5          | 15             | 30       | 19             | 38  | 77  | 85  | 85             | 65             | 57         | 2.8            | 4              | 7  | 10              | 4               | 56       | 31         |
| 40   | 9                  | 14             | 77   | 146            | 19<br>32       | 30<br>40 | 20             | 45  | 88  | 100 | 100            | 80             | 57<br>64   | 3.5            | 4<br>3.5       | 8  | 10<br>8         | 5               | 67       | 40<br>31   |
| 50   | 10                 | 16             | 87.5 | 159            | 32             | 50       | 28             | 50  | 100 | 115 | 115            | 95             | 73.5       | 4              | 4              | 10 | 10              | 6               | 73       | 29         |
| 60   | 12                 | 21             | 106  | 181<br>182     | 32<br>55       | 50<br>60 | 30             | 55  | 122 | 135 | 135            | 105            | 73.5<br>89 | 4              | 4              | 10 | 10              | 8               | 85<br>86 | 29<br>45.5 |

## Available Bore Sizes

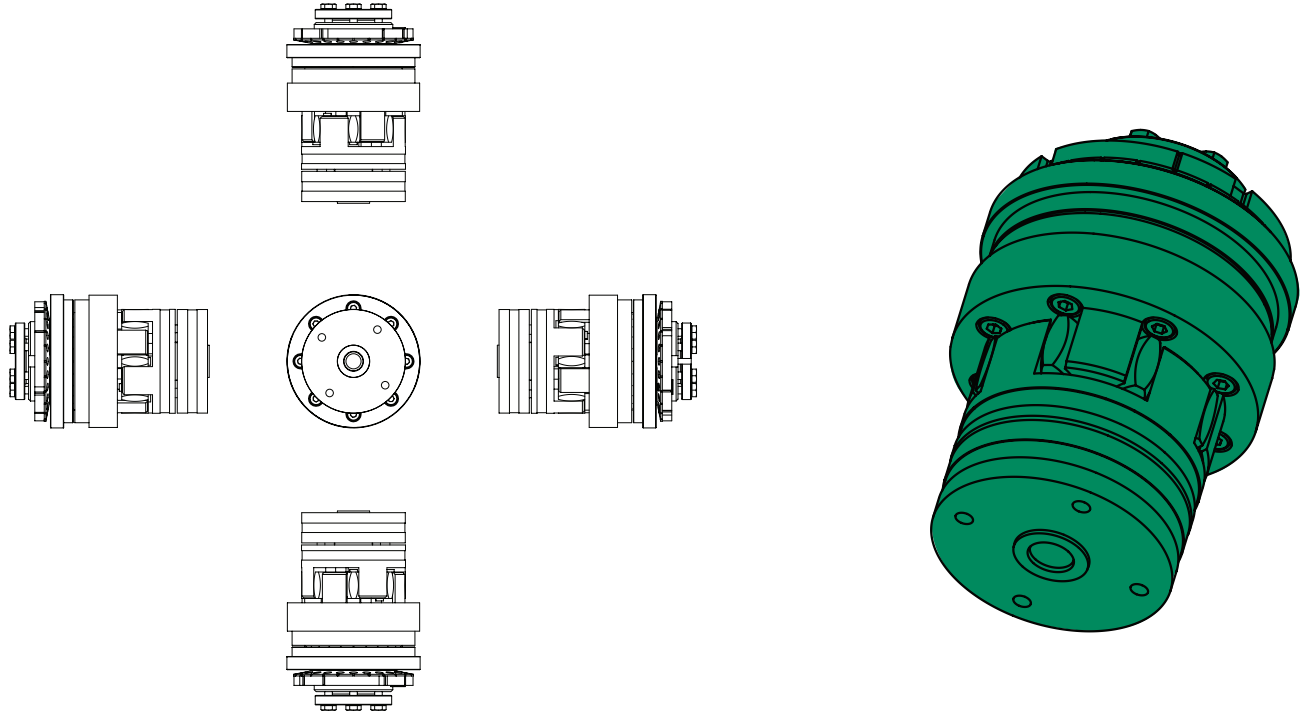
| ZBC Type P-R<br>Torque<br>Limiter Side | Available Bore Sizes/Transmissible Torque (mm/Nm) |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |          |    |  |    |  |     |
|----------------------------------------|---------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|----------|----|--|----|--|-----|
|                                        | 10                                                | 11 | 12 | 14 | 15  | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55   | 60   | Ts<br>Nm |    |  |    |  |     |
|                                        | Size                                              |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |          |    |  |    |  |     |
| 25                                     | 65                                                | 70 | 75 | 90 | 95  | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |     |      | 3    |          |    |  |    |  |     |
| 30                                     |                                                   |    |    |    | 120 | 130 | 150 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |     |      |      |          | 10 |  |    |  |     |
| 40                                     |                                                   |    |    |    |     |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |     |      |      |          | 10 |  |    |  |     |
| 40                                     |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |      |          |    |  |    |  | 5.9 |
| 50                                     |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |      |          |    |  |    |  | 10  |
| 60                                     |                                                   |    |    |    |     |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160 |          |    |  | 10 |  |     |

| ZBC Type R<br>Coupling<br>Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |   |    |    |    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |          |
|--------------------------------|-----------------------------------------------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|----------|
|                                | 6                                                               | 8 | 10 | 11 | 14 | 15  | 16  | 19  | 20  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40   | 42   | 45   | 48   | 50   | 55   | Ts<br>Nm |
|                                | Size                                                            |   |    |    |    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |          |
| 25                             |                                                                 |   |    | 48 | 67 | 74  | 72  | 90  | 97  | 112 | 120 | 143 |     |     |     |     |      |      |      |      |      |      | 6        |
| 30                             |                                                                 |   |    |    |    | 142 | 154 | 189 | 188 | 237 | 250 | 280 | 307 | 310 | 353 | 389 |      |      |      |      |      |      | 6        |
| 40                             |                                                                 |   |    |    |    |     |     |     | 269 | 337 | 356 | 398 | 436 | 442 | 501 | 533 | 572  | 585  | 644  |      |      |      | 10       |
| 50                             |                                                                 |   |    |    |    |     |     |     |     |     | 399 | 445 | 506 | 470 | 566 | 581 | 630  | 647  | 728  | 836  | 858  |      | 35       |
| 60                             |                                                                 |   |    |    |    |     |     |     |     |     |     |     | 775 | 819 | 955 | 999 | 1090 | 1091 | 1230 | 1334 | 1381 | 1540 | 69       |

\*Ts (Nm) Shrink disc screws tightening torque

# ZBC Zero Backlash Torque Limiters – Type R

with Flexible Coupling and Shrink Disc



## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |        |                                                                                     |     |           |     |                    |     |       |     |     |     |     |     |     |     |    |
|---------------------------|-----------|----------------------------|------------------|------|--------------|--------|-------------------------------------------------------------------------------------|-----|-----------|-----|--------------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|----|
| Range                     | Type      |                            |                  | Size | Disc Springs |        | Torque Limiter Side (mm)                                                            |     |           |     | Coupling Side (mm) |     |       |     |     |     |     |     |     |     |    |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout | H-K-M-T                                                                             |     | J-L-N-P-R |     | M                  |     | N     |     | P   |     | R   |     | T   |     |    |
|                           |           |                            |                  |      |              |        | Min                                                                                 | Max | Min       | Max | Min                | Max | Min   | Max | Min | Max | Min | Max | Min | Max |    |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1      |  | 8   | 20        | 10  | 25                 | 8   | 25*** | 10  | 20  | 10  | 28  | 15  | 28  | 8   | 28 |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   |              |        |                                                                                     | 10  | 30***     | 15  | 30                 | 11  | 35    | 19  | 30  | 19  | 38  | 19  | 38  | 10  | 38 |
| NBC* Quick Guard          |           |                            |                  | 40   | M-Medium     | 2      |  | 12  | 35***     | 19  | 40                 | 11  | 50*** | 15  | 42  | 20  | 45  | 20  | 45  | 12  | 45 |
| NBC* Synchronous          | M**       | N** P**-R**                | with Coupling    | 50   |              |        |                                                                                     | 16  | 45***     | 32  | 50                 | 15  | 50*** | 24  | 42  | 28  | 48  | 28  | 50  | 14  | 55 |
|                           |           |                            |                  | 60   | LL-Heavy     | 4      |  | 22  | 50        | 32  | 60                 | 16  | 65    | 32  | 60  | 25  | 55  | 30  | 55  | 15  | 60 |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Stop Switch

| Type | Description                     |
|------|---------------------------------|
| A    | Mechanical                      |
| B    | Proximity sensor                |
| C    | Proximity sensor ext. transmitt |

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              |              |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              | Max<br>Speed |
|                           | S            | M       | L       |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380                  | 650                  | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200         |

## Inertia Momentum

| Type | R        |             |
|------|----------|-------------|
|      | Hub Side | Flange Side |
|      | ZBC      |             |
|      | kg x cm² |             |
| 11   | —        | —           |
| 16   | —        | —           |
| 20   | —        | —           |
| 25   | 2.22     | 4           |
| 30   | 5.58     | 10          |
| 40   | 14.58    | 20          |
| 50   | 29.88    | 50          |
| 60   | 72.01    | 114         |

\*Corresponding to min. bore

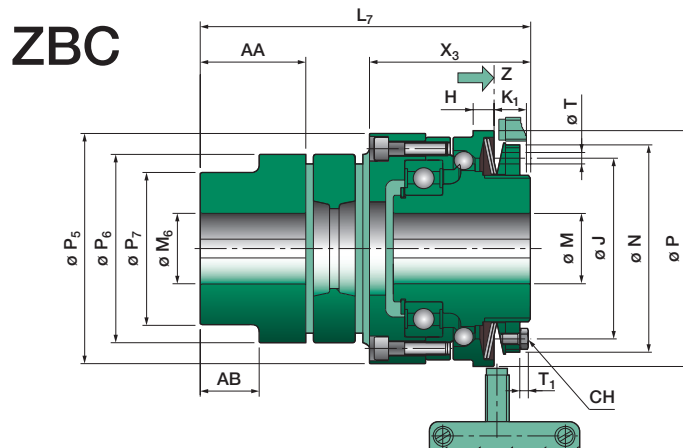
## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40 Order Code: R50LL40B+K

NBC Sychron Type J – Size 16 – Springs L – Ø40 – Ø 40 Order Code: J16L14B+K

# ZBC Zero Backlash Torque Limiters – Type T

with Flexible Coupling, Pilot Bored



## Dimensions

| Size | Overall Dimensions |                |      |                |                |          |                |     |     |     |                |                |                |   |                |    |                |     |    |    |
|------|--------------------|----------------|------|----------------|----------------|----------|----------------|-----|-----|-----|----------------|----------------|----------------|---|----------------|----|----------------|-----|----|----|
|      | H                  | K <sub>1</sub> | J    | L <sub>7</sub> | M <sub>1</sub> |          | M <sub>6</sub> |     | N   | P   | P <sub>5</sub> | P <sub>6</sub> | P <sub>7</sub> | T | T <sub>1</sub> | CH | X <sub>3</sub> | Z   | AA | AB |
|      |                    |                |      |                | Min            | Max      | Min            | Max |     |     |                |                |                |   |                |    |                |     |    |    |
| 25   | 7                  | 12             | 54.5 | 95             | 10<br>19       | 20<br>25 | 8              | 28  | 63  | 70  | 70             | 55             | —              | 5 | 2.8            | 7  | 47             | 1.2 | 30 | —  |
| 30   | 8                  | 12             | 69   | 111.5          | 15             | 30       | 10             | 38  | 77  | 85  | 85             | 65             | —              | 5 | 2.8            | 7  | 56.5           | 1.5 | 35 | —  |
| 40   | 9                  | 14             | 77   | 138            | 19<br>32       | 30<br>40 | 12             | 45  | 88  | 100 | 100            | 80             | —              | 5 | 3.5            | 8  | 69             | 1.8 | 45 | —  |
| 50   | 10                 | 16             | 87.5 | 150            | 32             | 50       | 14             | 55  | 100 | 115 | 115            | 95             | 85             | 6 | 4              | 10 | 74             | 2   | 50 | 28 |
| 60   | 12                 | 21             | 106  | 171            | 32<br>55       | 50<br>60 | 15             | 60  | 122 | 135 | 135            | 105            | 95             | 7 | 4              | 10 | 87             | 2.2 | 56 | 32 |

## Available Bore Sizes

| ZBC Type P-R<br>Torque<br>Limiter Side | Available Bore Sizes/Transmissible Torque (mm/Nm) |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |          |    |  |    |    |     |
|----------------------------------------|---------------------------------------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|----|--|----|----|-----|
|                                        | 10                                                | 11 | 12 | 14 | 15 | 16  | 18  | 19  | 20  | 22  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55  | 60   | Ts<br>Nm |    |  |    |    |     |
| Size                                   | 25                                                | 65 | 70 | 75 | 90 | 95  | 100 | 115 | 120 | 130 | 140 | 150 | 160 |     |     |     |     |     |     |     |     |     |     | 3    |          |    |  |    |    |     |
| 30                                     |                                                   |    |    |    |    | 120 | 130 | 150 | 160 | 180 | 190 | 210 | 220 | 240 | 260 |     |     |     |     |     |     |     |     |      |          | 10 |  |    |    |     |
| 40                                     |                                                   |    |    |    |    |     |     |     | 240 | 260 | 290 | 310 | 320 | 360 | 390 |     |     |     |     |     |     |     |     |      |          | 10 |  |    |    |     |
| 40                                     |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 440 | 480 | 520 | 550 |     |     |     |     |      |          |    |  |    |    | 5.9 |
| 50                                     |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 620 | 680 | 730 | 770 | 810 | 870 | 930 | 970 |      |          |    |  |    | 10 |     |
| 60                                     |                                                   |    |    |    |    |     |     |     |     |     |     |     |     |     |     | 680 | 700 | 740 | 780 | 820 | 870 | 930 | 970 | 1070 | 1160     |    |  | 10 |    |     |

| ZBC Type P<br>Coupling Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |          |
|-----------------------------|-----------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----------|
|                             | 8                                                               | 10 | 11 | 14 | 15 | 16 | 19 | 20  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40  | 42  | 45  | 48  | 50  | 55 | 60 | 65 | Ts<br>Nm |
| 25                          | 34                                                              | 35 | 36 | 38 | 39 | 39 | 41 | 43  | 45  | 46  |     |     |     |     |     |     |     |     |     |     |    |    |    | 10.5     |
| 30                          |                                                                 |    |    | 80 | 81 | 81 | 85 | 87  | 91  | 92  | 97  | 99  | 102 | 105 | 109 |     |     |     |     |     |    |    |    | 25       |
| 40                          |                                                                 |    |    |    | 92 | 94 | 98 | 99  | 104 | 105 | 109 | 112 | 113 | 118 | 122 | 123 | 126 | 130 |     |     |    |    |    | 25       |
| 50                          |                                                                 |    |    |    |    |    |    | 232 | 244 | 246 | 255 | 260 | 266 | 274 | 283 | 288 | 294 | 301 | 309 |     |    |    |    | 69       |
| 60                          |                                                                 |    |    |    |    |    |    |     | 393 | 405 | 413 | 421 | 434 | 445 | 454 | 462 | 473 | 486 | 494 | 514 |    |    |    | 120      |

\*Ts (Nm) Clamping hub screw tightening torque

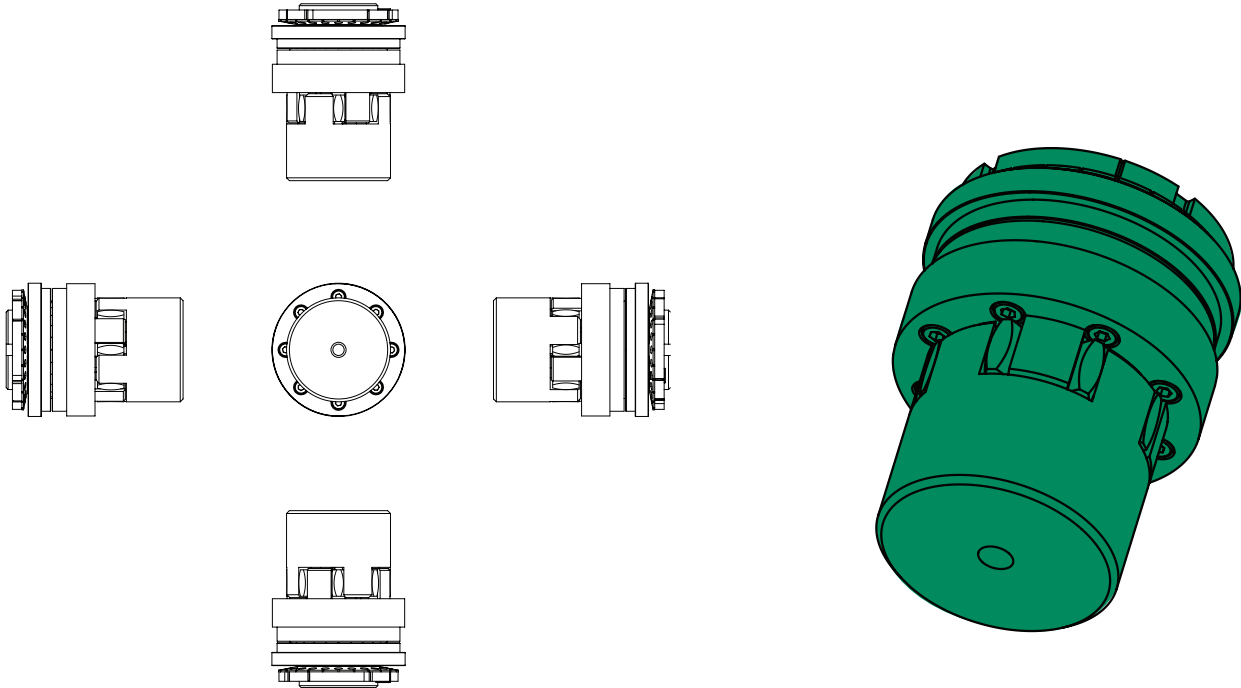
| ZBC Type R<br>Coupling<br>Side | Available Bore Sizes/Transmissible Torque Coupling Side (mm/Nm) |   |    |    |    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |          |
|--------------------------------|-----------------------------------------------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|----------|
|                                | 6                                                               | 8 | 10 | 11 | 14 | 15  | 16  | 19  | 20  | 24  | 25  | 28  | 30  | 32  | 35  | 38  | 40   | 42   | 45   | 48   | 50   | 55   | Ts<br>Nm |
| Size                           | 25                                                              |   |    | 48 | 67 | 74  | 72  | 90  | 97  | 112 | 120 | 143 |     |     |     |     |      |      |      |      |      |      | 6        |
| 30                             |                                                                 |   |    |    |    | 142 | 154 | 189 | 188 | 237 | 250 | 280 | 307 | 310 | 353 | 389 |      |      |      |      |      |      | 6        |
| 40                             |                                                                 |   |    |    |    |     |     |     | 269 | 337 | 356 | 398 | 436 | 442 | 501 | 533 | 572  | 585  | 644  |      |      |      | 10       |
| 50                             |                                                                 |   |    |    |    |     |     |     |     |     | 399 | 445 | 506 | 470 | 566 | 581 | 630  | 647  | 728  | 836  | 858  |      | 35       |
| 60                             |                                                                 |   |    |    |    |     |     |     |     |     |     |     | 775 | 819 | 955 | 999 | 1090 | 1091 | 1230 | 1334 | 1381 | 1540 | 69       |

\*Ts (Nm) Shrink disc screws tightening torque



# ZBC Zero Backlash Torque Limiters – Type T

with Flexible Coupling, Pilot Bored



## Arrangement Possibilities

| Arrangement Possibilities |           |                            |                  | ZBC  |              |                                                                                       |                          |       |           |     |                    |       |     |     |     |     |     |     |     |     |
|---------------------------|-----------|----------------------------|------------------|------|--------------|---------------------------------------------------------------------------------------|--------------------------|-------|-----------|-----|--------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| Range                     | Type      |                            |                  | Size | Disc Springs |                                                                                       | Torque Limiter Side (mm) |       |           |     | Coupling Side (mm) |       |     |     |     |     |     |     |     |     |
|                           | Pre-Bored | with Cone Clamping Element | Form             |      | Code         | Layout                                                                                | H-K-M-T                  |       | J-L-N-P-R |     | M                  |       | N   |     | P   |     | R   |     | T   |     |
|                           |           |                            |                  |      |              |                                                                                       | Min                      | Max   | Min       | Max | Min                | Max   | Min | Max | Min | Max | Min | Max | Min | Max |
| ZBC Quick Guard           | H         | J                          | Basic Type       | 25   | S-Light      | 1  | 8                        | 20    | 10        | 25  | 8                  | 25*** | 10  | 20  | 10  | 28  | 15  | 28  | 8   | 28  |
| ZBC Synchronous           | K         | L                          | for Large Drives | 30   |              |                                                                                       | 10                       | 30*** | 15        | 30  | 11                 | 35    | 19  | 30  | 19  | 38  | 19  | 38  | 10  | 38  |
| NBC* Quick Guard          |           |                            |                  | 40   | M-Medium     | 2  | 12                       | 35*** | 19        | 40  | 11                 | 50*** | 15  | 42  | 20  | 45  | 20  | 45  | 12  | 45  |
| NBC* Synchronous          | M**       | N**P**-R**                 | with Coupling    | 50   |              |                                                                                       | 16                       | 45*** | 32        | 50  | 15                 | 50*** | 24  | 42  | 28  | 48  | 28  | 50  | 14  | 55  |
|                           |           |                            |                  | 60   | LL-Heavy     | 4  | 22                       | 50    | 32        | 60  | 16                 | 65    | 32  | 60  | 25  | 55  | 30  | 55  | 15  | 60  |

\*Only in the form H-K-J-L

\*\* Only in the range ZBC

\*\*\* d max with keyway seat according to DIN 6885/3

## Stop Switch

| Type | Description                     |
|------|---------------------------------|
| A    | Mechanical                      |
| B    | Proximity sensor                |
| C    | Proximity sensor ext. transmitt |

## Technical Characteristics

| ZBC                       |              |         |         |               |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
|---------------------------|--------------|---------|---------|---------------|--------------------------|----------------------|----------------------|---------------|-------------|--------------|-------------------|-------------|--------------|-------------------|-------------|--------------|--------------|
| Disengagement Torque (Nm) |              |         |         | Coupling Type |                          |                      |                      |               |             |              |                   |             |              |                   |             |              |              |
| Size                      | Disc Springs |         |         | Size          | Couplings Nominal Torque |                      |                      | Misalignments |             |              |                   |             |              |                   |             |              |              |
|                           |              |         |         |               | M-N                      | P-R<br>92<br>Shore A | P-R<br>98<br>Shore A | M-N           |             |              | P-R<br>92 Shore A |             |              | P-R<br>98 Shore A |             |              | Max<br>Speed |
|                           | S            | M       | LL      |               | Nm                       | Nm                   | Nm                   | Δ ax<br>mm    | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | Δ ax<br>mm        | Δ rad<br>mm | Δ ang<br>(°) | n/1'         |
| 25                        | 3-14         | 6-28    | 13-56   | 53            | 70                       | 70                   | 120                  | 0.4           | —           | 1            | 1.4               | 0.14        | 1            | 1.4               | 0.10        | 0.90         | 4000         |
| 30                        | 9-35         | 18-70   | 40-140  | 72            | 180                      | 190                  | 320                  | 0.5           | —           | 1            | 1.5               | 0.15        | 1            | 1.5               | 0.11        | 0.90         | 3000         |
| 40                        | 19-65        | 38-130  | 78-260  | 72<br>89      | 180<br>360               | 380                  | 650                  | 0.5<br>0.6    | —           | 1            | 1.8               | 0.17        | 1            | 1.8               | 0.12        | 0.90         | 2500         |
| 50                        | 35-110       | 80-220  | 160-440 | 89            | 430                      | 530                  | 900                  | 0.6           | —           | 1            | 2.0               | 0.19        | 1            | 2.0               | 0.14        | 0.90         | 2000         |
| 60                        | 80-185       | 160-370 | 320-740 | 118           | 790                      | 620                  | 1050                 | 0.8           | —           | 1            | 2.1               | 0.23        | 1            | 2.1               | 0.16        | 0.90         | 1200         |

## How to order:

ZBC Quickquard Type R – Size 50 – Springs LL – Ø40 – Ø 40 Order Code: R50LL40B+K

NBC Sychron Type J – Size 16 – Springs L – Ø40 – Ø 40 Order Code: J16L14B+K

# Bibbigard® Torque Limiters

## Bibbigard® Torque Limiter

Bibbigard® Torque Limiters eliminate the problems associated with slow reaction electrical overload devices, shear pins which give a wide release torque variation, or slip clutches which may rapidly overheat.



**Bibbigard® products can save you money – the initial cost is frequently more than covered by the saving in down-time even on the first overload.**

- Protect plant and transmission against overload.
- Full bi-directional operation in any plane.
- All metal totally-enclosed construction.
- Virtually no maintenance.
- Provide years of trouble-free service.
- Competitive first cost.

Many of our torque limiters have been purpose designed and manufactured to meet customers' specific operating requirements. If you have any specific requirements please contact Bibby Turboflex for assistance.

### Boring and Keywaying

Standard bores and keyways are manufactured to H8 and Js9 tolerances to BS4500: 1969, both in Metric and Imperial dimensions.

### Maintenance

During assembly all units are packed with a 3% Molybdenum Disulphide ( $\text{MoS}_2$ ) grease BP Energrease L21 M. Because of their uniquely fully enclosed design all units need only be stripped and re-packed with grease every two years. However, under extremely adverse conditions of environment and duty please consult Bibby Turboflex.

### Running in Oil

All Bibbigard units can be run in oil if required without affecting performance.

## Typical Applications

### Manual Reset

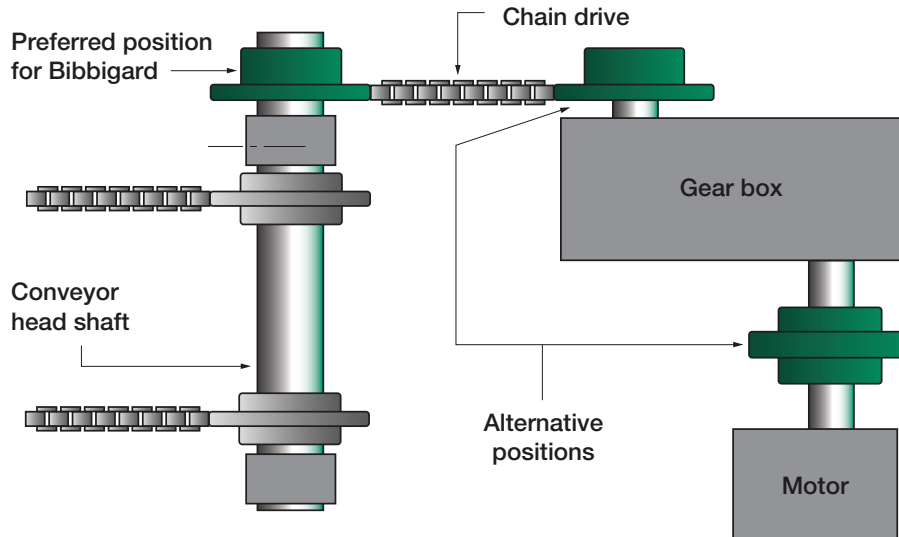
Type A: Conveyors, machine tools, woodworking and paper machinery, pumps, textile machinery, test rigs, packaging machinery, quarrying plant, Post Office machinery, extruders, automatic furnaces and ovens.

### Automatic Reset

Type B & C: Conveyors, bakery equipment, indexing drives, packaging, bottling and labeling machines, printing presses and special-purpose machines.

### Power Take-Off Protection

Type FV: Vane, lobe, screw and centrifugal pumps. Vane and lobe blowers, please contact Bibby Turboflex for further details.



## Torque Limiter Selection

### Types A, B, & C

#### For release torques up to 5500Nm

Decide on manual or automatic reset. Choose a position as near as possible to the expected overload (see diagram).

Calculate the torque setting required at that position. This can be determined from the motor power, r.p.m. and gearing ratio – the driven load – or from the maximum permissible torque for drive components such as crushing stress on keys. **It is the weakest component that requires protection.** Make allowance for motor starting torques (generally twice normal running torque).

Having calculated an approximate setting for the release torque, final adjustments can be made on site.

Check from tables that shaft, sprocket or pulley, etc. can be accommodated.

### Selection Example

#### Model 1000 Type AF

##### This specifies:

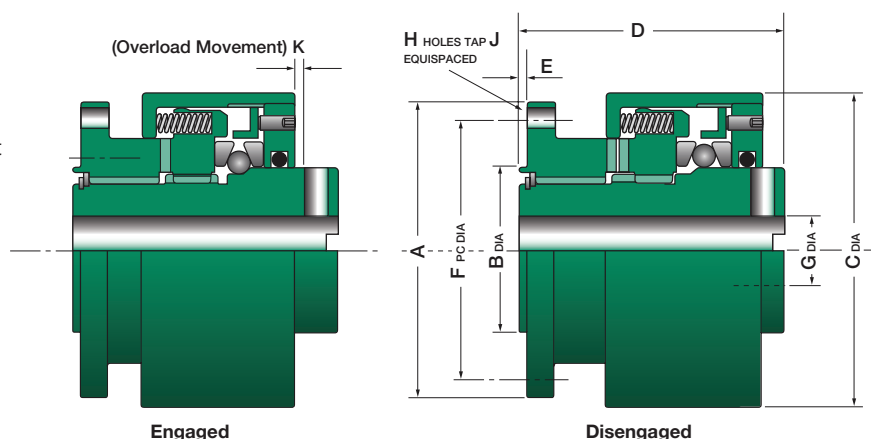
Manual reset clutch. Capable of 1000 lbf ft torque complete with flexible coupling for shaft-to-shaft application.

To enable us to deal efficiently with your enquiry, we ask you to supply the following facts:

- Type of application and environment conditions
- R.P.M. of drive
- Release torque required
- Length and diameters of shafts
- Space available between shaft ends
- Overall space available – length and diameter limitations
- Types and sizes of accessories, i.e. sprocket, pullet, etc.
- Any special requirements such as shifter flange, neoprene seals, etc.

# Bibbigard® Type AB – Manual Reset

Release Torque:  
14 to 5500Nm, 10 to 4000 lbf ft



## Dimensions

| Model  | Release Torque          |                       | ⑤<br>Max<br>Speed<br>rpm | Dimensions in mm and (inches) |                |                  |               |              |                |                |                 |   |     |                | Weight<br>kg<br>(lb) |
|--------|-------------------------|-----------------------|--------------------------|-------------------------------|----------------|------------------|---------------|--------------|----------------|----------------|-----------------|---|-----|----------------|----------------------|
|        | Min ①<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) |                          | A                             | ③<br>B         | C                | D             | E            | F              | G max          | ②<br>G min      | H | J   | K              |                      |
| 100AB  | 14<br>(10)              | 140<br>(100)          | 1500                     | 90<br>(3.54)                  | 55<br>(2.16)   | 93.5<br>(3.68)   | 85<br>(3.35)  | 3<br>(0.118) | 75<br>(2.95)   | 25.4<br>(1.00) | 12.7<br>(0.50)  | 6 | M8  | 6.35<br>(0.25) | 2.95<br>(6.5)        |
| 500AB  | 70<br>(50)              | 700<br>(500)          | 1500                     | 135<br>(5.31)                 | 80<br>(3.15)   | 123.8<br>(4.875) | 90<br>(3.54)  | 3<br>(0.118) | 100<br>(3.94)  | 40<br>(1.57)   | 19.05<br>(0.75) | 6 | M10 | 6.35<br>(0.25) | 5.59<br>(12.3)       |
| 1000AB | 475<br>(350)            | 1356<br>(1000)        | 1500                     | 180<br>(7.09)                 | 110<br>(4.33)  | 177.8<br>(7.00)  | 150<br>(5.91) | 3<br>(0.118) | 150<br>(5.91)  | 57<br>(2.24)   | 31.75<br>(1.25) | 6 | M12 | 6.35<br>(0.25) | 17<br>(37)           |
| 2000AB | 610<br>(450)            | 2712<br>(2000)        | 1500                     | 235<br>(9.25)                 | 150<br>(5.91)  | 228.6<br>(9)     | 150<br>(5.91) | 3<br>(0.118) | 195<br>(7.68)  | 77<br>(3.03)   | 38.1<br>(1.50)  | 6 | M16 | 6.35<br>(0.25) | 30<br>(66)           |
| 4000AB | 815<br>(600)            | 5500<br>(4000)        | 1000                     | 305<br>(12)                   | 200<br>(7.874) | 305<br>(12)      | 205<br>(8.07) | 3<br>(0.118) | 270<br>(10.63) | 102<br>(4.00)  | 50.8<br>(2.00)  | 6 | M20 | 8.13<br>(0.32) | 84<br>(185)          |

① Lower release torques can be achieved. Consult Bibby Turboflex.

② Dimensions G mm. and axial movement on overload also apply to Types AR, AF, AS and AP.

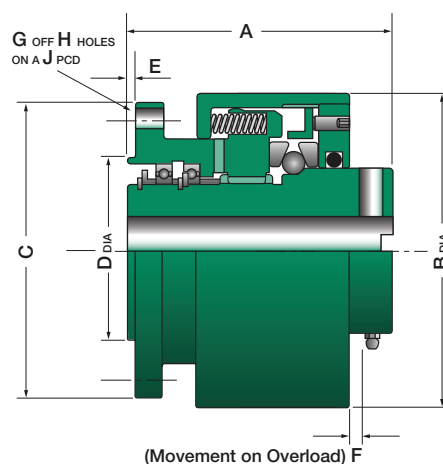
③ Tolerance on spigot diameter B is f7 to BS 4500:1969.

④ Standard tolerances on keyways is Js9 and on bores H8 to BS 4500:1969.

⑤ Applicable to all variants except AP Type.

# Bibbigard® Type AB/BM

## Type AB with ball bearing mounting

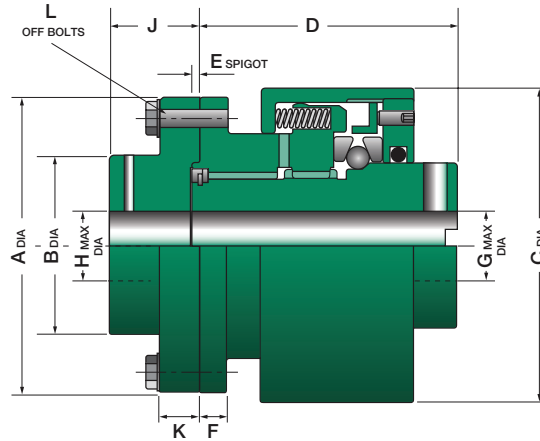


## Dimensions

| Model     | Max Bore | ⑤<br>Max<br>Speed<br>rpm | Dimensions in mm |     |     |               |   |      |   |     |     |
|-----------|----------|--------------------------|------------------|-----|-----|---------------|---|------|---|-----|-----|
|           |          |                          | A                | B   | C   | D             | E | F    | G | H   | J   |
| 100AB/BM  | 25       | 4500                     | 85               | 94  | 90  | 54.97/54.94   | 3 | 6.35 | 6 | M8  | 75  |
| 500AB/BM  | 40       | 3600                     | 90               | 124 | 120 | 79.97/79.94   | 3 | 6.35 | 6 | M10 | 100 |
| 1000AB/BM | 57       | 2400                     | 150              | 178 | 180 | 109.96/109.93 | 3 | 6.35 | 6 | M12 | 150 |
| 2000AB/BM | 79       | 1800                     | 150              | 229 | 235 | 149.96/149.92 | 3 | 6.35 | 6 | M16 | 195 |

# Bibbigard® Type AR

## Type AB combined with rigid coupling

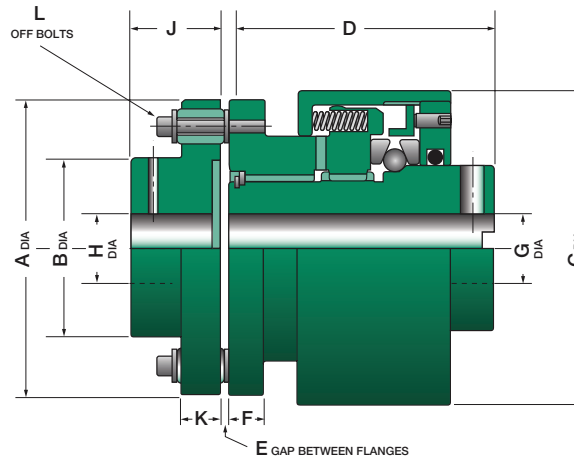


### Dimensions

| Model  | Release Torque        |                       | Dimensions in mm and (inches) |               |                  |               |              |              |                |               |               |              |   | Weight<br>kg<br>(lb) |
|--------|-----------------------|-----------------------|-------------------------------|---------------|------------------|---------------|--------------|--------------|----------------|---------------|---------------|--------------|---|----------------------|
|        | Min<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) | A                             | B             | C                | D             | E            | F            | G              | H             | J             | K            | L |                      |
| 100AR  | 14<br>(10)            | 140<br>(100)          | 90<br>(3.54)                  | 60<br>(2.36)  | 93.5<br>(3.68)   | 85<br>(3.35)  | 3<br>(0.118) | 10<br>(0.39) | 25.4<br>(1.00) | 40<br>(1.57)  | 40<br>(1.57)  | 15<br>(0.59) | 6 | 5.7<br>(12.5)        |
| 500AR  | 70<br>(50)            | 700<br>(500)          | 120<br>(4.72)                 | 75<br>(2.95)  | 123.8<br>(4.875) | 90<br>(3.54)  | 3<br>(0.118) | 13<br>(0.51) | 40<br>(1.57)   | 50<br>(1.97)  | 40<br>(1.57)  | 15<br>(0.59) | 6 | 10<br>(22)           |
| 1000AR | 475<br>(350)          | 1356<br>(1000)        | 180<br>(7.09)                 | 125<br>(4.92) | 177.8<br>(7.00)  | 150<br>(5.91) | 3<br>(0.118) | 22<br>(0.87) | 57<br>(2.24)   | 85<br>(3.35)  | 65<br>(2.56)  | 25<br>(0.98) | 6 | 25<br>(54)           |
| 2000AR | 610<br>(450)          | 2712<br>(2000)        | 235<br>(9.25)                 | 165<br>(6.50) | 228.6<br>(9.00)  | 150<br>(5.91) | 3<br>(0.118) | 22<br>(0.87) | 77<br>(3.03)   | 110<br>(4.33) | 95<br>(3.74)  | 25<br>(0.98) | 6 | 49<br>(108)          |
| 4000AR | 815<br>(600)          | 5500<br>(4000)        | 305<br>(12)                   | 215<br>(8.46) | 305<br>(12)      | 205<br>(8.07) | 3<br>(0.118) | 25<br>(0.98) | 102<br>(4.00)  | 140<br>(5.51) | 115<br>(4.53) | 30<br>(1.18) | 6 | 125<br>(275)         |

# Bibbigard® Type AF

## Type AB combined with Bibby Eflex flexible coupling



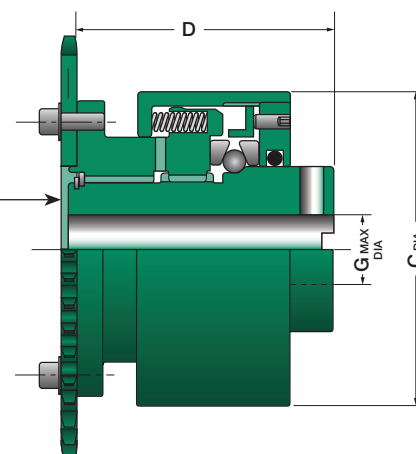
### Dimensions

| Model  | Release Torque        |                       | Dimensions in mm and (inches) |               |                  |               |             |              |                |               |              |               |              | Weight<br>kg<br>(lb) |                |
|--------|-----------------------|-----------------------|-------------------------------|---------------|------------------|---------------|-------------|--------------|----------------|---------------|--------------|---------------|--------------|----------------------|----------------|
|        | Min<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) | A                             | B             | C                | D             | E           | F            | G              | H max         | H min        | J             | K            |                      | L              |
| 100AF  | 14<br>(10)            | 140<br>(100)          | 145<br>(3.54)                 | 80<br>(3.15)  | 93.5<br>(3.68)   | 85<br>(3.35)  | 5<br>(0.20) | 15<br>(0.59) | 25.4<br>(1.00) | 58<br>(1.38)  | 16<br>(0.63) | 45<br>(1.77)  | 25<br>(0.98) | 3                    | 4.12<br>(9.17) |
| 500AF  | 70<br>(50)            | 700<br>(500)          | 195<br>(5.70)                 | 120<br>(4.72) | 123.8<br>(4.875) | 95<br>(3.74)  | 5<br>(0.20) | 20<br>(0.79) | 40<br>(1.57)   | 90<br>(2.28)  | 32<br>(0.63) | 70<br>(2.76)  | 30<br>(1.18) | 3                    | 10.4<br>(23)   |
| 1000AF | 475<br>(350)          | 1356<br>(1000)        | 195<br>(7.68)                 | 120<br>(4.72) | 177.8<br>(7.00)  | 150<br>(5.90) | 5<br>(0.20) | 25<br>(0.98) | 57<br>(2.24)   | 90<br>(3.54)  | 32<br>(1.26) | 70<br>(2.76)  | 30<br>(1.18) | 6                    | 33<br>(73)     |
| 2000AF | 610<br>(450)          | 2712<br>(2000)        | 240<br>(9.45)                 | 150<br>(5.90) | 228.6<br>(9.00)  | 150<br>(5.90) | 5<br>(0.20) | 25<br>(0.98) | 77<br>(3.03)   | 110<br>(4.33) | 42<br>(1.65) | 85<br>(3.39)  | 35<br>(1.38) | 8                    | 58<br>(127)    |
| 4000AF | 815<br>(600)          | 5500<br>(4000)        | 320<br>(11.42)                | 180<br>(7.09) | 305<br>(12)      | 205<br>(8.07) | 6<br>(0.24) | 40<br>(1.57) | 102<br>(4.00)  | 130<br>(5.12) | 60<br>(2.36) | 120<br>(4.72) | 50<br>(1.97) | 8                    | 102<br>(227)   |

# Bibbigard® Type AS

## Type AB combined with chainwheel

Duplex and Triplex sprockets will usually be supplied bushed to run on customer's shaft for additional support.

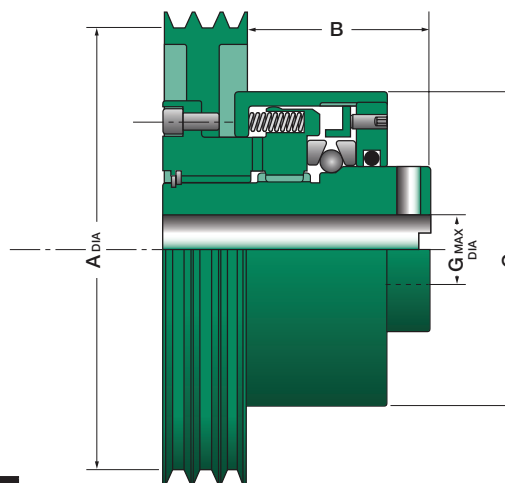


### Dimensions

| Model  | Release Torque  |                 | Dimensions in mm and (inches) |            |             | Smallest Standard Sprocket (number of teeth) |            |            |            |          |
|--------|-----------------|-----------------|-------------------------------|------------|-------------|----------------------------------------------|------------|------------|------------|----------|
|        | Min Nm (lbf ft) | Max Nm (lbf ft) | C                             | D          | G           | 3/8" pitch                                   | 1/2" pitch | 5/8" pitch | 3/4" pitch | 1" pitch |
| 100AS  | 14 (10)         | 140 (100)       | 93.5 (3.68)                   | 82 (3.23)  | 25.4 (1.00) | 38                                           | 26         | 21         | 18         | 15       |
| 500AS  | 70 (50)         | 700 (500)       | 123.8 (4.875)                 | 87 (3.43)  | 40 (1.57)   | 57                                           | 33         | 27         | 23         | 18       |
| 1000AS | 475 (350)       | 1356 (1000)     | 177.8 (7.00)                  | 147 (5.79) | 57 (2.24)   |                                              | 48         | 39         | 38         | 26       |
| 2000AS | 610 (450)       | 2712 (2000)     | 228.6 (9.00)                  | 147 (5.79) | 77 (3.03)   |                                              |            | 50         | 57         | 38       |
| 4000AS | 815 (600)       | 5500 (4000)     | 305 (12)                      | 202 (7.95) | 102 (4.00)  |                                              |            |            | 57         | 57       |

# Bibbigard® Type AP

## Type AB combined with pulley

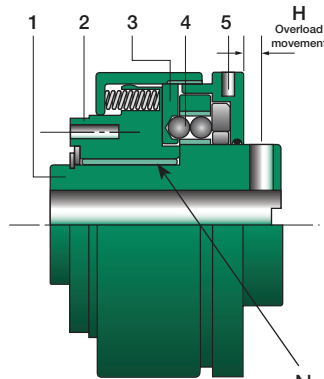


### Dimensions

| Model  | Release Torque  |                 | Max Speed                      | Dimensions in mm and (inches) |                                                 |               |             |
|--------|-----------------|-----------------|--------------------------------|-------------------------------|-------------------------------------------------|---------------|-------------|
|        | Min Nm (lbf ft) | Max Nm (lbf ft) |                                | A                             | B                                               | C             | G           |
| 100AP  | 14 (10)         | 140 (100)       | Dependant upon Pulley Diameter | 115 (4.53)                    | Dimension to suit Customers Pulley Requirements | 93.5 (3.68)   | 25.4 (1.00) |
| 500AP  | 70 (50)         | 700 (500)       |                                | 155 (6.10)                    |                                                 | 123.8 (4.875) | 40 (1.57)   |
| 1000AP | 475 (350)       | 1356 (1000)     |                                | 210 (8.27)                    |                                                 | 177.8 (7.00)  | 57 (2.24)   |
| 2000AP | 610 (450)       | 2712 (2000)     |                                | 270 (10.63)                   |                                                 | 228.6 (9.00)  | 77 (3.03)   |

# Bibbigard® Type B – Automatic Reset

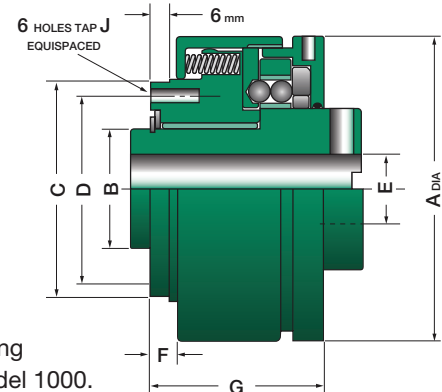
Release Torque:  
70 to 1356Nm, 50 to 1000 lbf ft



## Technical Features

- Instant release at pre-set torque
- Smooth hold-out for one revolution
- Means for motor switch-off
- Automatic self-engagement on restart without loss of phasing
- Also available fitted with Pulley (BP)
- Rigid coupling (BR)

Note: Ball bearing standard on model 1000.  
Ball bearing or bronze bush on model 550 depending on application requirement.



## Dimensions

| Model | Release Torque        |                       | ①<br>Max<br>Speed<br>rpm | Dimensions in mm and (inches) |              |                 |               |              |              |              |               |             |     | Weight<br>kg<br>(lb) |
|-------|-----------------------|-----------------------|--------------------------|-------------------------------|--------------|-----------------|---------------|--------------|--------------|--------------|---------------|-------------|-----|----------------------|
|       | Min<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) |                          | A                             | B            | C               | D             | E max        | E min        | F            | G             | ①<br>H      | J   |                      |
| 550B  | 68<br>(50)            | 745<br>(550)          | 500                      | 145<br>(5.70)                 | 67<br>(2.63) | 10617<br>(4.25) | 95<br>(3.74)  | 44<br>(1.75) | 19<br>(0.75) | 15<br>(0.59) | 100<br>(3.93) | 3<br>(0.12) | M8  | 8<br>(17.6)          |
| 1000B | 338<br>(250)          | 1356<br>(1000)        | 500                      | 205<br>(8.07)                 | 85<br>(3.34) | 14217<br>(5.66) | 125<br>(4.92) | 57<br>(2.25) | 32<br>(1.25) | 20<br>(0.78) | 150<br>(5.9)  | 4<br>(0.16) | M12 | 25<br>(55)           |

① Applicable to all variants

Note: Type B clutches should always be used with a limit switch to bring the drive to rest within a few revolutions thus preventing possible damage by continual releasing and resetting.

## Normal Running

The drive is transmitted between the hub flange (1) and the drive flange (2) by the balls (4), spring-loaded into the pockets on the ball detent ring (3) secured by dowels.

## Disengagement

On overload, the balls are displaced axially through the hub flange, further compressing the springs. Once out of their pockets, the balls roll on the face of the hub flange for one revolution before re-engaging and synchronising the drive.

## Torque Adjustment

The release torque is set by tightening nut (5) thus increasing the spring pressure. After setting, the nut is locked by grub screw.

## Installation

Clutches can be supplied pilot bored or may be finish bored and keywayed. The hub may be fitted to either shaft and should be axially constrained against a shoulder to resist the resetting force and locked by means of a grub screw onto the shafts key. The drive flange may be connected to a flexible coupling or can carry a sprocket or pulley.

## Application

This type of protection is ideally suited to drives where it is essential to restart in the correct sequence and where access for manual resetting is not available.

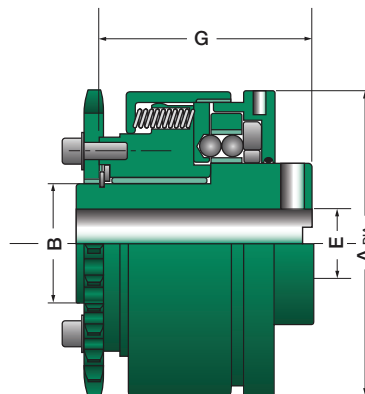
# Bibbigard® Type BS

## Type B combined with chainwheel

Ball bearing standard on Model 1000. Ball bearing or bronze bush on Model 550 depending on application requirement.

Duplex and Triplex sprockets will usually be supplied bushed to run on customer's shaft for additional support.

For sprockets smaller than listed, an adaptor is used. Details on request.

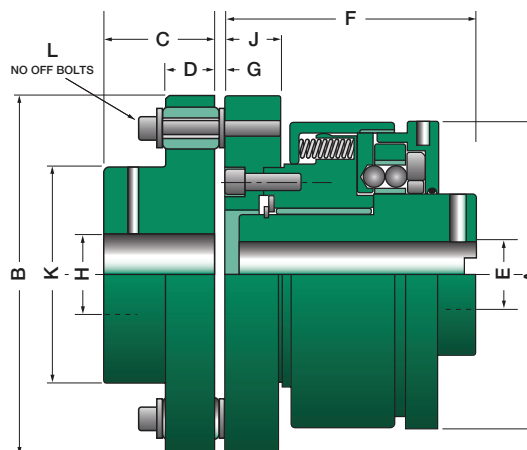


### Dimensions

| Model  | Release Torque  |                 | Dimensions in mm and (inches) |              |              |              |               | Smallest Standard Sprocket (number of teeth) |            |            |            |          |
|--------|-----------------|-----------------|-------------------------------|--------------|--------------|--------------|---------------|----------------------------------------------|------------|------------|------------|----------|
|        | Min Nm (lbf ft) | Max Nm (lbf ft) | A                             | B            | E max        | E min        | G             | 3/8" pitch                                   | 1/2" pitch | 5/8" pitch | 3/4" pitch | 1" pitch |
| 550BS  | 68<br>(50)      | 745<br>(550)    | 145<br>(5.70)                 | 67<br>(2.63) | 44<br>(1.75) | 19<br>(0.75) | 85<br>(3.34)  | 40                                           | 31         | 26         | 22         | 18       |
| 1000BS | 338<br>(250)    | 1356<br>(1000)  | 205<br>(8.07)                 | 80<br>(3.14) | 57<br>(2.25) | 32<br>(1.25) | 130<br>(5.11) | 51                                           | 40         | 32         | 28         | 22       |

# Bibbigard® Type BF

## Type AB combined with Bibby Eflex flexible coupling



### Dimensions

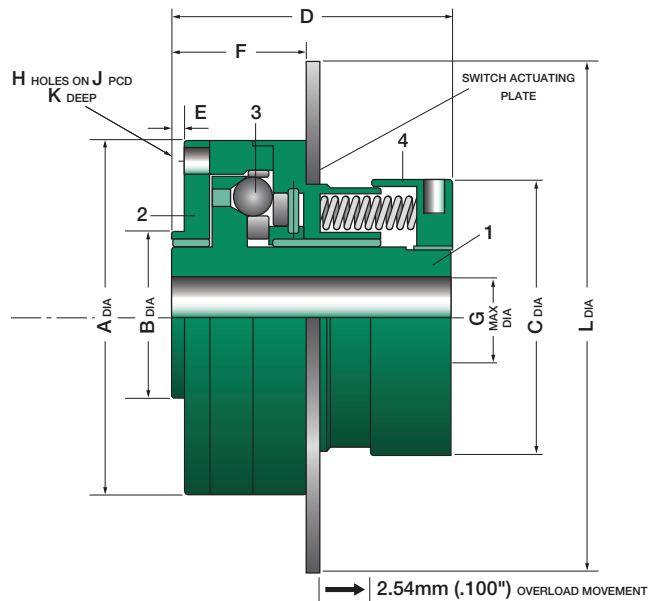
| Model  | Release Torque  |                 | Dimensions in mm and (inches) |               |              |              |              |              |               |             |              |              |              |               |   | Weight kg (lb) |
|--------|-----------------|-----------------|-------------------------------|---------------|--------------|--------------|--------------|--------------|---------------|-------------|--------------|--------------|--------------|---------------|---|----------------|
|        | Min Nm (lbf ft) | Max Nm (lbf ft) | A                             | B             | C            | D            | E max        | E min        | F             | G           | H max        | H min        | J            | K             | L |                |
| 550BF  | 68<br>(50)      | 745<br>(550)    | 195<br>(7.67)                 | 145<br>(5.70) | 70<br>(2.76) | 25<br>(0.98) | 44<br>(1.75) | 19<br>(0.75) | 105<br>(4.13) | 5<br>(0.19) | 58<br>(2.28) | 16<br>(0.63) | 22<br>(0.87) | 120<br>(4.72) | 4 | 23<br>(51)     |
| 1000BF | 338<br>(250)    | 1356<br>(1000)  | 205<br>(8.07)                 | 195<br>(7.67) | 65<br>(2.56) | 30<br>(1.18) | 57<br>(2.25) | 32<br>(1.25) | 155<br>(6.10) | 5<br>(0.19) | 90<br>(3.54) | 32<br>(1.26) | 25<br>(1.0)  | 120<br>(4.72) | 6 | 40<br>(88)     |



Automatic Reset Release Torque:  
14 to 210Nm, 10 to 150 lbf ft

## Technical Features

- Instant release at pre-set torque
- Smooth hold-out for one revolution
- Means for motor switch-off
- Automatic self-engagement on restart without loss of phasing



## Dimensions

| Model | ① Release Torque |                 | ⑤ Max Speed rpm | Dimensions in mm and inches |           |           |           |             |           |           |      |           |           |            | Weight kg (lb) |
|-------|------------------|-----------------|-----------------|-----------------------------|-----------|-----------|-----------|-------------|-----------|-----------|------|-----------|-----------|------------|----------------|
|       | Min Nm (lbf ft)  | Max Nm (lbf ft) |                 | A                           | ② B       | C         | D         | E           | F         | G         | H    | J         | K         | L          |                |
| 20CB  | 14 (10)          | 48 (35)         | 250             | 76 (2.98)                   | 35 (1.38) | 60 (2.37) | 62 (2.44) | 2.5 (0.098) | 31 (1.23) | 16 (0.63) | 3-M6 | 66 (2.60) | 8 (0.31)  | 120 (4.72) | 1.36 (3)       |
| 150CB | 42 (30)          | 210 (150)       | 250             | 94 (3.70)                   | 54 (2.13) | 87 (3.44) | 66 (2.60) | 3 (0.118)   | 34 (1.33) | 28 (1.13) | 6-M6 | 84 (3.31) | 11 (0.44) | 130 (5.11) | 2.80 (6.20)    |

① Lower release torques can be achieved. Consult Bibby Turboflex.

② Tolerance on spigot diameter B is f7 to BS 4500:1969.

③ For higher release torques use Type B on page 47.

④ Standard tolerances on keyways is Js9 and on bores H8 to B5 4500:1969.

⑤ Applicable to all variants.

## Normal Running

The drive is transmitted between the hub flange (1) and the housing (2) by the balls (3), spring-loaded into the pockets on the flange face.

## Disengagement

On overload, the balls are displaced axially through the housing, further compressing the springs. Once out of their pockets, the balls roll on the face of the hub flange for one revolution before re-engaging and synchronising the drive.

## Torque Adjustment

The release torque is set by tightening nut (4) thus increasing the spring pressure. After setting, the nut is locked with a grub screw and plug.

## Installation

Clutches can be supplied pilot bored or finish bored and keywayed. The hub may be fitted to either shaft and should be located against a shoulder to resist the resetting spring force and locked by means of grub screw in the hub flange. The drive flange may be replaced by a sprocket, pulley, etc., or connected to a coupling.

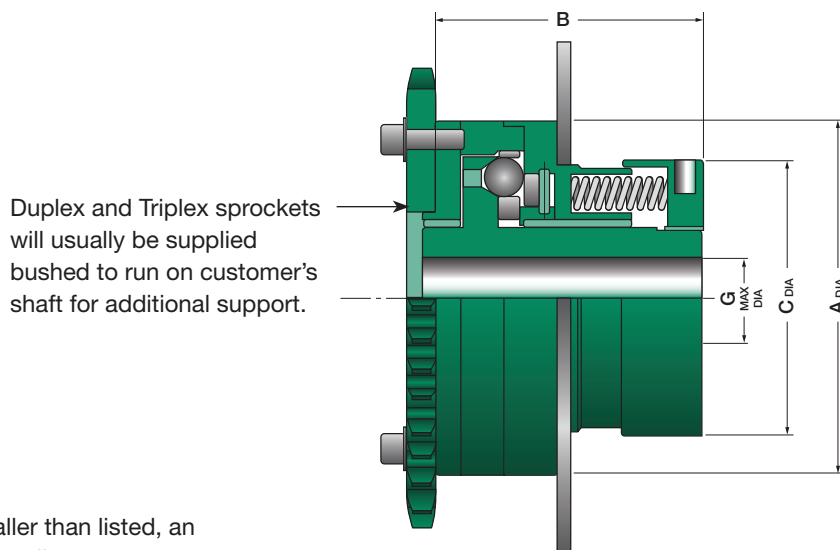
## Application

This type of protection is ideally suited to drives such as wrapping and packing machinery where it is essential to restart in the correct sequence and where access for manual resetting is not available.

**Type C clutches should always be used with a limit switch to bring the drive to rest within a few revolutions thus preventing possible damage by continual releasing and resetting.**

# Bibbigard® Type CS

## Type CB combined with sprocket



For sprockets smaller than listed, an adaptor is used. Details on request.

### Dimensions

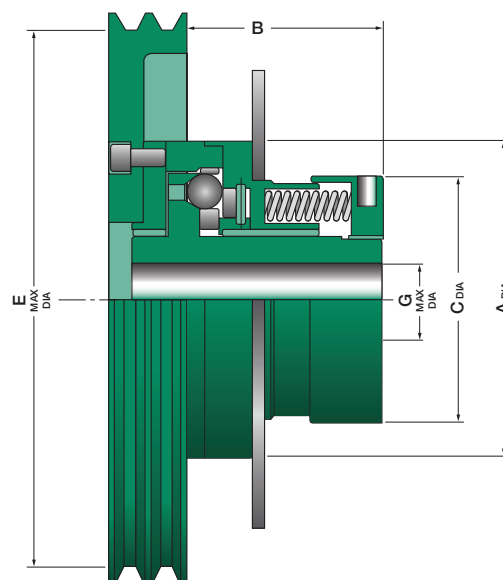
| Model | Release Torque  |                 | Dimensions in mm and (inches) |                |              |               | Smallest Standard Sprocket (number of teeth) |            |            |            |          |
|-------|-----------------|-----------------|-------------------------------|----------------|--------------|---------------|----------------------------------------------|------------|------------|------------|----------|
|       | Min Nm (lbf ft) | Max Nm (lbf ft) | A                             | B              | C            | G max         | 3/8" pitch                                   | 1/2" pitch | 5/8" pitch | 3/4" pitch | 1" pitch |
| 20CS  | 14<br>(10)      | 48<br>(35)      | 76<br>(2.98)                  | 59.5<br>(2.34) | 60<br>(2.37) | 16<br>(0.625) | 30                                           | 22         | 19         | 17         | 14       |
| 150CS | 42<br>(30)      | 210<br>(150)    | 94<br>(3.70)                  | 63<br>(2.48)   | 87<br>(3.44) | 28<br>(1.125) | 38                                           | 28         | 23         | 20         | 15       |

# Bibbigard® Type CP

## Type CB combined with pulley

Pulleys to suit the following belts can also be supplied:- standard 'V' section, flat, poly, 'V', and timing or toothed.

For pulleys smaller than listed, an adaptor is used. Details available on request.

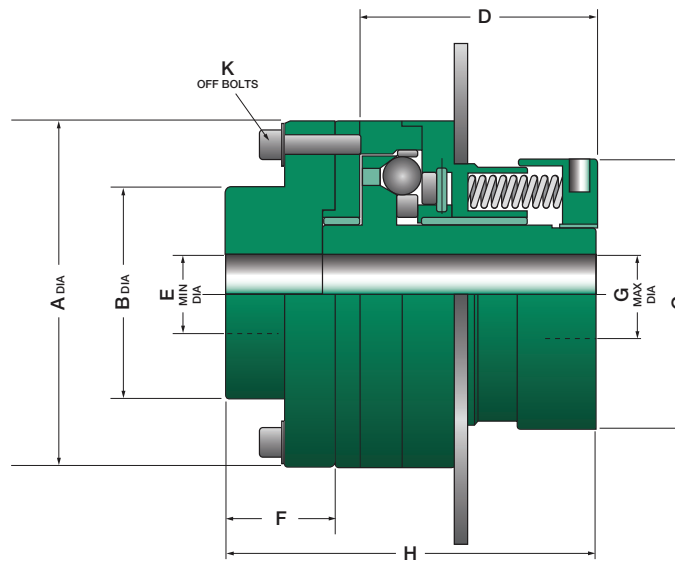


### Dimensions

| Model | Release Torque  |                 | Dimensions in mm and (inches) |         |              |                |               |
|-------|-----------------|-----------------|-------------------------------|---------|--------------|----------------|---------------|
|       | Min Nm (lbf ft) | Max Nm (lbf ft) | A                             | B       | C            | E              | G             |
| 20CP  | 14<br>(10)      | 48<br>(35)      | 76<br>(2.98)                  | to suit | 60<br>(2.37) | 102<br>(4.00)  | 16<br>(0.625) |
| 150CP | 42<br>(30)      | 210<br>(150)    | 94<br>(3.70)                  | to suit | 87<br>(3.44) | 124<br>(4.875) | 28<br>(1.125) |

# Bibbigard® Type CR

Type CB combined with rigid coupling



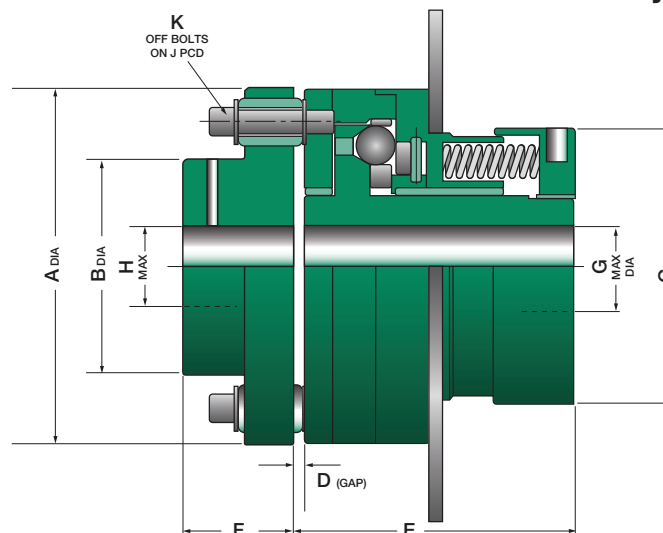
This arrangement will not accommodate any misalignment.

## Dimensions

| Model | Release Torque        |                       | Dimensions in mm and (inches) |              |              |              |              |              |              |               |   | Weight<br>kg<br>(lb) |
|-------|-----------------------|-----------------------|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---|----------------------|
|       | Min<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) | A                             | B            | C            | D            | E            | F            | G            | H             | K |                      |
| 20CR  | 14<br>(10)            | 48<br>(35)            | 76<br>(2.99)                  | 55<br>(2.17) | 60<br>(2.37) | 62<br>(2.44) | 35<br>(1.38) | 38<br>(1.50) | 16<br>(0.63) | 98<br>(3.85)  | 3 | 2<br>(4.5)           |
| 150CR | 42<br>(30)            | 210<br>(150)          | 94<br>(3.70)                  | 71<br>(2.80) | 87<br>(3.44) | 66<br>(2.60) | 44<br>(1.73) | 51<br>(2.00) | 28<br>(1.10) | 114<br>(4.48) | 6 | 4.3<br>(9.5)         |

# Bibbigard® Type CF

Type CB combined with Bibby  
Eflex flexible coupling



## Dimensions

| Model | Release Torque        |                       | Dimensions in mm and (inches) |              |              |             |              |              |              |              |              |   | Weight<br>kg<br>(lb) |
|-------|-----------------------|-----------------------|-------------------------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|---|----------------------|
|       | Min<br>Nm<br>(lbf ft) | Max<br>Nm<br>(lbf ft) | A                             | B            | C            | D           | E            | F            | G            | H            | J            | K |                      |
| 20CF  | 14<br>(10)            | 48<br>(35)            | 76<br>(2.99)                  | 35<br>(1.38) | 60<br>(2.36) | 2<br>(0.08) | 62<br>(2.44) | 29<br>(1.14) | 16<br>(0.63) | 20<br>(0.79) | 72<br>(2.83) | 2 | 2.52<br>(5.54)       |
| 150CF | 42<br>(30)            | 210<br>(150)          | 94<br>(3.70)                  | 48<br>(1.89) | 87<br>(3.43) | 3<br>(0.12) | 66<br>(2.60) | 40<br>(1.57) | 28<br>(1.10) | 28<br>(1.10) | 90<br>(3.54) | 4 | 5.18<br>(11.39)      |

# ALTRA COUPLINGS

## Offers the Largest Selection of Industrial Couplings Available from a Single Source...Worldwide

For over 150 years, TB Wood's, Ameridrives, Bibby Turboflex, and Ameridrives Power Transmission, the industry-leading brands of Altra Couplings have been providing innovative coupling solutions to meet the requirements for a broad variety of applications spanning many industries. Highly engineered Altra coupling products represent the latest in coupling technology, featuring superior design and exceptional quality to ensure long-lasting performance in all types of environments.

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



### Elastomeric Couplings

- TB Wood's
- Bibby Turboflex



### Elastomeric Couplings

- Bibby Turboflex
- Ameridrives Couplings



### Gear Spindles

- Ameridrives Couplings



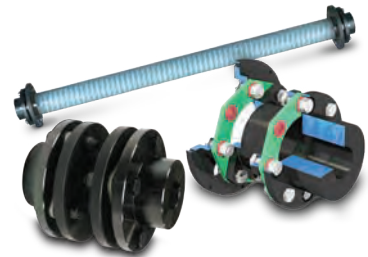
### Universal Joints

- Ameridrives Power Transmission



### Torque Limiters

- Bibby Turboflex



### General Purpose Disc Couplings

- TB Wood's
- Ameridrives Couplings
- Bibby Turboflex



### High Performance Disc & Diaphragm Couplings

- Ameridrives Power Transmission
- Bibby Turboflex



### Precision Couplings

- Huco Dynatork



### Locking Devices

- Ameridrives Couplings



P-1942-BB



P-1939-BB



P-1940-BB



P-1967-AC



P-1791-TBW



P-1919-TBW



P-1902-AP



P-1633-HD



## Altra Literature

To download the above literature or any other literature please visit our Literature Portal.

**[www.AltraLiterature.com](http://www.AltraLiterature.com)**





# Altra Industrial Motion

All Customer Service phone numbers shown in bold

## Electromagnetic Clutches and Brakes

### Warner Electric

*Electromagnetic Clutches and Brakes*

New Hartford, CT - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-825-9050

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

*Precision Electric Coils and Electromagnetic Clutches and Brakes*

Columbia City, IN - USA  
**1-260-244-6183**

### Matrix International

*Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes*

Brechin, Scotland  
**+44 (0) 1356 602000**

New Hartford, CT - USA  
**1-800-825-6544**

### Inertia Dynamics

*Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes*

New Hartford, CT - USA  
**1-800-800-6445**

## Linear Products

### Warner Linear

*Linear Actuators*  
Belvidere, IL - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-825-9050

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

## Couplings

### Ameridrives Couplings

*Mill Spindles, Ameriflex, Ameridisc*

Erie, PA - USA  
**1-814-480-5000**

*Gear Couplings*

San Marcos, TX - USA  
**1-800-458-0887**

### Bibby Turboflex

*Disc, Gear, Grid Couplings, Overload Clutches*

Dewsbury, England  
**+44 (0) 1924 460801**

Boksburg, South Africa  
**+27 11 918 4270**

### TB Wood's

*Elastomeric Couplings*

Chambersburg, PA - USA  
**1-888-829-6637 – Press #5**

*For application assistance:*  
1-888-829-6637 – Press #7

*General Purpose Disc Couplings*

San Marcos, TX - USA  
**1-888-449-9439**

### Ameridrives Power Transmission

*Universal Joints, Drive Shafts, Mill Gear Couplings*

Green Bay, WI - USA  
**1-920-593-2444**

### Huco Dynatork

*Precision Couplings and Air Motors*

Hertford, England  
**+44 (0) 1992 501900**  
Charlotte, NC - USA  
**1-800-825-6544**

## Heavy Duty Clutches and Brakes

### Wichita Clutch

*Pneumatic Clutches and Brakes*

Wichita Falls, TX - USA  
**1-800-964-3262**

Bedford, England  
**+44 (0) 1234 350311**

### Twiflex Limited

*Caliper Brakes and Thrusters*

Twickenham, England  
**+44 (0) 20 8894 1161**

### Industrial Clutch

*Pneumatic and Oil Immersed Clutches and Brakes*

Waukesha, WI - USA  
**1-262-547-3357**

## Gearing

### Boston Gear

*Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*

Charlotte, NC - USA  
**1-800-825-6544**

*For application assistance:*  
1-800-816-5608

### Bauer Gear Motor

*Geared Motors*

Esslingen, Germany  
**+49 (711) 3518-0**

### Nuttall Gear and Delroyd Worm Gear

*Worm Gear and Helical Speed Reducers*

Niagara Falls, NY - USA  
**1-716-298-4100**

## Overrunning Clutches

### Formsprag Clutch

*Overrunning Clutches and Holdbacks*

Warren, MI - USA  
**1-800-348-0881 – Press #1**

*For application assistance:*  
1-800-348-0881 – Press #2

### Marland Clutch

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*

South Beloit, IL - USA  
**1-800-216-3515**

### Stieber Clutch

*Overrunning Clutches and Holdbacks*

Heidelberg, Germany  
**+49 (0) 6221 30 47 0**

## Belted Drives and Sheaves

### TB Wood's

*Belted Drives*

Chambersburg, PA - USA  
**1-888-829-6637 – Press #5**

*For application assistance:*  
1-888-829-6637 – Press #7

## Engineered Bearing Assemblies

### Kilian Manufacturing

*Engineered Bearing Assemblies*

Syracuse, NY - USA  
**1-315-432-0700**

*For information concerning our sales offices in Asia Pacific check our website  
www.altramotion.com.cn*



[www.bibbytransmissions.co.uk](http://www.bibbytransmissions.co.uk)

Cannon Way, Dewsbury,  
West Yorkshire, WF13 1EH – United Kingdom  
+ 44(0) 1924 460801  
Fax: + 44(0) 1924 457668