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Torque Limiter 320 Series Overview



### Why Choose Rexnord?

When it comes to providing highly engineered products that improve productivity and efficiency for industrial applications worldwide, Rexnord is the most reliable in the industry. Commitment to customer satisfaction and superior value extend across every business function.

#### Delivering Lowest Total Cost of Ownership

The highest quality products are designed to help prevent equipment downtime and increase productivity and dependable operation.

#### Valuable Expertise

An extensive product offering is accompanied by global sales specialists, customer service and maintenance support teams, available anytime.

#### Solutions to Enhance Ease of Doing Business

Commitment to operational excellence ensures the right products at the right place at the right time.

# Torque Limiter 320 Series

#### Rexnord Corporation

Rexnord is a growth-oriented, multi-platform industrial company with leading market shares and highly trusted brands that serve a diverse array of global end markets.

#### Process and Motion Control

The Rexnord Process and Motion Control platform designs, manufactures, markets and services specified, highly engineered mechanical components used within complex systems where our customers' reliability requirements and the cost of failure or downtime are extremely high.

#### Water Management

The Rexnord Water Management platform designs, procures, manufactures and markets products that provide and enhance water quality, safety, flow control and conservation.





# Torque Limiter 320 Series

For more than 80 years, Autogard® products have led the industry in overload protection with high-quality products, design innovation and production. Autogard products are manufactured to meet ISO 9001 using the latest machine tools and high-quality materials.

Acting like a mechanical “fuse” to protect the weakest member of the drive train, the most effective location for Autogard Torque Limiters is as close as possible to the component being protected. The 320 Series has been designed to meet the need for a compact and reliable safety clutch. The optimized design provides a robust, backlash-free clutch that will protect equipment from the damaging effects caused by overloading a drive train. The 320 Series is offered in two re-engagement styles. The SR Reset features a timed automatic re-engagement as a standard. An un-timed reset version is also available. The MR Reset is a manual re-engagement and accommodates higher-speed applications, and is capable of running continuously in the disengaged condition.

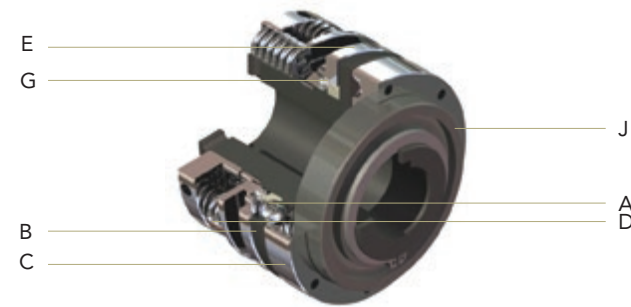
## Disengagement on Overload

In the normal drive condition, torque is transmitted through drive balls ‘A’ that are located in holes in flange ‘B’ and detents in drive plate ‘C’. The drive balls are held in the detents under pressure from springs ‘D’. When the driven machine either jams or an overload occurs which is greater than the torque setting, the balls roll out of their seats.

## Re-engagement

Re-engagement occurs in one of two ways depending upon which series is selected.

**Figure 1**



Letters above correspond to paragraphs on the left and below.

## Re-engagement — SR Reset

Re-engagement is automatic once the overload is removed. Ball detents are positioned in a scattered pattern so that the balls must return to their original position before they can reset. Re-engagement will occur within one revolution in either direction. Immediate shutdown is required to prevent wear of the detents.

## Re-engagement — MR Reset

Upon overload, the drive balls roll out of their seats and push the pressure plate ‘E’ and control balls ‘G’ into a position such that the drive balls are held away from the drive plate seats preventing re-engagement. The MR Reset remains disengaged and can run freely on a bearing ‘J’. A proximity sensor or limit switch can be used to detect this movement, sending a signal to a warning device or control system to shut down the motor. Re-engagement of the torque limiter is easy. Simply insert a screwdriver (or similar tool) between the pressure plate and the spring plate, and twist slightly. The unit will snap back into engagement, at any position.

## Features and Benefits:

- Accurate torque limitation prevents costly downtime caused by overloads
- Compact design reduces weight and inertia on the equipment
- Bi-directional operation
- The standard design can accommodate larger torque ranges than many other models currently available
- Offered in a larger number of styles ensuring the right solution is available for all applications
- Backlash-free operation
- Offered in automatic and manual re-engagement
- One revolution synchronous re-engagement offered
- Manual reset after tripping can be easily reset, at any position
- High-speed applications supported with free-running disengagement featured in the MR Reset
- Springs can be inspected and changed without removing the clutch from the drive train
- Coil springs allow one standard design to accommodate the full torque range as opposed to regressive disc springs that can only accommodate a narrow torque band
- Bore options with conventional bore and key or cone clamp sleeve for keyless connection

## Selection:

Data required for torque limiter selection:

- Application details for service factors
- Kilowatt (kW) and rpm of the driver
- Shaft details of the driving and driven equipment

(1) Calculate the nominal torque.

$$\text{Torque (Nm)} = \text{Kw} \times 9550 / \text{rpm}$$

Consideration should then be given to start torque or other special circumstances depending on the position chosen in the drive system. Choose a set torque with a suitable margin over nominal. Select the torque limiter which has a higher torque rating.

(2) Check limiting conditions:

- Check running speed
- Check hub bore capacity
- Check the torque limiter dimensions such as the overall length and outside diameter

(3) Select and specify the appropriate drive medium or coupling.

All 320 Series units may be supplied from the factory at a pre-set torque and with the required drive medium assembled to the unit.

## 320 Series Applications

- Conveyor Drives
- Vacuum Pumps
- Coal Feeder Conveyor
- Packaging Equipment
- Tool and Die

## Ordering the 320 Series Torque Limiter

When ordering, please provide the following designation:  
 Model and Size / Type / Reset / S1 or S3 bore / S2 bore  
 Standard bore tolerance = H8 + normal fit key

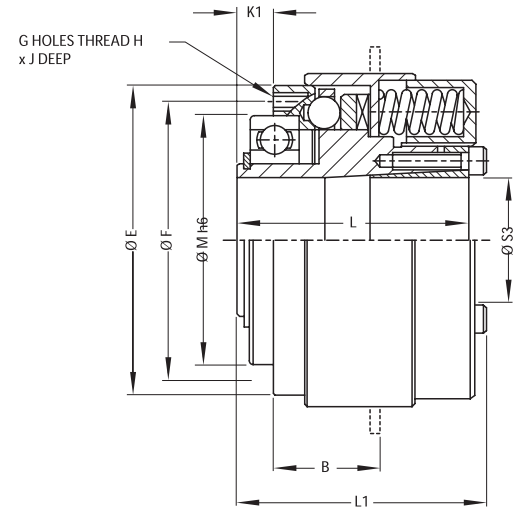
## Example: 320-2 / 8 / SR / S2175 / S3-163

Refers to a 320 Series, Size 2, Type 8 torque limiter designed for Single Position Reset  
 S2 Bore = 1.75 in    S3 Bore = 1.63 in  
 Also specify setting torque and/or pulley or sprocket if required.

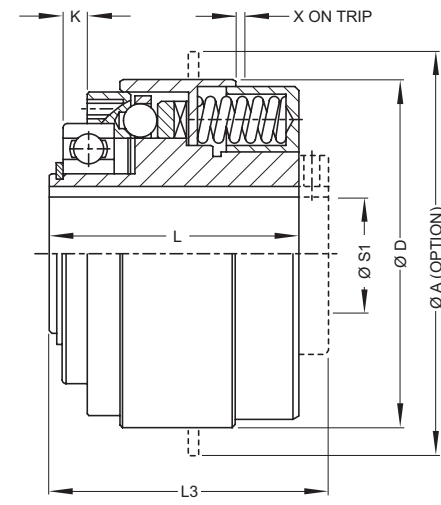
The specifications contained within this brochure are correct at the time of going to print. Rexnord is continually reviewing and updating the specifications on its entire Autogard product offering and therefore reserve the right to change any detail.

# 320 Series SR Standard Hub

**Type 1 - Figure 2**



**Type 2 - Figure 3**



**Table 1**

| Size | Torque ① |       | Max. Speed<br>rpm | Weight<br>②<br>Kg | Mass Moment of Inertia MR <sup>2</sup> ③ |                                  |
|------|----------|-------|-------------------|-------------------|--|----------------------------------|
|      | Min.     | Max.  |                   |                   | Hub Side<br>Kg-m <sup>2</sup>            | Flange Side<br>Kg-m <sup>2</sup> |
|      | Nm       | Nm    |                   |                   |  |                                  |
| 01   | 3        | 50    | 300               | 1.00              | 0.0004                                   | 0.0001                           |
| 0    | 5        | 100   | 300               | 1.91              | 0.0009                                   | 0.0005                           |
| 1    | 10       | 200   | 300               | 2.89              | 0.0019                                   | 0.0010                           |
| 2    | 20       | 400   | 300               | 4.47              | 0.0044                                   | 0.0020                           |
| 3    | 35       | 700   | 300               | 7.41              | 0.0094                                   | 0.0040                           |
| 4    | 75       | 1,500 | 300               | 12.95             | 0.0257                                   | 0.0109                           |

① See page 17, Table 21, for spring and torque ranges with specific springs.  
 ② Weights and inertia values are for unbored units.

**Table 2**

For use with sprockets, pulleys or gears. Type 1 contains keyless bore clamp bushing. Type 2 accommodates a parallel bore and key.

| Size | Bore (S3)<br>Clamped<br>Collar ② |      | Bore (S1)<br>Keyed Hub<br>② ③ | A  | B   | D    | E   | F | G   | H    | J | K  | K1  | L   | L1  | L3  | M<br>④ | X   |
|------|----------------------------------|------|-------------------------------|----|-----|------|-----|---|-----|------|---|----|-----|-----|-----|-----|--------|-----|
|      | Min.                             | Max. |                               |    |     |      |     |   |     |      |   |    |     |     |     |     |        |     |
|      | mm                               | mm   | mm                            |    |     |      |     |   |     |      |   |    |     |     |     |     |        |     |
| 10   | 20                               | 20   | 80                            | 21 | 68  | 63.6 | 56  | 8 | M4  | 6    | 5 | 8  | 47  | 50  | 52  | 47  | 1.2    | 1.2 |
| 15   | 28                               | 23   | 100                           | 28 | 84  | 78.7 | 71  | 8 | M5  | 8    | 7 | 11 | 60  | 65  | 68  | 62  | 1.6    | 1.6 |
| 22   | 35                               | 32   | 116                           | 33 | 100 | 93.6 | 85  | 8 | M6  | 10   | 7 | 12 | 71  | 77  | 80  | 75  | 1.7    | 1.7 |
| 32   | 45                               | 40   | 140                           | 38 | 120 | 111  | 100 | 8 | M6  | 12.7 | 8 | 12 | 84  | 90  | 95  | 90  | 2.2    | 2.2 |
| 35   | 55                               | 50   | 160                           | 42 | 132 | 127  | 116 | 8 | M8  | 12.7 | 8 | 16 | 95  | 101 | 105 | 100 | 2.4    | 2.4 |
| 42   | 65                               | 58   | 190                           | 49 | 166 | 157  | 144 | 8 | M10 | 18   | 8 | 16 | 110 | 118 | 122 | 115 | 2.8    | 2.8 |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.  
 ② Rectangular keys must be used for maximum bore diameters.  
 ③ The drive medium must be bored to suit dimension M. Clutches may be ordered complete with drive medium (v-belt pulleys, timing pulleys, etc).

**Table 3**

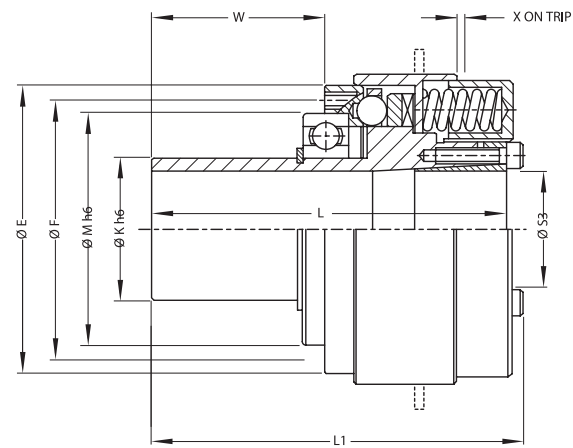
| Size | Smallest Sprocket (No. of teeth) |            |            |            |          | Smallest Pulley<br>Diameter ①<br>mm |
|------|----------------------------------|------------|------------|------------|----------|-------------------------------------|
|      | 3/8" Pitch                       | 1/2" Pitch | 5/8" Pitch | 3/4" Pitch | 1" Pitch |                                     |
| 01   | 24                               | 19         | 16         | 14         | 11       | 60                                  |
| 0    | 29                               | 23         | 19         | 16         | 13       | 76                                  |
| 1    | 34                               | 27         | 22         | 19         | 15       | 91                                  |
| 2    | 40                               | 31         | 25         | 22         | 17       | 106                                 |
| 3    | -                                | 35         | 29         | 24         | 19       | 124                                 |
| 4    | -                                | -          | 35         | 29         | 23       | 154                                 |

① The pulley diameter quoted is to the bottom of the V-pulley groove or the inside diameter for the flange of the timing pulley.



# 320 Series SR Long Projecting Hub

Type 3 - Figure 4



Type 4 - Figure 5

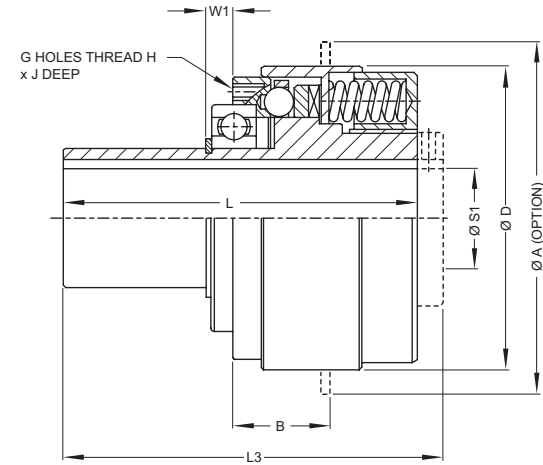


Table 6

| Size | Smallest Sprocket (No. of teeth) |            |            |            |          | Smallest Pulley Diameter <sup>⊙</sup><br>mm |
|------|----------------------------------|------------|------------|------------|----------|---|
|      | 3/8" Pitch                       | 1/2" Pitch | 5/8" Pitch | 3/4" Pitch | 1" Pitch |   |
| 01   | 18                               | 15         | 12         | 11         | 9        | 45  |
| 0    | 20                               | 16         | 13         | 11         | 9        | 55  |
| 1    | 24                               | 19         | 16         | 13         | 11       | 70  |
| 2    | 28                               | 22         | 18         | 16         | 12       | 85  |
| 3    | -                                | 26         | 21         | 18         | 14       | 100   |
| 4    | -                                | -          | 23         | 20         | 16       | 110   |

⊙ The pulley diameter quoted is to the bottom of the V-pulley groove or the inside diameter for the flange of the timing pulley.

Table 4

| Size | Torque <sup>⊙</sup> |            | Max. Speed<br>rpm | Weight<br><sup>⊙</sup><br>Kg | Mass Moment of Inertia MR <sup>2</sup> <sup>⊙</sup> |                                  |
|------|---------------------|------------|-------------------|------------------------------|---|----------------------------------|
|      | Min.<br>Nm          | Max.<br>Nm |                   |                              | Hub Side<br>Kg-m <sup>2</sup>                       | Flange Side<br>Kg-m <sup>2</sup> |
|      | 01                  | 3          | 50                | 300                          | 1.16  | 0.0004                           |
| 0    | 5                   | 100        | 300               | 2.28                         | 0.0010  | 0.0006                           |
| 1    | 10                  | 200        | 300               | 3.50                         | 0.0020  | 0.0012                           |
| 2    | 20                  | 400        | 300               | 5.64                         | 0.0048  | 0.0025                           |
| 3    | 35                  | 700        | 300               | 9.05                         | 0.0103  | 0.0048                           |
| 4    | 75                  | 1,500      | 300               | 15.83                        | 0.0277  | 0.0129                           |

⊙ See page 17, Table 21, for spring and torque ranges with specific springs.

⊙ Weights and inertia values are for unbored units.

Table 5

For use with sprockets, pulleys or gears. Type 3 contains a keyless bore clamp bushing. Type 4 accommodates a parallel bore and key.

| Size | Bore (S3)<br>Clamped<br>Collar |      | Bore (S1)<br>Keyed Hub<br><sup>⊙</sup> <sup>⊙</sup> | A   | B  | D   | E    | F   | G  | H     | J    | K<br><sup>⊙</sup> | L   | L1  | L3  | M   | W  | W1   | X   |
|------|--------------------------------|------|---|-----|----|-----|------|-----|----|-------|------|-------------------|-----|-----|-----|-----|----|------|-----|
|      | Min.                           | Max. |   |     |    |     |      |     |    |       |      |                   |     |     |     |     |    |      |     |
|      | mm                             | mm   | mm  | mm  | mm | mm  | mm   | mm  | mm | holes | mm   | mm                | mm  | mm  | mm  | mm  | mm | mm   | mm  |
| 01   | 10                             | 20   | 20  | 80  | 21 | 68  | 63.6 | 56  | 8  | M4    | 6    | 30                | 72  | 75  | 77  | 47  | 33 | 6.5  | 1.2 |
| 0    | 15                             | 28   | 24  | 100 | 22 | 84  | 78.7 | 71  | 8  | M5    | 8    | 40                | 93  | 97  | 101 | 62  | 43 | 8.5  | 1.6 |
| 1    | 22                             | 35   | 32  | 116 | 33 | 100 | 93.6 | 85  | 8  | M6    | 10   | 45                | 115 | 120 | 123 | 75  | 55 | 8.8  | 1.7 |
| 2    | 32                             | 45   | 40  | 140 | 38 | 120 | 111  | 100 | 8  | M6    | 12.7 | 55                | 139 | 145 | 150 | 90  | 67 | 10.6 | 2.2 |
| 3    | 35                             | 55   | 50  | 160 | 42 | 132 | 127  | 116 | 8  | M8    | 12.7 | 65                | 152 | 158 | 162 | 100 | 73 | 10.5 | 2.4 |
| 4    | 42                             | 65   | 58  | 190 | 49 | 166 | 157  | 144 | 8  | M10   | 18   | 75                | 185 | 193 | 197 | 115 | 91 | 10.5 | 2.8 |

⊙ Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.

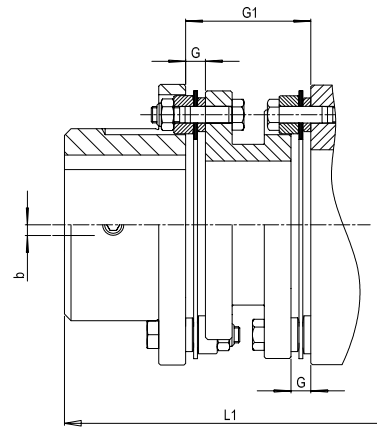
⊙ Rectangular keys must be used for maximum bore diameters.

⊙ The drive medium must be bored to suit dimension K and supported with suitable bearing. Clutches may be ordered complete with drive medium (v-belt pulleys, timing pulleys, etc).

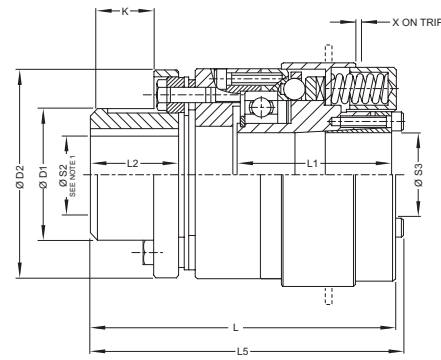


# 320 Series SR Torsionally Rigid

ES - Figure 6



Type 5, EB - Figure 7



Type 6, EB - Figure 8

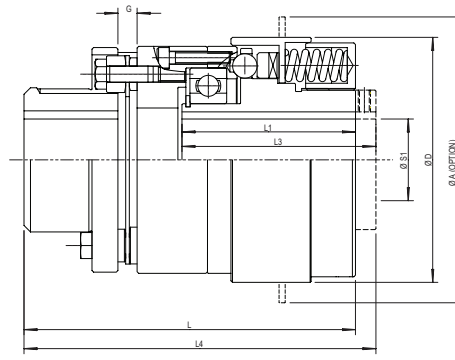


Table 7

| Size    | Torque ① |       | Max. Speed | Weight ② | Mass Moment of Inertia MR <sup>2</sup> |                   | Max. Coupling Misalignments |           |            |            |               |               |            |
|---------|----------|-------|------------|----------|--|-------------------|-----------------------------|-----------|------------|------------|---------------|---------------|------------|
|         | Min.     | Max.  |            |          | Hub Side                               | Flange Side       | EB                          | ES        | EB         | ES         | EB            | ES            | Combined ③ |
|         | mm       | mm    | rpm        | Kg       | Kg-m <sup>2</sup>                      | Kg-m <sup>2</sup> | Angular °                   | Angular ° | Axial (mm) | Axial (mm) | Parallel (mm) | Parallel (mm) |            |
| 01 / 8  | 3        | 50    | 300        | 2.24     | 0.0013                                 | 0.0011            | 0.5                         | 1         | 0.3        | 0.6        | 0             | 0.3           | 0.7        |
| 0 / 8   | 5        | 100   | 300        | 3.04     | 0.0017                                 | 0.0013            | 0.5                         | 1         | 0.3        | 0.6        | 0             | 0.3           | 0.7        |
| 1 / 15  | 10       | 200   | 300        | 4.75     | 0.0038                                 | 0.0030            | 0.5                         | 1         | 0.4        | 0.8        | 0             | 0.4           | 0.8        |
| 2 / 35  | 20       | 400   | 300        | 8.05     | 0.0097                                 | 0.0073            | 0.5                         | 1         | 0.5        | 1.0        | 0             | 0.4           | 1.0        |
| 3 / 70  | 35       | 700   | 300        | 13.22    | 0.0213                                 | 0.0159            | 0.5                         | 1         | 0.6        | 1.2        | 0             | 0.4           | 1.2        |
| 4 / 150 | 75       | 1,500 | 300        | 25.39    | 0.0662                                 | 0.0514            | 0.5                         | 1         | 0.7        | 1.4        | 0             | 0.5           | 1.5        |

① See page 17, Table 21, for spring and torque ranges with specific springs.

② Weights and inertia values are for unbored units.

③ This is the maximum variation in G measured around the periphery. It corresponds to the maximum combined angular, axial and parallel misalignments.

Table 8

Includes the Autoflex EB torsionally rigid metal membrane coupling for angular and axial misalignment. The Autoflex ES double flex spacer coupling can also be supplied to accommodate angular, axial and parallel offset misalignment. Type 5 contains a keyless bore clamp bushing.

| Size    | Bore (S3) Clamped Collar |      | Bore (S2) Keyed Hub ① ② | Bore (S1) Keyed Hub ① ② | A   | D   | D1  | D2  | G   | G1 ③ | L   | L1  | L2   | L3  | L4  | L5  | X   |
|---------|--------------------------|------|-------------------------|-------------------------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|-----|-----|
|         | Min.                     | Max. |                         |                         |     |     |     |     |     |      |     |     |      |     |     |     |     |
|         | mm                       | mm   | mm                      | mm                      | mm  | mm  | mm  | mm  | mm  | mm   | mm  | mm  | mm   | mm  | mm  | mm  | mm  |
| 01 / 8  | 10                       | 20   | 30                      | 20                      | 80  | 68  | 44  | 80  | 7.3 | 48   | 99  | 47  | 32.5 | 52  | 104 | 102 | 1.2 |
| 0 / 8   | 15                       | 28   | 30                      | 23                      | 100 | 84  | 44  | 80  | 7.3 | 48   | 118 | 61  | 32.5 | 68  | 125 | 122 | 1.6 |
| 1 / 15  | 22                       | 35   | 40                      | 32                      | 116 | 100 | 53  | 89  | 7.3 | 48   | 132 | 72  | 36.5 | 80  | 140 | 136 | 1.7 |
| 2 / 35  | 32                       | 45   | 50                      | 40                      | 140 | 120 | 71  | 110 | 9.4 | 58   | 162 | 85  | 46.0 | 95  | 172 | 166 | 2.2 |
| 3 / 70  | 35                       | 55   | 70                      | 50                      | 160 | 132 | 91  | 133 | 9.4 | 58   | 180 | 95  | 57.5 | 105 | 190 | 185 | 2.4 |
| 4 / 150 | 42                       | 65   | 90                      | 58                      | 190 | 166 | 123 | 170 | 8.8 | 64   | 214 | 110 | 73.5 | 122 | 226 | 222 | 2.8 |

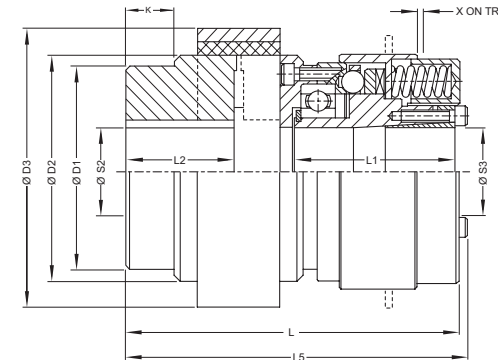
① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.

② Rectangular keys must be used for maximum bore diameters.

③ G1 is for minimum DBSE, longer spacers are available.

# 320 Series SR Elastic Coupling

Type 7 - Figure 9



Type 8 - Figure 10

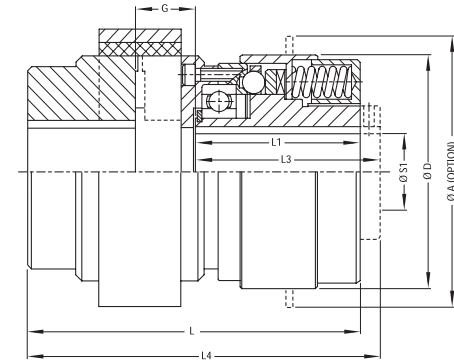


Table 9

| Size  | Torque ① |       | Max. Speed | Weight ② | Mass Moment of Inertia MR <sup>2</sup> ③ |                   | Coupling Misalignment |                      |              |
|-------|----------|-------|------------|----------|--|-------------------|-----------------------|----------------------|--------------|
|       | Min.     | Max.  |            |          | Hub Side                                 | Flange Side       | Max. Axial            | Max. Radial/Parallel | Max. Angular |
|       | mm       | mm    | rpm        | Kg       | Kg-m <sup>2</sup>                        | Kg-m <sup>2</sup> | mm                    | mm                   | degrees      |
| 01/A1 | 3        | 50    | 300        | 1.91     | 0.0012                                   | 0.0010            | +0.5                  | 0.10                 | 2            |
| 0/A2  | 5        | 100   | 300        | 3.99     | 0.0048                                   | 0.0044            | +0.5                  | 0.10                 | 2            |
| 1/A3  | 10       | 200   | 300        | 7.13     | 0.0172                                   | 0.0164            | +0.7                  | 0.15                 | 2            |
| 2/A3  | 20       | 400   | 300        | 8.64     | 0.0196                                   | 0.0172            | +0.7                  | 0.15                 | 2            |
| 3/A4  | 35       | 700   | 300        | 15.55    | 0.0678                                   | 0.0624            | +0.8                  | 0.20                 | 1.3          |
| 4/A45 | 75       | 1,500 | 300        | 24.51    | 0.1179                                   | 0.1031            | +1.0                  | 0.20                 | 1.3          |

① See page 17, Table 21, for spring and torque ranges with specific springs.

② Weights and inertia values are for unbored units.

Table 10

Model includes the Samiflex coupling which accommodates angular, axial and parallel offset misalignments. Type 7 contains a keyless bore clamp bushing.

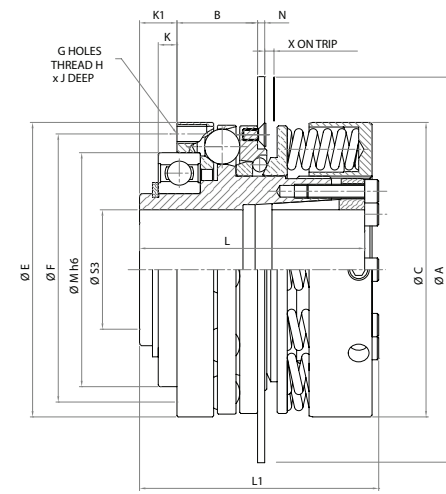
| Size  | Bore (S3) Clamped Collar |      | Bore (S2) Coupling Hub ① ② |      | Bore (S1) Keyed Hub ① ② | A   | D   | D1  | D2  | D3  | G  | L   | L1  | L2 | L3  | L4  | L5  | X   |
|-------|--------------------------|------|----------------------------|------|-------------------------|-----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|-----|
|       | Min.                     | Max. | Min.                       | Max. |                         |     |     |     |     |     |    |     |     |    |     |     |     |     |
|       | mm                       | mm   | mm                         | mm   | mm                      | mm  | mm  | mm  | mm  | mm  | mm | mm  | mm  | mm | mm  | mm  | mm  | mm  |
| 01/A1 | 10                       | 20   | 15                         | 38   | 20                      | 80  | 68  | 65  | 65  | 83  | 15 | 97  | 47  | 35 | 52  | 102 | 100 | 1.2 |
| 0/A2  | 15                       | 28   | 18                         | 42   | 24                      | 100 | 84  | 80  | 86  | 111 | 21 | 127 | 61  | 46 | 68  | 134 | 133 | 1.6 |
| 1/A3  | 22                       | 35   | 20                         | 42   | 32                      | 116 | 100 | 85  | 116 | 144 | 29 | 156 | 72  | 56 | 80  | 164 | 162 | 1.7 |
| 2/A3  | 32                       | 45   | 20                         | 42   | 40                      | 140 | 120 | 85  | 116 | 144 | 31 | 171 | 85  | 56 | 95  | 181 | 176 | 2.2 |
| 3/A4  | 35                       | 55   | 25                         | 70   | 50                      | 160 | 132 | 110 | 150 | 182 | 36 | 194 | 95  | 63 | 105 | 204 | 200 | 2.4 |
| 4/A45 | 42                       | 65   | 26                         | 75   | 58                      | 190 | 166 | 125 | 170 | 202 | 34 | 214 | 110 | 70 | 122 | 226 | 222 | 2.8 |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.

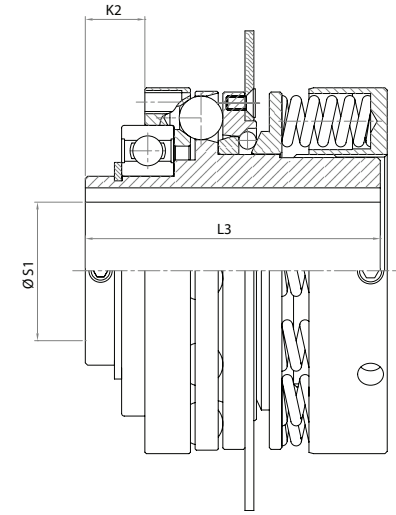
② Rectangular keys must be used for maximum bore diameters.

# 320 Series MR Standard Hub

**Type 1 - Figure 11**



**Type 2 - Figure 12**



**Table 11**

| Size | Torque ①   |            | Max. Speed<br>② | Weight<br>③ | Mass Moment of<br>Inertia MR <sup>2</sup> ④ |
|------|------------|------------|-----------------|-------------|---|
|      | Min.<br>Nm | Max.<br>Nm |                 |             |   |
| 01   | 6          | 60         | 8,000           | 1.0         | 0.0005                                      |
| 0    | 10         | 130        | 7,000           | 1.9         | 0.0010                                      |
| 1    | 20         | 220        | 6,000           | 2.9         | 0.0030                                      |
| 2    | 40         | 500        | 5,000           | 4.5         | 0.0060                                      |
| 3    | 80         | 800        | 3,600           | 7.4         | 0.0130                                      |
| 4    | 160        | 1,800      | 3,000           | 13          | 0.0400                                      |

① See page 17, Table 22, for spring and torque ranges with specific springs.  
 ② Higher speeds may be allowed under certain conditions. Consult Rexnord.  
 ③ Weights and inertia values are for unbored units.

**Table 12**

For use with sprockets, pulleys or gears. Type 1 contains a keyless bore clamp and bushing. Type 2 accommodates a parallel bore and key.

| Size | Bore (S3)<br>Clamped<br>Collar ② |      | Bore (S1)<br>Keyed<br>Hub ③ | A   | B  | C   | E   | F   | G  | H     | J   | K  | K1 | K2 | L   | L1  | L3  | M<br>④ | N   | X         |
|------|----------------------------------|------|-----------------------------|-----|----|-----|-----|-----|----|-------|-----|----|----|----|-----|-----|-----|--------|-----|-----------|
|      | Min.                             | Max. |                             |     |    |     |     |     |    |       |     |    |    |    |     |     |     |        |     |           |
|      | mm                               | mm   | mm                          | mm  | mm | mm  | mm  | mm  | mm | holes | mm  | mm | mm | mm | mm  | mm  | mm  | mm     | mm  | mm        |
| 01   | 10                               | 20   | 20                          | 100 | 16 | 64  | 64  | 56  | 8  | M4    | 5.5 | 5  | 8  | 15 | 47  | 50  | 54  | 47     | 1.5 | 2.2 - 2.7 |
| 0    | 15                               | 29   | 24                          | 115 | 21 | 79  | 79  | 71  | 8  | M5    | 7.3 | 7  | 11 | 19 | 61  | 66  | 69  | 62     | 1.5 | 2.5 - 3.3 |
| 1    | 22                               | 35   | 32                          | 130 | 26 | 94  | 94  | 85  | 8  | M6    | 10  | 7  | 12 | 19 | 71  | 77  | 78  | 75     | 2   | 3.0 - 4.0 |
| 2    | 32                               | 45   | 42                          | 150 | 34 | 114 | 111 | 100 | 8  | M6    | 10  | 9  | 12 | 23 | 88  | 94  | 98  | 90     | 3   | 3.6 - 4.7 |
| 3    | 35                               | 55   | 50                          | 165 | 34 | 126 | 126 | 116 | 8  | M8    | 13  | 8  | 16 | 26 | 96  | 102 | 106 | 100    | 3   | 4.0 - 5.3 |
| 4    | 42                               | 65   | 61                          | 200 | 42 | 159 | 159 | 144 | 8  | M10   | 18  | 8  | 16 | 26 | 112 | 120 | 123 | 115    | 3   | 4.9 - 6.5 |
| 5    | 60                               | 90   | 95                          | 280 | 60 | 230 | 230 | 205 | 6  | M16   | 22  | 14 | 25 | 42 | 153 | 165 | 170 | 180    | 4   | 6.9 - 8.9 |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.  
 ② Rectangular keys must be used for maximum bore diameters.  
 ③ The drive medium must be bored to suit dimension M. Clutches may be ordered complete with drive medium (v-belt pulleys, timing pulleys, etc).

**Table 13**

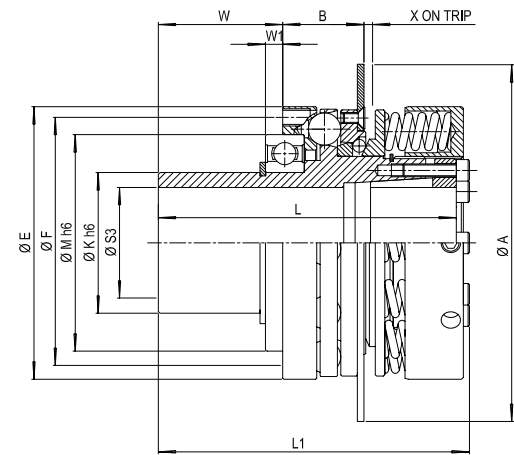
| Size | Smallest Sprocket (No. of teeth) |            |            |            |          | Smallest Pulley<br>Diameter ① |
|------|----------------------------------|------------|------------|------------|----------|-------------------------------|
|      | 3/8" Pitch                       | 1/2" Pitch | 5/8" Pitch | 3/4" Pitch | 1" Pitch |                               |
| 01   | 24                               | 19         | 16         | 14         | 11       | 60                            |
| 0    | 29                               | 23         | 19         | 16         | 13       | 76                            |
| 1    | 34                               | 27         | 22         | 19         | 15       | 91                            |
| 2    | 40                               | 31         | 25         | 22         | 17       | 106                           |
| 3    | -                                | 35         | 29         | 24         | 19       | 124                           |
| 4    | -                                | -          | 35         | 29         | 23       | 154                           |
| 5    | -                                | -          | 50         | 50         | 42       | 221                           |

① The pulley diameter quoted is to the bottom of the V-pulley groove or the inside diameter for the flange of the timing pulley.



# 320 Series MR Long Projecting Hub

Type 3 - Figure 13



Type 4 - Figure 14

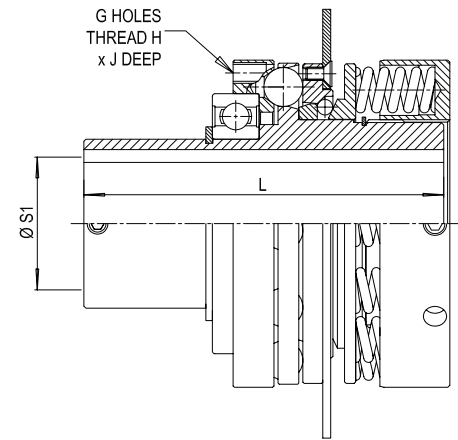


Table 14

| Size | Torque ①   |            | Max. Speed<br>② | Weight<br>③ | Mass Moment of<br>Inertia MR <sup>2</sup> ③ |
|------|------------|------------|-----------------|-------------|---|
|      | Min.<br>Nm | Max.<br>Nm |                 |             |   |
| 01   | 6          | 60         | 8,000           | 1.2         | 0.0006                                      |
| 0    | 10         | 130        | 7,000           | 2.3         | 0.0020                                      |
| 1    | 20         | 220        | 6,000           | 3.5         | 0.0030                                      |
| 2    | 40         | 500        | 5,000           | 5.6         | 0.0100                                      |
| 3    | 80         | 800        | 3,600           | 9.1         | 0.0200                                      |
| 4    | 160        | 1,800      | 3,000           | 16          | 0.0400                                      |

① See page 17, Table 22, for spring and torque ranges with specific springs.  
 ② Higher speeds may be allowed under certain conditions. Consult Rexnord.  
 ③ Weights and inertia values are for unbored units.

Table 15

For use with sprockets, pulleys or gears. Type 3 contains a keyless bore clamp bushing. Type 4 accommodates a parallel bore and key.

| Size | Bore (S3)<br>Clamped<br>Collar |      | Bore (S1)<br>Keyed<br>Hub ① ② | A   | B  | C   | E   | F   | G  | H     | J   | K  | L   | L1  | M<br>③ | N   | W  | W1   | X         |
|------|--------------------------------|------|-------------------------------|-----|----|-----|-----|-----|----|-------|-----|----|-----|-----|--------|-----|----|------|-----------|
|      | Min.                           | Max. |                               |     |    |     |     |     |    |       |     |    |     |     |        |     |    |      |           |
|      | mm                             | mm   | mm                            | mm  | mm | mm  | mm  | mm  | mm | holes | mm  | mm | mm  | mm  | mm     | mm  | mm | mm   | mm        |
| 01   | 10                             | 20   | 20                            | 100 | 16 | 64  | 64  | 56  | 8  | M4    | 5.5 | 30 | 72  | 75  | 47     | 1.5 | 33 | 6.4  | 2.2 - 2.7 |
| 0    | 15                             | 28   | 24                            | 115 | 21 | 79  | 79  | 71  | 8  | M5    | 7.3 | 35 | 94  | 99  | 62     | 1.5 | 44 | 8.7  | 2.5 - 3.3 |
| 1    | 22                             | 35   | 32                            | 130 | 26 | 94  | 94  | 85  | 8  | M6    | 10  | 45 | 114 | 119 | 75     | 2   | 55 | 8.7  | 3.0 - 4.0 |
| 2    | 32                             | 45   | 42                            | 150 | 34 | 114 | 111 | 100 | 8  | M6    | 10  | 55 | 144 | 150 | 90     | 3   | 68 | 11.2 | 3.6 - 4.7 |
| 3    | 35                             | 55   | 50                            | 165 | 34 | 126 | 126 | 116 | 8  | M8    | 13  | 65 | 153 | 159 | 100    | 3   | 73 | 10.5 | 4.0 - 5.3 |
| 4    | 42                             | 65   | 61                            | 200 | 42 | 159 | 159 | 144 | 8  | M10   | 18  | 75 | 187 | 195 | 115    | 3   | 91 | 10.5 | 4.9 - 6.5 |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.  
 ② Rectangular keys must be used for maximum bore diameters.  
 ③ The drive medium must be bored to suit dimension M. Clutches may be ordered complete with drive medium (v-belt pulleys, timing pulleys, etc).

Table 16

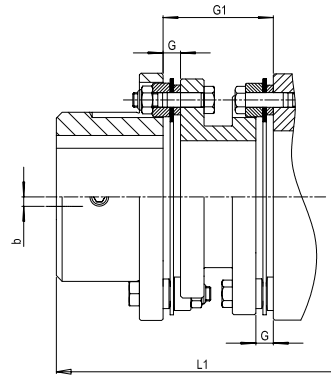
| Size | Smallest Sprocket (No. of teeth) |            |            |            |          | Smallest Pulley<br>Diameter ① |
|------|----------------------------------|------------|------------|------------|----------|-------------------------------|
|      | 3/8" Pitch                       | 1/2" Pitch | 5/8" Pitch | 3/4" Pitch | 1" Pitch |                               |
| 01   | 18                               | 15         | 12         | 11         | 9        | 45                            |
| 0    | 20                               | 16         | 13         | 11         | 9        | 55                            |
| 1    | 24                               | 19         | 16         | 13         | 11       | 70                            |
| 2    | 28                               | 22         | 18         | 16         | 12       | 85                            |
| 3    | -                                | 26         | 21         | 18         | 14       | 100                           |
| 4    | -                                | -          | 23         | 20         | 16       | 110                           |

① The pulley diameter quoted is to the bottom of the V-pulley groove or the inside diameter for the flange of the timing pulley.

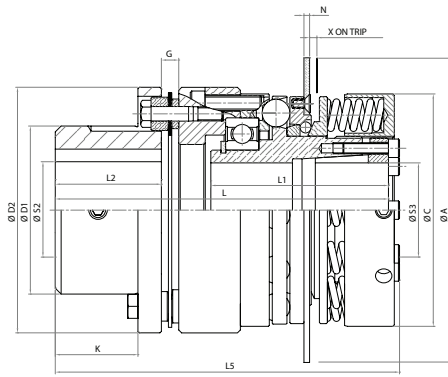


# 320 Series MR Torsionally Rigid

ES - Figure 15



Type 5, EB - Figure 16



Type 6, EB - Figure 17

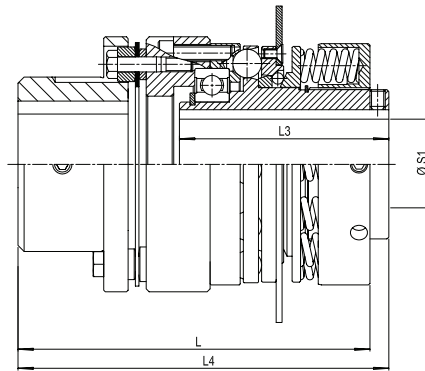


Table 17

| Size    | Torque ① |       | Max. Speed ② | Weight ③ | Mass Moment of Inertia MR <sup>2</sup> ④ | Max. Coupling Misalignments |           |            |            |               |               | Combined ⑤ |
|---------|----------|-------|--------------|----------|--|-----------------------------|-----------|------------|------------|---------------|---------------|------------|
|         | Min.     | Max.  |              |          |  | EB                          | ES        | EB         | ES         | EB            | ES            |            |
|         | Nm       | Nm    |              |          |  | Angular °                   | Angular ° | Axial (mm) | Axial (mm) | Parallel (mm) | Parallel (mm) |            |
| 01 / 8  | 6        | 60    | 8,000        | 2.2      | 0.0020                                   | 0.5                         | 1         | 0.3        | 0.6        | 0             | 0.3           | 0.7        |
| 0 / 8   | 10       | 130   | 7,000        | 3.0      | 0.0030                                   | 0.5                         | 1         | 0.3        | 0.6        | 0             | 0.3           | 0.7        |
| 1 / 15  | 20       | 220   | 6,000        | 4.8      | 0.0070                                   | 0.5                         | 1         | 0.4        | 0.8        | 0             | 0.4           | 0.8        |
| 2 / 35  | 40       | 500   | 5,000        | 8.0      | 0.0200                                   | 0.5                         | 1         | 0.5        | 1.0        | 0             | 0.4           | 1.0        |
| 3 / 70  | 80       | 800   | 3,600        | 13       | 0.0400                                   | 0.5                         | 1         | 0.6        | 1.2        | 0             | 0.4           | 1.2        |
| 4 / 150 | 160      | 1,800 | 3,000        | 25       | 0.1200                                   | 0.5                         | 1         | 0.7        | 1.4        | 0             | 0.5           | 1.5        |

① See page 17, Table 22, for spring and torque ranges with specific springs.  
 ② Higher speeds may be allowed under certain conditions. Consult Rexnord.  
 ③ Weights and inertia values are for unbored units.  
 ④ This is the maximum variation in G measured around the periphery. It corresponds to the maximum combined angular, axial and parallel misalignments.

Table 18

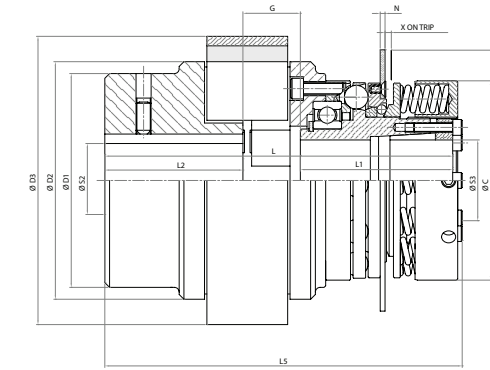
Includes the Autoflex EB torsionally rigid metal membrane coupling for angular and axial misalignment. The Autoflex ES double flex spacer coupling can also be supplied to accommodate angular, axial and parallel offset misalignment. Type 5 contains a keyless bore clamp bushing. Type 6 accommodates a parallel bore and key.

| Size    | Bore (S3) Clamped Collar |      | Bore (S2) Keyed Hub ① ② |      | Bore (S1) Keyed Hub ① ② |      | A   | C   | D1  | D2 | G  | G1 ③ | K   | L    | L1  | L2  | L3  | L4  | L5        | N | X |
|---------|--------------------------|------|-------------------------|------|-------------------------|------|-----|-----|-----|----|----|------|-----|------|-----|-----|-----|-----|-----------|---|---|
|         | Min.                     | Max. | Min.                    | Max. | Min.                    | Max. |     |     |     |    |    |      |     |      |     |     |     |     |           |   |   |
|         | mm                       | mm   | mm                      | mm   | mm                      | mm   |     |     |     |    |    |      |     |      |     |     |     |     |           |   |   |
| 01 / 8  | 10                       | 20   | 30                      | 20   | 100                     | 64   | 44  | 80  | 7.3 | 48 | 23 | 99   | 47  | 32.5 | 57  | 109 | 103 | 1.5 | 2.2 - 2.7 |   |   |
| 0 / 8   | 15                       | 28   | 30                      | 24   | 115                     | 79   | 44  | 80  | 7.3 | 48 | 23 | 118  | 61  | 32.5 | 71  | 128 | 123 | 1.5 | 2.5 - 3.3 |   |   |
| 1 / 15  | 22                       | 35   | 40                      | 32   | 130                     | 94   | 53  | 89  | 7.3 | 48 | 27 | 131  | 71  | 36.5 | 84  | 144 | 137 | 2   | 3.0 - 4.0 |   |   |
| 2 / 35  | 32                       | 45   | 50                      | 42   | 150                     | 114  | 71  | 110 | 9.4 | 58 | 33 | 165  | 88  | 46.0 | 105 | 182 | 171 | 3   | 3.6 - 4.7 |   |   |
| 3 / 70  | 35                       | 55   | 66                      | 50   | 165                     | 126  | 91  | 133 | 9.4 | 58 | 45 | 181  | 96  | 57.5 | 112 | 197 | 187 | 3   | 4.0 - 5.3 |   |   |
| 4 / 150 | 42                       | 65   | 90                      | 61   | 200                     | 159  | 123 | 170 | 8.8 | 64 | 59 | 216  | 112 | 73.5 | 130 | 234 | 224 | 3   | 4.9 - 6.5 |   |   |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.  
 ② Rectangular keys must be used for maximum bore diameters.  
 ③ G1 is for minimum DBSE, longer spacers are available.

# 320 Series MR Torsionally Soft Coupling

Type 7 - Figure 18



Type 8 - Figure 19

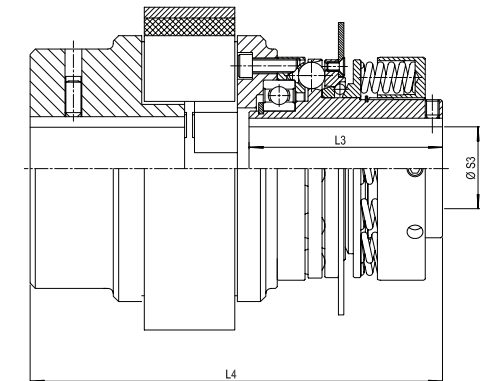


Table 19

| Size  | Torque ① |       | Max. Speed ② Unbalanced | Max. Speed ② Balanced | Weight ③ | Mass Moment of Inertia MR <sup>2</sup> ④ | Coupling Misalignment |                      |              |
|-------|----------|-------|-------------------------|-----------------------|----------|--|-----------------------|----------------------|--------------|
|       | Min.     | Max.  |                         |                       |          |  | Max. Axial            | Max. Radial/Parallel | Max. Angular |
|       | mm       | mm    |                         |                       |          |  | rpm                   | mm                   | mm           |
| 01/A1 | 6        | 60    | 7,250                   | 8,000                 | 1.9      | 0.0020                                   | +0.5                  | 0.30                 | 2            |
| 0/A2  | 10       | 130   | 5,440                   | 6,500                 | 4.0      | 0.0090                                   | +0.5                  | 0.50                 | 2            |
| 1/A3  | 20       | 220   | 4,200                   | 4,800                 | 7.1      | 0.0340                                   | +0.5                  | 0.50                 | 2            |
| 2/A3  | 40       | 500   | 4,200                   | 4,800                 | 8.6      | 0.0370                                   | +0.5                  | 0.50                 | 2            |
| 3/A4  | 80       | 800   | 3,275                   | 3,600                 | 16       | 0.1300                                   | +0.7                  | 0.70                 | 1.3          |
| 4/A45 | 160      | 1,800 | 2,800                   | 3,000                 | 25       | 0.2200                                   | +0.7                  | 0.70                 | 1.3          |

① See page 17, Table 21, for spring and torque ranges with specific springs.  
 ② Higher speeds may be allowed under certain conditions. Consult Rexnord.  
 ③ Weights and inertia values are for unbored units.

Table 20

Model includes the Samiflex coupling which accommodates angular, axial and parallel offset misalignments. Type 7 contains a keyless bore clamp bushing. Type 8 accommodates a parallel bore and key.

| Size  | Bore (S3) Clamped Collar |      | Bore (S2) Coupling Hub ① ② |      | Bore (S1) Keyed Hub ① ② |      | A   | C   | D1  | D2  | D3 | G   | L   | L1 | L2  | L3  | L4  | L5  | N         | X |
|-------|--------------------------|------|----------------------------|------|-------------------------|------|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|-----|-----------|---|
|       | Min.                     | Max. | Min.                       | Max. | Min.                    | Max. |     |     |     |     |    |     |     |    |     |     |     |     |           |   |
|       | mm                       | mm   | mm                         | mm   | mm                      | mm   |     |     |     |     |    |     |     |    |     |     |     |     |           |   |
| 01/A1 | 10                       | 20   | 15                         | 29   | 20                      | 100  | 64  | 65  | 65  | 83  | 15 | 97  | 47  | 35 | 57  | 107 | 101 | 1.5 | 2.2 - 2.7 |   |
| 0/A2  | 15                       | 28   | 18                         | 35   | 24                      | 115  | 79  | 80  | 86  | 111 | 21 | 127 | 61  | 45 | 71  | 137 | 132 | 1.5 | 2.5 - 3.3 |   |
| 1/A3  | 22                       | 35   | 20                         | 41   | 32                      | 130  | 94  | 85  | 116 | 144 | 28 | 155 | 71  | 56 | 84  | 168 | 161 | 2.0 | 3.0 - 4.0 |   |
| 2/A3  | 32                       | 45   | 20                         | 41   | 42                      | 150  | 114 | 85  | 116 | 144 | 30 | 174 | 88  | 56 | 105 | 191 | 180 | 3.0 | 3.6 - 4.7 |   |
| 3/A4  | 35                       | 55   | 25                         | 56   | 50                      | 165  | 126 | 110 | 150 | 182 | 36 | 195 | 96  | 63 | 112 | 211 | 201 | 3.0 | 4.0 - 5.3 |   |
| 4/A45 | 42                       | 65   | 26                         | 65   | 61                      | 200  | 159 | 125 | 170 | 202 | 34 | 216 | 112 | 70 | 130 | 234 | 224 | 3.0 | 4.9 - 6.5 |   |

① Bores are furnished for clearance fit unless otherwise specified by customer. Consult Rexnord.  
 ② Rectangular keys must be used for maximum bore diameters.



## Torque Setting

The full torque capabilities of the 320 Series will depend on the number of springs fitted. A full complement of springs gives the catalog maximum values. See Table 21 below.

**Table 21: Spring Selection 320 Series — SR**

| Size<br>No. of<br>Springs | 01   |      | 0    |      | 1    |      | 2    |      | 3    |      | 4    |       |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|
|                           | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max.  |
|                           | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm    |
| 2                         | 3    | 12   | 10   | 17   | 10   | 30   | 20   | 70   | 35   | 100  | 75   | 250   |
| 4                         | 5    | 25   | 10   | 35   | 20   | 60   | 40   | 140  | 70   | 225  | 150  | 500   |
| 8                         | 10   | 50   | 20   | 70   | 40   | 120  | 80   | 260  | 140  | 450  | 300  | 1,000 |
| 12                        | -    | -    | 30   | 100  | 60   | 200  | 120  | 400  | 200  | 700  | 450  | 1,500 |

**Table 22: Spring Selection 320 Series — MR**

| Size<br>No. of<br>Springs | 01   |      | 0    |      | 1    |      | 2    |      | 3    |      | 4    |       |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|
|                           | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max.  |
|                           | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm   | Nm    |
| 2                         | 6    | 12   | 10   | 20   | 20   | 40   | 40   | 80   | 80   | 160  | 160  | 320   |
| 4                         | 12   | 30   | 20   | 40   | 40   | 80   | 80   | 160  | 160  | 330  | 320  | 640   |
| 8                         | 25   | 60   | 40   | 80   | 80   | 150  | 160  | 330  | 320  | 530  | 640  | 1,200 |
| 12                        | -    | -    | 60   | 130  | 120  | 220  | 240  | 500  | 480  | 800  | 960  | 1,800 |

## Drive Shutdown on Disengagement — 320 Series SR

The 320 Series SR torque limiter is designed to run at speeds up to 300 rpm, but the service life is determined by the number of rotations after disengagement. No wear occurs while the torque limiter is engaged. The life of the unit when running tripped depends on the torque setting, the running speed, and the time it takes to stop the drive after an overload occurs. Situations where a drive is allowed to coast to a stop or where the drive runs continuously with the torque limiter disengaging, are to be avoided. Longer life may also be achieved at lower torque settings.

## Drive Shutdown on Disengagement — 320 Series MR

The 320 Series MR is designed to run continuously in the disengaged condition.

## Protective Finish

The standard phosphate and oil finish provides a high level of corrosion resistance. Units can be supplied with a suitable alternative finish for special machinery requirements, or for adverse environmental conditions. Please consult Rexnord to discuss any special requirements.

## Maintenance

The 320 Series uses sealed-for-life deep groove ball bearings. Other working surfaces are lightly greased on assembly. Under reasonably clean conditions the unit will operate with a minimum of maintenance and re-lubrication. It is recommended that the torque setting is checked and reset as part of routine maintenance or after any sustained period of disengaged running. The frequency of maintenance is dependent on many operating factors, but in adverse conditions, please consult Rexnord.

## General Safety

Autogard Torque Limiters are reliable units, built to high standards of workmanship. Similar to all mechanical devices, each application must be considered on its own merits with reference to safety (i.e. lifting equipment, explosive conditions, etc). As rotating components, adequate guarding must be provided, in accordance with local codes. The intended use of torque limiters is for the protection of industrial machinery and should not be regarded as human safety devices. Rexnord staff is always available to discuss particular applications.

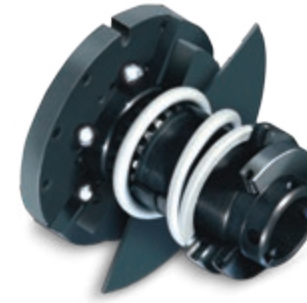


## 320 Series Industries

Lumber — Wood Products  
Energy  
Printing and Packaging  
Paper Converting  
Chemical  
Pharmaceuticals



## Other Autogard Products



Autogard Torque Limiter 200 Series



Autogard Torque Limiter 400 Series



Autogard Torque Limiter 600 Series



Autogard Torque Limiter 820 Series



Autogard WT Series

To learn more about the Autogard Torque Limiter offering and how it can provide you with high-quality overload protection, go to [www.autogard.com](http://www.autogard.com), where you'll find:

• Product information • Brochures • Manuals

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