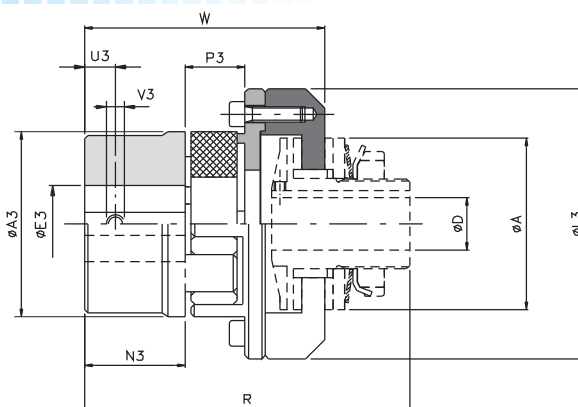


## ... + GAS (jaw coupling model): technical data

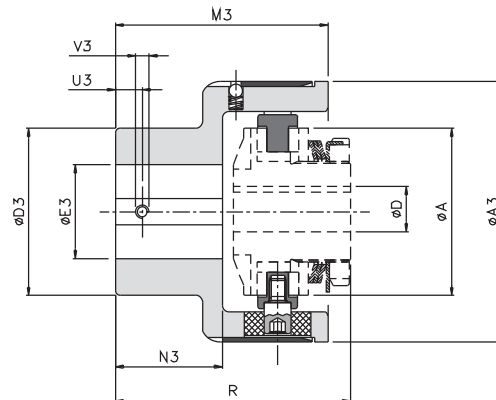


### DIMENSIONS AND TECHNICAL DETAILS

| Size    |                 | Torque [Nm] |      | A3   | E3<br>H7<br>max. | L3  | N3  | P3  | U3 | V3 | D H7          |      | R   | W     | Misalignments*          |                 |                  | Max<br>speed<br>[Rpm] | Weight<br>[Kg] |      |
|---------|-----------------|-------------|------|------|------------------|-----|-----|-----|----|----|---------------|------|-----|-------|-------------------------|-----------------|------------------|-----------------------|----------------|------|
| DF      | GAS<br>Std ▲Min | Nom.        | Max. |      |                  |     |     |     |    |    | pilot<br>bore | max. |     |       | Angular<br>$\alpha$ [°] | Axial<br>X [mm] | Radial<br>K [mm] |                       |                |      |
| 00.25   | 01 (14)         | -           | 12,5 | 25   | 30               | 16  | 43  | 11  | 12 | 5  | M4            | -    | 8   | 56    | 37,5                    | 0°54'           | 1                | 0,09                  | 10000          | 0,2  |
| 00.38   | 00 (19)         | -           | 17   | 34   | 40               | 25  | 58  | 25  | 16 | 10 | M5            | -    | 12  | 84,5  | 64                      | 1° 18'          | 1                | 0,20                  | 10000          | 0,4  |
| 0.50    | 0 (24)          | -           | 60   | 120  | 55               | 35  | 74  | 30  | 18 | 10 | M5            | -    | 20  | 94    | 74,5                    | 1° 18'          | 1                | 0,22                  | 7600           | 0,8  |
| 1.70    | 2 (38)          | 1 (28)      | 325  | 650  | 80               | 48  | 107 | 45  | 24 | 15 | M8            | -    | 25  | 135   | 104                     | 1° 18'          | 1,4              | 0,28                  | 5450           | 3,3  |
| 2.90    | 3 (42)          | 2 (38)      | 450  | 900  | 95               | 55  | 132 | 50  | 26 | 20 | M8            | -    | 38  | 148,5 | 115,5                   | 1° 18'          | 1,6              | 0,32                  | 4250           | 5,4  |
| 3.115   | 5 (55)          | 4 (48)      | 685  | 1370 | 120              | 74  | 164 | 65  | 30 | 20 | M10           | 18   | 45  | 181,5 | 143,5                   | 1° 18'          | 1,8              | 0,38                  | 3350           | 10,3 |
| 4.140   | 7 (75)          | 6 (65)      | 1465 | 2930 | 160              | 95  | 208 | 85  | 40 | 25 | M10           | 24   | 55  | 224   | 181                     | 1° 18'          | 2,5              | 0,48                  | 2750           | 21,1 |
| 5.170   | 8 (90)          | 7 (75)      | 3600 | 7200 | 200              | 110 | 246 | 100 | 45 | 30 | M12           | 28   | 65  | 260   | 207,5                   | 1° 18'          | 2,8              | 0,50                  | 2250           | 36,3 |
| ▲ 6.205 | 9 (100)         | -           | 3300 | 6600 | 225              | 115 | 285 | 110 | 50 | 30 | M12           | 38   | 80  | 295   | 236                     | 1° 18'          | 3,0              | 0,52                  | 1900           | -    |
| ▲ 7.240 | 10 (110)        | -           | 4800 | 9600 | 255              | 125 | 330 | 120 | 55 | 33 | M16           | 50   | 100 | 317   | 255                     | 1° 18'          | 3,2              | 0,55                  | 1600           | -    |

▲ On request

## ... + GEC (compact elastic coupling model): technical data



### DIMENSIONS AND TECHNICAL DETAILS

| Size    |     | Torque [Nm] |       | A3  | D3  | E3 H7         |      | M3   | N3  | U3 | V3  | A   | D H7                    |                 | R     | Misalignments    |       |     | Max.<br>speed<br>[Rpm] | Weight<br>[Kg] |
|---------|-----|-------------|-------|-----|-----|---------------|------|------|-----|----|-----|-----|-------------------------|-----------------|-------|------------------|-------|-----|------------------------|----------------|
| DF      | GEC | Nom         | Max   |     |     | pilot<br>bore | max. |      |     |    |     |     | Angular<br>$\alpha$ [°] | Axial<br>X [mm] |       | Radial<br>K [mm] |       |     |                        |                |
| 00.38   | 00  | 35          | 50    | 63  | 42  | 5             | 20   | 60,5 | 29  | 8  | M4  | 25  | -                       | 12              | 58    | 1°               | ± 0,7 | 0,5 | 6000                   | 0,8            |
| 0.50    | 0   | 70          | 110   | 78  | 50  | 10            | 28   | 63,5 | 32  | 10 | M5  | 50  | -                       | 20              | 68    | 1°               | ± 0,7 | 0,5 | 5500                   | 1,41           |
| 1.70    | 1   | 280         | 420   | 108 | 70  | 12            | 38   | 89   | 49  | 12 | M6  | 70  | -                       | 25              | 106   | 0° 48'           | ± 0,7 | 0,5 | 5000                   | 4,18           |
| 2.90    | 2   | 570         | 860   | 130 | 80  | 15            | 45   | 111  | 65  | 15 | M8  | 90  | -                       | 38              | 128   | 0° 36'           | ± 0,7 | 0,6 | 4250                   | 7,45           |
| 3.115   | 3   | 980         | 1500  | 161 | 100 | 15            | 60   | 140  | 85  | 15 | M8  | 115 | 18                      | 45              | 158   | 0° 30'           | ± 0,8 | 0,6 | 3350                   | 13,4           |
| 4.140   | 4   | 2340        | 3600  | 206 | 120 | 20            | 70   | 168  | 105 | 20 | M10 | 140 | 24                      | 55              | 189,5 | 0° 24'           | ± 0,8 | 0,6 | 2750                   | 24,1           |
| 5.170   | 5   | 3880        | 5800  | 239 | 135 | 30            | 80   | 201  | 130 | 20 | M10 | 170 | 28                      | 65              | 229,5 | 0° 24'           | ± 0,8 | 0,6 | 2250                   | 37,9           |
| ▲ 6.205 | 6   | 15000       | 20000 | 315 | 215 | 40            | 150  | 260  | 165 | 25 | M12 | 205 | 38                      | 80              | 290,5 | 0° 24'           | ± 0,8 | 0,6 | 1900                   | 86,8           |
| ▲ 7.240 | 7   | 30000       | 35000 | 360 | 240 | 40            | 160  | 310  | 205 | 25 | M12 | 240 | 50                      | 100             | 341,5 | 0° 24'           | ± 0,8 | 0,6 | 1500                   | 160,5          |



### NOTES

▲ On request

- ⊗ ... + GAS (misalignments)\*: data relates to red elastomeric element 98 Sh-A.
- ⊗ Technical details: data is relevant only to application (.../GAS-.../GEC), for torque limiter data see on page 5.
- ⊗ Technical details: weights are relevant only to the coupling application with pilot bore version (.../GAS-.../GEC).

# FRICION TORQUE LIMITER "DF": additional information

## TORQUE TRANSMISSION

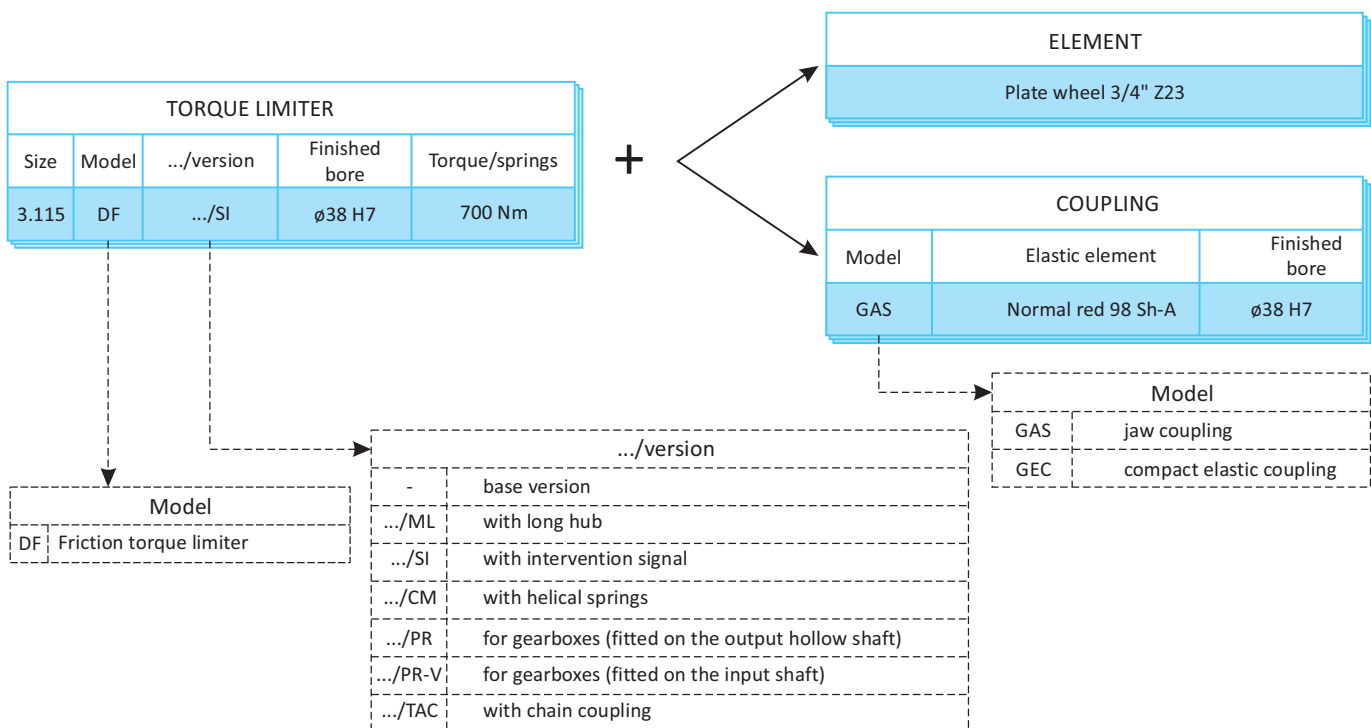
| Torque transmission [Nm] relevant to the springs configuration |            |           |           |             |           |            |             |   |   |
|--|------------|-----------|-----------|-------------|-----------|------------|-------------|---|---|
| Size   | A1S1<br>)  | A2S2<br>) | A3S3<br>) | A1M1<br>)   | A1G1<br>) | A2G2<br>)  | A3G3<br>)   | ST<br> | SQ<br> |
| 00.25  | 1 - 8      | 2 - 12    | 2 - 20    |             |           |            |             |   |   |
| 00.38  | 1 - 14     | 8 - 22    | 15 - 34   |             |           |            |             |   |   |
| 0.50   | 2 - 12     |           |           |             | 4 - 40    | 17 - 70    | 23 - 100    | 1,5 - 9   |   |
| 1.70   | 6 - 18     |           |           | 9 - 35      | 19 - 60   | 34 - 120   | 60 - 210    | 2 - 34  | 2 - 60  |
| 2.90   |            |           |           | 13 - 105    | 74 - 140  | 90 - 280   | 185 - 450   | 5 - 56  | 3 - 70  |
| 3.115  | 26 - 100 * |           |           | 65 - 280    | 120 - 360 | 207 - 700  | 210 - 950   | 10 - 130  | 25 - 160  |
| 4.140  | 80 - 140 * |           |           | 100 - 240 * | 180 - 550 | 260 - 950  | 390 - 1200  |   |   |
| 5.170  |            |           |           |             | 160 - 700 | 300 - 1450 | 1000 - 2600 |   |   |

| Size   | A4M1<br>(()) | A4G1<br>(()) | A4G2<br>(()) |  |  |  |  |  |  |
|--------|--------------|--------------|--------------|--|--|--|--|--|--|
| 6.205  | 300 - 1200   | 500 - 2400   | 1000 - 4800  |  |  |  |  |  |  |
| 7.240  | 500 - 2000   | 1000 - 4000  | 2000 - 8000  |  |  |  |  |  |  |
| 8.300  | 800 - 3500   | 1500 - 7000  | 3000 - 14000 |  |  |  |  |  |  |
| 9.340  | 1000 - 4500  | 2000 - 9000  | 4000 - 18000 |  |  |  |  |  |  |
| 10.400 | 1500 - 5000  | 3000 - 11000 | 5000 - 23000 |  |  |  |  |  |  |

\* Until stocks are finished

## ORDER EXAMPLE



# FRICION TORQUE LIMITER "DF": additional information

## PLATE WHEELS

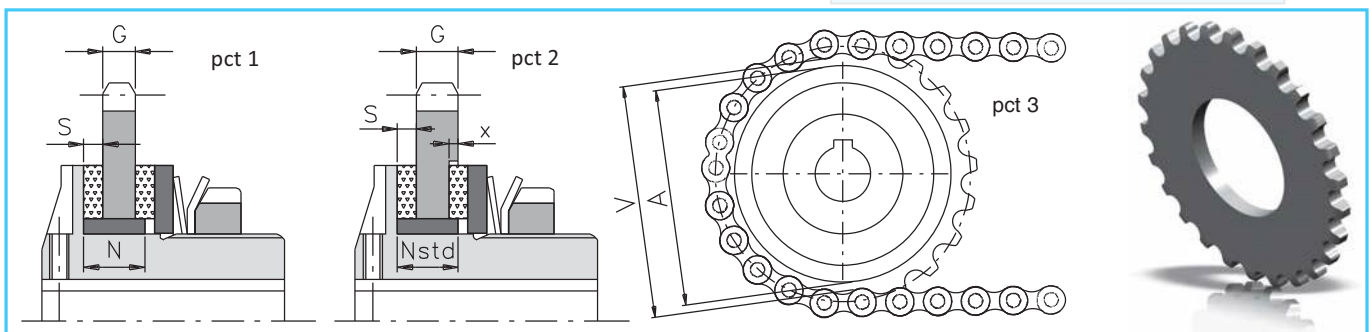
The driving part selected (plate wheels, pulleys, gears, and so on) to be incorporated into the friction torque limiter, must adhere to predetermined characteristics (ex. the surface in contact to the friction rings with roughness  $Ra=0,8 : 1,6$ ) to ensure good performance. In the table below, there are standard plate wheels in ComInTec's production (supplied already grounded) which can be assembled on the torque limiter; **and the minimum chain passage "V" (see picture 3)**, necessary for the correct sizing of the plate wheel to avoid contact between the chain and outside diameter of the limiter. It is possible to assemble various types of plate wheels, but the surfaces must be machined, and the chain passage cannot be smaller than this value. Another aspect to take into consideration to ensure the dimension of the assembly is correct, is the element thickness and its relevant bush "N" (see picture 1). We suggest to obtain a quote "N" equal to  $[S + G + 1]$ . Comparing "N" value obtained, to the  $N_{std}$  indicated on the table, which corresponds to the standard length of the bushes, you can have: "N" < " $N_{std}$ " (picture 1 - ex.A) → reduce the bush width to quote "N".

"N" > " $N_{std}$ " (picture 2 - exB) → machine the driving part at a diameter of "A+1" and a depth equal to "x" ( $N - N_{std}$ ).

Example "A" (see picture 1)  
 1.70 with plate wheel #7  
 $G = 7 \text{ mm}$   
 $S = 4 \text{ mm}$   
 $N = S + G + 1 = 4 + 7 + 1 = 12$   
 $N_{std} = 15$   
 Reduce the bush width to 12 mm.

Example "B" (see picture 2)  
 1.70 with plate wheel #13  
 $G = 13 \text{ mm}$   
 $S = 4 \text{ mm}$   
 $N = S + G + 1 = 4 + 13 + 1 = 18$   
 $N_{std} = 15$   
 Machine  $\varnothing 71$  with depth (value "x"= $18-15=3$ )

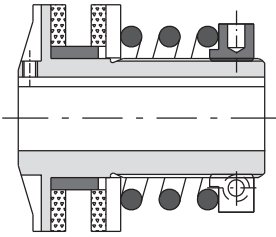
where:  
 $p$  = pitch [in]  
 $G$  = thickness of the ground element  
 $Z$  = teeth number  
 $dp$  = pitch diameter  
 $S$  = thickness of the friction ring  
 $N_{std}$  = thickness of the standard bush  
 $N$  = thickness of the calculated bush ( $S+G+1$ )  
 $A$  = outside diameter of the torque limiter  
 $V$  = inside diameter of the chain  
 $x$  = depth of the machining ( $N - N_{std}$ )



| Size   | P [in]       | G [mm] | Z  | dp [mm] | S [mm] | N Std [mm] | A [mm] | V [mm] | Code for single plate wheel |                    |              |
|--------|--------------|--------|----|---------|--------|------------|--------|--------|-----------------------------|--------------------|--------------|
|        |              |        |    |         |        |            |        |        | DF DSF/TF/AP                | DF/SI DSF/TF/AP/SI | EDF/F        |
| 00.25  | 3/8"         | 5,1    | 12 | 36,80   | 2      | 5,5        | 25     | 28     | 580419851P05                | -                  | -            |
| 00.38  | 3/8"         | 5,1    | 16 | 48,82   | 2,5    | 8          | 38     | 41     | 580406900P05                | -                  | 580406951P05 |
|        |              |        | 20 | 60,89   |        |            |        |        | 580406400P05                | -                  | 580406451P05 |
| 0.50   | 3/8"         | 5,1    | 22 | 66,93   | 3      | 10         | 50     | 53     | 580406500P05                | -                  | 580406551P05 |
|        |              |        | 22 | 89,24   |        |            |        |        | 580403700P05                | 580407700P20       | 580403751P05 |
| 1.70   | 1/2" x 5/16" | 7,0    | 19 | 96,45   | 4      | 15         | 70     | 73     | 580404200P05                | -                  | -            |
|        |              |        | 26 | 105,36  |        |            |        |        | 580404700P05                | -                  | -            |
| 2.90   | 1/2" x 5/16" | 7,0    | 18 | 109,71  | 4      | 17         | 90     | 94     | 580440100P05                | 580442100P20       | 580440151P05 |
|        |              |        | 23 | 139,9   |        |            |        |        | 580404900P05                | -                  | -            |
| 3.115  | 3/4"         | 10,9   | 17 | 138,22  | 4      | 21         | 115    | 119    | 580440200P05                | 580442200P20       | 580440200P05 |
|        |              |        | 28 | 170,13  |        |            |        |        | 580405500P05                | -                  | -            |
| 4.140  | 1"           | 16,0   | 20 | 162,38  | 5      | 25         | 140    | 144    | 580440300P05                | 580442300P20       | 580440351P05 |
|        |              |        | 24 | 194,59  |        |            |        |        | 580440400P05                | 580442400P20       | -            |
| 5.170  | 1" 1/4       | 18,3   | 20 | 202,98  | 5      | 28         | 170    | 175    | 580417200P05                | -                  | -            |
|        |              |        | 26 | 263,40  |        |            |        |        | 580406200P05                | 580407600P20       | -            |
| 7.240  | 1" 1/4       | 18,3   | 28 | 283,56  | 5      | 35         | 240    | 245    | 580406300P05                | 580407700P20       | -            |
| 8.300  | 1" 1/2       | 23,8   | 28 | 340,27  | 6      | 40         | 300    | 306    | 580407000P05                | 580407300P20       | -            |
| 9.340  | 1" 1/2       | 23,8   | 32 | 388,69  | 6      | 40         | 340    | 355    | 580407100P05                | 580407400P20       | -            |
| 10.400 | 1" 1/2       | 23,8   | 36 | 437,16  | 6      | 42         | 400    | 403    | 580407200P05                | 580407500P20       | -            |

▲ On request

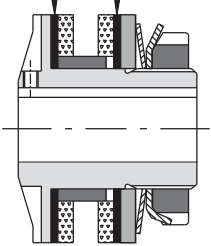
## VERSIONS ON REQUEST



### .../CM: minimum torque version

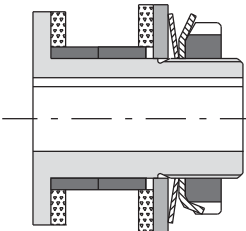
Helical springs execution, for a higher torque range and consequently, a finer adjustment on calibration is possible

STAINLESS STEEL discs



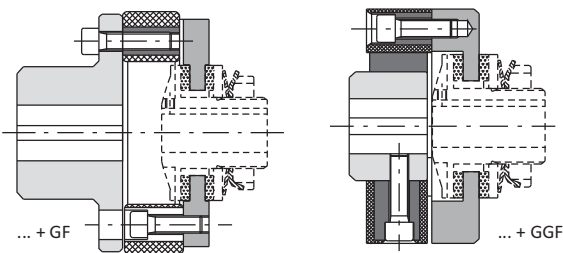
### .../EA: rust resistant

Rust resistant execution, with stainless steel rings, galvanized for application in wet environments.



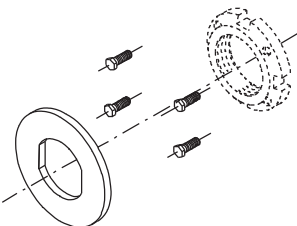
### .../MFR: reduced flange hub version

Reduced flange hub execution, to assemble elements with reduced diameters. Available with two or three bushes version.



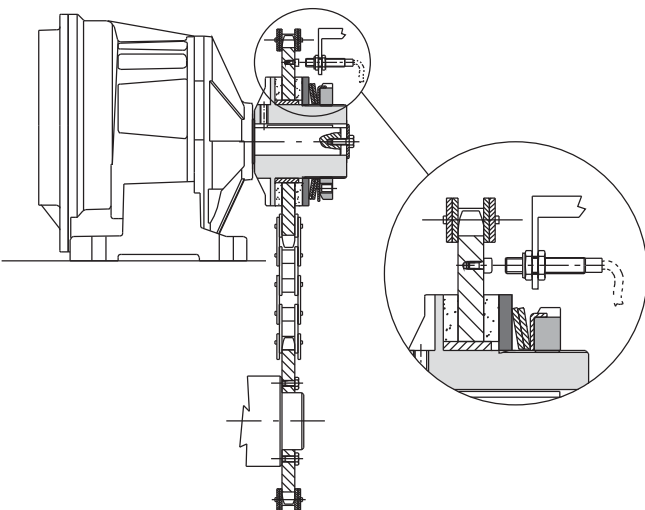
### DF + GF: with flexible coupling DF + GGF: with highly flexible coupling

Models suitable for an in-line shafts connection and also able to accommodate high misalignments.



### GT/DR KIT: kit for double registration matching to the nut with notches GT

Torque adjustment system by double registration (flange plus hexagonal head-screws) for high sensitivity and precision on calibration, also with belleville washers.



### .../MS: overload detection version

Our suggestion to increase the life of the friction rings and to maintain the torque limiter efficiency is (it is possible and advised) to stop the machine immediately, on the first slip caused by an overload. This is possible by using one proximity inductive sensor, which registers any speed anomaly, as indicated in the picture.








# "DF" FRICTION TORQUE LIMITER: introduction



- Simple and economic friction torque limiter.
- Suitable for dusty conditions without need of timing between gearbox and output.
- Silent overload without vibration.
- Protection in both rotation directions.
- Asbestos-free friction discs.
- Simple and precise torque setting by adjusting the locking ring.
- The innovative setting by the "H" dimension allows for immediate calibration.

### ON REQUEST

- Complete with transmission gear, fully turned and mounted (plate wheel, pulley, gear).
- Different types of friction discs for specific applications.
- Possibility of connections with bore and keyway, locking assembly or other locking systems.
- Anti-corrosive surface treatments for special requirements.

|   |  |  |         |
|---|--|--|---------|
|    | DF: Basic model for parallel shaft transmission, with plate wheels, gear pairs or pulleys. | from 1 to 23000 Nm<br>max. bore $\varnothing$ 140 mm       | Page 5  |
|    | DF/SI: signaling on overload and automatic re-engaging possible.                           | from 3 to 23000 Nm<br>max. bore $\varnothing$ 140 mm       | Page 6  |
|    | DF/TAC: in-line shaft connection, simple and economic.                                     | from 1 to 23000 Nm<br>max. bore $\varnothing$ 140 mm       | Page 7  |
|    | ... + GAS: in-line shaft connection with elastic coupling with high misalignments.         | from 1 to 7200 Nm<br>max bore $\varnothing$ 110 mm         | Page 8  |
|   | ... + GEC: in-line shaft connection with compact elastic coupling.                         | from 1 to 800 Nm<br>max bore $\varnothing$ 160 mm          | Page 8  |
|  | DF/PR: designed for the application on the slow speed shaft of a worm-gearbox.             | from 1 to 2600 Nm<br>max. bore $\varnothing$ 55 mm         | Page 9  |
|  | DF/TAC/PR-V: designed for application on the high speed shaft of a worm-gearbox.           | from 1 to 1200 Nm<br>max. shaft - bore $\varnothing$ 55 mm | Page 10 |

## MAIN APPLICATIONS

- Forming machines.
- Conveyors.
- Automotive.
- Agricultural machines, woodworking machines.

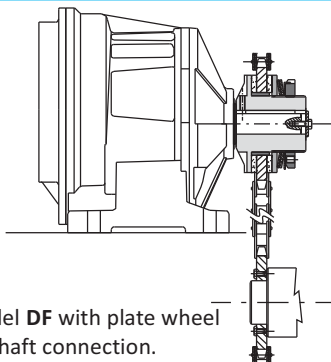
## ADVANTAGES AND BENEFITS

- Protects the motor-gearbox in case of accidental collision.
- Protects the film of wrapping machines in case of higher tension.
- Absorbs static torques without disengaging.
- Protects the gear in case of short product jam.

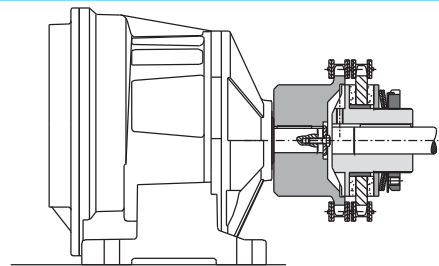
## FRICTION RINGS

- **STD (standard)**: friction rings used for the torque values indicated in the catalogue. Optimum performance ratio torque / life.
- ▲ ○ **LD (long life)**: same performance in torque respect std friction rings life greater than 5 times.
- ▲ ○ **LDX (extra long life)**: life greater than 150 times respect standard friction rings, but performance in torque reduce of 70%.
- ▲ On request

## APPLICATION EXAMPLES



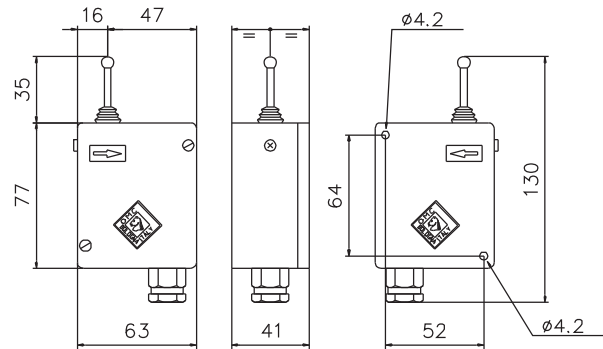
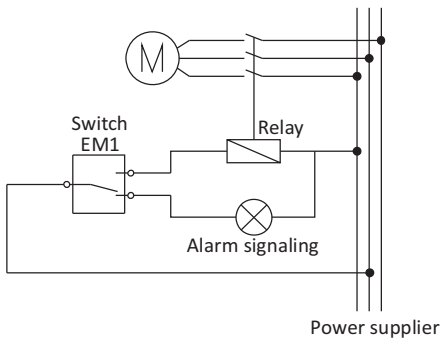
Friction Model DF with plate wheel for parallel shaft connection.



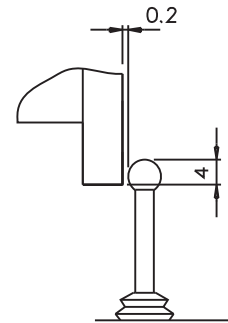
Friction Model with chain coupling DF/TAC for in-line shafts connection.

# ELECTROMECHANICAL SWITCH "EM1"

- Die-cast aluminium box with rotection level **IP57** DIN 40050.
- Adjustment of the lever end position possible.
- Operation temperature range from  $-10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .
- Three different options of voltage input: 15A-250VCA; 5A-24VCC; 0,2A-250VCC.
- 1 or 2 contacts available.
- Initial stroke 0,5 mm, Extra stroke:  $4 \div 8$  mm depending on setting (possible in a range of 6 mm).

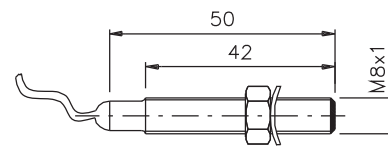
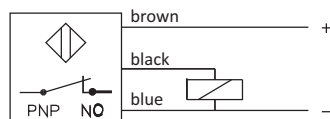
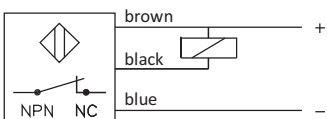
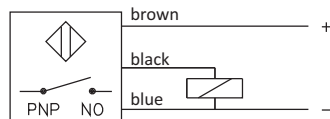
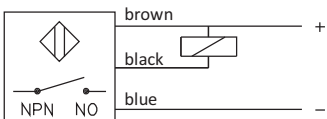


Weight: 350g



## PROXIMITY SENSOR "PRX"

- Standard version: Brass cover with protection level **IP67** DIN 40050.
- Electric contact:  $5 \div 24$  VdC.
- Frequency: 2000 Hz.
- Output: NPN (N.O.-N.C.) – PNP (N.O.-N.C.).
- Operating distance: max 1 mm.
- Cable length: 2 m (3x0,2).



Weight: 50g

