

# Production Protection



## TSUBAKI EMERSON

OVERLOAD PROTECTION DEVICE

SHOCK RELAY™  
TORQUE GUARD  
TORQUE LIMITER

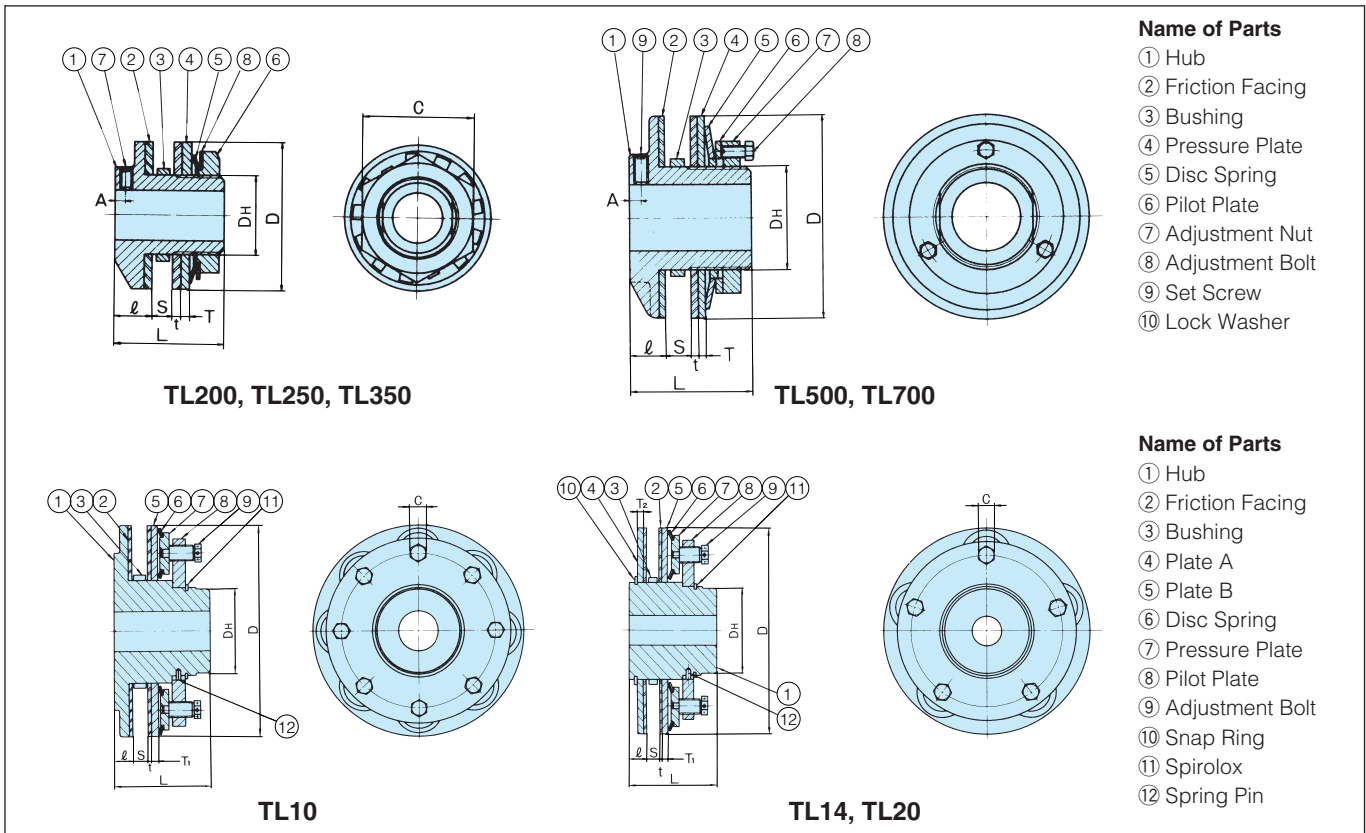
# Tsubaki Emerson Torque Limiter

Tsubaki Emerson Torque Limiter is the most economical overload protection device, which utilizes the friction mechanism. It can be used with a sprocket, gear, sheave or flange plate as the center member clamped between two friction facings. Tsubaki Emerson has finished bore series with sprocket as the standard product line. It will help to remove processing for the shaft bore and preparing the sprocket.

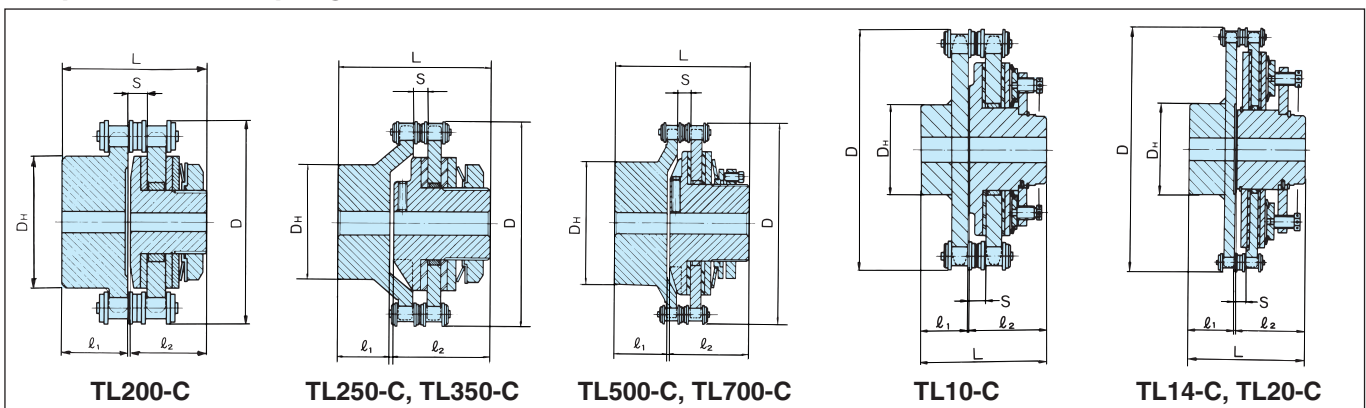
Tsubaki Emerson Torque Limiter is the easiest to use and the economical overload protection device.



## Torque Limiter



## Torque Limiter Coupling



## Capacity and Dimension of Torque Limiter

Dimensions in mm

| Model           | Torque Range (Nm) | Pilot Bore | Max. Bore | Bushing Length       | O.D. of Bushing                         | Bore for Center Member            | D   | DH  | L   | I   | T   | T1  | T2 | t   | S (max.) | A | C  | Mass (kg) |
|-----------------|-------------------|------------|-----------|----------------------|-----------------------------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|----|-----|----------|---|----|-----------|
| <b>TL200-1L</b> | 1.0~2.0           | 7          | 14        | 3.8<br>6.0           | 30 <sup>-0.024</sup> <sub>-0.049</sub>  | 30 <sup>+0.03</sup> <sub>0</sub>  | 50  | 24  | 29  | 6.5 | 2.6 | —   | —  | 2.5 | 7        | — | 38 | 0.2       |
| <b>TL200-1</b>  | 2.9~9.8           |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL200-2</b>  | 6.9~20            |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL250-1L</b> | 2.9~6.9           | 10         | 22        | 4.5<br>6.5           | 41 <sup>-0.010</sup> <sub>-0.045</sub>  | 41 <sup>+0.05</sup> <sub>0</sub>  | 65  | 35  | 48  | 16  | 4.5 | —   | —  | 3.2 | 9        | 4 | 50 | 0.6       |
| <b>TL250-1</b>  | 6.9~27            |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL250-2</b>  | 14~54             |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL350-1L</b> | 9.8~20            | 17         | 25        | 4.5<br>6.5<br>9.5    | 49 <sup>-0.025</sup> <sub>-0.065</sub>  | 49 <sup>+0.05</sup> <sub>0</sub>  | 89  | 42  | 62  | 19  | 4.5 | —   | —  | 3.2 | 16       | 6 | 63 | 1.2       |
| <b>TL350-1</b>  | 20~74             |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL350-2</b>  | 34~149            |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL500-1L</b> | 20~49             | 20         | 42        | 6.5<br>9.5           | 74 <sup>-0.05</sup> <sub>-0.10</sub>    | 74 <sup>+0.05</sup> <sub>0</sub>  | 127 | 65  | 76  | 22  | 6.0 | —   | —  | 3.2 | 16       | 7 | —  | 3.5       |
| <b>TL500-1</b>  | 47~210            |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL500-2</b>  | 88~420            |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL700-1L</b> | 49~118            | 30         | 64        | 9.5<br>12.5          | 105 <sup>-0.075</sup> <sub>-0.125</sub> | 105 <sup>+0.05</sup> <sub>0</sub> | 178 | 95  | 98  | 24  | 8.0 | —   | —  | 3.2 | 29       | 8 | —  | 8.4       |
| <b>TL700-1</b>  | 116~569           |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| <b>TL700-2</b>  | 223~1080          |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| TL10-16         | 400~1240          | 30         | 72        | 12.5<br>15.5<br>19.5 | 135 <sup>-0.085</sup> <sub>-0.125</sub> | 135 <sup>+0.07</sup> <sub>0</sub> | 254 | 100 | 115 | 23  | —   | 8.5 | —  | 4.0 | 24       | — | 19 | 21        |
| TL10-24         | 590~1860          |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| TL14-10         | 890~2660          | 40         | 100       | 15.5<br>19.5<br>23.5 | 183 <sup>-0.07</sup> <sub>-0.12</sub>   | 183 <sup>+0.07</sup> <sub>0</sub> | 356 | 145 | 150 | 31  | —   | 13  | 13 | 4.0 | 29       | — | 27 | 52        |
| TL14-15         | 1960~3920         |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| TL20- 6         | 2450~4900         |            |           |                      |                                         |                                   |     |     |     |     |     |     |    |     |          |   |    |           |
| TL20-12         | 4610~9310         | 50         | 130       | 15.5<br>19.5<br>23.5 | 226 <sup>-0.07</sup> <sub>-0.12</sub>   | 226 <sup>+0.07</sup> <sub>0</sub> | 508 | 185 | 175 | 36  | —   | 15  | 18 | 4.0 | 31       | — | 36 | 117       |

## Shaft Bore Size of Finished Bore series

| Model | Stock Bore Size (H7) in mm         |
|-------|------------------------------------|
| TL200 | 11. 12. 14                         |
| TL250 | 12. 14. 15. 16. 18. 19. 20. 22     |
| TL350 | 18. 19. 20. 22. 24. 25             |
| TL500 | 22. 24. 25. 30. 35. 38. 40. 42     |
| TL700 | 35. 40. 42. 45. 50. 55. 60. 63. 63 |



The key profile should be accordance with DIN 6885.3.

## Capacity and Dimension of Torque Limiter Coupling

Dimensions in mm

| Model            | Torque Range (Nm) | Max. Running Speed (r/min) | Pilot Bore |    | Max. Bore |     | Sprocket  | D   | DH  | L   | I <sub>1</sub> | I <sub>2</sub> | S    | Mass (kg) |
|------------------|-------------------|----------------------------|------------|----|-----------|-----|-----------|-----|-----|-----|----------------|----------------|------|-----------|
|                  |                   |                            | Sprocket   | TL | Sprocket  | TL  |           |     |     |     |                |                |      |           |
| <b>TL200-1LC</b> | 1.0~2.0           | 1200                       | 8          | 7  | 31        | 14  | RS 40-16T | 76  | 50  | 55  | 24             | 29             | 7.5  | 1.0       |
| <b>TL200-1C</b>  | 2.9~9.8           |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL200-2C</b>  | 6.9~20            |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL250-1LC</b> | 2.9~6.9           | 1000                       | 13         | 10 | 38        | 22  | RS 40-22T | 102 | 56  | 76  | 25             | 48             | 7.4  | 1.9       |
| <b>TL250-1C</b>  | 6.9~27            |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL250-2C</b>  | 14~54             |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL350-1LC</b> | 9.8~20            | 800                        | 13         | 17 | 45        | 25  | RS 50-24T | 137 | 72  | 103 | 37             | 62             | 9.7  | 4.2       |
| <b>TL350-1C</b>  | 20~74             |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL350-2C</b>  | 34~149            |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL500-1LC</b> | 20~49             | 500                        | 18         | 20 | 65        | 42  | RS 60-28T | 188 | 105 | 120 | 40             | 76             | 11.6 | 10.0      |
| <b>TL500-1C</b>  | 47~210            |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL500-2C</b>  | 88~420            |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL700-1LC</b> | 49~118            | 400                        | 23         | 30 | 90        | 64  | RS 80-28T | 251 | 150 | 168 | 66             | 98             | 15.3 | 26.0      |
| <b>TL700-1C</b>  | 116~569           |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| <b>TL700-2C</b>  | 223~1080          |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| TL10-16C         | 400~1240          | 300                        | 33         | 30 | 95        | 72  | RS140-22T | 355 | 137 | 189 | 71             | 115            | 26.2 | 66.0      |
| TL10-24C         | 590~1860          |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| TL14-10C         | 890~2660          | 200                        | 28         | 40 | 118       | 100 | RS160-26T | 470 | 167 | 235 | 80             | 150            | 30.1 | 140.0     |
| TL14-15C         | 1960~3920         |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| TL20- 6C         | 2450~4900         |                            |            |    |           |     |           |     |     |     |                |                |      |           |
| TL20-12C         | 4610~9310         | 140                        | 43         | 50 | 150       | 130 | RS160-36T | 631 | 237 | 300 | 120            | 175            | 30.1 | 285.0     |

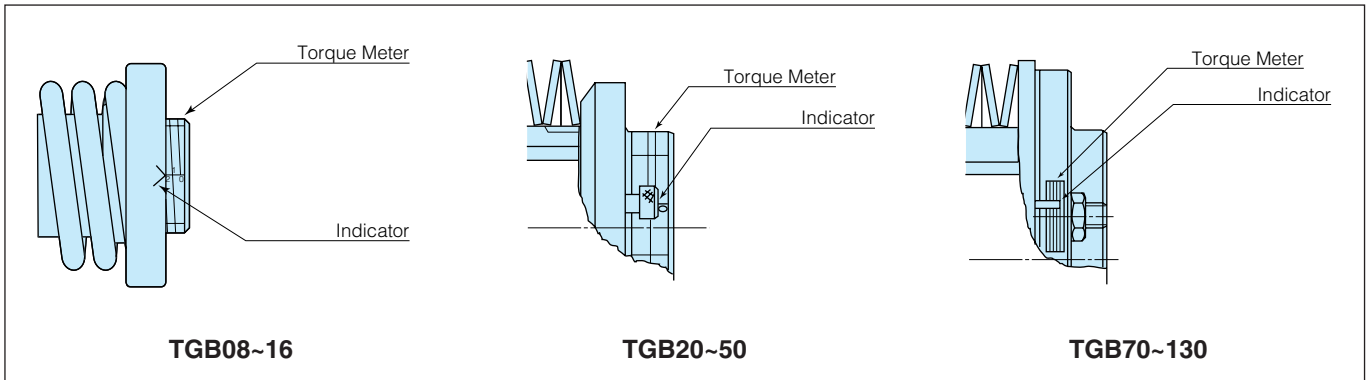
# Tsubaki Emerson Torque Guard

Tsubaki Emerson Torque Guard is the ball detent type overload protection device. It can stop machine immediately when overloaded by using non-contact micro switch. By the Torque meter and Indicator, desired torque can easily be set or adjusted. The non-symmetric arrangement of balls and pockets allows only one engagement position. Once the overload removed, it re-engages automatically by jogging a driving member.

Tsubaki Emerson Torque Guard can protect you from the machine damage and eliminate costly downtime.



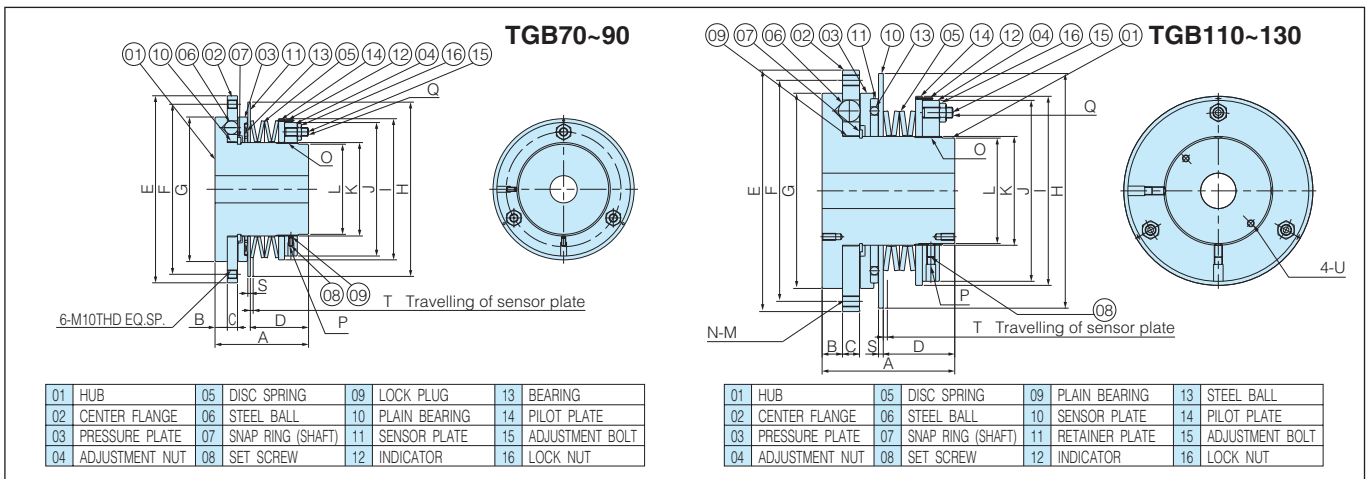
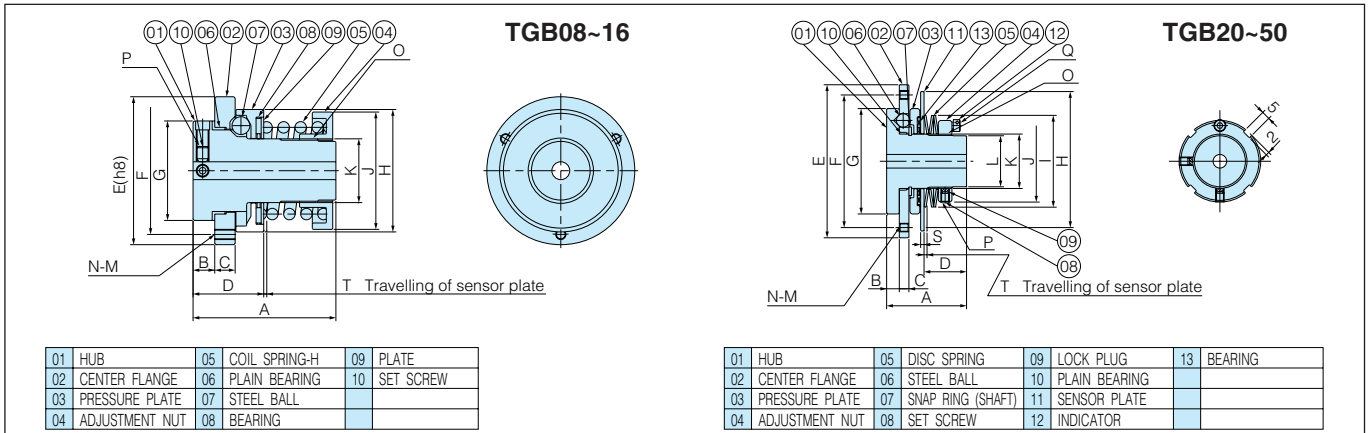
## Three kinds of Torque Meter and Indicator



## Specifications of Torque Guard and Torque Guard Coupling

Dimensions in mm

| Model  | Torque Range (Nm) | Max. Running Speed (r/min) | Color of Disc Spring | Pilot Bore | Max. Bore |
|--------|-------------------|----------------------------|----------------------|------------|-----------|
| TGB 08 | L (C)             | 1200                       | Yellow               | 5          | 8         |
|        | M (C)             |                            | Blue                 |            |           |
|        | H (C)             |                            | Orange               |            |           |
| TGB 12 | L (C)             | 1000                       | Yellow               | 6          | 12        |
|        | M (C)             |                            | Blue                 |            |           |
|        | H (C)             |                            | Orange               |            |           |
| TGB 16 | L (C)             | 900                        | Yellow               | 7          | 16        |
|        | M (C)             |                            | Blue                 |            |           |
|        | H (C)             |                            | Orange               |            |           |
| TGB 20 | H (C)             | 700                        | Orange               | 8          | 20        |
| TGB 30 | L (C)             | 500                        | Yellow               | 12         | 30        |
|        | H (C)             |                            | Orange               |            |           |
| TGB 50 | L (C)             | 300                        | Yellow               | 2          | 50        |
|        | M (C)             |                            | Blue                 |            |           |
|        | H (C)             |                            | Orange               |            |           |
| TGB 70 | H (C)             | 160                        | Orange               | 32         | 70        |
| TGB 90 | L (C)             | 120                        | Yellow               | 42         | 90        |
|        | H (C)             |                            | Orange               |            |           |
| TGB110 | L (C)             | 100                        | Yellow               | 52         | 110       |
|        | H (C)             |                            | Orange               |            |           |
| TGB130 | L (C)             | 80                         | Yellow               | 60         | 130       |
|        | H (C)             |                            | Orange               |            |           |



### Dimensions of Torque Guard

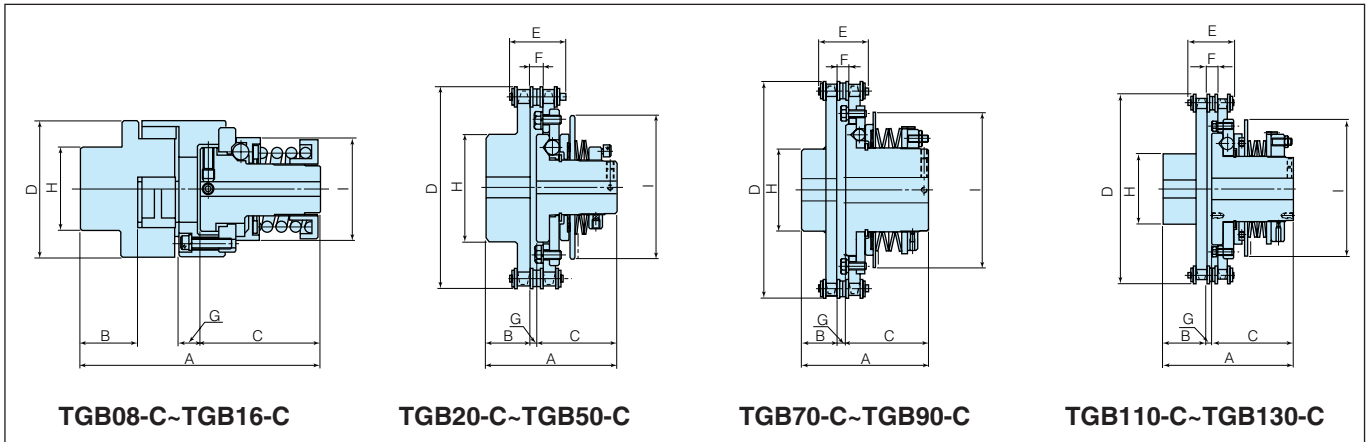
Dimensions in mm

| Model  | A   | B   | C   | D    | E (h7) | F P.C.D. | G   | H   | I   | J   | K   | L   | M   | N | O Adjust Nut | P Set Screw | Q Adjust Bolt |
|--------|-----|-----|-----|------|--------|----------|-----|-----|-----|-----|-----|-----|-----|---|--------------|-------------|---------------|
| TGB 08 | 39  | 6.5 | 5   | 20   | 40     | 34       | 26  | 33  | —   | 30  | 15  | —   | M3  | 3 | M15 × 1      | M3 × 4      | —             |
| TGB 12 | 46  | 8   | 6   | 23.5 | 48     | 40       | 32  | 40  | —   | 35  | 20  | —   | M4  | 3 | M20 × 1      | M4 × 6      | —             |
| TGB 16 | 55  | 8.5 | 8   | 27.7 | 58     | 50       | 39  | 48  | —   | 45  | 25  | —   | M4  | 3 | M25 × 1.5    | M5 × 6      | —             |
| TGB 20 | 47  | 7.5 | 5.7 | 25   | 90     | 78       | 62  | 82  | 54  | 48  | 32  | 30  | M5  | 4 | M32 × 1.5    | M5 × 6      | M4 × 8        |
| TGB 30 | 60  | 9.5 | 7   | 33   | 113    | 100      | 82  | 106 | 75  | 65  | 45  | 43  | M6  | 6 | M45 × 1.5    | M5 × 6      | M4 × 10       |
| TGB 50 | 81  | 15  | 8.5 | 44.8 | 160    | 142      | 122 | 150 | 117 | 95  | 75  | 70  | M8  | 6 | M75 × 2      | M5 × 10     | M4 × 14       |
| TGB 70 | 110 | 15  | 12  | 68.5 | 220    | 200      | 170 | 205 | 166 | 157 | 110 | 106 | M10 | 6 | M110×2       | M5 × 10     | M10×28        |
| TGB 90 | 157 | 25  | 22  | 88.6 | 295    | 265      | 236 | 290 | 213 | 203 | 130 | 124 | M12 | 8 | M130×2       | M10×20      | M16×35        |
| TGB110 | 195 | 30  | 25  | 105  | 355    | 325      | 287 | 345 | 278 | 266 | 160 | 155 | M16 | 6 | M160×3       | M12×20      | M16×45        |
| TGB130 | 230 | 35  | 27  | 130  | 400    | 360      | 319 | 390 | 316 | 304 | 190 | 184 | M16 | 8 | M190×3       | M16×30      | M20×60        |

| Model  | S   | T   | U Thread × Depth | W | X   | Y Snap Ring | Mass (kg) | Moment of Inertia (×10 <sup>-2</sup> kgf·m <sup>2</sup> ) | GD <sup>2</sup> (×10 <sup>-2</sup> kgf·m <sup>2</sup> ) |
|--------|-----|-----|------------------|---|-----|-------------|-----------|-----------------------------------------------------------|---------------------------------------------------------|
| TGB 08 | —   | 0.9 | —                | — | —   | —           | 0.14      | 0.0025                                                    | 0.01                                                    |
| TGB 12 | —   | 1   | —                | — | —   | —           | 0.24      | 0.0065                                                    | 0.026                                                   |
| TGB 16 | —   | 1.2 | —                | — | —   | —           | 0.44      | 0.018                                                     | 0.072                                                   |
| TGB 20 | 2   | 1.8 | —                | 5 | 2   | 32          | 0.9       | 0.058                                                     | 0.23                                                    |
| TGB 30 | 2   | 2   | —                | 6 | 2.5 | 45          | 2.0       | 0.2                                                       | 0.79                                                    |
| TGB 50 | 3   | 2.7 | —                | 8 | 3.5 | 75          | 5.9       | 1.21                                                      | 4.84                                                    |
| TGB 70 | 3   | 3.3 | —                | — | —   | 110         | 17.0      | 6.3                                                       | 25.2                                                    |
| TGB 90 | 5.5 | 5.4 | M8 × 16          | — | —   | 130         | 37.5      | 33.8                                                      | 135                                                     |
| TGB110 | 7   | 6   | M10×20           | — | —   | 160         | 69.6      | 91                                                        | 364                                                     |
| TGB130 | 7   | 6.6 | M12×24           | — | —   | 190         | 102       | 47                                                        | 688                                                     |

The table of sprocket, which can be used for the center member of Torque Limiter and fixing to center flange of Torque Guard is shown in page 5.

# Tsubaki Emerson Torque Guard



## Dimensions of Torque Guard Coupling

Dimensions in mm

| Model    | A   | B    | C   | D     | E     | F    | G    | H   | I    | Coupling type and Sprocket size | Mass (kg) | Moment of Inertia ( $\times 10^{-2} \text{kg}\cdot\text{m}^2$ ) | GD <sup>2</sup> ( $\times 10^{-2} \text{kgf}\cdot\text{m}^2$ ) |
|----------|-----|------|-----|-------|-------|------|------|-----|------|---------------------------------|-----------|-----------------------------------------------------------------|----------------------------------------------------------------|
| TGB 08-C | 80  | 20.6 | 39  | 44.5  | —     | —    | 7.2  | 24  | 13.2 | L075A                           | 0.235     | 0.005                                                           | 0.02                                                           |
| TGB 12-C | 88  | 19.9 | 47  | 53.6  | —     | —    | 7.9  | 32  | 13.2 | L090A                           | 0.380     | 0.0123                                                          | 0.049                                                          |
| TGB 16-C | 112 | 27   | 56  | 64.3  | —     | —    | 10.2 | 38  | 18.8 | L100A                           | 0.673     | 0.0324                                                          | 0.129                                                          |
| TGB 20-C | 76  | 25   | 47  | 117.4 | 32.6  | 7.4  | 4    | 63  | —    | RS 40-26                        | 2.5       | 0.313                                                           | 1.25                                                           |
| TGB 30-C | 93  | 28   | 60  | 146.7 | 40.5  | 9.7  | 5    | 73  | —    | RS 50-26                        | 4.8       | 0.948                                                           | 3.79                                                           |
| TGB 50-C | 126 | 40   | 81  | 200.3 | 51.0  | 11.6 | 5    | 83  | —    | RS 60-30                        | 12.2      | 4.43                                                            | 17.7                                                           |
| TGB 70-C | 165 | 45   | 110 | 283.2 | 64.8  | 15.3 | 10   | 107 | —    | RS 80-32                        | 32.0      | 22.43                                                           | 89.7                                                           |
| TGB 90-C | 242 | 80   | 157 | 394.4 | 78.5  | 18.2 | 5    | 147 | —    | RS100-36                        | 71.1      | 117.32                                                          | 469.29                                                         |
| TGB110-C | 303 | 100  | 195 | 473.4 | 99.2  | 21.9 | 8    | 157 | —    | RS120-36                        | 130.5     | 314.15                                                          | 1255.61                                                        |
| TGB130-C | 365 | 120  | 230 | 534.2 | 127.3 | 29.1 | 15   | 197 | —    | RS160-30                        | 202.3     | 632.66                                                          | 2530.63                                                        |

Minimum number of teeth for the Center member of Torque Limiter and fixing to the Center flange of Torque Guard.

## Minimum Number of Teeth of Sprocket and Bushing Length for Torque Limiter

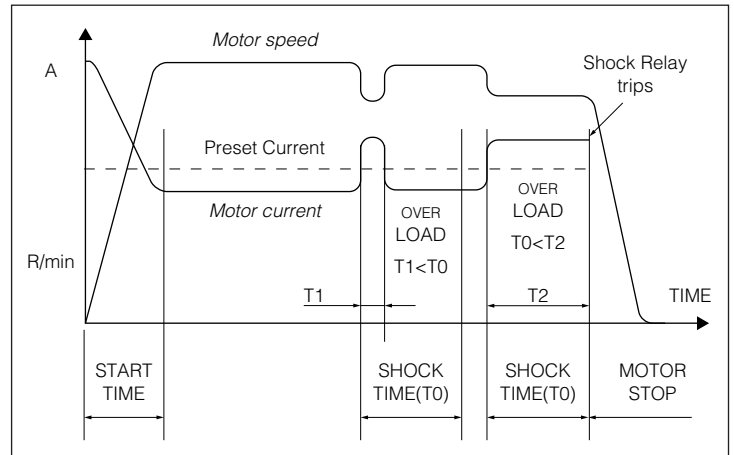
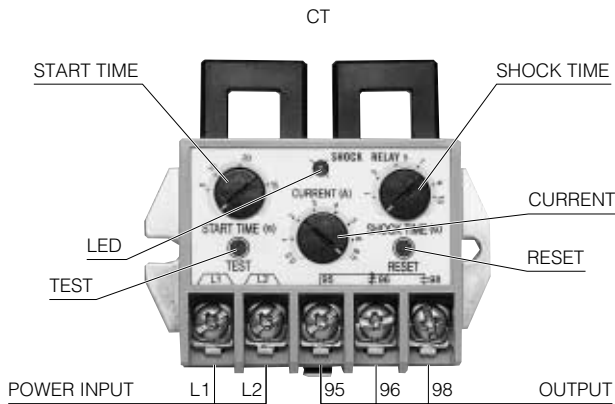
| Model | Bore of Center Member (mm)        | Sprocket Pitch and Number of Teeth |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |
|-------|-----------------------------------|------------------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
|       |                                   | 3/8"- #35                          |                     | 1/2"- #40            |                     | 5/8"- #50            |                     | 3/4"- #60            |                     | 1"- #80              |                     | 1 1/4"- #100         |                     | 1 1/2"- #120         |                     | 1 3/4"- #140         |                     | 2"- #160             |                     |
|       |                                   | Minimum No. of Teeth               | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) | Minimum No. of Teeth | Bushing Length (mm) |
| TL200 | 30 <sup>+0.03</sup> <sub>0</sub>  | 20                                 | 3.8                 | 16                   | 6                   |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |
| TL250 | 41 <sup>+0.05</sup> <sub>0</sub>  |                                    |                     | 20                   | 4.5                 | 17                   | 6.5                 |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |
| TL350 | 49 <sup>+0.05</sup> <sub>0</sub>  |                                    |                     | 26                   | 4.5                 | 21                   | 6.5                 | 18                   | 9.5                 | 15                   | 9.5                 |                      |                     |                      |                     |                      |                     |                      |                     |
| TL500 | 74 <sup>+0.05</sup> <sub>0</sub>  |                                    |                     |                      |                     | 29                   | 6.5                 | 25                   | 9.5                 | 19                   | 9.5                 |                      |                     |                      |                     |                      |                     |                      |                     |
| TL700 | 105 <sup>+0.05</sup> <sub>0</sub> |                                    |                     |                      |                     |                      |                     | 33                   | 9.5                 | 26                   | 9.5                 | 21                   | 12.5                | 18                   | 12.5                |                      |                     |                      |                     |
| TL 10 | 135 <sup>+0.07</sup> <sub>0</sub> |                                    |                     |                      |                     |                      |                     |                      |                     |                      |                     | 29                   | 12.5                | 24                   | 15.5                | 22                   | 19.5                |                      |                     |
| TL 14 | 183 <sup>+0.07</sup> <sub>0</sub> |                                    |                     |                      |                     |                      |                     |                      |                     |                      |                     | 39                   | 15.5                | 33                   | 15.5                | 29                   | 19.5                | 26                   | 23.5                |
| TL 20 | 226 <sup>+0.07</sup> <sub>0</sub> |                                    |                     |                      |                     |                      |                     |                      |                     |                      |                     | 54                   | 15.5                | 46                   | 15.5                | 40                   | 19.5                | 35                   | 23.5                |

## Minimum Number of Teeth of Sprocket for Torque Guard

| Model  | 1/4"- #25 | 3/8"- #35 | 1/2"- #40 | 5/8"- #50 | 3/4"- #60 | 1"- #80 | 1 1/4"- #100 | 1 1/2"- #120 | 1 3/4"- #140 | 2"- #160 |
|--------|-----------|-----------|-----------|-----------|-----------|---------|--------------|--------------|--------------|----------|
| TGB 08 | 24        | 17        |           |           |           |         |              |              |              |          |
| TGB 12 | 28        | 20        |           |           |           |         |              |              |              |          |
| TGB 16 | 32        | 23        |           |           |           |         |              |              |              |          |
| TGB 20 | 48        | 34        | 26        | 22        |           |         |              |              |              |          |
| TGB 30 | 60        | 41        | 32        | 26        | 22        | 18      |              |              |              |          |
| TGB 50 |           | 57        | 43        | 35        | 30        | 24      | 20           | 17           |              |          |
| TGB 70 |           |           | 58        | 47        | 40        | 31      | 26           | 22           |              |          |
| TGB 90 |           |           |           | 62        | 52        | 40      | 33           | 28           | 25           | 22       |
| TGB110 |           |           |           |           |           | 48      | 39           | 33           | 29           | 26       |
| TGB130 |           |           |           |           |           | 53      | 43           | 37           | 32           | 24       |

# Tsubaki Emerson Shock Relay

Tsubaki Emerson Shock Relay is an extremely reliable electronic device for the protection of machinery from dangerous overloads. While conventional safety devices such as shear pins and thermal relays, the Tsubaki Emerson Shock Relay provides complete protection with accuracy and dependability.



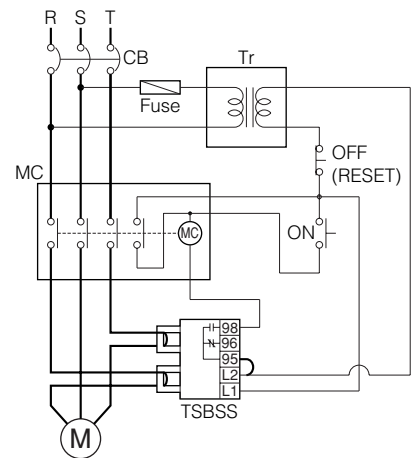
## Specifications of Shock Relay

| Function                |                        | Model                                        | TSBSS05                  | TSBSS30 | TSBSS60 |
|-------------------------|------------------------|----------------------------------------------|--------------------------|---------|---------|
| Motor kW                | At 200VAC              |                                              | 0.1~0.75 *1              | 1.5~5.5 | 7.5~11  |
|                         | At 400VAC              |                                              | 0.2~2.2 *1               | 3.7~11  | 15~22   |
| Start time              |                        |                                              | 0.2~30s                  |         |         |
| Shock time              |                        |                                              | 0.2~10s                  |         |         |
| Load current            |                        |                                              | 0.5~5A                   | 3~30A   | 5~60A   |
| Output relay            | Contact rating         | A transfer contact 250VAC 3A, Resistive load |                          |         |         |
|                         | Minimum allowable load | DC10V, 10mA                                  |                          |         |         |
|                         | Status                 | Normally Energized (self-holding)            |                          |         |         |
| CT Built-in             |                        |                                              | Yes                      |         |         |
| UL Approved             |                        |                                              | Yes                      |         |         |
| cUL                     |                        |                                              | Yes                      |         |         |
| CE Conformity           |                        |                                              | Yes *2                   |         |         |
| For DIN rail 35mm       |                        |                                              | Yes                      |         |         |
| Indicator for operation |                        |                                              | Yes                      |         |         |
| Test function           |                        |                                              | Yes                      |         |         |
| Control voltage         |                        |                                              | 90 to 250VAC 50/60Hz     |         |         |
| Temperature range       |                        |                                              | -20~+60°C (At Operating) |         |         |

\*1 Make sure normal operating current is over 0.5A.

\*2 This apparatus shall not be used in the residential, commercial and light-industrial environment.

## Wiring



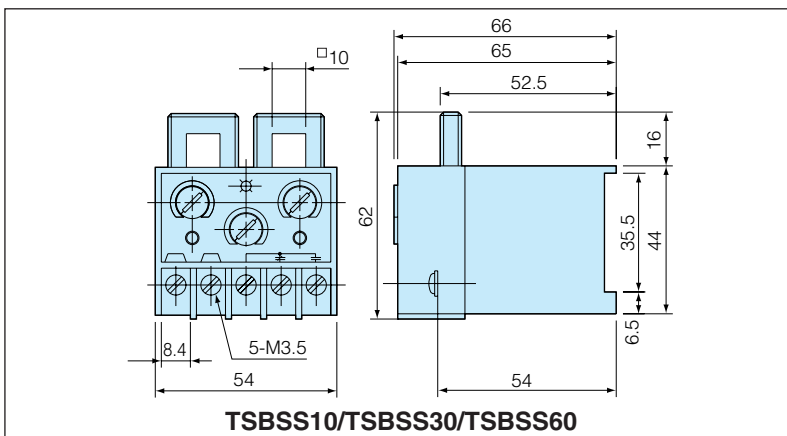
MC : Magnetic contactor ON : Start switch  
OFF : Stop switch Fuse : Fuse Tr : Transformer

\*1. A transformer may be required, depending on the voltage of motor (ie. over 250VAC).

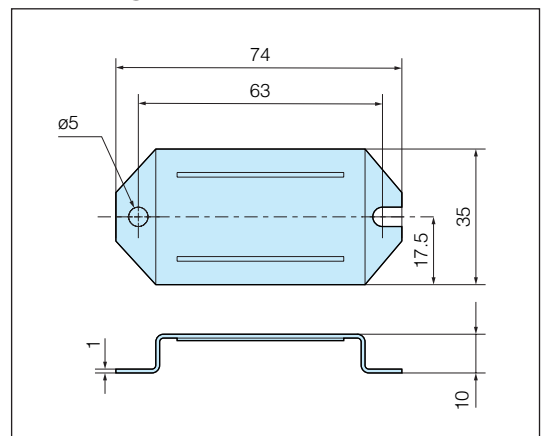
\*2. Output relay is normally energized. When Shock Relay works, it is OFF.

\*3. Two of three phase of the motor are passed through the Shock Relay's CT in the same direction.

## Outline



## Mounting frame



# Tsubaki Overload Protection Devices

## TGM series

Maintenance free and dust prevention type



## TGX series

High precision and high rigidity type



## TGZ series

High speed and ON-OFF clutch capability



Axial overload protection type



## TSBSD series

Digital multi function



Tsubaki has developed various series of Overload Protection Devices to meet any industrial demands. Expect for the series mentioned in these brochures you may need additional technical solutions to comply with your specific application. Please do not hesitate to contact us for advice or further documentation.