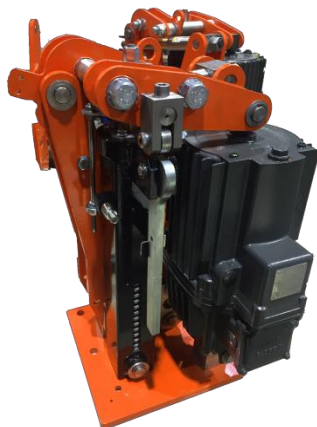


## TSB - Thruster Service Brake



**TSB braking force is applied to the brake shoes by a pre-stressed coil spring. The oversized brake shoes with bonded friction material press on the both sides of a rotating steel disc, providing the friction forces and thus braking capacity. Brake shoes are released from the disc by an electro-hydraulic thruster.**



Designed as a service brakes to be applied on high speed shafts of modern drives in order to stop its rotational movement. Thruster disc brakes possess a scalable torque tube which means that torque can be adjusted to the exact torque amount which yields more precise braking and enhanced safety.

### Applications:

- Ship to shore cranes
- Automated stacking cranes
- Wide Span Cranes
- Gantry Cranes
- Crane Systems/Winches
- Conveyor Drives
- Steelworks
- Material transport



### Features and Benefits

- Spring Set – Electro-Hydraulic Release
- Enclosed spring tube increases protection against dirt and damage
- Stainless steel pins and self-lubricating bushings on all pivot points
- Brake shoes with organic or asbestos free sintered metal linings easily removed and replaced
- Left/Right or Centered position lever for mechanical brake release
- Made with high quality structural steel
- Adjustable brake torque for more precise braking
- Equipped with Automatic Wear Compensator
- Means for shoe alignment for parallel air gap

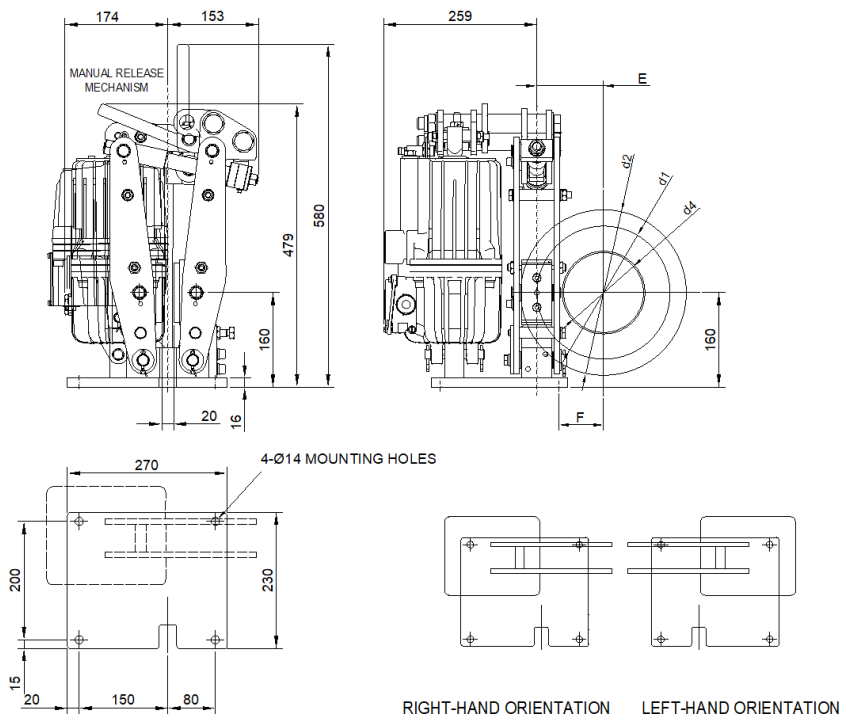
**TSB-16 Thruster Service Brake Spring Set, Electro-Hydraulic Release**

**STANDARD FEATURES**

- Proximity switch for release indication signal
- Manual release lever centered orientation
- Sintered metal linings for high friction speeds
- Zinc rich primer paint system DFT: 200-275 µm
- Standard supply with EMG Eldro Thrusters

**AVAILABLE OPTIONS**

- Proximity switch for lining wear and lever released indication
- Prewired control junction box
- Manual release lever Left/Right handling
- Paint system for highly corrosive environments
- EMG Thruster Right or Left position



| MODEL | TSB-16<br>Ed-23-50 | TSB-16<br>Ed-30-50 | TSB-20<br>Ed-23-50 | TSB-20<br>Ed-30-50 | TSB-20<br>Ed-50-60 | TSB-20<br>Ed-80-60 | TSB-28<br>Ed-121-60 | TSB-28<br>Ed-201-60 | TSB-28<br>Ed-301-60 | TSB-28<br>Ed-301-120 |
|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|----------------------|
| DISC  |                    |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| Ø(mm) | TORQUE (Nm)        |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| 250   | 195                | 270                |                    |                    |                    |                    |                     |                     |                     |                      |
| 280   | 225                | 315                |                    |                    |                    |                    |                     |                     |                     |                      |
| 315   | 260                | 365                |                    |                    |                    |                    |                     |                     |                     |                      |
| 355   | 300                | 420                | 420                | 590                | 830                | 1540               |                     |                     |                     |                      |
| 400   | 345                | 485                | 490                | 690                | 960                | 1790               |                     |                     |                     |                      |
| 450   | 395                | 555                | 560                | 800                | 1110               | 2070               | 2730                |                     |                     |                      |
| 500   | 445                | 625                | 640                | 910                | 1260               | 2350               | 3120                | 5040                |                     |                      |
| 560   |                    |                    |                    |                    | 1440               | 2690               | 3590                | 5800                | 8460                |                      |
| 630   |                    |                    |                    |                    | 1650               | 3080               | 4130                | 6680                | 9750                | 13250                |
| 710   |                    |                    |                    |                    |                    |                    | 4760                | 7690                | 11220               | 15250                |
| 800   |                    |                    |                    |                    |                    |                    | 5460                | 8820                | 12880               | 17500                |
| 900   |                    |                    |                    |                    |                    |                    |                     |                     | 14720               | 20000                |
| 1000  |                    |                    |                    |                    |                    |                    |                     |                     | 16560               | 22500                |

Models with holding capacities calculated with friction factor 0.4  
 All dimensions (mm) and capacities (Nm) subject to change without notification.

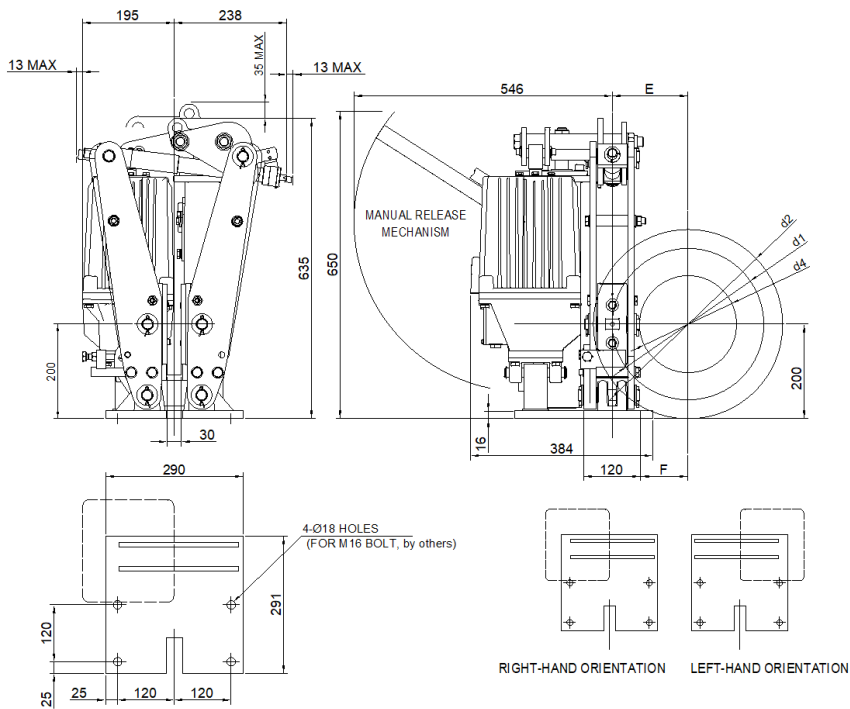
**TSB-20 Thruster Service Brake Spring Set, Electro-Hydraulic Release**

**STANDARD FEATURES**

- Proximity switch for release indication signal
- Manual release lever centered orientation
- Sintered metal linings for high friction speeds
- Zinc rich primer paint system DFT: 200-275 µm
- Standard supply with EMG Eldro Thrusters

**AVAILABLE OPTIONS**

- Proximity switch for lining wear and lever released indication
- Prewired control junction box
- Manual release lever Left/Right handling
- Paint system for highly corrosive environments
- EMG Thruster Right or Left position
- Brake disc with hub or coupling



| MODEL | TSB-16<br>Ed-23-50 | TSB-16<br>Ed-30-50 | TSB-20<br>Ed-23-50 | TSB-20<br>Ed-30-50 | TSB-20<br>Ed-50-60 | TSB-20<br>Ed-80-60 | TSB-28<br>Ed-121-60 | TSB-28<br>Ed-201-60 | TSB-28<br>Ed-301-60 | TSB-28<br>Ed-301-120 |
|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|----------------------|
| DISC  |                    |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| Ø(mm) | TORQUE (Nm)        |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| 250   | 195                | 270                |                    |                    |                    |                    |                     |                     |                     |                      |
| 280   | 225                | 315                |                    |                    |                    |                    |                     |                     |                     |                      |
| 315   | 260                | 365                |                    |                    |                    |                    |                     |                     |                     |                      |
| 355   | 300                | 420                | 420                | 590                | 830                | 1540               |                     |                     |                     |                      |
| 400   | 345                | 485                | 490                | 690                | 960                | 1790               |                     |                     |                     |                      |
| 450   | 395                | 555                | 560                | 800                | 1110               | 2070               | 2730                |                     |                     |                      |
| 500   | 445                | 625                | 640                | 910                | 1260               | 2350               | 3120                | 5040                |                     |                      |
| 560   |                    |                    |                    |                    | 1440               | 2690               | 3590                | 5800                | 8460                |                      |
| 630   |                    |                    |                    |                    | 1650               | 3080               | 4130                | 6680                | 9750                | 13250                |
| 710   |                    |                    |                    |                    |                    |                    | 4760                | 7690                | 11220               | 15250                |
| 800   |                    |                    |                    |                    |                    |                    | 5460                | 8820                | 12880               | 17500                |
| 900   |                    |                    |                    |                    |                    |                    |                     |                     | 14720               | 20000                |
| 1000  |                    |                    |                    |                    |                    |                    |                     |                     | 16560               | 22500                |

Models with holding capacities calculated with friction factor 0.4  
 All dimensions (mm) and capacities (Nm) subject to change without notification.

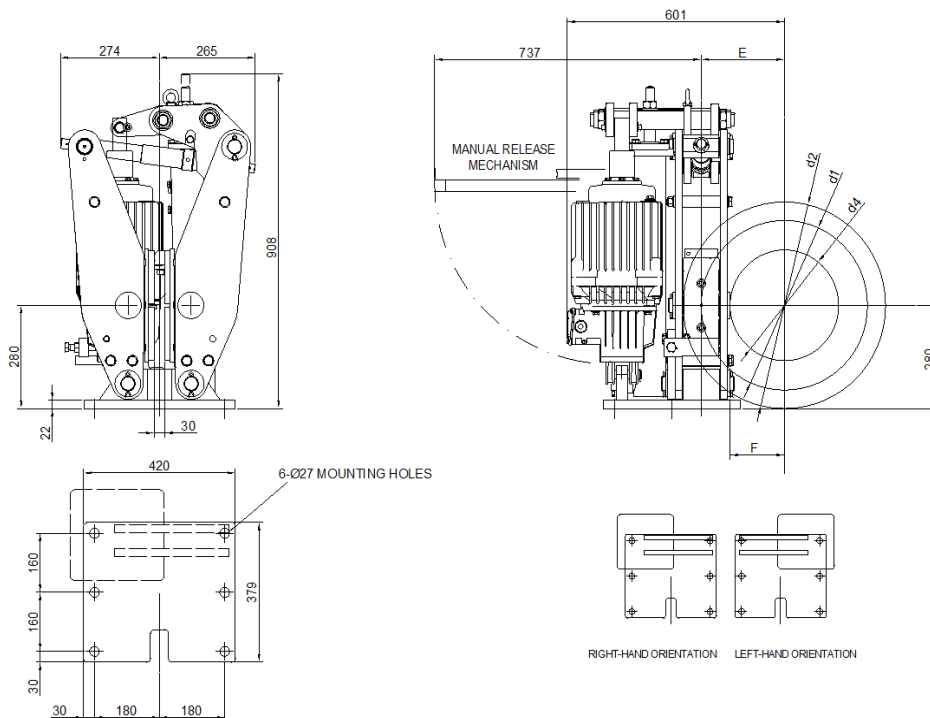
### TSB-28 Thruster Service Brake Spring Set, Electro-Hydraulic Release

#### STANDARD FEATURES

- Proximity switch for release indication signal
- Manual release lever centered orientation
- Sintered metal linings for high friction speeds
- Zinc rich primer paint system DFT: 200-275  $\mu\text{m}$
- Standard supply with EMG Eldro Thrusters

#### AVAILABLE OPTIONS

- Proximity switch for lining wear and lever released indication
- Prewired control junction box
- Manual release lever Left/Right handling
- Paint system for highly corrosive environments
- EMG Thruster Right or Left position
- Brake disc with hub or coupling



| MODEL              | TSB-16<br>Ed-23-50 | TSB-16<br>Ed-30-50 | TSB-20<br>Ed-23-50 | TSB-20<br>Ed-30-50 | TSB-20<br>Ed-50-60 | TSB-20<br>Ed-80-60 | TSB-28<br>Ed-121-60 | TSB-28<br>Ed-201-60 | TSB-28<br>Ed-301-60 | TSB-28<br>Ed-301-120 |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|----------------------|
| DISC               |                    |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| $\varnothing$ (mm) | TORQUE (Nm)        |                    |                    |                    |                    |                    |                     |                     |                     |                      |
| 250                | 195                | 270                |                    |                    |                    |                    |                     |                     |                     |                      |
| 280                | 225                | 315                |                    |                    |                    |                    |                     |                     |                     |                      |
| 315                | 260                | 365                |                    |                    |                    |                    |                     |                     |                     |                      |
| 355                | 300                | 420                | 420                | 590                | 830                | 1540               |                     |                     |                     |                      |
| 400                | 345                | 485                | 490                | 690                | 960                | 1790               |                     |                     |                     |                      |
| 450                | 395                | 555                | 560                | 800                | 1110               | 2070               | 2730                |                     |                     |                      |
| 500                | 445                | 625                | 640                | 910                | 1260               | 2350               | 3120                | 5040                |                     |                      |
| 560                |                    |                    |                    |                    | 1440               | 2690               | 3590                | 5800                | 8460                |                      |
| 630                |                    |                    |                    |                    | 1650               | 3080               | 4130                | 6680                | 9750                | 13250                |
| 710                |                    |                    |                    |                    |                    |                    | 4760                | 7690                | 11220               | 15250                |
| 800                |                    |                    |                    |                    |                    |                    | 5460                | 8820                | 12880               | 17500                |
| 900                |                    |                    |                    |                    |                    |                    |                     |                     | 14720               | 20000                |
| 1000               |                    |                    |                    |                    |                    |                    |                     |                     | 16560               | 22500                |

Models with holding capacities calculated with friction factor 0.4  
All dimensions (mm) and capacities (Nm) subject to change without notification.