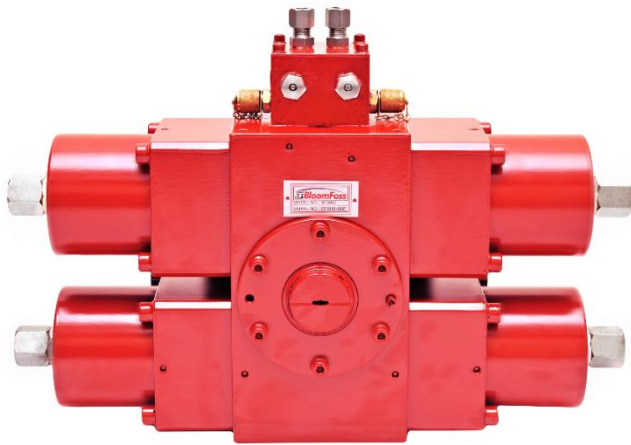


## BT Series Hydraulic Actuators



## BT Series Hydraulic Actuator



## About Us

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Bloomfoss, an Actuator and Automation Control Manufacturer that has been providing Quality and Reliable products and solutions.

Our products serve multiple industries from Marine, Offshore, Petrochemical, Refinery, Power, and Oil Storages.

With increasing expectation demands from customer, we continuously improved our products quality through extensive Research & Development capability and unrivalled technical support.

## BT Series Overview

The BT Series will provide superior performance in low pressure hydraulic applications.

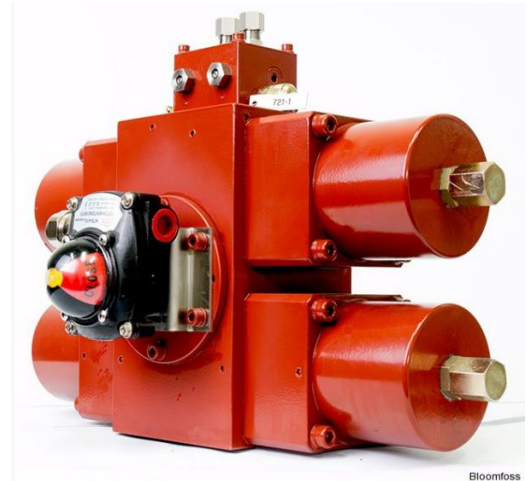
Floating piston ensure low breakaway pressure and smooth operations.

Brass piston rings and piston bands eliminate leakage and cylinder scoring.

Steel racks and pinions provide the strength and resilience for minimum downtime.

A broad offering of options and accessories provides unmatched flexibility in design and applications.

These include cushions, stroke adjusters, flow controls and position sensors, as well as application matched shaft, mounting, porting and seal variations.



## Material Variations

**Standard BT series** comes with tough epoxy coated marine paint for adverse situations. High resistance to sea environment and harsh weather conditions for long term usage.

Standard material of Carbon Steel  
Standard paint: 200 um Epoxy marine paint.  
(Limit switch can be fitted upon option request)

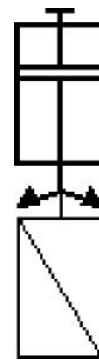
**Stainless Steel BT 316 series** is designed specifically for highly corrosive environments.

Stainless steel 316 has the standard properties of being very resistant to corrosion, gases and other chemical media. Most suitable for submerged conditions. High tensile strength of 316 stainless steel properties.

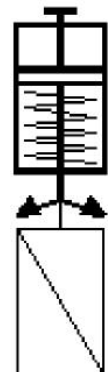
## Application Variations

Like most other actuator designs, our products also come with the following application possibilities. From double acting to single acting, from submerged to non-submerged.

- DOUBLE ACTING** - Open / Close functions
- SINGLE ACTING** - Spring to Open (Fail Open)  
- Spring to Close (Fail Close)
- MODULATION** - Modulate to Open / Modulate to Close  
- Modulation with spring to close during lost of Hydraulic force



Double Acting



Single Acting with loaded spring on one end

## BT Series Construction

### Bloomfoss . . . Leading the Industry

Development of new and innovative features to make rack and pinion quarter turn actuators more reliable, efficient and safe.

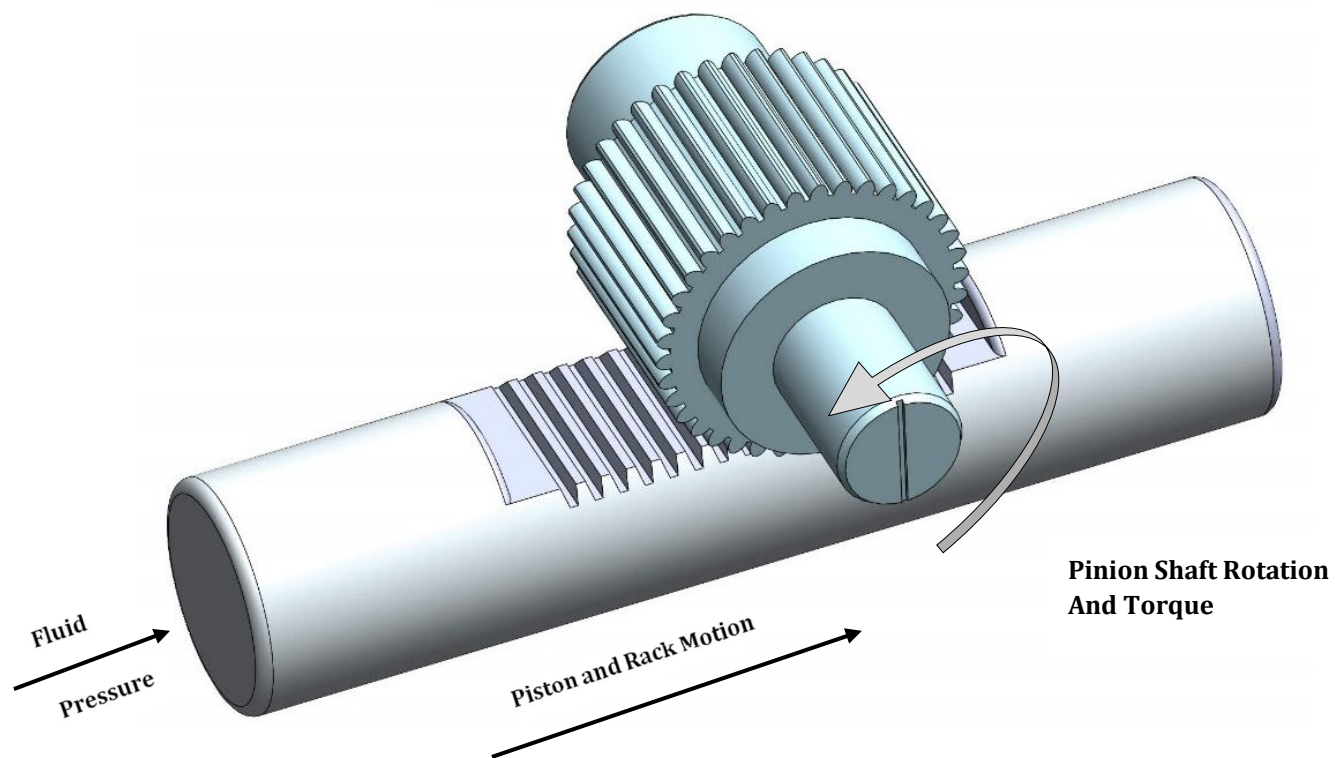
With a firm commitment to product quality and design research, our actuators are continually being improved so that you can enjoy benefits such as long service life and increased productivity. Specifically catered to Marine and Offshore.

### Rack & Pinion design...

Pressurized fluid is applied to a piston inside a cylinder which pushes a rack across the pinion gear. This action turns the shaft, generating rotary motion.

This motion is transferred through the shaft to the machinery for applications such as upending, turning, roll-over, tilting, indexing, transferring, mixing, valve operating, tensioning and clamping.

### Rack & Pinion in motion



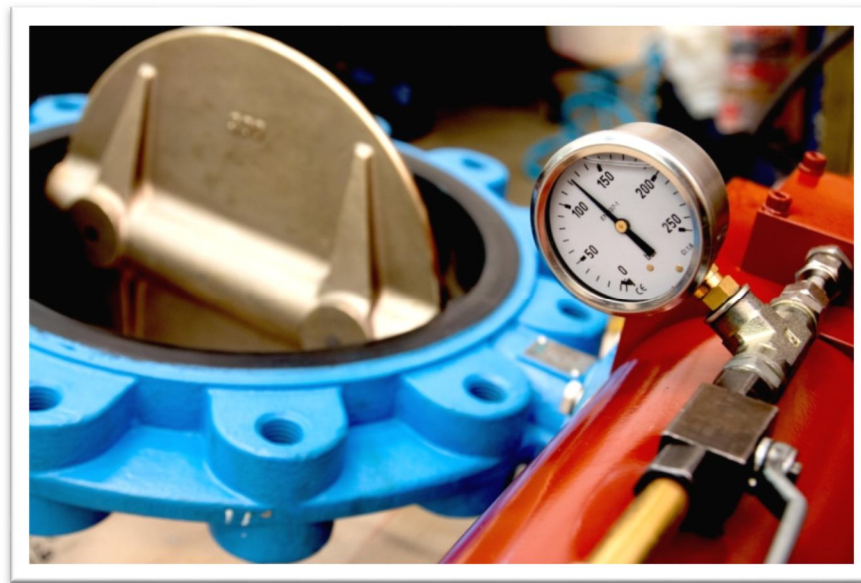
## Key Feature

- ATEX Certified
- Water Ingress Protected
- ABS Product Type Approved
- ABS Product Design Approved
- High Torque Output
- Rotation Angle Regulation
- Simple Construction
- Efficient Use Of Hydraulic Fluid
- Easy Servicing & Maintenance

Unique Bloomfoss features specifically designed for sea environment and harsh weather conditions for long term usage

## BT Features

- Unique and simple design
- Compact with high torque output
- Reliable and rugged Rack and Pinion design used by many other manufacturers worldwide
- Operate in harsh environment
- Simple speed regulation
- Easy adaptation of major quarter turn valves
- High quality steel grade
- Unlimited mounting possibilities with adjustments for final closing and opening positions.
- High quality painting specs meeting specifically to demanding Marine and offshore environment
- Wide range of accessories and blocks for all applications



### Torque

Output torque: **250 NM to 50,000 NM @130 Bar (1885 psi)**

### Operating Pressures

Hydraulic: 130 Bar (1885 psi)

### Operating Temperatures

Standard Temperature: -10 deg C to 75 deg C

High Temperature: - 40 deg C to 150 deg C (Upon request)

## Double Rack & Pinion Design for High Torque

### Single Rack & Pinion Design



**Double Acting,  
Single Rack & Pinion Design**

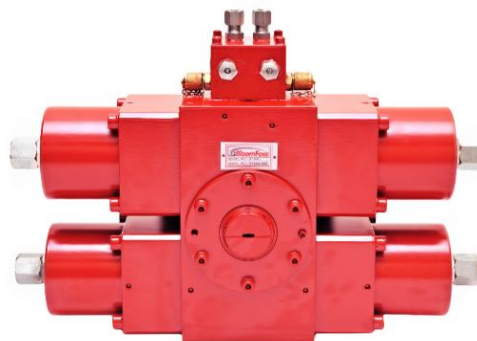
| No | Model    |
|----|----------|
| 1  | BT 200D  |
| 2  | BT 700D  |
| 3  | BT 1500D |



**Single Acting,  
Single Rack & Pinion Design**

| No | Model    |
|----|----------|
| 1  | BT 200S  |
| 2  | BT 700S  |
| 3  | BT 1500S |

### Double Rack & Pinion Design



**Double Acting,  
Double Rack & Pinion Design**

| No | Model     |
|----|-----------|
| 1  | BT 3000D  |
| 2  | BT 6000D  |
| 3  | BT 10000D |
| 4  | BT 16000D |



**Double Acting,  
Double Rack & Pinion Design**

| No | Model     |
|----|-----------|
| 1  | BT 3000S  |
| 2  | BT 6000S  |
| 3  | BT 10000S |
| 4  | BT 16000S |

## BT Specifications

**BLOOMFOSS QUARTER TURN**

**HYDRAULIC DOUBLE ACTING /**

**SINGLE ACTING ACTUATOR**

- **Nominal Pressure:** 50 Bar to 130 Bar (725 psi to 1885 psi)
- **IP rating:** IP 67 (for Dry), IP68 (for Submerge-100 meter)
- **Standard Rotations:** 90° + / - 3°
- **Other Rotations:** on request
- **Adjustment:** +/- 3 deg for both Open and Close directions
- **Output Torque:** **250 NM to 50,000 NM @130 Bar** (1885 psi)  
(2,200 lb-in to 442537 lb-in)
- **Hydraulic Oil type:** ISO VG 32 ~ 68 or Equivalent
- **Standard Temperature:** -10 deg C to 75 deg C
- **High Temperature:** -40 deg C to 150 deg C (Upon request)
- **Standard Coating:** Standard coating of Marine Epoxy paint at 200 um minimum
- **Special Coatings:** On request
- **Standard Seals:** Nitrile Buna Rubber seals, PU seals
- **Optional Seals:** Viton seals, Teflon Seals
- **Standard Indications:** On / Off (Open / Close) on actuator pinion
- **Optional Indications:** Feedback with Limit switch box or  
Volumetric Position indicator at valve cabinet
- **Valve Mounting:** **ISO 5211** – With several variations and key slot possible
- **Fitting:** Stainless steel single ferrule (OD 10mm), Other (on request)
- **Approvals:** Marine Classifications ABS type approvals (American Bureau of Shipping)

ATEX Directive 2014/34EU  
(Technicka Inspekcia)



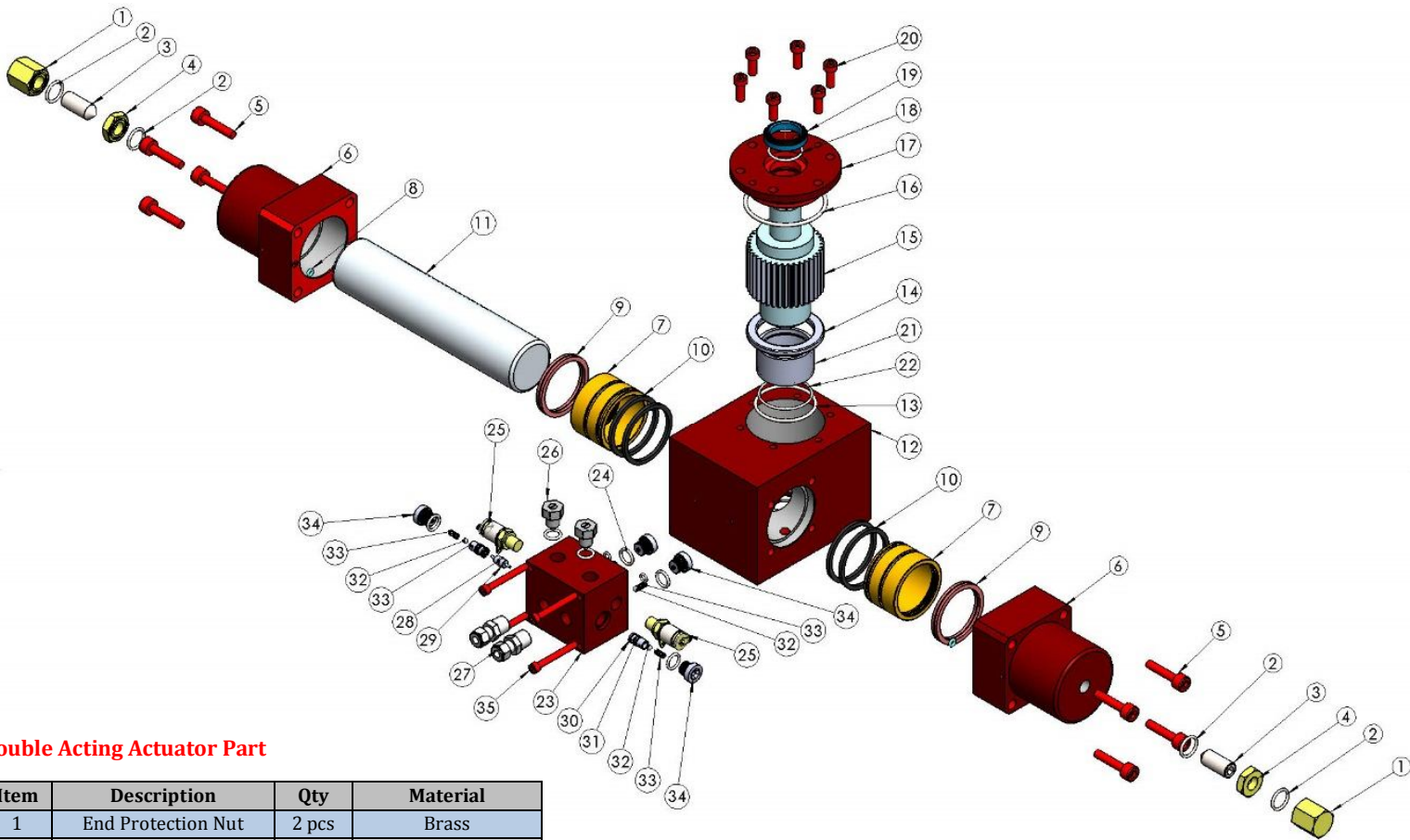
# Bloomfoss Pte Ltd

| Model              | Torque Range @130 bar (Nm) | Oil Volume (cc) | Max. Square Shaft size (mm) | Max. Square Shaft Depth (mm) | Non-Submersible c/w Emergency Block (kg) | Submersible c/w Connection Block & Submerged Cap (kg) | Valve Adaptor Flange |
|--------------------|----------------------------|-----------------|-----------------------------|------------------------------|--|---|----------------------|
| BT200S             | 68                         | 39              | 20                          | 50                           | 17                                       | 18  | F05 & F07            |
| BT200SA (Adaptor)  | 68                         | 39              | 20                          | 50                           | 18.5                                     | 20  | F10 & F12            |
| BT700S             | 209                        | 131             | 40                          | 60                           | 39.5                                     | 41  | F10 & F12            |
| BT1500S            | 620                        | 288             | 65                          | 72                           | 70.5                                     | 72  | F12 & F14            |
| BT1500SA (Adaptor) | 620                        | 288             | 65                          | 72                           | 74                                       | 75.5  | F12, F14 & F16       |
| BT3000S            | 1241                       | 576             | 65                          | 72                           | 141.5                                    | 144   | F14                  |
| BT3000SA (Adaptor) | 1241                       | 576             | 65                          | 72                           | 142                                      | 144.5   | F14 & F16            |
| BT6000S            | 1963                       | 975             | 85                          | 125                          | 219                                      | 222   | F16 & F25            |
| BT 10000S          | 2769                       | 1526            | 80                          |                              |  |   | F25&36               |
| BT 16000S          | 4489                       | 2566            | 90                          |                              |  |   | F30 & F36            |

| Model              | Torque Range @130 bar (Nm) | Oil Volume (cc) | Max. Square Shaft size (mm) | Max. Square Shaft Depth (mm) | Non-Submersible c/w CO-Blk (kg) | Submersible c/w Connection plate & Cap (kg) | Valve Adaptor Flange |
|--------------------|----------------------------|-----------------|-----------------------------|------------------------------|---------------------------------|---|----------------------|
| BT200D             | 258                        | 39              | 20                          | 50                           | 13                              | 12  | F05 & F07            |
| BT200DA (Adaptor)  | 258                        | 39              | 20                          | 50                           | 14.5                            | 15  | F10 & F12            |
| BT 700D            | 919                        | 131             | 40                          | 60                           | 28.5                            | 29  | F10 & F12            |
| BT1500D            | 2020                       | 288             | 65                          | 72                           | 55                              | 56  | F12 & F14            |
| BT1500DA (Adaptor) | 2020                       | 288             | 65                          | 72                           | 62                              | 64  | F12, F14 & F16       |
| BT3000D            | 4039                       | 576             | 65                          | 72                           | 89                              | 90  | F14                  |
| BT3000DA (Adaptor) | 4039                       | 576             | 65                          | 72                           | 100.5                           | 103.5                                       | F14 & F16            |
| BT6000D            | 6859                       | 975             | 85                          | 125                          | 138                             | 140   | F16 & F25            |
| BT 10000D          | 10123                      | 1526            | 80                          |                              |                                 |   | F25&36               |
| BT 16000D          | 16166                      | 2566            | 90                          |                              |                                 |   | F30 & F36            |

**Note: Above information are Bloomfoss standard item. Any special requirement including mounting size, shaft size, materials request, other option, please contact to Bloomfoss.**

## Parts and Materials (Double Acting Hydraulic Actuator)



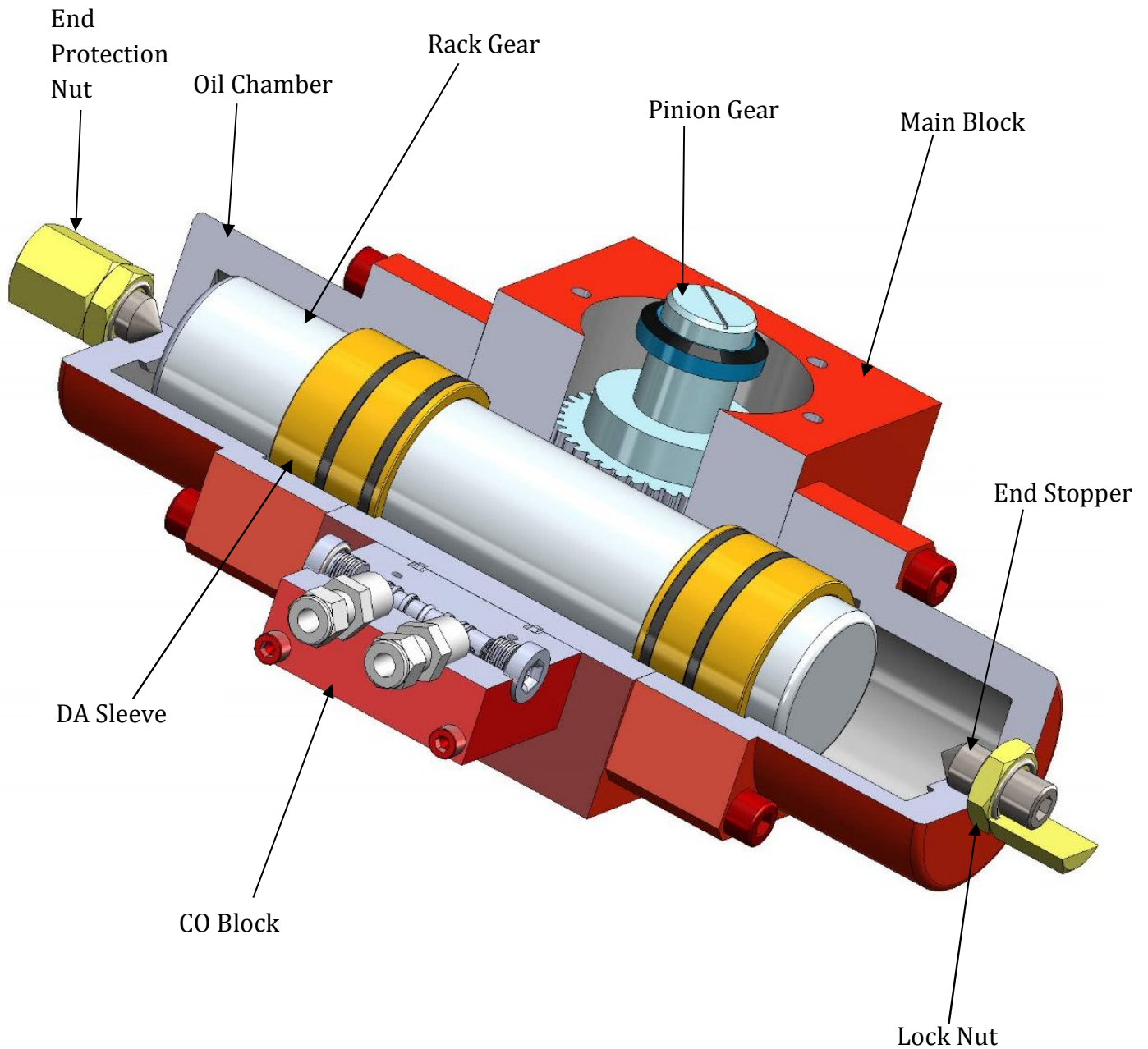
### Double Acting Actuator Part

| Item | Description                 | Qty   | Material              |
|------|-----------------------------|-------|-----------------------|
| 1    | End Protection Nut          | 2 pcs | Brass                 |
| 2    | Lock Nut O-ring             | 4 pcs | NBR                   |
| 3    | End Stopper                 | 2 pcs | Stainless Steel 316   |
| 4    | Lock Nut                    | 2 pcs | Brass                 |
| 5    | Cap Screw (Chamber)         | 8 pcs | Stainless Steel 316   |
| 6    | Oil Chamber                 | 2 pcs | Carbon Steel          |
| 7    | DA Sleeve                   | 2 pcs | Bronze                |
| 8    | Chamber O-ring              | 2 pcs | NBR                   |
| 9    | Inner Sleeve U seal         | 4 pcs | PU                    |
| 10   | Sleeve Outer O-ring         | 4 pcs | NBR                   |
| 11   | Rack Gear                   | 1 pce | High Tensile Steel    |
| 12   | Main Block                  | 1 pce | Carbon Steel          |
| 13   | Main Block O-ring           | 1 pce | NBR                   |
| 14   | Rack Ring                   | 1 pce | Carbon Steel          |
| 15   | Pinion Gear                 | 1 pce | High Tensile Steel    |
| 16   | Top Cover Outer O-ring      | 1 pce | NBR                   |
| 17   | Top Cover                   | 1 pce | Carbon Steel          |
| 18   | Top Cover Inner O-ring      | 1 pce | NBR                   |
| 19   | Dust Cover                  | 1 pce | Carbon Steel with NBR |
| 20   | Cap Screw (Top Cover)       | 4 pcs | Stainless Steel 316   |
| 21   | Teflon Bush/ Spacer         | 1 pce | Teflon                |
| 22   | Teflon Bush / Spacer O-ring | 2 pcs | NBR                   |

### CO Block Part list

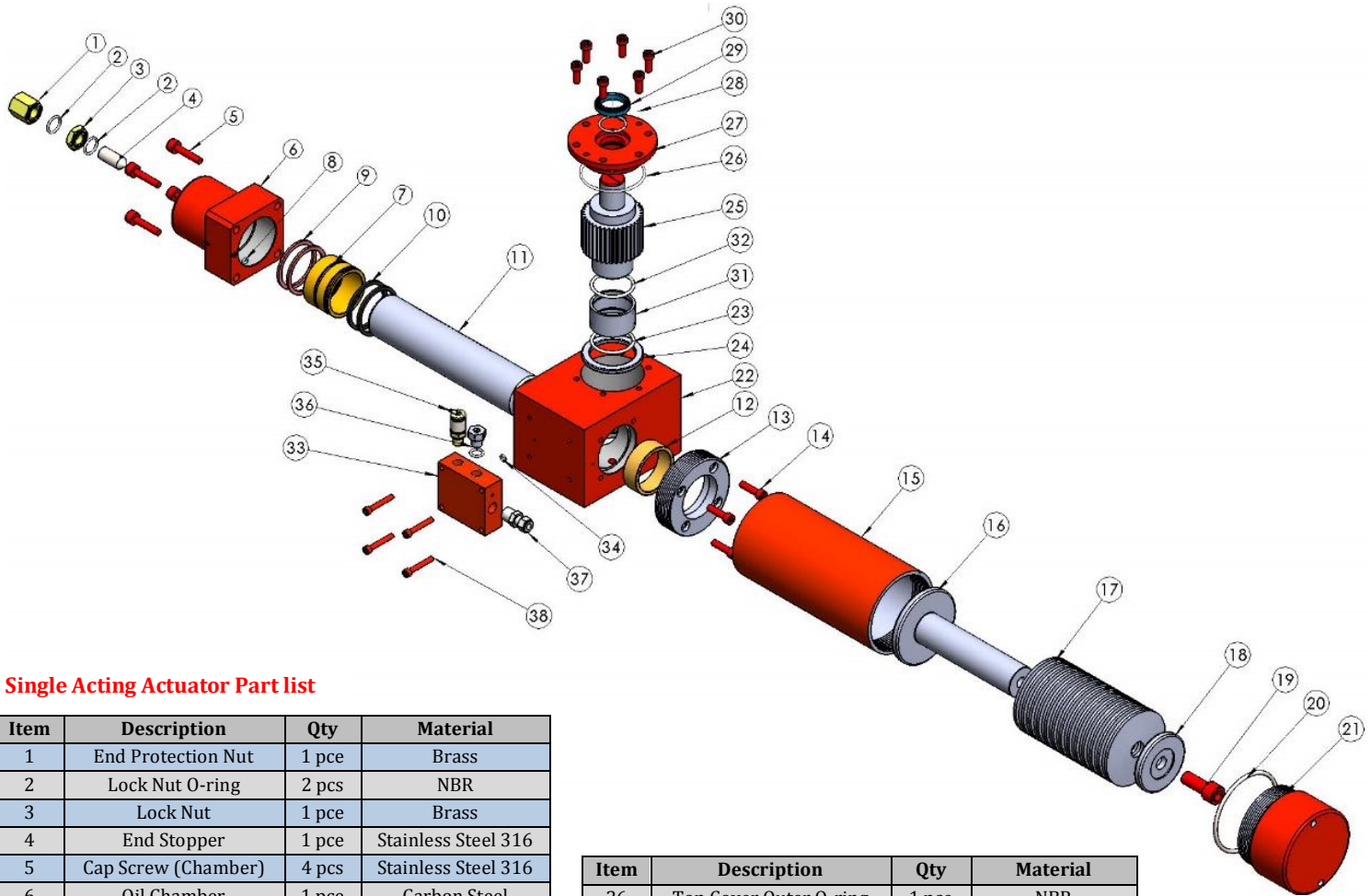
|    |                             |       |                 |
|----|-----------------------------|-------|-----------------|
| 23 | CO Block                    | 1 pce | Carbon Steel    |
| 24 | CB Block O-ring             | 2 pcs | NBR             |
| 25 | Quick Coupler               | 2 pcs | Carbon Steel    |
| 26 | Throttle valve with O-ring  | 2 pcs | Stainless Steel |
| 27 | Male Connector with ED Ring | 2 pcs | Stainless Steel |
| 28 | Control Slide O-ring        | 1 pce | NBR             |
| 29 | Control Slide               | 1 pce | Stainless Steel |
| 30 | Ball Guide O-ring           | 2pcs  | NBR             |
| 31 | Ball Guide                  | 2 pcs | Aluminum        |
| 32 | Ball                        | 4 pcs | Stainless Steel |
| 33 | Spring                      | 4 pcs | Stainless Steel |
| 34 | CO Block Plug with ED Ring  | 4 pcs | Carbon Steel    |
| 35 | Cap screw (CO Block)        | 4 pcs | Stainless Steel |

## Double Acting Actuator Section View



Double Acting Actuator Section View

## Parts and Materials (Single Acting Hydraulic Actuator)



### Single Acting Actuator Part list

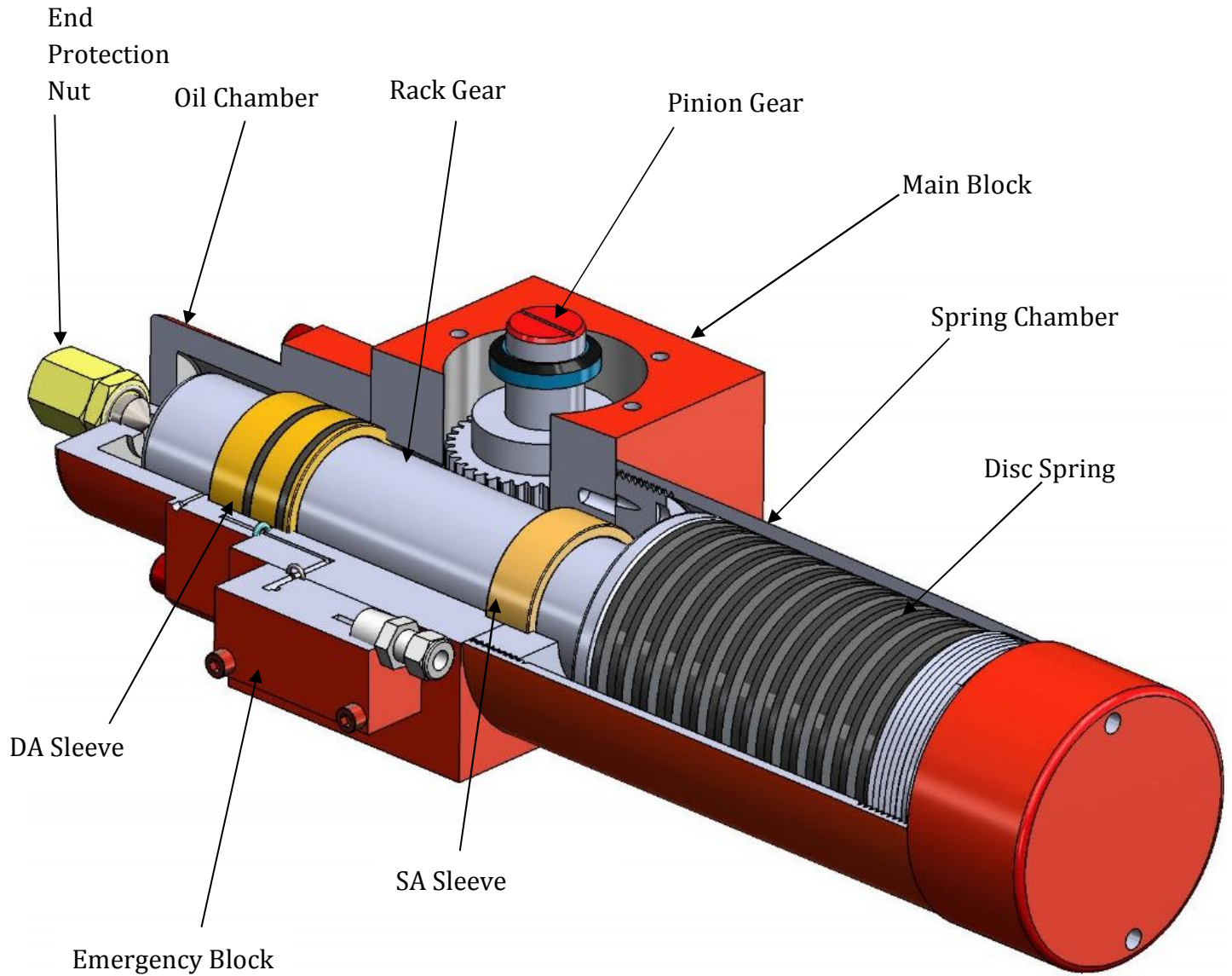
| Item | Description                     | Qty   | Material            |
|------|---------------------------------|-------|---------------------|
| 1    | End Protection Nut              | 1 pce | Brass               |
| 2    | Lock Nut O-ring                 | 2 pcs | NBR                 |
| 3    | Lock Nut                        | 1 pce | Brass               |
| 4    | End Stopper                     | 1 pce | Stainless Steel 316 |
| 5    | Cap Screw (Chamber)             | 4 pcs | Stainless Steel 316 |
| 6    | Oil Chamber                     | 1 pce | Carbon Steel        |
| 7    | DA Sleeve                       | 1 pce | Bronze              |
| 8    | Chamber O-ring                  | 1 pce | NBR                 |
| 9    | Inner Sleeve U seal             | 1 pce | PU                  |
| 10   | Sleeve Outer O-ring             | 2 pcs | NBR                 |
| 11   | Rack Gear                       | 1 pce | High Tensile Steel  |
| 12   | SA Sleeve                       | 1 pce | Bronze              |
| 13   | Spring Chamber mounting Bracket | 1 pce | Carbon Steel        |
| 14   | Cap Screw (Mounting Bracket)    | 4 pcs | Stainless Steel 316 |
| 15   | Spring Chamber                  | 1 pce | Carbon Steel        |
| 16   | Spring Guide                    | 1 pce | Carbon Steel        |
| 17   | Spring                          | 1 Set | 51 Crv4             |
| 18   | Spring Stopper                  | 1 pce | Carbon Steel        |
| 19   | Spring Stopper Bolt             | 1 pce | Stainless Steel     |
| 20   | Spring Chamber O-ring           | 2 pcs | NBR                 |
| 21   | Spring Chamber Cover            | 1 pce | Carbon Steel        |
| 22   | Main Block                      | 1 pce | Carbon Steel        |
| 23   | Main Block O-ring               | 1 pce | NBR                 |
| 24   | Rack Ring                       | 1 pce | Carbon Steel        |
| 25   | Pinion Gear                     | 1 pce | High Tensile Steel  |

| Item | Description                 | Qty   | Material              |
|------|-----------------------------|-------|-----------------------|
| 26   | Top Cover Outer O-ring      | 1 pce | NBR                   |
| 27   | Top Cover                   | 1 pce | Carbon Steel          |
| 28   | Top Cover Inner O-ring      | 1 pce | NBR                   |
| 29   | Dust Cover                  | 1 pce | Carbon Steel with NBR |
| 30   | Cap Screw (Top Cover)       | 4 pcs | Stainless Steel 316   |
| 31   | Teflon Bush / Spacer        | 1 pce | Teflon                |
| 32   | Teflon Bush / Spacer O-ring | 2 pcs | NBR                   |

### Emergency Block Part list

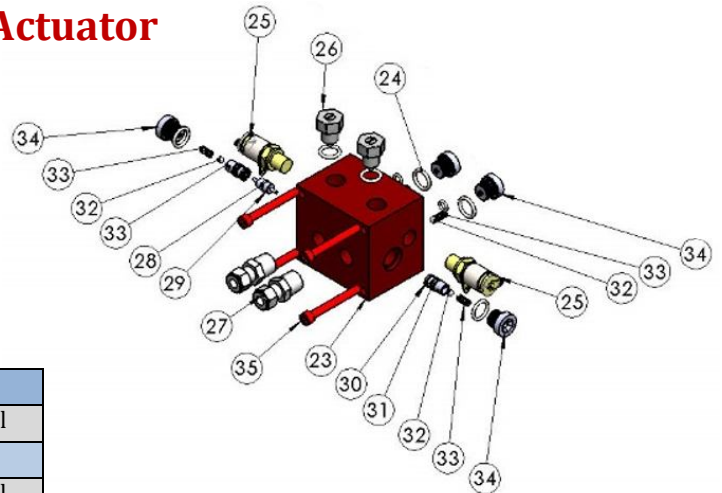
|    |                             |       |                 |
|----|-----------------------------|-------|-----------------|
| 33 | Emergency Block             | 1 pce | Carbon Steel    |
| 34 | Emergency Block O-ring      | 1 pce | NBR             |
| 35 | Quick Coupler               | 2 pcs | Carbon Steel    |
| 36 | Throttle valve with O-ring  | 1 pce | Stainless Steel |
| 37 | Male Connector with ED Ring | 1 pce | Stainless Steel |
| 38 | Cap Screw (Emergency Block) | 1 pce | Stainless Steel |

## Single Acting Actuator Section View



Single Acting Actuator Section View

## Control Block for Double Acting Actuator

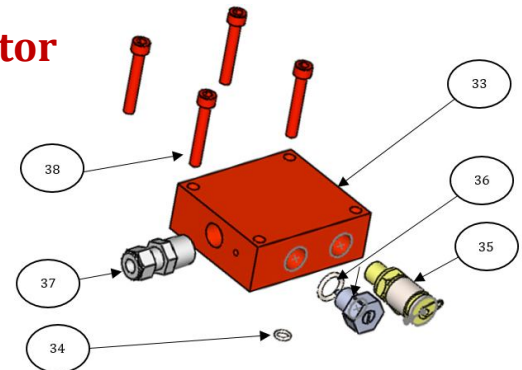


| Item | Description                 | Qty   | Material        |
|------|-----------------------------|-------|-----------------|
| 23   | CO Block                    | 1 pce | Carbon Steel    |
| 24   | CB Block O-ring             | 2 pcs | NBR             |
| 25   | Quick Coupler               | 2 pcs | Carbon Steel    |
| 26   | Throttle valve with O-ring  | 2 pcs | Stainless Steel |
| 27   | Male Connector with ED Ring | 2 pcs | Stainless Steel |
| 28   | Control Slide O-ring        | 1 pce | NBR             |
| 29   | Control Slide               | 1 pce | Stainless Steel |
| 30   | Ball Guide O-ring           | 2pcs  | NBR             |
| 31   | Ball Guide                  | 2 pcs | Aluminum        |
| 32   | Ball                        | 4 pcs | Stainless Steel |
| 33   | Spring                      | 4 pcs | Stainless Steel |
| 34   | CO Block Plug with ED Ring  | 4 pcs | Carbon Steel    |
| 35   | Cap screw (CO Block)        | 4 pcs | Stainless Steel |

Application for below Double Acting Actuator Model

| No | Model     |
|----|-----------|
| 1  | BT 200D   |
| 2  | BT 700D   |
| 3  | BT 1500D  |
| 4  | BT 3000D  |
| 5  | BT 6000D  |
| 6  | BT 10000D |
| 7  | BT 16000D |

## Emergency Block for Single Acting Actuator



| Item | Description                 | Qty   | Material        |
|------|-----------------------------|-------|-----------------|
| 33   | Emergency Block             | 1 pce | Carbon Steel    |
| 34   | Emergency Block O-ring      | 1 pce | NBR             |
| 35   | Quick Coupler               | 2 pcs | Carbon Steel    |
| 36   | Throttle valve with O-ring  | 1 pce | Stainless Steel |
| 37   | Male Connector with ED Ring | 1 pce | Stainless Steel |
| 38   | Cap Screw (Emergency Block) | 1 pce | Stainless Steel |

Applicable for below single acting actuator model

| No | Model     |
|----|-----------|
| 1  | BT 200S   |
| 2  | BT 700S   |
| 3  | BT 1500S  |
| 4  | BT 3000S  |
| 5  | BT 6000S  |
| 6  | BT 10000S |
| 7  | BT 16000S |

## Submerged Application

### CO Block with Deck Plate for Double Acting Actuators

- Compatible with Bloomfoss BT series double acting actuator.
- Can be applied in emergency operation by hand pump
- CO Block is direct mounting on actuator without use of pipe when actuators is dry location. Designed for submerge actuator as bulkhead mounting by using pipe between actuator and CO block when actuator is submerged location.
- Extend the reach of your hydraulic capabilities to actuators or bulkheads in submerged areas with the Bloomfoss Control Block. Designed for mounting on actuators, this systematic approach opens up a variety of options and combinations of the block functionality. (e.g. Throttle, DPCV and Quick connector for actuator emergency operation by hand pump)
- Control Blocks can be actuator mounted, manifold mounted or bulkhead mounted.
- Throttle speed control for actuator.
- Double pilot operated check valve (DPCV).

#### CO Block with Deck Plate



Applicable actuator model as per below

| No | Model     |
|----|-----------|
| 1  | BT 200D   |
| 2  | BT 700D   |
| 3  | BT 1500D  |
| 4  | BT 3000D  |
| 5  | BT 6000D  |
| 6  | BT 10000D |
| 7  | BT 16000D |

### Emergency Block with Deck Plate for Single Acting Actuators

- Compatible with Bloomfoss BT series single acting actuator.
- Can be applied in emergency operation by hand pump
- Emergency Block is direct mounting on actuator without use of pipe when actuators is dry location. Designed for submerge actuator as bulkhead mounting by using pipe between actuator and block when actuator is submerged location.
- Extend the reach of your hydraulic capabilities to actuators or bulkheads in submerged areas with the Bloomfoss Emergency Block. Designed for mounting on actuators, this systematic approach opens up a variety of options and combinations of the block functionality. (e.g. Throttle and Quick connector for actuator emergency operation by hand pump)
- Emergency Blocks can be actuator mounted, manifold mounted or bulkhead mounted.
- Throttle speed control for actuator.

#### Emergency Block with Deck Plate

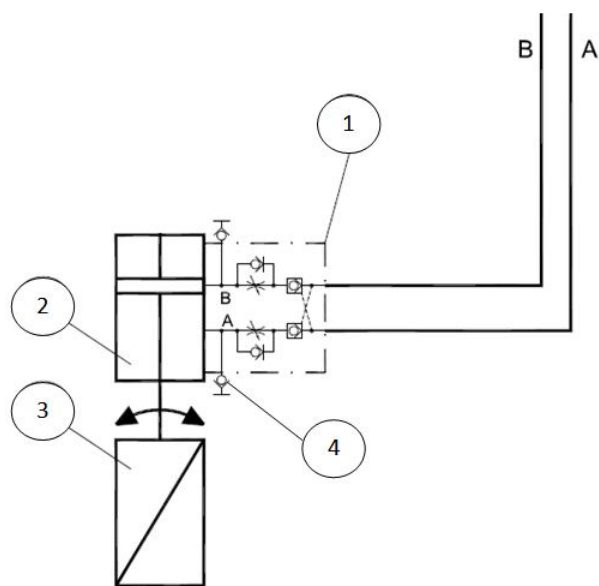


Applicable actuator model as per below

| No | Model     |
|----|-----------|
| 1  | BT 200S   |
| 2  | BT 700S   |
| 3  | BT 1500S  |
| 4  | BT 3000S  |
| 5  | BT 6000S  |
| 6  | BT 10000S |
| 7  | BT 16000S |

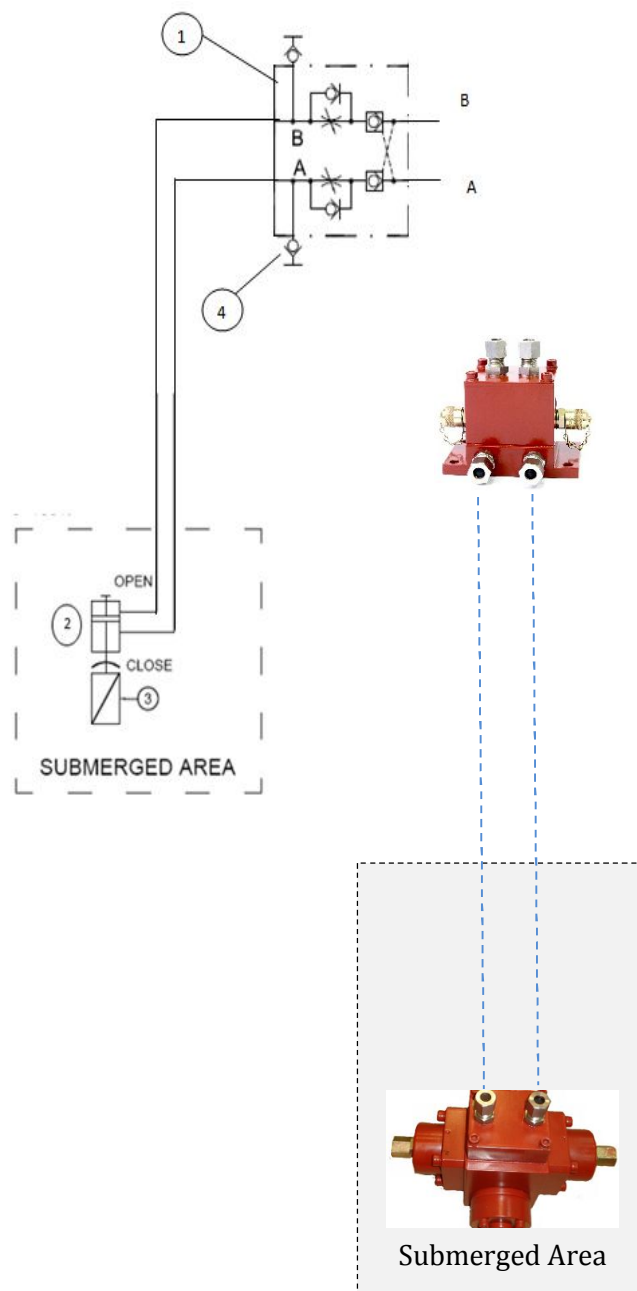
## Hydraulic Schematic Diagram

**CO Block direct mounted on Double Acting Actuators (Dry / IP 67)**

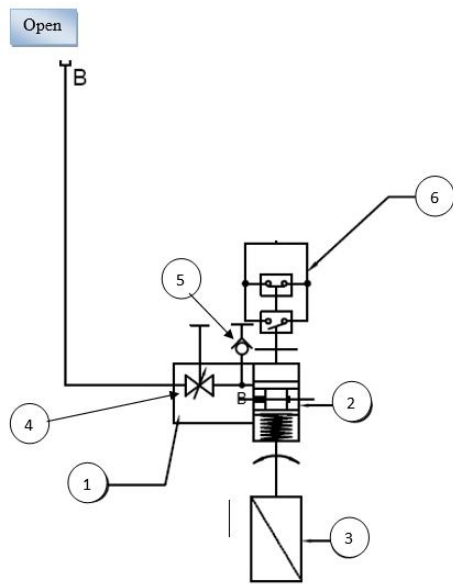


| No | Description                      |
|----|----------------------------------|
| 1  | CO Block (Control Block)         |
| 2  | Double Acting Hydraulic Actuator |
| 3  | Butterfly Valve                  |
| 4  | Test Point (Quick Connector)     |

**CO Block at Main Deck, Double Acting Actuators (Submerged / IP 68)**

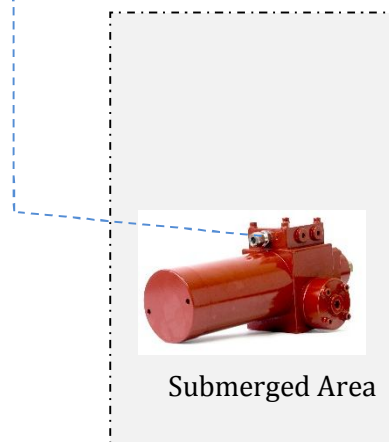
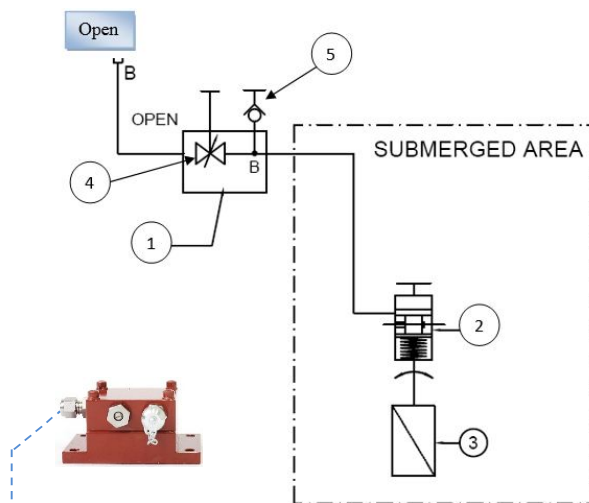


## Emergency Block direct mounted on Single Acting Actuators (Dry / IP 67)



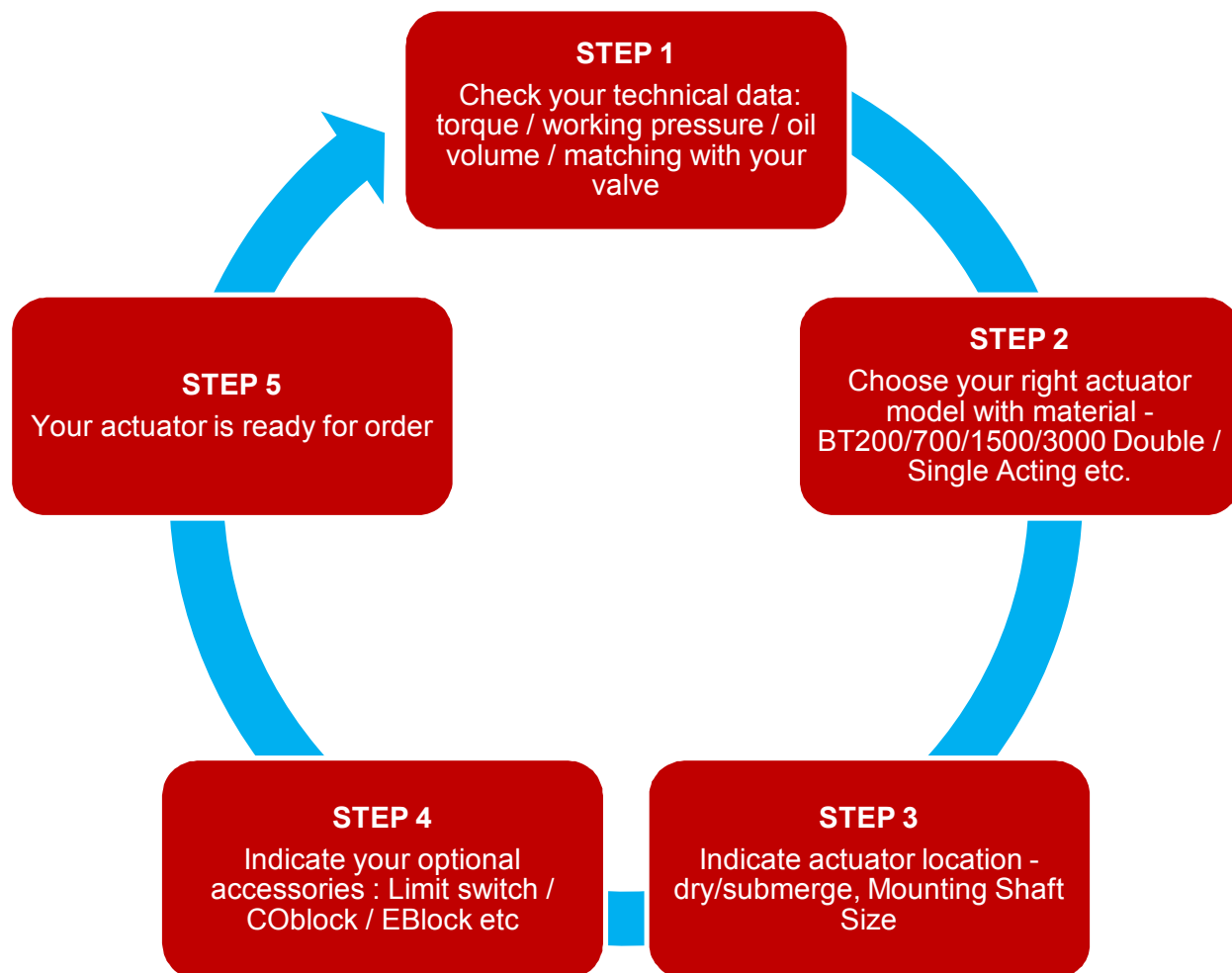
| No | Description                        |
|----|------------------------------------|
| 1  | E Block (Emergency Block)          |
| 2  | Singe Acting Hydraulic Actuator    |
| 3  | Butterfly Valve                    |
| 4  | Throttle Valve                     |
| 5  | Test Point (Quick Connector)       |
| 6  | Limit Switch Feedback (For Option) |

## Emergency Block at Main Deck, Single Acting Actuators (Submerged / IP 68)

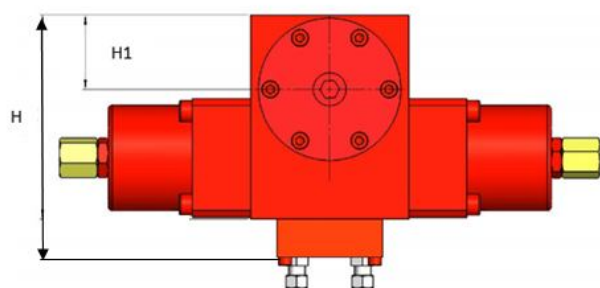
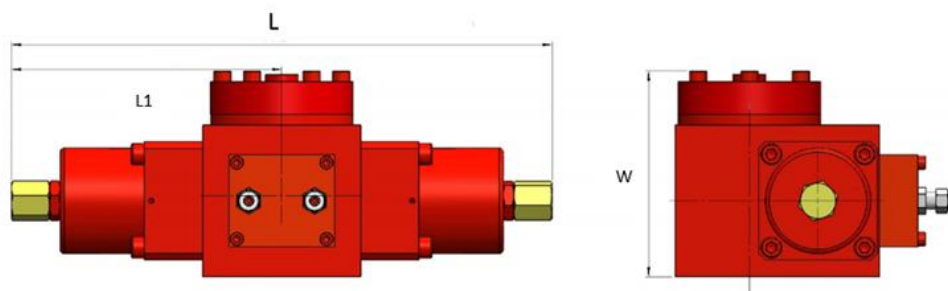


## Sizing

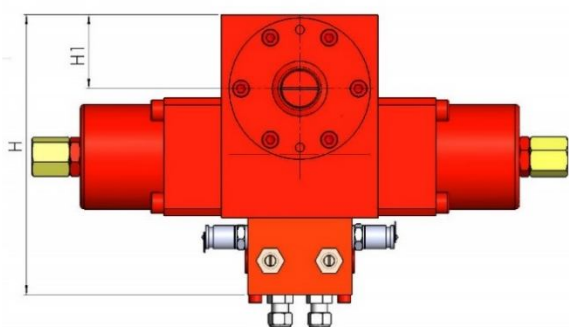
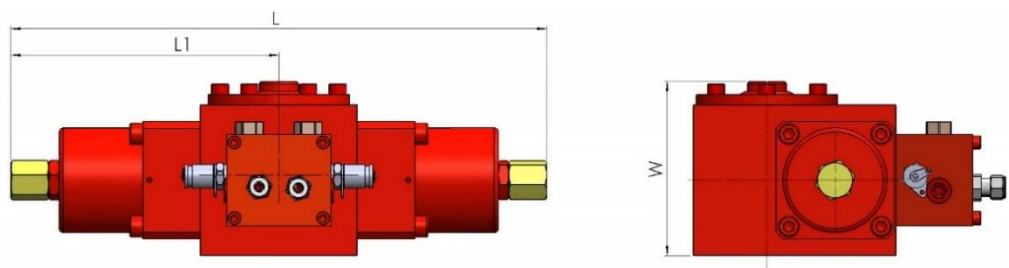
During selection of appropriate actuators, we can choose the more reasonable and more economical actuators easily with 5 simple steps as per below;



## Hydraulic Double Acting Actuator Drawing

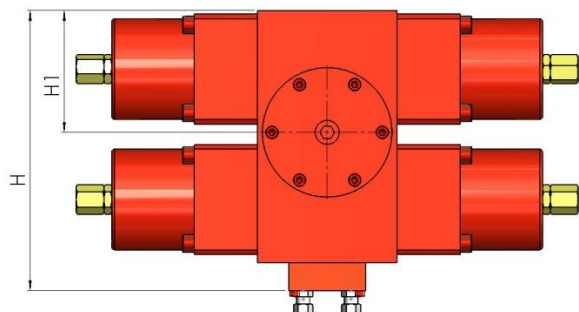
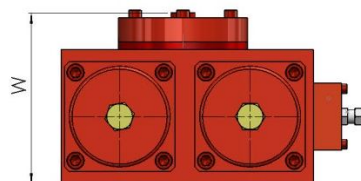
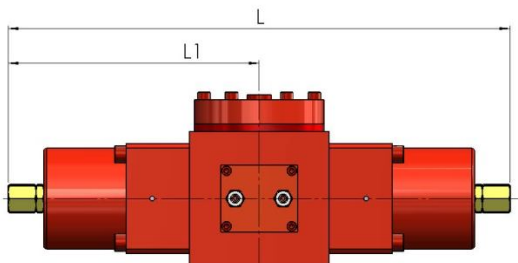


Submerged

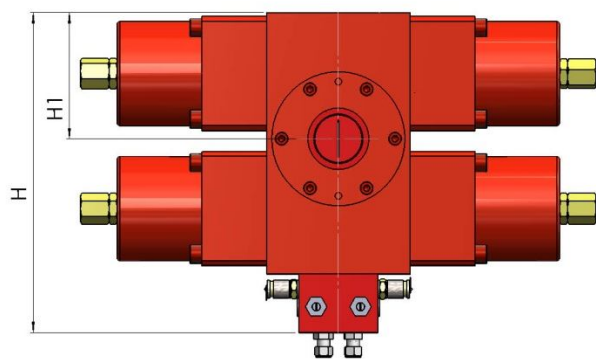
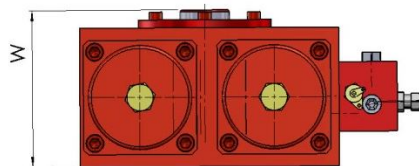
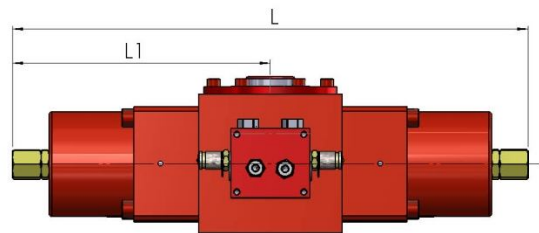


Dry

| Model    | Submerged (mm) |       |     |      |     | Dry (mm) |       |     |      |     |
|----------|----------------|-------|-----|------|-----|----------|-------|-----|------|-----|
|          | L              | L1    | W   | H1   | H   | L        | L1    | W   | H1   | H   |
| BT 200D  | 261            | 130.5 | 135 | 35   | 141 | 261      | 130.5 | 110 | 35   | 171 |
| BT 700D  | 410            | 205   | 156 | 56.5 | 184 | 410      | 205   | 135 | 56.5 | 214 |
| BT 1500D | 523            | 261.5 | 183 | 72   | 229 | 523      | 261.5 | 158 | 72   | 259 |



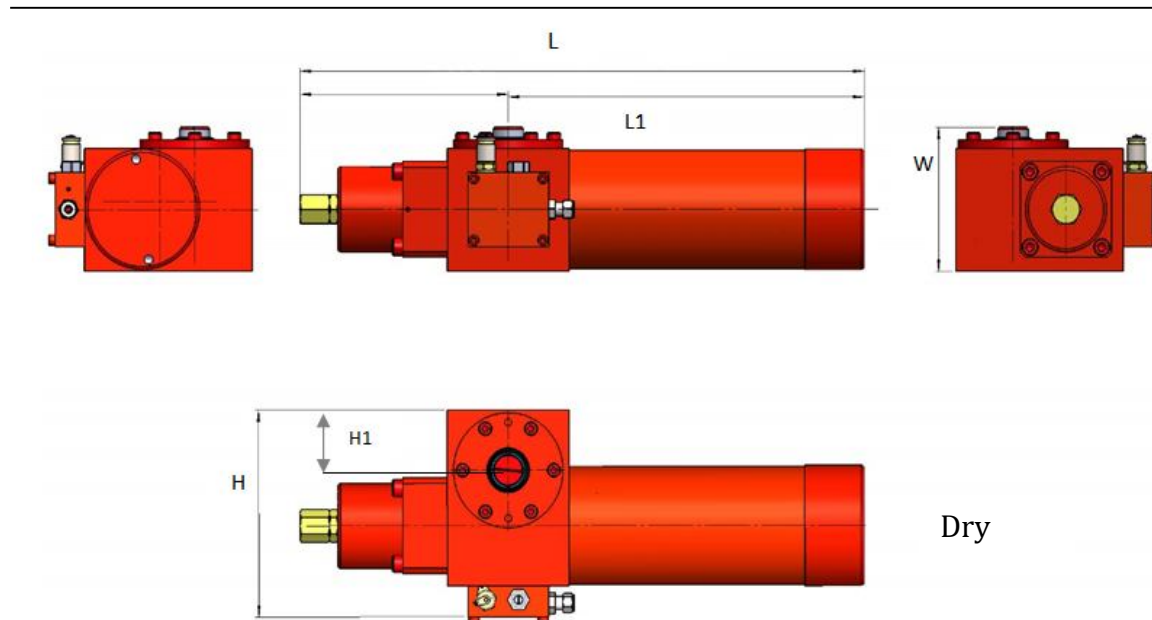
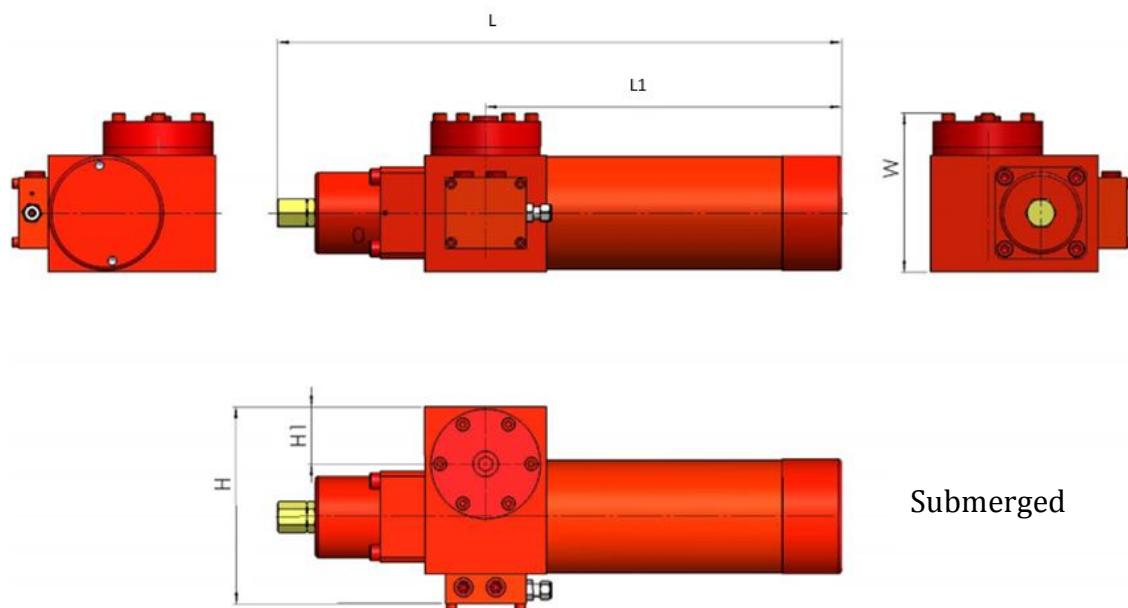
Submerged



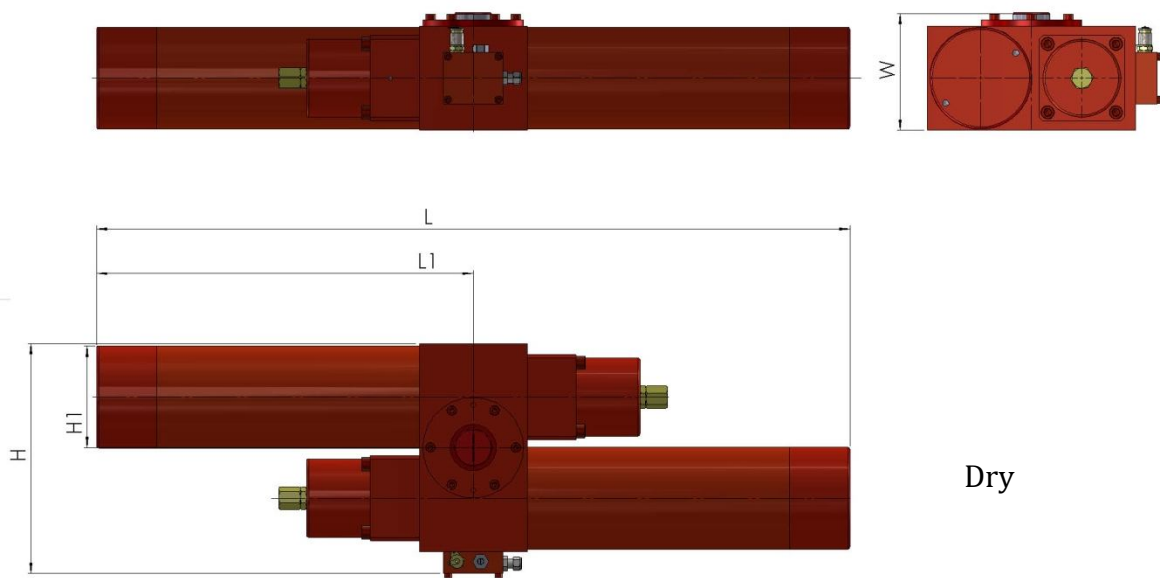
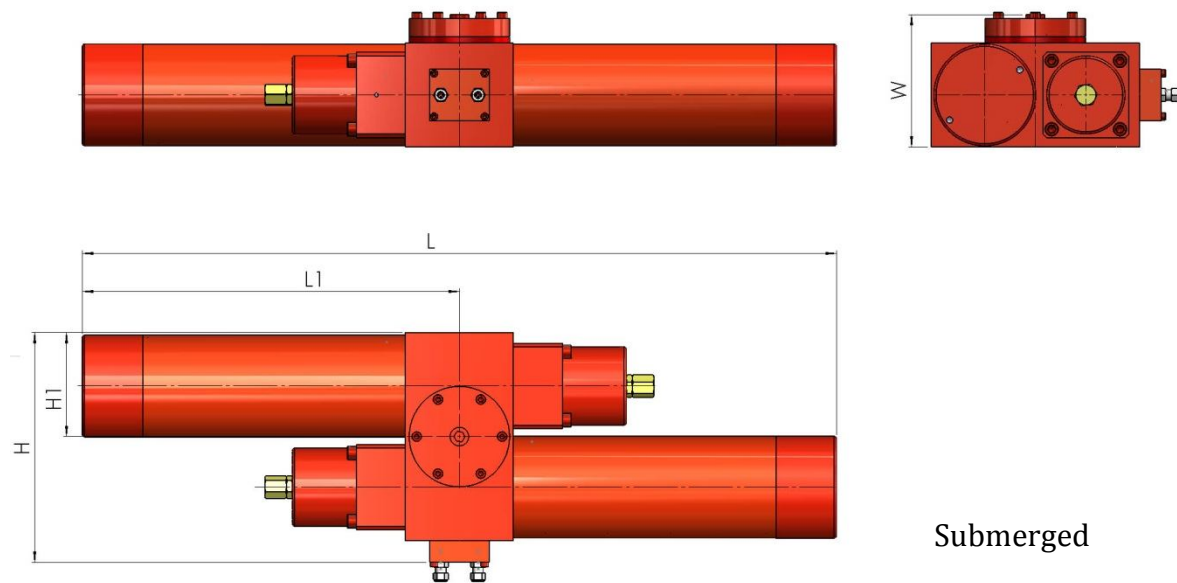
Dry

| Model     | Submerged (mm) |       |     |       |     | Dry (mm) |       |     |       |     |
|-----------|----------------|-------|-----|-------|-----|----------|-------|-----|-------|-----|
|           | L              | L1    | W   | H1    | H   | L        | L1    | W   | H1    | H   |
| BT 3000D  | 523            | 261.5 | 183 | 129   | 294 | 523      | 261.5 | 158 | 129   | 324 |
| BT 6000D  | 600            | 300   | 211 | 152   | 339 | 600      | 300   | 186 | 152   | 369 |
| BT 10000D | 756            | 378   | 210 | 172.5 | 374 | 756      | 378   | 195 | 172.5 | 404 |
| BT 16000D | 909            | 454.5 | 286 | 205   | 439 | 909      | 454.5 | 261 | 205   | 469 |

## Hydraulic Single Acting Actuator Drawing



| Model    | Submerged (mm) |     |     |      |     | Dry (mm) |     |     |      |     |
|----------|----------------|-----|-----|------|-----|----------|-----|-----|------|-----|
|          | L              | L1  | W   | H1   | H   | L        | L1  | W   | H1   | H   |
| BT 200S  | 354.5          | 226 | 135 | 35   | 141 | 354.5    | 226 | 110 | 35   | 141 |
| BT 700S  | 556            | 351 | 158 | 56.5 | 194 | 556      | 351 | 135 | 56.5 | 194 |
| BT 1500S | 764.5          | 507 | 183 | 72   | 239 | 764.5    | 507 | 158 | 72   | 239 |



| Model    | Submerged (mm) |     |     |     |     | Dry (mm) |     |     |     |     |
|----------|----------------|-----|-----|-----|-----|----------|-----|-----|-----|-----|
|          | L              | L1  | W   | H1  | H   | L        | L1  | W   | H1  | H   |
| BT 3000S | 1014           | 507 | 183 | 138 | 309 | 1014     | 507 | 158 | 138 | 309 |
| BT 6000S | 1138           | 569 | 211 | 165 | 359 | 1138     | 569 | 186 | 165 | 359 |

## Order Guide

| Series  | Actuator Models   |        |            |                      |                   |  |                       |  |  |  |  |
|---|---|--------|------------|----------------------|-------------------|--|-----------------------|--|--|--|--|
| BT  | 200   |        |            |                      |                   |  |                       |  |  |  |  |
|   | 700   |        |            |                      |                   |  |                       |  |  |  |  |
|   | 1500  |        |            |                      |                   |  |                       |  |  |  |  |
|   | 3000  |        |            |                      |                   |  |                       |  |  |  |  |
|   | 6000  |        |            |                      |                   |  |                       |  |  |  |  |
|   | 10000   |        |            |                      |                   |  |                       |  |  |  |  |
|   | 16000   |        |            |                      |                   |  |                       |  |  |  |  |
|   | <b>Type</b>   |        |            |                      |                   |  |                       |  |  |  |  |
|   | D   |        |            |                      |                   |  | Double Acting         |  |  |  |  |
|   | S   |        |            |                      |                   |  | Single Acting         |  |  |  |  |
|   | <b>Dry / Submerged</b>  |        |            |                      |                   |  |                       |  |  |  |  |
|   | 1   |        |            |                      |                   |  | Dry (IP 67)           |  |  |  |  |
|   | 2   |        |            |                      |                   |  | Submerged (100 meter) |  |  |  |  |
|   | <b>Mounting Flange availability (ISO 5211)/ (Available for below model)</b> |        |            |                      |                   |  |                       |  |  |  |  |
| F05   | BT 200  |        |            |                      |                   |  |                       |  |  |  |  |
| F07   | BT 200 , BT 700   |        |            |                      |                   |  |                       |  |  |  |  |
| F10   | BT 700, BT 1500, BT 3000  |        |            |                      |                   |  |                       |  |  |  |  |
| F12   | BT 1500, BT 3000, BT 6000   |        |            |                      |                   |  |                       |  |  |  |  |
| F14   | BT 3000, BT 6000  |        |            |                      |                   |  |                       |  |  |  |  |
| F16   | BT 3000, BT 6000  |        |            |                      |                   |  |                       |  |  |  |  |
| F25   | BT 6000, BT 10000   |        |            |                      |                   |  |                       |  |  |  |  |
| F30   | BT 10000 , BT 16000   |        |            |                      |                   |  |                       |  |  |  |  |
| <b>Shaft Size (Available for below model)</b>   |   |        |            |                      |                   |  |                       |  |  |  |  |
| 9x30  | BT200   |        |            |                      |                   |  |                       |  |  |  |  |
| 12x30   | BT 200, BT 700  |        |            |                      |                   |  |                       |  |  |  |  |
| 16x33   | BT 200, BT 700  |        |            |                      |                   |  |                       |  |  |  |  |
| 17x30   | BT 200, BT 700  |        |            |                      |                   |  |                       |  |  |  |  |
| 17x55   | BT 700  |        |            |                      |                   |  |                       |  |  |  |  |
| 22x35   | BT 700, BT 1500   |        |            |                      |                   |  |                       |  |  |  |  |
| 22x55   | BT 700, BT 1500   |        |            |                      |                   |  |                       |  |  |  |  |
| 27x55   | BT 700, BT 1500   |        |            |                      |                   |  |                       |  |  |  |  |
| 30x35   | BT 700, BT 1500   |        |            |                      |                   |  |                       |  |  |  |  |
| 36x36/40/50   | BT 1500, BT 3000  |        |            |                      |                   |  |                       |  |  |  |  |
| 46x50   | BT 3000, BT 6000  |        |            |                      |                   |  |                       |  |  |  |  |
| 55x(55/60)  | BT 6000, BT 10000   |        |            |                      |                   |  |                       |  |  |  |  |
| 72x72   | BT 16000  |        |            |                      |                   |  |                       |  |  |  |  |
| <b>Shaft Type</b>   |   |        |            |                      |                   |  |                       |  |  |  |  |
| ■ (SQ)  | Square  |        |            |                      |                   |  |                       |  |  |  |  |
| ◇ (DI)  | Diamond   |        |            |                      |                   |  |                       |  |  |  |  |
| Key way (KY)  | Key way (Please contact to Bloomfoss)                                       |        |            |                      |                   |  |                       |  |  |  |  |
| <b>Feedback (Option)</b>  |   |        |            |                      |                   |  |                       |  |  |  |  |
| Limit Switch  |   |        |            | On/Off or Modulating |                   |  |                       |  |  |  |  |
| BT  |   |        |            |                      |                   |  |                       |  |  |  |  |
| BT  | Order Code  | Flange | Shaft Size | Shaft                | Feedback (Option) |  |                       |  |  |  |  |
| <i>Note: Above information are Bloomfoss standard item. Any special requirement including mounting size, shaft size, materials request option, please contact to Bloomfoss.</i> |   |        |            |                      |                   |  |                       |  |  |  |  |

Example: BT 200D1 F07 9x30 (SQ)

## Accessory and Spare Order

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### Portable Hand Pump

|                              |   |
|------------------------------|---|
| Max. system working pressure | : 135 bar                                   |
| Max. system test pressure    | : 205 bar                                   |
| Max. hand pump pressure      | : 300 bar                                   |
| Oil displacement             | : 45 cc                                     |
| Oil viscosity range          | : ISO VG 32 ~ 68                            |
| Temperature range            | : 15°C to 80°C                              |
| Standard hose                | : 2m per hose / Request                     |
| Oil Tank                     | : 3L, 5L, Upon Request                      |
| Oil Tank Materials           | : Aluminum, Option (Steel, Stainless Steel) |



### Control Block with Deck Plate

|                              |  |
|------------------------------|--|
| Max. system working pressure | : 130 bar  |
| Material                     | : Carbon Steel,<br>Option (Stainless Steel, Brass) |
| Fitting                      | : Stainless Steel 316                              |
| Throttle Valve               | : Stainless Steel 316                              |
| Seal                         | : NBR  |
| Test Point                   | : Carbon Steel                                     |
| Temperature                  | : -10°C to 75°C                                    |
| Weight                       | : 5Kg  |



### Emergency Block with Deck Plate

|                              |  |
|------------------------------|--|
| Max. system working pressure | : 130 bar  |
| Material                     | : Carbon Steel,<br>Option (Stainless Steel, Brass) |
| Fitting                      | : Stainless Steel 316                              |
| Throttle Valve               | : Stainless Steel 316                              |
| Seal                         | : NBR  |
| Test Point                   | : Carbon Steel                                     |
| Temperature                  | : -10°C to 75°C                                    |
| Weight                       | : 3.5 Kg   |



## Spare Part Kit

Spare part kit : BT 200 Set  
 Spare part kit : BT 700 Set  
 Spare part kit : BT 1500 Set  
 Spare part kit : BT 3000 Set  
 Spare part kit : BT 6000 Set  
 Spare part kit : BT 10000 Set  
 Spare part kit : BT 16000 Set



| No | Description                   | BT 200/700/<br>1500 S | BT 3000/6000/<br>10000/<br>16000 S | BT 200/700/<br>1500 D | BT 3000/6000/<br>10000/<br>16000 S |
|----|-------------------------------|-----------------------|------------------------------------|-----------------------|------------------------------------|
| 1  | Protection & Lock Nut O-ring  | 2 pcs                 | 2 pcs                              | 4 pcs                 | 8 pcs                              |
| 2  | Chamber Cap Screw with Washer | 4 pcs                 | 8 pcs                              | 8 pcs                 | 16 pcs                             |
| 3  | Chamber O-ring                | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pcs                              |
| 4  | Sleeve Oil Seal               | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pcs                              |
| 5  | Inner Brass Sleeve Seal       | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pcs                              |
| 6  | Outer Brass Sleeve O-ring     | 2 pcs                 | 4 pcs                              | 4 pcs                 | 8 pcs                              |
| 7  | Main Block O-ring             | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 8  | Rack Ring                     | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 9  | Top Cover Outer O-ring        | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 10 | Top Cover Inner O-ring        | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 11 | Dust Seal                     | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 12 | End Stopper Set screw         | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pce                              |
| 13 | DA Sleeve                     | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pce                              |
| 14 | End Protection Nut            | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pce                              |
| 15 | Lock Nut                      | 1 pce                 | 2 pcs                              | 2 pcs                 | 4 pce                              |
| 16 | Emergency Block O-ring        | 1 pce                 | 1 pce                              | NA                    | NA                                 |
| 17 | Control Block O-ring          | NA                    | NA                                 | 2 pcs                 | 2 pcs                              |
| 18 | SA Sleeve without O-ring      | 1 pce                 | 2 pcs                              | NA                    | NA                                 |
| 19 | Submerge Cover O-ring         | 1 pce                 | 1 pce                              | 1 pce                 | 1 pce                              |
| 20 | Aluminum Tool Case Box        | 1 box                 | 1 box                              | 1 box                 | 1 box                              |

## Limit Switch

Enclosure : IP 67, IP 68  
 Temperature : -20°C to 80°C  
 Position Indicator : 0 to 90°  
 Switch : On/Off (2SPDT) or  
 Modulating (0~1KΩ) or  
 Other (on Request)  
 Explosion Proof : On Request



## Certification & Approval

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|                                |   |
|--------------------------------|---|
| <b>ABS Product Approval</b>    | <ol style="list-style-type: none"><li>1. ABS Product Design Approval</li><li>2. ABS Product Type Approval</li><li>3. Manufacturing Assessment</li></ol>   |
| <b>ATEX Approval</b>           | Technical documentation according to the Annex VIII Article 2 of Directive 2014/34/EU   |
| <b>CE Mark</b>                 | The device meets the legal requirements of the EC directives. Bloomfoss confirms that the device has been successfully tested by applying the EU Directive.   |
| <b>Standard and Guide Line</b> | <p>ABS Steel Vessel Rules (2014) 1-1-A3 and A4, 1-1-4/7.7, 4-6-7/3.5.5 Steel Vessels Under 90 Meters (295 Feet) in Length (2014) 1-1-4/7.7, 1-1-A3 and A4</p> <p>Facilities on Offshore Installations (2014) 1-1-4/9.7, 1-1-A2 and A3 Offshore</p> <p>Support Vessels (2014) 1-1-4/7.7, 1-1-A3 and A4 Mobile Offshore Drilling Units Rules (2014) 1-1-4/9.7, 1-1-A2 and A3 Aluminum Vessels (1975) 1-1-4/7.7, 1-1-A3 and A4 Steel Vessels for Service on Rivers and Intracoastal Waterways (2014) 1-1-4/7.7, 1-1-A3 and A4 Bulk Carriers for Service on the Great Lakes (1978) 1-1-4/7.7, 1-1-A3 and A4 High-Speed Craft (2014) 1-1-4/7.7, 1-1-4/9.7, 1-1-A2 and A3 Steel Barge Rules (2014) 1-1-4/7.7, 1-1-4/9.7 1-1-A3/A4</p> <p>EN 13463-1</p> <p>EN 13463-5</p> <p>IEC 60529:2013</p> <p>ISO 5211</p> |

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## Quality Management System



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