

# *Hydraulic Cylinders* **Swivel Cylinder**



Working Pressure up to 160 bar

**BRANT**  
**HYDRAULICS**

For limited rotary motion at a constant torque, highly developed single and double rack cylinders for all fields of engineering are manufactured by Brant. Standard and special constructions up to 291,000 Nm, 720° rotary angle, operation pressure up to 16Mpa, 160 bar, 2300 psi and working temperature range from -50 ~ +225°C have been used successfully many years

### Single Piston

- up to 145,000 Nm torque for small sizes
- angle of traverse up to 720° with adjustable limitation of angle of traverse and damping
- actuation shaft on one or both sides
- direct position indication for radial and axial movements
- flange or foot mounting
- sliding surface coated for maintenance-free operation
- exact positioning guaranteed by leakage-free stop in any position

### Double Piston

- rotary piston type for huge torques up to 291,000 Nm
- mounted control units for controlled swiveling
- flange or foot mounting
- adjustable terminal damping

### Model Code:

B S C — F — M — S R — 1 2 5 — 3 6 0 — W

#### Series:

BRANT Swivel Cylinder

#### Mounting Style:

F— Flange  
S— Foot

#### Output:

M— Male  
F— Female

#### Design Principle:

SR— Single Rack  
DR— Double Rack

#### End Cushion:

W— With cushion  
O— Without cushion

#### Traverse Angle:

090 — 0° ~ 90°  
180 — 0° ~ 180°  
270 — 0° ~ 270°  
360 — 0° ~ 360°  
450 — 0° ~ 450°  
540 — 0° ~ 540°  
630 — 0° ~ 630°  
720 — 0° ~ 720°

#### Bore Dia. mm:

40, 50, 63, 80  
100, 125, 140, 160  
180, 200, 220, 250

### Special Swivel Cylinders

Our team of qualified Engineers will be at your disposal with competent advice, offers and service for the prompt execution of and individual solutions regarding your enquiries.

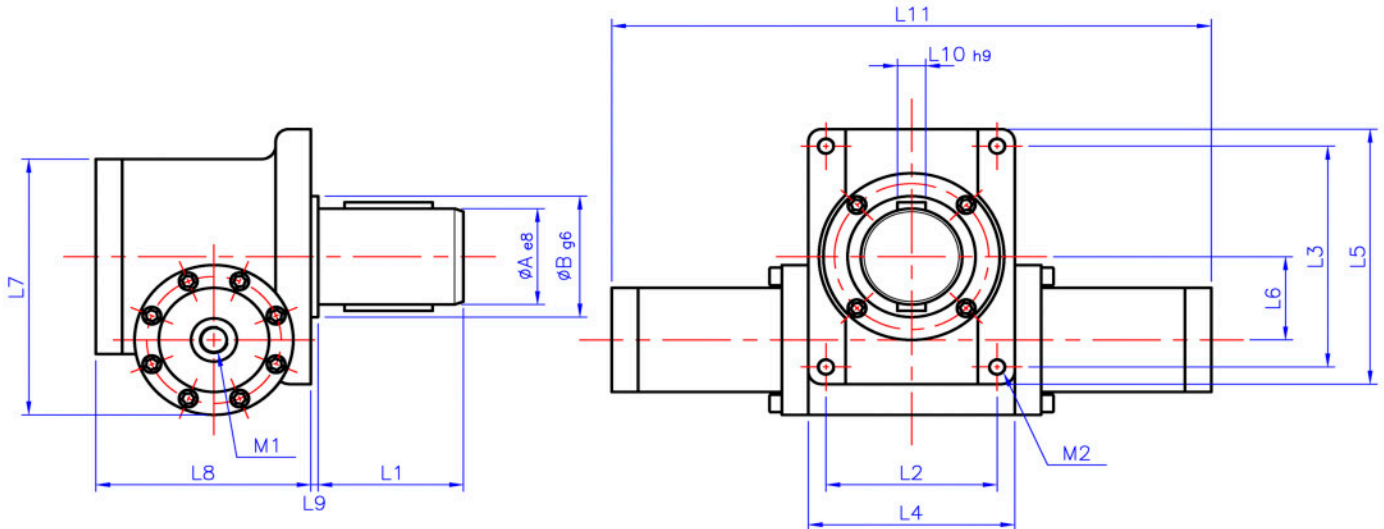
We would be glad to advise you on your specific problems and to work out proposals in consideration of your working conditions.

# Swivel Cylinder

## FMSR

Flange Mounting  
Male Output  
Single Rack

**Nominal pressure** **160 bar**



| Part No.   | Bore | Torque N-M | φ A | φ B | L1  | L2  | L3  | L4  | L5  | L6  | L7  | L8  | L9 | L10 | L11         | M1      | M2     |
|------------|------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-------------|---------|--------|
| BSCFMSR040 | 40   | 730        | 70  | 95  | 105 | 140 | 160 | 164 | 184 | 55  | 197 | 154 | 6  | 20  | 300+1.54 α  | M22×1.5 | M12×20 |
| BSCFMSR050 | 50   | 1297       | 80  | 105 | 125 | 146 | 185 | 170 | 210 | 66  | 231 | 163 | 6  | 22  | 320+1.75 α  | M22×1.5 | M12×20 |
| BSCFMSR063 | 63   | 2266       | 90  | 115 | 140 | 164 | 200 | 194 | 232 | 72  | 253 | 190 | 6  | 25  | 374+1.92 α  | M27×2   | M16×25 |
| BSCFMSR080 | 80   | 3987       | 95  | 125 | 150 | 175 | 225 | 205 | 257 | 86  | 292 | 212 | 8  | 25  | 427+2.23 α  | M27×2   | M16×25 |
| BSCFMSR100 | 100  | 7476       | 115 | 145 | 165 | 194 | 265 | 234 | 306 | 100 | 343 | 244 | 8  | 32  | 484+2.79 α  | M33×2   | M20×30 |
| BSCFMSR125 | 125  | 13141      | 125 | 155 | 170 | 230 | 285 | 274 | 334 | 116 | 390 | 284 | 8  | 32  | 554+3.35 α  | M42×2   | M24×35 |
| BSCFMSR140 | 140  | 18317      | 145 | 180 | 200 | 240 | 305 | 286 | 354 | 125 | 418 | 290 | 10 | 36  | 596+3.77 α  | M42×2   | M24×35 |
| BSCFMSR160 | 160  | 26583      | 165 | 200 | 220 | 255 | 330 | 315 | 390 | 140 | 464 | 314 | 10 | 40  | 620+3.91 α  | M48×2   | M30×45 |
| BSCFMSR180 | 180  | 36334      | 175 | 220 | 240 | 330 | 380 | 390 | 440 | 152 | 518 | 380 | 12 | 45  | 651+4.40 α  | M48×2   | M30×45 |
| BSCFMSR200 | 200  | 52335      | 195 | 240 | 260 | 365 | 440 | 425 | 500 | 170 | 578 | 438 | 12 | 45  | 681+5.03 α  | M48×2   | M30×45 |
| BSCFMSR220 | 220  | 88312      | 260 | 300 | 250 | 430 | 630 | 510 | 710 | 218 | 753 | 460 | 20 | 56  | 766+6.14 α  | M48×2   | M36×60 |
| BSCFMSR250 | 250  | 145790     | 320 | 380 | 250 | 590 | 785 | 670 | 865 | 280 | 903 | 540 | 20 | 70  | 1000+7.85 α | M48×2   | M36×60 |

Note:

1. α - traverse angle (range from 0° ~ 720°)

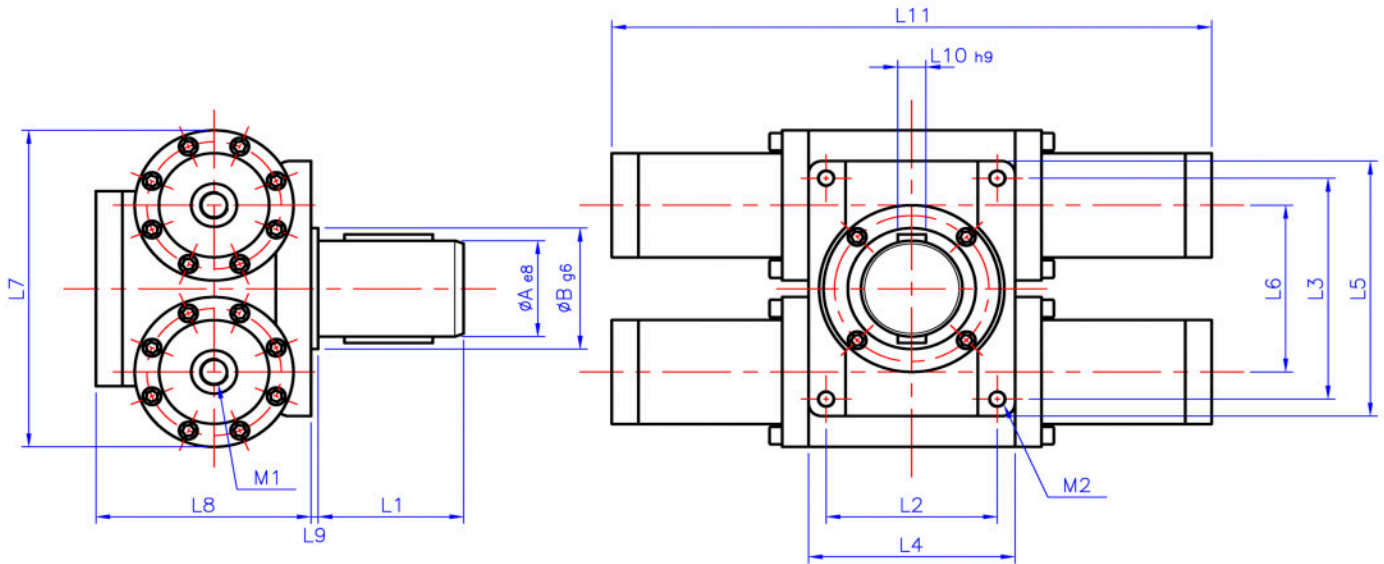
2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.



**FMDR**

Flange Mounting  
Male Output  
Double Rack

**Nominal pressure 160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | L1  | L2  | L3  | L4  | L5  | L6  | L7  | L8  | L9 | L10 | L11                | M1      | M2     |
|------------|------|------------|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|--------------------|---------|--------|
| BSCFMDR040 | 40   | 1460       | 70       | 95       | 105 | 140 | 160 | 164 | 184 | 110 | 210 | 154 | 6  | 20  | 300+1.54 $\alpha$  | M22×1.5 | M12×20 |
| BSCFMDR050 | 50   | 2594       | 80       | 105      | 125 | 146 | 185 | 170 | 210 | 132 | 252 | 163 | 6  | 22  | 320+1.75 $\alpha$  | M22×1.5 | M12×20 |
| BSCFMDR063 | 63   | 4532       | 90       | 115      | 140 | 164 | 200 | 194 | 232 | 144 | 274 | 190 | 6  | 25  | 374+1.92 $\alpha$  | M27×2   | M16×25 |
| BSCFMDR080 | 80   | 7974       | 95       | 125      | 150 | 175 | 225 | 205 | 257 | 172 | 327 | 212 | 8  | 25  | 427+2.23 $\alpha$  | M27×2   | M16×25 |
| BSCFMDR100 | 100  | 14952      | 115      | 145      | 165 | 194 | 265 | 234 | 306 | 200 | 380 | 244 | 8  | 32  | 484+2.79 $\alpha$  | M33×2   | M20×30 |
| BSCFMDR125 | 125  | 26282      | 125      | 155      | 170 | 230 | 285 | 274 | 334 | 232 | 446 | 284 | 8  | 32  | 554+3.35 $\alpha$  | M42×2   | M24×35 |
| BSCFMDR140 | 140  | 36634      | 145      | 180      | 200 | 240 | 305 | 286 | 354 | 250 | 482 | 290 | 10 | 36  | 596+3.77 $\alpha$  | M42×2   | M24×35 |
| BSCFMDR160 | 160  | 53166      | 165      | 200      | 220 | 255 | 330 | 315 | 390 | 280 | 538 | 314 | 10 | 40  | 620+3.91 $\alpha$  | M48×2   | M30×45 |
| BSCFMDR180 | 180  | 72666      | 175      | 220      | 240 | 330 | 380 | 390 | 440 | 304 | 596 | 380 | 12 | 45  | 651+4.40 $\alpha$  | M48×2   | M30×45 |
| BSCFMDR200 | 200  | 104670     | 195      | 240      | 260 | 365 | 440 | 425 | 500 | 340 | 656 | 438 | 12 | 45  | 681+5.03 $\alpha$  | M48×2   | M30×45 |
| BSCFMDR220 | 220  | 176624     | 260      | 300      | 250 | 430 | 630 | 510 | 710 | 436 | 796 | 460 | 20 | 56  | 766+6.14 $\alpha$  | M48×2   | M36×60 |
| BSCFMDR250 | 250  | 291580     | 320      | 380      | 250 | 590 | 785 | 670 | 865 | 560 | 940 | 540 | 20 | 70  | 1000+7.85 $\alpha$ | M48×2   | M36×60 |

Note:

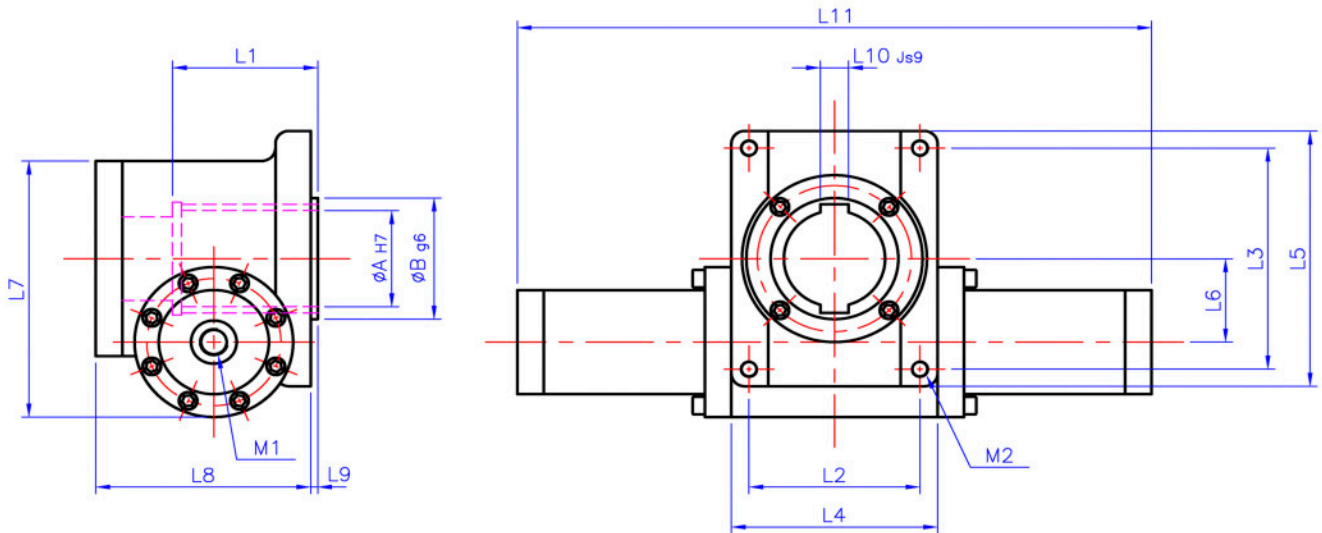
1.  $\alpha$  - traverse angle (range from 0° ~ 720°)

2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.

## FFSR

Flange Mounting  
Female Output  
Single Rack

**Nominal pressure** **160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | L1  | L2  | L3  | L4  | L5  | L6  | L7  | L8  | L9 | L10 | L11                | M1               | M2              |
|------------|------|------------|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|--------------------|------------------|-----------------|
| BSCFFSR040 | 40   | 730        | 50       | 95       | 105 | 140 | 160 | 164 | 184 | 55  | 197 | 154 | 6  | 14  | 300+1.54 $\alpha$  | M22 $\times$ 1.5 | M12 $\times$ 20 |
| BSCFFSR050 | 50   | 1297       | 60       | 105      | 125 | 146 | 185 | 170 | 210 | 66  | 231 | 163 | 6  | 18  | 320+1.75 $\alpha$  | M22 $\times$ 1.5 | M12 $\times$ 20 |
| BSCFFSR063 | 63   | 2266       | 65       | 115      | 140 | 164 | 200 | 194 | 232 | 72  | 253 | 190 | 6  | 18  | 374+1.92 $\alpha$  | M27 $\times$ 2   | M16 $\times$ 25 |
| BSCFFSR080 | 80   | 3987       | 70       | 125      | 150 | 175 | 225 | 205 | 257 | 86  | 292 | 212 | 8  | 20  | 427+2.23 $\alpha$  | M27 $\times$ 2   | M16 $\times$ 25 |
| BSCFFSR100 | 100  | 7476       | 85       | 145      | 165 | 194 | 265 | 234 | 306 | 100 | 343 | 244 | 8  | 22  | 484+2.79 $\alpha$  | M33 $\times$ 2   | M20 $\times$ 30 |
| BSCFFSR125 | 125  | 13141      | 90       | 155      | 170 | 230 | 285 | 274 | 334 | 116 | 390 | 284 | 8  | 25  | 554+3.35 $\alpha$  | M42 $\times$ 2   | M24 $\times$ 35 |
| BSCFFSR140 | 140  | 18317      | 105      | 180      | 200 | 240 | 305 | 286 | 354 | 125 | 418 | 290 | 10 | 28  | 596+3.77 $\alpha$  | M42 $\times$ 2   | M24 $\times$ 35 |
| BSCFFSR160 | 160  | 26583      | 120      | 200      | 220 | 255 | 330 | 315 | 390 | 140 | 464 | 314 | 10 | 32  | 620+3.91 $\alpha$  | M48 $\times$ 2   | M30 $\times$ 45 |
| BSCFFSR180 | 180  | 36334      | 125      | 220      | 240 | 330 | 380 | 390 | 440 | 152 | 518 | 380 | 12 | 32  | 651+4.40 $\alpha$  | M48 $\times$ 2   | M30 $\times$ 45 |
| BSCFFSR200 | 200  | 52335      | 140      | 240      | 260 | 365 | 440 | 425 | 500 | 170 | 578 | 438 | 12 | 36  | 681+5.03 $\alpha$  | M48 $\times$ 2   | M30 $\times$ 45 |
| BSCFFSR220 | 220  | 88312      | 160      | 300      | 280 | 430 | 630 | 510 | 710 | 218 | 753 | 460 | 20 | 40  | 766+6.14 $\alpha$  | M48 $\times$ 2   | M36 $\times$ 60 |
| BSCFFSR250 | 250  | 145790     | 190      | 380      | 310 | 590 | 785 | 670 | 865 | 280 | 903 | 540 | 20 | 45  | 1000+7.85 $\alpha$ | M48 $\times$ 2   | M36 $\times$ 60 |

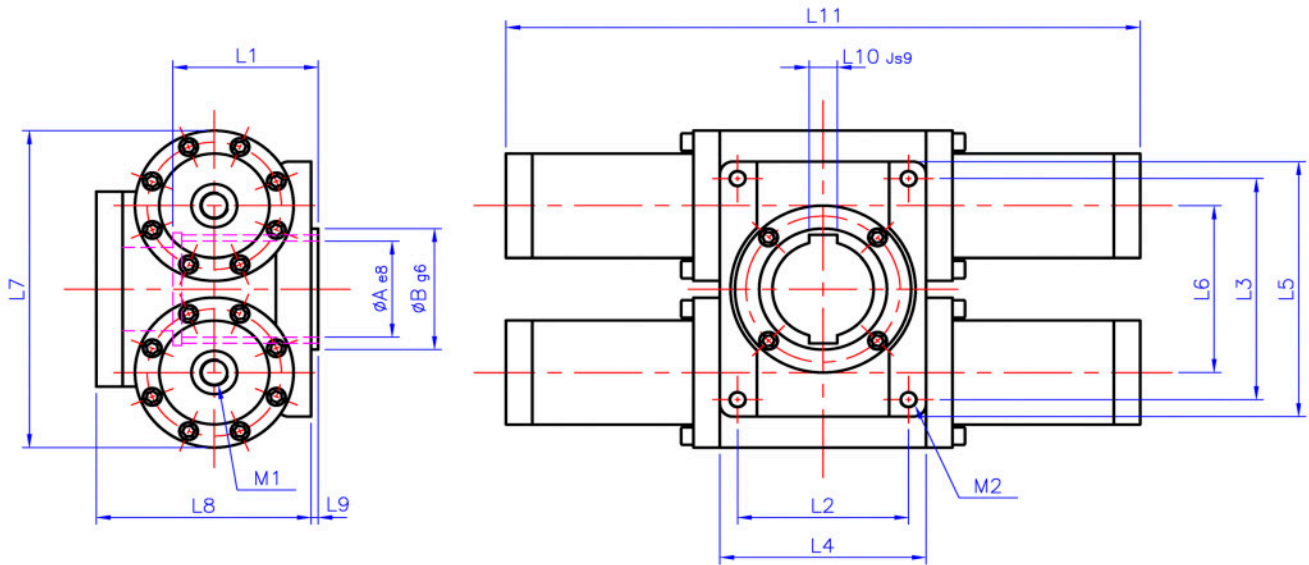
Note:

- $\alpha$  - traverse angle (range from  $0^\circ \sim 720^\circ$ )
- The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.

**FFDR**

Flange Mounting  
Female Output  
Double Rack

**Nominal pressure 160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | L1  | L2  | L3  | L4  | L5  | L6  | L7  | L8  | L9 | L10 | L11                | M1      | M2     |
|------------|------|------------|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|--------------------|---------|--------|
| BSCFFDR040 | 40   | 1460       | 50       | 95       | 105 | 140 | 160 | 164 | 184 | 110 | 210 | 154 | 6  | 14  | 300+1.54 $\alpha$  | M22×1.5 | M12×20 |
| BSCFFDR050 | 50   | 2594       | 60       | 105      | 125 | 146 | 185 | 170 | 210 | 132 | 252 | 163 | 6  | 18  | 320+1.75 $\alpha$  | M22×1.5 | M12×20 |
| BSCFFDR063 | 63   | 4532       | 65       | 115      | 140 | 164 | 200 | 194 | 232 | 144 | 274 | 190 | 6  | 18  | 374+1.92 $\alpha$  | M27×2   | M16×25 |
| BSCFFDR080 | 80   | 7974       | 70       | 125      | 150 | 175 | 225 | 205 | 257 | 172 | 327 | 212 | 8  | 20  | 427+2.23 $\alpha$  | M27×2   | M16×25 |
| BSCFFDR100 | 100  | 14952      | 85       | 145      | 165 | 194 | 265 | 234 | 306 | 200 | 380 | 244 | 8  | 22  | 484+2.79 $\alpha$  | M33×2   | M20×30 |
| BSCFFDR125 | 125  | 26282      | 90       | 155      | 170 | 230 | 285 | 274 | 334 | 232 | 446 | 284 | 8  | 25  | 554+3.35 $\alpha$  | M42×2   | M24×35 |
| BSCFFDR140 | 140  | 36634      | 105      | 180      | 200 | 240 | 305 | 286 | 354 | 250 | 482 | 290 | 10 | 28  | 596+3.77 $\alpha$  | M42×2   | M24×35 |
| BSCFFDR160 | 160  | 53166      | 120      | 200      | 220 | 255 | 330 | 315 | 390 | 280 | 538 | 314 | 10 | 32  | 620+3.91 $\alpha$  | M48×2   | M30×45 |
| BSCFFDR180 | 180  | 72666      | 125      | 220      | 240 | 330 | 380 | 390 | 440 | 304 | 596 | 380 | 12 | 32  | 651+4.40 $\alpha$  | M48×2   | M30×45 |
| BSCFFDR200 | 200  | 104670     | 140      | 240      | 260 | 365 | 440 | 425 | 500 | 340 | 656 | 438 | 12 | 36  | 681+5.03 $\alpha$  | M48×2   | M30×45 |
| BSCFFDR220 | 220  | 176624     | 160      | 300      | 280 | 430 | 630 | 510 | 710 | 436 | 796 | 460 | 20 | 40  | 766+6.14 $\alpha$  | M48×2   | M36×60 |
| BSCFFDR250 | 250  | 291580     | 190      | 380      | 310 | 590 | 785 | 670 | 865 | 560 | 940 | 540 | 20 | 45  | 1000+7.85 $\alpha$ | M48×2   | M36×60 |

Note:

1.  $\alpha$  - traverse angle (range from 0° ~ 720°)

2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.

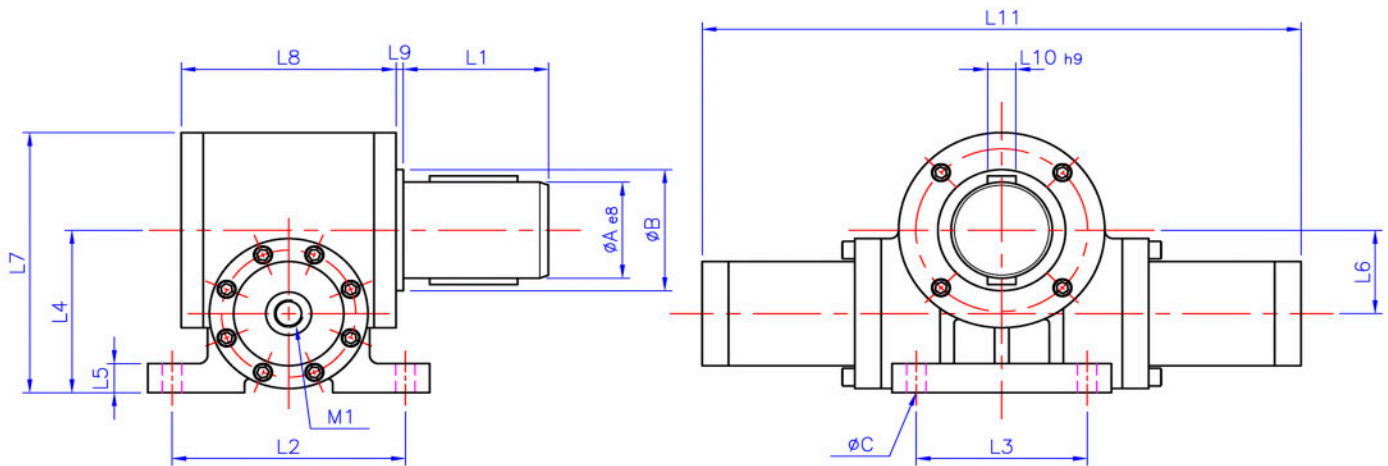


# Swivel Cylinder

## SMSR

Foot Mounting  
Male Output  
Single Rack

**Nominal pressure** **160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | $\phi C$ | L1  | L2  | L3  | L4  | L5 | L6  | L7  | L8  | L9 | L10 | L11                | M1               |
|------------|------|------------|----------|----------|----------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|--------------------|------------------|
| BSCSMSR040 | 40   | 730        | 70       | 95       | 14       | 105 | 140 | 160 | 110 | 25 | 55  | 188 | 154 | 6  | 20  | 300+1.54 $\alpha$  | M22 $\times$ 1.5 |
| BSCSMSR050 | 50   | 1297       | 80       | 105      | 14       | 125 | 146 | 185 | 131 | 25 | 66  | 215 | 163 | 6  | 22  | 320+1.75 $\alpha$  | M22 $\times$ 1.5 |
| BSCSMSR063 | 63   | 2266       | 90       | 115      | 18       | 140 | 164 | 200 | 142 | 35 | 72  | 236 | 190 | 6  | 25  | 374+1.92 $\alpha$  | M27 $\times$ 2   |
| BSCSMSR080 | 80   | 3987       | 95       | 125      | 18       | 150 | 175 | 225 | 168 | 35 | 86  | 267 | 212 | 8  | 25  | 427+2.23 $\alpha$  | M27 $\times$ 2   |
| BSCSMSR100 | 100  | 7476       | 115      | 145      | 22       | 165 | 194 | 265 | 195 | 35 | 100 | 306 | 244 | 8  | 32  | 484+2.79 $\alpha$  | M33 $\times$ 2   |
| BSCSMSR125 | 125  | 13141      | 125      | 155      | 26       | 170 | 230 | 285 | 228 | 40 | 116 | 354 | 284 | 8  | 32  | 554+3.35 $\alpha$  | M42 $\times$ 2   |
| BSCSMSR140 | 140  | 18317      | 145      | 180      | 26       | 200 | 240 | 305 | 246 | 40 | 125 | 377 | 290 | 10 | 36  | 596+3.77 $\alpha$  | M42 $\times$ 2   |
| BSCSMSR160 | 160  | 26583      | 165      | 200      | 33       | 220 | 255 | 330 | 274 | 45 | 140 | 415 | 314 | 10 | 40  | 620+3.91 $\alpha$  | M48 $\times$ 2   |
| BSCSMSR180 | 180  | 36334      | 175      | 220      | 33       | 240 | 330 | 380 | 303 | 45 | 152 | 475 | 380 | 12 | 45  | 651+4.40 $\alpha$  | M48 $\times$ 2   |
| BSCSMSR200 | 200  | 52335      | 195      | 240      | 33       | 260 | 365 | 440 | 333 | 45 | 170 | 520 | 438 | 12 | 45  | 681+5.03 $\alpha$  | M48 $\times$ 2   |
| BSCSMSR220 | 220  | 88312      | 260      | 300      | 36       | 250 | 430 | 490 | 408 | 50 | 218 | 653 | 460 | 20 | 56  | 766+6.14 $\alpha$  | M48 $\times$ 2   |
| BSCSMSR250 | 250  | 145790     | 320      | 380      | 45       | 250 | 590 | 590 | 485 | 60 | 280 | 795 | 540 | 20 | 70  | 1000+7.85 $\alpha$ | M48 $\times$ 2   |

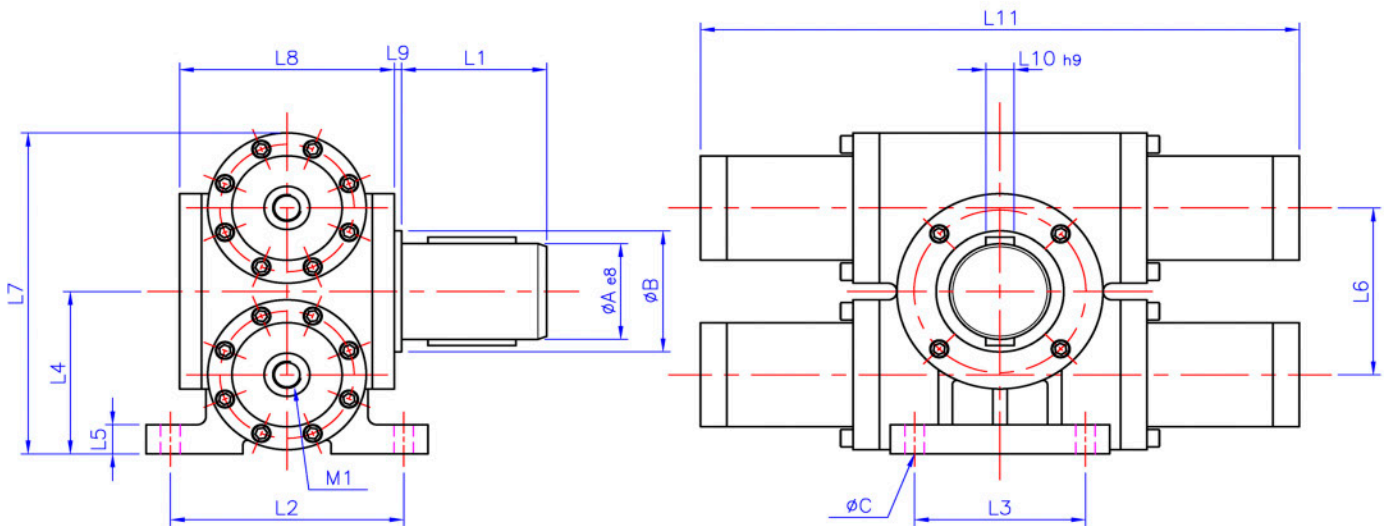
Note:

1.  $\alpha$  - traverse angle (range from 0° ~ 720°)
2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.

## SMDR

Foot Mounting  
Male Output  
Double Rack

**Nominal pressure 160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | $\phi C$ | L1  | L2  | L3  | L4  | L5 | L6  | L7  | L8  | L9 | L10 | L11                | M1               |
|------------|------|------------|----------|----------|----------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|--------------------|------------------|
| BSCSMDR040 | 40   | 1460       | 70       | 95       | 14       | 105 | 140 | 160 | 110 | 25 | 110 | 215 | 154 | 6  | 20  | 300+1.54 $\alpha$  | M22 $\times$ 1.5 |
| BSCSMDR050 | 50   | 2594       | 80       | 105      | 14       | 125 | 146 | 185 | 131 | 25 | 132 | 257 | 163 | 6  | 22  | 320+1.75 $\alpha$  | M22 $\times$ 1.5 |
| BSCSMDR063 | 63   | 4532       | 90       | 115      | 18       | 140 | 164 | 200 | 142 | 35 | 144 | 279 | 190 | 6  | 25  | 374+1.92 $\alpha$  | M27 $\times$ 2   |
| BSCSMDR080 | 80   | 7974       | 95       | 125      | 18       | 150 | 175 | 225 | 168 | 35 | 172 | 332 | 212 | 8  | 25  | 427+2.23 $\alpha$  | M27 $\times$ 2   |
| BSCSMDR100 | 100  | 14952      | 115      | 145      | 22       | 165 | 194 | 265 | 195 | 35 | 200 | 385 | 244 | 8  | 32  | 484+2.79 $\alpha$  | M33 $\times$ 2   |
| BSCSMDR125 | 125  | 26282      | 125      | 155      | 26       | 170 | 230 | 285 | 228 | 40 | 232 | 451 | 284 | 8  | 32  | 554+3.35 $\alpha$  | M42 $\times$ 2   |
| BSCSMDR140 | 140  | 36634      | 145      | 180      | 26       | 200 | 240 | 305 | 246 | 40 | 250 | 487 | 290 | 10 | 36  | 596+3.77 $\alpha$  | M42 $\times$ 2   |
| BSCSMDR160 | 160  | 53166      | 165      | 200      | 33       | 220 | 255 | 330 | 274 | 45 | 280 | 543 | 314 | 10 | 40  | 620+3.91 $\alpha$  | M48 $\times$ 2   |
| BSCSMDR180 | 180  | 72666      | 175      | 220      | 33       | 240 | 330 | 380 | 303 | 45 | 304 | 601 | 380 | 12 | 45  | 651+4.40 $\alpha$  | M48 $\times$ 2   |
| BSCSMDR200 | 200  | 104670     | 195      | 240      | 33       | 260 | 365 | 440 | 333 | 45 | 340 | 661 | 438 | 12 | 45  | 681+5.03 $\alpha$  | M48 $\times$ 2   |
| BSCSMDR220 | 220  | 176624     | 260      | 300      | 36       | 250 | 430 | 490 | 408 | 50 | 436 | 806 | 460 | 20 | 56  | 766+6.14 $\alpha$  | M48 $\times$ 2   |
| BSCSMDR250 | 250  | 291580     | 320      | 380      | 45       | 250 | 590 | 590 | 485 | 60 | 560 | 955 | 540 | 20 | 70  | 1000+7.85 $\alpha$ | M48 $\times$ 2   |

Note:

1.  $\alpha$  - traverse angle (range from 0° ~ 720°)

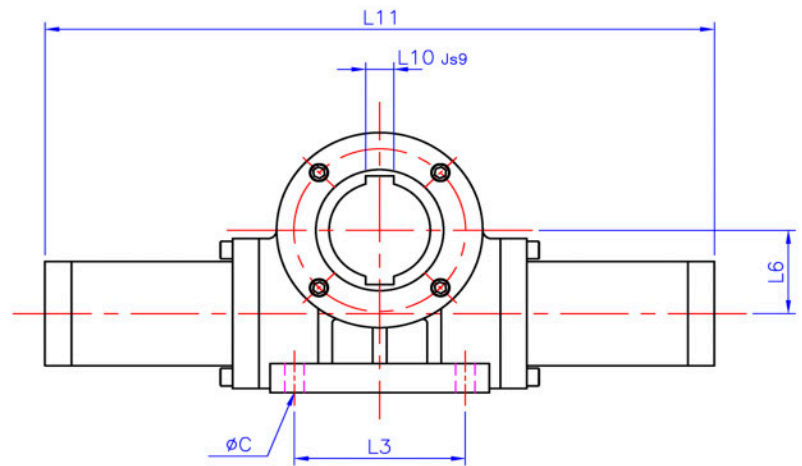
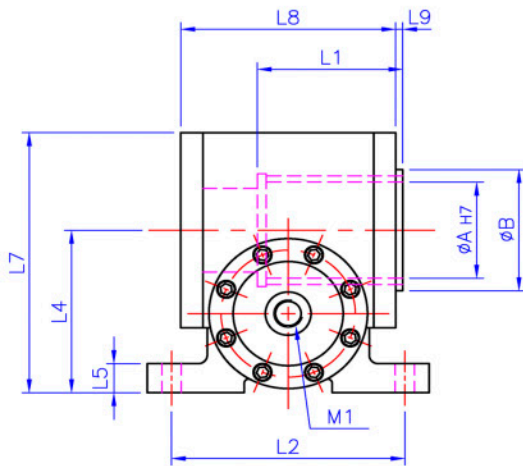
2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.



## SFSR

Foot Mounting  
Female Output  
Single Rack

Nominal pressure **160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | $\phi C$ | L1  | L2  | L3  | L4  | L5 | L6  | L7  | L8  | L9 | L10 | L11                | M1      |
|------------|------|------------|----------|----------|----------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|--------------------|---------|
| BSCSFSR040 | 40   | 730        | 50       | 95       | 14       | 105 | 140 | 160 | 110 | 25 | 55  | 188 | 154 | 6  | 14  | 300+1.54 $\alpha$  | M22×1.5 |
| BSCSFSR050 | 50   | 1297       | 60       | 105      | 14       | 125 | 146 | 185 | 131 | 25 | 66  | 215 | 163 | 6  | 18  | 320+1.75 $\alpha$  | M22×1.5 |
| BSCSFSR063 | 63   | 2266       | 65       | 115      | 18       | 140 | 164 | 200 | 142 | 35 | 72  | 236 | 190 | 6  | 18  | 374+1.92 $\alpha$  | M27×2   |
| BSCSFSR080 | 80   | 3987       | 70       | 125      | 18       | 150 | 175 | 225 | 168 | 35 | 86  | 267 | 212 | 8  | 20  | 427+2.23 $\alpha$  | M27×2   |
| BSCSFSR100 | 100  | 7476       | 85       | 145      | 22       | 165 | 194 | 265 | 195 | 35 | 100 | 306 | 244 | 8  | 22  | 484+2.79 $\alpha$  | M33×2   |
| BSCSFSR125 | 125  | 13141      | 90       | 155      | 26       | 170 | 230 | 285 | 228 | 40 | 116 | 354 | 284 | 8  | 25  | 554+3.35 $\alpha$  | M42×2   |
| BSCSFSR140 | 140  | 18317      | 105      | 180      | 26       | 200 | 240 | 305 | 246 | 40 | 125 | 377 | 290 | 10 | 28  | 596+3.77 $\alpha$  | M42×2   |
| BSCSFSR160 | 160  | 26583      | 120      | 200      | 33       | 220 | 255 | 330 | 274 | 45 | 140 | 415 | 314 | 10 | 32  | 620+3.91 $\alpha$  | M48×2   |
| BSCSFSR180 | 180  | 36334      | 125      | 220      | 33       | 240 | 330 | 380 | 303 | 45 | 152 | 475 | 380 | 12 | 32  | 651+4.40 $\alpha$  | M48×2   |
| BSCSFSR200 | 200  | 52335      | 140      | 240      | 33       | 260 | 365 | 440 | 333 | 45 | 170 | 520 | 438 | 12 | 36  | 681+5.03 $\alpha$  | M48×2   |
| BSCSFSR220 | 220  | 88312      | 160      | 300      | 36       | 280 | 430 | 490 | 408 | 50 | 218 | 653 | 460 | 20 | 40  | 766+6.14 $\alpha$  | M48×2   |
| BSCSFSR250 | 250  | 145790     | 190      | 380      | 45       | 310 | 590 | 590 | 485 | 60 | 280 | 795 | 540 | 20 | 45  | 1000+7.85 $\alpha$ | M48×2   |

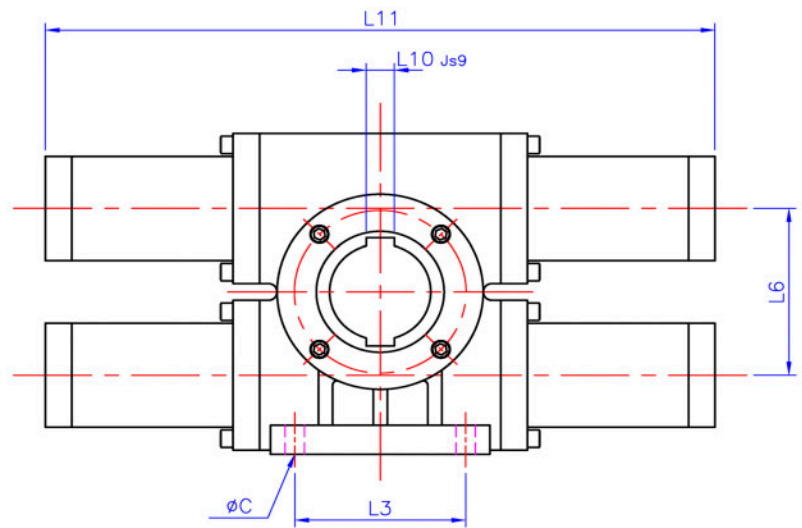
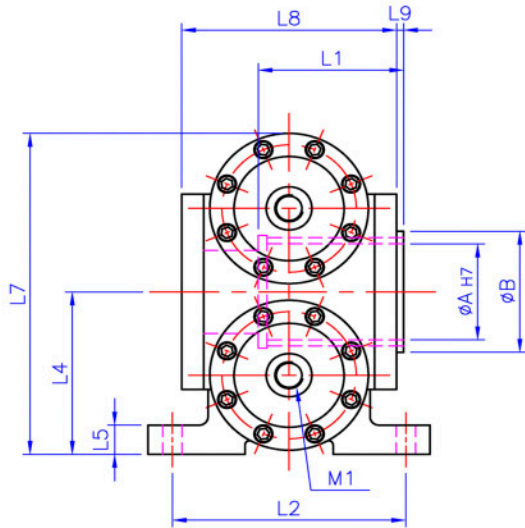
Note:

1.  $\alpha$  - traverse angle (range from 0° ~ 720°)
2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.

**SFDR**

Foot Mounting  
Female Output  
Double Rack

**Nominal pressure 160 bar**



| Part No.   | Bore | Torque N-M | $\phi A$ | $\phi B$ | $\phi C$ | L1  | L2  | L3  | L4  | L5 | L6  | L7  | L8  | L9 | L10 | L11                | M1               |
|------------|------|------------|----------|----------|----------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|--------------------|------------------|
| BSCSFDR040 | 40   | 1460       | 50       | 95       | 14       | 105 | 140 | 160 | 110 | 25 | 110 | 215 | 154 | 6  | 14  | 300+1.54 $\alpha$  | M22 $\times$ 1.5 |
| BSCSFDR050 | 50   | 2594       | 60       | 105      | 14       | 125 | 146 | 185 | 131 | 25 | 132 | 257 | 163 | 6  | 18  | 320+1.75 $\alpha$  | M22 $\times$ 1.5 |
| BSCSFDR063 | 63   | 4532       | 65       | 115      | 18       | 140 | 164 | 200 | 142 | 35 | 144 | 279 | 190 | 6  | 18  | 374+1.92 $\alpha$  | M27 $\times$ 2   |
| BSCSFDR080 | 80   | 7974       | 70       | 125      | 18       | 150 | 175 | 225 | 168 | 35 | 172 | 332 | 212 | 8  | 20  | 427+2.23 $\alpha$  | M27 $\times$ 2   |
| BSCSFDR100 | 100  | 14952      | 85       | 145      | 22       | 165 | 194 | 265 | 195 | 35 | 200 | 385 | 244 | 8  | 22  | 484+2.79 $\alpha$  | M33 $\times$ 2   |
| BSCSFDR125 | 125  | 26282      | 90       | 155      | 26       | 170 | 230 | 285 | 228 | 40 | 232 | 451 | 284 | 8  | 25  | 554+3.35 $\alpha$  | M42 $\times$ 2   |
| BSCSFDR140 | 140  | 36634      | 105      | 180      | 26       | 200 | 240 | 305 | 246 | 40 | 250 | 487 | 290 | 10 | 28  | 596+3.77 $\alpha$  | M42 $\times$ 2   |
| BSCSFDR160 | 160  | 53166      | 120      | 200      | 33       | 220 | 255 | 330 | 274 | 45 | 280 | 543 | 314 | 10 | 32  | 620+3.91 $\alpha$  | M48 $\times$ 2   |
| BSCSFDR180 | 180  | 72666      | 125      | 220      | 33       | 240 | 330 | 380 | 303 | 45 | 304 | 601 | 380 | 12 | 32  | 651+4.40 $\alpha$  | M48 $\times$ 2   |
| BSCSFDR200 | 200  | 104670     | 140      | 240      | 33       | 260 | 365 | 440 | 333 | 45 | 340 | 661 | 438 | 12 | 36  | 681+5.03 $\alpha$  | M48 $\times$ 2   |
| BSCSFDR220 | 220  | 176624     | 160      | 300      | 36       | 280 | 430 | 490 | 408 | 50 | 436 | 806 | 460 | 20 | 40  | 766+6.14 $\alpha$  | M48 $\times$ 2   |
| BSCSFDR250 | 250  | 291580     | 190      | 380      | 45       | 310 | 590 | 590 | 485 | 60 | 560 | 955 | 540 | 20 | 45  | 1000+7.85 $\alpha$ | M48 $\times$ 2   |

Note:

1.  $\alpha$  - traverse angle (range from  $0^\circ \sim 720^\circ$ )
2. The key is the center position of the traverse angle. It can turn clockwise and counter clockwise for 1/2 of the traverse angle each.





Long Stroke Cylinder



Rotary Cylinder



Ceramic Cylinder



AGC Cylinder



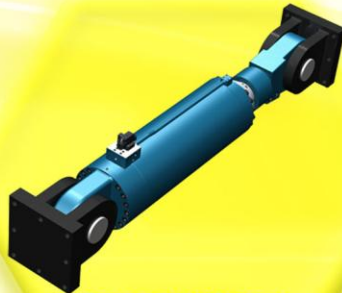
Large Cylinder



ISO Mill Type Cylinder

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Damper



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(a member of Brant Science & Technology Group)  
Address: Rm. 3A08, No. 5, Hsin-Yi Rd., Sec. 5, Taipei, Taiwan.  
Tel: 886-2-27296709 (Rep.)  
FAX: 886-2-27296759  
Website: <http://www.brant-hydraulics.com>  
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