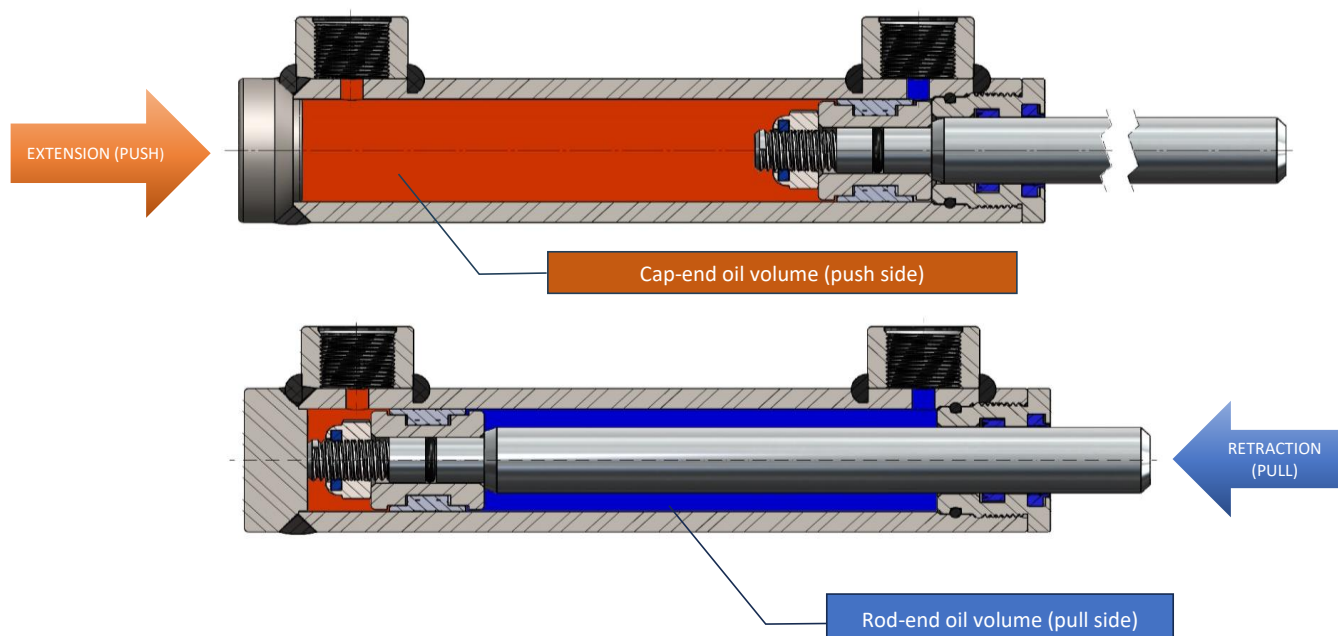


Technical Specifications

Hydraulic Cylinder Double Acting

Standard 70/40-Stroke



- Standard working pressure: 180 bar
- Test pressure: 1.5 × working pressure
- Standard flow for speed data: 5 L/min
- Maximum radial load: 10% of the axial force
- Maximum operating pressure depends on the buckling load
- Safety factor against buckling: 3:1

- All data refer to mineral oil at 40°C – viscosity 46 cSt
- Oil type: Mineral oil-based hydraulic oil (HL/HLP, DIN 51524)
- Filtration requirement: ISO 4406 ≤ 20/18/15
- Permissible ambient temperature: -40°C to +50°C
- Permissible oil temperature: -15°C to +80°C

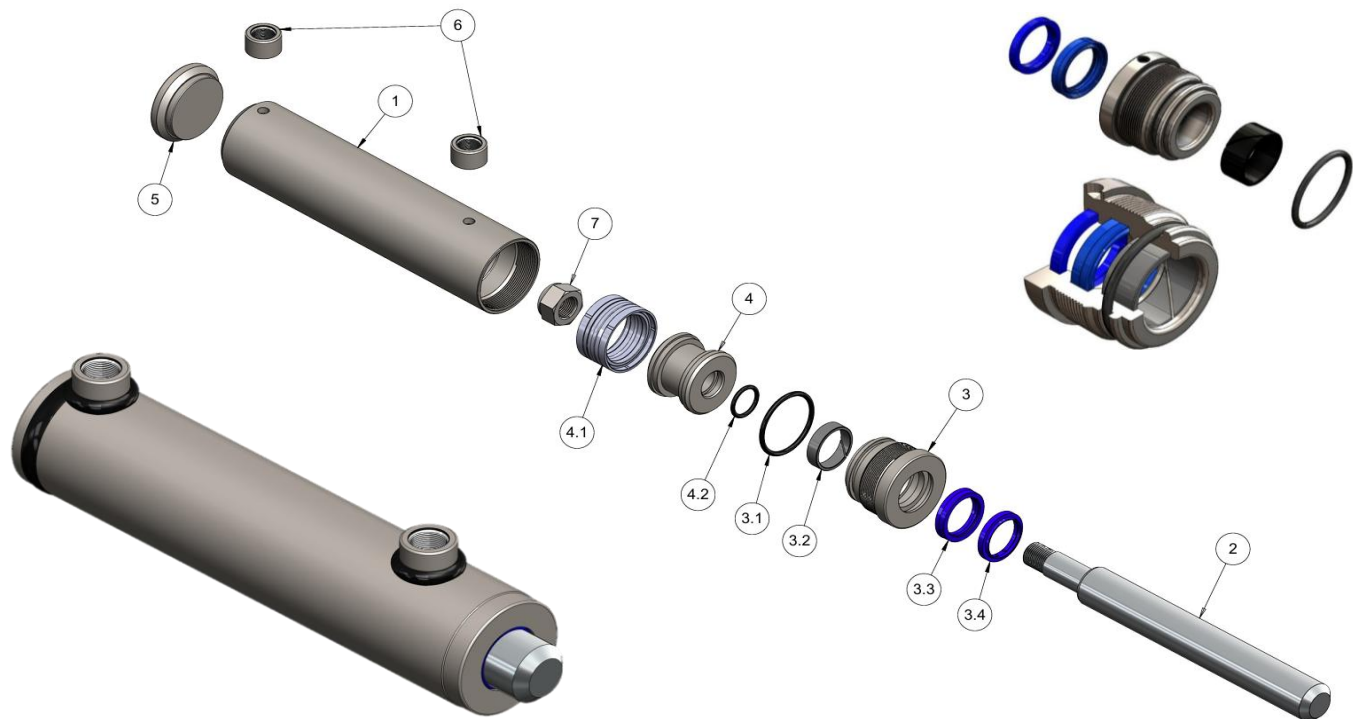
(Force vs Pressure) Theoretical forces at different working pressures		
Pressure [bar]	Push Force [kgf]	Pull Force [kgf]
50	1924	1296
100	3848	2591
150	5772	3887
180	6926	4664
200	7696	5182
250	9620	6478

1 ton ≈ 1000 kg
 1 kN ≈ 102 kg
 1 daN ≈ 1.02 kg
 Values are theoretical and do not include friction losses or efficiency factors.

Oil volume per stroke Cap-end and Rod-end chambers		
Stroke [mm]	Push volume (cap-end) [L]	Pull volume (rod-end) [L]
50	0,192	0,13
100	0,385	0,259
150	0,577	0,389
200	0,77	0,518
250	0,962	0,648
300	1,155	0,777
350	1,347	0,907
400	1,539	1,036
450	1,732	1,166
500	1,924	1,296
550	2,116	1,425
600	2,309	1,555
700	2,694	1,814
800	3,078	2,073
900	3,463	2,332
1000	3,848	2,591

Stroke times at 5 L/min		
Stroke [mm]	Extension time [s]	Retraction time [s]
50	2,31	1,62
100	4,62	3,24
150	6,93	4,86
200	9,24	6,48
250	11,55	8,1
300	13,86	9,72
350	16,17	11,34
400	18,48	12,96
450	20,79	14,58
500	23,1	16,2
550	25,41	17,82
600	27,72	19,44
700	32,34	22,68
800	36,96	25,92
900	41,58	29,16
1000	46,2	32,4





No	Product	Material
1	Polished tube	Steel St. 52.3 ISO H9
2	Chromed rod	Steel UNI C45 25 Micron
3	Head bush	Steel C43
3.1	O-Ring	NBR 70 shore
3.2	Guiding Element	POM
3.3	Rod Seal	Polyurethane / PU
3.4	Wiper	Polyurethane / PU
4	Piston	Steel C43
4.1	Compact Piston Seal	Nbr / Tpe / Pom
4.2	Piston O-Ring	NBR 70 shore
5	End Plug	Steel St. 52.3
6	Threaded Port	Steel C43
7	Locknut	UNI7473-DIN982

WARNINGS & SAFETY INFORMATION

- **Rated pressure:** Recommended working pressure is 180 bar; maximum allowable pressure is 250 bar.
- **Recommended lubricant:** Hydraulic mineral oil H-LP series (H-LP32, H-LP46, H-LP68).
- **Oil filtration:** Use efficient filtration with periodic replacement; required filtration level is 25 µm.
- **Oil temperature:** Keep oil temperature between 40–50°C during operation. Do not exceed 80°C. High temperatures reduce viscosity and lubrication quality, decreasing cylinder performance and service life.
- **Rod load:** Never apply radial loads to the rod during operation.
- **Welding:**
 - Remove the rod completely before welding accessories on the bottom or rod end.
 - Allow welded parts to cool before reassembly.
 - Protect the rod from welding sparks to avoid chrome damage.
 - Absolutely avoid welding on the external diameter of the cylinder tube.
- **Painting:**
 - When oven-drying, do not exceed 80°C.
 - When cold-painting a cylinder with rod installed, protect the rod to avoid contamination of the wiper/seal.
- **Safety:**
 - Materials are not dangerous, but installation may involve risks.
 - Install shut-off valves or additional safety devices according to machine regulations.
 - The manufacturer is not responsible for damages caused by non-compliance or improper use.
- **Maintenance:**
 - Replace worn seals when required.
 - Pay attention to oil cleanliness and prevent contamination.

