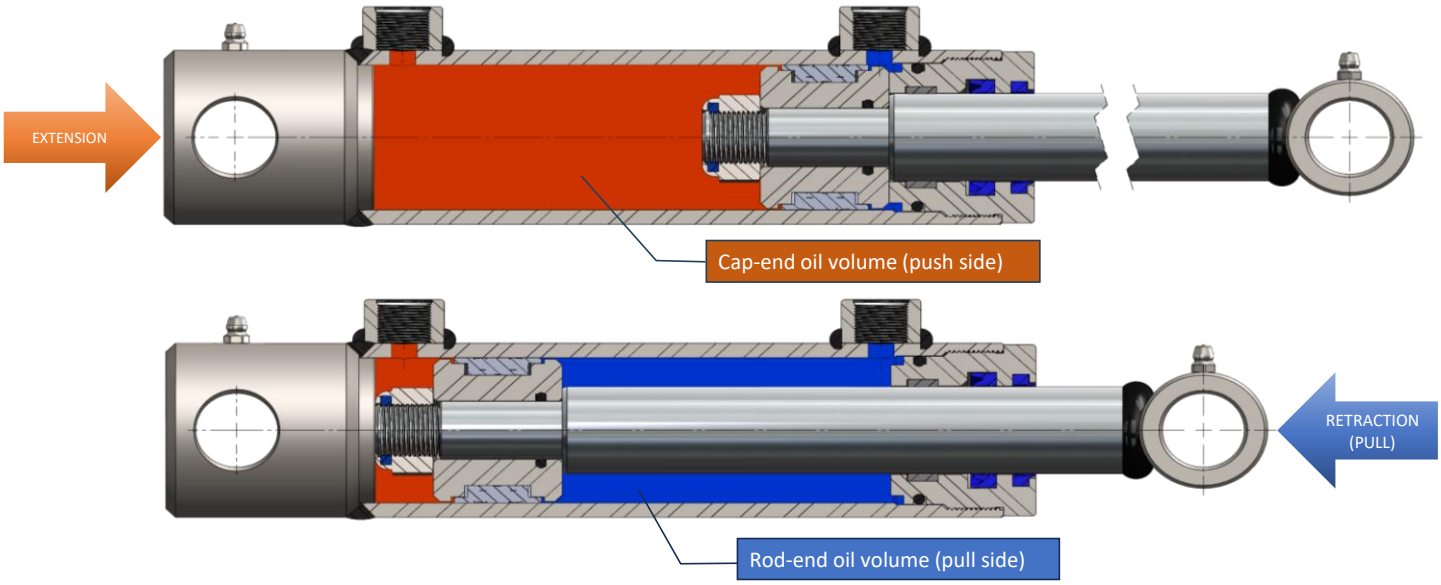
SPARE PARTS HOLLAND

Technical Specifications
Hydraulic Cylinder Double Acting
*Hole **70/40-Stroke***



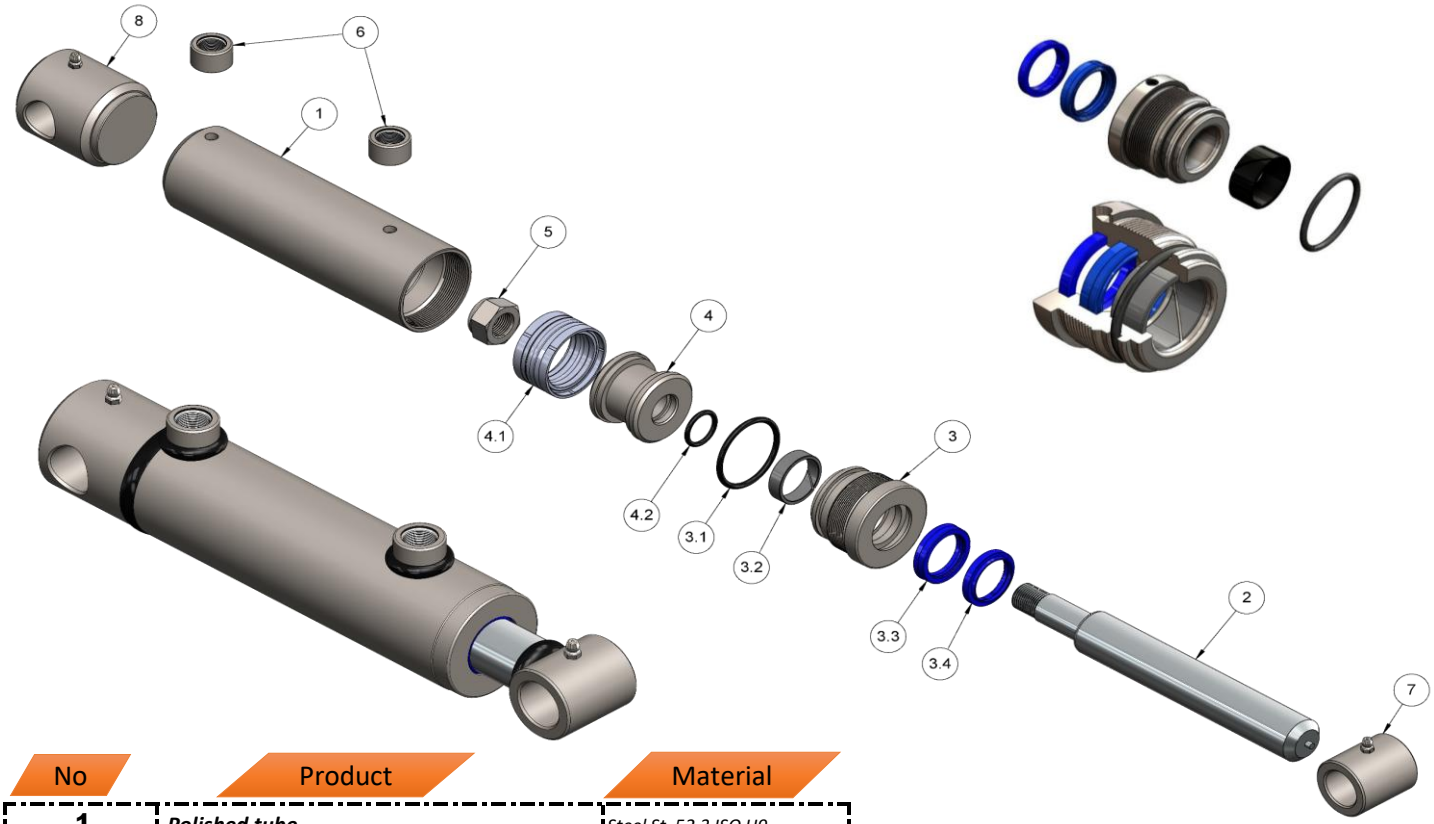
- ***Standard working pressure: 180 bar***
- ***Test pressure: 1.5 × working pressure***
- ***Standard flow for speed data: 5 L/min***
- ***Maximum radial load: 10% of the axial force***
- ***Maximum operating pressure depends on the buckling load***
- ***Safety factor against buckling: 3:1***
- ***All 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	2592
150	5773	3888
180	6927	4665
200	7697	5184
250	9621	6480

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	0,19	0,13
100	0,38	0,26
150	0,58	0,39
200	0,77	0,52
250	0,96	0,65
300	1,15	0,78
350	1,35	0,91
400	1,54	1,04
450	1,73	1,17
500	1,92	1,30
550	2,12	1,43
600	2,31	1,56
700	2,69	1,81
800	3,08	2,07
900	3,46	2,33
1000	3,85	2,59

Stroke times at 5 L/min		
Stroke [mm]	**Extension time [s]**	**Retraction time [s]**
50	2,31	1,56
100	4,62	3,11
150	6,93	4,67
200	9,24	6,22
250	11,55	7,78
300	13,85	9,33
350	16,16	10,89
400	18,47	12,44
450	20,78	14,00
500	23,09	15,55
550	25,40	17,11
600	27,71	18,66
700	32,33	21,77
800	36,95	24,88
900	41,56	27,99
1000	46,18	31,10



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	*Locknut*	*UNI7473-DIN982*
6	*Threaded Port*	*Steel C43*
7	*Bush*	*Steel C43*
8	*End Plug*	*Steel C43*

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.