



F1 hydraulic cylinder

Type approved by:



Technical specifications

Application:

Offshore- and marine hydraulics, cylinder diameter from $\varnothing 25$ to $\varnothing 300$ mm both included.

Material certificates:

Can be delivered with traceability at all steel parts according to the demands from DNVGL, Class Guideline for Hydraulic cylinders, DNVGL-CG-0194.

Third party certificate:

Can for extra charge be delivered with product certificate from e.g. DNVGL, ABS, Lloyd's or Bureau Veritas (PS: DNVGL type-approved with spherical bearings and composite bearings)

Working pressure: Max 250 bar.

Test pressure: Max 375 bar.

Cleanness:

Flushed to cleanness 19/17/14 according to ISO4406 corresponding class 8 in NAS 1638. Other cleanness classes are available on request.

Speed:

Max piston speed 0,5 m/sec. If the piston speed in top or bottom exceeds 0,1 m/sec, build-in damping in the cylinder is recommended.

Cylinder tube:

Honed or skived and roller burnished tube, material quality E355+SR or S355J2. Special material qualities can be delivered on request.

Piston rod:

Quality 20MnV6 corresponding to SS2142, Hard chrome $25\mu\text{m}$ +/- $5\mu\text{m}$, Hardness min. 850 HV, Ra max. $0.2\mu\text{m}$, external tolerance ISO f7

Alternative materials

SS2387 corresponding to EN 1.4418

AISI 630 corresponding to EN 1.4542

SS2324 corresponding to EN 1.4460

SS2377 corresponding to EN 1.4462

All qualities are delivered with hard chrome $25\mu\text{m}$ +/- $5\mu\text{m}$, Hardness min. 850 HV., Ra max. $0.2\mu\text{m}$, external tolerance ISO f7.

Special material qualities and surface protection (e.g. ceramic surface, double chrome layer) can be delivered on request.

Spherical bearing:

Many different qualities, e.g. in Carbon steel, stainless steel, bronze and composite. Special material and dimensions can be delivered on request.

Gaskets:

Piston seal: Polyurethane wiper ring with nitrile O-ring

Rod seal: Lip seal of polyurethane.

Wiper: Polyurethane with steel housing

Guide rings: Composite material

O-rings: Nitrile

Alternative materials

Piston seal, rod seal and wiper:

In PTFE with O-rings of nitrile. Recommended for intensive use plus applications, where low friction in the cylinder is desirable.

In PTFE with O-rings of viton. Recommended for applications, where the seals can be exposed to temperatures above 80-100°C.

Special seals can be delivered on request.

Integrated valve:

Can be delivered with built-in hose valves or load holding valves.

Damping:

Can be delivered with damping

Positioning:

Can be delivered with different types of electronic positioning, e.g. from REGAL, MTS-Temposonics or BALLUFF.

Temperature:

Working temperature $\pm 20^{\circ}\text{C}$ to $+80^{\circ}\text{C}$. Cylinders for working temperatures outside this area can be delivered on request.

Pressure medium:

Mineral hydraulic oil. Other media, ask FJERO.

Surface treatment:

Different surface treatment is possible. Standard Black primer, but also shot blasted / sand blasted and painted to corrosion class C2 - C3 or C5.

Surface treatment according to international standards as e.g. ISO 12944-2 or NORSOK M-501 can also be delivered.

Special requests:

Please contact FJERO A/S