

# Specifications for Marine and Offshore Cylinders

## Marine Cylinder Options

- All types of hydraulic cylinders up to 18 tons own weight
- Piston diameters up to 600mm, strokes up to 10000mm
- All piston rod materials and coatings available
- All cylinder mounting systems
- Linear transducers and other sensors
- Piping and integrated valve systems for cylinders

### RECOMMENDED SPECIFICATIONS FOR PISTON RODS

Base Material	Rod Surface Treatment	Rod Weldability	Rod Material Strength	Corrosion Resistance	Wear Resistance	Surface Hardness	Price order*) rod dia <100mm short stroke	Price order*) rod dia 100-160mm Long or medium stroke >160mm Long stroke	Price order*) rod dia >160mm Long stroke	Suitable Application
Carbon Steel S355J2 + stainless steel sleeve	Hard Chrome 30-80µm	+++	+	+ [++++]	++	++	2	1	1	Light to difficult marine environment, rod always retracted when cylinder is not operated. Otherwise not suitable for marine use.
Carbon Steel S355J2	Galvanic Nickel/Chrome total thickness 40-100µm	+++	+	+++	++	++	4	4	2	Difficult marine environment
Carbon Steel S355J2	Ceramic coating 300-400µm	+++	+	+++	++++	++++	5	4	3	Difficult marine environment
Carbon Steel S355J2	HVOF/HVAF Coatings 150-300µm	+++	+	++++	++++	+++	6	5	4	Difficult to extreme marine environment
Stainless EN 1.4057	Polishing	-	++	++	+	+	1	2		Light to medium marine environment
Stainless EN 1.4418	Hard Chrome 40µm	++	+++	+++	++	++	2	3	5	Medium marine environment
Stainless EN 1.4462	Roll polishing	+++	++	++++	+	+	3	3	5	Difficult marine environment

Alternative specifications also available  
Most of above base materials and coatings can be also mixed if needed.

\*) 1 = cheapest, 2 = next cheapest etc.