

Rod seals CSC

DESCRIPTION

CSC series rod seals are single-lip dynamic sealing elements designed to operate on the rods of hydraulic cylinders with reciprocating linear motion. The solid-section profile ensures geometric stability inside the housing machined into the cylinder head, while the polyurethane material generates the radial preload required to prevent fluid leakage towards the outside even at low pressures.

PROFILES

CSC Standard Type

Solid-section single-acting rod profile, with lip geometry optimized for fluid sealing during linear motion and for reducing stick-slip.

CSC/E Special Type

Variant with reinforced anti-extrusion profile or special high-hardness compound, developed for heavy-duty telescopic cylinders and applications characterized by high back-pressure peaks.

MATERIALS

Materials and operating conditions

MATERIAL	COMPOUND	SPEED	TEMPERATURE	MAX PRESSURE
Polyurethane	Tecnolan 90 Shore A (P0)	Up to 0.5 m/s	−40 / +110 °C	Up to 25.0 MPa 250 bar continuous, depending on radial clearance

STRUCTURE

Seal body

Main structure

Single solid-section body made of high-resilience polyurethane

Production

Precision moulding

Special options

Special polyurethanes or fluoroelastomers

COMPATIBLE FLUIDS

Mineral hydraulic oils, cutting lubricating oils, hydrocarbon-based mineral and synthetic greases and biodegradable hydraulic fluids.

FEATURES

Main features

Asymmetric dynamic lip

The CSC profile features a short and robust inner lip designed to operate at pressures up to **250 bar**, while maintaining seal stability inside the housing.

Elastic recovery

The compact polyurethane body provides high elastic recovery. Under hydraulic load, it helps compensate for rod micro-deflections and misaligned radial loads.

Preloaded sealing at zero bar

The calibrated lip geometry maintains contact with the rod surface even in the absence of internal pressure, helping to prevent static leakage when the circuit is idle.

ADVANTAGES

Advantages of the CSC profile

Dynamic sealing

The profile allows direct use on single- or double-acting cylinders, helping to contain external leakage and protect the internal guides.

Abrasion resistance

The 90 Shore A hardness provides high resistance to wear during sliding on the chrome-plated rod, limiting localized wear and the risk of scoring.

Installation in closed grooves

The elasticity of polyurethane allows the seal to be deformed to facilitate insertion into the internal grooves of the cylinder head.

COMPLIANCE AND STANDARDS

International standards

Nominal dimensions, radial geometric tolerances and surface roughness R_a / R_z in accordance with international standards for cylinder seal housings ISO 5597 and ISO 6195.

VARIANTS

Available configurations

POLYURETHANE 90 SHA**CSC Standard**

Configuration suitable for industrial cylinders and light- and heavy-duty mobile hydraulic applications, particularly for use with mineral oils.

FEATURES

Geometric stability, wear resistance and sealing for standard hydraulic applications.

H-PU / FILLED PTFE**CSC Premium**

Configuration manufactured by CNC machining using advanced materials such as H-PU, hydrolysis-resistant polyurethane, or filled PTFE.

USE

Applications characterized by extreme operating temperatures or the presence of aggressive synthetic fluids.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER / DISTRIBUTOR	CSC STANDARD TYPE - POLYURETHANE
Net Seals	CSC Rod Seal Series
Sixten	Sixten CSC Polyurethane Profile
Gapi (Miros)	CSC PU Seal Reference
Tecnolan	TTS / TTS-L Profile Series (equivalent geometries)