

# PTB-90X105X9.9-J1S



## Symmetric hydraulic rod seal, with energizer

These hydraulic rod seals consist of a LUBRITHANE thermoplastic polyurethane seal, with a bevel-style lip design, and an integrated nitrile rubber X-ring energizer that provides additional sealing force and improves long-term sealing performance.

- Suitable for seal housings according to ISO 5597
- Provide good performance even at low operating pressures and temperatures
- Accommodate pressures up to 400 bar (5 800 psi)
- Suitable for medium duty applications
- Available in metric and inch sizes

## Overview

### Dimensions

Rod diameter	90 mm
Housing groove diameter	105 mm
Housing groove width	9.9 mm

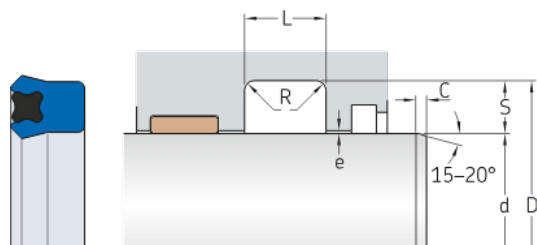
## Performance

Pressure limit, maximum	40 N/mm
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## Properties

Design	PTB
Primary sealing element	Polyurethane (TPU U-1003)
Compound 2	Nitrile Rubber (NBR A-8501)

# Technical Specification



## Dimensions

d	90 mm	Rod diameter
D	105 mm	Housing groove diameter
L	9.9 mm	Housing groove width
S	7.5 mm	Radial depth
R	max. 0.5 mm	Groove radius
C	min. 8.5 mm	Lead-in chamfer length

## Tolerances

tol d	-0.036 mm	Upper limit deviation
	-0.09 mm	Lower limit deviation
	f8	Tolerance class for rod diameter
	h9	Alternative tolerance class for rod diameter
tol D	0.14 mm	Upper limit deviation
	0 mm	Lower limit deviation
	H10	Tolerance class for housing groove diameter
tol L	0.2 mm	Upper limit deviation
	0 mm	Lower limit deviation

## Maximum extrusion gap

Reference temperature for extrusion gap		60 °C
Extrusion gap at 160 bar	e	0.5 mm
Extrusion gap at 250 bar	e	0.3 mm
Extrusion gap at 400 bar	e	0.15 mm

## Pressure and speed

Pressure	max. 400 bar
Speed	max. 1 m/s

## Operating temperature



T <sub>6</sub> 120 °C	Extreme upper temperature limit
T <sub>5</sub> 110 °C	Reduced performance upper temperature limit
T <sub>4</sub> 100 °C	Upper operating temperature limit
T <sub>3</sub> -25 °C	Lower operating temperature limit
T <sub>2</sub> -30 °C	Reduced performance lower temperature limit
T <sub>1</sub> -50 °C	Extreme lower temperature limit

Maximum values of application parameters (e.g. pressure, speed, temperature) should not be applied continuously nor simultaneously.

## Materials

Primary sealing element	Polyurethane (TPU U-1003)
Additional element	Nitrile Rubber (NBR A-8501)

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