

Rod seals TTX

DESCRIPTION

TTX series rod seals are special dynamic seals made of Tecolan polyurethane, designed for hydraulic cylinders operating under heavy-duty conditions. The profile combines an inner dynamic lip with an outer static lip and features high elastic memory, low compression set and abrasion resistance.

PROFILES

TTX Standard and TTX/S

TTX Standard

Double asymmetric-lip profile with dynamic sealing on the rod and an outer static lip. The outer diameter is made of compact polyurethane and is intended for general-purpose hydraulic applications.

Geometry	Double asymmetric lip
Material	Tecolan PU
Application	Medium / heavy-duty conditions

TTX/S Special

Variant with a reinforced dynamic lip or modified support-element configuration, developed for applications characterized by high pressures, heavy loads and an increased risk of extrusion.

Configuration	Reinforced
Protection	Anti-extrusion
Application	Heavy Duty

MATERIALS

Materials and operating conditions

MATERIAL	MAX SPEED	TEMPERATURE	MAX PRESSURE
TECNOLAN Standard Polyurethane	Up to 0.6 m/s	−40 / +110 °C	Up to 45.0 MPa 450 bar
Special / Reinforced Polyurethane	Up to 1.0 m/s	−35 / +125 °C	Up to 50.0 MPa 500 bar

REINFORCEMENT

Anti-extrusion protection

For the most demanding applications, an integrated anti-extrusion ring is available to support the profile during pressure peaks and in the presence of larger radial clearances.

Material	POM / Reinforced Nylon
Function	Extrusion prevention
Max pressure	Up to 500 bar

COMPATIBLE FLUIDS

Mineral hydraulic oils, fluid gear lubricants, mineral and synthetic greases.

FEATURES

Main features

Calibrated dynamic lip

The asymmetric geometry concentrates the sealing action on the rod surface, promoting operation at high pressures while limiting friction during movement.

Outer static retention

The outer profile stabilizes the seal within the cylinder housing and helps counteract deformation and extrusion during operation under load.

Secondary lip

The secondary stabilizing lip reduces the residual oil film on the rod and helps maintain performance even in the presence of large mating clearances.

ADVANTAGES

Advantages of the TTX profile

Leakage control

The profile geometry is designed for high-pressure hydraulic applications and to limit residual fluid on the rod surface.

Friction and temperature

The stability of the lip and the properties of the polyurethane help limit dynamic friction and the resulting localized heat generation.

Simplified installation

The elastic memory of TecnoLAN facilitates insertion of the seal into the housing and helps limit the risk of lip damage during installation.

COMPLIANCE AND STANDARDS

ISO 5597 / ISO 6020

Construction dimensions, geometric tolerances and installation dimensions according to international standards and standardized tables for ISO 5597 and ISO 6020 cylinders.

VARIANTS

Available configurations

PU TECNOLAN**TTX Standard**

Reference configuration for hydraulic cylinders operating under medium to heavy-duty conditions, with high mechanical loads and frequent operating cycles.

ADVANTAGES

High abrasion resistance, elastic memory and stable sealing performance under pressure.

REINFORCED PU**TTX/S Special**

Reinforced configuration designed for particularly demanding hydraulic applications, pressure peaks and increased radial clearances.

ADVANTAGES

Increased resistance to extrusion and improved stability under heavy loads.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER / BRAND	TTX STANDARD	TTX/S SPECIAL
Net Seals	TTX Rod Seal Series	TTX/S Reinforced Rod Seal Series
Guarnitec	TTX Profile	TTX/S Profile

MANUFACTURER / BRAND	TTX STANDARD	TTX/S SPECIAL
Freudenberg (Simrit) Merkel®	T20 / T22 Profile	Reinforced Heavy Duty Profile
Parker Prädifa	BS / B3 Profile	BS Premium / Reinforced Profile
Hallite	605 / 621 Series	Heavy Duty Series