



■ Turcon® Excluder® 5*

Description

The Turcon® Excluder® 5 is a patented double-acting scraper with two geometrically different scraper lips which are installed back-to-back. The scraper is installed together with an O-Ring as elastic energizing element in one groove. The scraper function is performed by the Excluder® 5. The O-Ring maintains the pressure of the scraper lips against the sliding surface and can compensate deflections of the piston rod.

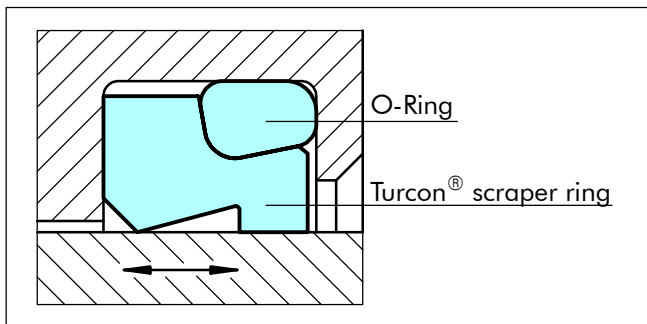


Figure 3 Turcon® Excluder® 5

Excluder® 5 has two functions:

- Scrape contaminants from the retracting piston rod and thus to protect the system from soiling
- Hold back the residual oil film on the extending piston rod on the medium side.

Excluder® 5 are preferably used in conjunction with our rod seal Turcon® Stepseal®, i.e. seals with a hydrodynamic back-pumping function. In contrast to the Excluder® 2, they are used particularly for heavy-duty applications such as in construction machinery, presses, etc.

Advantages

- Outstanding sliding properties
- Stick-slip-free, no sticking (Turcon® material)
- Tough scraper for heavy-duty operation
- Can compensate for deflections of the piston rod or plunger
- Very good scraping effect even against firmly adhered dirt, etc.
- Very good scraping effect from the inside against the residual oil film adhering to the surface of the piston rod
- Identical installation with that of the Zurcon® Excluder® 500
- Very high resistance to hydraulic media
- Available for all diameters up to 2.600 mm (Turcon®), up to 2.200 mm (Zurcon®).
- ISO/DIN 6195 Type D installation dimensions

Technical Data

Speed:	15 m/s for Turcon® materials 2 m/s for Zurcon® materials
Temperature:	-45° C to +200° C (Turcon®) -45° C to +100° C (Zurcon®) (depending on O-Ring material)
Media:	Mineral oil-based hydraulic fluids, flame retardant hydraulic fluids, environmentally safe hydraulic fluids (bio-oils), water, air and others, depending on the scraper and O-Ring material.

Important Note:

The above data are maximum values and cannot be used at the same time. e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also dependent on medium.

Materials

The following material combination has proven effective for most applications:

Excluder® 5:	Turcon® T46
O-Ring:	NBR, 70 Shore A
Set:	T46N

For other applications, other material combinations as listed in Table VII, may also be used.

Design and Installation Instructions

Excluder® 5 scrapers can be installed in split and closed grooves (installation dimensions, see table VIII).

Installation in closed grooves is dependent on the rod diameter, profile cross-section of the scraper and on the cross-section of the corresponding O-Ring, see Table VI.

Table VI Installation in Closed Grooves

Turcon® Excluder® 5 Series No.	Rod Diameter d_N	O-Ring Cross-Section d_2
WE50	> 30.0	2.62
WE51	> 40.0	2.62
WE52	> 70.0	3.53
WE53	> 100.0	5.33
WE54	> 140.0	7.00
WE55	> 180.0	8.40

* Patent No. EP 023 5568



Table VII Turcon[®] and Zurcon[®] Materials for Excluder[®] 5

Material, Applications, Properties	Code	O-Ring Material	Code	O-Ring Operating Temp.* °C	Mating Surface Material	Speed m/s max.
Turcon[®] T46 Standard material for hydraulics, high compressive strength, good sliding and wear properties, BAM tested. Bronze filled Colour: Greyish to dark brown	T46	NBR - 70 Shore A	N	-30 to +100	Steel, hardened Steel, chromeplated	15
		NBR - Low temp. 70 Shore A	T	-45 to +80		
		FKM - 70 Shore A	V	-10 to +200		
Turcon[®] T40 For all lubricating and non-lubricating hydraulic fluids, soft mating surfaces. Carbon fibre filled Colour: Grey	T40	NBR - 70 Shore A	N	-30 to +100	Steel Steel, chromeplated Cast iron Stainless steel Aluminium Bronze Alloys	15
		NBR - Low temp. 70 Shore A	T	-45 to +80		
		FKM - 70 Shore A	V	-10 to +200		
		EPDM-70 Shore A	E**	-45 to +145		
Zurcon[®] Z52 For lubricating hydraulic fluids, high abrasion resistance. Cast polyurethane Colour: Turquoise	Z52	NBR - 70 Shore A	N	-30 to +100	Steel Steel, hardened Steel, chromeplated Cast iron Stainless steel Aluminium Bronze Alloys	2
		NBR - Low temp. 70 Shore A	T	-45 to +80		

* The O-Ring Operation Temperature is only valid in mineral hydraulic oil. BAM: Tested by "Bundes Anstalt Materialprüfung, Germany".

Highlighted materials are standard. **Material not suitable for mineral oils.