



Full Shaft Sleeves & Shaft Seals Catalogue

1. Shaft Sleeves (Wear / Protection / Repair)	2
1.1. Short description	2
1.2. Typical applications	2
1.3. Typical performance parameters	2
1.4. Common sizes / specification guidance	2
2. Adapter & Mounting Sleeves	3
2.1. Short description	3
2.2. Typical applications	3
2.3. Typical performance parameters	3
2.4. Common sizes / guidance	3
3. Radial Shaft Seals (Oil Seals / Lip Seals)	3
3.1. Short description	3
3.2. Typical applications	4
3.3. Typical performance parameters	4
3.4. Common sizes / guidance	4
4. Rotary V-rings & Wipers	4
4.1. Short description	4
4.2. Typical applications	4
4.3. Typical performance parameters	5
4.4. Common sizes / guidance	5
5. Mechanical Face Seals (Pump Shaft Seals)	5
5.1. Short description	5
5.2. Typical applications	5
5.3. Typical performance parameters	5
5.4. Common sizes / guidance	6
6. Materials & Compatibility Guide	6



1. Shaft Sleeves (Wear / Protection / Repair)

1.1. Short description

Shaft sleeves (wear sleeves / shaft protection sleeves) are cylindrical replaceable components fitted over a shaft to (1) protect the shaft surface from friction and abrasion caused by seals/bearings, (2) restore a worn or corroded shaft without reworking the shaft, and (3) provide a fresh, accurate sealing surface for lip seals or mechanical seals. They are available as press-fit, welded, split (clamshell) or removable thin-sleeve types.



1.2. Typical applications

Centrifugal pumps, mixers, agitators, gearboxes, compressors and other rotating equipment where seals bear on the shaft surface or where shaft corrosion/wear is possible.

1.3. Typical performance parameters

Parameter	Typical range / value	Notes
Primary function	Wear protection, sacrificial surface for seals	Replaceable component to save shaft replacement costs.
Common materials	316 stainless steel, carbon steel (hardfaced), duplex/stainless alloys	Material chosen by fluid chemical compatibility and abrasion/erosion risk.
Typical sleeve length	10 mm – 200+ mm (depends on seal face width and wear area)	Longer sleeves used where bearing or multiple seals require coverage.
Standard shaft diameters covered	Typical vendor ranges ~12 mm – >200 mm (product family dependent)	See vendor Speedi-Sleeve size ranges as an example.

1.4. Common sizes / specification guidance

Provide exact shaft diameter (to nearest 0.01 mm), sleeve O.D., installed length, and mounting type (solid/press-fit or split/removable).

For emergency repair where shaft grinding or replacement is undesirable, removable thin sleeves (e.g., Speedi-Sleeve style) can restore sealing surface without shaft removal.



2. Adapter & Mounting Sleeves

2.1. Short description

Adapter sleeves are precision sleeves used primarily for mounting tapered-bore bearings on cylindrical shafts and for axial positioning. They are not primarily sealing elements but are often used in bearing assemblies and precision mounting tasks.



2.2. Typical applications

Tapered-bore rolling bearings, bearing housings in gearboxes and rotating assemblies.

2.3. Typical performance parameters

Parameter	Typical range / value	Notes
Function	Bearing seating and axial adjustment	Used with tapered inner race bearings requiring adapter sleeves.
Material & finish	Hardened steel, precision ground	Finish and tolerances critical for bearing life.
Sizing	Matches bearing taper and shaft seat	Use bearing manufacturer tables to specify sleeve dimensions.

2.4. Common sizes / guidance

Specify bearing inner diameter (d1) and appropriate adapter-sleeve code per bearing maker's chart.

3. Radial Shaft Seals (Oil Seals / Lip Seals)

3.1. Short description

Radial shaft seals (commonly called oil seals) are lip-type seals that retain lubricant and exclude contaminants around rotating shafts. Standard designs include an elastomeric outer body with metal reinforcement and one or more sealing lips (sometimes PTFE or fabric reinforced) often with a garter spring to maintain radial lip pressure.



3.2. Typical applications

Gearboxes, electric motors, pumps, transmissions and general rotating equipment requiring oil retention and contaminant exclusion.



3.3. Typical performance parameters

Parameter	Typical range / value	Notes
Pressure	Typically splash / low-pressure rotary sealing; not intended for high-pressure shaft sealing	For pressurized rotary seals or face sealing, use mechanical seals or specialist high-pressure rotary seals.
Temperature (dependent on compound)	NBR: approx. -30°C to +100°C; FKM: up to ~+150°C; PTFE variants extend range further	Select elastomer/compound per lubricant, temp and chemical exposure.
Peripheral speed (max)	Varies by profile and compound; consult vendor catalogs for m/s (peripheral) limits	High-speed motors require low-friction or PTFE-capped seals.
Common materials	NBR, HNBR, FKM, PTFE (lip), metal case	Material choice driven by lubricant type, temp and speed.

3.4. Common sizes / guidance

Standard metric and imperial sizes widely available; major vendors publish part-number cross-reference tables for shaft diameters 6 mm and up (common sizes: 10,12,15,20,25,30,35,40 mm etc).

4. Rotary V-rings & Wipers

4.1. Short description

V-rings are simple elastomeric seals used principally for contamination exclusion and grease retention on shafts; they often serve as a secondary seal or dust exclusion element. Wipers are simple scrapers that keep contaminants away from the primary seal.



4.2. Typical applications

Shaft protection in motors, pumps, actuators and relatively moderate-speed rotating equipment where a primary



oil seal is supported by a V-ring/wiper.

4.3. Typical performance parameters

Parameter	Typical range / value	Notes
Function	Contaminant exclusion, dust/water scraping	Often used as a first line of defense to prolong life of primary seals.
Materials	NBR, FKM, TPEs	Choose based on temperature and contamination (oils, chemicals).
Speed suitability	Moderate peripheral speeds (check vendor data)	Not intended for extreme high-speed applications.

4.4. Common sizes / guidance

V-rings and wipers are specified by shaft diameter and housing groove; vendors supply standard part numbers for common shaft diameters.

5. Mechanical Face Seals (Pump Shaft Seals)

5.1. Short description

Mechanical face seals (mechanical seals) consist of a rotating ring and a stationary ring that create a fluid-tight face interface; they are used where leakage control under pressure is critical (pumps, mixers, compressors). Materials for faces include carbon, ceramic, silicon carbide, tungsten carbide; secondary seals use elastomers selected for fluid compatibility.



5.2. Typical applications

Centrifugal pumps, agitators, compressors and challenging fluid-handling rotating equipment.

5.3. Typical performance parameters

Parameter	Typical range / value	Notes
Pressure capability	Many designs suitable for several bar up to tens of bar (dependent on balanced/unbalanced design)	Balanced designs reduce face loading at high pressure.



Parameter	Typical range / value	Notes
Temperature	Depends on face & elastomer materials	Choose materials (SiC, C, WC faces; FKM/HNBR secondary seals) per fluid and temp.
Speed	Rated per design; require correct installation and shaft alignment	High RPM requires precise face geometry and robust materials.

5.4. Common sizes / guidance

Mechanical seals are normally specified by shaft diameter and gland (housing) dimensions; vendor catalogs provide cross-reference tables and selection guides.

6. Materials & Compatibility Guide

6.1. Common materials and short guidance

Material	Typical properties	Typical uses / notes
NBR (Buna-N)	Good general oil resistance; temp ~ -30°C to +100°C	Common material for oil-seal lip in general-purpose lubricated equipment.
HNBR	Improved heat & chemical resistance over NBR	Used where higher temperature and oil aging resistance is required.
FKM (Viton®)	High temp and chemical resistance; ~ -20°C to +150°C	For aggressive fluids and higher temp environments.
PTFE	Very low friction, wide temp range, strong chemical resistance	Used as lip material or cap for low-friction seals and chemically aggressive fluids.
Stainless Steel / Duplex	Corrosion-resistant for sleeves and metal cases	For corrosive fluids/sea-water applications; consider surface hardness.
Ceramic / SiC / WC	Extremely hard for mechanical seal faces	Used for high-wear or abrasive fluids in mechanical seals.