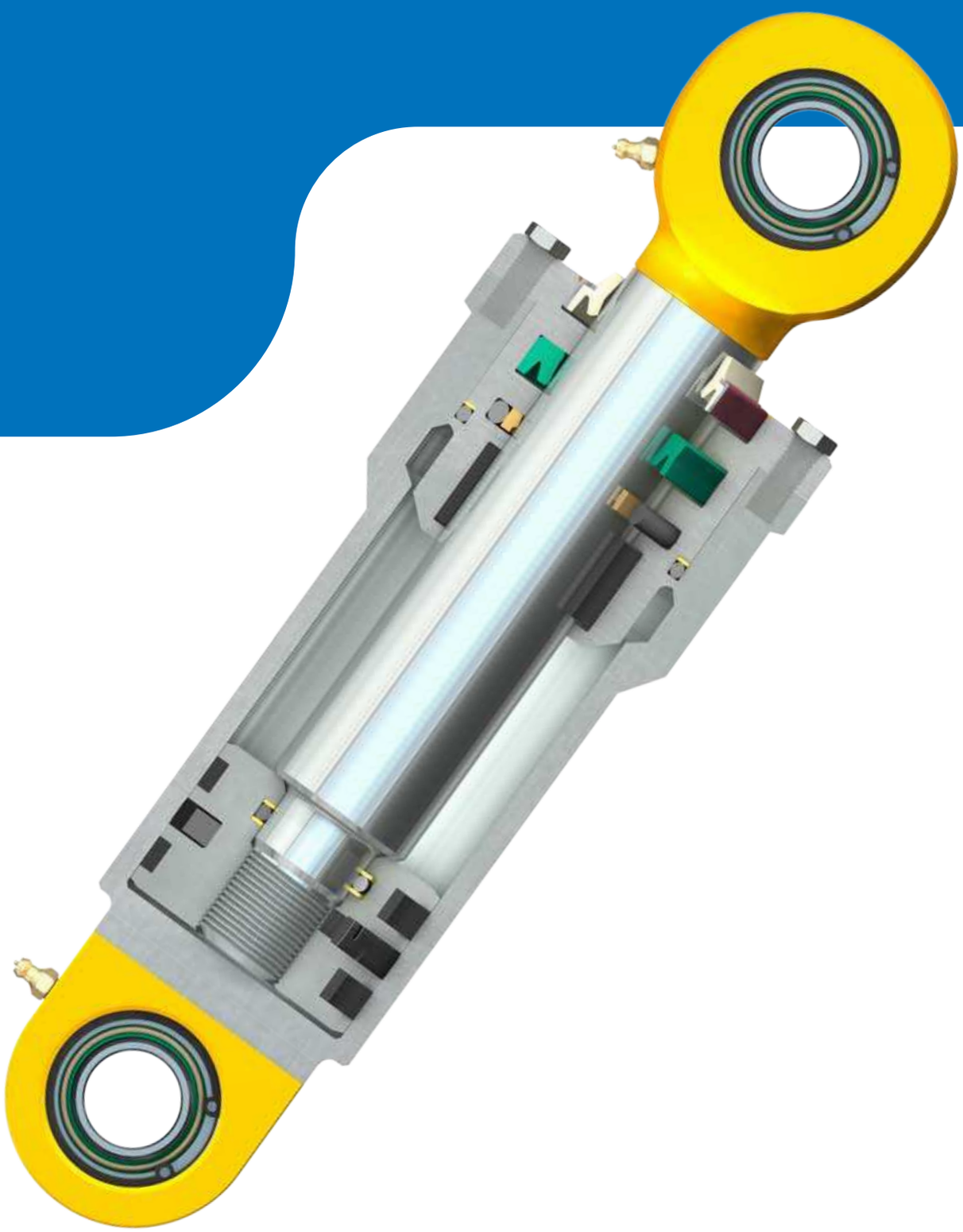
Hydraulic seals



SKF mobile apps

SKF mobile apps are available from both Apple App Store and Google Play. These apps provide useful information and allow you to make critical calculations, providing SKF Knowledge Engineering at your fingertips.

Register your catalogue

You can get updates for this catalogue via email if you register at skf.com/catalogues.

Apple App Store

Google Play

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Unit conversions

Unit conversions

Quantity	Unit	Conversion			
Length	inch	1 mm	0.03937 in.	1 in.	25,40 mm
	foot	1 m	3.281 ft.	1 ft.	0,3048 m
	yard	1 m	1.094 yd.	1 yd.	0,9144 m
	mile	1 km	0.6214 mi.	1 mi.	1,609 km
Speed, velocity	foot per second	1 m/s	3.28 ft/s	1 ft/s	0,30480 m/s
	foot per minute	1 m/s	196.8504 ft/min	1 ft/min	0,00508 m/s
	mile per hour	1 km/h	0.6214 mph	1 mph	1,609 km/h
Force	pound-force	1 N	0.225 lbf.	1 lbf.	4,4482 N
Pressure, stress	pounds per square inch	1 MPa	145 psi	1 psi	$6{,}8948 \times 10^3$ Pa
		1 N/mm^2	145 psi		
		1 bar	14.5 psi	1 psi	0,068948 bar
Temperature	degree	Celsius	$t_C = 0.555\ (t_F - 32)$	Fahrenheit	$t_F = 1{,}8\ t_C + 32$

Foreword

This catalogue contains the standard assortment of SKF hydraulic seals and guides typically used in hydraulic cylinders. To provide the highest levels of quality and customer service, these products are available worldwide through SKF sales channels. For information about lead times and deliveries, contact your local SKF representative or SKF Authorized Distributor.

This catalogue reflects SKF's state-of-the-art technology and production capabilities as of 2014. The data contained within may differ from that shown in earlier catalogues because of redesign, technological developments, or revised calculation methods. SKF reserves the right to continuously improve its products with respect to materials, design and manufacturing methods, some of which are driven by technological developments.

Getting started

Introduction to fluid power provides an overview over hydraulic cylinder types and classification, a reference to SKF customized solutions and standard assortment of hydraulic seals and guides. The first chapter contains general technical information. Seal counter-surface finish properties, materials, fluid media and gap extrusion are discussed in detail. Furthermore, product storage and installation information is included.

Guidance values

Since several factors simultaneously affect the sealing system and seal performance, all stated values in graphs and tables in this publication should be considered as guidelines only and not as absolute values for practical applications.

How best to use this catalogue

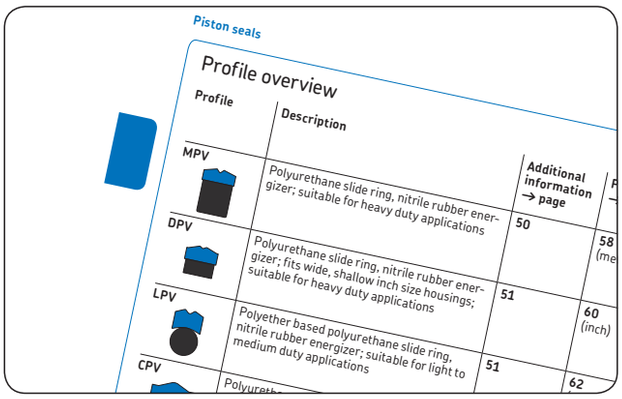
The catalogue follows an easy principle:

- *Introduction to fluid power* (→ **pages 12** to **18**) provides basic information about hydraulic seals.
- Chapter 1 (→ **pages 21** to **43**) provides general technical information, such as counter-surface finish properties, materials, fluid media.
- Chapters 2 to 6 provide product type specific information. If applicable, a profile overview at the beginning shows the different profiles with a brief description and reference to more information inside the chapter. Product type and profile characteristics are discussed in detail. The profile data tables provide product specifications per profile followed by the relevant product tables with dimensions per item. At the end of the chapter more profiles of the specific type are outlined, including examples of the machined seal profiles manufactured with the SKF SEAL JET technology.
- Chapter 7 (→ **pages 347** to **351**) provides some information on other types of fluid power seals used both in hydraulic cylinders and other applications.
- Chapter 8 contains the product index (→ **page 352**) sorted by the profiles.

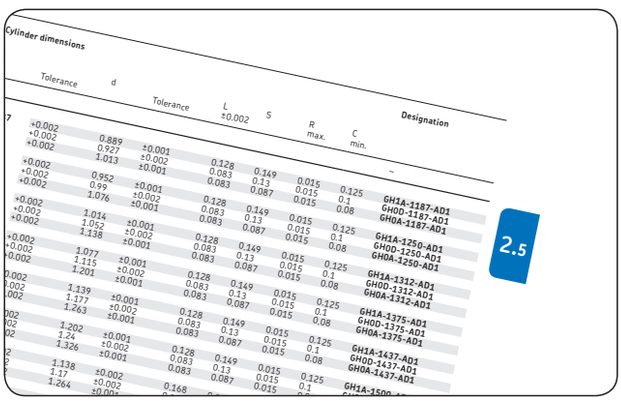
Find product details quickly

Blue tabs on each right hand page show the chapter or product table number.

A quick way to access detailed product data is via the product table numbers. They are listed in the full table of contents at the front of the catalogue, in the table of contents of each product chapter and in the product index.



Profile overview



Numbered product table

Colour coding for material

The product illustrations in this catalogue use a colour coding system to indicate the material group, but they do not match the actual material colours. For information about the actual material colours, refer to *Materials* (→ **page 26**).

Consistent colour coding for material groups

- Thermoplastic polyurethane elastomers (TPU), moulded articles
- Thermoplastic polyurethane elastomers (TPU), machined articles
- Rubbers
- Rigid thermoplastics
- Unfilled PTFE and other engineered plastics
- Filled PTFE
- Phenolic resins
- Thermoplastic polyester elastomers (TPC)
- Metals

Units of measurement

This catalogue is for global use. Therefore, the predominant units of measurement are in accordance with ISO 80000-1. Imperial units are used whenever necessary. Unit conversions can be made using the conversion table (→ **page 4**).

For easier use, some values are provided in both metric and imperial values. Values are typically rounded. Therefore, the two values do not always match according to the conversion formula.

This is SKF

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader. Over the years, we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.

Res

We have hands-on experience in over forty industries based on our employees' knowledge of real life conditions. In addition, our world-leading experts and university partners pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to research and development helps us keep our customers at the forefront of their industries.

SKF Solution Factory makes SKF knowledge and manufacturing expertise available locally to provide unique solutions and services to our customers.

Meeting the toughest challenges

Our network of knowledge and experience, along with our understanding of how our core technologies can be combined, helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

Working for a sustainable future

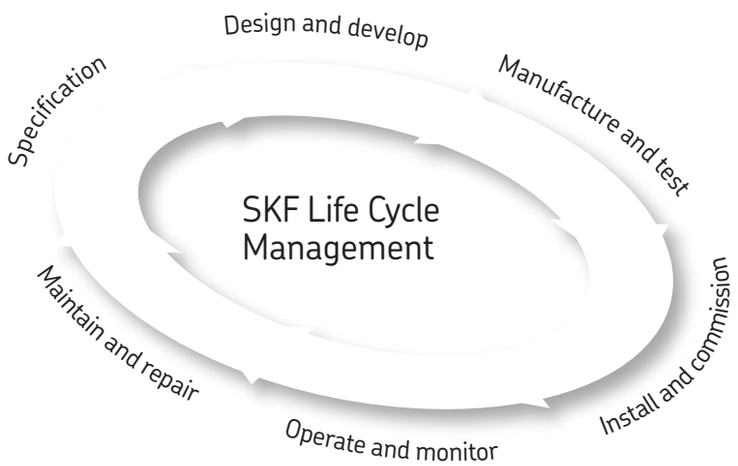
Since 2005, SKF has worked to reduce the negative environmental impact from our operations and those of our suppliers. Our continuing technology development resulted in the introduction of the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our operations and our customers' operations.

Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.

SKF – the knowledge engineering company

Our knowledge – your success

SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.



Working closely with you

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

Innovative solutions

Whether the application is linear or rotary or a combination, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with each other.

Design optimization and verification

SKF can work with you to optimize current or new designs with proprietary 3-D modelling software that can also be used as a virtual test rig to confirm the integrity of the design.

Bearings
SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.

Machinery maintenance
Condition monitoring technologies and maintenance services from SKF can help minimize unplanned down-time, improve operational efficiency and reduce main-tenance costs.

Sealing solutions
SKF offers standard seals and custom engineered seal-ing solutions to increase uptime, improve machine reli-ability, reduce friction and power losses, and extend lubricant life.

Mechatronics
SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applica-tions replace heavy, grease or oil consuming mechanical and hydraulic systems.

Lubrication solutions
From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.

Actuation and motion control
With a wide assortment of products – from actuators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.