



PNEUMATIC SEAL CATALOGUE

*QUALITY
PRECISION
SPEED*

 **MAX SPARE**
LIMITED



ASIA'S LARGEST SEAL PLANT



INTRODUCTION

Max Spare was incorporated in 1959 for manufacturing of Hydraulic and Pneumatic Seals, Rotary Shaft Seals and 'O' Rings. Over the years, Max Spare has evolved as India's No. 1 Seal Manufacturer, catering to a wide spectrum of industries with different sealing needs. Max Spare with its emphasis on Quality and Technology is ISO 9001-2015 certified and exports its seals and 'O' rings to quality conscious markets in Europe and North America. Having mutually enriching alliances with leading seal manufacturer and stockiest in Europe, Canada and the United States, exports contribute more than 60% of the current sales.

Max Spare caters to both replacement and Original Equipment market. With application ranging from Gear Boxes, Bearings, Pumps, Hydraulic and Pneumatic Systems, Constructions and Mining Equipments, Hydraulic and Pneumatic Cylinders, etc. With the advantages of having all facilities under one roof, Max Spare is well equipped to handle all sealing requirements from simple 'O' rings to complex profiles and large dia seals upto 3000 mm.

As a leading seal manufacturer for many years, Max Spare has diversified it's business to enter into the maximum products for its customers by adding new products range.

With Quality, Precision & Speed Max Spare is geared up to cater the requirements of its customers with best service support.





Warning

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND / OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

Please carefully evaluate your particular sealing application. In any application for which there might be a risk of property damage or injury to persons, the final selection of a suitable product should be made by individuals possessing sufficient technical skills and competence.

The product properties and operating parameters described in this catalogue are based upon industry standards or reported by others. Product cross-reference comparisons are based on data obtained from others and are shown in this handbook only to assist in the initial consideration of the type and features of the product required by your application. Only a trained professional should make the final product selection.

The data presented herein are subject to change without notice. Although care has been taken in compiling the data presented in this catalogue, Max Spare does not assume any responsibility or liability for errors in any data published in this catalogue.

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Max Spare Limited warrants that all products sold by it, shall be free of defects in material and workmanship to the first user / purchaser for a period of one year from the date of purchase**. At the discrepancy of Max Spare any product proven unable to meet the design capabilities for which it was produced shall be replaced or repaired free of charge including transportation, but not the cost of installation, provided that the product was not subject to negligence, accident, or damages beyond our control. All other warranties expressed or implied including warranty of merchantability are hereby disclaimed. We shall not be responsible for any consequential damages.

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Pneumatic Product Catalogue

PNE. 150612



The information contained in this catalogue is based on many years of experience in the fluid power industry, specifically in the manufacturing and application of fluid sealing and bearing systems. This information is a product of extensive in-house testing & vast international experience across all types of industries since 1959. However unknown parameters and conditions may restrict general statements during usage.

we would be obliged to offer our recommendations and sealing solutions for your particular application. However, no warranty or guarantee is expressed since the conditions of use are beyond our control.

The proportions of all the seal ranges have been determined to give a satisfactory performance when used with the recommended operating conditions.

The material from which each seal type is made could be found in the description under each seal type.

Max Spare is continuously improving its ranges and reserves the right to withdraw or modify any item shown in this catalogue without notice.

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INTRODUCTION

Maxspare offers piston seals, rod seals, symmetrical seals, wiper seals, wear rings and cushioning seals specifically designed for lower operating pressures where cylinders and valves are air-driven. Pneumatic applications typically demand higher operating speeds and lower friction applications and these seals operate under dynamic conditions, often at high speeds, usually with rotational or reciprocating movements.

In order to design pneumatic rod and piston sealing systems, there is a need to focus on the principles of dynamic seal interaction and tribology to ensure long service life, proper seal function, minimum wear, low friction and smooth operation. Pneumatic seals are made from variety of materials such as polyurethane, FKM/Fluorocarbon rubber, Nitrile, Silicone, EPDM, and some in PTFE.

The materials used will depend on the specific operating conditions. The most important consideration for tribological qualities of a dynamic sealing system are:

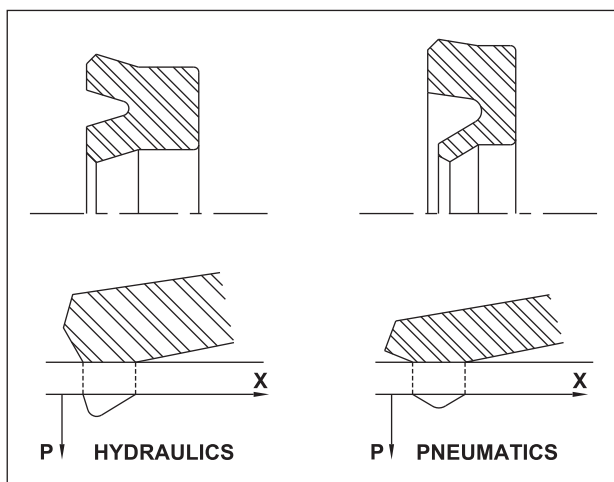
- Pressure
- Temperature
- Speed
- Media
- Surface Roughness
- Fluid Media
- System Tolerances

FACTORS INFLUENCING SEALING ELEMENT

System pressure, sliding speed, temperature, media, surface roughness and system tolerances are the important parameters taken in to consideration while choosing the type of the sealing element.

Pressure

The pressure is exerted by a pressurized gas, the most commonly used media is compressed air and the pressure settings are between 5 to 10 Bar and it does not go beyond 16 Bar. The structure of the pneumatic sealing element is according to function properly with no interruption in low pressures.



Temperature

In pneumatic systems, the operating temperature will increase due to frictional forces and the same must be considered while selecting a sealing element. Refer sealing materials on page No. to understand the maximum operating temperatures of each sealing elements.

Speed

Pneumatic sealing system requires high sliding speed and the speeds 0.5 m/sec or above are the medium speeds in pneumatics which is higher than hydraulic applications. The negative effects of the frictional forces caused by the high sliding speed must be taken into consideration while choosing the sealing material and the profile to have the optimal sealing in the system. For high sliding speeds the sealing elements should be chosen from PTFE material.

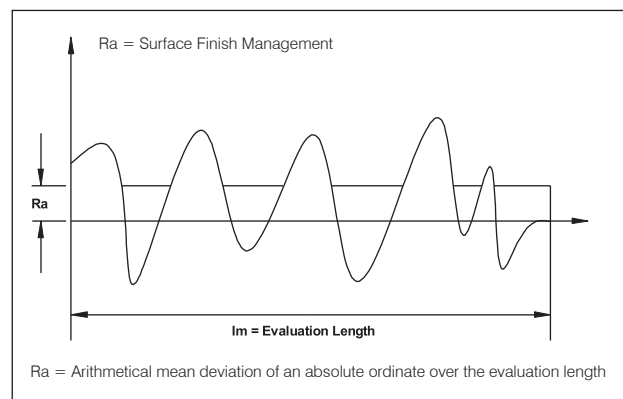
Media

Pneumatic systems are commonly powered by compressed air or gasses to produce mechanical motions. The dust, dirt and moisture content in the compressed air can prolong the life of the sealing ring. To prevent the premature wear of valves, cylinders, and seals, it is important to purify and clean the impurities by using suitable filters. The system must be thoroughly cleaned before greasing and commissioning and free from mechanical residues, old lubricant, and any other contaminants.

Surface Roughness

The functional reliability and service life of a seal very much depend on the quality and surface finish of the mating surface to be sealed. It should be free from Scores, scratches, pores, concentric or spiral machining marks etc. The aim of all types of surface finish is to provide a surface which causes the minimum wear to the seal. Kindly refer the values Surface roughness mentioned in each profile group.

Parameters for specifying a surface finish are defined by ISO 4287 and ISO 4288. The most common surface roughness parameter specified is Ra (in units μm or $\mu\text{in.}$), i.e. the arithmetic mean deviation of the surface profile.



System Tolerances

System tolerances are important factors in the life of the sealing elements. Inappropriate dimensions, tolerances, and decentralized hydraulic cylinders lead to rapid wear of the sealing elements, and the system does not provide the required performance. Below Table shows the general tolerances used in the pneumatic systems.

The cylinder bore in pneumatic cylinders are manufactured from steel or soft metals such as aluminum and special engineering plastics and should be honed or ground to obtain the required surface roughness values. Rods are produced from chrome-plated steel (55 HRC) and should be ground and polished and other parts of the cylinder must be of steel, cast steel, cast iron or special engineering plastics.

Nominal Dimension (mm)		Bore Tolerances (μm)					Rod Tolerances (μm)						
>	<=	H8	H9	H10	H11	H12	f7	f8	f9	h8	h9	h10	h11
	3	14	+25	40	+60	100	-6	-6	-6	0	0	0	0
		0	-0	0	0	0	-16	-20	-31	-14	-25	-40	-60
3	6	18	+30	48	75	120	-10	-10	-10	0	0	0	0
		0	-0	0	0	-0	-22	-28	-40	-18	-30	-48	-75
6	10	22	36	58	+90	150	-13	-13	-13	0	0	0	0
		0	0	0	0	-0	-28	-35	-49	-22	-36	-58	-90
10	18	27	+43	+ 70	110	180	-16	-16	-16	0	0	0	0
		0	0	0	0	-0	-34	-43	-59	-27	-43	-70	-110
18	30	33	52	+ 84	+130	210	-20	-20	-20	0	0	0	0
		0	-0	0	-0	-0	-41	-53	-72	-33	-52	-84	-130
30	50	39	+62	100	160	250	-25	-25	-25	0	0	0	0
		0	-0	0	0	0	-50	-64	-87	-39	-62	-100	-160
50	80	46	+74	+120	190	300	-30	-30	-30	0	0	0	0
		0	-0	0	0	-0	-60	-76	-104	-46	-74	-120	-190
80	120	54	+87	140	220	350	-36	-36	-36	0	0	0	0
		0	-0	0	0	0	-71	-90	-123	-54	-87	-140	-220
120	180	63	+100	160	+250	+400	-43	-43	-43	0	0	0	0
		0	-0	0	0	0	-83	-106	-143	-63	-100	-160	-250
180	250	72	+115	+185	290	460	-50	-50	-50	0	0	0	0
		0	-0	0	0	0	-96	-122	-165	-72	-115	-185	-290
250	315	81	+130	+210	320	520	-56	-56	-56	0	0	0	0
		0	-0	0	0	0	-108	-137	-185	-81	-130	-210	-320
315	400	89	+140	+230	360	570	-62	-62	-62	0	0	0	0
		0	-0	0	0	0	-119	-151	-202	-89	-140	-230	-360
400	500	97	+155	+250	+400	630	-68	-68	-68	0	0	0	0
		0	-0	0	0	0	-131	-165	-223	-97	-155	-250	-400

ELASTOMERS

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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ACRYLONITRILE-BUTADIENE

Commonly known as NITRILE or BUNA-N. The acrylonitrile content of nitrile rubber varies from 18 to 50%, the polymers with high acrylonitrile content have better oil resistance whereas low acrylonitrile content exhibit better compression set and low-temperature flexibility. Nitrile has moderate physical properties but good abrasion resistance. Gas permeability is low and Ozone resistance and electrical properties are poor.

NBR	NT	40/45 to 90/95 Shore A	-30°C to +100°C	Black
NBR/Fabric	NF	40/45 to 90/95 Shore A	-20°C to +100°C	Black
NBR Food grade	NT-FG	60/65 to 85/90 Shore A	-30°C to +100°C	Green
NBR Low temperature	NT-LT	45/50 to 90/95 Shore A	-50°C to +100°C	Black
NBR High temperature	NT-HT	60/65 to 90/95 Shore A	-30°C to +120°C	Black
NBR peroxide cured	NT (PEROXIDE)	60/65 to 90/95 Shore A	-30°C to +120°C	Black
NBR+Teflon blend	NT-TF	80/85 Shore A	-30°C to +100°C	Black
NBR Kevlar Fabric	NKF	70/75 Shore A	-30°C to +100°C	Black
NBR (Machining)	CNT	87/90 Shore A	-30°C to +100°C	Black

HYDROGENATED NITRILE-BUTADIENE (HNBR / HSN)

The properties of HNBR depend upon the acrylonitrile content and the degree of hydrogenation of the butadiene copolymer. They have rather better oil and chemical resistance than Nitrile Rubber and can withstand much higher temperatures. It has excellent resistance to sour oil and gas, steam, hot water, and ozone. Physical properties (e.g. tensile and tear strength, elongation, abrasion resistance, compression set, etc.) are also excellent and compounds exhibit good dynamic behavior at elevated temperatures. Limitations include poor electrical properties, poor flame resistance, and attack by aromatic oils and polar organic solvents.

HNBR	HN	60/65 to 90/95 Shore A	-30°C to +150°C	Black
HNBR/Fabric	HF	60/65 to 70/75 Shore A	-30°C to +130°C	Black
HNBR Food grade	HN-FG	70/75 to 80/85 Shore A	-30°C to +150°C	Green
HNBR Low temperature	HN-LT	60/65 to 85/90 Shore A	-45°C to +150°C	Black

CARBOXYLATED NITRILE-BUTADIENE (XNBR)

XNBR compounds are like NBR but stronger, enhanced tear, and improved abrasion behaviour in applications subjected to stress..

XNBR	XN	60/65 to 90/95 Shore A	-30°C to +100°C	Black
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Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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POLYCHLOROPRENE RUBBER (CR)

Chloroprene Rubber (CR), widely known as Neoprene®, was one of the first oil resistant synthetic rubber. It is a good general-purpose rubber with an excellent balance of physical and chemical properties. However, it has only moderate resistance to petroleum-based oils and fuels. It has better chemical, oil, ozone, and heat resistance than natural rubber. Gives excellent rubber-metal bonds and good resilience.

Neoprene®	NP	40/45 to 90/95 Shore A	-40°C to +120°C	Black
Neoprene®/Fabric	NPF	40/45 to 90/95 Shore A	-20°C to +100°C	Black

NATURAL RUBBER ((NR)

Natural rubber is the only non-synthetic rubber with excellent tensile strength, elongation, and abrasion resistance. With its good tear strength, fatigue resistance and excellent compression set it is the ideal choice for dynamic applications at low and ambient temperatures.

Natural Rubber	NR	40/45 to 90/95 Shore A	-40°C to +80°C	Black
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POLYACRYLIC RUBBER (ACM)

Polyacrylic (ACM) has good resistance to hot hydraulic oil, oxidation, and ozone. The water resistance is poor, as is its resistance to acids and alkalis. Low-temperature applications are limited to -10°C.

ACM	PC	70/75 to 80/85 Shore A	-10°C to +170°C	Black
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BUTYL RUBBER ((IIR)

Butyl rubber is also known as Isobutylene-isoprene (IIR). It has exceptionally low gas permeability making it ideal for inner tubes and high pressure/vacuum sealing applications. Its chemical unsaturation gives it excellent resistance to heat, ozone, and weathering. Very low resilience makes it suitable for shock and vibration damping and is not suitable for use in mineral or petroleum-based fluids.

Butyl Rubber	BU	60/65 to 80/85 Shore A	-40°C to +120°C	Black
Butyl Rubber with 1 or 2 ply fabric	BU+PLY FABRIC	60/65 to 80/85 Shore A	-40°C to +100°C	Black

ETHYLENE PROPYLENE DIENE RUBBER (EPDM)

EPDM is a copolymer of ethylene and propylene and a smaller amount of a diene monomer. It has excellent heat, ozone, and chemical resistance. Low-temperature resistance is excellent and also gives excellent electrical resistance. EPDM is not suitable for exposure to petroleum-based fluids and di-ester lubricants. (EPDM seals are peroxide cured and sulfur curing is used for EPDM cords)

EPDM	EP	50/55 to 90/95 Shore A	-40°C to +120°C	Black
EPDM Food Grade	EP-FG	60/65 to 80/85 Shore A	-40°C to +100°C	Green

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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SILICON RUBBER (VMQ) VINYL-METHYL-POLYSILOXANE

Silicone Rubbers are ideal for high and low-temperature applications. It is characterized by high thermal resistance, good cold flexibility, good dielectric properties, very good resistance to oxygen, and ozone attack. The main advantage is that it retains flexibility at very low temperatures and can withstand continuous heating without hardening, making it suitable for low and high-temperature applications. SILICON compounds have poor strength and tear resistance. Their resistance to oils and fuels is poor, concentrated acids and alkalis, water and steam at temperatures over 100°C will destroy the material.

Silicon	SL	30/35 to 80/85 Shore A	-60°C to +200°C	Red
Silicon Food grade	SL-FG	50/55 to 80/85 Shore A	-60°C to +200°C	Green
Silicon Low temperature	SL-LT	70/75 Shore A	-70°C to +200°C	Red

FLUROSILICON RUBBER (FVMQ)

Fluorosilicones (FVMQ) can operate over a very wide range of temperatures. It has excellent resistance to di-ester lubricants, ozone, and weathering. They have good electrical strength and moderate oil resistance.

Flurosilicon	FSL	60/65 to 80/85 Shore A	-70°C to +220°C	Blue
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STYRENE-BUTADIENE RUBBER (SBR)

Styrene-Butadiene rubber is a widely-used general-purpose rubber with an extensive range of applications. Key benefits of SBR are abrasion resistance, Perfect impact strength, Good resilience, and High tensile strength. Its physical strength, resilience, and low-temperature properties are usually inferior to Natural Rubber. SBR is not resistant to oil or fuel resistant and it can be prone to weathering.

SBR	SB	-30°C to +100°C	-10°C to +170°C	Black
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POLYBUTADIENE BLEND RUBBER (PBR)

Polybutadiene rubber (PBR) is polymerized butadiene. It is very similar to natural rubber, polyisoprene. It is good for uses which require exposure to low temperatures. It is used in blends with other rubber types for improved elasticity, wear resistance, and low-temperature properties.

PBR	PBR70	70/75 Shore A	-50°C to +80°C	Black
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Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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FLUROELASTOMER (FKM) Viton®

Fluoroelastomers or Fluorocarbons are commonly known as Viton®. The main characteristics of FKM are resistant to high temperatures and chemical stability. They also display minimal weight loss in high vacuum and its permeability to gases is low. It is compatible with fire-resistant Hydraulic fluids, hot oils, greases, hydrocarbon, chlorinated hydrocarbons most organic acids, even at high concentrations and several organic compounds. It has excellent resistance to hot water and steam. FKM, however, is not resistant to methanol, ketones, esters, and ethers.

Viton®/ FKM	VT	55/60 to 90/95 Shore A	-30°C to +220°C	Brown
Viton®/Fabric	VF	70/75 to 90/95 Shore A	-20°C to +150°C	Brown
Viton® Food grade	VT-FG	55/60 to 90/95 Shore A	-30°C to +220°C	Green
Viton® Low temperature	VT-GLT	55/60 to 90/95 Shore A	-40°C to +220°C	Black
Viton® GF	VT-GF	65/70 to 80/85 Shore A	-20°C to +210°C	Black
Viton® Anti Explosive Decompression	VT-AED	70/75 to 90/95 Shore A	-20°C to +210°C	Black
Viton® Extreme	VT70-Extreme	70/75 Shore A	-20°C to +220°C	Black
Viton®Excellent Low Temperature	VT-XLT	70/75 & 85/90 Shore A	-50°C to +220°C	Black
Viton®Electric resistant	VT-ER	90/95 Shore A	-20°C to +210°C	Black
Viton®Kevlar	VT-KEVLAR	80/85 Shore A	-20°C to +210°C	Black

PERFLUROELASTOMER (FFKM)

Perfluoroelastomers (FFKM) are fully-fluorinated fluorocarbon polymers which have elastomeric characteristics. They fill an important niche for applications involving aggressive chemicals at temperatures up to 320°C. They are extremely expensive and have poor physical properties and limited use at low temperatures. They are the most chemically resistant elastomers that are on the market and have outstanding high temperature and chemical resistance and also have an excellent stem, ozone, and weathering resistance. An important disadvantage is poor low-temperature properties.

FFKM	FF	70/75 & 85/90 Shore A	-10°C to +300°C	Black
FFKM	FF	70/75 & 85/90 Shore A	-10°C to +300°C	Black

TETRAFLUROETHYLENE / PROPYLENE (FEPM, TFE/P, AFLAS®)

AFLAS® (TFE/P, FEPM) is known for its use in oil field applications and its electrical resistance properties. This elastomer is a copolymer of tetrafluoroethylene (TFE) and propylene. Its chemical resistance is excellent across a wide range of aggressive media. It has excellent heat resistance with continuous service temperature capability of 230°C, high electrical resistivity, and excellent oil resistance and is not compatible with aromatic fuels, ketones, and acetone.

AFLAS®	AF	70/75 to 85/90 Shore A	-10°C to +220°C	Black
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THERMOPLASTICS & THERMOSETS

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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POLYURETHANE (PU)

The polyurethane material has extremely good mechanical properties such as high tensile strength, abrasion resistance, tear strength, extrusion strength, and above all, good flexibility. PU has good resistance to swelling in mineral oils and greases, water, oil mixtures, and aliphatic hydrocarbons. PU is not resistant to polar solvents, chlorinated hydrocarbons, aromatics, brake fluids, acids, and alkalis.

PU General purpose & Food grade	PU-70	40/45 to 90/95 Shore A	-40°C to +80°C	Blue
PU General purpose	PU-80 & PU-85	60/65 to 85/90 Shore A	-40°C to +80°C	Blue
PU General purpose & Food grade	PU-90 & PU-95	45/50 to 90/95 Shore A	-40°C to +100°C	Blue
PU GG25	PU-98	60/65 to 90/95 Shore A	-30°C to +100°C	Red/Blue
PU (General Purpose & Food grade)	PU-65D & PU-70D	80/85 Shore A	-30°C to +150°C	White/Red
PU (High oil resistance Poly caprolactone ester-based)	PU-X	87/90 Shore A	-40°C to +150°C	Red/Orange /Blue/Yellow
PU (Hydrolysis/Water-based for pneu.application)	PU-W90	60/65 to 90/95 Shore A	-40°C to +130°C	Green/Blue / Red
PU (Hydrolysis/Water-based for pneu.application)	PU-W95	60/65 to 90/95 Shore A	-40°C to +130°C	Blue/Green / Red
Cast PU (Oil resistant)	CPU-O	60/65 to 90/95 Shore A	-30°C to +100°C	Red
Cast PU (Hydrolysis Resistant)	CPU-W	60/65 to 90/95 Shore A	-30°C to +100°C	Red

POLYPROPYLENE (PP)

PP is one of the lightest polymers among all commodity plastics. This feature makes it a suitable option for lightweight/weight saving applications. It has excellent resistance to dilute and concentrated acids, alcohols and bases, and good resistance to aldehydes, esters, aliphatic hydrocarbons, ketones but limited resistance to aromatic and halogenated hydrocarbons and oxidizing agents. Polypropylene is a highly flammable material and it retains mechanical & electrical properties at elevated temperatures in humid conditions. PP has good resistance to environmental stress cracking.

PP	PP	80 M	-20°C to +95°C	Black/Off white
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Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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POLYETHYLENE (PE)

Polyethylene is a lightweight and durable thermoplastic and is one of the most widely produced plastics. Polyethylene is used in applications ranging for films, tubes, plastic parts, laminates, etc. in several markets (packaging, automotive, electrical, etc.). The most common types of polyethylene are

Low-density polyethylene (LDPE) – Features are flexible and good transparency, good moisture barrier properties, high impact strength at low temperature, excellent resistance to acids, bases, and vegetable oils.

Linear low-density polyethylene (LLDPE) - As compared to LDPE, it has higher tensile strength and higher impact and puncture resistance.

High-density polyethylene (HDPE) - Excellent Chemical Resistance, high tensile strength, excellent moisture barrier properties, hard to semi-flexible.

Ultra-high-molecular-weight polyethylene (UHMWPE) - It has excellent mechanical properties such as high abrasion resistance, impact strength, and low coefficient of friction. Even at high temperatures, it is resistant to several solvents, except aromatic, halogenated hydrocarbons, and strong oxidizing materials, such as nitric acid. UHMWPE is suitable for high wear applications.

LDPE	LDPE	80 M	-70°C to +90°C	Black/Off white
LLDPE	LLDPE	65 M	-70°C to +100°C	Black/Off white
HDPE	HDPE	80 M	-70°C to +110°C	Black/Off white
UHMWPE	UHMW	65 D	-250°C to + 80°C	Black/Off white

POLYACETAL (POLYALDEHYDE / POM)

Polyoxymethylene (POM), commonly known as acetal. It is a highly crystalline thermoplastic that is known for its high flexural and tensile strength, stiffness, hardness, and low creep under stress. It also has a low coefficient of friction, excellent chemical resistance, and outstanding fatigue properties, but only moderate heat stability and insufficient flame resistance. POM is available under the trade names Delrin®, Duracon®, etc. Glass-reinforced grades of polyacetal are also available.

Acetal	ACT-1	94 M	-40°C to +140°C	White
25% Glass-filled Acetal	ACT-2	96 M	-40°C to +160°C	White
15% Glass-filled Acetal	ACT-3	95 M	-40°C to +160°C	White
Cast Acetal	CAL	94 M	-40°C to +140°C	White

POLYAMIDE (PA)

PA material, polyamide, or commonly called Nylon is a semi-crystalline thermoplastic with low density and high thermal stability. Polyamide plastic offers: High wear resistance, High thermal stability, Very good strength and hardness, High mechanical damping characteristics, Good sliding properties, and Good chemical resistance. The most common polyamide plastics are Nylon 6, cast PA 6 and Nylon 66 (PA66).

Nylon PA6	NY-1	80 M	-30°C to +100°C	Black/ White
Cast Nylon PA6	CNY	85 M	-30°C to +100°C	Black/ White
Cast Nylon PA6	NY2(A)	79 M	-40°C to +140°C	Black/ White
Nylon PA66 + 33% Glass filled	NY2(B)	95 M	-40°C to +150°C	Black/ White
Nylon PA66 + 13% Glass filled	NY2(C)	95 M	-40°C to +150°C	Black/ White

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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POLYPHENYLENE SULFIDE (PPS)

PPS material (chemically known as polyphenylene sulfide) is a semi-crystalline, high-temperature engineering thermoplastic. Due to its structure, PPS is a very chemically resistant polymer with very good mechanical strength, even at temperatures above 200°C. In addition to its low water absorption, PPS polymer also has good dimensional stability and excellent electrical properties.

PPS 40% Glass filled	PPS	100 M	Up to +300°C	White
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THERMOPLASTIC ELASTOMER (TPE / Hytrel®)

Thermoplastic elastomer combines many of the most desirable characteristics of high-performance elastomers and flexible plastics. It features exceptional toughness and resilience; high resistance to creep, impact, and flex fatigue; flexibility at low temperatures; and good retention of properties at elevated temperatures. Besides, it resists deterioration from many industrial chemicals, oils, and solvents. DuPont™ trade name is Hytrel®

Hytrel® TPE 6356 Dupont	NY-1	80 M	-30°C to +100°C	Black/ White
Hytrel® Arnitel EM400 / Dupont 4069	CNY	85 M	-30°C to +100°C	Black/ White
Hytrel® Arnitel PL461	NY2(B)	95 M	-40°C to +150°C	Black/ White
Hytrel® Arnitel PL461	NY2(B)	95 M	-40°C to +150°C	Black/ White
Hytrel® TPE 7246 Dupont	NY2(C)	95 M	-40°C to +150°C	Black/ White

POLYETHERETHERKETONE (PEEK)

PEEK is a unique semi-crystalline high-performance plastic material with an excellent balance of physical properties. It has one of the highest levels of heat resistance and mechanical strength available among plastics. It is also one of the best choices when looking for good chemical resistance, as well as radiation resistance, also, and very good dimensional stability.

PEEK	PEEK	99M	Up to +280°C	Beige
70% PEEK, 10% PTFE, 10% CARBON FIBRE, 10% GRAPHITE	PEEK-AF803	86D	Up to +280°C	Black

POLYTETRAFLUOROETHYLENE (PTFE / Teflon®)

VIRGIN PTFE material (chemically known as Polytetrafluoroethylene, colloquially referred to as Teflon®) is one of the most chemically inert materials known and is used in many different applications and industries. PTFE is an incredibly versatile material with a wide variety of applications. It has extreme chemical resistance, a massive temperature range is completely unaffected by UV, excellent electrical insulation properties. Flexible, low friction, inert.

Virging Teflon	PTFE	60±5 Shore D	-250°C to +250°C	White
RULON J Gold	PFT-PF	60 Shore D	-200°C to +250°C	Dull Gold

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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BRONZE FILLED TEFLON (BFT)

Bronze Filled PTFE is reinforced with bronze powder with the percentage varying between 40% and 60%, resulting in a very hard-wearing material. The advantages of BFT are very heavy duty due to high specific gravity, electrically conductive, good wear-resistant properties, great deformation strengths, and good thermal conductivity. It has weaker chemical resistance than other grades of PTFE and is not suitable for electrical applications.

40% Bronze filled PTFE	BRT-40	65±3 Shore D	-200°C to +260°C	Brown
40% Bronze + 5% MOS2 filled PTFE	MBRT-40	65±3 Shore D	-200°C to +260°C	Brown
60% Bronze filled PTFE	BRT-60	70±3 Shore D	-200°C to +260°C	Brown
60% Bronze + 5% MOS2 filled PTFE	MBRT-60	70±3 Shore D	-200°C to +260°C	Brown

GLASS FILLED PTFE (GLT)

The properties of this material are high compressive strength, Improved wear resistance under load & permanent deformation, better thermal / electrical conductivity etc and are mainly used in valve components.

15% Glass-filled PTFE	GLT-15	60±3 Shore D	-200°C to +260°C	Black
15% Glass + 5% MOS2 filled PTFE	MGLT-20	60±3 Shore D	-200°C to +260°C	Black
25% Glass-filled PTFE	GLT-25	60±3 Shore D	-200°C to +260°C	Black
8% Glass + 3% MOS2 filled PTFE	MGLT-11	60±3 Shore D	-200°C to +260°C	Black

CARBON+GRAPHITE FILLED PTFE (CGRT)

The properties of this material are high compressive strength, Improved wear resistance under load & permanent deformation, better thermal / electrical conductivity etc and are mainly used in valve components.

23% Carbon + 2% Graphite filled PTFE	CGRT-25	63±3 Shore D	-200°C to +260°C	Beige
4% Carbon + 7% Graphite filled PTFE	CGRT-11	63±3 Shore D	-200°C to +260°C	Black

Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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GRAPHITE FILLED PTFE (GRT)

Graphite filled PTFE provides some similar benefits to normal carbon filled PTFE but without the greatly improved wear resistance. Graphite lowers the coefficient of friction and has excellent self lubricating properties. It can be combined with either carbon or glass or even both to reap the combined benefits of all three fillers.

15% Graphite filled PTFE	GRT-15	65±3 Shore D	-200°C to +260°C	Black
15% Graphite + 5% MOS2 filled PTFE	MGRT-20	65±3 Shore D	-200°C to +260°C	Black
25% Graphite filled PTFE	GRT-25	70±3 Shore D	-200°C to +260°C	Black

CARBON FILLED PTFE (CAT)

Carbon filled PTFE benefits from improved compressive strength, reduced deformation under heavy loads, and better wear resistance than virgin PTFE. Because carbon is conductive, it is suitable for applications which require higher thermal conductivity than PTFE alone and also becomes static dissipative due to its electrical conductivity. Carbon may be added in the form of powder or fibre. It can be abrasive, but not to the same extent as glass.

15% Carbon Filled PTFE- Carbon filled PTFE has excellent compressive strength, wear, and chemical resistance. It provides good thermal conductivity and low permeability. Ideal material for dynamic sealing applications.

25% Carbon Filled PTFE- The addition of Carbon Fibre to PTFE increases the compressive strength and wear resistance. It provides good thermal conductivity and low permeability. Commonly used in sealing applications.

15% Carbon filled PTFE	CAT-15	60±3 Shore D	-200°C to +260°C	Black
25% Carbon filled PTFE	CAT-25	60±3 Shore D	-200°C to +260°C	Black

PHENOLIC RESIN FABRIC (CPF)

Phenolic Fabrics are made with various weights of woven cotton fabric, impregnated with specifically formulated phenolic resins, bonded together under heat and pressure to produce a thermoset composite. These industrial laminates are a popular alternative to acrylic, because of its high resistance to flexing. The base material and resin combination used is dependent upon the intended application of the finished product. Physical strength, resiliency, ease and versatility of fabrication, and excellent electrical properties make phenolics useful as support components in a wide range of mechanical and electrical applications. (Available only up to 220 mm diameter)

Phenolic Resin Fabric	CPF	89M	-20°C to +120°C	Brown
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POLYSTER RESIN FABRIC (PRW)

The main features of PRW are high compressive strength, internally lubricated, offers high bearing load capacity, and are compatible with wide range of fluids including water based fluids and phosphate esters. (Available from diameter 70 mm or in strip form)

Polyster Resin Fabric	PRW	HRM100	-30°C to +120°C	Turquoise
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Material Name	Maxspare Code	Hardness Range	Service Temperature	Default Colour
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FOOD COMPLIANT MATERIAL

Sealing material plays an important role in food, beverages & pharma industries application. As seals may come into contact with products that are intended for human consumption. Therefore, sealing material ingredients and process should be comply with the FDA regulations and more

Maxspare had developed special compounds which are compliant with FDA and hadbeen approved and certified by an goverment testing laboratory

NBR	NT50 (FG) to NT85 (FG)	50 Shore 'A' to 90 Shore 'A'	177-2600.Cla.(F)	Green
FKM (Viton®)	VT55 (FG) to VT85 (FG)	55 Shore 'A' to 90 'A'	177-2600.Cla.(F)	Green
EPDM	EP50 (FG) to EP85 (FG)	50 Shore 'A' to 90 Shore 'A'	177-2600.Cla.(F)	Green
Silicon	SL60 (FG) to SL70 (FG)	60 Shore 'A' to 75 Shore 'A'	177-2600.Cla.(F)	Green
Polyurethane	PU 5 FG)	90 Shore 'A'	177-2600.Cla.(F)	Red
PTFE	PFT	65 D	–	White
UHMWPE	UHMW	65 D	–	White
Acetal	ACT	M 84	–	White

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R = Recommended

M = Marginal

U = Unsatisfactory

X = Insufficient Data

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Acetaldehyde	U	U	R	U	U	U	R	U
Acetamide	R	U	R	R	U	U	M	U
Acetic Acid	M	M	R	R	U	U	R	U
Acetone	U	M	R	M	U	U	M	U
Acetophenone	U	U	R	U	U	U	U	U
Acetylene	R	R	R	R	X	X	R	R
Ammonia	R	R	R	R	U	X	R	U
Ammonium Hydroxide	R	R	R	R	U	U	R	R
Amly Acetate	U	U	M	U	U	U	U	U
Anderol L-774	M	U	U	U	R	U	U	R
Antifreeze	R	R	R	R	U	U	R	R
Aniline	U	U	R	U	U	U	U	M
Ansul Ether	M	U	M	U	U	R	U	U
Aroclors	M	U	R	U	U	X	M	R
Askarel	R	U	U	U	U	U	U	R
ASTM #1	R	U	U	R	R	R	R	R
ASTM #3	R	U	U	U	R	R	U	R
ASTM Fuel A	R	U	U	R	R	R	U	R
ASTM Fuel B	R	U	U	U	U	R	U	R
ASTM Fuel C	R	U	U	U	U	R	U	R
ASTM Fuel D	M	U	U	U	U	R	U	R
Auto.Trans.Fluid	R	U	U	M	R	R	M	R
Beer	R	R	R	R	U	U	R	R
Benzaldehyde	U	U	R	U	U	U	U	U
Benzene	U	U	U	U	U	U	U	R
Benzine	R	U	U	R	R	R	U	R
Benzoic Acid	U	U	U	U	U	U	U	R
Benzophenone	U	U	R	X	U	U	U	R
Benzl Alcohol	U	U	U	R	U	U	X	R
Bleach	R	R	R	R	U	U	U	R
Borax	R	R	R	U	R	R	R	R
Boric Acid	R	R	R	R	U	R	R	R
(Non petroleum)								
Bromine	U	R	R	M	U	U	M	U
Bromobenzene	U	U	U	U	U	U	U	R
Bunker Oil	R	U	U	U	R	R	U	R
Butane	R	M	U	R	R	U	U	R
Butter	R	U	M	R	R	R	R	R
Butyl Acetate	U	U	U	U	U	U	U	U
Butyl Alcohol	R	R	R	R	U	U	R	R
Butyl Amine	M	U	U	U	U	U	R	U
Butyl Carbitol	U	U	R	M	U	X	U	M
Butyl Cellosolve	M	U	R	M	U	U	R	U

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Carbitol	R	R	R	R	U	U	R	R
Carbitol Acetate	U	U	U	U	U	U	U	R
Carbon Disulfide	U	U	U	U	U	X	U	R
Carbon Tetrachloride	R	U	U	U	U	U	U	R
Carbonic Acid	R	R	R	R	R	R	R	R
Castor Oil	R	R	R	R	R	R	R	R
Cellosolve	U	R	U	U	U	U	U	U
Chassis Grease	R	U	U	M	R	X	U	R
Chloracetic Acid	U	U	R	U	U	U	X	U
Chloracetone	U	U	R	M	X	X	U	R
Chlordane	R	U	U	M	X	X	U	R
Chlorine	U	U	R	U	U	U	X	R
Chlorobenzol	U	U	U	U	U	U	U	R
Chloroform	U	U	U	U	U	U	U	R
Chlorsulfonic Acid	U	U	U	U	U	U	U	U
Chrome Plating Solu.	U	U	R	U	U	U	R	R
Chromic Acid	U		X	U	X	X	M	R
Citric Acid	R	R	R	R	X	X	R	R
Cod Liver Oil	R	U	U	R	R	U	R	R
Coffee	R	R	R	R	U	U	R	R
Corn Oil	R	U	U	U	R	U	R	R
Creosote	R	U	U	R	R	M	U	R
Creoste oil	R	U	U	M	X	X	M	R
Creosylic Acid	U	U	U	U	U	U	U	R
Crude Oil	R	U	U	U	R	X	U	R
Cyclohexane	R	U	U	M	R	R	U	R
Cyclohexanol	R	U	U	R	X	X	U	R
Decalin	U	U	U	U	U	U	U	R
Denatured Alcohol	R	R	R	R	U	U	R	R
Diacetone	U	U	R	U	U	U	U	U
Dibutyl Amine	U	U	U	M	U	U	U	U
Dibutyl Phthalate	U	U	R	U	U	X	X	M
Dichlorp Aniline	U	U	U	U	U	U	U	M
Dichloro Butane	R	U	U	U	U	U	U	R
Diesel Oil	R	U	U	M	U	U	U	R
Diethylamine	R	R	R	R	U	M	R	U
Diethyl Benzene	M	U	U	U	X	X	X	H
Diethylene Glycol	R	R	R	R	U	U	R	R
Dimethyl Ether	U	U	U	M	M	R	U	U
Dimethyl Formamide	U	X	R	X	X	X	R	U
Dimethyl Phthalate	U	U	R	U	U	X	X	R
Dimethyl Terephthalate	U	U	U	U	U	U	U	R
Diocetyl Phthalate	U	U	R	U	U	U	M	R

For more information regarding Chemical Compatibility with sealing materials please visit our website
www.maxspare.com/technical-support/chemical-compatibility

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M = Marginal

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X = Insufficient Data

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Acetaldehyde	U	U	R	U	U	U	R	U
Acetamide	R	U	R	R	U	U	M	U
Acetic Acid	M	M	R	R	U	U	R	U
Acetone	U	M	R	M	U	U	M	U
Acetophenone	U	U	R	U	U	U	U	U
Acetylene	R	R	R	R	X	X	R	R
Ammonia	R	R	R	R	U	X	R	U
Ammonium Hydroxide	R	R	R	R	U	U	R	R
Amly Acetate	U	U	M	U	U	U	U	U
Anderol L-774	M	U	U	U	R	U	U	R
Antifreeze	R	R	R	R	U	U	R	R
Aniline	U	U	R	U	U	U	U	M
Ansul Ether	M	U	M	U	U	R	U	U
Aroclors	M	U	R	U	U	X	M	R
Askarel	R	U	U	U	U	U	U	R
ASTM #1	R	U	U	R	R	R	R	R
ASTM #3	R	U	U	U	R	R	U	R
ASTM Fuel A	R	U	U	R	R	R	U	R
ASTM Fuel B	R	U	U	U	U	R	U	R
ASTM Fuel C	R	U	U	U	U	R	U	R
ASTM Fuel D	M	U	U	U	U	R	U	R
Auto.Trans.Fluid	R	U	U	M	R	R	M	R
Beer	R	R	R	R	U	U	R	R
Benzaldehyde	U	U	R	U	U	U	U	U
Benzene	U	U	U	U	U	U	U	R
Benzine	R	U	U	R	R	R	U	R
Benzoic Acid	U	U	U	U	U	U	U	R
Benzophenone	U	U	R	X	U	U	U	R
Benzl Alcohol	U	U	U	R	U	U	X	R
Bleach	R	R	R	R	U	U	U	R
Borax	R	R	R	U	R	R	R	R
Boric Acid	R	R	R	R	U	R	R	R
(Non petroleum)								
Bromine	U	R	R	M	U	U	M	U
Bromobenzene	U	U	U	U	U	U	U	R
Bunker Oil	R	U	U	U	R	R	U	R
Butane	R	M	U	R	R	U	U	R
Butter	R	U	M	R	R	R	R	R
Butyl Acetate	U	U	U	U	U	U	U	U
Butyl Alcohol	R	R	R	R	U	U	R	R
Butyl Amine	M	U	U	U	U	U	R	U
Butyl Carbitol	U	U	R	M	U	X	U	M
Butyl Cellosolve	M	U	R	M	U	U	R	U

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Carbitol	R	R	R	R	U	U	R	R
Carbitol Acetate	U	U	U	U	U	U	U	R
Carbon Disulfide	U	U	U	U	U	X	U	R
Carbon Tetrachloride	R	U	U	U	U	U	U	R
Carbonic Acid	R	R	R	R	R	R	R	R
Castor Oil	R	R	R	R	R	R	R	R
Cellosolve	U	R	U	U	U	U	U	U
Chassis Grease	R	U	U	M	R	X	U	R
Chloracetic Acid	U	U	R	U	U	U	X	U
Chloracetone	U	U	R	M	X	X	U	R
Chlordane	R	U	U	M	X	X	U	R
Chlorine	U	U	R	U	U	U	X	R
Chlorobenzol	U	U	U	U	U	U	U	R
Chloroform	U	U	U	U	U	U	U	R
Chlorsulfonic Acid	U	U	U	U	U	U	U	U
Chrome Plating Solu.	U	U	R	U	U	U	R	R
Chromic Acid	U		X	U	X	X	M	R
Citric Acid	R	R	R	R	X	X	R	R
Cod Liver Oil	R	U	U	R	R	U	R	R
Coffee	R	R	R	R	U	U	R	R
Corn Oil	R	U	U	U	R	U	R	R
Creosote	R	U	U	R	R	M	U	R
Creoste oil	R	U	U	M	X	X	M	R
Creosylic Acid	U	U	U	U	U	U	U	R
Crude Oil	R	U	U	U	R	X	U	R
Cyclohexane	R	U	U	M	R	R	U	
Cyclohexanol	R	U	U	R	X	X	U	R
Decalin	U	U	U	U	U	U	U	R
Denatured Alcohol	R	R	R	R	U	U	R	R
Diacetone	U	U	R	U	U	U	U	U
Dibutyl Amine	U	U	U	M	U	U	U	U
Dibutyl Phthalate	U	U	R	U	U	X	X	M
Dichlorp Aniline	U	U	U	U	U	U	U	M
Dichloro Butane	R	U	U	U	U	U	U	R
Diesel Oil	R	U	U	M	U	U	U	R
Diethylamine	R	R	R	R	U	M	R	U
Diethyl Benzene	M	U	U	U	X	X	X	H
Diethylene Glycol	R	R	R	R	U	U	R	R
Dimethyl Ether	U	U	U	M	M	R	U	U
Dimethyl Formamide	U	X	R	X	X	X	R	U
Dimethyl Phthalate	U	U	R	U	U	X	X	R
Dimethyl Terephthalate	U	U	U	U	U	U	U	R
Diocetyl Phthalate	U	U	R	U	U	U	M	R

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M = Marginal

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X = Insufficient Data

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Dioxane	U	U	R	U	U	U	U	U
Diphenyl	U	U	U	U	U	U	U	R
Dow Corning 550	R	R	R	R	R	R	R	R
Dow Gard	R	R	R	R	M	M	R	R
Dowtherm A & E	U	U	U	U	U	U	U	R
Elco 28	R	U	U	M	R	R	R	R
Epoxy Resins	X	X	R	R	X	X	X	U
Ethane	R	U	U	R	R	M	U	R
Ethanol	R	R	R	R	U	R	R	R
Ethanolamine	R	R	R	R	U	R	R	R
Ethyl Acetate	U	U	R	U	U	U	R	U
Ethyl Benzene	U	U	U	U	U	U	U	R
Ethyl Cellulose	R	R	R	R	U	R	R	U
Ethyl Chloride	R	R	R	R	M	R	U	R
Ethyl Ether	M	U	M	U	U	R	U	U
Ethyl Formate	U	U	R	R	X	X	X	R
Ethyl Hexanol	M	R	R	R	X	X	X	R
Ethyl Merlaptan	U	U	X	M	X	X	M	R
Ethylene Chloride	U	U	U	U	U	U	U	R
Ethylene Oxide	U	U	R	U	U	U	U	U
Formaldehyde	M	M	R	M	U	U	R	U
Formic Acid	M	R	R	R	X	X	M	U
Freon 12	R	R	R	R	X	R	U	R
Fuel Oil	R	U	U	R	R	U	U	R
Furan	U	U	X	U	U	X	X	X
Furfural	U	U	R	U	U	X	U	U
Furfuryl Alcohol	U	U	R	U	U	U	U	X
Fyrquel	U	U	R	U	U	U	R	R
Gallic Acid	R	R	R	R	U	U	X	R
Gasoline	R	U	U	R	R	R	U	R

Fluid	NBR	SBR	EPDM	CR	ACM	PU	VMQ	FKM
Gelatin	R	R	R	R	U	U	R	R
Glucose	R	R	R	R	X	U	R	R
Glycerine	R	R	R	R	U	U	R	R
Heptane	R	U	U	R	R	R	U	R
Hexaldehyde	U	U	R	R	X	X	R	U
Hexane	R	U	U	R	R	R	U	R
Hexanol	R	R	M	R	U	U	R	R
Home Heating Oil	R	U	U	M	R	R	R	R
Hydrazine	R	R	R	R	X	X	R	X
Hydrochloric Acid	R	M	R	R	M	U	U	R
Hydrocyanic Acid	R	R	R	R	U	X	M	R
Hydrogen Peroxide	R	R	R	R	U	X	R	R
Hydrogen Sulfide	U	U	R	R	U	X	M	U
Hydroquinone	M	U	U	U	U	X	X	R
Hypoid Gear Lube	R	U	U	M	R	R	M	R
Iodine	R	R	R	U	X	X	X	R
Isocyanate	X	X	X	X	X	X	X	R
Iso Octane	R	U	U	R	R	R	U	R
Iso Phorone	U	U	R	U	U	U	U	U
Isocyanate	X	X	X	X	X	X	X	R
Isopar	R	R	R	R	U	U	R	R
Isopropanol	R	R	R	R	U	U	R	R
Isopropyl Acetate	U	U	R	U	U	U	U	U
JP-4 (MIL-J5624)	R	U	U	U	R	R	U	R
JP-4(MIL-5624)	R	U	U	U	R	R	U	R
Kerosene	R	U	U	R	R	R	U	R
Lacquers	U	U	U	U	U	U	U	U
Lactic Acid	R	R	R	R	U	X	X	R
Lard	R	U	R	R	R	R	R	R
Linoleic Acid	R	U	U	R	X	X	R	R

Aggressive Fluids

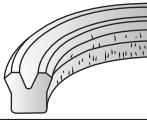
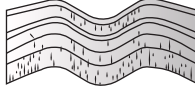
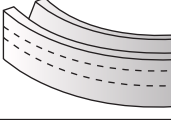
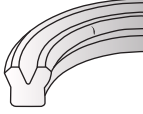
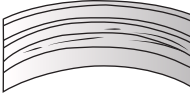
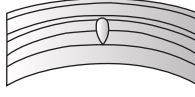
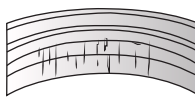
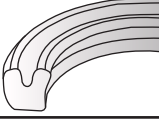
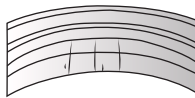
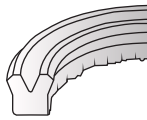
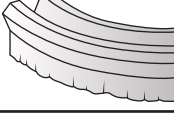
CIP (Cleaning in Place) and SIP (Sterilization in Place) are the general method for cleaning processing systems. This process ensures safety and toxic contamination of products and minimize recontamination of the process.

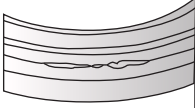
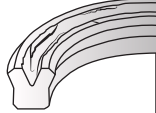
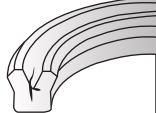
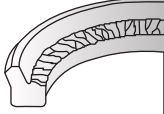
Sealing material should be compatible with the chemicals used in CIP & SIP process. Maxspare thus take care of this while selecting an appropriate sealing material.

Compatibility Chart

Chemical	Content	NBR	FKM	EPDM	SILICON	PU	PTFE
Chlorinated Alkalies	Caustic Soda (Mild)	R	M	M	U	R	+
Strong Alkalies	Caustic Soda (Strong)	R	M	M	U	R	+
Strong Acid	Nitric Acid	U	M	M	U	R	+
Sanitizer	Sodium Hypochlorite	X	M	M	X	R	+
Hot Water	-	R	M	R	R	R	+
Steam	-	U	U	R	X	U	+

CAUSES OF SEAL FAILURES & COUNTER MEASURES

SYMPTOM	PHENOMENON	CAUSES	COUNTERMEASURES
Hardening	Hardening of the dynamic face causing glazing and cracks 	High stroke speed generating excessive heat	Reduce stroke speed or use compatible material for speed and heat requirement
	Hardening of the entire seal causing glazing and cracks with loss of elasticity 	- Incompatible fluid for seal material - High fluid temperature - Deterioration of fluid	- Use compatible fluid - Lower fluid temperature - Change seal material
Wear	Dynamic face of the seal is worn to glossy mirror-like finish 	Excessive lateral load caused by worn-out wearing	- Replace worn-out wearing - Increase wearing surface area
	Sealing lip worn to rounded egg-shaped 	Insufficient lubrication	- Check Oil viscosity - Use alternate seal
	One side of the dynamic lip showing excessive wear 	Rod or Piston bore is eccentric	Check the eccentricity of the cylinder or replace it if necessary
Scarring	Dent mark or cut on the sealing lip 	- Foreign particles on the fluid - Scratched bore or rod cylinder	- Check the fluid system - Hone, polish, or de-burr the damaged cylinder
	Sealing side of the seal shows excessive scratches 	- May be damaged during improper installation - Improper storage	- Proper storage recommended - Installation tool should not have sharp edges
Swelling	Seal material has become softened and misshaped 	- Absorption of fluid by seal material - Incompatible fluid - Water in the system	- Change the seal material - Use compatible fluid - Flush system of contaminants
Deterioration	Seal lost elasticity and is cracked and crumbled 	- High fluid temperature - Exposed to ozone or sunlight	- Lower fluid temperature - Proper storage of seal recommended
Grooving	Sealing lip shows axial cuts and grooves signs 	- Sharp foreign particles in the fluid system - May also be caused by imploded air bubbles	- Flush the system - Bleed air from the system
Extrusion	Sealing lip side shows re sign of extrusion 	- Excessive extrusion gap - Worn-out wearing - Excessive system pressure	- Use back-up ring - Replace worn-out wearing
	Static heal of the seal side shows the sign of extrusion 	- Uneven sealing surface - Under-sized back-up ring	- Check the sealing surface and machined to size - Use correct back-up ring

SYMPTOM	PHENOMENON	CAUSES	COUNTERMEASURES
Fracturing	Chunks of torn material from the sealing side of the seal 	Excessive system pressure	Check the pressure and release valves
	Pressure side of the seal is burned or broken 	- Dieseling - Explosion of residual air at high pressure	- Check the system pressure - Bleed air from the system
	Cracks or splits on the U portion of the seals 	- Frequent high pressure or excessive pressure spikes - Low pressure start-up	- Increase start-up pressure - Use alternate seal for the application
	Breaking off the sealing side of the seal 	Deterioration of material or fluid	- Replace fluid - Use alternate seal for the application

Sealing performance of a seal is determined to a great extent by the method of assembling a cylinder. We recommend that customers adhere to the tolerance and surface finishes stated in this catalogue. Only by working to these values, the fitting of seals will be made easy and avoid damage during assembly.

1. It is important to keep the entire system and groove area clean and free of dirt and foreign particles.
2. Make sure to flush clean the internal face of cylinder and the interior of pipes. Use compressed air wherever possible.
3. Ensure that the cylinder and piston rod are chamfered.
4. Sharp edges should be deburred and filleted or chamfered.
5. Before assembling the cylinder, apply hydraulic oil (the same oil used in the machine) to the seal, gland, rod, surface, and the internal face of the cylinder.
6. Installation tool should not have any sharp edges.
7. The seals must be properly lubricated before installation
8. If grease is used for lubrication, it must not contain any solid additives (e.g., zinc sulphide or molybdenum disulphide). The grease should be compatible with the seal material.
9. When testing the cylinder after seal installation, it should not be out of the specified measures of pressure, temperature, linear velocity, etc.

INSTALLATION OF PISTON SEALS

U-Seals in closed grooves

The area between the sealing edge and the shaft is the most important. The sealing effect is obtained by preloading the sealing lip, making its inner diameter slightly smaller than the diameter of the shaft. The garter spring ensures constant mechanical pressure and maintains the radial force on the shaft and extends the sealing edge to the defined width. Sealing is guaranteed by the surface tension of the hydrodynamic oil film between the flattened area of the seal and the shaft. The oil thickness must be between 1 and 3 mm to avoid leakage. The meniscus acts as an interface between the outside air and the fluid. Any rupture of the meniscus will cause a leak. This can occur if the shaft contains scratches along the path of the joint.

PTFE Seals

PTFE seals or seals with thicker cross sections may require special assembly tools to save time or avoid seal damage during installation.

Dimensional Requirements: -

- 1) Piston Head Dia = d
- 2) Piston Head Length = L
- 3) Piston Head Total Length = $L1$ (in case of nut fitted)

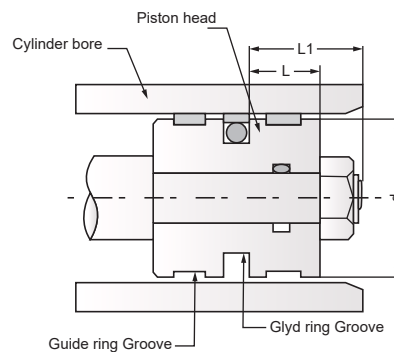


Fig. 1

Following are the steps to install PTFE Piston Seal Rings:-

Step 1

- Stretch the O-Ring and install in the groove.
- Place loading mandrel onto the piston head.

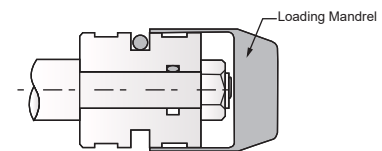


Fig. 2

Step 2

- Place Teflon ring on the loading mandrel.
- Place Pusher and push the PTFE ring up to the groove. Teflon ring will evenly expand and slide on the loading mandrel and fit into the groove without damage.

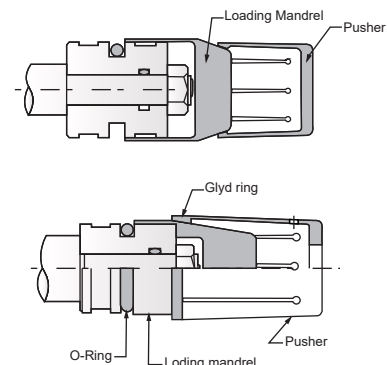


Fig. 3

Step 3

After the installation, it can constrict the seal again using a Piston Seal Constrictor to make it close to the metal groove

Guideline to use Piston Seal Constrictor: -

- Place the cloth tape around the seal and use the constrictor to tighten it.
- It will take 3 to 5 minutes to reach the restoring effect
- A Red PU pad can fill the gap between the tape and the seal, avoiding leaks during the restoring process.



Fig.4



Fig.5

INSTALLATION OF ROD SEALS IN CLOSED GROOVES

U-Seals / PTFE Seals

The rod seals can often be installed into closed grooves by carefully bending the profile into a kidney shape and insert it in to the groove. It is very important to avoid sharp bending. Thin and flexible profiles can be installed by hand while Installation tools must be used to install the profiles with large cross section. After installation, the seal may need to be reshaped into a circular shape by using a cone-shaped tool.

A Seal Twistor can be used to install the Rod Seals. It can reduce the chance of seal damage while installation. Most failures of quality seals are due to bad installation or complicate groove designs. Maxspare introduce series of tools to complete the job reliably. Seal Twistor turns seal to an omega/kidney shape without acute angle (not suitable for fragile materials). It makes the size of seal smaller than the gland hole diameter. Seal can cross all over the sharp chamfers safely then rebounds in the groove.



Size	S		M		L		XL	
Gland hole Ø	22 – 30 mm	0.7" - 1.187"	30 – 50 mm	1.187" - 2"	50 – 70 mm	2" - 2.75	70 – 165 mm	2.75" - 6.5
C/S MAX.	5 mm	0.187"	6 mm	0.234"	10 mm	0.375"	17.5 mm	0.675"

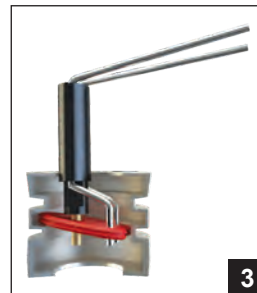
Following are the 4 steps to complete the Job: -



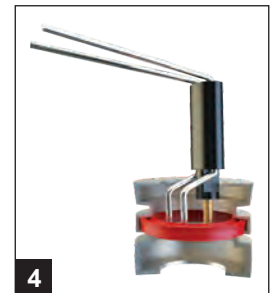
1
Fix the handle in the stand hole then put two arms inside the seal.



2
Twist the seal with guiding hand to prevent it popping out



3
Hold the handles, then put the seal into the gland hold carefully.



4
Turn handles back, then pull TWISTOR out to rebound the seal in the groove.

Storage Conditions:

Most polymers, including vulcanized rubber and other elastomers, tend to change their properties during storage and may become unusable. This may be due to hardening, softening, cracking or other deterioration and may result from exposure to oxygen, ozone, light, heat and / or moisture.

The following recommendations indicate the most suitable storage conditions for elastomeric products, whether it is a single item or a composite product.

- Temperature** - Ideal storage temperature should be 25°C (77°F). Low temperatures are not permanently harmful provided the rubber items are handled carefully and not distorted. When taken from low temperatures items should be raised to approximately 30°C (86°F) before they are used.
- Humidity** - Relative humidity is of 40% to 70% in a draft-free atmosphere.
- Light** - The products should be protected from direct sunlight, ultraviolet and artificial light have a high UV content.
- Oxygen and Ozone** - Wrapping, storage in airtight containers or other suitable means should be used for vulcanised rubber items. Storage in containers that limit exposure to environmental conditions (e.g. sealed plastic bags) should be used for all materials.
- Radiation** - Products should be protected from all sources of ionizing radiation.
- Deformation** - The rubber items should be stored in a relaxed position, without tension or compression. Laying the product on a flat surface and preventing its suspension or crushing keeps it from deforming and minimizes deformation.
- Contact with liquid or semi-liquid materials** - Rubber should not come in to contact with liquid or semi-liquid materials or their vapours at any time during storage, unless these materials are an integral part of the product or the manufacture's packaging.
- Contact with Metals** - Metals such as manganese, iron and copper, or copper alloys can have a harmful effect on rubber. A layer of paper, polyethylene or cellophane will keep these separated.
- Contact with Non-Metals** - Contact with other rubbers should be avoided.
- Stock Rotation** - Elastomers should be stored for as short a period as possible, and practice the First In First Out (FIFO system) stock liquidation.
- Cleaning** - Organic solvents such as trichloroethylene, carbon tetrachloride and petroleum are the most harmful agents. Soap and water and methylated spirits are the least harmful, and all parts should be dried at room temperature before use.
- Shelf Life** - The table shows the storage life of seal components made from the more common materials under ideal conditions. Storing under less than ideal conditions will reduce the life of the component.

Careful inspection for the following should be made before installation after storage:

- Cracks or Surface crazing
- Mechanical damage
- Permanent distortion
- Surface softening or hardening

Rubber / Elastomer	Max Code	Primary storage period (Years)	Extension of storage period after visual re-inspection (Years)
Nitrile Butadiene Rubber (NBR)	NT	7	3
Ethylene Propylene (EPDM)	EP	10	5
Fluorocarbon (FKM)	VT	10	5
Vinyl-Methyl-Silicon (VMQ)	SL	10	5
Polyurethane (PU)	PU	5	2
Engineering Thermoplastics:			
Acetal (POM)	ACT	Unlimited	-
Polyamide (PA)	NY		
Polytetrafluoroethylene (PTFE)	PFT		

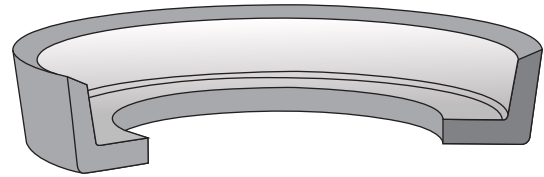
Guidelines of ISO 2230

PISTON SEALS

MAX TYPE	PRODUCT NAME	SEAL PROFILE	APPLICATION	PRESSURE (max) bar	TEMPERATURE	SPEED m/s	PAGE NO
P02	CUP SEAL		SINGLE ACTING	10	-30°C TO +100°C	0.5	25
P10	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	1.0	31
P11	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	1.0	33
P12	U SEAL		SINGLE ACTING	16	-30°C TO +100°C	1.0	35
P13	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	1.0	45
P16	U SEAL		SINGLE ACTING	16	-30°C TO +100°C	1.0	49
P15	U SEAL		SINGLE ACTING	16	-30°C TO +100°C	1.0	51
P14	U SEAL		DOUBLE ACTING	16	-30°C TO +100°C	1.0	53
P26	AIRZET SEAL		DOUBLE ACTING	12	-30°C TO +100°C	1.0	57
P25	AIRZET SEAL		DOUBLE ACTING	10	-30°C TO +100°C	1.0	61
P24	GLYD RING		DOUBLE ACTING	16	-30°C TO +100°C	0.5	65
P27	HECKER SEAL		DOUBLE ACTING	16	-30°C TO +100°C	1.0	69
P18	TDUO SEAL		DOUBLE ACTING	12	-30°C TO +100°C	1.0	73
P20	TDUO SEAL		DOUBLE ACTING	12	-30°C TO +100°C	1.0	75
P21	TDUO SEAL		DOUBLE ACTING	10	-30°C TO +100°C	1.0	79

DETAILS

P02 homogenous piston cup seals are used on piston heads rams or plungers in pneumatic applications or applications where a large extrusions gap is present. Its mechanical surface is at its periphery. Piston cups are commonly used because of economical cost, long service life, simple accessories easy to assemble etc.



COMPATIBILITY

Mineral oils, Hydraulic fluids.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy installation.
- Low friction.
- Economical cost.
- Simple accessories.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P14 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

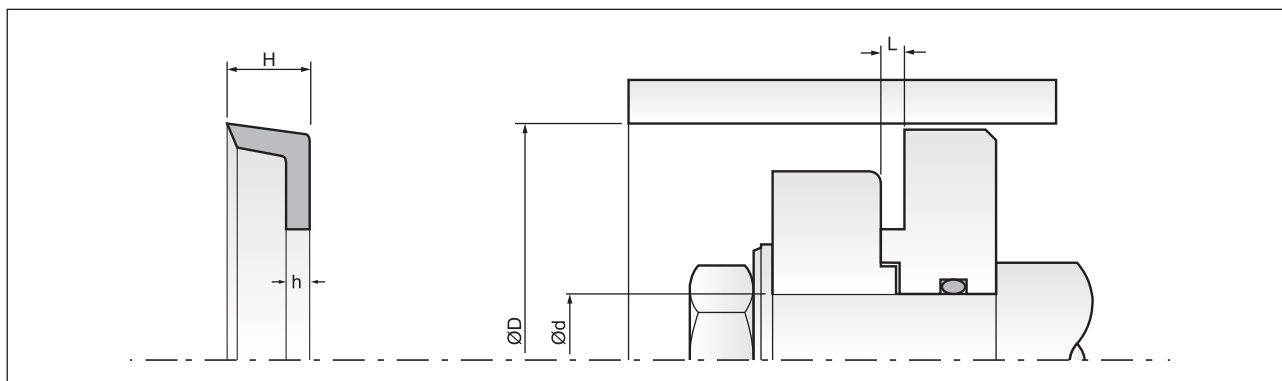
Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C
Pressure : 10 Bar
Speed : 0.5 m/s

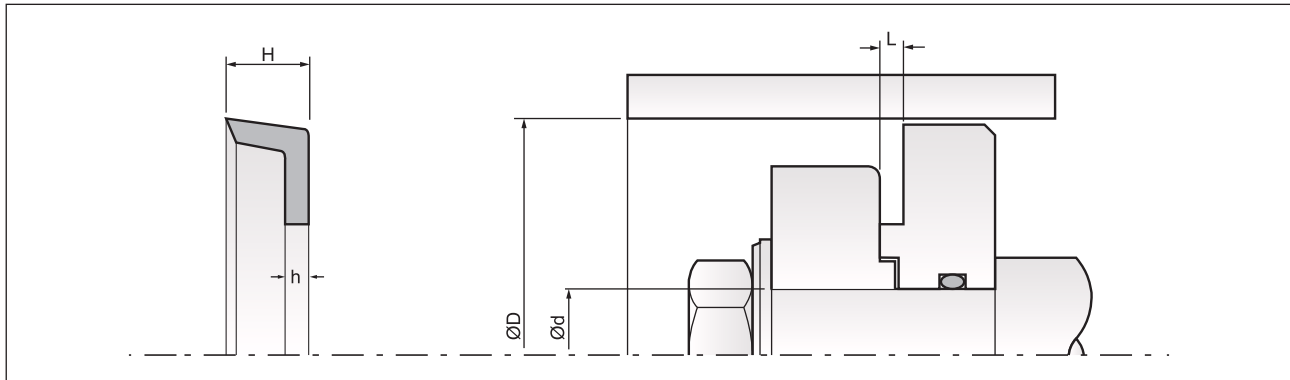
SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa



Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020151005	0.00	15.87	7.50	2.40	2.40	NBR	CWB-676
P020320901	0.00	32.00	7.90	2.10	2.10	NBR	CWB-535
P020041101	4.00	10.00	3.00	1.00	1.00	NBR	CWB-398
P020040602	4.50	10.00	4.50	2.00	2.00	NBR	CWB-582
P020051002	5.00	12.50	4.00	1.10	1.10	NBR	CWB-689
P020051101	5.00	14.00	8.00	2.00	2.00	NBR	CWB-403
P020051003	5.50	30.00	9.00	2.30	2.30	NBR	CWB-705
P020051001	5.75	13.00	10.50	7.70	7.70	NBR	CWB-656
P020061103	6.00	14.00	5.00	1.50	1.50	NBR	CWB-631
P020061102	6.00	24.00	7.00	2.00	2.00	NBR	CWB-424
P020060801	6.00	24.20	9.70	2.20	2.20	NBR	CWB-679
P020061001	6.00	27.00	8.30	2.50	2.50	NBR	CWB-522
P020060802	6.00	54.00	13.00	5.00	5.00	NBR	CWC-770
P020061002	6.35	19.05	7.95	1.57	1.57	NBR	CWB-547
P020061101	6.35	22.22	7.92	1.57	1.57	NBR	CWB-520
P020061104	6.35	44.45	12.70	3.17	3.17	NBR	CWB-648
P020070901	7.00	16.20	8.40	2.50	2.50	NBR	CWB-430
P020071102	7.00	38.00	7.00	2.00	2.00	NBR	CWB-580
P020081105	8.00	17.00	7.00	1.50	1.50	NBR	CWB-634
P020081106	8.00	20.00	6.50	3.00	3.00	NBR	CWB-742
P020081103	8.00	23.00	7.00	2.50	2.50	NBR	CWB-411
P020081101	8.00	25.00	6.00	1.50	1.50	NBR	CWB-399
P020081102	8.00	30.00	12.00	3.00	3.00	NBR	CWB-569
P020081104	8.00	32.00	5.00	2.00	2.00	NBR	CWB-429
P020080801	8.00	50.00	12.00	3.00	3.00	NBR	CWB-414
P020081001	8.40	20.00	6.20	1.20	1.20	NBR	CWB-696
P020090501	9.00	20.00	7.00	1.50	1.50	NBR	CWB-791
P020091102	9.00	20.00	10.00	7.00	7.00	NBR	CWB-606
P020091003	9.04	25.80	6.75	1.77	1.77	NBR	CWB-652
P020091101	9.20	20.20	10.00	8.00	8.00	NBR	CWB-584
P020091001	9.52	22.22	9.52	2.38	2.38	NBR	CWB-592
P020096601	9.52	44.45	12.70	3.17	3.17	FKM	CWB-740
P020090602	9.52	79.75	27.94	12.32	12.32	NBR	CWC-847
P020091004	9.52	127.00	12.70	3.17	3.17	NBR	CWD-439
P020090801	9.52	127.65	12.70	3.55	3.55	NBR	CWD-447
P020091002	9.65	31.75	9.52	3.17	3.17	NBR	CWB-629
P020101001	10.00	18.00	7.00	3.00	3.00	NBR	CWB-713
P020106701	10.00	18.00	5.50	3.15	3.15	FKM	CWB-687
P020101103	10.00	19.00	7.00	2.50	2.50	NBR	CWB-570
P020101105	10.00	20.00	10.00	7.00	7.00	NBR	CWB-621
P020101101	10.00	30.00	10.00	2.50	2.50	NBR	CWB-523
P020101106	10.00	32.00	8.00	2.30	2.30	NBR	CWB-638
P020101102	10.00	38.00	11.00	6.00	6.00	NBR	CWB-405
P020100901	10.00	45.00	17.00	5.00	5.00	NBR	CWB-706
P020101104	10.10	40.00	9.00	2.50	2.50	NBR	CWB-585
P020111101	11.00	32.00	7.00	2.00	2.00	NBR	CWB-420
P020111001	11.00	60.00	40.00	10.00	10.00	NBR	CWC-804
P020110801	11.11	304.80	25.40	4.77	4.77	NBR	CWE-667
P020110802	11.12	304.80	25.40	4.76	4.76	NBR	CWE-705
P020111002	11.12	355.60	25.40	4.76	4.76	NBR	CWE-706
P020121103	12.00	25.00	5.50	2.00	2.00	NBR	CWB-404
P020121003	12.00	32.00	10.00	3.00	3.00	NBR	CWB-770

Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020121104	12.00	40.00	14.00	3.00	3.00	NBR	CWB-579
P020121106	12.00	62.00	20.00	5.00	5.00	NBR	CWC-645
P020120801	12.00	65.00	16.00	5.10	5.10	NBR	CWC-771
P020121108	12.00	70.00	13.00	5.00	5.00	NBR	CWC-700
P020121105	12.50	38.00	14.70	3.00	3.00	NBR	CWB-434
P020121001	12.70	24.40	7.00	2.50	2.50	NBR	CWB-576
P02012C301	12.70	25.40	5.08	1.58	1.58	XNBR	CWB-583
P020121107	12.80	24.00	7.00	2.00	2.00	NBR	CWB-619
P020121002	12.82	98.42	11.12	3.96	3.96	NBR	CWC-855
P020131101	13.00	50.00	20.00	5.00	5.00	NBR	CWB-636
P020130901	13.20	64.69	6.00	3.20	3.20	NBR	CWC-752
P020131001	13.70	35.50	8.00	2.50	2.50	NBR	CWB-757
P020130801	13.80	26.00	6.00	1.50	1.50	NBR	CWB-660
P020141104	14.00	22.00	10.00	4.00	4.00	NBR	CWB-615
P020141003	14.00	30.00	6.00	2.20	2.20	NBR	CWB-702
P020141102	14.00	70.00	15.00	3.00	3.00	NBR	CWC-654
P020146501	14.00	100.00	24.00	6.50	6.50	FKM	CWC-883
P020141001	14.30	24.30	7.50	2.00	2.00	NBR	CWB-669
P020141103	14.40	42.00	14.50	4.50	4.50	NBR	CWB-601
P020141105	14.40	44.00	14.50	5.00	5.00	NBR	CWB-438
P020141002	14.40	46.00	14.50	5.00	5.00	NBR	CWB-682
P020151101	15.00	25.00	10.00	3.00	3.00	NBR	CWB-428
P020151104	15.00	30.00	10.00	3.00	3.00	NBR	CWB-620
P020156401	15.00	30.00	10.00	3.00	3.00	FKM	CWB-665
P020151010	15.00	60.00	16.00	3.00	3.00	NBR	CWC-873
P020151102	15.50	39.50	11.00	4.00	4.00	NBR	CWB-605
P020151103	15.80	57.15	12.70	4.50	4.50	NBR	CWC-680
P020151003	15.87	22.22	8.00	2.50	2.50	NBR	CWB-575
P020151004	15.87	31.75	8.00	2.50	2.50	NBR	CWB-577
P020151007	15.87	34.92	11.00	4.00	4.00	NBR	CWB-726
P020151001	15.87	60.32	15.87	3.96	3.96	NBR	CWC-694
P020161002	16.00	24.00	8.50	3.00	3.00	NBR	CWB-772
P020161112	16.00	28.00	8.00	2.50	2.50	NBR	CWB-439
P020161111	16.00	40.00	10.00	2.00	2.00	NBR	CWB-654
P020161107	16.00	40.00	8.00	2.00	2.00	NBR	CWB-425
P020161106	16.00	40.00	10.00	3.00	3.00	NBR	CWB-413
P020161113	16.00	40.00	12.00	3.00	3.00	NBR	CWB-663
P020161101	16.00	44.00	12.00	3.00	3.00	NBR	CWB-373
P020161116	16.00	45.00	10.00	3.00	3.00	NBR	CWB-426
P020161109	16.00	54.00	16.00	4.00	4.00	NBR	CWC-646
P020161103	16.00	56.00	12.00	4.50	4.50	NBR	CWC-581
P020161105	16.00	65.00	15.00	3.00	3.00	NBR	CWC-602
P020161110	16.00	65.00	23.00	8.00	8.00	NBR	CWC-647
P020161104	16.00	75.00	15.00	4.00	4.00	NBR	CWC-589
P020160902	16.00	78.00	6.30	3.30	3.30	NBR	CWC-764
P020161001	16.00	114.30	13.00	4.50	4.50	NBR	CWD-401
P020161114	16.00	115.00	15.00	5.00	5.00	NBR	CWD-413
P020160901	16.20	92.47	6.10	3.00	3.00	NBR	CWC-755
P020161102	16.50	56.00	13.00	6.00	6.00	NBR	CWC-573
P020171103	17.00	25.00	9.30	5.00	5.00	NBR	CWB-608
P020171101	17.00	32.00	8.00	3.00	3.00	NBR	CWB-571
P020171003	17.00	40.00	10.80	2.60	2.60	NBR	CWB-609

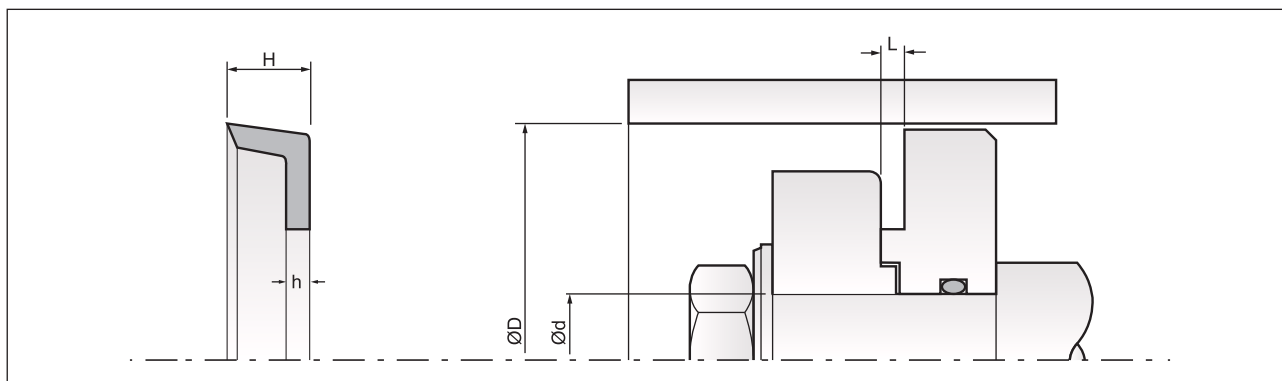


Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020178302	17.00	50.80	12.50	3.00	3.00	NBR	CWC-650
P020171102	17.00	56.00	12.00	3.00	3.00	NBR	CWC-652
P020181104	18.00	32.00	7.00	2.00	2.00	NBR	CWB-572
P020181102	18.00	36.00	6.00	2.00	2.00	NBR	CWB-400
P020181105	18.00	37.00	7.00	3.00	3.00	NBR	CWB-573
P020181002	18.00	40.00	12.00	2.30	2.30	NBR	CWB-630
P020181107	18.00	40.00	11.00	5.00	5.00	NBR	CWB-649
P020181101	18.00	45.00	12.00	6.00	6.00	NBR	CWB-401
P020181103	18.00	55.00	10.00	2.00	2.00	NBR	CWC-580
P020180801	18.20	31.75	8.60	2.30	2.30	NBR	CWB-521
P02019C301	19.00	38.10	8.70	2.30	2.30	XNBR	CWB-781
P020191103	19.00	52.00	16.00	8.00	8.00	NBR	CWC-679
P020191101	19.00	64.00	14.00	3.00	3.00	NBR	CWC-520
P020191102	19.00	65.00	12.50	3.00	3.00	NBR	CWC-595
P020191003	19.00	146.00	17.00	3.00	3.00	NBR	CWD-416
P020191002	19.05	38.10	8.00	2.50	2.50	NBR	CWB-578
P020191004	19.05	76.20	15.74	4.57	4.57	NBR	CWC-807
P020190801	19.43	40.64	6.60	2.54	2.54	NBR	CWB-683
P02020C301	20.00	40.00	7.50	2.50	2.50	XNBR	CWB-699
P020201101	20.00	44.00	12.00	4.00	4.00	NBR	CWB-397
P020201103	20.00	45.00	10.00	3.00	3.00	NBR	CWB-568
P020201106	20.00	47.00	6.00	2.00	2.00	NBR	CWB-433
P020201109	20.00	47.00	6.50	2.00	2.00	NBR	CWB-614
P020206602	20.00	50.00	10.00	2.70	2.70	FKM	CWB-675
P020201111	20.00	50.80	5.00	1.00	1.00	NBR	CWC-816
P020201102	20.00	52.00	8.00	2.50	2.50	NBR	CWC-570
P020201110	20.00	60.00	13.50	3.00	3.00	NBR	CWC-728
P020201108	20.00	60.00	13.00	4.00	4.00	NBR	CWC-653
P020201104	20.00	65.00	10.00	3.00	3.00	NBR	CWC-608
P020206601	20.00	75.00	12.00	3.00	3.00	FKM	CWC-717
P020201105	20.00	80.00	12.00	5.00	5.00	NBR	CWC-632
P020201112	20.00	100.00	23.00	8.00	8.00	NBR	CWC-874
P020201107	20.00	130.00	26.00	5.00	5.00	NBR	CWD-342
P020201001	20.00	250.00	22.00	5.00	5.00	NBR	CWE-344
P020200901	20.62	88.10	22.22	3.17	3.17	NBR	CWC-817
P020210901	21.00	43.65	6.00	3.00	3.00	NBR	CWB-672
P020211001	21.50	44.50	15.30	5.40	5.40	NBR	CWB-695
P020211101	21.70	58.00	15.30	4.20	4.20	NBR	CWC-682
P020211601	21.78	29.46	4.31	2.28	2.28	CR	CWB-691
P020221103	22.00	45.00	14.00	4.00	4.00	NBR	CWB-427
P020221101	22.00	52.00	14.00	6.00	6.00	NBR	CWC-508
P020221001	22.00	55.00	9.50	3.20	3.20	NBR	CWC-761
P020221104	22.00	58.00	16.00	4.00	4.00	NBR	CWC-628
P020221102	22.00	64.00	14.00	3.00	3.00	NBR	CWC-519
P020220801	22.47	55.24	6.34	3.12	3.12	NBR	CWC-610
P020220901	22.80	53.97	5.50	2.50	2.50	NBR	CWC-756
P020241101	24.00	32.00	10.00	5.00	5.00	NBR	CWB-607
P020241001	24.00	33.30	7.80	3.00	3.00	NBR	CWB-670
P020241102	24.00	72.00	16.00	6.00	6.00	NBR	CWC-686
P020241103	24.50	92.00	29.00	9.00	9.00	NBR	CWC-768
P020256602	25.00	36.00	3.60	2.50	2.50	FKM	CWB-587
P020251108	25.00	42.00	13.00	2.50	2.50	NBR	CWB-596

Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020251105	25.00	42.00	7.60	3.50	3.50	NBR	CWB-407
P020251002	25.00	45.00	9.00	3.50	3.50	NBR	CWB-602
P020251112	25.00	50.00	10.00	3.50	3.50	NBR	CWB-690
P020253401	25.00	50.00	10.00	3.50	3.50	EPDM	CWB-717
P020251104	25.00	50.00	12.00	3.00	3.00	NBR	CWB-566
P020251102	25.00	53.00	20.00	4.00	4.00	NBR	CWC-574
P020251101	25.00	60.00	15.00	6.00	6.00	NBR	CWC-571
P020251109	25.00	72.00	13.00	3.00	3.00	NBR	CWC-697
P020251106	25.00	72.00	15.00	4.00	4.00	NBR	CWC-622
P020251107	25.00	72.00	15.00	5.00	5.00	NBR	CWC-649
P020251005	25.00	76.00	15.00	4.00	4.00	NBR	CWC-882
P020251103	25.00	80.00	19.00	4.00	4.00	NBR	CWC-596
P020256601	25.40	50.80	11.10	3.17	3.17	FKM	CWC-481
P020251001	25.40	63.50	12.70	3.96	3.96	NBR	CWC-464
P020251003	25.40	76.20	12.70	4.76	4.76	NBR	CWC-721
P020266601	26.00	38.00	8.00	1.00	1.00	FKM	CWB-639
P020266602	26.00	52.00	12.00	3.50	3.50	FKM	CWC-796
P020261101	26.00	72.00	13.00	3.00	3.00	NBR	CWC-698
P020261002	26.00	100.00	10.00	3.00	3.00	NBR	CS-3054
P020261001	26.10	55.00	20.00	4.50	4.50	NBR	CWC-864
P020261102	26.50	45.00	18.00	3.00	3.00	NBR	CWB-635
P020271101	27.00	80.00	13.00	5.00	5.00	NBR	CWC-584
P020281102	28.00	55.00	10.00	3.00	3.00	NBR	CWC-673
P020281101	28.00	75.00	12.00	4.00	4.00	NBR	CWC-639
P020281001	28.00	127.00	20.00	4.50	4.50	NBR	CWD-319
P020291002	29.70	70.00	9.00	3.50	3.50	NBR	CWC-793
P020301001	30.00	42.00	8.00	1.60	1.60	NBR	CWB-364
P020351101	30.00	63.00	16.00	3.00	3.00	NBR	CWC-600
P020301101	30.75	210.00	20.00	5.00	5.00	NBR	CWC-681
P020316601	31.75	57.15	12.30	3.20	3.20	FKM	CWC-678
P020311002	31.75	57.15	14.00	4.00	4.00	NBR	CWC-604
P020318312	31.75	63.50	13.00	3.50	3.50	NBR	CWC-811
P020321102	32.00	44.00	7.39	2.50	2.50	NBR	CWB-625
P020326201	32.00	50.98	7.00	1.50	1.50	FKM	CWC-888
P020321101	32.00	51.00	10.00	3.50	3.50	NBR	CWC-601
P020321103	32.00	51.00	15.50	3.50	3.50	NBR	CWC-903
P020326601	32.00	100.00	19.00	5.00	5.00	FKM	CWC-785
P020322201	32.00	104.00	19.00	5.00	5.00	CR	CWD-398
P020341104	34.00	55.60	9.00	2.50	2.50	NBR	CWC-739
P020341002	34.00	65.00	17.00	3.50	3.50	NBR	CWC-787
P020341101	34.00	78.00	23.00	7.00	7.00	NBR	CWC-578
P020341102	34.00	80.00	13.00	4.00	4.00	NBR	CWC-585
P020341001	34.30	45.50	11.25	3.00	3.00	NBR	CWB-498
P02034C301	34.70	65.50	11.50	3.00	3.00	XNBR	CWC-897
P020341103	34.70	78.00	22.80	7.60	7.60	NBR	CWC-620
P020351004	35.00	75.00	13.00	4.50	4.50	NBR	CWC-802
P020352301	35.00	90.00	18.50	3.50	3.50	CR	CWC-716
P020351003	35.00	200.00	20.00	5.00	5.00	NBR	CWE-479
P020351004	35.40	65.00	13.00	4.10	4.10	NBR	CWC-866
P020361101	36.00	50.00	7.00	2.00	2.00	NBR	CWB-617
P020371101	37.00	47.50	5.00	2.00	2.00	NBR	CWB-422
P020371003	37.00	55.00	8.00	3.20	3.20	NBR	CWC-789

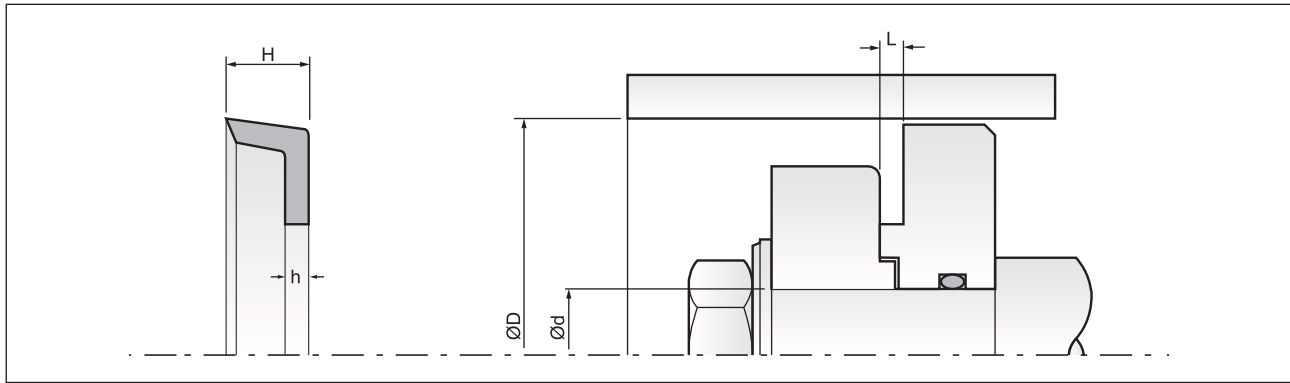
Bold sizes are readily available in stock.

Other materials are available on request.



Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020371002	37.00	55.00	7.50	3.80	3.80	NBR	CWC-788
P020371001	37.50	100.00	17.50	5.00	5.00	NBR	CWC-763
P02037C301	37.70	78.20	15.50	3.20	3.20	XNBR	CWC-898
P020381103	38.00	50.00	6.00	1.50	1.50	NBR	CWB-647
P020381101	38.00	71.00	13.50	3.50	3.50	NBR	CWC-572
P020381102	38.00	88.00	13.00	4.00	4.00	NBR	CWC-676
P020381002	38.10	50.80	9.52	3.17	3.17	NBR	CWC-695
P020381003	38.10	254.00	31.75	4.76	4.76	NBR	CWE-440
P020381004	38.50	153.00	15.00	6.00	6.00	NBR	CWE-504
P020381005	38.80	100.00	21.00	8.50	8.50	NBR	CWC-759
P020390901	39.00	102.00	14.00	6.00	6.00	NBR	CWD-412
P020391001	39.50	80.00	13.00	5.00	5.00	NBR	CWC-772
P020401102	40.00	60.00	13.00	3.50	3.50	NBR	CWC-684
P020401104	40.00	70.00	11.00	3.00	3.00	NBR	CWC-729
P020401101	40.00	78.00	15.00	4.00	4.00	NBR	CWC-640
P020401103	40.50	60.00	8.00	2.50	2.50	NBR	CWC-701
P02042V201	42.00	65.00	9.50	5.00	5.00	NBR	CWC-797
P020426401	42.50	62.60	8.00	2.00	2.00	FKM	CWC-597
P020431001	43.00	65.00	9.00	2.00	2.00	NBR	CWC-575
P020431101	43.00	130.00	23.00	5.00	5.00	NBR	CWD-335
P02044S801	44.00	64.00	7.00	2.00	2.00	NBR	CWC-908
P020441003	44.45	101.60	15.87	5.00	5.00	NBR	CWD-323
P020441002	44.45	101.60	19.05	4.80	4.80	NBR	CWD-307
P020441001	44.45	101.60	15.87	4.80	4.80	NBR	CWD-394
P02045D601	45.33	63.93	17.06	9.24	9.24	HNBR	CWC-781
P020461101	46.00	90.00	16.00	3.00	3.00	NBR	CWC-618
P02047D601	47.24	63.09	13.89	5.96	5.96	HNBR	CWC-779
P020471002	47.50	89.00	20.00	6.00	6.00	NBR	CWC-606
P020471001	47.60	114.30	15.50	3.50	3.50	NBR	CWD-320
P020481101	48.00	111.12	21.00	6.50	6.50	NBR	CWD-383
P020490601	49.50	60.00	12.00	3.00	3.00	NBR	CWC-814
P02050S801	50.00	60.00	7.00	2.00	2.00	NBR	CWC-909
P020500901	50.00	61.11	13.70	7.00	7.00	NBR	CWC-757
P020501102	50.00	70.00	20.00	3.00	3.00	NBR	CWC-625
P020501101	50.00	96.00	21.50	7.00	7.00	NBR	CWC-614
P02050C301	50.00	100.00	15.00	4.00	4.00	XNBR	CWC-915
P020501010	50.00	100.80	13.00	5.00	5.00	NBR	CWD-421
P020501104	50.00	101.60	10.00	4.00	4.00	NBR	CWD-366
P020501103	50.00	120.00	20.00	6.00	6.00	NBR	CWD-361
P020501106	50.00	140.00	15.00	3.00	3.00	NBR	CWD-373
P020501004	50.00	152.00	12.00	6.00	6.00	NBR	CWE-429
P020501105	50.00	152.40	15.00	4.00	4.00	NBR	CWE-421
P020502102	50.00	155.00	15.00	4.00	4.00	CR	CWE-683
P020501006	50.40	153.00	15.20	5.00	5.00	NBR	CWE-470
P020501011	50.80	127.00	14.00	5.00	5.00	NBR	CWD-474
P020501008	50.80	127.00	13.00	5.00	5.00	NBR	CWD-410
P020501009	50.80	152.40	14.00	4.00	4.00	NBR	CWE-593
P020501005	50.80	152.40	15.70	5.70	5.70	NBR	CWE-445
P020501108	50.80	152.40	14.00	6.00	6.00	NBR	CWE-492
P020501003	50.80	152.40	16.00	6.00	6.00	NBR	CWE-309
P020511102	51.00	77.00	12.00	5.00	5.00	NBR	CWC-805
P020511103	51.00	100.00	11.00	4.00	4.00	NBR	CWC-851

Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P020511101	51.00	155.00	14.00	4.00	4.00	NBR	CWE-425
P020521105	52.00	94.00	20.00	4.00	4.00	NBR	CWC-749
P020521101	52.00	95.00	19.00	5.00	5.00	NBR	CWC-603
P020521102	52.00	95.00	20.00	5.00	5.00	NBR	CWC-638
P020521001	52.00	153.00	19.00	7.00	7.00	NBR	CWE-576
P020521103	52.00	154.00	13.00	4.00	4.00	NBR	CWE-424
P020521106	52.20	94.00	20.50	6.20	6.20	NBR	CWC-750
P020521104	52.50	95.00	21.50	6.00	6.00	NBR	CWC-726
P02052S801	52.70	73.70	7.00	2.00	2.00	NBR	CWC-910
P020531101	53.50	94.00	20.00	5.00	5.00	NBR	CWC-683
P020531102	53.50	98.00	20.00	5.00	5.00	NBR	CWC-733
P020541101	54.00	95.00	21.00	6.00	6.00	NBR	CWC-577
P020541001	54.00	125.00	20.00	5.00	5.00	NBR	CWD-321
P020553401	55.50	70.00	5.50	2.80	2.80	EPDM	CWC-713
P020554501	55.50	70.00	5.50	2.80	2.80	VMQ	CWC-714
P020551101	55.50	75.00	12.00	3.00	3.00	NBR	CWC-826
P020566601	56.80	80.00	11.30	2.80	2.80	FKM	CWC-827
P020591101	59.50	82.55	13.30	3.32	3.32	NBR	CWC-681
P02060S801	60.00	70.00	7.00	2.00	2.00	NBR	CWC-911
P020601001	60.00	100.00	10.00	2.50	2.50	NBR	CWC-473
P020601101	60.00	117.00	15.00	3.00	3.00	NBR	CWD-424
P020601003	60.00	140.00	20.00	5.00	5.00	NBR	CWD-357
P020601002	60.00	153.00	28.00	5.00	5.00	NBR	CWE-318
P02060D601	60.96	75.23	14.37	6.14	6.14	HNBR	CWC-780
P020626401	62.00	100.00	18.00	4.00	4.00	FKM	CWC-561
P020620901	62.60	78.58	15.80	9.50	9.50	NBR	CWC-754
P020636601	63.20	132.00	19.00	4.00	4.00	FKM	CWD-464
P020630801	63.88	81.66	16.10	9.70	9.70	NBR	CWC-611
P020651103	65.00	90.00	12.00	3.00	3.00	NBR	CWC-918
P020651102	65.00	90.00	12.00	3.00	3.00	NBR	CWC-644
P020651101	65.00	100.00	10.00	3.00	3.00	NBR	CWC-579
P020651001	65.40	82.55	7.00	3.70	3.70	NBR	CWC-831
P020691002	69.00	143.00	14.00	3.00	3.00	NBR	CWD-392
P020691101	69.70	118.00	16.20	3.20	3.20	NBR	CWD-376
P020691001	69.85	114.30	15.87	3.96	3.96	NBR	CWD-378
P020701003	70.00	85.00	9.50	3.50	3.50	NBR	CWC-777
P020701102	70.00	110.00	15.00	3.00	3.00	NBR	CWD-349
P020701101	70.00	140.00	16.00	4.00	4.00	NBR	CWD-329
P020721001	72.00	125.00	16.70	2.50	2.50	NBR	CWD-387
P020730801	73.00	86.91	15.00	7.50	7.50	NBR	CWC-753
P020730601	73.91	91.18	16.00	7.87	7.87	NBR	CWC-609
P020751001	75.00	105.00	12.00	3.00	3.00	NBR	CWD-324
P020751003	75.00	205.00	21.00	6.00	6.00	NBR	CWE-489
P020751002	75.50	254.50	21.00	7.00	7.00	NBR	CWE-361
P020750801	75.70	204.50	17.00	6.00	6.00	NBR	CWE-594
P020761103	76.00	113.00	16.50	3.00	3.00	NBR	CWD-471
P020761004	76.00	115.00	11.00	3.00	3.00	NBR	CWD-446
P020761101	76.00	115.00	11.00	3.00	3.00	NBR	CWD-433
P020761003	76.00	130.00	17.00	5.00	5.00	NBR	CWD-399
P020761102	76.00	152.40	15.80	3.20	3.20	NBR	CWE-658
P020761005	76.00	200.00	15.00	6.00	6.00	NBR	CWE-686
P020761002	76.20	381.00	32.00	7.00	7.00	NBR	CWE-360



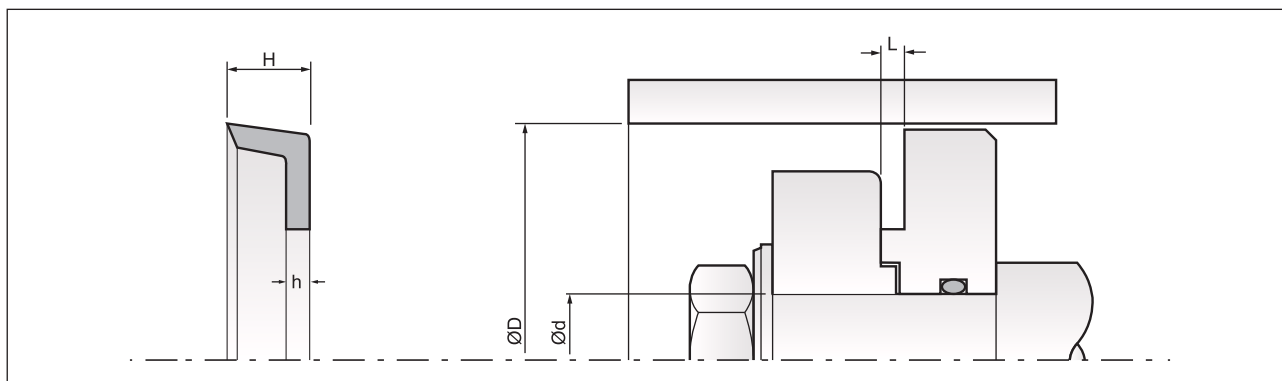
Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.	Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P02076D501	76.60	152.40	21.91	5.00	5.00	HNBR	CWE-610	P021301002	130.00	160.00	14.00	3.00	3.00	NBR	CWE-513
P020771001	77.00	101.60	12.00	3.00	3.00	NBR	CWD-402	P021306601	130.00	160.00	14.00	3.00	3.00	FKM	CWE-477
P020776601	77.50	100.00	13.00	5.00	5.00	FKM	CWC-543	P021301003	130.00	160.00	15.00	3.00	3.00	NBR	CWE-516
P020781101	78.00	100.00	12.00	3.00	3.00	NBR	CWC-633	P021301001	130.00	160.00	14.50	4.00	4.00	NBR	CWE-382
P020781102	78.00	152.40	19.05	4.76	4.76	NBR	CWE-533	P021306301	130.00	160.00	14.50	4.00	4.00	FKM	CWE-659
P020781001	78.50	100.00	11.50	3.50	3.50	NBR	CWC-794	P021301103	130.00	197.00	25.00	4.00	4.00	NBR	CWE-626
P020801101	80.00	137.00	15.00	3.00	3.00	NBR	CWD-423	P021331002	133.35	203.20	19.00	4.80	4.80	NBR	CWE-329
P020801102	80.00	160.00	24.00	5.00	5.00	NBR	CWE-696	P02133C301	133.40	208.00	20.50	4.75	4.75	XNBR	CWE-691
P020802201	80.96	152.40	19.05	4.45	4.45	CR	CWE-707	P021351001	135.89	203.20	25.40	5.00	5.00	NBR	CWE-354
P020811101	81.00	100.00	15.50	7.80	7.80	NBR	CWC-762	P021391001	139.00	158.00	8.25	4.34	4.34	NBR	CWE-689
P020851101	85.00	150.00	18.00	7.00	7.00	NBR	CWD-380	P021400801	140.00	186.00	17.00	4.00	4.00	NBR	CWE-510
P020881002	88.90	203.20	22.23	6.35	6.35	NBR	CWE-368	P021421101	142.50	152.50	22.00	5.00	5.00	NBR	CWE-411
P020951002	95.00	125.00	14.00	3.50	3.50	NBR	CWD-325	P021451001	145.00	175.00	12.00	2.50	2.50	NBR	CWE-531
P020951003	95.00	157.00	20.00	5.00	5.00	NBR	CWE-519	P021451101	145.00	203.00	22.00	4.00	4.00	NBR	CWE-416
P020963301	96.00	108.80	6.00	3.20	3.20	EPDM	CWD-390	P021471101	147.70	203.20	26.00	7.00	7.00	NBR	CWE-375
P020964401	96.00	108.80	6.00	3.20	3.20	VMQ	CWD-391	P021481001	148.00	200.00	20.00	9.00	9.00	NBR	CWE-423
P021004101	100.00	125.00	16.00	5.50	5.50	VMQ	CWD-404	P021500701	150.00	210.00	25.00	6.00	6.00	NBR	CWE-386
P021001101	100.00	127.00	16.00	5.00	5.00	NBR	CWD-346	P021501101	150.00	217.00	25.00	4.00	4.00	NBR	CWE-627
P021001002	100.00	145.00	15.00	3.00	3.00	NBR	CWD-445	P021501001	150.00	315.00	28.00	6.00	6.00	NBR	CWE-474
P021001103	100.00	145.00	15.00	3.00	3.00	NBR	CWD-385	P021541101	154.00	165.70	5.00	2.00	2.00	NBR	CWE-389
P021006601	100.00	152.40	15.50	5.50	5.50	FKM	CWE-717	P021546501	154.00	165.70	5.00	2.00	2.00	FKM	CWE-560
P021001104	100.00	157.00	18.00	3.50	3.50	NBR	CWE-624	P021606601	160.00	200.00	15.00	3.00	3.00	FKM	CWE-578
P021002201	100.00	306.00	22.00	8.00	8.00	CR	CWE-434	P021602201	160.00	280.00	25.00	5.00	5.00	CR	CWE-517
P021001102	100.00	309.00	21.50	9.50	9.50	NBR	CWE-410	P021646601	164.00	200.00	3.50	16.00	16.00	FKM	CWE-340
P021011102	101.60	304.80	22.00	10.00	10.00	NBR	CWE-597	P021656602	165.00	200.00	14.00	3.00	3.00	FKM	CWE-478
P021026601	102.50	153.00	15.00	5.80	5.80	FKM	CWE-534	P021656401	165.00	200.00	15.00	3.00	3.00	FKM	CWE-682
P021040901	104.00	121.84	18.50	12.30	12.30	NBR	CWD-395	P021656601	165.00	220.00	19.50	4.20	4.20	FKM	CWE-431
P021061001	106.00	134.00	18.50	4.30	4.30	NBR	CWD-372	P021651003	165.00	255.00	21.50	10.00	10.00	NBR	CWE-426
P021071101	107.50	150.00	25.00	6.00	6.00	NBR	CWD-343	P02165C301	165.00	259.00	25.40	6.35	6.35	XNBR	CWE-690
P021092201	109.00	150.00	14.00	3.00	3.00	CR	CWD-425	P021651002	165.10	203.20	20.00	10.00	10.00	NBR	CWE-417
P021101101	110.00	160.00	15.00	3.50	3.50	NBR	CWE-413	P02165D601	165.10	228.60	19.05	4.76	4.76	HNBR	CWE-490
P021101102	110.00	170.00	20.00	6.00	6.00	NBR	CWE-473	P021651001	165.10	250.82	21.50	10.00	10.00	NBR	CWE-415
P021101001	110.00	170.00	20.00	6.00	6.00	NBR	CWE-674	P021681001	168.50	203.20	15.00	3.50	3.50	NBR	CWE-341
P021102201	110.00	200.50	25.00	5.00	5.00	CR	CWE-471	P021691101	169.00	221.00	31.00	7.50	7.50	NBR	CWE-586
P02113D601	113.43	130.81	18.71	9.22	9.22	HNBR	CWD-403	P021701102	170.00	237.00	25.00	4.00	4.00	NBR	CWE-629
P021146601	114.30	152.40	10.00	2.50	2.50	FKM	CWE-393	P021701103	170.00	240.00	20.50	4.50	4.50	NBR	CWE-687
P021151001	115.20	151.50	17.00	4.25	4.25	NBR	CWE-673	P021701101	170.00	240.00	20.50	4.50	4.50	NBR	CWE-427
P021200801	120.00	154.00	13.50	3.30	3.30	NBR	CWE-541	P021770901	177.80	254.00	31.75	6.35	6.35	NBR	CWE-700
P021201101	120.00	165.00	19.50	5.00	5.00	NBR	CWE-385	P021801101	180.00	250.00	25.00	4.00	4.00	NBR	CWE-436
P021201102	120.00	170.00	20.00	4.00	4.00	NBR	CWE-394	P02871101	187.32	254.00	19.05	4.76	4.76	NBR	CWE-636
P021201103	120.00	177.00	18.00	3.50	3.50	NBR	CWE-625	P021901101	190.00	257.00	25.00	4.00	4.00	NBR	CWE-628
P021201005	120.00	184.15	26.50	3.50	3.50	NBR	CWE-588	P021901001	190.50	254.00	22.22	6.35	6.35	NBR	CWE-620
P021201003	120.00	200.00	18.00	4.50	4.50	NBR	CWE-550	P021901001	190.50	304.00	28.00	6.50	6.50	NBR	CWE-547
P021201004	120.00	200.00	20.00	4.50	4.50	NBR	CWE-552	P021981101	198.00	280.00	22.00	5.50	5.50	NBR	CWE-530
P021206401	120.65	152.40	13.50	3.00	3.00	FKM	CWE-120	P022001001	200.00	305.00	23.50	7.00	7.00	NBR	CWE-498
P021216601	121.79	152.40	14.28	3.17	3.17	FKM	CWE-630	P022036601	203.00	255.00	29.00	8.00	8.00	FKM	CWE-522
P021231001	123.00	152.40	15.00	3.00	3.00	NBR	CWE-515	P022051001	205.00	250.00	17.00	4.00	4.00	NBR	CWE-357
P021236401	123.10	152.40	12.70	3.17	3.17	FKM	CWE-598	P022076601	207.56	254.00	19.05	4.82	4.82	FKM	CWE-570
P021251101	125.00	150.00	20.00	5.00	5.00	NBR	CWD-409	P022091102	209.00	307.00	24.50	5.30	5.30	NBR	CWE-409
P021271001	127.00	406.40	38.10	4.74	4.74	NBR	CWE-524	P022091101	209.55	292.50	19.05	4.76	4.76	NBR	CWE-345
P021301102	130.00	160.00	15.00	2.50	2.50	NBR	CWE-583	P022101101	210.00	250.00	20.00	5.00	5.00	NBR	CWE-137
P021306602	130.00	160.00	15.00	2.50	2.50	FKM	CWE-501	P022150901	215.00	254.00	17.50	10.00	10.00	NBR	CWE-544

Bold sizes are readily available in stock.

Other materials are available on request.

P02

Single Acting Piston Seal

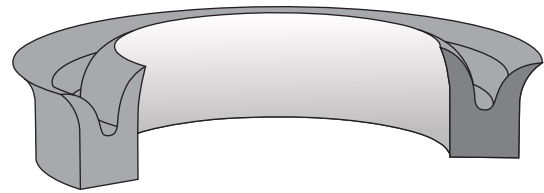


Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P022151001	215.90	304.80	31.75	6.35	6.35	NBR	CWE-336
P022251101	225.00	300.00	25.00	5.00	5.00	NBR	CWE-432
P022281101	228.00	300.00	20.00	5.00	5.00	NBR	CWE-438
P022291001	229.00	306.00	25.00	3.80	3.80	NBR	CWE-527
P022401002	240.00	310.00	27.00	5.00	5.00	NBR	CWE-558
P022401001	240.00	315.00	32.00	5.00	5.00	NBR	CWE-497
P022456501	245.00	300.00	20.00	5.30	5.30	FKM	CWE-551
P022501101	250.00	355.00	28.00	8.00	8.00	NBR	CWE-453
P022512001	251.00	309.00	22.00	5.00	5.00	CR	CWE-472
P022546501	254.00	269.00	9.00	2.50	2.50	FKM	CWE-561
P022551001	255.00	300.00	20.00	4.50	4.50	NBR	CWE-358
P022576601	257.00	307.50	20.00	5.00	5.00	FKM	CWE-503
P022606701	260.35	335.60	31.75	5.00	5.00	FKM	CWE-535
P022601001	260.35	355.60	30.80	5.00	5.00	NBR	CWE-337
P022641004	264.00	352.50	20.00	8.00	8.00	NBR	CWE-677
P022641003	264.00	354.50	20.00	8.00	8.00	NBR	CWE-676
P022651002	265.00	353.50	20.00	8.00	8.00	NBR	CWE-422
P022661003	266.00	354.00	26.50	6.00	6.00	NBR	CWE-543
P022661002	266.50	355.60	22.50	6.00	6.00	NBR	CWE-494
P022661001	266.70	352.42	23.00	10.00	10.00	NBR	CWE-414
P022701004	270.00	345.00	25.00	8.00	8.00	NBR	CWE-563
P022701003	270.00	357.00	26.00	6.00	6.00	NBR	CWE-428
P022721101	272.00	330.00	25.00	5.00	5.00	NBR	CWE-350
P022801001	280.00	357.20	30.00	6.00	6.00	NBR	CWE-539
P022901003	290.00	340.00	22.00	6.00	6.00	NBR	CWE-480
P022911001	291.00	361.95	26.50	5.00	5.00	NBR	CWE-587
P023001002	300.00	350.00	25.00	5.00	5.00	NBR	CWE-485
P023001003	300.00	360.00	29.50	5.00	5.00	NBR	CWE-546
P023050801	305.00	380.00	26.50	9.00	9.00	NBR	CWE-568
P023061001	306.00	355.60	32.00	6.35	6.35	NBR	CWE-514
P023201001	320.00	404.00	25.00	5.00	5.00	NBR	CWE-437
P023251001	325.00	406.00	25.00	5.00	5.00	NBR	CWE-408
P023251002	325.00	415.00	30.00	6.00	6.00	NBR	CWE-487

Part No.	d	D	H	h	L (+0.2)	Matl.	Mould No.
P023351001	335.00	400.00	31.00	5.00	5.00	NBR	CWE-607
P023361001	336.50	400.00	31.50	6.00	6.00	NBR	CWE-606
P023451001	345.00	460.00	32.00	5.30	5.30	NBR	CWE-365
P023501001	350.00	400.00	20.00	4.50	4.50	NBR	CWE-359
P023551001	355.00	455.00	25.00	5.00	5.00	NBR	CWE-648
P023558301	355.60	406.40	25.40	6.35	6.35	NBR	CWE-714
P023566601	356.00	460.00	35.00	5.00	5.00	FKM	CWE-712
P023631101	363.50	427.50	33.00	5.90	5.90	NBR	CWE-362
P023696601	369.00	384.00	7.00	2.50	2.50	FKM	CWE-642
P024121001	412.00	475.00	31.50	5.50	5.50	NBR	CWE-579
P024176601	417.00	434.00	7.00	2.50	2.50	FKM	CWE-643
P024201001	420.00	500.00	35.00	5.00	5.00	NBR	CWE-580
P024301001	430.00	490.00	35.00	5.00	5.00	NBR	CWE-571
P024391001	439.00	514.00	30.00	8.00	8.00	NBR	CWE-520
P024440801	444.50	552.45	28.57	4.74	4.74	NBR	CWE-695
P024651101	465.00	560.00	40.00	5.00	5.00	NBR	CWE-433
P024881001	488.60	540.00	24.00	4.00	4.00	NBR	CWE-521
P024920801	492.00	559.00	26.00	4.00	4.00	NBR	CWE-569
P024931001	493.60	545.00	24.00	4.00	4.00	NBR	CWE-537
P025001001	500.00	600.00	35.00	10.00	10.00	NBR	CWE-484
P025001002	500.00	600.00	36.00	10.00	10.00	NBR	CWE-562
P025101001	510.00	550.00	27.00	4.00	4.00	NBR	CWE-608
P025201001	520.00	610.00	40.00	5.00	5.00	NBR	CWE-447
P025351001	535.00	610.00	32.00	6.00	6.00	NBR	CWE-556
P025401001	540.00	610.00	40.00	5.00	5.00	NBR	CWE-482
P025601102	560.00	620.00	21.00	5.50	5.50	NBR	CWE-435
P025771001	577.00	661.00	28.00	4.50	4.50	NBR	CWE-321
P027161001	716.00	816.00	47.00	6.00	6.00	NBR	CWE-540
P027630801	763.00	812.50	26.50	7.50	7.50	NBR	CWE-704
P028101101	810.00	850.00	30.00	6.00	6.00	NBR	CWE-476
P028351001	835.00	932.00	35.00	5.00	5.00	NBR	CWE-538
P029991001	1010.00	1148.00	52.50	13.50	13.50	NBR	SLO-760
P022201001	220.00	300.00	18.00	6.00	6.00	NBR	CWE-616

DETAILS

P10 is a single acting seal with U-shaped cross-section specially developed for use in pneumatic applications. Its asymmetric profile with long sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy installation.
- Low friction.
- Minimise friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P10 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

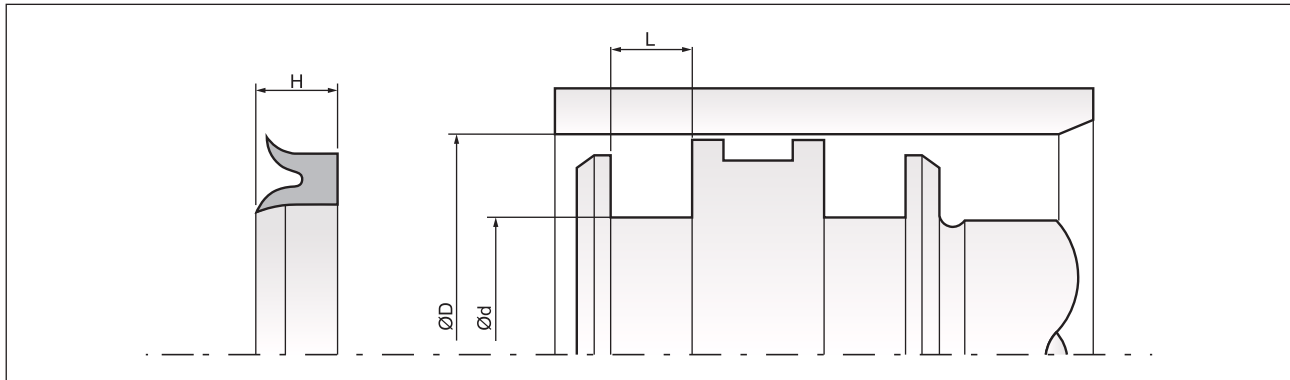
Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

P10

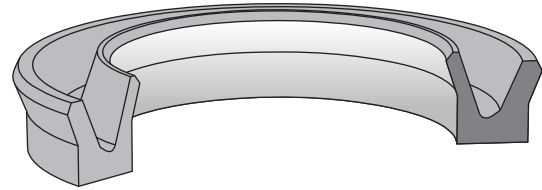
Single Acting Piston Cup Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.	Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P100034001	9.50	3.17	4.46	3.96	VMQ	SUA-951	P100351002	51.00	35.10	10.00	9.50	NBR	SUC-2351
P100074401	14.29	7.93	4.56	4.06	VMQ	SUA-1403	P100470901	60.32	47.62	6.85	6.35	NBR	SUC-1148
P100079801	15.87	7.93	6.05	5.55	VMQ	SUA-1172	P100471003	60.33	47.63	6.85	6.35	NBR	SUC-1086
P100111002	17.40	11.92	3.70	3.20	NBR	SUA-1420	P100480901	61.00	48.30	6.60	6.10	NBR	SUC-2727
P10009001	18.00	9.00	7.00	6.50	NBR	SUA-1400	P100481001	63.50	48.00	10.00	9.50	NBR	SUC-1862
P100126501	19.05	12.70	3.67	3.17	FKM	SUA-2409	P100461101	64.00	46.30	9.35	8.85	NBR	SUC-2409
P100120701	19.05	12.70	5.50	5.00	NBR	SUA-1063	P100440901	65.87	44.45	8.80	8.30	FKM	SUC-1743
P100130701	22.00	13.00	6.30	5.80	NBR	SUA-1401	P100430801	70.00	43.00	13.50	12.50	NBR	SUC-1644
P100131001	22.22	13.49	6.50	6.00	NBR	SUB-2614	P100511001	70.00	51.40	9.50	9.00	NBR	SUC-1454
P100090701	24.00	9.00	8.40	7.90	NBR	SUA-1402	P100550801	70.00	55.00	10.90	10.40	NBR	SUC-1654
P100120805	25.00	12.00	6.50	6.00	NBR	SUA-1227	P100611001	76.00	61.00	8.50	8.00	NBR	SUD-394
P1001500601	25.00	15.00	7.00	6.50	NBR	SUA-1488	P100571101	76.20	57.15	13.70	12.70	NBR	SUD-141
P100196501	25.00	19.00	3.75	3.25	FKM	SUA-1538	P100600901	79.37	60.32	13.70	12.70	NBR	SUD-979
P100191002	25.40	19.05	6.85	6.35	NBR	SUB-1480	P100606602	80.00	60.00	10.50	10.00	FKM	SUD-1497
P100160801	25.79	16.27	5.20	4.70	NBR	SUB-2410	P100656601	80.00	65.00	20.00	19.00	FKM	SUD-1093
P100170901	26.98	17.46	6.85	6.35	NBR	SUB-1871	P100686501	80.00	68.00	9.00	8.50	FKM	SUD-890
P100196502	28.57	19.05	6.85	6.35	FKM	SUB-3664	P100631001	82.55	63.50	13.50	12.50	NBR	SUD-1389
P100191004	29.36	19.84	6.65	6.15	NBR	SUB-2360	P100650801	84.62	65.78	7.09	6.59	NBR	SUD-1354
P100141001	30.00	14.00	7.50	7.00	NBR	SUB-2347	P100730901	85.73	73.03	10.02	9.52	NBR	SUD-894
P100180601	30.00	18.00	8.70	8.20	NBR	SUB-2456	P100786601	90.00	78.00	9.00	8.50	FKM	SUD-1775
P100200801	30.00	20.00	6.90	6.40	NBR	SUB-3350	P100760902	95.25	76.20	6.85	6.35	NBR	SUD-973
P100200901	30.00	20.50	6.70	6.20	NBR	SUB-4050	P100761001	95.25	76.20	13.50	12.50	NBR	SUD-1388
P100201001	30.00	20.50	6.85	6.35	NBR	SUB-559	P100750801	100.00	75.00	13.00	12.00	NBR	SUD-1265
P100220902	30.00	22.00	6.00	5.50	NBR	SUB-4067	P100830805	100.00	83.00	8.80	8.30	NBR	SUD-1164
P100231001	30.00	23.00	4.40	3.90	NBR	SUB-1980	P100856603	100.00	85.00	8.50	8.00	FKM	SUD-835
P100206401	31.00	20.00	7.30	6.80	FKM	SUB-2685	P100881002	100.00	87.00	9.10	8.60	NBR	SUD-1061
P100190901	31.75	19.05	8.70	8.20	NBR	SUB-2490	P100900901	100.00	90.00	4.80	4.30	NBR	SUD-1044
P100240901	32.00	24.00	7.00	6.50	NBR	SUB-2380	P100881001	101.60	88.90	10.02	9.52	NBR	SUE-592
P100210801	33.33	21.00	5.80	5.30	NBR	SUB-1589	P100881003	110.00	88.90	16.80	15.80	NBR	SUE-829
P100240902	34.00	24.00	6.60	6.10	NBR	SUB-3751	P101050901	125.00	105.00	10.50	10.00	NBR	SUE-731
P100221001	34.92	22.22	6.75	6.25	NBR	SUB-2361	P101106601	125.00	110.00	10.50	10.00	FKM	SUE-779
P100221002	34.92	22.22	7.00	6.50	NBR	SUB-2388	P101146601	127.00	114.30	6.50	6.00	FKM	SUF-599
P100220901	34.93	22.22	6.85	6.35	NBR	SUB-1647	P101141001	137.00	114.30	18.00	17.00	NBR	SUF-574
P100276501	35.00	27.00	3.75	3.25	FKM	SUB-2472	P101300901	150.00	130.00	10.50	10.00	NBR	SUF-524
P100230601	36.00	23.00	10.50	10.00	NBR	SUB-2179	P101270901	153.00	127.60	16.90	15.90	NBR	SUG-393
P100260901	38.00	26.00	8.20	7.70	NBR	SUB-2203	P101276501	153.00	127.60	16.90	15.90	FKM	SUG-478
P100271001	38.50	27.00	10.50	10.00	NBR	SUB-2582	P101331001	159.00	133.00	19.00	18.00	NBR	SUG-583
P10027L401	38.50	27.00	10.50	10.00	PU	PUB-1043	P101411001	167.00	141.30	20.00	19.00	NBR	SUG-510
P10027L401	38.50	27.00	10.50	10.00	PU	PUB-959	P101451001	176.50	145.50	17.00	16.00	NBR	SUH-393
P100276401	40.00	27.30	6.85	6.35	FKM	SUB-3922	P101800901	200.00	180.00	15.00	14.00	NBR	SUH-298
P100320901	40.00	32.00	6.00	5.50	NBR	SUB-2485	P101631001	201.00	163.50	20.00	19.00	NBR	SUJ-474
P100350901	49.21	35.23	10.02	9.52	NBR	SUB-1648	P101656601	203.20	165.10	19.50	18.50	FKM	SUJ-330
P100366801	50.00	36.00	9.50	9.00	FKM	SUB-1665	P101686601	203.20	168.28	19.50	18.50	FKM	SUJ-259
P100396601	50.00	39.00	7.50	7.00	FKM	SUB-2237	P101861001	244.00	186.00	24.00	23.00	NBR	SUK-258
P100401001	50.00	40.00	7.50	7.00	NBR	SUB-3610	P102296601	253.00	229.00	8.50	8.00	FKM	SUM-380
P100400901	50.00	40.00	7.50	7.00	NBR	SUB-1667	P102220801	254.73	222.77	19.50	18.50	NBR	SUM-157
P100406401	50.00	40.00	8.50	8.00	FKM	SUB-2653	P102700901	295.00	270.00	13.50	12.50	NBR	SUM-106
P100400801	50.00	40.00	8.50	8.00	NBR	SUB-3298	P103066601	340.00	306.00	15.00	14.00	FKM	SUM-593
P100321001	50.80	32.00	10.20	9.70	NBR	SUC-785	P103120901	363.00	312.00	20.00	19.00	NBR	SUM-600
P100366401	50.80	36.80	6.50	6.00	FKM	SUC-2772	P105601002	613.00	560.00	30.00	29.00	NBR	SUVG-333

DETAILS

P11 is a single acting pneumatic piston seal with U-shaped cross-section. Its asymmetric profile with longer and thicker static sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy installation.
- Low friction.
- Minimise friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P11 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

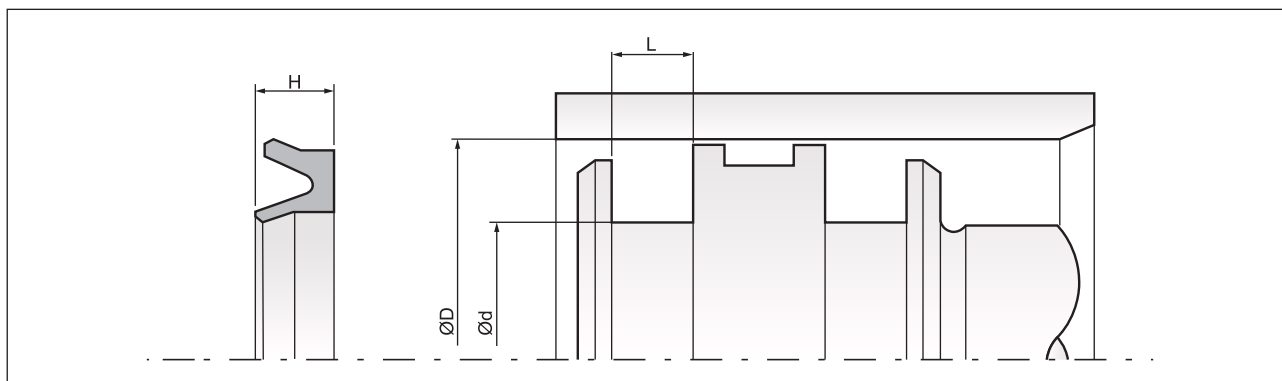
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

P11

Single Acting Piston Cup Seal

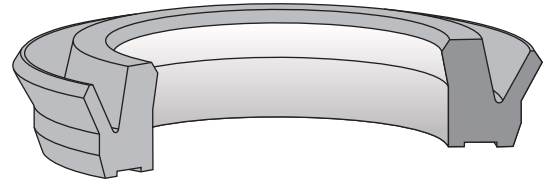


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P110043201	8.00	4.80	3.50	3.00	EPDM	SUA-1073
P110060901	12.00	6.50	3.10	2.60	NBR	SUA-1678
P110096401	14.00	9.00	3.30	2.80	FKM	SUA-1526
P110081001	16.00	8.00	5.50	5.00	NBR	SUA-1077
P110101001	16.00	10.00	2.95	2.45	NBR	SUA-906
P110111001	16.00	11.00	3.50	3.00	NBR	SUA-2063
P110126601	17.50	12.00	5.50	5.00	FKM	SUA-1103
P110126401	18.00	12.00	3.00	2.50	FKM	SUA-1528
P110090601	19.05	9.52	5.50	5.00	NBR	SUA-1301
P110120801	19.05	12.70	6.30	5.80	NBR	SUA-1302
P110121001	20.00	12.00	5.00	4.50	NBR	SUA-1071
P110146701	20.00	14.00	2.95	2.45	FKM	SUA-950
P110141101	20.00	14.00	3.00	2.50	NBR	SUA-1193
P110140901	23.80	14.30	6.85	6.35	NBR	SUA-827
P110121101	25.00	12.00	5.50	5.00	NBR	SUA-919
P110191001	25.00	19.00	3.80	3.30	NBR	SUA-1096
P11020L502	28.00	20.00	4.50	4.00	PU	PUB-2116
P110201101	28.00	20.00	5.50	5.00	NBR	SUB-1720
P110240701	28.00	24.00	4.50	4.00	NBR	SUB-2403
P110240701	28.00	24.00	4.50	4.00	NBR	SUB-3327
P110203401	28.30	20.00	6.50	6.00	EPDM	SUB-2435
P110231001	31.68	23.87	5.95	5.45	NBR	SUB-2529
P110241001	32.00	24.00	6.00	5.50	NBR	SUB-1787
P110240901	32.00	24.00	6.50	6.00	NBR	SUB-2581
P110241002	35.00	24.00	6.00	5.50	NBR	SUB-1825
P110300701	35.00	30.00	5.50	5.00	NBR	SUB-2404
P110300701	35.00	30.00	5.50	5.00	NBR	SUB-3328
P110250901	38.10	25.40	8.42	7.92	NBR	SUB-1608
P110291001	38.10	29.00	5.00	4.50	NBR	SUB-2940
P110291002	38.10	29.85	7.50	7.00	NBR	SUB-4019
P110316602	38.10	31.75	5.26	4.76	FKM	SUB-1403
P110316601	38.10	31.75	8.22	7.72	FKM	SUB-1377
P110281001	40.00	28.00	7.00	6.50	NBR	SUB-2382
P110301001	40.00	30.00	7.50	7.00	NBR	SUB-3176
P11030L401	40.00	30.00	7.50	7.00	PU	PUB-801
P110320901	40.00	32.00	3.90	3.40	NBR	SUB-2511
P110361002	45.00	36.00	5.00	4.50	NBR	SUB-2138
P110371101	45.00	37.00	3.75	3.25	NBR	SUB-1743
P110406601	48.00	40.00	8.50	8.00	FKM	PUB-717
P110401001	50.00	40.00	7.20	6.70	NBR	SUB-2521
P11040L401	50.00	40.00	7.50	7.00	PU	PUB-802
P110401002	50.00	40.00	7.50	7.00	NBR	SUB-3177
P110421101	50.00	42.00	3.75	3.25	NBR	SUB-1831

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P11042L401	50.00	42.00	3.90	3.40	PU	PUB-1113
P110451001	56.50	45.00	9.00	8.50	NBR	SUC-1024
P110426601	58.00	42.00	8.30	7.80	FKM	SUC-1541
P11052L401	63.00	52.00	7.50	7.00	PU	PUC-598
P110586101	70.00	58.00	10.00	9.00	FKM	SUC-1421
P110601001	76.50	60.00	8.75	8.25	NBR	SUD-1715
P110651001	80.00	65.00	8.50	8.00	NBR	SUD-1657
P110651002	80.00	65.00	10.00	9.00	NBR	SUD-1755
P110696501	80.77	69.35	7.50	7.00	FKM	SUD-623
P110706601	82.00	70.50	7.10	6.60	FKM	SUD-1470
P110736601	82.55	73.02	7.63	7.13	FKM	SUD-2004
P110736601	82.55	73.02	7.63	7.13	FKM	SUD-815
P110820901	92.07	82.55	7.63	7.13	NBR	SUD-779
P11088L501	100.00	88.00	9.00	8.50	PU	PUD-518
P11088L401	100.00	88.00	9.00	8.50	PU	PUD-729
P110881001	100.00	88.00	9.00	8.50	NBR	SUD-1656
P110881002	101.60	88.50	8.50	8.00	NBR	SUE-1287
P111101001	121.00	110.00	10.50	9.50	NBR	SUE-567
P11110L401	124.50	110.00	7.50	7.00	PU	PUE-354
P111046602	125.00	104.00	13.00	12.00	FKM	SUE-890
P111051001	125.00	105.00	8.75	8.25	NBR	SUE-654
P111051101	125.00	105.00	8.75	8.25	NBR	SUE-713
P111071101	125.00	107.00	13.50	12.50	NBR	SUE-750
P111101002	125.00	110.00	11.00	10.00	NBR	SUE-824
P111011001	127.00	101.60	17.00	16.00	NBR	SUF-633
P111151001	127.00	115.57	8.50	8.00	NBR	SUF-912
P111301101	150.00	130.00	10.20	9.20	NBR	SUF-681
P111306601	150.00	130.00	11.00	10.00	FKM	SUF-790
P111371001	152.40	137.40	10.50	9.50	NBR	SUG-513
P111391001	152.40	139.00	9.00	8.50	NBR	SUG-779
P111386601	158.50	138.00	11.00	10.00	FKM	SUG-516
P111401002	160.00	140.00	8.50	8.00	NBR	SUG-739
P111401001	160.00	140.00	13.00	12.00	NBR	SUG-678
P111451001	160.00	145.00	10.50	9.50	NBR	SUG-677
P111451002	160.00	145.00	11.00	10.00	NBR	SUG-718
P111486601	160.00	148.00	10.00	9.00	FKM	SUG-362
P111830901	203.00	183.00	24.00	23.00	NBR	SUJ-313
P111876601	203.00	187.00	10.50	9.50	FKM	SUJ-306
P111820901	203.20	182.56	24.81	23.81	NBR	SUJ-314
P111861001	203.20	186.69	10.50	9.50	NBR	SUJ-409
P112281001	254.00	228.60	13.70	12.70	NBR	SUM-524
P112351001	260.00	235.00	15.30	14.30	NBR	SUM-539
P112701001	300.00	270.00	16.00	15.00	NBR	SUM-139

DETAILS

P12 single-acting piston seal for pneumatic application is designed to give better performance in low lube air conditions and is used for both long and short stroke applications. The standard material for P12 is Polyurethane for excellent low temperature performance and long service life. It is a proven design for heavy-duty pneumatic applications. Its asymmetric profile with long sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy installation.
- Low friction.
- Minimise friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P12 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Polyurethane 92 Shore A.

OPERATING CONDITIONS

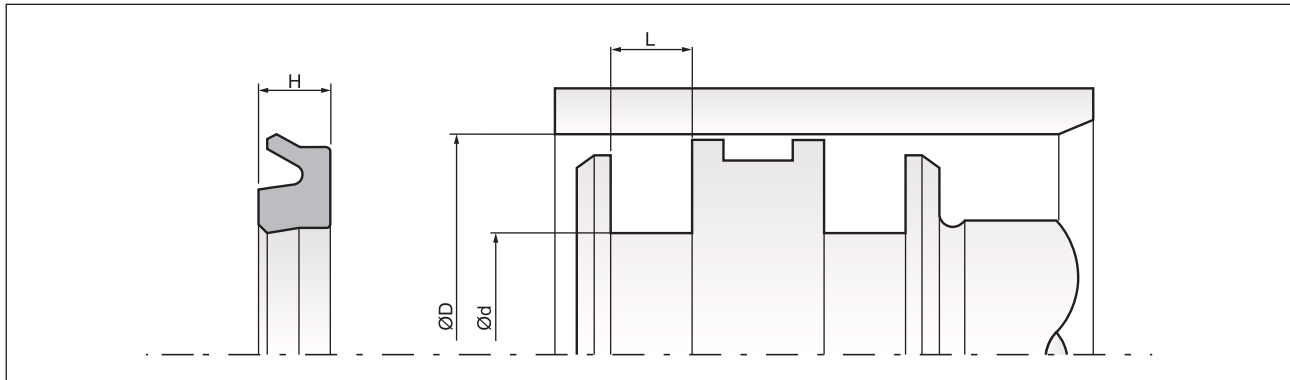
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

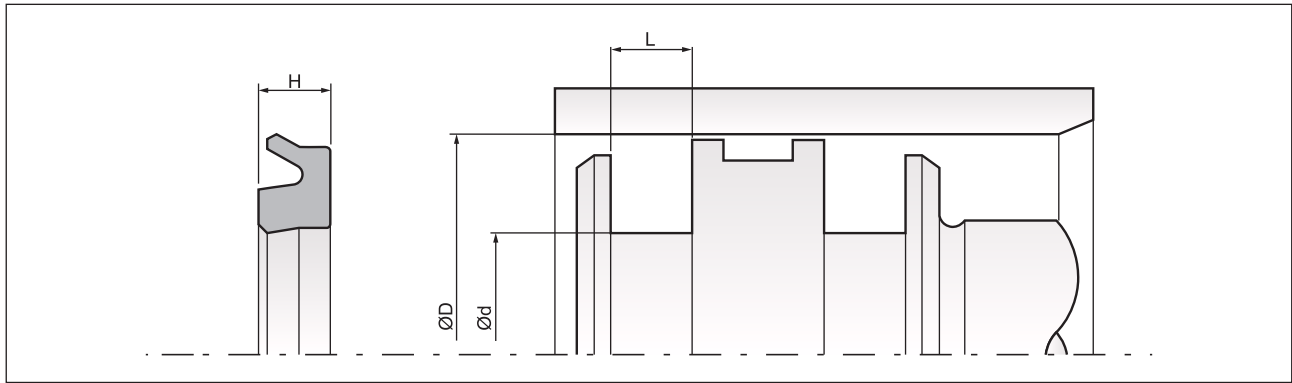
P12

Single Acting Piston Cup Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120030Q201	6.00	3.00	2.50	2.00	PU	PUA-763
P120033402	8.00	3.90	3.90	3.40	EPDM	SUA-900
P120033402	8.00	3.90	3.90	3.40	EPDM	SUA-780
P120046601	8.00	4.00	3.00	2.50	FKM	SUA-2329
P120041002	8.00	4.00	3.05	2.55	NBR	SUA-2325
P120041001	8.00	4.50	2.80	2.30	NBR	SUA-2058
P120040901	8.00	4.80	2.80	2.30	NBR	SUA-1289
P120040901	8.00	4.80	2.80	2.30	NBR	SUA-1779
P12004L401	8.00	4.80	2.95	2.45	PU	PUA-656
P12005L501	8.00	5.00	3.00	2.50	PU	PUA-861
P120050902	10.00	5.00	3.50	3.00	NBR	SUA-2061
P120050901	10.00	5.00	3.50	3.00	NBR	SUA-1788
P120060902	10.00	6.00	2.70	2.20	NBR	SUA-2210
P120061004	10.00	6.00	2.90	2.40	NBR	SUA-2241
P12006Q201	10.00	6.00	2.90	2.40	PU	PUA-711
P120066601	10.00	6.00	3.00	2.50	FKM	SUA-728
P120061101	10.00	6.00	3.00	2.50	NBR	SUA-105
P12006L502	10.00	6.00	3.00	2.50	PU	PUA-859
P12006Q203	10.00	6.00	3.50	3.00	PU	PUA-869
P120061002	11.00	6.00	3.80	3.30	NBR	SUA-1344
P120060L501	12.00	6.00	4.00	3.50	PU	PUA-712
P12066602	12.00	6.00	4.00	3.50	FKM	SUA-1994
P120060802	12.00	6.00	4.50	4.00	NBR	SUA-2410
P120060903	12.00	6.00	5.00	4.50	NBR	SUA-2386
P120071006	12.00	7.00	2.90	2.40	NBR	SUA-2240
P120076601	12.00	7.00	3.00	2.50	FKM	SUA-726
P120075902	12.00	7.00	3.00	2.50	PU	PUA-612
P12007L501	12.00	7.00	3.00	2.50	PU	PUA-765
P120070902	12.00	7.00	3.05	2.55	NBR	SUA-2029
P12007L401	12.00	7.00	3.05	2.55	PU	PUA-655
P120085901	12.00	8.00	3.00	2.50	PU	PUA-844
P120080901	12.00	8.00	3.30	2.80	NBR	SUA-2209
P120080801	12.00	8.00	3.50	3.00	NBR	SUA-1747
P120060801	13.00	6.00	5.30	4.80	NBR	SUA-2140
P120070901	13.00	7.00	5.20	4.70	NBR	SUA-1649
P120070801	13.00	7.50	4.50	4.00	NBR	SUA-2142
P120086601	13.00	8.00	3.10	2.60	FKM	SUA-1989
P120081002	14.00	8.00	3.00	2.50	NBR	SUA-2060
P12008L401	14.00	8.00	3.00	2.50	PU	PUA-851
P120086502	14.00	8.00	3.00	2.50	FKM	SUA-2219
P120080903	14.00	8.00	3.05	2.55	NBR	SUA-2260
P120081001	14.00	8.00	4.90	4.40	NBR	SUA-1647
P120090801	15.00	9.00	2.80	2.30	NBR	SUA-1677
P120096601	15.00	9.00	2.80	2.30	FKM	SUA-1680
P120110801	15.00	11.00	3.30	2.80	NBR	SUA-2404
P120091001	15.30	9.60	3.05	2.55	NBR	SUA-1632
P120081003	16.00	8.00	6.50	6.00	NBR	SUA-2151
P120101002	16.00	10.00	2.95	2.45	NBR	SUA-1777
P120106601	16.00	10.00	3.00	2.50	FKM	SUA-642
P120101101	16.00	10.00	3.00	2.50	NBR	SUA-102
P12010L401	16.00	10.00	3.05	2.55	PU	PUA-429
P120105901	16.00	10.00	3.05	2.55	PU	PUA-835

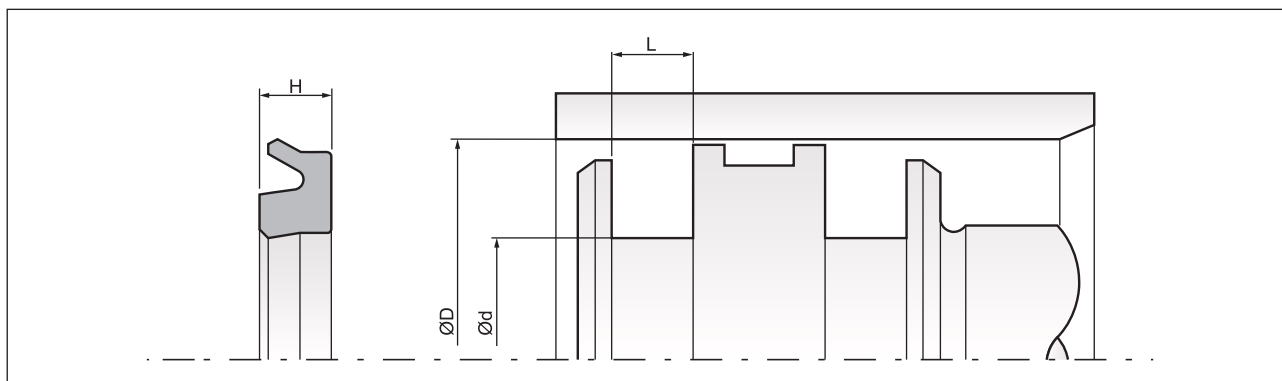
Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P12010L501	16.00	10.00	3.05	2.55	PU	PUA-764
P120101003	16.00	10.00	3.05	2.55	NBR	SUA-2317
P120106402	16.00	10.00	3.15	2.65	FKM	SUA-2086
P120106604	16.00	10.00	3.30	2.80	FKM	SUA-1988
P120106401	16.00	10.00	3.50	3.00	FKM	SUA-1147
P12010Q201	16.00	10.00	4.50	4.00	PU	PUA-559
P120106602	16.00	10.00	5.00	4.50	FKM	SUA-815
P120110902	16.00	11.00	2.90	2.40	NBR	SUA-1425
P120111001	16.00	11.00	3.05	2.55	NBR	SUA-2326
P120121002	16.48	12.14	3.17	2.67	NBR	SUA-1560
P120116601	17.00	11.00	3.50	3.00	FKM	SUA-1993
P12011L501	17.00	11.00	3.50	3.00	PU	PUA-680
P120121003	17.00	12.00	3.20	2.70	NBR	SUA-1744
P120094301	17.18	9.80	3.10	2.60	VMQ	SUA-1243
P120080701	18.00	8.00	6.50	6.00	NBR	SUA-2323
P120126601	18.00	12.00	3.00	2.50	FKM	SUA-1095
P120121004	18.00	12.00	3.05	2.55	NBR	SUA-2064
P120126603	18.00	12.00	3.20	2.70	FKM	SUA-2085
P120126602	18.00	12.00	3.20	2.70	FKM	SUA-1990
P12012L401	18.00	12.00	4.50	4.00	PU	PUA-487
P120131001	18.00	13.00	3.30	2.80	NBR	SUA-1718
P120130902	18.00	13.00	3.50	3.00	NBR	SUA-2270
P12013Q201	18.00	13.00	3.50	3.00	PU	PUA-787
P12014L401	18.00	14.00	2.50	2.00	PU	PUA-775
P120071003	19.00	7.00	6.50	6.00	NBR	SUA-2011
P120130901	19.00	13.00	5.10	4.60	NBR	SUA-2016
P120071004	20.00	7.00	6.50	6.00	NBR	SUA-2012
P120106605	20.00	10.00	7.50	7.00	FKM	SUA-2311
P120121001	20.00	12.00	3.60	3.10	NBR	SUA-1363
P120120806	20.00	12.00	6.20	5.70	NBR	SUA-1299
P12014L501	20.00	14.00	3.00	2.50	PU	PUA-334
P120140901	20.00	14.00	3.00	2.50	NBR	SUA-2493
P120141006	20.00	14.00	3.05	2.55	NBR	SUA-2066
P120146601	20.00	14.00	3.05	2.55	FKM	SUA-1055
P120146603	20.00	14.00	3.05	2.55	FKM	SUA-1690
P120141003	20.00	14.00	3.20	2.70	NBR	SUA-1689
P120141004	20.00	14.00	3.70	3.20	NBR	SUA-1345
P120140802	20.00	14.00	4.30	3.80	NBR	SUA-2141
P120140801	20.00	14.00	5.30	4.80	NBR	SUA-2133
P120141005	20.00	14.00	6.70	6.20	NBR	SUA-1609
P120146604	20.00	14.00	7.50	7.00	FKM	SUA-2312
P12015L501	20.00	15.00	3.20	2.70	PU	PUA-937
P120161003	20.00	16.00	3.30	2.80	NBR	SUA-1716
P12016G601	22.00	16.00	3.05	2.55	FKM	SUA-1942
P12016B602	22.00	16.00	4.00	3.50	FKM	SUA-1943
P120161002	22.00	16.00	4.00	3.50	NBR	SUA-1699
P12016BG03	22.00	16.00	5.50	5.00	FKM	SUA-1941
P120171002	22.00	17.00	3.20	2.70	NBR	SUA-1717
P120120801	22.22	12.70	6.50	6.00	NBR	SUA-882
P120150901	22.22	15.95	4.10	3.60	NBR	SUA-1806
P120126501	22.25	12.00	5.50	5.00	FKM	SUA-1108
P120126501	22.25	12.00	5.50	5.00	FKM	SUA-1230



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.	Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120120901	22.25	12.10	5.50	5.00	NBR	SUA-1141	P12024L406	32.00	24.00	3.75	3.25	PU	PUB-1288
P120110901	22.50	11.00	5.50	5.00	NBR	SUA-1125	P122045901	32.00	24.00	3.75	3.25	PU	PUB-373
P120171003	23.00	17.00	3.65	3.15	NBR	SUA-1760	P120241003	32.00	24.00	3.75	3.25	NBR	SUB-2638
P120171001	23.42	17.00	3.65	3.15	NBR	SUA-1633	P12024L409	32.00	24.00	3.75	3.25	PU	PUB-1400
P12016L402	24.00	16.00	5.50	5.00	PU	PUA-728	P12024Q202	32.00	24.00	3.75	3.25	PU	PUB-1825
P12016Q201	24.00	16.00	6.00	5.50	PU	PUA-881	P120240905	32.00	24.00	3.75	3.25	NBR	SUB-3838
P120151002	25.00	15.00	6.10	5.60	NBR	SUA-515	P120246604	32.00	24.00	3.80	3.30	FKM	SUB-3122
P120170301	25.00	17.00	6.00	5.50	NBR	SUA-1134	P120241006	32.00	24.00	3.80	3.30	NBR	SUB-3444
P12017Q201	25.00	17.00	6.00	5.50	PU	PUA-880	P120241005	32.00	24.00	3.80	3.30	NBR	SUB-2959
P120171004	25.00	17.00	6.90	6.40	NBR	SUA-1797	P120241004	32.00	24.00	4.00	3.50	NBR	SUB-2751
P12017L401	25.00	17.35	6.00	5.50	PU	PUA-464	P120246605	32.00	24.00	5.50	5.00	FKM	SUB-3580
P120196401	25.00	19.00	3.50	3.00	FKM	SUA-2319	P120241008	32.00	24.00	5.70	5.20	NBR	SUB-3468
P120191010	25.00	19.00	3.75	3.25	NBR	SUA-2249	P120246602	32.00	24.00	5.80	5.30	FKM	SUB-3013
P12019Q201	25.00	19.00	3.75	3.25	PU	PUA-882	P12024L501	32.00	24.00	6.00	5.50	PU	PUB-414
P12019L501	25.00	19.00	3.75	3.25	PU	PUA-177	P120246601	32.00	24.00	6.00	5.50	FKM	SUB-1408
P120196603	25.00	19.00	3.75	3.25	FKM	SUA-1708	P12024L405	32.00	24.00	6.00	5.50	PU	PUB-1187
P120196602	25.00	19.00	3.80	3.30	FKM	SUA-1707	P12024L408	32.00	24.00	6.00	5.50	PU	PUB-1396
P120191006	25.00	19.00	3.80	3.30	NBR	SUA-1778	P12024Q201	32.00	24.00	6.00	5.50	PU	PUB-1567
P12019L502	25.00	19.00	4.00	3.50	PU	PUA-481	P12024Q203	32.00	24.00	6.00	5.50	PU	PUB-1822
P12019U202	25.00	19.00	5.80	5.30	FKM	SUA-2435	P120240801	32.00	24.00	6.00	5.50	NBR	SUB-4012
P120211002	25.00	21.00	3.20	2.70	NBR	SUA-1764	P120241009	32.00	24.00	6.80	6.30	NBR	SUB-3696
P12021L501	25.00	21.00	3.20	2.70	PU	PUA-670	P120246606	32.00	24.00	6.80	6.30	FKM	SUB-4035
P120156501	25.52	15.10	6.00	5.50	FKM	SUB-2074	P120240904	32.00	24.00	7.30	6.80	NBR	SUB-3450
P12020L401	26.00	20.00	6.30	5.80	PU	PUB-1595	P12024L401	32.00	24.00	8.30	7.80	PU	PUB-695
P12017T201	26.99	17.46	6.85	6.35	VMQ	SUB-3220	P12025L502	32.00	25.00	5.50	5.00	PU	PUB-855
P120171101	27.00	17.00	7.10	6.60	NBR	SUB-3921	P12025L402	32.00	25.00	6.00	5.50	PU	PUB-1023
P120199801	28.00	18.00	7.50	7.00	PU	PUB-1916	P12025L401	32.00	25.00	7.50	7.00	PU	PUB-1104
P120206601	28.00	20.00	2.90	2.40	FKM	SUB-3782	P120241011	32.75	24.13	6.80	6.30	NBR	SUB-4206
P120200902	28.00	20.00	5.50	5.00	NBR	SUB-2618	P120211101	34.00	21.00	6.50	6.00	NBR	SUB-3920
P120201001	28.00	20.00	5.50	5.00	NBR	SUB-2428	P120221001	34.00	22.00	6.70	6.20	NBR	SUB-2746
P120206701	28.00	20.00	6.90	6.40	FKM	SUB-2370	P120241010	34.00	24.00	7.30	6.80	NBR	SUB-3737
P120211001	28.00	21.00	6.50	6.00	NBR	SUB-1554	P120261001	34.00	26.00	5.80	5.30	NBR	SUB-4038
P120221003	28.00	22.00	3.75	3.25	NBR	SUB-3480	P120260801	34.00	26.30	6.20	5.70	NBR	SUB-3973
P12022L402	28.00	22.00	3.75	3.25	PU	PUB-1686	P120202201	35.00	20.00	11.00	10.00	CR	SUB-2246
P12022Q201	28.00	22.00	3.75	3.25	PU	PUB-1819	P120251005	35.00	25.00	6.10	5.60	NBR	SUB-3278
P12022L401	28.00	22.00	6.30	5.80	PU	PUB-1594	P120251004	35.00	25.00	6.70	6.20	NBR	SUB-3015
P12022V201	28.00	22.00	6.30	5.80	NBR	SUB-3440	P120256702	35.00	25.00	6.80	6.30	FKM	SUB-3206
P120220901	28.50	22.22	4.10	3.60	NBR	SUB-3018	P120251002	35.00	25.00	7.50	7.00	NBR	SUB-2787
P120170801	28.57	17.57	7.20	6.70	NBR	SUB-2223	P120270901	35.00	27.00	3.70	3.20	NBR	SUB-2378
P120200901	29.00	20.00	6.00	5.50	NBR	SUB-2371	P120271001	35.00	27.00	3.75	3.25	NBR	SUB-2467
P120201002	30.00	20.00	6.70	6.20	NBR	SUB-2745	P120271001	35.00	27.00	3.75	3.25	NBR	SUB-1216
P12022Q202	30.00	22.00	3.75	3.25	PU	PUB-1818	P120271001	35.00	27.00	3.75	3.25	NBR	SUB-1302
P120220902	30.00	22.00	3.75	3.25	NBR	SUB-3746	P12027U201	35.00	27.00	3.75	3.25	FKM	SUB-2813
P120221004	30.00	22.00	3.75	3.25	NBR	SUB-3939	P12027L401	35.00	27.00	4.00	3.50	PU	PUB-1306
P12024L411	30.00	24.00	6.30	5.80	PU	PUB-1635	P120280801	35.00	28.00	6.50	6.00	NBR	SUB-2873
P120191007	32.00	19.00	7.30	6.80	NBR	SUB-3547	P120286402	35.00	28.00	6.50	6.00	FKM	SUB-4010
P120195903	32.00	19.00	8.50	8.00	PU	PUB-1057	P120286501	35.00	28.75	5.20	4.70	FKM	SUB-2715
P120200801	32.00	20.00	7.00	6.50	NBR	SUB-1116	P120286401	36.00	28.00	6.50	6.00	FKM	SUB-2962
P120200802	32.00	20.00	9.00	8.50	NBR	SUB-3723	P120280802	36.60	28.60	3.10	2.60	NBR	SUB-3317
P120220801	32.00	22.00	10.00	9.00	NBR	SUB-3722	P120290901	37.00	29.00	3.75	3.25	NBR	SUB-3361
P120241101	32.00	24.00	3.50	3.00	NBR	SUB-2958	P12029L501	37.00	29.00	3.75	3.25	PU	PUB-1624
P120246603	32.00	24.00	3.50	3.00	FKM	SUB-3041	P120300901	37.00	30.00	6.50	6.00	NBR	SUB-3385

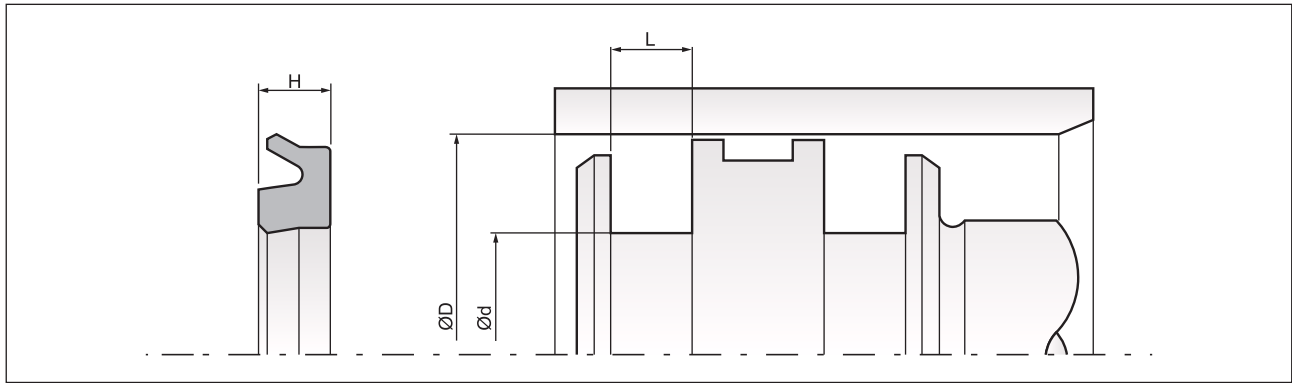
P12

Single Acting Piston Cup Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120251003	37.50	25.40	6.80	6.30	NBR	SUB-3002
P120251008	38.00	25.00	7.00	6.50	NBR	SUB-3546
P120251007	38.00	25.00	7.30	6.80	NBR	SUB-3510
P120281001	38.00	28.00	6.10	5.60	NBR	SUB-3058
P120301005	38.00	30.00	3.75	3.25	NBR	SUB-3526
P12030L403	38.00	30.00	3.80	3.30	PU	PUB-1282
P12030L401	38.00	30.00	6.00	5.50	PU	PUB-960
P120280901	38.10	28.57	5.83	5.33	NBR	SUB-2157
P120301101	38.10	30.15	6.06	5.56	NBR	SUB-4022
P120271002	39.00	27.00	6.00	5.50	NBR	SUB-1488
P120291101	39.00	29.00	5.50	5.00	NBR	SUB-3178
P12030Q201	39.00	30.00	7.50	7.00	PU	PUB-1245
P120310901	39.68	31.75	3.75	3.25	NBR	SUB-114
P120256501	40.00	25.00	8.50	8.00	FKM	SUB-2997
P120271101	40.00	27.50	6.50	6.00	NBR	SUB-2161
P120288901	40.00	28.00	4.50	4.00	PU	PUB-1915
P120293501	40.00	29.00	7.50	7.00	EPDM	SUB-2754
P120300902	40.00	30.00	6.40	5.90	NBR	SUB-3451
P12030L404	40.00	30.00	7.30	6.80	PU	PUB-1335
P120301003	40.00	30.00	7.40	6.90	NBR	SUB-3011
P120304501	40.00	30.00	7.50	7.00	VMQ	SUB-2931
P12030L406	40.00	30.00	7.50	7.00	PU	PUB-1395
P120306401	40.00	30.00	7.50	7.00	FKM	SUB-2930
P12030L402	40.00	30.00	7.50	7.00	PU	PUB-1008
P120302201	40.00	30.00	7.50	7.00	CR	SUB-2269
P120308901	40.00	30.00	7.50	7.00	PU	PUB-1429
P120306604	40.00	30.00	7.50	7.00	FKM	SUB-3590
P12030X402	40.00	30.00	7.50	7.00	PU	PUB-1870
P120306605	40.00	30.00	7.50	7.00	FKM	SUB-4187
P120305901	40.00	30.70	7.00	6.50	PU	PUB-1533
P120321001	40.00	32.00	3.70	3.20	NBR	SUB-3318
P12032L402	40.00	32.00	3.75	3.25	PU	PUB-1399
P120326601	40.00	32.00	3.75	3.25	FKM	SUB-1214
P120321001	40.00	32.00	3.75	3.25	NBR	SUB-1370
P120321001	40.00	32.00	3.75	3.25	NBR	SUB-2376
P120325902	40.00	32.00	3.75	3.25	PU	PUB-1924
P120321005	40.00	32.00	3.75	3.25	NBR	SUB-3733
P12032Q202	40.00	32.00	3.75	3.25	PU	PUB-1824
P12032L401	40.00	32.00	3.80	3.30	PU	PUB-1176
P120321003	40.00	32.00	3.80	3.30	NBR	SUB-3698
P120328701	40.00	32.00	4.30	3.80	PU	PUB-1232
P120301004	40.00	32.00	5.80	5.30	NBR	SUB-3285
P12032Q201	40.00	32.00	6.50	6.00	PU	PUB-1262
P120321004	40.00	32.00	6.80	6.30	NBR	SUB-3699
P12032CF01	40.00	32.00	6.80	6.30	PU	PUB-1932
S020321004	40.00	32.00	8.50	8.00	NBR	SUB-3871
P12033X401	40.00	33.70	4.50	4.00	PU	PUB-1857
P120320901	41.00	32.00	6.70	6.20	NBR	SUB-3680
P12032L403	42.00	32.00	6.00	5.50	PU	PUB-1550
P120330901	44.00	33.00	9.20	8.70	NBR	SUB-3957
P120366601	44.00	36.00	4.10	3.60	FKM	SUB-2894
P120341001	44.40	34.80	6.30	5.80	NBR	SUB-2998

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120283201	44.45	28.57	8.42	7.92	EPDM	SUB-3392
P120335901	45.00	33.00	10.00	9.00	PU	PUB-2117
P120330902	45.00	33.00	10.00	9.00	NBR	SUB-4168
P120371002	45.00	37.00	3.75	3.25	NBR	SUB-3481
P12037Q201	45.00	37.00	3.75	3.25	PU	PUB-1823
P120376501	45.00	37.00	4.00	3.50	FKM	SUB-3678
P120376601	45.00	37.00	4.10	3.60	FKM	SUB-2828
P120351002	47.00	35.00	7.20	6.70	NBR	SUB-3509
P12035X801	48.70	35.80	13.00	12.00	PU	PUB-1576
P120371001	49.00	37.00	7.00	6.50	NBR	SUB-2218
P120366602	50.00	30.00	13.00	12.00	FKM	SUB-2700
P120351001	50.00	35.00	8.90	8.40	NBR	SUB-3426
P120361001	50.00	36.00	7.50	7.00	NBR	SUB-3545
P120386601	50.00	38.00	6.52	6.02	FKM	SUB-4204
P120401003	50.00	40.00	4.00	3.50	NBR	SUB-2717
P12040L403	50.00	40.00	5.50	5.00	PU	PUB-1397
P120401006	50.00	40.00	5.50	5.00	NBR	SUB-3057
P120401004	50.00	40.00	6.50	6.00	NBR	SUB-2864
P120401008	50.00	40.00	7.00	6.50	NBR	SUB-4027
P120406401	50.00	40.00	7.30	6.80	FKM	SUB-3470
P120408901	50.00	40.00	7.50	7.00	PU	PUB-1430
P12040L404	50.00	40.00	7.50	7.00	PU	PUB-1479
P120400901	50.00	40.00	7.50	7.00	NBR	SUB-2994
P120401001	50.00	40.00	7.50	7.00	NBR	SUB-2838
P12040S401	50.00	40.00	7.50	7.00	HNBR	SUB-2919
P12040L401	50.00	40.00	7.50	7.00	PU	PUB-615
P120406603	50.00	40.00	7.50	7.00	FKM	SUB-2515
P12040Q202	50.00	40.00	7.50	7.00	PU	PUB-1821
P120406601	50.00	40.00	7.50	7.00	FKM	SUB-1382
P120401005	50.00	40.00	8.00	7.50	NBR	SUB-2976
P120401002	50.00	40.00	10.00	9.00	NBR	SUB-1421
P120406602	50.00	40.00	11.00	10.00	FKM	SUB-1437
P120405902	50.00	40.70	7.00	6.50	PU	PUB-1530
P120416602	50.00	41.00	6.50	6.00	FKM	SUB-3803
P120410801	50.00	41.00	8.50	8.00	NBR	SUB-3870
P12042L401	50.00	42.00	3.70	3.20	PU	PUB-1157
P12042L402	50.00	42.00	3.75	3.25	PU	PUB-170
P120421101	50.00	42.00	3.75	3.25	NBR	SUB-1201
P120426601	50.00	42.00	3.75	3.25	FKM	SUB-1030
P120426603	50.00	42.00	3.75	3.25	FKM	SUB-2666
P12042L403	50.00	42.00	3.75	3.25	PU	PUB-1398
P120421005	50.00	42.00	3.75	3.25	NBR	SUB-3527
P12042Q202	50.00	42.00	3.75	3.25	PU	PUB-1820
P120421008	50.00	42.00	3.75	3.25	NBR	SUB-3938
P12042Q203	50.00	42.00	3.75	3.25	PU	PUB-1920
P12042L503	50.00	42.00	3.75	3.25	PU	PUB-2032
P120426401	50.00	42.00	3.80	3.30	FKM	SUB-2178
P120421010	50.00	42.00	3.80	3.30	NBR	SUB-1462
P120426606	50.00	42.00	3.80	3.30	FKM	SUB-3360
P120420802	50.00	42.00	3.80	3.30	NBR	SUB-4001
P120426605	50.00	42.00	3.90	3.40	FKM	SUB-2926
P120426604	50.00	42.00	4.00	3.50	FKM	SUB-2850

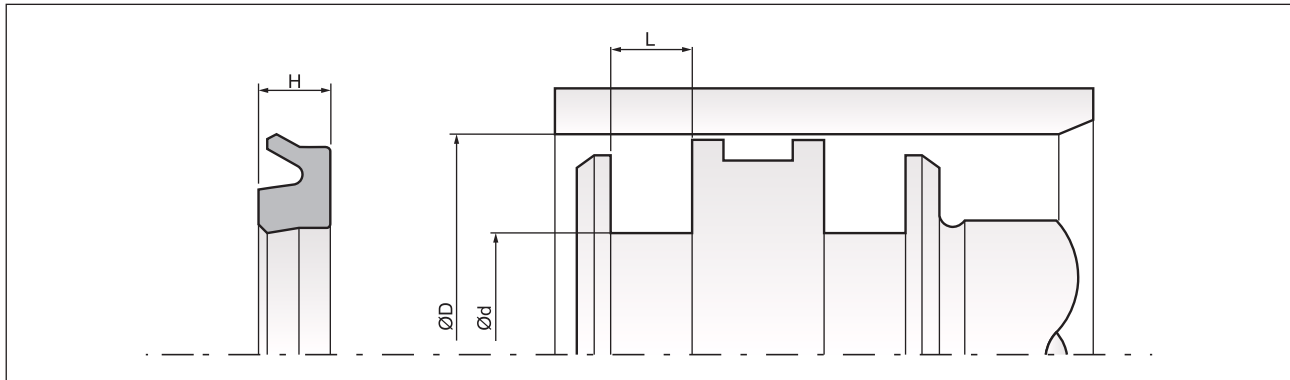


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120424301	50.00	42.00	4.00	3.50	VMQ	SUB-3021
P120426607	50.00	42.00	4.00	3.50	FKM	SUB-3936
P120421004	50.00	42.00	5.70	5.20	NBR	SUB-2999
P120420901	50.00	42.00	7.50	7.00	NBR	SUB-3452
P120421003	50.00	42.00	8.50	8.00	NBR	SUB-956
P12042L501	50.00	42.00	11.20	10.20	PU	PUB-1427
P120430901	50.00	43.00	3.75	3.25	NBR	SUB-4066
P120431001	50.00	43.00	4.20	3.70	NBR	SUB-3860
P120436601	50.00	43.50	3.50	3.00	FKM	SUB-3192
P120394301	50.80	39.50	5.30	4.80	VMQ	SUC-2776
P120421007	51.00	42.00	5.00	4.50	NBR	SUC-2522
P120421006	52.00	42.00	4.75	4.25	NBR	SUC-2468
P12047L502	54.00	47.00	4.80	4.30	PU	PUC-672
P120401007	55.00	40.00	12.80	11.80	NBR	SUC-2263
P120451001	55.00	45.00	7.50	7.00	NBR	SUC-1950
P12048L401	56.00	48.00	5.50	5.00	PU	PUC-1283
P120411001	57.00	41.50	8.50	8.00	NBR	SUC-2607
P120475901	57.15	47.62	5.26	4.76	PU	PUC-1389
P12050L401	59.00	50.00	7.50	7.00	PU	PUC-1284
P120516601	59.00	51.00	6.40	5.90	FKM	SUC-1498
P12044L501	60.00	44.00	12.50	11.50	PU	PUC-980
P120481101	60.00	48.00	8.00	7.50	NBR	SUC-1242
P120501004	60.00	50.00	7.50	7.00	NBR	SUC-2361
P120500901	60.00	50.00	7.50	7.00	NBR	SUC-2643
P120506701	60.00	50.00	10.00	9.00	FKM	SUC-2729
P120441002	62.00	44.00	10.00	9.00	NBR	SUC-2694
P120531011	62.00	53.00	6.50	6.00	NBR	SUC-2470
P12054L402	62.00	54.00	7.50	7.00	PU	PUC-1237
P120496401	62.50	49.50	7.50	7.00	FKM	SUC-2384
P120511001	63.00	51.00	11.00	10.00	NBR	SUC-2063
P120516502	63.00	51.00	15.00	14.00	FKM	SUC-2048
P120530801	63.00	53.00	4.20	3.70	NBR	SUC-1774
P120536602	63.00	53.00	4.75	4.25	FKM	SUC-1846
P120531102	63.00	53.00	4.75	4.25	NBR	SUC-1212
P120531009	63.00	53.00	4.75	4.25	NBR	SUC-2264
P120535903	63.00	53.00	4.75	4.25	PU	PUC-344
P12053Q201	63.00	53.00	4.75	4.25	PU	PUC-1002
P12053L406	63.00	53.00	4.75	4.25	PU	PUC-966
P12053Q202	63.00	53.00	4.75	4.25	PU	PUC-1297
P12053Q205	63.00	53.00	4.75	4.25	PU	PUC-1357
P120535905	63.00	53.00	4.80	4.30	PU	PUC-1118
P120536603	63.00	53.00	4.80	4.30	FKM	SUC-1932
P120530901	63.00	53.00	6.50	6.00	NBR	SUC-2305
P120531002	63.00	53.00	7.00	6.50	NBR	SUC-1570
P120536605	63.00	53.00	7.00	6.50	FKM	SUC-2454
P120531003	63.00	53.00	7.50	7.00	NBR	SUC-2265
P12053L405	63.00	53.00	7.50	7.00	PU	PUC-965
P120536401	63.00	53.00	7.50	7.00	FKM	SUC-759
P12053L404	63.00	53.00	7.50	7.00	PU	PUC-743
P12053L401	63.00	53.00	7.50	7.00	PU	PUC-549
P12053Q203	63.00	53.00	7.50	7.00	PU	PUC-1298
P120531010	63.00	53.00	8.00	7.50	NBR	SUC-2297

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120535904	63.00	53.50	7.30	6.80	PU	PUC-1042
P120541001	63.00	54.00	6.70	6.20	NBR	SUC-2484
P120551002	63.00	55.00	7.50	7.00	NBR	SUC-2701
P120471001	63.50	47.62	10.52	9.52	NBR	SUC-2532
P120481001	63.50	48.00	10.50	9.50	NBR	SUC-283
P12053L502	63.50	53.95	6.80	6.30	PU	PUC-791
P120536402	63.50	53.97	6.85	6.35	FKM	SUC-1977
P120480901	65.00	48.00	9.00	8.50	NBR	SUC-1725
P120501005	65.00	50.00	11.00	10.00	NBR	SUC-2612
P120501003	65.00	50.00	11.80	10.80	NBR	SUC-2356
P120500701	65.00	50.00	12.00	11.00	NBR	SUC-2683
P12051L501	65.00	51.00	3.70	3.20	PU	PUC-943
P12055U201	65.00	55.00	7.50	7.00	FKM	SUC-1943
P120092301	67.00	9.00	21.00	20.00	CR	SUC-2477
P120142301	67.00	14.00	21.00	20.00	CR	SUC-2476
P120516501	67.07	51.21	8.50	8.00	FKM	SUC-1751
P120530501	69.85	53.97	9.00	8.50	NBR	SUC-2699
P120510801	70.00	51.00	9.00	8.50	NBR	SUC-2648
P120520901	70.00	52.50	9.00	8.50	NBR	SUC-2045
P120540902	70.00	54.00	6.50	6.00	NBR	SUC-1296
P120581001	70.00	58.00	7.50	7.00	NBR	SUC-452
P12058D601	70.00	58.00	7.50	7.00	HNBR	SUC-2811
P120608901	70.00	60.00	16.00	15.00	PU	PUC-1159
P120621001	70.00	62.00	6.20	5.70	NBR	SUC-1297
P120648701	70.00	64.00	5.00	4.50	PU	PUC-1367
P12062T201	73.00	62.00	8.50	8.00	VMQ	SUC-2804
P120626601	73.02	62.30	9.00	8.50	FKM	SUC-1877
P120551001	74.00	55.00	13.00	12.00	NBR	SUC-2365
P120561001	75.00	56.00	12.00	11.00	NBR	SUC-2357
P120581002	75.00	58.00	10.00	9.00	NBR	SUC-2613
P12065Q201	75.00	65.00	6.20	5.70	PU	PUC-1296
P120651001	75.00	65.00	7.00	6.50	NBR	SUC-1250
P120600801	76.00	60.00	10.10	9.10	NBR	SUD-1543
P120616601	76.00	61.00	8.50	8.00	FKM	SUD-1800
P12067D601	77.40	67.70	8.00	7.50	HNBR	SUD-1371
P120680901	78.00	68.00	8.50	8.00	NBR	SUD-1873
P120641001	79.00	64.00	8.30	7.80	NBR	SUD-1660
P120696601	79.00	69.00	4.65	4.15	FKM	SUD-1366
P120601001	80.00	60.00	11.00	10.00	NBR	SUD-1620
P12060L501	80.00	60.00	11.30	10.30	PU	PUD-756
P120646501	80.00	64.00	8.30	7.80	FKM	SUD-1357
P120646601	80.00	64.00	8.53	8.03	FKM	SUD-2146
P120658901	80.00	65.00	12.40	11.40	PU	PUD-1081
P120660903	80.00	66.00	6.50	6.00	NBR	SUD-1810
P120660902	80.00	66.90	12.70	11.70	NBR	SUD-1778
P12066L401	80.00	66.90	13.70	12.70	PU	PUD-765
P120676501	80.00	67.00	10.00	9.00	FKM	SUD-2116
P120671001	80.00	67.00	10.00	9.00	NBR	SUD-2006
P120676601	80.00	67.30	6.85	6.35	FKM	SUD-1533
P120681002	80.00	68.00	6.90	6.40	NBR	SUD-809
P120681004	80.00	68.00	7.50	7.00	NBR	SUD-1639
P12068Q201	80.00	68.00	8.50	8.00	PU	PUD-719

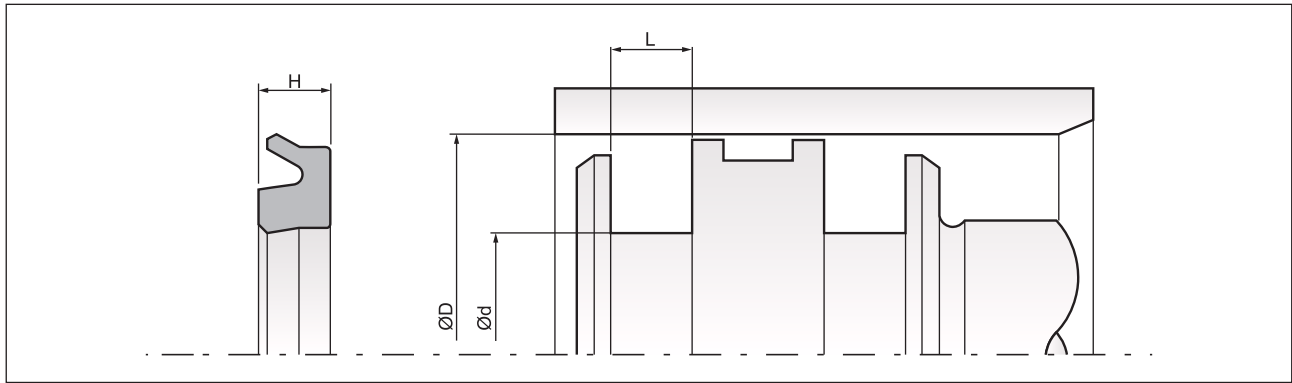
P12

Single Acting Piston Cup Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120681003	80.00	68.00	8.50	8.00	NBR	SUD-1583
P120681007	80.00	68.00	8.90	8.40	NBR	SUD-2084
P12068L401	80.00	68.00	9.00	8.50	PU	PUD-645
P120688901	80.00	68.00	9.00	8.50	PU	PUD-322
P120681005	80.00	68.00	9.00	8.50	NBR	SUD-567
P12068L403	80.00	68.00	9.00	8.50	PU	PUD-814
P120681001	80.00	68.00	9.00	8.50	NBR	SUD-2129
P120681006	80.00	68.00	10.00	9.00	NBR	SUD-1783
P12069S901	80.00	69.00	6.50	6.00	VMQ	SUD-1966
P120701003	80.00	70.00	4.50	4.00	NBR	SUD-1196
P120706601	80.00	70.00	4.75	4.25	FKM	SUD-1041
P12070L402	80.00	70.00	4.75	4.25	PU	PUD-817
P12070Q201	80.00	70.00	4.75	4.25	PU	PUD-1047
P12070L401	80.00	70.00	4.80	4.30	PU	PUD-615
P120702101	80.00	70.00	5.50	5.00	CR	SUD-2061
P120701006	80.00	70.00	7.00	6.50	NBR	SUD-1504
P120701009	80.00	70.00	7.00	6.50	NBR	SUD-1774
P120701010	80.00	70.00	7.10	6.60	NBR	SUD-2067
P120705901	80.00	70.00	7.50	7.00	PU	PUD-297
P120701007	80.00	70.00	12.50	11.50	NBR	SUD-1733
P12068L502	82.00	68.00	9.00	8.50	PU	PUD-770
P120726701	82.00	72.00	7.90	7.40	FKM	SUD-2131
P12071L401	82.55	71.37	6.08	5.58	PU	PUD-606
P120711001	82.55	71.42	7.64	7.14	NBR	SUD-1740
P120660501	82.60	66.00	13.60	12.60	NBR	SUD-1623
P120660901	82.80	66.00	13.60	12.60	NBR	SUD-1600
P12072Q201	83.00	72.00	6.50	6.00	PU	PUD-730
P120700801	85.00	70.00	10.10	9.10	NBR	SUD-1542
P120753401	85.00	75.00	7.50	7.00	EPDM	SUD-1463
P120721001	86.00	72.00	10.40	9.40	NBR	SUD-913
P120758901	87.50	75.50	14.50	13.50	PU	PUD-956
P120691002	90.00	69.50	11.00	10.00	NBR	SUD-1718
P120700601	90.00	70.00	14.00	13.00	NBR	SUD-969
P12075L501	90.00	75.00	13.00	12.00	PU	PUD-1090
P120771002	90.00	77.60	8.50	8.00	NBR	SUD-1279
P12080Q202	90.00	80.00	4.75	4.25	PU	PUD-1048
P120801002	95.00	80.00	10.00	9.00	NBR	SUD-1777
P120900501	95.00	90.00	3.50	3.00	NBR	SUD-102
P120841001	96.00	84.00	8.80	8.30	NBR	SUD-1838
P120881003	96.00	88.00	7.50	7.00	NBR	SUD-1687
P120790501	96.20	79.03	13.60	12.60	NBR	SUD-1622
P120790901	96.40	79.03	13.60	12.60	NBR	SUD-1601
P12088L407	98.00	88.00	7.50	7.00	PU	PUD-884
P120900803	98.00	90.00	11.00	10.00	NBR	SUD-2079
P120756601	100.00	75.00	17.00	16.00	FKM	SUD-1059
P120806601	100.00	80.00	4.75	4.25	FKM	SUD-1113
P12080L401	100.00	80.00	9.00	8.50	PU	PUD-584
P120800902	100.00	80.00	11.00	10.00	NBR	SUD-2082
P12080Q203	100.00	80.00	12.00	11.00	PU	PUD-1057
P120800901	100.00	80.00	12.00	11.00	NBR	SUD-1604
P12080L501	100.00	80.00	13.00	12.00	PU	PUD-420
P120806602	100.00	80.00	13.50	12.50	FKM	SUD-1530

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120828201	100.00	82.00	12.70	11.70	NBR	SUD-1848
P120831001	100.00	83.00	8.20	7.70	NBR	SUD-1553
P120831002	100.00	83.50	14.00	13.00	NBR	SUD-1759
P12085L401	100.00	85.00	9.00	8.50	PU	PUD-883
P120850903	100.00	85.00	10.30	9.30	NBR	SUD-1858
P120856501	100.00	85.00	10.50	9.50	FKM	SUD-1317
P120851001	100.00	85.00	10.50	9.50	NBR	SUD-1064
P120850901	100.00	85.00	10.50	9.50	NBR	SUD-1455
P120851004	100.00	85.00	10.50	9.50	NBR	SUD-1764
P120851003	100.00	85.00	11.00	10.00	NBR	SUD-1487
P120850902	100.00	85.00	12.50	11.50	NBR	SUD-1779
P120851002	100.00	85.00	13.50	12.50	NBR	SUD-1363
P12086L402	100.00	86.00	9.00	8.50	PU	PUD-792
P120871001	100.00	87.00	9.00	8.50	NBR	SUD-1946
P12087U101	100.00	87.00	10.00	9.00	FKM	SUD-1575
P12088L402	100.00	88.00	8.50	8.00	PU	PUD-616
P12088L401	100.00	88.00	9.00	8.50	PU	PUD-598
P120886602	100.00	88.00	9.00	8.50	FKM	SUD-1466
P120886501	100.00	88.00	9.00	8.50	FKM	SUD-1075
P120880901	100.00	88.00	9.00	8.50	NBR	SUD-1086
P12088Q203	100.00	88.00	9.00	8.50	PU	PUD-815
P12088Q202	100.00	88.00	9.20	8.70	PU	PUD-752
P120888902	100.00	88.00	9.20	8.70	PU	PUD-1202
P12088L404	100.00	88.00	12.80	11.80	PU	PUD-746
P120886607	100.00	88.00	16.00	15.00	FKM	SUD-1974
P120891001	100.00	89.00	7.40	6.90	NBR	SUD-1421
P12089L401	100.00	89.50	7.30	6.80	PU	PUD-628
P120901007	100.00	90.00	4.50	4.00	NBR	SUD-1688
P120906604	100.00	90.00	4.70	4.20	FKM	SUD-1434
P120901001	100.00	90.00	4.75	4.25	NBR	SUD-223
P12090L402	100.00	90.00	4.75	4.25	PU	PUD-816
P120901001	100.00	90.00	4.75	4.25	NBR	SUD-810
P120908901	100.00	90.00	4.75	4.25	PU	PUD-477
P120901102	100.00	90.00	4.75	4.25	NBR	SUD-1928
P12090T501	100.00	90.00	4.80	4.30	EPDM	SUD-1820
P120901004	100.00	90.00	4.80	4.30	NBR	SUD-1424
P120901006	100.00	90.00	4.80	4.30	NBR	SUD-1481
P12090Q202	100.00	90.00	4.90	4.40	PU	PUD-779
P120906605	100.00	90.00	7.50	7.00	FKM	SUD-1477
P120901101	100.00	90.00	7.50	7.00	NBR	SUD-1866
P120905902	100.00	90.00	7.50	7.00	PU	PUD-484
P120901008	100.00	90.00	7.50	7.00	NBR	SUD-2023
P120901005	100.00	90.00	8.50	8.00	NBR	SUD-1432
P120906702	100.00	90.00	8.50	8.00	FKM	SUD-2119
P120906602	100.00	90.00	13.00	12.00	FKM	SUD-1334
P120901003	100.00	90.00	13.00	12.00	NBR	SUD-1190
P120908902	100.00	90.00	13.00	12.00	PU	PUD-757
P120911002	100.00	91.00	4.75	4.25	NBR	SUD-1188
P120911003	100.00	91.00	7.50	7.00	NBR	SUD-1850
P120802201	101.60	80.96	15.00	14.00	CR	SUE-1106
P120821002	101.60	82.00	13.00	12.00	NBR	SUE-1150
P120821001	101.60	82.55	13.70	12.70	NBR	SUE-585



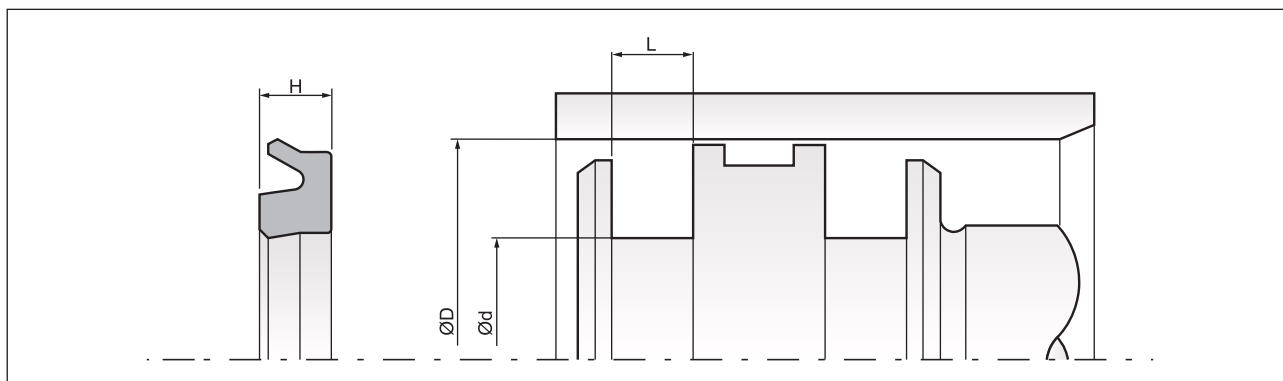
Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.	Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P120826601	101.60	82.55	13.70	12.70	FKM	SUE-1308	P12110L401	125.00	110.00	11.00	10.00	PU	PUE-414
P120821101	101.60	82.55	14.90	13.90	NBR	SUE-1397	P121100901	125.00	110.00	11.00	10.00	NBR	SUE-845
P120856601	101.60	85.00	5.90	5.40	FKM	SUE-1358	P12110Q201	125.00	110.00	11.00	10.00	PU	PUE-491
P120851006	101.60	85.74	8.70	8.20	NBR	SUE-1281	P121100903	125.00	110.00	11.00	10.00	NBR	SUE-1111
P120871002	101.60	87.31	9.00	8.50	NBR	SUE-1342	P12110Q202	125.00	110.00	11.00	10.00	PU	PUE-674
P120886605	101.60	88.00	7.00	6.50	FKM	SUE-1024	P121106605	125.00	110.00	11.24	10.24	FKM	SUE-1444
P120881004	101.60	88.00	7.50	7.00	NBR	SUE-1367	P121106604	125.00	110.00	12.00	11.00	FKM	SUE-1401
P120840801	103.58	84.53	11.00	10.00	NBR	SUE-1346	P121111003	125.00	111.00	10.00	9.00	NBR	SUE-1254
P12094D601	104.40	94.40	8.00	7.50	HNBR	SUE-962	P12111002	125.00	111.00	10.00	9.00	NBR	SUE-1126
P120851007	104.70	85.70	12.80	11.80	NBR	SUE-1354	P121121001	125.00	112.00	10.60	9.60	NBR	SUE-1124
P120851005	105.00	85.00	13.00	12.00	NBR	SUE-1229	P121126601	125.00	112.00	10.60	9.60	FKM	SUE-1195
P120856602	105.00	85.00	13.00	12.00	FKM	SUE-1393	P121126602	125.00	112.00	11.00	10.00	FKM	SUE-1295
P120861001	105.00	86.00	13.00	12.00	NBR	SUE-1022	P121136601	125.00	113.00	13.00	12.00	FKM	SUE-1175
P120870801	105.50	87.50	12.50	11.50	NBR	SUE-1294	P121130901	125.00	113.50	11.50	10.50	NBR	SUE-1205
P120860901	106.00	86.50	11.00	10.00	NBR	SUE-1072	P121131001	125.00	113.50	12.50	11.50	NBR	SUE-1031
P120881005	106.00	88.80	10.00	9.00	NBR	SUE-1407	P121156601	125.00	115.00	6.50	6.00	FKM	SUE-1034
P120886603	107.95	88.26	13.06	12.06	FKM	SUE-903	P121151001	125.00	115.00	13.00	12.00	NBR	SUE-1118
P120920501	109.20	92.03	13.60	12.60	NBR	SUE-1119	P12115L401	125.00	115.00	13.80	12.80	PU	PUE-668
P120920901	109.40	92.03	13.60	12.60	NBR	SUE-1044	P121046602	127.00	104.00	13.00	12.00	FKM	SUF-700
P120886604	110.00	88.00	16.00	15.00	FKM	SUE-906	P121051004	127.00	105.86	14.75	13.75	NBR	SUF-813
P120951101	110.00	95.00	11.00	10.00	NBR	SUE-516	P121071001	127.00	107.95	11.00	10.00	NBR	SUF-862
P121050601	110.00	105.00	10.00	9.00	NBR	SUE-642	P121086601	127.00	108.00	11.00	10.00	FKM	SUF-679
P12097L501	110.60	97.00	11.00	10.00	PU	PUE-322	P121136602	127.00	113.50	7.00	6.50	FKM	SUF-935
P121044301	114.00	104.00	8.00	7.50	VMQ	SUE-1418	P12113CF01	127.00	113.50	16.00	15.00	PU	PUF-557
P120981001	115.00	98.00	8.50	8.00	NBR	SUE-1068	P12114L501	128.40	114.80	11.00	10.00	PU	PUF-254
P121001001	117.00	100.00	8.20	7.70	NBR	SUE-1238	P12114D601	129.00	114.00	11.00	10.00	HNBR	SUF-659
P12107L501	118.60	107.00	6.30	5.80	PU	PUE-335	P121040801	130.00	104.00	17.00	16.00	NBR	SUF-750
P12100S801	120.00	100.00	13.00	12.00	NBR	SUE-1434	P121131002	130.00	113.00	10.00	9.00	NBR	SUF-928
P121051005	120.00	105.00	10.50	9.50	NBR	SUE-1314	P12119L501	130.00	119.00	9.00	8.50	PU	PUF-378
P121050901	120.00	105.00	11.00	10.00	NBR	SUE-623	P121170501	135.20	117.03	13.60	12.60	NBR	SUF-781
P12105CF01	120.00	105.00	19.00	18.00	PU	PUE-690	P121170901	135.40	117.03	13.60	12.60	NBR	SUF-772
P12106L401	120.00	106.00	8.90	8.40	PU	PUE-574	P121200801	145.00	120.00	14.00	13.00	NBR	SUF-749
P121050501	122.20	105.03	13.60	12.60	NBR	SUE-1120	P12133L501	146.60	133.00	11.00	10.00	PU	PUF-255
P121050902	122.40	105.03	13.60	12.60	NBR	SUE-1099	P121206601	150.00	120.00	16.00	15.00	FKM	SUF-761
P121041001	125.00	104.00	12.00	11.00	NBR	SUE-1223	P121256602	150.00	125.00	13.00	12.00	FKM	SUF-783
P121046601	125.00	104.00	13.00	12.00	FKM	SUE-979	P121251002	150.00	125.00	13.00	12.00	NBR	SUF-971
P121056501	125.00	105.00	7.70	7.20	FKM	SUE-1052	P121256604	150.00	125.00	14.00	13.00	FKM	SUF-890
P121056502	125.00	105.00	8.75	8.25	FKM	SUE-1070	P12125L501	150.00	125.00	14.00	13.00	PU	PUF-104
P121056602	125.00	105.00	8.75	8.25	FKM	SUE-589	P121256603	150.00	125.00	16.00	15.00	FKM	SUF-789
P12105L401	125.00	105.00	8.75	8.25	PU	PUE-520	P12127L501	150.00	127.00	13.50	12.50	PU	PUF-407
P121056603	125.00	105.00	11.00	10.00	FKM	SUE-1017	P121286601	150.00	128.00	13.00	12.00	FKM	SUF-683
P121051002	125.00	105.30	8.75	8.25	NBR	SUE-1028	P121286602	150.00	128.00	13.00	12.00	FKM	SUF-747
P121056606	125.00	105.30	8.75	8.25	FKM	SUE-1325	P121306601	150.00	130.00	10.70	9.70	FKM	SUF-408
P121061001	125.00	106.00	10.80	9.80	NBR	SUE-1285	P121301002	150.00	130.00	11.00	10.00	NBR	SUF-713
P121101002	125.00	110.00	8.50	8.00	NBR	SUE-659	P121308901	150.00	130.00	16.00	15.00	PU	PUF-420
P121108901	125.00	110.00	10.00	9.00	PU	PUE-639	P121350902	150.00	135.00	18.00	17.00	NBR	SUF-728
P121109901	125.00	110.00	10.00	9.00	SBR	SUE-1237	P121351002	150.00	135.00	19.00	18.00	NBR	SUF-970
P121106602	125.00	110.00	10.00	9.00	FKM	SUE-1333	P121366602	150.00	136.00	7.70	7.20	FKM	SUF-985
P121101005	125.00	110.00	10.20	9.20	NBR	SUE-1180	P121380901	150.00	138.00	12.00	11.00	NBR	SUF-842
P121100801	125.00	110.00	10.50	9.50	NBR	SUE-1399	P12138CF01	150.00	138.00	13.00	12.00	PU	PUF-425
P121101001	125.00	110.00	11.00	10.00	NBR	SUE-490	P121330501	150.20	133.03	13.60	12.60	NBR	SUG-663
P121106601	125.00	110.00	11.00	10.00	FKM	SUE-993	P121330901	150.40	133.03	13.60	12.60	NBR	SUG-657

Bold sizes are readily available in stock.

Other materials are available on request.

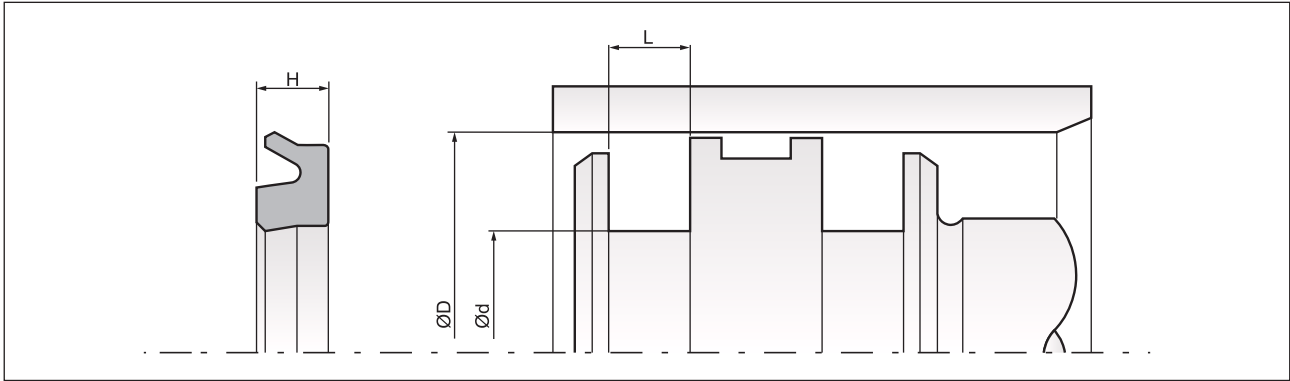
P12

Single Acting Piston Cup Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P121256601	152.00	125.00	16.50	15.50	FKM	SUG-648
P121386601	152.20	138.00	9.00	8.50	FKM	SUG-826
P121270801	152.40	127.00	16.50	15.50	NBR	SUG-750
P121270901	152.40	127.00	20.50	19.50	NBR	SUG-670
P12128L501	152.40	128.00	13.00	12.00	PU	PUG-290
P121306602	152.40	130.50	10.20	9.20	FKM	SUG-560
P121301006	152.40	130.50	10.20	9.20	NBR	SUG-870
P121301005	152.40	130.96	10.00	9.00	NBR	SUG-842
P121361001	152.40	136.52	13.70	12.70	NBR	SUG-848
P121281001	153.00	128.00	14.00	13.00	NBR	SUG-640
P121326602	153.00	132.00	13.00	12.00	FKM	SUG-827
P12139D601	154.00	139.00	11.00	10.00	HNBR	SUG-584
P121300902	155.00	130.00	15.50	14.50	NBR	SUG-713
P121301001	155.00	130.00	17.00	16.00	NBR	SUG-589
P121301003	155.00	130.00	17.50	16.50	NBR	SUG-736
P121300901	155.00	130.00	17.50	16.50	NBR	SUG-643
P12140L401	155.50	140.00	6.50	6.00	PU	PUG-282
P211301004	155.57	130.17	17.00	16.00	NBR	SUG-774
P121326601	155.63	132.62	15.00	14.00	FKM	SUG-622
P121321001	156.50	132.00	13.50	12.50	NBR	SUG-864
P121341001	157.00	134.00	14.50	13.50	NBR	SUG-847
P121351001	160.00	135.00	17.00	16.00	NBR	SUG-824
P121391001	160.00	139.40	14.20	13.20	NBR	SUG-345
P121406602	160.00	140.00	8.50	8.00	FKM	SUG-745
P121401101	160.00	140.00	8.70	8.20	NBR	SUG-689
P12140L402	160.00	140.00	8.75	8.25	PU	PUG-317
P121406701	160.00	140.00	8.75	8.25	FKM	SUG-623
P121406604	160.00	140.00	8.80	8.30	FKM	SUG-830
P121401102	160.00	140.00	10.00	9.00	NBR	SUG-690
P121400901	160.00	140.00	13.00	12.00	NBR	SUG-696
P121406501	160.00	140.00	13.50	12.50	FKM	SUG-382
P12140Q201	160.00	140.00	15.00	14.00	PU	PUG-404
P121406603	160.00	140.00	15.50	14.50	FKM	SUG-744
P121406702	160.00	140.00	16.00	15.00	FKM	SUG-721
P121456602	160.00	145.00	8.50	8.00	FKM	SUG-632
P121456601	160.00	145.00	8.70	8.20	FKM	SUG-613
P121456702	160.00	145.00	10.00	9.00	FKM	SUG-614
P121451002	160.00	145.00	10.00	9.00	NBR	SUG-558
P121459901	160.00	145.00	10.00	9.00	SBR	SUG-740
P121456605	160.00	145.00	10.00	9.00	FKM	SUG-812
P121451003	160.00	145.00	10.20	9.20	NBR	SUG-101
P121456401	160.00	145.00	10.30	9.30	FKM	SUG-799
P121450803	160.00	145.00	10.50	9.50	NBR	SUG-862
P121456701	160.00	145.00	10.60	9.60	FKM	SUG-605
P121450901	160.00	145.00	11.00	10.00	NBR	SUG-711
P121451001	160.00	145.00	11.00	10.00	NBR	SUG-301
P121456603	160.00	145.00	11.00	10.00	FKM	SUG-630
P12145Q201	160.00	145.00	11.00	10.00	PU	PUG-355
P12145Q202	160.00	145.00	11.00	10.00	PU	PUG-403
P121450902	160.00	145.00	11.00	10.00	NBR	SUG-816
P121461101	160.00	146.00	10.00	9.00	NBR	SUG-676
P121461002	160.00	146.00	10.00	9.00	NBR	SUG-852

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P121461102	160.00	146.00	11.00	10.00	NBR	SUG-687
P121466601	160.00	146.00	14.00	13.00	FKM	SUG-741
P121471001	160.00	147.00	8.70	8.20	NBR	SUG-703
P121476601	160.00	147.00	10.00	9.00	FKM	SUG-859
P12147L401	160.00	147.00	13.00	12.00	PU	PUG-293
P121471002	160.00	147.00	13.00	12.00	NBR	SUG-839
P121486602	160.00	148.00	9.00	8.50	FKM	SUG-724
P12148L401	160.00	148.00	10.50	9.50	PU	PUG-397
P121481003	160.00	148.00	11.00	10.00	NBR	SUG-792
P121480902	160.00	148.00	12.00	11.00	NBR	SUG-722
P121486601	160.00	148.00	13.00	12.00	FKM	SUG-596
P121488701	160.00	148.00	13.00	12.00	PU	PUG-294
P121486603	160.00	148.00	13.50	12.50	FKM	SUG-817
P121501101	160.00	150.00	12.00	11.00	NBR	SUG-637
P121502201	160.00	150.00	13.00	12.00	CR	SUG-666
P12151L501	160.00	151.00	12.00	11.00	PU	PUG-324
P121480501	165.20	148.03	13.60	12.60	NBR	SUG-664
P121480901	165.40	148.03	13.60	12.60	NBR	SUG-658
P121640802	176.00	164.00	7.50	7.00	NBR	SUG-430
P121521001	177.80	152.40	20.50	19.50	NBR	SUH-436
P12160L401	180.00	160.00	13.00	12.00	PU	PUH-257
P121600801	180.00	160.00	15.00	14.00	NBR	SUH-545
P121650901	184.15	165.10	11.00	10.00	NBR	SUH-517
P121786602	198.00	178.00	15.00	14.00	FKM	SUH-356
P121656601	200.00	165.00	19.00	18.00	FKM	SUH-515
P121681001	200.00	168.00	19.50	18.50	NBR	SUH-507
P121741001	200.00	174.00	15.00	14.00	NBR	SUH-330
P121756601	200.00	175.00	15.50	14.50	FKM	SUH-487
P121751001	200.00	175.00	15.50	14.50	NBR	SUH-513
P12180L401	200.00	180.00	8.50	8.00	PU	PUH-214
P121806605	200.00	180.00	8.50	8.00	FKM	SUH-450
P121801004	200.00	180.00	8.60	8.10	NBR	SUH-496
P12180CG01	200.00	180.00	8.75	8.25	PU	PUH-267
P121800905	200.00	180.00	8.75	8.25	NBR	SUH-357
P12180Q202	200.00	180.00	8.75	8.25	PU	PUH-310
P12180L501	200.00	180.00	12.40	11.40	PU	PUH-234
P121806607	200.00	180.00	12.80	11.80	FKM	SUH-474
P121801002	200.00	180.00	15.00	14.00	NBR	SUH-467
P121806604	200.00	180.00	15.00	14.00	FKM	SUH-438
P121806602	200.00	180.00	15.00	14.00	FKM	SUH-351
P121800906	200.00	180.00	15.00	14.00	NBR	SUH-374
P121806601	200.00	180.00	15.00	14.00	FKM	SUH-396
P121800901	200.00	180.00	15.00	14.00	NBR	SUH-303
P121800901	200.00	180.00	15.00	14.00	NBR	SUH-321
P12180L402	200.00	180.00	15.00	14.00	PU	PUH-256
P12180Q203	200.00	180.00	15.00	14.00	PU	PUH-311
P121806606	200.00	180.00	15.40	14.40	FKM	SUH-460
P121801003	200.00	180.00	15.50	14.50	NBR	SUH-481
P121818901	200.00	181.00	9.00	8.50	PU	PUH-314
P121831001	200.00	183.00	8.50	8.00	NBR	SUH-408
P121850901	200.00	185.00	16.00	15.00	NBR	SUH-461
P12185CF01	200.00	185.00	17.00	16.00	PU	PUH-268

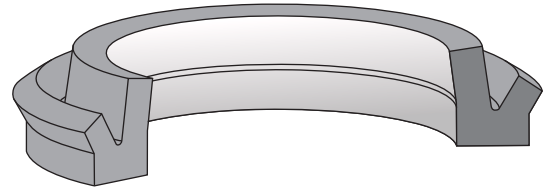


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P121856601	200.00	185.00	18.00	17.00	FKM	SUH-422
P121876602	200.00	187.50	9.10	8.60	FKM	SUH-429
P121886601	200.00	188.00	16.00	15.00	FKM	SUH-518
P121906602	200.00	190.00	15.00	14.00	FKM	SUH-371
P121906701	200.00	190.00	15.30	14.30	FKM	SUH-526
P121630801	202.00	163.00	20.00	19.00	NBR	SUJ-397
P121656602	203.00	165.00	19.00	18.00	FKM	SUJ-428
P121771001	203.20	177.80	20.50	19.50	NBR	SUJ-366
P121876601	203.20	187.32	8.20	7.70	FKM	SUJ-345
P121891001	203.20	189.20	10.50	9.50	NBR	SUJ-357
P121786501	204.00	178.00	10.00	9.00	FKM	SUJ-389
P121786502	204.00	178.50	10.00	9.00	FKM	SUJ-398
P121801005	204.60	180.00	15.00	14.00	NBR	SUJ-434
P121800801	205.00	180.00	17.00	16.00	NBR	SUJ-349
P121856602	205.00	185.00	16.00	15.00	FKM	SUJ-445
P121926601	205.00	192.00	12.00	11.00	FKM	SUJ-399
P121808901	210.00	180.00	16.00	15.00	PU	PUJ-260
P121926602	213.00	192.00	14.60	13.60	FKM	SUJ-439
P121966601	214.00	196.00	14.00	13.00	FKM	SUJ-418
P121901001	215.90	190.50	14.46	13.46	NBR	SUJ-234
P122031001	228.60	203.20	20.50	19.50	NBR	SUK-286
P122406701	247.50	240.90	5.30	4.80	FKM	SUK-269
P122261001	250.00	226.00	13.00	12.00	NBR	SUK-232
P122286601	250.00	228.50	15.60	14.60	FKM	SUK-242
P122306601	250.00	230.00	13.00	12.00	FKM	SUK-199
P122301001	250.00	230.00	15.70	14.70	NBR	SUK-320
P122301002	250.00	230.00	16.00	15.00	NBR	SUK-328
P122316601	250.00	231.00	14.50	13.50	FKM	SUK-312
P122336601	250.00	233.00	17.00	16.00	FKM	SUK-304
P12235091	250.00	235.00	15.00	14.00	NBR	SUK-297
P122358901	250.00	235.00	16.00	15.00	PU	PUK-172
P122406501	253.00	240.00	11.50	10.50	FKM	SUM-673

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P122220801	254.00	222.00	22.00	21.00	NBR	SUM-769
P122296601	254.00	229.00	18.00	17.00	FKM	SUM-513
P122346601	254.00	234.00	15.00	14.00	FKM	SUM-715
P122571001	290.00	257.00	15.00	14.00	NBR	SUM-773
P122601001	300.00	260.00	21.00	20.00	NBR	SUM-716
P122806601	300.00	280.00	16.00	15.00	FKM	SUM-772
P122791001	304.80	279.40	21.00	20.00	NBR	SUM-697
P122801101	310.00	280.00	19.00	18.00	NBR	SUM-794
P123050801	320.00	305.00	17.00	16.00	NBR	SUM-739
P123090801	323.34	309.06	14.48	13.48	NBR	SUM-546
P123101001	325.00	310.00	10.00	9.00	NBR	SUM-847
P123206602	350.00	320.00	18.50	17.50	FKM	SUM-836
P123206601	350.00	320.00	18.50	17.50	FKM	SUM-725
P12325L501	350.45	325.48	18.00	17.00	PU	PUM-330
P123301101	355.60	330.20	16.90	15.90	NBR	SUM-779
P123530701	371.00	353.00	10.60	9.60	NBR	SUM-398
P123608901	380.00	360.00	17.00	16.00	PU	PUM-345
P123745901	400.00	374.00	21.00	20.00	PU	PUM-312
P123756601	400.00	375.00	19.00	18.00	FKM	SUM-501
P123811001	406.40	381.00	21.00	20.00	NBR	SUVG-611
P12410L501	435.00	410.00	18.00	17.00	PU	PUM-318
P124060901	450.00	406.00	21.00	20.00	NBR	SUVG-631
P124251101	450.00	425.00	26.00	25.00	NBR	SUVG-550
P124256701	450.00	425.00	26.00	25.00	FKM	SUVG-632
P124311101	457.20	431.80	16.90	15.90	NBR	SUVG-649
P125006601	515.00	500.00	12.00	11.00	FKM	SUVG-663
P125506601	565.00	550.00	12.00	11.00	FKM	SUVG-664
P128000701	849.00	800.00	28.00	27.00	NBR	SUVG-391
P128891101	914.40	889.00	20.05	19.05	NBR	SLO-737
P129501001	1000.00	950.00	41.00	40.00	NBR	SUVG-718
P129990801	3817.00	3802.00	13.50	12.50	NBR	SLO-665

DETAILS

P13 is a single acting seal with U-shaped cross-section specially developed for use in pneumatic applications. Its asymmetric profile with long sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy installation.
- Low friction.
- Minimise friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P13 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

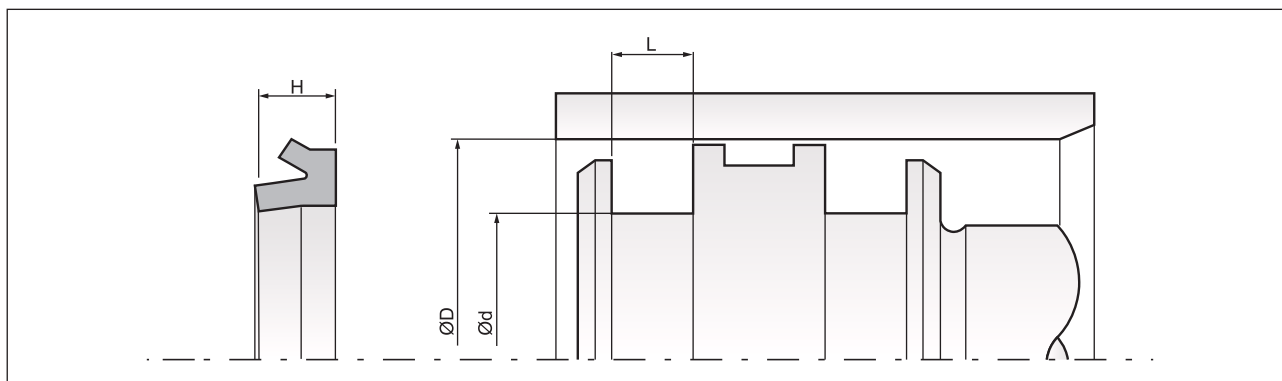
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

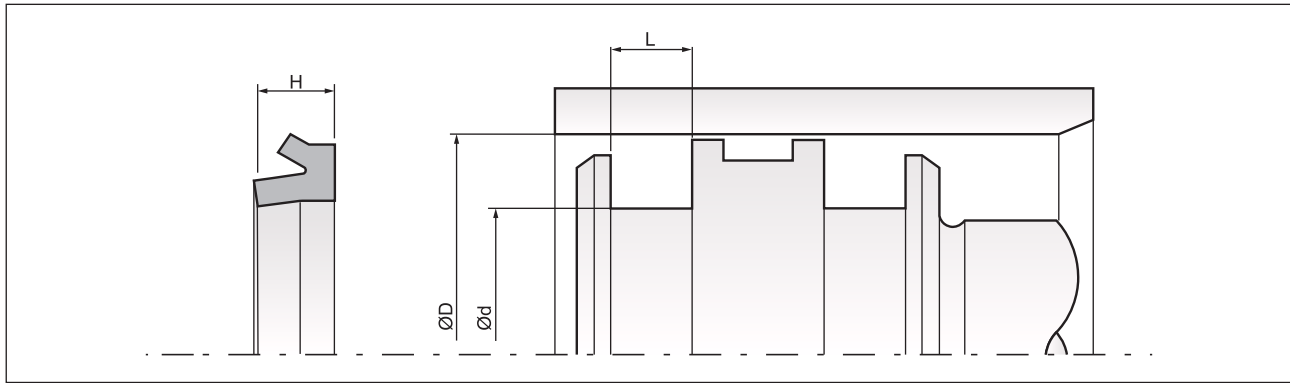
P13

Single Acting Piston Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P130056601	8.00	5.00	4.00	3.50	FKM	SUA-1236
P130051003	10.00	5.00	4.00	3.50	NBR	SUA-2354
P130071002	10.31	7.15	2.50	2.00	NBR	SUA-1745
P130044301	11.00	4.50	4.35	3.85	VMQ	SUA-767
P130044302	11.11	4.76	4.44	3.94	VMQ	SUA-1226
P130061003	12.00	6.00	3.70	3.20	NBR	SUA-943
P130061004	12.00	6.00	4.50	4.00	NBR	SUA-1578
P130086601	12.00	8.00	3.50	3.00	FKM	SUA-887
P130061001	12.70	6.35	4.43	3.93	NBR	SUA-715
P130071001	13.00	7.00	4.50	4.00	NBR	SUA-930
P130080601	14.25	8.00	4.50	4.00	NBR	SUA-1129
P130106401	15.87	10.71	3.00	2.50	FKM	SUA-1441
P130103201	15.89	10.00	4.39	3.89	EPDM	SUA-1098
P130106602	16.00	10.00	5.00	4.50	FKM	SUA-912
P130051002	17.00	5.00	11.00	10.00	NBR	SUA-1335
P130100901	17.00	10.00	4.50	4.00	NBR	SUA-1500
P130116401	17.84	11.50	5.10	4.60	FKM	SUA-1393
P130101002	18.00	10.00	5.00	4.50	NBR	SUA-2327
P130101001	18.00	10.00	6.00	5.50	NBR	SUA-1316
P130114501	18.00	11.80	4.50	4.00	VMQ	SUA-495
P130121003	18.00	12.00	5.00	4.50	NBR	SUA-1929
P130121005	18.00	12.80	4.50	4.00	NBR	SUA-2337
P130061002	18.50	6.00	5.50	5.00	NBR	SUA-774
P130031001	19.00	3.30	5.50	5.00	NBR	SUA-775
P130121004	19.05	12.70	5.10	4.60	NBR	SUA-1939
P130126601	20.00	12.00	6.00	5.50	FKM	SUA-1054
P130131001	20.00	13.00	5.30	4.80	NBR	SUA-1556
P130110801	21.00	11.00	4.50	4.00	NBR	SUA-1741
P130120801	22.00	12.00	7.75	7.25	NBR	SUA-829
P130141103	22.00	14.00	6.00	5.50	NBR	SUA-1298
P130120803	23.00	12.40	6.50	6.00	NBR	SUA-2365
P130160901	23.00	16.00	3.50	3.00	NBR	SUA-1947
P130121001	23.22	12.49	7.10	6.60	NBR	SUA-883
P130153201	23.83	15.42	6.33	5.83	EPDM	SUA-743
P130151101	24.00	15.60	5.50	5.00	NBR	SUA-1180
P130181003	24.00	18.00	6.00	5.50	NBR	SUA-1703
P130171003	25.00	17.00	4.80	4.30	NBR	SUA-1811
P130170301	25.00	17.00	6.00	5.50	NBR	SUA-1240
P130173201	25.00	17.00	6.00	5.50	EPDM	SUA-1250
P130176602	25.00	17.00	6.00	5.50	FKM	SUA-917
P130171001	25.00	17.00	6.00	5.50	NBR	SUA-359
P130171002	25.00	17.00	7.00	6.50	NBR	SUA-1138
P130181002	25.00	18.97	3.80	3.30	NBR	SUA-1151
P130190902	25.00	19.00	5.50	5.00	NBR	SUA-2051
P130190901	25.39	19.05	6.25	5.75	NBR	SUB-2409
P130190804	25.40	19.05	5.50	5.00	NBR	SUB-2401
P130191001	26.97	19.05	6.30	5.80	NBR	SUB-2763
P130196601	26.97	19.05	6.30	5.80	FKM	SUB-3477
P130171004	27.00	17.00	7.50	7.00	NBR	SUB-2130
P130200901	28.00	20.00	5.50	5.00	NBR	SUB-3238
P130201002	28.00	20.00	6.00	5.50	NBR	SUB-2374
P130201004	28.00	20.00	6.50	6.00	NBR	SUB-2785

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P130150801	28.57	15.87	8.90	8.40	NBR	SUB-1611
P130201001	28.57	20.63	6.34	5.84	NBR	SUB-1392
P130201001	28.57	20.63	6.34	5.84	NBR	SUB-1769
P130181104	30.00	18.00	8.50	8.00	NBR	SUB-3837
P130200801	30.00	20.00	6.40	5.90	NBR	SUB-2027
P130206601	30.00	20.00	6.50	6.00	FKM	SUB-1910
P130206602	30.00	20.00	7.00	6.50	FKM	SUB-2154
P130201003	30.00	20.00	8.50	8.00	NBR	SUB-1186
P130193201	30.16	19.44	5.90	5.40	EPDM	SUB-1989
P130201005	31.00	20.00	6.90	6.40	NBR	SUB-2845
P130156301	31.75	15.87	9.10	8.60	FKM	SUB-1761
P130190802	31.75	19.05	6.85	6.35	NBR	SUB-1601
P130230901	31.75	23.50	6.50	6.00	NBR	SUB-2758
P130236701	31.75	23.83	6.00	5.50	FKM	SUB-3266
P130240902	31.75	24.30	6.50	6.00	NBR	SUB-2760
P130190806	32.00	19.30	7.30	6.80	NBR	SUB-3048
P130190801	32.00	19.30	8.40	7.90	NBR	SUB-1565
P130200802	32.00	20.00	7.00	6.50	NBR	SUB-3456
P130216601	32.00	21.75	5.95	5.45	FKM	SUB-3096
P130226701	32.00	22.00	7.30	6.80	FKM	SUB-2241
P130236601	32.00	23.00	10.00	9.00	FKM	SUB-1413
P130246601	32.00	24.00	3.75	3.25	FKM	SUB-1248
P130246604	32.00	24.00	5.80	5.30	FKM	SUB-2983
P130246603	32.00	24.00	5.80	5.30	FKM	SUB-2899
P13024L501	32.00	24.00	5.90	5.40	PU	PUB-1292
P130241004	32.00	24.00	5.90	5.40	NBR	SUB-3900
P130240803	32.00	24.00	6.00	5.50	NBR	SUB-4020
P130246701	32.00	24.00	6.00	5.50	FKM	SUB-3315
P130246601	32.00	24.00	6.00	5.50	FKM	SUB-2197
P130241003	32.00	24.00	6.20	5.70	NBR	SUB-2530
P130241101	32.00	24.00	6.80	6.30	NBR	SUB-3118
P130241004	32.00	24.00	7.00	6.50	NBR	SUB-2980
P130246602	32.00	24.00	7.00	6.50	FKM	SUB-119
P130241002	32.00	24.00	7.50	7.00	NBR	SUB-1381
P130251005	32.00	25.00	6.80	6.30	NBR	SUB-3804
P130190803	32.54	19.84	8.63	8.13	NBR	SUB-1610
P130231001	34.00	23.00	6.50	6.00	NBR	SUB-2266
P130273201	34.92	27.00	6.00	5.50	EPDM	SUB-1988
P130221104	34.93	22.22	6.85	6.35	NBR	SUB-1544
P130220701	35.00	22.00	6.75	6.25	NBR	SUB-1624
P130250902	35.00	25.00	6.30	5.80	NBR	SUB-2777
P130250803	35.00	25.00	6.50	6.00	NBR	SUB-2872
P130251002	35.00	25.00	6.50	6.00	NBR	SUB-124
P130256701	35.00	25.00	7.00	6.50	FKM	SUB-2084
P130250901	35.00	25.00	7.00	6.50	NBR	SUB-2608
P130251103	35.00	25.00	7.50	7.00	NBR	SUB-2060
P130270901	35.00	27.00	5.30	4.80	NBR	SUB-3455
P130306604	35.00	30.00	5.50	5.00	FKM	SUB-2164
P130306604	35.00	30.00	5.50	5.00	FKM	SUB-2066
P130301003	35.00	30.00	5.50	5.00	NBR	SUB-1803
P130306604	35.00	30.00	5.50	5.00	FKM	SUB-1529
P130281002	36.51	28.57	3.00	2.50	NBR	SUB-1818

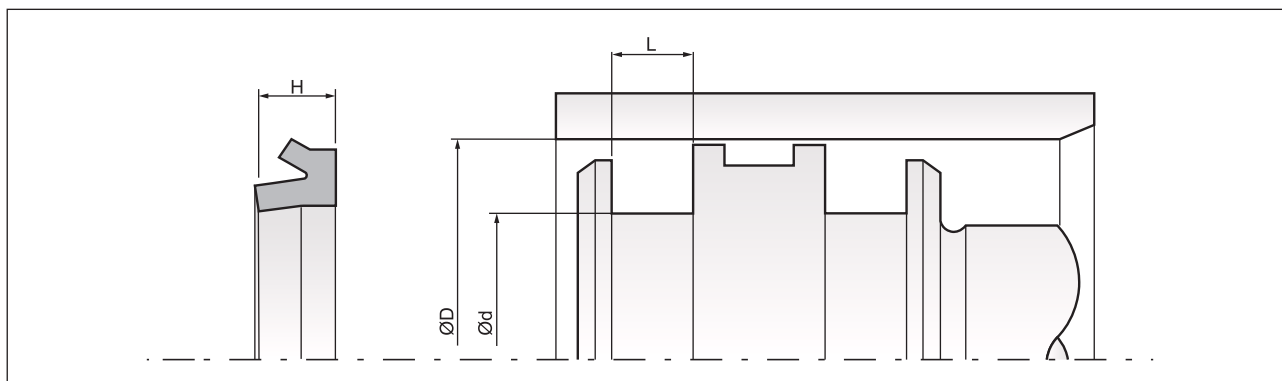


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P130280901	37.00	28.00	7.00	6.50	NBR	SUB-3237
P130290901	37.20	29.00	4.00	3.50	NBR	SUB-3239
P130250804	38.00	25.00	7.30	6.80	NBR	SUB-3047
P130281004	38.00	28.00	7.50	7.00	NBR	SUB-3046
P130301006	38.00	30.00	6.50	6.00	NBR	SUB-1541
P130250701	38.10	25.40	10.50	9.50	NBR	SUB-2411
P130260901	38.30	26.60	11.00	10.00	NBR	SUB-3240
P130251003	40.00	25.00	10.00	9.00	NBR	SUB-3250
P130281005	40.00	28.00	8.50	8.00	NBR	SUB-3247
P130281003	40.00	28.00	10.00	9.00	NBR	SUB-2256
P130306602	40.00	30.00	7.50	7.00	FKM	SUB-1730
P130306701	40.00	30.00	7.50	7.00	FKM	SUB-2383
P130301005	40.00	30.00	7.50	7.00	NBR	SUB-1912
P130306603	40.00	30.00	7.50	7.00	FKM	SUB-1944
P130306502	40.00	30.00	7.50	7.00	FKM	SUB-3902
P130300803	40.00	30.00	8.00	7.5	NBR	SUB-3091
P130321004	40.00	32.00	6.70	6.20	NBR	SUB-1804
P130326601	40.00	32.00	6.70	6.20	FKM	SUB-2067
P130326601	40.00	32.00	6.70	6.20	FKM	SUB-1528
P130326601	40.00	32.00	6.70	6.20	FKM	SUB-2166
P130326603	40.00	32.00	8.00	7.50	FKM	SUB-3304
P130350901	41.00	35.00	4.70	4.20	NBR	SUB-3454
P130301004	42.00	0.00	8.50	8.00	NBR	SUB-1754
P130261001	42.00	26.00	10.50	9.50	NBR	SUB-2312
P130341101	42.20	34.92	6.50	6.00	NBR	SUB-3754
P130310501	44.45	31.75	13.50	12.50	NBR	SUB-1431
P130326602	45.00	32.00	7.00	6.50	FKM	SUB-2185
P130321006	45.00	32.00	7.00	6.50	NBR	SUB-2773
P130321005	45.00	32.00	10.00	9.00	NBR	SUB-2296
P130351002	45.00	35.00	7.50	7.00	NBR	SUB-1965
P130351002	45.00	35.00	7.50	7.00	NBR	SUB-2470
P130376401	45.50	37.40	10.90	9.90	FKM	SUB-1685
P130391001	46.00	39.70	5.00	4.50	NBR	SUB-2951
P130400801	46.00	40.00	5.60	5.10	NBR	SUB-2687
P130350801	47.00	35.00	7.20	6.70	NBR	SUB-2968
P130381002	48.00	38.00	7.50	7.00	NBR	SUB-2268
P13038T501	48.00	38.00	7.50	7.00	EPDM	SUB-3599
P130400901	48.00	40.00	6.00	5.50	NBR	SUB-4195
P130360803	50.00	36.00	7.50	7.00	NBR	SUB-3049
P130360901	50.00	36.00	7.50	7.00	NBR	SUB-1893
P130361101	50.00	36.00	11.00	10.00	NBR	SUB-597
P130381102	50.00	38.00	6.50	6.00	NBR	SUB-1375
P130386602	50.00	38.00	7.00	6.50	FKM	SUB-2184
P130380801	50.00	38.00	9.00	8.50	NBR	SUB-444
P130406601	50.00	40.00	7.50	7.00	FKM	SUB-1362
P130406607	50.00	40.00	7.50	7.00	FKM	SUB-1748
P130401002	50.00	40.00	7.50	7.00	NBR	SUB-2814
P130400802	50.00	40.00	7.50	7.00	NBR	SUB-3080
P130361001	52.00	36.00	10.40	9.40	NBR	SUB-1199
P130380802	52.00	38.00	7.50	7.00	NBR	SUC-2052
P130380901	52.00	38.00	9.00	8.50	NBR	SUC-1920
P130401101	52.00	40.00	9.00	8.50	NBR	SUC-475

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P130410901	52.00	41.00	7.70	7.20	NBR	SUC-1146
P13040CF01	53.50	40.00	7.50	7.00	PU	PUC-1247
P130381201	55.00	38.00	10.70	9.70	NBR	SUC-2116
P130451001	55.00	45.00	7.50	7.00	NBR	SUC-1585
P130481101	58.00	48.00	7.50	7.00	NBR	SUC-497
P130506401	59.00	50.00	7.50	7.00	FKM	SUC-1127
P130481102	60.00	48.00	10.00	9.00	NBR	SUC-2530
P130500901	60.00	50.00	5.20	4.70	NBR	SUC-2308
P130506602	60.00	50.00	7.50	7.00	FKM	SUC-1158
P130501002	60.00	50.00	7.50	7.00	NBR	SUC-1516
P130506402	60.00	50.00	7.50	7.00	FKM	SUC-1913
P130526601	62.00	52.00	7.30	6.80	FKM	SUC-1812
P130530901	63.00	53.00	4.50	4.00	NBR	SUC-2179
P130531103	63.00	53.00	4.70	4.20	NBR	SUC-1866
P130536601	63.00	53.00	7.50	7.00	FKM	SUC-1240
P130531003	63.00	53.00	7.50	7.00	NBR	SUC-2726
P130480801	64.00	48.10	10.50	9.50	NBR	SUC-1126
P130491001	65.00	49.00	13.00	12.00	NBR	SUC-1001
P130500802	65.00	50.00	11.80	10.80	NBR	SUC-2101
P130440901	65.87	44.45	8.80	8.30	NBR	SUC-2517
P130500902	66.67	50.80	9.39	8.89	NBR	SUC-2653
P130566601	68.00	56.00	12.80	11.80	FKM	SUC-2358
P130531104	69.85	53.97	10.30	9.30	NBR	SUC-1875
P130551003	69.90	55.90	7.50	7.00	NBR	SUC-2602
P130501001	70.00	50.00	17.00	16.00	NBR	SUC-962
P130530801	73.00	53.90	13.70	12.70	NBR	SUC-1144
P130700802	74.00	70.00	3.00	2.50	NBR	SUC-1945
P130560801	75.00	56.00	12.00	11.00	NBR	SUC-2102
P130626501	75.00	62.00	9.00	8.50	FKM	SUC-1720
P130631001	75.00	63.00	9.00	8.50	NBR	SUC-1371
P130580801	76.00	58.00	11.50	10.50	NBR	SUD-1782
P130581001	76.20	58.72	14.00	13.00	NBR	SUD-2046
P130600901	76.20	60.32	8.43	7.93	NBR	SUD-1445
P130706602	78.58	70.64	8.50	8.00	FKM	SUD-1524
P130706601	78.70	70.50	7.30	6.80	FKM	SUD-1503
P130646602	80.00	64.00	9.00	8.50	FKM	SUD-1632
P13067Q201	80.00	67.00	13.00	12.00	PU	PUD-674
P130681002	80.00	68.00	9.00	8.50	NBR	SUD-1073
P130686602	80.00	68.00	9.00	8.50	FKM	SUD-697
P130686501	80.00	68.00	12.80	11.80	FKM	SUD-1713
P130683401	80.00	68.00	14.70	13.70	EPDM	SUD-956
P13070L401	80.00	70.00	5.00	4.50	PU	PUD-659
P130701002	80.00	70.00	5.50	5.00	NBR	SUD-1591
P130701003	80.00	70.00	7.10	6.60	NBR	SUD-2063
P130708901	80.00	70.00	13.00	12.00	PU	PUD-733
P130660901	80.50	66.00	9.00	8.50	NBR	SUD-1304
P130760901	82.00	76.00	3.50	3.00	NBR	SUD-1682
P130661101	82.55	66.67	11.80	10.80	NBR	SUD-1429
P130651001	82.60	65.60	9.00	8.50	NBR	SUD-1982
P130736601	85.00	73.00	15.50	14.50	FKM	SUD-1260
P130750901	89.00	75.00	8.50	8.00	NBR	SUD-1359
P130780801	90.00	78.00	9.00	8.50	NBR	SUD-865

P13

Single Acting Piston Seal

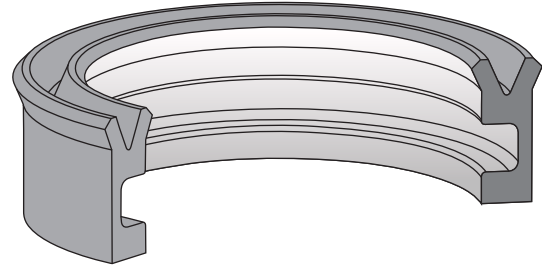


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P130791101	95.23	79.37	11.80	10.80	NBR	SUD-1430
P130781002	95.30	78.30	9.00	8.50	NBR	SUD-1981
P130806601	100.00	80.00	9.00	8.50	FKM	SUD-1047
P130826601	100.00	82.00	14.00	13.00	FKM	SUD-1729
P130851001	100.00	85.00	8.50	8.00	NBR	SUD-1312
P130876601	100.00	87.00	9.20	8.70	FKM	SUD-978
P130871001	100.00	87.60	15.70	14.70	NBR	SUD-996
P130886601	100.00	88.00	9.00	8.50	FKM	SUD-1038
P13088L401	100.00	88.00	13.00	12.00	PU	PUD-728
P130881001	100.00	88.00	15.50	14.50	NBR	SUD-1183
P130876602	101.00	83.00	10.00	9.00	FKM	SUE-970
P130881002	101.40	88.90	7.20	6.70	NBR	SUE-1061
P130820901	101.60	82.55	8.43	7.93	NBR	SUE-1000
P130821001	101.60	82.55	14.90	13.90	NBR	SUE-626
P130886603	101.60	88.90	7.20	6.70	FKM	SUE-738
P130880801	101.60	88.90	10.40	9.40	NBR	SUE-613
P130880901	101.60	88.90	10.52	9.52	NBR	SUE-588
P130801001	102.00	80.00	8.50	8.00	NBR	SUE-896
P130866601	104.00	86.80	14.00	13.00	FKM	SUE-1038
P130810801	105.00	85.00	13.00	12.00	NBR	SUE-1192
P130856601	105.00	85.00	13.00	12.00	FKM	SUE-1176
P130870901	105.00	87.00	13.30	12.30	NBR	SUE-999
P130911101	107.15	91.28	11.80	10.80	NBR	SUE-995
P130901001	107.20	90.20	9.00	8.50	NBR	SUE-1338
P130951002	115.00	95.00	15.00	14.00	NBR	SUE-861
P131031101	119.44	103.58	13.30	12.30	NBR	SUE-991
P131010801	119.90	101.90	10.00	9.00	NBR	SUE-1222
P131000901	120.00	100.00	16.00	15.00	NBR	SUE-1445
P131040801	120.00	104.00	13.30	12.30	NBR	SUE-1356
P131053301	120.00	105.00	11.00	10.00	EPDM	SUE-1197
P131056301	120.00	108.00	10.80	9.80	FKM	SUE-1443
P131110801	123.82	111.12	10.52	9.52	NBR	SUE-601
P131040901	125.00	104.00	8.50	8.00	NBR	SUE-934
P131051101	125.00	105.00	8.50	8.00	NBR	SUE-236
P131101002	125.00	110.00	10.00	9.00	NBR	SUE-1011
P131106602	125.00	110.00	10.30	9.30	FKM	SUE-610
P131101001	125.00	110.00	11.00	10.00	NBR	SUE-1224
P131106601	125.00	110.00	11.00	10.00	FKM	SUE-744
P13112Q201	125.00	112.00	13.00	12.00	PU	PUE-447
P131151002	125.00	115.00	8.00	7.50	NBR	SUE-798
P131066601	126.50	106.00	12.50	11.50	FKM	SUF-704
P131051001	127.00	105.86	14.75	13.75	NBR	SUF-774
P131151001	127.00	115.00	6.80	6.30	NBR	SUF-561
P131141101	130.00	114.00	10.50	9.50	NBR	SUF-952
P131150801	133.40	115.40	10.00	9.00	NBR	SUF-856
P131156602	135.00	115.00	11.00	10.00	FKM	SUF-945
P131201002	140.00	120.00	11.00	10.00	NBR	SUF-444
P131256601	140.00	125.00	11.00	10.00	FKM	SUF-435
P131280801	146.00	128.00	10.00	9.00	NBR	SUF-855
P131350801	150.00	135.00	8.75	8.25	NBR	SUF-582
P131356701	150.00	135.00	10.50	9.50	FKM	SUF-103
P131356601	150.00	135.00	11.00	10.00	FKM	SUF-407

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P131351001	150.00	135.00	11.00	10.00	NBR	SUF-590
P131351002	150.00	135.00	11.50	10.50	NBR	SUF-485
P131281005	151.00	128.00	20.00	19.00	NBR	SUG-629
P131321001	151.00	132.00	10.70	9.70	NBR	SUG-675
P131271001	152.00	127.00	20.50	19.50	NBR	SUG-424
P131246602	152.40	124.75	14.00	13.00	FKM	SUG-500
P131241101	152.40	127.00	20.50	19.50	NBR	SUG-553
P131346601	152.40	134.94	19.00	18.00	FKM	SUG-771
P131376601	152.40	137.80	12.00	11.00	FKM	SUG-412
P131246601	153.00	124.60	13.00	12.00	FKM	SUG-487
P131396601	160.00	139.00	15.50	14.50	FKM	SUG-461
P131401001	160.00	140.00	8.50	8.00	NBR	SUG-507
P131441001	160.00	144.00	12.20	11.20	NBR	SUG-857
P131456601	160.00	145.00	11.00	10.00	FKM	SUG-471
P131451001	160.00	145.00	12.00	11.00	NBR	SUG-528
P131450801	165.10	145.10	11.00	10.00	NBR	SUG-731
P131531001	178.00	153.00	20.50	19.50	NBR	SUH-409
P131700801	190.50	170.50	11.00	10.00	NBR	SUH-430
P131601001	200.00	160.00	24.50	23.50	NBR	SUH-428
P131751101	200.00	175.00	17.00	16.00	NBR	SUH-441
P131801003	200.00	180.00	13.00	12.00	NBR	SUH-366
P131806601	200.00	180.00	15.00	14.00	FKM	SUH-272
P131801005	200.00	180.00	15.00	14.00	NBR	SUH-283
P131841001	200.00	184.00	8.10	7.60	NBR	SUH-404
P131851001	200.00	185.00	17.00	16.00	NBR	SUH-495
P131646601	203.20	164.00	19.40	18.40	FKM	SUJ-256
P131651101	203.20	165.10	20.00	19.00	NBR	SUJ-380
P131826701	206.00	182.00	12.00	11.00	FKM	SUJ-101
P131801002	206.37	180.97	20.60	19.60	NBR	SUJ-257
P131930801	215.90	193.90	12.00	11.00	NBR	SUJ-355
P132190801	241.30	219.30	12.00	11.00	NBR	SUK-284
P132303401	250.00	230.00	15.00	14.00	EPDM	SUK-230
P132306603	250.00	230.00	15.00	14.00	FKM	SUK-316
P132306604	250.00	230.00	16.00	15.00	FKM	SUK-323
P132806501	300.00	280.00	16.00	15.00	FKM	SUM-457
P132801001	300.00	280.00	16.00	15.00	NBR	SUM-586
P132796601	304.80	279.40	15.60	14.60	FKM	SUM-470
P132801101	305.00	280.00	17.00	16.00	NBR	SUM-633
P132956601	320.00	295.00	18.00	17	FKM	SUM-486
P133005901	320.00	300.60	17.00	16.00	PU	PUM-216
P132950901	350.00	295.00	31.00	30.00	NBR	SUM-643
P133206702	350.00	320.00	18.00	17.00	FKM	SUM-497
P133206601	350.00	320.00	21.00	20.00	FKM	SUM-458
P133500801	370.00	350.00	16.00	15.00	NBR	SUM-551
P13344K301	375.43	344.00	12.81	11.81	HYT	PUM-133
P133746601	400.00	374.65	25.50	24.50	FKM	SUM-456
P133761001	400.00	376.00	26.00	25.00	NBR	SUM-494
P134800801	510.00	480.00	16.00	15.00	NBR	SUVG-506
P134900701	520.00	490.00	19.00	18.00	NBR	SUVG-433
P135001001	530.00	500.00	25.00	24.00	NBR	SUVG-590
P136170801	641.35	617.47	13.70	12.70	NBR	SUVG-509

DETAILS

P16 is a piston U-ring with an integral guiding surface for single-acting pneumatic equipments. Smooth running in piston due to optimized sealing lip geometry retaining the lubrication film and high temperature resistance in case of proper choice of elastomer compound. This profile is also available for double acting pistons (refer P14) with identical housing.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- No metallic contact between Piston & Cylinder.
- Multifunctional sealing element.
- Long service life.
- For use in dry and oil-free air.
- Easily mounted by pulling them over the one-piece piston.
- Ideal seal for plastic / light metal cylinders.
- Smooth running due to sealing lip geometry.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P16 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

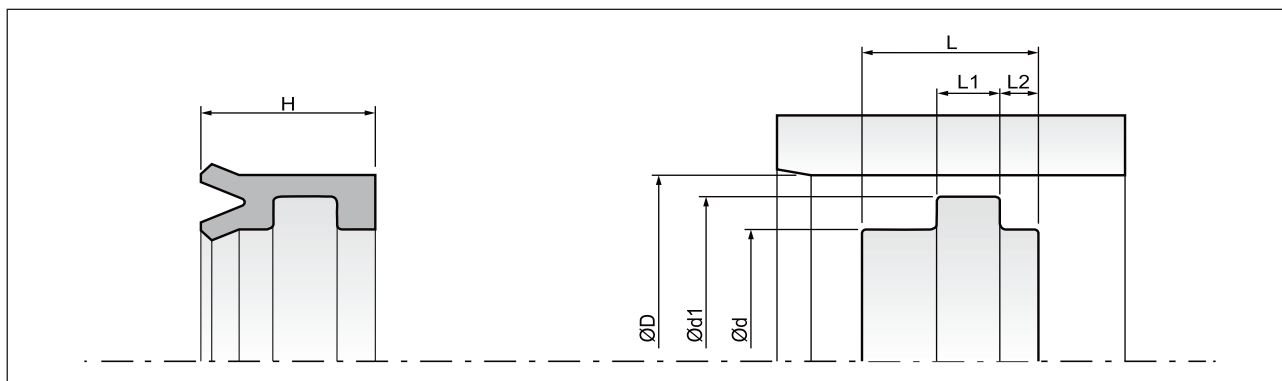
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

P16

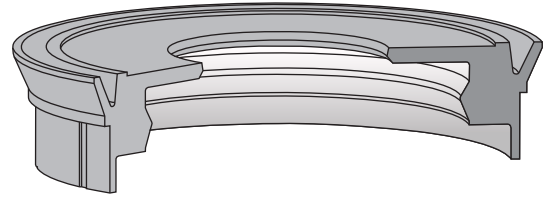
Single Acting Piston Seal



Part No.	D (H11)	d (h10)	H	d1 (-0.1)	L	L1	L2	Material	Mould No.
P160100901	16.00	10.00	8.00	13.50	9.50	3.00	2.00	NBR	SUA-1364
P160120902	18.00	12.00	8.00	15.50	9.50	3.00	2.00	NBR	SUA-2162
P160140902	20.00	14.00	8.00	17.50	9.50	3.00	2.00	NBR	SUA-2397
P160180901	25.00	18.00	9.00	22.50	9.50	3.00	2.00	NBR	SUA-1354
P160180902	25.00	18.00	9.00	22.50	9.50	3.00	2.00	NBR	SUA-2485
P160220901	28.00	22.00	8.00	25.50	9.50	3.00	2.00	NBR	SUB-000
P160230901	30.00	23.00	9.00	27.50	10.00	3.00	2.00	NBR	SUB-1211
P160231001	30.00	23.00	9.00	27.50	10.00	3.00	2.00	NBR	SUB-3020
P160220801	32.00	22.00	9.90	29.50	11.00	5.50	3.00	NBR	SUB-1902
P160232101	32.00	23.00	10.00	28.00	11.00	6.00	2.75	CR	SUB-2243
P160250901	32.00	25.00	9.00	29.50	10.00	3.00	2.00	NBR	SUB-000
P160280901	35.00	28.00	9.00	32.50	10.00	3.00	2.00	NBR	SUB-000
P160330901	40.00	33.00	9.00	37.50	10.00	3.00	2.00	NBR	SUB-2302
P160330902	40.00	33.00	9.00	37.50	10.00	3.00	2.00	NBR	SUB-4191
P160380901	45.00	38.00	9.00	42.50	10.00	3.00	2.00	NBR	SUB-2303
P160421001	50.00	42.00	11.90	42.50	13.00	3.00	2.00	NBR	SUB-2433
P160430901	50.00	43.00	9.00	47.50	10.00	3.00	2.00	NBR	SUB-000
P160460901	54.00	46.00	10.00	51.50	11.00	4.00	2.00	NBR	SUB-000
P160530901	63.00	53.00	13.00	60.00	14.50	5.00	2.50	NBR	SUB-000
P160560901	63.00	56.00	9.00	60.50	10.00	3.00	2.00	NBR	SUC-1650
P160700902	80.00	70.00	10.00	77.40	11.00	4.00	2.00	NBR	SUB-000
P160720902	80.00	72.00	10.50	77.40	11.00	4.00	2.00	NBR	SUD-1058
P160880901	100.00	88.00	16.50	96.50	18.00	8.00	2.50	NBR	SUB-000
P16090Q201	100.00	90.00	11.50	97.00	13.50	4.00	2.50	PU	PUD-882
P161581001	168.27	158.75	17.50	166.27	18.50	9.00	3.70	NBR	SUG-639
P161701001	184.00	170.00	19.00	180.00	20.00	10.00	5.00	NBR	SUH-462

DETAILS

P15 is a single acting piston seal with integrated guiding element and buffer for mechanical cushioning. This seal is particularly suitable for short stroke cylinders and magnetic pistons. For double pistons back to back seal will be used. We will supply the seal guide element without magnetic ring.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Prevent metallic contact between the cylinder and piston.
- Ideal for light plastic / light metal cylinders.
- Multi-functional sealing element – Sealing, guiding and cushioning element.
- Long service life.
- Easy Installation.
- Assemble on one-part piston.
- Low compression set.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P15 seals can be easily snapped into the groove. Remove all the pores and scratches to avoid damaging the seal during installation.

MATERIAL

Polyurethane 92 Shore A.

OPERATING CONDITIONS

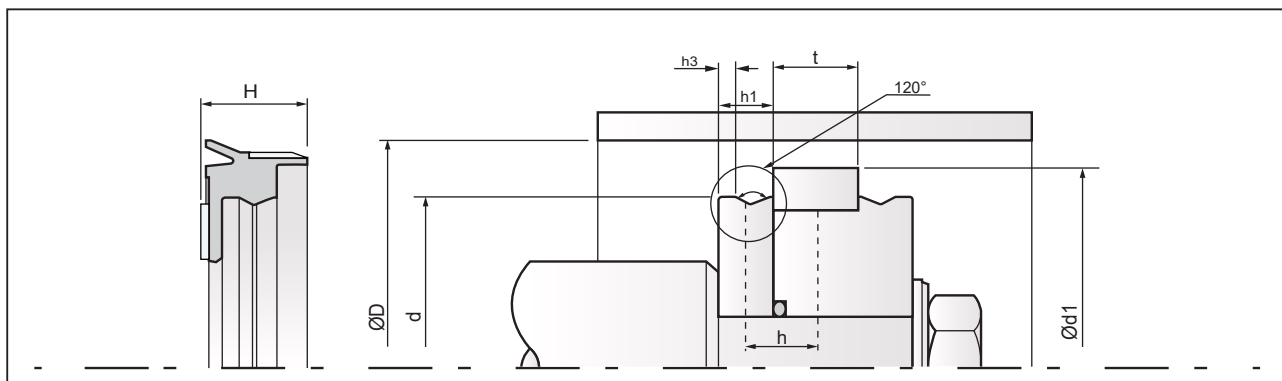
Temperature Range : -30°C to + 100°C
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 0.8 µmRa
Dynamic : 0.25 µmRa

P15

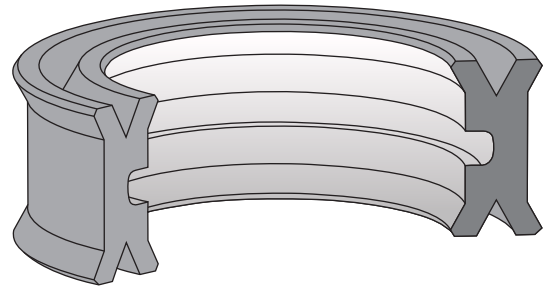
Single Acting Piston Seal



Part No.	D	d	H	d1	t	h	h1	Material	Mould No.
P15006L401	12.00	6.00	5.90	10.50	3.00	3.50	-	PU	PUA-736
P150066601	12.00	6.00	6.00	10.50	3.00	3.50	-	FKM	SUA-2334
P15008L401	16.00	8.00	5.80	14.50	3.00	3.50	-	PU	PUA-537
P150085901	16.00	8.00	6.00	14.50	3.00	3.50	-	PU	PUA-815
P15010L402	20.00	10.00	5.60	18.00	3.00	3.50	-	PU	PUA-576
P15010L401	25.00	10.00	6.00	23.00	3.00	3.50	-	PU	PUA-577
P150228901	32.00	22.00	7.00	29.20	4.00	3.70	3.00	PU	PUB-1358
P150250901	32.00	25.00	7.00	29.50	4.40	3.50	2.30	NBR	SUB-2384
P150266601	32.00	26.00	7.00	29.50	3.00	4.00	2.90	FKM	SUB-3892
P15032L401	38.10	32.10	7.15	35.60	4.80	4.15	3.50	PU	PPA-503
P15025L402	40.00	25.00	6.00	37.50	3.00	2.25	4.50	PU	PUB-866
P15026L401	40.00	26.00	7.50	37.50	5.00	4.40	3.80	PU	PUB-946
P15026CF01	40.00	26.00	7.50	37.50	5.00	4.40	3.80	PU	PUB-1961
P15033L401	40.00	33.00	8.00	37.50	7.00	4.65	3.40	PU	PUB-1247
P150341002	40.00	34.00	7.50	37.50	5.00	4.25	3.50	NBR	SUB-3405
P150348901	40.00	34.00	7.50	37.50	5.00	4.25	3.50	PU	PUB-1041
P15025L403	50.00	25.00	7.50	46.00	5.00	4.50	5.00	PU	PUB-867
P15032L402	50.00	32.50	7.50	47.00	4.80	4.25	3.50	PU	PUB-1170
P15032L403	50.00	32.60	7.50	47.00	4.80	4.25	3.50	PU	PUB-790
P150321001	50.00	32.60	7.50	47.00	4.80	4.25	3.50	NBR	SUB-3404
P15043L402	50.00	43.00	7.25	47.00	5.00	4.25	3.45	PU	PUB-1330
P150436601	50.00	43.00	7.25	47.00	5.00	4.25	3.50	FKM	SUB-2313
P150436602	50.00	43.00	7.50	47.00	4.60	4.10	3.20	FKM	SUB-2950
P15053Q201	63.00	53.00	9.80	60.50	7.20	5.90	4.80	PU	PUC-945
P15053L402	63.00	53.00	9.80	60.00	5.00	5.70	5.50	PU	PUC-1076
P15053L401	63.00	53.00	10.00	60.00	4.80	6.00	6.00	PU	PUC-593
P150531001	63.00	53.00	10.00	60.00	4.80	6.00	6.00	NBR	SUC-2279
P15055L402	63.00	55.00	10.00	60.50	5.00	5.00	6.30	PU	PUC-1088
P15054L401	80.00	54.00	10.50	77.00	6.00	5.25	5.40	PU	PUD-610
P150721001	80.00	72.00	11.00	77.50	7.00	6.50	6.30	NBR	SUD-1776
P15090L402	100.00	90.00	13.15	97.00	5.60	7.55	7.30	PU	PUD-762

DETAILS

P14 is a double U-ring with an integral guiding surface for double-acting pneumatic equipments. Smooth running in Piston due to sealing lip geometry in retaining the lubrication film and high temperature resistance in case of proper choice of elastomer compound. This profile is also available for single acting pistons (refer P16) with identical housings.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- No metallic contact between Piston & Cylinder.
- Long service life.
- For use in dry and oil-free air.
- Easily mounted by pulling them over the one-piece piston.
- Ideal seal for plastic / light metal cylinders.
- Multifunctional sealing element.
- Smooth running due to sealing lip geometry.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P14 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.

OPERATING CONDITIONS

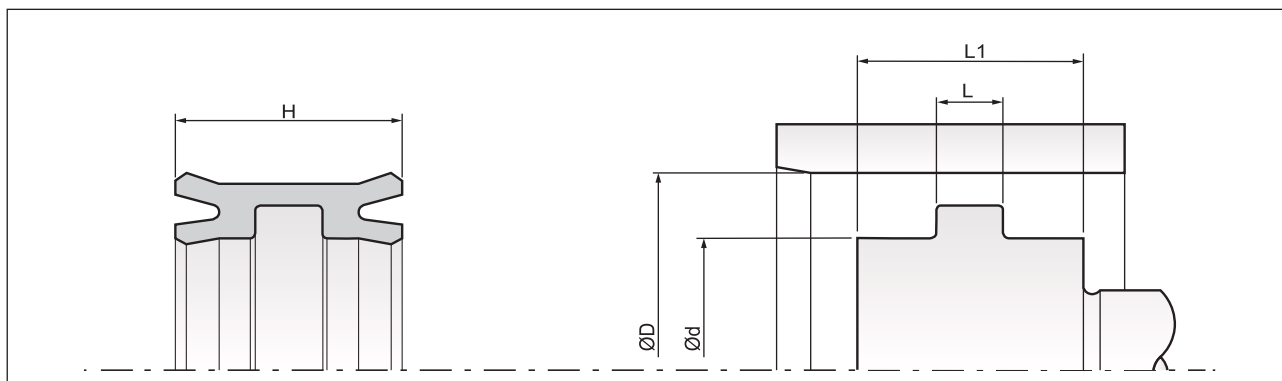
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

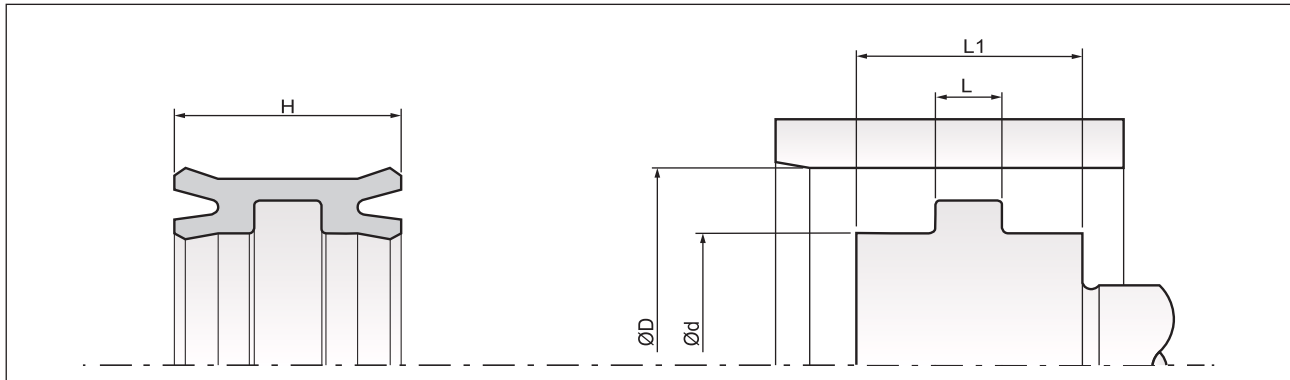
Static : 1.6 µmRa
Dynamic : 0.4 µmRa

P14

Double Acting Piston Seal



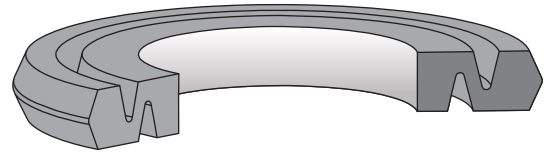
Part No.	D (H11)	d (h10)	H	d1 (-0.1)	L	L1	L2 (-0.1)	Material	Mould No.
P140101101	16.00	10.00	10.20	13.50	11.70	3.00	4.50	NBR	SUA-1089
P140100901	16.00	10.00	10.50	13.50	12.00	3.00	4.50	NBR	SUA-1183
P140120902	18.00	12.00	10.50	15.50	12.00	3.00	4.50	NBR	SUA-2368
P140140902	22.00	14.00	7.00	19.50	8.00	2.00	3.50	NBR	SUA-1015
P140180902	25.00	18.00	12.00	22.50	13.00	3.00	5.00	NBR	SUA-1946
P140186501	25.00	18.00	12.00	22.50	13.00	3.00	5.00	FKM	SUA-1154
P140221001	28.00	22.00	10.50	25.50	12.00	3.00	4.50	NBR	SUB-1453
P14022L401	28.00	22.00	10.50	25.50	12.00	3.00	4.50	PU	PUB-859
P140230901	30.00	23.00	12.00	27.50	13.00	3.00	5.00	NBR	SUB-1346
P140250801	32.00	25.00	10.30	29.50	11.80	3.00	5.00	NBR	SUB-1609
P140256701	32.00	25.00	12.00	29.50	13.00	3.00	5.00	FKM	SUB-2097
P140250802	32.00	25.00	12.00	29.50	13.00	3.00	5.00	NBR	SUB-1745
P140280901	35.00	28.00	12.00	32.50	13.00	3.00	5.00	NBR	SUB-1918
P14028M101	35.00	28.00	12.00	32.50	13.00	3.00	5.00	HNBR	SUB-3345
P140316501	38.00	31.00	12.00	35.50	13.00	3.00	5.00	FKM	SUB-4063
P140330901	40.00	33.00	12.00	37.50	13.00	3.00	5.00	NBR	SUB-1401
P14033L401	40.00	33.00	12.00	37.50	13.00	3.00	5.00	PU	PUB-860
P140350801	42.00	35.00	10.50	38.10	12.00	3.00	4.50	NBR	SUB-2152
P140380901	45.00	38.00	12.00	42.50	13.00	3.00	5.00	NBR	SUB-2021
P140380801	45.00	38.00	12.00	42.50	13.00	3.00	5.00	NBR	SUB-1746
P140410901	48.00	41.00	11.80	45.50	13.00	3.00	5.00	NBR	SUB-2697
P140430901	50.00	43.00	11.70	47.50	13.00	3.00	5.00	NBR	SUB-1230
P14043L401	50.00	43.00	11.70	47.50	13.00	3.00	5.00	PU	PUB-861
P140436501	50.00	43.00	11.70	47.50	13.00	3.00	5.00	FKM	SUB-2253
P140435901	50.00	43.00	11.70	47.50	13.00	3.00	5.00	PU	PUB-1952
P140430801	50.00	43.00	12.00	47.50	13.00	3.00	5.00	NBR	SUB-2635
P140460901	54.00	46.00	13.00	51.50	15.00	4.00	5.50	NBR	SUC-1500
P140501001	60.00	50.00	16.50	56.50	18.50	5.00	7.00	NBR	SUC-255
P140500902	60.00	50.00	17.00	56.50	19.00	5.00	7.00	NBR	SUC-2448
P140511001	63.00	51.50	16.50	60.30	18.50	5.00	7.00	NBR	SUC-892
P140530902	63.00	53.00	17.00	60.00	19.00	5.00	7.00	NBR	SUC-187
P140530801	63.00	53.00	17.00	60.00	19.00	5.00	7.00	NBR	SUC-1251
P140560901	63.00	56.00	12.00	60.50	13.00	3.00	6.00	NBR	SUC-1002
P140560902	63.00	56.00	12.00	60.50	13.00	3.00	6.00	NBR	SUC-1249
P140560903	63.00	56.20	12.00	60.50	13.00	3.00	6.00	NBR	SUC-2505
P140620901	70.00	62.00	13.00	67.50	15.00	4.00	5.50	NBR	SUC-923
P140660901	76.00	66.00	18.00	73.00	20.00	6.00	7.00	NBR	SUD-966
P140706501	80.00	70.00	18.00	77.00	20.00	6.00	7.00	FKM	SUD-967
P140701001	80.00	70.00	18.00	77.00	20.00	6.00	7.00	NBR	SUD-652
P140700901	80.00	70.00	18.00	77.00	20.00	6.00	7.00	NBR	SUD-1224
P140720901	80.00	72.00	13.00	77.40	15.00	4.00	5.50	NBR	SUD-811
P140731002	83.00	73.00	17.00	79.40	19.00	5.00	7.00	NBR	SUD-1206
P140780901	90.00	78.00	20.00	86.20	22.00	8.00	7.00	NBR	SUD-1892
P140800902	90.00	80.00	17.00	86.20	19.00	5.00	7.00	NBR	SUD-1415
P140880902	100.00	88.00	21.00	96.50	23.00	8.00	7.50	NBR	SUD-821
P140880902	100.00	88.00	21.00	96.50	23.00	8.00	7.50	NBR	SUD-875
P140886501	100.00	88.00	21.00	96.50	23.00	8.00	7.50	FKM	SUD-1037
P140900901	100.00	90.00	16.00	96.50	18.00	5.00	7.00	NBR	SUD-746
P140980901	110.00	98.00	20.20	105.60	22.20	8.00	7.50	NBR	SUE-1255
P141080901	120.00	108.00	20.00	117.00	22.00	8.00	7.00	NBR	SUE-1275
P141130802	125.00	113.00	15.00	122.00	17.00	4.00	6.00	NBR	SUE-646
P141136501	125.00	113.00	21.00	121.50	23.00	8.00	6.00	FKM	SUE-625



Part No.	D (H11)	d (h10)	H	d1 (-0.1)	L	L1	L2 (-0.1)	Material	Mould No.
P1401130902	125.00	113.00	21.00	121.50	23.00	8.00	6.00	NBR	SUE-289
P141130803	125.00	113.00	22.50	121.50	24.50	8.00	6.00	NBR	SUE-652
P141230901	133.00	123.00	17.00	130.00	19.00	5.00	7.00	NBR	SUF-894
P141286601	140.00	128.00	20.00	136.50	22.00	8.00	7.50	FKM	SUF-359
P141280901	140.00	128.00	21.00	136.50	23.00	8.00	7.50	NBR	SUF-549
P14128E301	140.00	128.00	21.00	136.50	23.00	8.00	7.50	NBR	SUF-654
P141450901	160.00	145.00	26.00	155.50	29.00	10.00	9.50	NBR	SUG-378
P141456601	160.00	145.00	26.00	155.50	29.00	10.00	9.50	FKM	SUG-504
P141451001	160.00	145.00	26.00	155.50	29.00	10.00	9.50	NBR	SUG-564
P141451001	160.00	145.00	26.00	155.50	29.00	10.00	9.50	NBR	SPA-1497
P141600902	175.00	160.00	25.00	170.50	28.00	10.00	9.50	NBR	SUG-776
P141650901	180.00	165.00	25.00	175.50	28.00	10.00	9.50	NBR	SUH-479
P141850902	200.00	185.00	26.00	195.50	29.00	10.00	9.50	NBR	SUH-478
P141856501	200.00	185.00	26.00	195.50	29.00	10.00	9.50	FKM	SUH-333
P142356601	250.00	235.00	26.00	245.30	29.00	10.00	9.50	FKM	SUK-197
P142350901	250.00	235.00	26.00	245.30	29.00	10.00	9.50	NBR	SUK-291
P143020901	322.00	302.00	27.00	317.50	30.00	10.50	10.00	NBR	SUM-542

DETAILS

P26 is a double acting pneumatic seal for piston required only small housing dimensions. It is mainly mounted on pneumatic cylinders but can also be used on pneumatic valves. The seal profile is rounded in the center on the dynamic lip and has two projections on the static lip. It is very easy to install due to its symmetrical profile. Particularly sliding even at low pressure.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- The compact design.
- Suitable for short piston designs.
- The rounded sealing profile and the flexible centre part give good tightness with low friction and maintain an effective lubricating film.
- Widely proven design.
- Large supply range available.
- Very good tribological properties (wear, friction).
- Long service life.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P26 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

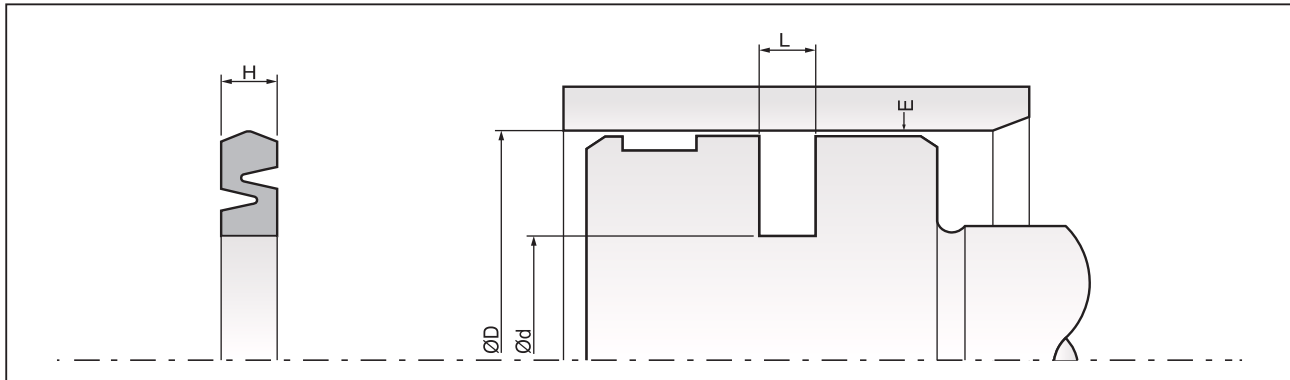
Static : 1.6 µmRa
Dynamic : 0.4 µmRa

EXTRUSION GAP

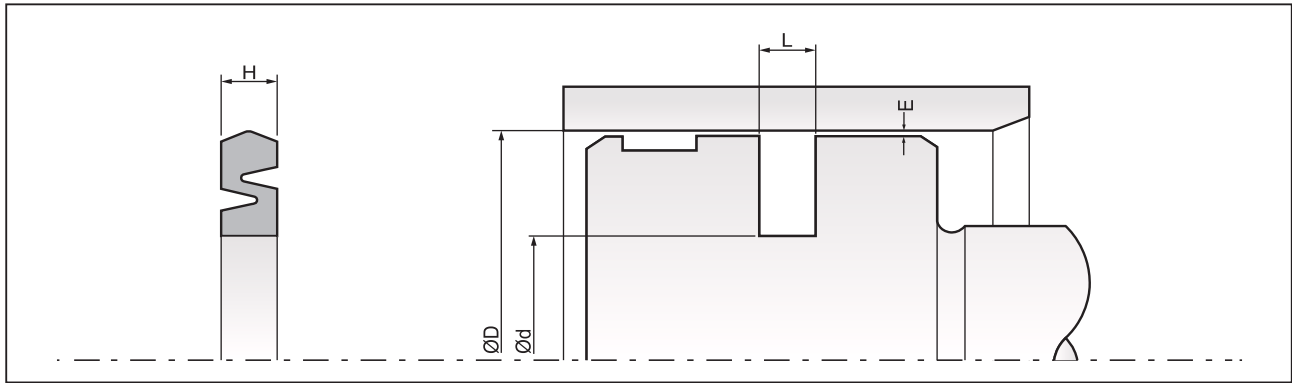
OD (mm)	E Max (mm)
30 <	0.40
30 < 100	0.50
100 <	0.50

P26

Double Acting Piston Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.	Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P260050801	10.00	5.70	1.70	1.50	NBR	SUA-1021	P260210803	30.00	21.00	2.70	2.50	NBR	SUB-3890
P260061001	10.00	6.50	1.60	1.40	NBR	SUA-1669	P260210902	30.00	21.00	3.00	2.80	NBR	SUB-2426
P260066401	12.00	6.50	1.90	1.70	FKM	SUA-1525	P26021L501	30.00	21.00	3.00	2.80	PU	PUB-1436
P260066501	12.00	6.50	1.90	1.70	FKM	SUA-2055	P260210801	30.00	21.00	3.20	3.00	NBR	SUB-2346
P260060801	12.00	6.50	1.90	1.70	NBR	SUA-1579	P260211001	30.00	21.00	3.20	3.00	NBR	SUB-127
P260070901	12.00	7.00	2.20	2.00	NBR	SUA-2088	P260220901	30.00	22.00	3.00	2.80	NBR	SUB-4087
P260070801	12.00	7.00	2.30	2.10	NBR	SUA-2331	P260220801	31.75	22.22	2.90	2.70	NBR	SUB-1512
P260071001	12.00	7.00	2.40	2.20	NBR	SUA-1569	P260226501	32.00	22.00	3.00	2.80	FKM	SUB-2706
P26005D501	12.51	5.93	2.26	2.06	HNBR	SUA-2402	P260236501	32.00	23.00	2.70	2.50	FKM	SUB-2356
P260098901	14.00	9.00	2.60	2.40	PU	PUA-302	P260230805	32.00	23.00	2.70	2.50	NBR	SUB-3889
P260101002	15.00	10.00	2.20	2.00	NBR	SUA-2328	P260230901	32.00	23.00	2.70	2.50	NBR	SUB-3410
P260111003	15.00	11.00	1.85	1.65	NBR	SUA-1568	P260230803	32.00	23.00	3.00	2.80	NBR	SUB-3627
P260090805	16.00	9.00	2.30	2.10	NBR	SUA-2345	P260236503	32.00	23.00	3.10	2.90	FKM	SUB-3836
P260090804	16.00	9.00	2.30	2.10	NBR	SUA-2333	P260231002	32.00	23.00	3.20	3.00	NBR	SUB-1142
P26007D501	16.57	7.72	2.45	2.25	HNBR	SUA-2403	P260210901	32.80	21.90	2.90	2.70	NBR	SUB-1994
P260100801	18.00	10.00	2.20	2.00	NBR	SUA-1145	P260250901	35.00	25.00	3.00	2.80	NBR	SUB-2890
P260131002	18.00	13.00	2.50	2.30	NBR	SUA-1167	P260250801	35.00	25.50	3.20	3.00	NBR	SUB-2011
P260121001	19.00	12.00	2.50	2.30	NBR	SUA-1954	P260260801	35.00	26.00	2.70	2.50	NBR	SUB-3886
P260120901	20.00	12.00	2.20	2.00	NBR	SUA-1594	P26026L401	35.00	26.00	3.00	2.80	PU	PUB-1158
P260126601	20.00	12.00	2.50	2.30	FKM	SUA-1965	P260261003	35.00	26.00	3.00	2.80	NBR	SUB-3084
P260130802	20.00	13.00	2.30	2.10	NBR	SUA-1846	P260261001	35.00	26.00	3.20	3.00	NBR	SUB-126
P260130903	20.00	13.00	2.30	2.10	NBR	SUA-2203	P260201003	37.20	20.00	2.90	2.70	NBR	SUB-2628
P26013O301	20.00	13.00	2.30	2.10	NBR	SUA-2479	P260270801	40.00	27.50	3.70	3.50	NBR	SUB-3893
P260130601	20.00	13.00	2.30	2.10	NBR	SUA-2237	P260306601	40.00	30.00	3.20	3.00	FKM	SUB-3629
P260136601	20.00	13.00	2.50	2.30	FKM	SUA-1450	P260301001	40.00	30.00	3.20	3.00	NBR	SUB-1365
P260130803	20.00	13.00	2.60	2.40	NBR	SUA-2175	P260310801	40.00	31.00	2.70	2.50	NBR	SUB-3065
P260140801	21.00	14.00	2.40	2.20	NBR	SUA-1675	P260316401	40.00	31.00	2.70	2.50	FKM	SUB-3775
P260141001	22.00	14.50	2.70	2.50	NBR	SUA-1557	P260310901	40.00	31.00	2.70	2.50	NBR	SUB-3411
P260156401	22.00	15.00	2.30	2.10	FKM	SUA-2279	P260316501	40.00	31.00	2.90	2.70	FKM	SUB-2869
P260160801	22.00	16.00	2.50	2.30	NBR	SUA-2423	P260309001	40.00	31.00	2.90	2.70	NBR	SUB-2835
P260170803	22.00	17.00	3.70	3.50	NBR	SUA-2174	P260311002	40.00	31.00	3.10	2.90	NBR	SUB-2560
P260161002	25.00	16.00	3.00	2.80	NBR	SUA-2078	P260316502	40.00	31.00	3.10	2.90	FKM	SUB-3854
P260170701	25.00	17.00	2.20	2.00	NBR	SUA-902	P260316503	40.00	31.00	3.20	3.00	FKM	SUB-1713
P260170804	25.00	17.00	2.20	2.00	NBR	SUA-2272	P260311001	40.00	31.00	3.20	3.00	NBR	SUB-635
P260176601	25.00	17.00	2.30	2.10	FKM	SUA-1434	P260320901	40.00	32.00	2.90	2.70	NBR	SUB-2634
P260176601	25.00	17.00	2.30	2.10	FKM	SUA-1482	P260320902	40.00	32.00	3.40	3.20	NBR	SUB-3752
P260170802	25.00	17.00	3.05	2.85	NBR	SUA-1925	P260130804	40.00	34.00	3.20	3.00	NBR	SUB-3608
P260171001	25.00	17.50	2.40	2.20	NBR	SUA-1022	P260350901	45.00	35.00	2.80	2.60	NBR	SUB-2891
P260176501	25.00	17.50	2.40	2.20	FKM	SUA-2244	P260360801	45.00	36.00	2.70	2.50	NBR	SUB-3827
P260176602	25.00	17.50	2.40	2.20	FKM	SUA-2238	P260360802	45.00	36.00	2.70	2.50	NBR	SUB-3887
P260170901	25.00	17.50	2.40	2.20	NBR	SUA-2005	P260361001	45.00	36.00	3.20	3.00	NBR	SUB-2817
P260186401	25.00	18.00	2.30	2.10	FKM	SUA-1529	P260361001	45.00	36.00	3.20	3.00	NBR	SUB-1076
P260180804	25.00	18.00	2.30	2.10	NBR	SUA-2332	P260350801	46.00	35.00	3.20	3.00	NBR	SUB-2013
P260181001	25.00	18.00	2.50	2.30	NBR	SUA-490	P260350802	46.00	35.00	3.50	3.30	NBR	SUB-3894
P260166501	26.00	16.00	3.00	2.80	FKM	SUB-2633	P26037U201	46.00	37.00	2.70	2.50	FKM	SUB-4011
P260191001	28.00	19.00	2.70	2.50	NBR	SUB-2789	P260406401	50.00	40.00	2.90	2.70	FKM	SUB-3781
P260190802	28.00	19.00	2.70	2.50	NBR	SUB-3891	P260406501	50.00	40.00	3.00	2.80	FKM	SUB-2366
P260201002	29.00	20.00	3.20	3.00	NBR	SUB-2004	P260400902	50.00	40.00	3.00	2.80	NBR	SUB-2889
P260196401	29.50	19.85	3.00	2.80	FKM	SUB-2443	P260400803	50.00	40.00	3.70	3.50	NBR	SUB-3395
P260190801	29.50	19.85	3.00	2.80	NBR	SUB-3401	P260400801	50.00	40.00	3.90	3.70	NBR	SUB-1604
P260200801	30.00	20.00	3.20	3.00	NBR	SUB-2798	P260401002	50.00	40.00	6.30	5.80	NBR	SUB-3137
P260201004	30.00	20.00	3.20	3.00	NBR	SUB-3309	P260410802	50.00	41.00	2.70	2.50	NBR	SUB-3888

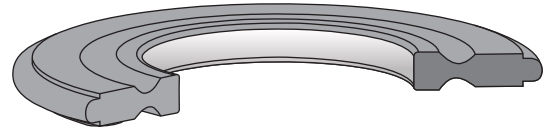


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P260410901	50.00	41.00	2.70	2.50	NBR	SUB-2710
P260416501	50.00	41.00	3.10	2.90	FKM	SUB-3835
P260410801	50.00	41.00	3.20	3.00	NBR	SUB-1143
P260410902	50.00	41.00	3.70	3.50	NBR	SUB-3029
P260401001	51.00	40.00	2.90	2.70	NBR	SUC-1809
P260400802	51.00	40.00	3.20	3.00	NBR	SUC-1418
P260400901	51.00	40.00	4.50	4.00	NBR	SUC-1462
P260440801	60.00	44.00	3.60	3.40	NBR	SUC-2604
P260481101	60.00	48.00	2.20	2.00	NBR	SUC-2639
P260480801	60.00	48.00	3.60	3.40	NBR	SUC-2603
P260481002	60.00	48.00	3.90	3.70	NBR	SUC-1761
P260481001	60.00	48.00	3.90	3.70	NBR	SUC-976
P260520801	60.00	52.00	4.50	4.00	NBR	SUC-1156
P260530903	60.00	53.00	4.50	4.00	NBR	SUC-2456
P260451001	60.20	45.00	3.90	3.70	NBR	SUC-1410
P260466501	61.30	46.30	4.00	3.80	FKM	SUC-1819
P260511003	63.00	51.00	3.60	3.40	NBR	SUC-1867
P260510901	63.00	51.00	3.60	3.40	NBR	SUC-2040
P260510801	63.00	51.00	3.60	3.40	NBR	SUC-2601
P260516602	63.00	51.00	3.90	3.70	FKM	SUC-1239
P260511002	63.00	51.00	3.90	3.70	NBR	SUC-931
P260511006	63.00	51.00	3.90	3.70	NBR	SUC-2439
P260530901	63.00	53.00	2.70	2.50	NBR	SUC-2012
P260536601	63.00	53.00	2.90	2.70	FKM	SUC-2180
P260530902	63.00	53.00	3.90	3.70	NBR	SUC-2398
P260531001	63.00	53.00	4.50	4.00	NBR	SUC-1816
P260530904	63.00	53.00	4.50	4.00	NBR	SUC-2497
P260550901	65.00	55.00	4.50	4.00	NBR	SUC-2816
P260559901	65.00	55.00	6.60	6.10	SBR	SUC-2199
P260501001	67.40	50.00	2.90	2.70	NBR	SUC-1810
P260580901	70.00	58.00	3.60	3.40	NBR	SUC-1707

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P260586501	70.00	58.00	3.60	3.40	FKM	SUC-2285
P260651001	79.00	65.00	5.80	5.30	NBR	SUD-1441
P260651003	80.00	65.00	6.00	5.50	NBR	SUD-872
P260650901	80.00	65.00	6.50	6.00	NBR	SUD-1923
P260680801	80.00	68.00	3.60	3.40	NBR	SUD-1980
P260680901	80.00	68.00	3.60	3.40	NBR	SUD-1561
P260681001	80.00	68.00	4.50	4.00	NBR	SUD-630
P260686602	80.00	68.00	5.60	5.10	FKM	SUD-1975
P260726601	80.00	72.00	6.00	5.50	FKM	SUD-1886
P260780801	90.00	78.00	4.70	4.20	NBR	SUD-1168
P260804401	95.00	80.00	6.10	5.60	VMQ	SUD-1378
P260856401	100.00	85.00	5.50	5.00	FKM	SUD-1879
P260850801	100.00	85.00	5.90	5.40	NBR	SUD-1107
P260856501	100.00	85.00	5.90	5.40	FKM	SUD-1425
P260854401	100.00	85.00	6.10	5.60	VMQ	SUD-1379
P260850902	100.00	85.00	6.50	6.00	NBR	SUD-1922
P260881001	100.00	88.00	3.60	3.40	NBR	SUD-1423
P260880801	100.00	88.00	3.60	3.40	NBR	SUD-1613
P260850802	110.00	85.00	5.50	5.00	NBR	SUE-1100
P261001001	125.00	100.00	5.40	4.90	NBR	SUE-674
P261100901	125.00	110.00	4.90	4.40	NBR	SUE-817
P261100801	125.00	110.00	4.90	4.40	NBR	SUE-1112
P261106602	125.00	110.00	5.35	4.85	FKM	SUE-841
P261150801	130.00	115.00	4.90	4.40	NBR	SUF-941
P261451002	160.00	145.00	4.90	4.40	NBR	SUG-823
P261451001	160.00	145.00	4.90	4.40	NBR	SUG-821
P262291001	250.00	229.50	8.50	8.00	NBR	SUK-204
P262366601	250.00	236.00	6.00	5.50	FKM	SUK-265
P262751001	315.00	275.00	20.50	20.00	NBR	SUM-504
P263180901	330.50	318.00	5.40	4.90	NBR	SUM-789

DETAILS

P25 is a pneumatic piston seal used for compact pistons that can be pressurized on both sides with grooves on the front face for pressure activation. This seal design is suitable for short stroke cylinders and the rounded sealing lip and flexible body provides good tightness with low friction and maintain effective lubrication.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Suitable for short stroke cylinders.
- Long service life.
- For use in dry and oil-free air.
- Easy installation.
- Low friction.
- Maintain lubrication.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The P25 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

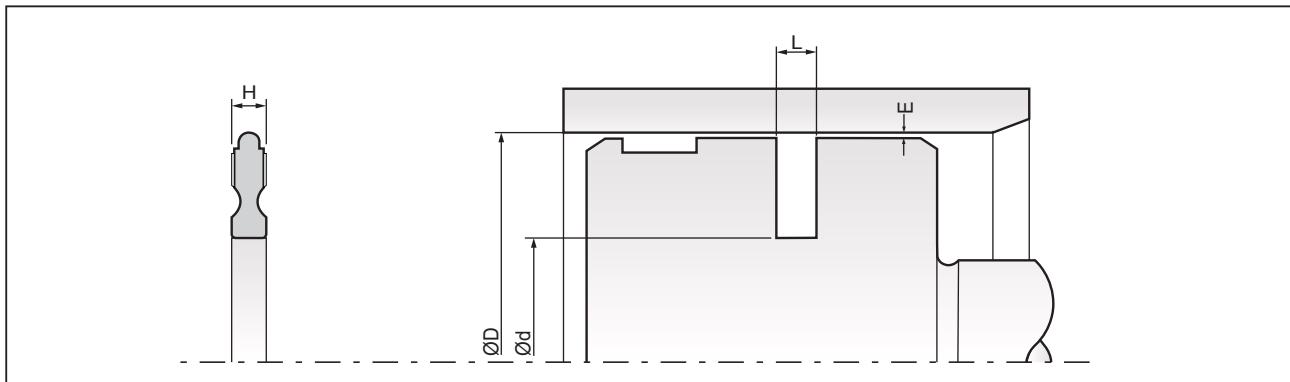
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

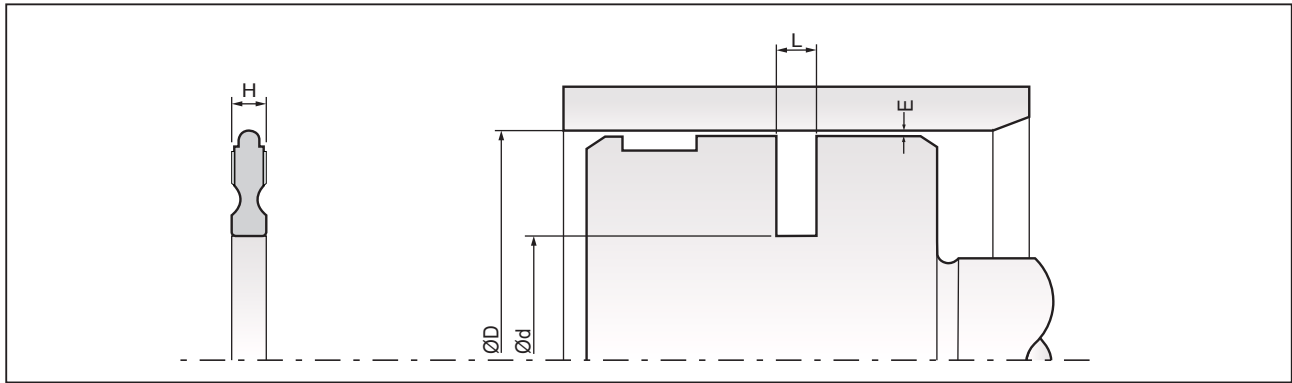
P25

Single Acting Piston Seal



Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P250066401	12.00	6.50	1.70	1.60	FKM	SUA-2375
P250071001	12.00	7.50	1.70	1.60	NBR	SUA-749
P250081003	12.00	8.00	1.70	1.60	NBR	SUA-2036
P250070901	13.00	7.00	1.60	1.50	NBR	SUA-1752
P250090801	14.00	9.00	2.40	2.30	NBR	SUA-866
P250110802	15.00	11.00	1.70	1.60	NBR	SUA-936
P250110901	15.00	11.00	1.75	1.65	NBR	SUA-1471
P250110801	15.00	11.00	1.85	1.75	NBR	SUA-766
P250100901	15.30	10.40	1.70	1.60	NBR	SUA-1706
P250090804	15.50	9.80	2.30	2.20	NBR	SUA-1997
P250090802	15.87	9.52	2.50	2.40	NBR	SUA-1038
P250121001	15.87	12.70	2.30	2.20	NBR	SUA-1437
P250074001	16.00	7.00	2.10	2.00	VMQ	SUA-1676
P250081002	16.00	8.50	3.10	3.00	NBR	SUA-1376
P250080801	16.00	8.90	2.20	2.10	NBR	SUA-1405
P250096601	16.00	9.30	1.60	1.50	FKM	SUA-2107
P250108901	16.00	10.00	1.60	1.50	PU	PUA-579
P250101001	16.00	10.00	2.10	2.00	NBR	SUA-1693
P250110803	16.00	11.40	1.60	1.50	NBR	SUA-1844
P250110805	16.00	11.40	1.60	1.50	NBR	SUA-2372
P250110902	16.00	11.50	1.75	1.65	NBR	SUA-1757
P250120801	16.00	12.00	1.70	1.60	NBR	SUA-1927
P250096401	16.10	9.30	1.70	1.60	FKM	SUA-2166
P250100801	17.00	10.50	1.70	1.60	NBR	SUA-1555
P250130802	17.00	13.00	2.40	2.30	NBR	SUA-1480
P25009AG01	18.00	9.50	2.72	2.62	FKM	SUA-1749
P250121002	18.00	12.00	2.10	2.00	NBR	SUA-1662
P250140804	19.00	14.00	2.40	2.30	NBR	SUA-2419
P250130801	19.80	13.80	2.40	2.30	NBR	SUA-1039
P250140801	20.00	14.00	2.20	2.10	NBR	SUA-1843
P250141003	20.00	14.00	2.30	2.20	NBR	SUA-1490
P250146401	20.00	14.00	2.50	2.40	FKM	SUA-1409
P250141001	20.00	14.30	2.10	2.00	NBR	SUA-954
P250141004	20.00	14.50	2.40	2.30	NBR	SUA-1652
P250140802	20.50	14.50	2.30	2.20	NBR	SUA-2004
P250141005	21.50	14.50	2.90	2.80	NBR	SUA-1651
P250151001	21.90	15.30	2.40	2.30	NBR	SUA-1755
P250141002	22.00	14.00	3.10	3.00	NBR	SUA-1368
P250141006	22.00	14.00	3.10	3.00	NBR	SUA-1754
P250161001	22.00	16.00	3.10	3.00	NBR	SUA-1704
P250111001	22.15	11.45	2.10	2.00	NBR	SUA-689
P250161002	24.00	16.00	3.10	3.00	NBR	SUA-1937
P250170901	24.00	17.00	3.10	3.00	NBR	SUA-2143
P250170803	25.00	17.00	2.20	2.10	NBR	SUA-1768
P250170804	25.00	17.00	3.00	2.90	NBR	SUA-1842
P250176401	25.00	17.50	3.10	3.00	FKM	SUA-2132
P250170806	25.00	17.50	3.10	3.00	NBR	SUA-2000
P250171001	25.00	17.50	3.10	3.00	NBR	SUA-1532
P25017L501	25.00	17.50	3.10	3.00	PU	PUA-347
P250170802	25.00	17.90	2.20	2.10	NBR	SUA-1234
P250180801	25.00	18.00	2.10	2.00	NBR	SUA-2360
P250190801	25.00	19.00	2.30	2.20	NBR	SUA-957

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P250210801	25.00	21.00	2.70	2.60	NBR	SUA-1435
P250210801	25.00	21.00	2.70	2.60	NBR	SUA-1481
P250170801	30.00	17.90	2.20	2.10	NBR	SUB-2155
P250170805	30.00	17.90	2.20	2.10	NBR	SUB-3307
P250221002	30.00	22.50	3.10	3.00	NBR	SUB-2344
P250230901	31.35	23.41	3.00	2.90	NBR	SUB-2762
P250250901	31.75	25.40	3.10	3.00	NBR	SUB-3717
P250190802	32.00	19.90	2.20	2.10	NBR	SUB-3352
P250206403	32.00	20.00	2.30	2.20	FKM	SUB-2227
P250221003	32.00	22.00	2.60	2.50	NBR	SUB-2912
P250220801	32.00	22.60	2.70	2.60	NBR	SUB-2829
P250240902	32.00	24.00	2.10	2.00	NBR	SUB-3291
P250248701	32.00	24.00	2.70	2.60	PU	PUB-1506
P250240801	32.00	24.00	3.00	2.90	NBR	SUB-3875
P250240905	32.00	24.00	3.10	3.00	NBR	SUB-4021
P25024L301	32.00	24.00	3.10	3.00	AFLAS	SUB-3140
P250240802	32.00	24.00	3.10	3.00	NBR	SUB-3985
P250246601	32.00	24.00	3.10	3.00	FKM	SUB-3019
P250241001	32.00	24.00	3.10	3.00	NBR	SUB-1776
P250241002	32.00	24.00	3.10	3.00	NBR	SUB-3054
P250240904	32.00	24.00	3.30	3.20	NBR	SUB-3929
P250240901	32.00	24.00	3.50	3.40	NBR	SUB-3189
P250251001	32.00	25.00	3.10	3.00	NBR	SUB-2736
P250320902	39.00	32.00	2.80	2.70	NBR	SUB-3124
P250320901	39.00	32.00	3.10	3.00	NBR	SUB-2749
P250261001	40.00	26.50	2.60	2.50	NBR	SUB-2790
P250271002	40.00	27.00	2.10	2.00	NBR	SUB-3425
P250271001	40.00	27.90	2.20	2.10	NBR	SUB-2005
P250270801	40.00	27.90	2.20	2.10	NBR	SUB-3742
P25029L501	40.00	29.00	4.10	4.00	PU	PUB-665
P250301001	40.00	30.00	2.80	2.70	NBR	SUB-3052
P250320803	40.00	32.00	2.60	2.50	NBR	SUB-3926
P250321005	40.00	32.00	2.90	2.80	NBR	SUB-3344
P250321004	40.00	32.00	2.90	2.80	NBR	SUB-3119
P250320802	40.00	32.00	3.00	2.90	NBR	SUB-3873
P250320904	40.00	32.00	3.10	3.00	NBR	SUB-3492
P250320905	40.00	32.00	3.10	3.00	NBR	SUB-3493
P250326601	40.00	32.00	3.10	3.00	FKM	SUB-2036
P250321001	40.00	32.00	3.10	3.00	NBR	SUB-1441
P250321003	40.00	32.00	3.10	3.00	NBR	SUB-2840
P250321002	40.00	32.00	3.20	3.10	NBR	SUB-2786
P250320903	40.00	32.00	3.20	3.10	NBR	SUB-3290
P250320907	40.00	32.00	3.30	3.20	NBR	SUB-3809
P250321006	40.00	32.00	3.60	3.50	NBR	SUB-3459
P250330805	40.00	33.00	3.10	3.00	NBR	SUB-2183
P250331002	40.00	33.00	3.10	3.00	NBR	SUB-2752
P250331001	40.00	33.00	3.10	3.00	NBR	SUB-2738
P250336401	40.00	33.00	3.10	3.00	FKM	SUB-1830
P250330901	40.00	33.00	3.20	3.10	NBR	SUB-2778
P250346601	41.00	34.08	4.10	4.00	FKM	SUB-1395
P250341001	42.00	34.00	3.10	3.00	NBR	SUB-3077
P250390901	50.00	39.00	4.10	4.00	NBR	SUB-3980

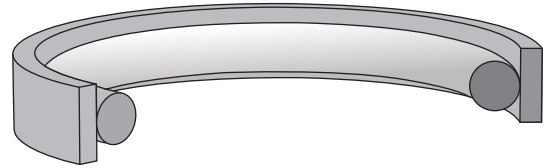


Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P250401005	50.00	40.00	2.10	2.00	NBR	SUB-3202
P250401006	50.00	40.00	3.50	3.40	NBR	SUB-3439
P250400801	50.00	40.00	3.60	3.50	NBR	SUB-2974
P250400902	50.00	40.00	3.60	3.50	NBR	SUB-3289
P250400802	50.00	40.00	3.80	3.70	NBR	SUB-3874
P250406401	50.00	40.00	3.80	3.70	FKM	SUB-3102
P250401101	50.00	40.00	3.80	3.70	NBR	SUB-2809
P250401001	50.00	40.00	3.90	3.80	NBR	SUB-1577
P250401002	50.00	40.00	3.90	3.80	NBR	SUB-2381
P250400903	50.00	40.00	3.90	3.80	NBR	SUB-3491
P250401004	50.00	40.00	4.10	4.00	NBR	SUB-3053
P250421001	58.00	42.00	3.10	3.00	NBR	SUC-2533
P250471001	59.00	47.00	2.10	2.00	NBR	SUC-2074
P250431001	60.00	43.60	3.60	3.50	NBR	SUC-2129
P250471002	60.00	47.00	2.10	2.00	NBR	SUC-2091
P250481001	60.00	48.00	2.10	2.00	NBR	SUC-1735
P250480801	60.00	48.00	3.80	3.70	NBR	SUC-2107
P250501001	62.00	50.00	3.30	3.20	NBR	SUC-1909
P250520801	62.00	52.00	3.60	3.50	NBR	SUC-1992
P250530901	62.00	53.00	4.10	4.00	NBR	SUC-1922
P25053L301	62.50	53.00	3.90	3.80	AFLAS	SUC-2451
P25041L301	62.50	53.00	3.90	3.80	AFLAS	SUC-2452
P250506401	63.00	50.80	3.55	3.45	FKM	SUC-1872
P250510801	63.00	51.00	2.20	2.10	NBR	SUC-2083
P250516401	63.00	51.00	3.50	3.40	FKM	SUC-1694
P250531007	63.00	53.00	3.80	3.70	NBR	SUC-2237
P250530902	63.00	53.00	3.80	3.70	NBR	SUC-2215
P250530802	63.00	53.00	3.80	3.70	NBR	SUC-2108
P250530801	63.00	53.00	3.80	3.70	NBR	SUC-1970
P250530903	63.00	53.00	3.90	3.80	NBR	SUC-2327
P250530905	63.00	53.00	3.90	3.80	NBR	SUC-2460
P250530904	63.00	53.00	4.10	4.00	NBR	SUC-2328
P250531008	63.00	53.00	4.10	4.00	NBR	SUC-2309
P250536603	63.00	53.00	4.10	4.00	FKM	SUC-1564
P250530906	63.00	53.00	4.10	4.00	NBR	SUC-2545
P250531003	63.00	53.00	5.10	5.00	NBR	SUC-1804
P250531004	63.00	53.26	3.80	3.70	NBR	SUC-2059
P250546601	63.00	53.26	3.80	3.70	FKM	SUC-2464
P250531002	63.00	53.26	4.10	4.00	NBR	SUC-1381
P250536601	63.00	53.26	4.10	4.00	FKM	SUC-1512
P250536404	63.00	53.50	5.60	5.50	FKM	SUC-2201
P250540901	63.00	54.00	3.80	3.70	NBR	SUC-1853
P250540804	63.00	54.00	3.80	3.70	NBR	SUC-1921
P250546401	63.00	54.00	3.90	3.80	FKM	SUC-1494
P250541002	63.00	54.00	3.90	3.80	NBR	SUC-2014
P250601001	75.00	60.00	5.60	5.50	NBR	SUC-2359
P250630901	78.00	63.00	6.10	6.00	NBR	SUD-1694
P280660801	79.38	66.68	10.02	9.52	NBR	SUD-2117
P250640901	80.00	64.00	6.00	5.90	NBR	SUD-1577
P250650901	80.00	65.00	5.30	5.20	NBR	SUD-1454
P250656601	80.00	65.00	5.50	5.40	FKM	SUD-1605
P2506510012	80.00	65.00	5.50	5.40	NBR	SUD-1769

Part No.	D (H11)	d (h10)	L (+0.2)	H	Material	Mould No.
P250650802	80.00	65.00	5.60	5.50	NBR	SUD-1984
P250656501	80.00	65.00	5.80	5.70	FKM	SUD-1408
P250650902	80.00	65.00	5.80	5.70	NBR	SUD-1473
P250651003	80.00	65.00	6.10	6.00	NBR	SUD-1150
P250660901	80.00	66.00	5.70	5.60	NBR	SUD-1294
P250666401	80.00	66.00	5.70	5.60	FKM	SUD-1146
P250661002	80.00	66.00	5.70	5.60	NBR	SUD-1749
P25066S801	80.00	66.00	5.80	5.70	NBR	SUD-1194
P250681001	80.00	68.00	2.10	2.00	NBR	SUD-678
P250680802	80.00	68.00	3.80	3.70	NBR	SUD-1719
P250686601	80.00	68.00	5.10	5.00	FKM	SUD-1617
P250701001	80.00	70.00	3.80	3.70	NBR	SUD-1596
P250681004	80.50	68.50	4.10	4.00	NBR	SUD-1932
P250681002	81.00	68.00	3.60	3.50	NBR	SUD-1517
P250686602	81.00	68.00	3.80	3.70	FKM	SUD-1853
P250751002	90.00	75.00	5.60	5.50	NBR	SUD-1500
P250840901	100.00	84.00	6.10	6.00	NBR	SUD-1578
P250850901	100.00	85.00	5.40	5.30	NBR	SUD-1307
P250856601	100.00	85.00	5.60	5.50	FKM	SUD-1784
P250850903	100.00	85.00	5.60	5.50	NBR	SUD-2000
P25085801	100.00	85.00	5.60	5.50	NBR	SUD-1612
P250851001	100.00	85.00	5.70	5.60	NBR	SUD-1450
P250851003	100.00	85.00	6.10	6.00	NBR	SUD-1736
P250851002	100.00	85.00	6.10	6.00	NBR	SUD-1731
P250881002	100.00	88.00	2.10	2.00	NBR	SUD-1796
P250881001	100.00	88.00	2.10	2.00	NBR	SUD-1570
P250880802	103.00	88.00	6.00	5.90	NBR	SUE-990
P250951001	110.00	95.00	5.60	5.50	NBR	SUE-1042
P251001001	125.00	100.00	4.60	4.50	NBR	SUE-1347
P251101004	125.00	110.00	5.30	5.20	NBR	SUE-1273
P251100802	125.00	110.00	5.60	5.50	NBR	SUE-1334
P251100801	125.00	110.00	5.60	5.50	NBR	SUE-953
P251100901	125.00	110.00	5.70	5.60	NBR	SUE-1280
P251101001	125.00	110.00	5.90	5.80	NBR	SUE-735
P251101003	125.00	110.00	6.10	6.00	NBR	SUE-959
P251121002	125.00	112.00	6.10	6.00	NBR	SUE-1293
P251121001	125.00	112.50	2.20	2.10	NBR	SUE-677
P251261001	140.00	126.00	5.90	5.80	NBR	SUF-879
P251341001	150.00	134.00	5.10	5.00	NBR	SUF-861
P251351001	150.00	135.00	5.90	5.80	NBR	SUF-854
P251321001	160.00	132.00	6.30	6.20	NBR	SUG-692
P251401001	160.00	140.00	8.00	7.50	NBR	SUG-470
P251406601	160.00	140.00	8.00	7.50	FKM	SUG-723
P251406401	160.00	140.00	8.00	7.50	FKM	SUG-879
P251401002	160.00	140.00	8.10	7.60	NBR	SUG-795
P251451001	160.00	145.00	4.60	4.50	NBR	SUG-808
P251456601	160.10	145.00	5.40	5.30	FKM	SUG-636
P251600801	180.00	160.00	6.80	6.70	NBR	SUH-510
P251801001	199.50	180.00	8.50	8.00	NBR	SUH-410
P251796601	200.00	179.40	8.10	7.60	FKM	SUH-411
P251801002	200.00	180.00	8.00	7.50	NBR	SUH-439
P252306601	250.00	230.00	8.50	8.00	FKM	SUK-287

DETAILS

The P24 is a combination of composite PTFE sealing element with an o ring energizer. It is designed for low friction pneumatic applications with small installation space, widely use in control cylinders and high-speed cylinders etc.



COMPATIBILITY

Dry and oil-free air.

MATERIAL

Sealing Ring : Carbon Filled PTFE.
O Ring : Nitrile Rubber 70/75 Shore A.
FKM Rubber 70/75 Shore A.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 4.0 m/s

FEATURES

- Assembly on one-piece piston.
- Short assembled length.
- Minimal break-out and dynamic slide friction, no stick-slip, steady movement at low velocities.
- Low wear.
- High extrusion & temperature resistance (as per material selected).

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

INSTALLATION & ASSEMBLY

The same installation procedure for piston seal P45 may be used for P24 also. Please refer to page no. 20 for the same.

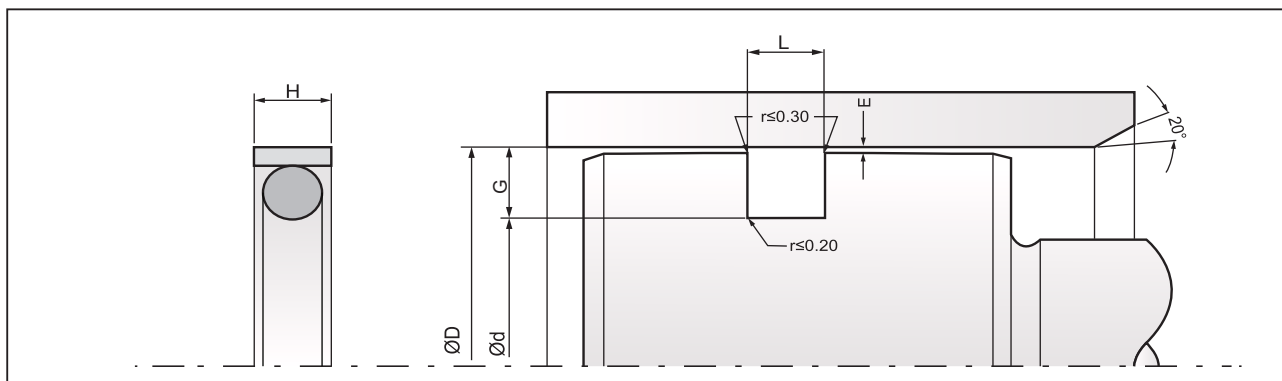
HOUSING DIMENSIONS

Bore Diameter	Groove Width	Groove Depth	Gap Max	O-Ring C/S
D (H8)	L (mm) (+0.20)	G (mm)	E (mm)	(mm)
7.00 - 14	2.00	2.00	0.25	1.78
14.10 - 25	2.85	3.00	0.50	2.62
25.10 - 75	3.80	3.75	0.50	3.53
75.10 - 130	5.60	6.25	0.70	5.33
130.10 - 160	7.55	7.50	1.00	6.99
160.10 - 250	7.55	9.00	1.00	6.99
251.10 - 999.90	7.55	9.00	1.50	6.99

Ordering information: D x d x L (Information for non-standard sizes)

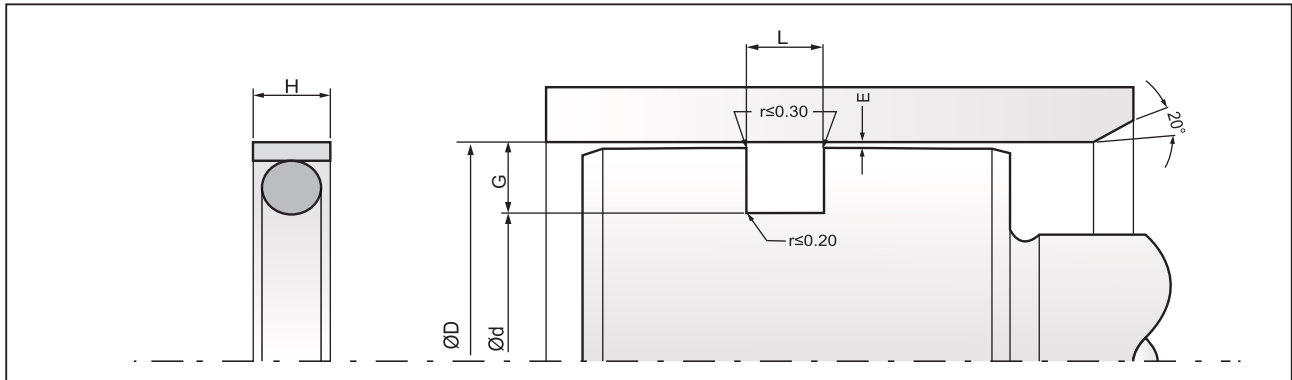
P24

Double Acting Composite Seal



D (H8)	d (h9)	L (+0.2)	O-Ring Size	
			ID	C/S
7.00	3.00	2.00	2.90	1.78
8.00	4.00	2.00	3.68	1.78
9.00	5.00	2.00	4.80	1.80
10.00	6.00	2.00	5.60	1.80
11.00	7.00	2.00	6.70	1.80
12.00	8.00	2.00	7.65	1.78
14.00	8.00	2.85	7.59	2.62
15.00	9.00	2.85	9.19	2.62
16.00	10.00	2.85	9.19	2.62
18.00	12.00	2.85	10.77	2.62
19.00	13.00	2.85	12.37	2.62
20.00	14.00	2.85	13.94	2.62
22.00	16.00	2.85	15.54	2.62
24.00	18.00	2.85	17.12	2.62
25.00	19.00	2.85	18.72	2.62
27.00	21.00	2.85	20.29	2.62
28.00	22.00	2.85	21.89	2.62
28.00	20.50	3.80	20.22	3.53
30.00	22.50	3.80	21.82	3.53
32.00	24.50	3.80	23.40	3.53
34.00	26.50	3.80	26.58	3.53
35.00	27.50	3.80	26.58	3.53
36.00	28.50	3.80	28.17	3.53
37.00	29.50	3.80	28.17	3.53
38.00	30.50	3.80	29.75	3.53
40.00	32.50	3.80	31.35	3.53
42.00	34.50	3.80	34.52	3.53
43.00	35.50	3.80	34.52	3.53
44.00	36.50	3.80	36.09	3.53
45.00	37.50	3.80	36.09	3.53
48.00	40.50	3.80	40.87	3.53
50.00	42.50	3.80	40.87	3.53
50.00	37.50	5.60	37.47	5.33
50.80	43.30	3.80	40.87	3.53
52.00	44.50	3.80	44.04	3.53
55.00	47.50	3.80	47.22	3.53
55.00	42.50	5.60	40.64	5.33
57.00	49.50	3.80	47.22	3.53
58.00	50.50	3.80	50.39	3.53
58.00	45.50	5.60	43.82	5.33
60.00	52.50	3.80	51.50	3.55
60.00	47.50	5.60	46.99	5.33
62.00	54.50	3.80	53.57	3.53
63.00	55.50	3.80	53.57	3.53
63.00	50.50	5.60	50.17	5.33
65.00	57.50	3.80	56.74	3.53
67.00	54.50	5.60	53.34	5.33
68.00	60.50	3.80	59.92	3.53
70.00	62.50	3.80	59.92	3.53
70.00	57.50	5.60	56.52	5.33
72.00	59.50	5.60	56.52	5.33
75.00	67.50	3.80	66.27	3.53

D (H8)	d (h9)	L (+0.2)	O-Ring Size	
			ID	C/S
75.00	62.50	5.60	59.69	5.33
76.20	68.70	3.80	66.27	3.53
78.00	70.50	3.80	69.44	3.53
80.00	67.50	5.60	66.04	5.33
82.00	69.50	5.60	69.22	5.33
82.50	70.00	5.60	69.22	5.33
85.00	72.50	5.60	72.39	5.33
90.00	77.50	5.60	75.57	5.33
92.00	79.50	5.60	78.74	5.33
95.00	82.50	5.60	81.92	5.33
100.00	87.50	5.60	85.09	5.33
101.60	89.10	5.60	88.27	5.33
102.00	89.50	5.60	88.27	5.33
105.00	92.50	5.60	91.44	5.33
108.00	95.50	5.60	94.62	5.33
110.00	97.50	5.60	94.62	5.33
115.00	102.50	5.60	100.97	5.33
118.00	105.50	5.60	104.14	5.33
120.00	107.50	5.60	107.32	5.33
125.00	112.50	5.06	110.49	5.33
127.00	114.50	5.60	113.67	5.33
130.00	117.50	5.60	116.84	5.33
130.00	115.00	7.55	113.67	7.00
133.00	118.00	7.55	116.84	7.00
135.00	120.00	7.55	120.02	7.00
137.00	122.00	7.55	120.02	7.00
140.00	125.00	7.55	123.19	7.00
143.00	128.00	7.55	126.37	7.00
145.00	130.00	7.55	129.54	7.00
150.00	135.00	7.55	132.72	7.00
152.40	137.40	7.55	135.89	7.00
153.00	138.00	7.55	135.89	7.00
155.00	140.00	7.55	139.07	7.00
160.00	145.00	7.55	142.24	7.00
165.00	150.00	7.55	148.59	7.00
170.00	155.00	7.55	151.77	7.00
175.00	160.00	7.55	158.12	7.00
180.00	165.00	7.55	164.47	7.00
180.00	162.00	7.55	158.12	7.00
185.00	167.00	7.55	164.47	7.00
190.00	175.00	7.55	170.82	7.00
194.00	179.00	7.55	177.17	7.00
195.00	177.00	7.55	177.17	7.00
200.00	185.00	7.55	183.52	7.00
200.00	182.00	7.55	177.17	7.00
203.20	188.20	7.55	183.52	7.00
205.00	190.00	7.55	189.87	7.00
210.00	192.00	7.55	189.87	7.00
210.00	195.00	7.55	189.87	7.00
215.00	200.00	7.55	196.22	7.00
215.00	197.00	7.55	196.22	7.00
220.00	205.00	7.55	202.57	7.00

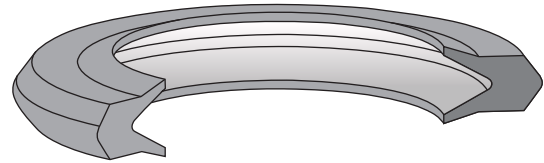


D (H8)	d (h9)	L (+0.2)	O-Ring Size	
			ID	C/S
220.00	202.00	7.55	202.57	7.00
230.00	215.00	7.55	215.27	7.00
240.00	225.00	7.55	227.97	7.00
250.00	232.00	7.55	227.97	7.00
254.00	236.00	7.55	227.97	7.00
255.00	237.00	7.55	227.97	7.00
260.00	242.00	7.55	240.67	7.00
265.00	247.00	7.55	240.67	7.00
268.00	250.00	7.55	240.67	7.00
270.00	252.00	7.55	253.37	7.00
280.00	262.00	7.55	253.37	7.00
290.00	272.00	7.55	266.07	7.00
300.00	282.00	7.55	278.77	7.00
304.80	286.80	7.55	278.77	7.00
310.00	292.00	7.55	291.47	7.00
320.00	302.00	7.55	304.17	7.00
330.00	312.00	7.55	304.17	7.00
350.00	332.00	7.55	329.57	7.00

D (H8)	d (h9)	L (+0.2)	O-Ring Size	
			ID	C/S
354.90	336.90	7.55	329.57	7.00
400.00	382.00	7.55	380.37	7.00
425.00	407.00	7.55	405.26	7.00
450.00	432.00	7.55	430.66	7.00
475.00	457.00	7.55	456.06	7.00
500.00	482.00	7.55	481.38	7.00
525.00	507.00	7.55	506.86	7.00
550.00	532.00	7.55	532.26	7.00
575.00	557.00	7.55	557.66	7.00
600.00	582.00	7.55	582.68	7.00
650.00	632.00	7.55	633.48	7.00
700.00	682.00	7.55	681.51	7.00
750.00	732.00	7.55	731.51	7.00
800.00	782.00	7.55	781.51	7.00
850.00	832.00	7.55	831.51	7.00
900.00	882.00	7.55	881.51	7.00
950.00	932.00	7.55	931.51	7.00
999.90	981.90	7.55	981.41	7.00

DETAILS

P27 is a double acting pneumatic piston seal suitable for small grooves, easy installation due to its special geometry.



COMPATIBILITY

Compressed air.

APPLICATION

- Pneumatic Cylinders.

FEATURES

- Low friction.
- Lubricating film by optimum profile arrangement.
- Long service lives.
- Symmetrical profile, easy installation.
- Pressure admission on one side or on both sides.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. Remove all the pores and scratches to avoid damaging the seal during installation, do not use sharp installation tools.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

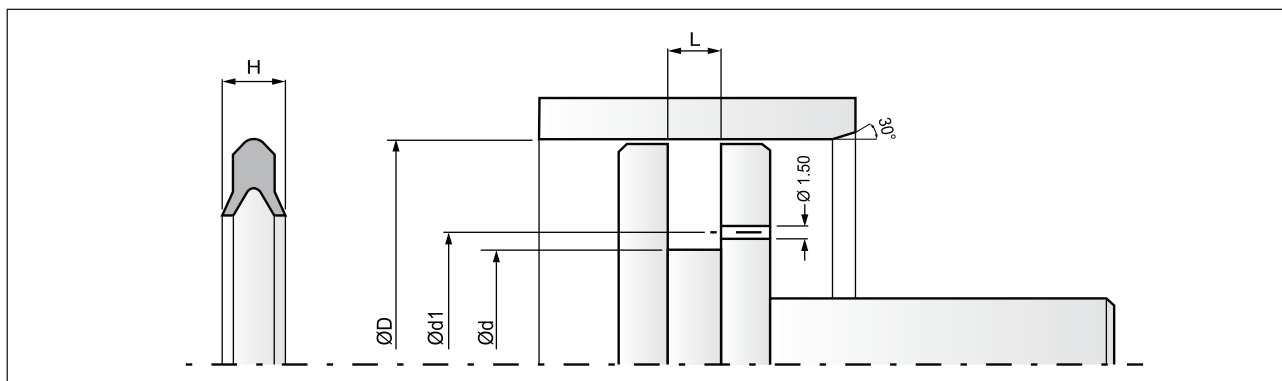
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

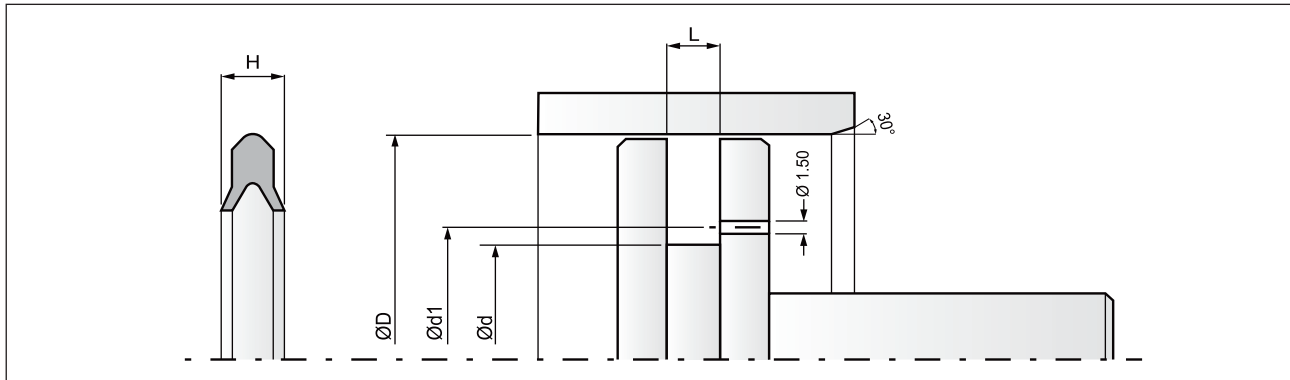
P27

Double Acting Piston Seal



Part No.	d	D	L	H	d1	Matl.	Mould No.
P270051001	5.20	12.00	1.70	2.10	6.80	NBR	SPA-3927
P270070801	7.50	18.00	2.30	2.80	11.20	NBR	SPA-2969
P270080802	8.00	18.00	2.30	2.60	11.20	NBR	SPA-3437
P270080801	8.50	18.00	2.30	2.80	11.20	NBR	SPA-866
P270090901	9.50	20.00	2.30	3.00	11.20	NBR	SPA-4939
P270106501	10.00	16.00	2.10	2.50	11.50	FKM	SPA-6363
P270101001	10.00	20.00	2.30	2.80	11.50	NBR	SPA-1877
P270100801	10.00	20.00	2.30	2.80	11.50	NBR	SPA-8856
P270110801	11.20	18.00	1.70	2.10	12.70	NBR	SPA-2926
P270120801	12.00	22.00	2.30	2.60	13.50	NBR	SPA-3438
P270120901	12.40	20.00	2.30	2.80	13.90	NBR	SPA-3186
P270120902	12.40	20.00	2.30	2.80	13.90	NBR	SPA-737
P270140801	14.00	24.00	2.30	2.80	15.50	NBR	SPA-5482
P270140901	14.60	22.20	2.30	2.80	16.10	NBR	SPA-6295
P270150904	15.00	25.00	2.10	2.50	17.40	NBR	SPA-8557
P270150907	15.00	25.00	2.30	2.80	16.50	NBR	SPA-1878
P270170903	17.30	25.30	2.30	3.00	18.80	NBR	SPA-7944
P270170901	17.50	25.00	2.00	2.60	19.00	NBR	SPA-6262
P270171001	17.60	25.20	2.30	2.60	19.00	NBR	SPA-2539
P270170902	17.80	25.60	2.30	3.00	19.30	NBR	SPA-6445
P270180905	18.00	25.70	2.30	3.00	19.50	NBR	SPA-10556
P270181003	18.10	25.70	2.10	2.50	19.50	NBR	SPA-577
P270200801	20.00	30.00	2.30	2.80	21.50	NBR	SPA-12918
P270200901	20.00	30.00	2.30	2.00	22.40	NBR	SPA-1880
P270220801	22.00	30.00	1.50	2.30	23.50	NBR	SPA-5483
P270220902	22.00	32.00	2.30	2.00	24.40	NBR	SPA-6039
P270220802	22.00	34.00	2.50	3.50	23.50	NBR	SPA-5686
P270240801	24.00	34.00	2.50	3.50	25.50	NBR	SPA-5986
P270240901	24.40	32.00	2.30	2.80	26.00	NBR	SPA-3187
P270250904	25.00	32.00	3.50	4.50	26.50	NBR	SPA-6113
P270250905	21.50	35.00	3.00	3.50	23.20	NBR	SPA-6406
P270250906	21.50	35.00	3.00	3.50	23.20	NBR	SPA-6775
P270260801	26.70	36.80	3.00	3.50	28.20	NBR	SPA-2924
P270271801	27.50	40.00	3.00	2.50	30.00	NBR	SPA-5502
P270290902	29.00	40.00	2.00	3.00	30.50	NBR	SPA-10618
P270290902	29.00	40.00	3.50	5.00	30.50	NBR	SPA-7501
P270301001	30.00	40.00	2.50	3.00	31.50	NBR	SPA-2587
P270300901	30.00	40.00	3.00	3.50	31.50	NBR	SPA-3188
P270300801	30.00	40.00	3.00	3.50	31.50	NBR	SPA-5850
P270300902	30.80	40.80	3.00	3.50	32.30	NBR	SPA-5687
P270320903	32.00	40.00	3.00	3.50	33.50	NBR	SPA-12594
P270320902	32.00	45.00	3.00	3.50	33.50	NBR	SPA-11017
P270330901	33.00	40.00	3.00	3.50	34.50	NBR	SPA-7500
P27034L501	34.00	55.00	5.00	6.00	35.50	PU	PPA-3131
P270350801	35.00	45.00	3.00	3.50	36.50	NBR	SPA-5851
P270360902	36.50	50.00	3.00	3.50	37.20	NBR	SPA-7625
P270360901	36.50	50.00	3.00	2.50	40.00	NBR	SPA-3326
P270360801	36.90	48.90	3.00	3.50	38.50	NBR	SPA-6747
P27037L501	37.00	57.00	5.00	6.00	38.50	PU	PPA-3130
P270371006	37.50	50.00	2.50	3.00	40.00	NBR	SPA-8327
P270370903	37.50	50.00	2.50	3.00	40.00	NBR	SPA-4781
P270380801	38.70	50.00	2.50	3.20	40.00	NBR	SPA-10192

Part No.	d	D	L	H	d1	Matl.	Mould No.
P270400801	40.00	50.00	3.00	3.50	41.50	NBR	SPA-5852
P27043L501	43.00	64.00	5.00	6.00	44.50	PU	PPA-3132
P270440901	44.00	60.00	3.50	4.00	45.50	NBR	SPA-3881
P270450903	45.00	59.00	3.00	3.50	46.50	NBR	SPA-6391
P270460901	46.00	60.00	3.50	4.00	47.50	NBR	SPA-3189
P270490901	49.00	63.00	3.50	4.00	50.50	NBR	SPA-3190
P270510901	51.00	65.00	3.50	4.30	52.50	NBR	SPA-3409
P270530901	53.50	70.00	3.50	4.30	55.00	NBR	SPA-9256
P270550901	55.50	70.00	3.00	3.50	58.00	NBR	SPA-3608
P270580901	58.00	70.00	3.50	4.00	59.50	NBR	SPA-3191
P270590901	59.00	75.00	3.50	3.00	61.00	NBR	SPA-3609
P270600902	60.00	76.00	3.50	4.50	61.50	NBR	SPA-6392
P270620801	62.00	82.00	4.10	3.60	65.40	NBR	SPA-3175
P270620802	62.00	82.00	4.10	3.60	65.40	NBR	SPA-3255
P270620901	62.20	74.70	3.50	4.00	64.00	NBR	SPA-7313
P270630903	63.00	80.00	4.10	3.70	63.40	NBR	SPA-5965
P270640901	64.00	80.60	4.00	5.00	65.50	NBR	SPA-12198
P270641001	64.80	81.80	4.50	45.00	66.50	NBR	SPA-2982
P270650901	65.00	75.00	3.00	3.50	66.50	NBR	SPA-11916
P270650802	65.00	85.00	4.00	5.00	66.50	NBR	SPA-3935
P270680901	68.00	80.00	3.00	3.50	69.50	NBR	SPA-7420
P270700903	70.00	90.00	4.00	4.50	73.00	NBR	SPA-11018
P270700901	70.00	93.00	4.50	5.50	73.00	NBR	SPA-6713
P270700902	70.00	100.00	4.50	5.50	73.00	NBR	SPA-9201
P270710903	71.00	95.00	5.00	6.00	73.00	NBR	SPA-7886
P270720901	72.00	95.00	4.50	5.50	74.00	NBR	SPA-6854
P270740901	74.70	91.30	4.00	4.60	76.50	NBR	SPA-11809
P271078901	78.00	101.00	5.50	6.00	80.00	NBR	SPA-8760
P270790902	79.00	100.00	4.50	5.50	81.00	NBR	SPA-12762
P270790901	79.00	100.00	4.50	5.80	83.80	NBR	SPA-3357
P270790801	79.20	89.80	3.00	3.50	80.70	NBR	SPA-6970
P270791101	79.70	100.10	4.00	4.50	81.20	NBR	SPA-7828
P270801001	80.00	100.00	4.50	5.80	83.80	NBR	SPA-2664
P270800801	80.50	91.50	3.00	3.60	82.00	NBR	SPA-11715
P270810802	81.30	92.30	3.00	4.00	83.00	NBR	SPA-3842
P270830901	83.40	100.00	4.50	5.50	85.00	NBR	SPA-3834
P27086L401	86.00	98.00	3.00	3.80	87.50	PU	PPA-719
P270860901	86.00	100.00	4.00	5.00	89.40	NBR	SPA-6183
P270860902	86.00	111.00	5.50	6.00	89.00	NBR	SPA-8490
P270870902	87.00	105.00	5.50	6.00	89.00	NBR	SPA-8761
P270870901	87.00	110.00	5.50	6.00	89.00	NBR	SPA-7885
P27100CG01	100.00	120.00	6.50	8.00	102.00	PU	PPA-3252
P271000901	100.00	125.00	5.00	6.20	104.40	NBR	SPA-802
P271006601	100.00	125.00	5.10	4.50	104.40	FKM	SPA-10515
P271010901	101.00	125.00	5.10	4.50	103.60	NBR	SPA-4716
P271010902	101.00	125.00	5.50	6.50	103.00	NBR	SPA-7668
P271030903	103.00	125.00	5.00	6.00	106.40	NBR	SPA-8492
P271030901	103.00	126.00	5.00	6.00	106.40	NBR	SPA-7887
P271030902	103.00	127.00	5.00	6.00	106.40	NBR	SPA-8491
P271040901	104.40	125.00	5.00	6.10	106.00	NBR	SPA-2742
P271050901	105.00	125.00	5.00	6.00	106.50	NBR	SPA-9647
P27114L401	114.00	126.00	3.00	3.80	115.50	PU	PPA-720



Part No.	d	D	L	H	d1	Matl.	Mould No.
P271170901	117.40	140.00	5.50	7.00	119.00	NBR	SPA-2741
P27120CG01	120.90	141.50	7.00	9.60	112.50	PU	PPA-3263
P271220901	122.50	150.00	6.20	7.30	126.40	NBR	SPA-4913
P271260901	122.50	150.00	6.20	6.70	126.40	NBR	SPA-3192
P271320902	132.00	160.00	6.20	7.70	134.00	NBR	SPA-8075
P271350902	135.60	160.00	7.00	9.00	137.00	NBR	SPA-10912
P271350901	135.60	160.00	6.20	6.70	137.00	NBR	SPA-3193
P271356501	135.60	160.00	6.20	6.70	137.00	FKM	SPA-5108
P271366401	132.00	160.00	6.20	6.70	134.00	FKM	SPA-6857
P27143V201	143.50	178.50	7.50	9.00	145.50	NBR	SPA-4684
P271480903	148.00	175.00	6.70	7.60	150.00	NBR	SPA-9399
P271511001	148.00	175.00	6.70	7.00	150.00	NBR	SPA-6407
P271521001	152.40	182.00	7.00	8.90	154.50	NBR	SPA-3683
P271551001	155.60	183.60	6.50	8.90	154.00	NBR	SPA-3680
P271560901	152.00	180.00	6.70	7.70	154.00	NBR	SPA-3194
P271570902	157.00	190.00	8.00	9.50	159.00	NBR	SPA-8199
P271621001	162.00	200.00	9.00	11.60	160.00	NBR	SPA-3682
P271631001	163.00	200.00	8.50	9.50	165.00	NBR	SPA-2287
P271670901	167.00	200.00	8.00	9.50	168.00	NBR	SPA-9330
P271671001	160.00	202.00	8.50	11.60	165.00	NBR	SPA-3681
P271681001	168.00	200.00	6.50	7.30	170.00	NBR	SPA-7342
P271680901	168.00	200.00	8.50	9.30	170.00	NBR	SPA-3195

Part No.	d	D	L	H	d1	Matl.	Mould No.
P271680801	168.00	200.00	8.00	9.50	170.00	NBR	SPA-10563
P271750801	175.00	212.00	8.50	10.00	177.00	NBR	SPA-12917
P271770901	177.80	210.80	8.00	9.00	176.00	NBR	SPA-6498
P271891001	189.50	225.00	8.50	10.30	192.00	NBR	SPA-988
P272000901	200.00	235.00	8.50	10.30	202.00	NBR	SPA-9565
P272040801	204.00	243.00	10.50	13.00	202.00	NBR	SPA-10344
P272060801	206.00	242.00	8.50	10.30	208.00	NBR	SPA-10295
P272070801	228.00	268.00	9.00	10.80	231.00	NBR	SPA-10343
P272130901	213.00	250.00	9.00	11.00	216.00	NBR	SPA-8558
P272131001	213.00	250.00	9.00	11.00	216.00	NBR	SPA-2769
P272131002	213.00	252.00	8.00	10.00	216.00	NBR	SPA-7296
P272220801	222.00	258.00	8.50	10.30	225.00	NBR	SPA-10297
P272520801	252.00	300.00	10.50	12.00	255.00	NBR	SPA-12692
P272580901	258.00	300.00	10.50	13.50	260.00	NBR	SPA-9649
P272601001	260.00	300.00	9.50	12.00	263.00	NBR	SPA-8305
P272641001	264.00	300.00	9.50	12.00	267.00	NBR	SPA-8247
P272700903	258.00	300.00	10.50	13.10	261.00	NBR	SPA-8603
P272700901	270.00	305.00	10.50	13.00	267.00	NBR	SPA-8475
P273130901	313.00	355.00	10.50	13.50	316.00	NBR	SPA-9648
P273151001	315.00	355.00	11.50	14.00	318.00	NBR	SPA-8245
P273600901	360.40	405.40	9.50	12.00	362.00	NBR	SPA-12199

DETAILS

P18 is a complete double acting pneumatic piston seal with a double cup seal with spring and a vulcanized metal disc support. (Without spring P20) It performs both sealing and guiding functions. It is easily fastened to the piston without additional sealing element. This profile also available for single acting pistons (refer profile Maxspare P19) with identical housing. Standard elastomer is Nitrile rubber 80 Shore A and vulcanized to a metal disc. FKM is recommended for high temperature application.

COMPATIBILITY

Dry and oil-free air.

APPLICATION

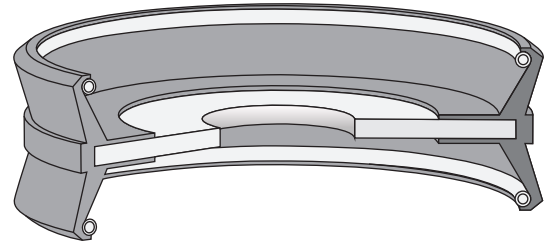
- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Prevent metallic contact between the cylinder and piston.
- Multi-functional sealing element – Sealing, guiding and cushioning element.
- Long service life.
- Easy Installation.
- Low friction and smooth running due to sealing geometry retaining the lubricating film.

INSTALLATION & ASSEMBLY

The P18 is fixed to the piston rod with a lock nut to prevent loosening. The piston and cylinder tube must be properly lubricated before installation.



MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

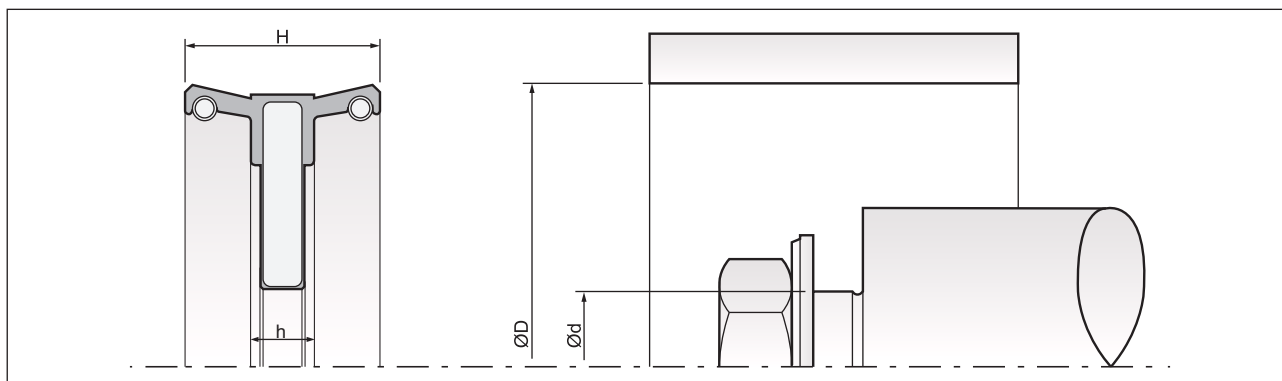
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

P18

Double Acting Piston Seal



Part No.	D (H11)	d (h10)	H	h	Material	Mould No.
P180071001	32.00	7.00	25.00	2.00	NBR	DUP-386
P180081006	35.00	8.00	25.00	4.00	NBR	DUP-165
P180121014	35.00	12.00	26.00	5.00	NBR	DUP-297
P180101002	40.00	10.00	25.00	4.00	NBR	DUP-135
P180121013	40.00	12.00	25.00	5.00	NBR	DUP-295
P180100801	45.00	10.00	25.00	5.00	NBR	DUP-419
P180201005	45.00	20.00	25.00	5.00	NBR	DUP-296
P180101009	50.00	10.00	25.50	4.00	NBR	DUP-393
P180101001	50.00	10.50	26.00	4.50	NBR	DUP-129
P180161004	50.00	16.00	25.00	5.00	NBR	DUP-269
P180201001	50.00	20.00	26.00	5.00	NBR	DUP-237
P180101008	50.80	10.00	25.00	6.60	NBR	DUP-365
P180100802	55.00	10.00	25.00	5.00	NBR	DUP-418
P180120807	57.15	12.70	25.40	6.00	NBR	DUP-196
P180121009	60.00	12.00	25.00	5.00	NBR	DUP-230
P180161005	60.00	16.50	26.00	5.00	NBR	DUP-356
P180211001	60.00	21.00	26.00	5.00	NBR	DUP-298
P180186601	63.00	18.00	32.00	12.00	FKM	DUP-260
P180121011	65.00	12.00	25.00	5.00	NBR	DUP-299
P180131001	65.00	13.00	35.00	4.00	NBR	DUP-314
P180121016	70.00	12.00	22.00	5.00	NBR	DUP-360
P18012V201	70.00	12.00	30.00	5.00	NBR	DUP-387
P180201007	70.00	20.00	30.00	5.00	NBR	DUP-392
P180121015	75.00	12.00	32.00	10.00	NBR	DUP-357
P180121017	80.00	12.00	25.00	5.00	NBR	DUP-366
P180120809	80.00	12.00	30.00	5.00	NBR	DUP-201
P210160804	80.00	16.00	16.00	5.50	NBR	DUP-433
P180161001	80.00	16.00	25.00	5.00	NBR	DUP-222
P180160901	80.00	16.00	25.00	6.00	NBR	DUP-424

Part No.	D (H11)	d (h10)	H	h	Material	Mould No.
P180161002	80.00	16.00	30.00	5.00	NBR	DUP-271
P180200803	80.00	20.00	31.00	6.00	NBR	DUP-373
P180200802	81.00	20.00	31.00	8.00	NBR	DUP-185
P180126701	90.00	12.00	35.00	11.10	FKM	DUP-465
P180123501	100.00	12.00	35.00	7.10	EPDM	DUP-411
P180161003	100.00	16.00	25.00	6.60	NBR	DUP-267
P180201003	100.00	20.00	35.00	10.00	NBR	DUP-253
P18012V202	110.00	12.00	40.00	7.00	NBR	DUP-422
P180160802	110.00	16.50	35.00	14.50	NBR	DUP-200
P180370801	110.00	37.00	10.00	6.00	NBR	DUP-279
P180206701	120.00	20.00	40.00	11.00	FKM	DUP-225
P18020S801	120.00	20.00	40.00	11.00	NBR	DUP-383
P180251001	120.00	25.00	39.00	9.00	NBR	DUP-364
P180300801	125.00	30.00	50.00	8.00	NBR	DUP-116
P180756701	125.00	75.00	40.00	9.00	FKM	DUP-444
P180926601	125.00	92.00	40.00	11.00	FKM	DUP-398
P180206401	130.00	20.00	13.00	8.00	FKM	DUP-321
P180301004	130.00	30.00	40.00	10.00	NBR	DUP-459
P180201002	140.00	20.00	40.00	13.00	NBR	DUP-176
P180201103	150.00	20.00	40.00	11.00	NBR	DUP-412
P180340801	150.00	34.50	40.00	11.00	NBR	DUP-396
P180160803	152.00	16.50	34.00	14.00	NBR	DUP-286
P180301001	160.00	30.00	20.00	6.00	NBR	DUP-199
P180201004	180.00	20.00	40.00	10.00	NBR	DUP-265
P180201006	200.00	20.00	40.00	11.30	NBR	DUP-372
P180301002	200.00	30.00	40.00	10.00	NBR	DUP-257
P180301101	250.00	30.00	40.00	13.00	NBR	DUP-379
P180601001	250.00	60.40	40.00	12.60	NBR	DUP-221
P180601002	300.00	60.00	40.00	12.00	NBR	DUP-258

DETAILS

P20 is a complete double acting pneumatic piston seal with a double cup seal and a vulcanized metal disc support. It performs both sealing and guiding functions. It is easily fastened to the piston without additional sealing element. This profile also available for single acting pistons (refer Maxspare P19) with identical housing. Standard elastomer is Nitrile rubber 80 Shore A and vulcanized to a metal disc. FKM is recommended for high temperature application.

COMPATIBILITY

Dry and oil-free air.

APPLICATION

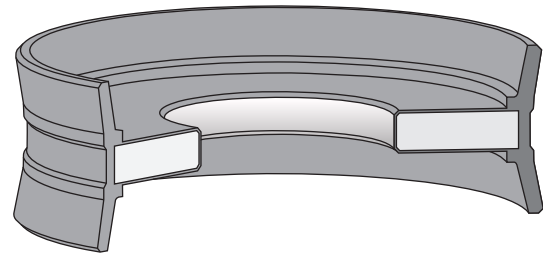
- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Prevent metallic contact between the cylinder and piston.
- Multi-functional sealing element – Sealing, guiding and cushioning element.
- Long service life.
- Easy Installation.
- Low friction and smooth running due to sealing geometry retaining the lubricating film.

INSTALLATION & ASSEMBLY

The P20 is fixed to the piston rod with a lock nut to prevent loosening. The piston and cylinder tube must be properly lubricated before installation.



MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

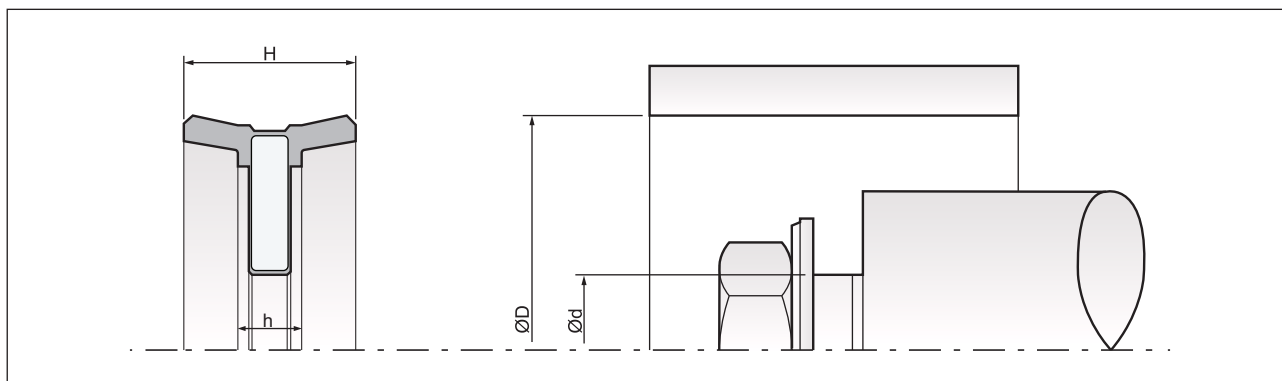
Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

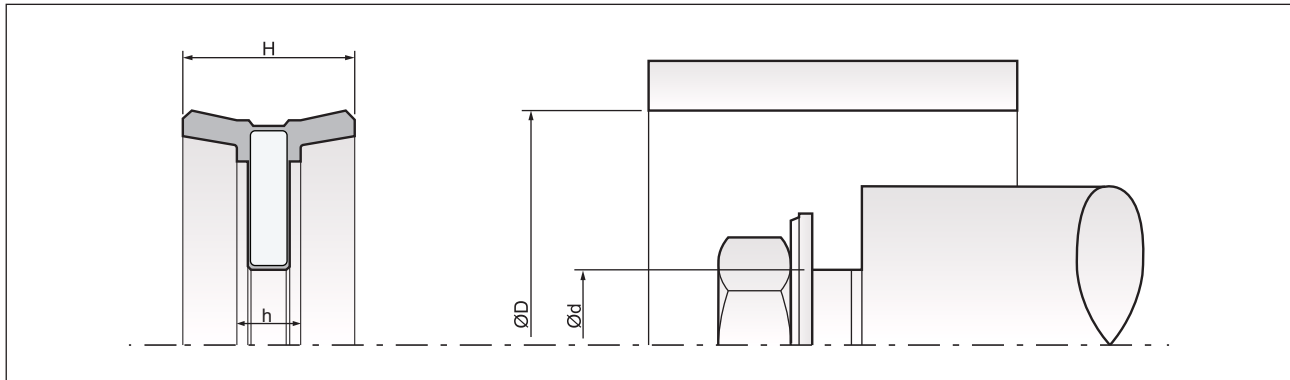
P20

Double Acting Piston Seal



Part No.	D (H11)	d (h10)	h	H	Material	Mould No.
P200080816	25.00	8.00	4.00	12.00	NBR	DUP-385
P200086402	26.00	8.00	3.00	9.50	FKM	DUP-390
P200080805	26.00	8.00	3.60	12.00	NBR	DUP-202
P20009C303	31.75	9.54	4.75	22.22	XNBR	DUP-255
P200320802	32.00	0.00	4.50	14.70	NBR	DUP-400
P200080815	32.00	8.00	3.50	11.30	NBR	DUP-369
P200800803	32.00	8.00	3.60	15.00	NBR	DUP-143
P200081003	32.00	8.00	3.00	19.50	NBR	DUP-326
P200080812	35.00	8.00	5.00	15.00	NBR	DUP-301
P200080814	35.00	8.00	4.00	15.00	NBR	DUP-376
P200086601	35.00	8.00	4.20	15.70	FKM	DUP-351
P200080806	35.00	8.00	4.60	18.00	NBR	DUP-208
P200080807	35.00	8.00	7.40	25.00	NBR	DUP-207
P200080813	40.00	8.00	4.60	18.00	NBR	DUP-307
P200100801	40.00	10.00	4.00	18.00	NBR	DUP-137
P200100905	40.00	10.00	6.50	24.00	NBR	DUP-355
P200100912	40.00	10.00	7.00	18.00	NBR	DUP-466
P200100803	40.00	10.00	7.40	25.00	NBR	DUP-209
P200176401	40.00	17.00	3.00	26.00	FKM	DUP-460
P20009C301	43.65	9.52	5.55	25.40	XNBR	DUP-226
P200060802	44.45	6.35	3.50	12.70	NBR	DUP-249
P200100902	45.00	10.20	4.00	15.00	NBR	DUP-318
P200080808	50.00	8.00	4.00	19.60	NBR	DUP-215
P200080809	50.00	8.00	4.60	18.00	NBR	DUP-229
P200100808	50.00	10.00	4.00	10.00	NBR	DUP-316
P200100909	50.00	10.00	4.00	14.00	NBR	DUP-380
P200100901	50.00	10.00	4.00	18.00	NBR	DUP-281
P200100802	50.00	10.00	4.60	18.00	NBR	DUP-213
P200106501	50.00	10.00	5.00	18.00	FKM	DUP-388
P200100903	50.00	10.00	5.00	21.00	NBR	DUP-333
P200100904	50.00	10.00	6.50	24.00	NBR	DUP-354
P200106601	50.00	10.00	4.60	18.00	FKM	DUP-346
P20010L501	50.00	10.00	4.60	18.00	PU	PPA-702
P200100807	50.00	10.00	7.00	25.00	NBR	DUP-270
P200166601	50.00	16.00	5.00	18.00	FKM	DUP-407
P20016S701	50.00	16.00	5.00	18.00	NBR	DUP-461
P200161004	50.00	16.00	5.00	18.00	NBR	DUP-131
P200090902	50.80	9.52	4.00	14.30	NBR	DUP-348
P200110901	52.00	11.00	3.00	18.00	NBR	DUP-330
P200116401	53.00	11.00	6.00	15.00	FKM	DUP-337
P200090807	53.97	9.52	3.17	14.28	NBR	DUP-264
P200164305	55.00	16.00	5.00	20.00	VMQ	DUP-382
P200090802	56.00	9.60	3.30	14.00	NBR	DUP-245
P200071001	56.13	7.95	7.62	29.21	NBR	DUP-317
P200090806	57.15	9.92	4.30	14.28	NBR	DUP-252
P200220801	59.00	22.00	6.00	23.00	NBR	DUP-343
P200120820	60.00	12.00	6.50	20.00	NBR	DUP-454
P200120806	60.00	12.00	7.00	25.00	NBR	DUP-144
P200180804	60.00	18.00	4.60	21.00	NBR	DUP-467
P200210801	60.00	21.00	6.60	26.00	NBR	DUP-150
P200096401	60.32	9.52	5.00	14.47	FKM	DUP-313
P200090901	61.00	9.50	4.00	15.00	NBR	DUP-343

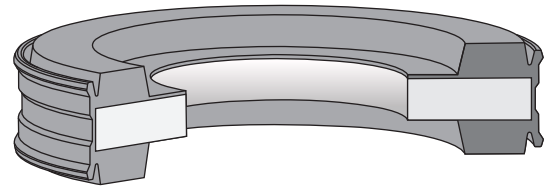
Part No.	D (H11)	d (h10)	h	H	Material	Mould No.
P200106401	63.00	10.00	3.50	16.00	FKM	DUP-273
P200120804	63.00	12.00	3.60	22.00	NBR	DUP-146
P200120902	63.00	12.00	5.30	22.00	NBR	DUP-283
P200140801	63.00	14.00	4.60	22.00	NBR	DUP-206
P200150902	63.00	15.00	6.00	27.00	NBR	DUP-397
P200160904	63.00	16.00	4.00	21.50	NBR	DUP-114
P200160903	63.00	16.00	7.50	29.00	NBR	DUP-353
P200160805	63.00	16.00	5.60	22.00	NBR	DUP-232
P200090804	63.50	9.52	3.50	14.30	NBR	DUP-239
P20009C302	63.50	9.52	7.14	25.40	XNBR	DUP-235
P200120810	65.00	12.00	6.00	25.00	NBR	DUP-231
P200090803	69.85	9.60	3.30	14.20	NBR	DUP-241
P200121004	70.00	12.00	8.00	25.00	NBR	DUP-358
P200120807	70.00	12.00	5.60	22.00	NBR	DUP-141
P200330903	70.00	33.00	5.60	22.00	NBR	DUP-322
P20012T201	72.00	12.00	6.00	20.00	VMQ	DUP-409
P200160811	75.00	16.00	15.00	33.00	NBR	DUP-389
P200120904	76.20	12.70	3.50	14.00	NBR	DUP-349
P200120813	76.20	12.70	3.50	14.30	NBR	DUP-240
P200120819	76.20	12.70	3.50	14.30	NBR	DUP-403
P200120821	80.00	12.00	5.00	22.00	NBR	DUP-463
P200120822	80.00	12.00	5.00	25.00	NBR	DUP-468
P200120802	80.00	12.00	6.60	30.00	NBR	DUP-140
P200140802	80.00	14.00	6.60	25.00	NBR	DUP-205
P200164303	80.00	16.00	5.00	20.00	VMQ	DUP-331
P200161002	80.00	16.00	5.00	22.50	NBR	DUP-342
P200160807	80.00	16.00	5.00	22.50	NBR	DUP-312
P200164304	80.00	16.00	6.00	20.00	VMQ	DUP-367
P200164306	80.00	16.00	6.00	25.00	VMQ	DUP-421
P200160812	80.00	16.00	6.00	25.00	NBR	DUP-410
P200160813	80.00	16.00	10.00	23.00	NBR	DUP-415
P200160910	80.00	16.00	12.00	30.00	NBR	DUP-414
P200160804	80.00	16.00	6.60	25.00	NBR	DUP-139
P200160902	80.00	16.00	13.00	30.00	NBR	DUP-294
P200190804	80.00	19.00	5.00	25.00	NBR	DUP-293
P200200901	80.00	20.00	5.60	22.50	NBR	DUP-336
P200306401	80.00	30.00	9.00	25.00	FKM	DUP-261
P200120814	90.00	12.00	8.00	25.00	NBR	DUP-288
P200160810	90.00	16.00	8.00	25.00	NBR	DUP-384
P200120803	90.40	12.70	4.76	19.05	NBR	DUP-328
P200121005	92.07	12.72	10.31	31.75	NBR	DUP-227
P200386501	92.07	38.10	6.00	22.22	FKM	DUP-394
P20016T202	93.00	16.00	6.00	25.00	VMQ	DUP-462
P200200814	95.00	20.00	6.00	25.00	NBR	DUP-404
P200120816	100.00	12.00	6.60	25.00	NBR	DUP-308
P200120801	100.00	12.70	7.00	25.00	NBR	DUP-154
P200160901	100.00	16.00	6.6	25.00	NBR	DUP-234
P200180802	100.00	18.00	7.25	22.00	NBR	DUP-268
P200180901	100.00	18.00	7.20	30.50	NBR	DUP-399
P20020L501	100.00	20.00	6.60	26.00	PU	PPA-2323
P200200807	100.00	20.00	6.60	25.00	NBR	DUP-204
P200200808	100.00	20.00	6.00	36.00	NBR	DUP-216



Part No.	D (H11)	d (h10)	h	H	Material	Mould No.	Part No.	D (H11)	d (h10)	h	H	Material	Mould No.
P200200815	100.00	20.00	4.50	48.00	NBR	DUP-408	P200201003	150.00	20.00	11.20	28.60	NBR	DUP-220
P200190901	100.70	19.00	6.60	26.00	NBR	DUP-423	P200200907	150.00	20.00	12.00	30.00	NBR	DUP-395
P200120818	101.60	12.70	5.95	19.05	NBR	DUP-352	P200250901	150.00	25.00	6.50	25.00	NBR	DUP-325
P200120812	101.60	12.80	5.00	17.60	NBR	DUP-242	P200120401	152.40	12.70	6.35	23.81	NBR	DUP-247
P200210803	101.60	21.70	10.00	35.00	NBR	DUP-405	P200190401	152.40	19.05	6.35	23.81	NBR	DUP-248
P200666401	101.60	66.68	6.00	21.00	FKM	DUP-420	P200200811	160.00	20.00	18.00	25.00	NBR	DUP-259
P200120811	107.95	11.50	4.50	20.50	NBR	DUP-244	P200200802	160.00	20.00	13.00	30.00	NBR	DUP-193
P200190801	114.30	19.00	5.50	19.50	NBR	DUP-243	P200276503	160.00	27.00	9.00	30.00	FKM	DUP-374
P20019C301	114.30	19.08	11.10	38.10	XNBR	DUP-254	P200276502	160.00	27.00	11.00	30.00	FKM	DUP-371
P200180803	125.00	18.00	8.00	30.00	NBR	DUP-287	P200276402	160.00	27.00	12.00	31.00	FKM	DUP-455
P200200813	125.00	20.00	8.20	28.00	NBR	DUP-278	P200276602	160.00	27.00	9.50	30.00	FKM	DUP-256
P200206403	125.00	20.00	8.20	28.00	FKM	DUP-464	P200271002	160.00	27.00	9.50	30.00	NBR	DUP-453
P200200810	125.00	20.00	9.60	26.00	NBR	DUP-275	P200270802	160.00	27.00	6.60	31.00	NBR	DUP-138
P200206602	125.00	20.00	7.00	26.00	FKM	DUP-266	P200320901	160.00	32.00	22.00	45.00	NBR	DUP-425
P200200804	125.00	20.00	9.60	30.00	NBR	DUP-149	P200201006	200.00	20.00	10.60	40.00	NBR	DUP-340
P200210802	125.00	21.00	10.00	40.00	NBR	DUP-272	P200200816	200.00	20.00	12.00	40.00	NBR	DUP-416
P200250801	125.00	25.00	9.00	31.00	NBR	DUP-280	P200270806	200.00	27.00	11.00	30.00	NBR	DUP-289
P200250803	125.00	25.00	10.00	30.00	NBR	DUP-458	P200271001	200.00	27.00	12.00	35.00	NBR	DUP-363
P200300802	125.00	30.00	6.60	30.00	NBR	DUP-203	P200273201	200.00	27.00	12.00	35.00	EPDM	DUP-236
P200190808	127.00	19.05	6.00	16.00	NBR	DUP-402	P200270803	200.00	27.00	12.00	40.00	NBR	DUP-250
P200190805	127.00	19.05	6.00	16.00	NBR	DUP-300	P200301004	200.00	30.00	10.60	35.00	NBR	DUP-377
P200250802	127.00	25.40	12.00	40.00	NBR	DUP-359	P200301002	200.00	30.00	11.00	34.50	NBR	DUP-219
P200126601	130.00	12.00	7.00	28.00	FKM	DUP-251	P200320801	200.00	32.00	10.00	36.00	NBR	DUP-274
P200190802	139.70	19.05	6.85	23.81	NBR	DUP-262	P200261001	203.20	26.90	11.00	39.5	NBR	DUP-233
P200206601	140.00	20.00	10.00	31.50	FKM	DUP-218	P200301001	250.00	30.00	15.00	40.00	NBR	DUP-198
P200220901	140.00	22.00	6.00	29.00	NBR	DUP-413	P200361001	250.00	36.00	15.00	40.00	NBR	DUP-334
P200190806	150.00	19.00	9.00	25.00	NBR	DUP-391	P200310802	304.80	31.75	8.00	26.50	NBR	DUP-319
P200190807	150.00	19.00	9.00	25.00	NBR	DUP-401							

DETAILS

P21 is a complete double acting pneumatic piston seal with a double cup seal and a vulcanized metal disc support. It performs both sealing and guiding functions. It is easily fastened to the piston without additional sealing element. This profile also available for single acting pistons (refer Maxspare P19) with identical housing. Standard elastomer is Nitrile rubber 80 Shore A and vulcanized to a metal disc. FKM is recommended for high temperature application.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Prevent metallic contact between the cylinder and piston.
- Multi-functional sealing element – Sealing, guiding and cushioning element.
- Long service life.
- Easy Installation.
- Low friction and smooth running due to sealing geometry retaining the lubricating film.

INSTALLATION & ASSEMBLY

The P21 is fixed to the piston rod with a lock nut to prevent loosening. The piston and cylinder tube must be properly lubricated before installation.

MATERIAL

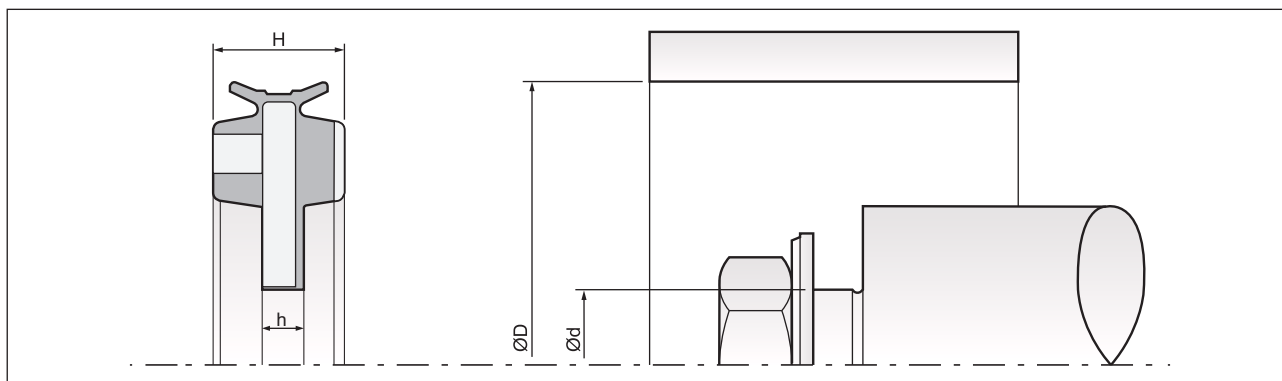
Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa



Part No.	D (H11)	d (h10)	h	H	Material	Mould No.
P210040802	12.00	4.50	2.30	6.00	NBR	DUP-426
P210040803	16.00	4.50	2.30	6.50	NBR	DUP-427
P210040801	16.00	4.50	2.30	6.50	NBR	DUP-291
P210050801	20.00	5.50	2.40	6.40	NBR	DUP-362
P210060803	20.00	6.00	3.00	7.50	NBR	DUP-329
P210060801	20.00	6.00	2.00	7.60	NBR	DUP-214
P210060802	20.00	6.00	2.80	7.70	NBR	DUP-246
P210060804	20.00	6.00	2.80	7.70	NBR	DUP-417
P210070801	25.00	7.00	3.50	8.80	NBR	DUP-290
P210070802	25.00	7.00	3.50	8.80	NBR	DUP-428
P210071001	32.00	7.20	3.30	10.80	NBR	DUP-282
P210085901	25.00	8.00	9.00	12.00	PU	PPA-3422
P210086301	25.80	8.00	8.55	11.75	FKM	DUP-323
P210080801	32.00	8.00	4.50	9.00	NBR	DUP-305
P210080806	32.00	8.00	3.50	11.00	NBR	DUP-429
P210080803	32.00	8.00	3.50	11.00	NBR	DUP-332
P210086401	32.00	8.00	8.00	11.70	FKM	DUP-381
P210080804	32.00	8.00	8.00	11.70	NBR	DUP-338
P21008L401	32.00	8.00	8.00	12.00	PU	PPA-1574
P21008L402	32.00	8.00	8.00	12.00	PU	PPA-2347
P210080802	40.00	8.00	4.50	11.80	NBR	DUP-309
P210080807	40.00	8.00	4.50	11.80	NBR	DUP-430

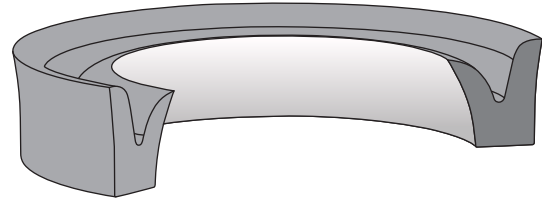
Part No.	D (H11)	d (h10)	h	H	Material	Mould No.
P210100802	40.00	10.00	4.50	10.00	NBR	DUP-303
P210100801	40.00	10.00	4.00	10.20	NBR	DUP-223
P210100805	40.00	10.00	4.50	10.00	NBR	DUP-341
P210100803	50.00	10.00	4.50	10.00	NBR	DUP-304
P210100806	50.00	10.00	4.50	14.00	NBR	DUP-431
P210100807	50.00	10.00	4.50	14.00	NBR	DUP-449
P210100804	50.00	10.00	4.50	14.00	NBR	DUP-310
P210120804	40.00	12.00	5.00	18.00	NBR	DUP-447
P210120902	63.00	12.00	5.00	14.00	NBR	DUP-446
P210120901	63.00	12.00	4.50	14.00	NBR	DUP-445
P210120805	63.00	12.00	4.50	14.00	NBR	DUP-448
P210120803	63.00	12.00	4.50	14.00	NBR	DUP-432
P210120801	63.00	12.00	4.50	14.00	NBR	DUP-224
P210160802	63.00	16.00	5.40	11.00	NBR	DUP-284
P210160805	80.00	16.00	5.50	16.00	NBR	DUP-450
P210160803	80.00	16.00	5.50	16.00	NBR	DUP-311
P210200802	95.00	20.00	24.00	31.00	NBR	DUP-210
P210200801	100.00	20.00	14.00	18.00	NBR	DUP-197
P210200803	100.00	20.00	6.50	18.00	NBR	DUP-434
P210201001	100.00	20.00	26.00	42.00	NBR	DUP-335
P210206401	100.00	20.00	6.00	17.30	FKM	DUP-292

ROD SEALS

MAX TYPE	PRODUCT NAME	SEAL PROFILE	APPLICATION	PRESSURE (max) bar	TEMPERATURE	SPEED m/s	PAGE NO
S01	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	0.5	83
S02	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	0.5	85
S03	U SEAL		SINGLE ACTING	16	-30°C TO +100°C	1.0	91
S06	U SEAL		DOUBLE ACTING	12	-30°C TO +100°C	0.5	95
S07	U SEAL		DOUBLE ACTING	16	-30°C TO +100°C	0.5	97
S08	COMPOSITE SEAL		DOUBLE ACTING	25	-30°C TO +100°C	5.0	99
S09	CUSHION SEAL		DOUBLE ACTING	16	-30°C TO +100°C	1.0	103
S10	CUSHION SEAL		DOUBLE ACTING	16	-30°C TO +100°C	1.0	105

DETAILS

S01 is a single acting pneumatic rod seal with u-shaped cross section. Its asymmetric profile with longer and thicker static sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy Installation.
- Low friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The S01 rod seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

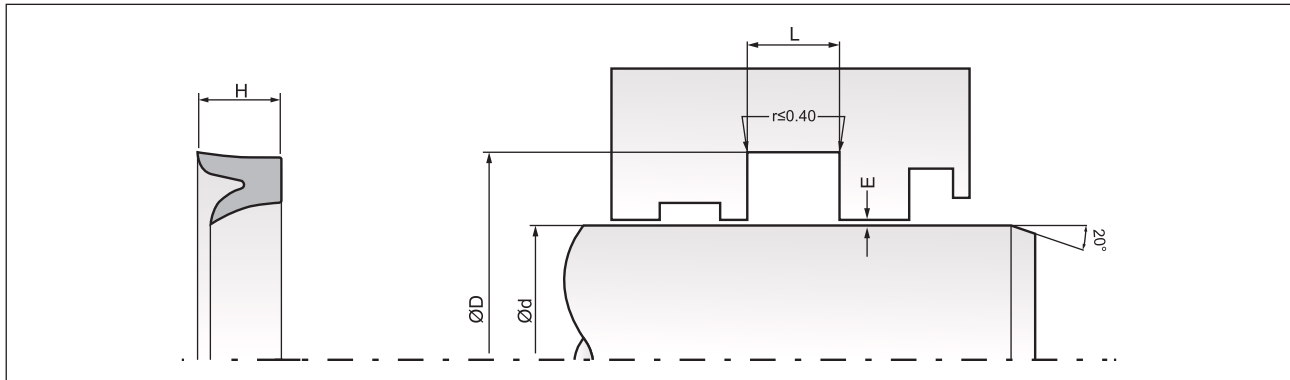
Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

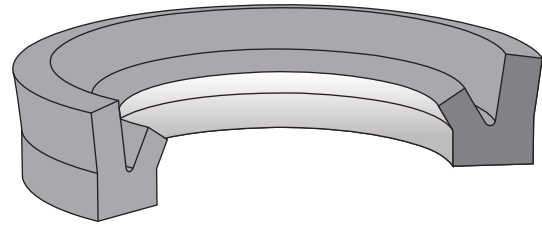


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S010034301	3.70	12.00	4.40	3.90	VMQ	SUA-974
S010076401	7.50	12.00	3.50	3.00	FKM	SUA-928
S010071001	7.93	14.28	4.46	3.96	NBR	SUA-1333
S01010L501	10.00	13.50	2.80	2.30	PU	PUA-331
S010106601	10.00	16.00	3.00	2.50	FKM	SUA-1392
S01010L401	10.00	20.00	8.50	8.00	PU	PUA-467
S010113201	11.11	19.05	4.46	3.96	EPDM	SUA-2454
S010124601	12.70	21.00	5.60	5.10	VMQ	SUA-2259
S010141001	14.28	20.63	5.26	4.76	NBR	SUA-752
S010151001	15.87	22.22	5.26	4.76	NBR	SUA-251
S010161001	16.00	25.40	8.00	7.50	NBR	SUB-692
S010161002	16.00	26.00	6.00	5.50	NBR	SUB-1387
S010176401	17.46	23.81	5.10	4.60	FKM	SUA-2359
S010191003	19.04	25.40	6.85	6.35	NBR	SUB-699
S010190903	19.05	25.40	5.90	5.40	NBR	SUB-2117
S010191001	19.08	25.40	5.26	4.76	NBR	SUB-2796
S01020L501	20.00	26.00	6.00	5.50	PU	PUB-1140
S010206601	20.00	28.00	5.50	5.00	FKM	SUB-3675
S010201102	20.00	28.00	7.00	6.50	NBR	SUB-638
S010241001	20.00	30.00	5.50	5.00	NBR	SUB-2584
S010206401	20.63	28.57	5.26	4.76	FKM	SUB-1812
S010251005	25.40	33.02	3.87	3.37	NBR	SUB-2352
S010251001	25.40	38.10	6.85	6.35	FKM	SUB-1404
S010256601	25.40	38.10	8.50	8.00	FKM	SUB-4072
S010260801	26.00	33.00	3.90	3.40	NBR	SUB-2277
S010264001	26.00	38.00	7.10	6.60	VMQ	SUB-4155
S010284301	28.00	40.00	7.10	6.60	VMQ	SUB-4156
S010286501	28.58	41.28	8.43	7.93	FKM	SUB-4056
S010306601	30.00	37.00	6.50	6.00	FKM	SUB-2236
S010326601	32.00	45.00	7.50	7.00	FKM	SUB-1673

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S010331101	33.34	40.63	5.10	4.60	NBR	SUB-1657
S010386501	38.10	50.80	10.52	9.52	FKM	SUC-1431
S010380901	38.10	50.80	10.52	9.52	NBR	SUC-1099
S010383301	38.10	50.80	12.00	11.00	EPDM	SUC-2737
S010406601	40.00	54.00	8.50	8.00	FKM	SUC-2498
S010456501	45.00	55.00	7.50	7.00	FKM	SUC-2794
S010456601	45.00	55.00	11.00	10.00	FKM	SUC-1973
S010473201	47.63	63.50	12.00	11.00	EPDM	SUC-2668
S010470801	47.63	63.50	12.00	11.00	NBR	SUC-2669
S010476501	47.63	63.50	12.00	11.00	FKM	SUC-2670
S010506701	50.00	58.50	11.37	10.37	FKM	SUC-1883
S010501003	50.00	60.00	13.30	12.30	NBR	SUC-2539
S010501002	50.00	63.00	12.20	11.20	NBR	SUC-2540
S010531001	53.97	62.69	8.10	7.60	NBR	SUC-1524
S010566601	56.00	66.00	7.00	6.50	FKM	SUC-1594
S010566602	56.00	67.00	8.10	7.60	FKM	SUC-1622
S010570801	57.15	69.85	8.43	7.93	NBR	SUC-869
S010600901	60.00	70.00	8.50	8.00	NBR	SUC-2830
S010671001	67.00	80.00	6.50	6.00	NBR	SUD-1264
S010701003	70.00	79.50	6.50	6.00	NBR	SUD-1950
S010886601	88.90	101.60	12.00	11.00	FKM	SUE-1404
S010921001	92.00	105.00	6.50	6.00	NBR	SUE-885
S010921002	92.08	106.40	8.43	7.93	NBR	SUE-1007
S010951001	95.00	104.00	6.50	6.00	NBR	SUE-1311
S011012301	101.60	111.12	10.52	9.52	NBR	SUE-409
S011221001	122.00	135.00	6.50	6.00	NBR	SUF-606
S011551001	155.00	170.00	5.50	5.00	NBR	SUG-547
S011751001	175.00	190.00	5.50	5.00	NBR	SUH-369
S012001001	200.00	220.00	16.00	15.00	NBR	SUJ-290

DETAILS

S02 is a single acting pneumatic rod seal with u-shaped cross section. Its asymmetric profile with longer and thicker static sealing lip guarantees a secure seat in the grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Compact design.
- Long service life.
- Easy Installation.
- Low friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The S02 rod seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

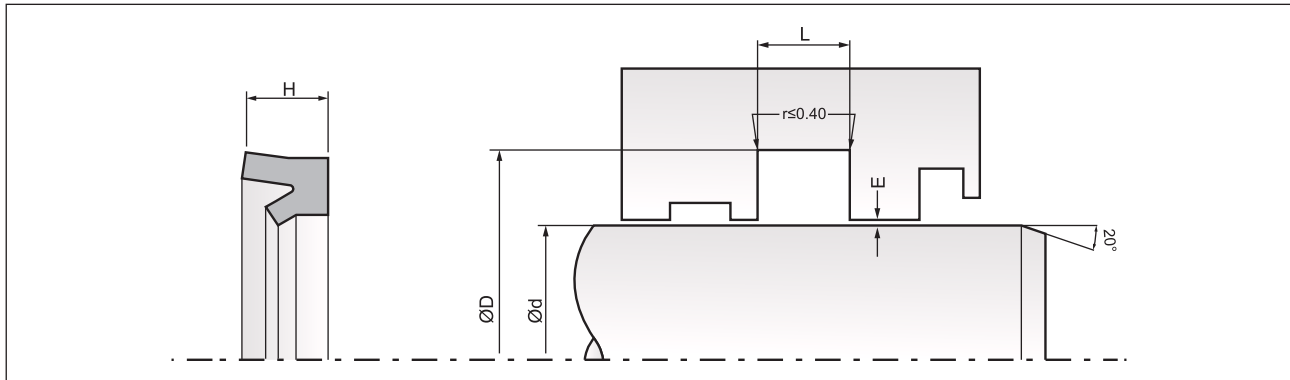
Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

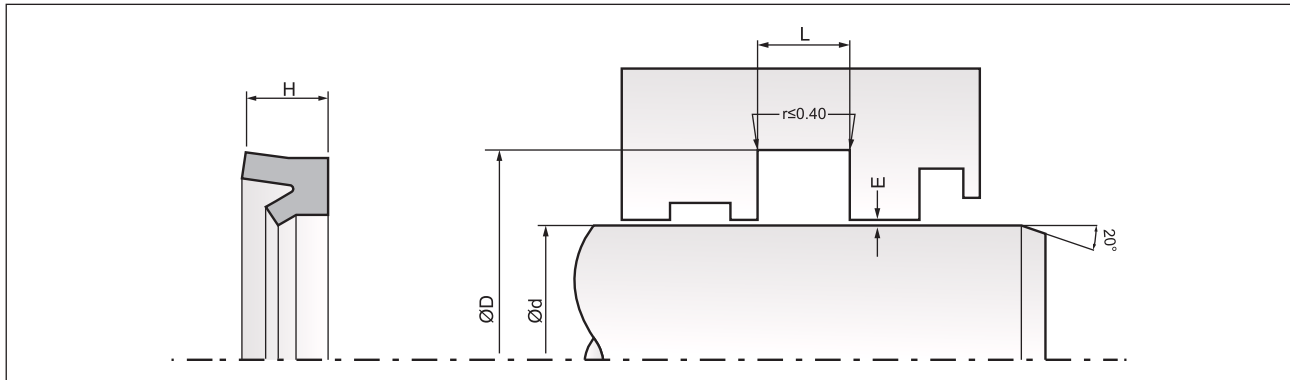
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

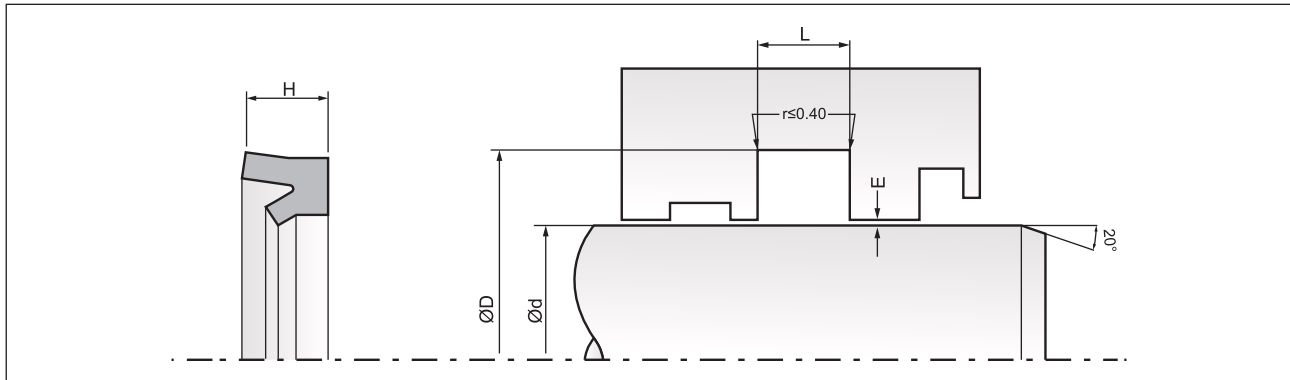
Static : 1.6 µmRa
Dynamic : 0.4 µmRa



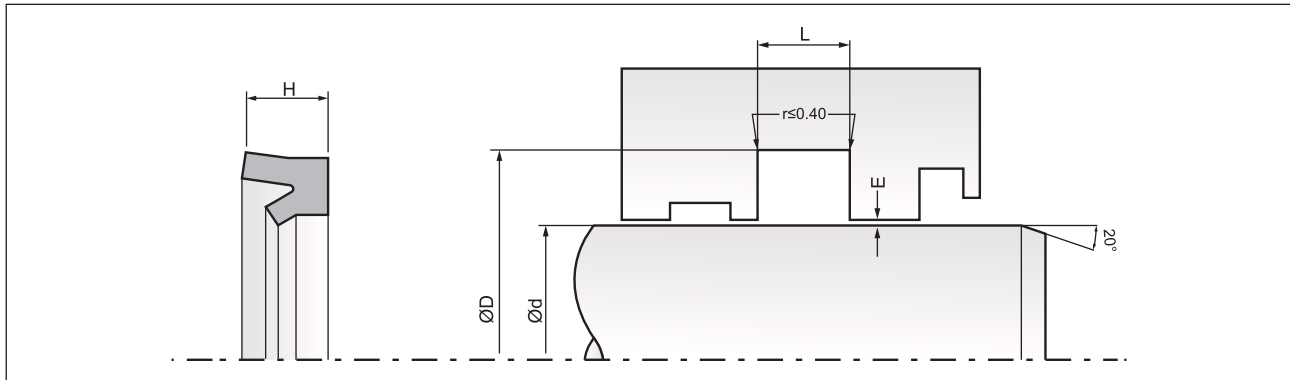
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S020020801	2.50	5.00	2.60	2.10	NBR	SUA-615	S020100802	10.00	14.00	2.70	2.20	NBR	SUA-801
S020033401	3.00	7.00	3.50	3.00	EPDM	SUA-1295	S020100905	10.00	14.00	2.70	2.20	NBR	SUA-2198
S020041004	4.00	8.00	3.50	3.00	NBR	SUA-868	S020100806	10.00	14.00	2.80	2.30	NBR	SUA-2263
S020041005	4.00	8.00	3.50	3.00	NBR	SUA-1156	S020101104	10.00	14.00	2.80	2.30	NBR	SUA-2382
S02004Q201	4.00	8.00	3.50	3.00	PU	PUA-525	S020101007	10.00	14.00	2.80	2.30	NBR	SUA-1620
S020041002	4.00	9.00	4.00	3.50	NBR	SUA-733	S020100901	10.00	14.00	2.80	2.30	NBR	SUA-1626
S020046603	4.00	10.00	4.50	4.00	FKM	SUA-2464	S020101102	10.00	14.00	3.00	2.50	NBR	SUA-612
S020041003	4.00	10.00	4.70	4.20	NBR	SUA-734	S020101011	10.00	14.00	3.20	2.70	NBR	SUA-2163
S020046601	4.00	10.00	4.70	4.20	FKM	SUA-886	S020090801	10.00	14.00	3.50	3.00	NBR	SUA-1010
S020040802	4.00	12.00	5.00	4.50	NBR	SUA-2431	S020101008	10.00	14.00	4.00	3.50	NBR	SUA-1621
S02004CF01	4.00	12.00	5.00	4.50	PU	PUA-929	S02010L401	10.00	14.00	4.50	4.00	PU	PUA-598
S020041006	4.50	12.00	4.50	4.00	NBR	SUA-1190	S020106602	10.00	16.00	5.00	4.50	FKM	SUA-918
S020050801	5.00	10.00	4.50	4.00	NBR	SUA-784	S020101003	10.00	16.00	5.00	4.50	NBR	SUA-737
S020051001	5.00	10.00	4.50	4.00	NBR	SUA-786	S020100805	10.00	16.00	5.00	4.50	NBR	SUA-1201
S020051001	5.00	10.00	4.50	4.00	NBR	SUA-823	S02010L502	10.00	16.00	5.00	4.50	PU	PUA-752
S020051002	5.50	12.00	4.50	4.00	NBR	SUA-1329	S020100809	10.00	16.00	5.00	4.50	NBR	SUA-2477
S020061003	6.00	10.00	3.50	3.00	NBR	SUA-926	S020106603	10.00	16.00	5.00	4.50	FKM	SUA-2480
S020066602	6.00	10.00	3.50	3.00	FKM	SUA-1084	S020100803	10.00	18.00	5.80	5.30	NBR	SUA-1005
S02006L501	6.00	10.00	3.50	3.00	PU	PUA-530	S020105501	10.00	18.00	6.00	5.50	FKM	SUA-965
S020063301	6.00	10.00	3.50	3.00	EPDM	SUA-2378	S020106601	10.00	18.00	6.00	5.50	FKM	SUA-1252
S020066603	6.00	10.00	4.50	4.00	FKM	SUA-1544	S020106502	10.00	18.00	6.50	6.00	FKM	SUA-2208
S020061002	6.00	12.00	3.50	3.00	NBR	SUA-922	S020100902	10.31	14.27	2.50	2.00	NBR	SUA-1674
S020061004	6.00	12.00	4.50	4.00	NBR	SUA-1199	S020110801	11.00	17.00	4.50	4.00	NBR	SUA-913
S020060801	6.00	13.00	5.50	5.00	NBR	SUA-1045	S020121005	12.00	17.00	5.00	4.50	NBR	SUA-1622
S020066401	6.00	13.00	5.50	5.00	FKM	SUA-2304	S020121009	12.00	18.00	3.05	2.55	NBR	SUA-2067
S020061003	6.35	15.87	10.80	9.80	NBR	SUA-988	S020121007	12.00	18.00	3.20	2.70	NBR	SUA-1875
S020061006	6.50	20.50	13.00	12.00	NBR	SUA-2341	S020121102	12.00	18.00	4.50	4.00	NBR	SUA-1265
S020073402	7.00	13.00	4.50	4.00	EPDM	SUA-1287	S020126501	12.00	18.00	7.50	7.00	FKM	SUA-1509
S020071102	7.50	14.00	4.60	4.10	NBR	SUA-940	S020121004	12.00	18.50	5.00	4.50	NBR	SUA-738
S020071101	7.93	14.28	4.46	3.96	NBR	SUA-793	S020121103	12.00	19.00	5.00	4.50	NBR	SUA-1442
S020080804	8.00	12.00	3.00	2.50	NBR	SUA-1417	S020120802	12.00	19.00	5.00	4.50	NBR	SUA-2265
S020081006	8.00	13.00	3.70	3.20	NBR	SUA-2199	S020121105	12.00	20.00	5.50	5.00	NBR	SUA-2105
S020080901	8.00	13.50	3.70	3.20	NBR	SUA-2261	S020121012	12.00	20.00	5.90	5.40	NBR	SUA-2394
S020086501	8.00	14.00	4.40	3.90	FKM	SUA-1007	S020126602	12.00	20.00	5.90	5.40	FKM	SUA-1673
S020080801	8.00	14.00	4.50	4.00	NBR	SUA-903	S020126604	12.00	20.00	6.20	5.70	FKM	SUA-2306
S020081001	8.00	14.00	4.50	4.00	NBR	SUA-735	S020126502	12.00	20.00	6.50	6.00	FKM	SUA-2119
S02008V201	8.00	14.00	4.90	4.40	NBR	SUA-1771	S020301001	13.00	20.00	5.00	4.50	NBR	SUA-1945
S020081003	8.00	16.00	5.50	5.00	NBR	SUA-1042	S020141003	14.00	18.00	3.25	2.75	NBR	SUA-2069
S020081002	8.00	16.00	6.00	5.50	NBR	SUA-904	S020141104	14.00	20.00	4.00	3.50	NBR	SUA-2264
S020083201	8.40	15.00	4.30	3.80	EPDM	SUA-798	S020141102	14.00	20.00	5.50	5.00	NBR	SUA-1432
S020080803	8.73	20.63	4.20	3.70	NBR	SUA-1286	S020141004	14.00	21.00	4.90	4.40	NBR	SUA-2165
S020091001	9.00	14.00	4.00	3.50	NBR	SUA-736	S020141002	14.00	21.00	5.20	4.70	NBR	SUA-1648
S020091002	9.30	14.00	3.50	3.00	NBR	SUA-956	S020146601	14.00	22.00	6.00	5.50	FKM	SUA-1109
S020092001	9.50	15.70	4.50	4.00	CR	SUA-2336	S020146501	14.00	22.00	6.20	5.70	FKM	SUA-1818
S020101009	10.00	13.00	2.50	2.00	NBR	SUA-2071	S02014T801	14.00	22.00	6.50	6.00	FKM	SUA-1958
S020101004	10.00	13.50	2.75	2.25	NBR	SUA-756	S02014AP01	14.00	23.00	6.50	6.00	NBR	PUA-795
S020106401	10.00	13.60	2.80	2.30	FKM	SUA-1452	S020141001	14.00	23.00	8.50	8.00	NBR	SUA-1168
S02010D501	10.00	13.60	2.80	2.30	HNBR	SUA-1027	S020140801	14.00	25.00	8.50	8.00	NBR	SUA-1334
S020101001	10.00	13.60	2.80	2.30	NBR	SUA-1404	S020141103	14.28	33.34	10.52	9.52	NBR	SUB-1617
S020106503	10.00	13.60	2.80	2.30	FKM	SUA-2246	S020150902	15.00	21.00	5.50	5.00	NBR	SUA-1612
S020100807	10.00	13.60	2.80	2.30	NBR	SUA-2398	S020150901	15.00	22.00	5.40	4.90	NBR	SUA-945
S020101005	10.00	13.60	2.90	2.40	NBR	SUA-776	S020151003	15.00	23.00	5.30	4.80	NBR	SUA-1996



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S020151002	15.00	24.00	4.50	4.00	NBR	SUA-1740	S020221101	22.00	35.00	6.00	5.50	NBR	SUB-2094
S020151004	15.87	22.15	6.06	5.56	NBR	SUA-2017	S020221003	22.22	27.78	4.00	3.50	NBR	SUB-2417
S020161006	16.00	20.00	3.25	2.75	NBR	SUA-2070	S020221002	22.22	29.36	6.25	5.75	NBR	SUB-2418
S020161003	16.00	22.00	5.00	4.50	NBR	SUA-1253	S020221001	22.40	35.00	9.60	8.60	NBR	SUB-2075
S020164502	16.00	22.00	5.50	5.00	VMQ	SUA-1967	S020230701	23.00	29.50	9.70	8.70	NBR	SUB-1451
S020161104	16.00	22.00	6.00	5.50	NBR	SUA-2438	S020236601	23.00	31.00	6.00	5.50	FKM	SUB-1369
S02016L501	16.00	22.00	8.50	8.00	PU	PUA-909	S020236401	23.00	31.20	6.00	5.50	FKM	SUB-2002
S020161002	16.00	22.50	5.00	4.50	NBR	SUA-739	S020241003	24.00	32.00	5.60	5.10	NBR	SUB-3876
S020166604	16.00	22.50	5.00	4.50	FKM	SUA-1273	S020241001	24.00	37.00	7.20	6.70	NBR	SUB-3071
S020161007	16.00	23.00	6.70	6.20	NBR	SUA-2248	S020250901	25.00	31.00	4.30	3.80	NBR	SUB-1615
S020161004	16.00	24.00	5.90	5.40	NBR	SUA-2020	S020251104	25.00	31.00	8.50	8.00	NBR	SUB-3437
S020166602	16.00	24.00	6.00	5.50	FKM	SUA-1110	S020251006	25.00	32.00	7.00	6.50	NBR	SUB-3347
S020160802	16.00	24.00	6.00	5.50	NBR	SUA-1136	S020256702	25.00	33.00	5.80	5.30	FKM	SUB-2693
S020161001	16.00	24.00	6.00	5.50	NBR	SUA-972	S020251103	25.00	33.00	6.00	5.50	NBR	SUB-2516
S020160901	16.00	24.00	6.00	5.50	NBR	SUA-659	S020251103	25.00	33.00	6.00	5.50	NBR	SUB-1970
S020160803	16.00	24.00	6.00	5.50	NBR	SUA-1743	S020256603	25.00	33.00	6.00	5.50	FKM	SUB-1879
S020164501	16.00	24.00	7.00	6.50	VMQ	SUA-960	S020256501	25.00	35.00	6.50	6.00	FKM	SUB-3657
S020166605	16.00	24.00	7.10	6.60	FKM	SUA-1978	S020250801	25.00	35.00	6.50	6.00	NBR	SUB-2217
S020166501	16.00	26.00	6.50	6.00	FKM	SUB-3656	S020256602	25.00	35.00	7.50	7.00	FKM	SUB-1729
S020160801	16.50	22.50	5.00	4.50	NBR	SUA-1502	S020251101	25.00	35.00	7.50	7.00	NBR	SUB-1574
S02017U201	17.00	24.00	3.30	2.80	FKM	SUA-1671	S020250802	25.00	36.00	8.50	8.00	NBR	SUB-2555
S020170801	17.00	24.00	6.00	5.50	NBR	SUA-1772	S020251003	25.00	37.00	7.70	7.20	NBR	SUB-2330
S020171101	17.00	25.00	6.00	5.50	NBR	SUA-1235	S02025Q201	25.00	38.00	7.20	6.70	PU	PUB-1872
S020176601	17.00	25.00	6.00	5.50	FKM	SUA-916	S020251004	25.40	34.92	5.60	5.10	NBR	SUB-2698
S020181002	18.00	24.00	4.00	3.50	NBR	SUA-1365	S020251102	25.40	38.10	6.85	6.35	NBR	SUB-1622
S020186601	18.00	25.00	6.00	5.50	FKM	SUA-977	S020250902	25.40	38.10	7.00	6.50	NBR	SUB-2759
S020181003	18.00	26.00	4.70	4.20	NBR	SUB-3254	S020256601	25.40	38.10	7.10	6.60	FKM	SUB-1379
S020186603	18.00	26.00	6.00	5.50	FKM	SUB-2200	S020251005	25.50	36.00	5.50	5.00	NBR	SUB-2812
S020186602	18.00	26.00	6.50	6.00	FKM	SUB-1901	S020260801	26.00	32.00	7.40	6.90	NBR	SUB-3235
S020186501	18.00	26.00	6.50	6.00	FKM	SUB-3556	S020261002	26.00	40.00	7.50	7.00	NBR	SUB-3625
S020191001	19.00	25.00	5.50	5.00	NBR	SUA-740	S020261001	26.00	43.00	10.50	9.50	NBR	SUB-2077
S020201004	20.00	24.00	3.20	2.70	NBR	SUA-2164	S020266601	26.50	33.00	6.80	6.30	FKM	SUB-2190
S020206603	20.00	24.00	3.28	2.78	FKM	SUA-1619	S020281001	28.00	33.00	3.50	3.00	NBR	SUB-4177
S020201003	20.00	26.00	4.50	4.00	NBR	SUB-1626	S02028L401	28.00	34.00	8.50	8.00	PU	PUB-1083
S020201101	20.00	26.00	5.30	4.80	NBR	SUB-1081	S020286603	28.00	36.00	6.00	5.50	FKM	SUB-1368
S020206606	20.00	26.00	5.30	4.80	FKM	SUB-3982	S020280901	28.00	36.00	6.00	5.50	NBR	SUB-1116
S020206604	20.00	28.00	5.20	4.70	FKM	SUB-3372	S020286603	28.00	36.00	6.00	5.50	FKM	SUB-1727
S020206605	20.00	28.00	5.50	5.00	FKM	SUB-3679	S020280701	28.00	36.50	9.70	8.70	NBR	SUB-1452
S020206602	20.00	28.00	6.00	5.50	FKM	SUB-1345	S02029X401	29.00	34.00	3.50	3.00	PU	PUB-1858
S020200902	20.00	28.00	6.00	5.50	NBR	SUB-229	S020306603	30.00	38.00	5.80	5.30	FKM	SUB-3299
S020201102	20.00	28.00	6.00	5.50	NBR	SUB-1621	S020301004	30.00	38.00	5.90	5.40	NBR	SUB-2520
S02020L401	20.00	28.00	6.10	5.60	PU	PUB-1178	S020300801	30.00	39.00	6.50	6.00	NBR	SUB-2229
S020200901	20.00	28.00	6.40	5.90	NBR	SUB-2839	S02030L501	30.00	39.00	6.50	6.00	PU	PUB-885
S020206401	20.00	29.00	6.70	6.20	FKM	SUB-4061	S02030L502	30.00	39.00	11.00	10.00	PU	PUB-1428
S020206403	20.00	29.00	7.20	6.70	FKM	SUB-4062	S020306501	30.00	40.00	6.50	6.00	FKM	SUB-3557
S020200803	20.00	30.00	6.00	5.50	NBR	SUB-3079	S020306602	30.00	40.00	7.50	7.00	FKM	SUB-2198
S020206501	20.00	30.00	6.50	6.00	FKM	SUB-3659	S020301002	30.00	40.00	7.50	7.00	NBR	SUB-1503
S02020L502	20.00	30.00	8.50	8.00	PU	PUB-1261	S020300803	30.00	40.00	8.00	7.50	NBR	SUB-3078
S020216601	21.50	30.00	8.50	8.00	FKM	SUB-3305	S020300802	30.00	40.00	7.50	7	NBR	SUB-3081
S020226601	22.00	30.00	6.00	5.50	FKM	SUB-2199	S020303501	30.00	45.00	7.00	6.50	EPDM	SUB-1399
S020226602	22.00	32.00	6.50	6.00	FKM	SUB-3466	S020301107	30.16	38.10	6.85	6.35	NBR	SUB-1578
S020221004	22.00	32.00	6.50	6.00	NBR	SUB-3467	S020311101	31.75	44.45	6.85	6.35	NBR	SUB-1570



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S020319901	31.75	44.45	13.00	12.00	SBR	SUB-3267	S020451101	45.00	55.00	8.50	8.00	NBR	SUC-833
S020320801	32.00	38.00	4.00	3.50	NBR	SUB-2652	S020456501	45.00	57.00	11.00	10.00	FKM	SUC-2003
S020325901	32.00	40.00	4.50	4.00	PU	PUB-1105	S020454101	45.00	61.00	13.00	12.00	VMQ	SUC-1491
S020326701	32.00	42.00	7.50	7.00	FKM	SUB-1731	S020480801	48.51	66.67	10.52	9.52	NBR	SUC-1736
S020341001	34.00	40.00	5.50	5.00	NBR	SUB-2267	S020506606	50.00	60.00	7.50	7.00	FKM	SUC-891
S020340801	34.00	44.00	7.50	7.00	NBR	SUB-1881	S020506701	50.00	60.00	7.50	7.00	FKM	SUC-1031
S020340901	34.92	44.45	6.00	5.50	NBR	SUB-2757	S020501004	50.00	60.00	7.50	7.00	NBR	SUC-2553
S020351003	35.00	43.00	5.00	4.50	NBR	SUB-2104	S020506605	50.00	60.00	8.00	7.50	FKM	SUC-1993
S020351102	35.00	43.00	6.50	6.00	NBR	SUB-1237	S020501002	50.00	60.00	10.00	9.00	NBR	SUC-2202
S020351004	35.00	43.00	8.50	8.00	NBR	SUB-3034	S020501103	50.00	60.00	12.50	11.50	NBR	SUC-2024
S020356602	35.00	45.00	7.00	6.50	FKM	SUB-3978	S020506602	50.00	63.00	8.50	8.00	FKM	SUC-756
S020351002	35.00	45.00	7.50	7.00	NBR	SUB-1998	S020506501	50.00	63.00	10.50	9.50	FKM	SUC-1878
S020356603	35.00	46.00	8.00	7.50	FKM	SUB-3749	S020506608	50.00	65.00	10.00	9.00	FKM	SUC-2637
S020351103	35.00	48.00	7.50	7.00	NBR	SUB-3725	S020586501	50.00	70.00	13.00	12.00	FKM	SUC-2261
S020356601	35.00	50.00	7.50	7.00	FKM	SUB-2592	S020501003	50.80	60.32	7.64	7.14	NBR	SUC-2272
S020356604	35.00	50.00	10.40	9.40	FKM	SUB-3800	S020500901	50.80	63.50	10.52	9.52	NBR	SUC-1985
S020361002	36.00	44.00	4.50	4.00	NBR	SUB-1613	S020503201	50.80	65.08	8.60	8.10	EPDM	SUC-1699
S020366602	36.00	45.00	7.50	7.00	FKM	SUB-2254	S020525901	52.00	63.00	4.50	4.00	PU	PUC-778
S020361005	36.00	46.00	7.50	7.00	NBR	SUB-1923	S020521101	52.00	69.00	10.00	9.00	NBR	SUC-2805
S020366601	36.00	46.00	7.50	7.00	FKM	SUB-1783	S020535901	53.00	63.00	4.50	4.00	PU	PUC-823
S020361003	36.00	46.00	8.00	7.50	NBR	SUB-3120	S020546601	54.00	66.00	8.50	8.00	FKM	SUC-2410
S020361001	36.00	50.00	11.00	10.00	NBR	SUB-1564	S020551101	55.00	65.00	7.50	7.00	NBR	SUC-522
S020381002	38.00	45.00	6.50	6.00	NBR	SUB-2390	S020550801	55.00	65.00	8.00	7.50	NBR	SUC-1845
S02038S801	38.00	48.00	7.50	7.00	NBR	SUB-2544	S020551102	55.00	65.00	8.50	8.00	NBR	SUC-605
S02038S801	38.00	48.00	7.50	7.00	NBR	SUB-2447	S020561101	56.00	66.00	7.50	7.00	NBR	SUC-913
S020381003	38.00	48.00	7.50	7.00	NBR	SUB-2474	S020566701	56.00	66.00	7.50	7.00	FKM	SUC-1716
S020382201	38.00	50.00	11.00	10.00	CR	SUB-3881	S020601102	56.00	70.00	13.00	12.00	NBR	SUC-2482
S020386601	38.10	52.10	7.50	7.00	FKM	SUC-2679	S020576601	57.00	70.00	6.20	5.70	FKM	SUC-1987
S020396601	39.50	48.00	8.50	8.00	FKM	SUB-3297	S020606401	60.00	70.00	8.50	8.00	FKM	SUC-1475
S020406606	40.00	48.00	6.80	6.30	FKM	SUB-4002	S020601102	60.00	72.00	10.00	9.00	NBR	SUC-1438
S020401008	40.00	48.00	7.50	7.00	NBR	SUB-3977	S020601001	60.00	80.00	11.00	10.00	NBR	SUD-1602
S020401004	40.00	48.00	8.50	8.00	NBR	SUB-3488	S020611001	61.02	73.96	7.76	7.26	NBR	SUC-1113
S020406603	40.00	48.00	8.50	8.00	FKM	SUB-2664	S020631102	63.00	75.00	9.50	8.50	NBR	SUC-1377
S020406501	40.00	50.00	6.50	6.00	FKM	SUB-3658	S020636501	63.00	76.00	8.50	8.00	FKM	SUD-1178
S020401002	40.00	50.00	6.80	6.30	NBR	SUB-2334	S020636502	63.00	78.00	10.00	9.00	FKM	SUD-1380
S020406601	40.00	50.00	7.50	7.00	FKM	SUB-1877	S020631001	63.00	78.00	10.00	9.00	NBR	SUD-791
S020401006	40.00	50.00	8.50	8.00	NBR	SUB-3635	S020636601	63.00	78.00	11.00	10.00	FKM	SUD-1983
S020401007	40.00	50.00	10.50	9.50	NBR	SUB-3711	S020630801	63.50	74.62	7.71	7.21	NBR	SUC-1115
S020406607	40.00	50.00	11.00	10.00	FKM	SUB-4003	S020650801	65.00	77.00	9.50	8.50	NBR	SUD-853
S020406604	40.00	52.00	7.50	7.00	FKM	SUB-1880	S020653301	65.00	77.00	9.50	8.50	EPDM	SUD-1768
S020401009	40.00	58.00	10.40	9.40	NBR	SUC-2738	S020654301	65.00	80.00	6.00	5.50	VMQ	SUD-1427
S02043L501	43.00	51.00	4.30	3.80	PU	PUC-1538	S020701001	70.00	80.00	8.50	8.00	NBR	SUD-1699
S020431001	43.00	51.00	4.30	3.80	NBR	SUC-2606	S020700801	70.00	82.00	9.50	8.50	NBR	SUD-1074
S020441001	44.45	52.36	4.50	4.00	NBR	SUC-1162	S020706602	70.00	82.00	9.50	8.50	FKM	SUD-1355
S020446602	44.45	53.97	7.50	7.00	FKM	SUC-1268	S020706603	70.00	82.00	11.00	10.00	FKM	SUD-1762
S020441002	44.45	53.97	7.64	7.14	NBR	SUC-2271	S020706601	70.00	88.00	13.00	12.00	FKM	SUD-900
S020446601	44.45	60.32	8.50	8.00	FKM	SUC-1195	S020751101	75.00	87.00	9.50	8.50	NBR	SUD-577
S020453401	45.00	53.00	10.40	9.40	EPDM	SUC-1293	S020756601	75.00	100.00	13.00	12.00	FKM	SUD-806
S020456604	45.00	54.00	7.50	7.00	FKM	SUC-2029	S020766602	76.00	86.50	11.70	10.70	FKM	SUD-1505
S020456602	45.00	55.00	7.50	7.00	FKM	SUC-1523	S020766601	76.00	97.00	15.70	14.70	FKM	SUD-1469
S020455901	45.00	55.00	7.50	7.00	PU	PUC-777	S020780901	78.00	86.00	14.50	13.50	NBR	SUD-1535
S020451002	45.00	55.00	7.50	7.00	NBR	SUC-2664	S020801001	80.00	92.00	9.50	8.50	NBR	SUD-820

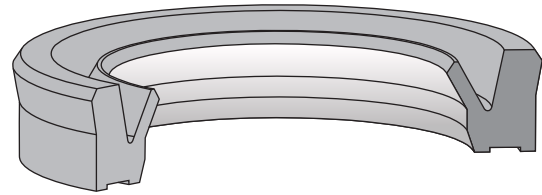


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S020801103	80.00	92.00	10.00	9.00	NBR	SUD-1411
S020806601	80.00	100.00	10.70	9.70	FKM	SUD-901
S020821101	82.00	100.00	14.00	13.00	NBR	SUD-1667
S020821001	82.00	103.00	9.50	8.50	NBR	SUE-1181
S020841001	84.00	96.00	14.00	13.00	NBR	SUD-1534
S020841002	84.00	96.00	14.00	13.00	NBR	SUD-1996
S020881001	88.00	100.00	9.50	8.50	NBR	SUD-1117
S020905901	90.00	104.00	16.00	15.00	PU	PUE-427
S020951101	95.25	107.95	8.90	8.40	NBR	SUE-1149
S02100L501	100.00	112.00	15.00	14.00	PU	PUE-347
S021101001	110.00	125.00	10.00	9.00	NBR	SUE-1211
S021200801	120.00	135.00	11.00	10.00	NBR	SUF-427
S021206602	120.00	135.00	11.00	10.00	FKM	SUF-446
S021256602	125.00	140.00	11.00	10.00	FKM	SUF-639
S021256601	125.00	140.00	11.00	10.00	FKM	SUF-437
S021256401	125.00	140.00	11.00	10.00	FKM	SUF-455
S021259001	125.00	160.00	21.00	20.00	NBR	SUG-840
S021261001	126.00	145.00	13.50	12.50	NBR	SUF-846
S021301101	130.00	145.00	11.00	10.00	NBR	SUF-816
S021301001	130.00	145.00	11.00	10.00	FKM	SUF-433

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S021356602	135.00	150.00	12.00	11.00	FKM	SUF-539
S02140L401	140.00	150.00	6.50	6.00	PU	PUF-358
S021420901	142.00	157.00	11.00	10.00	NBR	SUG-515
S021506601	150.00	170.00	15.00	14.00	FKM	SUG-410
S021501001	150.00	170.00	15.00	14.00	NBR	SUG-422
S021520801	152.40	161.92	7.23	6.73	NBR	SUG-355
S021521101	152.40	171.44	15.00	14.00	NBR	SUG-688
S021541001	154.00	176.00	16.50	15.50	NBR	SUH-341
S021550801	155.00	170.00	11.00	10.00	NBR	SUG-376
S021606601	168.00	180.00	15.00	14.00	FKM	SUH-316
S021801001	180.00	200.00	15.00	14.00	NBR	SUH-340
S021806601	180.00	200.00	15.00	14.00	FKM	SUH-277
S021906601	190.00	210.00	13.30	12.30	FKM	SUJ-289
S021901001	190.00	210.00	15.00	14.00	NBR	SUJ-262
S022000901	200.00	220.00	15.00	14.00	NBR	SUJ-279
S022506401	250.00	283.00	21.00	20.00	FKM	SUM-780
S022956701	295.65	305.30	4.56	4.06	FKM	SUM-575
S023296701	329.43	339.09	4.56	4.06	FKM	SUM-574
S023401001	340.00	364.00	24.50	23.50	NBR	SUM-691
S023708701	370.00	400.00	21.00	20.00	PU	PUM-198

DETAILS

S03 u seal is specially developed for pneumatic application. This seal design guaranties high reliability and simple snap assembly.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Due to application-optimized geometry and compounds suitable for use in oiled as well as in oil-free air.
- Extreme wear resistance.
- Long service life.
- Smooth running due to optimum lubricant-retaining sealing lip geometry.
- Installation in open housings.
- Low compression set.
- Easy installation.
- Low friction.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The S03 seals can be easily snapped into the grooves. Remove all the pores and scratches to avoid damaging the seal during installation.

MATERIAL

Polyurethane 92 Shore A.

OPERATING CONDITIONS

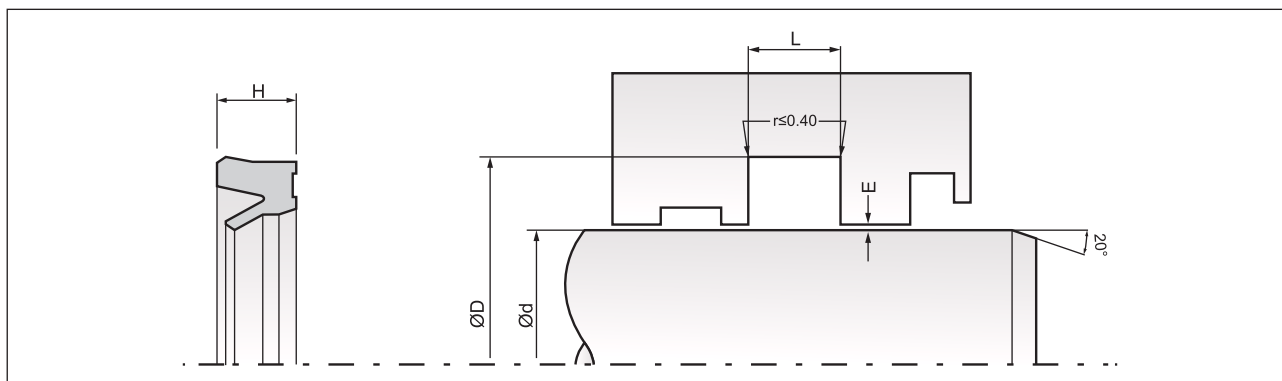
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

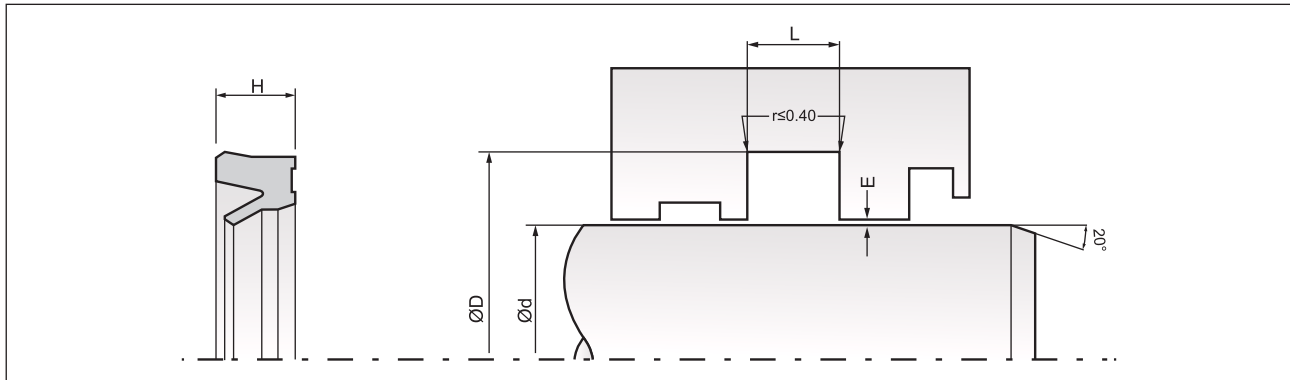
S03

Single Acting Rod Seal



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S03003U201	3.00	7.00	3.50	3.00	FKM	SUA-1670
S030040901	4.50	12.00	4.50	4.00	NBR	SUA-1208
S030040902	4.50	12.00	4.50	4.00	NBR	SUA-1216
S030041001	4.76	11.11	3.67	3.17	NBR	SUA-2347
S03005L501	5.00	12.00	6.00	5.50	PU	PUA-916
S030060901	6.00	12.50	3.50	3.00	NBR	SUA-2465
S030081003	8.00	12.00	2.00	1.50	NBR	SUA-2460
S030081001	8.00	13.00	5.00	4.50	NBR	SUA-2065
S030081002	8.00	15.00	6.50	6.00	NBR	SUA-2291
S030101002	10.00	13.00	2.60	2.10	NBR	SUA-2307
S030101001	10.00	15.00	4.00	3.50	NBR	SUA-1627
S030100901	10.00	18.00	6.00	5.50	NBR	SUA-1596
S03011L401	11.00	18.00	6.50	6.00	PU	PUA-756
S030111001	11.60	22.50	5.50	5.00	NBR	SUA-1131
S030120901	12.00	19.00	5.00	4.50	NBR	SUA-1406
S03012T901	12.00	19.00	5.00	4.50	FKM	SUA-2278
S030121101	12.00	19.00	5.00	4.50	NBR	SUA-2356
S03012L401	12.00	22.00	7.50	7.00	PU	PUA-914
S030131003	13.00	20.00	5.00	4.50	NBR	SUA-1961
S03013L401	13.00	21.00	8.50	8.00	PU	PUA-715
S030131001	13.85	23.78	5.50	5.00	NBR	SUA-1132
S030141001	14.50	24.50	8.50	8.00	NBR	SUA-2267
S030151002	15.00	30.00	9.20	8.70	NBR	SUB-4055
S030151001	15.87	22.22	3.67	3.17	NBR	SUA-2346
S030163301	16.00	22.00	4.50	4.00	EPDM	SUA-2377
S030161001	16.00	22.00	5.10	4.60	NBR	SUA-162
S030166601	16.00	22.00	5.10	4.60	FKM	SUA-1995
S030161002	16.00	22.00	5.30	4.80	NBR	SUA-1046
S030161003	16.00	22.00	6.00	5.50	NBR	SUA-1407
S030161004	16.00	24.00	5.25	4.75	NBR	SUA-1408
S030161006	16.00	24.00	5.50	5.00	NBR	SUA-2506
S030161005	16.00	25.00	6.30	5.80	NBR	SUA-2247
S030181001	18.00	24.00	6.00	5.50	NBR	SUA-2161
S03018CF01	18.00	26.00	6.00	5.50	PU	PUB-1962
S030206601	20.00	25.00	6.50	6.00	FKM	SUA-742
S030221003	22.00	28.00	4.50	4.00	NBR	SUB-3846
S030221001	22.00	30.00	6.00	5.50	NBR	SUB-1247
S03022T901	22.00	30.00	6.00	5.50	FKM	SUB-3779
S030221002	22.00	30.00	6.00	5.50	NBR	SUB-3479
S030231002	23.00	31.00	6.00	5.50	NBR	SUB-3541
S030241002	24.00	32.00	6.00	5.50	NBR	SUB-3540
S03024L401	24.00	32.00	6.00	5.50	PU	PUB-1702
S03025L401	25.00	33.00	5.20	4.70	PU	PUB-1507
S030251003	25.00	33.00	5.50	5.00	NBR	SUB-3508
S030251001	25.00	33.00	6.50	6.00	NBR	SUB-3539
S030250901	25.00	35.00	8.00	7.50	NBR	SUB-2665
S030206602	25.00	35.00	8.50	8.00	FKM	SUB-3076
S030226601	25.00	37.00	7.50	7.00	FKM	SUB-3349
S03025L402	25.40	34.50	6.50	6.00	PU	PUB-1701
S03025L403	25.40	39.00	6.50	6.00	PU	PUB-1700
S030251004	25.40	41.91	6.50	6.00	NBR	SUB-3930
S030271001	27.00	38.00	9.00	8.50	NBR	SUB-3984

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S030281002	28.00	38.00	9.00	8.50	NBR	SUB-3844
S030281001	28.50	38.50	7.50	7.00	NBR	SUB-3841
S030306401	30.00	37.00	7.00	6.50	FKM	SUB-3944
S030300801	30.00	42.00	11.00	10.00	NBR	SUB-1969
S030326602	32.00	41.00	7.00	6.50	FKM	SUB-4209
S03032L501	32.00	42.00	7.50	7.00	PU	PUB-609
S030320901	32.00	42.00	7.50	7.00	NBR	SUB-3357
S030326601	32.00	44.00	7.80	7.30	FKM	SUB-3098
S030346601	34.92	43.64	4.50	4.00	FKM	SUB-3367
S030341001	34.92	50.80	8.50	8.00	NBR	SUC-2330
S030351001	35.00	45.00	7.00	6.50	NBR	SUB-3979
S030350601	35.00	48.00	7.50	7.00	NBR	SUB-3549
S030361001	36.00	50.00	11.00	10.00	NBR	SUB-3962
S030381001	38.00	48.00	8.80	8.30	NBR	SUB-3370
S030386601	38.00	48.00	9.00	8.50	FKM	SUB-3945
S030386602	38.10	44.45	8.90	8.40	FKM	SUB-4194
S030381101	38.10	50.80	10.85	9.85	NBR	SUC-1698
S030406603	40.00	48.00	7.50	7.00	FKM	SUB-4004
S030406602	40.00	48.00	9.00	8.50	FKM	SUB-3869
S03040L501	40.00	50.00	7.50	7.00	PU	PUB-1944
S030406601	40.00	50.00	8.15	7.65	FKM	SUB-3348
S030401003	40.00	60.00	8.50	8.00	NBR	SUC-2262
S030401002	40.00	63.00	7.50	7.00	NBR	SUC-1974
S030446601	44.45	53.97	5.50	5.00	FKM	SUC-2021
S030456601	45.00	53.00	6.50	6.00	FKM	SUC-2446
S030450801	45.00	55.00	7.10	6.60	NBR	SUC-2735
S030456602	45.00	55.00	7.50	7.00	FKM	SUC-2447
S030456604	45.00	60.00	7.50	7.00	FKM	SUC-2718
S030456603	45.00	60.00	8.10	7.60	FKM	SUC-2678
S030481002	48.50	53.50	4.00	3.50	NBR	SUC-2799
S030506402	50.00	60.00	6.00	5.50	FKM	SUC-2730
S03050L501	50.00	60.00	6.50	6.00	PU	PUC-1212
S030506604	50.00	60.00	7.50	7.00	FKM	SUC-1719
S030506606	50.00	60.00	10.00	9.00	FKM	SUC-2656
S030506603	50.00	60.00	10.30	9.30	FKM	SUC-1692
S030501003	50.00	60.00	11.00	10.00	NBR	SUC-2298
S03050Q201	50.00	60.00	13.80	12.80	PU	PUC-848
S030506401	50.00	62.00	10.50	9.50	FKM	SUC-2174
S030501001	50.80	60.00	8.50	8.00	NBR	SUC-1509
S030506602	50.80	60.32	6.85	6.35	FKM	SUC-1659
S030531001	53.97	62.69	8.10	7.60	NBR	SUC-1849
S030550801	55.00	75.00	13.00	12.00	NBR	SUC-1400
S030566607	56.00	66.00	7.80	7.30	FKM	SUC-2702
S030566601	56.00	66.00	12.00	11.00	FKM	SUC-2557
S030566706	56.00	71.00	13.50	12.50	FKM	SUC-2687
S030576601	57.15	69.85	10.52	9.52	FKM	SUC-2716
S030591001	59.50	66.00	4.00	3.50	NBR	SUC-2806
S030606601	60.00	70.00	7.00	6.50	FKM	SUC-2157
S030606602	60.00	70.00	13.30	12.30	FKM	SUC-2593
S030618701	61.00	70.00	7.00	6.55	PU	PUC-1545
S030630901	63.00	75.00	7.50	7.00	NBR	SUC-2294
S030636602	63.00	78.00	11.00	10.00	FKM	SUD-1914

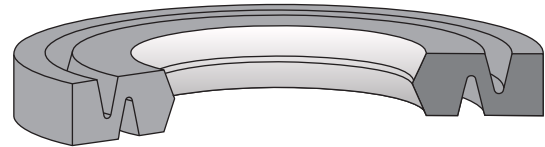


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S030636601	63.50	76.20	6.10	5.60	FKM	SUD-1537
S030681001	68.80	80.00	9.00	8.50	NBR	SUD-1988
S030700901	70.00	80.00	7.50	7.00	NBR	SUD-1217
S030701001	70.00	85.00	6.50	6.00	NBR	SUD-1763
S030706601	70.00	85.00	14.00	13.00	FKM	SUD-1870
S030706602	70.00	90.00	11.00	10.00	FKM	SUD-1908
S030761002	76.20	91.00	11.00	10.00	NBR	SUD-2020
S03080L501	80.00	90.00	13.00	12.00	PU	PUD-920

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S030901001	90.00	110.00	13.50	12.50	NBR	SUE-1348
S031108701	110.00	122.00	13.30	12.30	PU	PUE-486
S031336601	133.00	146.00	7.50	7.00	FKM	SUF-753
S031400901	140.00	152.00	13.00	12.00	NBR	SUG-845
S031906601	190.00	225.00	16.00	15.00	FKM	SUJ-430
S032201001	220.00	250.00	16.00	15.00	NBR	SUK-233
S03247S401	247.65	266.70	12.70	11.70	HNBR	SUM-787
S02300601	300.00	340.00	21.00	20.00	FKM	SUM-793

DETAILS

S06 is a double acting pneumatic seal for rod sealing applications. It is mainly mounted on pneumatic cylinders but can also be used on pneumatic valves. The seal profile is rounded in the center on the dynamic lip and has two projections on the static lip. It is very easy to install due to its symmetrical profile. Particularly sliding even at low pressure.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- The compact design.
- Suitable for short piston designs.
- The rounded sealing profile and the flexible centre part give good tightness with low friction and maintain an effective lubricating film.
- Widely proven design.
- Low friction.
- Long service life.

INSTALLATION & ASSEMBLY

Careful installation is the prerequisite for the correct functioning of the seal. The S06 seal is snapped over into the housing groove. Remove all the pores and scratches to avoid damaging the seal during installation.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

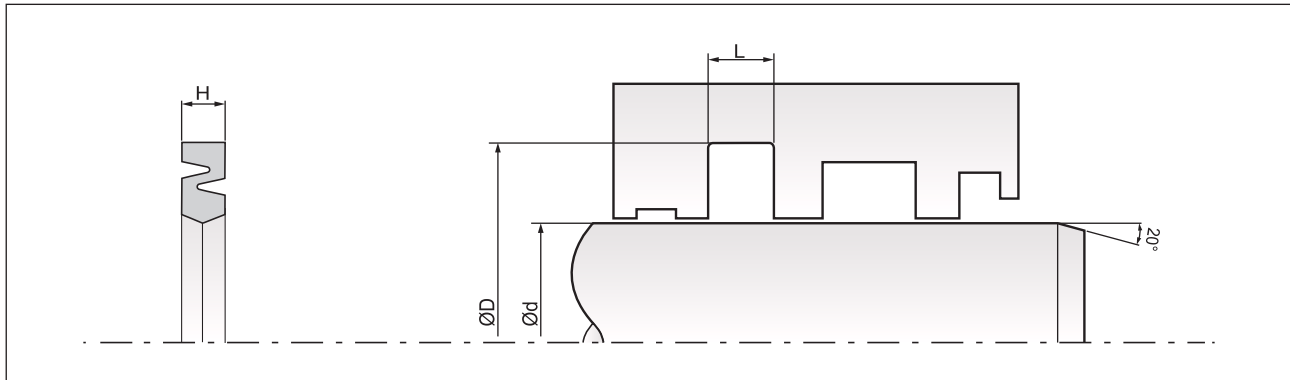
Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

S06

Single Acting Rod Seal

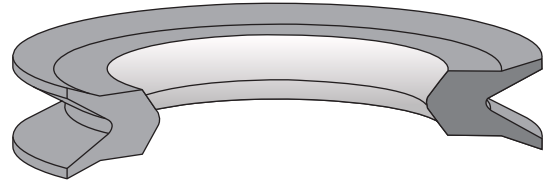


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S060050801	5.45	14.60	2.30	2.80	NBR	SUA-2315
S060070801	7.45	16.60	2.30	2.80	NBR	SUA-2316
S06008Q201	8.00	14.50	3.00	3.50	PU	PUA-936
S060080901	8.00	15.00	2.50	3.00	NBR	SUA-1326
S060086501	8.00	15.00	2.50	3.00	FKM	SUA-1137
S060080902	8.00	16.00	2.30	2.80	NBR	SUA-1352
S060091001	9.50	18.00	3.00	3.50	NBR	SUA-1248
S060100802	10.00	17.00	2.20	2.70	NBR	SUA-881
S060100901	10.00	17.00	2.20	2.70	NBR	SUA-1291
S060106501	10.00	17.00	2.20	2.70	FKM	SUA-1292
S060116502	11.50	20.00	2.20	2.70	FKM	SUA-1429
S060116503	11.50	21.90	2.10	2.60	FKM	SUA-1486
S060116501	11.60	19.80	2.20	2.70	FKM	SUA-1113
S060126601	12.00	19.00	2.20	2.70	FKM	SUA-1505
S060120901	12.00	19.00	2.20	2.70	NBR	SUA-1293
S060151002	15.00	21.00	3.00	3.50	NBR	SUA-1249
S060156603	15.00	22.00	2.30	2.80	FKM	SUA-1247
S060151003	15.00	22.00	2.30	2.80	NBR	SUA-1507
S060161002	16.00	20.00	3.00	3.50	NBR	SUA-1737
S060160902	16.00	20.50	3.00	3.50	NBR	SUA-1294
S060166401	16.00	25.00	2.80	3.30	FKM	SUA-2277
S060166501	16.00	25.00	3.00	3.50	FKM	SUA-1732
S060161001	16.00	25.00	3.00	3.50	NBR	SUA-888
S060160901	16.00	26.00	2.80	3.30	NBR	SUB-2211
S060190901	19.50	30.70	2.80	3.30	NBR	SUB-1995

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
S060206602	20.00	29.00	3.00	3.50	FKM	SUB-1714
S060201001	20.00	29.00	3.00	3.50	NBR	SUB-102
S060231001	23.00	29.00	3.00	3.50	NBR	SUB-2772
S060251001	25.00	34.00	3.00	3.50	NBR	SUB-2014
S060256501	25.00	34.00	3.00	3.50	FKM	SUB-2051
S060281001	28.00	36.00	3.00	3.50	NBR	SUB-3812
S060301003	30.00	38.00	3.00	3.50	NBR	SUB-3024
S060301001	30.00	39.00	3.00	3.50	NBR	SUB-1137
S060306601	30.00	39.00	3.00	3.50	FKM	SUB-2214
S060301002	30.00	40.00	2.80	3.30	NBR	SUB-2815
S060321001	32.00	40.00	3.00	3.50	NBR	SUB-2641
S060406501	40.00	49.00	2.80	3.30	FKM	SUB-3472
S060401001	40.00	49.00	3.00	3.50	NBR	SUB-1286
S060400801	40.00	50.00	2.70	3.20	NBR	SUB-3899
S060400901	40.00	50.00	2.70	3.20	NBR	SUB-4076
S060420901	42.00	51.00	3.00	3.50	NBR	SUC-1615
S060481001	48.00	60.00	3.70	4.20	NBR	SUC-1492
S060501002	50.00	59.00	2.80	3.30	NBR	SUC-1335
S060506601	50.00	59.00	2.80	3.30	FKM	SUC-2284
S060501001	50.00	59.00	3.00	3.50	NBR	SUC-1013
S060555901	55.00	66.00	4.20	4.70	PU	PUC-1041
S060700901	70.00	82.50	7.75	8.25	NBR	SUD-1903
S060701001	70.00	85.50	6.30	6.80	NBR	SUD-1833
S061206401	120.00	129.20	5.50	6.00	FKM	SUF-921

DETAILS

S07 is a double acting pneumatic piston seal suitable for small grooves, easy installation due to its special geometry.



COMPATIBILITY

Compressed air.

APPLICATION

- Pneumatic Cylinders.

FEATURES

- Low friction.
- Lubricating film by optimum profile arrangement.
- Long service lives.
- Symmetrical profile, easy installation.
- Pressure admission on one side or on both sides.

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. Remove all the pores and scratches to avoid damaging the seal during installation, do not use sharp installation tools.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

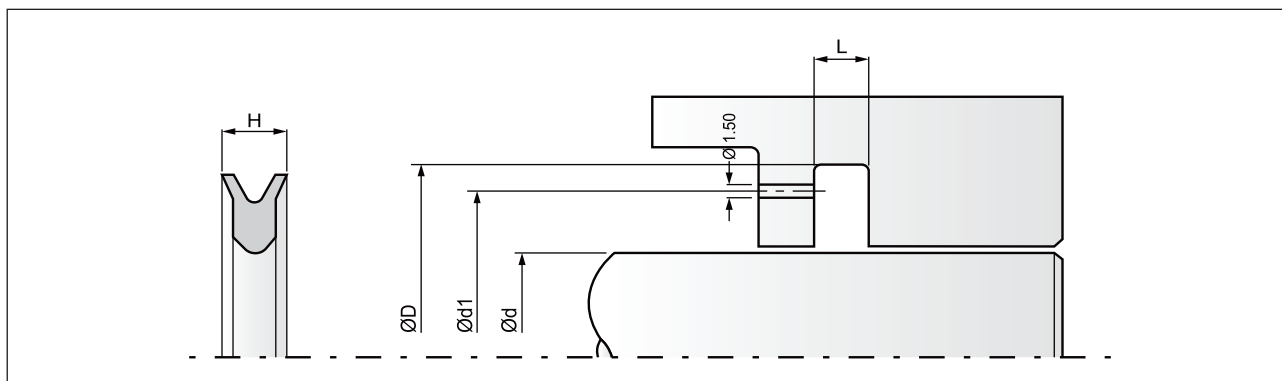
Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

S07

Double Acting Piston Seal

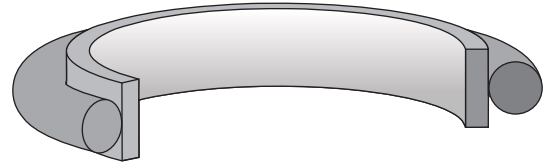


Part No.	d	D	L	H	d1	Matl.	Mould No.
S07060801	6.00	15.50	1.80	2.30	13.50	NBR	SPA-3294
S070080903	8.00	20.00	2.00	2.50	18.00	NBR	SPA-10553
S07080902	9.00	21.00	2.50	3.00	19.00	NBR	SPA-6509
S070080801	9.00	22.00	2.50	3.00	20.00	NBR	SPA-10558
S07080901	9.00	18.00	2.30	2.80	17.00	NBR	SPA-6499
S07090902	9.00	16.00	2.30	2.70	14.00	NBR	SPA-4399
S07090903	9.00	19.00	2.30	2.70	17.00	NBR	SPA-4464
S07130901	13.00	21.00	1.70	2.30	19.00	NBR	SPA-4454
S070130801	14.00	24.00	2.30	2.87	22.00	NBR	SPA-6746
S07140901	15.00	25.00	2.30	2.80	23.00	NBR	SPA-6261
S07140902	15.00	25.00	2.30	3.00	23.00	NBR	SPA-6444
S070150907	15.00	25.00	2.00	2.50	23.00	NBR	SPA-10555
S07150905	15.00	24.00	2.30	2.70	22.00	NBR	SPA-4398
S07160901	16.00	22.00	1.80	2.30	21.00	NBR	SPA-3183
S07160802	16.00	26.00	2.30	2.80	24.00	NBR	SPA-5985
S07160902	16.00	25.00	2.30	2.80	23.50	NBR	SPA-3184
S07160801	17.00	27.00	2.30	2.80	25.50	NBR	SPA-2925
S07170801	18.00	26.00	1.80	2.30	24.00	NBR	SPA-5484
S07180901	19.00	29.00	2.30	2.60	27.50	NBR	SPA-5499
S07200901	20.00	30.00	2.30	2.80	28.40	NBR	SPA-3185
S070200903	20.00	28.00	2.30	3.00	26.50	NBR	SPA-10081
S070201801	20.00	29.50	2.20	2.50	27.50	NBR	SPA-5501
S07220901	22.00	31.50	2.30	2.70	30.00	NBR	SPA-3606
S07250801	25.00	34.00	2.30	2.80	32.50	NBR	SPA-2694
S07301001	30.00	41.00	2.30	3.00	39.50	NBR	SPA-876
S07321001	32.00	45.00	2.30	3.00	42.50	NBR	SPA-8668
S070360901	36.00	48.00	3.00	3.50	46.40	NBR	SPA-12761
S07380901	38.00	50.00	3.00	3.50	48.00	NBR	SPA-6056
S07380902	38.00	50.00	3.00	3.80	48.00	NBR	SPA-9549

Part No.	d	D	L	H	d1	Matl.	Mould No.
S07401001	40.00	52.00	2.50	3.00	50.50	NBR	SPA-8185
S07420901	43.00	57.00	3.00	3.50	55.50	NBR	SPA-6452
S07450901	45.00	60.00	3.00	3.50	58.00	NBR	SPA-8695
S07500903	50.00	64.00	3.00	3.50	62.50	NBR	SPA-9001
S07500902	50.00	64.00	3.00	3.50	62.50	NBR	SPA-6532
S07500901	50.00	64.00	3.00	3.50	62.50	NBR	SPA-3607
S07582001	60.00	64.00	1.40	1.80	62.50	CR	SPA-4625
S07596501	60.00	78.00	3.50	4.00	75.00	FKM	SPA-9564
S07600901	60.00	82.00	3.50	4.00	79.00	NBR	SPA-6453
S07750903	75.00	89.00	5.00	5.50	87.00	NBR	SPA-8198
S07751001	75.00	91.00	4.00	5.10	88.00	NBR	SPA-2768
S07800901	80.00	94.00	4.00	5.00	92.50	NBR	SPA-7946
S07831001	85.00	104.00	4.50	5.10	101.00	NBR	SPA-3686
S07841002	85.00	109.00	4.00	5.10	106.00	NBR	SPA-3684
S07841003	85.00	105.00	4.00	5.10	102.00	NBR	SPA-3685
S07860902	86.00	103.00	4.00	5.00	101.00	NBR	SPA-6215
S070860801	86.00	104.00	4.00	5.10	101.00	NBR	SPA-5942
S07901001	90.00	109.00	4.50	5.50	106.00	NBR	SPA-8304
S071100801	110.00	129.00	4.50	5.60	126.00	NBR	SPA-12915
S071400801	140.00	168.00	6.00	8.00	163.00	NBR	SPA-10296
S071601004	160.00	184.50	5.50	6.70	181.00	NBR	SPA-10166
S07601003	160.00	188.00	6.00	7.20	185.00	NBR	SPA-6120
S07601002	160.00	188.00	5.50	6.70	185.00	NBR	SPA-6121
S07631001	163.00	188.00	5.50	6.70	184.00	NBR	SPA-9105
S07701001	170.00	188.00	5.50	6.70	184.00	NBR	SPA-9207
S07700901	170.00	198.00	5.50	6.70	195.00	NBR	SPA-9566
S07770903	177.00	192.00	8.00	9.50	190.00	NBR	SPA-8151
S07771001	177.00	203.00	8.00	9.50	199.00	NBR	SPA-2767
S07801001	180.00	204.00	6.00	8.00	201.50	NBR	SPA-8246

DETAILS

The S08 is a combination of composite PTFE sealing element with an o ring energizer. It is designed for low friction pneumatic applications with small installation space, widely use in control cylinders and high-speed cylinders etc.



COMPATIBILITY

Dry and oil-free air.

MATERIAL

Sealing Ring : Carbon Filled PTFE.
O Ring : Nitrile Rubber 70/75 Shore A.
FKM Rubber 70/75 Shore A.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 4.0 m/s

FEATURES

- Assembly on one-piece piston.
- Short assembled length.
- Minimal break-out and dynamic slide friction, no stick-slip, steady movement at low velocities.
- Low wear.
- High extrusion & temperature resistance (as per material selected).
- Easy installation & Smallest space groove.

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

INSTALLATION & ASSEMBLY

Carefull fitting is a prerequisite for the correct function of the seal. Please refer to page no. 21 for guidelines.

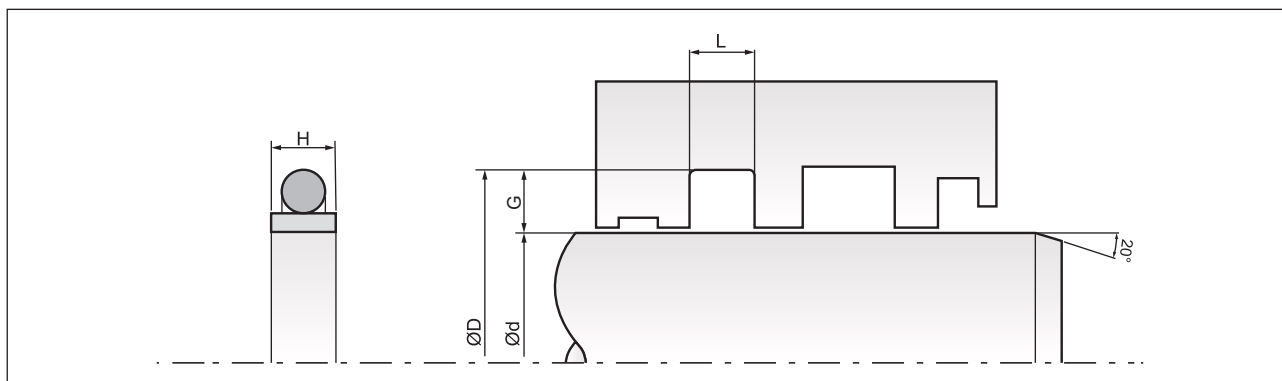
HOUSING DIMENSIONS

Bore Diameter	Groove Width	Groove Depth	Gap Max	O-Ring C/S
d (f8/h9)	L (mm) (+0.20)	G (mm)	E (mm)	(mm)
3.00 - 14.90	2.00	2.00	0.25	1.78
15.00 - 29.90	2.85	3.00	0.50	2.62
30.00 - 59.90	3.80	3.75	0.50	3.53
60.00 - 199.90	5.60	6.25	0.70	5.33
200.00 - 399.90	7.55	7.50	0.90	7.00
400.00 - 999.90	7.55	9.00	0.90	7.00

Ordering information: D x d x L (Information for non-standard sizes)

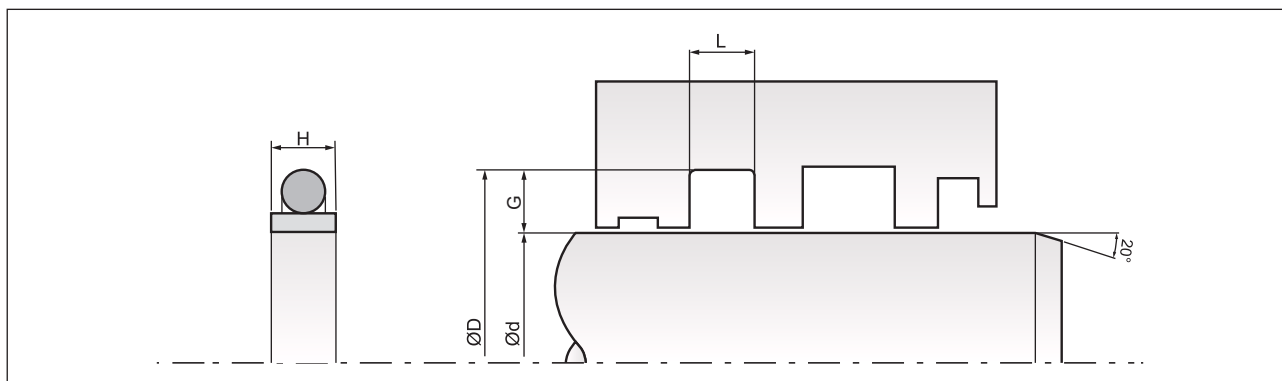
S08

Double Acting Composite Seal



d (f8/h9)	D (H9)	L1 (+0.2)	O-Ring Size	
			ID	C/S
3.00	7.00	2.00	3.68	1.78
4.00	8.00	2.00	4.47	1.78
5.00	9.00	2.00	5.60	1.80
5.50	9.50	2.00	6.07	1.78
6.00	10.00	2.00	6.70	1.80
7.00	11.00	2.00	7.65	1.78
8.00	12.00	2.00	8.75	1.80
9.00	13.00	2.00	9.50	1.80
10.00	14.00	2.00	10.60	1.80
10.00	16.00	2.85	10.77	2.62
11.00	15.00	2.00	11.80	1.80
12.00	16.00	2.00	12.42	1.78
12.00	18.00	2.85	12.37	2.62
14.00	20.00	2.85	14.50	2.65
15.00	21.00	2.85	15.54	2.62
16.00	22.00	2.85	17.12	2.62
18.00	24.00	2.85	18.72	2.62
18.00	25.50	3.80	18.66	3.53
19.00	25.00	2.85	20.29	2.62
20.00	26.00	2.85	20.29	2.62
20.00	27.50	3.80	20.22	3.53
22.00	28.00	2.85	23.47	2.62
22.00	29.50	3.80	21.82	3.53
23.00	30.50	3.80	23.40	3.53
24.00	30.00	2.85	25.07	2.62
25.00	31.00	2.85	25.07	2.62
25.00	32.50	3.80	25.00	3.53
25.40	31.40	2.85	26.64	2.62
26.00	33.50	3.80	26.58	3.53
28.00	34.00	2.85	28.24	2.62
28.00	35.50	3.80	28.17	3.53
30.00	37.50	3.80	31.35	3.53
32.00	39.50	3.80	32.92	3.53
33.00	40.50	3.80	34.52	3.53
35.00	42.50	3.80	36.09	3.53
36.00	43.50	3.80	37.69	3.53
38.00	45.50	3.80	37.69	3.53
38.00	50.50	5.60	40.64	5.33
40.00	47.50	3.80	40.87	3.53
40.00	52.50	5.60	40.64	5.33
42.00	49.50	3.80	44.04	3.53
44.00	56.50	5.60	46.99	5.33
45.00	52.50	3.80	44.04	3.53
45.00	57.50	5.60	46.99	5.33
48.00	55.50	3.80	47.22	3.53
50.00	57.50	3.80	50.39	3.53
50.00	62.50	5.60	53.34	5.33
50.80	58.30	3.80	51.50	3.55
52.00	59.50	3.80	53.57	3.53
53.00	65.50	5.60	56.52	5.33
55.00	62.50	3.80	56.74	3.53
56.00	63.50	3.80	56.74	3.53

d (f8/h9)	D (H9)	L1 (+0.2)	O-Ring Size	
			ID	C/S
56.00	68.50	5.60	56.52	5.33
57.00	64.50	3.80	56.74	3.53
58.00	65.50	3.80	59.92	3.53
60.00	72.50	5.60	62.87	5.33
63.00	75.50	5.60	66.04	5.33
65.00	77.50	5.60	66.04	5.33
67.00	79.50	5.60	69.22	5.33
68.00	80.50	5.60	69.22	5.33
70.00	82.50	5.60	72.39	5.33
73.00	85.50	5.60	75.57	5.33
75.00	87.50	5.60	78.74	5.33
76.20	88.70	5.60	78.74	5.33
77.00	89.50	5.60	78.74	5.33
79.00	91.50	5.60	81.92	5.33
80.00	92.50	5.60	81.92	5.33
82.50	95.00	5.60	85.09	5.33
85.00	97.50	5.60	88.27	5.33
88.00	100.50	5.60	91.44	5.33
90.00	102.50	5.60	91.44	5.33
95.00	107.50	5.60	97.79	5.33
98.00	110.50	5.60	100.97	5.33
100.00	112.50	5.60	104.14	5.33
101.60	114.10	5.60	104.14	5.33
105.00	117.50	5.60	107.32	5.33
107.00	119.50	5.60	110.49	5.33
108.00	120.50	5.60	110.49	5.33
110.00	122.50	5.60	113.67	5.33
115.00	127.50	5.60	116.84	5.33
115.00	130.00	7.55	116.84	7.00
117.00	132.00	7.55	120.02	7.00
120.00	132.50	5.60	123.19	5.33
120.00	135.00	7.55	123.19	7.00
123.00	138.00	7.55	123.19	7.00
125.00	137.50	5.60	126.37	5.33
125.00	140.00	7.55	126.37	7.00
127.00	139.50	5.60	129.54	5.33
130.00	142.50	5.60	132.72	5.33
130.00	145.00	7.55	132.72	7.00
132.00	144.50	5.60	135.89	5.33
133.00	148.00	7.55	135.89	7.00
135.00	147.50	5.60	135.89	5.33
135.00	150.00	7.55	135.89	7.00
140.00	152.50	5.60	142.24	5.33
140.00	155.00	7.55	142.24	7.00
142.00	157.00	7.55	142.24	7.00
145.00	157.50	5.60	148.49	5.33
145.00	160.00	7.55	145.42	7.00
150.00	162.50	5.60	151.77	5.33
150.00	165.00	7.55	151.77	7.00
152.40	164.90	5.60	151.77	5.33
155.00	167.50	5.60	158.12	5.33
155.00	173.00	7.55	158.12	7.00



d (f8/h9)	D (H9)	L1 (+0.2)	O-Ring Size	
			ID	C/S
160.00	172.50	5.60	164.47	5.33
160.00	178.00	7.55	164.47	7.00
165.00	177.50	5.60	170.82	5.33
165.00	183.00	7.55	170.82	7.00
170.00	182.50	5.60	170.82	5.33
170.00	188.00	7.55	177.17	7.00
175.00	187.50	5.60	177.17	5.33
175.00	193.00	7.55	177.17	7.00
180.00	192.50	5.60	183.52	5.33
180.00	198.00	7.55	183.52	7.00
190.00	202.50	5.60	196.22	5.33
190.00	208.00	7.55	196.22	7.00
194.00	206.50	5.60	202.57	5.33
195.00	213.00	7.55	202.57	7.00
200.00	215.00	7.55	202.57	7.00
203.20	218.20	7.55	202.57	7.00
205.00	220.00	7.55	208.90	7.00
210.00	225.00	7.55	215.27	7.00
215.00	230.00	7.55	215.27	7.00
220.00	235.00	7.55	215.27	7.00
230.00	245.00	7.55	227.97	7.00
240.00	255.00	7.55	240.67	7.00
250.00	265.00	7.55	253.37	7.00
254.00	269.00	7.55	253.37	7.00
260.00	275.00	7.55	266.07	7.00
265.00	280.00	7.55	266.07	7.00
268.00	283.00	7.55	266.07	7.00
270.00	285.00	7.55	266.07	7.00

d (f8/h9)	D (H9)	L1 (+0.2)	O-Ring Size	
			ID	C/S
280.00	295.00	7.55	278.77	7.00
290.00	305.00	7.55	291.47	7.00
300.00	315.00	7.55	304.17	7.00
304.80	319.80	7.55	304.17	7.00
310.00	325.00	7.55	316.87	7.00
320.00	335.00	7.55	316.87	7.00
330.00	345.00	7.55	329.57	7.00
340.00	355.00	7.55	342.27	7.00
350.00	365.00	7.55	354.97	7.00
360.00	375.00	7.55	367.67	7.00
370.00	385.00	7.55	367.67	7.00
380.00	395.00	7.55	380.37	7.00
400.00	418.00	7.55	405.26	7.00
425.00	443.00	7.55	430.66	7.00
450.00	468.00	7.55	456.06	7.00
475.00	493.00	7.55	481.38	7.00
500.00	518.00	7.55	506.86	7.00
525.00	543.00	7.55	532.26	7.00
550.00	568.00	7.55	557.66	7.00
575.00	593.00	7.55	582.68	7.00
600.00	618.00	7.55	608.08	7.00
650.00	688.00	7.55	658.88	7.00
700.00	718.00	7.55	704.49	7.00
750.00	768.00	7.55	754.49	7.00
800.00	818.00	7.55	804.49	7.00
850.00	868.00	7.55	854.49	7.00
900.00	918.00	7.55	904.49	7.00
950.00	968.00	7.55	954.49	7.00

DETAILS

S09 is a cushion seal specially designed to protect damping of piston head on gland surface where high pressure peaks occur. It is also called damping seal in pneumatic application. This profile also allows pressure to pass back into the system preventing a pressure trap between the rod seal and the buffer seal. It is an excellent pressure buffer option in heavy-duty applications and offers extended sealing system life and performance.

COMPATIBILITY

Dry and oil-free air.

APPLICATION

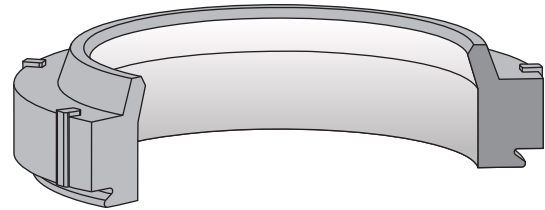
- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Optimum use of design related cushion.
- High cushioning consistency due to automatic centering, even in the case of misalignment of the cushioning spear to the cylinder head.
- Increased reliability due to two independent sealing (flexible sealing lips and axial sealing areas).
- Suitable for use in lubricated as well as dry and oil-free air. (after initial lubrication during assembly).
- Easy Installation.

INSTALLATION & ASSEMBLY

Careful installation is the prerequisite for the correct functioning of the seal. The S09 seal is snapped over into the housing groove. Remove all the pores and scratches to avoid damaging the seal during installation.



MATERIAL

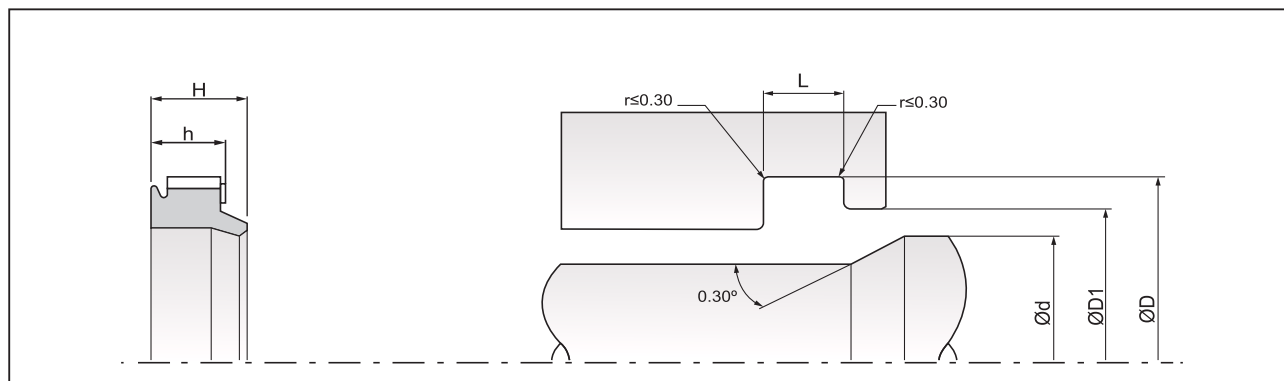
Polyurethane 92 Shore A.
FKM Rubber 80/85 Shore A.
Nitrile Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

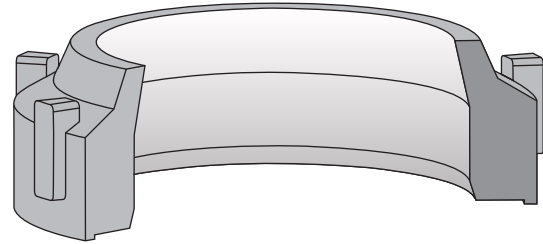


Part No.	d (h11)	D (h11)	L (+0.2)	h	H (+0.2)	D1	Matl.	Mould No.
S09010CF01	10.00	18.00	7.00	6.20	7.80	15.00	PU	PUA-871
S09012L402	12.00	18.00	4.80	4.10	5.00	15.50	PU	PUA-658
S09012L403	12.00	20.00	7.00	6.20	7.80	17.00	PU	PUA-659
S090121102	12.00	20.00	7.00	6.30	7.80	17.00	NBR	SUA-1762
S090141101	14.00	22.00	7.00	6.20	7.80	19.00	NBR	SUA-2023
S09014CF01	14.00	22.00	7.00	6.20	7.80	19.00	PU	PUA-888
S09016L402	16.00	22.00	5.20	4.70	5.50	19.20	PU	PUA-661
S090161001	16.00	22.00	5.20	4.50	6.00	19.20	NBR	SUA-1715
S090165901	16.00	22.00	5.20	4.50	6.00	19.20	PU	PUA-794
S090161101	16.00	23.00	7.00	5.00	8.00	20.00	NBR	SUA-1867
S09016CF01	16.00	23.00	7.00	6.30	8.00	20.00	PU	PUA-895
S09016L401	16.00	24.00	7.00	6.20	7.80	21.00	PU	PUA-660
S09016L501	16.00	24.00	7.00	6.20	7.80	21.00	PU	PUA-896
S09018CF01	18.00	26.00	7.00	6.20	7.80	23.00	PU	PUB-1812
S09018L501	18.00	26.00	7.00	6.20	7.80	23.00	PU	PUB-1589
S090206701	20.00	27.00	7.00	6.20	7.80	24.00	FKM	SUB-2970
S09020CF01	20.00	27.00	7.00	6.30	8.00	24.00	PU	PUB-1875
S090201102	20.00	28.00	6.50	6.00	7.00	24.00	NBR	SUB-3325
S09020L501	20.00	28.00	7.00	6.50	7.80	24.00	PU	PUB-1302
S09020L401	20.00	28.00	7.00	6.50	8.00	24.00	PU	PUB-1422
S09020L402	20.00	32.00	7.00	6.50	8.00	26.00	PU	PUB-1421
S09022L501	22.00	30.00	7.00	6.50	7.80	26.00	PU	PUB-1587
S09025L503	25.00	32.00	6.00	5.50	7.50	29.00	PU	PUB-1600
S090256701	25.00	32.00	7.00	6.20	7.80	29.00	FKM	SUB-2971
S09025L501	25.00	32.00	7.00	6.20	7.80	29.00	PU	PUB-1425
S090251101	25.00	32.00	7.00	6.20	8.00	29.00	NBR	SUB-2918
S09025L406	25.00	33.00	6.00	5.50	7.00	29.00	PU	PUB-1423
S090251002	25.00	33.00	6.50	5.90	7.00	29.00	NBR	SUB-3324
S09025CF01	25.00	33.00	7.00	6.20	7.80	29.00	PU	PUB-1811
S09025L404	25.00	33.00	7.00	6.20	7.80	29.00	PU	PUB-1406
S09025L502	25.00	33.00	7.00	6.50	7.80	29.00	PU	PUB-1604
S090251001	25.00	33.00	7.00	7.00	8.00	29.00	NBR	SUB-2800
S09025L402	25.00	33.00	7.00	6.20	8.00	29.00	PU	PUB-1310
S09025L401	25.00	33.00	7.00	6.80	8.00	29.00	PU	PUB-1293
S09025L405	25.00	35.00	7.00	6.20	7.80	31.00	PU	PUB-1407
S09025L505	25.00	36.00	4.80	4.50	5.50	32.00	PU	PUB-1861
S090286601	28.00	36.00	7.00	5.50	7.80	32.00	FKM	SUB-3391
S09028L401	28.00	36.00	7.00	6.20	7.80	32.00	PU	PUB-1408
S09028L501	28.00	36.00	7.00	6.5	7.80	32.00	PU	PUB-1876
S090281101	28.00	37.00	7.00	6.5	8.50	33.00	NBR	SUB-3807
S09030CF01	30.00	37.00	7.00	6.20	7.50	33.00	PU	PUB-1868
S090301001	30.00	37.00	7.00	6.20	7.50	33.00	NBR	SUB-3277
S090306602	30.00	38.00	4.80	4.20	5.80	33.00	FKM	SUB-3354
S09030L403	30.00	38.00	7.00	6.20	7.80	33.00	PU	PUB-1813

Part No.	d (h11)	D (h11)	L (+0.2)	h	H (+0.2)	D1	Matl.	Mould No.
S090301101	30.00	39.50	7.00	6.50	8.00	33.60	NBR	SUB-2342
S09030L401	30.00	40.00	7.00	6.20	7.80	35.00	PU	PUB-1409
S09030L502	30.00	40.00	7.00	6.5	7.80	35.00	PU	PUB-1877
S09030L501	30.00	41.40	7.00	6.20	8.50	39.00	PU	PPA-744
S090306601	30.00	41.40	7.00	6.30	8.50	39.00	FKM	SPA-2856
S09032CF01	32.00	40.00	7.00	6.20	7.80	36.00	PU	PUB-1814
S09032L501	32.00	42.00	7.00	6.5	7.80	37.00	PU	PUB-1588
S090321101	32.00	48.00	5.20	4.50	6.50	39.00	NBR	SUB-2234
S090356601	35.00	44.00	5.20	4.50	6.30	39.00	FKM	SUB-3353
S090351002	35.00	44.00	7.00	5.30	8.00	40.00	NBR	SUB-3207
S090351003	35.00	45.00	7.00	6.30	8.00	40.00	NBR	SUB-3666
S090351001	35.00	45.00	7.00	5.70	8.50	40.00	NBR	SUB-2876
S09036L401	36.00	46.00	7.00	6.20	7.80	41.00	PU	PUB-1410
S09036L501	36.00	46.00	7.00	6.5	7.80	41.00	PU	PUB-1878
S090406601	40.00	48.00	6.00	5.60	6.30	44.00	FKM	SUB-3101
S09040L401	40.00	50.00	7.00	6.20	7.80	45.00	PU	PUB-1411
S09040L402	40.00	50.00	7.00	6.00	7.80	45.00	PU	PUB-1577
S09040L501	40.00	50.00	7.00	6.5	7.80	45.00	PU	PUB-1879
S090409901	40.00	50.00	7.00	6.50	8.00	45.00	SBR	SUB-3531
S090406701	40.00	50.00	7.00	6.50	8.00	45.00	FKM	SUB-3269
S09420Q201	42.00	55.00	7.50	7.00	9.50	49.00	PU	PUC-1388
S090456701	45.00	55.00	7.00	6.20	7.80	50.00	FKM	SUC-2725
S09045L502	45.00	55.00	7.00	6.5	7.80	50.00	PU	PUC-1071
S09045L501	45.00	55.00	8.50	8.00	10.00	50.00	PU	PUC-863
S090456601	45.00	60.00	6.00	5.50	7.50	54.00	FKM	SUC-2412
S09045L503	45.00	60.00	6.00	5.50	7.50	54.00	PU	PUC-1089
S09050L402	50.00	60.00	7.00	6.20	7.80	55.00	PU	PUC-971
S090501101	50.00	60.00	7.00	6.5	7.80	55.00	NBR	SUC-1425
S09050L502	50.00	60.00	7.00	6.5	7.80	55.00	PU	PUC-1327
S090506602	50.00	60.00	7.00	6.5	7.80	55.00	FKM	SUC-1899
S090506603	50.00	60.00	7.00	5.70	8.00	55.00	FKM	SUC-2033
S090509901	50.00	60.00	7.00	6.50	8.00	55.00	SBR	SUC-2352
S090506604	50.00	60.00	7.00	6.50	8.00	55.00	FKM	SUC-2094
S090501103	50.00	60.60	7.00	6.50	8.50	55.00	NBR	SUC-1794
S09050L501	50.00	66.00	10.00	9.5	10	58.00	PU	PPA-1242
S090506601	50.00	67.00	5.20	5.30	6.70	58.00	FKM	SPA-805
S090506606	50.00	67.00	11.00	11.00	12.5	58.00	FKM	SUC-2586
S09050L401	50.00	67.00	11.00	11.00	12.5	58.00	PU	PUC-970
S09055L501	55.00	68.00	5.50	4.50	6.5	60.00	PU	PUC-1319
S09057L401	57.00	74.00	11.00	10.00	11.00	66.00	PU	PUC-972
S090571101	57.00	74.00	11.00	10.00	10	68.00	NBR	SUC-1771
S090576601	57.00	74.00	12.00	11.00	11	66.00	FKM	SUC-2585
S09095L501	95.00	110.00	11.00	10.00	12.00	104.00	PU	PUE-654

DETAILS

S10 is a cushion seal specially designed to protect damping of piston head on gland surface where high pressure peaks occur. It is also called damping seal in pneumatic application. This profile also allows pressure to pass back into the system preventing a pressure trap between the rod seal and the buffer seal. It is an excellent pressure buffer option in heavy-duty applications and offers extended sealing system life and performance.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Optimum use of design related cushion.
- High cushioning consistency due to automatic centering, even in the case of misalignment of the cushioning spear to the cylinder head.
- Increased reliability due to two independent sealing (flexible sealing lips and axial sealing areas).
- Suitable for use in lubricated as well as dry and oil-free air. (after initial lubrication during assembly).
- Easy Installation.

INSTALLATION & ASSEMBLY

Careful installation is the prerequisite for the correct functioning of the seal. The S10 seal is snapped over into the housing groove. Remove all the pores and scratches to avoid damaging the seal during installation.

MATERIAL

Polyurethane 92 Shore A.
FKM Rubber 80/85 Shore A.
Nitrile Rubber 80/85 Shore A.

OPERATING CONDITIONS

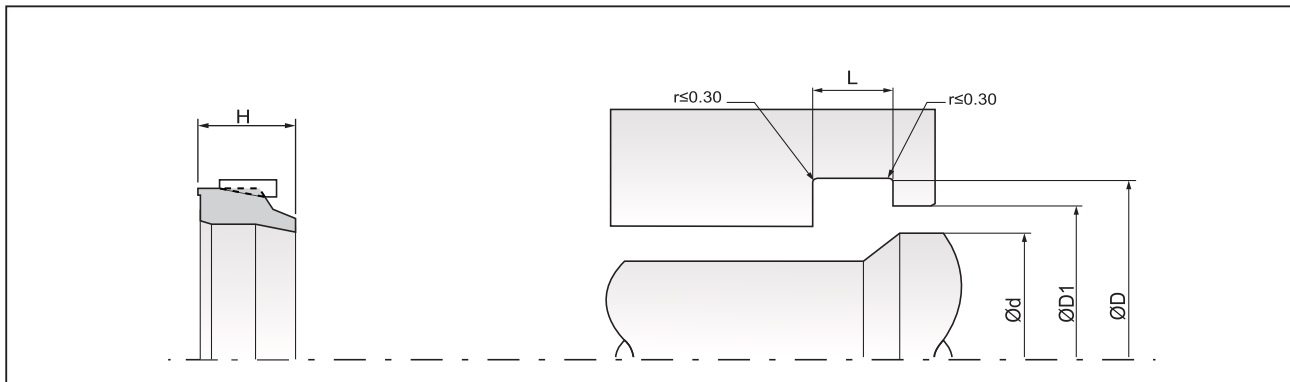
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

S10

Single Acting Cushion Seal



Part No.	d (h11)	D (h11)	L (+0.2)	h	H (+0.2)	D1	Matl.	Mould No.
S100081101	8.00	11.60	3.30	2.80	3.50	NBR	SUA-1122	
S10012L401	12.00	18.00	4.80	4.10	5.00	PU	PPA-813	
S100121001	12.00	18.00	4.80	4.10	5.00	NBR	SUA-1643	
S10014L501	14.00	21.00	7.00	6.20	7.80	PU	PPA-379	
S100166701	16.00	22.00	5.20	4.50	5.60	FKM	SUA-1222	
S10016L402	16.00	22.00	5.20	4.50	5.50	PU	PPA-1243	
S100161101	16.00	22.00	5.20	4.50	5.50	NBR	SUA-1504	
S100161001	16.00	24.00	7.00	6.20	7.80	NBR	SPA-126	
S10016L502	16.00	24.00	7.00	6.20	7.80	PU	PPA-585	
S100201107	20.00	28.00	7.00	6.50	8.00	NBR	SUB-2389	
S100206701	20.00	28.00	7.00	6.20	7.80	FKM	SUB-1733	
S10020L406	20.00	28.00	7.00	6.20	7.80	PU	PUB-1280	
S100221105	22.00	30.00	7.00	6.30	7.80	NBR	SPA-4630	
S10025L401	25.00	33.00	7.00	6.20	7.80	PU	PPA-1884	
S100251001	25.00	33.00	7.00	6.20	7.80	NBR	SPA-5760	
S100256701	25.00	33.00	7.00	6.20	7.80	FKM	SUB-2670	
S100250902	25.00	35.00	7.00	6.30	7.80	NBR	SUB-2804	
S10025L403	25.00	35.00	7.00	6.30	7.80	PU	PUB-1183	
S100271101	27.50	36.50	7.00	6.30	7.80	NBR	SUB-2937	
S10028L402	28.00	35.00	7.00	6.20	8.00	PU	PUB-1593	
S100286603	28.00	36.00	7.00	6.70	8.00	FKM	SPA-4639	
S100281101	28.00	36.00	7.00	6.70	8.00	NBR	SPA-106	
S10028L401	28.00	36.00	7.00	6.70	8.00	PU	PUB-1179	
S10030L403	30.00	40.00	7.00	6.20	7.80	PU	PPA-1191	
S100301104	30.00	40.00	7.00	6.20	7.80	NBR	SPA-1478	

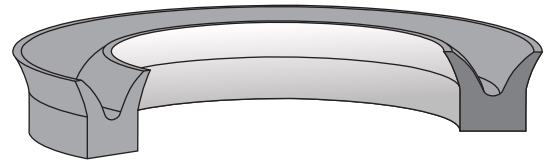
Part No.	d (h11)	D (h11)	L (+0.2)	h	H (+0.2)	D1	Matl.	Mould No.
S1003036602	30.00	40.00	7.00	6.20	7.80	FKM	SUB-2192	
S100326701	32.00	42.00	7.00	6.20	7.80	FKM	SUB-3068	
S10032L502	32.00	42.00	7.00	6.20	7.80	PU	PUB-828	
S100366603	36.00	46.00	7.00	6.20	8.00	FKM	SUB-2732	
S10036L401	36.00	46.00	7.00	6.20	8.00	PU	PPA-795	
S100381101	38.00	48.00	7.00	8.00	8.00	NBR	SUB-3435	
S10040L501	40.00	50.00	7.00	6.30	7.80	PU	PPA-1107	
S100401101	40.00	50.00	7.00	6.20	7.80	NBR	SPA-1477	
S100406701	40.00	50.00	7.00	6.20	7.80	FKM	SUB-1732	
S10044L401	44.00	56.00	7.00	6.20	7.80	PU	PPA-1359	
S100453501	45.00	55.00	7.00	6.20	7.80	EPDM	SUC-1325	
S10045L501	45.00	55.00	7.00	6.20	7.80	PU	PPA-819	
S10050L401	50.00	60.00	7.00	6.20	7.80	PU	PPA-953	
S100501101	50.00	60.00	7.00	6.20	7.80	NBR	SPA-1909	
S100506701	50.00	60.00	7.00	6.20	7.80	FKM	SPA-2729	
S100501102	50.00	67.00	12.50	11.00	11.00	NBR	SPA-4549	
S100506704	50.00	67.00	12.50	11.00	11.00	FKM	SUC-2368	
S100546601	54.00	64.00	7.00	6.25	7.80	FKM	SUC-1847	
S10055L401	55.00	72.00	12.50	11.00	11.00	PU	PUC-890	
S100561001	56.00	72.80	12.50	11.00	11.00	NBR	SPA-1330	
S100566801	56.00	73.00	12.50	11.21	11.21	FKM	SUC-2103	
S100571001	57.00	74.00	12.50	11.00	11.00	NBR	SUC-1933	
S100576702	57.00	74.00	12.50	11.00	11.00	FKM	SUC-2369	
S100781001	78.00	95.00	12.50	11.00	11.00	NBR	SUD-1802	
S100786701	78.00	95.00	12.50	11.00	11.00	FKM	SPA-200	

SYMMETRICAL SEALS

MAX TYPE	PRODUCT NAME	SEAL PROFILE	APPLICATION	PRESSURE (max) bar	TEMPERATURE	SPEED m/s	PAGE NO
E01	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	1.0	109
E02	U SEAL		SINGLE ACTING	12	-30°C TO +100°C	1.0	113
E05	U SEAL		SINGLE ACTING	16	-30°C TO +100°C	1.0	129

DETAILS

E01 is a single acting pneumatic seal with U-shaped cross-section. Its symmetric profile with long sealing lip guarantees a secure seat in the grooves especially for small section grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Symmetrical seal for piston and rod application.
- Easy snap fit installation.
- Long service life.
- Suitable for use in lubricated as well as dry and oil-free air. (after initial lubrication during assembly).

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The E01 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

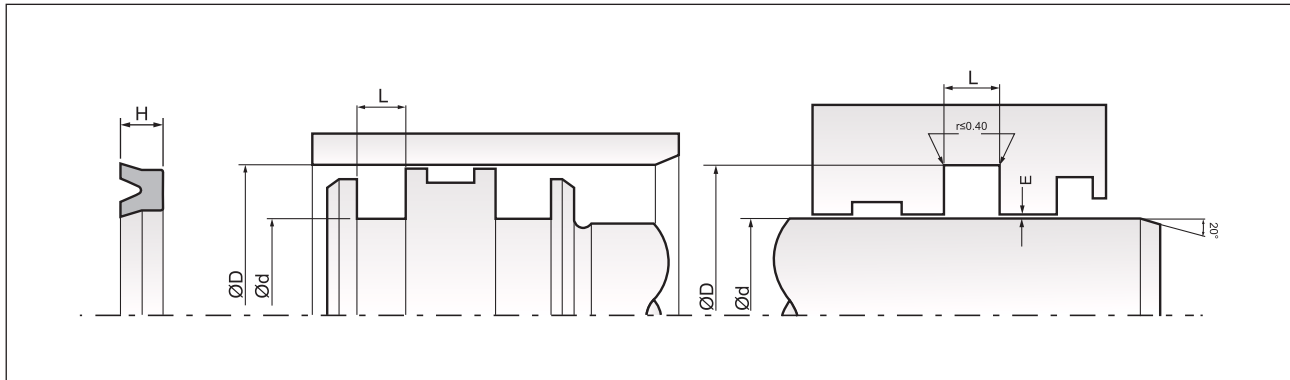
Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

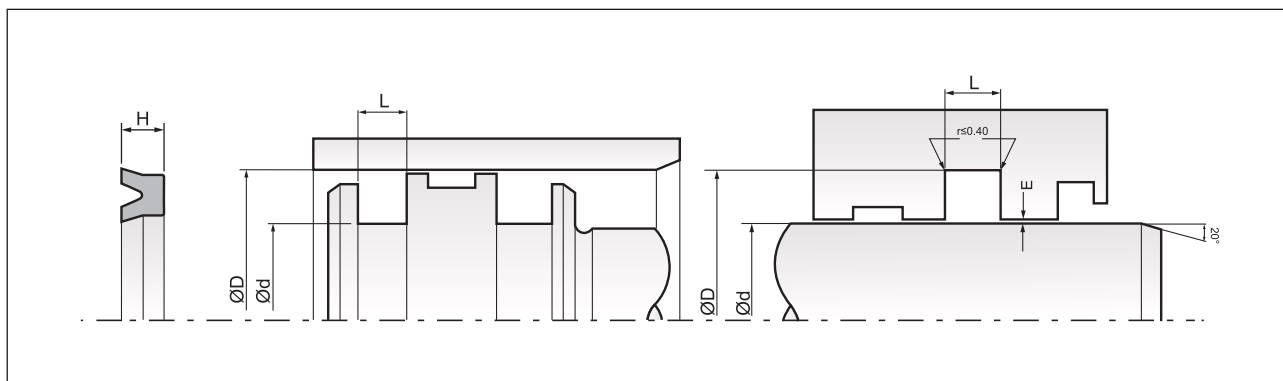
Static : 1.6 µmRa
Dynamic : 0.4 µmRa

E01

Single Acting Rod / Piston Seal



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E01006L501	6.00	12.00	11.00	10.00	PU	PUA-602	E010401007	40.00	50.00	11.00	10.00	NBR	SUB-3268
E010060901	6.00	12.00	11.00	10.00	NBR	SUA-1395	E010408901	40.00	50.00	13.00	12.00	PU	PUB-635
E01006L502	6.00	12.00	11.00	10.00	PU	PUA-620	E010401201	40.00	60.00	11.00	10.00	NBR	SUC-2136
E010060803	6.00	13.00	11.00	10.00	NBR	SUA-2358	E010420802	42.46	86.91	26.00	25.00	NBR	SUD-1152
E0100610801	6.00	14.00	11.00	10.00	NBR	SUA-1854	E010451101	45.00	65.00	11.00	10.00	NBR	SUC-2119
E01006L502	6.00	14.00	11.00	10.00	PU	PUA-619	E010450803	45.00	72.00	16.00	15.00	NBR+ACT-1	SUC-2634
E01006L502	6.00	14.00	11.00	10.00	PU	PUA-603	E01045L501	45.00	75.00	21.00	20.00	PU	PUC-569
E010060802	6.00	16.00	11.00	10.00	NBR	SUA-1960	E010450901	45.00	75.00	21.00	20.00	NBR	PFB-656
E010090901	9.04	23.74	9.63	8.63	NBR	SUA-2475	E010450901	45.00	75.00	21.00	20.00	NBR	SUC-1652
E010090902	9.04	39.82	9.25	8.25	NBR	SUB-4173	E010450901	45.00	75.00	21.00	20.00	NBR	SUC-1693
E010106601	10.00	16.00	4.50	4.00	FKM	SUA-2474	E010451001	45.00	75.00	21.00	20.00	NBR	SUC-2652
E010101003	10.00	18.00	9.00	8.00	NBR	SUA-1379	E010450804	45.00	75.00	21.00	20.00	NBR	SUC-2807
E010100901	10.00	20.00	9.00	8.00	NBR	SUA-1206	E010471101	47.00	61.00	9.00	8.00	NBR	SUC-1370
E010100902	10.00	20.00	9.00	8.00	NBR	SUA-1214	E010480801	48.30	87.30	32.00	31.00	NBR	SUD-1153
E010120901	12.00	18.00	6.50	6.00	NBR	SUA-2019	E010506401	50.00	63.00	10.20	9.20	FKM	SUC-2689
E010121005	12.00	19.50	4.50	4.00	NBR	SUA-2032	E010506603	50.00	70.00	13.00	12.00	FKM	SUC-2617
E010156602	15.88	25.40	5.26	4.76	FKM	SUB-2599	E010508901	50.00	70.00	16.00	15.00	PU	PUC-506
E010161102	16.00	26.00	7.80	7.30	NBR	SUB-1188	E010501005	50.80	63.50	10.52	9.52	NBR	SUC-2596
E010161004	16.50	22.50	5.50	5.00	NBR	SUA-2443	E010506602	50.80	70.00	11.00	10.00	FKM	SUC-2299
E010171002	17.00	23.00	5.50	5.00	NBR	SUA-2351	E010541001	54.05	91.99	26.40	25.40	NBR	SUD-1521
E010181007	18.00	26.00	4.60	4.10	NBR	SUB-2610	E010558901	55.00	70.00	16.00	15.00	PU	PUC-507
E010181008	18.00	29.00	5.50	5.00	NBR	SUB-2684	E010566702	56.00	66.50	12.00	11.00	FKM	SUC-994
E010186601	18.00	30.00	7.50	7.00	FKM	SUB-3276	E010571101	57.15	88.90	29.57	28.57	NBR	SUD-1878
E010200901	20.00	28.00	7.50	7.00	NBR	SUB-3394	E010606701	60.00	80.00	11.50	10.50	FKM	SUD-1112
E010206701	20.00	40.00	11.00	10.00	FKM	SUB-3306	E010601003	60.00	90.00	18.00	17.00	NBR+ACT-1	SUD-1910
E010226701	22.00	30.00	6.20	5.70	FKM	SUB-1321	E010600801	60.32	101.60	32.00	31.00	NBR	SUE-830
E010221106	22.00	35.00	11.00	10.00	NBR	SUB-1187	E010631103	63.00	73.00	13.00	12.00	NBR	SUC-950
E010226601	22.22	31.75	5.26	4.76	FKM	SUB-1161	E010631002	63.16	105.10	17.76	16.76	NBR	SUE-1049
E010256602	25.00	35.00	7.80	7.30	FKM	SUB-1384	E010631003	63.16	105.10	17.76	16.76	NBR	SUE-1189
E010251001	25.00	40.00	10.80	9.80	NBR	SUB-1619	E010631004	63.50	76.20	10.52	9.52	NBR	SUD-2121
E01025D601	25.40	44.45	10.53	9.53	HNBR	SUB-4157	E010661102	66.70	101.35	18.80	17.80	NBR	SUE-1269
E010270802	27.25	34.60	3.00	2.50	NBR	SUB-1537	E010671001	67.00	92.00	14.50	13.50	NBR	SUD-1104
E010270801	27.25	35.00	3.50	3.00	NBR	SUB-1538	E010691101	69.85	101.60	26.15	25.15	NBR	SUE-1435
E010301107	30.00	38.00	6.20	5.70	NBR	SUB-1378	E010736601	73.10	80.50	5.50	5.00	FKM	SUD-1674
E010301001	30.00	40.00	6.50	6.00	NBR	SUB-177	E010741001	74.00	90.00	6.50	6.00	NBR	SUD-627
E010301005	30.00	40.00	6.50	6.00	NBR	SUB-2440	E010760801	76.10	114.30	32.00	31.00	NBR	SUE-831
E010306601	30.00	40.00	7.50	7.00	FKM	SUB-1072	E010761003	76.20	88.90	10.52	9.52	NBR	SUD-2042
E010301004	30.00	40.00	9.00	8.00	NBR	SUB-2127	E010821101	82.55	101.60	13.90	12.90	NBR	SUE-1388
E010300901	30.00	45.00	11.00	10.00	NBR	SUB-3050	E010831002	83.05	103.60	13.70	12.70	NBR	SUE-1306
E010306601	30.00	50.00	11.00	10.00	FKM	SUB-2082	E010831101	83.74	101.60	15.08	14.08	NBR	SUE-1383
E010301006	30.00	60.00	16.80	15.80	NBR	SUC-1900	E010851001	85.00	100.00	13.00	12.00	NBR	SUD-757
E010326601	32.00	44.00	6.50	6.00	FKM	SUB-1448	E01088C301	88.90	127.00	18.27	17.27	XNBR	SUF-1008
E010351102	35.00	45.00	11.00	10.00	NBR	SUB-1231	E010906602	90.00	98.00	12.50	11.50	FKM	SUD-702
E010351004	35.00	50.00	11.00	10.00	NBR	SUB-1616	E010906501	90.00	115.00	15.00	14.00	FKM	SUE-1227
E010351007	35.00	65.00	14.80	13.80	NBR	SUB-2331	E011000801	100.00	115.00	10.00	9.00	NBR	SUE-935
E010361001	36.00	50.00	9.00	8.00	NBR	SUB-3607	E011006501	100.00	125.00	12.60	11.60	FKM	SUE-667
E010386602	38.00	52.00	7.50	7.00	FKM	SUC-2203	E011001001	100.00	125.00	13.00	12.00	NBR	SUE-1108
E010381101	38.00	54.00	12.00	11.00	NBR	SUC-1848	E011101002	110.00	125.00	16.00	15.00	NBR	SUE-821
E010386401	38.10	49.60	9.00	8.00	FKM	SUB-1618	E011106603	110.00	130.00	16.00	15.00	FKM	SUF-956
E010386601	38.10	50.80	10.00	9.00	FKM	SUC-1040	E011141001	114.30	127.00	10.52	9.52	NBR	SUF-929
E010381003	38.10	50.80	10.52	9.52	NBR	SUC-2568	E011241001	124.56	167.08	18.04	17.04	NBR	SUG-631
E010390801	39.25	46.00	4.50	4.00	NBR	SUB-1534	E011251001	125.00	155.00	16.00	15.00	NBR	SUG-796

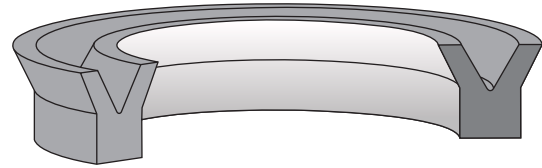


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E011311001	131.34	154.40	13.70	12.70	NBR	SUG-797
E011401002	140.00	155.00	9.00	8.00	NBR	SUG-668
E011401003	140.00	155.00	9.00	8.00	NBR	SUG-851
E011406601	140.00	160.00	15.50	14.50	FKM	SUG-372
E011501003	150.00	180.00	15.50	14.50	NBR	SUH-421
E011591001	159.25	179.80	13.70	12.70	NBR	SUH-490
E011606401	160.00	200.00	21.00	20.00	FKM	SUH-284
E011656601	165.10	203.20	19.80	18.80	FKM	SUJ-240
E011650901	165.10	203.20	19.90	18.90	NBR	SUJ-327
E011681001	168.27	203.20	20.00	19.00	NBR	SUJ-316
E011706602	170.00	201.00	17.00	16.00	FKM	SUJ-432
E011841001	184.65	205.20	13.70	12.70	NBR	SUJ-413
E01200L501	200.00	278.00	16.00	15.00	PU	PUM-150
E012041001	204.80	235.00	19.50	18.50	NBR	SUK-102
E012091001	209.55	228.60	13.70	12.70	NBR	SUK-322
E01210L501	210.00	230.00	20.00	19.00	PU	PUK-126
E012201001	220.00	250.00	19.50	18.50	NBR	SUK-107
E012306401	230.00	255.00	12.20	11.20	FKM	SUM-830
E012306701	230.00	260.00	19.00	18.00	FKM	SUM-411
E012341001	234.95	254.00	13.70	12.70	NBR	SUM-823
E012506601	250.00	274.00	12.00	11.00	FKM	SUM-687
E01250L501	250.00	280.00	23.20	22.20	PU	PUM-145
E012501002	250.00	300.00	26.00	25.00	NBR	SUM-258
E01251D601	251.00	269.00	14.00	13.00	HNBR	SUM-695
E01265L501	265.00	290.00	18.50	17.50	PU	PUM-221
E012776701	277.00	291.00	14.00	13.00	FKM	SUM-785

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E012851001	285.75	304.80	13.70	12.70	NBR	SUM-802
E012861001	286.00	300.00	11.00	10.00	NBR	SUM-294
E01320L501	320.00	360.00	22.00	21.00	PU	PUM-144
E013346701	334.00	348.00	14.00	13.00	FKM	SUM-784
E013361001	336.55	355.60	13.70	12.70	NBR	SUM-826
E01376S401	376.00	400.00	19.00	18.00	HNBR	SUM-806
E014151001	415.00	453.00	21.00	20.00	NBR	SUVG-376
E014806001	480.00	530.00	26.00	25.00	CPU	CPU-136
E01481D601	481.00	505.00	19.00	18.00	HNBR	SUVG-625
E015006602	500.00	530.00	17.00	16.00	FKM	SUVG-708
E01514001	514.35	533.40	13.70	12.70	NBR	SUVG-681
E015206001	520.00	550.00	26.00	25.00	CPU	CPU-125
E015691001	569.20	599.20	16.00	15.00	NBR	SUVG-409
E015811001	581.20	612.59	20.10	19.10	NBR	SUVG-679
E016201005	620.00	650.00	16.00	15.00	NBR	SUVG-665
E016341001	634.50	660.40	21.00	20.00	NBR	SUVG-349
E017701101	770.00	800.00	16.00	15.00	NBR	SUVG-616
E018101001	810.00	850.00	22.00	21.00	NBR	SUVG-375
E018751001	875.00	900.00	21.00	20.00	NBR	SUVG-355
E019991001	1010.00	1040.00	19.00	18.00	NBR	SLO-589
E019991006	1060.00	1100.00	21.00	20.00	NBR	SLO-759
E019991010	1200.00	1250.00	36.00	35.00	NBR	SUVG-227
E019991010	1200.00	1250.00	36.00	35.00	NBR	SLO-521
E019990802	1260.00	1330.00	38.00	37.00	NBR	SLO-747
E019991101	2584.00	2635.00	27.00	26.00	NBR	SLO-580
E019990901	2590.00	2630.00	21.00	20.00	NBR	SLO-405

DETAILS

E03 is a single acting pneumatic seal with U-shaped cross-section. Its symmetric profile with long sealing lip guarantees a secure seat in the grooves especially for small section grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Symmetrical seal for piston and rod application.
- Easy snap fit installation.
- Long service life.
- Suitable for use in lubricated as well as dry and oil-free air. (after initial lubrication during assembly).

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The E03 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

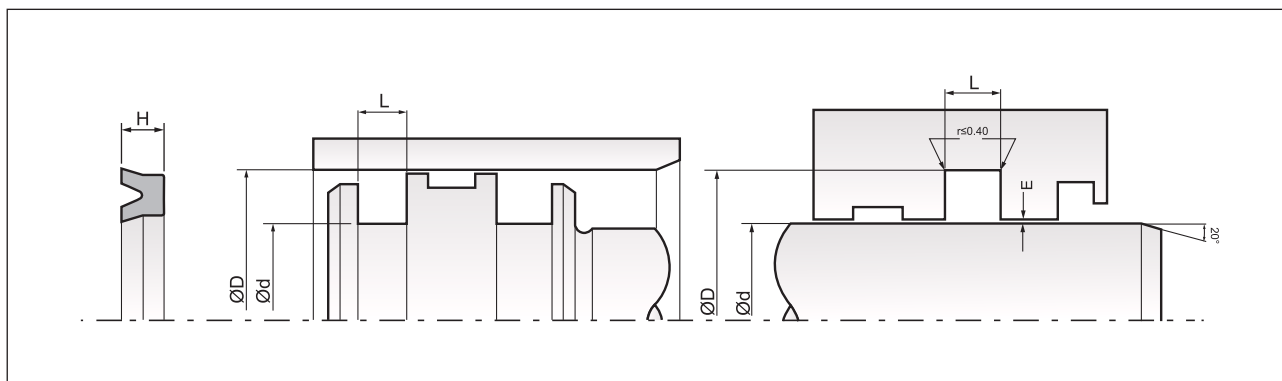
Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

Temperature Range : -30°C to + 100°C (NBR)
 : -40°C to + 220°C (FKM)
Pressure : 12 Bar
Speed : 1.0 m/s

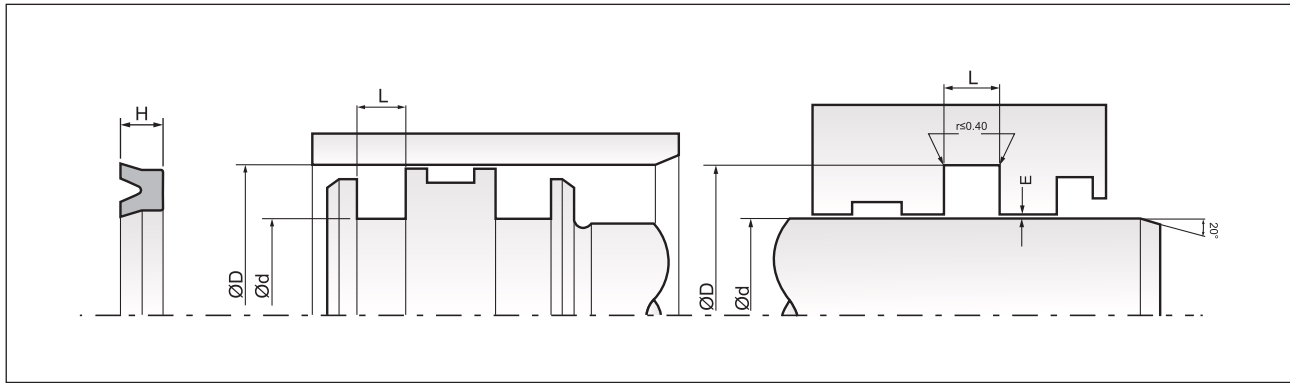
SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa



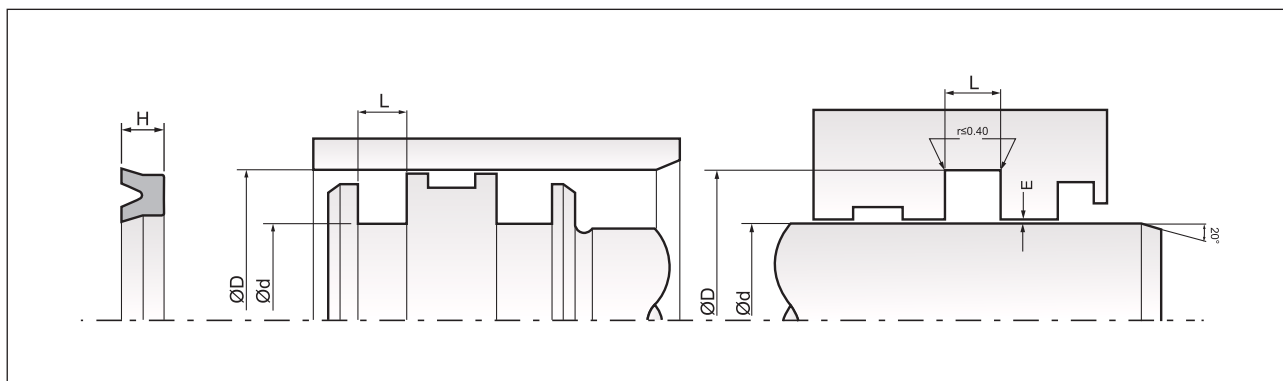
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030021001	2.00	6.00	3.50	3.00	NBR	SUA-1701
E030028901	2.00	37.50	6.50	6.00	PU	PUB-1842
E030020802	2.20	8.80	4.30	3.80	NBR	SUA-2173
E030020801	2.54	12.35	5.25	4.75	NBR	SUA-1756
E030026401	2.70	10.00	3.60	3.10	FKM	SUA-1926
E030034301	3.00	6.00	2.50	2.00	VMQ	SUA-2352
E030030803	3.00	6.00	2.60	2.10	NBR	SUA-1868
E030036401	3.00	6.00	3.00	2.50	FKM	SUA-1056
E030036601	3.00	7.00	5.50	5.00	FKM	SUA-2098
E030030807	3.00	7.00	5.50	5.00	NBR	SUA-2391
E030030903	3.00	7.00	6.50	6.00	NBR	SUA-1321
E03003L501	3.00	7.50	5.50	5.00	PU	PUA-624
E030030904	3.00	8.00	2.70	2.20	NBR	SUA-2087
E030030806	3.00	11.00	5.50	5.00	NBR	SUA-2114
E030038901	3.00	37.50	6.50	6.00	PU	PUB-1843
E030030907	3.17	7.93	2.88	2.38	NBR	SUA-2456
E030031002	3.17	7.93	2.88	2.38	NBR	SUA-905
E030030901	3.17	7.93	2.90	2.40	NBR	SUA-1207
E030030902	3.17	7.93	2.90	2.40	NBR	SUA-1215
E030030701	3.17	9.52	3.60	3.10	NBR	SUA-1572
E030031003	3.40	8.50	2.75	2.25	NBR	SUA-1127
E030031006	3.50	8.00	4.50	4.00	NBR	SUA-2221
E030030905	3.50	10.20	5.80	5.30	NBR	SUA-2113
E03003C301	3.52	7.58	2.58	2.08	XNBR	SUA-2440
E030031007	3.90	7.50	3.50	3.00	NBR	SUA-2292
E030031005	3.96	10.31	5.70	5.20	NBR	SUA-1323
E030040802	4.00	7.00	3.50	3.00	NBR	SUA-800
E030040902	4.00	7.00	3.70	3.20	NBR	SUA-1637
E030041006	4.00	7.00	3.75	3.25	NBR	SUA-1320
E030040902	4.00	7.93	2.90	2.40	NBR	SUA-1217
E030040901	4.00	7.93	2.90	2.40	NBR	SUA-1211
E030046501	4.00	8.00	3.00	2.50	FKM	SUA-1751
E030046604	4.00	8.00	3.67	3.17	FKM	SUA-1999
E030046401	4.00	9.00	3.70	3.20	FKM	SUA-1524
E030041003	4.00	10.00	4.50	4.00	NBR	SUA-896
E030041008	4.00	10.00	5.50	5.00	NBR	SUA-1644
E030041009	4.00	10.00	5.80	5.30	NBR	SUA-1820
E030048901	4.00	37.50	6.50	6.00	PU	PUB-1844
E030046603	4.50	10.50	3.70	3.20	FKM	SUA-1043
E030041007	4.60	10.00	3.50	3.00	NBR	SUA-1485
E030041104	4.76	9.52	3.00	2.50	NBR	SUA-1546
E030046402	4.76	13.08	5.50	5.00	FKM	SUA-1565
E030050803	5.00	8.00	2.50	2.00	NBR	SUA-1775
E030051002	5.00	8.00	2.80	2.30	NBR	SUA-744
E030051006	5.00	9.00	3.00	2.50	NBR	SUA-1296
E030056601	5.00	10.00	4.70	4.20	FKM	SUA-1576
E030050802	5.00	11.00	3.70	3.20	NBR	SUA-1729
E030051008	5.00	12.00	5.50	5.00	NBR	SUA-2290
E03005L501	5.00	12.00	6.50	6.00	PU	PUA-623
E030050901	5.00	16.70	19.50	18.50	NBR	SLO-595
E030051007	5.00	17.00	11.00	10.00	NBR	SUA-1346
E030058901	5.00	37.50	6.50	6.00	PU	PUB-1845

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030051101	5.33	8.99	2.48	1.98	NBR	SUA-1422
E030051005	5.55	12.70	10.90	9.90	NBR	SUA-894
E030061001	6.00	9.00	2.50	2.00	NBR	SUA-1444
E03006L501	6.00	9.00	2.50	2.00	PU	PUA-625
E030061013	6.00	9.00	2.50	2.00	NBR	SUA-1852
E030061011	6.00	9.00	2.60	2.10	NBR	SUA-1812
E030061012	6.00	10.00	3.00	2.50	NBR	SUA-1814
E030066604	6.00	10.00	4.50	4.00	FKM	SUA-1723
E030061004	6.00	10.00	4.50	4.00	NBR	SUA-921
E030066602	6.00	11.00	4.50	4.00	FKM	SUA-1067
E03006603	6.00	11.80	4.50	4.00	FKM	SUA-1079
E030066603	6.00	11.80	4.50	4.00	FKM	SUA-1269
E030061015	6.00	12.00	3.50	3.00	NBR	SUA-1957
E030060801	6.00	12.00	4.50	4.00	NBR	SUA-2104
E030061016	6.00	12.00	4.50	4.00	NBR	SUA-2289
E030061007	6.00	12.00	4.60	4.10	NBR	SUA-1107
E030060601	6.00	12.00	4.85	4.35	NBR	SUA-843
E030066401	6.00	12.00	6.00	5.50	FKM	SUA-1826
E030060801	6.00	13.00	3.50	3.00	NBR	SUA-2112
E030068701	6.00	13.00	7.00	6.50	PU	PUA-876
E030061008	6.00	15.00	5.50	5.00	NBR	SUA-1487
E030061006	6.00	15.50	8.50	8.00	NBR	SUA-1058
E030068902	6.00	37.50	6.50	6.00	PU	PUB-1846
E030066605	6.25	9.25	3.00	2.50	FKM	SUA-2393
E030066606	6.35	9.25	2.80	2.30	FKM	SUA-2392
E030061010	6.35	9.52	2.10	1.60	NBR	SUA-1711
E030061014	6.35	12.70	4.00	3.50	NBR	SUA-1934
E03006T501	6.35	19.05	6.85	6.35	EPDM	SUA-1869
E030061002	6.35	19.05	6.85	6.35	NBR	SUA-753
E030061003	6.60	12.70	8.50	8.00	NBR	SUA-895
E030061009	6.77	11.80	2.88	2.38	NBR	SUA-1618
E030070801	7.00	10.00	2.30	1.80	NBR	SUA-1816
E030071011	7.00	10.00	2.50	2.00	NBR	SUA-1712
E030071012	7.00	11.00	3.00	2.50	NBR	SUA-1761
E030071008	7.00	12.00	2.40	1.90	NBR	SUA-1338
E030071006	7.00	12.00	2.80	2.30	NBR	SUA-987
E030071007	7.00	12.00	2.90	2.40	NBR	SUA-1163
E030076604	7.00	12.00	3.70	3.20	FKM	SUA-1780
E030076401	7.00	12.00	5.60	5.10	FKM	SUA-2157
E030078701	7.00	12.00	6.50	6.00	PU	PPA-342
E030070802	7.00	13.00	3.00	2.50	NBR	SUA-2059
E030071010	7.00	14.00	4.50	4.00	NBR	SUA-1563
E030071005	7.00	15.00	5.50	5.00	NBR	SUA-915
E030071009	7.00	15.00	5.70	5.20	NBR	SUA-1387
E030071013	7.00	16.00	3.00	2.50	NBR	SUA-1776
E030072201	7.00	16.00	5.50	5.00	CR	SUA-1315
E030078901	7.00	37.50	6.50	6.00	PU	PUB-1847
E030071004	7.40	18.00	8.50	8.00	NBR	SUA-611
E030071004	7.40	18.00	8.50	8.00	NBR	SUA-1577
E030076602	7.50	11.80	4.50	4.00	FKM	SUA-1567
E030076602	7.50	11.80	4.50	4.00	FKM	SUA-1575
E030076603	7.87	11.50	2.80	2.30	FKM	SUA-1617



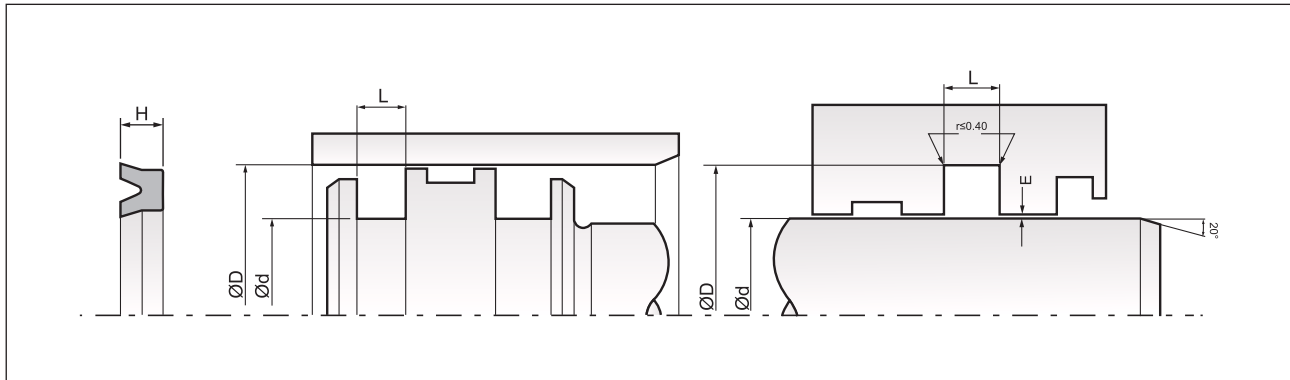
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030071014	7.90	14.80	7.00	6.50	NBR	SUA-1940
E030080901	8.00	10.00	2.60	2.10	NBR	SUA-1608
E030086401	8.00	11.00	2.00	1.50	FKM	SUA-1446
E030081004	8.00	11.00	2.60	2.10	NBR	SUA-1691
E030081007	8.00	12.00	3.80	3.30	NBR	SUA-1848
E030086601	8.00	12.00	4.50	4.00	FKM	SUA-1068
E030086601	8.00	12.00	4.50	4.00	FKM	SUA-1268
E030080802	8.00	12.50	3.00	2.50	NBR	SUA-2031
E030081010	8.00	12.50	4.50	4.00	NBR	SUA-2502
E030081002	8.00	13.00	3.65	3.15	NBR	SUA-1418
E030080902	8.00	13.00	5.00	4.50	NBR	SUA-2093
E030081003	8.00	13.00	5.20	4.70	NBR	SUA-1614
E030081009	8.00	14.00	3.05	2.55	NBR	SUA-2303
E030081008	8.00	16.00	5.30	4.80	NBR	SUA-2235
E030086602	8.00	16.00	6.50	6.00	FKM	SUA-2100
E030080904	8.00	17.00	6.50	6.00	NBR	SUA-2110
E030081005	8.00	20.00	6.50	6.00	NBR	SUA-1719
E030080903	8.40	17.20	6.50	6.00	NBR	SUA-2111
E030086602	8.50	17.50	4.80	4.30	FKM	SUA-1520
E030081801	8.50	51.00	16.00	15.00	CR	SUC-2622
E030081101	8.53	15.24	3.29	2.79	NBR	SUA-1453
E030091010	9.00	13.00	3.20	2.70	NBR	SUA-1714
E030091009	9.00	14.00	3.85	3.35	NBR	SUA-1419
E030094501	9.00	17.00	8.30	7.80	VMQ	SUA-1592
E030098901	9.00	37.50	6.50	6.00	PU	PUB-1848
E030096601	9.50	14.00	4.00	3.50	FKM	SUA-1472
E030096602	9.50	14.00	4.10	3.60	FKM	SUA-1473
E03009L402	9.50	14.00	7.50	7.00	PU	PUA-484
E030096603	9.50	14.25	3.10	2.60	FKM	SUA-2250
E030090901	9.52	12.70	2.30	1.80	NBR	SUA-1800
E030091007	9.52	15.68	4.00	3.50	NBR	SUA-1238
E030090801	9.52	15.87	3.67	3.17	NBR	SUA-2284
E030091006	9.52	16.50	4.30	3.80	NBR	SUA-978
E030090201	9.52	16.51	4.31	3.81	NBR	SUA-834
E030091005	9.52	16.58	4.60	4.10	NBR	SUA-870
E030091004	9.53	22.23	6.85	6.35	NBR	SUA-754
E030091008	9.56	16.24	3.00	2.50	NBR	SUA-1339
E030101011	10.00	13.00	3.00	2.50	NBR	SUA-1789
E030101002	10.00	13.35	2.30	1.80	NBR	SUA-952
E030100903	10.00	13.60	2.80	2.30	NBR	SUA-2367
E030100801	10.00	14.00	3.30	2.80	NBR	SUA-2461
E030100901	10.00	14.00	3.30	2.80	NBR	SUA-1611
E030101012	10.00	14.00	3.35	2.85	NBR	SUA-1824
E030106604	10.00	15.00	4.00	3.50	FKM	SUA-2148
E030106602	10.00	15.00	6.50	6.00	FKM	SUA-1118
E030105901	10.00	16.00	3.40	2.90	PU	PUA-488
E030101014	10.00	16.00	3.50	3.00	NBR	SUA-2211
E030106603	10.00	16.00	3.80	3.30	FKM	SUA-1765
E030101015	10.00	16.00	3.90	3.40	NBR	SUA-2231
E030101103	10.00	16.00	4.50	4.00	NBR	SUA-1256
E030101007	10.00	16.00	5.00	4.50	NBR	SUA-1593
E030108903	10.00	16.00	5.50	5.00	PU	PUA-809

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030101004	10.00	17.00	6.50	6.00	NBR	SUA-1087
E030101008	10.00	18.00	4.50	4.00	NBR	SUA-1684
E030101006	10.00	18.00	5.50	5.00	NBR	SUA-1375
E030101009	10.00	19.00	4.50	4.00	NBR	SUA-1692
E030108901	10.00	20.00	6.50	6.00	PU	PUA-475
E030106605	10.00	20.00	7.50	7.00	FKM	SUA-2232
E030101013	10.00	20.00	8.50	8.00	NBR	SUA-2152
E030101003	10.17	17.00	3.50	3.00	NBR	SUA-1044
E030101005	10.30	22.15	6.85	6.35	NBR	SUA-1200
E030101001	10.50	14.50	3.50	3.00	NBR	SUA-757
E030102101	10.50	18.00	5.50	5.00	CR	SUA-1735
E030100902	10.50	21.50	6.00	5.50	NBR	SUA-2109
E030101801	10.50	51.00	16.00	15.00	CR	SUC-2623
E030110803	11.00	15.00	2.80	2.30	NBR	SUA-1821
E030110802	11.00	15.00	3.25	2.75	NBR	SUA-1810
E030116403	11.00	15.00	3.50	3.00	FKM	SUA-1753
E030111001	11.00	15.00	3.50	3.00	NBR	SUA-750
E030116401	11.00	16.00	2.80	2.30	FKM	SUA-1447
E030111004	11.00	16.00	3.00	2.50	NBR	SUA-2126
E03111005	11.00	16.00	3.50	3.00	NBR	SUA-2127
E030116402	11.00	17.00	5.30	4.80	FKM	SUA-1527
E03011L403	11.00	17.00	7.50	7.00	PU	PUA-485
E030115901	11.00	18.00	3.80	3.30	PU	PUA-554
E030110901	11.00	19.00	6.00	5.50	NBR	SUA-2108
E030111003	11.00	20.00	6.50	6.00	NBR	SUA-1603
E030118901	11.00	37.50	6.50	6.00	PU	PUB-1849
E030111801	11.20	51.00	16.00	15.00	CR	SUC-2624
E030111002	11.50	16.00	2.10	1.60	NBR	SUA-1445
E030116602	11.50	18.00	5.00	4.50	FKM	SUA-1119
E03011L404	11.90	20.63	6.30	5.80	PU	PUA-695
E03011L401	11.94	19.80	17.70	16.70	PU	PUA-442
E030126502	12.00	16.00	2.80	2.30	FKM	SUA-1983
E030121016	12.00	16.00	3.00	2.50	NBR	SUA-1713
E030120901	12.00	16.00	3.30	2.80	NBR	SUA-1605
E030120905	12.00	16.00	3.30	2.80	NBR	SUA-2269
E030126503	12.00	16.00	3.50	3.00	FKM	SUA-2120
E030121024	12.00	16.50	5.00	4.50	NBR	SUA-2189
E030121011	12.00	17.00	3.10	2.60	NBR	SUA-1515
E03012L505	12.00	17.00	4.00	3.50	PU	PUA-648
E030121101	12.00	17.00	5.80	5.30	NBR	SUA-1111
E030121018	12.00	18.00	3.00	2.50	NBR	SUA-1815
E030120906	12.00	18.00	5.00	4.50	NBR	SUA-2308
E030120904	12.00	18.00	5.50	5.00	NBR	SUA-2200
E030121019	12.00	18.00	5.50	5.00	NBR	SUA-1819
E030126403	12.00	18.00	5.50	5.00	FKM	SUA-1589
E03012L503	12.00	18.00	5.50	5.00	PU	PUA-463
E03012L504	12.00	18.30	3.50	3.00	PU	PUA-635
E030121013	12.00	19.00	4.10	3.60	NBR	SUA-1582
E03012U201	12.00	19.00	5.50	5.00	FKM	SUA-2041
E030120902	12.00	20.00	5.50	5.00	NBR	SUA-1862
E030121017	12.00	20.00	5.50	5.00	NBR	SUA-1808
E030121103	12.00	20.00	5.50	5.00	NBR	SUA-2018

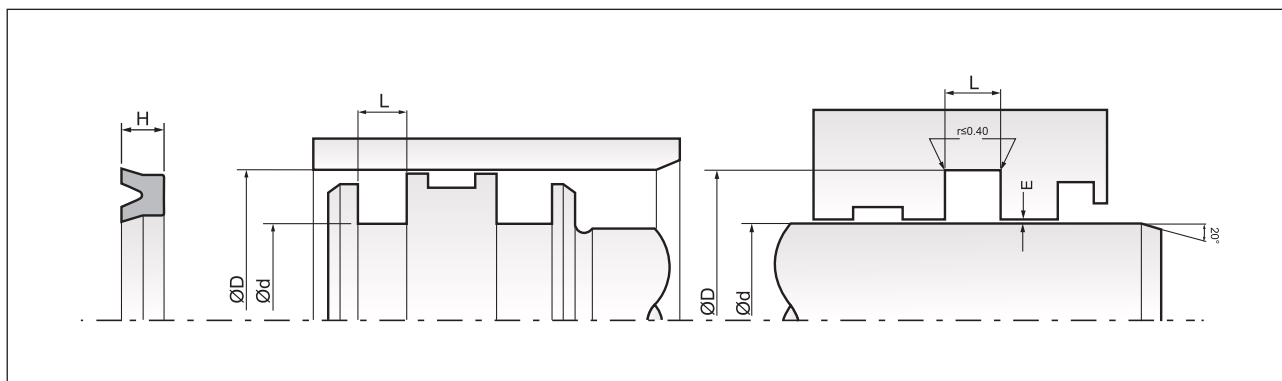


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030126402	12.00	20.00	5.80	5.30	FKM	SUA-1242
E030120803	12.00	20.00	5.80	5.30	NBR	SUA-1205
E03012L506	12.00	20.00	5.80	5.30	PU	PUA-704
E030126401	12.00	22.00	6.40	5.90	FKM	SUA-2170
E030121006	12.00	22.00	6.90	6.40	NBR	SUA-194
E03012V201	12.00	22.00	8.30	7.80	NBR	SUA-1361
E03012L502	12.00	22.00	8.50	8.00	PU	PUA-270
E030124302	12.00	22.00	12.00	11.00	VMQ	SUA-2468
E030121102	12.00	24.00	6.50	6.00	NBR	SUA-1610
E030121007	12.00	26.00	10.90	9.90	NBR	SUB-1703
E030125902	12.00	30.00	10.00	9.00	PU	PUB-1011
E030128902	12.00	37.50	6.50	6.00	PU	PUB-1850
E030121012	12.34	16.78	3.20	2.70	NBR	SUA-1521
E030128901	12.50	69.00	16.00	15.00	PU	PUC-849
E030121025	12.70	18.54	4.50	4.00	NBR	SUA-2192
E030126501	12.70	19.05	3.55	3.05	FKM	SUA-1793
E030126601	12.70	19.05	3.67	3.17	FKM	SUA-1416
E030121021	12.70	19.05	4.00	3.50	NBR	SUA-1935
E030121023	12.70	19.40	4.00	3.50	NBR	SUA-2008
E030124301	12.70	19.76	5.26	4.76	VMQ	SUA-1322
E030121009	12.70	22.22	5.26	4.76	NBR	SUA-1009
E030121005	12.70	25.40	6.85	6.35	NBR	SUB-1465
E030121010	12.70	25.40	6.85	6.35	NBR	SUB-1864
E030121014	12.70	25.40	7.50	7.00	NBR	SUC-1861
E030121801	12.80	51.00	16.00	15.00	CR	SUC-2625
E030136401	13.00	16.00	2.00	1.50	FKM	SUA-1685
E030130901	13.00	19.00	3.70	3.20	NBR	SUA-1663
E070131004	13.00	19.00	3.70	3.20	NBR	SUA-2314
E030136603	13.00	19.00	3.80	3.30	FKM	SUA-1665
E030130801	13.00	19.00	4.20	3.70	NBR	SUA-2395
E030136601	13.00	21.00	5.35	4.85	FKM	SUA-1126
E030136402	13.00	25.00	6.75	6.25	FKM	SUA-2470
E030138901	13.00	37.50	6.50	6.00	PU	PUB-1851
E030131005	13.09	19.44	3.70	3.20	NBR	SUA-1591
E030136602	13.30	20.60	4.30	3.80	FKM	SUA-1498
E030131004	13.50	18.00	5.30	4.80	NBR	SUA-1221
E030141014	14.00	18.00	3.20	2.70	NBR	SUA-1695
E030146602	14.00	20.00	2.90	2.40	FKM	SUA-1072
E0301401015	14.00	20.00	3.20	2.70	NBR	SUA-1796
E030141005	14.00	20.00	3.50	3.00	NBR	SUA-1149
E030146601	14.00	20.00	3.50	3.00	FKM	SUA-929
E030141102	14.00	20.00	3.50	3.00	NBR	SUA-2357
E030140904	14.00	20.00	4.50	4.00	NBR	SUA-2201
E030141006	14.00	20.00	4.50	4.00	NBR	SUA-1203
E030141001	14.00	20.00	4.50	4.00	NBR	SUA-133
E030141006	14.00	20.00	4.50	4.00	NBR	SUA-1008
E030141011	14.00	20.00	5.50	5.00	NBR	SUA-1394
E030140905	14.00	20.00	5.50	5.00	NBR	SUA-2202
E030141008	14.00	20.00	7.40	6.90	NBR	SUA-1288
E030146603	14.00	20.00	8.20	7.70	FKM	SUA-2001
E030146604	14.00	21.00	4.50	4.00	FKM	SUA-2147
E030141003	14.00	21.00	5.50	5.00	NBR	SUA-848

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030148901	14.00	22.00	5.50	5.00	PU	PUA-757
E030141001	14.00	22.00	6.50	6.00	NBR	SUA-1367
E030140801	14.00	22.00	6.60	6.10	NBR	SUA-1159
E030141101	14.00	24.00	5.50	5.00	NBR	SUA-2253
E030141016	14.00	24.00	6.50	6.00	NBR	SUA-2366
E030141012	14.00	30.00	7.50	7.00	NBR	SUB-2414
E030148902	14.00	37.50	6.50	6.00	PU	PUB-1852
E030141007	14.27	26.97	6.85	6.35	NBR	SUB-1865
E030141801	14.37	51.00	16.00	15.00	CR	SUC-2626
E030141010	14.39	23.61	4.00	3.50	NBR	SUA-1340
E030141802	14.50	51.00	16.00	15.00	CR	SUC-2627
E030151009	15.00	20.00	3.70	3.20	NBR	SUA-1873
E030151006	15.00	20.00	4.00	3.50	NBR	SUA-1766
E030156605	15.00	21.25	4.65	4.15	FKM	SUA-1570
E030151014	15.00	22.00	5.50	5.00	NBR	SUA-2218
E030151017	15.00	22.00	5.50	5.00	NBR	SUA-2459
E030151007	15.00	22.00	7.50	7.00	NBR	SUA-1801
E030151001	15.00	24.00	4.50	4.00	NBR	SUA-1439
E0300151102	15.00	28.00	8.10	7.60	NBR	SUB-3216
E030151101	15.00	28.00	11.00	10.00	NBR	SUB-2399
E030150802	15.50	23.50	4.00	3.50	NBR	SUA-2079
E030156606	15.50	24.10	8.40	7.90	FKM	SUA-2118
E030151012	15.87	25.00	5.30	4.80	NBR	SUA-2080
E030151003	15.87	25.40	5.26	4.76	NBR	SUB-1324
E030151005	15.87	28.57	6.72	6.22	NBR	SUB-1599
E030156604	15.88	22.23	3.50	3.00	FKM	SUA-765
E030151004	15.88	28.58	6.85	6.35	NBR	SUB-1466
E030158901	15.90	72.00	16.00	15.00	PU	PUC-851
E030161011	16.00	20.00	3.00	2.50	NBR	SUA-1595
E030161013	16.00	20.00	3.10	2.60	NBR	SUA-1991
E030161004	16.00	20.00	3.25	2.75	NBR	SUA-976
E030160904	16.00	20.00	3.30	2.80	NBR	SUA-2390
E030161010	16.00	20.00	3.40	2.90	NBR	SUA-1516
E03016CF01	16.00	20.00	4.00	3.50	PU	PUA-960
E030161901	16.00	22.00	3.50	3.00	CR	SUA-109
E030166602	16.00	22.00	3.80	3.30	FKM	SUA-1613
E030166603	16.00	22.00	4.00	3.50	FKM	SUA-2322
E030161008	16.00	22.00	4.50	4.00	NBR	SUA-1366
E030160804	16.00	22.00	4.50	4.00	NBR	SUA-2136
E030160902	16.00	22.00	5.00	4.50	NBR	SUA-2021
E030166502	16.00	22.00	5.00	4.50	FKM	SUA-2230
E030160803	16.00	22.00	5.00	4.50	NBR	SUA-1724
E030161007	16.00	22.00	6.20	5.70	NBR	SUA-1212
E030165901	16.00	22.00	11.00	10.00	PU	PUA-308
E030161101	16.00	22.00	6.50	6	NBR	SUA-1031
E030161015	16.00	24.00	4.50	4.00	NBR	SUA-2245
E030166601	16.00	24.00	5.20	4.70	FKM	SUA-1372
E030162001	16.00	24.00	5.50	5.00	CR	SUA-2233
E030166401	16.00	24.00	6.50	6.00	FKM	SUA-2169
E030161102	16.00	25.00	5.50	5.00	NBR	SUA-1090
E030161003	16.00	25.50	5.50	5.00	NBR	SUB-1696
E03016L401	16.00	26.00	7.00	6.50	PU	PUB-1324

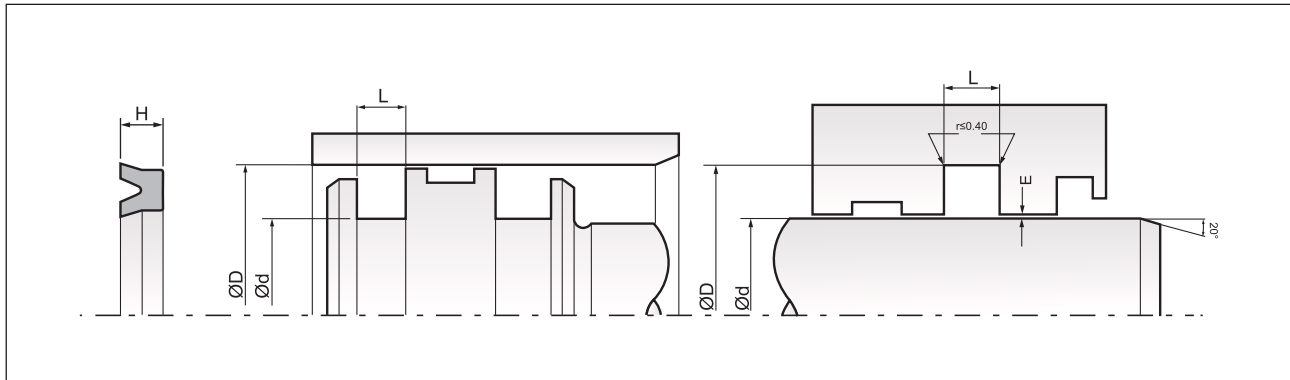


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030160802	16.50	31.00	8.50	8.00	NBR	SUB-1888	E030191008	19.96	23.94	3.39	2.89	NBR	SUA-1522
E030160901	16.50	61.50	25.50	24.50	NBR	SUC-2166	E030206605	20.00	24.00	3.25	2.75	FKM	SUA-755
E030166501	16.66	25.40	3.92	3.42	FKM	SUB-3571	E030201013	20.00	24.00	3.30	2.80	NBR	SUA-1736
E030161006	16.76	21.84	3.80	3.30	NBR	SUA-1135	E030206501	20.00	25.00	4.30	3.80	FKM	SUA-2229
E030161012	16.94	24.64	4.85	4.35	NBR	SUA-1728	E030206607	20.00	26.00	3.50	3.00	FKM	SUB-2941
E030171102	17.00	23.00	6.00	5.50	NBR	SUA-2339	E030201020	20.00	26.00	3.80	3.30	NBR	SUB-3500
E030170801	17.00	23.00	7.50	7.00	NBR	SUA-1218	E030201015	20.00	26.00	4.50	4.00	NBR	SUB-2906
E030171002	17.00	25.00	3.50	3.00	NBR	SUA-2194	E030205901	20.00	27.00	6.60	6.10	PU	PUB-810
E030178901	17.00	37.50	6.50	6.00	PU	PUB-1853	E030200801	20.00	28.00	4.50	4.00	NBR	SUB-1436
E030171802	17.50	51.00	16.00	15.00	CR	SUC-2628	E030203201	20.00	28.00	4.50	4.00	NBR	SUB-1175
E030171801	17.55	51.00	16.00	15.00	CR	SUC-2587	E030201014	20.00	28.00	5.30	4.80	NBR	SUB-2884
E030180805	18.00	22.00	3.30	2.80	NBR	SUA-2507	E030206604	20.00	28.00	5.50	5.00	FKM	SUB-1414
E030181009	18.00	22.00	3.50	3.00	NBR	SUA-1758	E030206608	20.00	28.00	5.80	5.30	FKM	SUB-3028
E030181005	18.00	24.00	3.70	3.20	NBR	SUA-1573	E030201019	20.00	28.00	5.90	5.40	NBR	SUB-3464
E030181010	18.00	24.00	8.00	7.50	NBR	SUA-1784	E030206610	20.00	28.00	11.00	10.00	FKM	SUB-3672
E030180804	18.00	25.00	4.20	3.70	NBR	SUA-2273	E030201101	20.00	30.00	6.50	6.00	NBR	SUB-2996
E030186701	18.00	25.00	4.50	4.00	FKM	SUA-1518	E030201022	20.00	30.00	6.50	6.00	NBR	SUB-3603
E030181004	18.00	26.00	4.50	4.00	NBR	SUB-1955	E030200903	20.00	30.00	6.50	6.00	NBR	SUB-3645
E030181101	18.00	26.00	4.50	4.00	NBR	SUB-2602	E030206606	20.00	30.00	7.25	6.75	FKM	SUB-2289
E030181201	18.00	26.00	4.50	4.00	NBR	SUB-3740	E030301104	20.00	30.00	12.00	11.00	NBR	SLO-572
E030181011	18.00	26.00	5.00	4.50	NBR	SUB-3447	E03020L501	20.00	30.00	13.00	12.00	PU	PUB-1371
E030181007	18.00	26.00	5.00	4.50	NBR	SUB-2725	E030201016	20.00	31.00	7.20	6.70	NBR	SUB-3256
E03018L501	18.00	26.00	5.50	5.00	PU	PUB-1248	E030201011	20.00	32.00	9.70	8.70	NBR	SUB-1900
E030181008	18.00	27.00	6.50	6.00	NBR	SUB-2863	E030201006	20.00	35.00	8.50	8.00	NBR	SUB-474
E030181013	18.00	28.00	11.50	10.50	NBR	SUB-3750	E030208701	20.00	46.00	17.00	16.00	PU	PUB-1498
E030181006	18.00	29.00	11.20	10.20	NBR	SUB-2708	E03020L401	20.00	55.00	26.00	25.00	PU	PUC-1214
E030181003	18.00	30.00	11.30	10.30	NBR	SUB-1704	E030200902	20.00	73.00	26.00	25.00	NBR	SUC-1633
E03018L401	18.00	55.00	26.00	25.00	PU	PUC-1215	E030208901	20.00	78.00	16.00	15.00	PU	PUD-736
E030180902	18.00	73.00	26.00	25.00	NBR	SUC-1631	E03020S601	20.28	31.48	11.20	10.20	NBR	SUB-3828
E030181012	18.80	26.40	4.00	3.50	NBR	SUB-3498	E030206609	20.30	27.00	4.00	3.50	FKM	SUB-1817
E030191012	19.00	25.00	3.50	3.00	NBR	SUA-2212	E030200904	20.50	27.90	4.70	4.20	NBR	SUB-4044
E030196603	19.00	25.00	3.50	3.00	FKM	SUA-2266	E030201801	20.50	51.00	16.00	15.00	CR	SUC-2629
E030196602	19.00	25.00	3.70	3.20	FKM	SUA-1104	E030200802	20.95	28.35	4.80	4.30	NBR	SUB-4043
E030191009	19.00	28.00	6.70	6.20	NBR	SUB-2934	E030210801	21.00	32.00	11.00	10.00	NBR	SUB-1921
E03019L401	19.00	35.00	11.30	10.30	PU	PUB-976	E030211002	21.00	32.00	11.00	10.00	NBR	SUB-2059
E030190903	19.00	73.00	26.00	25.00	NBR	SUC-1632	E030218901	21.00	37.50	6.50	6.00	PU	PUB-1854
E030191005	19.05	25.04	7.63	7.13	NBR	SUB-2003	E030211003	21.30	50.00	17.80	16.80	NBR	SUB-3213
E030196701	19.05	25.40	3.67	3.17	FKM	SUB-606	E030221013	22.00	26.00	8.50	8.00	NBR	SUB-3069
E030191001	19.05	25.40	3.70	3.20	NBR	SUB-498	E030221011	22.00	28.00	3.50	3.00	NBR	SUB-2386
E030190801	19.05	25.40	3.80	3.30	NBR	SUB-1595	E030226602	22.00	28.00	3.70	3.20	FKM	SUB-2646
E030196601	19.05	25.40	3.80	3.30	FKM	SUB-1924	E030221012	22.00	28.00	6.00	5.50	NBR	SUB-2527
E030191006	19.05	25.40	5.50	5.00	NBR	SUB-2173	E030223401	22.00	28.30	5.50	5.00	EPDM	SUB-2437
E030190802	19.05	28.57	5.26	4.76	NBR	SUB-2459	E030221015	22.00	29.00	3.50	3.00	NBR	SUB-3253
E030191003	19.05	31.75	6.85	6.35	NBR	SUB-1467	E030221009	22.00	30.00	4.30	3.80	NBR	SUB-2284
E030191004	19.05	38.10	10.52	9.52	NBR	SUB-1600	E03022L401	22.00	30.00	7.00	6.50	PU	PUB-1802
E030191011	19.05	50.00	17.80	16.80	NBR	SUB-3214	E030221004	22.00	31.00	5.50	5.00	NBR	SUB-1372
E030190904	19.05	69.85	26.00	25.00	NBR	SUC-2088	E030221008	22.00	32.00	5.50	5.00	NBR	SUB-1775
E030191007	19.05		3.67	3.17	NBR	SUA-1423	E030224101	22.22	28.57	3.67	3.17	VMQ	SUB-1802
E030198901	19.10	75.00	16.00	15.00	PU	PUC-850	E030226603	22.22	28.57	3.67	3.17	FKM	SUB-2925
E030191010	19.30	25.70	4.10	3.60	NBR	SUB-3075	E030221005	22.22	32.00	5.50	5.00	NBR	SUB-1416
E030191101	19.30	32.00	6.50	6.00	NBR	SUB-3924	E030221007	22.22	38.10	9.73	8.73	NBR	SUB-1636
E030191013	19.50	29.00	5.50	5.00	NBR	SUB-3693	E030228701	22.22	38.89	6.80	6.30	PU	PUB-811



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030221006	22.23	34.93	6.85	6.35	NBR	SUB-1472
E030221014	22.50	30.00	4.00	3.50	NBR	SUB-3138
E030231003	23.00	28.00	4.80	4.30	NBR	SUB-1811
E030231101	23.00	32.00	6.50	6.00	NBR	SUB-3819
E030230901	23.00	61.50	25.50	24.50	NBR	SUC-2076
E03023V201	23.41	30.14	4.40	3.90	NBR	SUB-2720
E030231004	23.50	30.00	5.00	4.50	NBR	SUB-3139
E030231801	23.50	51.00	16.00	15.00	CR	SUC-2630
E030156607	23.70	32.00	10.00	9.00	FKM	SUB-3554
E030231802	23.90	51.00	16.00	15.00	CR	SUC-2631
E030246402	24.00	28.00	4.50	4.00	FKM	SUB-2018
E030241011	24.00	29.50	4.60	4.10	NBR	SUB-3495
E030241007	24.00	30.00	3.80	3.30	NBR	SUA-1630
E030241006	24.00	32.00	3.50	3.00	NBR	SUB-2568
E030241101	24.00	32.00	4.50	4.00	NBR	SUB-1357
E030241010	24.00	32.00	6.00	5.50	NBR	SUB-3421
E030241012	24.00	32.00	6.10	5.60	NBR	SUB-3601
E030246601	24.00	36.00	7.50	7.00	FKM	SUB-1423
E030240803	24.00	38.00	7.30	6.80	NBR	SUB-2766
E03024L401	24.00	55.00	26.00	25.00	PU	PUC-1216
E030240903	24.00	73.00	26.00	25.00	NBR	SUC-1634
E030241009	24.20	35.00	6.00	5.50	NBR	SUB-3264
E030241014	24.50	29.50	4.50	4.00	NBR	SUB-3795
E030241005	24.50	32.00	5.50	5.00	NBR	SUB-2135
E030250806	25.00	30.00	4.50	4.00	NBR	SUB-3564
E030251037	25.00	31.00	8.50	8.00	NBR	SUB-4202
E030251013	25.00	32.00	3.80	3.30	NBR	SUB-2822
E030251012	25.00	32.00	4.10	3.60	NBR	SUB-2588
E030256613	25.00	32.00	4.50	4.00	FKM	SUB-3271
E030256603	25.00	32.00	6.50	6.00	FKM	SUB-1514
E030251015	25.00	33.00	5.80	5.30	NBR	SUB-2913
E030251103	25.00	33.00	7.50	7.00	NBR	SUB-1987
E030251034	25.00	34.00	5.50	5.00	NBR	SUB-3855
E030251025	25.00	34.00	6.50	6.00	NBR	SUB-3319
E030250910	25.00	35.00	5.50	5.00	NBR	SUB-3581
E030251017	25.00	35.00	6.50	6.00	NBR	SUB-3039
E030256611	25.00	35.00	7.00	6.50	FKM	SUB-3802
E030256604	25.00	35.00	7.30	6.80	FKM	SUB-1692
E030251027	25.00	35.00	7.50	7.00	NBR	SUB-3513
E030251035	25.00	35.00	7.50	7.00	NBR	SUB-3925
E030253402	25.00	35.00	8.50	8.00	EPDM	SUB-3644
E030251108	25.00	35.00	8.50	8.00	NBR	SUB-3759
E030251008	25.00	35.40	7.50	7.00	NBR	SUB-2362
E030253401	25.00	36.00	6.50	6.00	EPDM	SUB-1270
E030251016	25.00	36.00	7.50	7.00	NBR	SUB-2992
E030250906	25.00	36.30	8.50	8.00	NBR	SUB-2741
E030250804	25.00	37.00	6.50	6.00	NBR	SUB-2936
E030256607	25.00	37.00	6.90	6.40	FKM	SUB-2191
E030250803	25.00	37.00	11.00	10.00	NBR	SUB-101
E030251014	25.00	38.00	6.30	5.80	NBR	SUB-2821
E030256614	25.00	38.00	6.50	6.00	FKM	SUB-3272
E030251011	25.00	38.00	7.00	6.50	NBR	SUB-2531

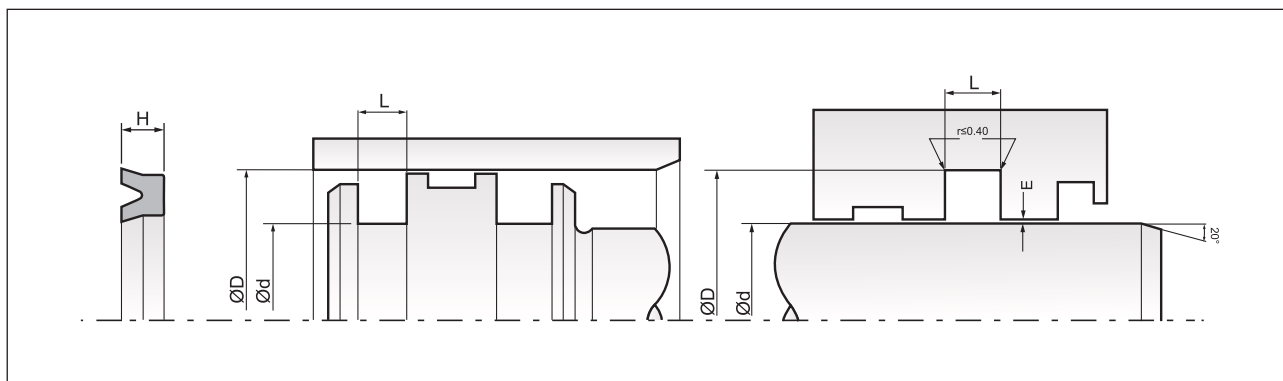
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030250905	25.00	38.00	7.00	6.50	NBR	SUB-2679
E030251107	25.00	38.00	7.00	6.50	NBR	SUB-3117
E030251032	25.00	38.50	8.00	7.50	NBR	SUB-3712
E030250903	25.00	40.00	9.80	8.80	NBR	SUB-2421
E03025L401	25.00	42.00	12.00	11.00	PU	PUB-975
E030251021	25.00	50.00	17.80	16.80	NBR	SUB-3210
E030250909	25.00	50.00	17.80	16.80	NBR	SUB-3561
E030250902	25.00	73.00	26.00	25.00	NBR	SUC-1635
E030251036	25.18	73.00	26.40	25.40	NBR	SUC-2778
E030251007	25.40	31.50	6.00	5.50	NBR	SUB-2123
E030256501	25.40	31.75	3.70	3.20	FKM	SUB-2990
E030256609	25.40	31.75	3.80	3.30	FKM	SUB-2317
E030251019	25.40	32.53	5.10	4.60	NBR	SUB-3171
E030251033	25.40	33.32	5.65	5.15	NBR	SUB-3748
E030256605	25.40	34.13	5.65	5.15	FKM	SUB-2026
E030251009	25.40	34.92	5.20	4.70	NBR	SUB-2397
E030256608	25.40	36.90	6.80	6.30	FKM	SUB-2240
E030256610	25.40	37.00	7.00	6.50	FKM	SUB-118
E030251010	25.40	38.10	6.85	6.35	NBR	SUB-2445
E030251004	25.40	38.10	6.85	6.35	NBR	SUB-1470
E030250805	25.40	38.10	6.85	6.35	NBR	SUB-3012
E030250907	25.40	38.10	6.85	6.35	NBR	SUB-3025
E030250807	25.40	38.10	6.85	6.35	NBR	SUB-3865
E030251101	25.40	38.10	7.10	6.60	NBR	SUB-1249
E030251031	25.40	38.10	7.50	7.00	NBR	SUB-3651
E030251105	25.40	38.50	6.50	6.00	NBR	SUB-2709
E030251022	25.40	50.00	17.80	16.80	NBR	SUB-3227
E030250908	25.40	69.85	26.00	25.00	NBR	SUC-2087
E030250904	25.40	72.23	26.40	25.40	NBR	SUC-1841
E030258901	25.40	81.00	16.00	15.00	PU	PUD-738
E030258701	25.50	51.00	17.00	16.00	PU	PUC-1106
E030266602	26.00	32.00	4.00	3.50	FKM	SUB-2783
E030261102	26.00	35.00	8.00	7.50	NBR	SUB-3409
E030266401	26.00	37.50	6.40	5.90	FKM	SUB-1484
E030261003	26.00	38.00	6.50	6.00	NBR	SUB-2589
E030266601	26.00	38.00	6.90	6.40	FKM	SUB-2239
E030261001	26.00	38.00	8.50	8.00	NBR	SUB-1894
E030261005	26.00	50.00	17.80	16.80	NBR	SUB-3112
E030260801	26.00	55.00	11.00	10.00	NBR	SUC-2483
E030261101	26.20	46.20	8.65	8.15	NBR	SUB-2478
E030266701	26.41	32.76	3.67	3.17	FKM	SUB-1887
E030261006	26.70	50.00	17.80	16.80	NBR	SUB-3211
E030261002	26.80	34.92	4.50	4.00	NBR	SUB-2293
E030260802	26.97	33.32	4.50	4.00	NBR	SUB-3934
E030270802	27.00	35.00	3.80	3.30	NBR	SUB-3998
E030271004	27.00	40.00	6.50	6.00	NBR	SUB-2866
E030270801	27.55	39.73	5.24	4.74	NBR	SUB-3105
E030281012	28.00	35.50	5.70	5.20	NBR	SUB-3496
E030281010	28.00	37.20	7.70	7.20	NBR	SUB-3106
E030281009	28.00	38.00	7.50	7.00	NBR	SUB-3056
E03028L502	28.00	38.00	7.80	7.30	PU	PUB-1892
E030281013	28.00	38.00	10.80	9.80	NBR	SUB-3517



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030281007	28.00	40.00	7.50	7.00	NBR	SUB-2415	E030310902	31.88	88.11	26.40	25.40	NBR	SUD-1492
E030280401	28.00	40.00	14.00	13.00	NBR	SUB-2972	E030310903	31.88	88.67	43.00	42.00	NBR	SUD-1490
E030281003	28.00	43.00	12.00	11.00	NBR	SUB-1433	E030321006	32.00	38.00	4.50	4.00	NBR	SUB-104
E03028R301	28.00	44.00	8.50	8.00	PU	PUB-1009	E030320804	32.00	40.00	3.50	3.00	NBR	SUB-2981
E03028L501	28.00	45.00	8.10	7.60	PU	PUB-1741	E030326605	32.00	40.00	3.50	3.00	FKM	SUB-3281
E030281011	28.00	50.00	17.80	16.80	NBR	SUB-3209	E030321005	32.00	40.00	4.00	3.50	NBR	SUB-2333
E03028L402	28.00	70.00	26.00	25.00	PU	PUC-1213	E030326607	32.00	40.00	4.00	3.50	FKM	SUB-3960
E030286604	28.20	35.00	4.60	4.10	FKM	SUB-2600	E030322201	32.00	40.00	4.50	4.00	CR	SUB-2040
E03028L401	28.40	43.80	8.65	8.15	PU	PUB-912	E030321011	32.00	40.00	5.20	4.70	NBR	SUB-3766
E030281008	28.50	38.00	7.50	7.00	NBR	SUB-2969	E030321007	32.00	40.00	6.50	6.00	NBR	SUB-2846
E030281801	28.50	51.00	16.00	15.00	CR	SUC-2632	E030321002	32.00	41.00	6.50	6.00	NBR	SUB-1373
E030288901	28.50	84.00	16.00	15.00	PU	PUD-737	E03032L402	32.00	42.00	6.50	6.00	PU	PUB-1145
E030281006	28.57	36.51	4.50	4.00	NBR	SUB-1816	E030321003	32.00	42.00	6.50	6.00	NBR	SUB-1505
E030286602	28.57	36.52	4.46	3.96	FKM	SUB-1572	E030326402	32.00	42.00	6.50	6.00	FKM	SUB-3055
E030281004	28.58	41.28	6.85	6.35	NBR	SUB-1471	E03032U201	32.00	42.00	7.50	7.00	FKM	SUB-3821
E030296701	29.15	43.87	6.85	6.35	FKM	SUB-3622	E03032L501	32.00	42.00	7.80	7.30	PU	PUB-1880
E030291002	29.30	36.00	6.50	6.00	NBR	SUB-2143	E030321010	32.00	42.00	9.80	8.80	NBR	SUB-3716
E030296601	29.84	38.10	6.50	6.00	FKM	SUB-4031	E030326602	32.00	43.00	6.50	6.00	FKM	SUB-1309
E030301007	30.00	38.00	3.50	3.00	NBR	SUB-120	E030320904	32.00	44.00	7.50	7.00	NBR	SUB-3959
E030301103	30.00	38.00	4.50	4.00	NBR	SUB-2769	E030320903	32.00	44.50	8.50	8.00	NBR	SUB-2416
E030301008	30.00	38.00	6.10	5.60	NBR	SUB-2988	E030326604	32.00	45.00	7.50	7.00	FKM	SUB-2617
E030301005	30.00	38.00	7.50	7.00	NBR	SUB-2318	E03032L401	32.00	48.00	12.60	11.60	PU	PUB-977
E0306602	30.00	38.00	11.00	10.00	FKM	SUB-3673	E030326603	32.00	60.40	8.00	7.50	FKM	SUC-1132
E030306601	30.00	40.00	6.50	6.00	FKM	SUB-2263	E030328701	32.00	66.00	20.00	19.00	PU	PUC-1030
E030308902	30.00	40.00	7.50	7.00	PU	PUB-856	E030320902	32.00	73.00	26.00	25.00	NBR	SUC-1637
E030301102	30.00	40.00	9.70	8.70	NBR	SUB-1986	E030328901	32.20	42.80	6.50	6.00	PU	PUB-1534
E030301006	30.00	40.00	10.00	9.00	NBR	SUB-2398	E030324501	32.20	42.80	6.50	6.00	VMQ	SUB-4013
E030301004	30.00	41.30	8.50	8.00	NBR	SUB-2124	E030323501	32.45	38.15	3.50	3.00	EPDM	SUB-2427
E030301101	30.00	45.00	6.50	6.00	NBR	SUB-1917	E030321101	32.45	38.15	3.50	3.00	NBR	SUB-2396
E030301009	30.00	50.00	17.80	16.80	NBR	SUB-3215	E030321008	32.46	42.14	4.46	3.96	NBR	SUB-2868
E030300905	30.00	73.00	26.00	25.00	NBR	SUC-1636	E030320803	32.94	40.08	3.87	3.37	NBR	SUB-2353
E030301012	30.28	88.10	26.40	25.40	NBR	SUD-2114	E030331002	33.00	40.00	3.70	3.20	NBR	SUB-2823
E030301011	30.95	38.10	4.70	4.20	NBR	SUB-3485	E030330801	33.00	40.00	4.00	3.50	NBR	SUB-3958
E030316605	31.00	38.00	4.50	4.00	FKM	SUB-3026	E030331005	33.00	40.00	4.30	3.80	NBR	SUB-3943
E030310901	31.00	73.00	26.00	25.00	NBR	SUC-1835	E030332201	33.00	52.00	11.00	10.00	CR	SUC-2348
E030310905	31.30	40.50	4.50	4.00	NBR	SUB-3070	E030331001	33.00	53.00	17.00	16.00	NBR	SUC-1267
E030311004	31.50	40.00	6.50	6.00	NBR	SUB-2571	E030338901	33.00	90.00	21.00	20.00	PU	PUD-742
E030311006	31.50	50.00	17.80	16.80	NBR	SUB-3111	E030331004	33.40	50.00	17.80	16.80	NBR	SUB-3212
E030316501	31.75	38.10	3.67	3.17	FKM	SUB-2764	E030335901	33.40	86.67	43.00	42.00	PU	PUD-726
E030316606	31.75	38.10	5.00	4.50	FKM	SUB-3471	E030331003	33.50	40.00	5.00	4.50	NBR	SUB-2978
E030316604	31.75	40.00	4.00	3.50	FKM	SUB-1807	E03033T201	33.73	48.68	5.27	4.77	VMQ	SUB-2622
E030316603	31.75	43.00	8.00	7.50	FKM	SUB-1808	E030341007	34.00	39.50	4.70	4.20	NBR	SUB-3494
E030311001	31.75	44.45	6.85	6.35	NBR	SUB-1469	E030341005	34.00	40.00	4.70	4.20	NBR	SUB-2574
E030311101	31.75	44.45	6.85	6.35	NBR	SUB-1591	E030341008	34.00	42.00	4.00	3.50	NBR	SUB-4172
E030311003	31.75	47.62	8.43	7.93	NBR	SUB-1585	E030343301	34.00	42.00	4.50	4.00	EPDM	SUB-2879
E030311002	31.75	47.63	8.44	7.94	NBR	SUB-1468	E030341004	34.53	41.28	4.50	4.00	NBR	SUB-2280
E030311008	31.75	50.00	17.80	16.80	NBR	SUB-3228	E030340901	34.92	43.65	5.66	5.16	NBR	SUB-2550
E030316602	31.75	51.00	4.50	4.00	FKM	SUC-1304	E03346701	34.92	43.65	5.66	5.16	FKM	SUB-1479
E030310904	31.75	73.00	26.40	25.40	NBR	SUB-1980	E030341006	34.92	44.05	5.50	5.00	NBR	SUB-2895
E030311005	31.80	39.00	4.00	3.50	NBR	SUB-2960	E030346603	34.92	44.45	4.50	4.00	FKM	SUB-2575
E030318902	31.80	87.00	16.00	15.00	PU	PUD-739	E030341001	34.92	44.45	5.50	5.00	NBR	SUB-1141
E030311011	31.88	88.10	26.40	25.40	NBR	SUD-2113	E030341003	34.92	50.80	8.42	7.92	NBR	SUC-1191

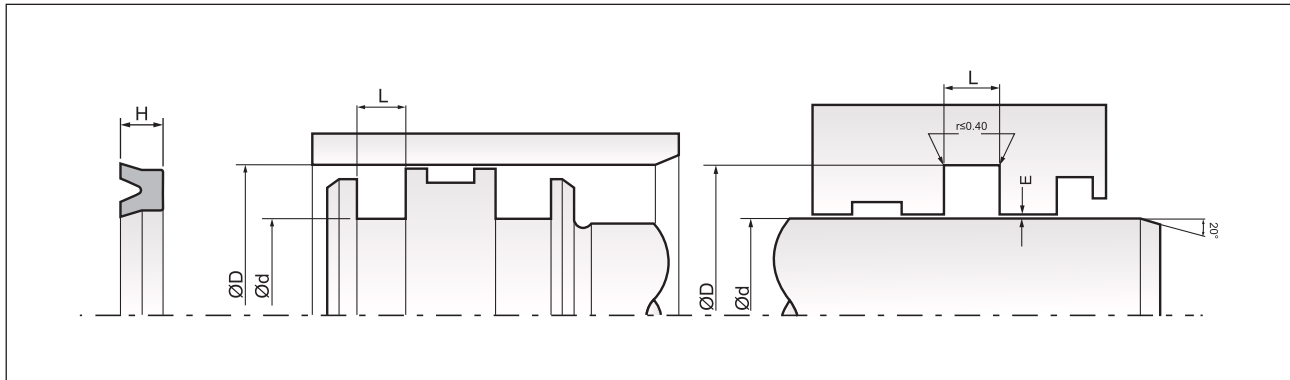
Bold sizes are readily available in stock.

Other materials are available on request.

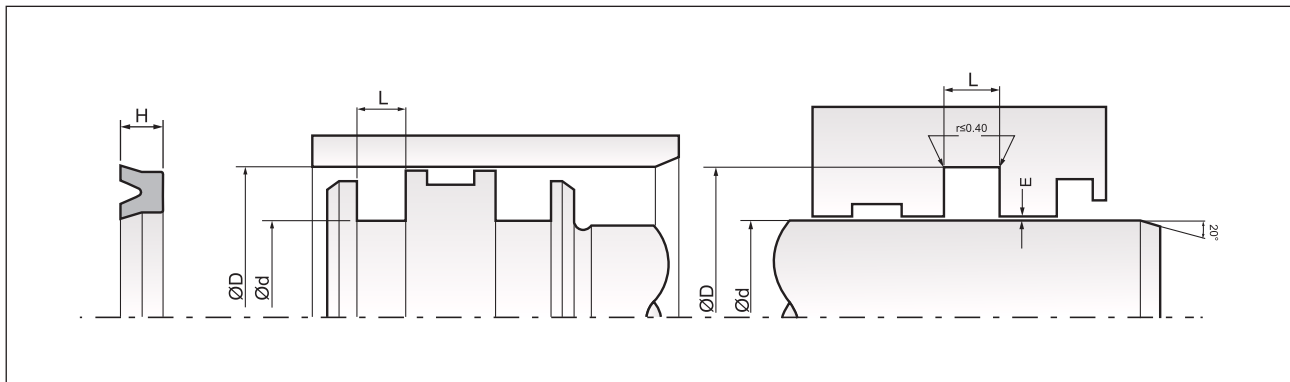


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030346602	34.92	50.80	8.50	8.00	FKM	SUC-1320
E030340903	34.93	42.86	4.47	3.97	NBR	SUB-3861
E030346501	34.93	44.00	5.20	4.70	FKM	SUB-2637
E030356609	35.00	42.00	4.50	4.00	FKM	SUB-3252
E030356608	35.00	43.00	4.50	4.00	FKM	SUB-3088
E030356612	35.00	43.00	7.00	6.50	FKM	SUB-4163
E030351701	35.00	43.50	5.50	5.00	CR	SUB-3611
E030351102	35.00	44.00	5.80	5.30	NBR	SUB-3009
E030351006	35.00	44.40	6.50	6.00	NBR	SUB-2701
E030356602	35.00	44.50	6.50	6.00	FKM	SUB-1935
E030351004	35.00	44.70	6.50	6.00	NBR	SUB-1510
E030351101	35.00	45.00	4.50	4.00	NBR	SUB-1915
E03035U201	35.00	45.00	6.50	6.00	FKM	SUB-2719
E030350906	35.00	45.00	6.50	6.00	NBR	SUB-4140
E030351011	35.00	45.00	10.00	9.00	NBR	SUB-3351
E030356501	35.00	45.00	11.00	10.00	FKM	SUB-3274
E030356607	35.00	46.00	8.50	8.00	FKM	SUB-2907
E030352101	35.00	46.00	8.50	8.00	CR	SUB-4009
E030350803	35.00	47.00	7.00	6.50	NBR	SUB-2716
E030356602	35.00	47.00	7.90	7.40	FKM	SUB-1409
E030350905	35.00	47.00	7.90	7.40	NBR	SUB-3434
E030351008	35.00	47.00	8.50	8.00	NBR	SUB-3062
E030356605	35.00	49.00	8.50	8.00	FKM	SUB-117
E030356611	35.00	50.00	7.20	6.70	FKM	SUB-3606
E030351013	35.00	50.00	8.00	7.50	NBR	SUB-3579
E030354501	35.00	50.00	8.20	7.70	VMQ	SUB-2903
E030350904	35.00	50.00	8.30	7.80	NBR	SUB-3400
E030356606	35.00	50.00	8.50	8.00	FKM	SUB-2848
E030351007	35.00	50.00	8.50	8.00	NBR	SUB-238
E030350902	35.00	50.00	8.50	8.00	NBR	SUB-2680
E030352201	35.00	50.00	8.70	8.20	CR	SUB-3087
E030356604	35.00	50.00	8.80	8.30	FKM	SUB-2727
E030350901	35.00	50.80	8.30	7.80	NBR	SUC-1762
E030356603	35.00	51.00	8.50	8.00	FKM	SUC-1550
E030350802	35.00	52.00	8.50	8.00	NBR	SUC-1802
E030351015	35.00	53.00	13.00	12.00	NBR	SUC-2453
E030350804	35.00	55.00	12.80	11.80	NBR	SUC-2566
E030351012	35.00	56.00	8.50	8.00	NBR	SUC-2375
E030351005	35.00	57.70	8.30	7.80	NBR	SUC-1214
E03035S601	35.03	46.33	10.20	9.20	NBR	SUB-3829
E030366602	36.00	45.00	5.50	5.00	FKM	SUB-2655
E030361005	36.00	45.00	7.50	7.00	NBR	SUB-3783
E030366603	36.00	46.00	6.50	6.00	FKM	SUB-3686
E030366604	36.00	46.00	7.50	7.00	FKM	SUB-3687
E030366601	36.00	47.00	7.50	7.00	FKM	SUB-2355
E030361001	36.00	50.00	8.50	8.00	NBR	SUB-290
E030361102	36.00	50.00	8.50	8.00	NBR	SUB-3671
E030361101	36.00	50.80	8.50	8.00	NBR	SUC-1780
E030366701	36.00	52.00	8.50	8.00	FKM	SUC-2393
E030361002	36.00	54.00	11.00	10.00	NBR	SUC-1978
E030361006	36.58	88.10	26.40	25.40	NBR	SUD-2111
E030360901	36.58	88.11	26.40	25.40	NBR	SUD-1489

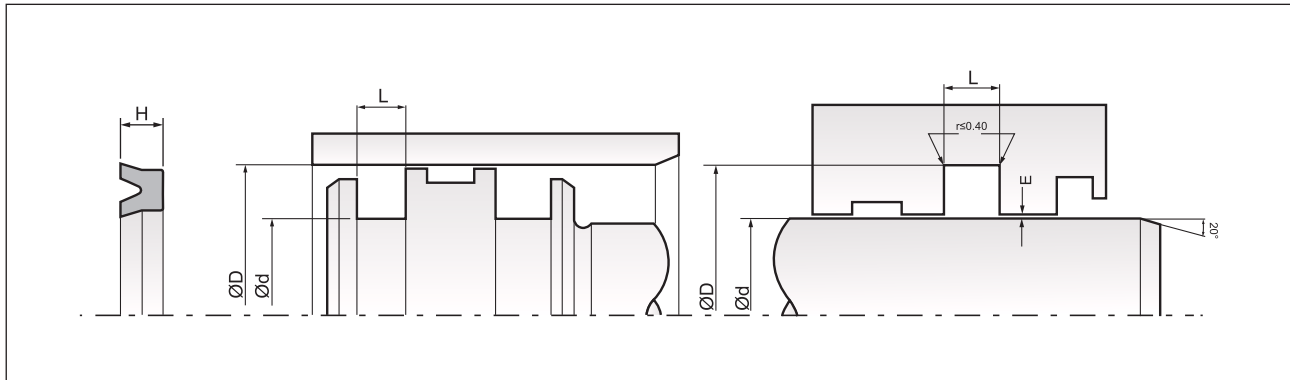
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030360902	36.58	96.00	43.00	42.00	NBR	SUD-1491
E030370902	37.00	73.00	26.00	25.00	NBR	SUC-1638
E030386702	38.00	46.00	4.60	4.10	FKM	SUB-3218
E030381018	38.00	48.00	8.00	7.50	NBR	SUB-4017
E030380801	38.00	50.00	7.00	6.50	NBR	SUB-3976
E030386701	38.00	50.00	10.00	9.00	FKM	SUB-510
E030381009	38.00	50.20	7.50	7.00	NBR	SUC-2080
E030386603	38.00	51.00	7.50	7.00	FKM	SUC-1353
E030386604	38.00	52.00	8.50	8.00	FKM	SUC-2204
E030381001	38.00	78.00	4.50	4.00	NBR	SUD-947
E030381006	38.10	49.47	6.52	6.02	NBR	SUB-1823
E030381010	38.10	50.00	10.00	9.00	NBR	SUB-3045
E030381013	38.10	50.00	17.80	16.80	NBR	SUB-3226
E030381008	38.10	50.80	5.00	4.50	NBR	SUC-1740
E030481102	38.10	50.80	8.50	8.00	NBR	SUC-2288
E030381012	38.10	50.80	11.70	10.70	NBR	SUC-2140
E030380702	38.10	52.38	9.70	8.70	NBR	SUC-2684
E030381005	38.10	53.97	8.42	7.92	NBR	SUC-1531
E030381005	38.10	53.97	8.42	7.92	NBR	SUC-1124
E030381007	38.10	55.16	7.00	6.50	NBR	SUC-1557
E030389901	38.10	57.10	17.00	16.00	SBR	SUC-2085
E030380901	38.10	71.37	26.40	25.40	NBR	SUC-1981
E030388901	38.10	93.00	16.00	15.00	PU	PUD-740
E03038Q201	38.10	94.00	43.00	42.00	PU	PUD-717
E030382301	38.10	115.00	32.00	31.00	CR	SUE-1389
E03038R101	38.46	48.13	4.57	4.07	VMQ	SUB-3506
E030396601	39.00	47.50	11.50	10.50	FKM	SUB-2201
E030391009	39.00	50.00	8.50	8.00	NBR	SUB-3654
E030391010	39.00	54.00	11.00	10.00	NBR	SUC-2481
E030390901	39.35	71.37	26.40	25.40	NBR	SUC-1746
E030391007	39.40	56.10	8.50	8.00	NBR	SUC-1907
E030390902	39.80	51.00	7.70	7.20	NBR	SUC-2573
E030401101	40.00	46.00	4.50	4.00	NBR	SUB-2528
E030406611	40.00	48.00	10.00	9.00	FKM	SUB-2261
E030406607	40.00	48.00	11.00	10.00	FKM	SUB-1907
E030401020	40.00	48.00	11.00	10.00	NBR	SUB-3805
E030401021	40.00	50.00	4.00	3.50	NBR	SUB-3989
E030401017	40.00	50.00	5.50	5.00	NBR	SUB-3663
E030406605	40.00	50.00	5.80	5.30	FKM	SUB-2305
E030406605	40.00	50.00	5.80	5.30	FKM	SUB-1582
E030406618	40.00	50.00	5.80	5.30	FKM	SUB-3636
E030401010	40.00	50.00	6.00	5.50	NBR	SUB-3044
E030401011	40.00	50.00	6.50	6.00	NBR	SUB-3107
E030401004	40.00	50.00	6.80	6.30	NBR	SUB-2363
E030401008	40.00	50.00	6.90	6.40	NBR	SUB-2987
E030406701	40.00	50.00	7.00	6.50	FKM	SUB-1255
E030400901	40.00	50.00	7.00	6.50	NBR	SUB-3961
E030406617	40.00	50.00	7.30	6.80	FKM	SUB-3390
E030401002	40.00	50.00	7.50	7.00	NBR	SUB-358
E030400803	40.00	50.00	9.70	8.70	NBR	SUB-2871
E030401009	40.00	50.00	11.00	10.00	NBR	SUB-3016
E030408901	40.00	50.80	8.14	7.64	PU	PUC-1051



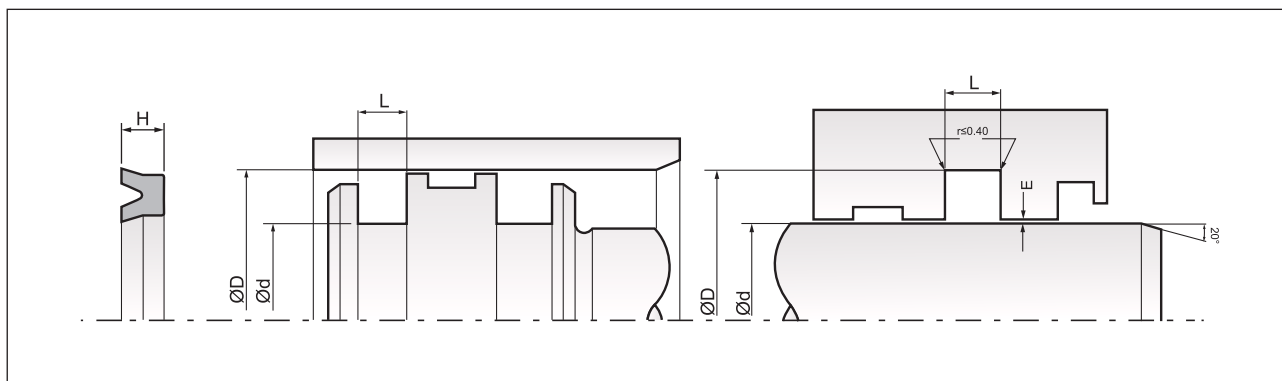
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030401015	40.00	50.80	8.14	7.64	NBR	SUC-2370	E030440801	44.45	57.15	6.75	6.25	NBR	SUC-2809
E030401003	40.00	51.00	7.50	7.00	NBR	SUC-705	E030440902	44.45	60.32	8.43	7.93	NBR	SUC-1764
E030406612	40.00	52.00	10.00	9.00	FKM	SUC-1599	E030441002	44.45	60.32	8.43	7.93	NBR	SUC-1087
E030406608	40.00	52.00	11.50	10.50	FKM	SUC-1510	E030441001	44.45	60.32	8.43	7.93	NBR	SUC-964
E030401001	40.00	55.00	12.00	11.00	NBR	SUC-1074	E030441004	44.45	60.32	8.50	8.00	NBR	SUC-2455
E030408902	40.00	56.00	7.50	7.00	PU	PUC-1321	E030446604	44.45	60.40	8.40	7.90	FKM	SUC-2680
E030406614	40.00	56.00	8.50	8.00	FKM	SUC-116	E030440901	44.50	55.50	8.40	7.90	NBR	SUC-1336
E030401007	40.00	56.50	13.00	12.00	NBR	SUC-1906	E030445901	44.50	101.00	43.00	42.00	PU	PUE-480
E030401012	40.00	56.60	8.90	8.40	NBR	SUC-2155	E030451007	45.00	50.00	6.50	6.00	NBR	SUB-3030
E030401014	40.00	57.00	9.50	8.50	NBR	SUC-2329	E030456607	45.00	55.00	7.00	6.50	FKM	SUC-1424
E030406616	40.00	58.00	9.50	8.50	FKM	SUC-2200	E030456605	45.00	55.00	7.30	6.80	FKM	SUC-1303
E030406609	40.00	60.00	8.50	8.00	FKM	SUC-1520	E030456605	45.00	55.00	7.30	6.80	FKM	SUC-1118
E030401019	40.00	60.00	13.00	12.00	NBR	SUC-2541	E030456606	45.00	55.00	7.50	7.00	FKM	SUC-1385
E030406610	40.00	61.40	8.50	8.00	FKM	SUC-1551	E030451102	45.00	55.00	7.50	7.00	NBR	SUC-2581
E030401013	40.50	50.80	7.50	7.00	NBR	SUC-2283	E030450401	45.00	55.00	7.80	7.30	NBR	SUC-1949
E030406613	40.50	60.00	10.00	9.00	FKM	SUC-1876	E030451101	45.00	55.00	8.50	8.00	NBR	SUC-1207
E030402203	40.50	76.50	11.00	10.00	CR	SUD-1968	E030456611	45.00	55.00	11.00	10.00	FKM	SUC-1908
E030406606	40.64	58.42	8.50	8.00	FKM	SUC-1321	E030451002	45.00	55.00	11.00	10.00	NBR	SUC-1023
E030401022	40.68	88.10	26.40	25.40	NBR	SUD-2110	E030450803	45.00	57.00	7.00	6.50	NBR	SUC-2228
E030406619	40.80	56.40	8.30	7.80	FKM	SUC-2423	E030450802	45.00	60.00	8.50	8.00	NBR	SUC-1803
E030401006	40.87	56.75	8.50	8.00	NBR	SUC-1890	E030456610	45.00	60.00	8.50	8.00	FKM	SUC-1778
E030411009	41.00	46.00	8.50	8.00	NBR	SUB-3179	E030456609	45.00	65.00	10.80	9.80	FKM	SUC-1522
E030411010	41.00	50.00	5.50	5.00	NBR	SUB-3499	E030456612	45.00	65.00	11.00	10.00	FKM	SUC-2041
E030411005	41.00	57.15	8.50	8.00	NBR	SUC-1252	E030451004	45.00	75.00	21.00	20.00	NBR	SUC-1339
E030411101	41.00	58.00	8.50	8.00	NBR	SUC-1681	E030457801	45.54	54.91	4.44	3.94	ACT-1	PUD-580
E030410902	41.00	73.00	26.00	25.00	NBR	SUC-1639	E030466501	46.00	62.00	11.00	10.00	FKM	SUC-2536
E030418701	41.00	75.00	20.00	19.00	PU	PUC-1029	E030461002	46.78	88.11	26.40	25.40	NBR	SUD-2112
E030411007	41.20	50.90	5.00	4.50	NBR	SUC-1565	E030460902	46.78	88.11	26.40	25.40	NBR	SUD-1669
E030411002	41.27	50.80	5.26	4.76	NBR	SUC-1043	E030460901	46.78	103.50	43.00	42.00	NBR	SUE-1115
E030411008	41.27	50.80	5.30	4.80	NBR	SUC-1825	E03047L401	47.00	63.00	11.70	10.70	PU	PUC-710
E030416603	41.27	57.15	8.00	7.50	FKM	SUC-1715	E03047L402	47.00	68.00	15.00	14.00	PU	PUC-719
E030410903	41.27	57.15	8.20	7.70	NBR	SUC-1763	E030478701	47.00	81.00	20.00	19.00	PU	PUD-919
E030411011	41.27	57.15	8.42	7.92	NBR	SUC-1275	E030470902	47.00	89.00	32.00	31.00	NBR	SUD-1255
E030410801	41.27	57.15	8.42	7.92	NBR	SUC-2415	E030471102	47.04	82.00	26.40	25.40	NBR	SUD-1509
E030411004	41.50	57.15	8.50	8.00	NBR	SUC-1237	E030476602	47.62	63.50	8.44	7.94	FKM	SUC-968
E030421003	42.00	50.00	3.70	3.20	NBR	SUB-2657	E0300476301	47.75	63.50	8.30	7.80	FKM	SUC-2098
E030421005	42.00	50.00	3.80	3.30	NBR	SUB-3994	E030486601	48.00	57.00	6.50	6.00	FKM	SUC-1607
E030421901	42.00	50.00	5.50	5.00	CR	SUB-110	E030486701	48.00	60.00	6.50	6.00	FKM	SUC-2325
E030421004	42.00	50.80	4.00	3.50	NBR	SUC-2535	E030481002	48.00	63.00	8.70	8.20	NBR	SUC-2173
E030426601	42.00	51.00	7.50	7.00	FKM	SUC-1133	E030480901	48.00	63.00	9.80	8.80	NBR	SUC-2205
E03042L401	42.00	61.00	14.00	13.00	PU	PUC-718	E030481101	48.00	63.00	12.00	11.00	NBR	SUC-1600
E030428901	42.00	99.00	21.00	20.00	PU	PUD-741	E030481103	48.00	63.50	10.00	9.00	NBR	SUC-2123
E030425901	42.50	96.00	43.00	42.00	PU	PUD-727	E030481001	48.00	65.00	11.00	10.00	NBR	SUC-1429
E030420901	42.98	88.11	26.40	25.40	NBR	SUD-1374	E030486501	48.00	68.00	11.00	10.00	FKM	SUC-1314
E030420902	42.98	103.50	43.00	42.00	NBR	SUE-1027	E030486602	48.00	68.00	11.00	10.00	FKM	SUC-2212
E030431003	43.00	52.00	6.00	5.50	NBR	SUC-1566	E030488901	48.00	105.00	21.00	20.00	PU	PUE-489
E030431001	43.00	63.00	17.00	16.00	NBR	SUC-1265	E030485901	48.30	103.50	43.00	42.00	PU	PUE-482
E030430902	43.00	89.00	32.00	31.00	NBR	SUD-1254	E030496603	49.00	57.00	5.50	5.00	FKM	SUC-2462
E030431002	43.30	57.15	9.50	8.50	NBR	SUC-1375	E030491101	49.00	58.00	5.90	5.40	NBR	SUC-1606
E030440903	44.00	56.00	6.80	6.30	NBR	SUC-2043	E030496602	49.00	60.00	6.50	6.00	FKM	SUC-2461
E030440904	44.00	58.20	6.80	6.30	NBR	SUC-2353	E030491001	49.00	64.00	11.00	10.00	NBR	SUC-2480
E030446602	44.45	53.97	5.50	5.00	FKM	SUC-1422	E030490903	49.28	88.11	26.40	25.40	NBR/FABRIC	SUD-1229



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030490904	49.28	88.11	26.40	25.40	NBR	SUD-1230	E030531006	53.00	63.00	7.50	7.00	NBR	SUC-1962
E030490906	49.28	103.70	43.00	42.00	NBR	SUE-1025	E030536603	53.00	63.00	7.50	7.00	FKM	SUC-112
E030490905	49.30	89.00	32.00	31.00	NBR	SUD-1256	E030531009	53.00	63.00	8.00	7.50	NBR	SUC-2645
E03050L501	50.00	58.00	11.00	10.00	PU	PUC-784	E030534101	53.00	65.00	8.50	8.00	VMQ	SUC-2463
E030500802	50.00	60.00	6.50	6.00	NBR	SUC-2073	E030531003	53.00	73.00	17.00	16.00	NBR	SUC-1266
E030506401	50.00	60.00	7.30	6.80	FKM	SUC-1484	E030530902	53.00	89.00	32.00	31.00	NBR	SUD-1257
E030506402	50.00	60.00	7.50	7.00	FKM	SUC-1800	E030536702	53.97	63.50	5.24	4.74	FKM	SUC-2138
E03050L401	50.00	60.00	7.50	7.00	PU	PUC-1103	E030536901	53.97	63.50	5.26	4.76	PTFE	SUC-1042
E030506614	50.00	60.00	7.80	7.30	FKM	SUC-2243	E030536501	53.97	63.50	5.26	4.76	FKM	SUC-1964
E030501010	50.00	60.00	7.80	7.30	NBR	SUC-2336	E030531005	53.97	63.50	5.30	4.80	NBR	SUC-1828
E030500801	50.00	60.00	8.50	8.00	NBR	SUC-1330	E030531002	53.97	69.85	8.42	7.92	NBR	SUC-1181
E030506610	50.00	60.00	10.00	9.00	FKM	SUC-1668	E030538301	53.97	73.02	10.52	9.52	NBR	SUC-837
E030501008	50.00	60.00	11.00	10.00	NBR	SUC-2214	E030541101	54.00	63.00	5.50	5.00	NBR	SUC-2078
E030506607	50.00	60.00	11.00	10.00	FKM	SUC-1469	E030541001	54.00	70.00	11.00	10.00	NBR	SUC-2432
E030501108	50.00	60.00	11.00	10.00	NBR	SUC-2023	E030541002	54.50	63.50	5.30	4.80	NBR	SUC-2521
E030500701	50.00	61.00	5.50	5.00	NBR	SUC-1291	E030550801	55.00	63.00	5.50	5.00	NBR	SUC-1220
E030506609	50.00	62.00	8.50	8.00	FKM	SUC-1663	E030550802	55.00	64.00	6.70	6.20	NBR	SUC-1918
E030501001	50.00	65.00	8.50	8.00	NBR	SUC-2002	E030551005	55.00	65.00	7.50	7.00	NBR	SUC-1598
E030506501	50.00	65.00	10.80	9.80	FKM	SUC-2124	E030556601	55.00	66.00	8.50	8.00	FKM	SUC-1020
E030506612	50.00	65.00	11.00	10.00	FKM	SUC-1942	E030551004	55.00	70.00	12.00	11.00	NBR	SUC-1596
E030501003	50.00	65.00	11.00	10.00	NBR	SUC-1045	E030551001	55.00	70.00	13.00	12.00	NBR	SUC-1073
E03050L502	50.00	65.00	12.00	11.00	PU	PUC-1206	E030551003	55.00	71.00	13.00	12.00	NBR	SUC-1409
E030506611	50.00	65.00	12.30	11.30	FKM	SUC-1888	E030551002	55.00	75.00	13.00	12.00	NBR	SUC-1174
E030506616	50.00	66.00	10.00	9.00	FKM	SUC-2647	E030566603	56.00	66.00	11.00	10.00	FKM	SUC-1855
E030506606	50.00	66.00	10.40	9.40	FKM	SUC-702	E030566602	56.00	68.00	8.50	8.00	FKM	SUC-1459
E030501012	50.00	66.00	11.00	10.00	NBR	SUC-2711	E030560801	56.00	70.00	8.50	8.00	NBR	SUC-2616
E030506613	50.00	70.00	11.00	10.00	FKM	SUC-2236	E030560902	56.00	89.00	32.00	31.00	NBR	SUD-1258
E030500902	50.00	70.00	11.50	10.50	NBR	SUC-2742	E030566601	56.50	69.90	8.00	7.50	FKM	SUC-1130
E030501011	50.00	70.00	13.00	12.00	NBR	SUC-2524	E030572101	57.00	70.00	10.00	9.00	CR	SUC-1989
E030508902	50.00	71.50	14.00	13.00	PU	PUC-1288	E030570901	57.00	74.00	13.80	12.80	NBR	SUC-2046
E030501106	50.00	80.00	16.00	15.00	NBR	SUD-1282	E030576602	57.15	73.02	8.12	7.62	FKM	SUC-2032
E030506615	50.30	63.30	7.80	7.30	FKM	SUC-2495	E030576801	57.15	73.02	8.12	7.62	FKM	SUC-1187
E030502001	50.80	60.32	5.26	4.76	CR	SUC-2819	E030571201	57.95	67.00	9.50	8.50	NBR	SUC-1773
E030506608	50.80	63.50	6.85	6.35	FKM	SUC-1614	E030586401	58.00	80.00	6.90	6.40	FKM	SUD-1143
E030504301	50.80	63.50	8.50	8.00	VMQ	SUC-1925	E030586302	58.42	76.20	13.70	12.70	FKM	SUD-2055
E030501005	50.80	63.50	10.52	9.52	NBR	SUC-1407	E030586301	58.50	69.20	4.60	4.10	FKM	SUC-1796
E030501007	50.80	63.50	11.00	10.00	NBR	SUC-2139	E030581001	58.60	76.00	13.50	12.50	NBR	SUD-1136
E030501006	50.80	63.50	11.80	10.80	NBR	SUC-2097	E030580902	58.73	115.30	43.00	42.00	NBR	SUE-1095
E030509901	50.80	69.80	17.00	16.00	SBR	SUC-2086	E030580901	58.73	115.88	32.75	31.75	NBR	SUE-948
E030506605	50.80	73.02	5.83	5.33	FKM	SUC-1415	E030581002	58.74	76.20	13.50	12.50	NBR	SUD-1501
E03050Q201	50.80	101.00	43.00	42.00	PU	PUE-475	E030581101	58.90	78.10	8.40	7.90	NBR	SUD-1985
E030508901	50.80	105.00	16.00	15.00	PU	PUE-494	E030594501	59.00	74.00	11.00	10.00	VMQ	SUC-2739
E030516601	51.00	60.00	10.00	9.00	FKM	SUC-1549	E030591001	59.00	74.00	11.00	10.00	NBR	SUC-1460
E030511002	51.00	63.00	6.50	6.00	NBR	SUC-2441	E030590902	59.00	103.00	32.00	31.00	NBR	SUE-873
E030511001	51.00	63.40	10.00	9.00	NBR	SUC-1479	E030598701	59.00	116.00	26.00	25.00	PU	PUE-579
E030520901	52.00	62.00	5.50	5.00	NBR	SUC-1163	E030590801	59.13	69.05	9.50	8.50	NBR	SUC-2822
E030521003	52.00	69.00	10.00	9.00	NBR	SUC-1717	E030601103	60.00	68.00	8.50	8.00	NBR	SUC-2403
E030521001	52.00	75.00	13.00	12.00	NBR	SUC-1430	E03060L501	60.00	70.00	8.50	8.00	PU	PUC-867
E030521002	52.20	63.30	7.80	7.30	NBR	SUC-1480	E0306010089	60.00	70.00	13.00	12.00	NBR	SUC-2241
E030531008	53.00	60.00	7.50	7.00	NBR	SUC-2525	E030608701	60.00	72.00	6.50	6.00	PU	PUC-1342
E030531004	53.00	63.00	6.50	6.00	NBR	SUC-1772	E03060D601	60.00	72.00	11.00	10.00	HNBR	SUC-2176
E030531007	53.00	63.00	7.00	6.50	NBR	SUC-2004	E030600601	60.00	75.00	6.50	6.00	NBR	SUC-1488

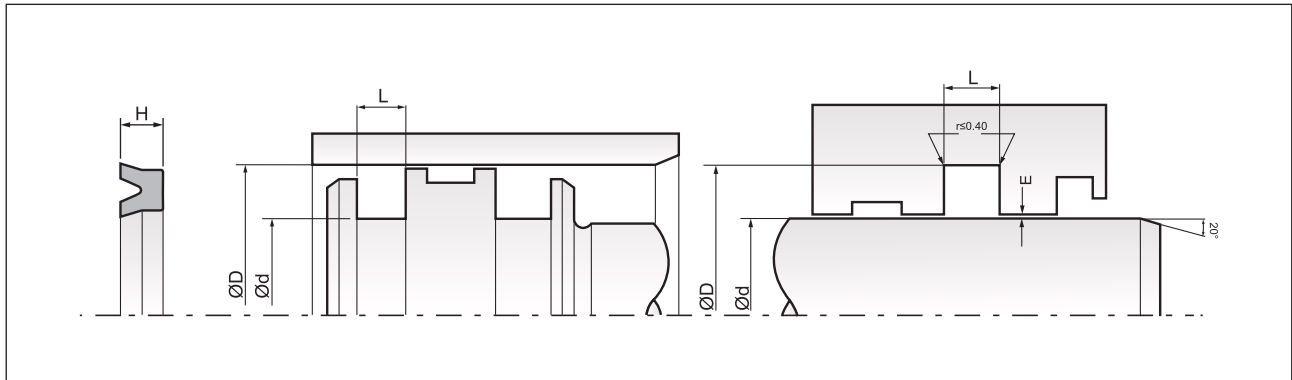


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030600802	60.00	75.00	8.00	7.50	NBR	SUC-1221	E030656603	65.00	80.00	7.50	7.00	FKM	SUD-1621
E030601004	60.00	75.00	10.00	9.00	NBR	SUC-252	E030656601	65.00	80.00	10.00	9.00	FKM	SUD-1170
E030601007	60.00	76.00	8.50	8.00	NBR	SUD-1157	E030651006	65.00	80.00	11.00	10.00	NBR	SUD-1442
E030606601	60.00	76.00	8.50	8.00	FKM	SUD-1807	E030656602	65.00	80.00	11.00	10.00	FKM	SUD-1554
E030602001	60.00	76.00	8.50	8.00	CR	SUD-2034	E030651007	65.00	80.00	11.00	10.00	NBR	SUD-1587
E030601006	60.00	76.00	10.00	9.00	NBR	SUD-1137	E03065R301	65.00	80.00	12.00	11.00	PU	PUD-625
E030603201	60.00	77.00	17.00	16.00	EPDM	SUD-837	E030656701	65.00	85.00	11.00	10.00	FKM	SUD-1912
E030601005	60.00	80.00	11.00	10.00	NBR	SUD-934	E030651101	65.48	78.96	10.00	9.00	NBR	SUD-1286
E030606101	60.00	80.00	13.00	12.00	FKM	SUD-1289	E03066Q201	66.00	74.00	10.50	9.50	PU	PUC-895
E030601102	60.00	80.00	13.50	12.50	NBR	SUD-1671	E030661001	66.62	76.20	7.63	7.13	NBR	SUD-1056
E0306010088	60.00	80.00	16.00	15.00	NBR	SUD-1611	E030661101	66.68	79.38	6.85	6.35	NBR	SUD-506
E03060L401	60.00	87.00	15.30	14.30	PU	PUD-624	E030671001	67.00	82.00	14.00	13.00	NBR	SUD-823
E030608901	60.00	117.00	21.00	20.00	PU	PUE-488	E030671002	67.00	83.00	14.00	13.00	NBR	SUD-1048
E030600901	60.30	103.00	32.75	31.75	NBR	SUE-1270	E030686603	68.00	80.00	8.00	7.50	FKM	SUD-1395
E030605901	60.30	115.50	43.00	42.00	PU	PUE-484	E030686601	68.00	80.00	8.70	8.20	FKM	SUD-906
E030601011	60.30	141.30	39.00	38.00	NBR	SUF-931	E030681006	68.00	80.00	9.50	8.50	NBR	SUD-2043
E030601003	60.33	76.20	8.44	7.94	NBR	SUD-832	E03068A201	68.00	80.00	9.50	8.50	PU	PUD-1062
E030601010	60.70	76.20	13.00	12.00	NBR	SUD-1708	E030686602	68.00	80.00	13.00	12.00	FKM	SUD-1063
E030610601	61.00	92.00	16.00	15.00	NBR	SUD-1478	E030681003	68.00	80.00	13.00	12.00	NBR	SUD-1725
E030611101	61.50	80.70	8.40	7.90	NBR	SUD-1986	E030681005	68.00	80.00	15.00	14.00	NBR	SUD-1960
E030626601	62.00	75.00	8.50	8.00	FKM	SUD-1172	E030681004	68.00	80.00	16.00	15.00	NBR	SUD-1746
E030626603	62.00	80.00	11.30	10.30	FKM	SUD-1897	E030681002	68.00	85.00	7.50	7.00	NBR	SUD-1242
E030626602	62.00	81.50	10.00	9.00	FKM	SUD-1874	E030680902	68.00	103.00	32.00	31.00	NBR	SUE-875
E030620905	62.00	103.00	32.00	31.00	NBR	SUE-874	E030680903	68.35	115.88	32.75	31.75	NBR	SUE-961
E030621001	62.50	76.20	8.60	8.10	NBR	SUD-1676	E030681001	69.00	78.00	6.50	6.00	NBR	SUD-818
E030620906	62.50	115.30	43.00	42.00	NBR	SUE-1026	E03069L401	69.00	81.00	8.50	8.00	PU	PUD-904
E030620902	62.50	115.88	32.75	31.75	NBR	SUE-856	E030691001	69.00	84.00	11.00	10.00	NBR	SUD-1110
E030630902	63.00	72.00	5.20	4.70	NBR	SUC-2798	E030694501	69.00	84.00	11.00	10.00	VMQ	SUD-2085
E030631011	63.00	73.00	5.15	4.65	NBR	SUC-2314	E030690901	69.85	80.95	6.10	5.60	NBR	SUD-1383
E030636613	63.00	73.00	6.50	6.00	FKM	SUC-1805	E030696601	69.95	82.55	14.50	13.50	FKM	SUD-993
E030631004	63.00	73.00	6.75	6.25	NBR	SUC-1053	E030700801	70.00	78.00	6.50	6.00	NBR	SUD-1204
E030636615	63.00	75.00	11.00	10.00	FKM	SUC-2783	E030706604	70.00	80.00	4.75	4.25	FKM	SUD-1396
E030636604	63.00	76.00	7.80	7.30	FKM	SUD-808	E030706606	70.00	80.00	4.90	4.40	FKM	SUD-1911
E030636605	63.00	77.00	12.35	11.35	FKM	SUD-1024	E030700901	70.00	80.00	5.30	4.80	NBR	SUD-873
E030631010	63.00	80.00	10.00	9.00	NBR	SUD-1471	E030706603	70.00	80.00	6.50	6.00	FKM	SUD-1273
E030631008	63.00	83.00	17.00	16.00	NBR	SUD-942	E03070L503	70.00	80.00	6.50	6.00	PU	PUD-866
E030636603	63.50	72.00	6.50	6.00	FKM	SUC-984	E030700802	70.00	80.00	6.70	6.20	NBR	SUD-1464
E030636614	63.50	72.50	7.50	7.00	FKM	SUC-2130	E030706602	70.00	80.00	7.00	6.50	FKM	SUD-1205
E030636611	63.50	74.93	6.50	6.00	FKM	SUC-1547	E030711004	70.00	80.00	7.50	7.00	NBR	SUD-1215
E030636612	63.50	75.50	6.50	6.00	FKM	SUD-1248	E030701007	70.00	80.00	7.50	7.00	NBR	SUD-1919
E030631006	63.50	79.37	8.42	7.92	NBR	SUD-867	E03070L501	70.00	80.00	8.50	8.00	PU	PUD-688
E030639901	63.50	82.50	17.00	16.00	SBR	SUD-1598	E030701002	70.00	80.00	11.00	10.00	NBR	SUD-933
E030631007	63.50	82.55	10.52	9.52	NBR	SUD-932	E030706605	70.00	83.00	14.50	13.50	FKM	SUD-1794
E030631005	63.50	82.55	10.53	9.53	NBR	SUD-833	E030701005	70.00	83.50	11.10	10.10	NBR	SUD-1641
E030630901	63.50	103.00	32.75	31.75	NBR	SUE-1035	E030706501	70.00	85.00	12.00	11.00	FKM	SUD-1905
E030635901	63.50	115.50	43.00	42.00	PU	PUE-481	E030706601	70.00	90.00	10.50	9.50	FKM	SUD-903
E030636607	63.80	75.00	8.50	8.00	FKM	SUC-1399	E03070Q201	70.00	90.00	11.00	10.00	PU	PUD-838
E030641002	64.00	75.00	6.00	5.50	NBR	SUC-2111	E030701004	70.00	90.00	11.00	10.00	NBR	SUD-1324
E030651004	65.00	75.00	6.50	6.00	NBR	SUC-1481	E030702201	70.00	90.00	11.00	10.00	CR	SUD-1461
E030650802	65.00	76.20	6.85	6.35	NBR	SUD-955	E030700803	70.00	90.00	11.00	10.00	NBR	SUD-1488
E03065D601	65.00	77.00	11.00	10.00	HNBR	SUD-1677	E030701102	70.00	100.00	16.30	15.30	NBR	SUD-1758
E030651005	65.00	80.00	6.50	6.00	NBR	SUD-1422	E030711003	71.00	79.00	6.80	6.30	NBR	SUD-1191

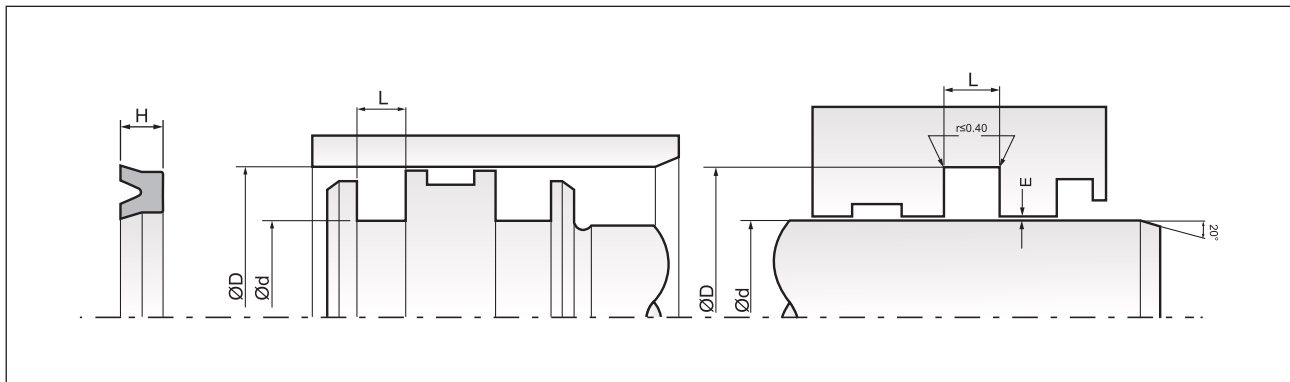


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030716602	71.20	82.60	6.20	5.70	FKM	SUD-1852
E030711005	71.40	82.60	6.10	5.60	NBR	SUD-1251
E030713401	71.45	82.55	6.00	5.50	EPDM	SUD-1813
E030711002	71.45	82.55	6.05	5.55	NBR	SUD-804
E030710901	71.47	115.88	32.75	31.75	NBR	SUE-1048
E030710902	71.47	128.00	43.00	42.00	NBR	SUF-793
E030716601	71.50	83.00	9.50	8.50	FKM	SUD-723
E030726601	72.00	83.00	8.50	8.00	FKM	SUD-863
E03072L401	72.00	100.50	16.60	15.60	PU	PUE-415
E030720903	72.00	103.00	32.00	31.00	NBR	SUE-876
E030731001	73.00	93.00	17.00	16.00	NBR	SUD-943
E030738901	73.00	130.00	21.00	20.00	PU	PUF-376
E030735901	73.03	125.00	43.00	42.00	PU	PUE-479
E030748701	74.00	114.00	32.00	31.00	PU	PUE-541
E030741001	74.61	85.72	6.06	5.56	NBR	SUD-1198
E030740901	74.68	115.88	32.75	31.75	NBR	SUE-989
E030740902	74.68	127.80	43.00	42.00	NBR	SUF-885
E030751001	75.00	95.00	11.00	10.00	NBR	SUD-2141
E030750902	75.00	103.00	32.00	31.00	NBR	SUE-877
E03076L401	76.00	92.00	9.50	8.50	PU	PUD-999
E030769901	76.00	95.00	17.00	16.00	NBR	SUD-1599
E030763201	76.00	96.00	22.50	21.50	EPDM	SUD-819
E030761001	76.20	85.72	5.50	5.00	NBR	SUD-1392
E030766604	76.20	87.70	6.20	5.70	FKM	SUD-1314
E030766604	76.20	87.70	6.20	5.70	FKM	SUD-1468
E030766607	76.20	88.90	10.52	9.52	FKM	SUD-1720
E030766602	76.20	88.90	11.00	10.00	FKM	SUE-911
E030766603	76.20	88.90	15.50	14.50	FKM	SUD-1108
E030761002	76.20	91.00	11.00	10.00	NBR	SUD-1618
E030766606	76.20	95.25	10.52	9.52	FKM	SUD-1721
E030766608	76.20	101.00	10.50	9.50	FKM	SUE-1372
E030766605	76.20	101.60	10.50	9.50	FKM	SUE-1008
E030766609	76.20	101.60	11.00	10.00	FKM	SUE-1382
E030765901	76.20	123.60	43.00	42.00	PU	PUE-483
E030770902	77.00	88.00	7.50	7.00	NBR	SUD-1476
E030771101	77.78	120.00	32.75	31.75	NBR	SUE-933
E030781001	78.00	90.00	8.30	7.80	NBR	SUD-1728
E030780903	78.00	103.00	32.00	31.00	NBR	SUE-878
E030783001	78.50	97.40	11.20	10.20	EPDM	SUD-1337
E030791001	79.00	94.00	11.00	10.00	NBR	SUD-1111
E030794501	79.00	94.00	11.00	10.00	VMQ	SUD-2086
E030801007	80.00	88.00	5.50	5.00	NBR	SUD-1990
E030801005	80.00	90.00	6.50	6.00	NBR	SUD-1412
E030806606	80.00	90.00	6.50	6.00	FKM	SUD-1869
E030802201	80.00	92.00	9.50	8.50	CR	SUD-1672
E030801006	80.00	95.00	13.00	12.00	NBR	SUD-1586
E030806602	80.00	95.00	16.00	15.00	FKM	SUD-1551
E030806603	80.00	100.00	10.00	9.00	FKM	SUD-1700
E030806601	80.00	100.00	11.00	10.00	FKM	SUD-775
E030801003	80.00	100.00	12.00	11.00	NBR	SUD-841
E030801004	80.00	100.00	13.00	12.00	NBR	SUD-1585
E030806605	80.96	107.95	13.50	12.50	FKM	SUE-1168

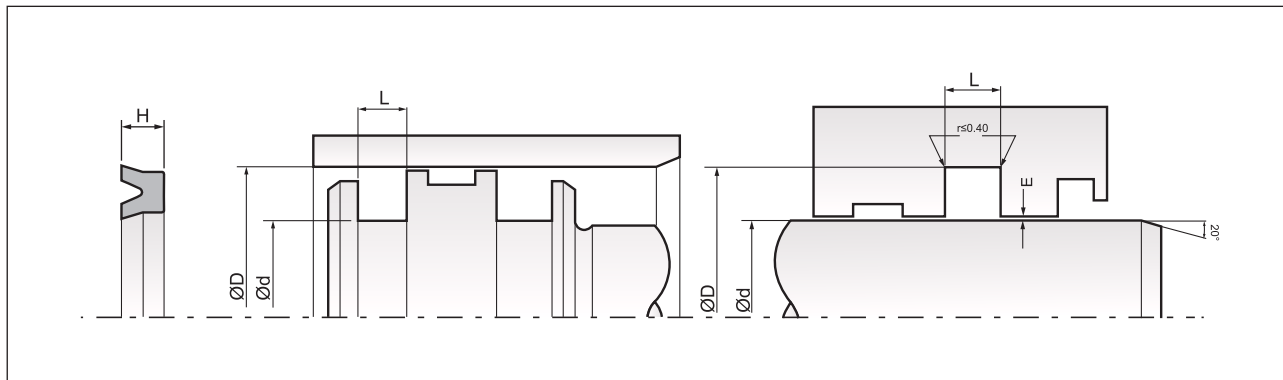
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030810903	81.00	94.00	8.00	7.50	NBR	SUD-2138
E030810902	81.00	103.00	32.00	31.00	NBR	SUE-879
E030826604	82.00	90.00	5.50	5.00	FKM	SUD-1642
E030826602	82.00	100.00	8.50	8.00	FKM	SUD-1346
E030821102	82.00	100.00	8.50	8.00	NBR	SUD-1404
E030821006	82.00	100.00	14.00	13.00	NBR	SUD-1684
E030821004	82.50	94.50	13.00	12.00	NBR	SUD-1349
E030826603	82.50	103.00	8.80	8.30	FKM	SUE-1037
E030820701	82.55	101.60	7.30	6.80	NBR	SUE-627
E030820901	82.55	101.60	8.50	8.00	NBR	SUE-942
E030821101	82.55	101.60	10.52	9.52	NBR	SUE-584
E030826605	82.55	101.60	10.52	9.52	FKM	SUE-1169
E03082L501	82.55	101.60	13.70	12.70	PU	PUE-250
E030821005	82.60	101.60	8.50	8.00	NBR	SUE-1046
E030830801	83.00	101.00	8.80	8.30	NBR	SUE-949
E030831006	83.00	101.00	11.00	10.00	NBR	SUE-1339
E030831008	83.00	101.60	8.50	8.00	NBR	SUE-1446
E030831102	83.00	101.60	9.50	8.50	NBR	SUE-865
E030830901	83.00	133.00	32.00	31.00	NBR	SUF-878
E030836602	83.50	96.20	7.50	7.00	FKM	SUD-1876
E030830902	83.50	100.00	14.50	13.50	NBR	SUD-2011
E030831007	83.56	101.60	14.70	13.70	NBR	SUE-1391
E030841001	84.00	100.00	8.50	8.00	NBR	SUD-1628
E030846601	84.00	100.00	8.50	8.00	FKM	SUD-1169
E030841003	84.00	100.00	10.50	9.50	NBR	SUD-2105
E030841004	84.00	100.00	14.00	13.00	NBR	SUD-2106
E030856605	85.00	100.00	8.50	8.00	FKM	SUD-1942
E030850902	85.00	100.00	8.50	8.00	NBR	SUD-2029
E030850801	85.00	100.00	10.00	9.00	NBR	SUD-1465
E030856604	85.00	100.00	10.20	9.20	FKM	SUD-1416
E030850901	85.00	100.00	14.00	13.00	NBR	SUD-1855
E030851005	85.00	100.00	14.00	13.00	NBR	SUD-1714
E030856602	85.00	100.00	14.00	13.00	FKM	SUD-959
E030852301	85.00	100.00	15.00	14.00	CR	SUD-1629
E030856603	85.00	100.00	15.50	14.50	FKM	SUD-1298
E030851004	85.00	101.60	14.00	13.00	NBR	SUE-1079
E030851102	85.00	110.00	13.00	12	NBR	SUE-897
E03085L401	85.00	114.00	16.90	15.90	PU	PUE-416
E030851006	85.72	101.60	8.50	8.00	NBR	SUE-1279
E030861002	86.00	100.00	10.00	9.00	NBR	SUD-1219
E030862301	86.00	105.00	13.50	12.50	CR	SUE-1123
E030861004	86.50	105.00	13.00	12.00	NBR	SUE-1271
E03087L401	87.00	103.00	10.20	9.20	PU	PUE-634
E030870902	87.00	103.00	32.00	31.00	NBR	SUE-880
E030871001	87.00	107.00	11.00	10.00	NBR	SUE-1199
E030870902	87.00	133.00	32.00	31.00	NBR	SUF-778
E030870904	87.37	142.20	43.00	42.00	NBR	SUF-933
E030870903	87.37	142.83	32.75	31.75	NBR	SUF-626
E030886604	88.00	100.00	8.60	8.10	FKM	SUD-907
E030881001	88.00	100.00	9.50	8.50	NBR	SUD-1458
E030886607	88.00	100.00	9.50	8.50	FKM	SUD-103
E03088L401	88.00	100.00	9.50	8.50	PU	PUD-886



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E030881004	88.00	100.00	13.00	12.00	NBR	SUD-1659	E031009901	100.60	119.60	17.00	16.00	SBR	SUE-1102
E030881005	88.00	100.00	16.00	15.00	NBR	SUD-1747	E031000902	100.70	156.30	43.00	42.00	NBR	SUG-650
E03088L402	88.00	100.00	17.00	16.00	PU	PUD-993	E031016601	101.00	125.00	12.00	11.00	FKM	SUE-656
E030886401	88.00	108.00	11.50	10.50	FKM	SUE-1160	E031018901	101.00	158.00	21.00	20.00	PU	PUG-295
E030880801	88.00	111.50	11.30	10.30	NBR	SUE-1134	E031011002	101.50	119.60	17.00	16.00	NBR	SUE-981
E030888901	88.00	145.00	21.00	20.00	PU	PUF-375	E031011003	101.60	117.00	19.00	18.00	NBR	SUE-1125
E030889901	88.50	107.50	17.00	16.00	SBR	SUE-1101	E031016602	101.60	127.00	13.70	12.70	FKM	SUF-495
E030881002	88.60	101.60	7.50	7.00	NBR	SUE-1075	E031010901	101.60	145.00	32.75	31.75	NBR	SUF-725
E03088V201	88.90	97.62	6.00	5.50	NBR	SUD-1428	E031036601	103.50	125.00	13.30	12.30	FKM	SUE-605
E030886608	88.90	98.42	6.20	5.70	FKM	SUD-1877	E031041001	104.77	117.47	6.85	6.35	NBR	SUE-1297
E030886606	88.90	101.60	7.10	6.60	FKM	SUE-855	E031051001	105.00	120.00	8.50	8.00	NBR	SUE-1303
E030886605	88.90	106.00	5.80	5.30	FKM	SUE-773	E031056702	105.00	120.00	8.50	8.00	FKM	SUE-1340
E030880901	88.90	133.00	32.75	31.75	NBR	SUF-724	E031051002	105.00	125.00	13.00	12.00	NBR	SUE-1322
E030891001	89.00	104.00	13.00	12.00	NBR	SUE-774	E031056801	105.00	125.00	14.00	13.00	FKM	SUE-638
E030894501	89.00	104.00	13.00	12.00	VMQ	SUE-1405	E031056701	105.00	125.00	17.50	16.50	FKM	SUE-1283
E030891003	89.00	107.50	17.00	16.00	NBR	SUE-982	E031056601	105.00	130.00	17.00	16.00	FKM	SUF-434
E030891002	89.50	100.00	6.80	6.30	NBR	SUD-1281	E031066601	106.00	116.00	8.20	7.70	FKM	SUE-737
E030891004	89.50	100.00	10.00	9.00	NBR	SUD-1925	E031071001	107.95	127.00	9.76	8.76	NBR	SUF-451
E030900803	90.00	98.00	8.50	8.00	NBR	SUD-2005	E031070901	107.96	127.00	16.87	15.87	NBR	SUF-726
E030906606	90.00	100.00	4.70	4.20	FKM	SUD-2022	E03108CF01	108.40	151.60	28.10	27.10	PU	PUG-384
E030900802	90.00	100.00	4.80	4.30	NBR	SUD-1829	E03108CF02	108.40	155.60	28.10	27.10	PU	PUG-385
E030900903	90.00	100.00	7.00	6.50	NBR	SUD-2035	E031086601	108.75	124.46	13.19	12.19	FKM	SUE-1030
E030903401	90.00	100.00	7.50	7.00	EPDM	SUD-1814	E031091002	109.00	124.00	13.00	12.00	NBR	SUE-776
E030906601	90.00	100.00	7.50	7.00	FKM	SUD-1655	E031091003	109.00	127.00	11.00	10.00	NBR	SUF-943
E030906602	90.00	100.00	13.00	12.00	FKM	SUD-869	E031096601	109.00	127.00	16.50	15.50	FKM	SUF-628
E030906603	90.00	102.00	15.00	14.00	FKM	SUE-827	E031091001	109.00	129.00	17.00	16.00	NBR	SUF-488
E030906604	90.00	105.00	12.00	11.00	FKM	SUE-1080	E031096602	109.53	125.73	12.11	11.11	FKM	SUF-978
E030900801	90.00	105.00	16.00	15.00	NBR	SUE-1018	E031101010	110.00	118.00	5.50	5.00	NBR	SUE-1289
E030901801	90.00	108.00	15.00	14.00	CR	SUE-1353	E031101007	110.00	125.00	10.00	9.00	NBR	SUE-1085
E030901002	90.00	110.10	17.00	16.00	NBR	SUE-1016	E031106603	110.00	125.00	10.00	9.00	FKM	SUE-1212
E030906605	90.00	123.00	13.00	12.00	FKM	SUE-1081	E031100901	110.00	125.00	11.00	10.00	NBR	SUE-1377
E030900902	90.40	133.00	32.75	31.75	NBR	SUF-632	E031106602	110.00	125.00	13.00	12.00	FKM	SUE-998
E030916601	91.00	100.00	4.80	4.30	FKM	SUD-2139	E03110201	110.00	127.00	17.00	16.00	PU	PUF-497
E030921001	92.00	107.00	13.50	12.50	NBR	SUE-562	E031101009	110.00	130.00	11.00	10.00	NBR	SUF-824
E030921002	92.00	108.00	13.50	12.50	NBR	SUE-721	E031106605	110.00	130.00	11.00	10.00	FKM	SUF-955
E030941101	94.00	114.00	11.50	10.50	NBR	SUE-980	E031106604	110.00	130.00	14.00	13.00	FKM	SUF-915
E03094901	94.00	133.00	32.00	31.00	NBR	SUF-742	E031101004	110.00	130.00	17.00	16.00	NBR	SUF-440
E030951002	95.00	120.00	16.50	15.50	NBR	SUE-1059	E031101006	110.00	135.00	19.50	18.50	NBR	SUF-739
E030954401	95.00	125.00	16.00	15.00	VMQ	SUE-1245	E031126601	112.00	125.00	11.00	10.00	FKM	SUE-716
E030951003	95.25	107.95	8.60	8.10	NBR	SUE-1122	E031121005	112.00	125.00	13.00	12.00	NBR	SUE-1173
E030951003	95.25	107.95	8.60	8.10	PU	PFC-469	E031121003	112.00	195.00	13.00	12.00	NBR	SUH-354
E030951001	95.25	114.30	10.52	9.52	NBR	SUE-619	E031121004	112.50	125.00	13.00	12.00	NBR	SUE-1398
E030971001	97.00	117.00	17.00	16.00	NBR	SUE-653	E031120902	112.77	164.58	32.75	31.75	NBR	SUG-531
E030986701	98.00	122.00	13.50	12.50	FKM	SUE-1424	E031136602	113.00	130.00	17.00	16.00	FKM	SUF-720
E030980901	98.00	133.00	32.00	31.00	NBR	SUE-741	E031139901	113.00	132.00	17.00	16.00	SBR	SUF-771
E030981001	98.80	109.50	11.00	10.00	NBR	SUE-780	E031131002	113.00	133.00	17.00	16.00	NBR	SUF-520
E030991001	99.00	114.00	13.00	12.00	NBR	SUE-775	E031131003	113.70	132.00	17.00	16.00	NBR	SUF-682
E030994501	99.00	114.00	13.00	12.00	VMQ	SUE-1406	E031146603	114.00	146.00	14.00	13.00	FKM	SUF-872
E03100K101	100.00	108.00	6.20	5.70	NYLON	PFC-303	E031148901	114.00	171.00	21.00	20.00	PU	PUG-296
E031001101	100.00	120.00	11.50	10.50	NBR	SUE-730	E031146602	114.30	127.00	6.85	6.35	FKM	SUF-635
E031001003	100.00	125.00	13.00	12.00	NBR	SUE-1083	E0311422001	114.30	127.00	7.64	7.14	CR	SUF-1014
E031006604	100.00	125.00	16.50	15.50	FKM	SUE-670	E031156601	115.00	125.00	6.50	6.00	FKM	SUE-521

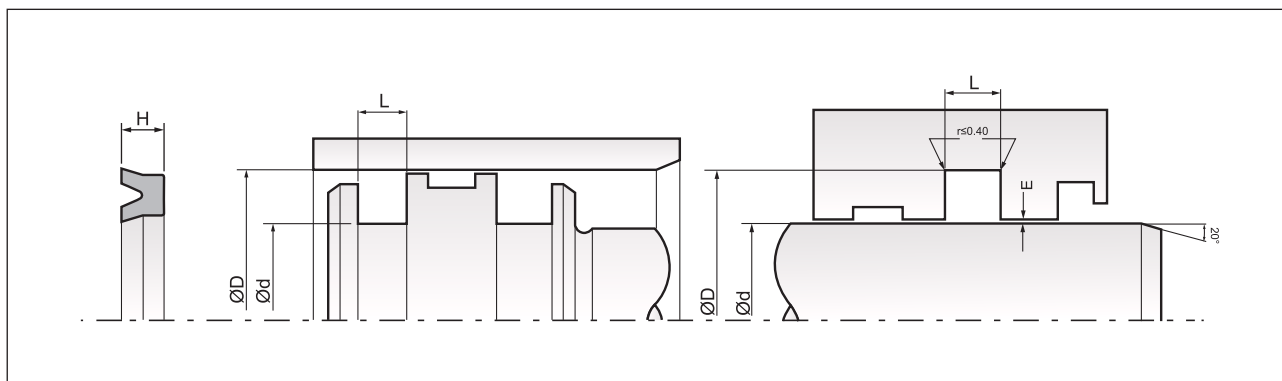


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E031156602	115.00	125.00	13.00	12.00	FKM	SUE-834	E031341001	134.30	145.40	11.00	10.00	NBR	SUF-555
E031156603	115.00	127.00	7.80	7.30	FKM	SUF-1000	E031351101	135.00	150.00	8.30	7.80	NBR	SUF-660
E0311510001	115.00	127.00	11.50	10.50	NBR	SUF-715	E031356602	135.00	150.00	10.00	9.00	FKM	SUF-815
E031161001	116.00	128.00	8.50	8.00	NBR	SUF-208	E031351002	135.00	150.00	11.00	10.00	NBR	SUF-658
E031161002	116.50	127.20	11.00	10.00	NBR	SUF-554	E031351102	135.00	150.00	11.40	10.40	NBR	SUF-938
E031196601	119.50	125.50	5.80	5.30	FKM	SUF-588	E031356603	135.00	150.00	12.00	11.00	FKM	SUF-845
E031206601	120.00	135.00	10.50	9.50	FKM	SUF-820	E031351004	135.00	150.00	13.00	12.00	NBR	SUF-743
E031205901	120.00	145.00	15.20	14.20	PU	PUF-488	E031351003	135.00	163.00	15.00	14.00	NBR	SUG-607
E031201001	120.00	145.00	19.50	18.50	NBR	SUF-740	E031361007	136.00	150.00	10.00	9.00	NBR	SUF-934
E031200801	120.00	150.00	16.00	15.00	NBR	SUF-818	E031366603	136.00	150.00	18.50	17.50	FKM	SUF-796
E031211001	121.00	136.00	17.00	16.00	NBR	SUF-550	E031366401	136.00	150.00	18.70	17.70	FKM	SUF-693
E031222301	122.00	152.50	11.00	10.00	CR	SUG-828	E031361004	136.42	152.40	8.51	8.01	NBR	SUG-616
E03125L501	125.00	135.00	13.00	12.00	PU	PUF-486	E031361101	136.52	152.40	8.42	7.92	NBR	SUG-396
E031256602	125.00	140.00	10.50	9.50	FKM	SUF-486	E0301361101	136.52	152.40	8.42	7.92	NBR	SUG-441
E031251002	125.00	145.00	17.00	16.00	NBR	SUF-441	E031366501	136.52	152.40	8.42	7.92	FKM	SUG-749
E031251003	125.00	150.00	16.00	15.00	NBR	SUF-756	E031361005	136.52	152.40	8.43	7.93	NBR	SUG-320
E031256603	125.00	152.00	16.50	15.50	FKM	SUG-460	E031366602	136.52	152.40	19.00	18.00	FKM	SUG-634
E031256601	125.00	153.00	13.00	12.00	FKM	SUG-418	E031381001	138.00	152.00	8.70	8.20	NBR	SUG-569
E031251004	125.41	139.70	7.23	6.73	NBR	SUF-997	E031396501	139.00	152.40	18.50	17.50	FKM	SUG-627
E031271101	127.00	139.70	6.85	6.35	NBR	SUF-417	E031406501.	140.00	150.00	8.50	8.00	FKM	SUF-979
E031270801	127.00	142.00	8.50	8.00	NBR	SUF-651	E03140L502	140.00	150.00	11.00	10.00	PU	PUF-487
E031271001	127.00	142.00	8.70	8.20	NBR	SUF-709	E031406501	140.00	152.40	18.50	17.50	FKM	SUG-535
E031279901	127.00	146.00	17.00	16.00	SBR	SUF-770	E031419901	141.00	160.00	17.00	16.00	SBR	SUG-656
E031279901	127.00	146.00	17.00	16.00	SBR	SUF-770	E031421001	142.00	160.00	8.50	8.00	NBR	SUG-686
E031281002	128.00	140.00	13.00	12.00	NBR	SUF-792	E031456601	145.00	160.00	9.80	8.80	FKM	SUG-352
E031280801	128.00	148.00	14.30	13.30	NBR	SUF-735	E031451003	145.00	160.00	10.10	9.10	NBR	SUG-497
E031281001	128.00	150.00	15.00	14.00	NBR	SUF-695	E031456603	145.00	160.00	10.30	9.30	FKM	SUG-505
E031286602	128.00	152.50	12.00	11.00	FKM	SUG-691	E031456604	145.00	160.00	10.30	9.30	FKM	SUG-524
E031286601	128.00	152.50	14.30	13.30	FKM	SUG-600	E031456604	145.00	160.00	10.30	9.30	FKM	SUG-534
E031300804	130.00	142.00	7.85	7.35	NBR	SUF-729	E031456602	145.00	160.00	11.00	10.00	FKM	SUG-525
E031306601	130.00	150.00	10.00	9.00	FKM	SUF-584	E031451001	145.00	160.00	11.00	10.00	NBR	SUG-368
E031306501	130.00	150.00	12.00	11.00	FKM	SUF-718	E031450801	145.00	160.00	11.50	10.50	NBR	SUG-635
E03130L501	130.00	150.00	13.00	12.00	PU	PUF-383	E031456605	145.00	160.00	16.00	15.00	FKM	SUG-606
E031301004	130.00	150.00	13.00	12.00	NBR	SUF-738	E031482201	148.00	160.00	11.00	10.00	CR	SUG-752
E031300902	130.00	150.00	14.00	13.00	NBR	SUF-999	E031486601	148.00	160.00	13.00	12.00	FKM	SUG-411
E031300805	130.00	153.00	13.50	12.50	NBR	SUG-695	E0301486603	148.00	160.00	16.00	15.00	FKM	SUG-543
E031300806	130.00	160.00	16.00	15.00	NBR	SUG-863	E031486602	148.60	163.00	10.50	9.50	FKM	SUG-526
E031300803	130.00	160.00	17.00	16.00	NBR	SUG-440	E031496601	149.50	161.50	11.00	10.00	FKM	SUG-467
E031306602	130.17	146.05	8.42	7.92	FKM	SUF-708	E03150L501	150.00	160.00	10.00	9.00	PU	PUG-217
E031302201	130.17	152.40	10.52	9.52	CR	SUG-580	E031501002	150.00	160.00	13.00	12.00	NBR	SUG-861
E031301101	130.17	154.78	18.85	17.85	NBR	SUG-557	E031506601	150.00	162.00	8.20	7.70	FKM	SUG-654
E031300901	130.38	152.60	10.30	9.30	NBR	SUG-574	E031506701	150.00	180.00	16.00	15.00	FKM	SUH-483
E031301002	130.50	152.40	10.35	9.35	NBR	SUG-426	E031506401	150.00	180.00	16.00	15.00	FKM	SUH-540
E031301003	130.96	152.40	10.00	9.00	NBR	SUG-602	E031521001	152.00	183.00	29.00	28.00	NBR	SUH-423
E031311001	131.00	152.00	10.00	9.00	NBR	SUG-548	E03153905	153.00	173.00	11.00	10.00	NBR	SUG-772
E031316602	131.00	152.40	10.00	9.00	FKM	SUG-762	E031536601	153.92	164.46	9.89	8.89	FKM	SUG-785
E031316601	131.00	156.00	16.00	15.00	FKM	SUG-550	E031569901	156.00	175.00	17.00	16.00	SBR	SUG-655
E031321102	132.00	150.00	18.70	17.70	NBR	SUF-807	E031576601	157.50	170.00	8.50	8.00	FKM	SUG-555
E031321101	132.00	152.00	11.00	10.00	NBR	SUG-679	E031596501	159.00	175.00	14.00	13.00	FKM	SUG-591
E031331001	133.00	148.00	17.00	16.00	NBR	SUF-551	E031601001	160.00	180.00	13.00	12.00	NBR	SUH-443
E031331002	133.00	150.00	13.00	12.00	NBR	SUF-721	E031601101	160.00	190.00	16.00	15.00	NBR	SUH-326
E031331003	133.00	157.00	14.00	13.00	NBR	SUG-773	E031611002	161.92	203.20	20.05	19.05	NBR	SUJ-295



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E031651004	165.00	180.00	11.00	10.00	NBR	SUH-466
E031656602	165.00	200.00	20.00	19.00	FKM	SUH-489
E031651001	165.00	200.00	20.00	19.00	NBR	SUH-380
E031651002	165.00	203.00	20.00	19.00	NBR	SUJ-343
E031656601	165.10	203.20	20.50	19.50	FKM	SUJ-102
E031651003	165.50	195.50	17.00	16.00	NBR	SUH-445
E031680801	168.00	203.50	21.00	20.00	NBR	SUJ-332
E031680901	168.00	227.00	37.00	36.00	NBR	SUK-282
E031711001	171.30	203.60	21.00	20.00	NBR	SUJ-407
E031729901	172.00	191.00	17.00	16.00	SBR	SUH-426
E031751001	175.00	200.00	15.50	14.50	NBR	SUH-406
E031750801	175.00	200.00	21.00	20.00	NBR	SUH-319
E031751003	175.00	205.00	15.00	14.00	NBR	SUJ-364
E031751002	175.00	205.00	16.00	15.00	NBR	SUJ-351
E031756601	175.41	207.90	19.84	18.84	FKM	SUJ-241
E031776501	177.80	203.20	13.50	12.50	FKM	SUJ-373
E031806603	180.00	200.00	7.50	7.00	FKM	SUH-363
E031806602	180.00	200.00	8.50	8.00	FKM	SUH-386
E031806701	180.00	200.00	13.00	12.00	FKM	SUH-387
E031806604	180.00	200.00	13.00	12.00	FKM	SUH-473
E031806401	180.00	200.00	17.00	16.00	FKM	SUH-457
E031801004	180.00	201.00	13.00	12.00	NBR	SUJ-378
E031801002	180.00	210.00	23.00	22.00	NBR	SUJ-352
E031801002	180.00	218.00	23.00	22.00	NBR	SUJ-346
E031801003	180.00	222.00	22.00	21.00	NBR	SUJ-372
E031801001	180.98	203.20	11.00	10.00	NBR	SUJ-331
E0301826401	182.00	198.00	16.00	15.00	FKM	SUH-405
E031821002	182.00	200.00	13.00	12.00	NBR	SUH-427
E031826601	182.00	200.00	17.00	16.00	FKM	SUH-472
E031830801	183.00	203.20	22.00	21.00	NBR	SUJ-427
E031840901	184.00	200.00	8.00	7.50	NBR	SUH-543
E031841002	184.00	200.00	8.50	8.00	NBR	SUH-546
E031846401	184.00	200.00	9.50	8.50	FKM	SUH-414
E031846501	184.15	203.20	23.00	22.00	FKM	SUJ-326
E031850801	185.00	200.00	8.50	8.00	NBR	SUH-362
E031851003	185.00	200.00	10.00	9.00	NBR	SUH-493
E031851002	185.00	200.00	10.50	9.50	NBR	SUH-494
E031851004	185.00	200.00	17.00	16.00	NBR	SUH-530
E03185S401	185.18	209.80	10.52	9.52	HNBR	SUJ-333
E031881001	188.00	200.00	8.50	8.00	NBR	SUH-435
E031901001	190.00	217.00	14.00	13.00	NBR	SUJ-297
E031906701	190.50	203.20	10.52	9.52	FKM	SUJ-391
E031908301	190.50	222.25	16.87	15.87	NBR	SUJ-202
E031981001	198.00	282.00	31.50	30.50	NBR	SUM-653
E031981001	198.90	262.90	46.00	45.00	NBR	SUM-760
E032000801	200.00	218.00	13.50	12.50	NBR	SUJ-310
E032000802	200.00	230.00	23.00	22.00	NBR	SUK-293
E032001003	200.00	240.00	23.00	22.00	NBR	SUK-280
E032011002	201.00	220.00	17.00	16.00	NBR	SUJ-403
E03201M101	201.00	221.00	13.00	12.00	HNBR	SUJ-382
E032011001	201.00	221.00	13.00	12.00	EPDM	SUJ-148
E032091001	209.55	228.60	10.52	9.52	NBR	SUK-200

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E032101201	210.00	240.00	21.00	20	NBR	SUK-236
E032106601	210.00	250.00	21.00	20.00	FKM	SUK-234
E302128401	212.72	228.60	20.05	19.05	HYT-HYTREL	PUK-106
E032101001	215.00	260.00	25.00	24.00	NBR	SUM-652
E032176601	217.48	254.00	20.05	19.05	FKM	SUM-834
E032196601	219.07	254.00	19.00	18.00	FKM	SUM-706
E032191002	219.30	300.27	39.00	38.00	NBR	SUM-801
E032191101	219.47	257.96	24.80	23.80	NBR	SUM-564
E03220L501	220.00	240.00	11.80	10.80	PU	PUK-213
E032202201	220.00	250.00	18.00	17.00	CR	SUK-325
E032211002	221.00	240.00	17.00	16.00	NBR	SUK-306
E032211001	221.00	285.00	46.00	45.00	NBR	SUM-737
E03221L401	221.00	285.00	46.00	45.00	PU	PUM-307
E032226601	222.25	254.00	25.00	24.00	FKM	SUM-110
E032246601	224.63	254.00	25.00	24.00	FKM	SUM-645
E032256601	225.00	250.00	19.00	18.00	FKM	SUM-561
E032251001	225.00	250.00	19.00	18.00	NBR	SUK-299
E032256603	225.00	252.00	26.00	25.00	FKM	SUM-622
E032256602	225.00	255.00	18.00	17.00	FKM	SUM-621
E032276601	227.00	254.00	25.60	24.60	FKM	SUM-637
E032291001	229.00	255.00	26.00	25.00	NBR	SUM-791
E032306601	230.00	250.00	14.00	13.00	FKM	SUK-145
E032331001	233.00	254.00	14.00	13.00	NBR	SUM-752
E0302346604	234.00	254.00	9.80	8.80	FKM	SUM-536
E032341002	234.00	298.00	46.00	45.00	NBR	SUM-754
E032346602	234.75	250.00	14.00	13.00	FKM	SUK-222
E032346601	234.75	250.00	19.50	18.50	FKM	SUK-207
E032346605	234.96	254.00	9.80	8.80	FKM	SUM-648
E032351001	235.00	250.00	17.00	16.00	NBR	SUK-327
E032356602	235.50	254.00	9.80	8.80	FKM	SUM-514
E032461001	246.50	310.50	46.00	45.00	NBR	SUM-755
E032496601	249.68	261.11	9.89	8.89	FKM	SUM-788
E032506601	250.00	264.00	10.50	9.50	FKM	SUM-714
E032501002	250.00	280.00	17.00	16.00	NBR	SUM-173
E032501003	250.00	280.00	17.50	16.50	NBR	SUM-602
E032501001	250.00	283.00	29.00	28.00	NBR	SUM-502
E032508901	250.00	290.00	26.00	25.00	PU	PUM-210
E032501004	250.00	290.00	26.00	25.00	NBR	SUM-661
E032521001	252.00	282.00	29.00	28.00	NBR	SUM-660
E032541001	254.00	274.00	11.00	10.00	NBR	SUM-605
E032601001	260.00	280.00	14.00	13.00	NBR	SUM-822
E032651001	265.00	285.00	13.00	12.00	NBR	SUM-192
E032686601	268.00	300.00	14.50	13.50	FKM	SUM-815
E032691001	269.20	333.20	46.00	45.00	NBR	SUM-759
E032690901	269.87	304.80	28.68	27.68	NBR	SUM-731
E032700801	270.00	300.00	14.00	13.00	NBR	SUM-483
E032701002	270.00	300.00	23.00	22.00	NBR	SUM-616
E032701001	270.80	308.20	26.00	25.00	NBR	SUM-111
E032736601	273.05	304.80	26.40	25.40	FKM	SUM-646
E032736401	273.06	304.80	27.50	26.50	FKM	SUM-523
E032746601	274.80	304.80	26.40	25.40	FKM	SUM-638
E032751003	275.00	290.00	10.00	9.00	NBR	SUM-846

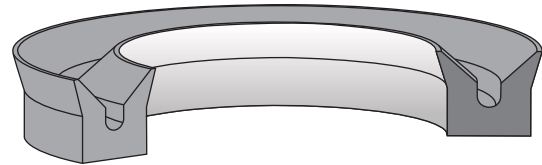


Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E032756601	275.00	300.00	13.00	12.00	FKM	SUM-597
E032756602	275.00	305.00	21.50	20.50	FKM	SUM-740
E032751001	275.00	310.00	20.00	19.00	NBR	SUM-724
E032751002	275.00	339.00	46.00	45.00	NBR	SUM-756
E032771001	277.80	304.80	28.00	27.00	NBR	SUM-680
E032791001	279.40	304.80	13.50	12.50	NBR	SUM-391
E032796601	279.40	304.80	15.00	14.00	FKM	SUM-607
E032806401	280.00	300.00	16.00	15.00	NBR	SUM-683
E032806602	280.00	305.00	13.00	12.00	FKM	SUM-848
E032806601	280.00	305.00	16.00	15.00	FKM	SUM-828
E032821001	282.60	307.50	19.00	18.00	NBR	SUM-119
E032856602	285.00	300.00	9.50	8.50	FKM	SUM-708
E032856601	285.00	308.00	16.00	15.00	FKM	SUM-401
E032851003	285.00	325.00	21.00	20.00	NBR	SUM-547
E032851004	285.67	304.80	10.50	9.50	NBR	SUM-549
E032951002	295.00	333.00	30.00	29.00	NBR	SUM-465
E03295L501	295.00	333.00	30.00	29.00	PU	PUM-209
E03296L501	296.00	333.00	30.00	29.00	PU	PUM-325
E033001101	300.00	330.00	17.00	16	NBR	SUM-548
E033001001	300.00	333.00	30.00	29.00	NBR	SUM-587
E033001002	300.50	364.50	46.00	45.00	NBR	SUM-761
E033040901	304.00	320.00	8.50	8.00	NBR	SUM-859
E033041001	304.80	330.20	13.70	12.70	NBR	SUM-468
E033041002	304.80	336.55	26.40	25.40	NBR	SUM-505
E033096601	309.00	330.20	15.50	14.50	FKM	SUM-478
E033151001	315.00	340.00	13.50	12.50	NBR	SUM-612
E033150401	315.00	350.00	25.00	24.00	NBR	SUM-484
E03316L401	316.00	347.00	27.20	26.20	PU	SUM-594
E03316L401	316.00	347.00	27.20	26.20	PU	PUM-227
E033190901	319.40	344.54	26.50	25.50	NBR	SUM-532
E033194501	319.50	345.00	27.20	26.20	VMQ	SUM-537
E033204301	320.00	344.00	27.00	26.00	VMQ	SUM-529
E033206601	320.00	350.00	16.00	15.00	FKM	SUM-613
E033201001	320.00	350.00	18.50	17.50	NBR	SUM-171
E033231101	323.85	355.60	27.67	26.67	NBR	SUM-558
E033251002	325.90	389.90	46.00	45.00	NBR	SUM-757
E033306601	330.00	350.00	12.70	11.70	FKM	SUM-469
E033301001	330.00	350.00	13.00	12.00	NBR	SUM-193
E033360801	336.55	355.60	11.50	10.50	NBR	SUM-735
E033461001	346.00	410.00	46.00	45.00	NBR	SUVG-652
E033501002	350.00	382.00	33.00	32.00	NBR	SUM-104
E033501001	350.00	384.00	29.00	28.00	NBR	SUM-503
E033501003	350.00	385.00	33.00	32.00	NBR	SUM-510
E033501004	350.00	390.00	33.00	32.00	NBR	SUM-655
E033501101	350.00	390.00	36.00	35.00	NBR	SUM-496
E033501005	350.00	390.00	36.00	35.00	NBR	SUM-817
E033551101	355.00	375.00	11.00	10.00	NBR	SUM-722
E033581001	358.00	422.00	46.00	45.00	NBR	SUVG-653
E033711001	371.00	400.00	16.00	15.00	NBR	SUM-383
E033741004	374.00	406.00	17.00	16.00	NBR	SUVG-137
E033806601	380.00	400.00	26.00	25.00	FKM	SUM-659

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E03382M101	382.00	414.00	21.00	20.00	HNBR	SUVG-630
E033846501	384.17	406.40	12.09	11.09	NBR	SUVG-715
E033840901	384.17	406.40	12.09	11.09	NBR	SUVG-570
E033840902	384.18	422.28	22.97	21.97	NBR	SUVG-583
E033851001	385.00	405.00	11.00	10.00	NBR	SUVG-546
E033876501	387.35	406.40	13.70	12.70	FKM	SUVG-575
E034001003	400.00	416.00	14.00	13.00	NBR	SUVG-581
E034001004	400.00	430.00	20.00	19.00	NBR	SUVG-629
E034001002	400.00	435.00	33.00	32.00	NBR	SUVG-540
E034066001	406.40	457.20	32.00	31.00	CPU	CPU-104
E034081001	408.00	472.00	46.00	45.00	NBR	SUVG-651
E034161001	416.00	440.00	13.00	12.00	NBR	SUVG-600
E034201001	420.00	450.00	26.00	25.00	NBR	SUVG-102
E034266601	426.00	450.00	25.00	24.00	FKM	SUVG-504
E034271001	427.00	459.00	17.00	16.00	NBR	SUVG-138
E034271002	427.00	461.00	17.00	16.00	NBR	SUVG-626
E034351001	435.00	460.00	13.80	12.80	NBR	SUVG-707
E034501001	450.00	480.00	26.00	25.00	NBR	SUVG-497
E034501002	450.00	482.00	33.00	32.00	NBR	SUVG-577
E034500701	450.00	485.00	13.00	12.00	NBR	SUVG-529
E034501003	450.00	500.00	26.00	25.00	NBR	SUVG-641
E034540901	454.03	492.13	22.97	21.97	NBR	SUVG-578
E031661001	466.00	498.00	21.00	20.00	NBR	SUVG-620
E034670801	467.00	486.00	13.70	12.70	NBR	SUVG-514
E034671001	467.00	499.00	17.00	16.00	NBR	SUVG-139
E034801001	480.00	510.00	26.00	25.00	NBR	SUVG-505
E034820801	482.60	520.70	20.00	19.00	NBR	SUVG-489
E034851001	485.00	510.00	19.00	18.00	NBR	SUVG-694
E035101001	510.00	550.00	21.00	20.00	NBR	SUVG-103
E035170901	517.52	555.62	22.97	21.97	NBR	SUVG-584
E035201001	520.00	550.00	26.00	25.00	NBR	SLO-308
E035326601	532.00	562.00	19.00	18.00	FKM	SUVG-416
E035571001	557.00	589.00	17.00	16.00	NBR	SUVG-140
E03571101	571.50	609.60	20.05	19.05	NBR	SUVG-493
E036076601	607.00	631.00	12.50	11.50	FKM	SUVG-615
E036136601	613.00	631.00	13.00	12.00	FKM	SUVG-627
E036201001	620.00	660.00	28.00	27.00	NBR	SUVG-706
E036301101	630.00	670.00	26.00	25.00	NBR	SUVG-320
E036718301	671.60	697.00	20.00	19.00	R/C	SUVG-281
E037251001	725.00	750.00	13.50	12.50	NBR	SLO-617
E038201002	820.00	850.00	20.00	19.00	NBR	SUVG-628
E039901001	990.00	1050.00	36.00	35.00	NBR	SLO-502
E039991014	1025.00	1050.00	20.00	19.00	NBR	SLO-640
E039991009	1200.00	1253.00	37.00	36.00	NBR	SLO-490
E039991013	1260.00	1290.00	18.50	17.50	NBR	SLO-607
E039991015	1310.00	1340.00	21.00	20.00	NBR	SLO-658
E039991021	1340.00	1366.00	20.00	19.00	NBR	SLO-739
E039991017	1401.00	1435.00	24.80	23.80	NBR	SLO-727
E039991023	1764.40	1803.40	33.00	32.00	NBR	SLO-749
E039991022	2465.00	2500.00	17.00	16.00	NBR	SLO-748

DETAILS

E05 is a single acting pneumatic seal with U-shaped cross-section. Its symmetric profile with long sealing lip guarantees a secure seat in the grooves especially for small section grooves. The special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Symmetrical seal for piston and rod application.
- Easy snap fit installation.
- Long service life.
- Suitable for use in lubricated as well as dry and oil-free air. (after initial lubrication during assembly).

INSTALLATION & ASSEMBLY

Careful installation is essential for the correct functioning of the seal. The E05 piston seals are simply pulled over the piston into the grooves. Remove all the pores and scratches to avoid damaging the seal while installation. Under oil free conditions it is important to obtain a solid lubrication film inside the cylinder tube to ensure the long service life of the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.

OPERATING CONDITIONS

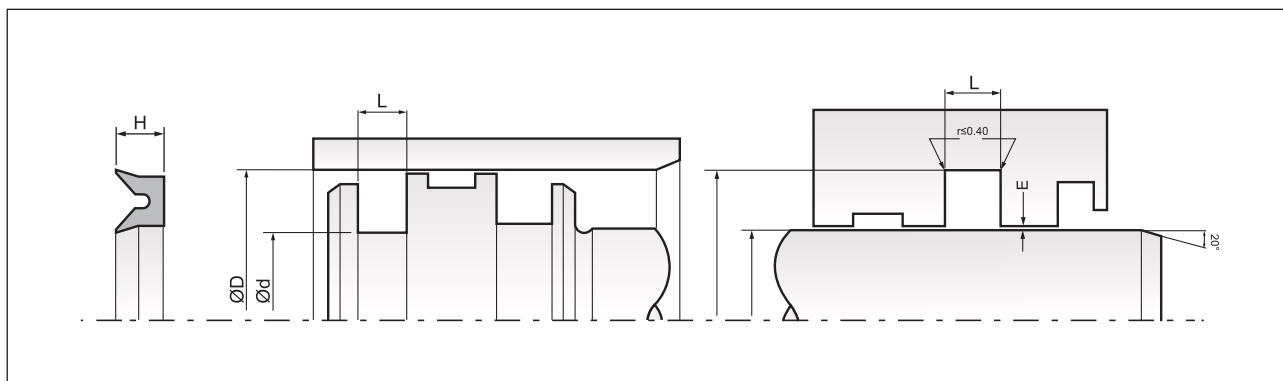
Temperature Range : -30°C to + 100°C
Pressure : 12 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

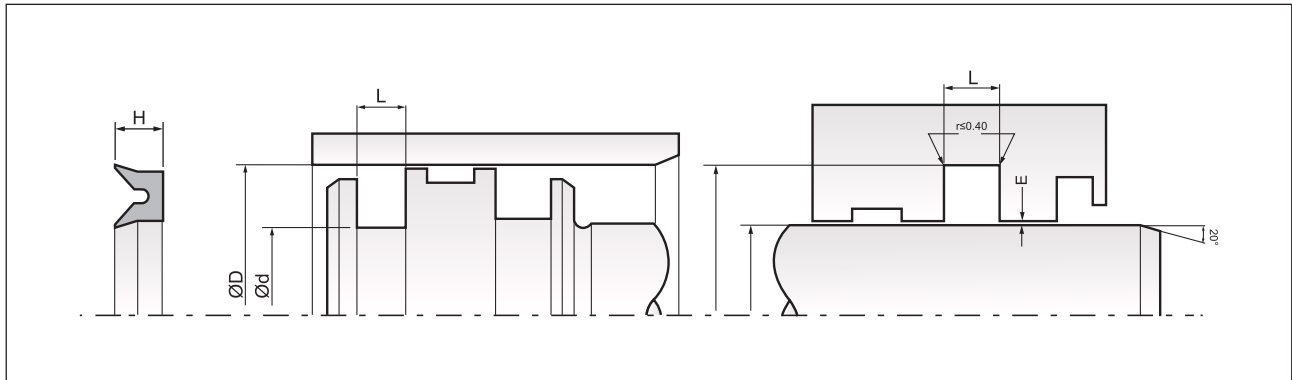
E05

Single Acting Rod / Piston Seal



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E050066602	6.00	16.00	6.50	6.00	FKM	SUA-1173
E050066603	6.00	16.00	7.00	6.50	FKM	SUA-1181
E05006D601	6.00	16.80	6.50	6.00	HNBR	SUA-1790
E050071001	7.90	16.50	4.50	4.00	NBR	SUA-803
E050081001	8.00	14.00	4.50	4.00	NBR	SUA-1705
E050106604	10.00	16.00	7.50	7.00	FKM	SUA-2007
E050104501	10.00	18.00	7.00	6.50	VMQ	SUA-2009
E050106603	10.00	22.00	7.00	6.50	FKM	SUA-1182
E050106602	10.00	22.00	7.10	6.60	FKM	SUA-1174
E05010D601	10.00	22.00	7.10	6.60	HNBR	SUA-1794
E050101001	10.00	25.00	12.20	11.20	NBR	SUA-984
E050110801	11.00	32.00	12.00	11.00	NBR	SUB-1869
E050141002	14.00	20.00	21.00	20.00	NBR	SLO-541
E050141101	14.00	22.00	4.50	4.00	NBR	SUA-1390
E050140801	14.00	22.00	4.50	4.00	NBR	SUA-1061
E05014V201	14.00	22.00	4.50	4.00	NBR	SUA-2381
E050150802	15.00	20.20	3.70	3.20	NBR	SUA-1040
E050150801	15.00	25.00	5.90	5.40	NBR	SUA-783
E05015D601	15.00	30.00	7.50	7.00	HNBR	SUB-2991
E050161002	16.00	28.00	6.20	5.70	NBR	SUB-136
E050164501	16.00	28.00	6.20	5.70	VMQ	SUB-3822
E050170801	17.00	26.00	4.50	4.00	NBR	SUB-1892
E050170801	17.00	26.00	4.50	4.00	NBR	SUB-2058
E050201101	20.00	28.00	4.50	4.00	NBR	SUB-2364
E050204301	20.00	28.00	4.70	4.20	VMQ	SUB-4153
E050201003	20.00	28.00	5.50	5.00	NBR	SUB-1418
E050206603	20.00	28.00	5.50	5.00	FKM	SUB-1153
E05021L401	21.30	43.00	14.00	13.00	PU	PUB-639
E050221003	22.00	26.50	27.50	26.50	NBR	SLO-370
E050226601	22.00	30.00	6.10	5.60	FKM	SUB-2648
E050221001	22.00	32.00	10.50	9.50	NBR	SUB-1459
E050231101	23.02	38.10	8.20	7.70	NBR	SUB-2640
E050242201	24.00	36.00	8.50	8.00	CR	SUB-2171
E050241101	24.00	38.00	8.20	7.70	NBR	SUB-2767
E050246401	24.00	44.00	10.50	9.50	FKM	SUB-985
E050246701	24.30	34.00	4.50	4.00	FKM	SUB-2770
E05025L402	25.00	32.00	6.00	5.50	PU	PUB-958
E050254301	25.00	32.50	4.60	4.10	VMQ	SUB-4154
E050251002	25.00	35.00	8.50	8.00	NBR	SUB-1100
E050251007	25.00	36.00	10.00	9.00	NBR	SUB-3536
E050256601	25.00	38.00	6.50	6.00	FKM	SUB-3572
E050251006	25.00	38.00	6.50	6.00	NBR	SUB-1405
E05026L401	26.70	43.00	14.00	13.00	PU	PUB-640
E050276601	27.00	35.00	5.50	5.00	FKM	SUB-2311
E050281001	28.00	36.00	6.50	6.00	NBR	SUB-1774
E050286602	28.00	36.00	6.50	6.00	FKM	SUB-3583
E050303401	30.00	39.00	8.00	7.50	EPDM	SUB-2065
E050306601	30.00	40.00	5.50	5.00	FKM	SUB-2686
E050301004	30.00	40.00	7.50	7.00	NBR	SUB-3942
E050301002	30.00	48.00	7.50	7.00	NBR	SUB-2723
E05030L501	30.50	40.00	6.50	6.00	PU	PUB-1474
E050301003	30.50	40.00	6.50	6.00	NBR	SUB-3463

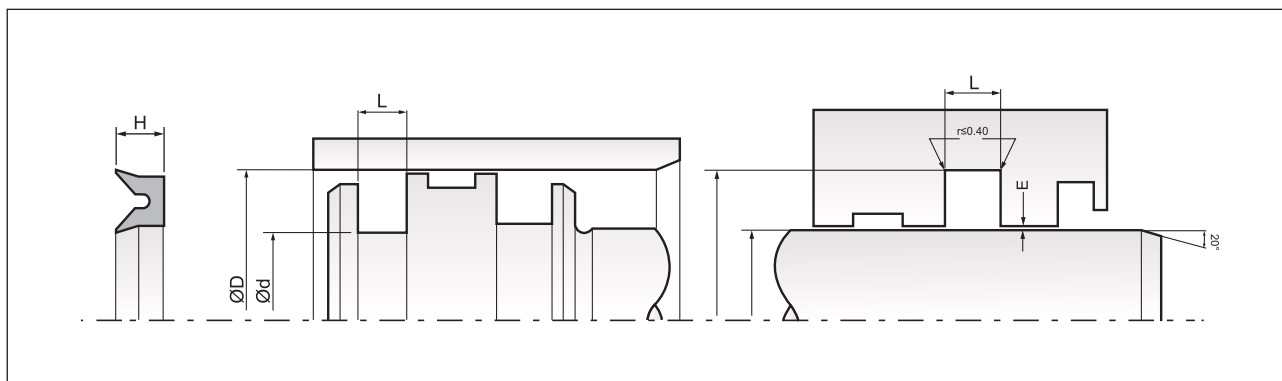
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E050311001	31.00	50.00	13.50	12.50	NBR	SUB-2292
E050321003	32.00	40.00	5.50	5.00	NBR	SUB-2722
E050321005	32.00	42.00	7.50	7.00	NBR	SUB-3901
E050321004	32.00	44.00	11.00	10.00	NBR	SUB-2724
E05033L401	33.40	53.40	14.00	13.00	PU	PUC-511
E050346601	34.50	41.27	4.50	4.00	FKM	SUB-2598
E050356603	35.00	44.50	5.50	5.00	FKM	SUB-4178
E050356602	35.00	50.00	7.80	7.30	FKM	SUB-122
E050350801	35.00	50.00	8.50	8.00	NBR	SUB-2379
E050364301	36.00	44.00	4.70	4.20	VMQ	SUB-4152
E050361001	36.00	45.00	7.50	7.00	NBR	SUB-2304
E050381002	38.00	50.00	7.50	7.00	NBR	SUB-2473
E050381004	38.00	50.00	10.00	9.00	NBR	SUB-4222
E050381003	38.00	52.00	10.50	9.50	NBR	SUC-2229
E050386601	38.10	53.97	7.48	6.98	FKM	SUC-1641
E050391001	39.50	48.00	7.50	7.00	NBR	SUB-2743
E050401002	40.00	49.00	7.50	7.00	NBR	SUB-1844
E050401101	40.00	50.00	5.50	5.00	NBR	SUB-3402
E050406603	40.00	50.00	6.80	6.30	FKM	SUB-2647
E050406604	40.00	50.00	7.30	6.80	FKM	SUB-2735
E050401004	40.00	50.00	7.50	7.00	NBR	SUB-3640
E050401005	40.00	55.00	9.50	8.50	NBR	SUC-2826
E050401003	40.00	60.00	11.00	10.00	NBR	SUC-2131
E050406602	40.00	60.00	11.00	10.00	FKM	SUC-1461
E05042L401	42.00	60.80	14.00	13.00	PU	PUC-512
E050440601	44.45	57.15	6.85	6.35	NBR	SUC-2633
E050441001	44.45	57.15	7.60	7.10	NBR	SUC-1578
E05048L401	48.00	68.00	14.00	13.00	PU	PUC-517
E050506701	50.00	60.00	6.50	6.00	FKM	SUC-2395
E050506603	50.00	60.00	7.50	7.00	FKM	SUC-2016
E050501003	50.00	63.00	12.00	11.00	NBR	SUC-861
E05050Q201	50.00	65.00	10.50	9.50	PU	PUC-692
E050501102	50.00	70.00	11.00	10.00	NBR	SUC-2100
E050526602	52.00	62.00	7.50	7.00	FKM	SUC-1868
E050526701	52.00	65.00	6.85	6.35	FKM	SUC-2692
E050536701	53.00	63.00	4.50	4.00	FKM	SUC-1905
E05053L501	53.00	63.00	5.25	4.75	PU	PUC-781
E050531002	53.00	63.00	5.50	5.00	NBR	SUC-1966
E050531003	53.00	63.00	7.50	7.00	NBR	SUC-2646
E050536602	53.00	63.00	13.00	12.00	FKM	SUC-1493
E050551101	55.00	65.00	5.50	5.00	NBR	SUC-1646
E050576501	57.00	69.00	8.50	8.00	FKM	SUC-1837
E050571002	57.00	70.00	13.00	12.00	NBR	SUC-2315
E050606602	60.00	75.00	11.00	10.00	FKM	SUC-2017
E05060L501	60.00	80.00	11.00	10.00	PU	PUD-406
E050601004	60.00	80.00	13.00	12.00	NBR	SUD-1619
E05060L502	60.00	80.00	13.00	12.00	PU	PUD-405
E050601003	60.00	80.00	17.00	16.00	NBR	SUD-1193
E05060L401	60.00	85.00	17.00	16.00	PU	PUD-458
E050631001	63.00	78.00	11.00	10.00	NBR	SUD-1420
E050655901	65.00	75.00	6.50	6.00	PU	PUC-691
E050666601	66.00	80.00	10.00	9.00	FKM	SUD-610



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.	Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E050691001	69.00	80.00	10.20	9.20	NBR	SUD-1831	E051302201	130.00	160.00	14.00	13.00	CR	SUG-444
E050706601	70.00	80.00	4.00	3.50	FKM	SUD-1786	E051306601	130.50	152.40	10.20	9.20	FKM	SUG-867
E050701002	70.00	80.00	7.00	6.50	NBR	SUD-1987	E051356601	135.00	150.00	10.00	9.00	FKM	SUF-450
E05073L401	73.00	100.00	17.00	16.00	PU	PUD-457	E051351001	135.00	150.00	15.00	14.00	NBR	SUF-691
E050751002	75.00	90.00	6.00	5.50	NBR	SUD-1937	E051351002	135.00	160.00	13.00	12.00	NBR	SUG-889
E050751001	75.00	95.00	13.50	12.50	NBR	SUD-1766	E051406601	140.00	153.00	8.00	7.50	FKM	SUG-358
E050756601	75.00	100.00	16.00	15.00	FKM	SUD-263	E051406603	140.00	153.00	8.00	7.50	FKM	SUG-693
E050761101	76.00	98.00	17.00	16.00	NBR	SUD-1069	E051406604	140.00	165.00	17.00	16.00	FKM	SUG-733
E050801004	80.00	100.00	8.50	8.00	NBR	SUD-1243	E051406602	140.00	170.00	15.00	14.00	FKM	SUG-443
E050801005	80.00	100.00	16.00	15.00	NBR	SUD-1798	E05140L401	140.00	172.00	20.00	19.00	PU	PUG-196
E050826602	82.55	101.60	12.00	11.00	FKM	SUE-618	E051446701	144.00	160.00	11.00	10.00	FKM	SUG-759
E050831001	83.00	100.00	9.50	8.50	NBR	SUD-1580	E051456601	145.50	160.00	11.00	10.00	FKM	SUG-620
E050836601	83.00	100.00	12.40	11.40	FKM	SUD-1967	E051506601	150.00	170.00	12.00	11.00	FKM	SUG-594
E050831002	83.00	101.00	9.50	8.50	NBR	SUE-1363	E051500902	150.00	170.00	12.50	11.50	NBR	SUG-674
E050851004	85.00	100.00	5.50	5.00	NBR	SUD-1451	E051500901	150.00	180.00	16.00	15.00	NBR	SUH-417
E050851006	85.00	100.00	8.50	8.00	NBR	SUD-1812	E051601002	160.00	180.00	17.00	16.00	NBR	SUH-240
E050856602	85.00	100.00	10.00	9.00	FKM	SUD-1426	E051606601	160.00	195.00	16.00	15.00	FKM	SUH-323
E050851101	85.00	102.00	14.00	13.00	NBR	SUE-1252	E05163L401	163.00	198.00	20.00	19.00	PU	PUH-176
E050851005	85.00	106.00	11.60	10.60	NBR	SUE-1133	E051651002	165.00	185.00	16.00	15.00	NBR	SUH-468
E050864501	86.00	104.00	14.00	13.00	VMQ	SUE-963	E051656602	165.10	203.20	20.05	19.05	FKM	SUJ-244
E050876601	87.00	100.00	9.70	8.70	FKM	SUD-871	E05166L401	166.00	198.00	20.00	19.00	PU	PUH-173
E050886601	88.26	107.95	13.06	12.06	FKM	SUE-883	E05166L402	166.40	199.60	20.00	19.00	PU	PUH-217
E050886001	88.90	114.30	17.00	16.00	CPU	CPU-110	E051691001	169.84	184.15	7.63	7.13	NBR	SUH-376
E05088L401	88.90	114.30	17.00	16.00	PU	PUE-493	E051701002	170.00	200.00	21.00	20.00	NBR	SUH-440
E050901005	90.00	105.00	12.50	11.50	NBR	SUE-1345	E051731001	173.50	200.00	17.00	16.00	NBR	SUH-550
E050906601	90.00	110.00	11.00	10.00	FKM	SUE-689	E051756601	175.00	215.00	22.00	21.00	FKM	SUJ-268
E050901004	90.00	110.00	16.00	15.00	NBR	SUE-1159	E051801005	180.00	200.00	13.00	12.00	NBR	SUH-471
E05090L501	90.00	110.00	17.00	16.00	PU	PUE-329	E051801001	180.00	200.00	16.00	15.00	NBR	SUH-222
P280956701	95.00	110.00	11.00	10.00	FKM	SUE-1301	E051802201	180.00	200.00	24.00	23.00	CR	SUH-419
E050956601	95.00	120.00	11.00	10.00	FKM	SUE-690	E051801004	180.00	205.00	16.00	15.00	NBR	SUJ-381
E051016602	101.60	120.65	14.00	13.00	FKM	SUE-1047	E051806602	180.00	205.00	16.00	15.00	FKM	SUJ-429
E051011003	101.60	120.65	14.00	13.00	NBR	SUE-1040	E051801002	180.00	206.00	17.00	16.00	NBR	SUJ-319
E051056601	105.00	130.00	14.00	13.00	FKM	SUF-504	E051801003	180.00	210.00	16.00	15.00	NBR	SUJ-360
E051101002	110.00	140.00	19.00	18.00	NBR	SUF-710	E051851001	185.00	210.00	19.50	18.50	NBR	SUJ-265
E051126601	112.00	134.00	13.50	12.50	FKM	SUF-466	E051851003	185.00	222.50	22.00	21.00	NBR	SUJ-309
E051131001	113.50	127.00	8.00	7.50	NBR	SUF-731	E051851002	185.00	225.00	23.00	22.00	NBR	SUJ-301
E051141001	114.00	127.00	7.50	7.00	NBR	SUF-730	E051881101	188.00	220.00	17.00	16.00	NBR	SUJ-337
E051141501	114.00	150.00	15.50	14.50	NBR	SUF-881	E052001001	200.00	240.00	21.00	20.00	NBR	SUK-184
E051146601	114.30	127.00	12.11	11.11	FKM	SUF-614	E052006601	200.00	240.00	21.00	20.00	FKM	SUK-223
E05114L402	114.30	145.00	20.00	19.00	PU	PUF-252	E052001002	200.00	240.50	30.20	29.20	NBR	SUK-183
E051151001	115.00	135.00	15.20	14.20	NBR	SUF-727	E05206D601	206.37	238.12	16.87	15.87	HNBR	SUK-261
E051256601	125.00	150.00	13.50	12.50	FKM	SUF-422	E052106601	210.00	250.00	16.00	15.00	FKM	SUK-181
E051250802	125.00	150.00	13.50	12.50	NBR	SUF-871	E052146401	214.00	250.00	23.00	22.00	FKM	SUK-276
E051250801	125.00	155.00	16.00	15.00	NBR	SUG-665	E052150901	215.90	241.30	15.00	14.00	NBR	SUK-179
E051251001	125.00	165.00	13.00	12.00	NBR	SUG-719	E05218L401	218.00	250.00	20.00	19.00	PU	PUK-139
E051261001	126.00	150.00	13.80	12.80	NBR	SUF-690	E052186401	218.00	255.27	23.00	22.00	FKM	SUM-675
E051271101	127.00	147.00	16.00	15.00	NBR	SUF-711	E052201004	220.00	250.00	16.00	15.00	NBR	SUK-260
E051276701	127.00	149.22	14.00	13.00	FKM	SUF-703	E052201005	220.00	250.00	18.00	17.00	NBR	SUK-289
E051276602	127.00	150.00	14.00	13.00	FKM	SUF-472	E052201003	220.00	250.00	32.00	31.00	NBR	SUK-186
E051286601	128.00	150.00	13.00	12.00	FKM	SUF-621	E052201002	220.00	260.00	21.00	20.00	NBR	SUM-311
E051281102	128.00	150.00	14.00	13.00	NBR	SUF-732	E05220M101	220.00	260.00	21.00	20.00	HNBR	SUM-569
E051301001	130.00	150.00	15.50	14.50	NBR	SUF-432	E052281002	228.60	304.80	20.05	19.05	NBR	SUM-436

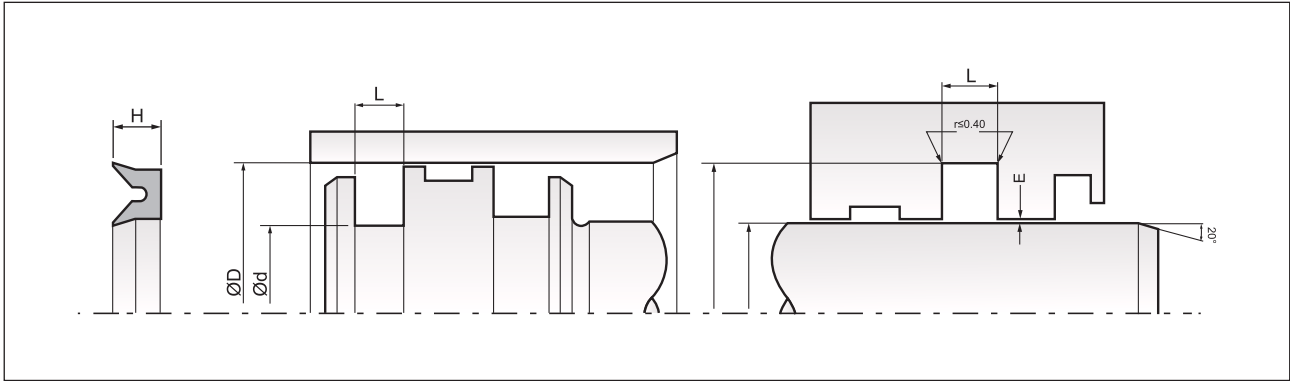
E05

Single Acting Rod / Piston Seal



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E052300801	230.00	250.00	11.00	10.00	NBR	SUK-217
E052301002	230.00	250.00	13.00	12.00	NBR	SUK-195
E052301003	230.00	260.00	19.00	18.00	NBR	SUM-644
E052356601	235.00	250.00	17.00	16.00	FKM	SUK-238
E052371001	237.00	265.00	17.00	16.00	NBR	SUM-588
E052406601	240.00	280.00	21.00	20.00	FKM	SUM-603
E05250D601	250.00	265.00	11.00	10.00	HNBR	SUM-552
E052501003	250.00	270.00	11.00	10.00	NBR	SUM-385
E0525251001	252.00	280.00	12.80	11.80	NBR	SUM-640
E052531001	253.00	305.20	23.00	22.00	NBR	SUM-650
E05256601	256.00	280.00	13.50	12.50	FKM	SUM-461
E052601001	260.00	280.00	14.00	13.00	NBR	SUM-491
E052666501	266.00	304.80	23.00	22.00	FKM	SUM-589
E052696601	269.24	304.80	22.00	21.00	FKM	SUM-448
E052701001	270.00	305.00	27.00	26.00	NBR	SUM-727
E052751002	275.00	300.00	13.00	12.00	NBR	SUM-161
E052751003	275.00	305.00	21.75	20.75	NBR	SUM-821
E052801002	280.00	294.00	11.50	10.50	NBR	SUM-425
E052800901	280.00	300.00	16.00	15.00	NBR	SUM-516
E052801006	280.00	305.00	16.00	15.00	NBR	SUM-860
E052801004	280.00	310.00	26.00	25.00	NBR	SUM-685
E052851001	285.00	350.00	33.00	32.00	NBR	SUM-446
E052941001	294.00	350.00	31.00	30.00	NBR	SUM-566
E052961001	296.00	320.00	16.00	15.00	NBR	SUM-618
E053001001	300.00	325.00	13.50	12.50	NBR	SUM-699
E053156601	315.00	338.00	14.00	13.00	FKM	SUM-676
E05317D601	317.50	342.90	13.70	12.70	HNBR	SUM-555
E053201003	320.00	348.00	17.00	16.00	NBR	SUM-146
E053206601	320.00	350.00	16.00	15.00	FKM	SUM-632
E053201006	320.00	350.00	20.00	19.00	NBR	SUM-403
E053201002	320.00	350.00	23.00	22.00	NBR	SUM-172
E053201005	320.00	360.00	31.00	30.00	NBR	SUM-389
E053201004	320.00	360.00	34.00	33.00	NBR	SUM-388
E053201007	320.00	360.40	22.00	21.00	NBR	SUM-590
E053281003	328.00	368.00	23.50	22.50	NBR	SUM-591
E053300701	330.00	360.00	14.00	13.00	NBR	SUM-667
E053361001	336.00	356.00	17.00	16.00	NBR	SUM-729
E053401001	340.00	380.00	22.00	21.00	NBR	SUM-573
E053421001	342.20	385.50	25.00	24.00	NBR	SUM-475
E053501003	350.00	380.00	12.50	11.50	NBR	SUM-696
E053501002	350.00	380.00	16.00	15.00	NBR	SUM-378
E053521001	352.42	387.35	16.87	15.87	NBR	SUM-481
E053551004	355.00	385.00	21.00	20.00	NBR	SUM-583
E053601004	360.00	380.00	13.00	12.00	NBR	SUM-682
E053620801	362.18	387.30	18.00	17.00	NBR	SUM-782
E053641001	364.70	405.20	21.00	20.00	NBR	SUVG-305
E053756601	375.00	405.00	16.00	15.00	FKM	SUVG-450
E05381D601	381.00	406.40	13.70	12.70	HNBR	SUVG-511
E053851001	385.00	405.00	16.00	15.00	NBR	SUVG-541
E053950901	395.00	425.00	16.00	15.00	NBR	SUVG-572
E053951001	395.00	450.00	26.00	25.00	NBR	SUVG-396
E054001009	400.00	430.00	27.00	26.00	NBR	SUVG-700

Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E056301005	400.00	440.00	21.00	20.00	NBR	SUVG-531
E054001008	400.00	450.00	28.00	27.00	NBR	SUVG-571
E054156601	415.00	455.00	22.00	21.00	FKM	SUVG-451
E05431D601	431.80	457.20	13.70	12.70	HNBR	SUVG-512
E054451001	445.00	475.00	22.40	21.40	NBR	SUVG-654
E054501006	450.00	480.00	20.00	19.00	NBR	SUVG-591
E054501001	450.85	501.65	22.00	21.00	NBR	SUVG-296
E054571001	457.20	508.00	36.00	35.00	NBR	SUVG-390
E054606601	460.00	500.00	21.00	20.00	FKM	SUVG-452
E054SS801	465.50	509.50	17.00	16.00	NBR	SUVG-693
E05476D601	476.25	501.65	13.70	12.70	HNBR	SUVG-526
E054801001	480.00	510.00	16.00	15.00	NBR	SUVG-249
E055001002	500.00	520.00	11.00	10.00	NBR	SUVG-242
E055081001	508.00	550.00	21.00	20.00	NBR	SUVG-354
E055101001	510.00	550.00	21.00	20.00	NBR	SUVG-441
E055100901	510.00	550.00	21.00	20.00	NBR	SUVG-336
E05510M101	510.00	550.00	21.00	20.00	HNBR	SUVG-522
E055101003	510.00	560.00	26.00	25.00	NBR	SUVG-386
E055151001	515.00	540.00	13.00	12.00	NBR	SUVG-363
E056151001	518.00	560.00	21.00	20.00	NBR	SUVG-298
E055301001	530.00	570.00	19.00	18.00	NBR	SUVG-564
E055302201	530.00	570.00	21.00	20.00	CR	SUVG-442
E055306601	530.00	570.00	21.00	20.00	FKM	SUVG-433
E055361001	536.00	560.00	19.00	18.00	NBR	SUVG-696
E055601004	560.00	600.00	26.00	25.00	NBR	SUVG-612
E055601001	560.00	610.00	39.00	38.00	NBR	SUVG-329
E055601002	560.00	613.00	39.00	38.00	NBR	SUVG-328
E055706601	570.00	610.00	21.00	20.00	FKM	SUVG-543
E055751001	575.00	625.00	26.00	25.00	NBR	SUVG-253
E055761001	576.00	600.00	17.50	16.50	NBR	SUVG-385
E055761002	576.00	600.00	21.00	20.00	NBR	SUVG-557
E055801001	580.00	600.00	11.00	10.00	NBR	SUVG-343
E055801002	580.00	620.00	21.00	20.00	NBR	SUVG-367
E055802201	580.00	620.00	26.00	25.00	CR	SUVG-443
E05584D601	584.20	609.60	13.70	12.70	HNBR	SUVG-513
E055841002	584.20	609.60	20.05	19.05	NBR	SUVG-478
E055966601	596.00	630.00	19.00	18.00	FKM	SUVG-703
E056001002	600.00	630.00	16.00	15.00	NBR	SUVG-560
E05614D601	614.00	630.00	11.00	10.00	HNBR	SUVG-510
E056151001	615.95	647.70	18.00	17.00	NBR	SUVG-295
E056201005	620.00	660.00	21.00	20.00	NBR	SUVG-532
E056251003	625.00	650.00	11.50	10.50	NBR	SUVG-398
E056256601	625.00	650.00	14.00	13.00	FKM	SUVG-598
E056281001	628.00	680.00	26.00	25.00	NBR	SUVG-479
E056302201	630.00	680.00	21.00	20.00	CR	SUVG-445
E056301003	630.00	680.00	26.00	25.00	NBR	SUVG-473
E056456601	645.00	670.00	14.00	13.00	FKM	SUVG-597
E056461001	646.00	670.00	13.00	12.00	NBR	SUVG-302
E056501002	650.00	690.00	19.50	18.50	NBR	SLO-313
E056701001	670.00	700.00	26.00	25.00	NBR	SUVG-310
E056731001	673.10	711.20	20.50	19.50	NBR	SUVG-388
E056821002	682.50	714.30	23.30	22.30	NBR	SUVG-325



Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E057191001	719.00	750.00	21.00	20.00	NBR	SUVG-314
E057201002	720.00	750.00	26.00	25.00	NBR	SUVG-311
E057201003	720.00	752.00	26.00	25.00	NBR	SUVG-384
E057211001	721.00	762.00	22.50	21.50	NBR	SUVG-400
E057266601	726.00	750.00	14.00	13.00	FKM	SUVG-596
E057361002	736.70	768.10	23.20	22.20	NBR	SUVG-326
E05742D601	742.95	768.35	13.70	12.70	HNBR	SUVG-525
E057701005	770.00	810.00	21.00	20.00	NBR	SUVG-530
E057811001	781.05	812.80	18.70	17.70	NBR	SUVG-318
E058001006	800.00	840.00	21.00	20.00	NBR	SUVG-535
E058001002	800.00	850.00	43.00	42.00	NBR	SUVG-436
E058301002	830.00	870.00	31.00	30.00	NBR	SLO-317
E058361001	836.50	864.00	22.00	21.00	NBR	SUVG-712
E058401001	840.00	870.00	21.00	20.00	NBR	SUVG-307
E058701006	870.00	920.00	26.00	25.00	NBR	SLO-745
E058701004	870.00	920.00	27.00	26.00	NBR	SLO-236
E05950E301	950.00	975.00	13.00	12.00	NBR	SLO-306
E059501007	950.00	1000.00	31.00	30.00	NBR	SLO-722
E059511001	951.50	1001.50	42.00	41.00	NBR	SUVG-342
E059701001	970.00	1000.00	19.00	18.00	NBR	SUVG-360
E059771001	977.90	1003.30	25.00	24.00	NBR	SLO-438
E059901002	990.00	1030.00	22.00	21.00	NBR	SUVG-490
E059991005	1000.00	1050.00	31.00	30.00	NBR	SUVG-453
E059991060	1000.00	1055.00	31.00	30.00	NBR	SLO-721

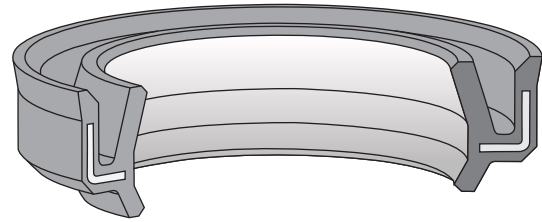
Part No.	d (h10)	D (H11)	L (+0.2)	H	Material	Mould No.
E059991045	1005.00	1033.00	21.00	20.00	NBR	SUVG-614
E059991034	1010.00	1060.00	26.50	25.50	NBR	SLO-517
E0510401001	1040.00	1068.00	23.00	22.00	NBR	SLO-445
E059991008	1068.00	1098.00	21.00	20.00	NBR	SLO-318
E059991006	1090.00	1150.00	46.00	45.00	NBR	SLO-319
E059991044	1110.00	1130.00	11.00	10.00	NBR	SLO-591
E059991046	1190.00	1242.00	37.00	36.00	NBR	SLO-598
E059991049	1200.00	1250.00	37.00	36.00	NBR	SLO-624
E059991014	1200.00	1250.00	42.00	41.00	NBR	SLO-337
E059991010	1210.00	1235.00	13.50	12.50	NBR	SLO-328
E059991047	1210.00	1242.00	21.00	20.00	NBR	SLO-597
E059991032	1210.00	1258.00	24.50	23.50	NBR	SLO-449
E059991035	1215.00	1250.00	15.00	14.00	NBR	SLO-518
E059991050	1222.00	1250.00	19.00	18.00	NBR	SLO-625
E059991009	1310.00	1338.00	19.00	18.00	NBR	SLO-329
E059991057	1333.00	1360.00	19.00	18.00	NBR	SLO-690
E059991053	1400.00	1430.00	21.00	20.00	NBR	SUVG-633
E059991101	1506.98	1547.04	28.04	27.04	NBR	SLO-462
E059991067	1561.10	1588.10	20.00	19.00	NBR	SLO-758
E051575101	1575.00	1600.00	21.00	20.00	NBR	SLO-289
E059991028	1990.00	2030.00	26.00	25.00	NBR	SLO-431
E059991055	2470.00	2520.00	26.00	25.00	NBR	SLO-655
E059991036	2837.00	2869.50	24.25	23.25	NBR	SLO-546

WIPER SEALS

MAX TYPE	PRODUCT NAME	SEAL PROFILE	APPLICATION	PRESSURE (max) bar	TEMPERATURE	SPEED m/s	PAGE NO
W04	WIPER SEAL		ROD SEAL WITH WIPER	16	-30°C TO +100°C	1.0	137
W07	WIPER SEAL		ROD SEAL WITH WIPER	16	-30°C TO +100°C	1.0	139
W08	WIPER SEAL		ROD SEAL WITH WIPER	16	-30°C TO +100°C	1.0	143
W09	WIPER SEAL		ROD SEAL WITH WIPER	16	-30°C TO +100°C	1.0	145

DETAILS

W04 pneumatic rod/wiper seal is the combination wiper seal with metal reinforcement and special pneumatic sealing edge. It performs both sealing and wiping function. It has improved seal-lip design for better sealing and scraping performance. Very good protection against dirt ingress.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Performs both sealing & wiping.
- The component can be replaced from the outside (without dismantling the equipment).
- Long service life.
- Widest range of sizes available.
- Smooth running due to optimum lubricant-retaining sealing lip geometry.
- Installation in open housings.
- Easy installation.

INSTALLATION & ASSEMBLY

W04 wiper seals are fitted into the housing by means of a circlip presses. The sealing part is pushed into the housing and fixed by the circlip. Remove all the pores and scratches before installation to avoid damaging the sealing lip under oil free conditions, it is important to lubricate the seal.

MATERIAL

Nitrile Rubber 80/85 Shore A.
FKM Rubber 80/85 Shore A.

OPERATING CONDITIONS

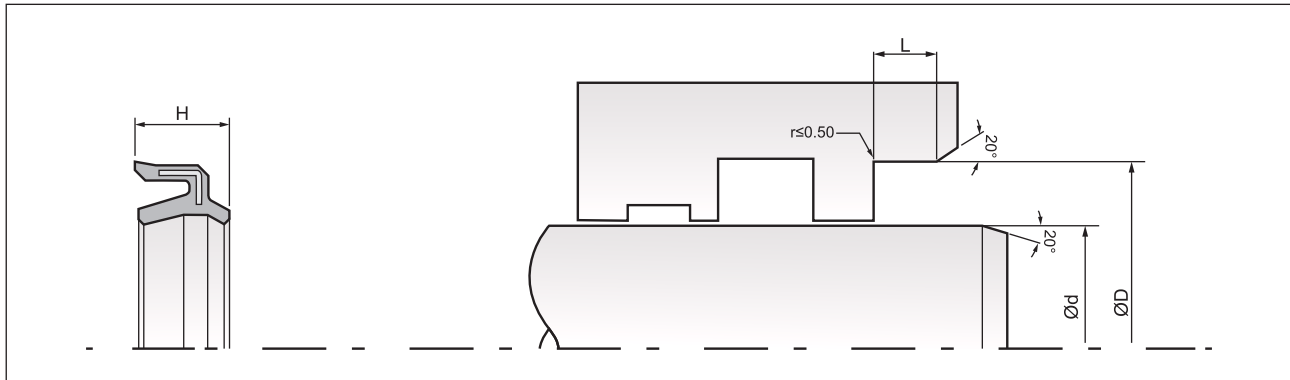
Temperature Range : -30°C to + 100°C (NBR)
: -40°C to + 220°C (FKM)
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

W04

Single Acting Wiper Seal

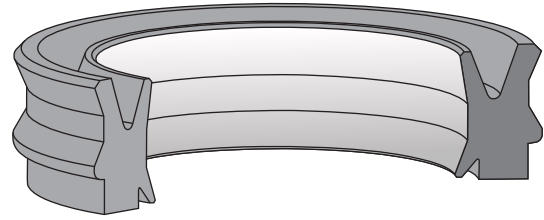


Part No.	d (h10)	D (H11)	h	H	L	Matl.	Mould No.
W040081001	8.00	14.00	3.80	5.50	4.50	NBR	WPS-7468
W040086701	8.00	16.00	5.20	8.20	6.00	FKM	WPS-6719
W040100902	10.00	16.00	4.00	6.00	4.50	NBR	WPS-4285
W040100901	10.00	18.00	6.20	8.20	7.00	NBR	WPS-4251
W040100903	10.31	17.46	4.90	6.70	5.50	NBR	WPS-5127
W040121004	12.00	20.00	5.00	7.00	5.50	NBR	WPS-3293
W040121101	12.00	20.00	6.00	8.00	6.50	NBR	WPS-2341
W040121005	12.00	20.00	6.00	8.50	6.50	NBR	WPS-3975
W040121002	12.00	20.00	7.00	9.50	8.00	NBR	WPS-2357
W040121007	12.00	22.00	4.50	7.50	5.00	NBR	WPS-7053
W040126602	12.00	22.00	6.50	8.50	7.00	FKM	WPS-5923
W040121003	12.00	22.00	7.00	9.50	8.00	NBR	WPS-2358
W040121006	12.00	22.00	9.00	13.00	10.00	NBR	WPS-4708
W040141101	14.00	20.00	4.50	6.00	5.00	NBR	WPS-4626
W040141001	14.00	22.00	5.00	7.00	5.50	NBR	WPS-2359
W040140801	14.00	24.00	7.00	9.50	8.00	NBR	WPS-2360
W040141003	14.00	24.00	8.00	13.00	9.00	NBR	WPS-4541
W040151001	15.00	25.00	7.00	9.20	8.00	NBR	WPS-4164
W04016L501	16.00	26.00	6.00	8.50	6.50	PU	WPH-1890
W040166601	16.00	26.00	7.00	8.50	8.00	FKM	WPS-5065
W040160803	16.00	26.00	7.00	9.00	8.00	NBR	WPS-5196
W040166501	16.00	26.00	7.00	9.00	8.00	FKM	WPS-4028
W040160801	16.00	26.00	7.00	9.50	8.00	NBR	WPS-2361
W040161002	16.00	26.00	8.00	13.00	9.00	NBR	WPS-5398
W040160802	16.00	26.00	8.20	13.30	9.20	NBR	WPS-3883
W040166502	16.00	30.00	7.30	10.00	8.30	FKM	WPS-7025
W040181102	18.00	25.00	4.80	7.60	5.30	NBR	WPS-4269
W040181101	18.00	26.00	6.00	8.00	6.50	NBR	WPS-4239
W040181002	18.00	26.00	7.00	9.50	8.00	NBR	WPS-2362
W040181003	18.00	28.00	7.00	9.50	8.00	NBR	WPS-2363
W040191001	19.00	27.00	4.00	6.00	4.50	NBR	WPS-2533
W040191001	19.00	27.00	4.00	6.00	4.50	NBR	WPS-2349
W040201005	20.00	28.00	5.00	7.50	5.50	NBR	WPS-4279
W040201011	20.00	28.00	6.00	8.00	6.50	NBR	WPS-2025
W040201105	20.00	28.00	6.00	8.00	6.50	NBR	WPS-6659
W040201006	20.00	30.00	7.30	9.50	8.00	NBR	WPS-5932
W040201003	20.00	30.00	7.00	9.50	8.00	NBR	WPS-988
W040201002	20.00	30.00	7.00	9.50	8.00	NBR	WPS-2356
W040200801	20.00	30.00	7.00	9.50	8.00	NBR	WPS-5657
W040206705	20.00	30.00	7.00	9.50	8.00	FKM	WPS-3927
W040201102	20.00	30.00	7.80	9.80	8.80	NBR	WPS-5849
W040201103	20.00	30.00	7.50	10.50	8.50	NBR	WPS-6230
W040221002	22.00	28.00	5.00	8.00	5.50	NBR	WPS-6232
W040221001	22.00	32.00	7.00	9.50	8.00	NBR	WPS-2355
W040221003	22.00	32.25	6.80	9.00	7.80	NBR	WPS-6676
W04025L501	25.00	34.14	4.89	7.00	5.50	PU	WPH-1417
W040251101	25.00	35.00	5.50	7.00	6.00	NBR	WPS-4652
W040251006	25.00	35.00	6.50	8.00	7.00	NBR	WPS-6576
W040251007	25.00	35.00	6.50	8.00	7.00	NBR	WPS-7269
W040250901	25.00	35.00	7.00	9.00	8.00	NBR	WPS-4410
W040251103	25.00	35.00	7.00	9.00	8.00	NBR	WPS-6548

Part No.	d (h10)	D (H11)	h	H	L	Matl.	Mould No.
W040251004	25.00	35.00	7.00	9.50	8.00	NBR	WPS-2354
W040250801	25.00	35.00	7.00	9.50	8.00	NBR	WPS-5656
W040251003	25.35	32.00	4.00	6.00	4.50	NBR	WPS-2568
W040251003	25.35	32.00	4.00	6.00	4.50	NBR	WPS-2348
W040271001	27.00	38.00	4.00	8.70	4.50	NBR	WPS-3686
W040271002	27.00	38.00	6.40	8.70	7.00	NBR	WPS-4389
W040271002	27.00	38.00	6.40	8.70	7.00	NBR	WPS-4932
W040281002	28.00	36.00	4.00	5.00	4.50	NBR	WPS-5513
W040281005	28.00	36.50	5.70	7.60	6.35	NBR	WPS-7428
W040301003	30.00	40.00	5.00	7.50	5.50	NBR	WPS-4280
W040306501	30.00	40.00	7.00	9.00	8.00	FKM	WPS-1802
W040305901	30.00	40.00	7.00	9.50	8.00	PU	WPH-1290
W040301002	30.00	40.00	7.00	9.50	8.00	NBR	WPS-2353
W040306701	30.00	40.00	7.00	9.50	8.00	FKM	WPS-4085
W040301101	30.00	42.00	7.00	9.00	8.00	NBR	WPS-5902
W040316701	31.75	41.27	8.00	10.00	9.00	FKM	WPS-2319
W040321001	32.00	42.00	7.00	9.50	8.00	NBR	WPS-2352
W040320801	32.00	42.00	7.00	9.50	8.00	NBR	WPS-5655
W040326501	32.00	42.00	7.00	9.50	8.00	FKM	WPS-6081
W04035V201	35.00	45.00	6.00	9.00	6.50	NBR	WPS-5438
W040351004	35.00	45.00	7.00	9.50	8.00	NBR	WPS-7233
W040351003	35.00	46.00	6.30	8.60	7.00	NBR	WPS-4724
W040351003	35.00	46.00	6.30	8.60	7.00	NBR	WPS-4800
W040351001	35.00	46.00	7.90	9.70	8.90	NBR	WPS-3687
W040381101	38.10	50.00	7.00	10.00	8.00	NBR	WPS-5969
W040406603	40.00	49.50	7.20	8.50	8.20	FKM	WPS-3572
W040401005	40.00	50.00	6.50	8.00	7.00	NBR	WPS-6415
W040406604	40.00	50.00	6.00	8.50	6.50	FKM	WPS-5066
W040406701	40.00	50.00	6.70	8.70	7.70	FKM	WPS-4668
W040406702	40.00	50.00	6.00	9.00	6.50	FKM	WPS-5724
W040401003	40.00	50.00	7.00	9.00	8.00	NBR	WPS-5212
W040406601	40.00	50.00	7.00	9.00	8.00	FKM	WPS-5213
W040401002	40.00	50.00	7.00	9.50	8.00	NBR	WPS-2351
W040406602	40.00	50.00	7.00	9.50	8.00	FKM	WPS-3971
W04040L501	40.00	50.00	7.00	10.00	8.00	PU	WPH-2664
W040401103	40.00	50.00	7.00	10.00	8.00	NBR	WPS-6994
W040401102	40.00	51.00	6.50	8.00	7.00	NBR	WPS-5918
W040441101	44.45	53.97	5.00	6.80	5.50	NBR	WPS-4513
W040450901	45.00	55.00	7.00	9.00	8.00	NBR	WPS-3815
W040481001	48.00	62.00	9.00	11.00	10.00	NBR	WPS-3685
W040501101	50.00	58.00	6.00	8.00	6.50	NBR	WPS-6549
W040501002	50.00	60.00	7.00	9.50	8.00	NBR	WPS-3278
W040501102	50.80	58.00	6.00	8.00	6.50	NBR	WPS-6709
W040576601	57.00	67.00	7.00	9.50	8.00	FKM	WPS-4869
W040611101	61.91	76.20	10.00	12.00	11.00	NBR	WPS-4116
W040636601	63.00	75.00	8.00	11.00	9.00	FKM	WPS-4763
W04076L501	76.00	86.50	6.30	9.30	7.00	PU	WPH-758
W040761001	76.00	86.50	6.30	9.30	7.00	NBR	WPS-2767
W04095L401	95.25	107.95	6.00	8.00	6.50	PU	WPH-1652
W042741101	274.50	310.00	6.00	9.00	6.50	NBR	WPS-4651
W045601001	560.00	580.00	16.00	22.00	17.00	NBR	WPS-6361

DETAILS

E07 is a pneumatic rod/wiper seal performs both sealing and wiping function. It has improved seal-lip design for better sealing and scraping performance. Very good protection against dirt ingress. The standard material is Polyurethane it offers exceptional wear resistance and extremely high operating performance. Special lip design for pneumatic application to maintain lubricating film and minimize friction.



COMPATIBILITY

Dry and oil-free air.

APPLICATION

- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Dual function - both sealing and wiping.
- Extreme wear resistance.
- Long service life.
- Smooth running due to optimum lubricant-retaining sealing lip geometry.
- Installation in open housings.
- Low compression set.
- Easy installation.
- Low friction.

INSTALLATION & ASSEMBLY

W07 rod cum wiper seal requires open housing and is pushed into the housing designed with a circlip groove as DIN 7993 (type B). It is retained by the rounded outside diameters which makes it easy to snap into the groove. Remove all the pores and scratches to avoid damaging the seal lip during assembly.

MATERIAL

Polyurethane 92 Shore A.

OPERATING CONDITIONS

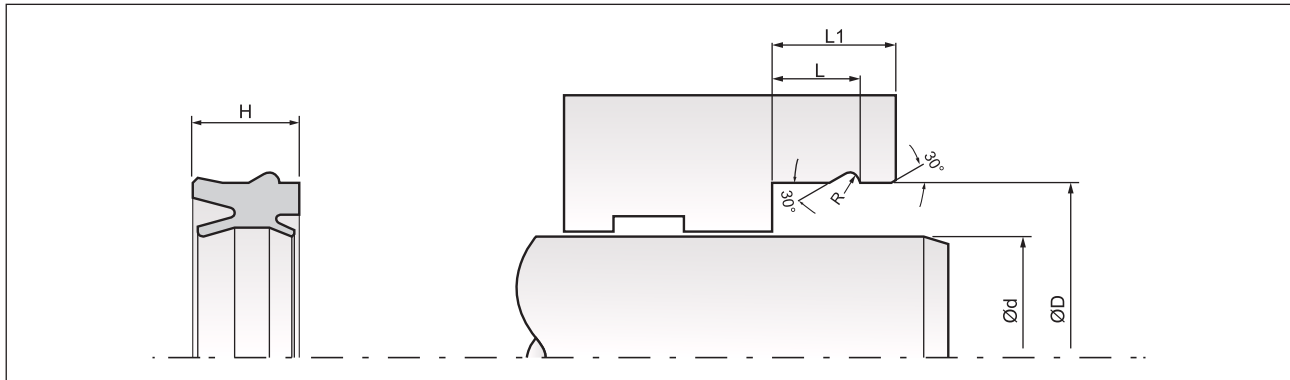
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

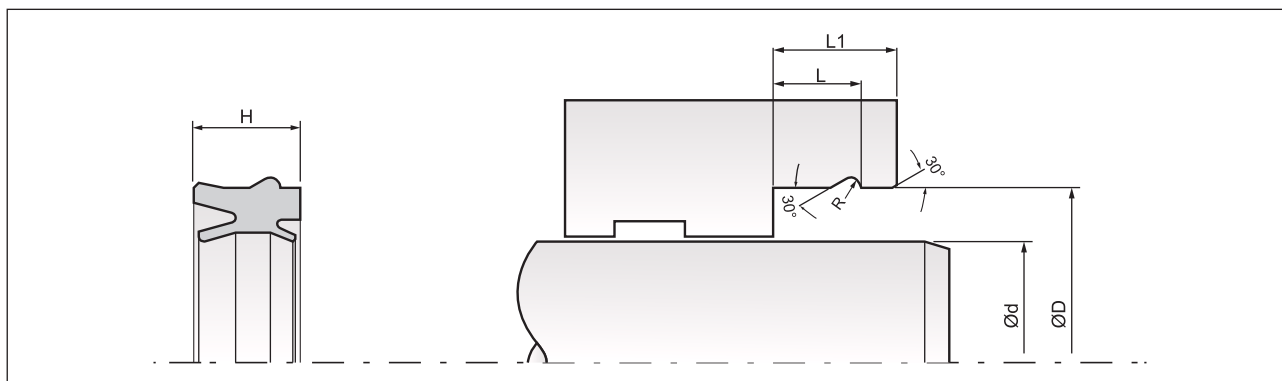
Static : 1.6 µmRa
Dynamic : 0.4 µmRa

W07

Single Acting Wiper Seal



Part No.	d (e9 / H11)	D (H10)	H	h	L (0.20)	L1 (+ 0.50)	Material	Mould No.
W07010CF01	10	18	10.4	20	8.8	13	PU	WPH-2377
W07012L504	12	19	10.4	21	8.8	13	PU	WPH-2897
W07012L503	12	20	10.4	22	8.8	13	PU	WPH-394
W07012CF02	12	22	10.4	24	8.8	13	PU	WPH-2827
W070126701	12	22	10.4	24	8.8	13	FKM	WPS-2227
W07012L408	12	22	10.4	24	8.8	13	PU	WPH-1972
W07012L402	12	22	10.7	24	8.8	13	PU	WPH-1320
W07012L402	12	22	10.7	24	8.8	13	PU	WPH-393
W070121102	12	22	10.7	24	8.8	13	NBR	WPS-6307
W07012L502	12	22	10.7	24	8.8	13	PU	WPH-2053
W07012L502	12	22	10.7	24	8.8	13	PU	WPH-1982
W07013L401	13	23	11.2	25	9.4	14	PU	WPH-1448
W07013CF01	13	26	10.7	28	8.8	13	PU	WPH-2878
W07014L501	14	24	10.7	26	8.8	13	PU	WPH-1285
W070165903	16	26	10.4	28	8.8	13	PU	WPH-392
W07016L503	16	26	10.4	28	8.8	13	PU	WPH-1983
W070166601	16	26	10.4	28	8.8	13	FKM	WPS-2217
W070166703	16	26	10.5	28	8.8	13	FKM	WPS-6539
W07016L501	16	26	10.7	28	8.8	13	PU	WPH-1984
W070166702	16	26	10.7	28	8.8	13	FKM	WPS-3302
W07016L503	16	26	10.7	28	8.8	13	PU	WPH-577
W07016X401	16	30	10.7	32	8.8	13	PU	WPH-2663
W070186701	18	26	10.4	28	8.8	13	FKM	WPS-2219
W07018L401	18	28	10.4	30	8.8	13	PU	WPH-1973
W07018L503	18	28	10.7	30	8.8	13	PU	WPH-1577
W07018L503	18	28	10.7	30	8.8	13	PU	WPH-2297
W070206701	20	30	10.4	32	8.8	13	FKM	WPS-987
W07020L502	20	30	10.4	32	8.8	13	PU	WPH-2353
W07020CF01	20	30	10.4	32	8.8	13	PU	WPH-2655
W070206705	20	30	10.4	32	8.8	13	FKM	WPS-6730
W07020L503	20	30	10.5	32	8.8	13	PU	WPH-826
W07020L404	20	30	10.7	32	8.8	13	PU	WPH-1327
W070206602	20	30	10.7	32	8.8	13	FKM	WPS-4459
W07020L503	20	30	10.7	32	8.8	13	PU	WPH-181
W070206702	20	30	10.7	32	8.8	13	FKM	WPS-5215
W07020L501	20	30	10.7	32	8.8	13	PU	WPH-1985
W07020CF03	20	30	10.7	32	8.8	13	PU	WPH-2826
W07020L408	20	30	11.4	32	9.4	14	PU	WPH-2232
W070206703	20	30	11.4	32	9.4	14	FKM	WPS-6662
W07022L504	22	32	10.4	34.5	8.8	13	PU	WPH-2441
W070226702	22	32	10.5	34.5	8.8	13	FKM	WPS-6485
W07022L503	22	32	10.7	34.5	8.8	13	PU	WPH-2235
W07022L401	22	32	11	34.5	9.4	14	PU	WPH-1110
W070226701	22	32	11	34.5	9.4	14	FKM	WPS-3438
W07022L403	22	32	11	34.5	9.4	14	PU	WPH-2627
W070256704	25	35	10.4	37.5	8.8	13	FKM	WPS-4641
W07025L509	25	35	10.4	37.5	8.8	13	PU	WPH-1438
W07025CF01	25	35	10.4	37.5	8.8	13	PU	WPH-2654
W070256703	25	35	10.7	37.5	8.8	13	FKM	WPS-4045
W070256703	25	35	10.7	37.5	8.8	13	FKM	WPS-4049
W070251103	25	35	10.7	37.5	8.8	13	NBR	WPS-5456
W070255902	25	35	10.7	37.5	8.8	13	PU	WPH-231



Part No.	d (e9 / H11)	D (H10)	H	h	L (0.20)	L1 (+0.50)	Material	Mould No.
W070255909	25	35	10.7	37.5	8.8	13	PU	WPH-2554
W07025L502	25	35	10.7	37.5	8.8	13	PU	WPH-1988
W07025L409	25	35	11.2	37.5	9.4	14	PU	WPH-1731
W07025L501	25	35	11.2	37.5	9.4	14	PU	WPH-1986
W070256602	25	35	11.2	37.5	9.4	14	FKM	WPS-2424
W07025L501	25	35	11.2	37.5	9.4	14	PU	WPH-2030
W07025L406	25	35	11.4	37.5	9.4	14	PU	WPH-576
W07025L507	25	35	11.5	37.5	9.4	14	PU	WPH-470
W07256702	25	35	11.5	37.5	9.4	14	FKM	WPS-3740
W070251102	25	35	11.5	37.5	9.4	14	NBR	WPS-5567
W07028X401	28	38	11.5	40.5	9.4	14	PU	WPH-2830
W070306701	30	40	10.4	42.5	8.8	13	FKM	WPS-7060
W07030L503	30	40	10.7	42.5	8.8	13	PU	WPH-311
W07030L404	30	40	11.2	42.5	9.4	14	PU	WPH-1974
W07032L402	32	40	10.4	42.5	8.8	13	PU	WPH-1659
W07032L404	32	42	10.4	44.5	8.8	13	PU	WPH-1975
W07032L504	32	42	10.7	44.5	8.8	13	PU	WPH-2268
W07032L401	32	42	11.2	44.5	9.4	14	PU	WPH-189
W070326701	32	42	11.2	44.5	9.4	14	FKM	WPS-1730
W07032L501	32	42	11.2	44.5	9.4	14	PU	WPH-1989
W07035CF502	35	45	10.7	47.5	8.8	13	PU	WPH-2676
W070356701	35	45	10.7	47.5	8.8	13	FKM	WPS-6586
W07035CF01	35	45	11.2	47.5	9.4	14	PU	WPH-2658
W07036L401	36	46	10.7	48.5	8.8	13	PU	WPH-2379
W07036CF01	36	46	10.7	48.5	8.8	13	PU	WPH-2677
W07040L403	40	50	10.4	52.5	8.8	13	NBR	WPH-1971
W070406601	40	50	10.7	52.5	8.8	13	FKM	WPS-2308
W070407601	40	50	10.7	52.5	8.8	13	AFLAS	WPS-7417
W07040L501	40	50	10.7	52.5	8.8	13	PU	WPH-615
W07040L502	40	50	11.2	52.5	9.4	14	PU	WPH-745
W070406501	40	50	11.2	52.5	9.4	14	FKM	WPS-5125
W070401101	40	50	11.2	52.5	9.4	14	NBR	WPS-5133
W07040L406	40	50	11.7	52.5	9.4	14	PU	WPH-2491
W070402301	40	50	12.5	52.5	10.4	15	NEOPRENE	WPS-6675
W07045L402	45	55	10.4	58.2	8.8	13	PU	WPH-1420
W07045L501	45	55	10.7	58.2	8.8	13	PU	WPH-2296
W07045L403	45	55	11.2	58.2	9.4	14	PU	WPH-2191
W07050L405	50	60	10.5	63.2	8.8	13	PU	WPH-2381
W070506703	50	60	11.2	63.2	9.4	14	FKM	WPS-7282
W07050L404	50	60	11.2	63.2	9.4	14	PU	WPH-2300
W070506702	50	60	12.2	63.2	10.4	15	FKM	WPS-5928
W07056L401	56	66	11.2	69.2	9.4	14	PU	WPH-2299
W07063CF01	63	75	13	78.2	11.4	16	PU	WPH-2659
W070656701	65	77	13	80.2	11.4	16	FKM	WPS-7231
W070726701	72	85	10	88.2	8.8	13	FKM	WPS-7166

DETAILS

W08 is a pneumatic rod/wiper seal performs both sealing and wiping function. The split design of the sealing set allows optimal adaptation of the materials to the requirements of the individual component. It has improved seal-lip design for better sealing and scraping performance. Very good protection against dirt ingress. Special lip design for pneumatic application to maintain lubricating film and minimize friction.

COMPATIBILITY

Compressed air.

APPLICATION

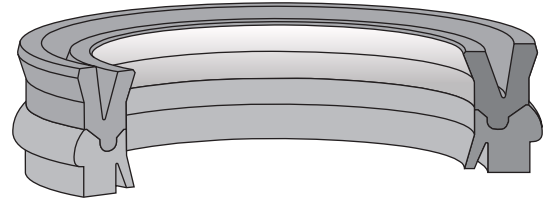
- Pneumatic Cylinders.

FEATURES

- Performs both sealing and wiping function.
- Smooth running due to optimum lubricant-retaining sealing lip geometry.
- Excellent media resistance.
- Long service life.
- Product profile ensures dirt deposits at the face of the cylinder.
- Good wear resistance.
- Installation in open housings.

INSTALLATION & ASSEMBLY

W08 rod cum wiper seal requires open housing and is pushed into the housing designed with a circlip groove as DIN 7993 (type B). It is retained by the rounded outside diameters which makes it easy to snap into the groove. Remove all the pores and scratches to avoid damaging the seal lip during assembly.



MATERIAL

Sealing Part : Nitrile Rubber 80/85 Shore A.
FKM 80/85 Shore A.
Scraping part : Polyurethane 92 Shore A
PTFE.

OPERATING CONDITIONS

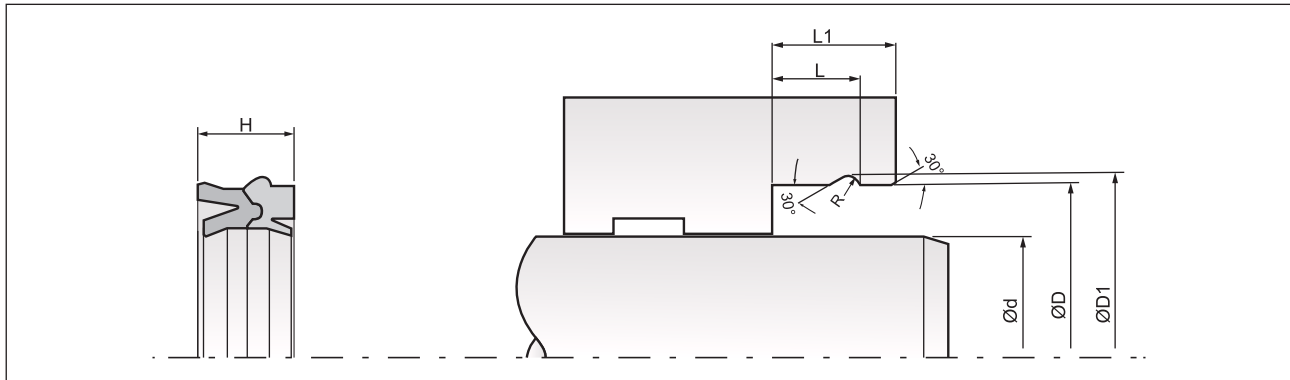
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

W08

Single Acting Rod Seal



Part No.	d (e9 / H11)	D (H10)	H	h	D1	L (0.20)	L1 (0.50)	Material	Mould No.
W080121001	12.00	19.00	10.00	5.90	21.00	8.00	12.30	NBR+PU	CS-2187
W080121004	12.00	20.00	11.00	5.50	22.00	8.80	13.00	NBR	CS-2201
W080121003	12.00	22.00	11.50	6.45	24.00	9.40	14.00	NBR	CS-2161
W080126601	12.00	22.00	11.50	6.45	24.00	9.40	14.00	FKM+PU	CS-1805
W080131001	13.00	26.00	11.00	5.50	28.00	8.80	13.00	NBR+PU	CS-2002
W080166601	16.00	26.00	11.00	5.50	28.00	8.80	13.00	FKM	CS-1329
W080161002	16.00	26.00	11.20	6.45	28.00	9.40	14.00	NBR	CS-2200
W080161003	16.00	30.00	11.40	6.45	32.00	9.40	14.00	NBR+PU	CS-2860
W080186601	18.00	28.00	11.00	5.50	30.00	8.80	13.00	FKM	SUB-3586
W080201003	20.00	30.00	10.70	5.50	32.00	8.80	13.00	NBR	CS-1205
W080206601	20.00	30.00	10.70	5.50	32.00	8.80	13.00	FKM+PU	CS-1690
W080206702	20.00	30.00	11.20	6.45	32.00	9.40	14.00	FKM+PU	CS-2727
W080201005	20.00	30.00	11.20	6.45	32.00	9.40	14.00	NBR	CS-2199
W080256604	25.00	35.00	11.00	5.50	37.50	8.80	13.00	FKM	SUB-3731
W080251002	25.00	35.00	11.30	6.45	37.50	9.40	14.00	NBR+PU	CS-1137
W080256601	25.00	35.00	11.30	6.45	37.50	9.40	14.00	FKM	CS-1330
W080251009	25.00	35.00	11.50	6.45	37.50	9.40	14.00	NBR	CS-2198
W080251007	25.00	35.00	11.50	6.45	37.50	9.40	14.00	NBR	CS-1948
W080252202	25.40	34.00	11.00	5.50	36.50	8.80	13.00	NEOPRENE	CS-2941
W080286601	28.00	38.00	11.50	6.45	40.50	9.40	14.00	FKM	CS-1718
W080301001	30.00	40.00	11.50	6.45	42.50	9.40	14.00	NBR	SUB-1083
W080321004	32.00	42.00	11.50	6.45	44.50	9.40	14.00	NBR	CS-2160
W080326601	32.00	42.00	11.50	6.45	44.50	9.40	14.00	FKM	CS-1334
W080321001	32.00	42.00	11.50	6.45	44.50	9.40	14.00	NBR	CS-1409
W080406604	40.00	50.00	11.50	6.45	52.50	9.40	14.00	NBR+PU	CS-1082
W080406901	40.00	50.00	11.50	6.45	52.50	9.40	14.00	NBR	SUB-1082
W080406605	40.00	50.00	11.50	6.45	52.50	9.40	14.00	FKM	SUB-3578
W080456601	45.00	55.00	12.00	7.45	58.20	10.40	15.00	FKM	SUC-1445
W080456602	45.00	55.00	12.50	7.45	58.20	10.40	15.00	FKM	CS-1083
W08045L501	45.00	55.00	12.50	7.45	58.20	10.40	15.00	PU	PUC-422
W080506601	50.00	60.00	12.00	7.45	63.20	10.40	15.00	FKM+PU	CS-2542
W080501001	50.00	60.00	12.00	7.45	63.20	10.40	15.00	NBR	CS-1410
W08063L501	63.00	75.00	13.00	7.45	78.20	11.40	16.00	PU	PUC-421
W080631001	63.00	75.00	13.00	7.45	78.20	11.40	16.00	NBR+PU	CS-1935
W080636601	63.00	75.00	13.00	7.45	78.20	11.40	16.00	FKM	SUC-1295

DETAILS

W09 is a pneumatic rod seal cum wiper with grinding element used for rods in pneumatic cylinders and is made of a polyurethane material. The Polyurethane materials are the highly wear resistant and has excellent compression set properties. The supporting / reinforcement part of this profile is made of a steel ring chemically bonded to the polyurethane compound. Reinforcement parts can be made with other materials on request.

COMPATIBILITY

Dry and oil-free air.

APPLICATION

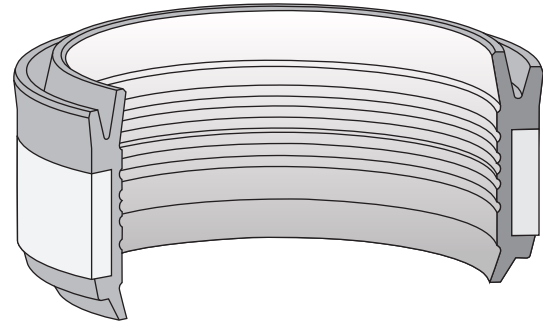
- Pneumatic Cylinders.
- Pneumatic Valves.
- Short-stroke cylinders.

FEATURES

- Multi-functional seal combines sealing, wiper and guiding element.
- The compact design .
- Smooth running due to optimum lubricant-retaining sealing lip geometry.
- Low compression cost.
- Good wear resistance.
- Long service life.

INSTALLATION & ASSEMBLY

W09 pneumatic seals requires open housing and are pressed into the bore and retained by a press fit between cylinder housing and a steel ring. Remove all the pores and scratches to avoid damaging the seal lip during assembly while pressing the seal into the groove, pressure should put upon metal part only.



MATERIAL

Polyurethane 92 Shore A.

OPERATING CONDITIONS

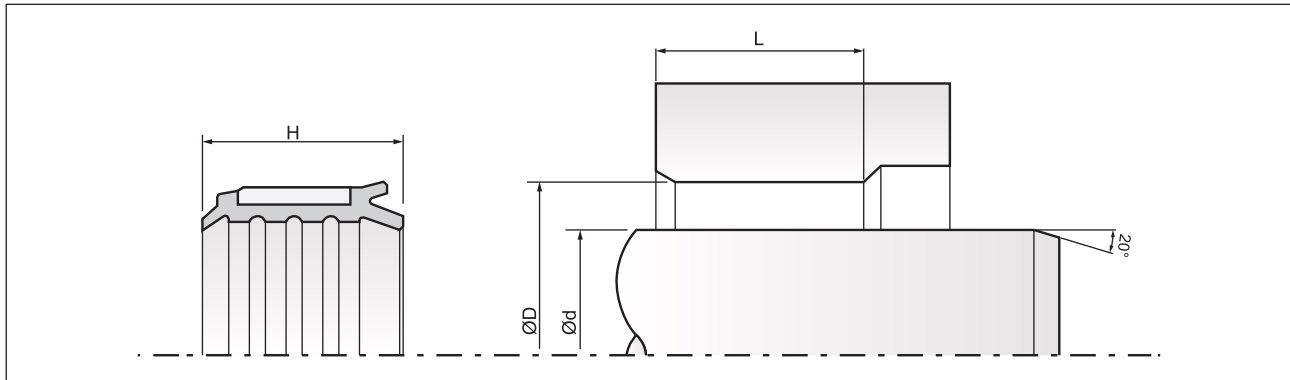
Temperature Range : -30°C to + 100°C
Pressure : 16 Bar
Speed : 1.0 m/s

SURFACE ROUGHNESS

Static : 1.6 µmRa
Dynamic : 0.4 µmRa

W09

Rod cum Wiper Seal



Part No.	d (h10)	D (H11)	H	L (+0.2)	Material	Mould No.
W090081101	8.00	15.00	17.50	15.00	NBR	SUA-1531
W090100901	10.00	17.00	20.30	18.00	NBR	SUA-1343
W090101101	10.00	17.00	20.50	18.00	NBR	SUA-1377
W090121101	12.00	19.00	22.50	19.50	NBR	SUA-937
W090121102	12.00	19.00	22.50	19.50	NBR	SUA-1310
W090140801	14.00	21.00	23.50	20.50	NBR	PLA-316
W090141101	14.00	21.00	23.50	20.50	NBR	WPS-6979
W090160801	16.00	25.00	25.50	20.50	NBR	SUA-836
W090161001	16.00	25.00	25.50	21.50	NBR	WPS-7104
W09020801	20.00	29.00	30.50	26.50	NBR	SUB-2309

Part No.	d (h10)	D (H11)	H	L (+0.2)	Material	Mould No.
W090220801	22.00	31.00	30.50	26.50	NBR	SUB-1895
W090251101	25.00	35.00	35.50	31.50	NBR	SUB-1785
W090251103	25.00	35.00	35.50	31.50	NBR	WPS-6978
W09025R301	25.00	35.00	35.50	31.50	PU	PPA-1545
W090251110	25.00	35.00	35.50	31.50	NBR	WPS-6688
W090300801	30.00	41.00	41.00	37.00	NBR	SUB-1536
W090301101	30.00	41.00	41.00	37.00	NBR	SUB-2144
W090325901	32.00	43.00	41.00	37.00	PU	PUB-710
W090351101	35.00	46.00	43.00	39.00	NBR	SUB-1740

GUIDE RINGS

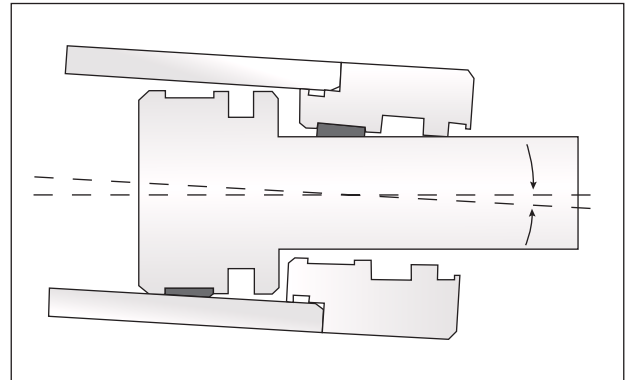
MAX TYPE	PRODUCT NAME	SEAL PROFILE	APPLICATION	PRESSURE (max) bar	TEMPERATURE	SPEED m/s	PAGE NO
	General Technical Information						149
PG1/ SG1	GUIDE RING		PISTON/ROD	-	-200°C TO +260°C	1.0	153
GS	GUIDE STRIP		PISTON/ROD	-	-200°C TO +260°C	1.0	153

Introduction

Maxspare offers a complete line of guide ring and guide strip to fit any hydraulic or pneumatic application. Guides adjust the radial loads of the forces acting on the cylinder assembly and guide the rod in the cylinder head, as well as the piston in the cylinder bore. The guide ring prevents metal-to-metal contact and improves the seal life performance. Compared to the metal guides the polymer guides have many advantages. Maxspare supplies different precision moulded and machined guide rings with different polymers and sizes, which make appropriate for your applications.

Advantages

- Prevents metal-to-metal contacts in cylinders self lubricating feature.
- High load bearing capacity.
- Eliminates local stress concentrations.
- Wear-resistant.
- Long service life.
- Low friction between the sliding metallic components.
- Damping of vibrations.
- Improves seal life performance.
- Large contact area due to higher degree of elastic deformation distributes the load and reduces stress to counter-surface.
- Provide guidance and alignment.
- Act as a good wiper.



- Eliminates hydrodynamic pressure problems in the guide system.
- Easy installation even in closed grooves.
- Low service costs.

Guide Ring Height Selection

While selecting the guide ring height, it is important to evaluate the transverse load that the guide ring will have to withstand. The elastic deformation, deflection and stretching of the components under the load creates an angular deviation between the piston and bore or rod and gland cap. Therefore, an assumption-based approach is recommended to determine the transverse load that occurred on the cylinder. As per thump rule, about 10- 15% of the hydraulic force is applied as a transverse load.

The fig.... shows the total pressure area that the transverse force (F) from the side load will affect. The guide ring height(H) required for an application can be calculated from the below formula:

$$H_{min} = \frac{F \times f}{d \times Pr}$$

where:

- F = Maximum radial load (N)
- f = Safety factor (f=2)
- d/D = Rod / Bore diameter (mm)
- Pr = Permissible surface pressure (N/mm²)
- H_{min} = Minimum guide ring height (mm)

For Example:

- d = 100
- F = 60000 N
- f = 2
- Pr = 100 N/mm²

$$H_{min} = \frac{60000 \times 2}{100 \times 100} = 12 \text{ mm}$$

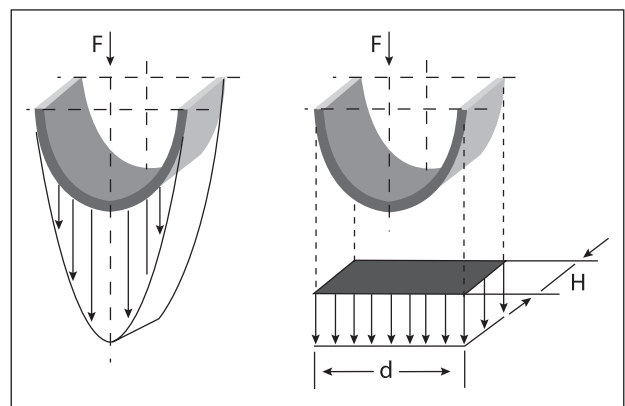


Fig. Calculation of guide ring height

The closest larger standard groove width of 15 mm must be selected for the above case.

Linear Length of Guide Ring

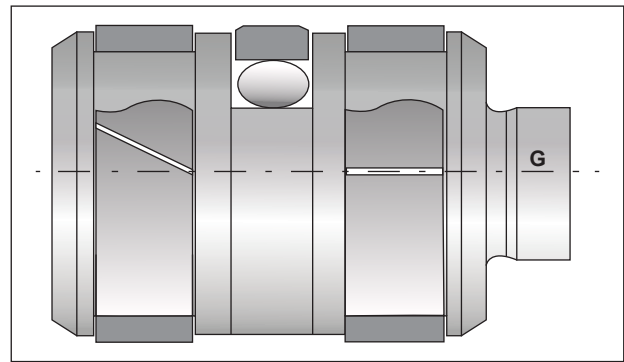
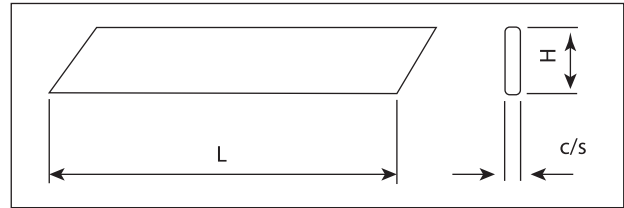
Guide strips are delivered in length form and can be cut to length to suit your requirements. The length not only calculated depending on the rod/bore diameter but also considering the thermal expansion in the guide ring while operation. also accounts for the gap 'G' necessary at the ends of the strip after fitting. These gap 'G' offsets the thermal expansion under the effects of temperature and prevents intermediate pressure and dry pressure in the system. The length of the wear ring can be calculated by using the following formula:

Rod application : $L(\text{mm}) = \pi \times (\text{Ø}D - c/s) - G$

Piston application : $L(\text{mm}) = \pi \times (\text{Ø}d + c/s) - G$

where

- L = Length of wear strip (mm)
- D = Piston diameter (mm)
- d = Rod diameter (mm)
- c/s = cross section/thickness of the wear strip
- G = Required gap after fitting
- H = Height of guide strip



Design Instructions

The guide ring has a rectangular cross-section with chamfered edges, thus preventing edge forces from becoming too high in the corner radial of the grooves. Chamfers too facilitate installation easier. Depending on the material, wear rings are supplied in split or endless or as a strip. This Strip material is available in rolls (meters)

Non-Cut / Endless Guide Ring

Used primarily in piston and rod applications under 0.500" in diameter.



Angle / Oblique Cut Guide Ring

Angled cuts are recommended for use in reciprocating applications.



Butt / Straight Cut Guide Ring

Straight cuts are for rotary applications.



Step / Z Cut Guide Ring

Stepped cuts are used in special applications, e.g. for flow restriction. Use to help to provide piston guidance and help reduce pressure pulses on the piston seal.



Material

For Calculating the required bearing material strength, it is important for determining the correct material to use. Below are criteria that need to be considered:

- The application whether rotary, reciprocating, or static.
- Surface speed.
- Lubrication.
- Temperature.
- Shaft / Bore material, hardness, and surface finish.

As per the different specific demands, guide strips, piston and rod guides are available in various materials.

Material	Compressive Strength at yield	Surface Speed	Operating Temp.	Size Availability	Uses
BFT (Bronze Filled Teflon)	Max. 15 N/mm ² (+25 °C) Max. 12 N/mm ² (+80 °C) Max. 8 N/mm ² (+120 °C)	15.0 m/s	-250 °C to +250 °C	Ring: 8 mm to 1000 mm Strip: 10 mtr continuous length	highly wear-resistant, low friction, especially for low to medium duty with limited radial forces.
PA6 (Nylon)		1.0 m/s	-30 °C to +100 °C	Ring: 10 to 1000 mm dia Strip: Not available	Medium duty, Lubricated environment
POM (Acetal)	max. 20 N/mm ²	1.0 m/s	-40 °C to +140 °C	Ring: 10 mm to 200 mm dia Strip: Not available	Medium duty, Well in dry non-lubricated environment
Glass Filled Acetal		1.0 m/s	-40 °C to +160 °C	Ring: 10 mm to 200 mm dia Strip: Not available	Medium duty, Lubricated environment

Tolerances

Depending on the material and dimensions of the wear ring, the thickness tolerance is in the range from +0.00/-0.08 mm except for BFT (Bronze filled Teflon) where it is +0.02/-0.03 mm.

DETAILS

The GS wear ring is supplied usually in split form. The split is oblique for Reciprocating / Oscillating application & straight for rotary movement applications. The GS wear ring is the most widely used general-purpose wear rings in light-duty applications and particularly for small diameters where the flexibility of the strip makes installation into a groove easier. The material used is PTFE with a Bronze content of 40%. For further improvement in performance, a Bronze content of 60% can be available on request. The GS wear ring can be cut to length to suit your specific requirements. Length not only calculated depending on the Rod/Cylinder bore diameter, but also considering thermal expansion in the GS wear ring in operation. The low friction PTFE material reduces 'stick-slip' between moving parts.

COMPATIBILITY

Hydraulic mineral oil, lubricating oil, water based soluble & water glycol fluids, synthetic fire-resistant fluids, and lubricating grease.

APPLICATION

Hydraulic and pneumatic cylinders pumps, dry applications compressors, chemical and process industries.

FEATURES

- Stick-slip free.
- Suitable for non-lubricating fluids.
- Minimum static and dynamic friction coefficient for low operating temperature and energy loss.
- Outstanding lubrication.
- High wear resistance.
- Long service life.
- Suitable for new environmentally friendly hydraulic fluids.
- The embedding of foreign particles is enhanced.
- Good damping effect absorbs vibrations.

INSTALLATION & ASSEMBLY

The split design makes the installation of this rings easy snap-in fitting. This allows the product to be used in rods, rams, pistons in reciprocating applications for both rotary and static applications.



MATERIAL

BFT (Bronze filled Teflon compound with 40% bronze)

OPERATING CONDITIONS

Temperature Range : -200°C to +260°C
 Pressure : Max 15 N/mm² (+25°C)
 Max 12 N/mm² (+80°C)
 Max 8 N/mm² (+120°C)
 Speed : 6.0 m/s (+80°C)
 15.0 m/s (+20°C)

SURFACE ROUGHNESS

Static : 3.2 µmRa
 Dynamic : 0.4 µmRa

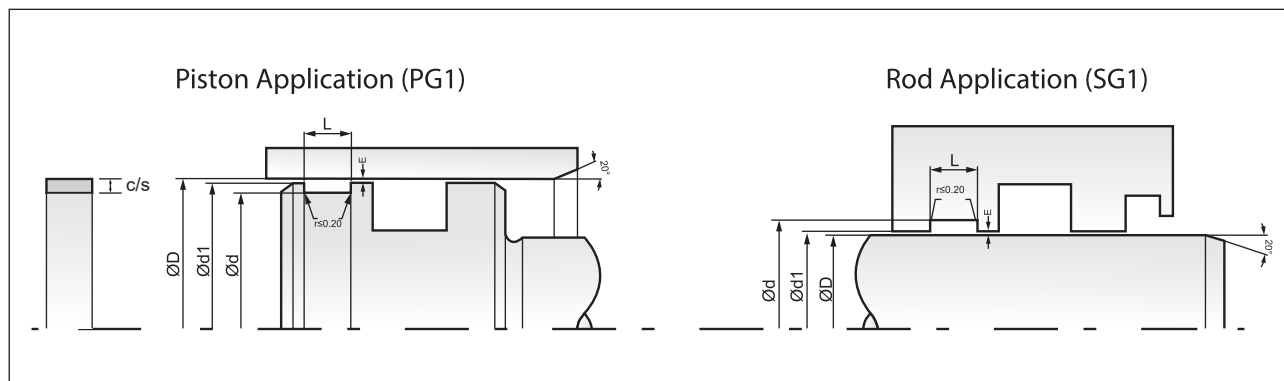
TOLERANCES

ROD

d1	f9
D2 = d1 + (c/s x 2)	≤ 80.00 H10 > 80.00 H9
L1	+0.20 -0.00

PISTON

D1	H11
d2 = D1 - (c/s x 2)	h8
L1	+0.20 -0.00



Part No.	Cross Section (c/s) mm	L (+0.20) mm	PG1 Bore Diameter Range (D) mm	SG1 Rod Diameter Range (d) mm
GS0017009	1.50	4.00	10 – 25	8 – 20
GS0017011	1.50	5.60	10 – 25	8 – 20
GS0087001	2.00	8.00	40 – 320	35 – 300
GS0027031	2.00	10.00	40 – 320	35 – 300
GS0027025	2.00	15.00	40 – 320	35 – 300
GS0027036	2.00	20.00	40 – 320	35 – 300
GS0027001	2.50	5.60	25 – 80	20 – 75
GS0027006	2.50	6.00	25 – 80	20 – 75
GS0027017	2.50	8.00	40 – 320	35 – 300
GS0027002	2.50	9.70	40 – 320	35 – 300
GS0027007	2.50	10.00	40 – 320	35 – 300
GS0027013	2.50	12.00	90 – 800	85 – 800
GS0027003	2.50	15.00	125 – 900	120 – 900
GS0027027	2.50	20.00	200 – 900	200 – 900
GS0027005	2.50	25.00	300 – 900	300 – 900
GS0037010	3.00	20.00	300 – 900	300 – 900
GS0037001	3.17	9.52	300 – 900	300 – 900
GS0037020	3.17	12.70	300 – 900	300 – 900
GS0037002	3.17	15.87	300 – 900	300 – 900
GS0037011	3.17	25.40	300 – 900	300 – 900

INTRODUCTION

COMPANY :
ADDRESS :
CITY : STATE : COUNTRY :
CONTACT PERSON : DESIGNATION : PIN CODE :
PHONE NO. : E-MAIL :

NAME OF THE EQUIPMENT : - PRODUCT TYPE ;

CORRESPONDING MAX SPARE STYLE : (Ref. Seal Profile Chart)

APPLICATION : ☐ **HYDRAULIC** ☐ **PNEUMATIC** TYPE OF MOTION : ☐ **SINGLE ACTING** ☐ **DOUBLE ACTING**

PRESSURE : MINIMUM OPERATING MAXIMUM TEMPERATURE : MINIMUM OPERATING MAXIMUM
..... BAR BAR BAR°C°C°C

HOUSING TYPE : ☐ **SPLIT** ☐ **SOLID** PISTON TYPE : ☐ **SPLIT** ☐ **SOLID**

EQUIPMENT MOUNTING STYLE : ☐ **HORIZONTAL** ☐ **VERTICAL** ☐ **TELESCOPIC**

EQUIPMENT CONDITION IN SEALING AREA : ☐ **SMOOTH** ☐ **SCORED** ☐ **PITTED**

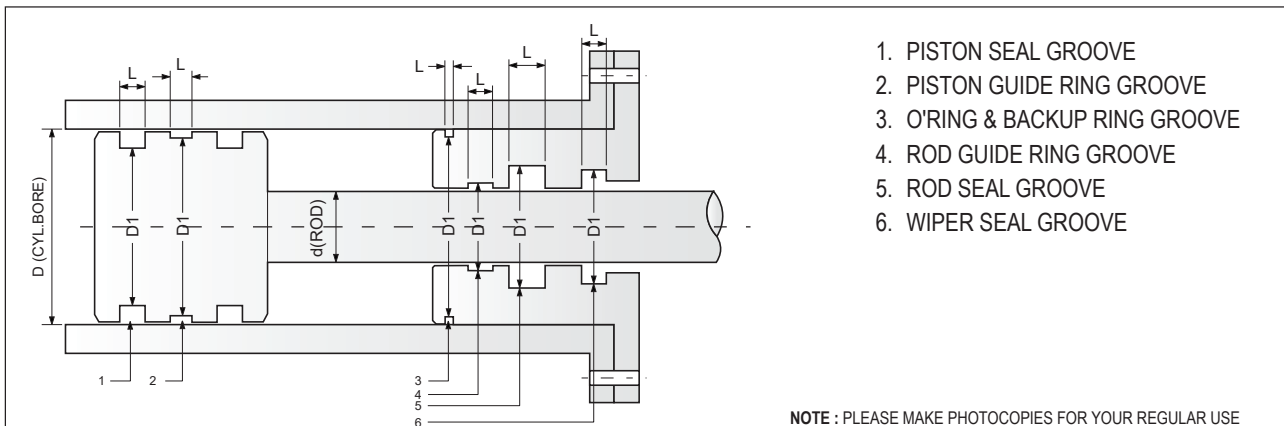
LENGTH OF STROKE : SEALING MEDIA :

ENCLOSED : ☐ EXISTING SAMPLE ☐ PRODUCT DRAWING

NOMINAL DIMENSIONS DETAILS : -

PISTON SEALS : -	D (CYL. BORE)	D1 (PISTON GROOVE DIA)	L (GROOVE WIDTH).....
ROD SEALS : -	d (ROD DIA)	D1 (HOUSING DIA)	L (GROOVE WIDTH)
WIPER SEALS : -	d (ROD DIA)	D1 (HOUSING DIA)	L (GROOVE WIDTH)
GUIDE RINGS :-	PISTON : - D	D1	L
	ROD : - d	D1	L
O'RING &	D (CYL. BORE)	D1 (GLAND GROOVE DIA).....	L (GROOVE WIDTH)

BACKUP RINGS : -



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MAX GROUP COMPANIES



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