

© Note: "CF" and graphics are the brands of Zhejiang Huaxi Sealing Technology Co., LTD



CONTACT US

西爱孚(杭州)密封科技有限公司
CF SEALS TECHNOLOGY CO.,LTD.

☎ +86-571-81600011 ✉ wlm@cfseals.com.cn 🌐 www.cfseal.com
📍 Yongli Baihe Intelligent Manufacturing Industrial Zone, Hangzhou, China



HYDRAULIC SEAL

Worldwide experts in seal design
& Manufacture

CF SEAL HYDRAULIC SEAL 2025 版

BRITISH FACTORY

英国工厂

40⁺

Exporting product to over 40 countries throughout
The Worlds continents.

Worldwide experts in seal design
& Manufacture



Robert Crossley Purdy

CF SEAL

Founded in 1871

CF SEAL was founded in 1871 and is headquartered in Newcastle, UK. Which is engaged in the manufacturing of seals and has become one of the leading brands in the global sealing industry. Its products are exported to more than 40 countries including North America, South America, Asia, and Europe.



ABOUT CHN

One of the leading global brands in the Sealing industry

2004年 | Company Establishment | **2000**万 | Corporate Investment

CF Seal entered in Chinese market in 2004. After nearly 20 years of accumulation and precipitation, CF Seal invested 20 million yuan to establish a polyurethane production base in China in 2023, engaged in research and manufacturing of polymer materials.

Worldwide experts in seal design
& Manufacture



Innovators

Through the decades we have become the innovators of seal development, with our vast technical knowledge & experience in all industries, with this in mind, we have the passion & desire to constantly strive to further our technical seal development programme, which includes research into new sealing materials, seal design, application development & new & unique production methods to achieve our goal of seal perfection.



Core Principles

CF Seals, has a set core principles, that have been adhered to since it, inception & these principles are the basis of CF Seals worldwide success, we believe that customer service & satisfaction is the most important aspect of our business, we achieve this by offering our customers a complete purchasing experience.



Storage information

Pls. pay attention to the following items when store seals:

- 1 Don't open the package when it is not necessary, otherwise the dust will stay in the seal or damage the seal.
- 2 Store in cool place, not under the direct sunshine. Violet and vapor will accelerate the aging of rubber and PU material which lead to size change.
- 3 When store unpacked seals, store in original condition away from foreign substance and dust. For nylon, tightly sealed to stop water absorption.
- 4 Keep away from hot source, including boiler, furnace and so on. Extra heat will accelerate the aging of the material.
- 5 Keep away from motors and ozone generators.
- 6 Don't use needle, iron thread or rope to hang the seal, which will damage the sealing lips.
- 7 Color change or white powder in the surface of seal (frost) will not affect the performance of seals.
- 8 PTFE ring will be scratched when drop or being punched. Be careful!

Shelf life

Shelf life of various seals as following:

Description	Material	Shelf Life
Rubber seals	PU	10 years
	NBR	10 years
	Silicon	20 years
	FKM	20 years

- 1 Within the shelf life, the seal should be stored in standard package, away from direct sunlight, extra hot and over damp.
- 2 Rust of metal part has great link to improper store.
- 3 Pls. confirm if the long-reserved part is rusty or not before use.
- 4 White powder in the surface of rubber element (frost) will not affect the performance of seals.

CONTENTS

Hydraulic seal

Contents

Contents ----- 05

Material information

Material of seals ----- 11

Application Area

Application Area ----- 17

Product Range

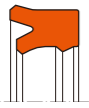
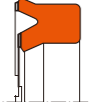
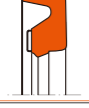
Rod seal ----- 27

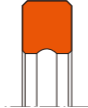
Piston seal ----- 111

Rod & piston seal ----- 167

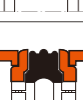
Wiper seal ----- 205

Rod Seals

Seal				Function		Operating Limits		
Type	Section	Page	Material	Single-acting	Double-acting	Pressure (Mpa)	Speed (m/s)	Temperature (°C)
C3		30	TPU	●		50	2	-50°C to+150°C
C2		41	TPU	●		50	2	-50°C to+150°C
C2B		66	TPU	●		50	2	-50°C to+150°C
CUH		75	PFKM	●		50	5	-50°C to+150°C
C2Y		81	TPU	●		50	2	-50°C to+150°C
CS		85	PTFE NBR	●		80	15	-40°C to+120°C
C10		97	TPU	●		80	5	-50°C to+150°C

Seal				Function		Operating Limits		
Type	Section	Page	Material	Single-acting	Double-acting	Pressure (Mpa)	Speed (m/s)	Temperature (°C)
C14		100	TPU		●	50	1	-50°C to+150°C
CAS		104	PFKM		●	50	1	-50°C to+150°C

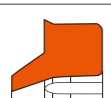
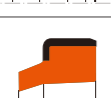
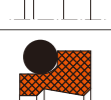
Piston Seals

Seal				Function		Operating Limits		
Type	Section	Page	Material	Single-acting	Double-acting	Pressure (Mpa)	Speed (m/s)	Temperature (°C)
C1		114	TPU	●		50	1	-50°C to+150°C
CG		136	PTFE NBR		●	80	15	-40°C to+120°C
CPW		146	TPU NBR		●	40	0.5	-40°C to+120°C
CPI		149	TPU NBR		●	40	0.5	-40°C to+120°C
CUT		153	PA NBR		●	80	1	-40°C to+100°C
CGA		157	PTFE NBR POM		●	60	1.5	-40°C to+120°C
MDB		160	NBR POM TFE		●	50	0.5	-40°C to+120°C

Rod & piston seal

Seal				Function		Operating Limits		
Type	Section	Page	Material	Single-acting	Double-acting	Pressure (Mpa)	Speed (m/s)	Temperature (°C)
CU		170	TPU	●		40	1	-60°C to+110°C

Wiper seal

Seal				Function		Operating Limits		
Type	Section	Page	Material	Single-acting	Double-acting	Pressure (Mpa)	Speed (m/s)	Temperature (°C)
CHA		208	TPU		●		0.5	-50°C to+150°C
CHC		213	TPU	●			2	-50°C to+150°C
CHJ		220	TPE	●			4	-60°C to+120°C
CE1		228	TPU		●		2	-35°C to+110°C
CE3		231	TPU	●			2	-35°C to+110°C
CE2		236	TPU	●			2	-35°C to+110°C
CH		239	PTFE NBR			●	5	-40°C to+120°C

Material information

TPU—Polyurethane

Working Temperatures:-50°C to +150°C.

Polyurethane has been developed in response to the industries requirement for flexible, easy fit, long life sealing systems, for use in a variety of temperature and media applications.

Polyurethane is a 95 Shore A TPU with outstanding compression set values at both low and elevated temperatures, other properties such as strength, abrasion, tear resistance and low temperature flexibility are excellent resistance to petroleum products, hydrocarbons, ozone and weathering are also good.

NBR-ACRYLONITRILE BUTADIENE RUBBER.

Commonly known as NITRILE or BUNAN. Nitrile rubber forms the most common group of elastomers for general use in the sealing industry. Chemically, Nitrile is a copolymer of Butadiene and Acrylonitrile with ratio's of the two depending upon the application of use.

Nitrile elastomers have good physical characteristics, and are superior to most rubbers regarding resistance to swell in oils and fats etc. and abrasion resistance.

LOW ACRYLONITRILE NBR 20% ACRYLONITRILE.80% BUTADIENE

Working Temperatures:-30°C to +100°C. Low Nitrile compounds have a very good low temperature flexibility and elasticity, but the resistance to swell in oils and fats etc. is, however, poorer than that of compounds which have higher Acrylonitrile content.

MEDIUM ACRYLONITRILE NBR 34%,ACRYLONITRILE,66% BUTADIENE

Working Temperatures:-20°C to +100°C. Medium Nitrile compounds have a poorer low temperature flexibility and elasticity than that of low Nitrile compounds, but offer a better resistance to swell in oils and fats.

HIGH ACRYLONITRILE NBR 50% ACRYLONITRILE,50% BUTADIENE

Working Temperatures:0°C to +100°C. High Nitrile compounds have very poor low temperature flexibility and elasticity, but resistance to swell in oil and fats is excellent, and also the gas permeability becomes much lower the higher the Acrylonitrile content.

THERMOPLASTICS AND PTFE MATERIALS

PTFE Polytetrafluoroethylene

Working Temperatures:-100°C to +260°C .

PTFE is a synthetic material with a wax like feel with a surface which repels the majority of liquids.

It has low co-efficient of friction, is inert, combined with a very wide working temperature range -100°C to +260°C .

Melted alkaline metals and gaseous fluorine will chemically attack at high temperature and pressure. Also some highly fluorinated greasing oils cause swelling at high temperature and pressures. The material also tends to deform over a period of time.

Adding appropriate fillers, glass fibre, graphite, carbon and bronze, will improve compressive creep, dimensional stability under load and abrasion resistance.

PTFE is resistant to weathering and is not flammable. It is used extensively in hydraulics for low friction.

PA-POLYAMIDES

Working Temperatures:-20°C to +90°C .

Polyamides have excellent sliding properties. Polyamides are resistant to aliphatic and aromatic hydrocarbons, mineral oils, greases, esters and ketones. They are not resistant to acids, phenols and some solvents. In a relatively humid atmosphere, approximately 65% and temperature +20°C , they absorb about 3% water, when totally immersed in water this will increase to about 10%. Absorption of water increases the elasticity and released when the surrounding atmosphere has a lower humidity.

The absorption of water due to the surrounding humidity causes volume change, (dimensions are effected) the rate of change due to weather is very slow, therefore, the effect may be negligible.

PC·POLYCARBONATES

Working Temperature Range:-40°C to +100°C .

Polycarbonates absorb less water than Polyamides. In a relative humidity 60% and temperature of +20°C, they absorb roughly 0.2% water. When immersed the absorption increases to 0.3%. The figures quoted have no practical influence on the mechanical properties or dimensional stability.

Polycarbonates soften at temperatures above +135°C and melt at +220°C, they retain good mechanical properties down to -100°C; below this, impact strength is noticeably reduced.

Polycarbonates are resistant to water up to 60°C (without grease additives), diluted acids, salt solutions, many mineral, animal and vegetable oils, aliphatic hydrocarbons and alcohols excluding methyl alcohol.

Polycarbonates are not resistant to alkalis, ammonia solutions, amines, trichloroethylene, aromatic carbons, ketones, esters and HFC fluids.

POM·POLYACETAL

Trade Name: Delrin *Du Pont*.

Working Temperatures:-50°C to +122°C .

Thermoplastic polymers have gained widespread recognition for reliability of performance. They have a combination of physical properties not available with either metals or other plastics, due to chemical composition.

POM has a temperature range of -50°C in air, with intermittent use up to 160°C, service life is reduced by lengthy use in steam, hot water and strong acids.

POM has high mechanical strength, rigidity, fatigue endurance, dimensional stability, high resistance to repeated impacts, resilience and natural lubricity. It has excellent resistance to moisture, gasoline, solvents and many neutral chemicals.

FKM·FLOUROCARBON RUBBER

Commonly known as Viton *du Pont trade mark*
Working Temperatures:-20°C to +220°C.

FKM Elastomers offer compatibility to fire resistant hydraulic fluids, hot oils, greases, hydrocarbon, chlorinated hydrocarbons, most organic acids, even at high concentrations, and a number of organic compounds.

FKM, however, is not resistant to swell in methanol. Ketones, esters and ethers, although in specially formulated compounds this can be greatly improved.

XNBR·CARBOXYLATED NITRILE RUBBER

Working Temperatures:-20°C to +100°C

XNBR rubbers have very good dynamic properties, and a better resistance to solvent swell and abrasion resistance. Higher shore hardness compounds are easier to achieve with XNBR, due to the carboxylic side groups having a hydrophilic character. There is a greater affinity for non-black fillers, and hence these fillers have a better reinforcement.

XNBR may give improved characteristic's compared to NBR, but compression set is generally poorer.

HNBR ·HYDROGENATED ACRYLONITRILE BUTADIENE RUBBER

Working Temperature Range:-35°C to +140°C

Hydrogenated NBR Elastomers offer a unique combination of heat resistance, oil resistance and resistance to a number of aggressive chemicals.

The products made of this material have outstanding mechanical properties, very good resistance to abrasion, excellent compression set. Superior resistance to weathering, ozone and hot air, and very good resistance to technical oils, even in the presence of hydrogen sulphide and amines.

HNBR compounds would only be used in an application where the seal is subject to a hostile environment.

EPDM ·ETHYLENE PROPYLENE DIEN RUBBER

Working Temperatures:-40°C to +120°C

EPDM is from a general class of Ethylene Propylene Dien Rubber, with enhanced properties.

Dynamic properties and dynamic fatigue resistance is very good, also is its low temperature flexibility. Resistance to swell in organic acids is excellent, but in concentrated inorganic acids the compound will harden or even be destroyed.

EPDM is not suitable for use in mineral based oils or hydrocarbons, but in non-mineral automotive brake fluid and phosphate esters the swelling is minimal. A wide range of hardnesses can be achieved, with harder compounds giving acceptable high elasticity.

ACM·POLYACRYLIC

Working Temperatures:-10°C to +125°C

Polyacrylics are polymerised products of acrylic acid esters, a group midway in properties, between Nitrile and Fluorocarbon rubbers.

They have excellent resistance to mineral oils, hypoid oils and greases up to 125°C.

Resistance to ageing and flex-cracking makes them favourable for use for rotary shaft seals.

Low temperature Characteristics are not outstanding, also mechanical strength and resistance to water are inferior. Polyacrylic may be compounded to give a very high temperature resistance, but this is reflected in price.

MQ·METHYL SILICONE RUBBER

Commonly known as Silicone.
Working Temperatures:-70°C to +250°C.

Basically silicone compounds have poor strength and tear resistance, though mechanical performance can be enhanced by special compounding. Resistance to Alkalis is generally good. Chemical resistance to oils and fuels is poor.

Silicone rubbers are not recommended for use with petrols, paraffin, lighter mineral oils, or steam above a pressure of 50 lb/in², as swelling and softening can occur.

The chief advantages are, silicone retains flexibility at very low temperatures and can withstand continuous heating without hardening, making it suitable for low and high temperature applications.

CR·CHLOROPRENE RUBBER

Commonly known as Neoprene Working Temperatures:-20°C to +100°C.

CR based compounds have excellent resistance to ozone, many chemicals, many refrigerants and are fire resistant. Special compounds have good resistance to water, salt solutions, diluted acids and alkalis.

CR compounds are not resistant to aromatics, chlorinated hydrocarbons and many polar solvents.

Physical performance

Sealing material	Test standard	Unit	PU				PU					PE	NBR	
Material code			80P81	92P79	93P60		93P86	93P87	94P97	94P09	94P95	55E06	70R006	80R156
Density	DIN 53479	g/cm ³	1,17	1,18	1,14		1,2	1,2	1,2	1,2	1,18	1,19	1,21	1,3
Hardness	DIN 53505	Shore A	80+/-2	92+/-2	93+/- 2		93 +/-2	93+/-2	94+/-2	94+/-2	94+/-2		70 +/-5	80 +/-5
Hardness	DIN 53505	Shore D										55		
Tensile strength	DIN 53504	Mpa	≥35	48	54		50	47	55	>40	59	60	>15	>15
Elongation at breakage	DIN 53504	%	420	500	550		500	410	500	450	460	520	-200	> 200
Modulus @ 100% elongation	DIN 53504	Mpa	6	8	11.5		10	12.6	12.5	12	11	14		
Modulus @ 300% elongation	DIN 53504	Mpa	12	17	18		20	31.8	25	18	21	30		
Compression set 24h/70°C	DIN 53517	%	20	25	26		25	26	25	45	47	25		
Compression set 24h/100°C	DIN 53517	%	23	30	30		30	30	30			30	20	22
Abrasion loss	DIN 53516	mm ³	≤40	28	20		30	30	35	35	35	20		
Lowest working temperature		°C	-35	-35	-60		-35	-35	-35	-40	-50	-50	-30	-30
Highest working temperature		°C	100	110	110		110	110	110	150	150	100	100	100
Application example			Mild material Pneumatic material	Pneumatic material	Low temperature resistant material		High temperature resistant material	Anti water- dissolution material	Low temperature resistant / anti-extrusion material	High and low temperature resistant / anti-wearing material	High and low temperature resistant / anti-wearing material	Low temperature resistant / high strength material	Static sealing material	Dynamic sealing material

Application Area

Model	Application	Piston Sealing System	Operating Limits	Rod Sealing System	Operating Limits
 Hydraulic shovel excavator	Boom cylinder Forearm cylinder Bucket cylinder Adjusting cylinder	 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
		 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
		 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
		 (C1N)	Type: CIN Material: TPU94P09 Hardness: 94A Pressure: 80Mpa Temperature: -40°Cto+150°C Running speed: 1m/s	 (C2) (CHC)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Mini construction equipment Mini backhoe excavator	Boom cylinder Forearm cylinder Bucket cylinder Blade cylinder	 (CGF)	Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s	 (C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Wheeled loader	Lifting cylinder Bucket cylinder	 (CGF)	Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
	Assisted steering cylinder	 (CGF)	Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s

Application Area

Model	Application	Piston Sealing System	Operating Limits	Rod Sealing System	Operating Limits
 Earthmover	Lifting cylinder Blade cylinder	 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s
 Off-road crane (automobile crane) Wheeled crane	Telescopic cylinder Sliding cylinder Lifting cylinder	 (CZK) (C1)	Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s	 (CS C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s
		 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s
		 (CZK) (C1)	Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s	 (C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s
	Hydraulic suspension cylinder	 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (CS C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s
 Self-dumping truck	Tilting cylinder	 (CGA)	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C10 C2) (CE1)	Type: C2 Material: TPU 94P09 Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s

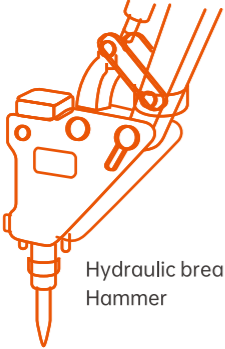
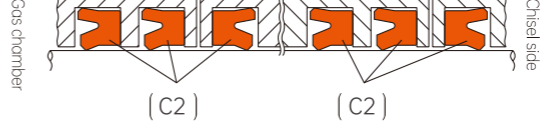
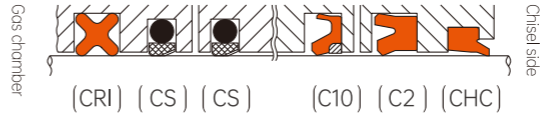
Application Area

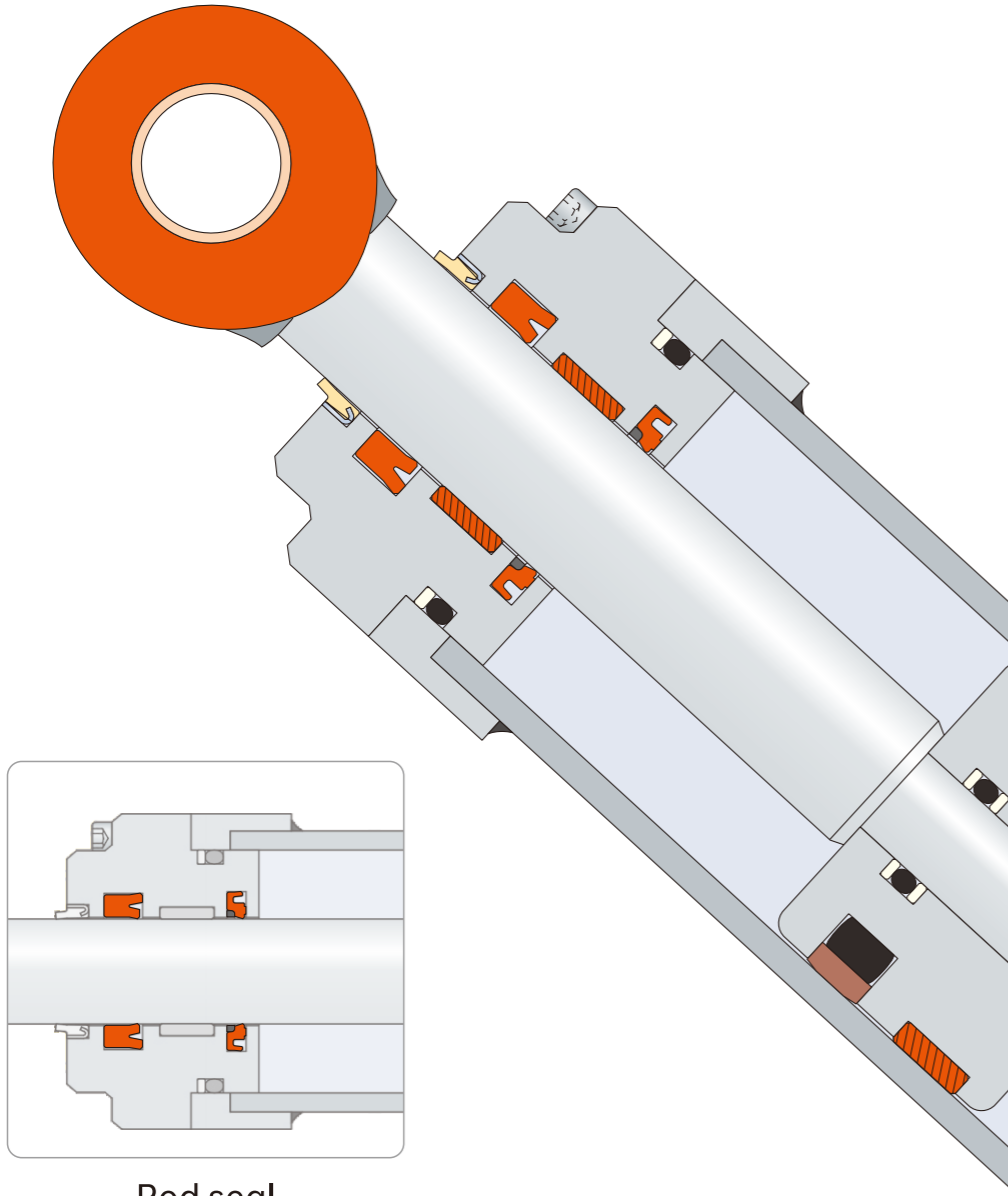
Model	Application	Piston Sealing System	Operating Limits	Rod Sealing System	Operating Limits
Forklift Battery forklift	Tilting cylinder		Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
	Lifting cylinder (low temperature specifications)		Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
	Assisted steering cylinder		Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
Garbage collection vehicle	—		Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
Combine harvester Tractor	Double-acting cylinder		Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
	Single-acting cylinder		Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s	—	
Punch machinery	—		Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s

Application Area

Model	Application	Piston Sealing System	Operating Limits	Rod Sealing System	Operating Limits
 Manipulator	—	 CGF	Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s	 (C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Elevator	—	 C1	Type: C1 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -40°Cto+150°C Running speed: 1m/s	 (CS) (C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Plastic-injection machine	—	 CGA	Type: CGA Material: PTFE/NBR Pressure: 60Mpa Temperature: -40°Cto+120°C Running speed: 1.5m/s	 (C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Multi-storey park building	—	 CGF	Type: CGF Material: PTFE/NBR Pressure: 40Mpa Temperature: -30°Cto+120°C Running speed: 1.5m/s	 (CS) (C2) (CE1)	Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
 Hydraulic elevator	—		—	 (C2N) (CHA)	Type: C2N Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s

Application Area

Model	Application	Magnified view of sealing system	Operating Limits
 Hydraulic breaking Hammer	—		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s
	—		Type: C2 Material: TPU 94P95 Hardness: 94A Pressure: 50Mpa Temperature: -50°Cto+150°C Running speed: 1m/s



Rod seal

CONTENTS

Rod seal

Product Range

C3	30-40
C2	41-64
C2B	66-74
CUH	75-80
C2Y	81-84
CS	85-96
C10	97-99
C14	100-101
CAS	103-109



Seals profile



RS01



RS05



RS17



RS31-33



R53



RS01A



RS08



RS17A



RS35



RS01B



RS09



RS17B



RS1012T



RS02



RS09A



RS17C



RS1012M



RS02A



RS09B



RS17D



R50



RS02B



RS91



RS17E



R50A



RS03



RS91B



RS19



R51



RS04



RS16



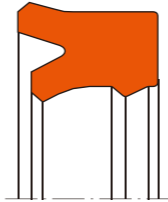
RS20



R52

C3

Rod seal



Description

Double acting rod seal with compact double lips, its supportive minor lip can effectively avoid eccentric distortion to minimize abrasion, and stop possible leakage under low working pressure.

Material

Material: polyurethane TPU
Code: 92P50
Hardness: 93 Shore A

Feature

- Excellent abrasion resistant.
- Superior impact resistance and anti-extrusion.
- Low compression set.
- Fit for hardest working environment.
- Ample lubrication brought by pressure media between major and minor lips.
- Excellent seals performance under zero pressure.
- Effectively stop entering of outside air.
- Easy to install.

Examples of use

- earth moving equipment
- supporting cylinders
- marine hydraulics
- mobile hydraulics

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_1 > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

Gap dimension

Profile dimension	Max.permissible gap dimension $S_{max.}$			
	16 MPa	26 MPa	32 MPa	40 MPa
L				
8 - 13	0.50	0.40	0.35	-
11 - 13	0.55	0.45	0.40	0.35
11 - 16	0.60	0.50	0.45	0.40
≥16	0.60	0.50	0.45	0.40

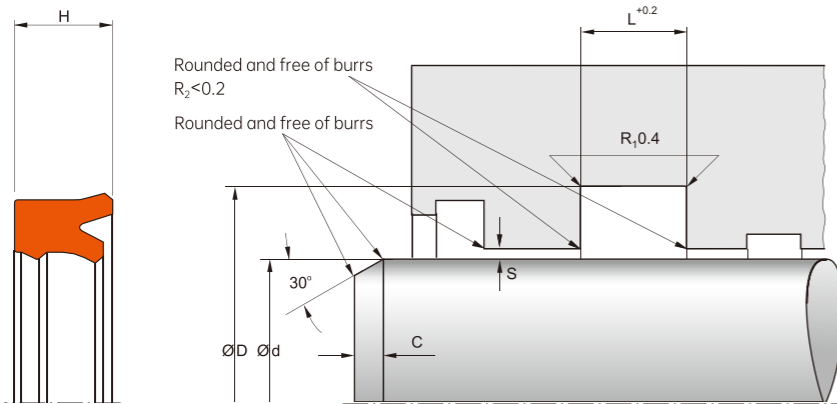
Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Working limit

Pressure: 50 MPa
Running speed: 2 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Installation Example C3



Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
8	14	6	7	C3020080
8	16	5.7	6.3	C3010080
9	16	5.7	6.3	C3010090
10	16	4.5	5.2	C3010100
10	17	5.7	6.3	C3030100
10	18	5.7	6.3	C3020100
12	19	5	5.6	C3010120
12	20	5.7	6.3	C3020120
12	22	7	8	C3030120
14	20	5.7	6.3	C3010140
14	21	5	5.6	C3020140
14	22	5.7	6.3	C3030140
14	24	7.3	8	C3040140
16	24	5.7	6.3	C3010160

• For further information, pls. contact hotline

Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
16	26	5	6	C3020160
16	26	7.3	8	C3030160
18	25	5	5.6	C3010180
18	26	5.7	6.3	C3020180
18	28	7.3	8	C3030180
20	28	5.7	6.3	C3010200
20	30	7.3	8	C3020200
22	29	5	5.6	C3010220
22	30	6	7	C3020220
22	32	7.3	8	C3030220
25	33	5	6	C3040250
25	33	5.7	6.3	C3010250
25	33	6.5	7.3	C3020250
25	35	7.3	8	C3030250
26	36	10	11	C3010260
28	36	5.7	6.3	C3010280
28	36	7.3	8	C3020280
28	38	7.3	8	C3030280
28	38	8	9	C3040280
28	43	11.5	12.5	C3050280
28.575	40.8	9.8	11	C3010285
30	38	5.7	6.3	C3010300
30	38	6	7	C3060300
30	40	6.5	7.5	C3020300

• For further information, pls. contact hotline

Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
30	40	7.3	8	C3030300
30	40	10	11	C3040300
30	45	10	11	C3050300
32	42	5.7	6.3	C3010320
32	40	5.5	6.3	C3070320
32	40	5.8	6.3	C3060320
32	40	6.7	7.7	C3020320
32	42	7.3	8	C3030320
32	42	10	11	C3040320
32	45	10	11	C3050320
35	42	7	8	C3010350
35	43	5.7	6.3	C3020350
35	43	7.2	8	C3030350
35	45	7	8	C3040350
35	45	10	11	C3050350
35	47	16.5	17.5	C3060350
36	44	5.7	6.3	C3010360
36	44	6.3	7	C3020360
36	46	7.3	8	C3030360
36	46	7.5	8.5	C3040360
36	51	10	11	C3050360
37	47	10	11	C3010370
38	48	8	9	C3010380
40	48	5.7	6.3	C3010400

• For further information, pls. contact hotline

Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
40	50	7.3	8	C3020400
40	50	10	11	C3030400
40	52	8	9	C3050400
40	55	11.4	12.5	C3040400
43	53	7.3	8	C3010430
45	53	5.6	6.3	C3030450
45	53	7.3	8	C3080450
45	53	8	9	C3070450
45	55	7.3	8	C3010450
45	55	10	11	C3040450
45	60	11.5	12.5	C3020450
46	56	10	11	C3010460
48	56	11.5	12.5	C3010480
50	57	10	11	C3010500
50	58	11.5	12.5	C3020500
50	60	7.3	8	C3030500
50	60	9	10	C3080500
50	60	10	11	C3040500
50	65	9	10	C3060500
50	65	11.4	12.5	C3050500
50	70	12	13	C3070500
52	62	7.3	8	C3020520
52	62	10	11	C3010520
55	63	11.5	12.5	C3010550

• For further information, pls. contact hotline

Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
55	65	7.3	8	C3050550
55	65	10	11	C3020550
55	67	10	11	C3030550
55	68	10	11	C2060550
55	70	10	11	C3040550
55	70	12	13	C3070550
56	71	11.4	12.5	C3010560
60	68	11.5	12.5	C3010600
60	68	13	14	C3080600
60	70	7.3	8	C3020600
60	70	10	11	C3030600
60	70	11.5	12.5	C3040600
60	70	12	13	C3090600
60	75	9	10	C3070600
60	75	10	11	C3050600
60	75	11.5	12.5	C3060600
63	71	8	9	C3030630
63	78	11.4	12.5	C3010630
63	83	13.5	14.5	C3020630
64	72	9.1	10	C3010640
65	73	11.5	12.5	C3060650
65	75	10	11	C3020650
65	75	11.5	12.5	C3010650
65	78	10	11	C3050650

• For further information, pls. contact hotline

Article List C3

d f8/h9	D H10	H	L +0.2	Article No.
65	80	11.5	12.5	C3040650
65	85	11.4	12.5	C3030650
68	78	12	13	C3010680
70	78	11.5	12.5	C3010700
70	80	11.5	12.5	C3020700
70	80	11.4	12.5	C3030700
70	80	12	13	C3060700
70	85	11.4	12.5	C3050700
70	85	11.5	12.5	C3040700
75	83	11.5	12.5	C3010750
75	85	10	11	C3020750
75	85	11.5	12.5	C3030750
75	88	10	11	C3050750
75	90	10	11	C3040750
78	86	11.5	12.5	C3010780
78	88	14.3	15	C3020780
80	88	8	9	C3050800
80	88	11.5	12.5	C3060800
80	90	8	9	C3070800
80	90	12	13	C3040800
80	95	11.4	12.5	C3020800
80	95	11.5	12.5	C3010800
80	100	12	13	C3030800
85	93	11.5	12.5	C3020850

• For further information, pls. contact hotline

Article List C3				
d f8/h9	D H10	H	L +0.2	Article No.
85	100	11.5	12.5	C3010850
85	100	12	13	C3030850
90	98	11.5	12.5	C3010900
90	100	8	9	C3060900
90	100	10	11	C3080900
90	100	11.5	12.5	C3020900
90	105	11.4	12.5	C3030900
90	105	12	13	C3040900
90	110	14.5	16	C3070900
92	107	11.4	12.5	C3010920
93	101	11.5	12.5	C3010930
95	103	11.5	12.5	C3010950
95	105	11.4	12.5	C3040950
95	105	12	13	C3020950
95	115	12	13	C3030950
97	105	11.5	12.5	C3010970
97	105	13	14	C3020970
99	109	14.3	15	C3010990
100	108	11.5	12.5	C3011000
100	108	12	13	C3091000
100	110	10	11	C3021000
100	110	11.4	12.5	C3031000
100	115	9	10	C3071000
100	115	10	11	C3041000

• For further information, pls. contact hotline

Article List C3				
d f8/h9	D H10	H	L +0.2	Article No.
100	115	12	13	C3051000
100	120	14.5	16	C3081100
100	120	15	16	C3061000
105	113	11.5	12.5	C3021050
105	115	11.5	12.5	C3011050
107	115	11.5	12.5	C3011070
108.5	116.5	11.5	12.5	C3011085
110	118	11.5	12.5	C3051100
110	125	14.5	16	C3021100
110	130	10	11	C3031100
110	130	14.5	16	C3041100
110	130	15	16	C3011100
115	123	11.5	12.5	C3011150
115	125	12	13	C3021150
118	126	11.5	12.5	C3011180
118	126	13	14	C3021180
120	130	11.4	12.5	C3011200
120	130	14	15	C3021200
120	140	12	13	C3031200
125	133	11.5	12.5	C3011250
125	135	10	11	C3021250
125	135	11.4	12.5	C3041250
125	145	15	16	C3031250
130	138	11.5	12.5	C3011300

• For further information, pls. contact hotline

Article List C3				
d f8/h9	D H10	H	L +0.2	Article No.
130	145	12	13	C3021300
130	150	12	13	C3031300
135	150	11.5	12.5	C3011350
140	150	11.5	12.5	C3011400
140	160	14.5	16	C3031400
140	160	15	16	C3021400
141	151	14.3	15	C3011410
145	153	11.5	12.5	C3011450
145	155	11.4	12.5	C3021450
150	160	11.4	12.5	C3021500
150	170	11.4	12.5	C3031500
150	170	15	16	C3011500
152	160	9.1	10	C3011520
160	168	11.5	12.5	C3011600
160	170	11.5	12.5	C3021600
160	185	18.2	20	C3031600
162	172	14.3	15	C3011620
167	175	11.5	12.5	C3011670
170	180	12	13	C3011700
170	200	18	19	C3021700
171	179	13	14	C3011710
175	185	11.4	12.5	C3011750
176	186	12	13	C3011760
180	188	11.5	12.5	C3031800

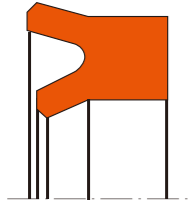
• For further information, pls. contact hotline

Article List C3				
d f8/h9	D H10	H	L +0.2	Article No.
180	190	11.4	12.5	C3041800
180	195	12.5	13.5	C3011800
180	205	15	16	C3021800
183	193	14.3	15	C3011830
193	201	11.5	12.5	C3011930
200	211	12	13	C3032000
200	225	15	16	C3012000
200	225	18.2	20	C3022000
207	217	14.3	15	C3012070
220	250	22.7	25	C3012200
223	231	11.5	12.5	C3012230
230	260	22.7	25	C3012300
250	280	22.7	25	C3012500
266.7	284	9.73	11.3	C3012667
280	310	18	19	C3012800

• For further information, pls. contact hotline

C2

Rod seal



Description

Lip seal compact in outside diameter with asymmetrical sealing lips.

Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to punch load and pressure limit.
- Superior anti-extrusion performance.
- Fit for harsh working environment.
- Easy to install.

Examples of use

- earth moving equipment
- agricultural machinery
- injection moulding machines
- steel hydraulics engineering
- support cylinders
- manipulators
- industrial vehicles
- cranes
- loading platforms
- presses
- marine hydraulics

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

Gap dimension

Profile dimension	Max.permissible gap dimension $S_{max.}$			
	16 MPa	26 MPa	32 MPa	40 MPa
□ 5.0	0.50	0.40	0.35	-
>5.0 - 7.5	0.55	0.45	0.40	0.35
>7.5 - 12.5	0.60	0.50	0.45	0.40
15.0	0.60	0.50	0.45	0.40

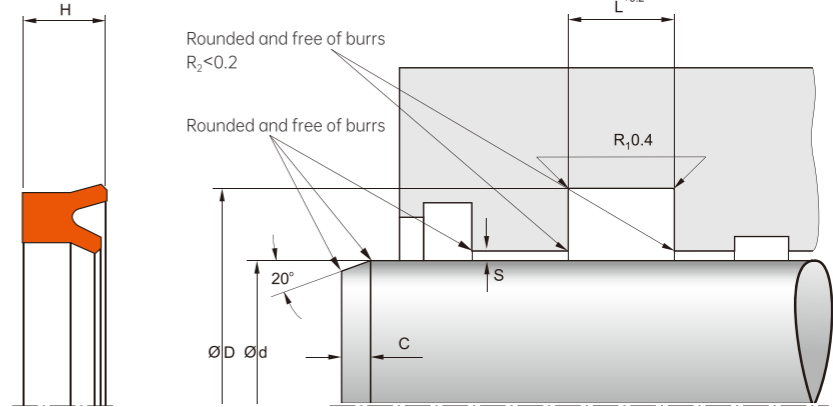
Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Working limit

Pressure: 50 MPa
Running speed: 2 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Installation Example C2



Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
6	13	5	5.6	C2010060
6	14	5.7	6.3	C2020060
6.3	14.3	5	5.7	C2010063
6.3	16.3	6	7	C2020063
6.3	16.3	7.5	8.5	C2030063
6.3	16.3	8	9	C2040063
8	14	5	5.6	C2010080
8	16	5	5.7	C2020080
8	16	5.7	6.3	C2030080
8	18	7.5	8.5	C2040080
8	18	8	9	C2050080
9	17	5	5.7	C2010090
9	19	6	7	C2020090
9	19	7.5	8.5	C2030090

- For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
9	19	8	9	C2040090
10	16	4.5	5.2	C2010100
10	18	5	5.7	C2020100
10	18	5.7	6.3	C2030100
10	20	5.7	6.4	C2040100
10	20	6	7	C2050100
10	20	7.2	8	C2060100
10	20	7.5	8.5	C2070100
10	20	8	9	C2080100
11.2	19.2	5	5.7	C2010112
11.2	21.2	6	7	C2020112
11.2	21.2	7.5	8.5	C2030112
11.2	21.2	8	9	C2040112
12	19	5	5.6	C2010120
12	20	5.7	6.3	C2020120
12	22	7.2	8	C2030120
12	22	8	9	C2040120
12.5	20.5	5	5.7	C2010125
12.5	22.5	6	7	C2020125
12.5	22.5	7.5	8.5	C2030125
12.5	22.5	8	9	C2040125
14	21	5	5.6	C2010140
14	22	5	5.7	C2020140
14	22	5.7	6.3	C2030140

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
14	24	6	7	C2040140
14	24	7.2	8	C2050140
14	24	7.5	8.5	C2060140
14	24	8	9	C2070140
15	23	5	5.7	C2010150
15	23	5.7	6.3	C2020150
15	25	6	7	C2030150
15	25	8	9	C2040150
15	28	8	9	C2050150
15	28	10	11	C2060150
16	20.6	3.3	3.6	C2010160
16	22	5	6	C2020160
16	24	5	5.7	C2030160
16	24	5.7	6.3	C2040160
16	26	6	7	C2050160
16	26	7.2	8	C2060160
16	26	8	9	C2070160
18	24	4.7	5.3	C2020180
18	25	5	5.6	C2030180
18	26	5	5.7	C2010180
18	26	5.7	6.3	C2040180
18	28	6	7	C2050180
18	28	7.3	8	C2060180
18	28	8	9	C2070180

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
18	31	8	9	C2080180
18	31	10	11	C2090180
20	26	5	6	C2020200
20	28	5	5.7	C2010200
20	28	5.7	6.3	C2030200
20	28	6.2	7	C2040200
20	28	8	9	C2070200
20	30	6	7	C2050200
20	30	7.2	8	C2060200
20	30	8	9	C2070200A
20	33	8	9	C2080200
20	33	10	11	C2090200
22	29	5	5.6	C2010220
22	30	5	6	C2060220
22	30	5.7	6.3	C2020220
22	30	8	9	C2030220
22	32	7.3	8	C2040220
22	35	10	11	C2050220
22.4	32.4	6	7	C2030224
22.4	32.4	8	9	C2040224
22.4	35.4	8	9	C2050224
22.4	35.4	10	11	C2060224
22.4	30	5	5.7	C2010224
22.4	30.4	5	5.7	C2020224

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
23.5	31.5	5	5.7	C2010235
24	34	7.2	8	C2010240
25	32	6	7	C2030250
25	33	5.7	6.3	C2040250
25	33	5	5.7	C2010250
25	35	5	5.7	C2020250
25	35	6	7	C2050250
25	35	7.2	8	C2060250
25	35	8	9	C2070250
25	38	8	9	C2080250
25	38	10	11	C2090250
25	40	9	10	C2100250
25	40	10	11	C2110250
27	40	10	11	C2010270
28	35.5	5	5.7	C2010280
28	36	5	5.7	C2020280
28	36	5.7	6.3	C2030280
28	38	7.2	8	C2040280
28	38	8	9	C2050280
28	40	8.5	9.5	C2060280
28	41	8	9	C2070280
28	41	10	11	C2080280
28	43	9	10	C2090280
28	43	10	11	C2100280

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
28	43	11.5	12.5	C2110280
30	37	6	7	C2110300
30	38	5.7	6.3	C2020300
30	40	5.7	6.3	C2030300
30	40	6	7	C2010300
30	40	7.2	8	C2040300
30	40	8	9	C2050300
30	40	10	11	C2060300
30	43	9	10	C2070300
30	43	10	11	C2080300
30	45	9	10	C2090300
30	45	10	11	C2100300
31.5	41.5	6	7	C2010315
31.5	41.5	8	9	C2020315
31.5	44.5	8	9	C2030315
31.5	44.5	10	11	C2040315
31.5	46.5	9	10	C2050315
31.5	46.5	10	11	C2060315
32	40	5.7	36	C2010320
32	40	6	7	C2090320
32	40	8	9	C2020320
32	42	6	7	C2070320
32	42	7.3	8	C2030320
32	42	10	11	C2040320

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
32	45	9.5	10.5	C2050320
32	47	10	11	C2060320
32	48	10	11	C2080320
34	50	12	13	C2010340
35	42	7	8	C2120350
35	42	6	7	C2130350
35	43	5.7	6.3	C2020350
35	43	8	9	C2030350
35	45	7	8	C2140350
35	45	7.2	8	C2040350
35	45	6	7	C2010350
35	45	8	9	C2050350
35	45	10	11	C2060350
35	46	8	9	C2070350
35	47	8	9	C2080350
35	50	9	10	C2090350
35	50	10	11	C2100350
35	50	12	13	C2110350
35.5	45	6	7	C2010355
35.5	45.5	6	7	C2020355
35.5	45.5	8	9	C2030355
35.5	50.5	9	10	C2040355
35.5	50.5	10	11	C2050355
35.5	51.5	10	11	C2060355

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
35.5	51.5	12	13	C2070355
36	44	5.7	6.3	C2010360
36	46	7	8	C2020360
36	46	10	11	C2030360
36	48	8	9	C2040360
36	51	10	11	C2050360
36	51	11.5	12.5	C2060360
38	45	5	5.5	C2010380
38	45	6.2	7	C2020380
40	48	5.7	6.3	C2020400
40	48	6	7	C2140400
40	48	7	8	C2150400
40	48	8	9	C2030400
40	50	6	7	C2010400
40	50	7	8	C2160400
40	50	7.3	8	C2040400
40	50	8	9	C2050400
40	50	9	10	C2060400
40	50	10	11	C2070400
40	52	8	9	C2080400
40	55	9	10	C2090400
40	55	10	11	C2100400
40	55	11.5	12.5	C2110400
40	56	10	11	C2120400

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
40	56	12	13	C2130400
45	53	5.7	6.3	C2030450
45	55	7.2	8	C2040450
45	55	8	9	C2050450
45	55	10	11	C2060450
45	55	6	7	C2010450
45	55	7	8	C2130450
45	56	7	8	C2020450
45	58	9	10	C2070450
45	60	9	10	C2080450
45	60	10	11	C2090450
45	60	11.5	12.5	C2100450
45	61	10	11	C2110450
45	61	12	13	C2120450
45	65	12	13	C2140450
47	63	12	13	C2010470
50	60	6	7	C2010500
50	60	7.2	8	C2020500
50	60	8	9	C2030500
50	60	10	11	C2040500
50	60	12	13	C2050500
50	63	10	11	C2120500
50	65	9	10	C2060500
50	65	10	11	C2070500

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
50	65	11.5	12.5	C2080500
50	66	10	11	C2090500
50	66	12	13	C2100500
50	70	12	13	C2110500
52	62	10	11	C2010520
53	63	6	7	C2010530
53	69	12	13	C2020530
55	65	7.2	8	C2020550
55	65	6	7	C2010550
55	65	8	9	C2030550
55	65	10	11	C2040550
56	66	6	7	C2010560
55	68	10	11	C2110550
55	70	9	10	C2050550
55	70	10	11	C2060550
55	71	10	11	C2070550
55	71	12	13	C2080550
55	75	12	13	C2090550
56	66	8	9	C2020560
56	66	10	11	C2030560
56	71	9	10	C2040560
56	71	10	11	C2050560
56	71	11.5	12.5	C2060560
56	71	12	13	C2070560

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
56	75	12	13	C2080560
56	76	15	16	C2090560
58	68	7.3	8	C2010580
60	70	5	5.7	C2140600
60	70	6	7	C2010600
60	71	7	8	C2020600
60	70	7.2	8	C2030600
60	70	8	9	C2040600
60	70	10	11	C2050600
60	72	8	9	C2060600
60	73	10	11	C2070600
60	75	9	10	C2080600
60	75	10	11	C2090600
60	75	12	13	C2100600
60	76	10	11	C2110600
60	76	12	13	C2120600
60	80	12	13	C2130600
63	73	6	7	C2010630
63	73	6.5	7.5	C2011630
63	73	8	9	C2020630
63	73	12	13	C2030630
63	75	12	13	C2040630
63	78	9	10	C2050630
63	78	10	11	C2060630

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
63	78	11.4	12.5	C2110630
63	79	10	11	C2070630
63	79	12	13	C2080630
63	83	12	13	C2090630
63	83	15	16	C2100630
64	80	12	13	C2010640
65	73	8	9	C2020650
65	75	6	7	C2010650
65	75	7	8	C2020650A
65	75	8	9	C2030650
65	75	10	11	C2040650
65	78	10	11	C2100650
65	77	9	10	C2050650
65	80	9	10	C2060650
65	80	10	11	C2070650
65	80	12	13	C2080650
65	85	12	13	C2090650
67	77	6	7	C2010670
67	82	9	10	C2020670
68	82	10	11	C2010680
70	80	6	7	C2010700
70	80	7.2	8	C2020700
70	80	8	9	C2030700
70	80	12	13	C2040700

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
70	83	10	11	C2100700
70	85	9	10	C2050700
70	85	10	11	C2060700
70	85	11.5	12.5	C2070700
70	90	10	11	C2100700
70	90	12	13	C2080700
70	90	15	16	C2090700
71	81	6	7	C2010710
71	81	8	9	C2020710
71	86	9	10	C2030710
71	86	10	11	C2040710
71	91	12	13	C2050710
71	91	15	16	C2060710
75	85	6	7	C2010750
75	85	7	8	C2020750
75	85	8	9	C2030750
75	85	12	13	C2040750
75	88	10	11	C2090750
75	90	9	10	C2050750
75	90	10	11	C2060750
75	95	12	13	C2070750
75	95	15	16	C2080750
80	90	6	7	C2010800
80	90	7.2	8	C2020800

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
80	90	8	9	C2030800
80	90	10	11	C2040800
80	93	10	11	C2060800
80	95	9	10	C2050800
80	95	10	11	C2060800A
80	95	11.5	12.5	C2070800
80	95	12	13	C2080800
80	100	12	13	C2090800
80	100	15	16	C2100800
85	100	9	10	C2010850
85	100	10	11	C2020850
85	100	11	12	C2030850
85	100	12	13	C2040850
85	105	12	13	C2050850
85	105	15	16	C2060850
90	100	6.5	7.5	C2020900
90	105	9	10	C2010900
90	105	8.5	9.5	C2030900
90	105	10	11	C2040900
90	105	11.4	12.5	C2080900
90	105	12	13	C2050900
90	110	12	13	C2060900
90	110	15	16	C2070900
95	110	9	10	C2010950

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
95	110	10	11	C2020950
95	115	12	13	C2030950
95	115	15	16	C2040950
98	112	8.5	9.5	C2010980
100	115	9	10	C2011000
100	115	10	11	C2021000
100	115	12	13	C2031000
100	120	12	13	C2041000
100	120	14.5	16	C2071000
100	120	15	16	C2051000
100	125	19	20	C2061000
105	115	11.5	12.5	C2021050
105	120	10	11	C2031050
105	125	12	13	C2041050
105	125	14.5	16	C2071050
105	125	15	16	C2051050
105	125	16	17	C2061050
105	120	9	10	C2011050
106	120	8.5	9.5	C2011060
106	121	9	10	C2021060
106	121	10	11	C2031060
106	126	15	16	C2041060
106	126	16	17	C2051060
110	125	9	10	C2011100

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
110	125	10	11	C2021100
110	125	11	12	C2031100
110	130	12	13	C2041100
110	130	14.5	16	C2081100
110	130	15	16	C2051100
110	130	16	17	C2061100
110	135	19	20	C2071100
112	125	9	10	C2011120
112	127	9	10	C2021120
112	127	10	11	C2031120
112	132	15	16	C2041120
112	132	16	17	C2051120
115	130	9	10	C2011150
115	135	12	13	C2021150
115	135	15	16	C2041150
118	133	9	10	C2011180
118	133	10	11	C2021180
118	138	15	16	C2031180
118	138	16	17	C2041180
120	132	10	11	C2021200
120	135	9	10	C2011200
120	135	14.5	16	C2051200
120	135	15	16	C2031200
120	140	12	13	C2071200

• For further information, pls. contact hotline

Article List C2

d f8/h9	D H10	H	L +0.2	Article No.
120	140	15	16	C2041200
120	140	10	11	C2061200
125	140	9	10	C2011250
125	140	10	11	C2021250
125	145	12	13	C2031250
125	145	14.5	16	C2071250
125	145	15	16	C2041250
125	150	19	20	C2051250
125	150	20	21	C2061250
130	145	9	10	C2011300
130	145	10	11	C2021300
130	145	12	13	C2031300
130	150	12	13	C2041300
130	150	15	16	C2051300
130	150	16	17	C2061300
132	157	20	21	C2011320
134	148	8.5	10	C2011340
135	150	9	10	C2031350
135	160	19	20	C2011350
135	160	20	21	C2021350
136	150	8.5	9.5	C2011360
140	150	6	7	C2081400
140	155	9	10	C2011400
140	155	10	11	C2021400

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
140	160	12	13	C2031400
140	160	14.5	16	C2091400
140	160	15	16	C2041400
140	160	16	17	C2051400
140	165	19	20	C2061400
140	165	20	21	C2071400
141	156	8.5	9	C2011410
145	160	9	10	C2011450
145	165	14.5	16	C2021450
145	170	19	20	C2031450
145	170	20	21	C2041450
150	165	9	10	C2011500
150	165	10	11	C2021500
150	170	12	13	C2031500
150	170	15	16	C2041500
150	170	16	17	C2051500
150	175	16	17	C2061500
150	175	20	21	C2071500
155	170	9	10	C2011550
155	180	19	20	C2021550
155	180	20	21	C2031550
160	175	9	10	C2011600
160	175	10	11	C2021600
160	180	12	13	C2031600

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
160	180	15	16	C2041600
160	180	16	17	C2051600
160	185	16	17	C2061600
160	185	18.2	20	C2091600
160	185	19	20	C2071600
160	185	20	21	C2081600
165	175	10	11	C2021650
165	180	9	10	C2011650
170	185	9	10	C2011700
170	180	10	11	C2011700A
170	185	10	11	C2021700
170	190	12	13	C2031700
170	190	15	16	C2041700
170	190	16	17	C2051700
170	195	16	17	C2061700
170	195	20	21	C2071700
170	200	18.2	20	C2081700
175	190	9	10	C2011750
175	200	19	20	C2021750
175	200	20	21	C2031750
180	200	12	13	C2011800
180	200	15	16	C2021800
180	200	16	17	C2031800
180	205	16	17	C2041800

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
180	205	18.2	20	C2071800
180	205	19	20	C2051800
180	205	20	21	C2061800
190	210	12	13	C2011900
190	210	15	16	C2021900
190	210	16	17	C2031900
190	215	16	17	C2041900
190	215	20	21	C2051900
199	219	11	12	C2011990
199	219	15	16	C2021990
199	224	16	17	C2031990
199	224	19	20	C2041990
200	212	15	16	C2022000
200	220	12	13	C2012000
200	220	15	16	C2032000
200	220	16	17	C2042000
200	225	16	17	C2052000
200	225	18.2	20	C292000
200	225	19	20	C2062000
200	225	20	21	C2072000
200	230	18	19	C2082000
204	224	12	13	C2012040
210	230	12	13	C2012100
210	230	16	17	C2012100

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
210	230	15	16	C2052100
210	235	16	17	C2022100
210	235	19	20	C2032100
210	235	20	21	C2042100
220	240	12	13	C2012200
220	240	12	13	C2022200A
220	240	15	16	C2012200
220	240	16	17	C2022200
220	245	16	17	C2032200
220	245	19	20	C2042200
220	245	20	21	C2052200
220	250	22.7	25	C2072200
224	244	11	12	C2012240
224	244	15	16	C2022240
224	249	15	16	C2032240
224	249	18	19	C2042240
224	249	19	20	C2052240
225	245	12	13	C2012250
225	245	16	17	C2022250
225	250	16	17	C2032250
225	250	18	19	C2042250
225	250	19	20	C2052250
225	250	20	21	C2062250
230	250	12	13	C2012300

• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
230	250	16	17	C2022300
230	255	16	17	C2042300
230	255	19	20	C2052300
230	255	20	21	C2062300
240	260	12	13	C2012400
240	260	15	16	C2022400
240	260	16	17	C2032400
240	265	16	17	C2042400
240	265	19	20	C2052400
240	265	20	21	C2062400
250	270	12	13	C2012500
250	270	15	16	C2022500
250	270	16	17	C2032500
250	275	16	17	C2042500
250	275	19	20	C2052500
250	275	20	21	C2062500
250	280	22	23	C2072500
250	280	22.7	25	C2082500
260	285	16	17	C2012600
260	285	19	20	C2022600
260	290	19	20	C2032600
265	297	24	25	C2012650
265	297	25	26	C2022650
270	295	16	17	C2012700

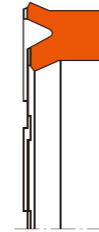
• For further information, pls. contact hotline

Article List C2				
d f8/h9	D H10	H	L +0.2	Article No.
270	295	19	20	C2022700
270	300	18	19	C2032700
270	300	19	20	C2042700
270	300	24	24	C2052700
270	300	25	26	C2062700
280	300	15	16	C2022800
280	305	16	17	C2012800
280	305	19	20	C2032800
280	310	19	20	C2042800
280	310	22.7	25	C2082800
280	310	24	25	C2052800
280	312	24	25	C2062800
280	312	25	26	C2072800
290	315	16	17	C2012900
290	315	19	20	C2022900
290	320	19	20	C2032900
300	325	16	17	C2013000
300	325	19	20	C2023000
300	330	19	20	C2033000
300	332	24	25	C2043000
300	332	25	26	C2053000
320	350	18	20	C2013200
360	390	22	24	C2013600

• For further information, pls. contact hotline

C2B

Rod seal



Description

Lip seal compact in outside diameter with asymmetrical sealing lips.

Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to punch load and pressure limit.
- Superior anti-extrusion performance.
- Fit for harsh working environment.
- Easy to install.

Examples of use

- seals for breaking hammers

Working limit

Pressure: 50 MPa
Running speed: 2 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

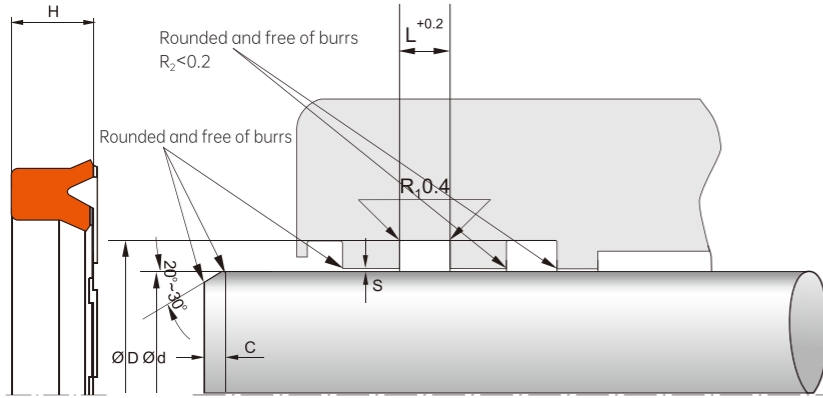
Gap dimension

Profile dimension	Max.permissible gap dimension S_{max}			
	16 MPa	26 MPa	32 MPa	40 MPa
≤5.0	0.50	0.40	0.35	-
>5.0 - 7.5	0.55	0.45	0.40	0.35
>7.5 - 12.5	0.60	0.50	0.45	0.40
15.0	0.60	0.50	0.45	0.40

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example C2B



Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	22.0	30.0	6.0	7.0
C2B	25.0	35.0	6.0	7.0
C2B	30.0	40.0	6.0	7.0
C2B	32.0	40.0	8.0	9.0
C2B	34.5	42.5	5.0	7.0
C2B	35.0	45.0	6.0	7.0
C2B	38.0	48.0	6.0	7.0
C2B	40.0	48.0	5.0	6.0
C2B	40.0	50.0	6.0	7.0
C2B	40.0	55.0	9.0	10.0
C2B	42.0	52.0	6.0	7.0
C2B	43.0	51.0	5.0	6.0
C2B	45.0	53.0	8.0	9.0
C2B	45.0	55.0	6.0	7.0

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	45.0	60.0	9.0	10.0
C2B	49.0	59.0	6.0	7.0
C2B	50.0	60.0	6.0	7.0
C2B	50.0	65.0	9.0	10.0
C2B	52.5	60.5	5.0	6.0
C2B	53.0	63.0	6.0	7.0
C2B	55.0	65.0	6.0	7.0
C2B	55.0	70.0	9.0	10.0
C2B	56.0	66.0	6.0	7.0
C2B	58.0	68.0	6.0	7.0
C2B	60.0	70.0	6.0	7.0
C2B	60.0	75.0	9.0	10.0
C2B	63.0	73.0	6.0	7.0
C2B	65.0	75.0	6.0	7.0
C2B	65.0	80.0	9.0	10.0
C2B	66.0	76.0	6.0	7.0
C2B	68.0	78.0	6.7	7.7
C2B	70.0	80.0	6.0	7.0
C2B	70.0	80.0	6.0	7.0
C2B	70.0	85.0	9.0	10.0
C2B	72.5	82.5	6.0	7.0
C2B	75.0	85.0	6.0	7.0
C2B	75.0	90.0	9.0	10.0
C2B	76.0	88.0	5.5	6.5

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	77.5	87.5	6.0	7.0
C2B	80.0	90.0	6.0	7.0
C2B	80.0	95.0	9.0	10.0
C2B	80.0	95.0	12.5	13.5
C2B	82.0	97.0	6.0	7.0
C2B	85.0	100.0	9.0	10.0
C2B	85.0	100.0	12.0	13.0
C2B	85.0	105.0	12.0	13.0
C2B	86.5	96.5	6.0	7.0
C2B	90.0	100.0	6.0	7.0
C2B	90.0	105.0	9.0	10.0
C2B	90.0	110.0	12.0	13.0
C2B	93.0	103.0	6.0	7.0
C2B	95.0	110.0	9.0	10.0
C2B	95.0	110.0	13.0	14.0
C2B	95.0	115.0	12.0	13.0
C2B	97.0	112.0	9.0	10.0
C2B	98.0	112.0	8.5	9.5
C2B	98.0	114.0	6.0	7.0
C2B	100.0	115.0	9.0	10.0
C2B	100.0	115.5	6.0	7.0
C2B	100.0	120.0	12.0	13.0
C2B	105.0	120.0	9.0	10.0
C2B	105.0	120.5	6.0	7.0

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	105.0	125.0	15.0	16.0
C2B	106.0	121.5	6.3	7.0
C2B	107.0	117.0	6.0	7.0
C2B	108.0	118.0	6.0	7.0
C2B	110.0	120.0	6.0	7.0
C2B	110.0	125.0	9.0	10.0
C2B	110.0	130.0	15.0	16.0
C2B	112.0	125.0	9.0	10.0
C2B	115.0	130.0	9.0	10.0
C2B	115.0	130.5	6.0	7.0
C2B	115.0	135.0	12.0	13.0
C2B	117.0	132.0	10.0	11.0
C2B	118.0	133.0	8.5	9.5
C2B	118.0	133.0	9.0	10.0
C2B	120.0	135.0	9.0	10.0
C2B	120.0	140.0	15.0	16.0
C2B	124.0	134.0	6.0	7.0
C2B	125.0	140.0	9.0	10.0
C2B	125.0	140.0	10.0	11.0
C2B	125.0	145.0	16.0	17.0
C2B	126.3	142.0	9.5	10.5
C2B	130.0	145.0	9.0	10.0
C2B	130.0	150.0	16.0	17.0
C2B	133.0	142.0	6.0	7.0

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	135.0	150.0	9.0	10.0
C2B	135.0	155.0	11.5	12.0
C2B	135.0	155.0	16.0	17.0
C2B	135.8	150.9	9.6	10.0
C2B	136.0	146.0	6.0	7.0
C2B	136.0	150.0	8.5	9.5
C2B	138.6	158.6	11.5	12.0
C2B	136.0	158.0	13.5	12.0
C2B	140.0	150.0	6.0	7.0
C2B	140.0	150.7	6.0	7.0
C2B	140.0	155.0	9.0	10.0
C2B	140.0	160.0	16.0	17.0
C2B	141.0	156.0	8.5	9.5
C2B	145.0	155.0	6.0	7.0
C2B	145.0	160.0	9.0	10.0
C2B	145.0	162.0	11.5	12.0
C2B	145.0	170.0	19.0	20.0
C2B	147.6	165.0	9.0	10.0
C2B	150.0	165.0	9.0	10.0
C2B	150.0	170.0	12.0	13.0
C2B	150.0	170.0	16.0	17.0
C2B	152.0	162.0	6.0	7.0
C2B	155.0	165.0	6.0	7.0
C2B	155.0	170.0	9.0	10.0

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	155.0	170.0	12.0	13.0
C2B	155.0	180.0	19.0	20.0
C2B	155.0	170.0	9.0	10.0
C2B	156.0	171.0	10.0	11.0
C2B	157.0	175.0	10.0	11.0
C2B	160.0	175.0	9.0	10.0
C2B	160.0	175.0	10.0	11.0
C2B	160.0	180.0	16.0	17.0
C2B	160.0	185.0	16.0	17.0
C2B	160.0	185.0	19.0	20.0
C2B	165.0	180.0	9.0	10.0
C2B	170.0	180.0	6.0	7.0
C2B	170.0	185.0	9.0	10.0
C2B	170.0	190.0	16.0	17.0
C2B	175.0	190.0	9.0	10.0
C2B	175.0	190.0	9.5	10.5
C2B	175.0	200.0	19.0	20.0
C2B	180.0	200.0	12.0	13.0
C2B	180.0	200.0	16.0	17.0
C2B	180.0	205.0	19.0	20.0
C2B	182.0	202.0	12.0	20.0
C2B	185.0	195.0	9.0	10.0
C2B	185.0	205.0	12.0	13.0
C2B	185.0	205.0	16.0	17.0

• For further information, pls. contact hotline

Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	185.0	205.0	16.0	13.0
C2B	185.0	210.0	19.0	20.0
C2B	186.0	196.0	6.0	7.0
C2B	186.0	201.0	9.0	10.0
C2B	186.0	206.0	13.0	14.0
C2B	190.0	210.0	12.0	13.0
C2B	190.0	210.0	15.0	16.0
C2B	190.0	215.0	16.0	17.0
C2B	192.0	212.0	12.0	13.0
C2B	195.0	215.0	12.0	13.0
C2B	200.0	220.0	12.0	13.0
C2B	200.0	220.0	15.0	16.0
C2B	200.0	220.0	16.0	17.0
C2B	200.0	225.0	19.0	20.0
C2B	205.0	225.0	12.0	13.0
C2B	207.0	227.0	12.0	13.0
C2B	210.0	230.0	12.0	13.0
C2B	210.0	230.0	16.0	17.0
C2B	210.0	235.0	19.0	20.0
C2B	215.0	235.0	12.0	20.0
C2B	220.0	240.0	12.0	13.0
C2B	220.0	245.0	19.0	20.0
C2B	225.0	245.0	12.0	13.0
C2B	225.0	250.0	19.0	20.0

• For further information, pls. contact hotline

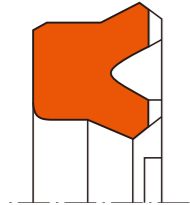
Article List C2B

TYPE	d f8/h9	D H10	H	L
C2B	230.0	250.0	12.0	13.0
C2B	230.0	255.0	19.0	20.0
C2B	240.0	260.0	12.0	13.0
C2B	240.0	260.0	16.0	17.0
C2B	240.0	265.0	19.0	20.0
C2B	250.0	270.0	12.0	13.0
C2B	250.0	270.0	16.0	17.0
C2B	250.0	275.0	19.0	20.0
C2B	260.0	285.0	16.0	17.0
C2B	260.0	285.0	19.0	20.0
C2B	260.0	290.0	19.0	20.0
C2B	270.0	295.0	16.0	17.0
C2B	270.0	300.0	19.0	20.0
C2B	280.0	305.0	16.0	17.0
C2B	280.0	305.0	19.0	20.0
C2B	280.0	310.0	19.0	20.0

• For further information, pls. contact hotline

CUH

Rod seal



Description

Lip seal with oil outlet on the lip of seal, stop leakage under back pressure, no climbing.

Material

Material: polyurethane TPU
Code: PFKM
Hardness: 93 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to pressure load and working limit.
- Superior anti-extrusion performance.
- Applicable for harsh working environment.
- Easy to fit.

Examples of use

- earth moving equipment
- support cylinders
- presses

Working limit

Pressure: 50 MPa
Running speed: 5 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL, HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

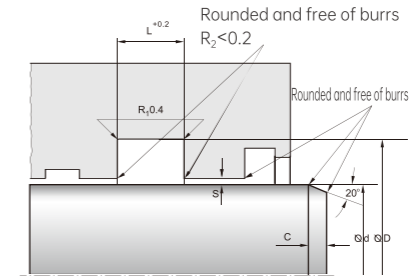
Gap dimension

Profile dimension	Max.permissible gap dimension S_{max}		
	10 MPa	16 MPa	30 MPa
≤5.0	0.45	0.35	0.25
>5.0	0.50	0.40	0.30

Lead Chamfer

d/D	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CUH



Article List CUH

d f8/h9	D f8/H9	H	L +0.2	Article No.
14	22	5	6	CUH010140
16	24	5	6	CUH010160
18	26	5	6	CUH010180
20	28	5	6	CUH010200
22.4	30	5	6	CUH010224
25	33	5	6	CUH010250
28	35.5	5	6	CUH010280
30	40	6	7	CUH010300
35	45	7	8	CUH020350
40	50	6	7	CUH010400
40	50	7	8	CUH020400
45	55	6	7	CUH010450
45	56	6	7	CUH030450
45	55	7	8	CUH020450

- For further information, pls. contact hotline

Article List CUH

d f8/h9	D f8/H9	H	L +0.2	Article No.
45	65	12	13	CUH040450
50	60	6	7	CUH010500
50	60	8	9	CUH030500
50	63	10	11	CUH040500
50	65	9	10	CUH060500
50	70	12	13	CUH050500
53	63	6	7	CUH010530
55	65	10	11	CUH020550
55	65	6	7	CUH010550
55	65	8	8	CUH030550
55	68	10	11	CUH110550
55	70	9	10	CUH050550
55	71	12	13	CUH040550
55	75	12	13	CUH060550
56	66	6	7	CUH010560
60	70	10	11	CUH030600
60	70	6	7	CUH010600
60	70	8	9	CUH040600
60	73	10	11	CUH070600
60	75	10	11	CUH020600
60	75	9	10	CUH050600
60	76	10	11	CUH060600
60	80	12	13	CUH080600
60	75	10	11	CUH090600

• For further information, pls. contact hotline

Article List CUH

d f8/h9	D f8/H9	H	L +0.2	Article No.
63	73	6	7	CUH010630
65	75	6	7	CUH010650
65	75	8	9	CUH030650
65	78	10	11	CUH100650
65	80	9	10	CUH060650
65	85	12	13	CUH020650
70	80	6	7	CUH010700
70	83	10	11	CUH100700
70	85	10	11	CUH020700
70	85	9	10	CUH050700
71	80	6	7	CUH010710
75	85	6	7	CUH010750
75	85	8	9	CUH020750
75	88	10	11	CUH090750
75	90	10	11	CUH030750
75	90	9	10	CUH050750
80	90	6	7	CUH010800
80	93	10	11	CUH060800
80	95	10	11	CUH110800
80	95	9	10	CUH050800
85	100	10	11	CUH020850
85	100	9	10	CUH010850
85	105	12	13	CUH050850
90	105	10	11	CUH040900

• For further information, pls. contact hotline

Article List CUH				
d f8/h9	D f8/H9	H	L +0.2	Article No.
90	105	9	10	CUH010900
90	110	12	13	CUH060900
95	110	10	11	CUH020950
95	110	9	10	CUH010950
95	115	12	13	CUH030950
100	115	10	11	CUH021000
100	115	9	10	CUH011000
100	120	12	13	CUH041000
100	120	15	16	CUH031000
105	120	10	11	CUH031050
105	120	9	10	CUH011050
105	125	12	13	CUH041050
105	125	15	16	CUH051050
110	125	10	11	CUH021100
110	125	9	10	CUH011100
110	130	10	11	CUH091100
110	130	12	13	CUH031100
110	130	15	16	CUH041100
112	125	8.5	9.5	CUH011120
115	130	10	11	CUH031150
115	130	9	10	CUH011150
115	135	12	13	CUH021150
115	135	15	16	CUH051150
115	135	16	--	CUH041150

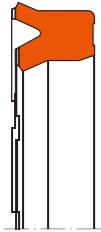
• For further information, pls. contact hotline

Article List CUH				
d f8/h9	D f8/H9	H	L +0.2	Article No.
120	135	9	10	CUH011200
120	140	10	11	CUH021200
120	140	12	13	CUH061200
120	140	15	16	CUH041200
125	140	9	10	CUH011250
130	145	9	10	CUH011300
130	145	10	--	CUH021300
130	150	12	13	CUH041300
130	150	16	17	CUH061300
135	150	9	10	CUH011350
140	155	9	10	CUH011400
140	160	12	13	CUH031400
145	160	9	10	CUH011450
150	170	12	13	CUH031500
150	165	9	10	CUH011500
160	175	9	10	CUH011600
170	190	12	13	CUH021700
180	200	12	13	CUH011800
190	215	16	17	CUH011900
200	225	16	17	CUH012000
210	235	16	17	CUH012100
220	245	16	17	CUH012200
240	265	19	20	CUH012400

• For further information, pls. contact hotline

C2Y

Buffer Seal



Description

Lip seal compact in outside diameter with asymmetrical sealing lips.

Material

Material: polyurethane TPU
Code: 97P97
Hardness: 97 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to punch load and pressure limit.
- Superior anti-extrusion performance.
- Fit for harsh working environment.
- Easy to install.

Examples of use

- seals for breaking hammers

Working limit

Pressure: 50 MPa
Running speed: 2 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_r > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line C ref=0%

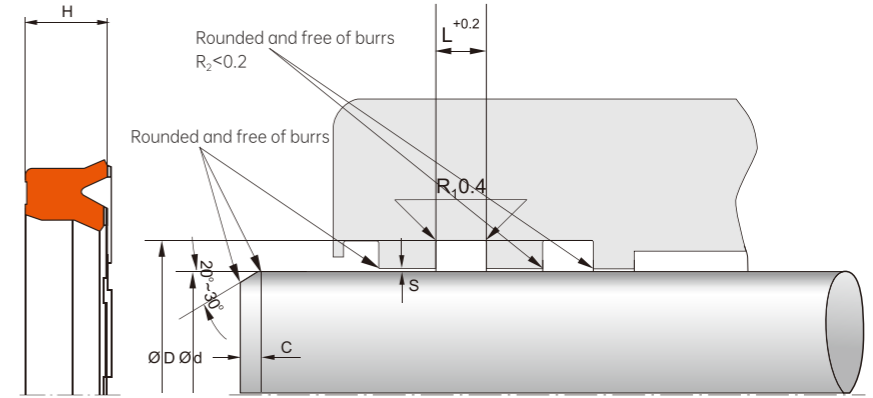
Gap dimension

Profile dimension	Max.permissible gap dimension S_{max}			
	16 MPa	26 MPa	32 MPa	40 MPa
≤5.0	0.50	0.40	0.35	-
>5.0 - 7.5	0.55	0.45	0.40	0.35
>7.5 - 12.5	0.60	0.50	0.45	0.40
15.0	0.60	0.50	0.45	0.40

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example C2Y



Article List C2Y

TYPE	d f8/h9	D H10	H	L
C2Y	100.0	114.5	9.0	10.0
C2Y	100.0	115.0	12.0	13.0
C2Y	140.0	154.5	9.0	10.0
C2Y	140.0	155.0	12.0	13.0
C2Y	140.0	155.5	6.0	7.0
C2Y	140.0	155.5	9.0	10.0
C2Y	150.0	164.5	9.0	10.0
C2Y	150.0	165.0	13.0	14.0
C2Y	160.0	174.5	9.0	10.0
C2Y	160.0	175.0	13.0	14.0
C2Y	160.0	175.5	6.0	6.3
C2Y	160.0	185.0	23.0	24.0
C2Y	167.0	181.8	8.0	9.0
C2Y	170.0	184.5	9.0	10.0

- For further information, pls. contact hotline

Article List C2Y

TYPE	d f8/h9	D H10	H	L
C2Y	170.0	185.0	9.0	10.0
C2Y	170.0	185.5	9.0	10.0
C2Y	175.0	189.5	9.0	10.0
C2Y	175.0	190.0	13.0	14.0
C2Y	175.0	200.0	23.0	24.0
C2Y	180.0	194.5	9.0	10.0
C2Y	180.0	195.5	6.0	6.3
C2Y	180.0	200.0	16.0	17.0
C2Y	180.0	205.0	23.0	24.0
C2Y	185.0	199.5	9.0	10.0
C2Y	185.0	205.0	12.0	13.0
C2Y	185.0	205.0	12.0	13.0
C2Y	185.0	210.0	19.0	20.0
C2Y	186.0	200.5	9.0	10.0
C2Y	186.0	206.0	13.0	14.0
C2Y	190.0	204.5	9.0	10.0
C2Y	195.0	209.5	9.0	10.0
C2Y	192.0	206.5	9.0	10.0
C2Y	200.0	214.5	9.0	10.0
C2Y	200.0	214.5	9.0	10.0
C2Y	200.0	220.0	12.0	13.0
C2Y	205.0	219.5	9.0	10.0
C2Y	210.0	224.5	9.0	10.0
C2Y	210.0	230.0	12.0	13.0

• For further information, pls. contact hotline

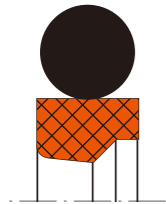
Article List C2Y

TYPE	d f8/h9	D H10	H	L
C2Y	220.0	234.5	16.0	17.0
C2Y	220.0	240.0	16.0	17.0
C2Y	220.0	245.0	23.0	24.0
C2Y	230.0	250.0	16.0	17.0
C2Y	250.0	270.0	16.0	17.0
C2Y	280.0	300.0	15.0	16.0

• For further information, pls. contact hotline

CS

Rod seal



Description

Rod seal consist of one PTFE stage slide ring and one O ring, fit for high-speed cylinder, low friction rate, work with or without lubrication, and easy for installation.

Material

PTFE profile ring

Material: PTFE bronze compound

Code: E201

O-ring

Material: nitrile rubber NBR

Code: 70R006

Hardness: 70 Shore A

Material: fluoro-rubber FKM

Code: 70M203

Hardness: 70 Shore A

Feature

- Excellent pressure resistance and best stability under pressure.
- Superior temperature conductivity.
- Good anti-extrusion performance.
- Good anti-friction performance.
- Low friction rate, no hydraulic crawling.

Examples of use

- earth moving equipment
- industrial vehicles
- agricultural machinery
- injection moulding machines
- marine hydraulics
- control and regulation equipment
- cranes
- presses
- Mills

Working limit

Pressure: 80 MPa

Running speed: 15 m/s

Temperature: -40°C to +120°C(NBR)

-20°C to +220°C (FKM)

Medium: Hydraulic oils HL,HLP

Surface finish

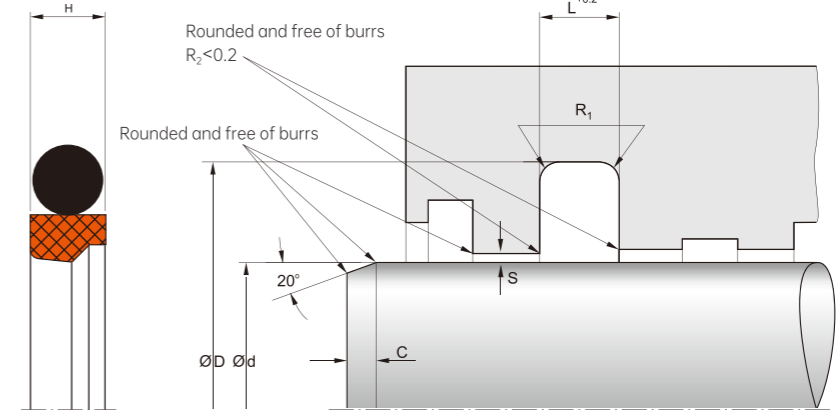
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

Gap dimension

Profile dimension	Max.permissible gap dimension S_{max}			
L	16 MPa	26 MPa	32 MPa	40 MPa
2.2	0.35	0.30	0.15	0.15
3.2	0.40	0.35	0.15	0.15
4.2	0.50	0.40	0.30	0.20
6.3	0.55	0.45	0.35	0.30
8.1	0.60	0.50	0.40	0.40
8.1	0.70	0.60	0.55	0.50
9.5	0.75	0.65	0.60	0.55

Installation Example CS



Article List CS

d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
3	7.9	2	2.2	2	0.3	4.47*1.78	CS010003
4	8.9	2	2.2	2	0.3	5.6*1.8	CS010004
5	9.9	2	2.2	2	0.3	6.7*1.8	CS010005
6	10.9	2	2.2	2	0.3	7.65*1.78	CS010006
7	11.9	2	2.2	2	0.3	8.75*1.78	CS010007
8	12.9	2	2.2	2	0.3	9.5*1.8	CS010008
8	15.3	3	3.2	3	0.5	10.77*2.62	CS020008
9	13.9	2	2.2	2	0.3	10.82*1.78	CS010009
9	16.3	3	3.2	3	0.5	10.77*2.62	CS020009
10	14.9	2	2.2	2	0.3	11.8*1.8	CS010010
10	17.3	3	3.2	3	0.5	12.37*2.62	CS020010
12	16.9	2	2.2	2	0.3	14*1.78	CS010012
12	19.3	3	3.2	3	0.5	13.94*2.62	CS020012
14	18.9	2	2.2	2	0.3	15.6*1.78	CS010014

- For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
14	21.3	3	3.2	3	0.5	17.12*2.62	CS020014
15	19.9	2	2.2	2	0.3	17.17*1.78	CS010015
15	22.3	3	3.2	3	0.5	17.12*2.62	CS020015
16	20.9	2	2.2	2	0.3	17.17*1.78	CS010015
16	23.3	3	3.2	3	0.5	18.72*2.62	CS020016
17	21.9	2	2.2	2	0.3	18.77*1.78	CS010017
18	22.9	2	2.2	2	0.3	18.77*1.78	CS010018
18	25.3	3	3.2	3	0.5	20.29*2.62	CS020018
19	29.7	4	4.2	3.5	0.8	23.4*3.53	CS010019
20	27.3	3	3.2	3	0.5	21.89*2.62	CS010020
20	30.7	4	4.2	3.5	0.8	23.4*3.53	CS020020
22	29.3	3	3.2	3	0.5	25.07*2.62	CS010022
22	32.7	4	4.2	3.5	0.8	26.58*3.53	CS020022
24	31.3	3	3.2	3	0.5	26.64*2.62	CS010024
24	34.7	4	4.2	3.5	0.8	28.17*3.53	CS020024
25	32.3	3	3.2	3	0.5	28.24*2.62	CS010025
25	35.7	4	4.2	3.5	0.8	29.75*3.53	CS020025
26	33.3	3	3.2	3	0.5	28.24*2.62	CS010026
26	36.7	4	4.2	3.5	0.8	29.75*3.53	CS020026
28	35.3	3	3.2	3	0.5	29.82*2.62	CS010028
28	38.7	4	4.2	3.5	0.8	32.92*3.53	CS020028
30	37.3	3	3.2	3	0.5	32.99*2.62	CS010030
30	40.7	4	4.2	3.5	0.8	34.52*3.53	CS020030
32	39.3	3	3.2	3	0.5	34.59*2.62	CS010032

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
32	42.7	4	4.2	3.5	0.8	36.09*3.53	CS020032
35	42.3	3	3.2	3	0.5	37.77*2.62	CS010035
35	45.7	4	4.2	3.5	0.8	37.69*3.53	CS020035
36	43.3	3	3.2	3	0.5	39.34*2.62	CS010036
36	46.7	4	4.2	3.5	0.8	40.87*3.53	CS020036
37	44.3	3	3.2	3	0.5	39.34*2.62	CS010037
37	47.7	4	4.2	3.5	0.8	40.87*3.53	CS020037
38	48.7	4	4.2	3.5	0.8	40.87*3.53	CS010038
38	53.1	5.9	6.3	5.5	1.2	43.82*5.33	CS020038
40	50.7	4	4.2	3.5	0.8	44.04*3.53	CS010040
40	55.1	5.9	6.3	5.5	1.2	43.82*5.33	CS020040
42	52.7	4	4.2	3.5	0.8	47.22*3.53	CS010042
42	57.1	5.9	6.3	5.5	1.2	46.99*5.33	CS020042
43	53.7	4	4.2	3.5	0.8	47.22*3.53	CS010043
45	55.7	4	4.2	3.5	0.8	50.39*3.53	CS010045
45	60.1	5.9	6.3	5.5	1.2	50.17*5.33	CS020045
48	58.7	4	4.2	3.5	0.8	51.5*3.53	CS010048
48	63.1	5.9	6.3	5.5	1.2	53.34*5.33	CS020048
50	60.7	4	4.2	3.5	0.8	53.57*3.53	CS010050
50	65.1	5.9	6.3	5.5	1.2	56.52*5.33	CS020050
52	62.7	4	4.2	3.5	0.8	56.74*3.53	CS010052
52	67.1	5.9	6.3	5.5	1.2	56.52*5.33	CS020052
54	69.1	5.9	6.3	5.5	1.2	59.69*5.33	CS010054
55	65.7	4	4.2	3.5	0.8	59.92*3.53	CS010055

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
55	70.1	5.9	6.3	5.5	1.2	59.69*5.33	CS020055
56	66.7	4	4.2	3.5	0.8	59.92*3.53	CS010056
56	71.1	5.9	6.3	5.5	1.2	62.87*5.33	CS020056
56	76.5	7.6	8.1	7.5	2	63*7	CS030056
57	72.1	5.9	6.3	5.5	1.2	62.87*5.33	CS010057
58	73.1	5.9	6.3	5.5	1.2	62.87*5.33	CS010058
59	69.7	4	4.2	3.5	0.8	63.09*3.53	CS010059
60	70.7	4	4.2	3.5	0.8	63.09*3.53	CS010060
60	75.1	5.9	6.3	5.5	1.2	66.04*5.33	CS020060
63	73.7	4	4.2	3.5	0.8	66.27*3.53	CS010063
63	78.1	5.9	6.3	5.5	1.2	69.22*5.33	CS020063
65	75.7	4	4.2	3.5	0.8	69.44*3.53	CS010065
65	80.1	5.9	6.3	5.5	1.2	69.22*5.33	CS020065
67	77.7	4	4.2	3.5	0.8	72.62*3.53	CS010067
69	84.1	5.9	6.3	5.5	1.2	75.57*5.33	CS010069
70	80.7	4	4.2	3.5	0.8	75.79*3.53	CS010070
70	85.1	5.9	6.3	5.5	1.2	75.57*5.33	CS020070
70	90.5	7.6	8.1	7.5	2	78*7	CS030070
72	82.7	4	4.2	3.5	0.8	75.79*3.53	CS010072
73	88.1	5.9	6.3	5.5	1.2	78.74*5.33	CS010073
75	85.7	4	4.2	3.5	0.8	78.97*3.53	CS010075
75	90.1	5.9	6.3	5.5	1.2	81.92*5.33	CS020075
78	93.1	5.9	6.3	5.5	1.2	85.09*5.33	CS010078
80	90.7	4	4.2	3.5	0.8	85.32*3.53	CS010080

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
80	95.1	5.9	6.3	5.5	1.2	85.09*5.33	CS020080
80	100.5	7.6	8.1	7.5	2	88*7	CS030080
83	93.7	4	4.2	3.5	0.8	88.49*3.53	CS010083
85	95.7	4	4.2	3.5	0.8	88.49*3.53	CS010085
85	100.1	5.9	6.3	5.5	1.2	91.44*5.33	CS020085
85	105.5	7.6	8.1	7.5	2	93*7	CS030085
89	104.1	5.9	6.3	5.5	1.2	94.62*5.33	CS010089
90	100.7	4	4.2	3.5	0.8	94.84*3.53	CS010090
90	105.1	5.9	6.3	5.5	1.2	94.62*5.33	CS020090
90	110.5	7.6	8.1	7.5	2	98*7	CS030090
92	102.7	4	4.2	3.5	0.8	98.02*3.53	CS010092
92	107.1	5.9	6.3	5.5	1.2	97.79*5.33	CS020090
95	105.7	4	4.2	3.5	0.8	101.19*3.53	CS010095
95	110.1	5.9	6.3	5.5	1.2	100.97*5.33	CS020095
100	110.7	4	4.2	3.5	0.8	104.37*3.53	CS010100
100	115.1	5.9	6.3	5.5	1.2	107.32*5.33	CS020100
100	120.5	7.6	8.1	7.5	2	108*7	CS030100
105	120.1	5.9	6.3	5.5	1.2	110.49*5.33	CS010105
105	125.5	7.6	8.1	7.5	2	113.67*7	CS020105
110	120.7	4	4.2	3.5	0.8	113.89*3.53	CS010110
110	125.1	5.9	6.3	5.5	1.2	116.84*5.33	CS020110
110	130.5	7.6	8.1	7.5	2	116.84*7	CS030110
115	130.1	5.9	6.3	5.5	1.2	120.02*5.33	CS010115
120	135.1	5.9	6.3	5.5	1.2	126.37*5.33	CS010120

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
120	145.5	7.6	8.1	7.5	2	129.54*7	CS020120
125	140.1	5.9	6.3	5.5	1.2	129.54*5.33	CS010125
125	145.5	7.6	8.1	7.5	2	132.72*7	CS020125
127	142.1	5.9	6.3	5.5	1.2	132.72*5.33	CS010127
130	145.1	5.9	6.3	5.5	1.2	135.89*5.33	CS010130
130	150.5	7.6	8.1	7.5	2	139.07*7	CS020130
132	147.1	5.9	6.3	5.5	1.2	139.07*5.33	CS010132
135	145.7	4	4.2	3.5	0.8	139.29*3.53	CS010135
135	150.1	5.9	6.3	5.5	1.2	142.24*5.33	CS020135
137	152.1	5.9	6.3	5.5	1.2	142.24*5.33	CS010137
138	153.1	5.9	6.3	5.5	1.2	142.24*5.33	CS010138
140	150.7	4	4.2	3.5	0.8	145.64*3.53	CS010140
140	155.1	5.9	6.3	5.5	1.2	145.42*5.33	CS020140
140	160.5	7.6	8.1	7.5	2	148.59*7	CS030140
145	160.1	5.9	6.3	5.5	1.2	151.77*5.33	CS010145
145	165.5	7.6	8.1	7.5	2	151.77*7	CS020145
150	165.1	5.9	6.3	5.5	1.2	158.12*5.33	CS010150
150	170.5	7.6	8.1	7.5	2	158.12*7	CS020150
153	168.1	5.9	6.3	5.5	1.2	158.12*5.33	CS010153
155	170.1	5.9	6.3	5.5	1.2	158.12*5.33	CS010155
160	175.1	5.9	6.3	5.5	1.2	164.47*5.33	CS010160
160	180.5	7.6	8.1	7.5	2	170.82*7	CS020160
165	180.1	5.9	6.3	5.5	1.2	170.82*5.33	CS010165
170	185.1	5.9	6.3	5.5	1.2	177.17*5.33	CS010170

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
170	190.5	7.6	8.1	7.5	2	177.17*7	CS020170
173	188.1	5.9	6.3	5.5	1.2	177.17*5.33	CS010173
175	190.1	5.9	6.3	5.5	1.2	183.52*5.33	CS010175
180	195.1	5.9	6.3	5.5	1.2	183.52*5.33	CS010180
180	200.5	7.6	8.1	7.5	2	189.87*7	CS020180
185	200.1	5.9	6.3	5.5	1.2	189.87*5.33	CS010185
185	205.5	7.6	8.1	7.5	2	196.22*7	CS020185
190	205.1	5.9	6.3	5.5	1.2	196.22*5.33	CS010190
190	210.5	7.6	8.1	7.5	2	196.22*7	CS020190
195	210.1	5.9	6.3	5.5	1.2	202.57*5.33	CS010195
200	215.1	5.9	6.3	5.5	1.2	208.92*5.33	CS010200
200	220.5	7.6	8.1	7.5	2	208.92*7	CS020200
205	225.5	7.6	8.1	7.5	2	215.27*7	CS010205
210	230.5	7.6	8.1	7.5	2	215.27*7	CS010210
211	231.5	7.6	8.1	7.5	2	215.27*7	CS010211
212	232.5	7.6	8.1	7.5	2	227.97*7	CS010212
215	235.5	7.6	8.1	7.5	2	227.97*7	CS010215
220	240.5	7.6	8.1	7.5	2	227.97*7	CS010220
225	245.5	7.6	8.1	7.5	2	240.67*7	CS010225
230	245.1	5.9	6.3	5.5	1.2	234.32*5.33	CS010230
230	250.5	7.6	8.1	7.5	2	240.67*7	CS020230
235	255.5	7.6	8.1	7.5	2	240.67*7	CS010235
240	260.5	7.6	8.1	7.5	2	253.37*7	CS010240
245	265.5	7.6	8.1	7.5	2	253.37*7	CS010245

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
250	270.5	7.6	8.1	7.5	2	266.07*7	CS010250
260	284	7.6	8.1	7.5	2	266.07*7	CS010260
265	289	7.6	8.1	7.5	2	278.77*7	CS010265
270	290	7.6	8.1	7.5	2	278.77*7	CS010270
270	294	7.6	8.1	7.5	2	278.77*7	CS020270
275	299	7.6	8.1	7.5	2	291.47*7	CS010275
280	304	7.6	8.1	7.5	2	291.47*7	CS010280
285	309	7.6	8.1	7.5	2	291.47*7	CS010285
290	314	7.6	8.1	7.5	2	304.17*7	CS010290
295	319	7.6	8.1	7.5	2	304.17*7	CS010295
300	320.5	7.6	8.1	7.5	2	304.17*7	CS010300
300	324	7.6	8.1	7.5	2	316.87*7	CS020300
310	334	7.6	8.1	7.5	2	316.87*7	CS010310
320	344	7.6	8.1	7.5	2	329.57*7	CS010320
330	354	7.6	8.1	7.5	2	342.27*7	CS010330
340	364	7.6	8.1	7.5	2	354.97*7	CS010340
350	370.5	7.6	8.1	7.5	2	354.97*7	CS010350
350	374	7.6	8.1	7.5	2	367.67*7	CS020350
360	384	7.6	8.1	7.5	2	367.67*7	CS010360
365	389	7.6	8.1	7.5	2	380.37*7	CS010365
370	394	7.6	8.1	7.5	2	380.37*7	CS010370
375	399	7.6	8.1	7.5	2	393.07*7	CS010375
380	404	7.6	8.1	7.5	2	393.07*7	CS010380
390	414	7.6	8.1	7.5	2	405.26*7	CS010390

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
400	424	7.6	8.1	7.5	2	417.96*7	CS010400
410	434	7.6	8.1	7.5	2	417.96*7	CS010410
420	444	7.6	8.1	7.5	2	430.66*7	CS010420
430	454	7.6	8.1	7.5	2	443.36*7	CS010430
435	459	7.6	8.1	7.5	2	443.36*7	CS010435
440	464	7.6	8.1	7.5	2	456.06*7	CS010440
450	474	7.6	8.1	7.5	2	468.76*7	CS010450
460	484	7.6	8.1	7.5	2	468.76*7	CS010460
470	494	7.6	8.1	7.5	2	481.46*7	CS010470
480	504	7.6	8.1	7.5	2	494.16*7	CS010480
485	509	7.6	8.1	7.5	2	494.16*7	CS010485
490	514	7.6	8.1	7.5	2	506.86*7	CS010490
500	524	7.6	8.1	7.5	2	506.86*7	CS010500
510	534	7.6	8.1	7.5	2	532.26*7	CS010510
520	544	7.6	8.1	7.5	2	532.26*7	CS010520
525	549	7.6	8.1	7.5	2	532.26*7	CS010525
530	554	7.6	8.1	7.5	2	557.66*7	CS010530
540	564	7.6	8.1	7.5	2	557.66*7	CS010540
550	574	7.6	8.1	7.5	2	557.66*7	CS010550
560	584	7.6	8.1	7.5	2	582.68*7	CS010560
570	594	7.6	8.1	7.5	2	582.68*7	CS010570
580	604	7.6	8.1	7.5	2	608.08*7	CS010580
585	609	7.6	8.1	7.5	2	608.08*7	CS010585
590	614	7.6	8.1	7.5	2	608.08*7	CS010590

• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
600	624	7.6	8.1	7.5	2	608.08*7	CS010600
610	634	7.6	8.1	7.5	2	633.48*7	CS010610
620	644	7.6	8.1	7.5	2	633.48*7	CS010620
630	654	7.6	8.1	7.5	2	658.88*7	CS010630
640	664	7.6	8.1	7.5	2	658.88*7	CS010640
650	677.3	8.7	9.5	11	2	663*8.4	CS010650
656	683.3	8.7	9.5	11	2	669*8.4	CS010656
660	687.3	8.7	9.5	11	2	673*8.4	CS010660
670	697.3	8.7	9.5	11	2	683*8.4	CS010670
680	707.3	8.7	9.5	11	2	693*8.4	CS010680
685	712.3	8.7	9.5	11	2	698*8.4	CS010685
690	717.3	8.7	9.5	11	2	703*8.4	CS010690
700	727.3	8.7	9.5	11	2	713*8.4	CS010700
710	737.3	8.7	9.5	11	2	723*8.4	CS010710
720	747.3	8.7	9.5	11	2	733*8.4	CS010720
730	757.3	8.7	9.5	11	2	743*8.4	CS010730
740	767.3	8.7	9.5	11	2	753*8.4	CS010740
750	777.3	8.7	9.5	11	2	763*8.4	CS010750
760	787.3	8.7	9.5	11	2	773*8.4	CS010760
765	792.3	8.7	9.5	11	2	778*8.4	CS010765
770	797.3	8.7	9.5	11	2	783*8.4	CS010770
780	807.3	8.7	9.5	11	2	793*8.4	CS010780
790	817.3	8.7	9.5	11	2	803*8.4	CS010790
800	827.3	8.7	9.5	11	2	813*8.4	CS010800

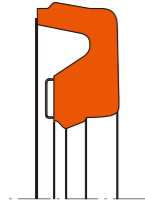
• For further information, pls. contact hotline

Article List CS							
d f8/h9	D H9	H	L+0.2	C	R1	O-Ring	Article No.
810	837.3	8.7	9.5	11	2	823*8.4	CS010810
820	847.3	8.7	9.5	11	2	833*8.4	CS010820
830	857.3	8.7	9.5	11	2	843*8.4	CS010830
850	877.3	8.7	9.5	11	2	863*8.4	CS010850
860	887.3	8.7	9.5	11	2	873*8.4	CS010860
870	897.3	8.7	9.5	11	2	883*8.4	CS010870
880	907.3	8.7	9.5	11	2	893*8.4	CS010880
885	912.3	8.7	9.5	11	2	898*8.4	CS010885
890	917.3	8.7	9.5	11	2	903*8.4	CS010890
900	927.3	8.7	9.5	11	2	913*8.4	CS010900
910	937.3	8.7	9.5	11	2	923*8.4	CS010910
920	947.3	8.7	9.5	11	2	933*8.4	CS010920
930	957.3	8.7	9.5	11	2	943*8.4	CS010930
940	967.3	8.7	9.5	11	2	953*8.4	CS010940
950	977.3	8.7	9.5	11	2	963*8.4	CS010950
955	982.3	8.7	9.5	11	2	968*8.4	CS010955
1040	1067.3	8.7	9.5	11	2	1053*8.4	CS011040
1050	1077.3	8.7	9.5	11	2	1063*8.4	CS011050
1120	1147.3	8.7	9.5	11	2	1133*8.4	CS011120
1200	1227.3	8.7	9.5	11	2	1213*8.4	CS011200
1330	1357.3	8.7	9.5	11	2	1343*8.4	CS011330
1500	1527.3	8.7	9.5	11	2	1513*8.4	CS011500

• For further information, pls. contact hotline

C10

Rod seal



Description

Consist of one Polyurethane ring and one POM header, protect major seal from any possible damage when cylinder under pressure.

Material

TPU profile ring

Material: polyurethane TPU

Code: PFKM

Hardness: 97 Shore A

Feature

- Excellent friction resistance.
- Pressure resistance.
- Anti-extrusion
- Work in harsh environment.
- Easy to fit.

Examples of use

- earth moving equipment
- industrial vehicles
- agricultural machinery
- crane
- injection moulding machines
- standard cylinders

Working limit

Pressure: 80 MPa
Running speed: 5m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

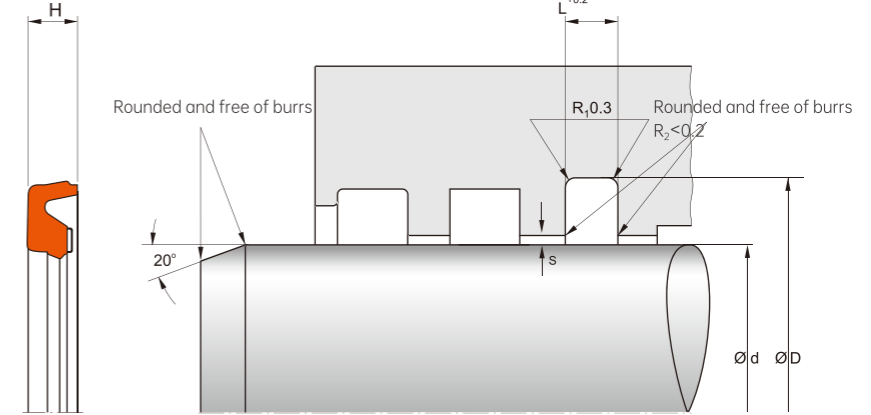
Gap dimension

Profile dimension		Max.permissible gap dimension $S_{max.}$			
L	Profile	16 MPa	26 MPa	32 MPa	40 MPa
6.3	7.55	0.6	0.50	0.40	0.40
8.1	10.25	0.7	0.60	0.50	0.50

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example C10



Article List C10

d f8/h9	D H9	H	L +0.2	Article No.
40	55.5	6	6.3	C10010400
45	60.5	6	6.3	C10010450
50	65.5	6	6.3	C10010500
55	70.5	6	6.3	C10010550
60	75.5	6	6.3	C10010600
65	80.5	6	6.3	C10010650
70	85.5	6	6.3	C10010700
75	90.5	6	6.3	C10010750
80	95.5	6	6.3	C10010800
85	100.5	6	6.3	C10010850
90	105.5	6	6.3	C10010900
95	110.5	6	6.3	C10010950
100	115.5	6	6.3	C10011000
105	120.5	6	6.3	C10011050

- For further information, pls. contact hotline

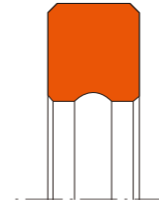
Article List C10

d f8/h9	D H9	H	L +0.2	Article No.
110	125.5	6	6.3	C10011100
115	130.5	6	6.3	C10011150
120	135.5	6	6.3	C10011200
125	140.5	6	6.3	C10011250
130	145.5	6	6.3	C10011300
132	147.5	6	6.3	C10011320
135	150.5	6	6.3	C10011350
140	155.5	6	6.3	C10011400
150	160.5	6	6.3	C10011500
160	175.5	6	6.3	C10011600
170	185.5	6	6.3	C10011700
180	195.5	6	6.3	C10011800
190	205.5	6	6.3	C10011900
200	221	7.7	8	C10012000
210	231	7.7	8	C10012100

• For further information, pls. contact hotline

C14

Rod seal



Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

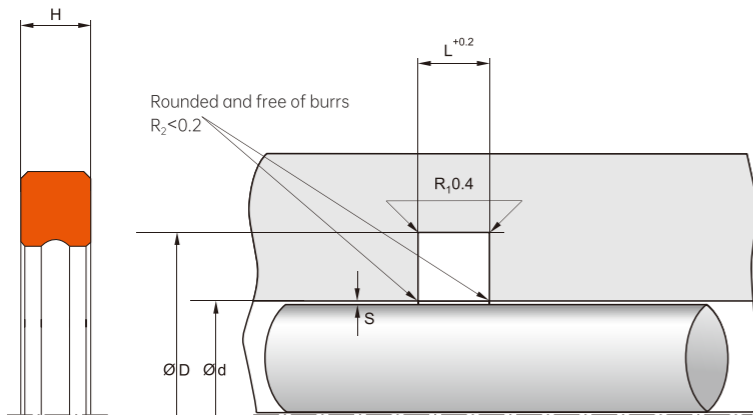
Examples of use

· seals for excavators

Working limit

Pressure: 50 MPa
Running speed: 1 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Installation Example C14



Article List C14

TYPE	d f8/h9	D H10	H	L
C14	60	70	4.9	5.0
C14	70	80	4.9	5.0
C14	75	85	4.9	5.0
C14	80	90	4.9	5.0
C14	90	100	4.9	5.0
C14	95	105	4.9	5.0
C14	100	110	4.9	5.0
C14	105	115	4.9	5.0
C14	110	120	4.9	5.0
C14	115	125	4.9	5.0
C14	120	130	4.9	5.0
C14	125	135	4.9	5.0
C14	130	140	4.9	5.0
C14	150	160	4.9	5.0

- For further information, pls. contact hotline

CAS

Rod seal



Description

Lip seal with oil outlet on the lip of seal, stop leakage under back pressure, no climbing.

Material

Material: polyurethane TPU
Code: PFKM
Hardness: 93 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to punch load and pressure limit.
- Superior anti-extrusion performance.
- Fit for harsh working environment.
- Easy to install.

Examples of use

- seals for breaking hammers

Working limit

Pressure: 40 MPa
Running speed: 5 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL, HLP

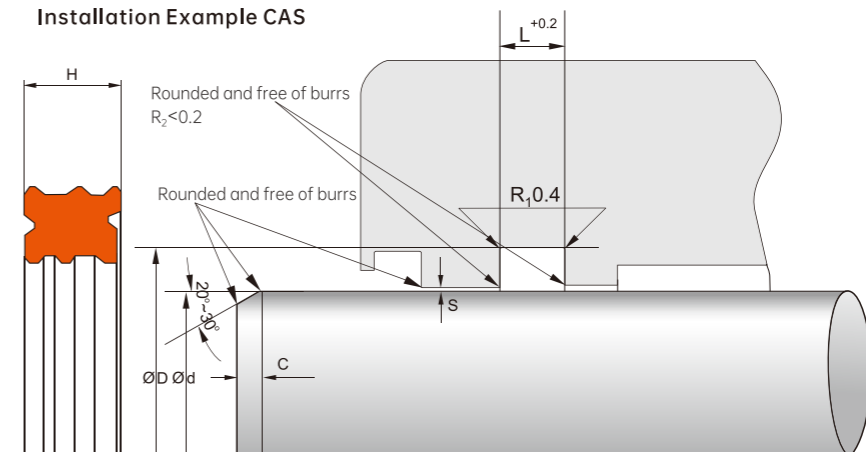
Surface finish		
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_r > 50\%$ to max. 90% at cutting depth $c = R_z/2$ and reference line C ref=0%

Gap dimension				
Profile dimension	Max. permissible gap dimension S_{max}			
	16 MPa	26 MPa	32 MPa	40 MPa
≤5.0	0.50	0.40	0.35	-
>5.0 - 7.5	0.55	0.45	0.40	0.35
>7.5 - 12.5	0.60	0.50	0.45	0.40
15.0	0.60	0.50	0.45	0.40

Lead Chamfer	
d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CAS



Article List CAS

TYPE	d f8/h9	D H10	H	L
CAS	34.5	43.2	5.3	6.0
CAS	36.5	46.5	5.5	6.0
CAS	37.0	47.0	7.0	8.0
CAS	37.0	48.5	5.3	6.0
CAS	40.0	3.5	3.5	4.0
CAS	40.0	5.3	5.3	6.0
CAS	40.0	6.5	6.5	7.5
CAS	41.5	51.5	5.5	6.0
CAS	42.0	52.0	7.0	8.0
CAS	43.0	5.3	5.3	6.0
CAS	43.5	53.5	5.5	6.5
CAS	43.5	55.0	5.3	6.0
CAS	45.0	5.3	5.3	6.0
CAS	50.0	5.3	5.3	6.0

- For further information, pls. contact hotline

Article List CAS				
TYPE	d f8/h9	D H10	H	L
CAS	50.0	60.0	5.5	6.5
CAS	50.0	60.0	7.0	8.0
CAS	50.5	60.5	5.5	6.0
CAS	52.5	5.3	5.3	6.0
CAS	53.3	5.3	5.3	6.0
CAS	53.5	63.5	5.5	6.0
CAS	55.5	65.5	5.5	6.0
CAS	57.0	67.0	5.5	6.0
CAS	57.0	70.0	7.0	8.0
CAS	58.0	5.3	5.3	6.0
CAS	60.0	70.0	5.5	6.5
CAS	62.9	5.3	5.3	6.0
CAS	65.5	75.5	6.5	7.0
CAS	66.0	76.0	5.5	6.5
CAS	67.5	78.5	6.5	7.0
CAS	68.0	78.0	5.5	6.5
CAS	72.0	82.0	5.5	6.5
CAS	73.0	82.5	7.0	8.0
CAS	74.0	5.3	5.3	6.0
CAS	77.0	87.0	7.0	8.0
CAS	78.0	88.0	7.0	8.0
CAS	82.0	91.5	7.0	8.0
CAS	83.5	93.5	7.0	8.0
CAS	86.5	5.3	5.3	6.0

• For further information, pls. contact hotline

Article List CAS				
TYPE	d f8/h9	D H10	H	L
CAS	90.0	5.3	5.3	6.0
CAS	90.5	5.3	5.3	6.0
CAS	96.0	106.0	7.0	8.0
CAS	98.0	5.3	5.3	6.0
CAS	98.0	108.0	7.0	8.0
CAS	98.0	108.5	5.5	6.0
CAS	105.0	7.0	7.0	8.0
CAS	107.0	5.3	5.3	6.0
CAS	108.0	118.0	7.0	8.0
CAS	110.0	5.3	5.3	6.0
CAS	117.0	130.0	7.4	8.0
CAS	117.0	130.0	9.7	10.5
CAS	118.0	5.3	5.3	6.0
CAS	118.0	131.0	9.7	10.5
CAS	120.0	133.0	9.7	10.5
CAS	120.0	7.0	7.0	8.0
CAS	123.5	136.5	9.7	10.5
CAS	128.0	141.0	9.7	10.5
CAS	130.0	7.0	7.0	8.0
CAS	132.0	145.0	7.4	8.0
CAS	133.0	146.0	7.4	8.0
CAS	133.0	146.0	7.4	8.0
CAS	133.0	146.0	9.7	10.5
CAS	135.0	7.0	7.0	8.0

• For further information, pls. contact hotline

Article List CAS				
TYPE	d f8/h9	D H10	H	L
CAS	135.0	148.0	9.7	10.5
CAS	136.0	149.0	9.7	10.5
CAS	137.0	150.0	9.7	10.5
CAS	137.0	7.0	7.0	8.0
CAS	138.0	151.0	9.7	10.5
CAS	140.0	7.0	7.0	8.0
CAS	141.0	7.0	7.0	8.0
CAS	143.0	156.0	9.7	10.5
CAS	145.0	7.0	7.0	8.0
CAS	145.0	158.0	9.7	10.5
CAS	147.0	160.0	9.7	10.5
CAS	148.0	161.0	9.7	10.5
CAS	148.0	7.0	7.0	8.0
CAS	150.0	7.0	7.0	8.0
CAS	150.0	163.0	9.7	10.5
CAS	152.0	7.0	7.0	8.0
CAS	152.0	165.0	9.7	10.5
CAS	155.0	168.0	9.7	10.5
CAS	157.0	170.0	9.7	10.5
CAS	163.0	176.0	9.7	10.5
CAS	165.0	7.0	7.0	8.0
CAS	165.0	178.0	7.4	8.0
CAS	165.0	178.0	9.7	10.5
CAS	167.0	7.0	7.0	8.0

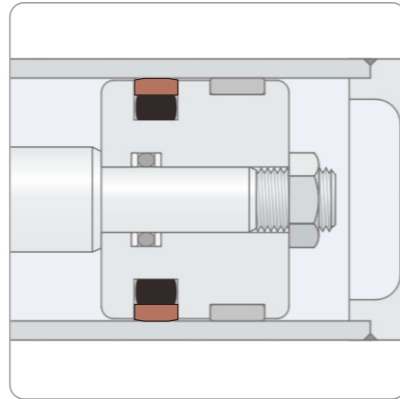
• For further information, pls. contact hotline

Article List CAS				
TYPE	d f8/h9	D H10	H	L
CAS	167.0	180.0	9.7	10.5
CAS	168.0	181.0	9.7	10.5
CAS	169.0	182.0	9.7	10.5
CAS	170.0	183.0	9.7	10.5
CAS	170.0	(184)	9.7	10.5
CAS	172.0	185.0	9.7	10.5
CAS	174.0	187.0	9.7	10.5
CAS	175.0	188.0	9.7	10.5
CAS	176.0	189.0	9.7	10.5
CAS	177.0	190.0	9.7	10.5
CAS	178.0	191.0	9.7	10.5
CAS	180.0	193.0	9.7	10.5
CAS	182.0	195.0	9.7	10.5
CAS	185.0	196.7	9.7	10.5
CAS	185.0	198.0	9.7	10.5
CAS	186.0	199.0	9.7	10.5
CAS	187.0	200.0	9.7	10.5
CAS	190.0	203.0	9.7	10.5
CAS	192.0	205.0	9.7	10.5
CAS	195.0	208.0	9.7	10.5
CAS	196.0	209.0	9.7	10.5
CAS	197.0	210.0	9.7	10.5
CAS	198.0	211.0	9.7	10.5
CAS	200.0	213.0	9.7	10.5

• For further information, pls. contact hotline

Article List CAS				
TYPE	d f8/h9	D H10	H	L
CAS	205.0	218.0	9.7	10.5
CAS	206.0	219.0	9.7	10.5
CAS	207.0	220.0	9.7	10.5
CAS	210.0	223.0	9.7	10.5
CAS	215.0	228.0	9.7	10.5
CAS	216.0	229.0	9.7	10.5
CAS	217.0	230.0	9.7	10.5
CAS	225.0	238.0	9.7	10.5
CAS	227.0	240.0	9.7	10.5
CAS	245.0	265.0	12.0	13.0
CAS	275.0	295.0	12.0	13.0

• For further information, pls. contact hotline



Piston seal

CONTENTS

Piston seal

Product Range

C1	-----	114-134
CG	-----	136-145
CPW	-----	146-148
CPI	-----	149-152
CUT	-----	153-156
CGA	-----	157-159
MDB	-----	160-165



Seals profile



PS01



PS08



PS09



PS20



P51A



PS01A



PS08A



PS09A



PS23



P51G



PS01B



PS08B



PS16



PS35



P52



PS02



PS08C



PS16A



PS1012T



P53



PS02A



PS08D



PS17



PS1012M



P54



PS03



PS08E



PS17A



P50



P54A



PS04



PS08F



PS17B



P50A



P55



PS05



PS81



PS19

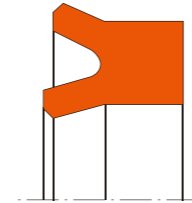


P51



P58

C1

Piston seal


Description

Asymmetrical section, outer dynamic lip short but strong for better seal performance and effectively decrease the compression set of seal. broad application.

Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

Feature

- Good friction resistance.
- Anti-extrusion.
- Superior pressure resistance.
- Fit for harsh environment.
- Easy to fit.

Examples of use

- earth moving equipment
- support cylinders
- presses

Working limit

Pressure: 50 MPa
Running speed: 1 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL, HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

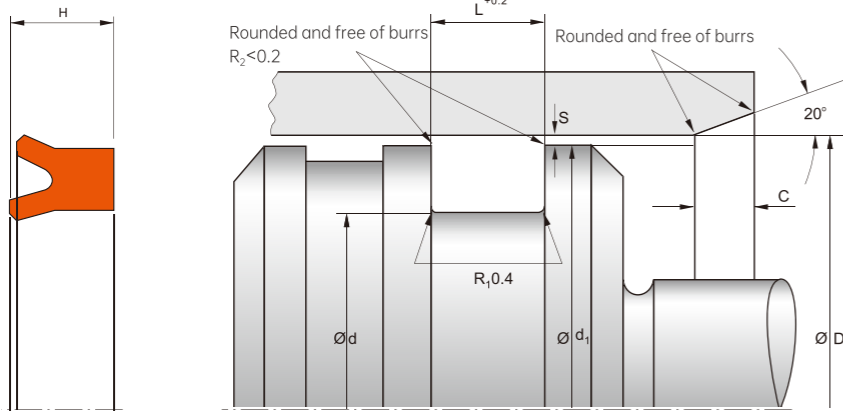
Gap dimension

Profile dimension	Max.permissible gap dimension $S_{max.}$			
	16 Mpa	26 Mpa	32 Mpa	40 Mpa
4.0 - 5.0	0.50	0.40	0.35	0.30
>5.0 - 7.5	0.55	0.45	0.40	0.35
>7.5 - 11.0	0.66	0.50	0.45	0.40

Lead Chamfer

D	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example C1



Article List C1 (JIS)

D H9	d h9	H	L +0.2	d1	C	Article No.
35	27	5	5.7	34	2	C1010350
35.5	27.5	5	5.7	34.5	2	C1010355
35.5	28	5	5.7	34.5	2	C1020355
40	30	6	7	39	2.5	C1010400
41.5	31.5	6	7	40.5	2.5	C1010415
45	35	6	7	44	2.5	C1010450
45	35.5	6	7	44	2.5	C1020450
50	40	6	7	49	2.5	C1010500
55	45	6	7	54	2.5	C1010550
56	45	7	8	55	2.5	C1010560
56	46	6	7	55	2.5	C1020560
60	50	6	7	59	2.5	C1010600
63	53	6	7	62	2.5	C1010630
65	55	6	7	64	2.5	C1010650

• For further information, pls. contact hotline

Article List C1 (JIS)

D H9	d h9	H	L +0.2	d1	C	Article No.
66	56	6	7	65	2.5	C1010660
70	60	6	7	69	2.5	C1010700
71	60	7	8	70	2.5	C1010710
71	61	6	7	70	2.5	C1020710
73	63	6	7	72	2.5	C1010730
75	65	6	7	74	2.5	C1010750
77	67	6	7	76	2.5	C1010770
80	70	6	7	79	2.5	C1010800
80	71	6	7	79	2.5	C1020800
85	75	6	7	84	2.5	C1010850
90	80	6	7	89	2.5	C1010900
100	85	9	10	98	4	C1011000
105	90	9	10	103	4	C1011050
110	95	9	10	108	4	C1011100
112	98	8.5	9.5	110	4	C1011120
115	100	9	10	113	4	C1011150
120	105	9	10	118	4	C1011200
120	106	8.5	9.5	118	4	C1021200
125	112	9	10	123	4	C1011250
130	115	9	10	128	4	C1011300
140	125	9	10	138	4	C1011400
145	130	9	10	143	4	C1011450
150	135	9	10	148	4	C1011500
150	136	8.5	9.5	148	4	C1021500

• For further information, pls. contact hotline

Article List C1 (JIS)

D H9	d h9	H	L +0.2	d1	C	Article No.
155	140	9	10	153	4	C1011550
160	145	9	10	158	4	C1011600
170	155	9	10	168	4	C1011700
175	160	9	10	173	4	C1011750
180	165	9	10	178	4	C1011800
190	175	9	10	188	4	C1011900
200	180	12	13	198	5	C1012000
210	190	12	13	208	5	C1012100
220	200	12	13	218	5	C1012200
224	204	12	13	222	5	C1012240
225	205	12	13	223	5	C1012250
230	210	12	13	228	5	C1012300
240	220	12	13	238	5	C1012400
250	230	12	13	248	5	C1012500
260	240	12	13	258	5	C1012600
270	250	12	13	268	5	C1012700
280	255	16	17	278	6.5	C1012800
290	265	16	17	288	6.5	C1012900
300	275	16	17	298	6.5	C1013000

• For further information, pls. contact hotline

Article List C1

D H9	d h9	H	L +0.2	Article No.
12	5	5.5	6	C1010120
14	8	6.3	6.8	C1010140
15	10	4.2	4.7	C1010150
16	8	5.7	6.3	C1010160
16	10	5.7	6.3	C1020160
16	10	6	6.5	C1030160
16	10	8	9	C1040160
18	8	7.5	8.5	C1010180
19.2	11.2	5	5.7	C1010192
20	10	6	7	C1010200
20	10	7.5	8.5	C1020200
20	10	8	9	C1030200
20	12	5	5.7	C1040200
20	12	5.7	6.3	C1050200
20	12	6.5	7.5	C1060200
20	14	5.5	6	C1070200
22	12	8	9	C1010220
22	14	5	5.7	C1020220
24	16	5.7	6.3	C1010240
25	10	10	11	C1010250
25	15	6	7	C1020250
25	15	8	9	C1030250
25	17	5	5.7	C1040250
25	17	5.7	6.3	C1050250

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
25	18	5	5.6	C1060250
26	16	7.5	8.5	C1010260
26	18	5	5.7	C1020260
28	15	10	11	C1010280
28	20	5	5.7	C1020280
30	15	9.5	10.5	C1010300
30	15	10	11	C1020300
30	20	5	5.7	C1030300
30	20	6	7	C1040300
30	20	8	9	C1050300
30	22	6.5	7	C1060300
30	22.4	5	5.7	C1070300
31	18	10	11	C1010310
31.5	18.5	8	9	C1010315
31.5	18.5	10	11	C1020315
31.5	21.5	6	7	C1030315
31.5	21.5	8	9	C1040315
31.5	23.5	5	5.7	C1050315
32	22	7.3	8	C1010320
32	22	8	9	C1020320
32	22	10	11	C1030320
32	24	5.7	6.3	C1040320
32	26	5	6	C1050320
33	20	10	11	C1010330

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
33	25	5	5.7	C1020330
34	22	8.4	9.4	C1010340
34	22	9	10	C1020340
34	28	3.5	4	C1030340
35	20	10	11	C1020350
35	22	10	11	C1030350
35	25	6	7	C1040350
35	25	7.3	8	C1050350
35	25	8	9	C1060350
35	27	10	11	C1070350
35.4	22.4	10	11	C1010354
35.5	22.5	8	9	C1030355
35.5	22.5	10	11	C1040355
35.5	25.5	6	7	C1050355
35.5	25.5	8	9	C1060355
36.5	24	6.2	7	C1010365
37	21	12	13	C1010370
38	25	10	11	C1010380
38	31	4.7	5.2	C1020380
40	25	9	10	C1020400
40	25	10	11	C1030400
40	27	8	9	C1040400
40	27	10	11	C1050400
40	30	6.5	7.5	C1060400

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
40	30	7.3	8	C1070400
40	30	8	9	C1080400
40	30	10	11	C1090400
40	32	5.5	6.5	C1100400
40	32	5.7	6.3	C1110400
40	32	8	9	C1120400
40	33	8	9	C1130400
41	28	10	11	C1010410
42	32	10	11	C1010420
42	34.5	4.2	4.7	C1020420
43	25	9	10	C1010430
43	30	10	11	C1020430
44	20	11	12	C1010440
44	25	11	12	C1020440
44.5	31.5	10	11	C1010445
45	28.5	12	13	C1030450
45	30	9	10	C1040450
45	30	10	11	C1050450
45	30	12	13	C1060450
45	32	8	9	C1070450
45	32	10	11	C1080450
45	35	8	9	C1090450
50	30	12	13	C1020500
50	32	10	11	C1030500

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
50	34	10	11	C1040500
50	34	12	13	C1050500
50	35	8.5	9.5	C1060500
50	35	9	10	C1070500
50	35	10	11	C1080500
50	35	12	13	C1090500
50	40	5	5.5	C1100500
50	40	7.3	8	C1110500
50	40	8	9	C1120500
50	40	10	11	C1130500
50	42	5.5	6	C1140500
50	42	5.7	6.3	C1150500
50	42	8	9	C1160500
50	42	10	11	C1170500
50.8	40.8	7	8	C1010508
51.5	35.5	12	13	C1010515
52	42	5.7	6.5	C1010520
52	42	10	10.6	C1020520
55	40	9	10	C1020550
55	40	10	11	C1030550
55	45	8	9	C1040550
55	45	10	11	C1050550
55	47	5.7	6.3	C1060550
56	40	10	11	C1030560

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
56	40	12	13	C1040560
56	41	9	10	C1050560
56	41	10	11	C1060560
56	46	8	9	C1070560
60	40	10	11	C1020600
60	40	12	13	C1030600
60	40	13.5	14.5	C1040600
60	45	9	10	C1050600
60	45	10	11	C1060600
60	50	5	5.5	C1070600
60	50	7	8	C1080600
60	50	7.3	8	C1090600
60	50	8	9	C1100600
60	50	10	11	C1110600
60	52	8	9	C1120600
61	45	12	13	C1010610
63	43	12	13	C1020630
63	45	10	11	C1030630
63	45	12	13	C1040630
63	47	10	11	C1050630
63	47	12	13	C1060630
63	48	58	9.5	C1070630
63	48	9	10	C1080630
63	48	10	11	C1090630

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
63	48	12	13	C1100630
63	53	6.3	7	C1110630
63	53	7	8	C1120630
63	53	7.3	8	C1130630
63	53	8	9	C1140630
63	53	12	13	C1150630
63	55	5.7	6.3	C1160630
65	45	12	13	C1020650
65	45	13.5	14.5	C1030650
65	50	9	10	C1040650
65	50	10	11	C1050650
65	50	11.5	12.5	C1060650
65	55	7.3	8	C1070650
65	55	8	9	C1080650
65	55	10	11	C1090650
65	55	13.5	14.5	C1100650
66	50	12	13	C1020660
68	48	10	11	C1010680
69	53	12	13	C1010690
70	50	12	13	C1020700
70	50	13.5	14.5	C1030700
70	50	15	16	C1040700
70	55	9	10	C1050700
70	55	9.5	10.5	C1060700

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
70	55	10	11	C1080700
70	55	12	13	C1090700
70	60	7	8	C1100700
70	60	8	9	C1110700
70	60	12	13	C1120700
70	60	13.5	14.5	C1130700
70	62	7.5	8.5	C1140700
71	51	12	14	C1030710
71	55	10	11	C1040710
71	55	12	13	C1050710
71	56	9	10	C1060710
71	56	10	11	C1070710
71	61	8	9	C1080710
72	58	12	13	C1010720
75	50	14	15	C1020750
75	55	12	13	C1030750
75	55	13.5	14.5	C1040750
75	60	9	10	C1050750
75	60	10	11	C1060750
75	63	8.7	9.5	C1070750
75	65	5	5.5	C1080750
75	65	7	8	C1090750
75	65	8	9	C1100750
75	65	10	11	C1110750

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
75	65	13.5	14.5	C1120750
76	56	12	13	C1010760
76	60	12	13	C1020760
80	60	10	11	C1030800
80	60	11.5	12.5	C1040800
80	60	12	13	C1050800
80	60	13.5	14.5	C1060800
80	64	10	11	C1070800
80	64	12	13	C1080800
80	65	8.6	9.5	C1090800
80	65	9	10	C1100800
80	65	10	11	C1110800
80	65	11.4	12.5	C1120800
80	65	12	13	C1130800
80	68	8.5	9.5	C1140800
80	70	6.7	7.5	C1150800
80	70	7	8	C1160800
80	70	8	9	C1170800
80	70	12	13	C1180800
80	72	12	13	C1190800
85	65	12	13	C1020850
85	65	13.5	14.5	C1030850
85	70	9	10	C1040850
85	70	10	11	C1050850

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
85	70	12	13	C1060850
85	75	8	9	C1070850
85	75	10	11	C1080850
85	75	12	13	C1090850
90	70	12	13	C1020900
90	70	13.5	14.5	C1030900
90	70	15	16	C1040900
90	75	9	10	C1050900
90	75	10	11	C1060900
90	75	11.4	12.5	C1070900
90	75	12	13	C1080900
90	80	5	5.5	C1090900
90	80	8	9	C1100900
90	80	10	11	C1110900
90	80	13	14	C1120900
95	75	12	13	C1010950
95	75	13.5	14.5	C1020950
95	75	15	16	C1030950
95	80	9	10	C1040950
95	80	10	11	C1050950
95	80	12	13	C1060950
95	85	6.7	7.5	C1070950
95	85	7	8	C1080950
95	85	8.5	9.5	C1090950

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
95	85	13.5	14.5	C1100950
100	80	10	11	C1021000
100	80	11.5	12.5	C1031000
100	80	12	13	C1041000
100	80	13.5	14.5	C1051000
100	80	14.5	16	C1061000
100	80	15	16	C1071000
100	85	8.5	9.5	C1081000
100	85	10	11	C1091000
100	85	11.4	12.5	C1101000
100	85	12	13	C1111000
100	86	12	13	C1121000
100	88	8.5	9.5	C1131000
100	90	6.7	7.5	C1141000
100	90	7	8	C1151000
100	90	10.5	11.5	C1161000
101.6	80	12	13	C1011016
105	85	15	16	C1021050
105	90	12	13	C1031050
110	90	12	13	C1021100
110	90	15	16	C1031100
110	95	10	11	C1041100
110	95	12	13	C1051100
110	100	7	8	C1061100

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
110	100	13.5	14.5	C1071100
112	92	12	13	C1021120
112	92	15	16	C1031120
112	97	9	10	C1041120
112	97	10	11	C1051120
115	95	15	16	C1021150
115	98	14.5	16	C1031150
115	100	10.5	11.5	C1041150
115	100	12	13	C1051150
115	105	13.5	14.5	C1061150
120	95	12	13	C1031200
120	100	12	13	C1041200
120	100	13.5	14.5	C1051200
120	100	15	16	C1061200
120	103	16	17	C1071200
120	105	10	11	C1081200
120	105	12	13	C1091200
125	100	15	16	C1021250
125	100	18.2	20	C1031250
125	105	12	13	C1041250
125	105	14.5	16	C1051250
125	105	15	16	C1061250
125	105	16	17	C1071250
125	110	9	10	C1081250

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
125	110	9.6	10.6	C1091250
125	110	10	11	C1101250
125	110	12	13	C1111250
125	115	7	8	C1121250
125	115	15	16	C1131250
130	110	12	13	C1021300
130	110	15	16	C1031300
130	110	16	17	C1041300
130	115	10	11	C1051300
132	112	15	16	C1011320
140	120	12	13	C1021400
140	120	15	16	C1031400
140	120	16	17	C1041400
140	125	10	11	C1051400
145	115	18	20	C1021450
150	125	19	20	C1031500
150	125	20	21	C1041500
150	130	12	13	C1051500
150	130	15	16	C1061500
150	130	16	17	C1071500
150	135	10	11	C1081500
152.4	136.5	10	11	C1011524
157	132	20	21	C1011570
160	135	18.2	20	C1021600

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
160	135	19	20	C1031600
160	135	20	21	C1041600
160	140	11.5	12.5	C1051600
160	140	12	13	C1061600
160	140	14.5	16	C1071600
160	140	16	17	C1081600
160	145	10	11	C1091600
165	140	19	20	C1011650
165	140	20	21	C1021650
165	145	15	16	C1031650
170	145	19	20	C1021700
170	145	20	21	C1031700
170	150	12	13	C1041700
170	150	16	17	C1051700
170	155	10	11	C1061700
180	150	18	20	C1021800
180	155	16	17	C1031800
180	155	19	20	C1041800
180	155	20	21	C1051800
180	160	11.5	12.5	C1061800
180	160	12	13	C1071800
180	160	16	17	C1081800
180	165	10	11	C1091800
185	160	19	20	C1011850

• For further information, pls. contact hotline

Article List C1				
D H9	d h9	H	L +0.2	Article No.
185	160	20	21	C1021850
190	165	16	17	C1021900
190	165	20	21	C1031900
190	170	12	13	C1041900
190	170	16	17	C1051900
190	175	10	11	C1061900
200	170	19	20	C1022000
200	175	15	16	C1032000
200	175	16	17	C1042000
200	175	18.2	20	C1052000
200	175	19	20	C1062000
200	175	20	21	C1072000
200	180	16	17	C1082000
200	185	9.6	10.6	C1092000
205	180	19	20	C1012050
205	180	20	21	C1022050
210	185	16	17	C1022100
210	185	20	21	C2032100
210	190	16	17	C1042100
215	190	16	17	C1012150
220	195	16	17	C1022200
220	195	20	21	C1032200
220	200	15	16.5	C1042200
220	200	16	17	C1052200

• For further information, pls. contact hotline

Article List C1

D H9	d h9	H	L +0.2	Article No.
224	199	16	17	C1022240
224	199	20	21	C1032240
224	204	16	17	C1042240
225	200	16	17	C1022250
225	200	19	20	C1032250
225	200	20	21	C1042250
225	205	16	17	C1052250
230	205	16	17	C1022300
230	205	19	20	C1032300
230	205	20	21	C1042300
230	210	16	17	C1052300
240	215	16	17	C1022400
240	215	19	20	C1032400
240	215	20	21	C1042400
240	220	16	17	C1052400
250	220	19	20	C1022500
250	225	15	16	C1032500
250	225	16	17	C1042500
250	225	18.2	20	C1052500
250	225	19	20	C1062500
250	225	20	21	C1072500
250	230	15	16.5	C1082500
250	230	16	17	C1092500
260	235	16	17	C1022600

• For further information, pls. contact hotline

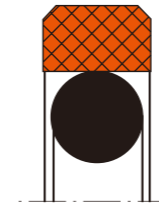
Article List C1

D H9	d h9	H	L +0.2	Article No.
260	235	19	20	C1032600
260	240	16	17	C1042600
270	245	16	17	C1022700
270	245	19	20	C1032700
270	250	16	17	C1042700
275	250	19	20	C1012750
275	250	20	21	C1022750
280	250	19	20	C1022800
280	255	20	21	C1032800
290	260	19	20	C1022900
290	265	19	20	C1032900
297	265	24	25	C1012970
297	265	25	26	C1022970
300	270	19	20	C1023000
300	270	24	25	C1033000
300	270	25	26	C1043000
300	275	19	20	C1053000
312	280	24	25	C1013120
320	290	20	22	C1013200
332	300	24	25	C1013320

• For further information, pls. contact hotline

CG

Piston seal



Description

Standard double-acting seal of reciprocating cylinder, bigger anti-extrusion gap, broader application. High performance dynamic seal, also fit for polluted environment, low friction rate, simple housing, Strong applicability to the working conditions.

Material

PTFE profile ring

Material: PTFE bronze compound

Code: E201

O-ring

Material: nitrile rubber NBR

Code: 70R006

Hardness: 70 Shore A

Material: fluoro-rubber FKM

Code: 70M203

Hardness: 70 Shore A

Feature

- No climbing when engine start, work smoothly.
- Abrasion resistance, long service life.
- Superior temperature conductivity.
- High performance anti-extrusion.

Examples of use

- presses
- agricultural machinery
- injection moulding machines
- handling equipment
- control and regulation equipment
- marine hydraulics
- industrial vehicles
- cranes
- mills

Working limit

Pressure: 80 MPa

Running speed: 15m/s

Temperature: -40°C to +120°C (NBR)
-20°C to +220°C (FKM)

Medium: Hydraulic oils HL, HLP

Surface finish

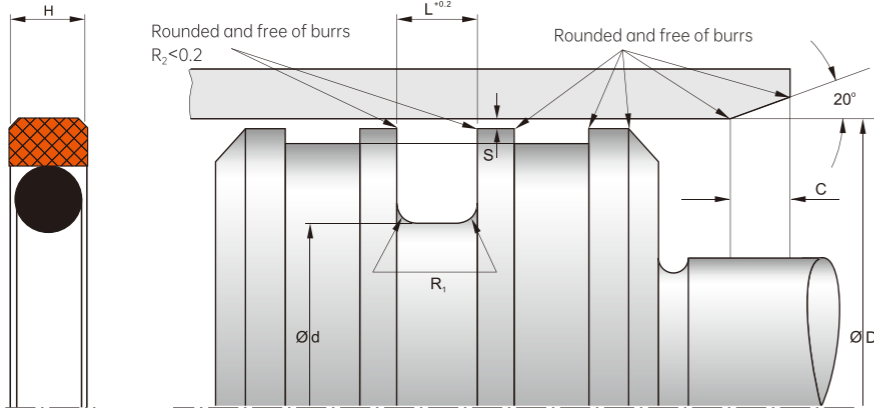
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_c > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

Gap dimension

Profile dimension	Max.permissible gap dimension			
	$S_{max.}$			
L	16 MPa	26 MPa	32 MPa	40 MPa
2.2	0.35	0.30	-	-
3.2	0.40	0.35	-	-
4.2	0.50	0.40	0.30	-
6.3	0.55	0.45	0.35	0.35
8.1	0.60	0.50	0.40	0.45
8.1	0.70	0.60	0.55	0.50
9.5	0.75	0.65	0.60	0.55

Installation Example CG



Article List CG

D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
8	3.1	2	2.2	3	0.3	2.9*1.78	CG010008
10	5.1	2	2.2	3	0.3	4.8*1.8	CG010010
12	7.1	2	2.2	3	0.3	6.7*1.8	CG010012
14	9.1	2	2.2	3	0.3	8.75*1.8	CG010014
15	7.5	3	3.2	4.5	0.5	7.59*2.62	CG010015
16	11.1	2	2.2	3	0.3	10.82*1.78	CG010016
16	8.5	3	3.2	4.5	0.5	7.59*2.62	CG020016
18	13.1	2	2.2	3	0.3	12.42*1.78	CG010018
18	10.5	3	3.2	4.5	0.5	9.19*2.62	CG020018
20	14	3	3.2	4.5	0.5	13.94*2.62	CG010020
20	15.1	2	2.2	3	0.3	14*1.78	CG020020
20	12.5	3	3.2	4.5	0.5	12.37*2.62	CG030020
21	13.5	3	3.2	4.5	0.5	12.37*2.62	CG010021
22	17.1	2	2.2	3	0.3	17.17*1.78	CG010022

• For further information, pls. contact hotline

Article List CG

D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
22	14.5	3	3.2	4.5	0.5	13.94*2.62	CG020022
24	16.5	3	3.2	4.5	0.5	15.54*2.62	CG010024
25	20.1	2	2.2	3	0.3	18.77*1.78	CG010025
25	17.5	3	3.2	4.5	0.5	17.12*2.62	CG020025
25	14	4	4.2	6	0.8	13.87*3.53	CG030025
28	20.5	3	3.2	4.5	0.5	20.29*2.62	CG010028
30	22.5	3	3.2	4.5	0.5	21.89*2.62	CG010030
32	27.1	2	2.2	3	0.3	26.7*1.78	CG010032
32	24.5	3	3.2	4.5	0.5	23.47*2.62	CG020032
32	21	4	4.2	6	0.8	20.22*3.53	CG030032
35	27.5	3	3.2	4.5	0.5	26.64*2.62	CG010035
35	24	4	4.2	6	0.8	23.4*3.53	CG020035
36	28.5	3	3.2	4.5	0.5	28.24*2.62	CG010036
38	30.5	3	3.2	4.5	0.5	29.82*2.62	CG010038
39	31.5	3	3.2	4.5	0.5	31.42*2.62	CG010039
40	29	4	4.2	6	0.8	28.17*3.53	CG010040
42	31	4	4.2	6	0.8	29.75*3.53	CG010042
45	34	4	4.2	6	0.8	32.92*3.53	CG010045
48	37	4	4.2	6	0.8	36.09*3.53	CG010048
50	42.5	3	3.2	4.5	0.5	40.94*2.62	CG010050
50	39	4	4.2	6	0.8	37.7*3.53	CG020050
50	34.5	5.9	6.3	8	1.2	32.69*5.33	CG030050
52	41	4	4.2	6	0.8	40.87*3.53	CG010052
53	42	4	4.2	6	0.8	40.87*3.53	CG010053

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
55	44	4	4.2	6	0.8	44.04*3.53	CG010055
57	46	4	4.2	6	0.8	44.04*3.53	CG010057
58	47	4	4.2	6	0.8	47.22*3.53	CG010058
60	49	4	4.2	6	0.8	47.22*3.53	CG010060
62	51	4	4.2	6	0.8	50.39*3.53	CG010062
63	52	4	4.2	6	0.8	50.39*3.53	CG010063
63	47.5	5.9	6.3	8	1.2	46.99*5.33	CG020063
68	57	4	4.2	6	0.8	56.74*3.53	CG010068
70	59	4	4.2	6	0.8	56.74*3.53	CG010070
70	54.5	5.9	6.3	8	1.2	53.34*5.33	CG020070
75	64	4	4.2	6	0.8	63.09*3.53	CG010075
75	59.5	5.9	6.3	8	1.2	56.52*5.33	CG020075
79	68	4	4.2	6	0.8	66.27*3.53	CG010079
80	69	4	4.2	6	0.8	66.27*3.53	CG010080
80	64.5	5.9	6.3	8	1.2	62.87*5.33	CG020080
80	59	7.7	8.1	10.5	2	58*7	CG030080
85	69.5	5.9	6.3	8	1.2	69.22*5.33	CG010085
85	64	7.7	8.1	10.5	2	63*7	CG020085
90	79	4	4.2	6	0.8	78.97*3.53	CG010090
90	74.5	5.9	6.3	8	1.2	72.39*5.33	CG020090
90	69	7.7	8.1	10.5	2	68*7	CG030090
95	84	4	4.2	6	0.8	82.14*3.53	CG010095
95	79.5	5.9	6.3	8	1.2	78.74*5.33	CG020095
95	74	7.7	8.1	10.5	2	73*7	CG030095

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
100	89	4	4.2	6	0.8	88.49*3.53	CG010100
100	84.5	5.9	6.3	8	1.2	81.92*5.33	CG020100
100	79	7.7	8.1	10.5	2	78*7	CG030100
105	94	4	4.2	6	0.8	91.67*3.53	CG010105
105	89.5	5.9	6.3	8	1.2	88.27*5.33	CG020105
108	92.5	5.9	6.3	8	1.2	91.44*5.33	CG010108
110	99	4	4.2	6	0.8	98.02*3.53	CG010110
110	94.5	5.9	6.3	8	1.2	91.44*5.33	CG020110
110	89	7.7	8.1	10.5	2	88*7	CG030110
115	99.5	5.9	6.3	8	1.2	97.79*5.33	CG010115
120	106	4	4.2	6	0.8	107.54*3.53	CG010120
120	104.5	5.9	6.3	8	1.2	100.97*5.33	CG020120
120	99	7.7	8.1	10.5	2	98*7	CG030120
125	114	4	4.2	6	0.8	113.89*3.53	CG010125
125	109.5	5.9	6.3	8	1.2	107.32*5.33	CG020125
125	104	7.7	8.1	10.5	2	103*7	CG030125
127	111.5	5.9	6.3	8	1.2	110.49*5.33	CG010127
130	114.5	5.9	6.3	8	1.2	113.67*5.33	CG010130
130	109	7.7	8.1	10.5	2	108*7	CG020130
132	121	4	4.2	6	0.8	120.24*3.53	CG010132
135	114	7.7	8.1	10.5	2	113.67*7	CG010135
140	119	7.7	8.1	10.5	2	116.84*6.99	CG010140
140	124.5	5.9	6.3	8	1.2	123.19*5.33	CG020140
140	119	7.7	8.1	10.5	2	116.84*7	CG030140

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
145	129.5	5.9	6.3	8	1.2	126.37*5.33	CG010145
145	124	7.7	8.1	10.5	2	123.19*7	CG020145
150	134.5	5.9	6.3	8	1.2	132.72*5.33	CG010150
150	129	7.7	8.1	10.5	2	126.37*7	CG020150
155	134	7.7	8.1	10.5	2	132.72*7	CG010155
160	144.5	5.9	6.3	8	1.2	142.24*5.33	CG010160
160	139	7.7	8.1	10.5	2	135.89*7	CG020160
165	144	7.7	8.1	10.5	2	142.24*7	CG010165
170	149	7.7	8.1	10.5	2	145.42*7	CG010170
175	154	7.7	8.1	10.5	2	151.77*7	CG010175
180	164.5	5.9	6.3	8	1.2	164.47*5.33	CG010180
180	159	7.7	8.1	10.5	2	158.12*7	CG020180
185	164	7.7	8.1	10.5	2	164.47*6.99	CG010185
190	169	7.7	8.1	10.5	2	164.47*7	CG010190
194	178.5	5.9	6.3	8	1.2	177.17*5.33	CG010194
195	174	7.7	8.1	10.5	2	170.82*6.99	CG010195
200	184.5	5.9	6.3	8	1.2	183.52*5.33	CG010200
200	179	7.7	8.1	10.5	2	177.17*7	CG020200
205	184	7.7	8.1	10.5	2	183.52*7	CG010205
210	189	7.7	8.1	10.5	2	183.52*7	CG010210
215	194	7.7	8.1	10.5	2	189.87*7	CG010215
220	199	7.7	8.1	10.5	2	196.22*7	CG010220
225	204	7.7	8.1	10.5	2	202.57*6.99	CG010225
230	214.5	5.9	6.3	8	1.2	208.92*5.33	CG010230

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
230	209	7.7	8.1	10.5	2	208.9*7	CG020230
240	219	7.7	8.1	10.5	2	215.27*7	CG010240
250	229	7.7	8.1	10.5	2	227.97*7	CG010250
250	134.5	5.9	6.3	8	1.2	234.32*5.33	CG020250
250	225.5	7.7	8.1	10.5	2	215.27*7	CG030250
254	233	7.7	8.1	10.5	2	227.97*7	CG010254
260	239	7.7	8.1	10.5	2	240.67*7	CG010260
265	244	7.7	8.1	10.5	2	240.67*7	CG010265
268	247	7.7	8.1	10.5	2	240.67*7	CG010268
270	249	7.7	8.1	10.5	2	240.67*7	CG010270
280	259	7.7	8.1	10.5	2	253.37*7	CG010280
290	269	7.7	8.1	10.5	2	266.07*7	CG010290
300	279	7.7	8.1	10.5	2	278.77*7	CG010300
300	275.5	7.7	8.1	10.5	2	266.07*7	CG020300
310	289	7.7	8.1	10.5	2	278.77*7	CG010310
320	295.5	7.7	8.1	10.5	2	291.47*7	CG010320
320	299	7.7	8.1	10.5	2	291.47*7	CG020320
330	305.5	7.7	8.1	10.5	2	304.17*7	CG010330
340	315.5	7.7	8.1	10.5	2	316.87*7	CG010340
350	325.5	7.7	8.1	10.5	2	316.87*7	CG010350
360	335.5	7.7	8.1	10.5	2	329.57*7	CG010360
370	345.5	7.7	8.1	10.5	2	342.27*7	CG010370
380	355.5	7.7	8.1	10.5	2	354.97*7	CG010380
400	375.5	7.7	8.1	10.5	2	367.67*7	CG010400

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
410	385.5	7.7	8.1	10.5	2	380.37*7	CG010410
420	395.5	7.7	8.1	10.5	2	393.07*7	CG010420
430	405.5	7.7	8.1	10.5	2	405.26*7	CG010430
440	415.5	7.7	8.1	10.5	2	405.26*7	CG010440
450	425.5	7.7	8.1	10.5	2	417.96*7	CG010450
460	435.5	7.7	8.1	10.5	2	430.66*7	CG010460
470	445.5	7.7	8.1	10.5	2	443.36*7	CG010470
480	455.5	7.7	8.1	10.5	2	456.06*7	CG010480
490	465.5	7.7	8.1	10.5	2	462*7	CG010490
500	475.5	7.7	8.1	10.5	2	468.76*7	CG010500
510	485.5	7.7	8.1	10.5	2	468.76*7	CG010510
515	490.5	7.7	8.1	10.5	2	481.46*7	CG010515
520	495.5	7.7	8.1	10.5	2	494.16*7	CG010520
530	505.5	7.7	8.1	10.5	2	494.16*7	CG010530
540	515.5	7.7	8.1	10.5	2	506.86*7	CG010540
550	525.5	7.7	8.1	10.5	2	515*7	CG010550
560	535.5	7.7	8.1	10.5	2	532.26*7	CG010560
570	545.5	7.7	8.1	10.5	2	552.24*7	CG010570
580	555.5	7.7	8.1	10.5	2	552.24*7	CG010580
590	565.5	7.7	8.1	10.5	2	557.66*7	CG010590
600	575.5	7.7	8.1	10.5	2	557.66*7	CG010600
610	585.5	7.7	8.1	10.5	2	580*7	CG010610
620	595.5	7.7	8.1	10.5	2	582.68*7	CG010620
630	605.5	7.7	8.1	10.5	2	600*7	CG010630

• For further information, pls. contact hotline

Article List CG							
D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
640	615.5	7.7	8.1	10.5	2	608.08*7	CG010640
650	625.5	7.7	8.1	10.5	2	615*7	CG010650
660	635.5	7.7	8.1	10.5	2	633.48*7	CG010660
670	642	9	9.5	13	2	640*8.4	CG010670
680	652	9	9.5	13	2	650*8.4	CG010680
690	662	9	9.5	13	2	660*8.4	CG010690
700	672	9	9.5	13	2	670*8.4	CG010700
710	682	9	9.5	13	2	680*8.4	CG010710
720	692	9	9.5	13	2	690*8.4	CG010720
730	702	9	9.5	13	2	700*8.4	CG010730
740	712	9	9.5	13	2	710*8.4	CG010740
750	722	9	9.5	13	2	720*8.4	CG010750
760	732	9	9.5	13	2	730*8.4	CG010760
770	742	9	9.5	13	2	740*8.4	CG010770
780	752	9	9.5	13	2	750*8.4	CG010780
790	762	9	9.5	13	2	760*8.4	CG010790
800	772	9	9.5	13	2	770*8.4	CG010800
810	782	9	9.5	13	2	780*8.4	CG010810
820	792	9	9.5	13	2	790*8.4	CG010820
830	802	9	9.5	13	2	800*8.4	CG010830
840	812	9	9.5	13	2	810*8.4	CG010840
850	822	9	9.5	13	2	820*8.4	CG010850
860	832	9	9.5	13	2	830*8.4	CG010860
870	842	9	9.5	13	2	840*8.4	CG010870

• For further information, pls. contact hotline

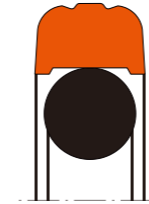
Article List CG

D H9	d h9	H	L +0.2	C	R1	O-Ring	Article No.
880	852	9	9.5	13	2	850*8.4	CG010880
890	862	9	9.5	13	2	860*8.4	CG010890
900	872	9	9.5	13	2	870*8.4	CG010900
910	882	9	9.5	13	2	880*8.4	CG010910
920	892	9	9.5	13	2	890*8.4	CG010920
930	902	9	9.5	13	2	900*8.4	CG010930
940	912	9	9.5	13	2	910*8.4	CG010940
950	922	9	9.5	13	2	920*8.4	CG010950
965	937	9	9.5	13	2	935*8.4	CG010965
1100	1072	9	9.5	13	2	1070*8.4	CG011100

- For further information, pls. contact hotline

CPW

Piston seal



Description

Low friction double acting piston seal, consist of one Polyurethane ring and one NBR O ring.

Material

TPU profile ring

Material: polyurethane

Code: 97P97

Hardness: 97 Shore A

O-ring

Material: nitrile rubber NBR

Code: 70R006

Hardness: 70 Shore A

Feature

- Good static and dynamic sealing performance.
- Superior abrasion resistance.
- Simple housing, one-piece piston.
- Easy to fit.

Examples of use

- industrial vehicles
- agricultural machinery
- cranes
- standard cylinders

Working limit

Pressure: 40 MPa

Running speed: 0.5m/s

Temperature: -40°C to +120°C

Medium: Hydraulic oils HL, HLP

Surface finish

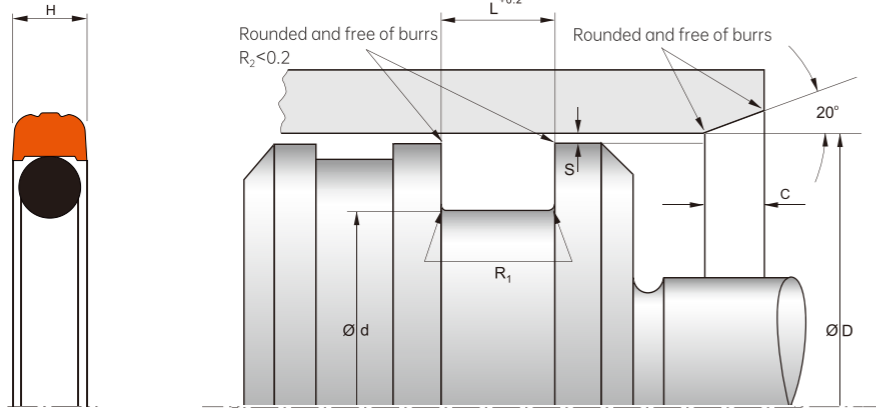
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area M_c >50% to max.90% at cutting depth c=Rz/2 and reference line C ref=0%

Gap dimension

Profile dimension	Max.permissible gap dimension S _{max} .			
	16 MPa		26 MPa	
L	60°C	80°C	60°C	80°C
≤8.1	0.50	0.40	0.35	0.24

Installation Example CPW



Article List CPW

D H9	d h9	H	L +0.2	C	R1	Article No.
20	12.5	3	3.2	3	0.5	CPW010200
25	14	4	4.2	4.5	0.5	CPW010250
32	21	4	4.2	4.5	0.5	CPW010320
40	29	4	4.2	4.5	0.5	CPW010400
45	34	4	4.2	4.5	0.5	CPW010450
50	34.5	6	6.3	6	0.5	CPW010500
50	39	4.2	6.3	4.5	0.5	CPW020500
55	39.5	6	6.3	4.5	0.5	CPW010550
55	44	4	4.2	4.5	0.5	CPW020550
60	49	4	4.2	4.5	0.5	CPW010600
63	47.5	6	6.3	6	0.5	CPW010630
63	52	4	4.2	4.5	0.5	CPW020630
65	54	4	4.2	4.5	0.9	CPW010650
70	59	4	4.2	4.5	0.9	CPW010700

• For further information, pls. contact hotline

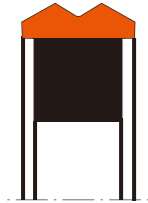
Article List CPW

D H9	d h9	H	L +0.2	C	R1	Article No.
80	64.5	6	6.3	6	0.9	CPW010800
90	74.5	6	6.3	6	0.9	CPW010900
100	84.5	6	6.3	6	0.9	CPW011000
110	94.5	6	6.3	6	0.9	CPW011100
120	104.5	6	6.3	6	0.9	CPW011200
125	104	7.7	8.1	8	0.9	CPW011250
125	109.5	6	6.3	6	0.9	CPW021250
140	119	7.7	8.1	8	0.9	CPW011400
160	139	7.7	8.1	8	0.9	CPW011600
200	179	7.7	8.1	8	0.9	CPW012000

• For further information, pls. contact hotline

CPI

Piston seal



Description

Low friction double-acting piston seal, consist of one Polyurethane ring and one NBR quad ring.

Material

TPU profile ring

Material: polyurethane

Code: 97P97

Hardness: 97 Shore A

Clamping element

Material: nitrile rubber NBR

Code: 80R156

Hardness: 80 Shore A

Feature

- Extremely high dynamic and static sealing performance.
- Also fit for single acting requirement.
- Excellent anti-friction performance.
- Maintain low friction throughout the working journey.
- Superior anti-extrusion performance.
- Short axial installation distance.
- Easy to fit.

Examples of use

- earth moving equipment
- industrial vehicles
- agricultural machinery
- cranes
- injection moulding machines
- loading platforms

Working limit

Pressure: 40 MPa

Running speed: 0.5m/s

Temperature: -40°C to +120°C

Medium: Hydraulic oils HL,HLP

Surface finish

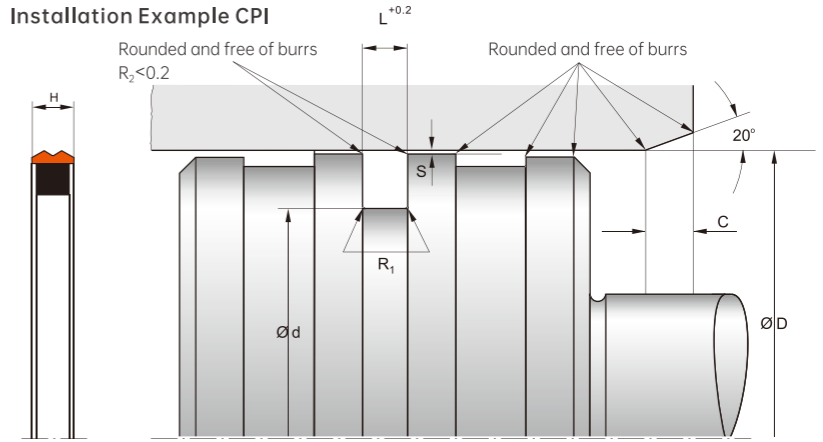
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

Gap dimension

Profile dimension	Max.permissible gap dimension S _{max.}			
L	16 MPa	26 MPa	32 MPa	40 MPa
3. 20	0.30	0.20	-	-
4. 20	0.40	0.30	0.20	-
6. 30	0.50	0.40	0.30	0.25
8. 10	0.60	0.50	0.40	0.35
10. 5	0.65	0.55	0.45	0.40

Installation Example CPI



Article List CPI

D H9	d h9	H	L +0.2	C	R1	Article No.
20	12.5	3	3.2	2	0.2	CPI010200
25	17.5	3	3.2	2	0.2	CPI010250
30	22.5	3	3.2	2	0.2	CPI010300
32	24.5	3	3.2	2	0.2	CPI010320
35	24	4	4.2	2.5	0.3	CPI010350
40	24.5	6	6.3	3	0.3	CPI010400
40	29	4	4.2	2.5	0.3	CPI020400
45	34	4	4.2	2.5	0.3	CPI010450
50	34.5	6	6.3	3	0.3	CPI010500
50	39	4	4.2	2.5	0.3	CPI020500
55	39.5	6	6.3	3	0.3	CPI010550
60	44.5	6	6.3	3	0.3	CPI010600
60	49	4	4.2	2.5	0.3	CPI020600
63	47.5	6	6.3	3	0.3	CPI010630

- For further information, pls. contact hotline

Article List CPI						
D H9	d h9	H	L +0.2	C	R1	Article No.
63	52	4	4.2	2.5	0.3	CPI020630
65	49.5	6	6.3	4	0.3	CPI010650
70	54.5	6	6.3	4	0.3	CPI010700
70	59	4	4.2	3	0.3	CPI020700
75	59.5	6	6.3	4	0.3	CPI010750
80	59	7.8	8.1	5	0.4	CPI010800
80	59	10	10.5	7	0.4	CPI020800
80	64.5	6	6.3	4	0.3	CPI030800
85	69.5	6	6.3	4	0.3	CPI010850
90	69	7.8	8.1	5	0.4	CPI010900
90	69	10	10.5	7	0.4	CPI020900
90	74.5	6	6.3	4	0.3	CPI030900
95	79.5	6	6.3	4	0.3	CPI010950
100	79	7.8	8.1	5	0.4	CPI011000
100	84.5	6	6.3	4	0.3	CPI021000
105	89.5	6	6.3	4	0.3	CPI011050
110	89	7.8	8.1	5	0.4	CPI011100
110	89	10	10.5	7	0.4	CPI021100
110	94.5	6	6.3	4	0.3	CPI031100
115	94	7.8	8.1	5	0.4	CPI011150
120	99	7.8	8.1	5	0.4	CPI011200
120	99	10	10.5	7	0.4	CPI021200
125	104	7.8	8.1	5	0.4	CPI011250
125	104	10	10.5	7	0.4	CPI021250

• For further information, pls. contact hotline

Article List CPI						
D H9	d h9	H	L +0.2	C	R1	Article No.
125	109.5	6	6.3	4	0.3	CPI031250
130	109	7.8	8.1	5	0.4	CPI011300
135	114	7.8	8.1	7	0.4	CPI011350
140	119	7.8	8.1	5	0.4	CPI011400
140	119	10	10.5	7	0.4	CPI021400
150	129	10	10.5	7	0.4	CPI011500
160	139	7.8	8.1	5	0.4	CPI011600
180	159	7.8	8.1	5	0.4	CPI011800
200	175	12	12.5	9	0.4	CPI012000
200	179	7.8	8.1	5	0.4	CPI022000

• For further information, pls. contact hotline

CUT

Piston seal



Description

The main application is heavy-duty hydraulic equipment, especially suitable for double-acting piston. The max working pressure is 500bar.

Material

a) header
Material: modified nylon
Code: A571

b) quad ring
Material: NBR
Code: 80R156
Hardness: 80 shore A

Feature

- Excellent wear resistant
- Anti-extrusion
- Impact resistant
- Low compression set
- Small size
- Installation without auxiliary tools

Examples of use

- walking machinery
- standard hydraulic cylinder
- lathe
- punch press

Surface finish		
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

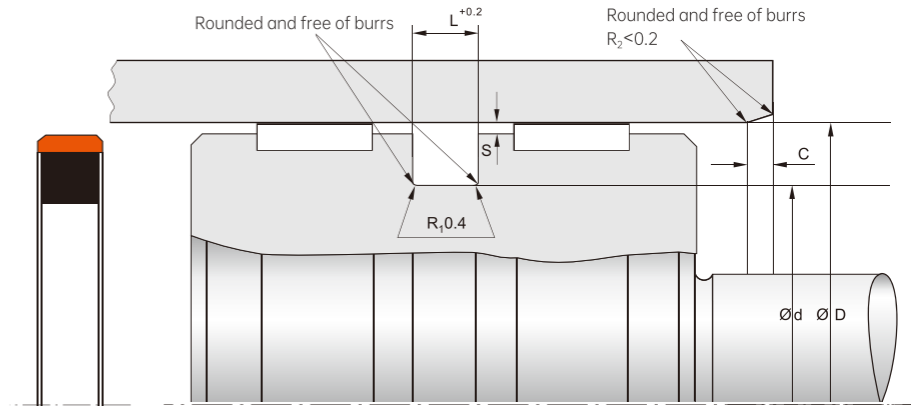
Gap dimension			
Profile dimension	Max.permissible gap dimension $S_{max.}$		
L	10 Mpa	20 Mpa	40 MPa
4.2	0.40	0.25	0.20
6.3	0.50	0.30	0.20
8.0	0.60	0.35	0.25
9.5	0.70	0.50	0.30

Lead Chamfer	
D	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Working limit

Pressure: 80 MPa
Running speed: 1 m/s
Temperature: -40°C to +110°C
Medium: Hydraulic oils HL,HLP

Installation Example CUT



Article List CUT

D H9	d h9	L +0.2	Article No.
25	16	4.2	CUT010250
32	21	4.2	CUT010320
40	29	4.2	CUT010400
40	26.3	5.8	CUT020400
50	34.5	6.3	CUT010500
50	39	4.2	CUT020500
60	41.7	7	CUT010600
60	49	4.2	CUT020600
63	44.7	7	CUT010630
63	47.5	6.3	CUT020630
63	52	4.2	CUT030630
70	51.7	7	CUT010700
70	59	4.2	CUT020700
75	54	8	CUT010750

- For further information, pls. contact hotline

Article List CUT			
D H9	d h9	L +0.2	Article No.
80	59	8	CUT010800
80	64.5	6.3	CUT020800
85	64	8	CUT010850
90	69	8	CUT010900
90	74.5	6.3	CUT020900
95	74	8	CUT010950
100	79	8	CUT011000
100	84.5	6.3	CUT021000
105	84	8	CUT011050
110	89	8	CUT011100
110	94.5	6.3	CUT021100
115	94	8	CUT011150
120	99	8	CUT011200
125	104	8	CUT011250
125	109.5	6.3	CUT021250
130	109	8	CUT011300
135	119.5	6.3	CUT011350
135	114	8	CUT021350
140	119	8	CUT011400
145	124	8	CUT011450
150	129	8	CUT011500
160	139	8	CUT011600
165	144	8	CUT011650
170	149	8	CUT011700

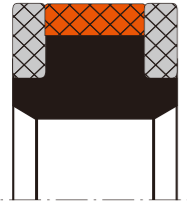
• For further information, pls. contact hotline

Article List CUT			
D H9	d h9	L +0.2	Article No.
175	154	8	CUT011750
180	159	8	CUT011800
190	169	8	CUT011900
200	179	8	CUT012000
210	189	8	CUT012100
220	199	8	CUT012200
230	209	8	CUT012300
240	225	8	CUT012400
250	229	8	CUT012500
260	239	8	CUT012600
270	249	8	CUT012700
280	255.5	8	CUT012800
290	271	9.5	CUT012900
300	272	9.5	CUT013000
320	292	9.5	CUT013200
330	302	9.5	CUT013300
350	322	9.5	CUT013500
370	342	9.5	CUT013700
420	392	9.5	CUT014200
450	422	9.5	CUT014500
480	452	9.5	CUT014800

• For further information, pls. contact hotline

CGA

Piston seal



Description

One compact double-acting piston seal, consist of one PTFE ring, one NBR elastomer ring, and two headers. Excellent performance in heavy load double acting piston under heavy pressure, major applied in cylinder piston of heavy duty or construction machinery, good leakage control.

Material

PTFE profile ring

Material: PTFE bronze compound

Code: E201

Pre-load component

Material: nitrile rubber NBR

Code: 85R110

Hardness: 85 Shore A

Back-up rings

Material: polyacetal POM

Code: M2051

Feature

- Minimized start and working friction, work smoothly even under low speed, no climbing.
- Excellent performance under high temperature and high pressure.
- Not susceptible to pressure load.
- Fit for walking machinery under heavy load.

Examples of use

- earth moving equipment
- injection moulding machines
- presses
- excavators

Working limit

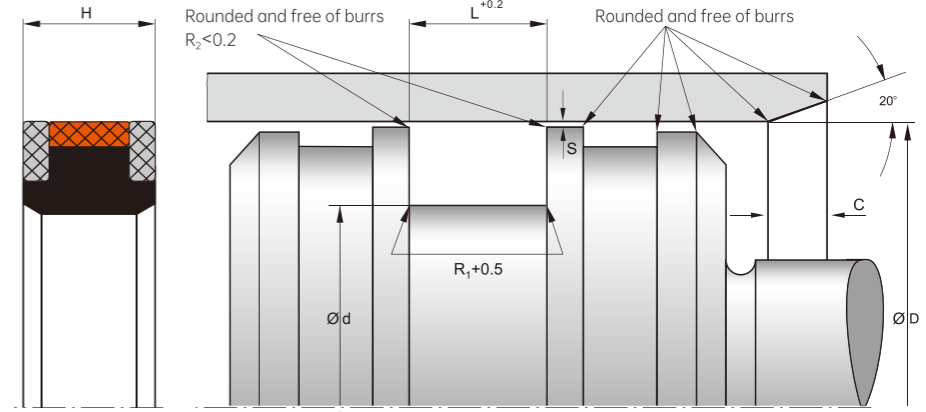
Pressure: 50 MPa
Running speed: 1.5m/s
Temperature: -40°C to +120°C
Medium: Hydraulic oils HL,HLP

Surface finish		
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

Gap dimension				
Profile dimension	Max.permissible gap dimension			
	S _{max}			
	16 MPa	26 MPa	32 MPa	40 MPa
6.0	0.80	0.70	0.50	0.40
8.5	1.20	1.00	0.65	0.50
10.0	1.20	1.00	0.65	0.50
12.5	1.80	1.40	0.90	0.70

Installation Example CGA



Article List CGA

D H9	d h9	H	L +0.2	C	Article No.
50	36	8.5	9	4	CGA010500
60	46	8.5	9	4	CGA010600
65	50	10.5	11	5	CGA010650
70	55	10.5	11	5	CGA010700
75	60	10.5	11	5	CGA010750
80	65	10.5	11	5	CGA010800
85	70	10.5	11	5	CGA010850
90	75	10.5	11	5	CGA010900
95	80	10.5	11	5	CGA010950
100	85	12	12.5	5	CGA011000
105	90	12	12.5	5	CGA011050
110	95	12	12.5	5	CGA011100
115	100	12	12.5	6.5	CGA011150
120	105	12	12.5	6.5	CGA011200

- For further information, pls. contact hotline

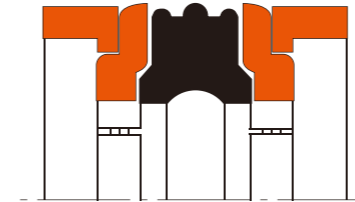
Article List CGA

D H9	d h9	H	L +0.2	C	Article No.
125	102	15.5	16	6.5	CGA011250
130	107	15.5	16	6.5	CGA011300
135	112	15.5	16	6.5	CGA011350
140	117	15.5	16	6.5	CGA011400
145	122	15.5	16	6.5	CGA011450
150	127	15.5	16	6.5	CGA011500
160	137	15.5	16	6.5	CGA011600
170	147	15.5	16	6.5	CGA011700
180	157	15.5	16	6.5	CGA011800
185	162	15.5	16	6.5	CGA011850
190	167	15.5	16	6.5	CGA011900
200	177	15.5	16	6.5	CGA012000
210	187	15.5	16	6.5	CGA012100
220	197	15.5	16	6.5	CGA012200
225	202	15.5	16	6.5	CGA012250
230	207	15.5	16	6.5	CGA012300
240	217	15.5	16	6.5	CGA012400
250	222	17	17.5	6.5	CGA012500
260	232	17	17.5	7.5	CGA0125600
270	242	17	17.5	7.5	CGA012700
280	252	17	17.5	7.5	CGA012800
300	272	17	17.5	7.5	CGA013000
320	292	17	17.5	7.5	CGA013200

• For further information, pls. contact hotline

MDB

Piston seal



Description

Double-acting compact piston seal, consist of one elastomer, two headers and two bearing rings. High performance in static and dynamic environment.

Material

Sealing component

Material: nitrile rubber NBR

Code: 80R156

Hardness: 80 Shore A

Back-up rings

Material: polyester elastomer

Angled bushes

Material: polyacetal POM

Code: M2051

Feature

- Superior guide and sealing performance.
- Easy to fit.
- Applicable for simple, short, one-piece piston.
- Special design to avoid any distortion of seals in housing.

Examples of use

- earth moving equipment
- agricultural machinery
- cranes
- standard cylinders

Working limit

Pressure: 40 MPa

Running speed: 0.5 m/s

Temperature: -40°C to +120°C

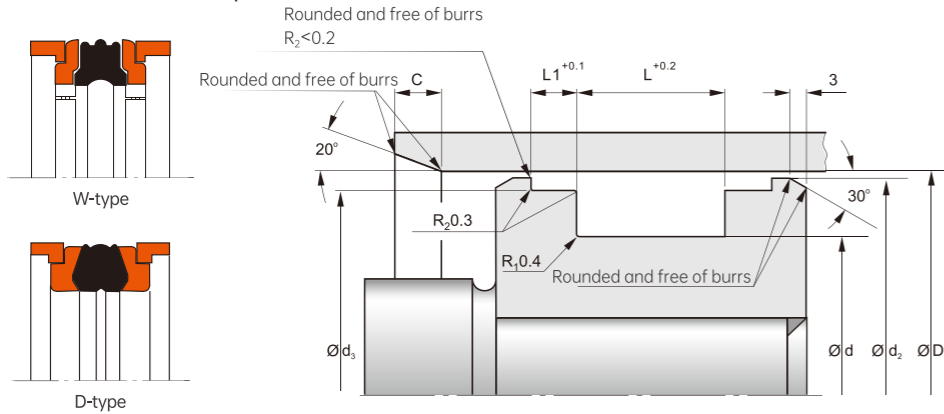
Medium: Hydraulic oils HL, HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max. 90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

Installation Example MDB



Article List MDB

D H9	d h9	L +0.2	d3 h9	d2 h11	L1 +0.1	C	Article No.
20.0	11.00	13.50	17.00	19.00	2.10	4	MDB010200
22.0	13.00	13.50	19.00	21.00	2.10	4	MDB010220
25.0	15.00	12.00	21.00	23.00	4.00	4	MDB010250
25.0	15.00	12.50	22.00	24.00	4.00	4	MDB020250
25.0	15.00	16.45	21.45	23.50	6.35	4	MDB030250
25.0	16.00	13.50	22.00	24.00	2.10	4	MDB040250
28.0	19.00	13.50	25.00	27.00	2.10	4	MDB010280
30.0	17.00	15.40	26.50	28.50	6.35	4	MDB010300
30.0	21.00	13.50	27.00	29.00	2.10	4	MDB020300
32.0	22.00	15.50	28.00	31.00	2.60	4	MDB010320
32.0	22.00	16.40	28.50	30.50	6.35	4	MDB020320
35.0	25.00	15.50	31.00	34.00	2.60	4	MDB010350
35.0	25.00	16.40	31.40	33.50	6.35	4	MDB020350
40.0	24.00	18.40	35.40	38.50	6.35	4	MDB010400

- For further information, pls. contact hotline

Article List MDB

D H9	d h9	L +0.2	d3 h9	d2 h11	L1 +0.1	C	Article No.
40.0	26.00	15.50	36.00	39.00	2.60	4	MDB020400
40.0	30.00	12.50	36.00	38.00	4.00	4	MDB030400
40.0	30.00	12.50	37.00	39.00	4.00	4	MDB040400
40.0	30.00	16.40	35.40	38.50	6.35	4	MDB050400
42.0	28.00	15.50	38.00	41.00	2.60	4	MDB010420
45.0	29.00	18.40	40.40	43.50	6.35	4	MDB010450
45.0	31.00	15.50	41.00	44.00	2.60	4	MDB020450
45.0	35.00	16.40	40.40	43.50	6.35	4	MDB030450
50.0	34.00	18.40	45.40	48.50	6.35	4	MDB010500
50.0	34.00	20.50	46.00	49.00	3.10	4	MDB020500
55.0	39.00	18.40	50.36	53.50	6.35	4	MDB010550
55.0	39.00	20.50	51.00	54.00	3.10	4	MDB020550
56.0	40.00	20.50	52.00	55.00	3.10	4	MDB010560
60.0	44.00	18.40	55.40	58.50	6.35	4	MDB010600
60.0	44.00	20.50	56.00	59.00	3.10	4	MDB020600
63.0	47.00	18.40	58.40	61.50	6.35	4	MDB010630
63.0	47.00	19.40	58.40	61.50	6.35	4	MDB020630
63.0	47.00	20.50	59.00	62.00	3.10	4	MDB030630
65.0	49.00	20.50	61.00	64.00	3.10	4	MDB010650
65.0	50.00	18.40	60.40	63.50	6.35	4	MDB020650
70.0	50.00	22.40	64.20	68.30	6.35	4	MDB010700
70.0	54.00	20.50	66.00	69.00	3.10	4	MDB020700
75.0	55.00	22.40	69.20	73.30	6.35	4	MDB010750
75.0	59.00	20.50	71.00	74.00	3.10	4	MDB020750

- For further information, pls. contact hotline

Article List MDB							
D H9	d h9	L +0.2	d3 h9	d2 h11	L1 +0.1	C	Article No.
80.0	60.00	22.40	74.15	78.30	6.35	5	MDB010800
80.0	62.00	22.50	76.00	79.00	3.60	5	MDB020800
85.0	65.00	22.40	79.15	83.30	6.35	5	MDB010850
90.0	70.00	22.40	84.15	88.30	6.35	5	MDB010900
90.0	72.00	22.50	86.00	89.00	3.60	5	MDB020900
95.0	75.00	22.40	89.15	93.30	6.35	5	MDB010950
100.0	75.00	22.40	93.15	98.00	6.35	5	MDB011000
100.0	82.00	22.50	96.00	99.00	3.60	5	MDB021000
105.0	80.00	22.40	98.10	103.00	6.35	5	MDB011050
110.0	85.00	22.40	103.10	108.00	6.35	5	MDB011100
110.0	92.00	22.50	106.00	109.00	3.60	5	MDB021100
115.0	90.00	22.40	108.10	113.00	6.35	5	MDB011150
115.0	97.00	22.50	111.00	114.00	3.60	5	MDB021150
120.0	95.00	22.40	113.10	118.10	6.35	5	MDB011200
125.0	100.00	25.40	118.10	123.00	6.35	6	MDB011250
125.0	103.00	26.50	121.00	124.00	5.10	6	MDB021250
130.0	105.00	25.40	123.10	128.00	6.35	6	MDB011300
130.0	105.00	25.40	122.60	127.50	9.50	6	MDB021300
133.0	115.00	22.40	125.60	130.50	9.52	6	MDB011330
135.0	110.00	25.40	128.10	133.00	6.35	6	MDB011350
135.0	110.00	25.40	127.60	132.50	9.50	6	MDB021350
140.0	115.00	25.40	133.00	138.00	6.35	6	MDB011400
140.0	115.00	25.40	132.60	137.50	9.50	6	MDB021400
140.0	118.00	26.50	136.00	139.00	5.10	6	MDB031400

• For further information, pls. contact hotline

Article List MDB							
D H9	d h9	L +0.2	d3 h9	d2 h11	L1 +0.1	C	Article No.
145.0	120.00	25.40	138.30	142.95	6.35	6	MDB011450
145.0	120.00	25.40	137.60	142.50	9.50	6	MDB021450
150.0	125.00	25.40	142.60	147.50	9.50	6	MDB011500
150.0	125.00	25.40	143.00	148.00	6.35	6	MDB021500
150.0	128.00	26.50	146.00	149.00	5.10	6	MDB031500
152.4	127.00	31.75	145.00	149.91	9.50	6	MDB011524
155.0	130.00	25.40	147.60	152.50	9.50	6	MDB011550
155.0	130.00	25.40	148.00	153.00	6.35	6	MDB021550
160.0	130.00	25.40	153.00	157.50	6.35	6	MDB011600
160.0	130.00	25.40	152.60	157.50	9.50	6	MDB021600
160.0	135.00	25.40	152.60	157.50	9.50	6	MDB031600
160.0	138.00	26.50	156.00	159.00	5.10	6	MDB041600
165.0	140.00	25.40	157.60	162.50	9.50	6	MDB011650
170.0	145.00	25.40	161.70	167.10	12.70	6	MDB011700
170.0	148.00	26.50	166.00	169.00	5.10	6	MDB021700
175.0	150.00	25.40	166.70	172.10	12.70	6	MDB011750
180.0	150.00	35.40	172.95	177.87	6.35	6	MDB011800
180.0	155.00	25.40	171.70	177.10	12.70	6	MDB021800
185.0	160.00	25.40	176.70	182.10	12.70	6	MDB011850
190.0	165.00	25.40	181.70	187.00	12.70	6	MDB011900
195.0	170.00	25.40	186.70	192.00	12.70	6	MDB011950
200.0	175.00	25.40	191.60	197.00	12.70	6	MDB012000
200.0	175.00	31.50	196.00	199.00	6.60	6	MDB022000
210.0	185.00	25.40	201.60	207.00	12.70	6	MDB012100

• For further information, pls. contact hotline

Article List MDB							
D H9	d h9	L +0.2	d3 h9	d2 h11	L1 +0.1	C	Article No.
220.0	190.00	35.40	212.70	217.90	6.35	6	MDB012200
220.0	195.00	25.40	211.60	217.00	12.70	6	MDB022200
230.0	205.00	25.40	221.60	227.00	12.70	6	MDB012300
240.0	215.00	25.40	231.60	237.00	12.70	6	MDB012400
250.0	220.00	35.40	242.90	247.85	6.35	6	MDB012500
250.0	225.00	25.40	241.60	247.00	12.70	6	MDB022500

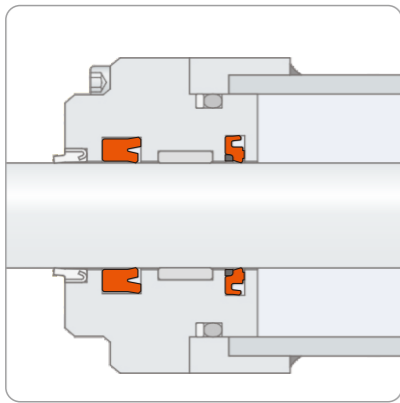
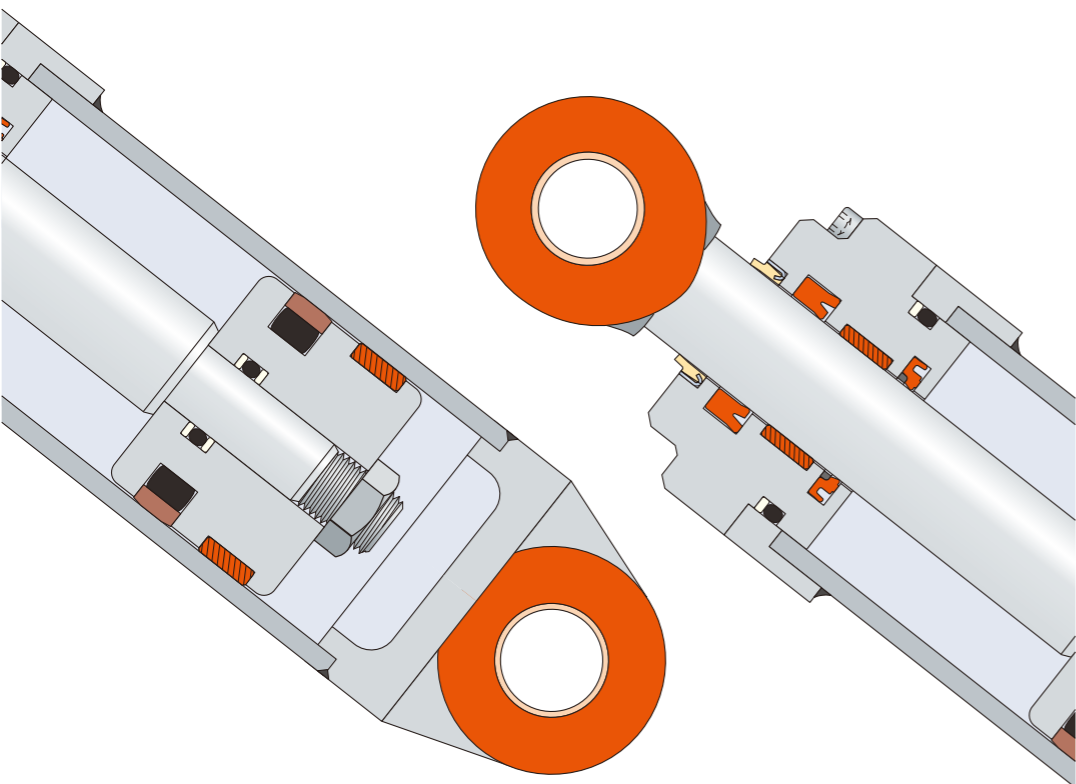
• For further information, pls. contact hotline

CONTENTS

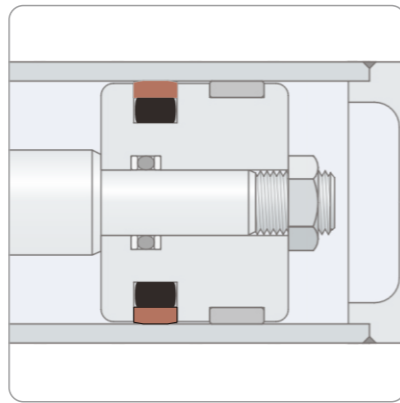
Rod & piston seal

Product Range

CU ----- 170-204



Rod seal



Piston seal

Seals profile



PRS06



PRS10-12



PRS99



PRS06A



PRS13-15



PRS06B



PRS18



PRS06C



PRS19



PRS06D



PRS19B



PRS06E



PRS19C



PRS07



PRS19D



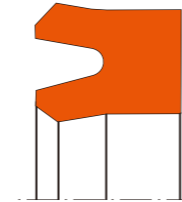
PRS10SP



PRS22

CU

Rod & piston seal



Description

Lip seal with oil outlet on the lip of seal, stop leakage under back pressure, no climbing.

Material

Material: polyurethane TPU
Code: 92P50
Hardness: 93 Shore A

Feature

- Excellent abrasion resistance.
- Not susceptible to pressure load and working limit.
- Superior anti-extrusion performance.
- Applicable for harsh working environment.
- Easy to fit.

Examples of use

- earth moving equipment
- support cylinders
- presses

Working limit

Pressure: 40 MPa
Running speed: 1 m/s
Temperature: -60°C to +110°C
Medium: Hydraulic oils HL, HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

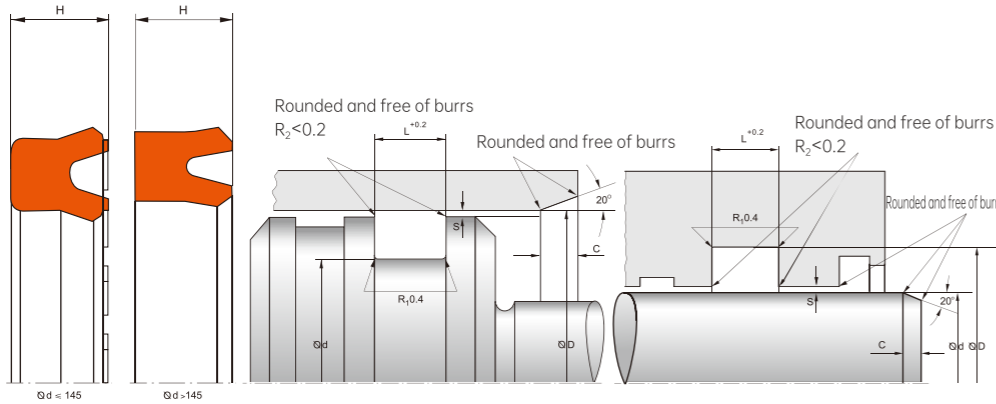
Gap dimension

Profile dimension	Max.permissible gap dimension $S_{max.}$		
	10 MPa	16 MPa	30 MPa
≤5.0	0.45	0.35	0.25
>5.0	0.50	0.40	0.30

Lead Chamfer

d/D	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CU



Article List CU

d f8/h9	D f8/H9	H	L +0.2	Article No.
4	10	4	5	CU010040
4	11	5	5.7	CU020040
4	12	4	5	CU030040
4.5	9.5	4	5	CU010045
5	11	8	9	CU010050
5	12	5	5.7	CU020050
5	12	5.5	6.5	CU030050
5	12	6	7	CU040050
5	12	8	9	CU050050
5	14	4.5	5.5	CU060050
5	14	6	7	CU070050
5	14	8	9	CU080050
5	16	6	7	CU090050
5	16	8	9	CU100050

• For further information, pls. contact hotline

Article List CU

d f8/h9	D f8/H9	H	L +0.2	Article No.
6	12	4	5	CU010060
6	12	5	5.7	CU020060
6	12	5.5	6.5	CU030060
6	12	6	7	CU040060
6	12	8	9	CU050060
6	13	5	5.7	CU060060
6	13.5	5	5.7	CU070060
6	14	5	5.7	CU080060
6	14	6	7	CU090060
6	14	8	9	CU100060
6	15	6	7	CU110060
6	16	6	7	CU120060
6	16	8	9	CU130060
6.3	16.3	8	9	CU010063
7.1	17.1	8	9	CU010071
8	14	4	5	CU100080
8	14	6	7	CU020080
8	14	8	9	CU030080
8	15	6	7	CU040080
8	15	8	9	CU050080
8	16	4	4.5	CU060080
8	16	5.7	6.5	CU070080
8	16	6	7	CU080080
8	16	8	9	CU090080

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
8	18	8	9	CU010080
8	19	8	9	CU110080
8	22	10	11	CU120080
9	16	6	7	CU030090
9	19	6	7	CU020090
9	19	8	9	CU010090
10	14	4	5	CU070100
10	15	3	4	CU140100
10	16	4	5	CU030100
10	16	4.5	5.5	CU040100
10	16	6	7	CU050100
10	16	8	9	CU060100
10	18	5	5.7	CU010100
10	18	5.5	6.5	CU080100
10	18	6	7	CU090100
10	18	8	9	CU100100
10	20	5	5.7	CU110100
10	20	6	7	CU120100
10	20	7	8	CU130100
10	20	8	9	CU020100
10	22	6	7	CU150100
10	22	8	9	CU160100
11	17	4	5	CU010110
11.2	19.2	5	5.7	CU020112

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
11.2	21.2	8	9	CU010112
12	18	4	5	CU050120
12	18	6	7	CU140120
12	18	8	9	CU030120
12	19	5	5.7	CU040120
12	20	5	5.7	CU010120
12	20	6	7	CU060120
12	20	8	9	CU070120
12	22	5	5.7	CU080120
12	22	6	7	CU090120
12	22	7	8	CU100120
12	22	8	9	CU110120
12	24	6	7	CU120120
12	24	8	9	CU130120
12	25	8	9	CU020120
12	26	10	11	CU150120
12.5	22.5	8	9	CU010125
13	21	5	5.7	CU010130
14	20	5	5.7	CU060140
14	20	6	7	CU090140
14	20	8	9	CU030140
14	21	5	5.7	CU040140
14	22	4	5	CU050140
14	22	5	5.7	CU010140

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
14	22	8	9	CU070140
14	24	5	5.7	CU080140
14	24	8	9	CU020140
14	26	5	5.7	CU100140
14	28	10	11	CU110140
14	30	5	5.7	CU120140
15	21	4	5	CU070150
15	22	6	7	CU020150
15	22	8	9	CU030150
15	23	5	5.7	CU040150
15	25	6	7	CU050150
15	25	7	8	CU060150
15	25	8	9	CU010150
15	25	10	11	CU080150
15	27	7	8	CU090150
15	30	8	9	CU100150
15	30	10	11	CU110150
15.8	20	3	4	CU010158
16	22	4	5	CU070160
16	22	5	5.7	CU120160
16	22	6	7	CU030160
16	22	7	8	CU040160
16	22	8	9	CU050160
16	24	4	5	CU060160

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
16	24	5	5.7	CU010160
16	24	8	9	CU080160
16	24	9	10	CU090160
16	26	5	5.7	CU100160
16	26	7	8	CU110160
16	26	8	9	CU020160
16	28	6	7	CU130160
16	32	8	9	CU140160
17	25	5	5.7	CU010170
17	25	5.5	6.5	CU020170
17	25	6	7	CU030170
17	30	6	7	CU040170
17	30	7	8	CU050170
18	22	8	9	CU050180
18	24	5	5.7	CU080180
18	24	8	9	CU030180
18	25	5	5.7	CU040180
18	26	5	5.7	CU010180
18	26	6	7	CU060180
18	26	8	9	CU070180
18	28	8	9	CU020180
18	30	8	9	CU090180
18	30	10	11	CU100180
18	31	8	9	CU110180

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
18	32	7	8	CU120180
18	34	8	9	CU130180
18	38	6	7	CU140180
19	25	7	8	CU010190
19	34	8	9	CU020190
20	26	5	5.7	CU110200
20	26	6	7	CU130200
20	28	4	5	CU190200
20	28	5	5.7	CU010200
20	28	5.5	6.5	CU060200
20	28	6	7	CU070200
20	28	7	8	CU080200
20	28	8	9	CU090200
20	30	5	5.7	CU100200
20	30	6	7	CU020200
20	30	7	8	CU120200
20	30	8	9	CU030200
20	30	10	11	CU140200
20	31	8	9	CU150200
20	32	6	7	CU160200
20	32	8	9	CU170200
20	33	8	9	CU180200
20	33	10	11	CU040200
20	34.5	12	13	CU200200

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
20	35	7	8	CU210200
20	35	8	9	CU220200
20	35	10	11	CU050200
20	36	8	9	CU240200
20	37	12	13	CU250200
20	40	8	9	CU260200
20	40	10	11	CU270200
20	40	12	13	CU280200
22	28	4	5	CU060220
22	28	4.5	5.5	CU110220
22	28	8	9	CU160220
22	29	5	5.7	CU040220
22	30	4	5	CU050220
22	30	5	5.7	CU010220
22	30	6	7	CU070220
22	30	7	8	CU080220
22	32	5	5.7	CU090220
22	32	6	7	CU100220
22	32	8	9	CU020220
22	32	10	11	CU120220
22	34	7	8	CU130220
22	34	10	11	CU140220
22	35	6	7	CU150220
22	35	10	11	CU030220

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
22	36	9	10	CU170220
22	40	10	11	CU180220
22	40	12	13	CU190220
22.4	30	5	5.7	CU010224
22.4	32.4	8	9	CU020224
22.5	31.5	5	5.7	CU010225
22.7	33	5.3	6	CU010227
23.5	31.5	5	5.7	CU010235
24	30	6	7	CU020240
24	32	5	5.7	CU010240
24	32	6	7	CU030240
24	32	7	8	CU040240
24	34	6	7	CU050240
24	34	7	8	CU060240
24	36	6	7	CU070240
25	30	6	7	CU170250
25	31	6	7	CU100250
25	32	4	5	CU130250
25	33	5	5.7	CU010250
25	33	5.5	6.5	CU220250
25	33	6	7	CU060250
25	33	7	8	CU070250
25	33	8	9	CU080250
25	35	5	5.7	CU090250

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
25	35	6	7	CU020250
25	35	7	8	CU110250
25	35	7.3	8	CU120250
25	35	8	9	CU030250
25	35	10	11	CU140250
25	36	6	7	CU150250
25	37	7	8	CU160250
25	38	8	9	CU040250
25	38	10	11	CU180250
25	40	6	7	CU190250
25	40	6.5	7.5	CU200250
25	40	8	9	CU210250
25	40	10	11	CU050250
25	42	8	9	CU230250
25	43	8	9	CU240250
25	45	8	9	CU250250
25	45	10	11	CU260250
25	50	10	11	CU270250
26	32	4.7	5.5	CU010260
26	36	10	11	CU020260
26	38	8	9	CU030260
26	47	12	13	CU040260
27	35	5	5.7	CU010270
27	36	6	7	CU020270

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
28	35	6	7	CU130280
28	35.5	5	5.7	CU010280
28	36	4	5	CU120280
28	36	5	5.7	CU020280
28	36	6	7	CU050280
28	36	7	8	CU060280
28	36	8	9	CU070280
28	38	7	8	CU080280
28	38	8	9	CU090280
28	38	10	11	CU100280
28	40	8	9	CU110280
28	40	10	11	CU030280
28	43	10	11	CU040280
28	44	8	9	CU140280
28	50	13	14	CU150280
30	36	8	9	CU220300
30	37	6	7	CU100300
30	38	5	5.7	CU010300
30	38	5.7	6.5	CU230300
30	38	6	7	CU050300
30	38	7	8	CU060300
30	38	8	9	CU070300
30	40	5	5.7	CU080300
30	40	5.5	6.5	CU090300

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
30	40	6	7	CU020300
30	40	6.5	7.5	CU110300
30	40	7.3	8	CU120300
30	40	8	9	CU130300
30	40	10	11	CU140300
30	42	6	7	CU150300
30	42	8	9	CU160300
30	42	10	11	CU170300
30	43	6.5	7.5	CU180300
30	43.6	9.5	11.5	CU190300
30	44	5.5	6.5	CU200300
30	45	8	9	CU210300
30	45	10	11	CU030300
30	46	10	11	CU040300
30	47	10	11	CU240300
30	50	9	10	CU250300
30	50	10	11	CU260300
30	50	11	12	CU270300
30	50	12	13	CU280300
30	52	10	11	CU290300
31	47	10	11	CU010310
31.5	41.5	6	7	CU010315
31.5	44.3	9.5	10.5	CU030315
31.5	46.5	10	11	CU020315

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
32	40	4	5	CU080320
32	40	5	5.7	CU150320
32	40	5.5	6.5	CU030320
32	40	6	7	CU040320
32	40	6.3	7.3	CU050320
32	40	8	9	CU060320
32	40	10	11	CU070320
32	42	6	7	CU010320
32	42	8	9	CU090320
32	42	10	11	CU100320
32	44	6.3	7.3	CU110320
32	45	6	7	CU120320
32	45	8	9	CU130320
32	45	10	11	CU140320
32	46	10	11	CU020320
32	47	10	11	CU160320
32	48	8	9	CU170320
32	48	10	11	CU180320
32	50	10	11	CU190320
33	39	8	9	CU010330
33	40	8	9	CU020330
34	45	8	9	CU010340
34	50	12	13	CU020340
35	41	5	5.7	CU070350

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
35	42	10	11	CU190350
35	43	5	5.7	CU030350
35	43	6	7	CU040350
35	43	7	8	CU050350
35	45	5	5.7	CU060350
35	45	6	7	CU010350
35	45	7	8	CU080350
35	45	8	9	CU090350
35	45	10	11	CU100350
35	46	6	7	CU110350
35	46	8	9	CU120350
35	46	10	11	CU130350
35	47	6	7	CU140350
35	48	8	9	CU150350
35	48	10	11	CU160350
35	50	8	9	CU170350
35	50	9	10	CU180350
35	50	10	11	CU020350
35	55	10	11	CU200350
35.5	45	6	7	CU010355
35.5	50.5	10	11	CU030355
36	44	4	5	CU050360
36	44	5.3	6.5	CU020360
36	44	8	9	CU030360

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
36	45	6.5	7.5	CU040360
36	46	6	7	CU010360
36	46	7	8	CU060360
36	46	10	11	CU070360
36	48	10	11	CU080360
37	47	8	9	CU010370
37	47	10	11	CU020370
38	45	5	5.7	CU040380
38	45	6.5	7.5	CU100380
38	45.5	6	7	CU030380
38	48	6	7	CU010380
38	48	10	11	CU050380
38	50	6	7	CU060380
38	50	8	9	CU070380
38	50	9	10	CU080380
38	50	10	11	CU090380
38	52	10	11	CU020380
38	55	10	11	CU110380
38	58	9.7	11	CU120380
38	58	10	11	CU130380
38	60	10	11	CU140380
38	62	12	13	CU150380
39	48	6.5	7.5	CU010390
39	54	10	11	CU020390

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
39	58	13	14	CU030390
40	48	5	5.7	CU070400
40	48	6	7	CU170400
40	48	8	9	CU030400
40	48	10	11	CU200400
40	48	11	12	CU050400
40	50	5	5.7	CU060400
40	50	6	7	CU010400
40	50	6.5	7.5	CU080400
40	50	7	8	CU090400
40	50	8	9	CU100400
40	50	9	10	CU110400
40	50	10	11	CU120400
40	52	8	9	CU130400
40	53	8	9	CU140400
40	55	7	8	CU150400
40	55	8	9	CU160400
40	55	10	11	CU020400
40	56	6	7	CU180400
40	60	10	11	CU190400
40	60	12	13	CU040400
40	63	13	14	CU210400
40	65	10	11	CU220400
40	65	12	13	CU230400

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
42	50	6	7	CU010420
42	50	8	9	CU020420
42	52	6	7	CU030420
42	52	8	9	CU040420
42	52	10	11	CU050420
42	53	9	10	CU060420
42	55	7	8	CU070420
42	55	8	9	CU080420
42	62	12	13	CU090420
44	50	8.5	9.5	CU010440
44.5	54.5	6	7	CU010445
45	52	10	11	CU060450
45	53	6	7	CU110450
45	53	8	9	CU150450
45	53	10	11	CU170450
45	55	5	5.7	CU050450
45	55	6	7	CU010450
45	55	6.5	7.5	CU070450
45	55	7	8	CU080450
45	55	10	11	CU090450
45	55	12	13	CU100450
45	56	7	8	CU020450
45	58	10	11	CU120450
45	58	12	13	CU130450

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
45	60	9	10	CU140450
45	60	10	11	CU030450
45	60	12	13	CU160450
45	61	10	11	CU040450
45	63	10	11	CU180450
45	65	10	11	CU190450
45	65	12	13	CU200450
45	70	12	13	CU210450
45	70	16	17	CU220450
—	—	—	—	---
47	55	10	11	CU010470
48	58	6	7	CU040480
48	58	10	11	CU020480
48	60	6	7	CU030480
48	63	10	11	CU010480
50	67	5	6	CU060495
50	57	10	11	CU010500
50	58	6	7	CU210500
50	58	8	9	CU230500
50	58	12	13	CU250500
50	60	5	6	CU050500
50	60	6	7	CU010500
50	60	7	8	CU070500
—	—	—	—	---

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
50	60	8	9	CU090500
50	60	10	11	CU100500
50	60	12	13	CU110500
50	62	10	11	CU120500
50	62	10	11	CU130500
50	62	12	13	CU140500
50	63	6	7	CU150500
50	63	7	8	CU160500
50	63	8	9	CU170500
50	63	10	11	CU180500
50	65	8	9	CU190500
50	65	9	10	CU200500
50	65	10	11	CU020500
50	65	12	13	CU220500
50	66	12	13	CU030500
50	70	10	11	CU240500
50	70	12	13	CU040500
50	70	18	19	CU260500
50	75	13	14	CU270500
52	62	12	13	CU010520
52	70	12	13	CU020520
53	63	6	7	CU010530
53	63	7	8	CU050530
53	63	10	11	CU030530

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
53	63	8	9	CU040530
53	73	12	13	CU020530
54	64	6	7	CU010540
54	70	12	13	CU020540
55	65	6	7	CU010550
55	65	10	11	CU070550
55	65	12	13	CU100550
55	70	9	10	CU040550
55	70	10	11	CU050550
55	70	12	13	CU060550
55	71	12	13	CU020550
55	72	10	11	CU080550
55	75	10	11	CU090550
55	75	12	13	CU030550
56	66	6	7	CU010560
56	66	7	8	CU020560
56	66	9	10	CU060560
56	66	10	11	CU040560
56	71	12	13	CU050560
56	76	12	13	CU030560
57	63	8	9	CU010570
57	63	10	11	CU020570
58	68	6	7	CU010580
58	68	14	15	CU020580

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
60	68	12	13	CU030600
60	68	14	15	CU070600
60	70	6	7	CU010600
60	70	8	9	CU170600
60	70	10	11	CU050600
60	70	12	13	CU060600
60	71	7	8	CU020600
60	72	10	11	CU080600
60	73	8	9	CU090600
60	75	9	10	CU100600
60	75	10	11	CU110600
60	75	12	13	CU120600
60	75	13	14	CU130600
60	76	12	13	CU140600
60	80	6	7	CU150600
60	80	10	11	CU160600
60	80	12	13	CU040600
60	80	18	19	CU180600
60	85	10	11	CU190600
60	85	12	13	CU200600
60	90	15	16	CU210600
60	90	16	17	CU220600
61	67	5	6	CU020610
61	71	6	7	CU010610

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
61	71	7	8	CU030610
62	70	10	11	CU050620
62	72	10	11	CU020620
62	75	10	11	CU030620
62	82	10	11	CU040620
63	71	8	9	CU090630
63	73	6	7	CU010630
63	73	12	13	CU030630
63	75	10	11	CU040630
63	75	14	15	CU050630
63	78	10	11	CU060630
63	80	10	11	CU070630
63	80	16	17	CU080630
63	83	12	13	CU020630
65	73	8	9	CU030650
65	73	12	13	CU130650
65	75	6	7	CU010650
65	75	9	10	CU040650
65	75	10	11	CU050650
65	75	12	13	CU060650
65	79	10	11	CU070650
65	80	9	10	CU080650
65	80	10	11	CU090650
65	80	11	12	CU100650

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
65	80	12	13	CU110650
65	85	10	11	CU120650
65	85	12	13	CU020650
67	77	6	7	CU010670
67	77	10	11	CU040670
67	77	12	13	CU030670
67	87	12	13	CU020670
67	95	12	13	CU050670
70	80	5	6	CU150700
70	80	6	7	CU010700
70	80	8	9	CU030700
70	80	10	11	CU040700
70	80	12	13	CU050700
70	82	10	11	CU060700
70	83	12	13	CU070700
70	84	10	11	CU080700
70	85	8	9	CU090700
70	85	9	10	CU100700
70	85	10	11	CU110700
70	85	11	12	CU120700
70	85	12	13	CU130700
70	90	10	11	CU140700
70	90	12	13	CU020700
70	90	13	14	CU160700

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
70	90	15	16	CU170700
70	90	18	19	CU180700
70	95	12	13	CU190700
71	80	6	7	CU010710
71	81	6	7	CU030710
71	91	12	13	CU020710
73	85	10	11	CU010730
75	85	6	7	CU010750
75	85	10	11	CU080750
75	85	12	13	CU030750
75	90	9	10	CU040750
75	90	10	11	CU050750
75	90	12	13	CU060750
75	95	10	11	CU070750
75	95	12	13	CU020750
75	95	13	14	CU090750
75	100	15	16	CU100750
80	88	8	9	CU150800
80	90	5	6	CU100800
80	90	6	7	CU010800
80	90	8	9	CU170800
80	90	10	11	CU050800
80	90	12	13	CU060800
80	92	9	10	CU070800

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
80	93	8	9	CU080800
80	94	10	11	CU090800
80	95	9	10	CU020800
80	95	10	11	CU110800
80	95	12	13	CU120800
80	96	12	13	CU130800
80	100	10	11	CU140800
80	100	12	13	CU030800
80	100	13	14	CU160800
80	100	15	16	CU040800
80	105	12	13	CU180800
80	110	15	16	CU190800
85	93	8	9	CU110850
85	93	12	13	CU080850
85	95	6	7	CU010850
85	95	9	10	CU040850
—	—	—	—	—
85	95	12	13	CU060850
85	97	9	10	CU070850
85	100	9	10	CU020850
85	100	10	11	CU090850
85	100	12	13	CU100850
85	105	12	13	CU030850
85	105	15	16	CU120850

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
85	105	18	19	CU130850
85	110	12	13	CU140850
90	100	8	9	CU010900
90	100	10	11	CU050900
90	100	12	13	CU090900
90	102	14	15	CU040900
90	105	9	10	CU020900
90	105	12	13	CU060900
90	110	9	10	CU070900
90	110	10	11	CU080900
90	110	12	13	CU030900
90	110	15	16	CU100900
90	115	12	13	CU110900
90	115	15	16	CU120900
95	105	10	11	CU040950
95	105	12	13	CU060950
—	—	—	—	—
95	110	9	10	CU010950
95	110	12	13	CU050950
95	115	12	13	CU020950
95	115	14	15	CU070950
95	115	15	17	CU080950
98	112	9	10	CU020980
100	110	5	6	CU071000

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
100	110	6	7	CU121000
100	110	8	9	CU161000
100	110	11	12	CU041000
100	110	15	17	CU051000
100	112	9	10	CU061000
100	115	9	10	CU011000
100	115	10	11	CU081000
100	115	12	13	CU091000
100	115	15	17	CU101000
100	120	10	11	CU111000
100	120	12	13	CU021000
100	120	15	17	CU131000
100	125	10	11	CU141000
100	125	12	13	CU151000
100	125	15	17	CU031000
100	130	15	17	CU171000
105	115	9	10	CU011050
105	120	8	9	CU101050
105	120	9	10	CU011050
105	120	11	12	CU041050
105	120	12	13	CU051050
105	120	15	17	CU061050
105	125	10	11	CU071050
105	125	12	13	CU081050

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
105	125	13	14	CU091050
105	125	15	17	CU021050
105	125	16	18	CU111050
106	121	9	10	CU011060
106	126	16	18	CU021060
110	120	12	13	CU031100
110	124	10	11	CU071100
110	125	9	10	CU011100
110	125	12	13	CU041100
110	125	15	17	CU051100
110	130	12	13	CU061100
110	130	15	17	CU021100
110	130	16	18	CU081100
110	135	15	17	CU091100
110	140	15	17	CU101100
110	140	18	20	CU111100
112	125	9	10	CU011120
112	132	15	17	CU021120
112	132	16	18	CU031120
115	125	12	13	CU061150
115	130	9	10	CU011150
115	130	10	11	CU031150
115	130	12	13	CU041150
115	130	15	17	CU051150

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
115	135	15	17	CU021150
115	140	15	17	CU071150
120	130	12	13	CU021200
120	135	9	10	CU031200
120	140	10	11	CU041200
120	140	12	13	CU051200
120	140	15	17	CU011200
120	140	16	18	CU071200
120	145	15	17	CU081200
120	150	15	17	CU091200
125	140	9	10	CU011250
125	140	11	12	CU051250
125	140	12	13	CU031250
125	145	12	13	CU041250
125	145	15	17	CU021250
125	150	15	17	CU061250
125	155	15	17	CU071250
130	145	9	10	CU041300
130	150	10	11	CU021300
130	150	12	13	CU031300
130	150	15	17	CU011300
130	160	15	17	CU051300
135	150	12	13	CU041350
135	150	15	17	CU021350

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
135	155	12	13	CU031350
135	155	15	17	CU011350
135	160	15	17	CU051350
135	165	15	17	CU061350
136	150	9	10	CU021360
140	150	6	7	CU121400
140	150	15	17	CU031400
140	152	10	11	CU041400
140	155	9	10	CU051400
140	155	15	17	CU061400
140	157	6	7	CU071400
140	160	9	10	CU081400
140	160	12	13	CU091400
140	160	15	17	CU011400
140	160	16	18	CU111400
140	165	15	17	CU021400
140	170	15	17	CU131400
141	150	14	16	CU011410
143	151	14	16	CU011430
145	160	9	10	CU011450
145	160	12	13	CU031450
145	165	15	17	CU021450
145	175	15	17	CU041450
150	165	9	10	CU041500

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
150	170	10	11	CU021500
150	170	12	13	CU031500
150	170	15	17	CU011500
150	180	15	17	CU051500
150	180	18	20	CU061500
155	180	15	17	CU011550
160	170	12	13	CU011600
160	175	8	9	CU021600
160	175	9	10	CU031600
160	175	12	13	CU041600
160	175	15	17	CU051600
160	180	10	11	CU061600
160	180	12	13	CU071600
160	180	15	17	CU081600
160	190	15	17	CU091600
160	195	17	19	CU101600
165	180	9	10	CU031650
165	185	15	17	CU021650
165	190	15	17	CU011650
170	190	15	17	CU021700
170	195	15	17	CU011700
170	200	15	17	CU031700
170	200	18	20	CU041700
170	215	20	22	CU051700

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
175	200	15	17	CU011750
180	190	10	11	CU061800
180	200	12	13	CU021800
180	200	13	14	CU031800
180	200	15	17	CU041800
180	205	12	13	CU051800
180	205	15	17	CU011800
180	205	18	20	CU071800
180	210	15	17	CU081800
180	210	22	24	CU091800
180	215	15	17	CU101800
185	200	8	9	CU041850
185	200	9	10	CU021850
185	200	12	13	CU031850
185	210	15	17	CU011850
185	215	15	17	CU051850
190	210	12	13	CU031900
190	210	15	17	CU021900
190	215	15	17	CU011900
190	220	15	17	CU041900
190	220	22	24	CU051900
200	220	12	13	CU042000
200	220	15	17	CU022000
200	220	18	20	CU032000

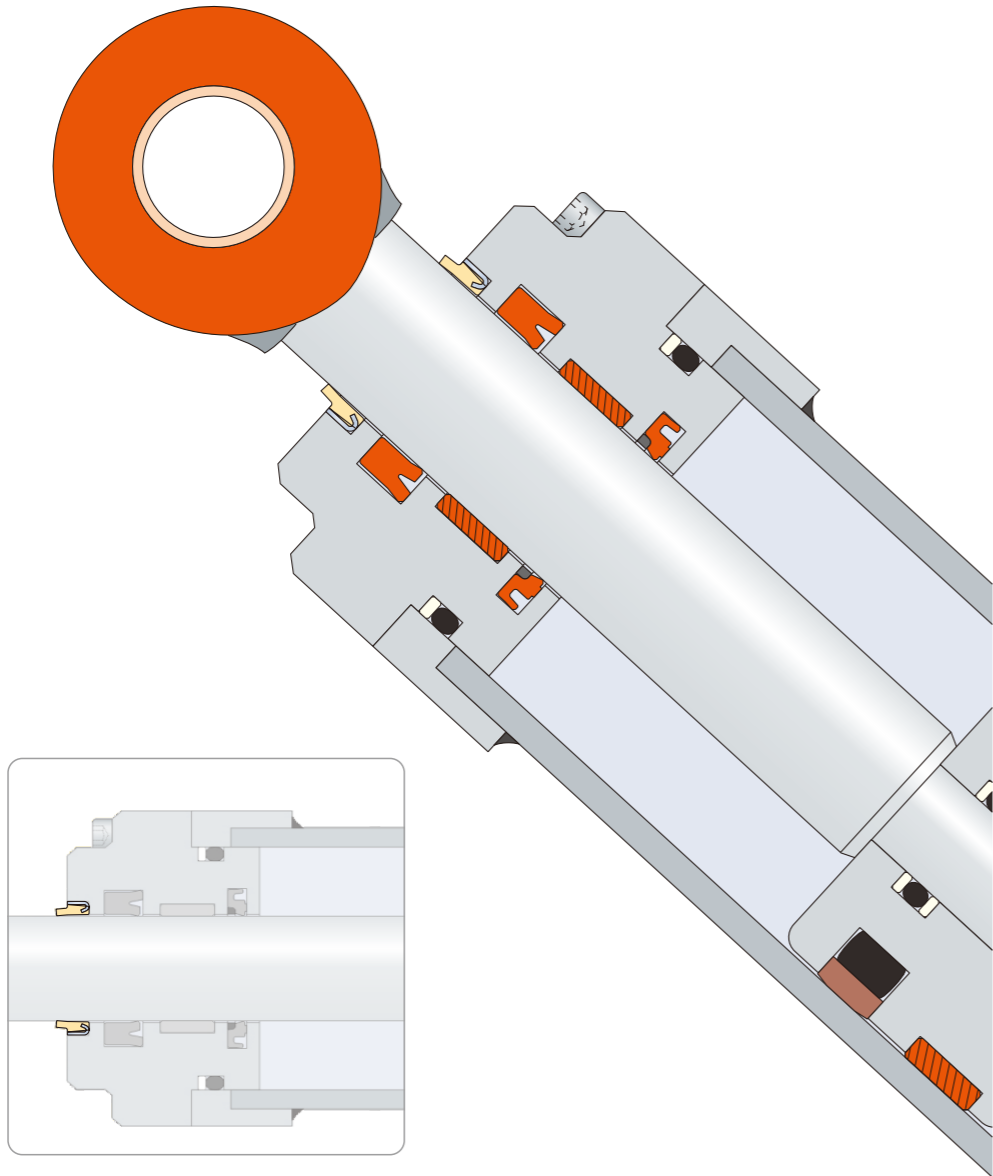
• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
200	225	15	17	CU012000
200	230	22	24	CU052000
210	230	12	13	CU012100
210	230	15	17	CU022100
210	235	15	17	CU032100
210	240	18	20	CU042100
220	250	15	17	CU012200
225	240	12	13	CU012250
225	255	26	28	CU022250
230	250	13	14	CU032300
230	250	15	17	CU022300
230	255	18	20	CU012300
230	260	18	20	CU042300
240	260	16	18	CU012400
240	265	16	18	CU022400
250	270	15	17	CU012500
250	275	19	21	CU022500
250	280	25	27	CU032500
260	280	14	16	CU022600
260	290	18	20	CU012600
275	300	16	18	CU012750
280	300	15	17	CU012800
280	300	16	18	CU022800
280	300	18	20	CU032800

• For further information, pls. contact hotline

Article List CU				
d f8/h9	D f8/H9	H	L +0.2	Article No.
280	310	20	22	CU042800
280	320	20	22	CU052800
290	320	18	20	CU012900

• For further information, pls. contact hotline



Wiper seal

CONTENTS

Wiper seal

Product Range

CHA	208-212
CHC	213-218
CHJ	220-227
CE1	228-230
CE3	231-235
CE2	236-238
CH	239-241



Seals profile



WR01



WR04



WR15



WR01A



WR07



WR17



WR02



WR08



WR18



WR02A



WR11



W50



WR02B



WR12



W51



WR02C



WR13



W53



WR02D



WR13_E2



W54

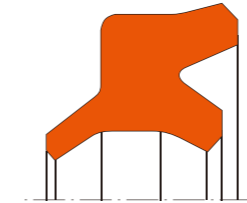


WR03



WR14

CHA

Wiper seal


Description

Double-acting polyurethane wiper, effectively scrape pollution, leave remaining film on the rod. Inside scraper maintain sealing even under low pressure.

Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

Feature

- Superior sealing performance.
- Good friction resistance.
- Excellent anti-dust performance.
- Easy to fit.

Examples of use

- industrial vehicles
- injection moulding machines
- standard cylinders

Working limit

Running speed: 0.5 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL,HLP

Surface finish

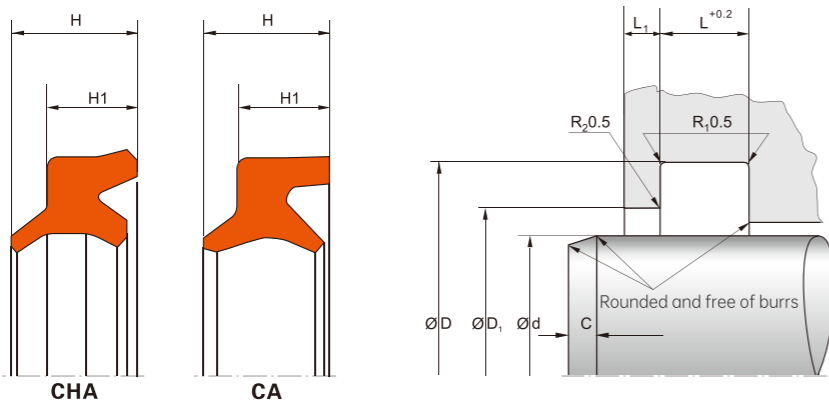
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area M₁>50% to max.90% at cutting depth c=Rz/2 and reference line C ref=0%

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CHA



Article List CHA

d f8/h9	D H9	H1	H	L +0.2	D1 H11	L1	Article No.
18	26	4.5	6	5	22.2	2	CHA010180
20	28	4.5	6	5	24.3	2	CHA010200
22	30	4.5	6	5	26.3	2	CHA010220
22.4	30.4	4.5	6	5	26.7	2	CHA010224
25	33	4.5	6	5	29.3	2	CHA010250
28	36	4.5	6	5	32.3	2	CHA010280
30	38	5	6.5	6	34	2	CHA010300
31.5	39.5	5	6.5	6	35.5	2	CHA010315
32	40	5	6.5	6	36	2	CHA010320
35	43	5	6.5	6	39	2	CHA010350
35.5	43.5	5	6.5	6	39.5	2	CHA010355
36	44	5	6.5	6	40	2	CHA010360
40	48	5	6.5	6	44	2	CHA010400
45	53	5	6.5	6	49	2	CHA010450

• For further information, pls. contact hotline

Article List CHA

d f8/h9	D H9	H1	H	L +0.2	D1 H11	L1	Article No.
50	58	5	6.5	6	54	2	CHA010500
53	61	5	6.5	6	57	2	CHA010530
55	63	5	6.5	6	59	2	CHA010550
56	64	5	6.5	6	60	2	CHA010560
60	68	5	6.5	6	64	2	CHA010600
63	71	5	6.5	6	67	2	CHA010630
65	73	5	6.5	6	69	2	CHA010650
67	75	5	6.5	6	71	2	CHA010670
70	80	6	8	7	75	3	CHA010700
71	81	6	8	7	76	3	CHA010710
75	85	6	8	7	80	3	CHA010750
80	90	6	8	7	85	3	CHA010800
85	95	6	8	7	90	3	CHA010850
90	100	6	8	7	95	3	CHA010900
95	105	6	8	7	100	3	CHA010950
100	110	6	8	7	105	3	CHA011000
105	115	6	8	7	110	3	CHA011050
106	116	6	8	7	111	3	CHA011060
110	120	6	8	7	115	3	CHA011100
112	122	6	8	7	117	3	CHA011120
115	125	6	8	7	120	3	CHA011150
118	128	6	8	7	123	3	CHA011180
120	133	7	9.5	8	127	3	CHA011200
125	138	7	9.5	8	132	3	CHA011250

• For further information, pls. contact hotline

Article List CHA							
d f8/h9	D H9	H1	H	L +0.2	D1 H11	L1	Article No.
132	145	7	9.5	8	139	3	CHA011320
140	153	7	9.5	8	147	3	CHA011400
145	158	7	9.5	8	152	3	CHA011450
150	163	7	9.5	8	157	3	CHA011500
155	168	7	9.5	8	162	3	CHA011550
160	173	7	9.5	8	167	3	CHA011600
160	174	7	9.5	8	167	3	CHA021600
165	178	7	9.5	8	172	3	CHA011650
170	183	7	9.5	8	177	3	CHA011700
170	185	11	14	12	178	5	CHA021700
175	188	7	9.5	8	182	3	CHA011750
180	193	7	9.5	8	187	3	CHA011800
180	194	7	9.5	8	187	3	CHA021800
190	203	7	9.5	8	197	3	CHA011900
200	213	7	9.5	8	207	3	CHA012000
205	218	7	9.5	8	212	3	CHA012050
210	223	7	9.5	8	217	3	CHA012100
224	237	7	9.5	8	231	3	CHA012240
240	256	10	13	11	248	4	CHA012400
250	266	9	12	10	258	4	CHA012500
250	266	10	13	11	258	4	CHA022500
280	296	9	12	10	288	4	CHA012800
355	371	10	13	11	363	4	CHA013550
355	375	10	14	11	365	5	CHA023500

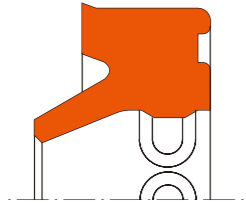
• On enquiry,available at short notice

Article List CHA							
d f8/h9	D H9	H1	H	L +0.2	D1 H11	L1	Article No.
400	416	10	13	11	408	4	CHA014000
500	520	11.5	15.5	12.5	510	5	CHA015000

• On enquiry,available at short notice

CHC

Wiper seal



Description

General polyurethane wiper.

Material

Material: polyurethane TPU
Code: 94P95
Hardness: 94 Shore A

Feature

- Good sealing performance.
- Superior abrasion resistance.
- Excellent anti-dust performance.
- Easy to fit.

Examples of use

- seals for breaking hammers

Working limit

Running speed: 2 m/s
Temperature: -50°C to +150°C
Medium: Hydraulic oils HL, HLP

Surface finish

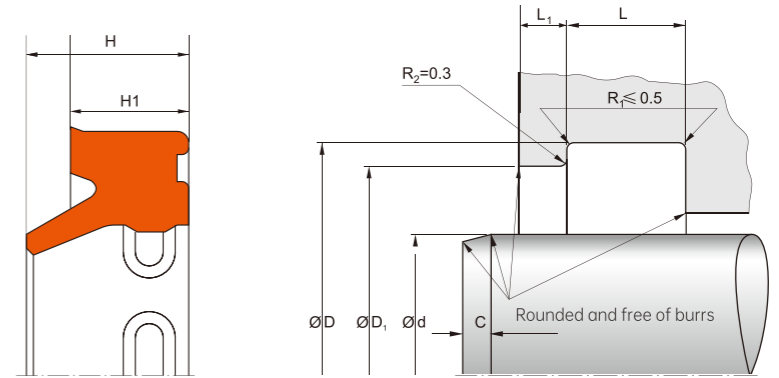
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_r > 50\%$ to max. 90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CHC



Article List CHC

TYPE	d	D	H1	H	L	D1
CHC	36.0	45.0	6.2	8.0	7.0	41
CHC	38.0	46.0	5.0	6.5	6.0	42
CHC	40.0	48.0	5.0	6.5	6.0	44
CHC	45.0	53.0	5.0	6.5	6.0	49
CHC	49.0	59.0	5.0	8.0	6.0	55
CHC	50.0	58.0	5.0	6.5	6.0	54
CHC	53.0	61.0	5.0	6.5	6.0	57
CHC	55.0	63.0	5.0	6.5	6.0	59
CHC	55.0	65.6	5.3	6.5	6.0	61.5
CHC	56.0	64.0	5.0	6.5	6.0	60
CHC	58.0	68.0	5.5	8.0	6.0	64
CHC	60.0	68.0	5.0	6.5	6.0	64
CHC	60.0	70.6	5.3	7.0	6.0	66.6
CHC	63.0	71.0	5.0	6.5	6.0	67

- For further information, pls. contact hotline

Article List CHC						
TYPE	d	D	H1	H	L	D1
CHC	63.0	73.0	5.5	7.9	6.0	69
CHC	65.0	73.0	5.0	6.5	6.0	69
CHC	65.0	75.0	5.5	8.0	6.0	71
CHC	68.0	76.0	5.0	6.5	6.0	71
CHC	70.0	80.0	6.0	8.0	7.0	75
CHC	75.0	85.0	6.0	8.0	7.0	80
CHC	75.0	90.0	6.5	10.3	7.5	85
CHC	76.0	86.0	6.0	8.0	7.0	81
CHC	77.5	92.5	6.5	10.3	7.0	87.5
CHC	80.0	90.0	6.0	8.0	7.0	85
CHC	85.0	93.0	4.0	6.0	5.0	88
CHC	85.0	95.0	6.0	8.0	7.0	90
CHC	90.0	100.0	6.0	8.0	7.0	95
CHC	93.0	108.0	6.5	10.3	7.0	103
CHC	95.0	105.0	6.0	8.0	7.0	100
CHC	97.0	107.0	6.0	9.0	7.0	102
CHC	100.0	110.0	6.0	8.0	7.0	105
CHC	100.0	115.5	9.0	12.0	10.0	110.5
CHC	105.0	115.0	6.0	8.0	7.0	110
CHC	106.0	118.0	7.0	10.0	8.0	113
CHC	108.0	123.0	6.5	10.3	7.0	118
CHC	110.0	120.0	6.0	8.0	7.0	115
CHC	115.0	125.0	6.0	8.0	7.0	120
CHC	115.0	130.0	6.0	12.0	7.0	125

• For further information, pls. contact hotline

Article List CHC						
TYPE	d	D	H1	H	L	D1
CHC	117.0	129.0	7.0	10.0	8.0	124
CHC	118.0	128.0	6.0	8.0	7.0	123
CHC	120.0	130.0	6.0	8.0	7.0	125
CHC	120.0	132.0	5.5	10.0	6.0	126
CHC	124.0	139.0	6.5	10.3	7.0	133
CHC	125.0	138.0	7.0	9.5	8.0	132
CHC	125.0	140.0	9.0	12.0	10.0	134
CHC	130.0	143.0	7.0	9.5	8.0	137
CHC	135.0	147.0	6.8	10.3	8.0	141
CHC	135.0	148.0	7.0	9.5	8.0	142
CHC	135.0	150.0	9.0	13.0	10.0	144
CHC	136.0	149.0	7.8	9.4	8.5	143
CHC	140.0	153.0	7.0	9.5	8.0	147
CHC	140.0	155.0	6.5	10.3	7.0	149
CHC	145.0	158.0	7.0	9.5	8.0	152
CHC	145.0	160.0	6.5	10.3	7.0	154
CHC	145.0	160.0	5.5	7.5	6.0	154
CHC	150.0	163.0	7.0	9.5	8.0	157
CHC	150.0	165.0	5.5	7.5	6.0	159
CHC	150.0	165.0	9.5	12.5	10.0	159
CHC	155.0	168.0	7.0	9.5	8.0	162
CHC	155.0	170.0	6.5	10.3	7.0	164
CHC	156.0	169.0	7.8	9.4	9.0	163
CHC	156.0	169.0	7.0	9.5	8.0	163

• For further information, pls. contact hotline

Article List CHC						
TYPE	d	D	H1	H	L	D1
CHC	160.0	173.0	7.0	9.5	8.0	167
CHC	170.0	183.0	7.0	9.5	8.0	177
CHC	170.0	185.0	6.5	10.3	7.0	179
CHC	170.0	185.0	10.0	16.0	11.0	179
CHC	175.0	188.0	7.0	9.5	8.0	182
CHC	180.0	193.0	7.0	9.5	8.0	187
CHC	180.0	193.0	8.0	11.0	9.0	187
CHC	185.0	198.0	7.0	9.5	8.0	192
CHC	185.0	200.0	5.5	7.5	6.5	194
CHC	186.0	199.0	7.0	9.5	8.0	193
CHC	186.0	201.0	6.5	10.3	7.0	195
CHC	186.0	201.0	7.0	9.5	7.0	195
CHC	190.0	203.0	7.0	9.5	8.0	197
CHC	192.0	205.0	7.0	9.5	8.0	199
CHC	195.0	208.0	7.0	9.5	8.0	202
CHC	195.0	213.0	9.0	12.0	10.0	207
CHC	200.0	213.0	7.0	9.5	8.0	207
CHC	210.0	223.0	7.0	9.3	8.0	217
CHC	220.0	233.0	7.0	9.5	8.0	227
CHC	225.0	238.0	7.0	9.5	8.0	232
CHC	230.0	243.0	7.0	9.5	8.0	237
CHC	240.0	253.0	7.0	9.5	8.0	247
CHC	250.0	263.0	7.0	9.5	8.0	257
CHC	260.0	275.0	9.0	12.0	10.0	268

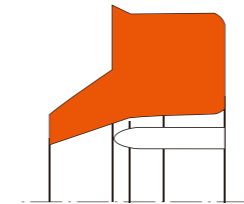
• For further information, pls. contact hotline

Article List CHC						
TYPE	d	D	H1	H	L	D1
CHC	270.0	285.0	9.0	12.0	10.0	278
CHC	280.0	295.0	9.0	12.0	10.0	288

• For further information, pls. contact hotline

CHJ

Wiper seal



Description

Designed bulge inside ring and outer lip in outside ring. Bulge can enhance stability, and outer lip working close to the rod can scrape heavy pollution and prevent the vapor from entering.

Material

material: TPE
code: 55E06
hardness: 55 Shore D

Feature

- Outer lip seal the housing effectively.
- Relieving bulge.
- Effective scraper lip.
- Excellent low-temperature resistance.
- Superior impact resistance.

Examples of use

- hydraulic cylinder
- walking machinery
- industrial hydraulic
- excavator

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c = R_z/2$ and reference line $C_{ref} = 0\%$

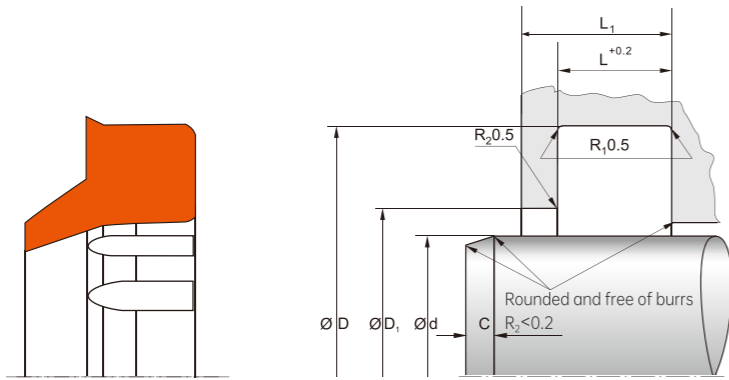
Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Working limit

Running speed: 4 m/s
Temperature: -50°C to +100°C
Medium: Hydraulic oils HL,HLP

Installation Example CHJ



Article List CHJ

d	D1	D2	L1	L2	Article No.
18	24	21	5	7	CHJ010180
20	28	25.5	5	8	CHJ010200
22	30	27.5	5	8	CHJ010220
25	33	30.5	5	8	CHJ010250
28	36	33.5	5	8	CHJ010280
30	38	35.5	5	8	CHJ010300
30	41.2	37	7.5	10	CHJ020300
32	40	37.5	5	8	CHJ010320
35	43	40.5	5	8	CHJ010350
36	44	41.5	5	8	CHJ010360
40	48	45.5	5	8	CHJ010400
40	50.6	43	5.3	7	CHJ020400
41.28	49.28	46.8	5	8	CHJ0104128
45	53	50.5	5	8	CHJ010450

• For further information, pls. contact hotline

Article List CHJ

d	D1	D2	L1	L2	Article No.
45	55.6	48	5.3	7	CHJ020450
50	58	55.5	5	8	CHJ010500
50	58.6	53	5.3	7	CHJ020500
50	60.6	53	5.3	7	CHJ030500
55	65.6	58	5.3	7	CHJ010550
56	66	63	6.3	10	CHJ010560
56	66.6	59	5.3	7	CHJ020560
60	70	66	5.3	7	CHJ010600
60	70	67	6.3	10	CHJ020600
60	70.6	63	5.3	7	CHJ030600
63	73	70	6.3	10	CHJ010630
63	73.6	66	5.3	7	CHJ020630
65	75	72	6.3	10	CHJ010650
65	75.6	68	5.3	7	CHJ020650
70	80	77	6.3	10	CHJ010700
70	80.6	73	5.3	7	CHJ020700
70	82.2	76	7.2	12	CHJ030700
75	83.6	78	5.3	7	CHJ010750
75	85	82	6.3	10	CHJ020750
75	87.2	81	7.2	12	CHJ030750
80	90	87	6.3	10	CHJ010800
80	91	85	7.5	11	CHJ020800
80	92.2	86	7.2	12	CHJ030800
82.6	92.2	85.7	5.3	7.1	CHJ010826

• For further information, pls. contact hotline

Article List CHJ					
d	D1	D2	L1	L2	Article No.
85	93.6	88	5.3	7	CHJ010850
85	97.2	91	7.2	12	CHJ020850
85	98	92	7.5	11.5	CHJ030850
88	100.2	94	7.2	12	CHJ010880
90	100	97	6.3	10	CHJ010900
90	102.2	96	7.2	12	CHJ020900
95	107.2	101	7.2	12	CHJ010950
100	110.6	104	5.3	7	CHJ011000
100	112.2	106	7.2	12	CHJ021000
100	115	110	9.5	14	CHJ031000
101.6	116.6	111.6	9.5	14	CHJ011016
105	113	110.5	5	8	CHJ011050
105	120	112	7.2	12	CHJ021050
110	122.2	116	7.2	12	CHJ011100
110	125	120	9.5	14	CHJ021100
115	127.2	121	7.2	12	CHJ011150
120	132.2	126	7.2	12	CHJ011200
120	135	130	9.5	14	CHJ021200
125	133	130.8	5.3	7	CHJ011250
125	140	135	9.5	14	CHJ021250
125	140	132.6	10.2	16	CHJ031250
125	137.2	131	7.7	12	CHJ041250
128	143	138	9.5	14	CHJ011280
130	142.2	136	7.2	12	CHJ011300

• For further information, pls. contact hotline

Article List CHJ					
d	D1	D2	L1	L2	Article No.
130	145	137.6	10.2	16	CHJ021300
132	144.2	138	7.2	12	CHJ011320
135	150	145	9.5	14	CHJ011350
140	148.6	143	5.3	7	CHJ011400
140	152.2	146	7.7	12	CHJ021400
140	155	147.6	10.2	16	CHJ031400
140	155	150	9.5	14	CHJ041400
145	153.6	148	5.3	7	CHJ011450
145	160	155	9.5	14	CHJ021450
145	153.6	148	5.3	7	CHJ031450
145	160	155	9.5	14	CHJ041450
150	165	158.6	10.2	12	CHJ011500
150	166	161	8	12	CHJ021500
155	163	160.5	5	8	CHJ011550
155	167.2	161	7.7	12	CHJ021550
155	175	165	10.2	18	CHJ031550
160	172.2	166	7.7	12	CHJ011600
160	175	170	9.5	14	CHJ021600
160	175	167.6	10.2	16	CHJ031600
165	180	175	9.5	14	CHJ011650
170	180.6	174	5.3	7	CHJ011700
170	182.2	176	7.7	12	CHJ021700
170	185	180	9.5	14	CHJ031700
177	192	187	9.5	14	CHJ011770

• For further information, pls. contact hotline

Article List CHJ					
d	D1	D2	L1	L2	Article No.
180	195	190	9.5	14	CHJ011800
180	200	190	10.2	18	CHJ021800
185	200	192.6	10.2	16	CHJ011850
185	205	195	10.2	18	CHJ021850
190	198.6	193	5.3	7	CHJ011900
190	205	200	9.5	14	CHJ021900
190	210	200	10.2	18	CHJ031900
195	210	202.5	10.2	16	CHJ011950
200	208.6	203	5.3	7	CHJ012000
200	215	210	9.5	14	CHJ022000
200	220	210	10.2	18	CHJ032000
205	213.6	210	5.3	7	CHJ012050
205	220	215	9.5	14	CHJ022050
210	225	220	9.5	14	CHJ012100
210	226	221	9	12	CHJ022100
210	230	220	10.2	18	CHJ032100
212	232	225.5	12.5	18	CHJ012120
220	235	227.6	10.2	16	CHJ012200
220	240	230	10.2	18	CHJ022200
220	240	233.5	12.5	18	CHJ032200
225	240	235	9.5	14	CHJ012250
225	245	235	10.2	18	CHJ022250
230	238.6	233	5.3	7	CHJ012300
230	245	240	9.5	14	CHJ022300

• For further information, pls. contact hotline

Article List CHJ					
d	D1	D2	L1	L2	Article No.
230	246	240.7	7.5	12	CHJ032300
230	250	240	10.2	18	CHJ042300
235	255	245	10.2	18	CHJ012350
240	255	250	9.5	14	CHJ012400
240	260	250	10.2	18	CHJ022400
240	260	253.5	12.5	18	CHJ032400
245	265	258.5	12.5	18	CHJ012450
250	270	260	10.2	18	CHJ012500
250	270	263.5	12.5	18	CHJ022500
255	270	265	9.5	14	CHJ012550
260	275	270	9.5	14	CHJ012600
260	280	270.5	10.2	18	CHJ022600
265	280	272.6	10.2	16	CHJ012650
265	285	275	10.2	15	CHJ022650
270	278.6	273	5.3	7	CHJ012700
270	286	280.7	7.5	12	CHJ022700
280	295	290	9.5	14	CHJ012800
280	300	290	10.2	15	CHJ022800
285	300	295	9.5	14	CHJ012850
285	305	298.5	12.5	18	CHJ022850
288	308	301.5	10.2	15	CHJ012880
290	310	303.5	12.5	18	CHJ012900
295	315	308.5	12.5	18	CHJ012950
300	316	310.7	7.5	12	CHJ013000

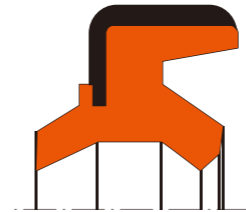
• For further information, pls. contact hotline

Article List CHJ

d	D1	D2	L1	L2	Article No.
300	320	313.5	12.5	18	CHJ023000
305	325	318.5	12.5	18	CHJ013050
320	340	330	10.2	18	CHJ013200
330	346	340.7	7.5	12	CHJ013300
335	355	345	10.2	18	CHJ013350
340	360	350	10.2	18	CHJ013400
350	370	360	10.2	18	CHJ013500
355	375	365	10.2	18	CHJ013550
360	380	370	10.2	18	CHJ013600
370	390	383.5	12.5	18	CHJ013700
370	390	380	10.2	18	CHJ023700
380	400	393.5	12.5	18	CHJ013800
400	420	410	10.2	18	CHJ014000
455	475	465	10.2	18	CHJ014550

• For further information, pls. contact hotline

CE1

Wiper seal


Description

Metal caged polyurethane wiper designed for open housing.

Material

Material: polyurethane TPU
Code: 93P86
Hardness: 93 Shore A

Feature

- Superior abrasion resistance.
- Excellent dust resistance.
- Easy to fit.

Examples of use

- earth moving equipment
- agricultural machinery
- loading platforms
- support cylinders
- industrial vehicles
- cranes
- presses

Working limit

Running speed: 2 m/s
Temperature: -40°C to +110°C
Medium: Hydraulic oils HL,HLP

Surface finish

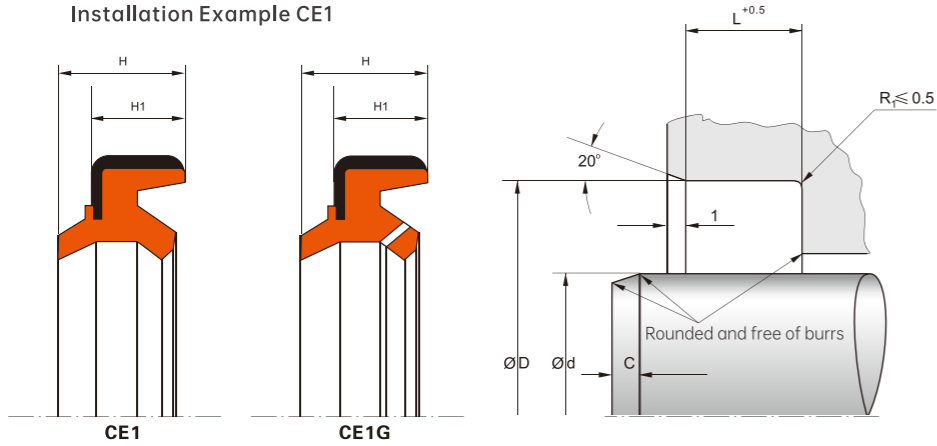
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CE1



Article List CE1

d f8	D H8	H1	H	L	Article No.
20	32	6	9	6	CE1010200
25	37	6	9	6	CE1010250
30	42	6	9	6	CE1010300
32	44	7	10	7	CE1010320
32	52	8	11	8	CE1020320
34	46	7	10	7	CE1010340
35	47	7	10	7	CE1010350
38	50	7	10	7	CE1010380
40	52	7	10	7	CE1010400
45	57	7	10	7	CE1010450
50	62	7	10	7	CE1010500
55	69	8	11	8	CE1010550
60	74	8	11	8	CE1010600
65	79	8	11	8	CE1010650

• For further information, pls. contact hotline

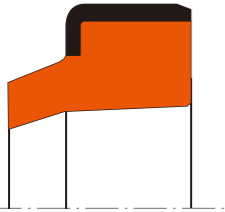
Article List CE1

d f8	D H8	H1	H	L	Article No.
70	84	8	11	8	CE1020700
75	89	8	11	8	CE1010750
80	94	8	12	8	CE1020800
85	99	8	11	8	CE1010850
90	104	8	11	8	CE1010900
95	109	8	11	8	CE1010950
100	114	8	11	8	CE1011000
105	121	9	12	9	CE1011050
110	126	9	12	9	CE1011100
115	131	9	12	9	CE1011150
120	136	9	12	9	CE1011200
130	146	9	12	9	CE1011300
140	160	10	14	10	CE1011400

• For further information, pls. contact hotline

CE3

Wiper seal



Description

Metal caged polyurethane wiper designed for open housing.

Material

Material: polyurethane TPU
Code: 93P86
Hardness: 93 Shore A

Feature

- Superior abrasion resistance.
- Excellent dust resistance.
- Easy to fit.

Examples of use

- earth moving equipment
- agricultural machinery
- loading platforms
- support cylinders
- industrial vehicles
- cranes
- presses

Working limit

Running speed: 2 m/s
Temperature: -40°C to +110°C
Medium: Hydraulic oils HL,HLP

Surface finish

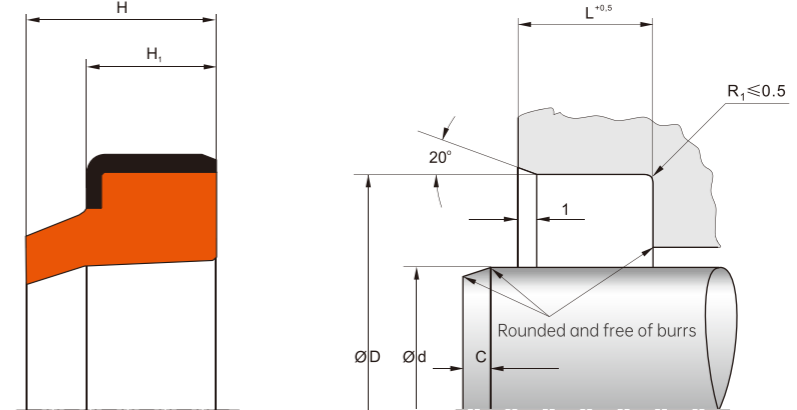
Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

- Percentage contact area $M_1 > 50\%$ to max.90% at cutting depth $c = Rz/2$ and reference line $C_{ref} = 0\%$

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CE3



Article List CE3

d f8	D H8	H1	H	L	Article No.
6.3	16	5	7	5	CE3010063
7.1	17	5	7	5	CE3010071
8	18	5	7	5	CE3010080
9	19	5	7	5	CE3010090
10	20	5	7	5	CE3010100
11.2	21	5	7	5	CE3010112
12.5	23	5	7	5	CE3010125
14	24	5	7	5	CE3010140
15	25	5	7	5	CE3010150
16	26	5	7	5	CE3010160
18	30	6	9	6	CE3010180
20	32	6	9	6	CE3010200
22.4	34.4	6	9	6	CE3010224
25	37	6	9	6	CE3010250

- For further information, pls. contact hotline

Article List CE3

d f8	D H8	H1	H	L	Article No.
27	39	6	9	6	CE3010270
28	40	6	9	6	CE3010280
30	42	6	9	6	CE3010300
31.5	44	7	10	7	CE3010315
32	44	7	10	7	CE3010320
35	47	7	10	7	CE3010350
35.5	47.5	7	10	7	CE3010355
38	50	7	10	7	CE3010380
40	52	7	10	7	CE3010400
45	57	7	10	7	CE3010450
47	59	7	10	7	CE3010470
50	62	7	10	7	CE3010500
53	67	8	11	8	CE3010530
55	69	8	11	8	CE3010550
56	70	8	11	8	CE3010560
60	74	8	11	8	CE3010600
63	77	8	11	8	CE3010630
64	78	8	11	8	CE3010640
65	79	8	11	8	CE3010650
67	81	8	11	8	CE3010670
70	84	8	11	8	CE3010700
71	85	8	11	8	CE3010710
75	89	8	11	8	CE3010750
80	94	8	11	8	CE3010800

• For further information, pls. contact hotline

Article List CE3

d f8	D H8	H1	H	L	Article No.
85	99	8	11	8	CE3010850
90	104	8	11	8	CE3010900
92	106	8	11	8	CE3010920
95	109	8	11	8	CE3010950
100	114	8	11	8	CE3011000
105	121	9	12	9	CE3011050
106	122	9	12	9	CE3011060
108	125	9	12	9	CE3011080
110	126	9	12	9	CE3011100
112	128	9	12	9	CE3011120
115	131	9	12	9	CE3011150
118	134	9	12	9	CE3011180
120	136	9	12	9	CE3011200
125	141	9	12	9	CE3011250
130	146	9	12	9	CE3011300
132	148	9	12	9	CE3011320
135	155	10	14	10	CE3011350
140	160	10	14	10	CE3011400
145	165	10	14	10	CE3011450
150	170	10	14	10	CE3011500
155	175	10	14	10	CE3011550
160	180	10	14	10	CE3011600
165	185	10	14	10	CE3011650
170	190	10	14	10	CE3011700

• For further information, pls. contact hotline

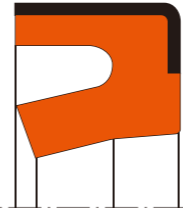
Article List CE3

d f8	D H8	H1	H	L	Article No.
175	195	10	14	10	CE3011750
180	205	12	17	12	CE3011800
185	210	12	17	12	CE3011850
190	215	12	17	12	CE3011900
200	225	12	17	12	CE3012000
210	235	12	17	12	CE3012100
212	237	12	17	12	CE3012120
220	245	12	17	12	CE3012200
224	249	12	17	12	CE3012240
225	250	12	17	12	CE3012250
230	255	12	17	12	CE3012300
236	261	12	17	12	CE3012360
240	265	12	17	12	CE3012400
245	270	12	17	12	CE3012450
250	275	12	17	12	CE3012500
260	285	12	17	12	CE3012600
265	290	12	17	12	CE3012650
280	310	16	22	16	CE3012800
290	320	16	22	16	CE3012900
300	330	16	22	16	CE3013000

• For further information, pls. contact hotline

CE2

Wiper seal



Description

Metal caged polyurethane wiper designed for open housing.

Material

Material: polyurethane TPU
Code: 93P86
Hardness: 93 Shore A

Feature

- Superior abrasion resistance.
- Excellent dust resistance.
- Easy to fit.

Examples of use

- earth moving equipment
- industrial vehicles
- agricultural machinery
- cranes
- loading platforms
- support cylinders
- pivoting pin seal

Working limit

Running speed: 2 m/s
Temperature: -40°C to +110°C
Medium: Hydraulic oils HL,HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

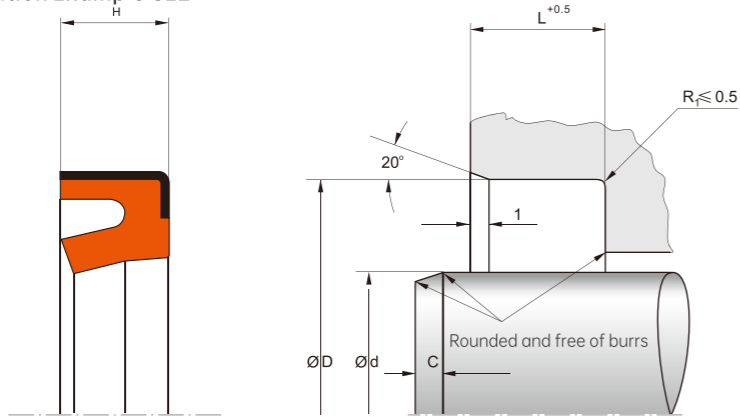
- Percentage contact area $M_v > 50\%$ to max.90% at cutting depth $c=R_z/2$ and reference line $C_{ref}=0\%$

*On usage as a wiper, surface roughness of the running surface to suit the sealing component

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CE2



Article List CE2

d f8	D H8	H	L	Article No.
110	126	9	9	CE2051100
120	136	9	9	CE2021200
130	146	9	9	CE2021300
140	160	10	10	CE2011400

• For further information, pls. contact hotline

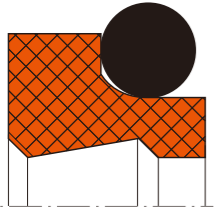
Article List CE2

d f8	D H8	H	L	Article No.
40	52	7	7	CE2010400
45	57	7	7	CE2010450
50	62	7	7	CE2020500
55	69	8	8	CE2010550
60	74	8	8	CE2030600
61	74	8	8	CE2010610
63	77	8	8	CE2010630
65	79	8	8	CE2010650
70	84	8	8	CE2020700
75	89	8	8	CE2010750
80	94	8	8	CE2020800
85	99	8	8	CE2020850
90	104	8	8	CE2020900
100	114	8	8	CE2011000

• For further information, pls. contact hotline

CH

Wiper seal



Description

Consist of one irregular PTFE ring and O ring, applicable for harsh working environment and high-frequency reciprocating cylinder, sliding smoothly, no pause, no climbing, effectively compensating the distortion of rod, compatible with hydraulic media, effectively block remaining oil film on the surface of rod.

Material

PTFE Profile ring
Material: PTFE bronze compound
Code: E201
O-ring
Material: nitrile rubber NBR
Code: 70R006
Hardness: 70 Shore A
Material: fluoro-rubber FKM
Code: 70M203
Hardness: 70 Shore A

Feature

- Applicable for small housing.
- Minimized start and working friction, work smoothly even under low speed, no climbing.
- Smoothly sliding performance.
- Abrasion resistance, long service life.

Examples of use

- industrial vehicles
- injection moulding machines
- handling equipment
- presses
- agricultural machinery
- mills
- control and regulation equipment

Working limit

Running speed: 5 m/s
Temperature: -40°C to +120°C
Medium: Hydraulic oils HL,HLP

Surface finish

Surface roughness	Rmax	Ra
Slide surface	≤2.5um	0.05-0.3um
Surface of groove bottom	≤6.3um	≤1.6um
Surface of groove side	≤15um	≤3.0um

*Surface roughness of the running surface to suit the sealing component used.

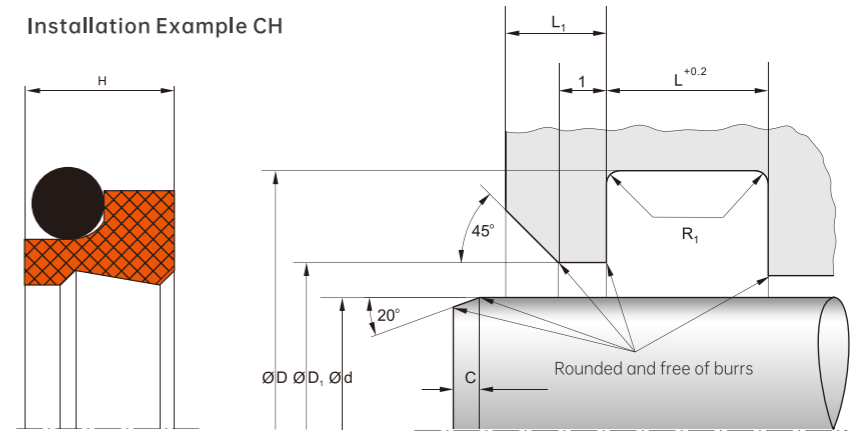
Lead-in chamfers

Length and angle are to be designed to suit the seal used.

Lead Chamfer

d	c
0-60	4
60-120	5
120-180	6
180-250	8
250-400	10

Installation Example CH



Article List CH

d f8/h9	D H9	L +0.2	D1 H11	R1	L1	O-Ring	Article No.
12.0	19.6	4.2	13.5	0.8	3.0	15.00*2.62	CH010120
14.0	21.6	4.2	15.5	0.8	3.0	17.12*2.62	CH010120
18.0	25.6	4.2	19.5	0.8	3.0	20.29*2.62	CH010180
20.0	27.6	4.2	21.5	0.8	3.0	21.89*2.62	CH010200
22.0	29.6	4.2	23.5	0.8	3.0	25.07*2.62	CH010220
25.0	32.6	4.2	26.5	0.8	3.0	28.24*2.62	CH010250
28.0	35.6	4.2	29.5	0.8	3.0	29.82*2.62	CH010280
30.0	37.6	4.2	31.5	0.8	3.0	32.99*2.62	CH010300
32.0	39.6	4.2	33.5	0.8	3.0	34.59*2.62	CH010320
35.0	42.6	4.2	36.5	0.8	3.0	37.77*2.62	CH010350
36.0	43.6	4.2	37.5	0.8	3.0	37.77*2.62	CH010360
36.0	44.8	6.3	37.5	0.8	3.0	39.34*2.62	CH020360
40.0	48.8	6.3	41.5	0.8	3.0	44.12*2.62	CH010400
45.0	53.8	6.3	46.5	0.8	3.0	48.90*2.62	CH010450

• For further information, pls. contact hotline

Article List CH							
d f8/h9	D H9	L +0.2	D1 H11	R1	L1	O-Ring	Article No.
50.0	58.8	6.3	51.5	0.8	3.0	53.64*2.62	CH010500
55.0	63.8	6.3	56.5	0.8	3.0	58.42*2.62	CH010550
56.0	64.8	6.3	57.5	0.8	3.0	59.99*2.62	CH010560
60.0	68.8	6.3	61.5	0.8	3.0	63.17*2.62	CH010600
63.0	71.8	6.3	64.5	0.8	3.0	66.34*2.62	CH010630
65.0	73.8	6.3	66.5	0.8	3.0	67.95*2.62	CH010650
70.0	82.2	8.1	72	1.0	4.0	75.79*3.53	CH010700
75.0	87.2	8.1	77	1.0	4.0	78.97*3.53	CH010750
80.0	92.2	8.1	82	1.0	4.0	85.32*3.53	CH010800
85.0	97.2	8.1	87	1.0	4.0	88.49*3.53	CH010850
90.0	102.2	8.1	92	1.0	4.0	94.84*3.53	CH010900
95.0	107.2	8.1	97	1.0	4.0	101.19*3.53	CH010950
100.0	112.2	8.1	102	1.0	4.0	104.37*3.53	CH011000
105.0	117.2	8.1	107	1.0	4.0	110.72*3.53	CH011050
110.0	122.2	8.1	112	1.0	4.0	113.89*3.53	CH011100
120.0	132.2	8.1	122	1.0	4.0	123.42*3.53	CH011200
125.0	137.2	8.1	127	1.0	4.0	129.77*3.53	CH011250
130.0	142.2	8.1	132	1.0	4.0	132.94*3.53	CH011300

• For further information, pls. contact hotline

Metric tolerance range

Nominal size mm		SHAFTS (outside diameters) units 0.001mm										BORES (inside diameters) units 0.001mm				
Over	to	e9	f8	f9	h8	h9	h10	h11	js10	js11		H8	H9	H10	H11	js11
1.6	3	-14	-6	-6	0	0	0	0	+20	+30		+14	+25	+40	+60	+30
		-39	-20	-31	-14	-25	-40	60	-20	-30		0	0	0	0	-30
3	6	-20	-10	-10	0	0	0	0	+24	+37.5		+18	+30	+48	+75	+37.5
		-50	-28	-40	-18	-30	-48	-75	-24	-37.5		0	0	0	0	-37.5
6	10	-25	-13	-13	0	0	0	0	+29	+45		+22	+36	+58	+90	+45
		-61	-35	-49	-22	-36	-58	-90	-29	-45		0	0	0	0	-45
10	18	-32	-16	-16	0	0	0	0	+35	+55		+27	+43	+70	+110	+55
		-75	-43	-59	-27	-43	-70	-110	-35	-55		0	0	0	0	-55
18	30	-40	-20	-20	0	0	0	0	+42	+65		+33	+52	+84	+130	+65
		-92	-53	-72	-33	-52	-84	-130	-42	-65		0	0	0	0	-65
30	50	-50	-25	-25	0	0	0	0	+50	+80		+39	+62	+100	+160	+80
		-112	-64	-87	-39	-62	-100	-160	-50	-80		0	0	0	0	-80
50	80	-60	-30	-30	0	0	0	0	+60	+95		+46	+74	+120	+190	+95
		-134	-76	-104	-46	-74	-120	-190	-60	-95		0	0	0	0	-95
80	120	-72	-36	-36	0	0	0	0	+70	+110		+54	+87	+140	+220	+110
		-159	-90	-123	-56	-87	-140	-220	-70	-110		0	0	0	0	-110
120	180	-85	-43	-43	0	0	0	0	+80	+125		+63	+100	+160	+250	+125
		-185	-106	-143	-63	-100	-160	-250	-80	-125		0	0	0	0	-125
180	250	-100	-50	-50	0	0	0	0	+92	+145		+72	+115	+185	+290	+145
		-215	-122	-165	-72	-115	-185	-290	-92	-145		0	0	0	0	-145

English tolerance range

Nominal size mm		SHAFTS (outside diameters) units 0.001mm									BORES (inside diameters) units 0.001mm				
Over	to	e9	f8	f9	h8	h9	h10	h11	js10	js11	H8	H9	H10	H11	js11
0.04	0.12	-0.6	-0.3	-0.3	0	0	0	0	+0.8	+1.3	+0.6	+1.0	+1.6	+2.5	+1.3
		-1.6	-0.9	-1.2	-0.6	-1.6	-1.6	-2.5	-0.8	-1.3	0	0	0	0	-1.3
0.12	0.24	-0.8	-0.4	-0.4	0	0	0	0	+0.9	+1.5	+0.7	+1.2	+1.8	+3.0	+1.5
		-2.0	-1.1	-1.6	-0.7	-1.8	-1.8	-3.0	-0.9	-1.5	0	0	0	0	-1.5
0.24	0.40	-1.0	-0.5	-0.5	0	0	0	0	+1.1	+1.8	+0.9	+1.4	+2.2	+3.5	+1.8
		-2.4	-1.4	-1.9	-0.9	-2.2	-2.2	-3.5	-1.1	-1.8	0	0	0	0	-1.8
0.40	0.71	-1.2	-0.6	-0.6	0	0	0	0	+1.4	+2.0	+1.0	+1.6	+2.8	+4.0	+2.0
		-2.8	-1.6	-2.3	-1.0	-2.8	-2.8	-4.0	-1.4	-2.0	0	0	0	0	-2.0
0.71	1.19	-1.6	-0.8	-0.8	0	0	0	0	+1.8	+2.5	+1.2	+2.0	+3.5	+5.0	+2.5
		-3.6	-2.8	-2.8	-1.2	-3.5	-3.5	-5.0	-1.8	-2.5	0	0	0	0	-2.5
1.19	1.97	-2.0	-1.0	-1.0	0	0	0	0	+2.0	+3.0	+1.6	+2.5	+4.0	+6.0	+3.0
		-4.5	-2.6	-3.4	-1.6	-4.0	-4.0	-6.0	-2.0	-3.0	0	0	0	0	-3.0
1.97	3.15	-2.5	-1.2	-1.2	0	0	0	0	+2.3	+3.5	+1.8	+3.0	+4.5	+7.0	+3.5
		-5.5	-3.0	-4.1	-1.8	-4.5	-4.5	-7.0	-2.3	-3.5	0	0	0	0	-3.5
3.15	4.73	-3.0	-1.4	-1.4	0	0	0	0	+2.5	+4.5	+2.2	+3.5	+5.0	+9.0	+4.5
		-6.5	-3.6	-4.8	-2.2	-5.0	-5.0	-9.0	-2.5	-4.5	0	0	0	0	-4.5
4.73	7.09	-3.5	-1.6	-1.6	0	0	0	0	+3.0	+5.0	+2.5	+4.0	+6.0	+10.0	+5.0
		-7.5	-4.1	-5.6	-2.5	-6.0	-6.0	-10.0	-3.0	-5.0	0	0	0	0	-5.0
7.09	9.85	-4.0	-2.0	-2.0	0	0	0	0	+3.5	+6.0	+2.8	+4.5	+7.0	+12.0	+6.0
		-8.5	-4.8	-6.5	-2.8	-7.0	-7.0	-12.0	-3.5	-6.0	0	0	0	0	-6.0
9.85	12.41	-4.5	-2.2	-2.2	0	0	0	0	+4.0	+6.0	+3.0	+5.0	+8.0	+12.0	+6.0
		-9.5	-5.2	-7.3	-3.0	-8.0	-8.0	-12.0	-4.0	-6.0	0	0	0	0	-6.0

Conversion table

Dimension equivalents (Imperial to Metric to Imperial)				Temperature Conversions			Pressure equivalents (PSI to BARS to KN/M2)		
INCH	MM	MM	INCH	°C	°F		PSI	BARS	KN/M2
0.0005	0.012	0.005	0.00019	-51	-60	-76	1	0.069	6.895
0.001	0.025	0.01	0.00039	-46	-50	-58	2	0.138	13.790
0.002	0.050	0.02	0.00078	-40	-40	-40	3	0.207	20.685
0.003	0.076	0.03	0.00118	-34	-30	-22	4	0.276	27.580
0.004	0.100	0.04	0.00157	-29	-20	-4	5	0.345	34.475
0.005	0.12	0.06	0.00197	-23	-10	14	6	0.414	41.370
0.006	0.15	0.07	0.00236	-17.8	0	32	7	0.483	48.265
0.007	0.17	0.08	0.00275	-12.2	10	50	8	0.552	55.160
0.008	0.20	0.09	0.00315	-6.7	20	68	9	0.621	62.005
0.009	0.22	0.10	0.00354	-1.1	30	86	10	0.690	68.950
0.010	0.25	0.20	0.00394	0	32	89.6	20	1.379	137.90
0.020	0.50	0.30	0.00787	4.4	40	104	30	2.069	206.85
0.030	0.76	0.40	0.0118	10	50	122	40	2.758	275.80
0.040	1.01	0.50	0.0157	15.6	60	140	50	3.448	344.75
0.050	1.27	0.60	0.0197	21.1	70	158	60	4.13	413.70
0.060	1.52	0.70	0.0236	26.7	80	176	70	4.827	482.65
0.070	1.77	0.80	0.0315	32.2	90	194	80	5.516	551.60
0.080	2.03	0.90	0.0354	37.8	100	212	90	6.203	620.55
0.090	2.28	1.0	0.0394	43.9	110	230	100	6.895	689.50
0.100	2.54	2.0	0.0787	48.9	120	248	200	13.79	1,379
0.200	5.08	3.0	0.1181	54.4	130	266.6	300	20.69	2,068.5
0.300	7.62	4.0	0.1575	60	140	284	400	27.58	2,758
0.400	10.16	5.0	0.1968	65.6	150	302	500	34.48	3,447.5
0.500	12.70	6.0	0.2362	71.1	160	320	600	41.37	4,137
0.600	15.24	7.0	0.2755	76.7	170	338	700	48.27	4,826.5
0.700	17.78	8.0	0.3149	82.2	180	356	800	55.16	5,516
0.800	20.32	9.0	0.3543	87.8	190	374	900	62.03	6,203.5
0.900	22.86	10.0	0.3937	93.3	200	392	1000	68.95	6,895
1.000	25.4	20.0	0.787	98.9	210	410	2000	137.9	13,790
2.000	50.79	30.0	1.181	104.4	220	428	3000	206.85	20,685
3.000	76.19	40.0	1.575	110	230	446	4000	275.8	27,580
4.000	101.60	50.0	1.968	115.6	240	464	5000	344.75	34,475
5.000	127.00	60.0	2.362	121.1	250	482	6000	413.7	41,370
6.000	152.40	70.0	2.755	126.7	260	500	7000	482.65	48,265
7.000	177.79	80.0	3.149	137.8	280	536	8000	551.6	55,160
8.000	203.19	90.0	3.543	148.9	300	572	9000	620.55	62,055
9.000	228.62	100	3.937	160	320	608	10000	689.5	68,950
10.000	54.0	200	7.874	171.1	340	644			
		300	11.811	182.2	360	680			
		400	15.748	193.3	380	716			
				204.4	400	752			