Product information
Sakagami Catalogue

03.0

info@sealparts.co.uk

SAKAGAMI

Technology & Sealing System

The professional seal manufacturer in Japan

SAKAGAMI SEISAKUSHO LTD.

⚠ Cautions

1 Handling precautions:

1) Important handling and installation precautions in this catalogue, page 14 to 18 should be referred to obtain optimum product performance.

2) Do not use the basic products for food, pharmaceutical and medical treatment related applications.

3) Install the packings in the correct directions. Improper installation may cause the damage to the packings and/or failures of sealing performance.

4) The product identification of "Non-lube" does not mean "No lubrication required". Grease should be applied to the packings and to the surface to which the packings get contacts.

5) Do not incinerate packings. They may create hazardous gas when decomposed by heat. Follow the local legislations for waste controls.

2 Storage precautions:

1) Although the packings are properly packed and shipped to ensure a good storage condition, it is advisable to keep the packages in a solid box or a bag. Then keep them in a dark and cool place.

2) Once the package is opened, avoid contacts to dusts or contaminants. The original packing mode should be restored as long as possible.

3) Keep away from the high moisture. Especially, the products with metal jacket may get rusty and the products made of polyamide and polyester materials may change physical characteristics.

4) Do not expose to a direct sunlight, ozone and radiant rays.

5) Do not pile heavy material on the packings. Do not bind up packings by a string or a cord. Do not hang the packings on a nail or a hook. These inadequate handling methods will involve scars and/or deformation on the products.

3 Storage limitation of packings:

	Materials		Storage limitation
Rubber	NBR	Nitrile rubber	10 years
	NBR + PVC		10 years
	HNBR	Hydrogenated nitrile rubber	20 years
	EPDM	Ethylene propylene rubber	20 years
	FKM	Fluoro rubber	20 years
	S-KID®	Special compounded Nitrile	10 years
	Urethane		10 years
Resin	Fabric reinforced phenol resin		20 years
	Fabric reinforced polyester resin		20 years
	Polyester		10 years
	Polyamide		20 years
	S-FLON®	PTFE	20 years
	Polyethylene		20 years
	Polyacetal		20 years
	Complexed polyester fiber		10 years

Remarks:

○The storage limitation is the period starting from the date of production to the target date under the appropriate storage conditions.
(The production date can be referred to the lot number indicated on the product label.)

○The above storage limitation does not directly mention about the operating period or durability of the products.

○A white or light colored crystalline deposit on the surface of the rubber may take place. The phenomenon called a BLOOM, however, does not cause any malfunction to the product performance.

○ The material numbers and products of the above chart are referable at the pages 4 to 13.

TABLE OF CONTENTS

Exemptions:

1) The contents of this catalogue are believed to be correct and honest based on our centennial sealing technology and experience of the field applications. However, due to unexpected elements existing in actual applications, the general specifications given herein may not always be reproducible.
   Prior to adopting our products, customers are requested to conduct tests to confirm that the products fully meet the requirements.
2) The contents of this catalogue may change without a notice.

Hydraulic packings

Disclaimer

The figures and values herein, including operation ranges and performance data, are intended solely for the purpose of providing general information with respect to the selection of packings. Sakagami Seisakusho Ltd. does not carry any kind of warranty regarding the information in this catalogue.

Product name / Application	Profiles (Left section)	Standard Material: Material codes	Service range: Max. pressure MPa (kgf/cm²)		Max. speed (m/s)	Temperature range (℃)	Operating fluid
GPY-Packings Piston packings		RN919	Clearance of extrusion H9/f8	17.5 {175}	1	−30~100	Mineral oils Water polyglycol solutions Water-in-oil emulsions
			w/Back-up ring	25 {250}	0.5		
			w/Standard & high pressure back-up rings	35 {350}			
GNY-Packings Rod packings		RN919	Clearance of extrusion H9/f8	17.5 {175}	1	−30~100	
			w/Back-up ring	25 {250}	0.5		
			w/Standard & high pressure back-up rings	35 {350}			
RGY-Packings Piston packings		RN923	Clearance of extrusion H9/f8	14 {140}	1	−25~100	
			w/Back-up ring	21 {210}	0.5		
			w/Standard & high pressure back-up rings	28 {280}			
RNY-Packings Rod packings		RN922	Clearance of extrusion H9/f8	14 {140}	1	−25~100	
			w/Back-up ring	21 {210}	0.5		
			w/Standard & high pressure back-up rings	28 {280}			
ⓉSGY-Packings Piston packings		RN812	w/Back-up ring	21 {210}	0.5	−45~100	Mineral oils Mineral oils for low temperature applications ⚠ Do not use MIL H 5606 oils
ⓉSNY-Packings Rod packings		RN809	w/Back-up ring	21 {210}	0.5	−45~100	
SKY-Packings Piston & rod packings		RN906 (RF905 RF907)	Clearance of extrusion H9/f8	14 {140}	1 (0.5)	−10~80 (−5~150)	Mineral oils Water polyglycol solutions Water-in-oil emulsions (Mineral oils / Phosphoric ester)
			w/Back-up ring	21 {210}	0.5		
			w/Standard & high pressure back-up rings	28 {280}			
KY-Packings Piston & rod packings		RN906 (RF905 RF907)	Clearance of extrusion H9/f8	15 {150}	1 (0.5)	−10~80 (−5~150)	
			w/Back-up ring	30 {300}	0.5		
			w/Standard & high pressure back-up rings	35 {350}			
RGU-Packings Piston packings		RN923	Clearance of extrusion H9/f8	14 {140}	1	−25~100	
			w/Back-up ring	21 {210}	0.5		
			w/PWL-bearing			−25~80	
HSD-Packings Piston packings		RN906	Clearance of extrusion H9/f8	14 {140}	1	−10~80	
			w/Back-up ring	21 {210}	0.5		
PENTA®-Seals PS Rod packings		RN906 (RF905)	Clearance of extrusion H9/f8	14 {140}	0.5	−10~80 (−5~150)	
			w/Back-up ring	21 {210}			
NMY-Packings Rod packings		RN906	Clearance of extrusion H9/f8	14 {140}	0.5	−10~80	
			w/Back-up ring	21 {210}			
STR-Seals Piston seals		PT151	Rotation & oscillating movements	28 {280}	0.3	−30~100	
ST-Seals Piston seals		PT111	Reciprocating movement	25 {250}	3	−30~100	
SMJ-Seal Rod seal		PT154	Clearance of extrusion 0.6mm in dia.	21 {210}	3	−30~100	
			Clearance of extrusion 0.3mm in dia.	35 {350}			

● For the material codes, the temperature ranges and applicable fluid specified in ( ), heat resistant materials are used. For those applications requiring heat resistance, while the pressure condition is far below the maximum pressure, it is advisable to add back-up rings to the packings for improvement of the heat resistance.

Characteristics	Main usage	Page
For those applications, the SKY-packings are used and the improvement of durability becomes an essential issue. The GPY-packings for pistons and the GNY-packings for rods are recommended. With the RN919 wear resistant material and larger cross-sectional area than the SKY- packings of the same dimensions, the GPY piston packings prove to be free from damage by a back pressure and the GNY rod packings obtain higher sealing capability and optimum sealing performance against eccentric movements.	● Basic cylinders ● Cylinders for construction machines and industrial vehicles ● Cylinders for industrial robots	GPY 20 GNY 21
The grooves of RGY piston packings and RNY rod packings are compatible with those for the SKY-packings. RGY-packings are designed to withstand back pressure and provide longer service time by adopting an improved wear resistant material. RNY rod packings are designed exclusively for sealing rods. RNY rod packings made of a highly elastic compound achieve good sealing performance against eccentric movements.	● Basic cylinders ● Cylinders for machine tools and industrial vehicles	RGY 22 RNY 23
The groove dimensions of SGY & SNY packings are compatible with those of the SKY-packings. Service temperature range of −45℃ to +100℃ allows cylinders for use in multiple temperature conditons-in both regular and severe cold euvironments-without changing packings. SGY & SNY-packings also feature exceptionally low stick slip. Due to the nature of the application, the material is required to have a moderately low material hardness. Conduct verification tests in the case of SGY & SNY-packings being used in high pressure and/or high frequency conditions.	● Cylinders for low temperature ambient specification	Ⓣ SGY 24 Ⓣ SNY 25
SKY-packings are specified as the basic hydraulic packing in Japan since 1966. SKY-packings are multiply applicable for both pistons and rods. Flexible and easy installing properties fit to one piece groove and eliminate parts of divided grooves. Compacter cylinder design with lower cost is achievable by SKY packings.	● Basic cylinders ● Cylinders of low hydraulic pressure ● Cylinders for machine tools and industrial vehicles	SKY 26
KY-packings replace V-packings with superior sealing performance, compacter groove dimensions and easy installation. The largest cross-sectional area of KY- packings assures stable sealing performance for vast applications. Abundant dimensional assortment is another plus.	● Basics cylinders ● Die-cushion cylinders in stamping machines	KY 30
As double acting packings, the RGU-packings have a unique seal lip shape and provide identical sealing performance to U-packings on compacter sized pistons. Frequently be in service as a combination system with the PWL-bearings, which offer multi-functions-bearing & back-up ring.	● Cylinders for agricultural machines ● Cylinders for machine tools and industrial vehicles ● Cylinders for light weight construction machines	RGU 36
HSD-packings are double acting packings and enable to minimize the size of pistons. Stable sealing performance without damage from twisting or rolling, unlike O-rings is obtainable.	● Cylinders for agricultural machines	HSD 37
The grooves of PENTA®-Seals are compatible with those of O-rings specified by JIS B2401 P line. In addition to the superior sealing performance, PENTA®-Seals prevent damage from twisting or rolling.	● Miniature cylinders ● Solenoid valves	PS 38
NMY-packings are small in cross sectional area and compatible with the O-rings specified by JIS B2401 P line in the grooves. NMY packings are far superior in sealing performance and friction characteristics over O-rings.	● Miniature cylinders ● Solenoid valves	NMY 40
S-FLON® (PTFE) seals and back-up rings are combined to achieve low friction resistance and to eliminate stick slip even at low pressure/speed conditions. Moderate sealing performance comparing with U-packings due to the PTFE plastic seals which have higher rigidity and lower elasticity than rubber materials. Good practice is needed to prevent scars on the delicate surface of S-FLON® seals. ● ST type is applicable to common & general applications with diversified dimensions. ● STS type is designed for low friction/pressure cylinders, with small cross sectional area. ● STG type is well accepted by construction machines and heavy machineries sectors. ● SMJ type is available as rod seals with optimum sealing performance and durability. ● STR type is designed for rotary joints.	● Rotary joints.	STR 41
	● Cylinders for general industrial machines ● Cylinders specially designated to meet specific requirements	ST 42
	● Cylinders for general industrial machines ● Cylinders for construction machines ● Cylinders specially designated to meet specific rquirements	SMJ 44

● As aqueous based hydraulic fluids provide lower lubricating ability comparing with general mineral oil based fluids, the packings used in those would be less durable.
Aqueous based hydraulic fluids may not allow packings to achieve enough durability at the temperature of 70℃ or over.
●The heat resistant material for the SKY-300F, KY-250F and their larger sized products is RF907 instead of RF905.

Pneumatic packings

Disclaimer

The figures and values herein, including operating ranges and performance data, are intended solely for the purpose of providing general information with respect to the selection of packings. Sakagami Seisakusho Ltd. does not carry any kind of warranty regarding the information in this catalogue.

Product name / Application	Profiles (Left section)	Standard Material: Material codes	Service range: Pressure MPa (kgf/cm²)	Service range: Max. speed (m/s)	Service range: Temperature range (℃)	Characteristics
PGY-Packings Piston packings		RN713 (RF905)	1 {10}	1	−25~80 (−5~150)	Improved wear resistant packings are PGY piston packings & PNY rod packings. Stable sealing performance is obtainable in lubricated, non-lubricated and dry air systems.
PNY-Packings Rod packings		RN713 (RF905)	1 {10}	1	−25~80 (−5~150)	
GLY-Packings Piston & rod packings		RK701 (RF905)	1 {10}	1	−25~70 (−5~150)	GLY-packings are applicable to pneumatic pistons & rods in non-lubricated air supply systems, while inapplicable to lubricated cylinders.
PPD-Packings Piston packings		RN729	1 {10}	1	−20~80	PPD-packings are double acting piston packings compatible with the grooves for the PSD-packings. Sealing performance of PPD-packings sustains unchanged despite of large eccentric movement of the pistons. Moderate durability and fair friction characteristics.
PSD-Packings Piston packings		RN713 (RF704)	1 {10}	1	−20~80 (−5~150)	PSD-packings are the world best selling double acting pneumatic piston packings. The profile of the PSD-packings is compact and designed to provide outstanding friction properties. Unlike O-rings, PSD- packings resist twisting or rolling.
PDU-Packings Rod packings		RN818 (RF905)	1 {10}	1	−20~80 (−5~150)	PDU-packings, the one-piece packing & wiper, allow compacter cylinder designs.
Mini Y-Packings MYA・MYN Piston & rod packings	 	MYA RK703 MYN RN716	0.8 {8}	0.4	−25~70	Compatible with the grooves for O-rings specified by JIS B2401 P-line, Mini Y-packings are ideal U-packings for cylinders of small cross sectional area. Mini Y-packings are suitable for the applications where low friction resistance is essential such as solenoid valves.
MYP-Packings Piston packings		RN722	1 {10}	0.5	−20~60	MYP-packings are applicable to small diameter pistons. Likewise Mini Y Packings, they are compatible with the grooves for O-rings specified by JIS B2401 P-line. By adopting the slit structure of the lip part to avoid back pressure and inverted setting and high wear resistant properties, they provide stable sealing properties.
MYR-Packings Rod packings		RN818	1 {10}	0.5	−15~60	MYR-packings are applicable to small diameter rods. Likewise Mini Y Packings, they are compatible with the grooves for O-rings specified by JIS B2401 P-line. By adopting an improved wear resistant material, they provide long and stable sealing properties despite of the small cross sectional size.
PPY-Packings Piston packings		RN713 (RF704)	1 {10}	1	−20~80 (−5~150)	Improved wear resistant PPY piston packings & PRY rod packings are applicable to miniature cylinders. Greater abrasion resistance with superior friction properties is obtainable, comparing with O-rings.
PRY-Packings Rod packings		RN713 (RF704)	1 {10}	1	−20~80 (−5~150)	
Grid-Surface Gaskets® Rubber sheet gaskets		RN917 RD911	1 {10}	—	−30~80	Unique and deep grid pattern of Grid-Surface Gaskets® minimizes protrusion of the gasket sheet when squeezed in the assembly process enabling to provide optimum sealing performance.

● For the material codes, the temperature ranges and applicable fluid specified in ( ), heat resistant

Main usage	Quality of air			Page
	Lube	Non-lube	Dry air	
● Basic cylinders	○	○	○	PGY 46
	○	○	○	PNY 47
● Basic cylinders	NR	○	NR	GLY 48
● Basic cylinders ● Miniature cylinders ● Thin type cylinders ● Cylinders specially designed to meet specific requirements	○	○	○	PPD 50
● Basic cylinders ● Miniature cylinders ● Thin type cylinders	○	○	○	PSD 51
● Basic cylinders	NR	○	○	PDU 52
● Solenoid valves	○	○	NR	Mini Y 53
●Miniature cylinders	○	○	○	MYP 54
	○	○	○	MYR 55
●Miniature cylinders	○	○	○	PPY 56
	○	○	○	PRY 57
● Solenoid valves	○	○	○	Grid-Surface 58

O: Applicable
NR: Not recommended

Definition of air quality

(ISO 8573-1: Compressed air standard)

Lubrication:

By setting air lubricators in the circuit, supply compressed air with oil mist to the pneumatic systems attempting in corrosion control and lubrication.
Qualitied mineral oil should be used as lubrication fluids.
(ASTM #2 or equivalence)

Non-lube:

Compressed air is supplied without lubricator in the circuit.
Pre-lube is required. Apply qualitied grease to the surfaces of packings and contacting area of packings prior to assembling.

Dry air:

The systems supply and exhaust purified air which is clean and free from moisture and foreign matters by filtering units gathered in the system.
Pre-lube with qualitied grease is required.

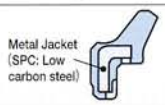
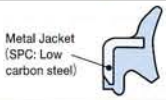
Grease:

Greases equivalent to the viscosity of NLGI (National Lubricating Grease Institute) #1 or #2 lithium soap (mineral oil based) greases are recommended.
For high temperature applications, silicone or fluoric greases are applicable.

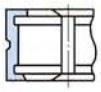
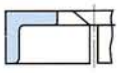
Disclaimer

The figures and values herein, including operating ranges and performance data, are intended solely for the purpose of providing general information with respect to the selection of packings. Sakagami Seisakusho Ltd. does not carry any kind of warranty regarding the information in this catalogue.

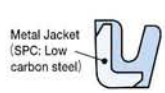
Wipers

Product name / Application	Profiles (Left section)	Standard Material: Material codes	Service range: Pressure MPa (kgf/cm²)	Service range: Max. speed (m/s)	Service range: Temperature range (℃)	Operating fluid
SCK-Wipers Rod wipers		RN814	—	1	−45～100	Mineral oils Mineral oils for low temperature applications
SDR-Wipers Rod wipers		RN906 (RF905)	—	1 (0.5)	−25～100 (−5～150)	Mineral oils Water polyglycol solutions Water-in-oil emulsions (Mineral oils Phosphoric ester)
SDB-Wipers Rod wipers		RN819 (RF903)	—	1	−25～100 (−5～150)	Water soluble cutting oil Cutting oil of sulfide lines Industrial water (Cutting oil of chloride lines)
SCB-Wipers Rod wipers		RN807	—	1	−40～100	Mineral oils Water polyglycol solutions Water-in-oil emulsions (Mineral oils Phosphoric ester)
SER-Wipers Rod wipers		RN906 (RF905)	—	0.5	−25～100 (−5～150)	
SFR-Wipers Rod Wipers		RN912	—	1	−30～100	—

Wear rings & Bearings

SW-Wear Rings Piston wear rings		PB201	—	3	−55～120	Mineral oils Mineral oils for low temperature applications Phosphoric ester
SWA-Wear Rings Piston wear rings		PB201	—	3	−55～120	
SWB-Wear Rings Piston wear rings		PB251	—	3	−55～120	
S-LEEVE® (WPB type) Piston bearings		PN104	21 {210}	1	−25～80	Mineral oils Water polyglycol solutions Water-in-oil emulsions Phosphoric ester
S-LEEVE® (WRB type) Rod bearings		PN104	21 {210}	1	−25～80	
PWL-Bearings Piston bearings		PN104	21 {210}	1	-25～80	

Cushion Seals

PCS-Cushion Seals —		RN803 (RF903)	1 {10}	0.5	-5～80 (-5～150)	

●For the material codes, the temperature ranges and applicable fluid specified in ( ), heat resistant materials are used.
●Aqueous based hydraulic fluids may not allow packings to achieve enough durability at the temperature of 70℃ or over.

Characteristics	Hydraulic	Air hydro	Quality of air			Field of application	Page
			Lube	Non-lube	Dry-air		
Wipers protect packings and cylinders by preventing the penetration of dust from the outside.	○	○	○	○	○	●Basic cylinders ●Low pressure air-hydraulic cylinders	SCK 59
●SCK-wipers: Insertable dust seals with a large profile for both outdoor and indoor applications. They are specially designed not to penetrate water from the outer circuit of the groove.	○	○	○	○	○	●Cylinders for construction machines ●Cylinders for machine tools ●Cylinders for marine vessels	SDR 60
●SDR-wipers: Common dust seals insertable in cylinders for indoor applications.	○	○	○	○	○	●Cylinders for machine tools ●Cylinders for special applications	SDB 63
●SDB-wipers: Dust seals with rubber coated metal rim placed on the outer circuit. It is specially designed for the prevention of penetrating fluids.	○	NR	○	○	NR	●Basic cylinders ●Cylinders for construction and industrial vehicles	SCB 64
●SCB-wipers: Metal jacket type insertable in the groove by press fitting. They are suitable to the conditions where protection from dust, mud, and rain is required.	NR	NR	○	○	○	●Miniature cylinders	SER 66
●SER-wipers: Insertable dust seals with a small profile for miniature cylinders of indoor applications.	○	○	○	○	○	●Basic pneumatic cylinders	SFR 67
●SFR-wipers: Low friction type for pneumatic cylinders of indoor applications.							

Wear rings for pistons. Fabric reinforced phenolic resin structure provides excellent resistance against pressing load. Installable in one piece groove and prevent a metal seizing and/or a deterioration of metal surface.	○	○	NR	NR	NR	●Basic hydraulic cylinders ●Cylinders for construction and industrial vehicles.	SW 68
●SW-wear rings are applied to the wide range of hydraulic cylinders.	○	○	○	○	○	●Basic air pressure cylinders ●Low pressure hydraulic cylinders ●Air-hydro cylinders	SWA 70
●SWA-wear rings are designed for low pressure hydraulic cylinders and pneumatic cylinders.	○	○	○	○	○		SWB 71
●SWB-wear rings are applicable to pneumatic cylinders.							
WPB & WRB-bearings provide multi-functions of bearing plus back-up ring, installable in one piece grooves in combination with the packings compatible with the grooves of the SKY-packings. WPB & WRB-bearings prevent metal seizing and eccentric movement of piston and/or rod and greatly improve pressure resistance and durability of the SKY-packings. For those applications higher dimensional precision is required, SW-wear ring are recommended.	○	NR	NR	NR	NR	●Basic hydraulic cylinders ●Cylinders for industrial vehicles ●Cylinders for machine tools	WPB 72
	○	NR	NR	NR	NR		WRB 73
PWL-plastic bearings provide multi-functions of bearing plus back-up ring, installable in one piece grooves in combination with the RGU-packings. PWL-bearings prevent seizing of piston metals and greatly improve pressure resistance and durability of the RGU- packings. PWL-bearings are applicable to be combined with most of the HSD-packings for improvement.	○	NR	NR	NR	NR	●Cylinders for agricultural machines ●Cylinders for machine tools and industrial vehicles ●Cylinders for light weight construction machines	PWL 74

PCS-cushion seals for basic pneumatic cylinders can prevent the breakage failure of cylinders and the impact noise by absorbing shock at the stroke end. Comparing with the other cushion systems, they have advantages in the maintenance such as check valve-free.	NR	NR	○	○	○	●Basic pneumatic cylinders	PCS 75

◆Apart from the above, various special products as below are available by order.

- ·Rubber moulded gaskets
- ·Packings for rodless cylinders
- ·Deformed packings for rotating-free cylinders
- ·SAPLATIC®(Rubber) made L-shaped packings
- ·Other rubber sealing products.
- ·S-FLON®(PTFE) moulded products
- ·S-FLON®(PTFE) wear rings
- ·S-FLON®(PTFE) dust seals
- ·Other S-FLON®(PTFE) products and polyamide, polyacetal, polyethylene resin sealing products

Classification of materials

Disclaimer

The figures and values herein, including operating ranges and performance data, are intended solely for the purpose of providing general information with respect to the selection of packings. Sakagami Seisakusho Ltd. does not carry any kind of warranty regarding the information in this catalogue.

Materials			Physical properties (Actual measurement value)			Limited temperature range of materials** (℃)	Resistance properties					
							Operating fluid			Fire resistant operating fluid		
Classifications	Material classification	Material No.	Hardness (JIS Hs)	Tensile strength MPa (kgf/cm²)	Elongation (%)	** All figures do not indicate the regular service temperature	General petroleum based oil	Petroleum based oil for low temperature applications	Phosphonic acid ester based oil	Water polyglycol solution	Water-in-oil emulsion	High-water-base fluid
RUBBER	NBR (Nitrile rubber)	RN503	52	15.38 {157}	589	−35~120	E	E	NR	E	E	E
		RN612	62	15.48 {158}	409	−30~120	E	E	NR	E	E	E
		RN711	73	14.40 {147}	233	−55~100	C	E	NR	C	C	C
		RN712	71	18.14 {185}	355	−30~120	E	E	NR	E	E	E
		RN713	74	16.18 {165}	250	−30~120	E	E	NR	E	E	E
		RN716	71	17.65 {180}	350	−20~120	E	E	NR	E	E	E
		RN719	72	18.32 {187}	266	−20~120	E	E	NR	E	E	E
		RN722	71	20.01 {204}	370	−30~120	E	E	NR	E	E	E
		RN729	70	22.66 {231}	327	−25~120	E	E	NR	E	E	E
		RN801	79	23.05 {235}	312	−20~120	E	E	NR	E	E	E
		RN803	80	19.61 {200}	370	−20~120	E	E	NR	E	E	E
		RN807	79	16.48 {168}	262	−40~120	E	E	NR	E	E	E
		RN809	79	15.99 {163}	136	−55~120	E	F	NR	C	C	C
		RN812	82	19.52 {199}	218	−45~120	E	F	NR	C	C	C
		RN814	78	16.77 {171}	153	−45~120	E	F	NR	C	C	C
		RN818	82	23.44 {239}	239	−20~120	E	E	NR	E	E	E
		RN819	80	27.66 {282}	224	−25~120	E	E	NR	E	E	E
		RN903	85	17.26 {176}	135	−40~100	C	F	NR	C	C	C
		RN906	86	20.01 {204}	220	−25~120	E	E	NR	E	E	E
		RN909	85	14.71 {150}	118	−55~100	C	E	NR	C	C	C
		RN912	87	20.59 {210}	150	−30~120	E	E	NR	E	E	E
		RN917	86	20.87 {213}	180	−30~100	E	E	NR	E	E	E
		RN918	83	18.04 {184}	150	−35~130	E	E	NR	E	E	E
		RN919	85	16.67 {170}	170	−30~120	E	E	NR	E	E	E
		RN922	85	19.71 {201}	148	−25~120	E	E	NR	E	E	E
		RN923	86	21.67 {221}	169	−25~120	E	E	NR	E	E	E
	HNBR (Hydrogenated nitrile rubber)	RP703	70	18.13 {185}	180	−35~135	E	NT	NR	E	C	NT
		RP903	89	33.02 {337}	179	−20~135	E	NT	NR	E	E	NT
	NBR+PVC (Nitrile rubber / Polyvinyl chloride)	RD902	89	24.12 {246}	285	−25~100	E	E	NR	E	E	E
		RD903	96	23.24 {237}	160	−25~100	E	E	NR	E	E	E
		RD911	88	18.03 {184}	230	−30~100	E	E	NR	E	E	E
	EPDM (Ethylene propylene rubber)	RE702	72	16.67 {170}	224	−50~150	NR	NR	F	E	NR	NR
		RE901	87	17.16 {175}	146	−50~150	NR	NR	F	E	NR	NR
	FKM (Fluorine rubber)	RF704	71	15.20 {155}	269	−15~200	E	E	F	NR	C	C
		RF903	85	16.67 {170}	190	−15~200	E	E	F	NR	C	C
		RF905	86	17.16 {175}	190	−15~200	E	E	F	NR	C	C
		RF907	86	13.30 {136}	220	−15~200	E	E	F	NR	C	C
	S-KID® rubber (Specially formulated nitrile rubber)	RK701	73	11.67 {119}	210	−30~100	C	NT	NT	NT	NT	NT
		RK703	73	14.71 {150}	256	−30~100	C	NT	NT	NT	NT	NT
	Polyurethane rubber	RU803	85	28.12 {287}	598	−35~100	E	NT	NR	NR	E	E
		RU915	95	41.45 {423}	440	−25~100	E	E	NR	NR	NR	NR

** Limited temperature range of materials indicates the limit value of the material properties but not the regular service temperature. Service temperature range should be referred to the product specifications at page 4 to 9. Service temperature range would be differed by the shape and the application of the product.
*** For NBR+PVC material, the alternative material is taken into account as PVC is designated as an environmentally harmful chemical.

Resistance properties											Applications	Material No.
Lubricating oil				Grease			Other fluid					
Engine oil	Gear oil	Break fluid	Silicone oil	Lithium based grease	Silicone based grease	Chrorid based cutting oil	Sulfur based cutting oil	Aqueous cutting oil	Water	Steam		
E	E	NR	E	E	E	NR	E	E	E	NR	Low friction pneumatic packings	RN503
E	E	NR	E	E	E	NR	E	E	E	NR	Low friction pneumatic packings	RN612
C	C	NR	E	E	E	NR	C	C	C	NR	Low temperature resistant packings	RN711
E	E	NR	E	E	E	NR	E	E	E	NR	Standard back-up rings for STK seals, JIS B2401 class 1 material A	RN712
E	E	NR	E	E	E	NR	E	E	E	NR	Standard PGY・PNY・PSD・PPY・PRY Packings	RN713
E	E	NR	E	E	E	NR	E	E	E	NR	Standard MYN-Packings	RN716
E	E	NR	E	E	E	NR	E	E	E	NR	JIS B2401, class1, material A	RN719
E	E	NR	E	E	E	NR	E	E	E	NR	Standard MYP-Packings, JIS B2401 class 1 material A	RN722
E	E	NR	E	E	E	NR	E	E	E	NR	Standard PPD-Packings	RN729
E	E	NR	E	E	E	NR	E	E	E	NR	Standard OSY-Packings	RN801
E	E	NR	E	E	E	NR	E	E	E	NR	Standard PCS-Cushion Seals	RN803
E	E	NR	E	E	E	NR	E	E	E	NR	Standard SCB-Wipers	RN807
E	E	NR	E	E	E	NR	E	E	E	NR	Standard ⓉSNY-Packings	RN809
E	E	NR	E	E	E	NR	E	E	E	NR	Standard ⓉSGY-Packings	RN812
E	E	NR	E	E	E	NR	E	E	E	NR	Standard SCK-Wipers	RN814
E	E	NR	E	E	E	NR	E	E	E	NR	Standard PDU・MYR-Packings	RN818
E	E	NR	E	E	E	NR	E	E	E	NR	Standard SDB-Wipers	RN819
C	C	NR	E	E	E	NR	C	C	C	NR	Low temperature resistant packings	RN903
E	E	NR	E	E	E	NR	E	E	E	NR	Standard KY・SKY・HSD・NMY-Packings, PENTA®-Seal, SDR・SER-Wipers	RN906
C	C	NR	E	E	E	NR	C	C	C	NR	Low temperature resistant packings	RN909
E	E	NR	E	E	E	NR	E	E	E	NR	Standard SFR-Wipers	RN912
E	E	NR	E	E	E	NR	E	E	E	NR	Standard Grid-Surface Gaskets®(thickness 0.5mm)	RN917
E	E	NR	E	E	E	NR	E	E	E	NR	High・low temperature resistant packings	RN918
E	E	NR	E	E	E	NR	E	E	E	NR	Standard GPY・GNY-Packings	RN919
E	E	NR	E	E	E	NR	E	E	E	NR	Standard RNY-Packings	RN922
E	E	NR	E	E	E	NR	E	E	E	NR	Standard RGY・RGU-Packings	RN923
E	E	NR	E	E	E	NR	E	F	E	NR	Automotive parts seals and other products	RP703
E	E	NR	E	E	E	NR	E	F	E	NR	High temperature (135℃ and less) packings for water polyglycol fluid	RP903
E	E	NR	E	E	E	NR	E	E	E	NR	Standard AL-packings	RD902
E	E	NR	E	E	E	NR	E	E	E	NR	Large diameter AL-packings	RD903
E	E	NR	E	E	E	NR	E	E	E	NR	Standard Grid-Surface Gaskets®(thickness 1.0mm)	RD911
NR	NR	E	F	NR	F	NR	NR	NR	E	E	Steam resistant (193℃ and less) for break fluid, chemical resistant material	RE702
NR	NR	E	F	NR	F	NR	NR	NR	E	E	Steam resistant (193℃ and less) for break fluid, chemical resistant material	RE901
E	E	NR	E	E	E	E	E	C	E	NR	High temperature, chemical resistant material	RF704
E	E	NR	E	E	E	E	E	C	E	NR	High temperature, chemical resistant material	RF903
E	E	NR	E	E	E	E	E	C	E	NR	High temperature, chemical resistant material	RF905
E	E	NR	E	E	E	E	E	C	E	NR	High temperature, chemical resistant material	RF907
NT	NT	NT	NT	E	E	NT	NT	NT	C	NT	Standard GLY-Packings	RK701
NT	NT	NT	NT	E	E	NT	NT	NT	C	NT	Standard MYA-Packings	RK703
E	NT	NR	E	E	E	NT	NT	NT	C	NR	Cylinder packings for railway breaks and door engines	RU803
E	NT	NR	E	E	E	NT	NT	NT	NR	NR	Packings and other products for civil engineering and construction machines	RU915

Following symbols indicate chemical suitability of materials.

E: Excellent
C: Applicable subject to technical consultation
NR: Not recommended
F: Certain products can be applicable
NT: No data available

Classification of materials

Disclaimer

The figures and values herein, including operating ranges and performance data, are intended solely for the purpose of providing general information with respect to the selection of packings. Sakagami Seisakusho Ltd. does not carry any kind of warranty regarding the information in this catalogue.

Materials			Physical properties					Limited temperature range of materials** (℃) **:All figures do not indicate the regular service temperature
Classifi-cations	Material classification	Material No.	Hardness (JIS Hs)	Tensile strength MPa (kgf/cm²)	Elongation (%)	Compression strength MPa (kgf/cm²)	Bending strength MPa (kgf/cm²)	
RESIN	S-FLON® (PTFE)	PT101	59*	28.22 {288}	332	NT	NT	−100~260
		PT111	60*	19.81 {202}	345	NT	NT	−100~260
		PT114	65*	21.46 {219}	224	NT	NT	−100~260
		PT141	69*	22.05 {225}	173	NT	NT	−100~260
		PT151	63*	16.38 {167}	250	NT	NT	−100~260
		PT154	70*	19.71 {201}	160	NT	NT	−100~260
		PT165	63*	14.40 {147}	260	NT	NT	−100~260
	Fabric-reinforced phenol	PB201	NT	NT	NT	113.07 {1153}	116.14 {1187}	−55~140
		PB251	NT	NT	NT	166.42 {1697}	127.98 {1305}	−55~140
	Polyester	PD101	96	32.36 {330}	590	NT	NT	−30~100
	Polyamide	PN104	80*	55.02 {561}	399	NT	58.84 {600}	−40~100
		PN341	NT	81.10 {827}	28	NT	96.11 {980}	−40~120
	Polyacetal	PA101	84*	66.44 {678}	33	NT	NT	−60~100
	Polyethylene	PE102	65*	37.04 {378}	418	NT	NT	−100~90

*: Shore Durometer D (ASTM D-2240)

**: Limited temperature range of materials indicates the limit value of the material properties but not the regular service temperature. Service temperature ranges should be referred to the product specifications at page 4 to 9. Service temperature range would be differed by the shape and the application of the product.

Resistance properties																	Applications	Material No.
Operating fluid				Fire resistant operating fluid					Lubricating oil			Grease			Other fluid			
General petroleum based oil	Petroleum based oil for low temperature applications	Phosphoric acid ester based oil	Water polyglycol solution	Water-in-oil emulsion	High-water-base fluid	Engine oil	Gear oil	Break fluid	Silicone oil	Lithium based grease	Silicone based grease	Chrorid based cutting oil	Sulfur based cutting oil	Aqueous cutting oil	Water	Steam		
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	Back-up rings for standard NMY-Packings, PENTA®-Seals and O-rings	PT101
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	Standard ST, STS, STG-Seals and PG rings and other back-up rings	PT111
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	Standard back-up rings for GPY, GNY-packings	PT114
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	NT	High pressure seals and back-up rings	PT141
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	Standard STH, STR-Seals	PT151
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	NT	Standard SMJ-Seals	PT154
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	Seals for swivel joint and other products	PT165
E	E	E	C	C	C	E	E	NR	E	E	E	E	E	C	C	NT	Standard SW, SWA-Wear rings	PB201
E	E	E	C	C	C	E	E	NR	E	E	E	E	E	C	C	NT	SWB-Wear rings	PB251
E	NT	NT	NT	NT	NT	NT	NT	NT	NT	E	E	NT	NT	NT	NT	NT	Standard YCS-Cushion Seals	PD101
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	NT	Standard S-LEEVE®, PWL and KCS	PN104
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	NT	Back-up rings and other products	PN341
E	E	NT	E	E	E	E	E	E	E	E	E	NT	E	E	E	NT	Standard high pressure back-up rings for GPY, GNY-Packings	PA101
C	C	NT	E	C	C	NR	NR	NT	C	C	C	NT	NT	NT	E	NT	Seals for food processing appliances, water cylinders and other products	PE102

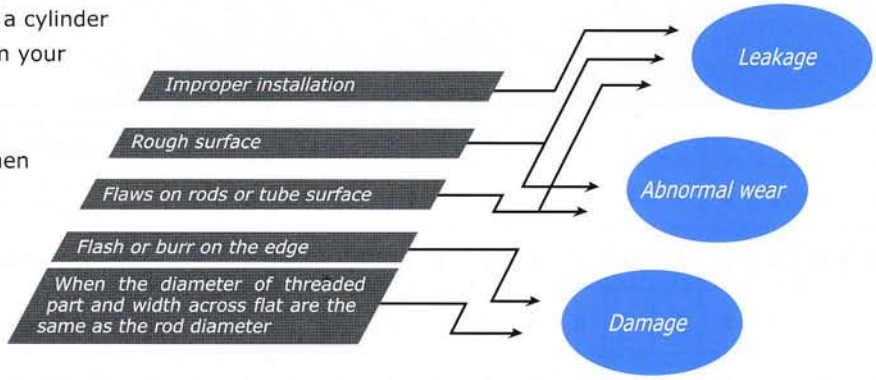
Following symbols indicate chemical suitability of materials.

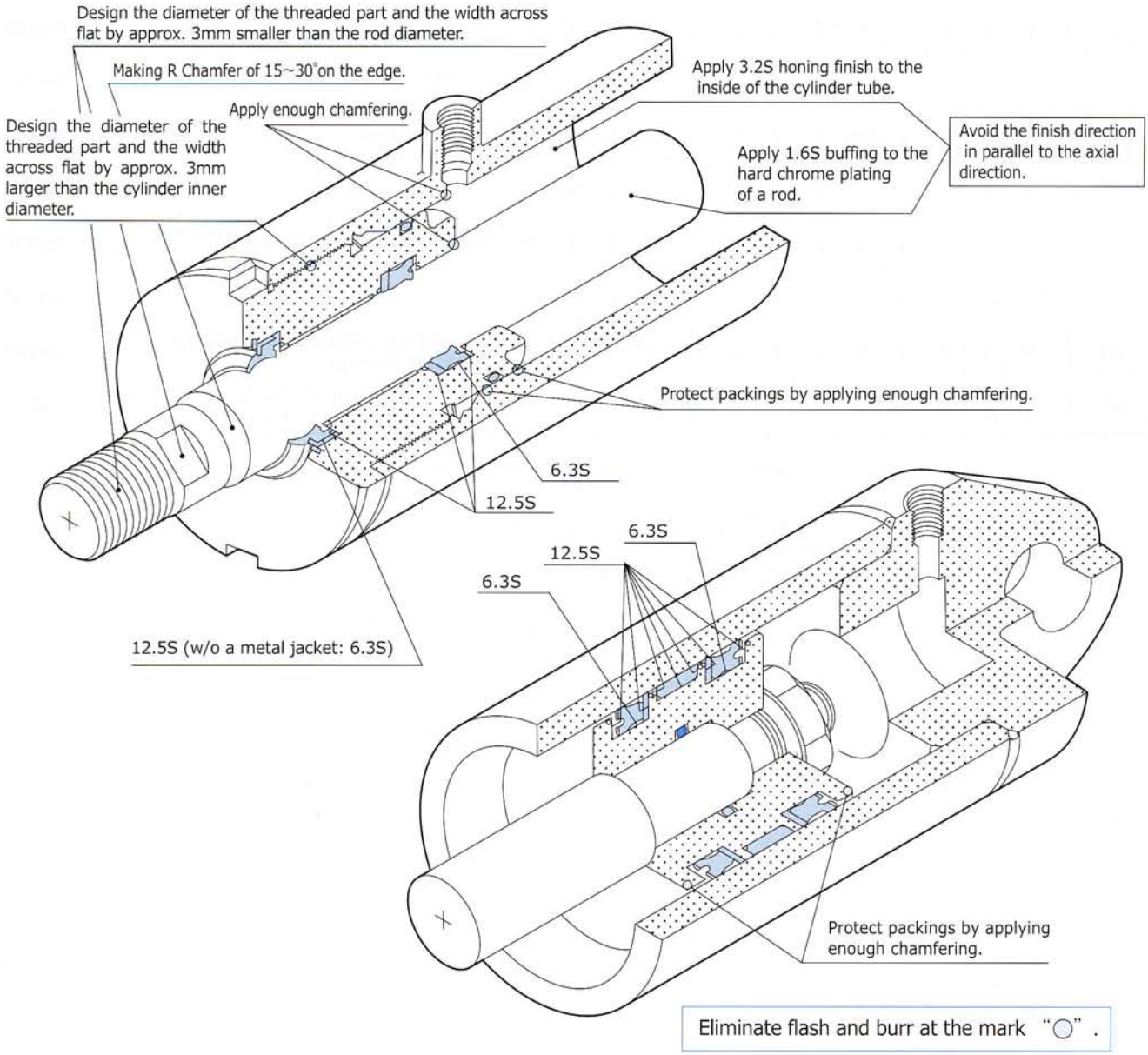
E: Excellent
C: Applicable subject to technical consultation
NR: Not recommended
F: Certain products can be applicable
NT: No data available

Points to be checked when designing and processing seal systems

Among all the component parts of a cylinder, packings are made of the most soft and fragile material. Packing is one element that has a big influence on performance and durability of a cylinder. Appropriate designing, processing and assembling of the installing position will improve the performance and the durability of a cylinder and avoid unexpected complaints from your customers.

Followings are the basic conditions when designing and processing cylinders, but they often been overlooked and led to fatal errors.
The chart on the right shows defects and problems.





Eliminate flash and burr at the mark "○".

Damage due to extrusion

When the clearance of extrusion is too large and not balanced with the pressure applied, the heel of the packings can be bitten into the clearance and be damaged. Use back-up rings together with packings or adjust the clearance (See The Limiting Curve of Extrusion of Seals).
Chamfer the edge of the groove, and minimize eccentricity of pistons and rods. As the clearance tends to large when wear rings for the bearing are adopted, refer to The Limiting Curve of Extrusion of Seals and determine appropriate clearance.

Appearance of Packings

- The heel part of the packings is partly or thoroughly missing (See Fig. A).
- In the early stage, the bottom part of the packings tends to have a circumferential trace of extrusion.

Fig. A Damage due to extrusion

Causes

- Clearance of extrusion (C/2) is too large (See Fig. B).
- Excessive R chamfering on the groove edge.

Measures

- Adjust the clearance of extrusion to the appropriate distance (See Graph, The Limiting Curve of Extrusion of Seals).
- Use back-up rings together with packings (See Fig. C).

Fig. B Clearance of extrusion and chamfering on the edge

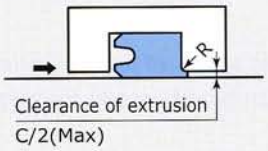
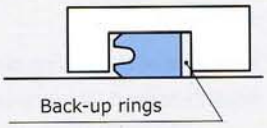
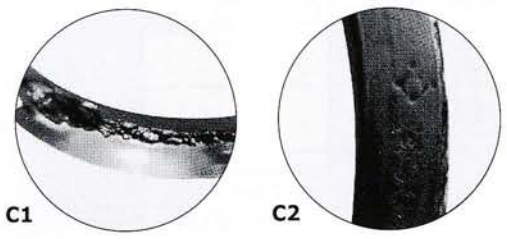


Fig. C Combination with back-up rings

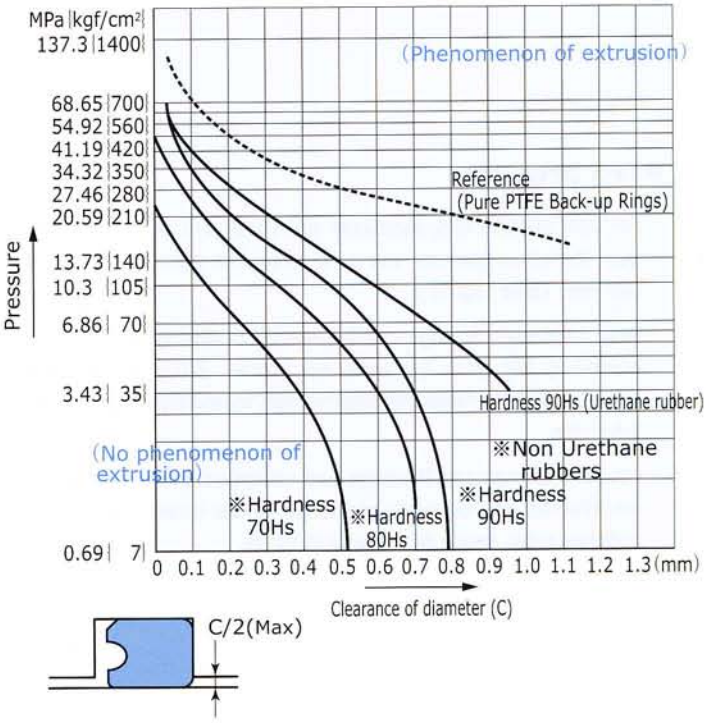


Highlights

- Chamfering on the edge of the groove should be appropriate. Eccentricity of pistons and rods should not be excessive.
- Use back-up rings when wear rings are used for the bearing.
- For frequent operating or high temperature applications, use back-up rings even though the application is under the regular pressure and clearance.
- Control impulsive pressure by PG rings.



The Limiting Curve of Extrusion of Seals



Handling precautions

Installing precautions

Keep the following precautions to eliminate the damage or deterioration of packings during installation process.

- Housing parts must be flushed to secure cleanliness.
- Do not use fuel oil, such as gasoline and kerosene, or solvent for flushing. Wipe off or dry up these liquid completely prior to installation to avoid making contact to packings.
- In coating on the rod cover part, mask the dust seals (especially the exposed lip part) so that the wet coating does not contact the dust seals.
- Applying operating fluid (lubricating oil for the machinery) or grease (applicable type, referring to page 10) to a packing and a housing for an easy installation work.
- Use a protective cover on the rod, threaded part and the width across flat to avoid contacting delicate lip of packings. (See Fig. ① and ②)
- Protect packings by making pit around the port or by making R chamfer on the edge of port and pit. (See Fig. ③)
- Tools like spatulas should be chamfered to be free from the sharp edge.
- Make sure of the sealing direction and install packings correctly.
  Note: Direction of pressure can be referred to the page of Dimention table.
- Avoid excessive stretching or deformation of packings.
- When disassembling or repairing the equipment, packings must be replaced to new ones.

Fig.①

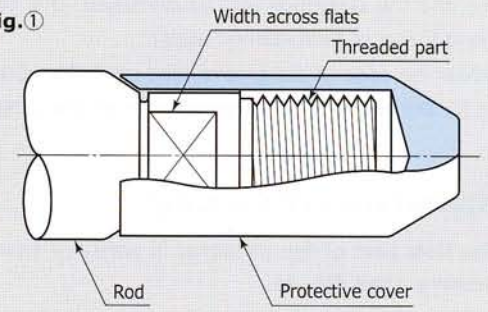


Fig.②

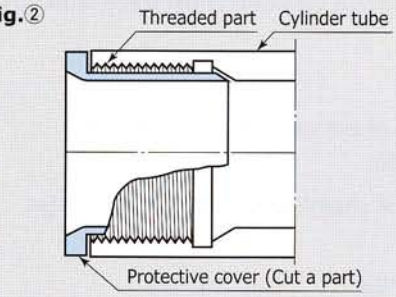
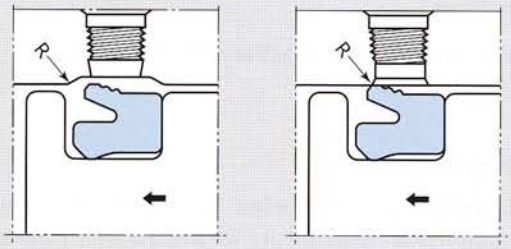


Fig.③



PTFE products

- For tight installations, especially when they are needed to pass over the other grooves, use a jig to protect packings from the damage. (See Fig. ④)
- Seal rings and PG-rings can be easily installed when they are heated by hot oil or hot water (at approx. 80℃) and become less stiff. Safety measures against high temperature liquids are advisable.
- When seal rings and PG-rings had excessive extension during installation and became too large to be inserted into the cylinder tube, use a jig to reform them. (See Fig. ⑤)

Fig.④

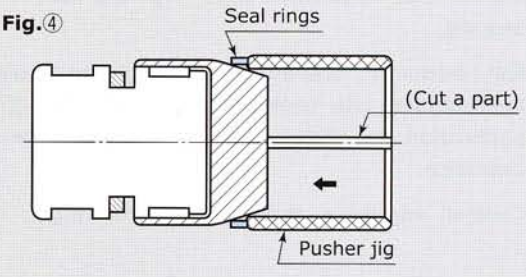
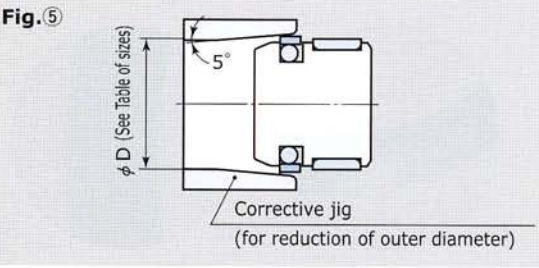


Fig.⑤



How to install

The products in this catalogue are available for the one piece groove if not otherwise specified.
But in certain locations of the groove or the structures of the equipment, the installation can be difficult.
In these cases, use the devided grooves.

1. Installing packings

1-1: U-Packings, etc.

- On a piston, hook one side on the groove and push the packing by extending to the opposite side.
  (See Fig. ⑥)
- Deform a rod packing to ellipse shape and slide its one side into the groove. Then insert the whole part from the opposite side by pushing the packing with your finger.
  Use a jig to install Small packing into a groove.
  (See Fig.⑦ and ⑧)

Fig.⑥

1-2: ST, STK-Seals

- Insert a back ring(rubber O-ring/Square ring) first, then hook one side of the seal ring on the groove and push the opposite side from the taper side.
  (See Fig.⑨)

Fig.⑦

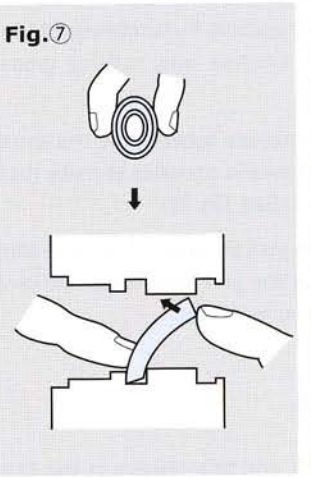
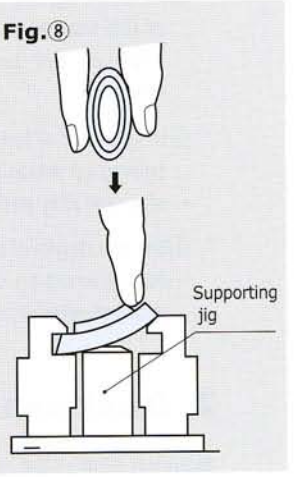


Fig.⑧



1-3: PG-Rings

- For a piston, hook one side of a ring and push the opposite side into the groove.
- For a rod, deform a ring into the shape in Fig. ⑩, insert one side and push the whole part by holding the ring with your finger.
  (See Fig.⑩)

1-4: SMJ-Seals

- Insert a back ring (O-ring made of rubber) first, then deform the seal ring into the shape in Fig. ⑩, insert one side and push the whole part by holding the ring with your finger. In this time, note that a seal ring has the correct direction to be inserted. Besides, minimize deformation of the seal ring during installation.
  (See Fig. ⑩)

Fig.⑨

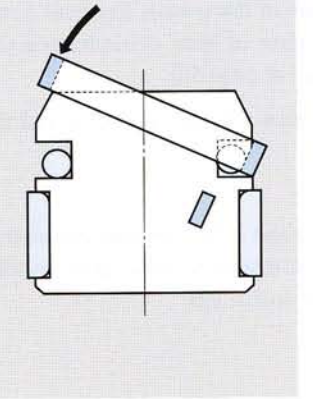
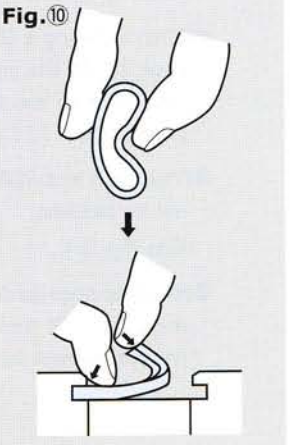


Fig.⑩



Handling precautions

1-5: Rotating joint

- When installing a STK(STR)-Seal, the procedures would be as follows:

  ①Install a back ring (square ring made of rubber) in only the seal groove located at the bottom.

  ②Move a seal ring downward through other seal grooves and port grooves. (See Fig. ⑪)

  ③When installing a seal ring in the seal groove, hook one side of the seal ring in the groove and push the opposite side quickly from R chamfering or the tapered side. (See Fig. ⑫)

  ④When installing seal rings to the second and subsequent grooves from the bottom, repeat the procedure ① to ③ for each.

- Furthermore, note the following points.

  ①When installing seal rings, pre-installation of back rings in each groove makes movement of seal rings difficult.

  ②When designing the structure, consider the smooth installing of the seal rings by applying R chamfering (R2 to 3) on the edge of the port grooves and making groove interval narrower.

  ③In the case of long intervals between the end and the groove, setting up waste grooves is advisable to make the installation of a seal ring easier. (See Fig.⑬)

  ④Set the depth of the port grooves in the same plane with the seal grooves so that the port grooves can be used as waste grooves when moving seal rings.

Fig.⑪

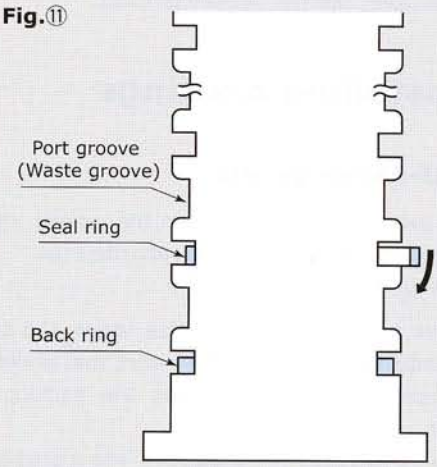


Fig.⑫

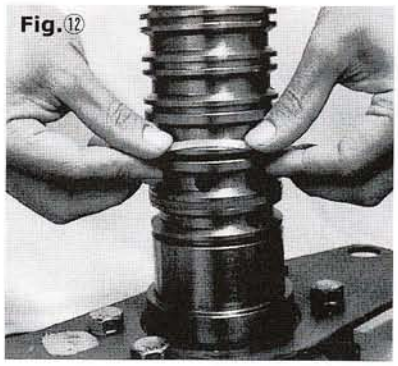
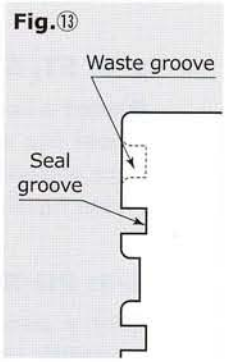


Fig.⑬



2. Dust seals

- Install SDR, SER, SFR and SCK-Wipers in the same way as installing the rod packings.
  (See Fig. ⑦ and ⑧at page 17.)

- When installing a SCK-Wiper, apply enough grease (specified at page 10) to the inside of the groove. Consider a rust control treatment on the surface of inner circumference of pressure plate surface (ϕC size at page 58).

- Press SCB and SDB-Wipers by using a jig so that they would not be inclined.
  (See Fig. ⑭)

- Retaining rings for SCB and SDB-Wipers are available. Retaining rings for SCB and SDB-Wipers allow easy installation and removal without using special jigs.

Fig.⑭

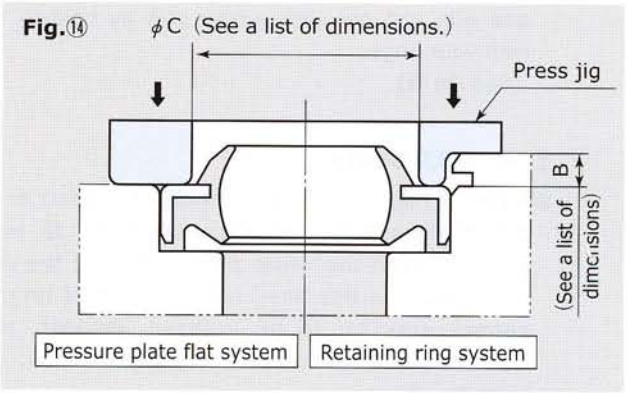


Fig.⑮

Fig.⑯

3. Installing bearings

- Install a S-LEEVE® prior to installing a packing or a wiper.
- When installing a S-LEEVE® of ϕ45 or over on a rod, deform it with your finger and insert it from the wiper side. (See Fig. ⑰)
- When installing a S-LEEVE® of ϕ40 or smaller on a rod, insert it from the pressure side by using an installing jig. (See Fig. ⑱)
- When installing S-LEEVE® and Wear rings on a piston, spread them as they have a cut in one part. (See Fig. ⑲)
- Install a PWL-Bearing after all other packings are mounted on.
- Minimize deformation during the installing process.

Fig.⑰

Fig.⑱

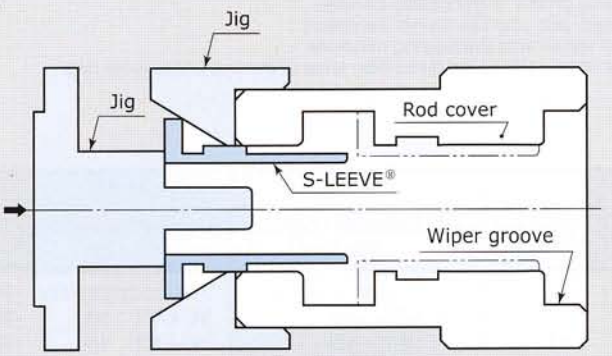
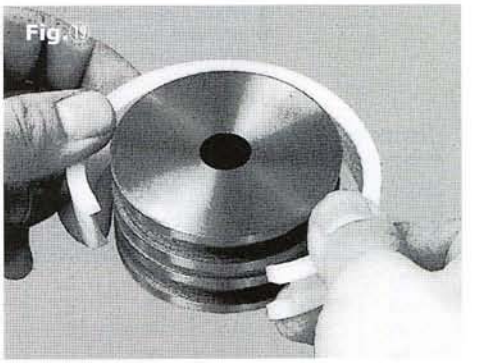


Fig.⑲



4. Installing cushion seals

- When installing a KCS-Cushion seal, press one end of the cut part to axis direction, slide it into the groove and insert the whole part quickly along the circumference. (See Fig. ⑳) Minimize deformation during the installing process.
- When installing a PCS-Cushion seal, use a jig so that it would not be inclined. (See Fig. ㉒)

Fig.⑳

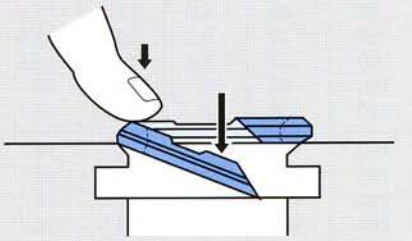


Fig.㉒

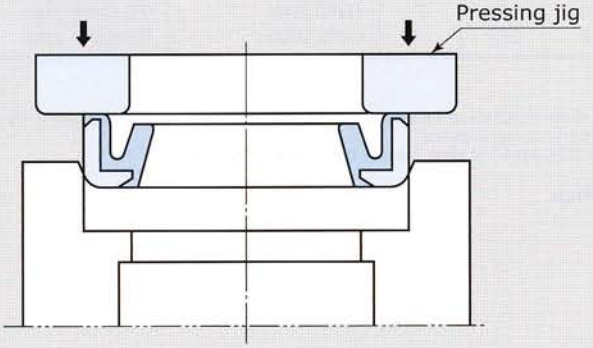
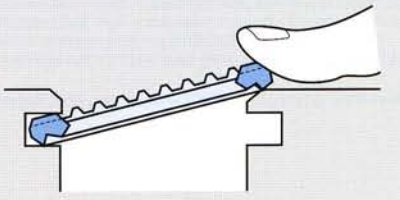


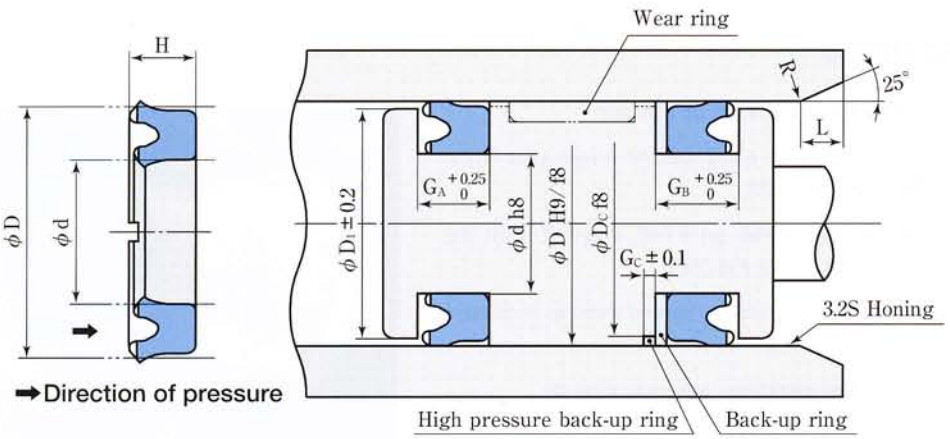
Fig.㉑



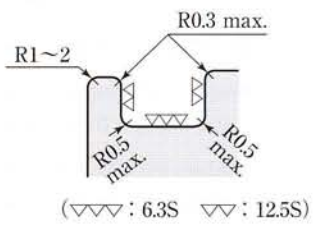
GPY-Packings

Hydraulic packings for rods
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one piece groove is technically adverse.
● When a high pressure back-up ring is not used, φDc and Gc are not necessary.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of GPY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.		
D	d	H	G_A	G_B	G_C	D_1	D_C	L	Standard material (RN 919)	Standard back-up ring (PT 114)	High pressure back-up ring (PA 101)
32	22	6.2	7	9	2.5	31	28	4	*GPY-0032001N919*	*TBC-0022008T114*	**PE**-Part No. of packing
40	30	6.2	7	9	2.5	39	36	4	**GPY- 40**	**TC-GPY- 40**	**PE-GPY- 40**
45	35	6.2	7	9	2.5	44	41	4	**GPY- 45**	**TC-GPY- 45**	**PE-GPY- 45**
50	40	6.2	7	9	2.5	49	46	4	**GPY- 50**	**TC-GPY- 50**	**PE-GPY- 50**
55	45	6.2	7	9	2.5	54	51	4	**GPY- 55**	**TC-GPY- 55**	**PE-GPY- 55**
60	50	6.2	7	9	2.5	59	56	4	**GPY- 60**	**TC-GPY- 60**	**PE-GPY- 60**
63	53	6.2	7	9	2.5	62	59	4	**GPY- 63**	**TC-GPY- 63**	**PE-GPY- 63**
65	52	7.7	8.5	11	3	63.5	59	5	**GPY- 65**	**TC-GPY- 65**	**PE-GPY- 65**
70	57	7.7	8.5	11	3	68.5	64	5	**GPY- 70**	**TC-GPY- 70**	**PE-GPY- 70**
75	62	7.7	8.5	11	3	73.5	69	5	**GPY- 75**	**TC-GPY- 75**	**PE-GPY- 75**
80	65	9.2	10	12.5	3	78.5	74	5	**GPY- 80**	**TC-GPY- 80**	**PE-GPY- 80**
85	70	9.2	10	12.5	3	83.5	79	5	**GPY- 85**	**TC-GPY- 85**	**PE-GPY- 85**
90	75	9.2	10	12.5	3	88.5	84	5	**GPY- 90**	**TC-GPY- 90**	**PE-GPY- 90**
100	80	12	13	16	3.5	98	93	6	**GPY-100**	**TC-GPY-100**	**PE-GPY-100**
110	90	12	13	16	3.5	108	103	6	**GPY-110**	**TC-GPY-110**	**PE-GPY-110**
120	100	12	13	16	3.5	118	113	6	**GPY-120**	**TC-GPY-120**	**PE-GPY-120**
125	105	12	13	16	3.5	123	118	6	**GPY-125**	**TC-GPY-125**	**PE-GPY-125**
130	110	12	13	16	3.5	128	123	6	**GPY-130**	**TC-GPY-130**	**PE-GPY-130**
140	120	12	13	16	3.5	138	133	6	**GPY-140**	**TC-GPY-140**	**PE-GPY-140**
150	125	16	17	20	4	148	142	7	**GPY-150**	**TC-GPY-150**	**PE-GPY-150**
160	135	16	17	20	4	158	152	7	**GPY-160**	**TC-GPY-160**	**PE-GPY-160**
180	155	16	17	20	4	178	172	7	**GPY-180**	**TC-GPY-180**	**PE-GPY-180**
200	175	16	17	20	4	198	192	7	**GPY-200**	**TC-GPY-200**	**PE-GPY-200**
250	225	16	17	20	4	248	242	7	**GPY-250**	**TC-GPY-250**	**PE-GPY-250**

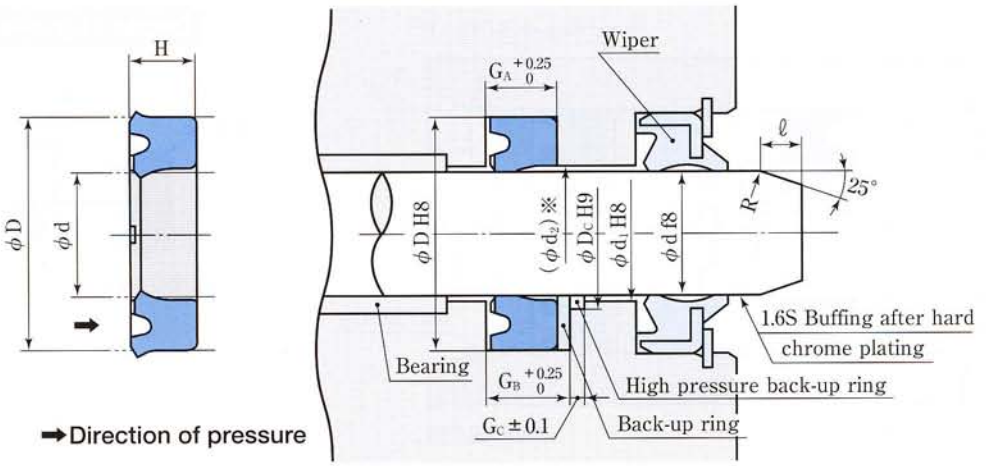
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of the existence of the tooling prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires to newly produce the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: **GNY-Packings, SW-Wear rings and PG-Rings**

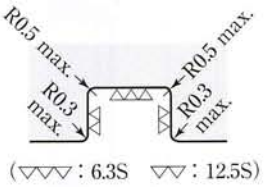
GNY-Packings

Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note:
- Packings should be installed in the direction specified on the above schematic.
- Consider adopting divided grooves if one piece groove is technically adverse.
- When a high pressure back-up ring is not used, φDc and Gc are not necessary.

※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of GNY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.		
d	D	H	G_A	G_B	G_C	D_C	d_1 (Reference)	ℓ	Standard material (RN 919)	Standard back-up ring (PT 114)	High pressure back-up ring (PA 101)
18	26	5	6	7.5	2	21	18.5	3.5	GNY- 18	TC-GNY- 18	PE-GNY- 18
20	28	5	6	7.5	2	23	20.5	3.5	GNY- 20	TC-GNY- 20	PE-GNY- 20
22	30	5	6	7.5	2	25	22.5	3.5	GNY- 22	TC-GNY- 22	PE-GNY- 22
25	33	5	6	7.5	2	28	25.5	3.5	GNY- 25	TC-GNY- 25	PE-GNY- 25
28	36	5	6	7.5	2	31	28.5	3.5	GNY- 28	TC-GNY- 28	PE-GNY- 28
30	40	6	7	9	2.5	34	30.5	4	GNY- 30	TC-GNY- 30	PE-GNY- 30
32	42	6	7	9	2.5	36	32.5	4	GNY- 32	TC-GNY- 32	PE-GNY- 32
35	45	6	7	9	2.5	39	35.5	4	GNY- 35	TC-GNY- 35	PE-GNY- 35
36	46	6	7	9	2.5	40	36.5	4	GNY- 36	TC-GNY- 36	PE-GNY- 36
40	50	6	7	9	2.5	44	40.5	4	GNY- 40	TC-GNY- 40	PE-GNY- 40
45	55	6	7	9	2.5	49	45.5	4	GNY- 45	TC-GNY- 45	PE-GNY- 45
50	63	8	9	11.5	3	56	50.5	5	GNY- 50	TC-GNY- 50	PE-GNY- 50
55	68	8	9	11.5	3	61	55.6	5	GNY- 55	TC-GNY- 55	PE-GNY- 55
56	69	8	9	11.5	3	62	56.6	5	GNY- 56	TC-GNY- 56	PE-GNY- 56
60	73	8	9	11.5	3	66	60.6	5	GNY- 60	TC-GNY- 60	PE-GNY- 60
63	76	8	9	11.5	3	69	63.6	5	GNY- 63	TC-GNY- 63	PE-GNY- 63
65	78	8	9	11.5	3	71	65.6	5	GNY- 65	TC-GNY- 65	PE-GNY- 65
70	85	9	10	12.5	3	76	70.6	5	GNY- 70	TC-GNY- 70	PE-GNY- 70
75	90	9	10	12.5	3	81	75.6	5	GNY- 75	TC-GNY- 75	PE-GNY- 75
80	95	9	10	12.5	3	86	80.6	5	GNY- 80	TC-GNY- 80	PE-GNY- 80
90	105	9	10	12.5	3	96	90.6	5	GNY- 90	TC-GNY- 90	PE-GNY- 90
100	120	12	13	16	3.5	107	100.6	6	GNY-100	TC-GNY-100	PE-GNY-100
110	130	12	13	16	3.5	117	110.6	6	GNY-110	TC-GNY-110	PE-GNY-110
125	145	12	13	16	3.5	132	125.7	6	GNY-125	TC-GNY-125	PE-GNY-125
140	160	12	13	16	3.5	147	140.7	6	GNY-140	TC-GNY-140	PE-GNY-140
160	180	12	13	16	3.5	167	160.7	6	GNY-160	TC-GNY-160	PE-GNY-160
180	200	12	13	16	3.5	187	180.7	6	GNY-180	TC-GNY-180	PE-GNY-180

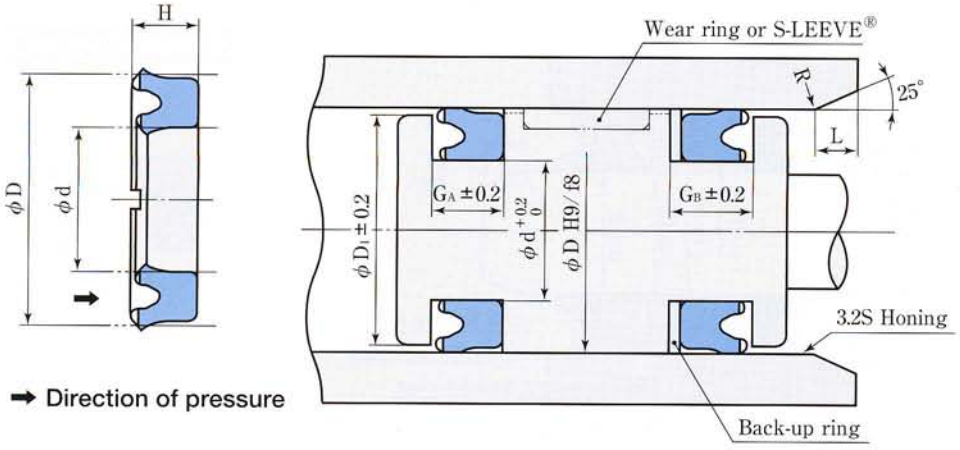
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: GPY-Packings, SDR-Wipers, SCB-Wipers and PG-Rings

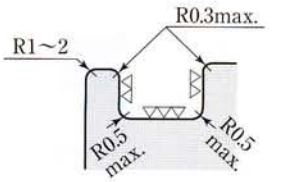
RGY-Packings

Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of RGY-Packings

(Unit : mm)

Packing & Groove dimensions							Part No.		Compatible SKY-Packings
D	d	H	G_A	G_B	D_1	L	Standard material (RN 923)	Standard back-up ring (PT 111)	
40	30	6.2	7	8.5	39	3.5	RGY- 40	TCS- 40× 30	SKY- 30
45	35	6.2	7	8.5	44	3.5	RGY- 45	TCS- 45× 35	SKY- 35
50	40	6.2	7	8.5	49	3.5	RGY- 50	TCS- 50× 40	SKY- 40
55	45	6.2	7	8.5	54	3.5	RGY- 55	TCS- 55× 45	SKY- 45
60	50	6.2	7	8.5	59	3.5	RGY- 60	TCS- 60× 50	SKY- 50
63	53	6.2	7	8.5	62	3.5	RGY- 63	TCS- 63× 53	SKY- 53
65	55	6.2	7	8.5	64	3.5	RGY- 65	TCS- 65× 55	SKY- 55
70	60	6.2	7	8.5	69	3.5	RGY- 70	TCS- 70× 60	SKY- 60
70	57	8.2	9	11	69	4	RGY- 70B	TCS- 70× 57	—
75	65	6.2	7	8.5	74	4	RGY- 75	TCS- 75× 65	SKY- 65
75	62	8.2	9	11	74	4	RGY- 75B	TCS- 75× 62	—
80	70	6.2	7	8.5	79	4	RGY- 80	TCS- 80× 70	SKY- 70
80	71	6.2	7	8.5	79	4	RGY- 80A	TCS- 80× 71	SKY- 71
80	65	9.2	10	12	79	4	RGY- 80B	TCS- 80× 65	—
90	80	6.2	7	8.5	89	4	RGY- 90	TCS- 90× 80	SKY- 80
90	75	9.2	10	12	88	4	RGY- 90B	TCS- 90× 75	—
100	85	9.2	10	12	98	4	RGY-100	TCS-100× 85	SKY- 85
110	95	9.2	10	12	108	4	RGY-110	TCS-110× 95	SKY- 95
120	106	8.7	9.5	11.5	118	4	RGY-120	TCS-120×106	SKY-106
125	112	8.7	9.5	11.5	123	4	RGY-125	TCS-125×112	SKY-112, 112A
140	125	9.2	10	12	138	4	RGY-140	TCS-140×125	SKY-125
150	136	8.7	9.5	11.5	148	4	RGY-150	TCS-150×136	SKY-136
160	145	9.2	10	12	158	4	RGY-160	TCS-160×145	SKY-145
180	165	9.2	10	12	178	4	RGY-180	TCS-180×165	SKY-165
200	180	12.2	13	15.5	198	5.5	RGY-200	TCS-200×180	SKY-180
224	204	12.2	13	15.5	222	5.5	RGY-224	TCS-224×204	SKY-204
250	230	12.2	13	15.5	248	5.5	RGY-250	TCS-250×230	SKY-230

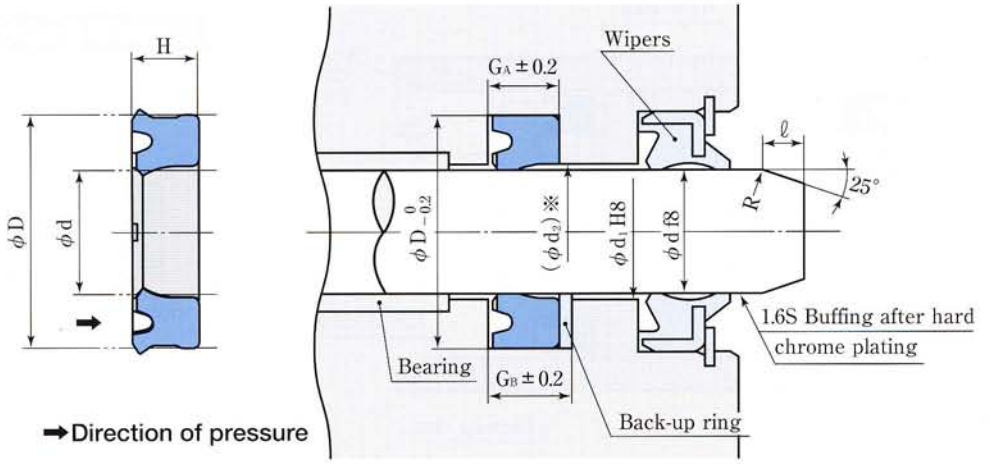
★Orders and inquiries are acceptable by part numbers.
★Packings with the part numbers in blue back ground are stock items.
★Packings with the part numbers including letter B are the improved strength types and incompatible with the groove of SKY-Packings.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: RNY-Packings, SW-Wear rings, S-LEEVE® and PG-Rings

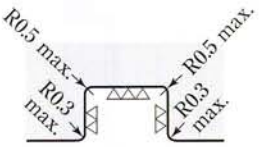
Hydraulic packings for rods
(Installable in one-piece groove)

RNY-Packings

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Use divided grooves for packings smaller than RNY-18 in size.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of RNY-Packings

(Unit : mm)

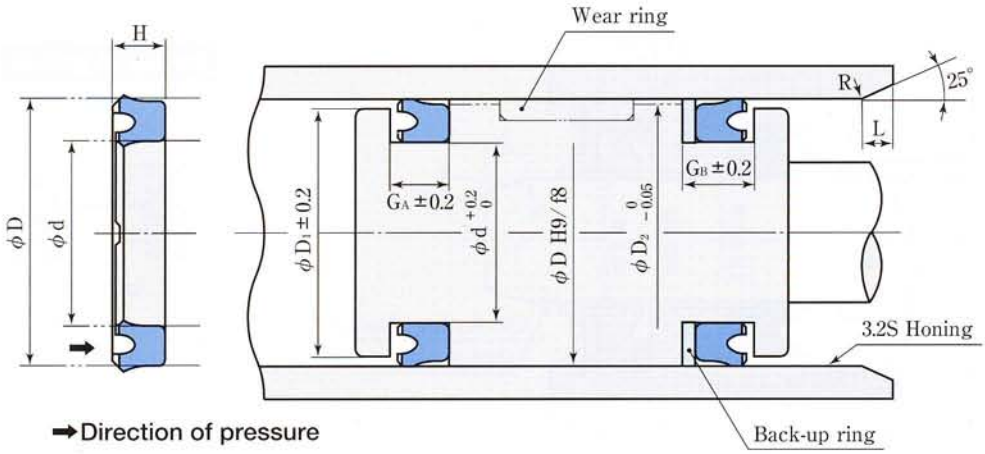
Packing & Groove dimensions							Part No.		Compatible SKY-Packings
d	D	H	G_A	G_B	d_1 (Reference)	ℓ	Standard material (RN 922)	Standard back-up ring (PT 111)	
16	24	5.1	5.7	6.7	16.4	2.5	RNY- 16	TCS- 24 × 16	SKY- 16
18	26	5.1	5.7	6.7	18.4	2.5	RNY- 18	TCS- 26 × 18	SKY- 18
20	28	5.1	5.7	6.7	20.4	2.5	RNY- 20	TCS- 28 × 20	SKY- 20
22	30	5.1	5.7	6.7	22.4	2.5	RNY- 22	TCS- 30 × 22	SKY- 22
22.4	30	5.1	5.7	6.7	22.8	2.5	RNY- 22.4	TCS- 30 × 22.4	SKY- 22.4
25	33	5.1	5.7	6.7	25.4	2.5	RNY- 25	TCS- 33 × 25	SKY- 25
28	35.5	5.1	5.7	6.7	28.4	2.5	RNY- 28	TCS- 35.5× 28	SKY- 28
30	40	6.2	7	8.5	30.5	3	RNY- 30	TCS- 40 × 30	SKY- 30
31.5	41.5	6.2	7	8.5	32	3	RNY- 31.5	TCS- 41.5× 31.5	SKY- 31.5
32	42	6.2	7	8.5	32.5	3	RNY- 32	TCS- 42 × 32	SKY- 32
35	45	6.2	7	8.5	35.5	3	RNY- 35	TCS- 45 × 35	SKY- 35
35.5	45	6.2	7	8.5	36	3	RNY- 35.5	TCS- 45 × 35.5	SKY- 35.5
36	46	6.2	7	8.5	36.5	3	RNY- 36	TCS- 46 × 36	SKY- 36
40	50	6.2	7	8.5	40.5	3	RNY- 40	TCS- 50 × 40	SKY- 40
45	55	6.2	7	8.5	45.5	3	RNY- 45	TCS- 55 × 45	SKY- 45
45	56	7.2	8	9.5	45.5	3	RNY- 45A	TCS- 56 × 45	SKY- 45A
50	60	6.2	7	8.5	50.5	3	RNY- 50	TCS- 60 × 50	SKY- 50
55	65	6.2	7	8.5	55.6	3	RNY- 55	TCS- 65 × 55	SKY- 55
56	66	6.2	7	8.5	56.6	3	RNY- 56	TCS- 66 × 56	SKY- 56
60	70	6.2	7	8.5	60.6	3	RNY- 60	TCS- 70 × 60	SKY- 60
60	71	7.2	8	9.5	60.6	3	RNY- 60A	TCS- 71 × 60	SKY- 60A
63	73	6.2	7	8.5	63.6	3	RNY- 63	TCS- 73 × 63	SKY- 63
65	75	6.2	7	8.5	65.6	3	RNY- 65	TCS- 75 × 65	SKY- 65
65	78	8.2	9	11	65.6	3.5	RNY- 65B	TCS- 78 × 65	——
70	80	6.2	7	8.5	70.6	3.5	RNY- 70	TCS- 80 × 70	SKY- 70
70	85	9.2	10	12	70.6	3.5	RNY- 70B	TCS- 85 × 70	——
71	80	6.2	7	8.5	71.6	3.5	RNY- 71	TCS- 80 × 71	SKY- 71
75	85	6.2	7	8.5	75.6	3.5	RNY- 75	TCS- 85 × 75	SKY- 75
75	90	9.2	10	12	75.6	3.5	RNY- 75B	TCS- 90 × 75	——
80	90	6.2	7	8.5	80.6	3.5	RNY- 80	TCS- 90 × 80	SKY- 80
80	95	9.2	10	12	80.6	4	RNY- 80B	TCS- 95 × 80	——
85	100	9.2	10	12	85.6	4	RNY- 85	TCS-100 × 85	SKY- 85
90	105	9.2	10	12	90.6	4	RNY- 90	TCS-105 × 90	SKY- 90
100	115	9.2	10	12	100.6	4	RNY-100	TCS-115 ×100	SKY-100
110	125	9.2	10	12	110.6	4	RNY-110	TCS-125 ×110	SKY-110
112	125	8.7	10	12	112.6	4	RNY-112	TCS-125 ×112	SKY-112, 112A
125	140	9.2	10	12	125.6	4	RNY-125	TCS-140 ×125	SKY-125
140	155	9.2	10	12	140.6	4	RNY-140	TCS-155 ×140	SKY-140
160	175	9.2	10	12	160.6	4	RNY-160	TCS-175 ×160	SKY-160
180	200	12.2	13	15.5	180.7	5.5	RNY-180	TCS-200 ×180	SKY-180

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers including letter B are the improved strength types and incompatible with SKY-Packings.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

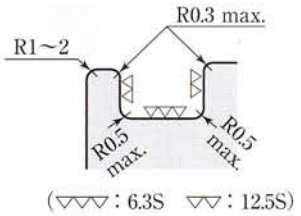
Related products: RGY-Packings, SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings, S-LEEVE® and PG-Rings

ⓉSGY-Packings Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.

Dimension table of ⓉSGY-Packings

(Unit : mm)

Packing & Groove dimensions								Part No.	
D	d	H	D_1	D_2	G_A	G_B	L	Standard material (RN 812)	Combination back-up ring (PT 111)
40	30	6.3	39	39.5	7	8.5	3.5	ⓉSGY- 40A	TCS- 40× 30
45	35	6.3	44	44.5	7	8.5	3.5	ⓉSGY- 45A	TCS- 45× 35
50	40	6.3	49	49.5	7	8.5	3.5	ⓉSGY- 50A	TCS- 50× 40
55	45	6.3	54	54.4	7	8.5	3.5	ⓉSGY- 55A	TCS- 55× 45
60	50	6.3	59	59.4	7	8.5	3.5	ⓉSGY- 60A	TCS- 60× 50
65	55	6.3	64	64.4	7	8.5	3.5	ⓉSGY- 65	TCS- 65× 55
70	60	6.3	69	69.4	7	8.5	3.5	ⓉSGY- 70	TCS- 70× 60
70	57	7.7	69	69.4	8.5	10.5	4.5	ⓉSGY- 70A	TCS- 70× 57
75	65	6.3	74	74.4	7	8.5	4.5	ⓉSGY- 75	TCS- 75× 65
75	62	7.7	74	74.4	8.5	10.5	4.5	ⓉSGY- 75A	TCS- 75× 62
80	71	6.3	79	79.4	7	8.5	4.5	ⓉSGY- 80	TCS- 80× 71
80	65	9.2	79	79.4	10	12	4.5	ⓉSGY- 80A	TCS- 80× 65
85	75	6.3	84	84.4	7	8.5	4.5	ⓉSGY- 85	TCS- 85× 75
85	70	9.2	84	84.4	10	12	4.5	ⓉSGY- 85A	TCS- 85× 70
90	80	6.3	89	89.4	7	8.5	4.5	ⓉSGY- 90	TCS- 90× 80
90	75	9.2	89	89.4	10	12	4.5	ⓉSGY- 90A	TCS- 90× 75
95	80	9.2	94	94.4	10	12	4.5	ⓉSGY- 95A	TCS- 95× 80
95	85	6.3	94	94.4	7	8.5	4.5	ⓉSGY- 95B	TCS- 95× 85
100	85	9.2	98	99.4	10	12	4.5	ⓉSGY-100	TCS-100× 85
105	90	9.2	103	104.4	10	12	4.5	ⓉSGY-105	TCS-105× 90
110	95	9.2	108	109.4	10	12	4.5	ⓉSGY-110	TCS-110× 95
115	100	9.2	113	114.4	10	12	4.5	ⓉSGY-115	TCS-115×100
120	106	8.7	118	119.4	9.5	11.5	4.5	ⓉSGY-120	TCS-120×106
125	112	9.2	123	124.3	10	12	4.5	ⓉSGY-125	TCS-125×112
130	115	8.7	128	129.3	9.5	11.5	4.5	ⓉSGY-130	TCS-130×115
140	125	9.2	138	139.3	10	12	4.5	ⓉSGY-140	TCS-140×125
150	136	8.7	148	149.3	9.5	11.5	4.5	ⓉSGY-150	TCS-150×136
160	145	9.2	158	159.3	10	12	4.5	ⓉSGY-160	TCS-160×145
180	165	9.2	178	179.3	10	12	4.5	ⓉSGY-180	TCS-180×165
200	180	12	198	199.2	13	15.5	5.5	ⓉSGY-200	TCS-200×180

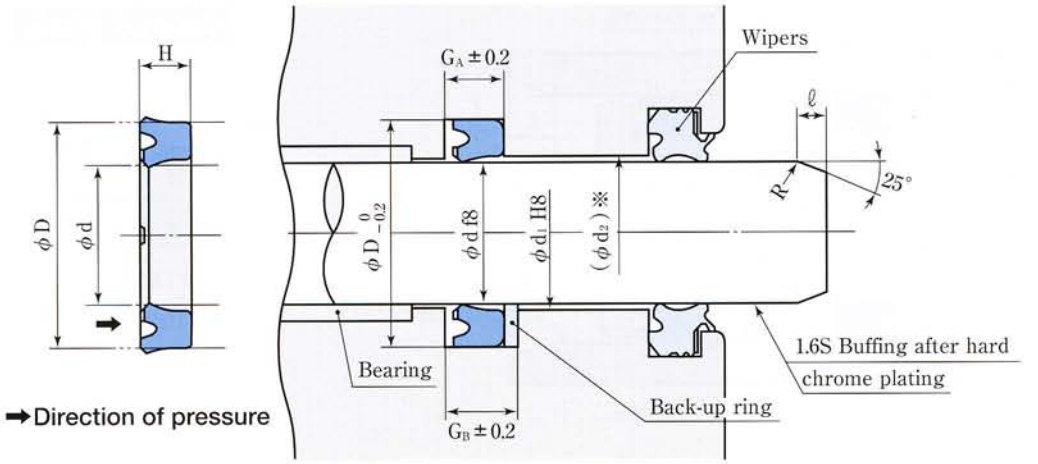
★Orders and inquiries are acceptable by part numbers.
★ⓉSGY-Packings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: ⓉSNY-Packings, SW-Wear rings and PG-Rings

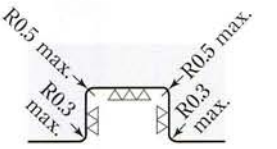
Hydraulic packings for rods
(Installable in one-piece groove)

ⓉSNY-Packings

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Use divided grooves for packings smaller than ⓉSNY-18 in size.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of ⓉSNY-Packings

(Unit : mm)

Packing & Groove dimensions							Part No.	
d	D	H	G_A	G_B	d_1 (Reference)	ℓ	Standard material (RN 809)	Combination back-up ring (PT 111)
14	22	5	5.7	6.7	14.4	2.5	ⓉSNY- 14	TCS- 22 × 14
18	26	5	5.7	6.7	18.4	2.5	ⓉSNY- 18	TCS- 26 × 18
20	28	5	5.7	6.7	20.4	2.5	ⓉSNY- 20	TCS- 28 × 20
25	33	5	5.7	6.7	25.4	2.5	ⓉSNY- 25	TCS- 33 × 25
28	35.5	5	5.7	6.7	28.4	2.5	ⓉSNY- 28	TCS- 35.5 × 28
30	40	6	7	8.5	30.5	3	ⓉSNY- 30	TCS- 40 × 30
31.5	41.5	6	7	8.5	32	3	ⓉSNY- 31.5	TCS- 41.5 × 31.5
35	45	6	7	8.5	35.5	3	ⓉSNY- 35	TCS- 45 × 35
35.5	45	6	7	8.5	36	3	ⓉSNY- 35.5	TCS- 45 × 35.5
40	50	6	7	8.5	40.5	3	ⓉSNY- 40	TCS- 50 × 40
45	55	6	7	8.5	45.5	3	ⓉSNY- 45	TCS- 55 × 45
45	56	7	8	9.5	45.5	3	ⓉSNY- 45A	TCS- 56 × 45
50	60	6	7	8.5	50.5	3	ⓉSNY- 50	TCS- 60 × 50
55	65	6	7	8.5	55.6	3	ⓉSNY- 55	TCS- 65 × 55
56	66	6	7	8.5	56.6	3	ⓉSNY- 56	TCS- 66 × 56
60	70	6	7	8.5	60.6	3	ⓉSNY- 60	TCS- 70 × 60
60	71	7	8	9.5	60.6	3	ⓉSNY- 60A	TCS- 71 × 60
63	73	6	7	8.5	63.6	3	ⓉSNY- 63	TCS- 73 × 63
65	75	6	7	8.5	65.6	3	ⓉSNY- 65	TCS- 75 × 65
70	85	9	10	12	70.6	4	ⓉSNY- 70A	TCS- 85 × 70
70	80	6	7	8.5	70.6	4	ⓉSNY- 70C	TCS- 80 × 70
75	85	6	7	8.5	75.6	4	ⓉSNY- 75	TCS- 85 × 75
75	90	9	10	12	75.6	4	ⓉSNY- 75A	TCS- 90 × 75
80	95	9	10	12	80.6	4	ⓉSNY- 80A	TCS- 95 × 80
80	90	6	7	8.5	80.6	4	ⓉSNY- 80C	TCS- 90 × 80
85	100	9	10	12	85.6	4	ⓉSNY- 85	TCS-100 × 85
90	105	9	10	12	90.6	4	ⓉSNY- 90	TCS-105 × 90
95	110	9	10	12	95.6	4	ⓉSNY- 95	TCS-110 × 95
100	115	9	10	12	100.6	4	ⓉSNY-100	TCS-115 ×100
105	120	9	10	12	105.6	4	ⓉSNY-105	TCS-120 ×105
110	125	9	10	12	110.6	4	ⓉSNY-110	TCS-125 ×110
115	130	8.5	9.5	11.5	115.6	4	ⓉSNY-115B	TCS-130 ×115
125	140	9	10	12	125.7	4	ⓉSNY-125	TCS-140 ×125
140	155	9	10	12	140.7	4	ⓉSNY-140	TCS-155 ×140
150	165	9	10	12	150.7	4	ⓉSNY-150	TCS-165 ×150
160	175	9	10	12	160.7	4	ⓉSNY-160	TCS-175 ×160
180	200	12	13	15.5	180.7	5.5	ⓉSNY-180	TCS-200 ×180

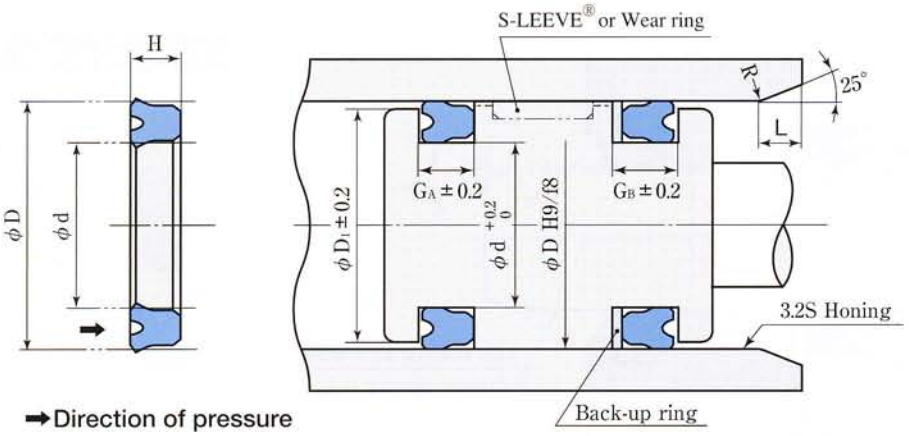
★Orders and inquiries are acceptable by part numbers.
★ⓉSNY-Packings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: ⓉSGY-Packings, SDR-Wipers, SCK-Wipers, SCB-Wipers and PG-Rings

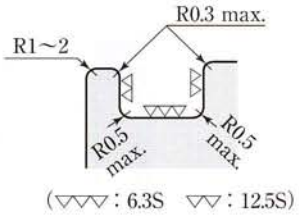
SKY-Packings

Hydraulic packings for pistons and rods
(Installable in one-piece groove)

Dimension table



Details of groove



Note:
- Packings should be installed in the direction specified on the above schematic.
- Consider adopting divided grooves if one piece groove is technically adverse.
- Use divided grooves for packings smaller than SKY-18 in size.
- φD H9/f8 would be modified according to the variation of the bearing structure. For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

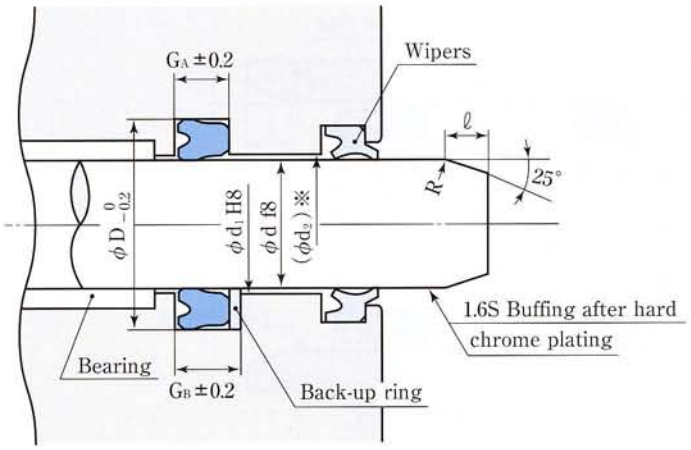
Dimension table of SKY-Packings

(Unit : mm)

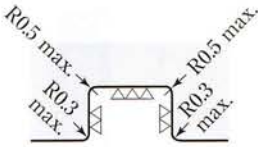
Packing & Groove dimensions									Part No.			
									SKY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
10	18	5	5.7	6.7	17	10.4	3	1.5	*SKY-0010001N906*			*TBC-0010007T111*
12	20	5	5.7	6.7	19	12.4	3	1.5	*SKY-0012001N906*			*TBC-0012003T111*
12.5	20	5	5.7	6.7	19	12.9	3	1.5	*SKY-12.5*			**TCS-20 ×12.5**
14	22	5	5.7	6.7	21	14.4	3	1.5	**SKY-14**	*SKY-14F*		**TCS-22 ×14**
16	24	5	5.7	6.7	23	16.4	3	1.5	**SKY-16**	**SKY-16F**		**TCS-24 ×16**
17	25	5	5.7	6.7	24	17.4	3	1.5	*SKY-0017001N906*			**TCS-25 ×17**
18	26	5	5.7	6.7	25	18.4	3	1.5	**SKY-18**	**SKY-18F**		**TCS-26 ×18**
20	28	5	5.7	6.7	27	20.4	3	1.5	**SKY-20**	**SKY-20F**	*SKY-20N*	**TCS-28 ×20**
20	30	6	7	8.5	29	20.4	3	1.5	*SKY-0020001N906*			*TBC-0020006T111*
22	30	5	5.7	6.7	29	22.4	3	1.5	**SKY-22**	**SKY-22F**		**TCS-30 ×22**
22.4	30	5	5.7	6.7	29	22.8	3	1.5	**SKY-22.4**	**SKY-22.4F**		**TCS-30 ×22.4**
23.5	31.5	5	5.7	6.7	30.5	23.9	3	1.5	**SKY-23.5**	**SKY-23.5F**		**TCS-31.5×23.5**
24	32	5	5.7	6.7	31	24.4	3	1.5	*SKY-0024002N906*			**TCS-32 ×24**
25	33	5	5.7	6.7	32	25.4	3	1.5	**SKY-25**	**SKY-25F**	*SKY-25N*	**TCS-33 ×25**
26	34	5	5.7	6.7	33	26.4	3	1.5	*SKY-0026001N906*			**TC**-Part No. of packings
27	35	5	5.7	6.7	34	27.4	3	1.5	*SKY-0027001N906*			**TCS-35 ×27**
28	35.5	5	5.7	6.7	34.5	28.4	3	1.5	**SKY-28**	**SKY-28F**	*SKY-28N*	**TCS-35.5×28**
28	36	5	5.7	6.7	35	28.4	3	1.5	**SKY-28A**			**TCS-36 ×28**
30	38	5	5.7	6.7	37	30.5	3.5	3	*SKY-0030001N906*			*TBC-0030005T111*
30	40	6	7	8.5	39	30.5	3.5	3	**SKY-30**	**SKY-30F**	*SKY-30N*	**TCS-40 ×30**
31.5	41.5	6	7	8.5	40.5	32.0	3.5	3	**SKY-31.5**	**SKY-31.5F**		**TCS-41.5×31.5**
32	42	6	7	8.5	41	32.5	3.5	3	**SKY-32**			**TCS-42 ×32**
35	45	6	7	8.5	44	35.5	3.5	3	**SKY-35**	**SKY-35F**	*SKY-35N*	**TCS-45 ×35**
35.5	45	6	7	8.5	44	36.0	3.5	3	**SKY-35.5**	**SKY-35.5F**	*SKY-35.5N*	**TCS-45 ×35.5**
35.5	45.5	6	7	8.5	44.5	36.0	3.5	3	**SKY-35.5A**			**TCS-45.5×35.5**
36	46	6	7	8.5	45	36.5	3.5	3	**SKY-36**	**SKY-36F**		**TCS-46 ×36**
38	48	6	7	8.5	47	38.5	3.5	3	*SKY-0038001N906*			*TBC-0038003T111*
40	50	6	7	8.5	49	40.5	3.5	3	**SKY-40**	**SKY-40F**	*SKY-40N*	**TCS-50 ×40**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the SKY-300F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings, S-LEEVE® and PG-Rings



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Consider adopting divided grooves if one piece groove is technically adverse.
● Use divided grooves for packings smaller than SKY-18 in size.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of SKY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.			
									SKY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
45	55	6	7	8.5	54	45.5	3.5	3	**SKY- 45**	**SKY- 45F**	*SKY-45N*	**TCS- 55× 45**
45	56	7	8	9.5	55	45.5	3.5	3	**SKY- 45A**	**SKY- 45AF**	*SKY-45AN*	**TCS- 56× 45**
50	60	6	7	8.5	59	50.5	3.5	3	**SKY- 50**	**SKY- 50F**	*SKY-50N*	**TCS- 60× 50**
53	63	6	7	8.5	62	53.6	3.5	3	**SKY- 53**	**SKY- 53F**		**TCS- 63× 53**
55	65	6	7	8.5	64	55.6	3.5	3	**SKY- 55**	**SKY- 55F**	*SKY-55N*	**TCS- 65× 55**
56	66	6	7	8.5	65	56.6	3.5	3	**SKY- 56**	**SKY- 56F**		**TCS- 66× 56**
58	68	6	7	8.5	67	58.6	3.5	3	*SKY-0058001N906*			*TBC-0058004T111*
60	70	6	7	8.5	69	60.6	3.5	3	**SKY- 60**	**SKY- 60F**	*SKY-60N*	**TCS- 70× 60**
60	71	7	8	9.5	70	60.6	3.5	3	**SKY- 60A**	**SKY- 60AF**		**TCS- 71× 60**
61	71	6	7	8.5	70	61.6	3.5	3	*SKY-0061001N906*			**TC**-Part No. of packings
63	73	6	7	8.5	72	63.6	3.5	3	**SKY- 63**	**SKY- 63F**	*SKY-63N*	**TCS- 73× 63**
65	75	6	7	8.5	74	65.6	3.5	3	**SKY- 65**	**SKY- 65F**	*SKY-65N*	**TCS- 75× 65**
67	77	6	7	8.5	76	67.6	3.5	3	**SKY- 67**	**SKY- 67F**		**TCS- 77× 67**
70	80	6	7	8.5	79	70.6	3.5	3	**SKY- 70**	**SKY- 70F**	*SKY-70N*	**TCS- 80× 70**
71	80	6	7	8.5	79	71.6	3.5	3	**SKY- 71**	**SKY- 71F**		**TCS- 80× 71**
75	85	6	7	8.5	84	75.6	3.5	3	**SKY- 75**	**SKY- 75F**	*SKY-75N*	**TCS- 85× 75**
80	90	6	7	8.5	89	80.6	3.5	3	**SKY- 80**	**SKY- 80F**	*SKY-80N*	**TCS- 90× 80**
85	95	6	7	8.5	94	85.6	3.5	3	*SKY-0085002N906*			*TBC-0085001T111*
85	100	9	10	12	98	85.6	4	4	**SKY- 85**	**SKY- 85F**	*SKY-85N*	**TCS-100× 85**
86	100	8.5	9.5	11.5	98	86.6	4	4	**SKY- 86**	*SKY- 86F*		**TCS-100× 86**
89	104	9	10	12	102	89.6	4	4	*SKY-0089001N906*			*TBC-0089001T111*
90	100	6	7	8.5	99	90.6	4	4	*SKY-0090001N906*			*TBC-0090013T111*
90	105	9	10	12	103	90.6	4	4	**SKY- 90**	**SKY- 90F**	*SKY-90N*	**TCS-105× 90**
95	110	9	10	12	108	95.6	4	4	**SKY- 95**	**SKY- 95F**		**TCS-110× 95**
96	111	9	10	12	109	96.6	4	4	*SKY-0096001N906*			*TBC-0096001T111*
98	112	8.5	9.5	11.5	110	98.6	4	4	**SKY- 98**	**SKY- 98F**		**TCS-112× 98**
100	115	9	10	12	113	100.6	4	4	**SKY-100**	**SKY-100F**	*SKY-100N*	**TCS-115×100**
105	120	9	10	12	118	105.6	4	4	*SKY-0105002N906*			*TBC-0105001T111*
106	120	8.5	9.5	11.5	118	106.6	4	4	**SKY-106**	**SKY-106F**	*SKY-106N*	**TCS-120×106**
110	125	9	10	12	123	110.6	4	4	*SKY-0110003N906*			*TBC-0110001T111*

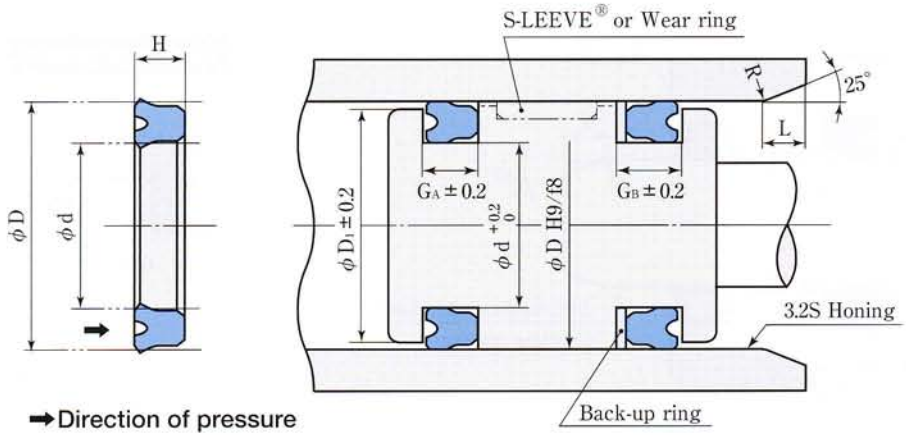
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the SKY-300F is RF907.

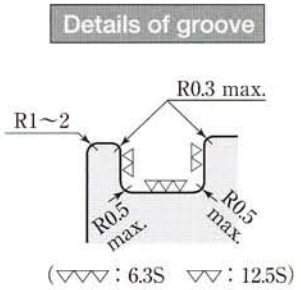
Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings, S-LEEVE® and PG-Rings

SKY-Packings

Hydraulic packings for pistons and rods
(Installable in one-piece groove)

Dimension table





Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

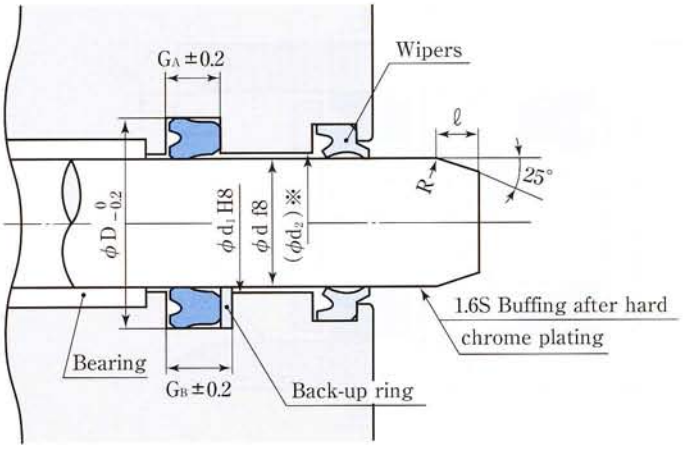
Dimension table of SKY-Packings

(Unit : mm)

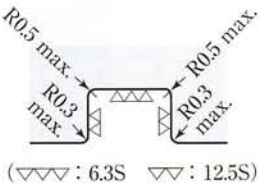
Packing & Groove dimensions									Part No.			
									SKY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
112	125	8.5	9.5	11.5	123	112.6	4	4	**SKY-112**	**SKY-112F**		**TCS-125×112**
112	125	9	10	12	123	112.6	4	4	**SKY-112A**	**SKY-112AF**		**TCS-125×112**
115	130	8.5	9.5	11.5	128	115.6	4	4	*SKY-0115002N906*		*SKY-0115001N903*	*TBC-0115002T111*
118	132	8.5	9.5	11.5	130	118.6	4	4	**SKY-118**	**SKY-118F**	*SKY-118N*	**TCS-132×118**
119	133	8.5	9.5	11.5	131	119.6	4	4	*SKY-0119001N906*			*TBC-0119001T111*
120	135	9	10	12	133	120.6	4	4	*SKY-0120002N906*			*TBC-0120001T111*
125	140	9	10	12	138	125.6	4	4	**SKY-125**	**SKY-125F**	*SKY-125N*	**TCS-140×125**
130	145	9	10	12	143	130.6	4	4	*SKY-0130001N906*			*TBC-0130001T111*
132	145	8.5	9.5	11.5	143	132.6	4	4	**SKY-132**	**SKY-132F**		**TCS-145×132**
136	150	8.5	9.5	11.5	148	136.6	4	4	**SKY-136**	**SKY-136F**		**TCS-150×136**
140	155	9	10	12	153	140.6	4	4	**SKY-140**	**SKY-140F**		**TCS-155×140***
145	160	9	10	12	158	145.6	4	4	**SKY-145**	**SKY-145F**	*SKY-145N*	**TCS-160×145**
150	165	9	10	12	163	150.6	4	4	**SKY-150**	**SKY-150F**		**TCS-165×150**
155	170	9	10	12	168	155.6	4	4	**SKY-155**	**SKY-155F**		**TCS-170×155**
160	175	9	10	12	173	160.6	4	4	**SKY-160**	**SKY-160F**		**TCS-175×160**
165	180	9	10	12	178	165.6	4	4	**SKY-165**	**SKY-165F**		**TCS-180×165**
170	185	9	10	12	183	170.6	4	4	*SKY-0170001N906*			*TBC-0170001T111*
175	190	9	10	12	188	175.6	4	4	**SKY-175**	**SKY-175F**		**TCS-190×175**
180	200	12	13	15.5	198	180.8	5	5	**SKY-180**	**SKY-180F**		**TCS-200×180**
185	205	12	13	15.5	203	185.8	5	5	*SKY-0185001N906*			*TBC-0185001T111*
190	210	12	13	15.5	208	190.8	5	5	*SKY-0190003N906*	*SKY-0190001F905*		*TBC-0190004T111*
195	215	12	13	15.5	213	195.8	5	5	*SKY-0195001N906*			*TBC-0195006T111*
200	220	12	13	15.5	218	200.8	5	5	**SKY-200**	**SKY-200F**		**TCS-220×200**
204	224	12	13	15.5	222	204.8	5	5	**SKY-204**	**SKY-204F**		**TCS-224×204**
210	230	12	13	15.5	228	210.8	5	5	*SKY-0210002N906*	*SKY-0210001F905*		*TBC-0210004T111*
215	235	12	13	15.5	233	215.8	5	5	*SKY-0215001N906*			**TC**-Part No. of packings
220	240	12	13	15.5	238	220.8	5	5	*SKY-0220001N906*			*TBC-0220003T111*
224	244	12	13	15.5	242	224.8	5	5	**SKY-224**	**SKY-224F**		**TCS-244×224**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling concerned at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the SKY-300F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings, S-LEEVE® and PG-Rings



Details of groove



Note: ● Consider adopting divided grooves if one piece groove is technically adverse.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of SKY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.			
									SKY-Packings			
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	Combination back-up ring (PT 111)
230	250	12	13	15.5	248	230.8	5	5	**SKY-230**	**SKY-230F**		**TCS-250×230**
235	255	12	13	15.5	253	235.8	5	5	*SKY-0235001N906*			*TBC-0235001T111*
237	257	12	13	15.5	255	237.8	5	5	*SKY-0237001N906*			**TC**-Part No. of packings
240	260	12	13	15.5	258	240.8	5	5	*SKY-0240003N906*	*SKY-0240001F905*		*TBC-0240001T111*
245	265	12	13	15.5	263	245.8	5	5	*SKY-0245001N906*			*TBC-0245004T111*
250	270	12	13	15.5	268	250.8	5	5	**SKY-250**	**SKY-250F**		**TCS-270×250**
260	280	14	15	18	278	260.8	5	5	*SKY-260*	*SKY-260F*		**TCS-280×260**
280	300	14	15	18	298	280.8	5	5	*SKY-280*	*SKY-280F*		**TCS-300×280**
290	310	14	15	18	308	290.8	5	5	*SKY-0290001N906*			*TBC-0290001T111*
295	315	14	15	18	313	295.8	5	5	*SKY-295*	*SKY-295F*		**TCS-315×295**
300	320	12	13	16	318	300.8	5	5	*SKY-0300003N906*			*TBC-0300003T111*
310	330	14	15	18	328	311	5	5	*SKY-0310001N906*			*TBC-0310002T111*
315	335	14	15	18	333	316	5	5	*SKY-315*			**TCS-335×315**
335	355	14	15	18	353	336	5	5	*SKY-335*			**TCS-355×335**
355	375	14	15	18	373	356	5	5	*SKY-355*			**TCS-375×355**
380	400	14	15	18	398	381	5	5	*SKY-380*	*SKY-380F*		**TCS-400×380**
400	420	14	15	18	418	401	5	5	*SKY-400*			**TCS-420×400**
430	450	14	15	18	448	431	5	5	*SKY-430*			**TCS-450×430**
450	470	14	15	18	468	451	5	5	*SKY-450*			**TCS-470×450**
480	500	14	15	18	498	481	5	5	*SKY-480*			**TCS-500×480**
500	525	17	18	21	522	501	5	5	*SKY-0500001N906*			*TBC-0500002T111*
540	560	14	15	18	558	541	5	5	*SKY-0540001N906*			*TBC-0540001T111*
550	570	13	14	17	568	551	5	5	*SKY-0550001N906*			*TBC-0550001T111*
610	630	14	15	18	628	611	5	5	*SKY-0610001N906*			*TBC-0610001T111*
630	655	17	18	21	652	631	5	5	*SKY-0630001N906*			*TBC-0630001T111*
660	690	18	19	22	687	661	5	5	*SKY-0660001N906*			**TC**-Part No. of packings
770	800	18	19	22	797	771	5	5	*SKY-0770001N906*			**TC**-Part No. of packings

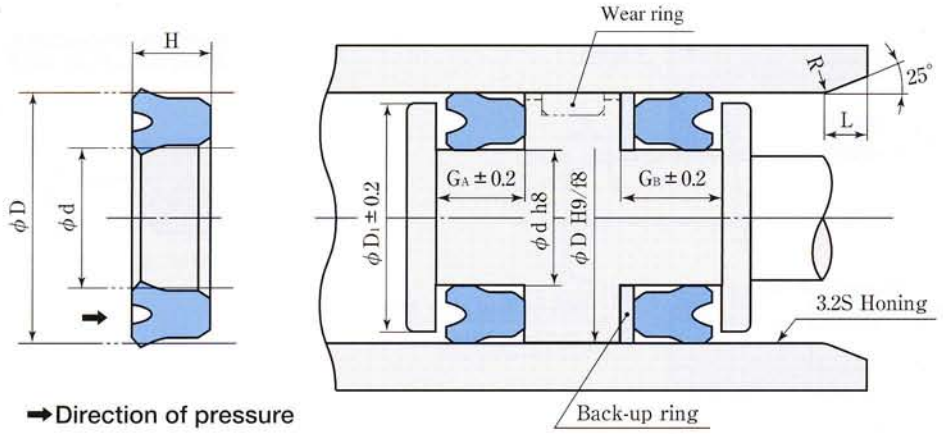
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the SKY-300F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings, S-LEEVE® and PG-Rings

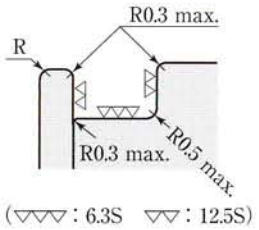
KY-Packings

Hydraulic packings for pistons and rods
(For divided grooves)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note:
- Packings should be installed in the direction specified on the above schematic.
- Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. For these cases, specify back-up rings with bias cut (TC-KY-○○).
  Besides, one piece groove can be technically adverse for some groove locations.
- φD H9/f8 would be modified according to the variation of the bearing structure.
  For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

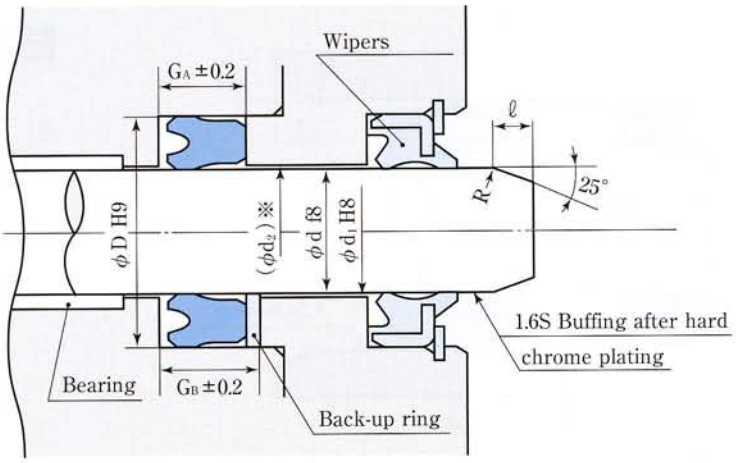
Dimension table of KY-Packings

(Unit : mm)

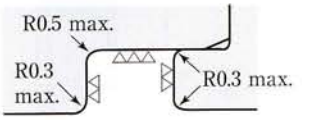
Packing & Groove dimensions									Part No.			
									KY-Packings			
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	Combination back-up ring (PT 111)
6.3	16.3	7.5	8.5	10.5	15.3	6.7	3	3	**KY -6.3**	*KY-6.3F*		**TE-KY- 6.3**
7.1	17.1	7.5	8.5	10.5	16.1	7.5	3	3	**KY -7.1**			**TE-KY- 7.1**
8	18	7.5	8.5	10.5	17	8.4	3	3	**KY -8**			**TE-KY- 8**
9	19	7.5	8.5	10.5	18	9.4	3	3	**KY -9**			**TE-KY- 9**
10	20	7.5	8.5	10.5	19	10.4	3	3	**KY -10**	*KY-10F*		**TE-KY-10**
11.2	21.2	7.5	8.5	10.5	20.2	11.6	3	3	**KY -11.2**			**TE-KY-11.2**
12.5	22.5	7.5	8.5	10.5	21.5	12.9	3	3	**KY -12.5**	*KY-12.5F*		**TE-KY-12.5**
14	24	7.5	8.5	10.5	23	14.4	3	3	**KY -14**			**TE-KY-14**
15	25	6.5	7.5	9.5	24	15.4	3	3	*KKY-0015001N906*			**TE**-Part No. of packings
15	28	10	11	13.5	27	15.4	3	3	**KY -15**			**TE-KY-15**
16	26	7.5	8.5	10.5	25	16.4	3	3	**KY -16**	*KY-16F*		**TE-KY-16**
18	28	8	9	11	27	18.4	3	3	*KKY-0018001N906*			**TE**-Part No. of packings
18	31	10	11	13.5	30	18.4	3	3	**KY -18**			**TE-KY-18**
18.5	31.5	10	11	13.5	30.5	18.9	3	3	**KY -18.5**			**TE-KY-18.5**
20	33	10	11	13.5	32	20.4	3	3	**KY -20**	*KY-20F*		**TE-KY-20**
20	35	9.5	10.5	13	34	20.4	3	3	*KKY-0020003N906*			**TE**-Part No. of packings
22	35	8	9	11.5	34	22.4	3	3	*KKY-0022002N906*			**TE-KY-22**
22	35	10	11	13.5	34	22.4	3	3	**KY -22**			**TE-KY-22**
22.4	35.4	10	11	13.5	34.4	22.8	3	3	**KY -22.4**	*KY-22.4F*		**TE-KY-22.4**
25	35	8	9	11	34	25.4	3	3	*KKY-0025002N906*	*KKY-0025001F905*		**TE**-Part No. of packings
25	38	10	11	13.5	37	25.4	3	3	**KY -25**			**TE-KY-25**
27	40	10	11	13.5	39	27.4	3	3	**KY -27**			**TE-KY-27**
28	40	10	11	13.5	39	28.4	3	3	*KKY-0028001N906*			**TE**-Part No. of packings
28	41	10	11	13.5	40	28.4	3	3	**KY -28**	*KY-28F*		**TE-KY-28**
30	43	10	11	13.5	42	30.5	3	3	**KY -30**	*KY-30F*	*KY-30N*	**TE-KY-30**
30	45	10	11	14	44	30.5	3	3	*KKY-0030003N906*			*TBE-0030046T111*
31.5	44.5	10	11	13.5	43.5	32	3	3	**KY -31.5**	*KY-31.5F*		**TE-KY-31.5**
32	45	10	11	13.5	44	32.5	3	3	**KY -32**			**TE-KY-32**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings and PG-Rings



Details of groove



Note: ● Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. In these cases, specify back-up rings with bias cut (TC-KY-○○).
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension Table of KY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.			
									KY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
34	50	12	13	16	48	34.5	3.5	3.5	**KY -34**	*KY-34F*		**TE-KY-34**
35	50	10	11	14	48	35.5	3.5	3.5	*KKY-0035003N906*			**TE-KY-35**
35	50	12	13	16	48	35.5	3.5	3.5	**KY -35**		*KY-35N*	**TE-KY-35**
35	51	12	13	16	49	35.5	3.5	3.5	**KY -35A**			**TE-KY-35A**
35.5	51.5	12	13	16	49.5	36.0	3.5	3.5	**KY -35.5**	*KY-35.5F*		**TE-KY-35.5**
36	52	12	13	16	50	36.5	3.5	3.5	*KKY-0036001N906*			*TBE-0036002T111*
40	55	10	11	14	53	40.5	3.5	3.5	*KKY-0040006N906*			**TE**-Part No. of packings
40	56	12	13	16	54	40.5	3.5	3.5	**KY -40**	*KY-40F*		**TE-KY-40**
40	60	12	13	16	58	40.5	3.5	3.5	*KKY-0040003N906*			*TBE-0040004T111*
44	60	12	13	16	58	44.5	3.5	3.5	*KKY-0044002N906*	*KKY-0044001F905*		*TBE-0044003T111*
45	60	10	11	14	58	45.5	3.5	3.5	*KKY-0045001N906*			*TBE-0045001T111*
45	60	12	13	16	58	45.5	3.5	3.5	*KKY-0045003N906*			*TBE-0045007T111*
45	61	12	13	16	59	45.5	3.5	3.5	**KY -45**	*KY-45F*		**TE-KY-45**
47	63	12	13	16	61	47.5	3.5	3.5	**KY -47**			**TE-KY-47**
50	65	10	11	14	63	50.5	3.5	3.5	*KKY-0050005N906*			*TBE-0050010T111*
50	66	12	13	16	64	50.5	3.5	3.5	**KY -50**	*KY-50F*	*KY-50N*	**TE-KY-50**
50	70	12	13	16	68	50.5	3.5	3.5	*KKY-0050001N906*			*TBE-0050001T111*
53	69	12	13	16	67	53.6	3.5	3.5	**KY -53**			**TE-KY-53**
54	70	12	13	16	68	54.6	3.5	3.5	*KKY-0054001N906*			**TE**-Part No. of packings
55	71	12	13	16	69	55.6	3.5	3.5	**KY -55**	*KY-55F*		**TE-KY-55**
55	72	12	13	16	70	55.6	3.5	3.5	*KKY-0055005N906*			**TE**-Part No. of packings
55	75	12	13	16	73	55.6	3.5	3.5	*KKY-0055001N906*			*TBE-0055003T111*
55	80	15	16	19	78	55.6	4	4	*KKY-0055003N906*			**TE**-Part No. of packings
56	72	12	13	16	70	56.6	3.5	3.5	**KY -56**	*KY-56F*		**TE-KY-56**
60	76	12	13	16	74	60.6	3.5	3.5	**KY -60**	*KY-60F*		**TE-KY-60**
60	80	12	13	16	78	60.6	3.5	3.5	*KKY-0060002N906*			*TBE-0060008T111*
63	79	12	13	16	77	63.6	3.5	3.5	**KY -63**	*KY-63F*		**TE-KY-63**
64	80	12	13	16	78	64.6	3.5	3.5	**KY -64**	*KY-64F*		**TE-KY-64**
65	81	12	13	16	79	65.6	3.5	3.5	**KY -65**	*KY-65F*		**TE-KY-65**
67	87	15	16	19	85	67.6	4	4	**KY -67**	*KY-67F*	*KY-67N*	**TE-KY-67**

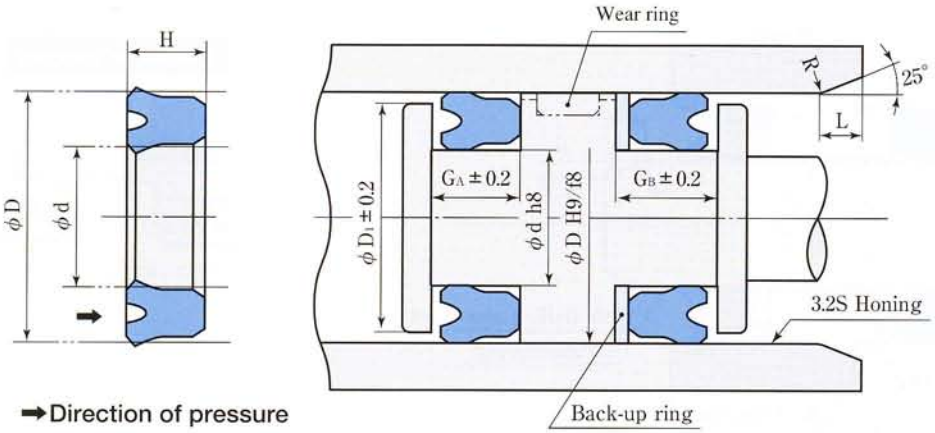
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings and PG-Rings

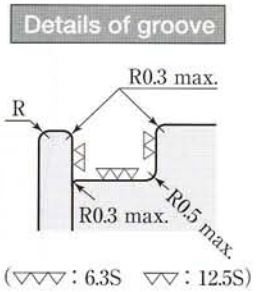
KY-Packings

Hydraulic packings for pistons and rods
(For divided grooves)

Dimension table



➡Direction of pressure



Note: ● Packings should be installed in the direction specified on the above schematic.
● Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. For these cases, specify back-up rings with bias cut (TC-KY-○○).
Besides, one piece groove can be technically adverse for some groove locations.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

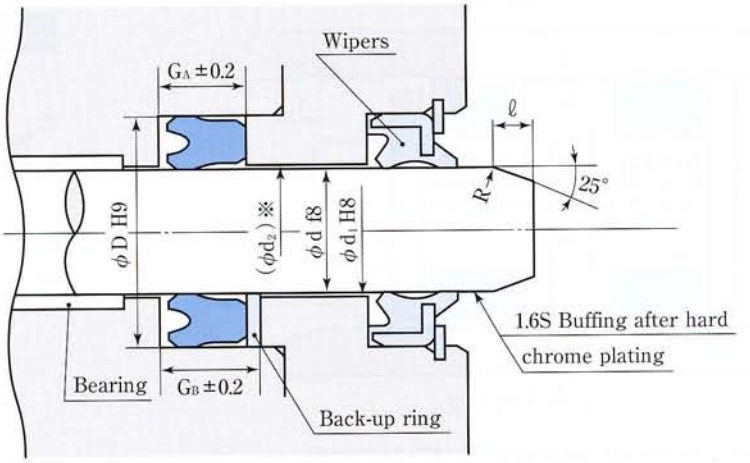
Dimension table of KY-Packings

(Unit : mm)

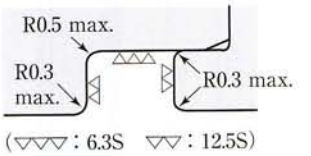
Packing & Groove dimensions									Part No.			
									KY-Packings			
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	Combination back-up ring (PT 111)
70	90	12	13	16	88	70.6	4	4	*KKY-0070001N906*			**TE-KY- 70**
70	90	15	16	19	88	70.6	4	4	**KY -70**	*KY-70F*		**TE-KY- 70**
71	91	15	16	19	89	71.6	4	4	**KY -71**	*KY-71F*		**TE-KY- 71**
75	95	12	13	16	93	75.6	4	4	*KKY-0075001N906*			**TE-KY- 75**
75	95	15	16	19	93	75.6	4	4	**KY -75**	*KY-75F*		**TE-KY- 75**
80	100	12	13	16	98	80.6	4	4	*KKY-0080002N906*			**TE-KY- 80**
80	100	15	16	19	98	80.6	4	4	**KY -80**	*KY-80F*		**TE-KY- 80**
85	105	12	13	16	103	85.6	4	4	*KKY-0085002N906*			**TE-KY- 85**
85	105	15	16	19	103	85.6	4	4	**KY -85**	*KY-85F*	*KY-85N*	**TE-KY- 85**
90	110	12	13	16	108	90.6	4	4	*KKY-0090001N906*			**TE-KY- 90**
90	110	15	16	19	108	90.6	4	4	**KY -90**	*KY-90F*		**TE-KY- 90**
92	112	15	16	19	110	92.6	4	4	**KY -92**	*KY-92F*		**TE-KY- 92**
95	115	15	16	19	113	95.6	4	4	**KY -95**			**TE-KY- 95**
100	120	15	16	19	118	100.6	4	4	**KY -100**	*KY-100F*	*KY-100N*	**TE-KY-100**
100	125	15	16	19	123	100.6	4	4	*KKY-0100005N906*			*TBE-0100004T111*
105	125	15	16	19	123	105.6	4	4	**KY -105**	*KY-105F*		**TE-KY-105**
106	126	15	16	19	124	106.6	4	4	**KY -106**			**TE-KY-106**
110	130	15	16	19	128	110.6	4	4	**KY -110**	*KY-110F*		**TE-KY-110**
112	132	15	16	19	130	112.6	4	4	**KY -112**	*KY-112F*		**TE-KY-112**
115	135	15	16	19	133	115.6	4	4	*KKY-0115001N906*			*TBE-0115003T111*
118	138	15	16	19	136	118.6	4	4	**KY -118**			**TE-KY-118**
120	140	15	16	19	138	120.6	4	4	**KY -120**	*KY-120F*		**TE-KY-120**
125	150	19	21	24	147	125.7	5	5	**KY -125**	*KY-125F*		**TE-KY-125**
130	150	15	16	19	147	130.7	5	5	*KKY-0130001N906*			*TBE-0130007T111*
130	155	19	21	24	152	130.7	5	5	**KY -130**	*KY-130F*		**TE-KY-130**
132	157	19	21	24	154	132.7	5	5	**KY -132**			**TE-KY-132**
135	155	16	17	20	152	135.7	5	5	*KKY-0135001N906*			**TE**-Part No. of packings
135	160	15.7	17	20	157	135.7	5	5	**KY -135A**	*KY-135AF*		**TE-KY-135**
135	160	19	21	24	157	135.7	5	5	**KY -135**	*KY-135F*		**TE-KY-135**
140	160	15	16	19	157	140.7	5	5	*KKY-0140001N906*			*TBE-0140001T111*
140	165	19	21	24	162	140.7	5	5	**KY -140**	*KY-140F*		**TE-KY-140**
145	170	19	21	24	167	145.7	5	5	**KY -145**			**TE-KY-145**
150	175	19	21	24	172	150.7	5	5	**KY -150**			**TE-KY-150**
155	180	15.7	17	20	177	155.7	5	5	**KY -155A**	*KY-155AF*		**TE-KY-155**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings and PG-Rings



Details of groove



Note: ● Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. In these cases, specify back-up rings with bias cut (TC-KY-○○).
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension Table of KY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.			
									KY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
155	180	19	21	24	177	155.7	5	5	**KY -155**	*KY -155F*		**TE-KY-155**
160	185	19	21	24	182	160.7	5	5	**KY -160**	*KY -160F*	*KY -160N*	**TE-KY-160**
165	190	19	21	24	187	165.7	5	5	**KY -165**			**TE-KY-165**
170	195	19	21	24	192	170.7	5	5	**KY -170**			**TE-KY-170**
175	200	15.7	17	20	197	175.7	5	5	**KY -175A**	*KY -175AF*		**TE-KY-175**
175	200	19	21	24	197	175.7	5	5	**KY -175**	*KY -175F*		**TE-KY-175**
180	205	19	21	24	202	180.7	5	5	**KY -180**	*KY -180F*		**TE-KY-180**
190	215	19	21	24	212	190.8	5	5	**KY -190**	*KY -190F*		**TE-KY-190**
195	220	19	21	24	217	195.8	5	5	*KKY-0195002N906*			*TBE-0195003T111*
199	224	15.7	17	20	221	199.8	5	5	**KY -199A**	*KY -199AF*		**TE-KY-199**
199	224	19	21	24	221	199.8	5	5	**KY -199**	*KY -199F*		**TE-KY-199**
200	225	19	21	24	222	200.8	5	5	**KY -200**	*KY -200F*		**TE-KY-200**
205	230	19	21	24	227	205.8	5	5	*KKY-0205001N906*			*TBE-0205002T111*
210	235	18	20	23	232	210.8	5	5	*KKY-0210002N906*			*TBE-0210005T111*
210	235	19	21	24	232	210.8	5	5	*KKY-0210001N906*			*TBE-0210005T111*
212	237	19	21	24	234	212.8	5	5	**KY -212**			**TE-KY-212**
215	240	19	21	24	237	215.8	5	5	*KKY-0215003N906*			*TBE-0215001T111*
220	250	18	20	23	247	220.8	5	5	*KKY-0220001N906*			*TBE-0220004T111*
224	249	19	21	24	246	224.8	5	5	**KY -224**			**TE-KY-224**
225	250	18	20	23	247	225.8	5	5	*KKY-0225001N906*			**TE-KY-225**
225	250	19	21	24	247	225.8	5	5	**KY -225**	*KY -225F*		**TE-KY-225**
230	255	19	21	24	252	230.8	5	5	*KKY-0230001N906*			*TBE-0230005T111*
235	260	19	21	24	257	235.8	5	5	*KKY-0235001N906*			*TBE-0235003T111*
236	261	19	21	24	258	236.8	5	5	**KY -236**	*KY -236F*		**TE-KY-236**
240	265	19	21	24	262	240.8	5	5	*KKY-0240003N906*			*TBE-0240001T111*
245	270	19	21	24	267	245.8	5	5	*KKY-0245001N906*			*TBE-0245002T111*
250	275	19	21	24	272	250.8	5	5	**KY -250**	*KY -250F*		**TE-KY-250**
250	280	22	24	27	277	250.8	6	6	*KKY-0250002N906*	*KKY-0250004F907*		*TBE-0250003T111*
255	280	19	21	24	277	255.8	6	6	*KKY-0255003N906*	*KKY-0255005F907*		*TBE-0255001T111*
260	290	22	24	27	287	260.8	6	6	*KKY-0260001N906*			*TBE-0260001T111*

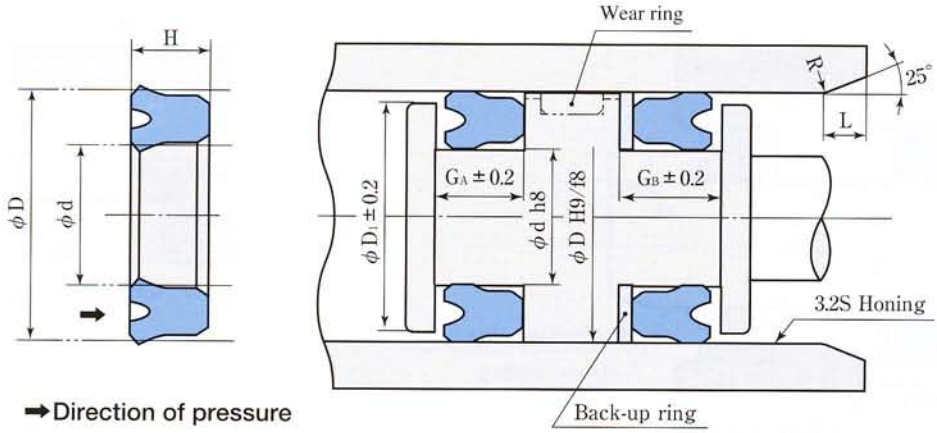
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR Wipers, SCK Wipers, SCB Wipers, SW-Wear rings and PG-Rings

KY-Packings

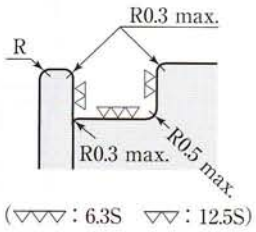
Hydraulic packings for pistons and rods
(For divided grooves)

Dimension table



➡Direction of pressure

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. For these cases, specify back-up rings with bias cut (TC-KY-○○).
Besides, one piece groove can be technically adverse for some groove locations.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications wear rings are installed together with wear rings, refer to the dimension table of the applicable wear ring.

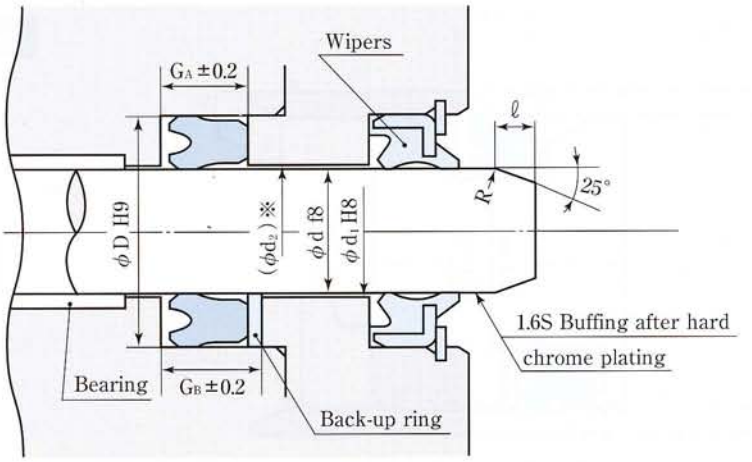
Dimension table of KY-Packings

(Unit : mm)

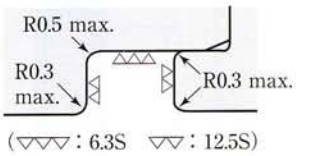
Packing & Groove dimensions									Part No.			
									KY-Packings			Combination back-up ring (PT 111)
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	
265	297	24	26	29	294	265.8	6	6	**KY -265**	*KY-265F*		**TE-KY-265**
270	300	18	20	23	297	270.8	6	6	*KKY-0270002N906*			**TE-KY-270**
270	300	22	24	27	297	270.8	6	6	*KKY-0270001N906*			**TE-KY-270**
270	300	24	26	29	297	270.8	6	6	**KY -270**	*KY-270F*		**TE-KY-270**
275	300	19	21	24	297	275.8	6	6	*KKY-0275001N906*			*TBE-0275002T111*
280	310	22	24	27	307	280.8	6	6	*KKY-0280001N906*			*TBE-0280001T111*
280	312	24	26	29	309	280.8	6	6	**KY -280**			**TE-KY-280**
283	315	24	26	29	312	283.8	6	6	*KKY-0283002N906*			*TBE-0283001T111*
285	315	22	24	27	312	285.8	6	6	*KKY-0285002N906*			*TBE-0285002T111*
290	320	18	20	23	317	290.8	6	6	*KKY-0290002N906*			*TBE-0290003T111*
290	320	22	24	27	317	290.8	6	6	*KKY-0290001N906*			*TBE-0290003T111*
300	332	24	26	29	329	300.8	6	6	**KY -300**			**TE-KY-300**
310	340	22	24	27	337	311	6	6	*KKY-0310001N906*			*TBE-0310002T111*
315	347	24	26	29	344	316	6	6	**KY -315**			**TE-KY-315**
323	355	24	26	29	352	324	6	6	*KKY-0323001N906*			*TBE-0323001T111*
330	360	22	24	27	357	331	6	6	*KKY-0330001N906*			*TBE-0330001T111*
335	367	24	26	29	364	336	6	6	**KY -335**			**TE-KY-335**
340	370	22	24	27	367	341	6	6	*KKY-0340002N906*			*TBE-0340002T111*
340	372	24	26	29	369	341	6	6	*KKY-0340001N906*			**TE**-Part No. of packings
348	380	24	26	29	377	349	6	6	*KKY-0348002N906*			*TBE-0348001T111*
355	387	24	26	29	384	356	6	6	**KY -355**	*KY-355F*		**TE-KY-355**
360	392	24	26	29	389	361	6	6	*KKY-0360001N906*			*TBE-0360003T111*
365	395	22	24	27	392	366	6	6	*KKY-0365001N906*			*TBE-0365001T111*
368	400	24	26	29	397	369	6	6	**KY -368**			**TE-KY-368**
375	407	24	26	29	404	376	6	6	**KY -375**	*KY-375F*		**TE-KY-375**
388	420	24	26	29	417	389	6	6	*KKY-0388001N906*			*TBE-0388001T111*
400	432	24	26	29	429	401	6	6	**KY -400**			**TE-KY-400**
415	450	25	27	30	447	416	6	6	*KKY-0415001N906*			*TBE-0415001T111*
420	455	25	27	30	452	421	6	6	*KKY-0420001N906*			**TE**-Part No. of packings

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR-Wipers, SCK-Wipers, SCB-Wipers, SW-Wear rings and PG-Rings



Details of groove



Note: ● Adopt divided grooves. However, note that D=140 for pistons and larger sizes, and d=80 for rods and larger sizes are installable in one-piece groove. In these cases, specify back-up rings with bias cut (TC-KY-○○).
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension Table of KY-Packings

(Unit : mm)

Packing & Groove dimensions									Part No.			
									KY-Packings			
d	D	H	G_A	G_B	D_1	d_1 (Reference)	L	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)(RF 907)	Low temperature-resistant material (RN 903)	Combination back-up ring (PT 111)
425	457	24	26	29	454	426	6	6	**KY -425**			**TE-KY-425**
450	482	24	26	29	479	451	6	6	**KY -450**			**TE-KY-450**
475	507	24	26	29	504	476	6	6	**KY -475**			**TE-KY-475**
480	515	25	27	30	512	481	6	6	*KKY-0480001N906*			*TBE-0480002T111*
500	532	24	26	29	529	501	6	6	**KY -500**			**TE-KY-500**
505	545	30	33	37	542	506	8	8	*KKY-0505001N906*			*TBE-0505002T111*
510	542	24	26	29	539	511	6	6	*KKY-0510001N906*			*TBE-0510001T111*
510	550	30	33	37	546	511	8	8	*KKY-0510002N906*			*TBE-0510002T111*
520	560	30	33	37	556	521	8	8	*KKY-0520001N906*			*TBE-0520001T111*
530	570	30	33	37	566	531	8	8	**KY -530**			**TE-KY-530**
560	600	30	33	37	596	561	8	8	**KY -560**			**TE-KY-560**
570	610	30	33	37	606	571	8	8	*KKY-0570001N906*			**TE**-Part No. of packings
580	620	30	33	37	616	581	8	8	*KKY-0580001N906*			**TE**-Part No. of packings
600	640	30	33	37	636	601	8	8	**KY -600**			**TE-KY-600**
630	670	30	33	37	666	631	8	8	**KY -630**			**TE-KY-630**
660	700	30	33	37	696		8	8	*KKY-0660001N906*			
690	730	30	33	37	726		8	8	*KKY-0690002N906*			
700	740	30	33	37	736		8	8	*KKY-0700001N906*			
720	760	30	33	37	756		8	8	*KKY-0720001N906*			
740	780	30	33	37	776		8	8	*KKY-0740001N906*			
780	820	30	33	37	816		8	8	*KKY-0780001N906*			
790	830	30	33	37	826		8	8	*KKY-0790001N906*			
830	870	30	33	37	866		8	8	*KKY-0830001N906*			
900	940	30	33	37	936		8	8	*KKY-0900001N906*			
960	1000	30	33	37	996		8	8	*KKY-0960001N906*			
960	1020	45	48	53	1014		12	12	*KKY-0960002N906*			
1020	1080	45	48	53	1074		12	12	*KKY-1020001N906*			
1090	1150	45	48	53	1144		12	12	*KKY-1090001N906*			
1210	1270	45	48	53	1264		12	12	*KKY-1210001N906*			
1340	1400	45	48	53	1394		12	12	*KKY-1340001N906*			

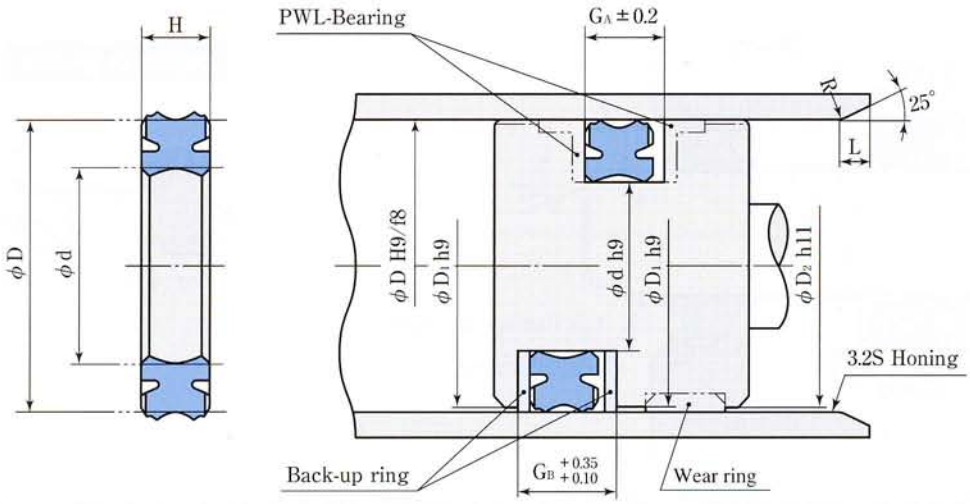
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of the existence of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.
★The heat resistant material for the products larger than the KY-250F is RF907.

Related products: SDR Wipers, SCK Wipers, SCB Wipers, SW-Wear rings and PG-Rings

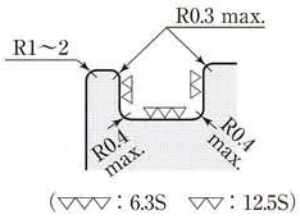
RGU-Packings

Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of RGU-Packings

(Unit : mm)

Packing & Groove dimensions								Part No.	
D	d	H	G_A	G_B	D_1	D_2	L	Standard material (RN 923)	Combination back-up ring (PT 111)
40	30	6.5	7.0	11.0	39.5	38.5	2.5	RGU- 40	TBC- 40×30×2
45	35	6.5	7.0	11.0	44.5	43.5	2.5	RGU- 45	TBC- 45×35×2
50	40	6.5	7.0	11.0	49.5	48.5	2.5	RGU- 50	TBC- 50×40×2
55	45	6.5	7.0	11.0	54.4	53.0	2.5	RGU- 55	TBC- 55×45×2
60	50	6.5	7.0	11.0	59.4	58.0	2.5	RGU- 60	TBC- 60×50×2
63	53	6.5	7.0	11.0	62.4	61.0	2.5	RGU- 63	TBC- 63×53×2
65	55	6.5	7.0	12.0	64.4	63.0	2.5	RGU- 65	TBC- 65×55×2.5
70	60	6.5	7.0	12.0	69.4	68.0	2.5	RGU- 70	TBC- 70×60×2.5
75	65	6.5	7.0	12.0	74.4	73.0	2.5	RGU- 75	TBC- 75×65×2.5
80	67	8.0	8.5	13.5	79.4	78.0	3.0	RGU- 80	TBC- 80×67×2.5
85	72	8.0	8.5	13.5	84.4	83.0	3.0	RGU- 85	TBC- 85×72×2.5
90	77	8.0	8.5	13.5	89.4	88.0	3.0	RGU- 90	TBC- 90×77×2.5
100	85	9.0	10.0	16.0	99.4	98.0	4.0	RGU-100	TBC-100×85×3

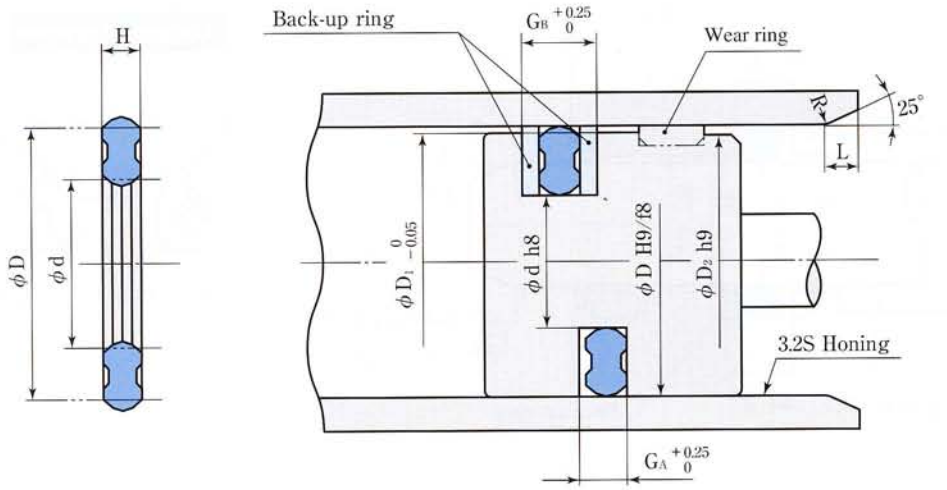
★Orders and inquiries are acceptable by part numbers.
★RGU-Packings and the back-up rings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SW-Wear rings and PWL-Bearings

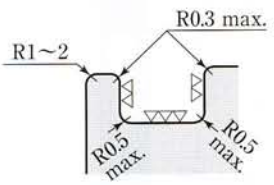
HSD-Packings

Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension Table of HSD-Packings

(Unit : mm)

Packing & Groove dimensions								Part No.	
D	d	H	G_A	G_B	D_1	D_2	L	Standard material (RN 906)	Combination back-up ring (PT 111)
20	14	1.9	2.4	4.4	19.5	19	1.5	HSD- 20	TCS- 20×14
25	17	2.6	3.2	5.2	24.5	24	2	HSD- 25	TCS- 25×17
30	22	2.6	3.2	5.2	29.5	29	2	HSD- 30	TCS- 30×22
32	24	2.6	3.2	5.2	31.5	30.5	2	HSD- 32	TCS- 32×24
35	27	2.6	3.2	5.2	34.5	33.5	2	HSD- 35	TCS- 35×27
40	32	2.6	3.2	5.2	39.5	38.5	2	HSD- 40	TCS- 40×32
40	30	3.4	4	7	39.5	38.5	2.5	HSD- 40A	TCS- 40×30
45	35	3.4	4	7	44.5	43.5	2.5	HSD- 45	TCS- 45×35
50	40	3.4	4	7	49.5	48.5	2.5	HSD- 50	TCS- 50×40
55	45	3.4	4	7	54.4	53	2.5	HSD- 55	TCS- 55×45
60	50	3.4	4	7	59.4	58	2.5	HSD- 60	TCS- 60×50
63	53	3.4	4	7	62.4	61	2.5	HSD- 63	TCS- 63×53
65	55	3.4	4	7	64.4	63	2.5	HSD- 65	TCS- 65×55
70	55	5.2	6	10	69.4	68	3	HSD- 70	TCS- 70×55
80	65	5.2	6	10	79.4	78	3	HSD- 80	TCS- 80×65
90	75	5.2	6	10	89.4	88	3	HSD- 90	TCS- 90×75
100	85	5.2	6	10	99.4	98	3	HSD-100	TCS-100×85

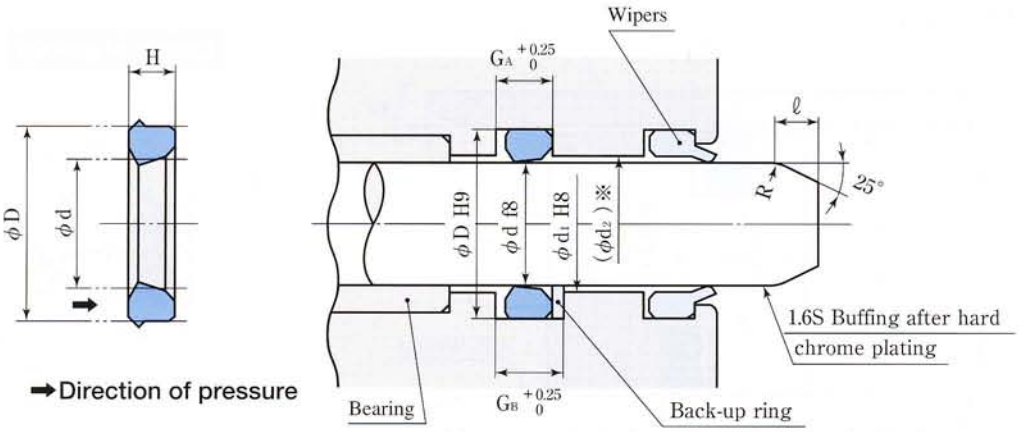
★Orders and inquiries are acceptable by part numbers.
★HSD-Packings and the back-up rings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SKY-Packings, SDR-Wipers, SW-Wear rings and SWA-Wear rings

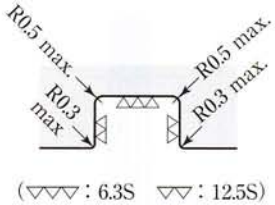
PENTA®-Seals

Hydraulic packings for rods
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one piece groove is technically adverse.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

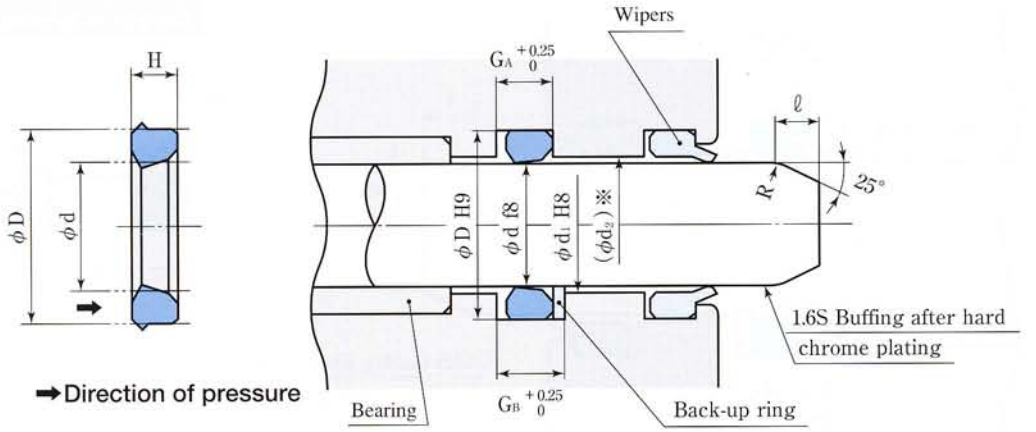
Dimension table of PENTA®-Seals

(Unit : mm)

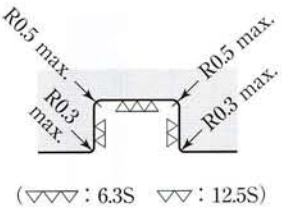
Packing & Groove dimensions							Part No.			
							PENTA®-Seals		Combination back-up ring (PT101)	
d	D	H	G_A	G_B	d_1 (Reference)	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)	Bias cut type	Endless type
3	6	2	2.5	3.9	3.2	1.5	PS- 3		T2 P- 3	T3 P- 3
4	7	2	2.5	3.9	4.2	1.5	PS- 4		T2 P- 4	T3 P- 4
5	8	2	2.5	3.9	5.2	1.5	PS- 5		T2 P- 5	T3 P- 5
6	9	2	2.5	3.9	6.2	1.5	PS- 6		T2 P- 6	T3 P- 6
7	10	2	2.5	3.9	7.2	1.5	PS- 7		T2 P- 7	T3 P- 7
8	11	2	2.5	3.9	8.2	1.5	PS- 8		T2 P- 8	T3 P- 8
9	12	2	2.5	3.9	9.2	1.5	PS- 9		T2 P- 9	T3 P- 9
10	13	2	2.5	3.9	10.2	1.5	PS-10		T2 P-10	T3 P-10
10	14	2.9	3.2	4.4	10.3	1.5	PS-10A		T2 P-10A	T3 P-10A
11.2	15.2	2.9	3.2	4.4	11.5	1.5	PS-11.2		T2 P-11.2	T3 P-11.2
12	16	2.9	3.2	4.4	12.3	1.5	PS-12		T2 P-12	T3 P-12
12.5	16.5	2.9	3.2	4.4	12.8	1.5	PS-12.5		T2 P-12.5	T3 P-12.5
14	18	2.9	3.2	4.4	14.3	1.5	PS-14		T2 P-14	T3 P-14
15	19	2.9	3.2	4.4	15.3	1.5	PS-15	*PS-15F*	T2 P-15	T3 P-15
16	20	2.9	3.2	4.4	16.3	1.5	PS-16		T2 P-16	T3 P-16
18	22	2.9	3.2	4.4	18.3	1.5	PS-18		T2 P-18	T3 P-18
20	24	2.9	3.2	4.4	20.3	1.5	PS-20		T2 P-20	T3 P-20
22	26	2.9	3.2	4.4	22.3	1.5	PS-22		T2 P-22	T3 P-22
22	28	4.3	4.7	6	22.3	3	PS-22A		T2 P-22A	T3 P-22A
22.4	28.4	4.3	4.7	6	22.7	3	PS-22.4		T2 P-22.4	T3 P-22.4
24	30	4.3	4.7	6	24.3	3	PS-24		T2 P-24	T3 P-24
25	31	4.3	4.7	6	25.3	3	PS-25	*PS-25F*	T2 P-25	T3 P-25
26	32	4.3	4.7	6	26.3	3	PS-26		T2 P-26	T3 P-26
28	34	4.3	4.7	6	28.3	3	PS-28	*PS-28F*	T2 P-28	T3 P-28
30	36	4.3	4.7	6	30.3	3	PS-30		T2 P-30	T3 P-30
31	37	4.3	4.7	6	31.3	3	PS-31		T2 P-31	T3 P-31
31.5	37.5	4.3	4.7	6	31.8	3	PS-31.5		T2 P-31.5	T3 P-31.5
32	38	4.3	4.7	6	32.3	3	PS-32	*PS-32F*	T2 P-32	T3 P-32
34	40	4.3	4.7	6	34.3	3	PS-34		T2 P-34	T3 P-34
35	41	4.3	4.7	6	35.3	3	PS-35		T2 P-35	T3 P-35

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires newly producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SER-Wipers



Details of groove



Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one piece groove is technically adverse.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of PENTA®-Seals

(Unit : mm)

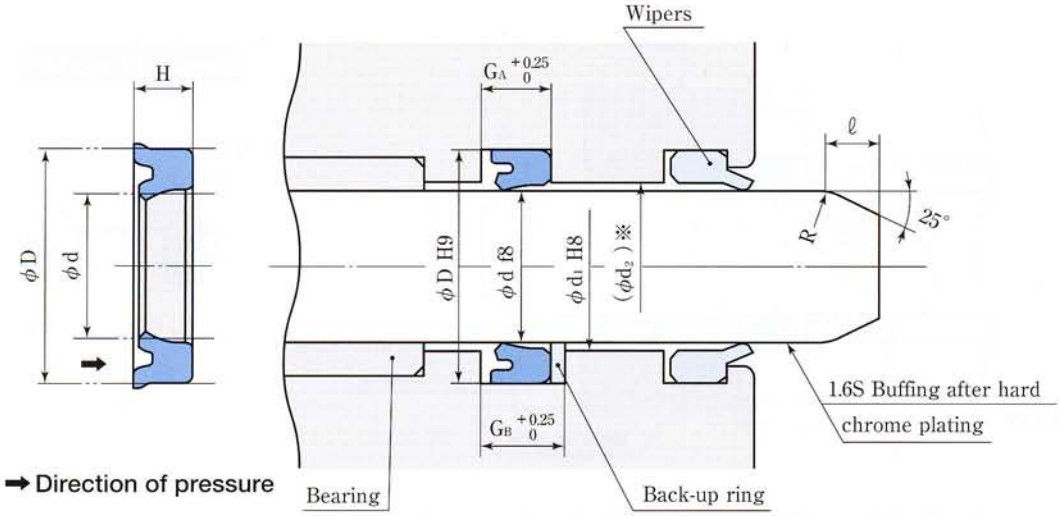
Packing & Groove dimensions							Part No.			
							PENTA®-Seals		Combination back-up ring (PT101)	
d	D	H	G_A	G_B	d_1 (Reference)	ℓ	Standard material (RN 906)	High temperature-resistant material (RF 905)	Bias cut type	Endless type
35.5	41.5	4.3	4.7	6	35.8	3	PS-35.5	*PS-35.5F*	T2 P-35.5	T3 P-35.5
36	42	4.3	4.7	6	36.3	3	PS-36		T2 P-36	T3 P-36
38	44	4.3	4.7	6	38.3	3	PS-38		T2 P-38	T3 P-38
40	46	4.3	4.7	6	40.3	3	PS-40	*PS-40F*	T2 P-40	T3 P-40
41	47	4.3	4.7	6	41.3	3	PS-41		T2 P-41	T3 P-41
42	48	4.3	4.7	6	42.3	3	PS-42		T2 P-42	T3 P-42
44	50	4.3	4.7	6	44.3	3	PS-44		T2 P-44	T3 P-44
45	51	4.3	4.7	6	45.3	3	PS-45	*PS-45F*	T2 P-45	T3 P-45
46	52	4.3	4.7	6	46.3	3	PS-46		T2 P-46	T3 P-46
48	54	4.3	4.7	6	48.3	3	PS-48	*PS-48F*	T2 P-48	T3 P-48
48	58	6.9	7.5	9	48.4	4	PS-48A		T2 P-48A	T3 P-48A
50	56	4.3	4.7	6	50.3	3	PS-50		T2 P-50	T3 P-50
50	60	6.9	7.5	9	50.4	4	PS-50A		T2 P-50A	T3 P-50A
52	62	6.9	7.5	9	52.4	4	PS-52		T2 P-52	T3 P-52
53	63	6.9	7.5	9	53.4	4	PS-53		T2 P-53	T3 P-53
55	65	6.9	7.5	9	55.4	4	PS-55		T2 P-55	T3 P-55
56	66	6.9	7.5	9	56.4	4	PS-56		T2 P-56	T3 P-56
58	68	6.9	7.5	9	58.4	4	PS-58		T2 P-58	T3 P-58
60	70	6.9	7.5	9	60.4	4	PS-60		T2 P-60	T3 P-60
62	72	6.9	7.5	9	62.4	4	PS-62		T2 P-62	T3 P-62
63	73	6.9	7.5	9	63.4	4	PS-63		T2 P-63	T3 P-63
65	75	6.9	7.5	9	65.4	4	PS-65		T2 P-65	T3 P-65
67	77	6.9	7.5	9	67.4	4	PS-67		T2 P-67	T3 P-67
70	80	6.9	7.5	9	70.4	4	PS-70		T2 P-70	T3 P-70
71	81	6.9	7.5	9	71.4	4	PS-71		T2 P-71	T3 P-71
75	85	6.9	7.5	9	75.4	4	PS-75		T2 P-75	T3 P-75
80	90	6.9	7.5	9	80.4	4	PS-80	*PS-80F*	T2 P-80	T3 P-80
85	95	6.9	7.5	9	85.4	4	PS-85		T2 P-85	T3 P-85
90	100	6.9	7.5	9	90.4	4	PS-90	*PS-90F*	T2 P-90	T3 P-90
95	105	6.9	7.5	9	95.4	4	PS-95		T2 P-95	T3 P-95
100	110	6.9	7.5	9	100.4	4	PS-100	*PS-100F*	T2 P-100	T3 P-100

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

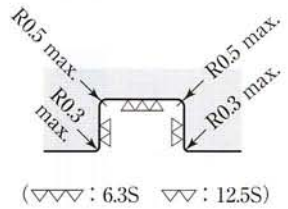
NMY-Packings

Hydraulic packings for rods
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one piece groove is technically adverse.
※ For applications without back-up rings, refer to the limiting curve of extrusion of seals (page 15) for the size (ϕd_2).

Dimension table of NMY-Packings

(Unit : mm)

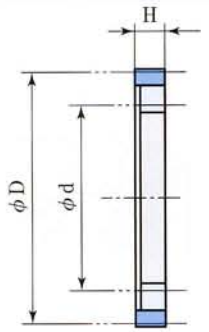
Packing & Groove dimensions							Part No.		
							NMY-Packings	Combination back-up ring (PT101)	
d	D	H	G_A	G_B	d_1 (Reference)	ℓ	Standard material (RN 906)	Bias cut type	Endless type
3	6	2.1	2.5	3.9	3.2	1.5	NMY- 3	T2 P- 3	T3 P- 3
4	7	2.1	2.5	3.9	4.2	1.5	NMY- 4	T2 P- 4	T3 P- 4
5	8	2.1	2.5	3.9	5.2	1.5	NMY- 5	T2 P- 5	T3 P- 5
6	9	2.1	2.5	3.9	6.2	1.5	NMY- 6	T2 P- 6	T3 P- 6
7	10	2.1	2.5	3.9	7.2	1.5	NMY- 7	T2 P- 7	T3 P- 7
8	11	2.1	2.5	3.9	8.2	1.5	NMY- 8	T2 P- 8	T3 P- 8
9	12	2.1	2.5	3.9	9.2	1.5	NMY- 9	T2 P- 9	T3 P- 9
10	13	2.1	2.5	3.9	10.2	1.5	NMY-10	T2 P-10	T3 P-10
10	14	2.8	3.2	4.4	10.3	1.5	NMY-10A	T2 P-10A	T3 P-10A
12	16	2.8	3.2	4.4	12.3	1.5	NMY-12	T2 P-12	T3 P-12
14	18	2.8	3.2	4.4	14.3	1.5	NMY-14	T2 P-14	T3 P-14
15	19	2.8	3.2	4.4	15.3	1.5	NMY-15	T2 P-15	T3 P-15
16	20	2.8	3.2	4.4	16.3	1.5	NMY-16	T2 P-16	T3 P-16
18	22	2.8	3.2	4.4	18.3	1.5	NMY-18	T2 P-18	T3 P-18
20	24	2.8	3.2	4.4	20.3	1.5	NMY-20	T2 P-20	T3 P-20
25	31	4.2	4.7	6	25.3	3	NMY-25	T2 P-25	T3 P-25
30	36	4.2	4.7	6	30.3	3	NMY-30	T2 P-30	T3 P-30

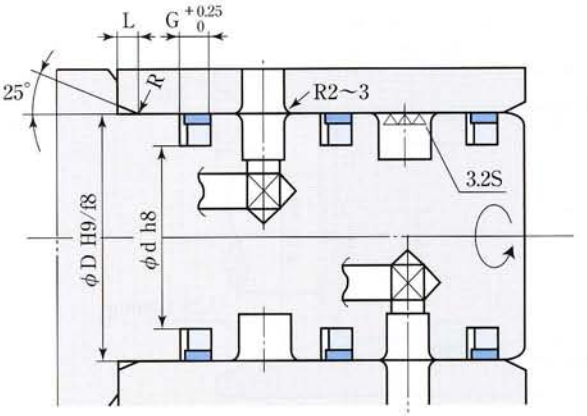
★Orders and inquiries are acceptable by part numbers.
★NMY-Packings and the back-up rings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SER-Wipers

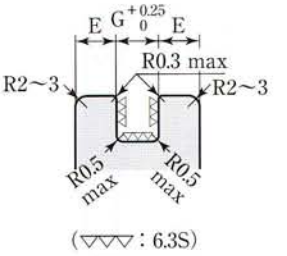
STK-Seals
(STR type)
for Rotating joint

Dimension table





Details of groove



Note:
- Consider adopting divided grooves if one piece groove is technically adverse.
- Note that the STK-Seals are not applicable to the part requiring strict sealing performance. Installation of the drain circuit is advisable for the prevention of the leakage.
- STK-Seals with pressure-introducing notches are also available for higher sealing properties and reliability.

Dimension table of STK-Seals (STR type)

(Unit : mm)

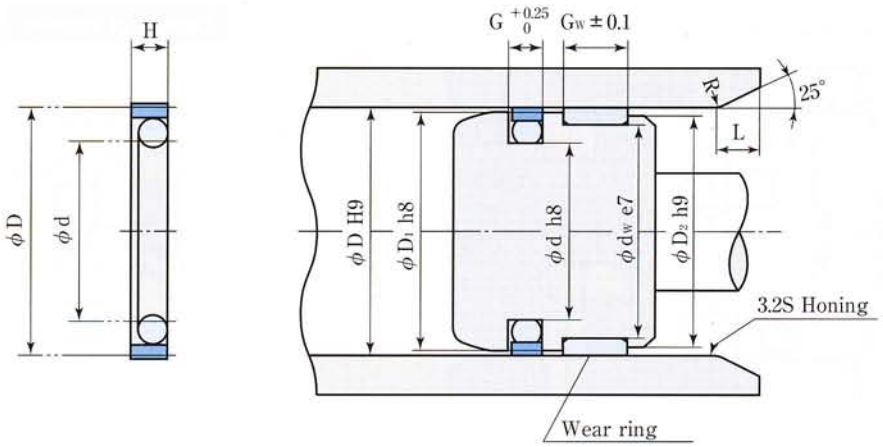
Packing & Groove dimensions						Part No.
D	d	H	G	E (Reference)	L	Standard material (PT 151)
50	40	4.8	5	4	3	STR- 50
60	50	4.8	5	4	3	STR- 60
70	60	4.8	5	4	3	STR- 70
80	70	4.8	5	4	3	STR- 80
90	80	4.8	5	4	3	STR- 90
100	90	4.8	5	4	3	STR-100
110	100	4.8	5	4	3	STR-110
120	108	5.3	5.5	5	4	STR-120
130	118	5.3	5.5	5	4	STR-130
140	128	5.3	5.5	5	4	STR-140
150	138	5.3	5.5	5	4	STR-150
160	148	5.3	5.5	5	4	STR-160
165	153	5.3	5.5	5	4	STR-165

★Orders and inquiries are acceptable by part numbers.
★STK-Seals are made-to-order products. The seals for inner slide are also available upon request.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

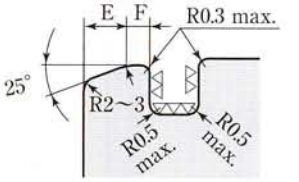
ST-Seals

Hydraulic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note:
- Consider adopting divided grooves if one piece groove is technically adverse.
- For applications without wear rings, set the φD2 side diameter to φD H9/f8.
- Install wear rings for φ20 and φ25 together with SWA-Wear rings.
- ST-Seals with the pressure-introducing notches are also available for the higher sealing effectiveness and the reliability.

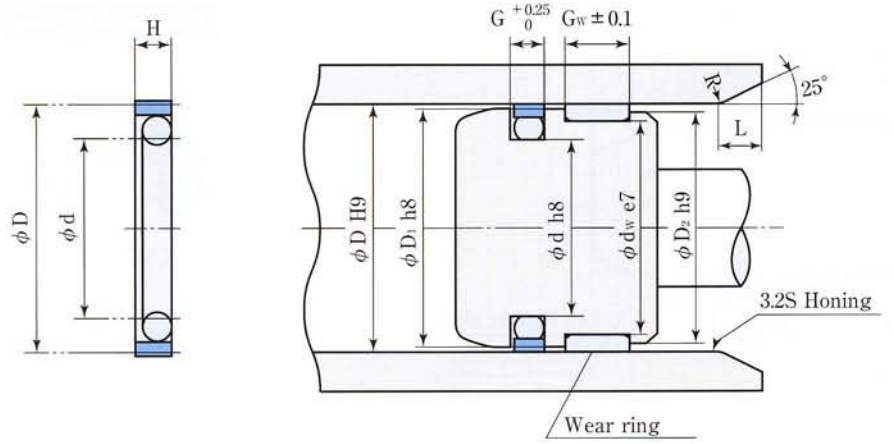
Dimension table of ST-Seals (ST type)

(Unit : mm)

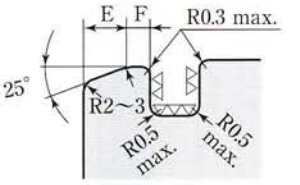
Packing & Groove dimensions											Part No.
D	d	H	G	D_1	d_w	D_2	G_w	E	F	L	Standard material (PT 111)
20	14	3	3.2	19.6	17	19	3	4	1	3	ST- 20
25	19	3	3.2	24.6	22	24	3	4	1	3	ST- 25
30	21.5	3.7	4	29.5	26	29	5	6	2	3	ST- 30
31.5	23	3.7	4	31	27.5	30	8	6	2	3	ST- 31.5
32	23.5	3.7	4	31.5	28	30.5	8	6	2	3	ST- 32
35	26.5	3.7	4	34.5	31	33.5	8	6	2	3	ST- 35
35.5	27	3.7	4	35	31.5	34	10	6	2	3	ST- 35.5
40	31.5	3.7	4	39.5	36	38.5	10	6	2	3	ST- 40
45	36.5	3.7	4	44.5	41	43.5	12	6	2	3	ST- 45
50	41.5	3.7	4	49.5	46	48.5	12	6	2	3	ST- 50
53	44.5	3.7	4	52.4	47	51	16	6	2	3	ST- 53
55	46.5	3.7	4	54.4	49	53	16	6	2	3	ST- 55
56	47.5	3.7	4	55.4	50	54	16	6	2	3	ST- 56
60	51.5	3.7	4	59.4	54	58	16	6	2	3	ST- 60
63	49	6.2	6.5	62.4	57	61	16	7	3	4	ST- 63
65	51	6.2	6.5	64.4	59	63	16	7	3	4	ST- 65
70	56	6.2	6.5	69.4	64	68	20	7	3	4	ST- 70
71	57	6.2	6.5	70.4	65	69	20	7	3	4	ST- 71
75	61	6.2	6.5	74.4	69	73	20	7	3	4	ST- 75
80	66	6.2	6.5	79.4	74	78	20	7	3	4	ST- 80
85	71	6.2	6.5	84.4	79	83	20	7	3	4	ST- 85
90	76	6.2	6.5	89.4	84	88	25	7	3	4	ST- 90
95	81	6.2	6.5	94.4	89	93	25	7	3	4	ST- 95
100	86	6.2	6.5	99.4	94	98	25	7	3	4	ST-100
105	91	6.2	6.5	104.4	99	103	25	7	3	4	ST-105
110	96	6.2	6.5	109.4	104	108	30	7	3	4	ST-110
112	98	6.2	6.5	111.4	106	110	30	7	3	4	ST-112
115	101	6.2	6.5	114.4	109	113	30	7	3	4	ST-115
120	106	6.2	6.5	119.4	114	118	30	7	3	4	ST-120
125	111	6.2	6.5	124.3	119	123	30	7	3	4	ST-125

★Orders and inquiries are acceptable by part numbers.
★ST-Seals are made-to-order products. The seals for the inner slide are also available upon request.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SW-Wear rings and SWA-Wear rings



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Consider adopting divided grooves if one piece groove is technically adverse.
● For applications without back-up rings, set the φD2 side diameter to φD H9/f8.
● ST-Seals with the pressure-introducing notches are also available for the higher sealing effectiveness and the reliability.

Dimension table of ST-Seals (ST type)

(Unit : mm)

Packing & Groove dimensions											Part No.
D	d	H	G	D_1	d_w	D_2	G_w	E	F	L	Standard material (PT 111)
130	116	6.2	6.5	129.3	124	128	30	7	3	4	ST-130
135	121	6.2	6.5	134.3	129	133	30	7	3	4	ST-135
140	126	6.2	6.5	139.3	134	138	40	7	3	4	ST-140
150	136	6.2	6.5	149.3	144	148	40	7	3	4	ST-150
160	146	6.2	6.5	159.3	154	158	40	7	3	4	ST-160
170	150	9	10	169.3	164	168	50	11	4	6	ST-170
180	160	9	10	179.3	174	178	50	11	4	6	ST-180
190	170	9	10	189.3	184	188	50	11	4	6	ST-190
200	180	9	10	199.2	194	198	50	11	4	6	ST-200
210	190	9	10	209.2	204	208	50	11	4	6	ST-210
220	200	9	10	219.2	214	218	60	11	4	6	ST-220
224	204	9	10	223.2	218	222	60	11	4	6	ST-224
230	210	9	10	229.2	224	228	60	11	4	6	ST-230
240	220	9	10	239.2	234	238	60	11	4	6	ST-240
250	230	9	10	249.2	244	248	60	11	4	6	ST-250
260	240	9	10	259.2	252	257	60	11	4	6	ST-260
270	250	9	10	269.2	262	267	60	11	4	6	ST-270
280	260	9	10	279.2	272	277	60	11	4	6	ST-280
290	270	9	10	289.2	282	287	60	11	4	6	ST-290
300	280	9	10	299.2	292	297	60	11	4	6	ST-300
310	290	9	10	309.2	302	307	70	11	4	6	ST-310
320	300	9	10	319.2	312	317	70	11	4	6	ST-320
340	320	9	10	339.2	332	337	70	11	4	6	ST-340
350	330	9	10	349.2	342	347	70	11	4	6	ST-350
360	340	9	10	359.2	352	357	70	11	4	6	ST-360
375	355	9	10	374.2	367	372	70	11	4	6	ST-375
380	360	9	10	379.2	372	377	70	11	4	6	ST-380
400	380	9	10	399.2	392	397	70	11	4	6	ST-400

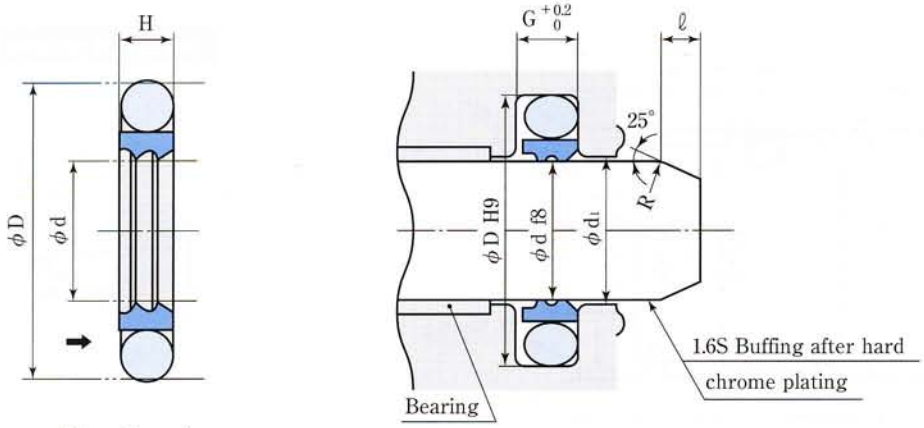
★Orders and inquiries are acceptable by part numbers.
★ST-Seals are made-to-order products. The seals for the inner slide are also available upon request.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SW-Wear rings

SMJ-Seals

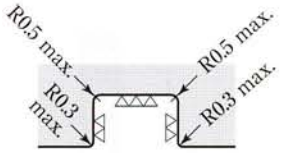
Hydraulic packings for rods
(Installable in one-piece groove)

Dimension table



➡ Direction of pressure

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note:
- Packings should be installed in the direction specified on the above schematic.
- Consider adopting divided grooves if one piece groove is technically adverse.
- For applications with rod diameter φ30 and smaller sizes, the structure of the divided grooves is recommended for the smooth installation.
- Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SMJ-Seals

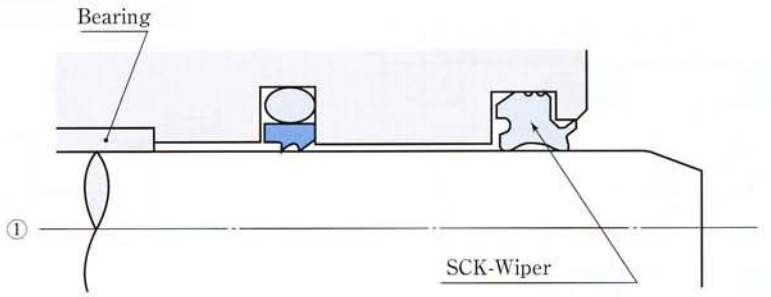
(Unit : mm)

Packing & Groove dimensions							Part No.
d	D	H	G	Maximum d_1 (21MPa and below)	Maximum d_1 (35MPa and below)	ℓ	Standard material (PT 154)
18	25.3	3	3.2	18.6	18.3	1.5	SMJ- 18
20	30.7	4	4.2	20.6	20.3	2	SMJ- 20
22	32.7	4	4.2	22.6	22.3	2	SMJ- 22
25	35.7	4	4.2	25.6	25.3	2	SMJ- 25
28	38.7	4	4.2	28.6	28.3	2	SMJ- 28
30	40.7	4	4.2	30.6	30.3	2	SMJ- 30
35	45.7	4	4.2	35.6	35.3	2	SMJ- 35
36	46.7	4	4.2	36.6	36.3	2	SMJ- 36
40	55.1	6	6.3	40.6	40.3	3	SMJ- 40
45	60.1	6	6.3	45.6	45.3	3	SMJ- 45
50	65.1	6	6.3	50.6	50.3	3	SMJ- 50
55	70.1	6	6.3	55.6	55.3	3	SMJ- 55
56	71.1	6	6.3	56.6	56.3	3	SMJ- 56
60	75.1	6	6.3	60.6	60.3	3	SMJ- 60
65	80.1	6	6.3	65.6	65.3	3	SMJ- 65
70	85.1	6	6.3	70.6	70.3	3	SMJ- 70
75	90.1	6	6.3	75.6	75.3	3	SMJ- 75
80	95.1	6	6.3	80.6	80.3	3	SMJ- 80
85	100.1	6	6.3	85.6	85.3	3	SMJ- 85
90	105.1	6	6.3	90.6	90.3	3	SMJ- 90
100	115.1	6	6.3	100.6	100.3	3	SMJ-100
125	140.1	6	6.3	125.6	125.3	3	SMJ-125
140	155.1	6	6.3	140.6	140.3	3	SMJ-140

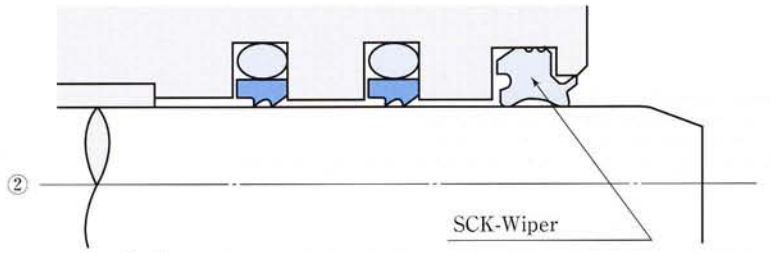
★Orders and inquiries are acceptable by part numbers.
★SMJ-Seals are made-to-order products. The seals for the outer slide are also available upon request.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: GNY-Packings, RNY-Packings, SKY-Packings, KY-Packings, SCK-Wipers and SCB-Wipers

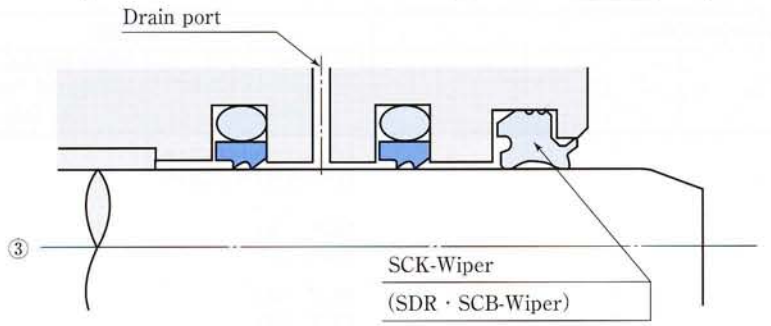
Suggested sealing systems



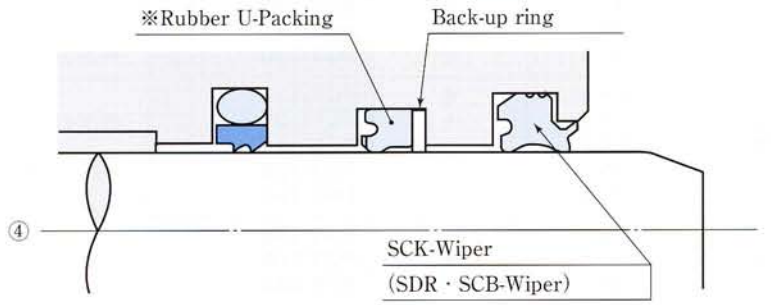
① This is an example of the sealing for a basic cylinder. Although it has small leakage, the emission of the pressure oil from the outer side of the wiper avoids the damage caused due to the extrusion and the breakage.



② This is a design in which the sealing performance has been improved compared with that of ①. Double installation of SMJ-Seals can keep a balance between the improved sealing performance and good friction properties.

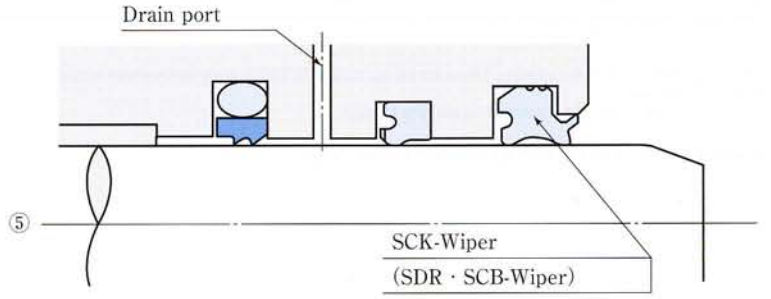


③ Addition of drain port to ② is recommended when the external leakage is strictly prohibited.



④ This is a design which is combined with U-Packing made of synthetic rubber for the improved sealing reliability.

※ Select the optimal product from the list of our U-packings according to the level of the applications and the requirements.
(Refer to page 4 "Hydrauric packings")



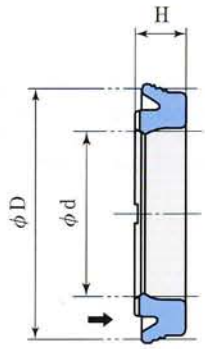
⑤ Addition of drain port to ④ is recommended when the external leakage is strictly prohibited.

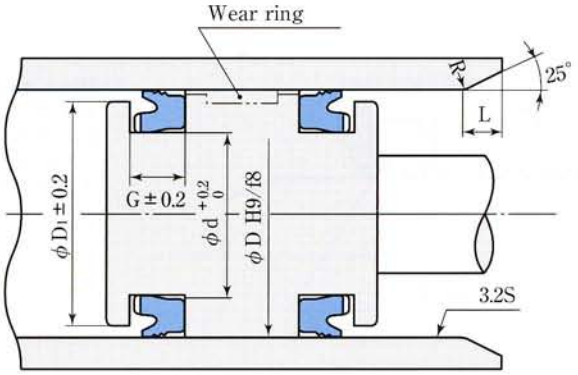
Note: The selection of the combined packings and the wipers is important as they would be altered according to the required motion conditions of high-speed, super low-speed and high-frequency, and the ambient conditions of dust. If you have any questions, feel free to contact us.

PGY-Packings

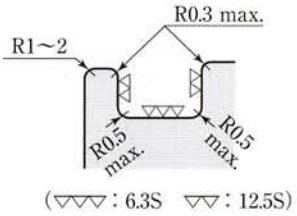
Pneumatic packings for pistons
(Installable in one-piece groove)

Dimension table





Details of groove



➡ Direction of pressure

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● φDH9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of PGY-Packings

(Unit : mm)

Packing & Groove dimensions						Part No.	
D	d	H	G	D_1	L	Standard material (RN 713)	High temperature-resistant material (RF 905)
20	12	5.2	5.7	17	3	*PGY-0020001N713*	
25	17	5.2	5.7	23	3	*PGY-0025001N713*	
28	20	5.2	5.7	26	3	*PGY-0028001N713*	
30	22.4	5.2	5.7	29	3	**PGY- 30**	
32	24	5.2	5.7	31	3	*PGY- 32*	
40	30	6.5	7	39	3	**PGY- 40**	
50	40	6.5	7	49	3	**PGY- 50**	
63	53	6.5	7	62	3	**PGY- 63**	
80	70	6.5	7	79	3	**PGY- 80**	
100	85	9.5	10	98.5	4	**PGY-100**	*PGY-100F*
120	105	9.5	10	118.5	4	**PGY-120**	
125	110	9.5	10	123.5	4	**PGY-125**	*PGY-125F*
140	125	9.5	10	138.5	4	**PGY-140**	
150	135	9.5	10	148.5	4	**PGY-150**	*PGY-150F*
160	145	9.5	10	158.5	4	**PGY-160**	
180	165	9.5	10	178.5	4	**PGY-180**	
200	180	12	13	198	5	**PGY-200**	
250	230	12	13	248	5	**PGY-250**	
300	280	14	15	298	5	*PGY-300*	

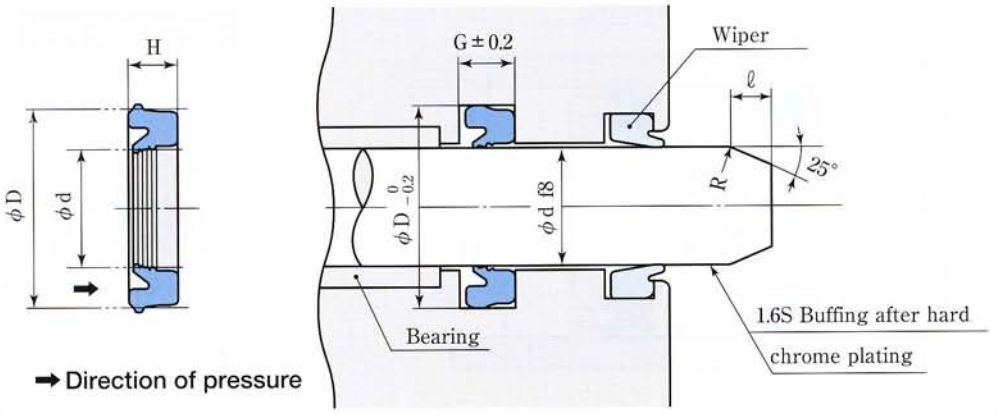
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: PNY-Packings, PCS-Cushion seals, YCS-Cusion seals, SWA-Wear rings and SWB-Wear rings

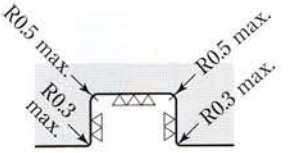
PNY-Packings

Pneumatic packings for rods
(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of PNY-Packings

(Unit : mm)

Packing & Groove dimensions					Part No.	
d	D	H	G	ℓ	Standard material (RN 713)	High temperature-resistant material (RF 905)
16	24	5.2	5.7	1.5	**PNY-16**	
18	26	5.2	5.7	1.5	**PNY-18**	
20	28	5.2	5.7	1.5	**PNY-20**	
22	30	5.2	5.7	1.5	**PNY-22**	
22.4	30	5.2	5.7	1.5	**PNY-22.4**	
25	33	5.2	5.7	1.5	**PNY-25**	*PNY-25F*
28	36	5.2	5.7	1.5	**PNY-28**	
30	40	6.5	7	3	**PNY-30**	
32	42	6.5	7	3	**PNY-32**	*PNY-32F*
35	45	6.5	7	3	**PNY-35**	
35.5	45.5	6.5	7	3	**PNY-35.5**	
36	46	6.5	7	3	**PNY-36**	
40	50	6.5	7	3	**PNY-40**	
45	55	6.5	7	3	**PNY-45**	
50	60	6.5	7	3	**PNY-50**	
55	65	6.5	7	3	**PNY-55**	
60	70	6.5	7	3	**PNY-60**	
63	73	6.5	7	3	*PNY-0063001N713*	
70	80	6.5	7	3	**PNY-70**	

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

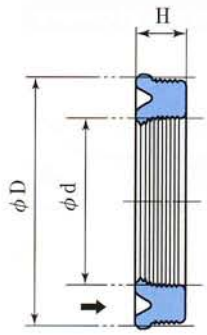
Related products: PGY-Packings, SDR-Wipers and SFR-Wipers

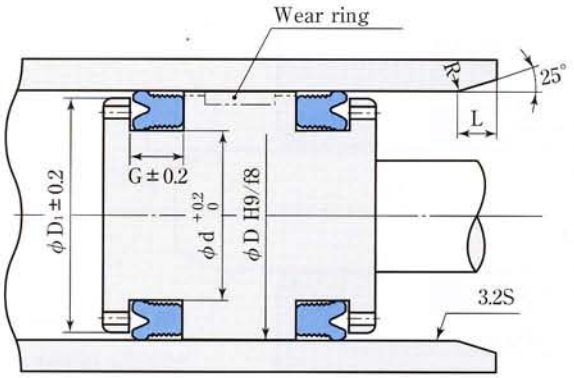
GLY-Packings

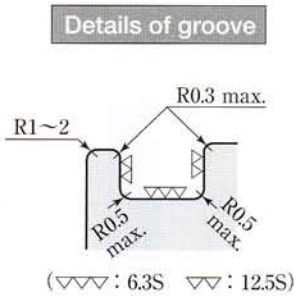
Pneumatic packings for pistons and rods
(Installable in one-piece groove)

※Use GLY-Packings only for the application with non-lubrication air.
(PGY and PNY-Packings are recommended for the application with lubricating oil air.)

Dimension table







➡ Direction of pressure

Note:
- Packings should be installed in the direction specified on the above schematic.
- Consider adopting divided grooves if one-piece groove is technically adverse.
- φD H9/f8 would be modified according to the variation of the bearing structure.
  For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

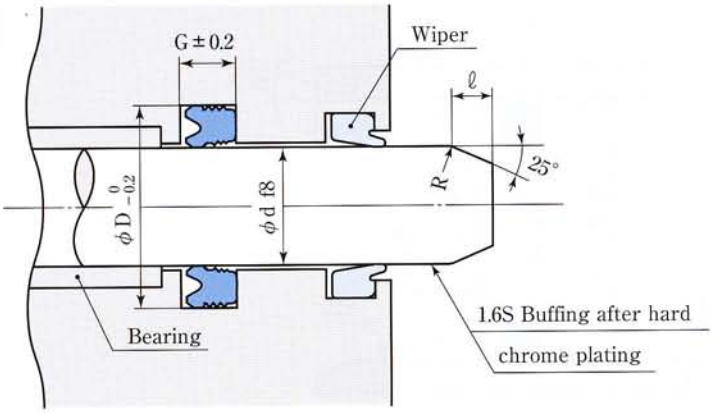
Dimension table of GLY-Packings

(Unit : mm)

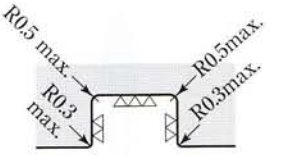
Packing & Groove dimensions							Part No.	
d	D	H	G	D_1	L	ℓ	Standard material (RK 701)	High temperature-resistant material (RF 905)
10	18	5	5.7	17.1	3	1.5	*GLY-0010001K701*	
12	20	5	5.7	19.1	3	1.5	*GLY-0012001K701*	
14	22	5	5.7	21.1	3	1.5	*GLY-0014001K701*	
16	24	5	5.7	23.1	3	1.5	**GLY-16**	
17	25	5	5.7	24.1	3	1.5	*GLY-0017001K701*	
18	26	5	5.7	25.1	3	1.5	**GLY-18**	
20	28	5	5.7	27.1	3	1.5	**GLY-20**	*GLY-20F*
22.4	30	5	5.7	29.1	3	1.5	**GLY-22.4**	*GLY-22.4F*
25	33	5	5.7	32.1	3	1.5	**GLY-25**	*GLY-25F*
27	35	5	5.7	34.1	3	1.5	*GLY-0027001K701*	
28	36	5	5.7	35.1	3	1.5	**GLY-28**	
30	40	6	7	39	3	3	**GLY-30**	*GLY-30F*
31.5	41.5	6	7	40.5	3	3	**GLY-31.5**	
32	42	6	7	41	3	3	**GLY-32**	
35	45	6	7	44	3	3	**GLY-35**	*GLY-35F*
35.5	45.5	6	7	44.5	3	3	**GLY-35.5**	
36	46	6	7	45	3	3	**GLY-36**	*GLY-36F*
40	50	6	7	49	3	3	**GLY-40**	*GLY-40F*
45	55	6	7	54	3	3	**GLY-45**	*GLY-45F*
50	60	6	7	59	3	3	**GLY-50**	*GLY-50F*
53	63	6	7	62	3	3	**GLY-53**	*GLY-53F*
55	65	6	7	64	3	3	*GLY-0055001K701*	
60	70	6	7	69	3	3	**GLY-60**	*GLY-60F*
63	73	6	7	72	3	3	*GLY-63*	
65	75	6	7	74	3	3	**GLY-65**	

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: SDR-Wipers, SFR-Wipers, PCS-Cushion seals, SWA-Wear rings and SWB-Wear rings



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of GLY-Packings

(Unit : mm)

Packing & Groove dimensions							Part No.	
d	D	H	G	D_1	L	ℓ	Standard material (RK 701)	High temperature-resistant material (RF 905)
70	80	6	7	79	3	3	**GLY- 70**	*GLY- 70F*
75	85	6	7	84	3	3	*GLY- 75*	
80	90	6	7	89	3	3	**GLY- 80**	
85	100	9	10	98.5	4	4	**GLY- 85**	
95	110	9	10	108.5	4	4	*GLY-0095001K701*	
100	115	9	10	113.5	4	4	*GLY-0100002K701*	*GLY-0100001F905*
105	120	9	10	118.5	4	4	**GLY-105**	
110	125	9	10	123.5	4	4	**GLY-110**	*GLY-110F*
115	130	9	10	128.5	4	4	*GLY-0115001K701*	
125	140	9	10	138.5	4	4	**GLY-125**	
135	150	9	10	148.5	4	4	**GLY-135**	
145	160	9	10	158.5	4	4	**GLY-145**	*GLY-145F*
160	175	9	10	173.5	4	4	*GLY-0160001K701*	
165	180	9	10	178.5	4	4	**GLY-165**	
175	190	9	10	188.5	4	4	*GLY-0175001K701*	
180	200	12	13	198	5	5	**GLY-180**	*GLY-180F*
185	205	12	13	203	5	5	*GLY-0185001K701*	
200	220	12	13	218	5	5	*GLY-0200001K701*	
215	235	12	13	233	5	5	**GLY-215**	
230	250	12	13	248	5	5	**GLY-230**	*GLY-230F*
240	260	12	13	258	5	5	*GLY-0240001K701*	

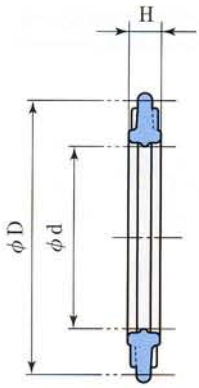
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

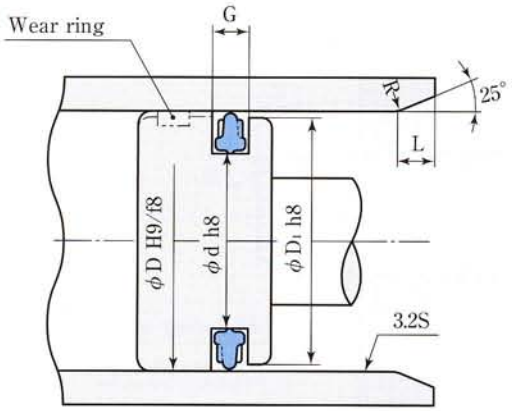
Related products: **SDR-Wipers, SFR-Wipers, PCS-Cushion seals, SWA-Wear rings and SWB-Wear rings**

PPD-Packings

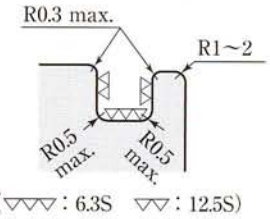
Pneumatic packings for pistons
(Installable in one-piece groove)

Dimension table





Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.
● For applications with bar diameter φ40 and smaller sizes, the tolerance of G dimension is altered to achieve better performance.

Dimension table of PPD-Packings

(Unit : mm)

Packing & Groove dimensions							Part No.	Compatible packings with PSD-Packings
D	d	H	G		D_1	L	Standard material (RN 729)	
10	5.4	1.6	1.8		9.7	1.5	PPD- 10	PSD- 10
12	7.4	1.6	1.8		11.7	1.5	PPD- 12	PSD- 12
15	10.4	1.6	1.8	$^{+0.1}_{0}$	14.7	1.5	PPD- 15	PSD- 15
16	11.4	1.6	1.8		15.7	1.5	PPD- 16	PSD- 16
20	14	2.2	2.4		19.5	1.5	PPD- 20	PSD- 20
25	17	3	3.2		24.5	2	PPD- 25	PSD- 25
30	22	3	3.2	$^{+0.15}_{0}$	29.5	2	PPD- 30	PSD- 30
32	24	3	3.2		31.5	2	PPD- 32	PSD- 32
40	32	3	3.2		39.5	2	PPD- 40	PSD- 40
50	40	3.7	4		49.5	2.5	PPD- 50	PSD- 50
63	53	3.7	4		62.4	2.5	PPD- 63	PSD- 63
80	65	5.6	6		79.4	3	PPD- 80	PSD- 80
100	85	5.6	6		99.4	3	PPD-100	PSD-100
125	110	5.6	6	$^{+0.25}_{0}$	124.3	3.5	PPD-125	PSD-125
140	125	5.6	6		139.3	3.5	PPD-140	PSD-140
160	140	7.6	8		159.3	5	PPD-160	PSD-160
180	160	7.6	8		179.3	5	PPD-180	PSD-180

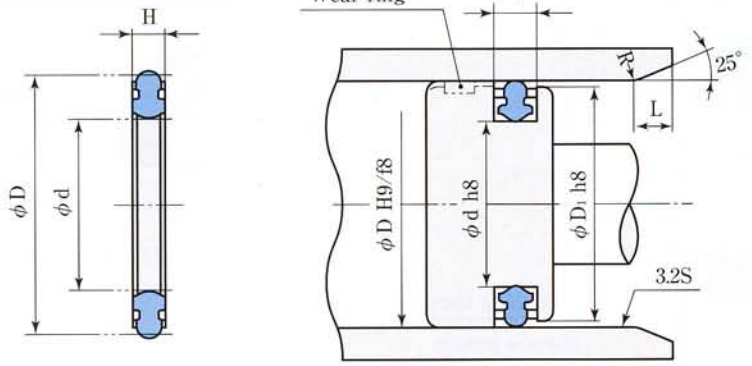
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: PDU-Packings, SWA-Wear rings and SWB-Wear rings

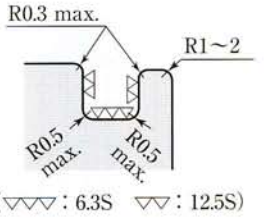
PSD-Packings

Pneumatic packings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of PSD-Packings

(Unit : mm)

Packing & Groove dimensions						Part No.	
D	d	H	G	D_1	L	Standard material (RN 713)	High temperature-resistant material (RF 704)
10	5.4	1.6	1.8	9.7	1	**PSD- 10**	*PSD - 10F*
12	7.4	1.6	1.8	11.7	1	**PSD- 12**	*PSD - 12F*
15	10.4	1.6	1.8	14.7	1	**PSD- 15**	*PSD - 15F*
16	11.4	1.6	1.8	15.7	1	**PSD- 16**	*PSD - 16F*
20	14	2.24	2.4	19.5	1.5	**PSD- 20**	**PSD- 20F**
25	17	3	3.2	24.5	2	**PSD- 25**	**PSD- 25F**
30	22	3	3.2	29.5	2	**PSD- 30**	**PSD- 30F**
32	24	3	3.2	31.5	2	**PSD- 32**	**PSD- 32F**
38	30	3	3.2	37.5	2	*PSD -0038A02N713*	
40	32	3	3.2	39.5	2	**PSD- 40**	**PSD- 40F**
44	36	3	3.2	43.5	2	*PSD -0044A02N713*	
50	40	3.8	4	49.5	2.5	**PSD- 50**	**PSD- 50F**
56	46	3.8	4	55.5	2.5	*PSD -0056A02N713*	
60	50	3.8	4	59.5	2.5	*PSD -0060A03N713*	
63	53	3.8	4	62.4	2.5	**PSD- 63**	**PSD- 63F**
70	55	5.6	6	69.4	3	*PSD -0070A02N713*	
75	60	5.6	6	74.4	3	*PSD -0075A02N713*	
80	65	5.6	6	79.4	3	**PSD- 80**	**PSD- 80F**
85	70	5.6	6	84.4	3	*PSD -0085A02N713*	
90	75	5.6	6	89.4	3	*PSD -0090A02N713*	
95	80	5.6	6	94.4	3	*PSD -0095A02N713*	
100	85	5.6	6	99.4	3	**PSD-100**	**PSD-100F**
110	95	5.6	6	109.3	3	*PSD -0110A02N713*	
120	105	5.6	6	119.3	3.5	*PSD -0120A03N713*	
125	110	5.6	6	124.3	3.5	**PSD-125**	*PSD -125F*
140	125	5.6	6	139.3	3.5	**PSD-140**	*PSD -140F*
150	135	5.6	6	149.3	3.5	*PSD -0150A02N713*	
160	140	7.6	8	159.3	5	**PSD-160**	
175	155	7.6	8	174.3	5	*PSD -0175A02N713*	
180	160	7.6	8	179.3	5	**PSD-180**	*PSD -180F*
200	180	7.6	8	199	5	*PSD -0200A03N713*	*PSD -0200A04F704*
250	230	7.6	8	249	5	*PSD -0250A03N713*	
300	280	7.6	8	299	5	*PSD -0300A03N713*	

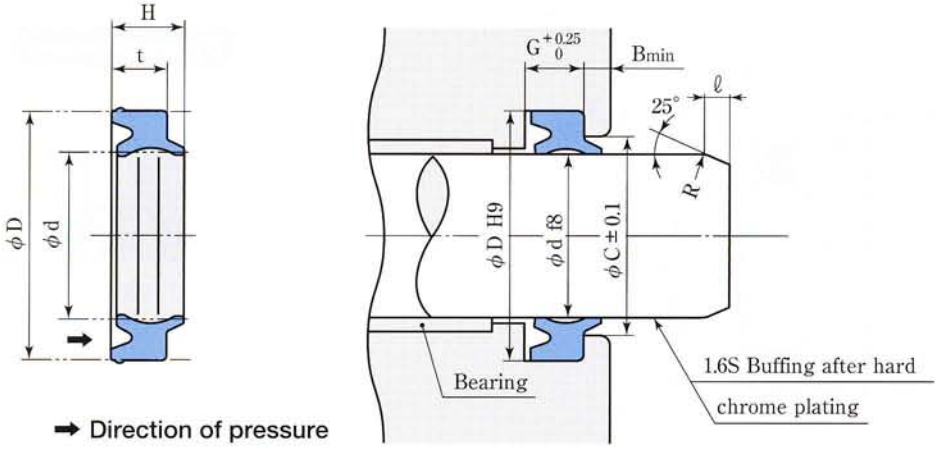
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: PDU-Packings, SWA-Wear rings and SWB-Wear rings

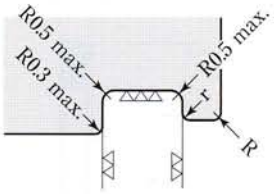
PDU-Packings

Pneumatic packings and wipers for rods
(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of PDU-Packings

(Unit : mm)

Packing & Groove dimensions										Part No.	
d	D	H		t	G	C	B	r	ℓ	Standard material (RN 818)	High temperature-resistant material (RF 905)
		RN 818	RF 905								
6	10	4.4		3	3.5	7.6	2	0.5	1.5	PDU- 6Z	PDU- 6F
8	12	4.9	4.7	3.5	4	9.6	2	0.5	1.5	PDU- 8Z	PDU- 8F
10	14	4.9	4.7	3.5	4	11.6	2	0.5	1.5	PDU-10Z	PDU-10F
12	16	4.9	4.7	3.5	4	13.6	2	0.5	1.5	PDU-12Z	PDU-12F
14	18	4.9	4.7	3.5	4	15.6	2	0.5	1.5	PDU-14Z	PDU-14F
16	24	7.5	7.3	5.5	6	19.4	2	0.6	2	PDU-16Z	PDU-16F
20	28	7.5	7.3	5.5	6	23.4	2	0.6	2	PDU-20Z	PDU-20F
25	33	7.5	7.3	5.5	6	28.4	2	0.6	2	PDU-25Z	PDU-25F
30	40	8.5		6.5	7	34	2	0.8	2.5	PDU-30Z	PDU-30F
32	42	8.5		6.5	7	36	2	0.8	2.5	PDU-32Z	PDU-32F
35	45	8.5		6.5	7	39	2	0.8	2.5	PDU-35Z	PDU-35F
36	46	8.5		6.5	7	40	2	0.8	2.5	PDU-36Z	PDU-36F
40	50	8.5		6.5	7	44	2	0.8	2.5	PDU-40Z	
45	55	8.5		6.5	7	49	2	0.8	2.5	PDU-45Z	

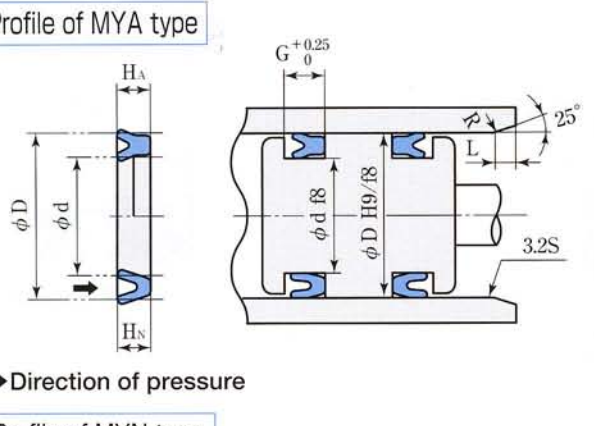
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: PPD-Packings and PSD-Packings

Mini Y-Packings

Dimension table

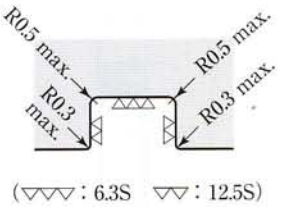
Profile of MYA type



➡Direction of pressure

Profile of MYN type

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified in the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of Mini Y-Packings

(Unit : mm)

Packing & Groove dimensions							Part No.	
d	D	HA	HN	G	L	ℓ	Standard material 1 (RK 703)	Standard material 2 (RN 716)
3	6	2.1	2	2.5	2	1.5	MYA- 3	MYN- 3
4	7	2.1	2	2.5	2	1.5	MYA- 4	MYN- 4
5	8	2.1	2	2.5	2	1.5	MYA- 5	MYN- 5
6	9	2.1	2	2.5	2	1.5	MYA- 6	MYN- 6
7	10	2.1	2	2.5	2	1.5	MYA- 7	MYN- 7
8	11	2.1	2	2.5	2	1.5	MYA- 8	MYN- 8
9	12	2.1	2	2.5	2	1.5	MYA- 9	MYN- 9
10	13	2.1	2	2.5	2	1.5	MYA-10	MYN-10
10	14	2.8	2.7	3.2	2.5	2	MYA-10A	MYN-10A
11	15	2.8	2.7	3.2	2.5	2	MYA-11	MYN-11
11.2	15.2	2.8	2.7	3.2	2.5	2	MYA-11.2	
12	16	2.8	2.7	3.2	2.5	2	MYA-12	MYN-12
12.5	16.5	2.8	2.7	3.2	2.5	2	MYA-12.5	MYN-12.5
14	18	2.8	2.7	3.2	2.5	2	MYA-14	MYN-14
15	19	2.8	2.7	3.2	2.5	2	MYA-15	MYN-15
16	20	2.8	2.7	3.2	2.5	2	MYA-16	MYN-16
18	22	2.8	2.7	3.2	2.5	2	MYA-18	MYN-18
20	24	2.8	2.7	3.2	2.5	2	MYA-20	MYN-20
21	25	2.8	2.7	3.2	2.5	2	MYA-21	MYN-21
22	26	2.8	2.7	3.2	2.5	2	MYA-22	MYN-22
24	30	4.2	4.0	4.7	3	3	MYA-24	MYN-24
34	40	4.2	4.0	4.7	3	3	MYA-34	MYN-34

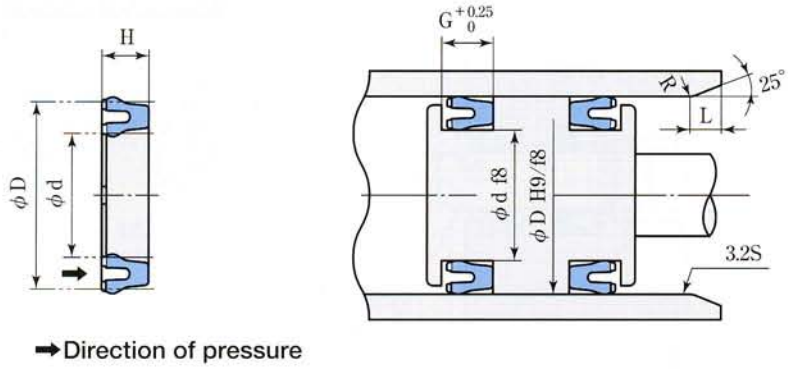
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

Related products: SER-Wipers, SWA-Wear rings and SWB-Wear rings

MYP-Packings

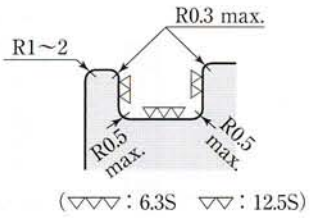
Pneumatic packings for pistons
(Installable in one-piece groove)

Dimension table



➡Direction of pressure

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.

Dimension table of MYP-Packings

(Unit : mm)

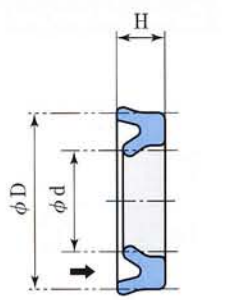
Packing & Groove dimensions					Part No.
D	d	H	G	L	Standard material (RN 722)
6	3	2.2	2.5	2	**MYP- 6**
8	5	2.2	2.5	2	**MYP- 8**
10	7	2.2	2.5	2	**MYP-10**
12	9	2.2	2.5	2	**MYP-12**
15	11	2.8	3.2	2.5	**MYP-15**
16	12	2.8	3.2	2.5	**MYP-16**

★Orders and inquiries are acceptable by part numbers.
★MYP-Packings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

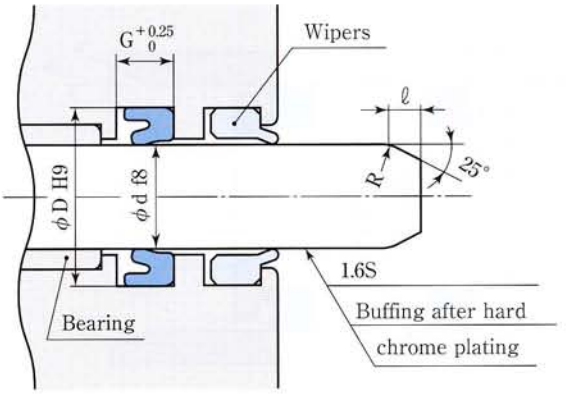
Related products: **MYR-Packings, SWA-Wear rings and SWB-Wear rings**

MYR-Packings

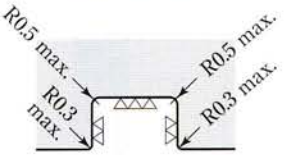
Dimension table



➡ Direction of pressure



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of MYR-Packings

(Unit : mm)

Packing/Groove dimensions					Part No.
d	D	H	G	ℓ	Standard material (RN 818)
3	6	2.0	2.5	1.5	**MYR- 3**
4	7	2.0	2.5	1.5	**MYR- 4**
5	8	2.0	2.5	1.5	**MYR- 5**
6	9	2.0	2.5	1.5	**MYR- 6**
8	11	2.0	2.5	1.5	**MYR- 8**
10	13	2.0	2.5	1.5	**MYR-10**
10	14	2.7	3.2	2	**MYR-10A**
12	16	2.7	3.2	2	**MYR-12**
14	18	2.7	3.2	2	**MYR-14**
15	19	2.7	3.2	2	**MYR-15**
16	20	2.7	3.2	2	**MYR-16**
20	24	2.7	3.2	2	**MYR-20**

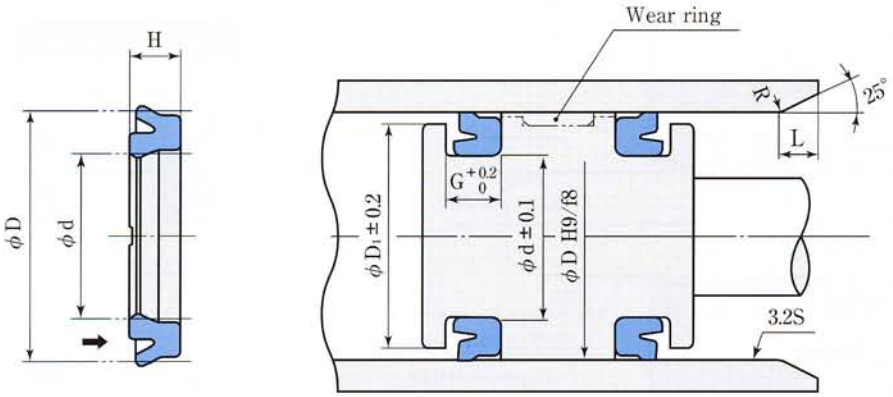
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: MYP-Packings and SER-Wipers

PPY-Packings

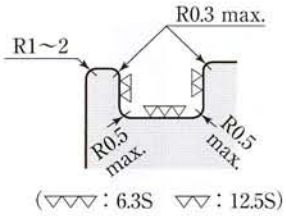
Pneumatic packings for pistons
(Installable in one-piece groove)

Dimension table



➡ Direction of pressure

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● φD H9/f8 would be modified according to the variation of the bearing structure.
For applications installed together with wear rings, refer to the dimension table of the applicable wear ring.

Dimension table of PPY-Packings

(Unit : mm)

Packing & Groove dimensions						Part No.	
D	d	H	D_1	G	L	Standard material (RN 713)	High temperature-resistant material (RF 704)
6	3	2.2	5.5	2.6	2.5	**PPY- 6**	**PPY- 6F**
8	4	2.9	7.5	3.3	2.5	**PPY- 8**	
10	6	2.9	9.5	3.3	2.5	**PPY-10**	**PPY-10F**
12	8	2.9	11.5	3.3	2.5	**PPY-12**	
15	10	3.6	14	4	2.5	**PPY-15**	**PPY-15F**
16	11	3.6	15	4	2.5	**PPY-16**	
20	14	4.3	19	4.7	3	**PPY-20**	
25	17	5.3	24	5.7	3	**PPY-25**	
32	24	5.3	31	5.7	3	**PPY-32**	
40	30	6.5	39	7	3	**PPY-40**	

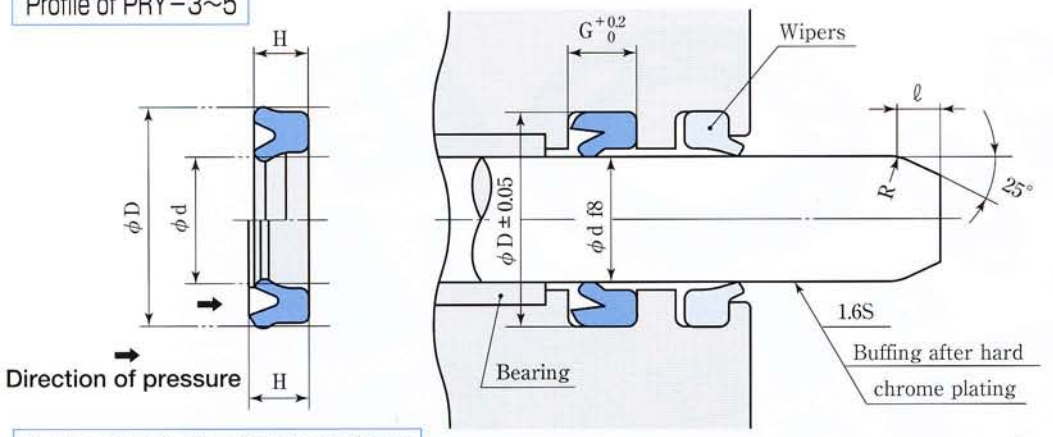
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★There is no slits on the inner diameter of PPY-6.
★The use of SWB-Wear rings is recommended on φ20 cylinder and larger sizes.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: **PRY-Packings and SWB-Wear rings**

PRY-Packings

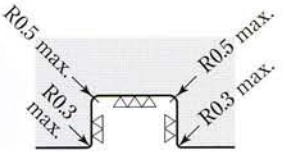
Dimension table

Profile of PRY−3~5



Profile of PRY−6 and larger products

Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Packings should be installed in the direction specified on the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.

Dimension table of PRY-Packings

(Unit : mm)

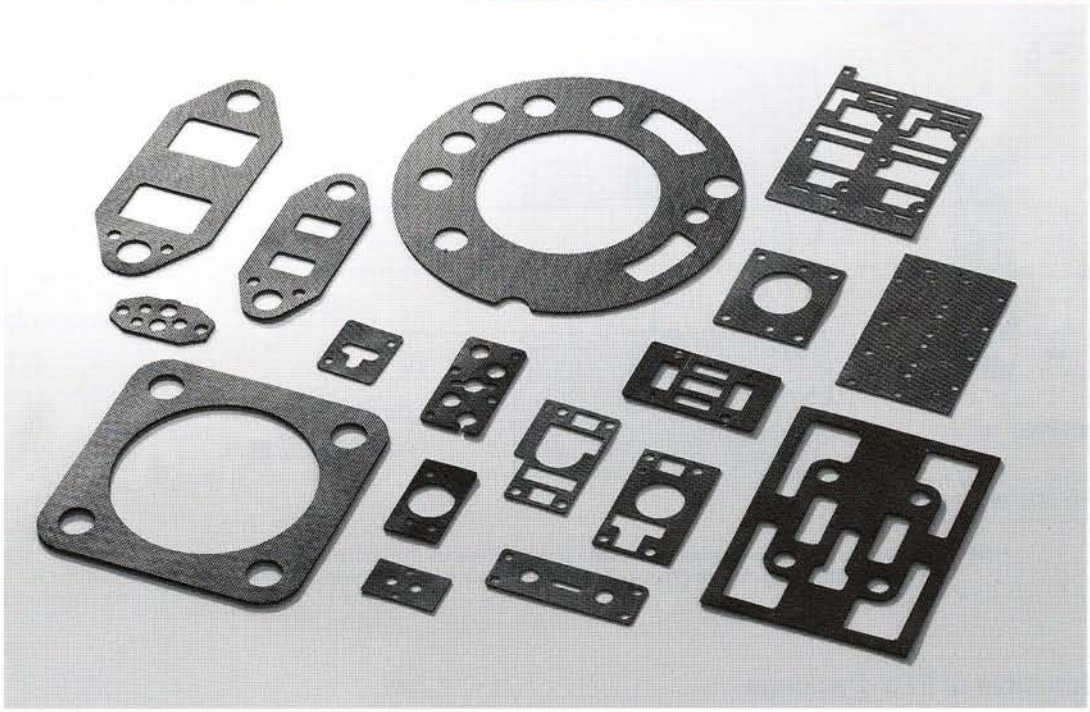
Packing & Groove dimensions					Part No.	
d	D	H	G	ℓ	Standard material (RN 713)	High temperature-resistant material (RF 704)
3	7	2.9	3.2	1.5	PRY- 3	PRY- 3F
4	8	2.9	3.2	1.5	PRY- 4	PRY- 4F
5	9	2.9	3.2	1.5	PRY- 5	PRY- 5F
6	10	3.5	4	1.5	PRY- 6	
8	12	3.5	4	1.5	PRY- 8	
10	14	3.5	4	1.5	PRY-10	
12	17	4	4.5	1.5	PRY-12	
14	19	4	4.5	1.5	PRY-14	
16	22	5	5.7	1.5	PRY-16	

★Orders and inquiries are acceptable by part numbers.
★PRY-Packings are made-to-order products.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and the storage.

Related products: **PPY-Packings and SER-Wipers**

Grid-Surface Gaskets®

Pneumatic rubber sheet gaskets



Grid-Surface Gaskets®

Pneumatic rubber sheet gaskets originally were designed by SAKAGAMI. Grid-surface formed on the sheet surface has solved the problem of protruding when ordinary gaskets are tightened, and achieved further improved sealing performance.

Features

① Grid-surface gaskets® seal with minimum tightening force, providing excellent sealing performance.

② Protrusion of rubber when tightened is minimized.

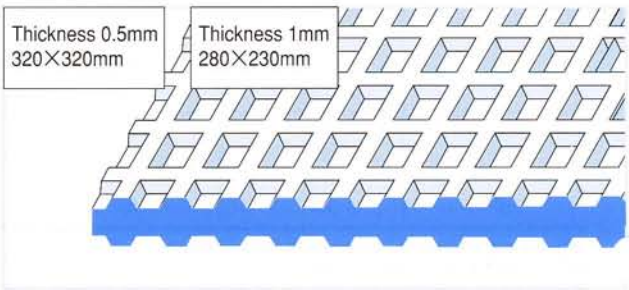
③ Neither corrosion nor sticking on the contact surface are observed.

④ Superior in weather, water and oil resistance.

⑤ Cuttable (die-punching) into a requested shape.

Shapes and types

The following two types are available as the standard sheets.



Grid-surface gaskets® are available in either standard sheets or customized shapes. When the gasket is ordered in customized shape, the tooling cost would be at your expense.

Description

Items \ Thickness			1mm	0.5mm
Material			SAPLATIC® RD911 (Special compounded NBR H_S90)	SAPLATIC® RN917 (Special compounded NBR H_S90)
Operating temperature range			−30~80℃	
Tolerance		Thickness	$1\ ^{+0.35}_{-0.15}$ mm	$0.5\ ^{+0.3}_{-0.1}$ mm
	Dimensions	Less than 60	±0.36mm	
		60 and over	±(Design dimensions×0.006) mm	
Minimum design width			3mm	2mm
Recommended contact pressure			1~5MPa {10~50kgf/cm²}	2~6MPa {20~60kgf/cm²}

★Apart from the above mentioned NBR, fluorine rubber is also available for high temperature-resistant and chemical-resistant models. Please contact our sales department.
★Packings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

Major applications

Pneumatic equipment

- Solenoid valves
- Cylinder covers
- Drier bodies

Electric parts

- Dust and water proof
- Contact protecting cover

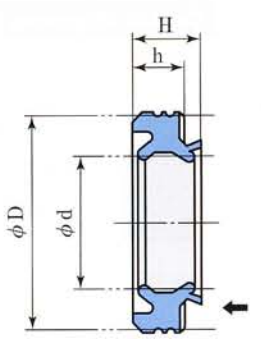
Railway vehicle equipment

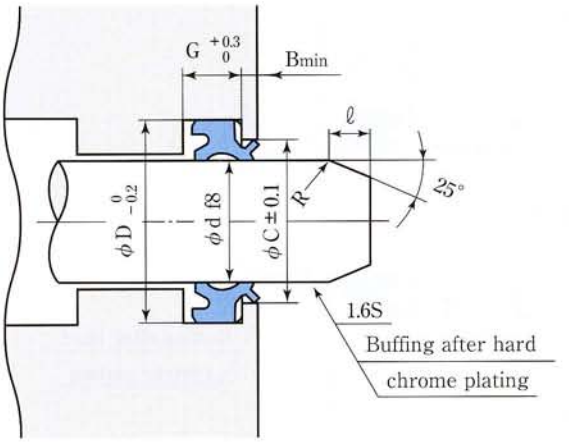
- Door engine and cover
- Break cylinder cover
- Gearbox and cover
- Rotating joints of pipes

(Installable in one-piece groove)

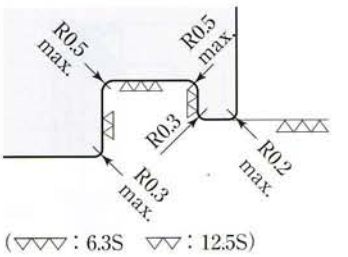
SCK-Wipers

Dimension table





Details of groove



Note:
- Wipers should be installed in the direction specified in the above schematic.
- Consider adopting divided grooves if one-piece groove is technically adverse.
- Apply enough grease (specified at page 10) to the inside of the groove at the installation. Besides, consider a rust control treatment on the surface of φC dimension.
- Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SCK-Wipers

(Unit : mm)

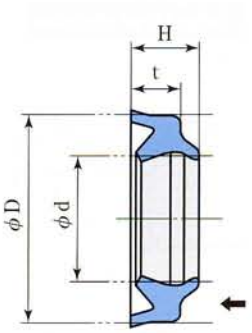
Wipers & Groove dimensions							Part No.
d	D	H	h	C	G	B	Standard material (RN 814)
18	30	7.7	5.8	24	6	3	SCK- 18
20	32	7.7	5.8	26	6	3	SCK- 20
25	37	7.7	5.8	31	6	3	SCK- 25
28	40	7.7	5.8	34	6	3	SCK- 28
30	42	7.7	5.8	36	6	3	SCK- 30
32	44	8.7	6.8	38	7	3	SCK- 32
35	47	8.7	6.8	41	7	3	SCK- 35
40	52	8.7	6.8	46	7	3	SCR- 40
45	57	8.7	6.8	51	7	3	SCK- 45
50	62	8.7	6.8	56	7	3	SCK- 50
55	69	10	7.7	62	8	3	SCK- 55
60	74	10	7.7	67	8	3	SCK- 60
65	79	10	7.7	72	8	3	SCK- 65
70	84	10	7.7	77	8	3	SCK- 70
75	89	10	7.7	82	8	3	SCK- 75
80	94	10	7.7	87	8	3	SCK- 80
85	99	10	7.7	92	8	3	SCK- 85
90	104	10	7.7	97	8	3	SCK- 90
95	109	10	7.7	102	8	3	SCK- 95
100	114	10	7.7	107	8	3	SCK-100
105	121	12	8.7	113	9	4	SCK-105
110	126	12	8.7	118	9	4	SCK-110
115	131	12	8.7	123	9	4	SCK-115
120	136	12	8.7	128	9	4	SCK-120
125	141	12	8.7	133	9	4	SCK-125
130	146	12	8.7	138	9	4	SCK-130
132	148	12	8.7	140	9	4	SCK-132
140	160	14	9.7	150	10	5	SCK-140
160	180	14	9.7	170	10	5	SCK-160

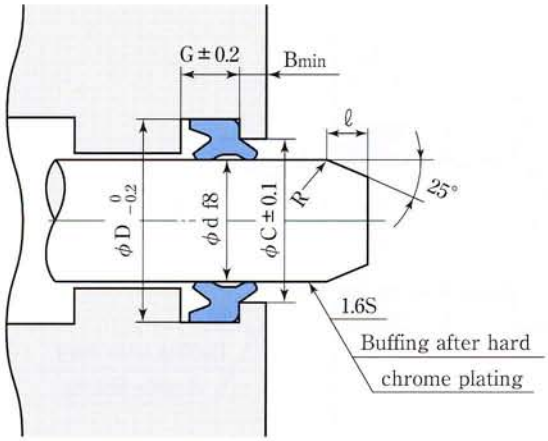
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SDR-Wipers

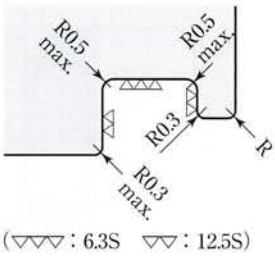
(Installable in one-piece groove)

Dimension table





Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

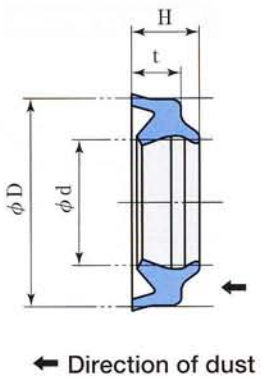
Note: ● Wipers should be installed in the direction specified in the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

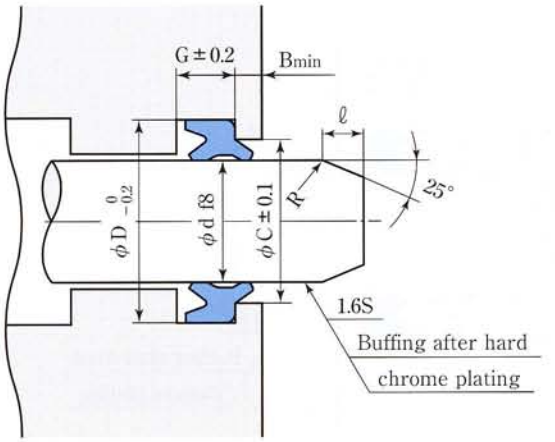
Dimension table of SDR-Wipers

(Unit : mm)

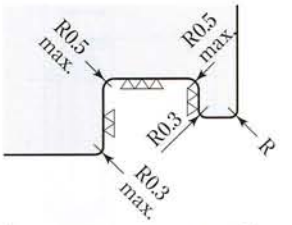
Wipers & Groove dimensions							Part No.		
							SDR-Wipers		
d	D	H	t	G	C	B	Standard material (RN 906)	High temperature-resistant material (RF 905)	Low temperature-resistant material (RN 903)
12	20	6	4.5	5	16.3	2	*SDR-0012001N906*		
12.5	20.5	6	4.5	5	16.8	2	*SDR-12.5*		
14	22	6	4.5	5	18.3	2	**SDR-14**		
16	24	6	4.5	5	20.3	2	**SDR-16**	**SDR-16F**	
18	26	6	4.5	5	22.3	2	**SDR-18**	**SDR-18F**	
19	27	6	4.5	5	23.3	2	*SDR-0019001N906*		
20	28	6	4.5	5	24.3	2	**SDR-20**	**SDR-20F**	
22	30	6	4.5	5	26.3	2	**SDR-22**	**SDR-22F**	
22.4	30.4	6	4.5	5	26.7	2	**SDR-22.4**	**SDR-22.4F**	*SDR-22.4N*
25	33	6	4.5	5	29.3	2	**SDR-25**	**SDR-25F**	*SDR-25N*
25.4	33.4	6	4.5	5	29.7	2	*SDR-0025404N906*		*SDR-0025402N903*
26	34	6	4.5	5	30.3	2	*SDR-0026001N906*		
28	36	6	4.5	5	32.3	2	**SDR-28**	**SDR-28F**	
30	38	6.5	5	6	34	2	**SDR-30**	**SDR-30F**	
31.5	39.5	6.5	5	6	35.5	2	**SDR-31.5**	**SDR-31.5F**	
32	40	6.5	5	6	36	2	**SDR-32**		
35	43	6.5	5	6	39	2	**SDR-35**	**SDR-35F**	
35.5	43.5	6.5	5	6	39.5	2	**SDR-35.5**	**SDR-35.5F**	*SDR-35.5N*
36	44	6.5	5	6	40	2	**SDR-36**	**SDR-36F**	
38	46	6.5	5	6	42	2	*SDR-0038001N906*		
40	48	6.5	5	6	44	2	**SDR-40**	**SDR-40F**	*SDR-40N*
45	53	6.5	5	6	49	2	**SDR-45**	**SDR-45F**	
50	58	6.5	5	6	54	2	**SDR-50**	**SDR-50F**	*SDR-50N*
53	61	6.5	5	6	57	2	**SDR-53**	**SDR-53F**	
55	63	6.5	5	6	59	2	**SDR-55**	**SDR-55F**	
56	64	6.5	5	6	60	2	**SDR-56**	**SDR-56F**	
60	68	6.5	5	6	64	2	**SDR-60**	**SDR-60F**	
63	71	6.5	5	6	67	2	**SDR-63**	**SDR-63F**	*SDR-63N*
65	73	6.5	5	6	69	2	**SDR-65**	**SDR-65F**	
67	75	6.5	5	6	71	2	**SDR-67**	**SDR-67F**	*SDR-67N*

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.





Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Wipers should be installed in the direction specified in the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SDR-Wipers

(Unit : mm)

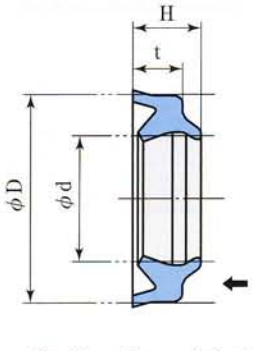
Wipers & Groove dimensions							Part No.		
							SDR-Wipers		
d	D	H	t	G	C	B	Standard material (RN 906)	High temperature-resistant material (RF 905)	Low temperature-resistant material (RN 903)
70	80	8	6	7	75	3	**SDR- 70**	**SDR- 70F**	
71	81	8	6	7	76	3	**SDR- 71**	**SDR- 71F**	*SDR- 71N*
75	85	8	6	7	80	3	**SDR- 75**	**SDR- 75F**	*SDR- 75N*
80	90	8	6	7	85	3	**SDR- 80**	**SDR- 80F**	
85	95	8	6	7	90	3	**SDR- 85**	**SDR- 85F**	*SDR- 85N*
90	100	8	6	7	95	3	**SDR- 90**	**SDR- 90F**	
95	105	8	6	7	100	3	**SDR- 95**	**SDR- 95F**	*SDR- 95N*
100	110	8	6	7	105	3	**SDR-100**	**SDR-100F**	*SDR-100N*
105	115	8	6	7	110	3	*SDR-0105002N906*		
106	116	8	6	7	111	3	**SDR-106**	**SDR-106F**	
110	120	8	6	7	115	3	*SDR-0110002N906*		
112	122	8	6	7	117	3	**SDR-112**	**SDR-112F**	
115	125	8	6	7	120	3	*SDR-0115002N906*		
118	128	8	6	7	123	3	**SDR-118**	**SDR-118F**	*SDR-118N*
120	133	9.5	7	8	127	3	*SDR-0120001N906*		
125	138	9.5	7	8	132	3	**SDR-125**	**SDR-125F**	
127	140	9.5	7	8	134	3	*SDR-0127003N906*		
132	145	9.5	7	8	139	3	**SDR-132**	**SDR-132F**	
140	153	9.5	7	8	147	3	**SDR-140**	**SDR-140F**	
145	158	9.5	7	8	152	3	**SDR-145**	**SDR-145F**	
150	163	9.5	7	8	157	3	**SDR-150**	**SDR-150F**	
153	166	9.5	7	8	160	3	*SDR-0153001N906*		
155	168	9.5	7	8	162	3	*SDR-0155001N906*		
160	173	9.5	7	8	167	3	**SDR-160**	**SDR-160F**	
160	174	9.5	7	8	167	3	*SDR-160A*	*SDR-160AF*	
165	178	9.5	7	8	172	3	**SDR-165**	**SDR-165F**	
170	183	9.5	7	8	177	3	*SDR-0170001N906*		
175	188	9.5	7	8	182	3	**SDR-175**	**SDR-175F**	
180	193	9.5	7	8	187	3	**SDR-180**	**SDR-180F**	
180	194	9.5	7	8	187	3	*SDR-180A*	*SDR-180AF*	
190	203	9.5	7	8	197	3	*SDR-0190001N906*		
195	207	9.5	7	8	201.5	3	*SDR-0195001N906*		
200	213	9.5	7	8	207	3	**SDR-200**	**SDR-200F**	

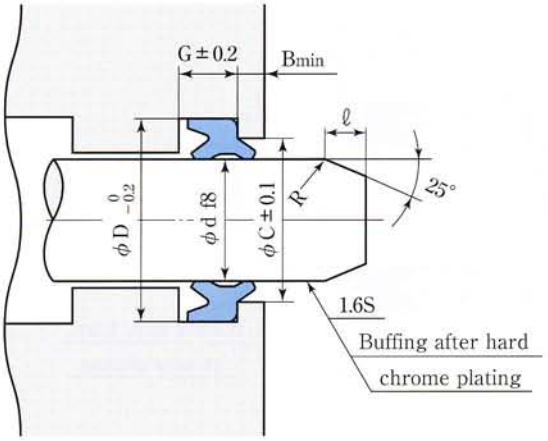
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SDR-Wipers

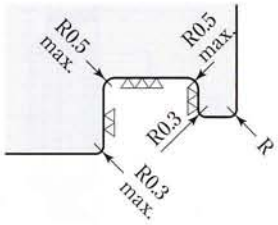
(Installable in one-piece groove)

Dimension table





Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note: ● Wipers should be installed in the direction specified in the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SDR-Wipers

(Unit : mm)

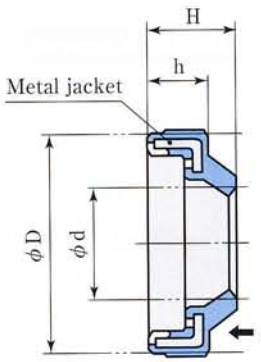
Wipers & Groove dimensions							Part No. SDR-Wipers		
d	D	H	t	G	C	B	Standard material (RN 906)	High temperature-resistant material (RF 905)	Low temperature-resistant material (RN 903)
205	218	9.5	7	8	212	3	*SDR-0205002N906*	*SDR-0205001F905*	
210	223	9.5	7	8	217	3	*SDR-0210002N906*		*SDR-0210001N903*
215	228	9.5	7	8	222	3	*SDR-0215001N906*		
224	237	9.5	7	8	231	3	**SDR-224**	**SDR-224F**	
225	238	9.5	7	8	232	3	*SDR-0225001N906*		
230	243	9.5	7	8	237	3	*SDR-0230001N906*		
250	266	13	10	11	258	4	**SDR-250**	**SDR-250F**	
280	296	13	10	11	288	4	*SDR-280*	*SDR-280F*	
285	301	13	10	11	293	4	*SDR-0285001N906*		
290	306	13	10	11	298	4	*SDR-0290001N906*		
295	311	13	10	11	303	4	*SDR-0295001N906*		
300	316	13	10	11	308	4	*SDR-0300002N906*		
315	331	13	10	11	323	4	*SDR-315*		
320	336	13	10	11	328	4	*SDR-0320001N906*		
335	351	13	10	11	343	4	*SDR-0335001N906*		
355	371	13	10	11	363	4	*SDR-355*		
360	380	13	10	11	368	4	*SDR-0360002N906*		
400	416	13	10	11	408	4	*SDR-0400001N906*		
415	435	13	10	11	423	4	*SDR-0415001N906*		
420	436	13	10	11	428	4	*SDR-0420001N906*		
450	466	13	10	11	458	4	*SDR-450*		
480	496	13	10	11	488	4	*SDR-0480001N906*		
500	520	15.5	11.5	12.5	510	5	*SDR-0500001N906*		
505	521	13	10	11	513	4	*SDR-0505001N906*		
508	528	16	12	13	518	5	*SDR-0508001N906*		
600	616	13	10	11	608	4	*SDR-0600001N906*		

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SDB-Wipers

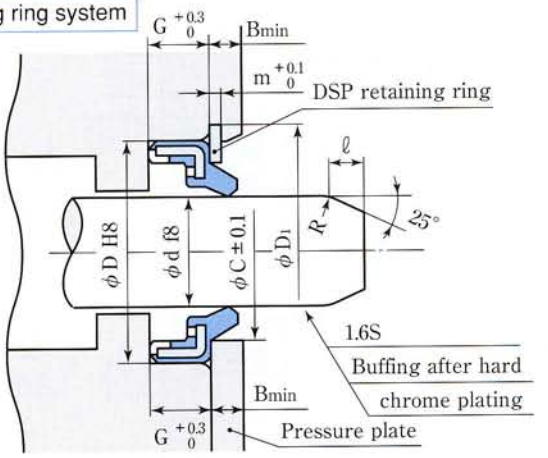
Wipers for liquids
(Press fit installation)

Dimension table



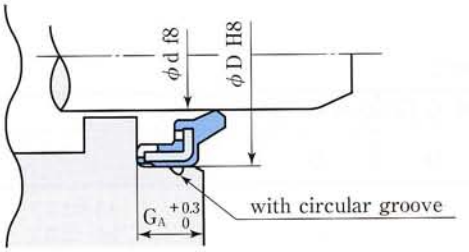
← Direction of liquid flow

Retaining ring system



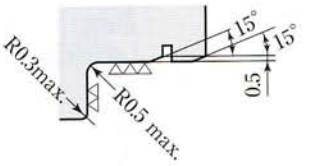
Pressure plate flat system

Press fit system

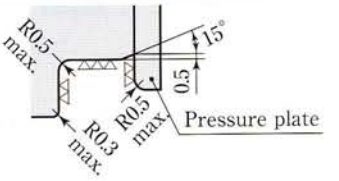


Details of groove

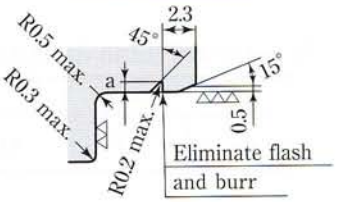
Retaining ring system



Pressure plate flat system



Press fit system



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note:
- Wipers should be installed in the direction specified in the above schematic.
- Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.
- As pressure plate flat system requires the inner dimension of pressure bar different from that of SCB-wiper, refer to the table below.

⚠ Caution

1) For dust-proof application, choose the suitable one out of the standard wipers.
2) SDB-wipers have strong wiping ability of oil film on the surface of the rod. Note that the use of SDB-wipers for hydraulic and pneumatic cylinders may wipe out lubricants and grease outside.
3) Do not apply any lubricants such as grease to the outer ring surface of wipers and the inside of the housing to avoid lifting of wipers from the housing at installation. (no problem in the use for press fit installation)
4) At the insertion of the rod, apply grease to the inner ring of wipers and the rod surface to avoid damages on the lip part.

Part No.	G_A	a
8~16	5.5	0.3
18~30	6.5	0.3
32~50	8.0	0.5
56	9.0	0.7

Dimension table of SDB-Wipers

(Unit : mm)

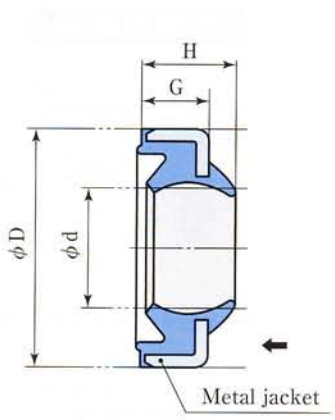
Wipers & Groove dimensions										Part No.			Compatible SCB-wipers
d	D	H	h	G	B	D_1	m	C	ℓ	Standard material (RN819)	Material for chlorine fluid (RF 903)	Retaining ring	
8	18	7.5	4.8	5	3.5	18.8±0.1	0.7	14.9	2	SDB- 8	SDB- 8F	DSP- 8	SCB- 8
10	20	7.5	4.8	5	3.5	21 ±0.1	0.7	16.9	2	SDB-10	SDB-10F	DSP-10	SCB-10
12	22	7.5	4.8	5	3.5	23 ±0.1	0.7	18.9	2	SDB-12	SDB-12F	DSP-12	SCB-12
14	24	7.5	4.8	5	3.5	25 ±0.1	0.7	20.9	2	SDB-14	SDB-14F	DSP-14	SCB-14
16	26	7.5	4.8	5	3.5	27 ±0.1	0.7	22.9	2	SDB-16	SDB-16F	DSP-16	SCB-16
18	30	9	5.8	6	4.5	31.5±0.1	0.8	26.3	2	SDB-18	SDB-18F	DSP-18	SCB-18
20	32	9	5.8	6	4.5	33.5±0.1	0.8	28.3	2	SDB-20	SDB-20F	DSP-20	SCB-20
22.4	34.4	9	5.8	6	4.5	35.9±0.1	0.8	30.7	2	SDB-22.4	SDB-22.4F	DSP-22.4	SCB-22.4
25	37	9	5.8	6	4.5	38.5±0.1	0.8	33.3	2	SDB-25	SDB-25F	DSP-25	SCB-25
28	40	9	5.8	6	4.5	41.5±0.1	0.8	36.3	2	SDB-28	SDB-28F	DSP-28	SCB-28
30	42	9	5.8	6	4.5	43.5±0.1	0.8	38.3	2	SDB-30	SDB-30F	DSP-30	SCB-30
32	44	10	6.8	7	4.5	45.5±0.1	0.8	40.3	3	SDB-32	SDB-32F	DSP-32	SCB-32
35.5	47.5	10	6.8	7	4.5	49.5±0.15	1.0	43.8	3	SDB-35.5	SDB-35.5F	DSP-35.5	SCB-35.5
40	52	10	6.8	7	4.5	54 ±0.15	1.0	48.3	3	SDB-40	SDB-40F	DSP-40	SCB-40
45	57	10	6.8	7	4.5	59 ±0.15	1.0	53.3	3	SDB-45	SDB-45F	DSP-45	SCB-45
50	62	10	6.8	7	4.5	64 ±0.15	1.0	58.3	3	SDB-50	SDB-50F	DSP-50	SCB-50
56	70	11	7.7	8	5	72.5±0.15	1.1	65.5	3	SDB-56	SDB-56F	DSP-56	SCB-56

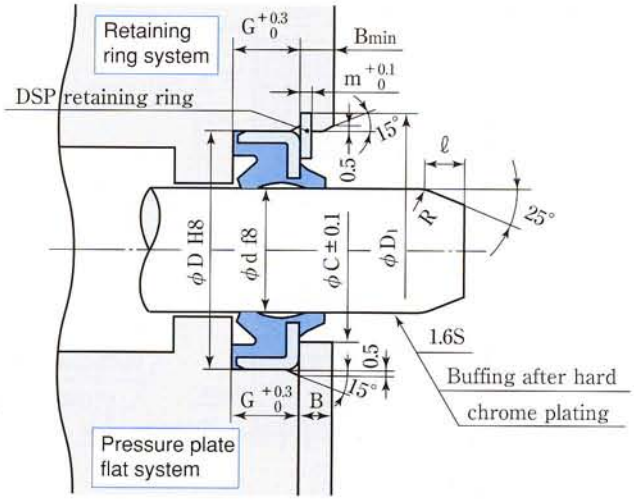
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★DSP-retaining rings are made-to-order products. Note that other retaining rings such as C-shaped retaining rings are unapplicable.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SCB-Wipers

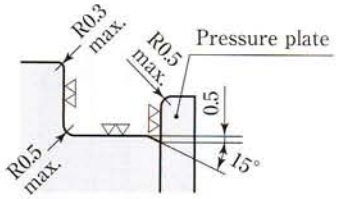
(Press fit installation)

Dimension table





Details of groove



(▽▽ : 12.5S)

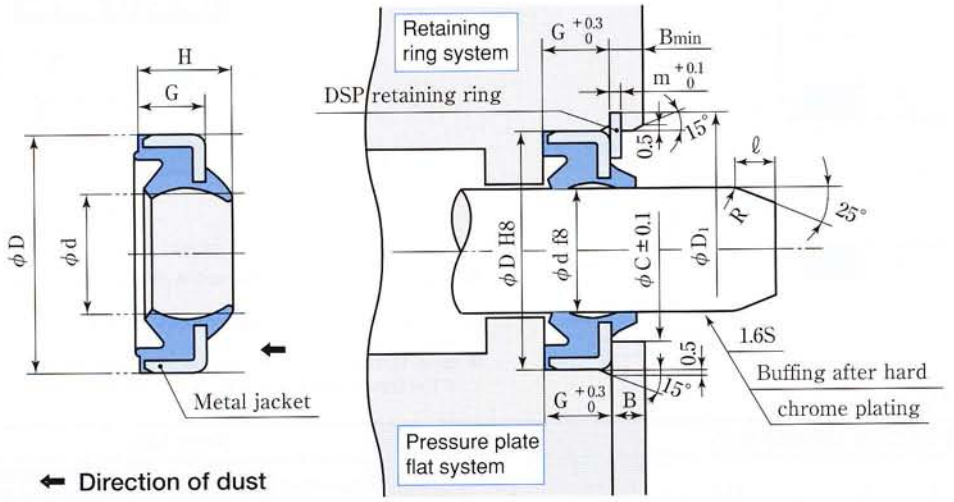
Note: ● Wipers should be installed in the direction specified in the above schematic.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

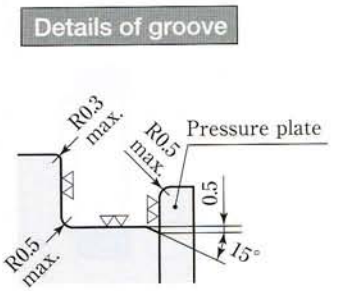
Dimension table of SCB-Wipers

(Unit : mm)

Wipers & Groove dimensions								Part No.	
d	D	H	G	C	B	D_1	m	Standard material (RN 807)	Retaining ring
8	18	8	5	14	3	18.8±0.1	0.7	**SCB- 8**	**DSP- 8**
10	20	8	5	16	3	21 ±0.1	0.7	**SCB-10**	**DSP-10**
12	22	8	5	17	3			*SCB-0012001N807*	
12.5	23	8	5	19	3	24 ±0.1	0.7	**SCB-12.5**	**DSP-12.5**
14	24	8	5	19	3	25 ±0.1	0.7	**SCB-14**	**DSP-14**
15	25	8	5	21	3	26 ±0.1	0.7	**SCB-15**	**DSP-15**
16	26	8	5	21	3	27 ±0.1	0.7	**SCB-16**	**DSP-16**
18	30	9	6	24	3	31.5±0.1	0.8	**SCB-18**	**DSP-18**
20	32	9	6	26	3	33.5±0.1	0.8	**SCB-20**	**DSP-20**
22	32	9	6	28	3			*SCB-0022001N807*	
22	34	9	6	28	3	35.5±0.1	0.8	**SCB-22**	**DSP-22**
22.4	34.4	9	6	29.4	3	35.9±0.1	0.8	**SCB-22.4**	**DSP-22.4**
25	37	9	6	31	3	38.5±0.1	0.8	**SCB-25**	**DSP-25**
28	40	9	6	34	3	41.5±0.1	0.8	**SCB-28**	**DSP-28**
30	42	9	6	36	3	43.5±0.1	0.8	**SCB-30**	**DSP-30**
30	45	9	6	37	3			*SCB-0030001N807*	
31.5	44	10	7	39	3	45.5±0.1	0.8	**SCB-31.5**	**DSP-31.5**
32	44	10	7	39	3	45.5±0.1	0.8	**SCB-32**	**DSP-32**
34	46	10	7	41	3			*SCB-0034001N807*	
35	47	10	7	41	3	49 ±0.15	1.0	**SCB-35**	**DSP-35**
35.5	47.5	10	7	42.5	3	49.5±0.15	1.0	**SCB-35.5**	**DSP-35.5**
40	52	10	7	46	3	54 ±0.15	1.0	**SCB-40**	**DSP-40**
45	57	10	7	51	3	59 ±0.15	1.0	**SCB-45**	**DSP-45**
50	62	10	7	56	3	64 ±0.15	1.0	**SCB-50**	**DSP-50**
55	69	11	8	62	4	71.5±0.15	1.1	**SCB-55**	**DSP-55**
56	70	11	8	64	4	72.5±0.15	1.1	**SCB-56**	**DSP-56**
60	74	11	8	67	4	76.5±0.15	1.1	**SCB-60**	**DSP-60**
63	77	11	8	71	4	79.5±0.15	1.1	**SCB-63**	**DSP-63**
65	79	11	8	72	4	81.5±0.15	1.1	**SCB-65**	**DSP-65**
70	84	11	8	77	4	86.5±0.15	1.1	**SCB-70**	**DSP-70**
71	85	11	8	79	4	87.5±0.15	1.1	**SCB-71**	**DSP-71**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★DSP-retaining rings are made-to-order products. Note that other retaining rings, such as C-shaped retaining rings are unapplicable.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.





Note: ● Wipers should be installed in the direction specified in the above schematic.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SCB-Wipers

(Unit : mm)

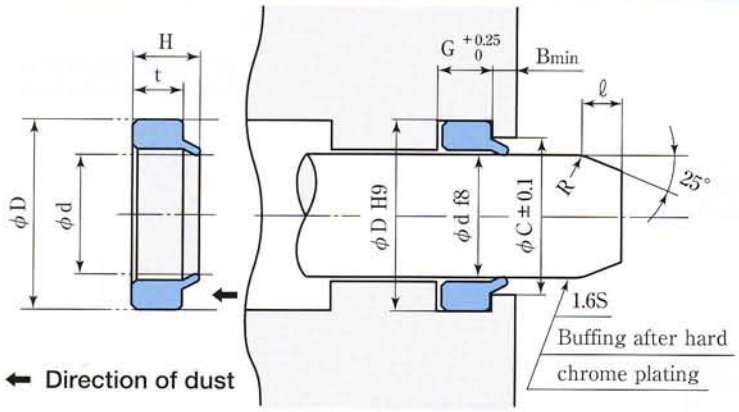
Wipers & Groove dimensions								Part No.	
d	D	H	G	C	B	D_1	m	Standard material (RN 807)	Retaining ring
75	89	11	8	82	4	91.5±0.15	1.1	**SCB- 75**	**DSP- 75**
78	92	11	8	86	4			*SCB-0078001N807*	
80	94	11	8	87	4	96.5±0.15	1.1	**SCB- 80**	**DSP- 80**
85	99	11	8	92	4	101.5±0.15	1.1	**SCB- 85**	**DSP- 85**
90	104	11	8	97	4	106.5±0.15	1.1	**SCB- 90**	**DSP- 90**
95	109	11	8	102	4	111.5±0.15	1.1	**SCB- 95**	**DSP- 95**
98	112	11	8	106	4			*SCB-0098001N807*	
100	114	11	8	107	4	116.5±0.15	1.1	**SCB-100**	**DSP-100**
105	121	12	9	113	5	125 ±0.15	1.3	**SCB-105A**	**DSP-105A**
106	120	11	8	114	5	124 ±0.15	1.3	*SCB-106*	**DSP-106**
110	126	12	9	118	5	130 ±0.15	1.3	**SCB-110**	**DSP-110**
112	128	12	9	121	5	132 ±0.15	1.3	*SCB-112*	**DSP-112**
115	131	12	9	123	5	135 ±0.15	1.3	**SCB-115**	**DSP-115**
118	134	12	9	127	5	138 ±0.15	1.3	*SCB-118*	**DSP-118**
120	136	12	9	128	5	140 ±0.15	1.3	**SCB-120**	**DSP-120**
125	141	12	9	133	5	145 ±0.15	1.3	**SCB-125**	**DSP-125**
130	146	12	9	138	5	150 ±0.15	1.3	**SCB-130**	**DSP-130**
132	148	12	9	141	5	152 ±0.2	1.3	**SCB-132**	**DSP-132**
135	155	14	10	145	5	159 ±0.2	1.3	**SCB-135**	**DSP-135**
140	160	14	10	150	5	164 ±0.2	1.3	**SCB-140**	**DSP-140**
145	165	14	10	155	5	169 ±0.2	1.3	**SCB-145**	**DSP-145**
150	170	14	10	160	6	174 ±0.2	1.3	**SCB-150**	**DSP-150**
160	180	14	10	170	6	184 ±0.2	1.3	**SCB-160**	**DSP-160**
170	190	14	10	180	6	194 ±0.2	1.3	**SCB-170**	**DSP-170**
175	195	14	10	185	6	199 ±0.2	1.3	**SCB-175**	**DSP-175**
180	200	14	10	190	6	204 ±0.2	1.3	**SCB-180**	**DSP-180**
190	215	16	12	202.5	6	219.5±0.2	1.6	**SCB-190A**	**DSP-190A**
200	225	16	12	212.5	6	229.5±0.2	1.6	**SCB-200A**	**DSP-200A**
250	274	16	12	262	6	278.5±0.2	1.6	**SCB-250**	**DSP-250**

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★DSP-retaining rings are made-to-order products. Note that other retaining rings such as C-shaped retaining rings are unapplicable.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

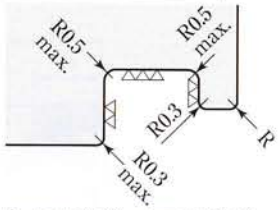
SER-Wipers

(Installable in one-piece groove)

Dimension table



Details of groove



(▽▽▽ : 6.3S ▽▽ : 12.5S)

Note:
- Wipers should be installed in the direction specified in the left schematic.
- Consider adopting divided grooves if one-piece groove is technically adverse.
- Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SER-Wipers

(Unit : mm)

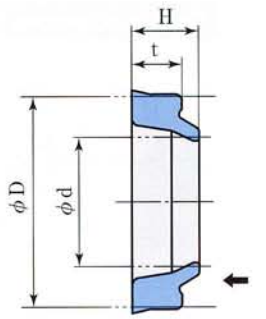
Wipers & Groove dimensions							Part No.	
d	D	H	t	G	C	B	Standard material (RN 906)	High temperature-resistant material (RF 905)
3	6	2.75	2	2.5	4.5	1.5	SER- 3	
4	7	2.75	2	2.5	5.5	1.5	SER- 4	
5	8	2.75	2	2.5	6.5	1.5	SER- 5	
6	9	2.75	2	2.5	7.5	1.5	SER- 6	
7	10	2.75	2	2.5	8.5	1.5	SER- 7	
8	11	2.75	2	2.5	9.5	1.5	SER- 8	*SER- 8F*
9	12	2.75	2	2.5	10.5	1.5	SER- 9	*SER- 9F*
10	13	2.75	2	2.5	11.5	1.5	SER- 10	
10	14	3.9	2.9	3.2	12	1.5	SER- 10A	*SER-10AF*
11.2	15.2	3.9	2.9	3.2	13.2	1.5	SER- 11.2	
12	16	3.9	2.9	3.2	14	1.5	SER- 12	*SER-12F*
12.5	16.5	3.9	2.9	3.2	14.5	1.5	SER- 12.5	
14	18	3.9	2.9	3.2	16	1.5	SER- 14	*SER-14F*
15	19	3.9	2.9	3.2	17	1.5	SER- 15	
16	20	3.9	2.9	3.2	18	1.5	SER- 16	*SER-16F*
18	22	3.9	2.9	3.2	20	1.5	SER- 18	*SER-18F*
20	24	3.9	2.9	3.2	22	1.5	SER- 20	*SER-20F*
22	26	3.9	2.9	3.2	24	1.5	SER- 22	
22.4	28.4	5.8	4.3	4.7	25.4	2	SER- 22.4	
24	30	5.8	4.3	4.7	27	2	SER- 24	
25	31	5.8	4.3	4.7	28	2	SER- 25	*SER-25F*
26	32	5.8	4.3	4.7	29	2	SER- 26	
28	34	5.8	4.3	4.7	31	2	SER- 28	
30	36	5.8	4.3	4.7	33	2	SER- 30	*SER-30F*
32	38	5.8	4.3	4.7	35	2	SER- 32	
34	40	5.8	4.3	4.7	37	2	SER- 34	
35	41	5.8	4.3	4.7	38	2	SER- 35	*SER-35F*
35.5	41.5	5.8	4.3	4.7	38.5	2	SER- 35.5	*SER-35.5F*
36	42	5.8	4.3	4.7	39	2	SER- 36	
38	44	5.8	4.3	4.7	41	2	SER- 38	
40	46	5.8	4.3	4.7	43	2	SER- 40	*SER-40F*
42	48	5.8	4.3	4.7	45	2	SER- 42	
45	51	5.8	4.3	4.7	48	2	SER- 45	
46	52	5.8	4.3	4.7	49	2	SER- 46	
48	54	5.8	4.3	4.7	51	2	SER- 48	
50	56	5.8	4.3	4.7	53	2	SER- 50	
55	65	9.4	6.9	7.5	60	3	SER- 55	
56	66	9.4	6.9	7.5	61	3	SER- 56	
60	70	9.4	6.9	7.5	65	3	SER- 60	
70	80	9.4	6.9	7.5	75	3	SER- 70	
75	85	9.4	6.9	7.5	80	3	SER- 75	
80	90	9.4	6.9	7.5	85	3	SER- 80	
90	100	9.4	6.9	7.5	95	3	SER- 90	*SER-90F*
100	110	9.4	6.9	7.5	105	3	SER-100	

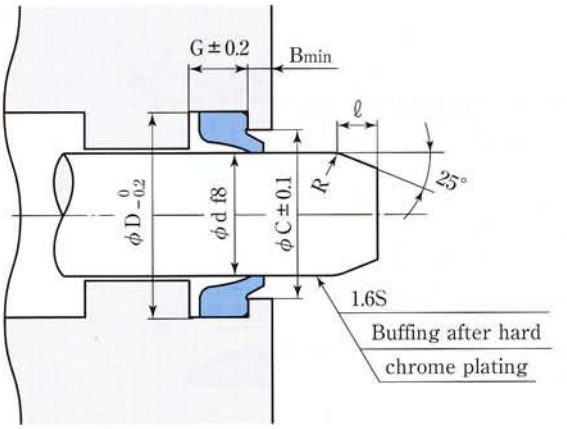
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SFR-Wipers

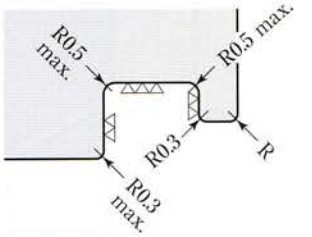
(Installable in one-piece groove)

Dimension table





Details of groove



Note: ● Wipers should be installed in the direction specified in the above schematic.
● Consider adopting divided grooves if one-piece groove is technically adverse.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of SFR-Wipers

(Unit : mm)

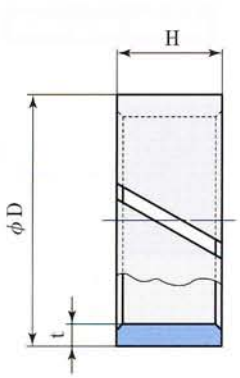
Wiper & Groove dimensions							Part No.
d	D	H	t	G	C	B	Standard material (RN 912)
16	24	6	4.5	5	20.3	2	SFR- 16K
18	26	6	4.5	5	22.3	2	SFR- 18K
20	28	6	4.5	5	24.3	2	SFR- 20K
22	30	6	4.5	5	26.3	2	SFR- 22K
22.4	30.4	6	4.5	5	26.7	2	SFR- 22.4K
25	33	6	4.5	5	29.3	2	SFR- 25K
28	36	6	4.5	5	32.3	2	SFR- 28K
30	38	6.5	5	6	34	2	SFR- 30K
31.5	39.5	6.5	5	6	35.5	2	SFR- 31.5K
32	40	6.5	5	6	36	2	SFR- 32K
35	43	6.5	5	6	39	2	SFR- 35K
35.5	43.5	6.5	5	6	39.5	2	SFR- 35.5K
36	44	6.5	5	6	40	2	SFR- 36K
40	48	6.5	5	6	44	2	SFR- 40K
45	53	6.5	5	6	49	2	SFR- 45K
50	58	6.5	5	6	54	2	SFR- 50K
55	63	6.5	5	6	59	2	SFR- 55K
60	68	6.5	5	6	64	2	SFR- 60K
63	71	6.5	5	6	67	2	SFR- 63K
70	80	8	6	7	75	3	SFR- 70K
75	85	8	6	7	80	3	SFR- 75K
80	90	8	6	7	85	3	SFR- 80K

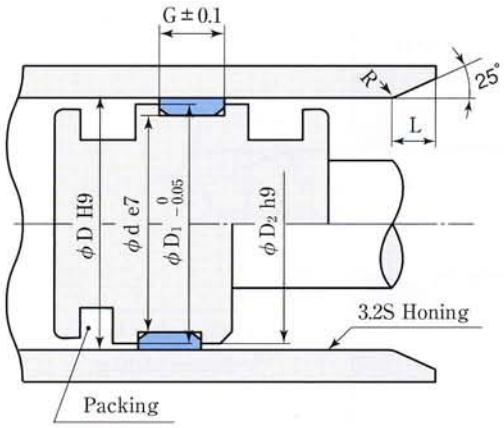
★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Wipers are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

SW-Wear rings

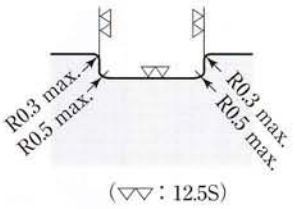
Wear rings for high-load pistons
(Installable in one-piece groove)

Dimension table





Details of groove



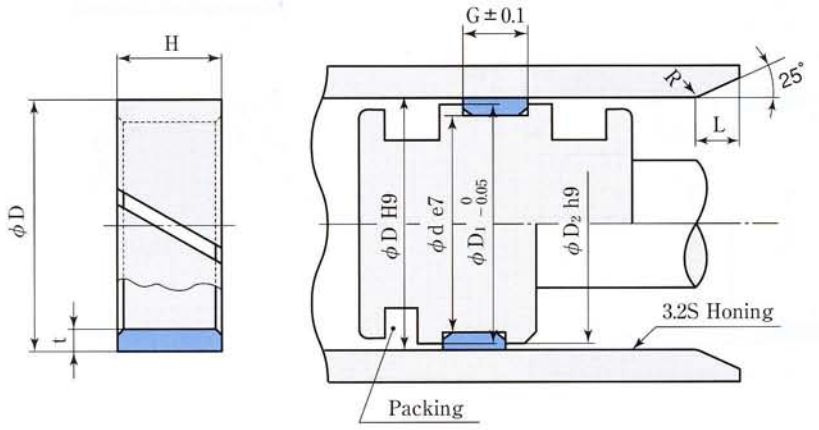
Note: ● Refer to the L dimension as it would be differed according to the type of packings to be used together.

Dimension table of SW-Wear rings

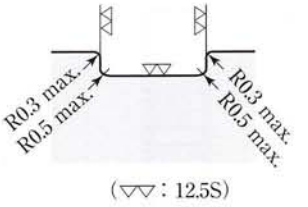
(Unit : mm)

Wear ring & Groove dimensions							Part No.
D	d	H	t	G	D_1	D_2	Standard material (PB 201)
30	26	5	2	5	29.5	29	SW- 30
31.5	27.5	8	2	8	31	30	SW- 31.5
32	28	8	2	8	31.5	30.5	SW- 32
35	31	8	2	8	34.5	33.5	SW- 35
35.5	31.5	10	2	10	35	34	SW- 35.5
40	36	10	2	10	39.5	38.5	SW- 40
45	41	12	2	12	44.5	43.5	SW- 45
50	46	12	2	12	49.5	48.5	SW- 50
53	47	16	3	16	52.4	51	SW- 53
55	49	16	3	16	54.4	53	SW- 55
56	50	16	3	16	55.4	54	SW- 56
60	54	16	3	16	59.4	58	SW- 60
63	57	16	3	16	62.4	61	SW- 63
65	59	16	3	16	64.4	63	SW- 65
70	64	20	3	20	69.4	68	SW- 70
71	65	20	3	20	70.4	69	SW- 71
75	69	20	3	20	74.4	73	SW- 75
80	74	20	3	20	79.4	78	SW- 80
85	79	20	3	20	84.4	83	SW- 85
90	84	25	3	25	89.4	88	SW- 90
95	89	25	3	25	94.4	93	SW- 95
100	94	25	3	25	99.4	98	SW-100
105	99	25	3	25	104.4	103	SW-105
110	104	30	3	30	109.4	108	SW-110
112	106	30	3	30	111.4	110	SW-112
115	109	30	3	30	114.4	113	SW-115
120	114	30	3	30	119.4	118	SW-120
125	119	30	3	30	124.3	123	SW-125

★Orders and inquiries are acceptable by part numbers.
★SW-Wear rings are made-to-order products. The wear rings for the inner slide are also available upon request.
★Wear rings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.



Details of groove



Note: ● Refer to the L dimension as it would be differed according to the type of packings to be used together.

Dimension table of SW-Wear rings

(Unit : mm)

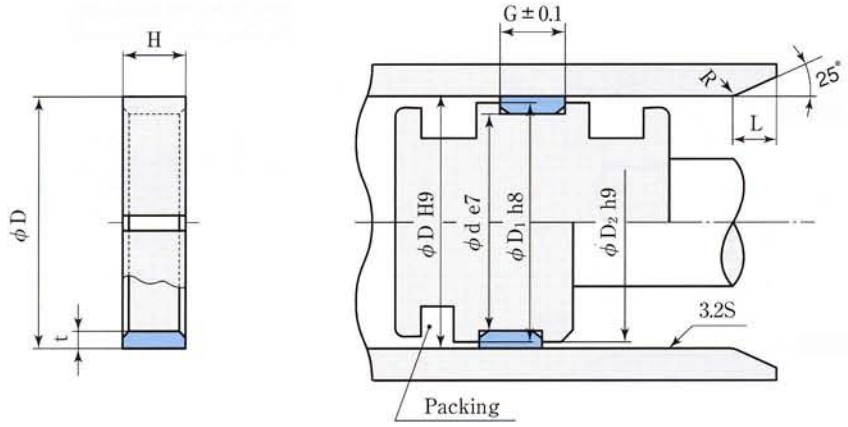
Wear ring & Groove dimensions							Part No.
D	d	H	t	G	D_1	D_2	Standard material (PB 201)
130	124	30	3	30	129.3	128	SW-130
135	129	30	3	30	134.3	133	SW-135
140	134	40	3	40	139.3	138	SW-140
150	144	40	3	40	149.3	148	SW-150
160	154	40	3	40	159.3	158	SW-160
170	164	50	3	50	169.3	168	SW-170
175	169	50	3	50	174.3	173	SW-175
180	174	50	3	50	179.3	178	SW-180
190	184	50	3	50	189.2	188	SW-190
200	194	50	3	50	199.2	198	SW-200
210	204	50	3	50	209.2	208	SW-210
220	214	60	3	60	219.2	218	SW-220
224	218	60	3	60	223.2	222	SW-224
230	224	60	3	60	229.2	228	SW-230
240	234	60	3	60	239.2	238	SW-240
250	244	60	3	60	249.2	248	SW-250
260	252	60	4	60	259.2	257	SW-260
270	262	60	4	60	269.2	267	SW-270
280	272	60	4	60	279.2	277	SW-280
290	282	60	4	60	289.2	287	SW-290
300	292	60	4	60	299.2	297	SW-300
310	302	70	4	70	309	307	SW-310
320	312	70	4	70	319	317	SW-320
340	332	70	4	70	339	337	SW-340
350	342	70	4	70	349	347	SW-350
360	352	70	4	70	359	357	SW-360
375	367	70	4	70	374	372	SW-375
380	372	70	4	70	379	377	SW-380
400	392	70	4	70	399	397	SW-400

★Orders and inquiries are acceptable by part numbers.
★SW-Wear rings are made-to-order products. The wear rings for the inner slide are also available upon request.
★Wear rings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

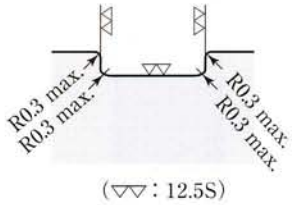
SWA-Wear rings

Wear rings for low-load pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Refer to the L dimension as it would be differed according to the type of packings to be used together.

Dimension table of SWA-Wear rings

(Unit : mm)

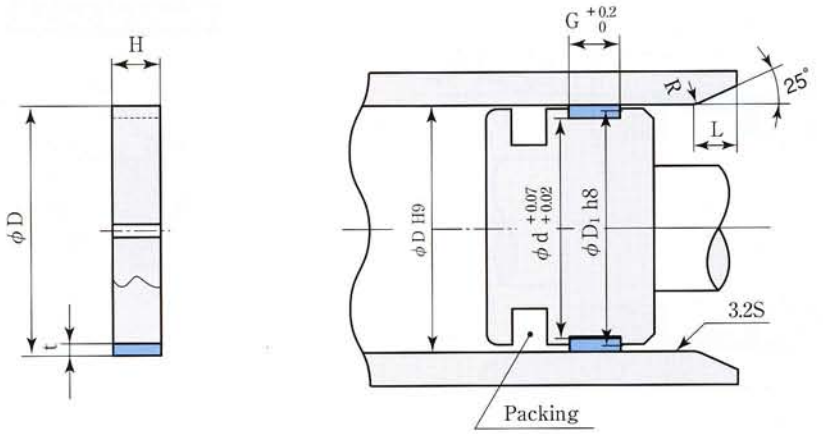
Wear ring & Groove dimensions							Part No.
D	d	H	t	G	D_1	D_2	Standard material (PB 201)
20	17	3	1.5	3	19.5	19	SWA- 20
25	22	3	1.5	3	24.5	24	SWA- 25
30	27	4	1.5	4	29.5	29	SWA- 30
32	29	4	1.5	4	31.5	31	SWA- 32
35	32	4	1.5	4	34.5	34	SWA- 35
40	36	5	2	5	39.2	39	SWA- 40
45	41	5	2	5	44.2	44	SWA- 45
50	46	5	2	5	49.2	49	SWA- 50
55	51	5	2	5	54.2	54	SWA- 55
60	56	6	2	6	59.2	59	SWA- 60
63	59	6	2	6	62.2	62	SWA- 63
65	61	6	2	6	64.2	64	SWA- 65
70	66	6	2	6	69.2	69	SWA- 70
75	71	6	2	6	74.2	74	SWA- 75
80	76	8	2	8	79.2	79	SWA- 80
85	81	8	2	8	84.2	84	SWA- 85
90	86	8	2	8	89.2	89	SWA- 90
95	91	8	2	8	94.2	94	SWA- 95
100	95	10	2.5	10	99	98	SWA-100
120	115	10	2.5	10	119	118	SWA-120
125	120	10	2.5	10	124	123	SWA-125
140	134	15	3	15	139	138	SWA-140
150	144	15	3	15	149	148	SWA-150
160	154	15	3	15	159	158	SWA-160
180	174	15	3	15	179	178	SWA-180
200	194	20	3	20	199	198	SWA-200
250	244	20	3	20	249	248	SWA-250

★Orders and inquiries are acceptable by part numbers.
★SWA-Wear rings are made-to-order products.
★Wear rings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

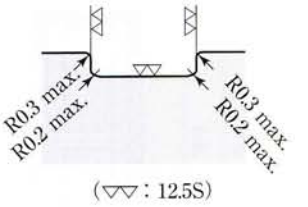
SWB-Wear rings

Wear rings for low-load compact type pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Refer to the L dimension as it would be differed according to the type of packings to be used together.

Dimension table of SWB-Wear rings

(Unit : mm)

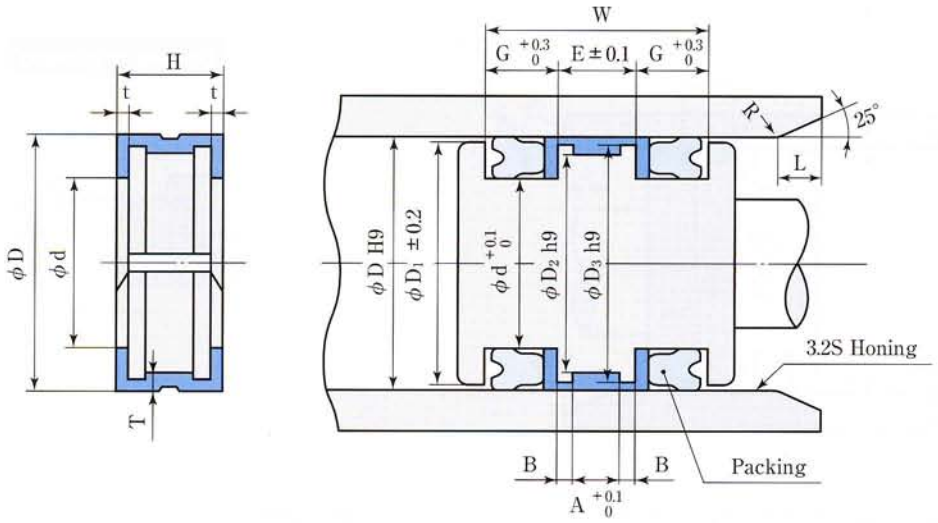
Wear ring & Groove dimensions						Part No.
D	d	H	t	G	D_1	Standard material (PB 251)
20	17	2	1.5	2	19.5	SWB- 20
25	22	2	1.5	2	24.5	SWB- 25
30	27	2	1.5	2	29.5	SWB- 30
32	29	3	1.5	3	31.5	SWB- 32
40	37	3	1.5	3	39.5	SWB- 40
50	47	4	1.5	4	49.5	SWB- 50
63	59	4	2	4	62.4	SWB- 63
80	76	5	2	5	79.4	SWB- 80
100	96	6	2	6	99.4	SWB-100
125	121	8	2	8	124.3	SWB-125
140	136	8	2	8	139.3	SWB-140
160	156	8	2	8	159.3	SWB-160
180	176	8	2	8	179.3	SWB-180

★Orders and inquiries are acceptable by part numbers.
★SWB-Wear rings are made-to-order products.
★Wear rings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

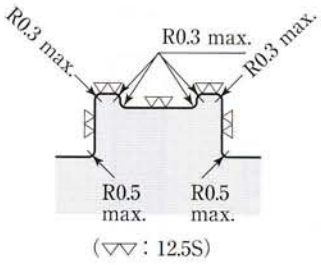
S-LEEVE® (WPB) for pistons

Hydraulic bearings and back-up rings for pistons
(Installable in one-piece groove)

Dimension table



Details of groove



Note: ● Refer to the L dimension as it would be differed according to the type of packings to be used together.

Dimension table of S-LEEVE® (WPB)

(Unit : mm)

S-LEEVE® & Groove dimensions											Part No.
D	d	H	t	D_1	D_2	D_3	G	B	A	E	W	Standard material (PN 104)
40	30	14	1.5	39	36	38	8.5	1.8	7	10.6	27.6	WPB- 40A
45	35	15	1.5	44	41	43	8.5	1.8	8	11.6	28.6	WPB- 45A
50	40	15	1.5	49	46	48	8.5	1.8	8	11.6	28.6	WPB- 50A
55	45	16	2	54	51	53	9	1.8	8	11.6	29.6	WPB- 55A
60	50	16	2	59	56	58	9	1.8	8	11.6	29.6	WPB- 60A
63	53	17	2	62	59	61	9	1.8	9	12.6	30.6	WPB- 63A
65	55	17	2	64	61	63	9	1.8	9	12.6	30.6	WPB- 65
70	60	18	2	69	66	68	9	1.8	10	13.6	31.6	WPB- 70
71	60	18	2	70	67	69	10	1.8	10	13.6	33.6	WPB- 71
75	65	20	2	74	71	73	9	1.8	12	15.6	33.6	WPB- 75
80	71	20	2	79	76	78	9	1.8	12	15.6	33.6	WPB- 80
90	80	20	2	89	86	88	9	1.8	12	15.6	33.6	WPB- 90
100	85	26	2	98	96	98	12	2.8	16	21.6	45.6	WPB-100
110	95	28	2	108	106	108	12	2.8	18	23.6	47.6	WPB-110
115	100	30	2	113	111	113	12	2.8	20	25.6	49.6	WPB-115
120	106	30	2	118	116	118	11.5	2.8	20	25.6	48.6	WPB-120
125	112	32	2	123	121	123	12	2.8	22	27.6	51.6	WPB-125
140	125	36	2	138	134	138	12	2.8	26	31.6	55.6	WPB-140
150	136	39	3	148	144	148	12.5	2.8	27	32.6	57.6	WPB-150
160	145	42	3	158	154	158	13	2.8	30	35.6	61.6	WPB-160
180	165	46	3	178	174	178	13	2.8	34	39.6	65.6	WPB-180

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★S-LEEVE® is adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

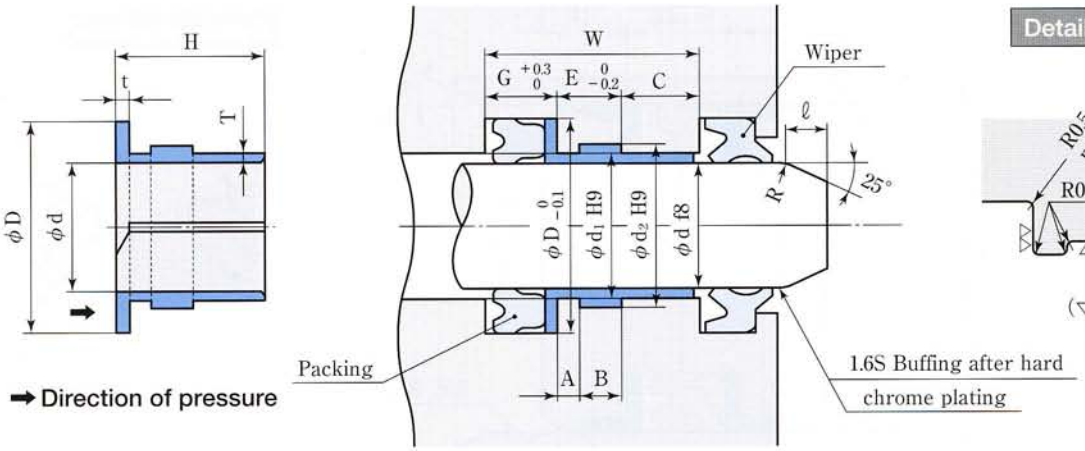
Part No.	T
WPB-40A～125	$1.95\ ^{0}_{-0.15}$
WPB-140～180	$2.95\ ^{0}_{-0.15}$

Related products: RGY-Packings and SKY-Packings

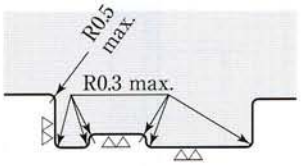
Hydraulic bearings and back-up rings for rods
(Installable in one-piece groove.)

S-LEEVE® (WRB) for rods

Dimension table



Details of groove



(▽▽ : 12.5S)

Note: ● S-LEEVE® should be installed in the direction specified on the above schematic.
● Refer to the ℓ dimension as it would be differed according to the type of packings to be used together.

Dimension table of S-LEEVE® (WRB)

(Unit : mm)

S-LEEVE® & Groove dimensions											Part No.
d	D	H	t	d_1	d_2	G	A	B	E	C	W	Standard material (PN 104)
18	26	21	1	20	22	6.7	3	$6^{+0.15}_{0}$	9	11.5	27.2	WRB- 18
20	28	21	1	22	24	6.7	3	$6^{+0.15}_{0}$	9	11.5	27.2	WRB- 20
22.4	30	21	1	24.4	26.4	6.7	3	$6^{+0.15}_{0}$	9	11.5	27.2	WRB- 22.4
25	33	24	1	27	29	6.7	3	$6^{+0.15}_{0}$	9	14.5	30.2	WRB- 25
28	35.5	26	1	30	32	6.7	3	$6^{+0.15}_{0}$	9	16.5	32.2	WRB- 28
30	40	28.5	1.5	32	34	8.5	3.5	$10^{+0.2}_{0}$	13.5	14	36	WRB- 30
35	45	33.5	1.5	37	39	8.5	3.5	$10^{+0.2}_{0}$	13.5	19	41	WRB- 35
35.5	45	33.5	1.5	37.5	39.5	8.5	3.5	$10^{+0.2}_{0}$	13.5	19	41	WRB- 35.5
40	50	37.5	1.5	42	44	8.5	3.5	$10^{+0.2}_{0}$	13.5	23	45	WRB- 40
45	56	41.5	1.5	47	49	9.5	3.5	$10^{+0.2}_{0}$	13.5	27	50	WRB- 45
50	60	46.5	1.5	52	54	8.5	3.5	$10^{+0.2}_{0}$	13.5	32	54	WRB- 50
55	65	51.5	1.5	57	59	8.5	3.5	$10^{+0.2}_{0}$	13.5	37	59	WRB- 55
56	66	51.5	1.5	58	60	8.5	3.5	$10^{+0.2}_{0}$	13.5	37	59	WRB- 56
60	71	55	2	62	64	10	3.5	$10^{+0.2}_{0}$	13.5	40	63.5	WRB- 60
63	73	57	2	65	67	9	3.5	$10^{+0.2}_{0}$	13.5	42	64.5	WRB- 63
71	80	62	2	73	75	9	3.5	10^{+02}_{0}	13.5	47	69.5	WRB- 71
80	90	67	2	82	84	9	3.5	$10^{+0.2}_{0}$	13.5	52	74.5	WRB- 80
90	105	72	2	92	94	12	4	$10^{+0.2}_{0}$	14	57	83	WRB- 90
100	115	77	2	102	104	12	4	$10^{+0.2}_{0}$	14	62	88	WRB-100

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★S-LEEVE® is adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

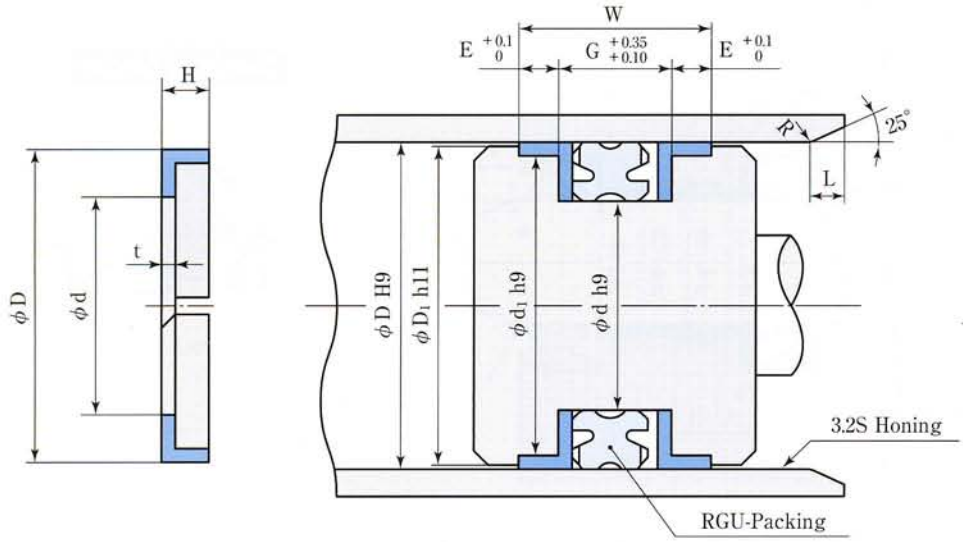
Part No.	T
WRB-18～100	$0.95^{0}_{-0.1}$

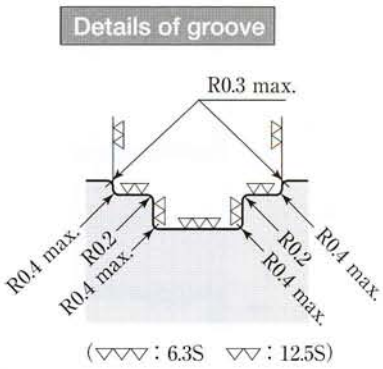
Related products: RNY-Packings and SKY-Packings

PWL-Bearings

Hydraulic bearings and back-up rings for pistons
(Installable in one-piece groove)

Dimension table





Dimension table of PWL-Bearings

(Unit : mm)

PWL- Bearings & Groove dimensions											Part No.
D	d	H	t	D_1 14MPa max.	D_1 21MPa max.	d_1	G	E	W	L	Standard material (PN 104)
40	30	5.5	1.5	39.0	39.4	37	10.0	4.0	18.0	2.5	**PWL- 40**
45	35	5.5	1.5	44.0	44.4	42	10.0	4.0	18.0	2.5	**PWL- 45**
50	40	5.5	1.5	49.0	49.4	47	10.0	4.0	18.0	2.5	**PWL- 50**
55	45	5.5	1.5	54.0	54.4	52	10.0	4.0	18.0	2.5	**PWL- 55**
60	50	5.5	1.5	59.0	59.4	57	10.0	4.0	18.0	2.5	**PWL- 60**
63	53	5.5	1.5	62.0	62.4	60	10.0	4.0	18.0	2.5	**PWL- 63**
65	55	7.0	2.0	63.5	64.2	61	11.0	5.0	21.0	2.5	**PWL- 65**
70	60	7.0	2.0	68.5	69.2	66	11.0	5.0	21.0	2.5	**PWL- 70**
75	65	7.0	2.0	73.5	74.2	71	11.0	5.0	21.0	2.5	**PWL- 75**
80	67	7.0	2.0	78.5	79.2	76	12.5	5.0	22.5	3.0	**PWL- 80**
85	72	7.0	2.0	83.5	84.2	81	12.5	5.0	22.5	3.0	**PWL- 85**
90	77	7.0	2.0	88.5	89.2	86	12.5	5.0	22.5	3.0	**PWL- 90**
100	85	7.0	2.0	98.5	99.2	96	14.0	5.0	24.0	4.0	**PWL-100**

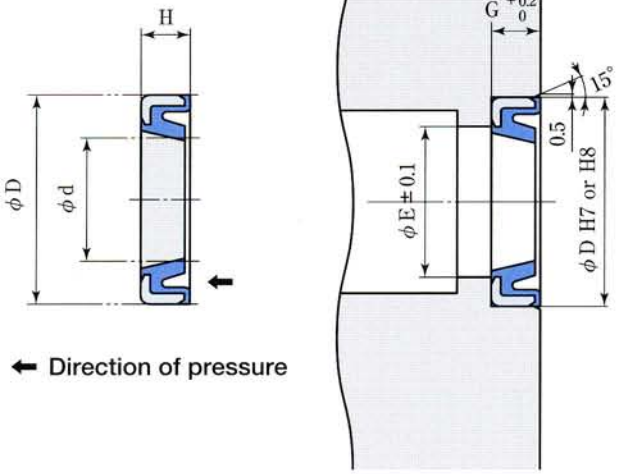
★Orders and inquiries are acceptable by part numbers.
★PWL-Bearings are made-to-order products.
★PWL-Bearings are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.

Related products: RGU-Packings

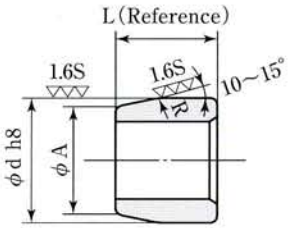
Pneumatic cushion seals
(Press fit installation)

PCS-Cushion seals

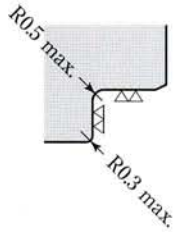
Dimension table



Cushion collar



Details of groove



(▽▽ : 12.5S)

Note: ● Cushion seals should be installed in the direction specified in the left schematic.

Dimension table of PCS-Cushion seals

(Unit : mm)

Cushion seal & Groove dimensions							Part No.	
d	D	H	G	E	A	L	Standard material (RN 803)	High temperature-resistant material (RF 903)
10	18	4.7	5	12.5	8	15~20	*PCS-10*	
11.2	19.2	4.7	5	13.7	9.2	15~20	*PCS-11.2*	
14	22	4.7	5	16.5	12	15~20	**PCS-14**	
15	23	4.7	5	17.5	13	15~20	*PCS-15*	
16	24	4.7	5	18.5	14	15~20	**PCS-16**	**PCS-16F**
18	26	4.7	5	20.5	16	15~20	**PCS-18**	**PCS-18F**
20	28	4.7	5	22.5	18	15~20	**PCS-20**	**PCS-20F**
22	30	4.7	5	24.5	20	15~20	**PCS-22**	
22.4	30.4	4.7	5	24.9	20.4	15~20	**PCS-22.4**	
24	32	4.7	5	26.5	22	15~20	**PCS-24**	**PCS-24F**
25	33	4.7	5	27.5	23	15~30	**PCS-25**	**PCS-25F**
28	36	4.7	5	30.5	26	15~30	**PCS-28**	**PCS-28F**
30	40	5.6	6	33	28	20~30	**PCS-30**	**PCS-30F**
31.5	41.5	5.6	6	34.5	29.5	20~30	**PCS-31.5**	
35	45	5.6	6	38	33	20~30	**PCS-35**	**PCS-35F**
35.5	45.5	5.6	6	38.5	33.5	20~30	**PCS-35.5**	
38	48	5.6	6	41	36	20~30	**PCS-38**	**PCS-38F**
40	50	5.6	6	43	38	20~40	**PCS-40**	**PCS-40F**
45	55	5.6	6	48	43	20~40	**PCS-45**	
50	62	6.6	7	53	48	25~40	**PCS-50**	**PCS-50F**
55	67	6.6	7	58	53	25~40	**PCS-55**	
56	68	6.6	7	59	54	25~40	**PCS-56**	
60	72	6.6	7	63	58	25~40	**PCS-60**	**PCS-60F**
65	77	6.6	7	68	63	25~40	**PCS-65**	
75	87	6.6	7	78	73		*PCS-0075002N803*	*PCS-0075001F903*
85	97	6.6	7	88	83		*PCS-0085002N803*	*PCS-0085001F903*
120	132	6.6	7	123	118		*PCS-0120002N803*	*PCS-0120001F903*
130	142	6.6	7	133	128		*PCS-0130001N803*	

★Orders and inquiries are acceptable by part numbers.
★Products with the part numbers in blue back ground are stock items.
★Cushion seals with the part numbers in light Italic require the confirmation of their availability prior to ordering. These items are subject to the abolishment without notice. Reclamation of an abolished product requires producing the new tooling at your expense.
★Cushion seals are adequately packaged for the optimum storage. Refer to "Cautions" at page 1 for the handling and storage.