

***PILLAR***

**PILAFLON®**

Overview of Pilaflon

PTFE (polytetrafluoroethylene) is a unique plastic material that has many advantages such as low friction, chemical resistance, heat resistance, insulation, etc. It is an essential material in a wide range of industries.

Nippon Pillar Packing is proud of mastering the use of PTFE. It made it possible to get the best of PTFE characteristics with a variety of fillers, Mixing, molding of raw materials, baking processing, quality control, and technology based on a long experience.

Pilaflon® is a registered trademark of Nippon Pillar Packing Co., Ltd., which is a generic name of applied products based on PTFE.

Main characteristics of PTFE

The main characteristics of PTFE are shown in the table below. (The characteristics of this are specialized for the application, therefore the Pilaflon product does not have all the characteristics.)

Chemical resistance	Low coefficient of friction	Low dielectric constant
Thermal stability	Non-stickiness	Flame retardance
Purity	Weatherability	Nonabsorptive

Main filler of Pilaflon®

Filler name	Filler characteristics
Glass fiber	Improves mechanical strength and cold flow resistance
Carbon fiber	Increases the mechanical strength
Carbon black	Used as a solid lubricant, improving sliding characteristics
Heat resistant resin	Improves strength and abrasion resistance
Molybdenum disulfide	Used as a solid lubricant, improving sliding characteristics

- Main Pilaflon material · Characteristic list ..... P3
- Rod packing (P / # 4391 ~ 4) ..... P5  
(Segment module for pneumatic and reciprocating equipment)
- Piston ring & Rider ring (P / # 4370 & 4371) ..... P6  
(Piston ring for reciprocating compressor etc.)
- HiP seal (P / # 4368) ..... P7  
(Self-sealing seal combining Pilaflon rings and metal springs etc.)
- Gland seal Unit (P / # 4392S) ..... P8  
(Rotary shaft sealing unit combining segment and HiP Seal)
- LBP Curl Bearing (P / # 4822) ..... P9  
(Dry sliding bearing)
- V-Ring set (P / # 4360S) ..... P9
- Ring seal (P / # 4377) ..... P10  
(For hydraulic rotary equipment)
- Slipper ring (P / # 4376) ..... P10  
(For reciprocating motion)

※Pilaflon products described in this catalog are application examples of PTFE. We also support processing materials such as round bars, molding with special filling materials etc.

Besides Pilaflon products, Nippon Pillar Packing has many solutions such as Mechanical Seal, Gland Packing, Gasket, etc. Please contact us in case of any sealing trouble.

Appendix

- HiP seal dimension table ..... P11
- V-Ring size table ..... P13
- Ring seal dimension table ..... P13
- Slipper ring size table ..... P14

Pilaflon materials: Choosing the material is an important phase in using Pilaflon products.

(Measured values at 25 ° C)

Materials	Main filler	Characteristics	Hue	Specific gravity -----	Expansion coefficient X 10 <sup>-5</sup> /°C	Tensile strength N / mm <sup>2</sup>	Elongation %	Compressive Strength N / mm <sup>2</sup>	Compressive modulus X 10 <sup>3</sup> N / mm <sup>2</sup>	Hardness -----
W2	Unfilled	Clean, Chemical & heat resistant, excellent in high abstractability.	White	2.18	MD 13.4 CD 12.0	CD 27.4	CD 310	MD 5.2	MD 0.4	Durometer D55
G2	Glass fiber Low amount	Due to the use of glass fiber with high strength and high toughness as filler material, dimensional stability and cold flow resistance are improved according to filling amount. On the other hand, characteristics such as conformability are reduced.	Grayish white	2.24	MD 13.2 CD 7.5	CD 20.6	CD 265	MD 7.0	MD0.8	Durometer D62
G3	Glass fiber High amount		Grayish white	2.25	MD 12.3 CD 6.1	CD 15.7	CD 235	MD 8.04	MD 1.0	Durometer D64
H3	Glass fiber Molybdenum disulfide	In addition to cold flow resistance due to glass fiber filling, molybdenum disulfide filling reduces friction which makes it suitable for sliding materials.	Gray black	2.29	MD 14.0 CD 7.7	CD 18.5	CD 273	MD 8.1	MD 0.9	Durometer D67
H4A	Heat resistant resin	H4 series contains heat resistant resin excellent in strength and abrasion resistance, while maintaining the flexibility of PTFE, it improves abrasion resistance.  We offer high-strength H4F blended with carbon fiber as a variation, and low friction H4C and H4R filled with carbon-based solid lubricant.	Yellowish pink	2.07	-----	CD 20.1	CD 265	-----	-----	Durometer D65
H4C	Heat resistant resin Carbon black		Gray black	1.88	MD 8.9 CD 7.9	CD 9.9	CD 159	MD 9.3	MD 1.1	Durometer D68
H4F	Heat resistant resin Carbon fiber Graphite powder		Gray black	1.98	MD 15.5 CD 8.0	CD 13.8	CD 166	MD 8.5	MD 0.85	Durometer D65
H4R	Heat resistant resin Graphite powder		Gray black	2.00	-----	CD 15.7	CD 230	-----	-----	Durometer D64
D5	Bronze powder Molybdenum disulfide	Bronze powder with self-lubricating property and excellent reforming heat and solid lubricant Sliding material grade filled with molybdenum disulfide. It has both wears resistance and hardness / strength.	Copper black	4.07	MD 11.1 CD 9.3	CD 15.7	CD 127	MD 7.3	MD 0.75	Durometer D69
R2	Carbon black Glass fiber	R2 · R3 is filled with solid lubricated carbon black to improve sliding characteristics. (R2 improves cold flow resistance by using glass fiber further)	Black	2.24	MD 13.6 CD 7.9	CD 14.3	CD 229	MD 8.7	MD 1.0	Durometer D68
R3	Carbon black		Black	2.13	MD 12.1 CD 7.3	CD 14.7	CD 111	MD 9.6	MD 1.1	Durometer D71
R4	Carbon fiber	R4 improves cold flow resistance at high temperature by filling with carbon fiber while maximizing PTFE characteristics.	Black	2.05	MD 14.3 CD 4.9	CD 16.9	CD 224	MD 9.4	MD 0.95	Durometer D67
Y2A	Heat resistant resin	Y series has excellent sliding characteristics in dry condition with engineering plastic. Y2A is particularly low in aggressiveness to counterparts, Y3A is strong and an excellent abrasion resistant.	Ocher color	1.95	MD 15.0 CD 14.0	CD 17.1	CD 235	-----	-----	Durometer D65
Y3A	PPS resin		Black	1.84	MD 16.6 CD 6.8	CD 16.6	CD 7	-----	-----	Durometer D70

Note: 1. The numbers shown in the above table are representative values of measured data, not standards.

2. Compressive strength and stress value at 1% deformation are shown.

3. MD of each data indicates molding direction and CD is measurement value perpendicular to molding direction.

Pilaflon Rod Packing was developed for sealing the gland of the piston rod of a pneumatic device such as a reciprocating compressor. It can be used without lubrication which guarantees longer life compared to metallic seals. In general, Pilaflon Rod Packing is used with a set of 3 or 6 split pilaflon processed products and springs.

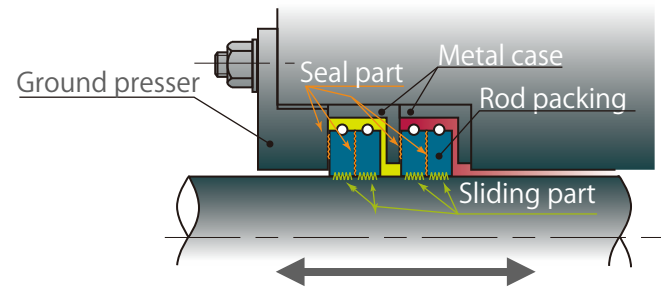


### Features

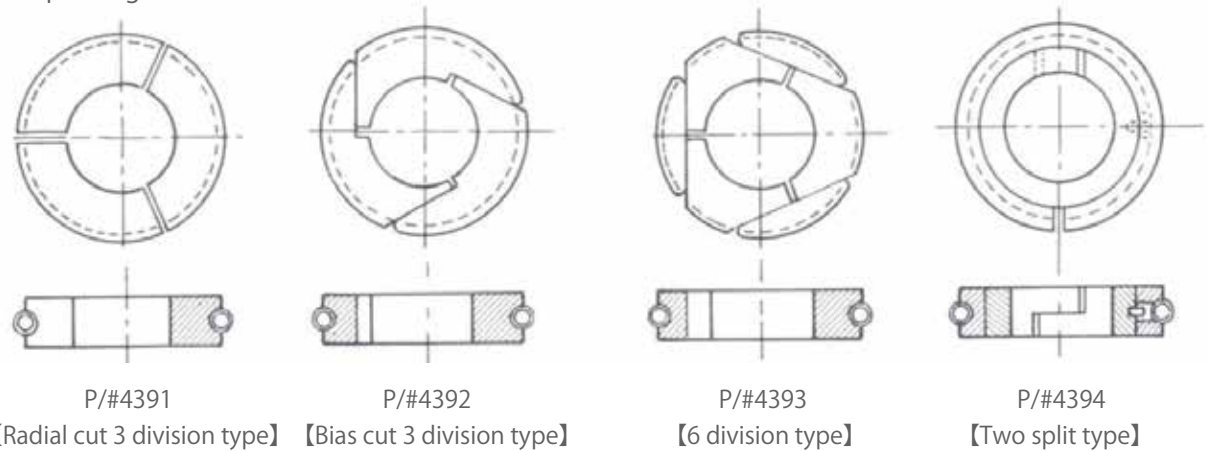
- Spring is included in the split structure, which makes the seal parts maintenance simple without disassembling the equipment.
- Structure makes the shaft embrace by the spring, which can follow more axis swing compared to other ground part sealing methods (e.g. Gland Packing).
- Material selection and the structure have a large degree of freedom which guarantee sealability and longer lifespan.

### Rod Packing

Reciprocating air pressure device mounting image



### Types of rod packing



In general, Rod packing has one of the above shapes. it is common to use in the following combinations: P/# 4391 + P/# 4392, P/# 4392 × 2, P/# 4391 + P/# 4393.

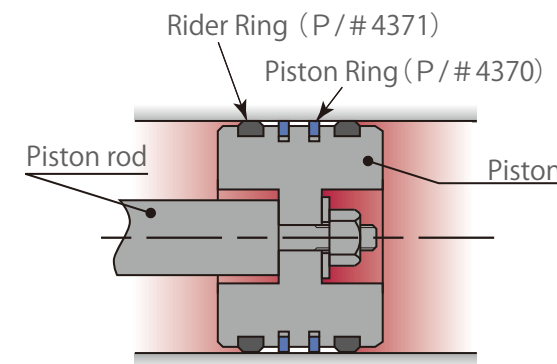
Rod Packing  
When the gland part is sealed by rod packing, it is necessary to be designed taking into consideration the material selection, combination pattern, set form, etc.  
• Please inquire the equipment conditions / required specifications etc. beforehand.

Pilaflon Piston Ring & Rider Ring have been developed for reciprocating compressor, and reciprocating pump for chemical liquid. The piston ring works as a sealing material, and the rider ring's function is to correct the head swing of the piston. By dividing the function, it became possible to achieve both sealability and long service life.



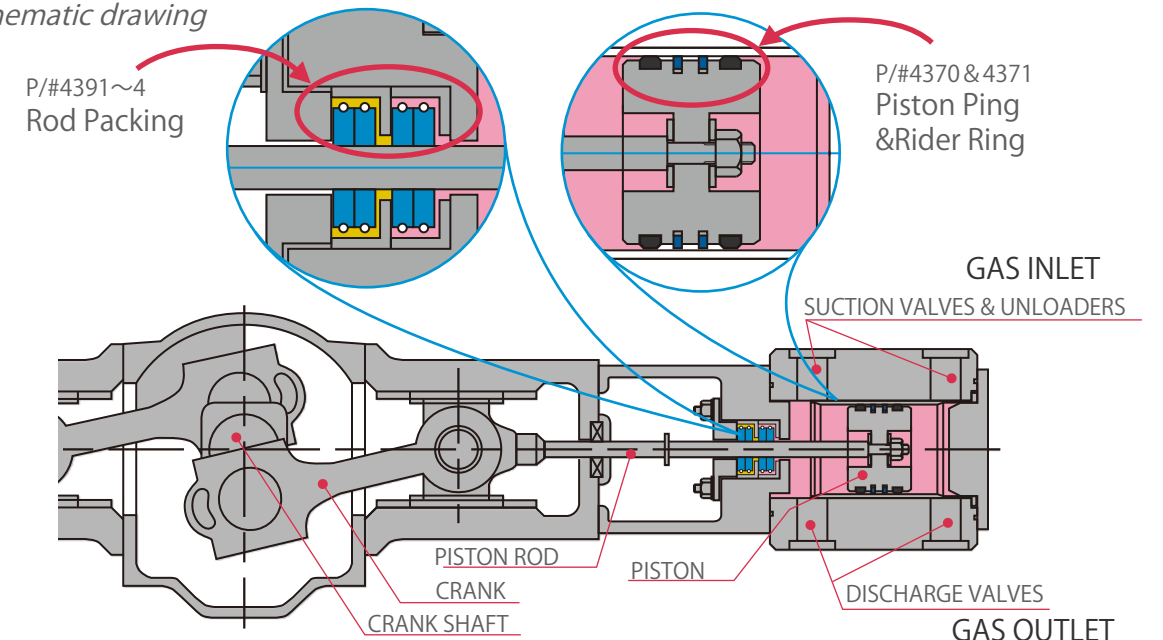
### Features

- Compared with carbon and phenolic resin ring, it has less abrasion due to gas and it is superior in nonbrittleness.
- Excellent sliding characteristics and excellent abrasion resistance. (Ideal for oilless reciprocating compressor.)
- Optimum filler materials are chosen depending on conditions and fluid.



Pilaflon No.	Main filler	Main characteristics	Fluid application
H3	Glass fiber/ Molybdenum disulfide	Low friction Low heat generation	General purpose
D5	Bronze powder/ Molybdenum disulfide	Low compressive strain	For high pressure/ high PV
G3	Glass fiber	Oxidation resistance/ flame retardancy	For oxygen
R3	Carbon black	Chemical resistance	Various chemical gases
H4C	Heat resistant resin/ Carbon black	Wear resistance/ mechanical strength	High PV condition
H4F	Heat resistant resin/Carbon fiber/Graphite powder	Wear resistance/ mechanical strength	High PV condition
Y3A	PPS resin	Wear resistance/ Heat resistance	For dry gas and high PV

### Reciprocating compressor schematic drawing





Pilaflon HiP seal is a self-sealing product developed in a way to use sliding properties of PTFE : Flexibility and compliance of elastomer O-ring.  
Due to its excellent characteristics, it prevents leakage in many types of equipment such as reciprocating machine, gasket in a static machine, shaft sealing part in a low-speed rotating equipment, and it can not be easily dealt with by other sealing methods.



### Features

- Elastomer O-ring corresponds to wide temperature range from extremely low to high temperature range.
- It is resistant to heat cycle loading and can maintain stable seal performance for a long time.
- High sealability can be obtained with small sliding resistance as compared with PTFE V-ring.
- There is a degree of freedom in design in order to obtain a balance between sealability and an optimum life span considering application and conditions.

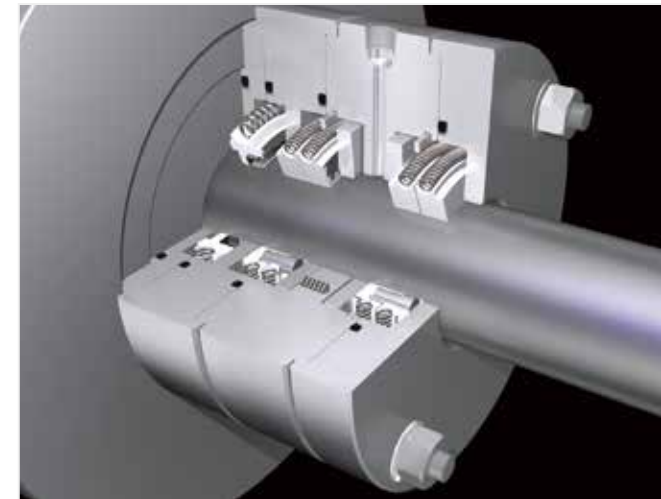
Pilaflon No.	Main filler	Characteristics
W2	Unfilled	Excellent sealing in cryogenic temperature
H3	Glass fiber • Molybdenum disulfide	Can be used for rotating as well as static parts
R4	Carbon fiber	Suitable for high temperature and pressure applications
H4A	Heat resistant resin	Excellent sliding characteristics
Y2A	Heat resistant resin	Scratch resistant mating material

### Structures / Types

Static Equipment		<b>Suitable applications</b> <ul style="list-style-type: none"> <li>• When cryogenic fluid is sealed.</li> <li>• When more tightening surface pressure is required.</li> <li>• When sealing part requires high chemical resistance.</li> <li>• When contamination countermeasures are required.</li> </ul>
Reciprocating Machine		<b>Suitable applications</b> <ul style="list-style-type: none"> <li>• When there is a problem due to sealing property, life span, counterpart material wear, etc. with O-ring alone or O-ring + slipper ring</li> </ul>
Rotating Equipment		<b>Suitable applications</b> <ul style="list-style-type: none"> <li>• Compact, when it is necessary to achieve a certain level of sealability and lifespan.</li> <li>• It is effective to use another shaft seal system as the main seal and use it as an auxiliary seal.</li> </ul>

Pilaflon HiP seal  
In order to use the HiP seal under optimal conditions, it is necessary to design it individually based on the usage environment.  
• Please inquire the equipment conditions / required specifications etc. beforehand.

Pilaflon Gland Seal Unit is a shaft seal unit that makes full use of the performance as a segment seal. In general, shaft sealing methods use mechanical seal and gland packing. This Gland Seal Unit is particularly suitable for powered rotating equipment, which is difficult to seal for reasons such as dry operation and large runout. In recent years, the use as a countermeasure, against shaft seal contamination, increased thanks to the pilaflon's purity and lubrication characteristics.

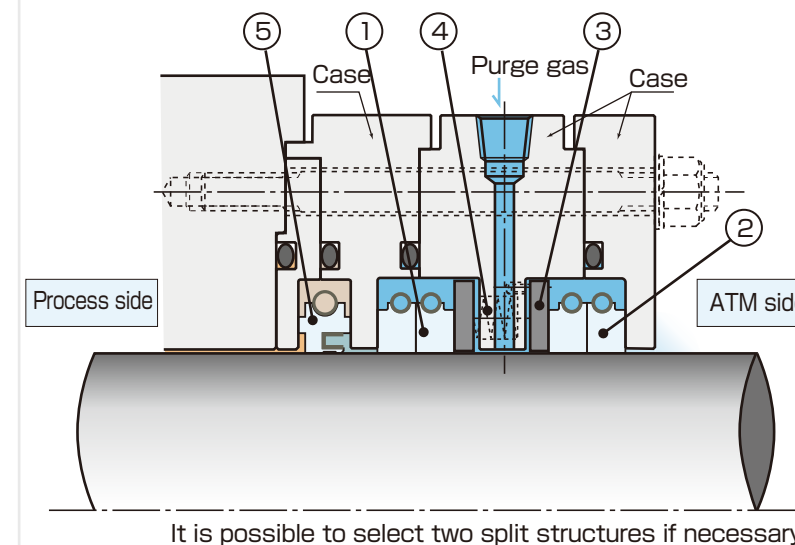


### Features

- **Resists to axial movement : no wear of shaft and sleeve**  
Since the segment seal is not fixed to the shaft or the case, it can show flexibly toward shaft's vibration, elongation etc.
- **Excellent maintenance**  
Segment seals, including spring parts, are easy to be replaced. Moreover, retightening is also unnecessary.
- **Dry compatible - Less contamination**  
Because the segment seal member uses pilaflon, it can be used without lubrication and does not contaminate the internal fluid, which is also advantageous for contamination prevention.

### Rotating machine for powder equipment / Application example of gland part seal

- Rotary equipment such as rotary valve, dryer.
- Low-speed rotating equipment for powder resin, elastomer raw material, etc.
- Vertical agitator, reaction vessel etc.



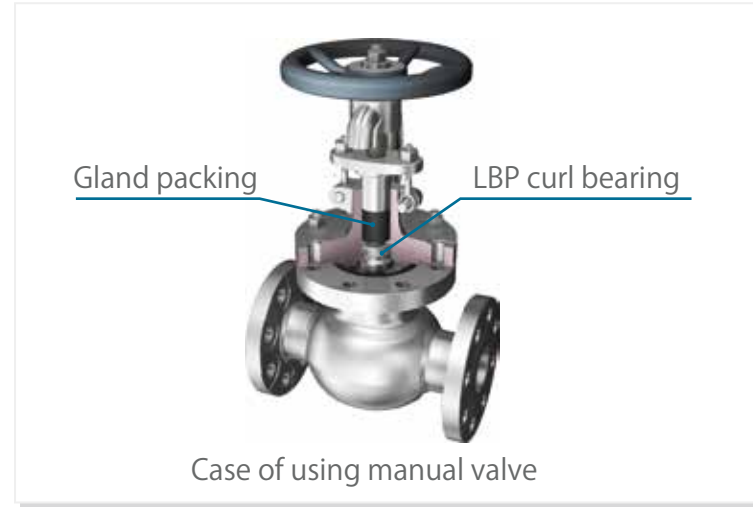
### Parts' Functions

1. Segment seal (A)  
Main seal of 4392S. It is to prevent leakage of substances in cans with a purge gas. It rotates together with the shaft and has a structure that slides on the end face of the segment seal and the case or spring stopper in order to reduce aggression to the shaft.
2. Segment seal (B)  
Its function, same as ①, is to prevent the purge gas from leaking to the atmosphere side.
3. Sliding plate  
It does not have a sealing function.
4. Spring  
The segment seal is pressed against the case via a sliding plate to prevent the occurrence of a clearance on the seal surface when the shaft shakes or when shaft elongation occurs.
5. Hip seal  
By limiting the amount of fluid contacting the segment seal, it works to improve the performance and life of the main seal (segment seal).

# PILLAR No. 4822

# PILAFLON® LBP Curl Bearing (Dry sliding bearing)

LBP curl bearings are dry plain bearings made of stainless steel punched metal and Pilaflon. Wear-resistant, high-sliding, and cold-flow grade Pilaflon are bonded in thin plates then cut and curled. Compared to general dry sliding bearings, it is a revolutionary product that simultaneously has various performances required for dry sliding bearings, such as excellent compactness and durability at high surface pressure.



### Features

- It can be used under high pressure (~ 70 MPa).
- Coefficient of friction is small and stick slip hardly occurs.
- Thermal expansion can be kept low.
- It can be used over a wide temp. (-200 °C ~ +200 °C). It has an excellent chemical, solvent, and weather resistance.

# PILLAR No. 4360 S

# PILAFLON® V-Ring set

In recent years, various high-performance elastomer materials have been developed. V-ring set, made from PTFE, achieves both wear resistance and without affecting the sealability. In addition, with various fillers, it is possible to specialize performance on customer's required specifications.



Main Pilaflon material used for V ring set

Pilaflon No.	Main filler	Characteristics
W2	Unfilled	Unfilled PTFE makes both purity and slidability possible to be achieved.
H3	Glass fiber Molybdenum disulfide	Effective in making wear resistance and high sliding property.
R4	Carbon fiber	Recommended in case of high temperature / pressure when it is required to resist to cold flow.

Pilaflon materials and use cases

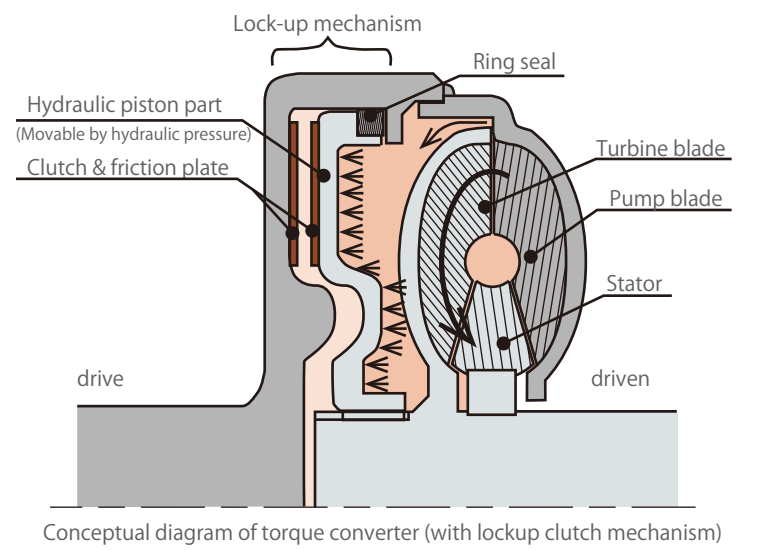
Pilaflon No.	Temperature (°C)	Maximum pressure (MPaG)
W2	-70~+100	7.0
H3	-30~+150	15.0
R4	-30~+200	20.0

Main applications  
• Valve stem, Plunger, pump

# PILLAR No. 4377

# PILAFLON® Ring Seal

Pilaflon ring seals are seal parts made of Pilaflon® that seal fluids such as torque converter, fluid clutch, and fluid coupling. Compared to metal ring seals, this seal presents many advantages e.g., it protects shafts and housings. Using Nippon Pillar's extensive experience, it is possible to maintain simultaneously fluid pressure and sealing performance.



### Features

- Since the sealing material itself has lubricity, breakage, abnormal wear, etc. do not occur in oil film shortage.
- Excellent abrasion resistance that guarantees long life.
- Low friction, as well as an extremely low torque loss at startup.

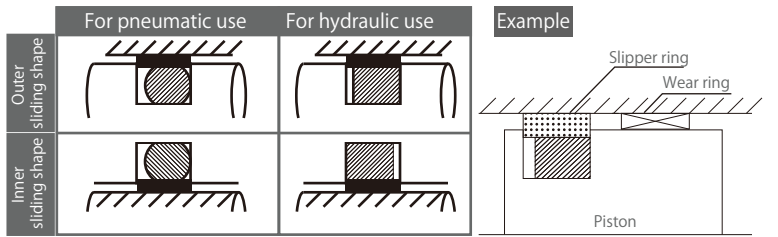
Pilaflon No.	Main filler	Pressure classification (MPaG)	PV value (MPaG · cm/s)	Max. TEMP (°C)
H3	Glass fiber Molybdenum disulfide	~2.0	~980	120
D5	Bronze powder molybdenum disulfide	2.0~2.9	980~2940	120
R4	Carbon fiber	~2.9	~4410	120

# PILLAR No. 4376

# PILAFLON® Slipper Ring (For reciprocating motion)

Pilaflon Slipper Ring is a reciprocating seal part that combines the self-lubricity of Pilaflon and elasticity of elastomer. Regardless of hydraulic or pneumatic pressure, it demonstrates high performance as a piston seal. The elastomer has a square and a round cross section. The square section is for hydraulic pressure while the round section is used for pneumatic pressure.

Pilaflon No.	Main filler	Characteristics
Y2A	Heat resistant resin	Excellent abrasion resistance under no lubrication and no damage to the mating material.
G2	Glass fiber	Excellent abrasion resistance under oil
R4	Carbon fiber	Excellent cold flow resistance and brittleness resistance under high pressure



PILLAR No. 4368

(Unit : mm)

Types and sections		Type 10	Type 12	Type 13	Type 20	Type 22	Type 23	
Type		S-3	S-5	S-7.5	S-5	S-7.5	S-5	S-7.5
Nominal diameter range		15~75	25~150	60~400	50~150	150~400	50~150	150~400
10~13	W	3.8	6.2	8.9	6.2	8.9	6.2	8.9
	B	4.2	6.7	10	6.7	10	6.7	10
	T	2.8	4.8	7.3	4.8	7.3	4.8	7.3
20~23	W	3.3	5.7	8.4	5.7	8.4	5.7	8.4
	B	4.2	6.7	10	6.7	10	6.7	10
	T	2.7	4.8	7.2	4.8	7.2	4.8	7.2
Groove size	H	--	--	--	5	7.5	5	7.5
	L	4.7	7.5	11	7.5	11	7.5	11
	G max	0.08	0.1	0.14	0.1	0.14	0.1	0.14
Mounting groove section			For inside pressure		For outside pressure			

Note: Please refer to the following dimensional table below to check HiP seal inner diameter / outer diameter - mounting part inner diameter / outer diameter.

PILLAR No. 4368 S-3Type

(Unit : mm)

Number	Type 10 and 20		Mounting groove	
	HiP Seal inner diameter		Inner diameter	Outer diameter
	Type 10 I.D.	Type 20 I.D.	d	D
S-3-15	14.2	14.7	15	21
S-3-16	15.2	15.7	16	22
S-3-17	16.2	16.7	17	23
S-3-18	17.2	17.7	18	24
S-3-20	19.2	19.7	20	26
S-3-21	20.2	20.7	21	27
S-3-22	21.2	21.7	22	28
S-3-22.4	21.6	22.1	22.4	28.4
S-3-24	23.2	23.7	24	30
S-3-25	24.2	24.7	25	31
S-3-25.5	24.7	25.2	25.5	31.5
S-3-26	25.2	25.7	26	32
S-3-28	27.2	27.7	28	34
S-3-29	28.2	28.7	29	35
S-3-29.5	28.7	29.2	29.5	35.5
S-3-30	29.2	29.7	30	36
S-3-31.5	30.7	31.2	31.5	37.5
S-3-32	31.2	31.7	32	38
S-3-34	33.2	33.7	34	40
S-3-35	34.2	34.7	35	41
S-3-35.5	34.7	35.2	35.5	41.5
S-3-36	35.2	35.7	36	42
S-3-38	37.2	37.7	38	44
S-3-39	38.2	38.7	39	45
S-3-40	39.2	39.7	40	46
S-3-42	41.2	41.7	42	48
S-3-44	43.2	43.7	44	50
S-3-45	44.2	44.7	45	51
S-3-46	45.2	45.7	46	52
S-3-48	47.2	47.7	48	54
S-3-49	48.2	48.7	49	55
S-3-50	49.2	49.7	50	56
S-3-52	51.2	51.7	52	58
S-3-53	52.2	52.7	53	59
S-3-55	54.2	54.7	55	61
S-3-56	55.2	55.7	56	62
S-3-58	57.2	57.7	58	64
S-3-60	59.2	59.7	60	66
S-3-63	62.2	62.7	63	69
S-3-65	64.2	64.7	65	71
S-3-67	66.2	66.7	67	73
S-3-70	69.2	69.7	70	76
S-3-71	70.2	70.7	71	77
S-3-75	74.2	74.7	75	81

PILLAR No. 4368 S-5 Type

(Unit : mm)

Number	Type 10 and 20		Mounting groove		Type 12 and 22		Type 13 and 23	
	HiP seal inner diameter		Inner diameter	Outer diameter	HiP Outer diameter	Mounting groove Outer diameter	HiP Outer diameter	Mounting groove Outer diameter
	Type 10 I.D.	Shape 20 I.D.	d	D	O.D.	D	I.D.	d
S-5-30	28.8	29.3	30	40	---	---	---	---
S-5-31.5	30.3	30.8	31.5	41.5	---	---	---	---
S-5-32	30.8	31.3	32	42	---	---	---	---
S-5-34	32.8	33.3	34	44	---	---	---	---
S-5-35	33.8	34.3	35	45	---	---	---	---
S-5-35.5	34.3	34.8	35.5	45.5	---	---	---	---
S-5-36	34.8	35.3	36	46	---	---	---	---
S-5-38	36.8	37.3	38	48	---	---	---	---
S-5-39	37.8	38.3	39	49	---	---	---	---
S-5-40	38.8	39.3	40	50	---	---	---	---
S-5-42	40.8	41.3	42	52	---	---	---	---
S-5-45	43.8	44.3	45	55	---	---	---	---
S-5-46	44.8	45.3	46	56	---	---	---	---
S-5-48	46.8	47.3	48	58	---	---	---	---
S-5-49	47.8	48.3	49	59	---	---	---	---
S-5-50	48.8	49.3	50	60	60	60	50	50
S-5-52	50.8	51.3	52	62	62	62	52	52
S-5-53	51.8	52.3	53	63	63	63	53	53
S-5-55	53.8	54.3	55	65	65	65	55	55
S-5-56	54.8	55.3	56	66	66	66	56	56
S-5-58	56.8	57.3	58	68	68	68	58	58
S-5-60	58.8	59.3	60	70	70	70	60	60
S-5-63	61.8	62.3	63	73	73	73	63	63
S-5-65	63.8	64.3	65	75	75	75	65	65
S-5-67	65.8	66.3	67	77	77	77	67	67
S-5-70	68.8	69.3	70	80	80	80	70	70
S-5-71	69.8	70.3	71	81	81	81	71	71
S-5-75	73.8	74.3	75	85	85	85	75	75
S-5-80	78.8	79.3	80	90	90	90	80	80
S-5-85	83.8	84.3	85	95	95	95	85	85
S-5-90	88.8	89.3	90	100	100	100	90	90
S-5-95	93.8	94.3	95	105	105	105	95	95
S-5-100	98.8	99.3	100	110	110	110	100	100
S-5-102	100.8	101.3	102	112	112	112	102	102
S-5-105	103.8	104.3	105	115	115	115	105	105
S-5-110	108.8	109.3	110	120	120	120	110	110
S-5-112	110.8	111.3	112	122	122	122	112	112
S-5-115	113.8	114.3	115	125	125	125	115	115
S-5-120	118.8	119.3	120	130	130	130	120	120
S-5-125	123.8	124.3	125	135	135	135	125	125
S-5-130	128.8	129.3	130	140	140	140	130	130
S-5-132	130.8	131.3	132	142	142	142	132	132
S-5-135	133.8	134.3	135	145	145	145	135	135
S-5-140	138.8	139.3	140	150	150	150	140	140
S-5-145	143.8	144.3	145	155	155	155	145	145
S-5-150	148.8	149.3	150	160	160	160	150	150

Note: Model HiP 10 can be manufactured to a minimum nominal diameter of 25.

PILLAR No. 4368 S-7.5 Type

(Unit : mm)

Number	Type 10 and 20		Mounting groove		Type 12 and 22		Type 13 and 23	
	HiP seal inner diameter		Inner diameter	Outer diameter	HiP Outer diameter	Mounting groove Outer diameter	HiP Outer diameter	Mounting groove Outer diameter
	Type 10 I.D.	Type 20 I.D.	d	D	O.D.	D	I.D.	d
S-7.5-150	148.6	149.1	150	165	165	165	150	150
S-7.5-155	153.6	154.1	155	170	170	170	155	155
S-7.5-160	158.6	159.1	160	175	175	175	160	160
S-7.5-165	163.6	164.1	165	180	180	180	165	165
S-7.5-170	168.6	169.1	170	185	185	185	170	170
S-7.5-175	173.6	174.1	175	190	190	190	175	175
S-7.5-180	178.6	179.1	180	195	195	195	180	180
S-7.5-185	183.6	184.1	185	200	200	200	185	185
S-7.5-190	188.6	189.1	190	205	205	205	190	190
S-7.5-195	193.6	194.1	195	210	210	210	195	195
S-7.5-200	198.6	199.1	200	215	215	215	200	200
S-7.5-205	203.6	204.1	205	220	220	220	205	205
S-7.5-209	207.6	208.1	209	224	224	224	209	209
S-7.5-210	208.6	209.1	210	225	225	225	210	210
S-7.5-215	213.6	214.1	215	230	230	230	215	215
S-7.5-220	218.6	219.1	220	235	235	235	220	220
S-7.5-225	223.6	224.1	225	240	240	240	225	225
S-7.5-230	228.6	229.1	230	245	245	245	230	230
S-7.5-235	233.6	234.1	235	250	250	250	235	235
S-7.5-240	238.6	239.1	240	255	255	255	240	240
S-7.5-245	243.6	244.1	245	260	260	260	245	245
S-7.5-250	248.6	249.1	250	265	265	265	250	250
S-7.5-255	253.6	254.1	255	270	270	270	255	255
S-7.5-260	258.6	259.1	260	275	275	275	260	260
S-7.5-265	263.6	264.1	265	280	280	280	265	265
S-7.5-270	268.6	269.1	270	285	285	285	270	270
S-7.5-275	273.6	274.1	275	290	290	290	275	275
S-7.5-280	278.6	279.1	280	295	295	295	280	280
S-7.5-285	283.6	284.1	285	300	300	300	285	285
S-7.5-290	288.6	289.1	290	305	305	305	290	290
S-7.5-295	293.6	294.1	295	310	310	310	295	295
S-7.5-300	298.6	299.1	300	315	315	315	300	300
S-7.5-315	313.6	314.1	315	330	330	330	315	315
S-7.5-320	318.6	319.1	320	335	335	335	320	320
S-7.5-335	333.6	334.1	335	350	350	350	335	335
S-7.5-340	338.6	339.1	340	355	355	355	340	340
S-7.5-355	353.6	354.1	355	370	370	370	355	355
S-7.5-360	358.6	359.1	360	375	375	375	360	360
S-7.5-375	373.6	374.1	375	390	390	390	375	375
S-7.5-385	383.6	384.1	385	400	400	400	385	385
S-7.5-400	398.6	399.1	400	415	415	415	400	400

Note: Model HiP 10 can be manufactured to a minimum nominal diameter of 60.









**Follow the instructions, before installation and operation, for your safety.**

\*Specifications and dimensions are subject to change without prior notice.

\*The data on this catalogue are solely for your reference and are not to be construed as constituting a warranty.

\*PILAFロン® is a registered trademark of Nippon Pillar Packing Co., Ltd.

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