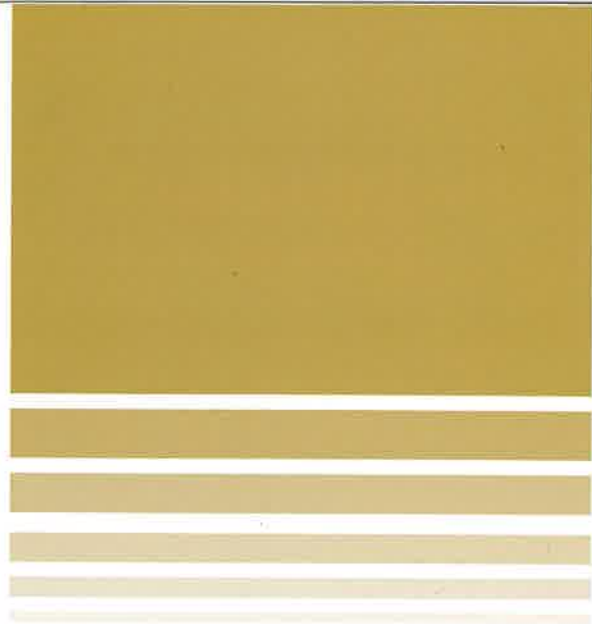




Marine  
Machine  
Motor Car



Electronics  
Energy  
Ecology



# Pillar Products for **POWER PLANT**



Since 1924, Nippon Pillar Packing Co.,Ltd has contributed to the growth of industries with our total sealing technology. In our long and glorious history, we have always put emphasis on Research and Development, and served the-state-of-the-art products in the field of leak preventive products such as mechanical seals, gland packings, gaskets and Pilaflon® products.

PILLAR mechanical seals, by using the superior sealing materials based on our advanced technology and abundant experience, have been employed in much severe applications such as for nuclear power stations. PILLAR packings/gaskets are available with our differential raw material to the requirements of fugitive emission control and of low torque in the valves. Pilaflon® products has used the best suitable material in our integral manufacturing process from raw material.

"Quality first" is our company motto, and we are the first seal manufacturer in Japan to be certified ISO 9001. Also, we were certified ISO 14001 for environmental concern.

To power stations, where most reliable products are required and environmental protection concerns badly, we provide total sealing technology with our innovative products to nuclear, hydraulic and thermal power stations.

This catalogue was prepared to help you select the best suitable products to your specifications in power stations. It shows only typical products to cover the specifications as much as possible to minimize the inventory stock. But, our products are not shown exhaustively here. We have PILLAR distributors worldwide to serve you, so please contact us for any further information.



BRAIDING OF GLAND PACKING



LAPPING OF MECHANICAL SEAL



DRY GAS SEAL TEST BENCH



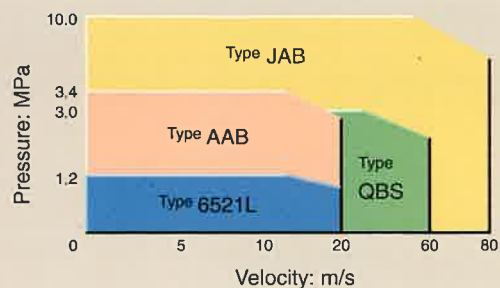
ELECTRON MICROSCOPE



SANDA FACTORY



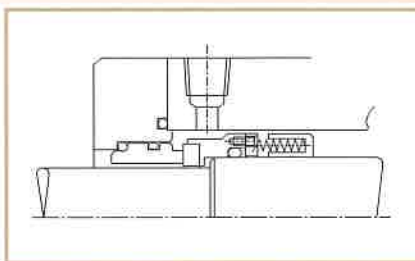
## Selection of seal and packing for pump



## Mechanical Seals

### Type AAB

#### Rotating multi-spring seal



##### Features & Benefits

##### For General application

This type is widely used for wide application in many industries.

##### Performance

Pressure: 3.43MPa, Velocity: 20m/s, Nom.size:  $\phi 20\sim 250$   
Application: General pumps

Code: MS-AAB30-KEB00 - (Size), Tungsten Carbide (SiC) vs. Carbon & Fluoro Elastomer, 316 SS

### Type QBS

#### Welded metal bellows seal

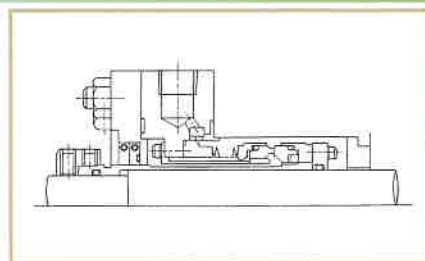
##### Features & Benefits

##### For High Temperature

This type is stationary type using welded double metal bellows which has superior pressure resistance. This has no stick-slip and superior heat resistance as no shaft packing is employed.

##### Performance

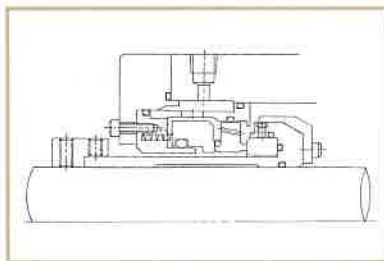
Pressure: 3.0MPa, Velocity: 60m/s, Nom.size:  $\phi 23\sim 136$   
Application: Oil feed pump, Fuel transfer pump



Code: MS-QBS20-PXK00 - (Size), Tungsten Carbide (SiC) vs. Premium carbon & Fluoro Elastomer, 316 SS

### Type JAB

#### Stationary floating ring seal (For heavy duty)



##### Features & Benefits

##### For High Load Application

This type is widely used for high speed, high pressure and big pressure fluctuation. Carbon floating ring can accommodate big pressure fluctuation owing to its symmetrical shape. The pump fluid can be flushed effectively through lots of holes on this ring to dissipate the heat generated on the faces.

##### Performance

Pressure: 10.0MPa, Velocity: 80m/s, Nom.size:  $\phi 50\sim 250$   
Application: Boiler feed pump, Main pump for nuclear power plant

Code: MS-JAB25-R - (Size), Tungsten Carbide (SiC) vs. Premium carbon & Fluoro Elastomer, 316 SS

## Gland Packings

### Type 6521L

#### Carbonized fiber packing

##### Features & Benefits

##### For General Pump

This is made of carbonized fiber impregnated with PTFE dispersion, and lattice braided with special lubricant. This has much enhanced performance than our popular type 6501L. This packing can accommodate big pressure fluctuation, so can be used widely in rotating/reciprocating equipment.

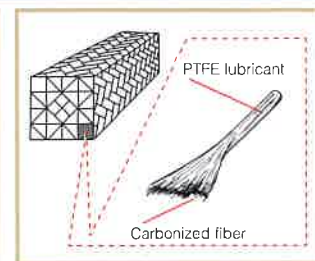
##### Performance

Temperature: 200°C, Pressure: 1.2MPa, Velocity: 20m/s, PV value: 9.8MPa·m/s  
Application: Sea water pump

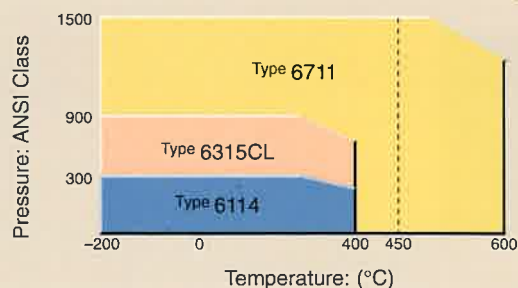
\*Cooling is required for liquid over 80°C



Code: GP-6521L - (Size)



## Selection of valve packing

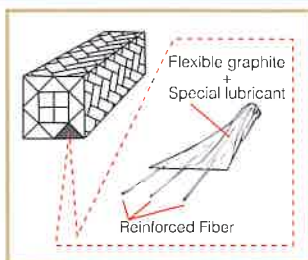


### Type 6114\*

#### Pillarfoil® Braided Packing (Mark VII)



Code: GP-6114 - (Size)



##### Features & Benefits

##### Non-metal Valve Packing for Low Torque

This is made of flexible graphite yarn reinforced by organic fiber and braided. This flexible graphite material is pre-treated on its surface to obtain low torque properties as well as sealability.

(Pat.No.US 5370405, Pat.No.EP 466923, Pat.No.KR74981, Pat.No.Canada 2029303, Pat.No.Ireland 71684)

##### Performance

Temperature: -200~400°C (Packing area up to 350°C)

Pressure: ANSI Class 300

Application: General application valves, for manhole packing

### Type 6315CL\*

#### Pillarfoil® Braided Packing for low torque (Mark V)



##### Features & Benefits

##### For regulating and control valve to comply CAAA regulation

This is made of flexible graphite yarn reinforced by stainless steel wire, and braid over braid then treated with special lubricant. This has superior performance for regulating and control valves.

(Pat.No.US 5134030, 5240769, Pat.No.EP 340303, Pat.No.KR 63539)

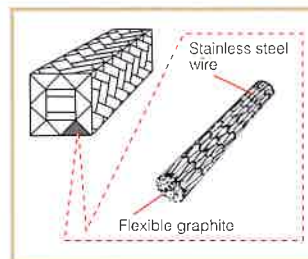
##### Performance

Temperature: -200~400°C (Packing area up to 350°C), Pressure: ANSI Class 900

Application: Regulating valve, Control valve



Code: GP-6315CL - (Size)

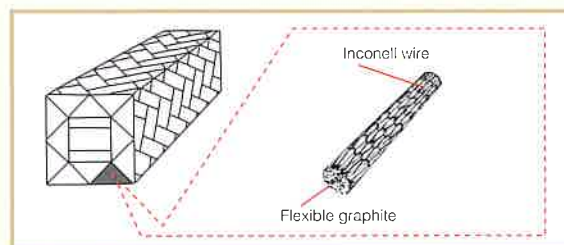


### Type 6711\*

#### Pillarfoil® Braided Packing (Mark III®)



Code: GP-6711 - (Size)



##### Features & Benefits

##### For High Pressure High Temperature Valves

This is made of flexible graphite yarn reinforced by inconel wire, and braid over braid then treated with flexible graphite on its surface. This packing can be used without end rings.

(Pat.No.US 4705722, Pat.No.EP 253031, Pat.No.KR42430)

##### Performance

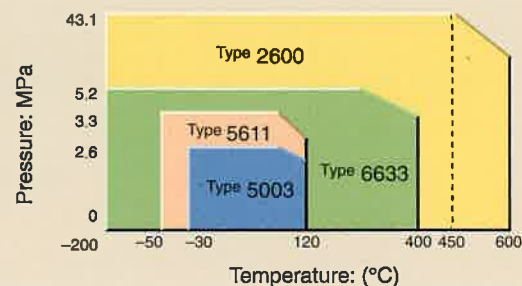
Temperature: -200~600°C, Pressure: ANSI Class 1500

Application: High pressure high temperature valves, for packing

\*Maximum Temperature in oxidizing atmosphere : 450°C



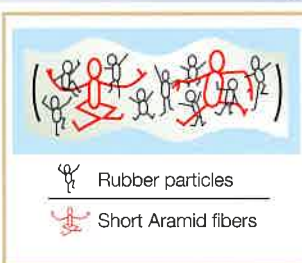
## Selection of gasket



## Gaskets

### Type 5003

#### Aramid fiber hybrid rubber sheet



Code: VG-5003 - (thickness) × (width) × (length)

#### Features & Benefits

##### Hybrid rubber sheet gasket

Aramid fiber hybrid rubber sheet gasket.

This has superiority in sealability, no permeation leakage, excellent reversion for compressibility and minimized stress relaxation.

#### Performance

Temperature: -30~120°C, Pressure: 2.6MPa

Application: Lining pipe, Sea water intake pipe

### Type 5611

#### Non Asbestos Joint Sheet (For general application)

#### Features & Benefits

##### For general application

High strength synthetic fiber, inorganic fiber and NBR are combined evenly, and formed into sheet.

#### Performance

Temperature: -50~120°C, Pressure: 3.3MPa

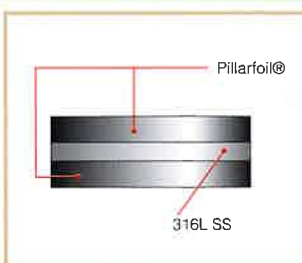
Application: Flanges for pipe, Equipment



Code: VG-5611 - (thickness) × (width) × (length)

### Type 6633

#### Metalfoil inserted Pillarfoil® Sheet



Code: VG-6633 - (thickness) × (width) × (length)

#### Features & Benefits

##### Flexible Graphite sheet reinforced by stainless steel foil.

This has superior heat resistance and flexibility as well as sealability, and easy to handle.

#### Performance

Temperature: -200~400°C, Pressure: 5.2MPa (ANSI Class 300)

Application: Flanges for pipe, Equipment

### Type 2600

#### Pillarfoil® Spiral Wound Gasket

#### Features & Benefits

##### Spiral wound gasket using Pillarfoil® filler

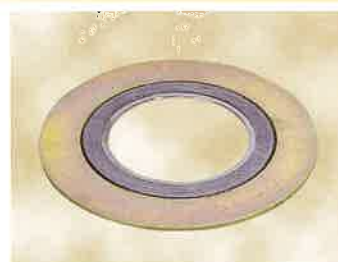
It is superior in gas sealability, heat resistance and chemical resistance. It can be used in vacuum, LNG, nuclear application as well as general application.

#### Performance

Temperature: -200~600°C (450°C for oxidizing atmosphere)

Pressure: 43.1MPa (ANSI Class 2500)

Application: Flanges for pipe, Equipment



Code: Standard  
With inner ring  
With inner/outer ring

VG-2600-EOO-ANSI (Size) LB-00"  
VG-2601-EEO-ANSI (Size) LB-00"  
VG-2603-EEE-ANSI (Size) LB-00"

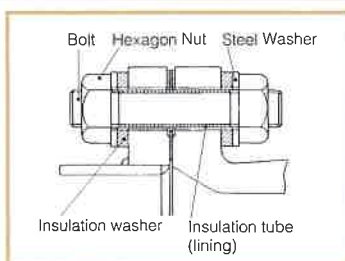
## PTFE Products

### Type 4650(H)

#### AC Bolts



Code: PF-4650(H)-ANSI - (Size)



#### Features & Benefits

##### Lined with hard Pilaflon®

With insulation washers and gaskets, it is to prevent galvanic corrosion which may be generated on different metal flanges. PFA insulation diameter is smaller than thread diameter, so enabling easy insertion work.

#### Performance

Temperature: -196~200°C, Application: Flanges for pipe, Equipment

### Type 4801

#### FLUOROGOLD® Slide Bearing

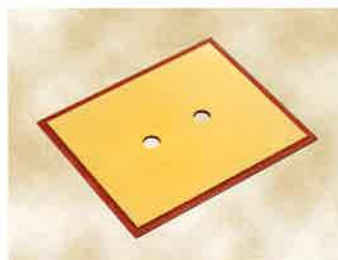
#### Features & Benefits

Fluorogold® is a high load slide bearing to accommodate relative movement by earthquakes, temperature difference, wind and so on.

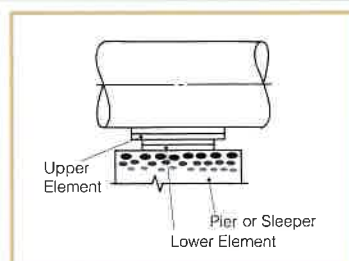
#### Performance

Temperature: -200~260°C

Application: Support for pipe, Equipment, Iron structure and apparatus



Code: PF-FC-1010-CS 15L - (width) × (length). Carbon steel + PTFE

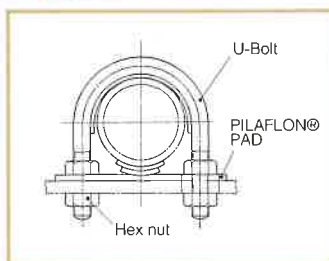


### Type 4811, 4812

#### Pilaflon® U-bolt and pad



Code: PF-4811-U - (number)  
PF-4812-P - (number)



#### Features & Benefits

##### To accommodate relative movement of piping

Filled PTFE is fitted firmly on the pipe-contacting face of U-bolt. Size is available of 1-1/4"~36" as standard.

#### Performance

Temperature: -200~260°C, Application: Pipe support

### Type 8612

#### Damper bearing

#### Features & Benefits

##### Oilless metal bearing

Developed for damper bearing on duct, and long stable performance can be obtained under severe condition.

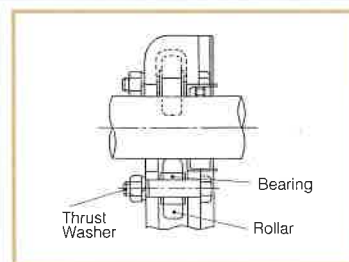
#### Performance

Load: 34.3MPa, Temperature: 350°C

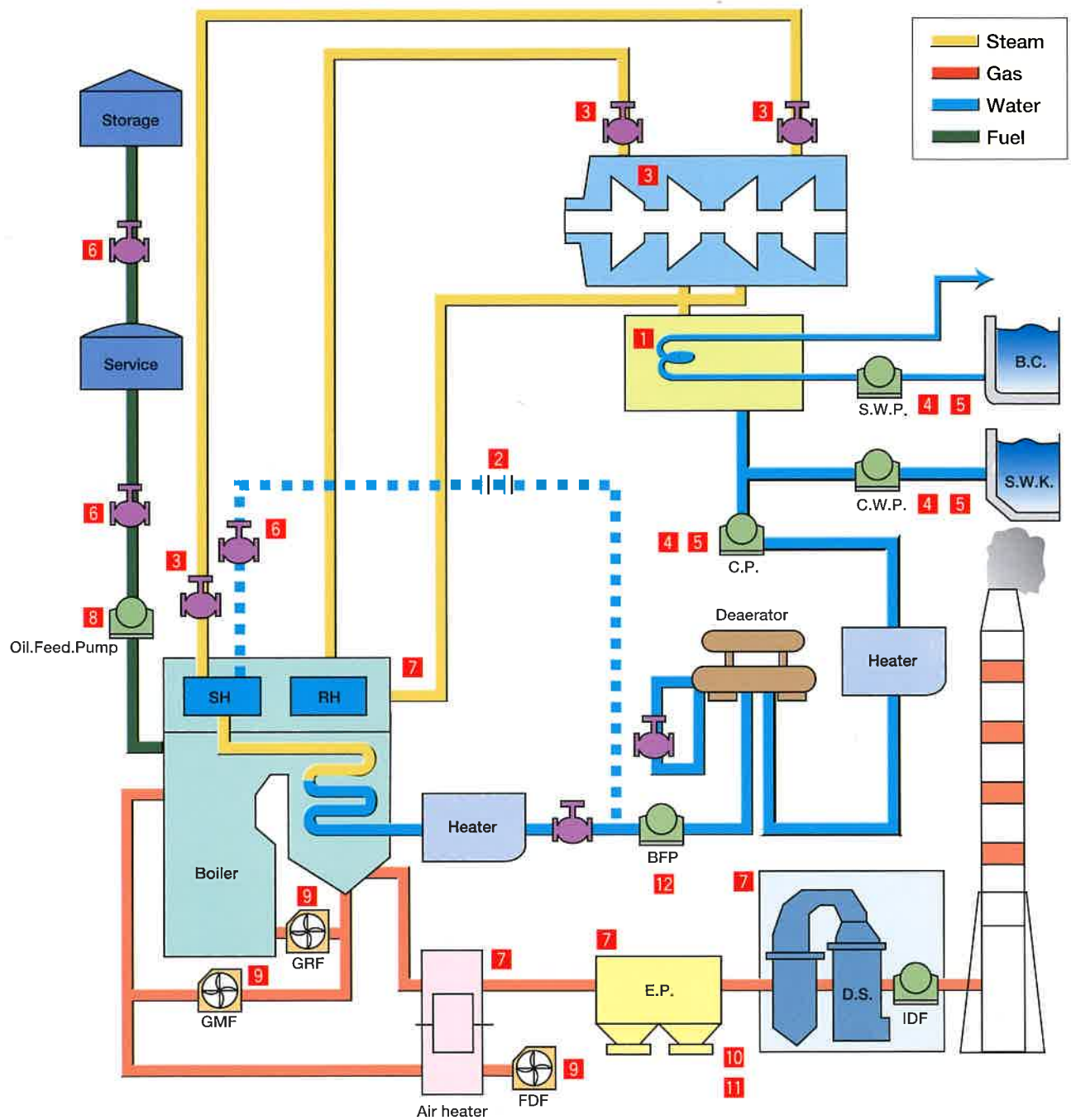
Application: Damper



Code: PF-8612-DB1- (number)



# PILLAR Products in Process of Power Plants



Тип 5003



Тип 2600



Тип 6711



Тип 6521L



Тип AAB



Тип 6315CL



Тип 6114



Тип QBS



Тип 8612



Тип 4801



Тип 4650(H)



Тип JAB



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\*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.



**CAUTION**

Read through and follow the instructions on the manual  
before installation and operation for your safety.