

○ Rotary type multi-spring seals (for low-load/medium-load) (1/1)

Product Nos.	Names	Construction	Performances	Main applications
AAU ABU	Unbalance rotary type multi-spring mechanical seal	The mechanical seal of this type is a representative unbalance type seal used in all industries since olden times. It is so designed as to adopt the multi-spring which assures the stabilized performance in a wide range of application.	Pressure limit: 1.3MPa Peripheral speed limit: 10m/s Nominal dia.: φ 20~ φ 250	Process pump, agitator, blower,
AAB ABB	Balance rotary type multi-spring mechanical seal	The mechanical seal of this type is a balance type mechanical seal of type-AAU and type-ABU shown above.	Pressure limit: 3.5MPa Peripheral speed limit: 20m/s Nominal dia.: φ 20~ φ 250	Process pump, agitator, blower,
EAU AFU	Unbalance rotary type multi-spring mechanical seal	The mechanical seal of this type is so designed as to be applicable to the pump of ISO code or ANSI code, and is a sister product of type-AAU and type-ABU.	Pressure limit: 1.3MPa Peripheral speed limit: 20m/s Nominal dia.: φ 18~ φ 130	Process pump, chemical pump
AEB AFB	Balance rotary type multi-spring mechanical seal	The mechanical seal of this type is a balance type mechanical seal of type-AEU and type-AFU shown above.	Pressure limit: 3.0MPa Peripheral speed limit: 20m/s Nominal dia.: φ 22~ φ 130	Process pump, chemical pump
EAB	Outside balance rotary type multi-spring mechanical seal	The mechanical seal of this type is an outside seal of which standard type is made by combining the SiC materials having excellent corrosion-resisting performance and chemical-resisting performance, to the sliding material, and is suitable to the chemical to which strict corrosion-resisting performance is required. The knife edge seal of similar construction is also available to the high-viscosity liquid. (Type-EAK)	Pressure limit: 1.0MPa Peripheral speed limit: 20m/s Nominal dia.: φ 20~ φ 130	Chemical feeding pump for each industry
EAB60	Chemimighty II Outside type multi-spring mechanical seal	The mechanical seal of this type is an outside type mechanical seal in which O-ring is used for shaft packing, and can be easily maintained, as the seal components are arranged at the outside the equipment body. Since it can directly seal the gas within vessel, it is not necessary to prepare the sealant required for double seal.	Pressure limit: 0.4MPa Peripheral speed limit: 1.0m/s Nominal dia.: φ 20~ φ 150	Agitator for each industry
TELSM	SiCX seal Rotary type multi-spring seal	The mechanical seal of this type is a multi-spring type mechanical seal in which the SiC is used independently for seal ring and the drive collar is grooved in radial pattern. Since the metal parts are made of SUS316, the mechanical seal is applicable to a wide range of fluid in addition to fluid containing acid solution, alkali solution or fine particle.	Pressure limit: 0.5MPa Peripheral speed limit: 10m/s Nominal dia.: φ 20~ φ 55	Process pump, chemical pump

○ Rotary type one-coil spring seals (for low-load/medium-load) (1/1)

Product Nos.	Names	Construction	Performances	Main applications
CCU	US-1 Unbalance rotary type one-coil spring mechanical seal	The mechanical seal of this type is adopted officially as a type US-1 by the Japanese Marine Equipment Association and uses the one-coil spring which is hardly affected by corrosion or slurry. There is a hole provided at the shaft O-ring of rotary ring, to prevent the follow-up failure due to clogging.	Pressure limit: 1.0MPa Peripheral speed limit: 15m/s Nominal dia.: φ 20~ φ 130	Fresh water, seawater, lubrication oil pump
CGU	US-2 Unbalance rotary type one-coil spring mechanical seal	The mechanical seal of this type is adopted officially as a type US-2 by the Japanese Marine Equipment Association and uses the one-coil spring which is hardly affected by corrosion or slurry. It is also applicable in all industries except for marine use.	Pressure limit: 1.0MPa Peripheral speed limit: 15m/s Nominal dia.: φ 20~ φ 180	Fresh water, seawater, lubrication oil pump
HGU	US-2 Rotary type rubber bellows mechanical seal	The mechanical seal of this type is an improved version of marine-use seal. Since the mechanical seal adopts the rubber bellows, it is of such construction as to allow the follow-up failure to hardly occur at the shaft packing. In addition, the mechanical seal also adopts the one-coil spring which is hardly affected by corrosion or slurry.	Pressure limit: 1.5MPa Peripheral speed limit: 15m/s Nominal dia.: φ 20~ φ 120	Fresh water, seawater, lubrication oil pump
CFU CEU	Unbalance rotary type one-coil spring mechanical seal	The mechanical seal of this type is a one-coil spring seal which is so designed as to be applicable to the pump of ISO code, and of which sliding material uses the SiC for standard feature. It is applicable to the chemical liquid. The knife edge seal of similar construction is also available to the high-viscosity liquid. (Types: CEL, CFL, pressure: 0.5MPa)	Pressure limit: 0.9MPa Peripheral speed limit: 15m/s Nominal dia.: φ 18~ φ 55	Process pump, chemical pump
PEU PFU	Unbalance rotary type one-coil spring mechanical seal	The mechanical seal of this type is a one-coil spring seal having excellent corrosion-resisting performance and slurry-resisting performance, adopts the clutch mechanism to the rotation torque transmission of seal, and is a seal which makes up for the disadvantages of spring drive.	Pressure limit: 1.3MPa Peripheral speed limit: 15m/s Nominal dia.: φ 18~ φ 130	High-viscosity liquid, slurry-mixed liquid, crystalline liquid
PEU PFU	Balance rotary type one-coil spring mechanical seal	Balance type seal of type-PEU and type-PFU shown above	Pressure limit: 3.0MPa Peripheral speed limit: 15m/s Nominal dia.: φ 18~ φ 130	High-viscosity liquid, slurry-mixed liquid, crystalline liquid

◆ Stationary seals (for high peripheral speed) (1/1)

Product Nos.	Names	Construction	Performances	Main applications
GAKEM	Pillar Cassette seal Stationary cartridge seal	The seal is a cartridge type mechanical seal applicable to a wide range of fluids ranging from fresh water to high-viscosity slurry. Since the end surface of seal uses the Sic having excellent wear-resisting performance and chemical-resisting performance, the long-time service life is expectable. Besides, it can be also attached to the pump of ISO code or DIN code, as it is designed for compact type.	Pressure limit: 1.0MPa Peripheral speed limit: 20m/s Nominal dia.: φ 20~ φ 100	Process pump, Chemical pump
GHB	Stationary type mechanical seal	Since the mechanical seal of this type is a standard type stationary type seal, it is designed for compact type, and the spring is arranged at the atmospheric side, it will not cause any clogging. For center impeller type pump or vertical pump, it is not necessary to perform any dimension adjustment work, as it is designed for cartridge type by the setting claw.	Pressure limit: 4.0MPa Peripheral speed limit: 40m/s Nominal dia.: φ 30~ φ 200	Process pump for oil refining, petro- chemical and chemical, etc.

◆ Bellows seals (1/1)

Product Nos.	Names	Construction	Performances	Main applications
QAK	Stationary type molded metal bellows seal (for high- viscosity liquid)	The seal of this type uses the molded metal bellows, it is designed for sharp knife edge at one side, and is developed to provide the stabilized performance to high-viscosity fluid, polymerizable liquid and coagulative liquid.	Pressure limit: 1.0MPa Peripheral speed limit: 20m/s Nominal dia.: φ 20~ φ 106	High- viscosity polymeri- zable liquids such as pulp, food, paint, resin, etc.
QBS	Stationary type welded metal bellows seal (for high tempe- rature)	The seal of this type is a stationary type seal which uses the welded metal bellows having excellent pressure-resisting performance. Since it does not use any shaft packing, it is not necessary to make consideration the heat-resisting limit of packing, and is applicable to the high-temperature use.	Pressure limit: 3.0MPa Peripheral speed limit: 60m/s Heat-resisting limit: 450°C Nominal dia.: φ 23~ φ 120	High-load pump for high- temperature, low- temperature, high-speed, high- pressure
WCB	Chemi- Mighty seal Rotary type PTFE bellows seal (for chemical fluid)	The seal of this type is an outside seal having excellent corrosion-resisting performance, of which bellows uses PTFE, and the sliding material uses SiC. It also provides the excellent performance as a dry seal for agitator, etc.	Pressure limit: 0.6MPa Peripheral speed limit: 14m/s Nominal dia.: φ 20~ φ 100	Each chemical liquid and slurry liquid
WBR	Bellows pack Rotary type welded metal bellows seal (for high temp.)	The bellows seal of this type is a rotary type metal bellows seal which can be attached to the pump of ISO code or DIN code, and assures the excellent performance in taking the corrective measure against operation failure of shaft packing. This seal is applicable to a wide range of fluid, as its bellows is made of inconel.	Pressure limit: 2.0MPa Peripheral speed limit: 25m/s Nominal dia.: φ 20~ φ 100	Utility pump, low-pressure/ medium- pressure pump

◆ Split seals (1/1)

Product Nos.	Names	Construction	Performances	Main applications
SCU	R II seal Stationary type outside seal	Since the soft material side forming its seal surface is designed for split type, it is not necessary to disassemble the equipment in the event of repair. It is also possible for seal of this type to execute the daily inspection, and to adjust the spring force, as it is arranged outside.	Pressure limit: 1.0MPa Peripheral speed limit: 13m/s Nominal dia.: $\phi 20 \sim \phi 280$	Water, sewage pump
SCU	AR II seal Stationary type outside seal	The adoption of special carbon having excellent lubricity has made it possible to perform the water-free operation or aerial operation for over one hour. Besides, the maintenance is executable without disassembling the equipment, as the fixed side sliding part and rotary side part are of split construction.	Pressure limit: 0.5MPa Peripheral speed limit: 12m/s Nominal dia.: $\phi 35 \sim \phi 260$	Vertical shaft type advance stand-by, sewage/ rainwater discharge, river water pump

◆ Gas seals (1/1)

Product Nos.	Names	Features	Performances	Main applications
PEC	<p>PEC seal Static pressure type dry gas seal</p> <p>PEC-2SA Balance rotary type non-contact seal</p> <p>PEC-3SB Balance stationary type non-contact seal</p>	<p>The seal of this type is a non-contact type seal in which the pressure of gas spouted out of orifice on to the fixed side seal surface is balanced with the spring force, by which a stabilized clearance of several microns up to several tens of microns is secured between seal surfaces, to restrict the leak rate.</p> <p>It is applicable to the gas which is not allowed to leak to the outside, or to the gas containing powder, etc.</p>	<p><u>PEC-2SA</u> Pressure limit: 0.05MPa</p> <p>Peripheral speed limit: 80m/s</p> <p><u>PEC-3SA</u> Pressure limit: 1.05MPa</p> <p>Peripheral speed limit: 80m/s</p>	Turbine, blower, agitator
PPG	<p>Phoenix seal Dynamic pressure type non-contact seal</p> <p>PPG-1R Rotary dynamic pressure type non-contact seal</p> <p>PEC-3SB Stationary type dynamic pressure non-contact seal</p>	<p>The seal of this type is a seal in which the unique groove like phoenix feather is arranged on the seal surface, to utilize the dynamic pressure(provided by barrier) effectively.</p> <p>It is applicable to a wide range within range from compressor and steam turbine to blower.</p>	<p><u>PPG-1RB</u> Pressure limit: 1.0MPa</p> <p>Peripheral speed limit: 20m/s</p> <p><u>PPG-3SB</u> Pressure limit: 10.0MPa</p> <p>Peripheral speed limit: 150m/s</p>	Turbine, blower, compressor
AD seal	<p>AD seal Dynamic pressure type double dry gas seal for liquid</p>	<p>The seal of this type is a dynamic pressure end surface non-contact type dry gas seal to which automatic clearance adjustment function is provided.</p> <p>When the pump is started with seal gas supplied in the equipment at +2bar prior to operation, the dynamic pressure is generated by the groove arranged at the rotary ring, by which the fixed clearance is secured on the seal surface, to prevent the fluid within equipment from leaking. Since the seal chamber is pressurized, using the nitrogen gas, it becomes possible to simplify the attached unit, by which it is not necessary to arrange the oil unit, etc. which had been required for conventional double mechanical seal.</p>	<p>Pressure limit: -1~16Bar</p> <p>Peripheral speed limit: 3~40m/s</p> <p>Nominal dia.: φ 50~ φ 163</p>	Each process pump
RRG	<p>RRG seal Dry contact seal for secondary seal</p>	<p>The seal of this type is a dry contact seal for secondary seal, and is applicable as a seal unit in substitute for tandem seal. Since the seal surface is grooved for reduction of load, the dry-resisting performance is improved.</p> <p>The long service life is also assured, as the special lubricant is impregnated to the seal ring.</p>	<p>Pressure limit: 0.1MPa</p> <p>Peripheral speed limit: 20m/s</p> <p>Nominal dia.: φ 20~ φ 130</p>	Each process pump

◆ End surface rubber sliding seals (for marine use, general industrial machine use) (1/1)

Product Nos.	Names	Features	Performances	Main applications
G1	G1 seal End surface rubber sliding seal (for general)	The seal of this type is an end surface sliding seal to which the U-shape rubber is used. It is suitable to the low-speed unit in which the shaft may run out or may become eccentric frequently. Since it provides the excellent self-sealing performance, it is also applicable to the gas containing powder.	Pressure limit: 0.2MPa Peripheral speed limit: 6m/s Nominal dia.: φ 50~ φ 450	Each industrial machine
G1-FL	G1-FL End surface rubber sliding seal (flocculator)	The seal of this type is a seal used for partition at through part of water chamber of flocculator. The seal is an end surface sliding seal to which the simplified U-shape rubber is used, and provides the excellent self-sealing performance.	Pressure limit: 0.2MPa Peripheral speed limit: 6m/s Nominal dia.: φ 60~ φ 250	Flocculator
G1-PRS	G1-PRS End surface rubber sliding seal (for rudder stock)	The seal of this type is a seal for shaft seal used for marine rubber stock. It is an end surface sliding seal to which the simplified U-shape rubber is used.	Pressure limit: 0.2MPa Nominal dia.: φ 80~ φ 990	Marine rudder stock
G1-STB	G1-STB End surface rubber sliding seal (for stem tube seal)	The seal of this type is a seal for stem tube, to which the seawater lubrication type bearing is provided. It provides the excellent follow-up performance to shaft movement.	Pressure limit: 0.12MPa Nominal dia.: φ 80~ φ 990	Stem tube seal for marine use