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# RAJWAD

## ENTERPRISES

## ABOUT US :

**RAJWAD ENTERPRISES** WAS FORMED IN YEAR 2007, BY A TEAM OF YOUNG TECHNOCRATS HAVING MANY YEARS OF EXPERIENCE IN DESIGNING,MANUFACTURING AND TROUBLESHOOTING POINTS OCCURING IN ALL TYPES OF MECHANICAL SEALS, REACTOR SEALS, AGITATOR SEALS,PLATE HEAT EXCHANGERS, SRG 509/610 SEPRATORS.RAJWAD ENTERPRISES ARE DESIGNED AS PER LATEST INTERNATIONAL STANDARDS AND SAFETY NORMS. IN YEAR 2010, WE GOT ISO 9001: 2015 CERTIFICATE TO MEET LATEST QUALITY STANDARDS.



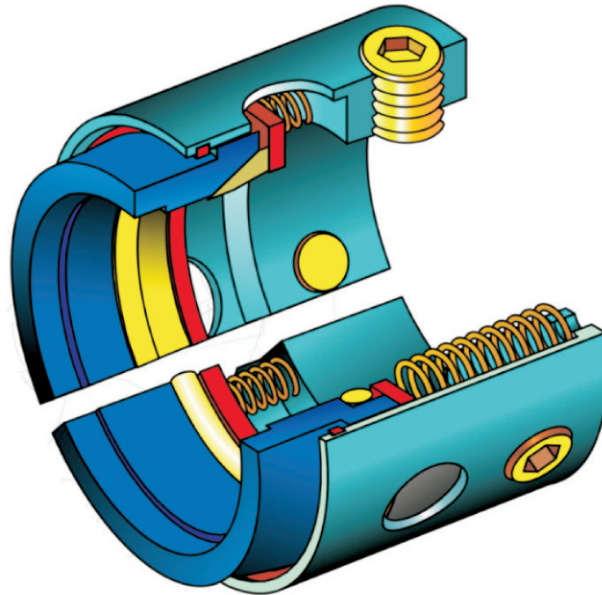
**Mr. Pradeep Singh Rajwad**  
Proprietor

WE MANUFACTURE HIGHLY EFFICIENT AND RELIABLE MECHANICAL SEALS FOR PUMPS, COMPRESSORS, AGITATORS, MIXERS, REACTORS, DYEING MACHINES AND ALL OTHER EQUIPMENTS HAVING ROTATING SHAFTS. TODAY, THE WORLD CLASS RAJWAD ENTERPRISES MECHANICAL SEALS RANGE IS WIDELY USED FOR VARIOUS CRITICAL APPLICATIONS IN ALL INDUSTRIES LIKE CHEMICALS,FERTILIZERS,TEXTILE PROCESSING, PETRO-CHEMICALS,SOLVENT EXTRACTION PLANTS, OIL REFINERIES,SUGAR INDUSTRIES PHARMACEUTICALS,DISTILLERIES, BREWERIES,BEVERAGES, POWER PLANTS ETC. THE MATING AND SEAL RING FACES ARE CAREFULLY SELECTED FROM VARIOUS GRADES OF CARBON,TUNGSTAN CARBIDE,SILICON CARBIDE,STELLITE,BRONZE,CERAMIC,DIAMOND COATING AND OTHER SPECIAL ALLOYS MATERIALS. THESE RAW MATERIALS ARE OF SPECIAL GRADES USED FOR MANUFACTURING OF MECHANICAL SEAL.

THE ELASTOMERS USED ARE MADE FROM VARIOUS GRADES OF RUBBER LIKE KALREZ,VITON,SILICON,NEOPRENE,BUNA-N,EPDM,EPT,PTFE,GFT,SFT ETC. THE METAL PARTS ARE USUALLY MADE OF HASTEALLOY "C",ALLOY-20 OR SS-316.THESE METALS ARE THOROUGHLY CHEMICALLY ANALYSED FOR THEIR PROPERTIES BEFORE BEING PROCESSED.FLATNESS OF SEAL FACES ARE CHECKED BY OPTIC LIGHT BAND TESTS AFTER LAPPING TO ENSURE PROPER SEALING FACES.THE INSPECTION IS DONE UNDER HELIUM MONOCHROMATIC.

**RAJWAD ENTERPRISES** ALSO DEALS IN PLATE HEAT EXCHANGERS PLATE AND GASKETS, ALL TYPES OF VALVE'S, ALL TYPES OF 'O' RING OR 'O' RING CORD, PTFE GASKETS, BEARINGS, FLEXIBLE HOSES, PUMP AND PUMP SPARES . WE HAVE READY STOCK FOR OUR VALUABLE CLIENTS TO PROVIDE AS SOON AS POSSIBLE DELIVERY FOR UP TO DATE SERVICE.

## RJW 1001 'O' AND 'W' (MULTI SPRING SEAL WEDGE/'O' RING)



### Application

For clear corrosive / non-corrosive liquids from low to high pressure & high temperature range.

### Design Features

- Internally Mounted compact design.
- Multiple spring arrangement ensures uniform spring loading
- Mechanical locking ensures positive drive.
- Independent of direction of rotation.

### Optional Design for type RJW 1001 'O'

- The seal can be supplied with reverse pressure balanced design.
- The seal can be supplied for equipment having axial float up to 1mm with special modification.

### Seal face material

**Rotary** : Carbon / Ceramic / Tungsten carbide / silicon carbide.

**Stationary** : Tungsten carbide / silicon carbide / ceramic / Stellite

### Hardware Material

Retainer / Springs / Thrust Ring / Snap Ring / Grub Screw: SS316 / Alloys

### Secondary Seal Material

For RJW 1001 'W' : Wedge / stationary Packing : PTFE / Glass filled PTFE Wedge material ensures, the seal usage in high temperature / chemical applications.

For RJW 1001 'O' Ring : Rotary / stationary 'O' Viton / EPR / Buna-n / Neoprene 'O' ring seals are more preferred, wherever elastomer is suitable to process fluid.

### Operating Parameters

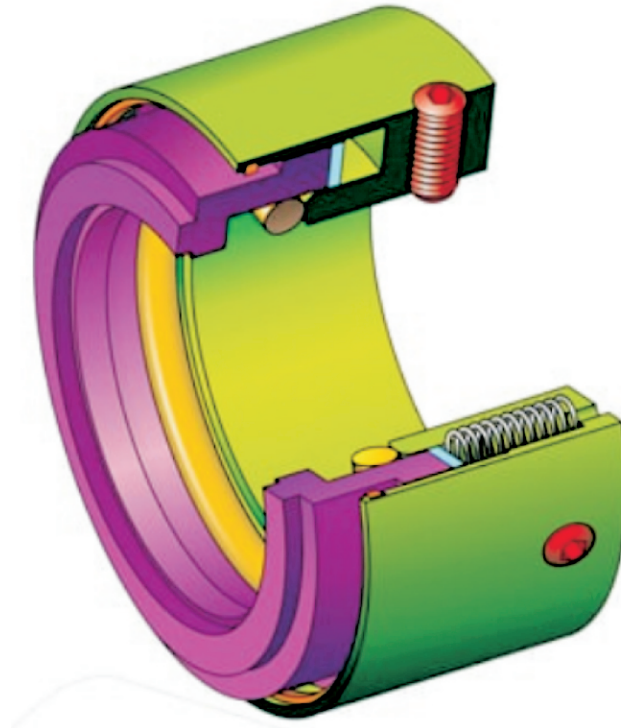
**Pressure** : For Unbalanced : Up to 11 Kg / Cm<sup>2</sup>  
: For Balanced : 40 Kg / Cm<sup>2</sup>

**Speed** : Up to 2900 RPM

**Temperature** : -50°C to 200°C

## WHAT IS MECHANICAL SEAL

A mechanical seal is a device which helps join mechanisms or systems together using pressure. This type of seal can be used in plumbing systems to prevent leakage in the tubes and pipes. A mechanical seal can also be used for manufacturing and other high pressure applications. Mechanical seals offer the required reconciliation and sealing between a compressor housing of stationary pump and a spinning shaft. They generally contain a key area such a busing or ring that is mounted, and has a stationary seal brought about by a spinning shaft or an o-ring. Another portion is affixed to the stationary housing which also carries an o- ring seal. A plug is a simple example of a mechanical seal. A plug consists of a sponge- like material such as cork or rubber. When Inserted into a hole it will press against the hole's exteriors which creates the mechanical pressure. The pressure from the plug will seal the hole and concurrently prevent leakage.



### Application

For highly slurry / high viscous liquids / abrasive services : from low to high pressure & temperature range.

### Design Features

- Externally mounted
- Multiple spring arrangement ensures uniform spring loading.
- Springs are not in product contact.
- Mechanical loading ensures positive drive
- Independent of direction of rotation.

### Seal face material

**Rotary :** Carbon / silicon carbide / Tungsten carbide.

**Stationary :** Tungsten carbide / Silicon carbide / Ceramic / Stellite

### Hardware Material

Retainer / Springs / Thrust Ring / Grub Screw : SS316 / Alloys

### Secondary Seal Material

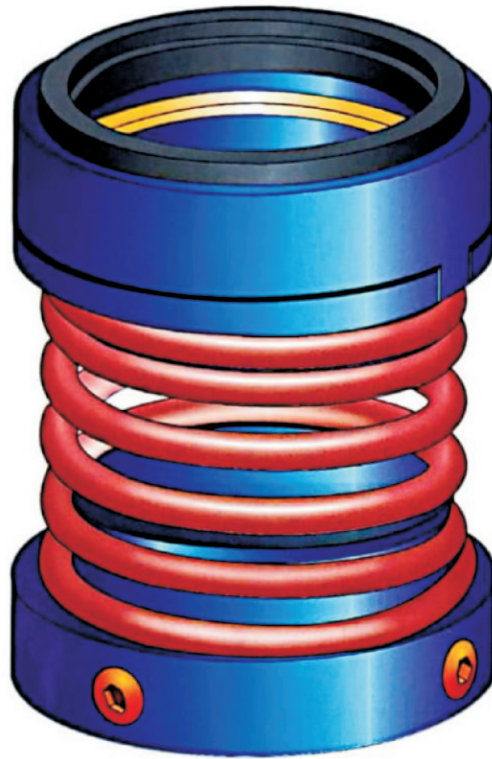
Viton / EPR / Buna-n / Neoprene / TTV / Kalrez  
O-Ring ensures less shaft fretting due to capability of flex & roll.

### Operating Parameters

Pressure : Up to 25 Kg / Cm<sup>2</sup>

Speed : Up to 2900 RPM

Temperature : -20°C to 220°C



#### **Application**

For Slurry / high viscous liquids / abrasive services from low to high pressure & temperature range.

#### **Design Features**

- Internally Mounted
- Single coil spring arrangement eliminates spring clogging.
- Independent of direction of rotation.

#### **Seal face material**

Rotary : Carbon / Tungsten carbide / silicon carbide.

**Stationary:** Tungsten carbide / silicon carbide / ceramic / Stellite

#### **Hardware Material**

SS 316 / Alloys

#### **Secondary Seal Material**

V-Packings / stationary Packing : PTFE ensures, the seal usage in mostly all chemical applications.

#### **Operating Parameters**

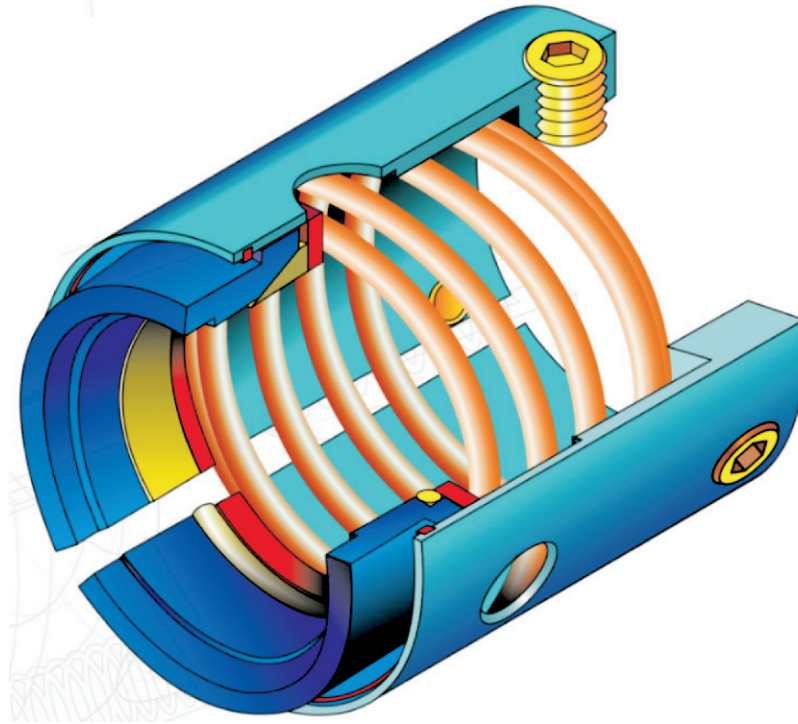
**Pressure** : Up to 11 Kg / Cm<sup>2</sup>

**Speed** : Up to 2900 RPM

**Temperature** : -50°C to 175°C



## RJW 2005R 'O' AND 'V' (SINGLE SPRING IN SS RETAINER)



### Application

For Slurry / high viscous liquids / abrasive services from low to high pressure & temperature range.

### Design Features

- Internally Mounted
- Single coil spring arrangement eliminates spring clogging.
- Mechanical locking ensures positive drive.
- Independent of direction of rotation.

### Seal face material

**Rotary :** Carbon / Tungsten carbide / silicon carbide.

**Stationary :** Tungsten carbide / silicon carbide / ceramic / Stellite

### Hardware Material

Retainer / Springs / Thrust Ring / Snap Ring / Grub Screw: SS316 / Alloys

### Secondary Seal Material

For RJW 2005R 'W' : Wedge / Stationary Packing : PTFE / Glass filled PTFE Wedge material ensures, the seal usage in high temperature / chemical applications.

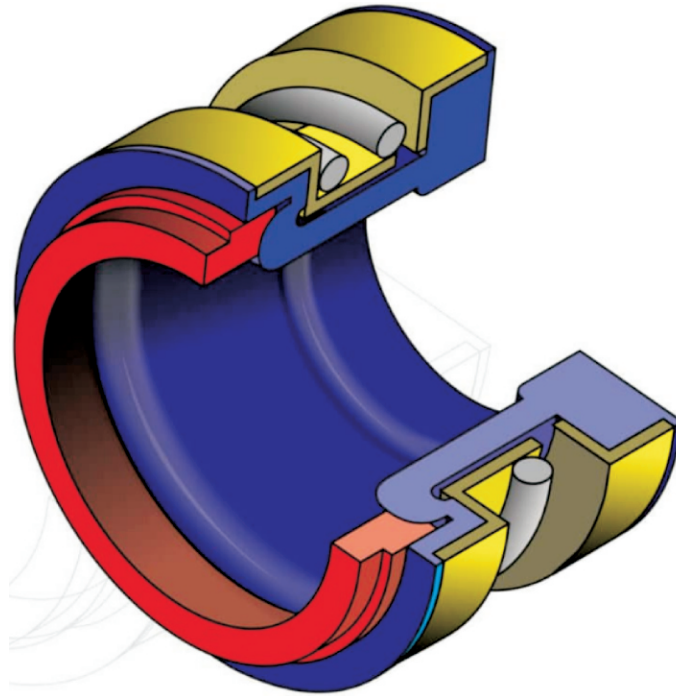
For RJW 2005R 'O' Ring : Rotary / Stationary 'O' Ring : Viton / EPR / Buna-n / Neoprene 'O' ring ensures less shaft fretting due to capability of flex & roll. 'O' rings seals are more preferred, wherever elastomer is suitable to process fluid.

### Operating Parameters

**Pressure** : For RJW 2005R 'O' / 'W' :  
Up to 11 Kg to 30 kg / Cm<sup>2</sup>

**Speed** : Up to 2900 RPM

**Temperature** : -50°C to 200°C



### Application

For light chemical duties ranging from water to weak acid solutions, wherever Elastomer is suitable.

### Design Features

- Single coil, elastomer bellow eliminate clogging.
- Single unit without any loose component ensures easy & accurate assembly.
- Compact design permits to install within limited dimension of stuffing Box.

### Seal face material

Rotary : Carbon / silicon carbide.  
stationary : Silicon carbide / High Alumina Ceramic 99.5%

### Hardware Material

SS 316

### Secondary Seal Material

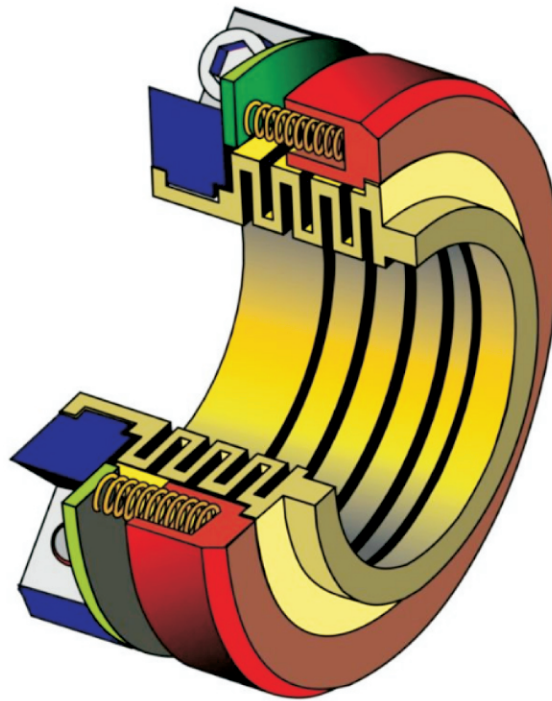
Elastomers:

Viton / EPR / Buna-n / Neoprene

### Operating Parameters

**Pressure** : 15 Kg / Cm<sup>2</sup>

**Speed** : Upto 2900 RPM



## Application

For highly corrosive clear / abarasive liquids from low to medium pressure.

## Design Features

- All wetted parts are non metallic.
- Extremely Mounted
- Multiple spring arrangement ensures uniform spring loading.
- Independent of direction of rotation.

## Seal face material

Rotary : Glass filled Teflon (GFT)  
Silicon Filled Teflon (SFT)

Stationary: Ceramic / Silicon carbide

## Hardware Material

Retainer : Glass filled PTFE  
Springs : Alloys  
Thrust Ring : SS316  
Allen Bolt : SS316  
Clamp Ring : SS316  
Mating Ring Packing : PTFE

## Secondary Seal Material

Ceramic / SIC / TC

## Operating Parameters

Pressure : 9kg / Cm<sup>2</sup>  
Speed : Up to 2900 RPM  
Temperature: -40°C to 120°C

## Comparative leakage rates between Mechanical Seal & Gland Rope

### In Gland Rope Average Leakage 90 Drop / minute

Or 5400 Drop/hr  
Or 2.3galleon (8.6 Litre) Per Day  
Or 833 Galleon (3153 Litre) Per Year

### In Mechanical Seal to Small to Measure Per Minute

Average 5 Drop Per Hour  
or 120 Drop Per Day  
or 0.8 Galleon (2.9 Litre) Per Year

or 0.8 Galleon (2.9 Litre) Per Year

5400 Drop Per Hour%5drop Per Hour=1080  
Ratio = 1:1080

1microne = 1 Millionth of Meter = .001mm

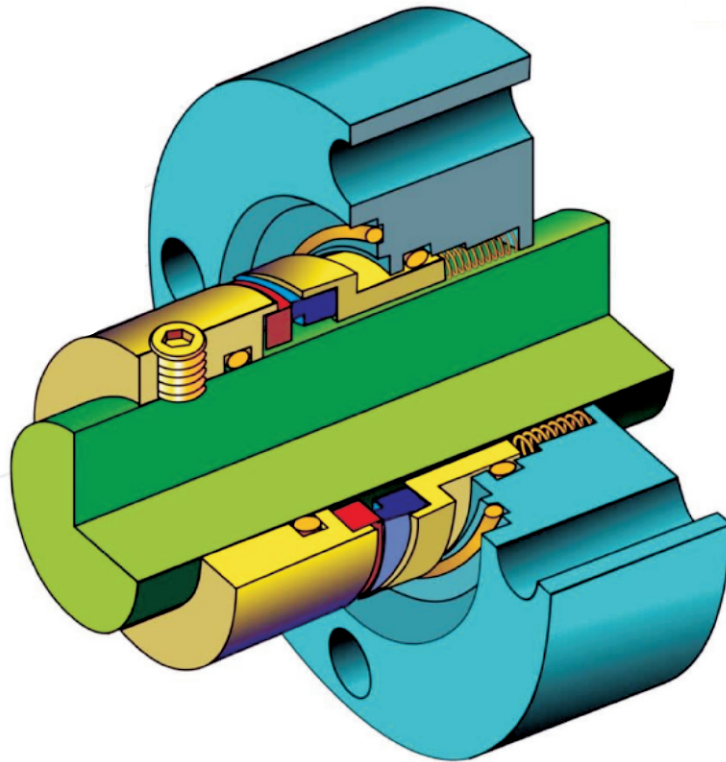
1l.b. = 1.11 Lakh's of An Inch Approximately = 0.000016"

2l.b. (light Band) = 23.2 Millionth of An Inch

3l.b. = 0.00884mm = 0.001mm = 1microne

Nacked Eye Can See upto 100 Mircone





### **Application**

For liquid of crystallizing nature / slurry / high viscous liquids / abrasive services of low & high pressure & temperature range.

### **Design Features**

- Spring provided in stationary part eliminates spring clogging & seal hang up.
- Mechanical loading ensures positive drive
- Independent of direction of rotation.
- Face combination selected ensures extended seal life in abrasive services.
- stationary part provided with springs do not flex on every revolution, ensure better life of secondary sealing, can work for high shaft speed.

### **Mostly Used in following Industries :**

Paper & Pulp Plant  
Alcohol Distilleries  
Pharmaceutical Industries

### **Seal face material**

**Rotary :** Carbon / Tungsten carbide / Silicon carbide

**Stationary :** Tungsten carbide / Silicon carbide / Ceramic

### **Hardware Material**

Rotary & stationary cage / Springs / Grub Screw: SS 316/Alloys

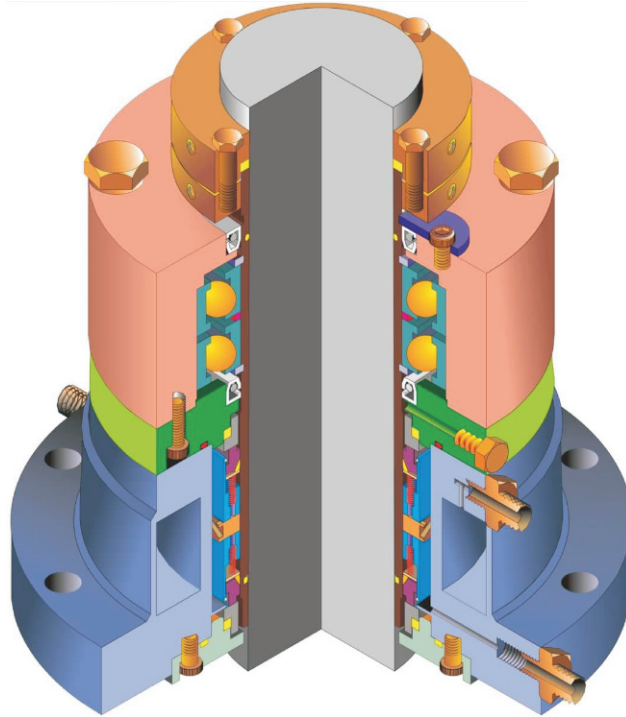
### **Secondary Seal Material**

Rotary / stationary 'O' Ring :  
Viton / EPR / Buna-n / FEP / Neoprene / PTFE  
enveloped elastomer 'O' Ring ensures less shaft fretting due to capability of flex & roll.

### **Operating Parameters**

Pressure : 35 Kg / Cm<sup>2</sup>

Speed : Up to 2900 RPM



### Application

For Agitators / Mixers / Vessels / Auto Claves

### Design Features

- Top entry drive.
- Cartridge Construction.
- Independent of direction of rotation.
- Optional design available to match the pressure level.
- Seal can be supplied with reverse pressure balance Single Seal.

### Seal Face Material

**Rotary** : Carbon / Silicon carbide / Tungsten carbide

**Stationary** : Ceramic / Silicon carbide / Tungsten carbide / Stellite

### Hardware Material

Retainer / Springs / Thrust Ring / Grub Screw: SS 316/Alloys

### Secondary Seal Material

For RJW 5100 : Wedge / stationary packing : PTFE / Glass filled PTFE / Graphite Wedge material ensures, the seal usage in high temperature / chemical applications.

For RJW 5200 : Rotary / stationary 'O' Ring : Viton / EPR / Buna-n / Neoprene / FEP / Kalrez 'O' Ring ensures less shaft fretting due to capability of flex & roll. 'O' ring seals are more preferred, wherever elastomer is suitable to process fluid.

### Operating Parameters

**Pressure** : RJW 5100 : Up to 11 Kg/Cm<sup>2</sup>  
: RJW 5200 : 40 Kg/Cm<sup>2</sup>

**Temperature** : -20°C to 300°C

## Some of Our Valuable Clients





METAL BELLOW SEALS



AGITATOR SEAL



MULTI SPRING



TEFLON BELLOW



RUBBER BELLOW SEAL



CARTRIDGE SEAL



BEARINGS



SRG SEPARATOR



VITON-O-RINGS OIL SEALS



PUMP SPARES



VALVE



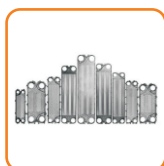
ROTARY UNION



HOSE PIPE



MECHANICAL SEALS



PHE GASKET & PHE PLATE



SPECIAL DESIGN SEALS

## SPECIALISTS

- Mechanical Seals
- Valve
- PHE Gasket
- Gasket, Food Grade 'o' Rings, Oil Seals
- SRG 509-610 Spares
- Silicon Braided Hose, Flexible Hose
- Bearings
- Cooling Tower Chemicals,
- Boiler Chemicals,
- Pump and Pump Spares
- Solar Water Heaters
- Solar Energy Equipments

**CLEAN ENERGY**  
GREEN LIVING

Sunshine be Our Energy Source!



(An ISO 9001 : 2015 Certified)

# RAJWAD ENTERPRISES

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