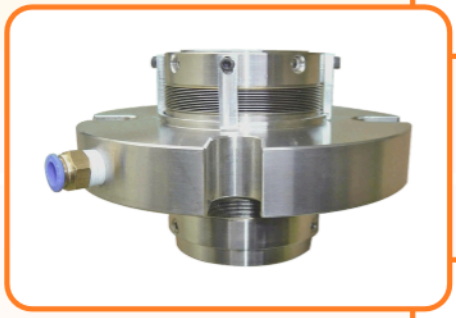


ISO 9001 : 2015
CERTIFIED COMPANY

MACWELL SEAL

Mfg. of Mechanical Seals & Components

www. macwellseal.in

- MECHANICAL SHAFT SEALS
- AGITATOR SEALS
- REACTOR SEALS
- RUBBER PRODUCTS

- FERTILIZERS
- REFINERIES
- PETROCHEMICALS
- FOOD & PHARMA
- POWER GENERATION

MACWELL SEAL
Mfg. of Mechanical Seals & Components
ISO 9001 : 2015 CERTIFIED COMPANY

Unit No: 3, Qureshi Compound, Near New Ruby Hospital,
Behind Himaliya Hotel, Ajit Glass S.V Road, Jogeshwari (W),
Mumbai-400102

Tel. : +91-9029615081
+91-9167965797
Email : macwellseal@gmail.com
Web : www.macwellseal.in
Key Person : Mr. Asfak Choudhary

COMPANY PROFILE

Macwell Seal found in 2012 as design and manufactures of Mechanical Seals and associated products for pump, chemicals, Petrochemicals, Refinery, and more

PRODUCT RANGE

We have the wide range of products in mechanical seals included Unbalanced as well as Balanced version for Pumps, Compressors, Blowers, Reactor Vessels, Agitators, etc. We cater to the requirement of Chemical, Pharmaceuticals, Refinery and Petrochemical, Gas, Oil Industries, Textile Industries, Dairies, Shipping Marine, Sugar Industries, Waste Water, Textile Machinery, Oil, Gas & Virtually all those Industries Where rotating equipment are used.

COMMITMENT

- Total Customer satisfaction by Quality
- Technical support
- Delivery on Time

SERVICES

Round the clock and all over India, Our staff is available to resolve customer's problems. Our engineers have great Experience and technical knowledge of mechanical seals, support system and rotating equipments, which enable them To quickly point out the root cause accurately.

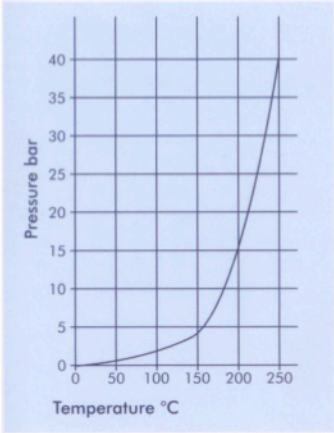
PERFORMANCE

Based on over customers feedback we are able to design customise & manufacture mechanical seals which performed equally well to the other expensive mechanical seals brand.

Material Description	Minimum Temperature Limits	Maximum Temperature Limits
Fluoroelastomer	0°F/-18°C	400°F/204°C
Ethylene Propylene (EPDM)	-40°F/-40°C	300°F/149°C
Neoprene	-40°F/-40°C	300°F/140°C
Nitrile Butadiene (Buna N)	-40°F/-40°C	300°F/125°C
Kalrez 1050LF	240°F/-7°C	550°F/288°C
PTFE	-100°F/-7°C	450°F/232°C
Flexible Graphite	-320°F/-196°C	800°F/427°C
Chemraz	-20°F/-29°C	450°F/310°C

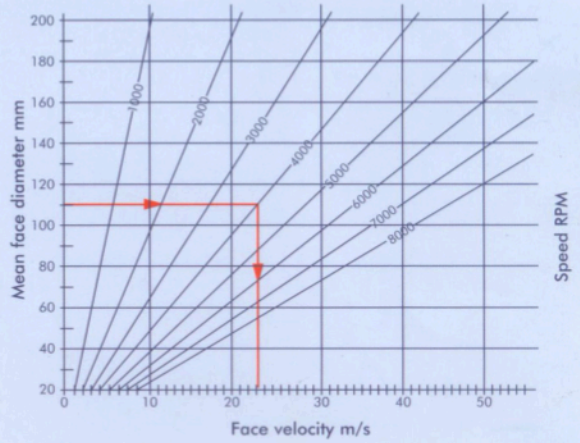
Material	Compressive Strength N/mm²	Density N/mm³	Hardness
Carbon, Resin Impregnated	250	1.83	100*
Carbon, Antimony Impregnated	350	2.15	115*
Tungsten Carbide	4750	15	1500*
Silicon Carbide	2750	3.1	2400*
Alumina Oxide	2620	3.9	1800**

WATER / STEAM PRESSURE CURVE

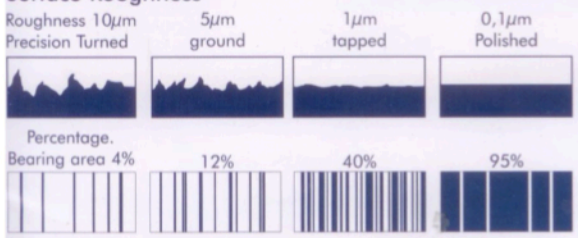


FACE VELOCITY

Example from Data :
Mean Face Diameter : 110mm
Speed : 4000 RPM
Face Velocity : 23 m/sec. (4600 FPM)



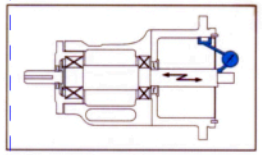
Surface Roughness



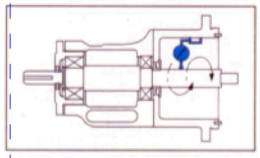
Lapped sliding face made out of different materials having the following average, arithmetic mean roughness values (Ra)

Tungsten Carbide	0.01µmm
Silicon Carbide	0.04µmm
Carbon Graphite	0.10µmm
Aluminium Oxide	0.15µmm

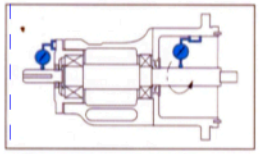
Equipment Checkpoints



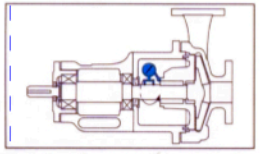
Shaft end play - Axial shaft movement (end play) must not exceed 0.004" (0.10 mm) full indicatormovement (F.I.M.) on ball type thrust bearings.



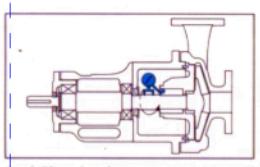
Shaft radial deflection - Must not exceed 0.002" (0.5 mm) full indicator movement at any point along the shaft.



Shaft run out - must not exceed 0.002" (0.5mm) full indicator movement at any point along the shaft.



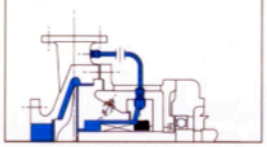
Seal Chamber face run out - Seal Chamber face should be square to shaft centre line within 0.005" (0.13 mm) full indicator movement.



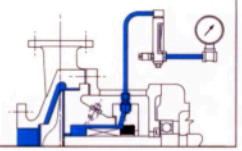
Seal Chamber bore concentricity - Shaft concentricity to seal chamber bore should not exceed 0.005" (0.13 mm) full indicator movement.

API Flush Plans

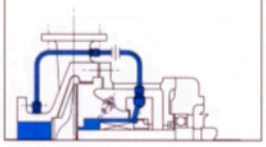
Plan 11
Circulation from discharge through orifice.



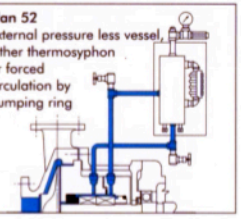
Plan 32
Flush from external source



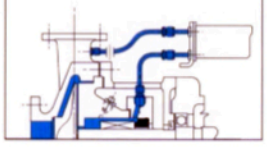
Plan 13
Circulation from seal cavity through orifice to suction.



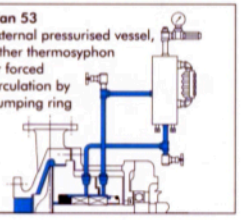
Plan 52
External pressure less vessel, either thermosyphon or forced circulation by pumping ring



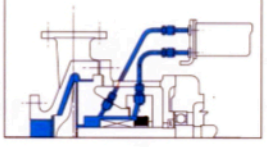
Plan 21
Circulation from discharge through orifice and cooler



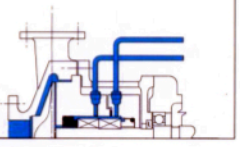
Plan 53
External pressurised vessel, either thermosyphon or forced circulation by pumping ring



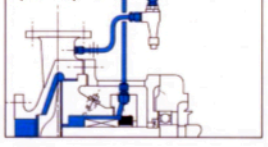
Plan 23
Forced circulation through cooler, back to seal, by pumping ring.



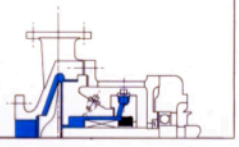
Plan 54
Forced barrier circulation from external system.



Plan 31
Circulation from discharge through cycloneseparator



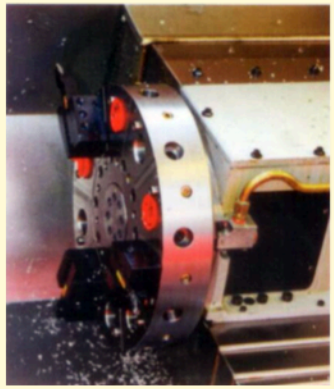
Plan 61
Plugged quench and drain ports

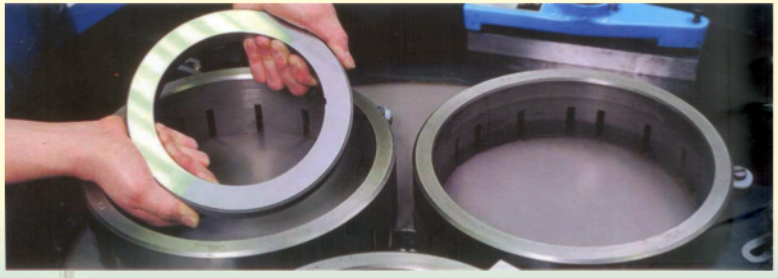


QUALITY TRUST

What does Macwell have offer?

- Broad range of mechanical seals
- Wide variety of seal face materials
- Custom made parts and seal assemblies to your specifications
- High quality finish ceramic and carbide shaft sleeves and bearings
- Seal failure analysis services
- Face material test and identification
- High volume metal and plastic components manufacturing





M7S WAVE SPRING UNBALANCED SEAL

OPERATING LIMIT

Seal size : 20mm to 200mm,
Pressure : 10kg\cm2
Speed : 20m/s
Temp : 20°C ...to 220°C

FACE MATERIAL

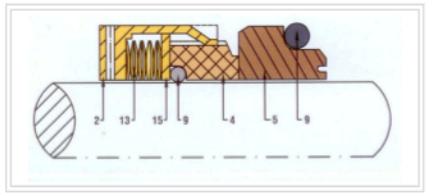
Rotary Face : Carbon, Silicon,
Stationary Seats : Silicon, TC, SS Ceramic
Type : S-6,S-9, S-4, S-13, S-50

SECONDARY SEAL MATERIALS

Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS

SS304, Ss316, SS316L



H7S MULTI SPRING BALANCED SEAL

OPERATING LIMIT

Seal size : 20mm to 175mm
Pressure : 10kg\cm2
Speed : 20m/s
Temp : 20°C ...to 220°C

FACE MATERIAL

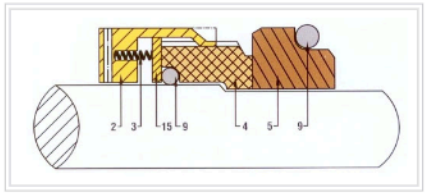
Rotary Face : Carbon, Silicon,TC
Stationary Seats : Silicon, TC, SS, Ceramic
Type : S-6, S-9, S-4 S-13, S-15,

SECONDARY SEAL MATERIALS

Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS

SS304, Ss316, SS316L



S7S MULTI SPRING UNBALANCED SEAL

OPERATING LIMIT

Seal size : 20mm to 100mm
Pressure : 10kg\cm2
Speed : 20m/s
Temp : 20°C ...to 200°C

FACE MATERIAL

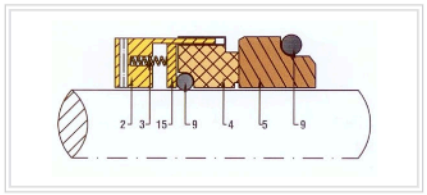
Rotary Face : Carbon, Silicon,TC
Stationary Seats : Silicon, TC, SS, Ceramic
Type : S-6, S-9, S-6 S-4, S-13, S-50

SECONDARY SEAL MATERIALS

Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS

Ss304, SS316



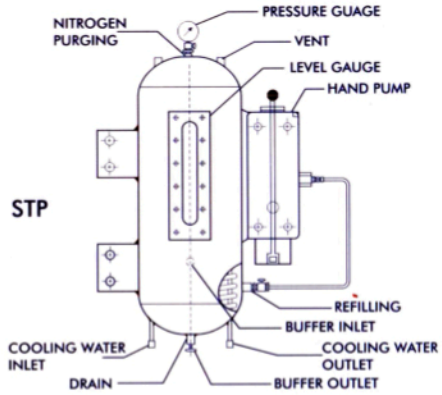
SEAL SUPPORT SYSTEM

THERMOSYPHON POT

Thermosyphon seal pots can be supplied as per API 610 specifications

Series **STS** is basicaly used as a storage & pressurising unit. This is used for double mechanical seals in back to back or tandem seal arrangement to provide necessary lubrication and cooling to the seal faces to achive recommended seal life. This is equipped with cooling coil inside the shell to bring down the temperature of barrier fluid coming fromseal to Thermosyphon.

STP

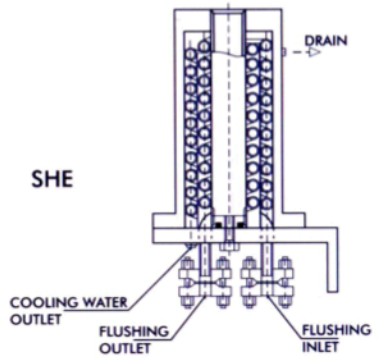


HEAT EXCHANGER

Heat exchanger can be supplied as per API Plans 21,23,41

Heat Exchanger offered find application in flushing of seal chamber with reduced temperature and supported by cooling cail, it assists in bringing noticeable reduction to temperatures as well as at the same time also providing vital contribution in maintaining sealing chamber temperatures to a low level.

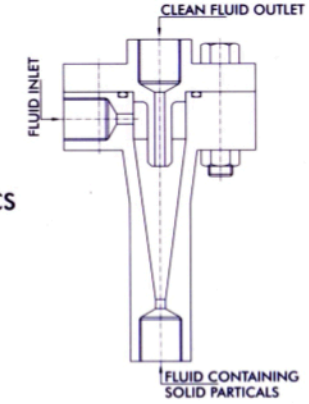
SHE



CYCLONE SEPARATOR

Cyclone Separator are designed for removing dirt , sand and solid particles from injection flow to mechanical seal. The separation is obtained by centrifugal force generated by differential pressure across the cyclone.

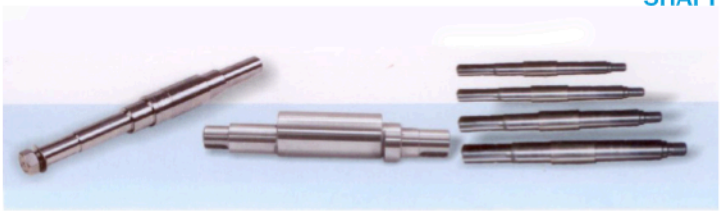
SCS



MECHANICAL SEALS SPARES

SHAFT

Material:
SS304
SS316



GRUNDFOS CARTRIDGE SEAL

Size:
12.0 mm
16.0 mm
22.0 mm

CARBON BEARING BUSH

Generally used in furnace and boiler equipment where temperatures are too high for the use of conventional lubricants. Where the bearings are immersed in liquids such as hot and cold water, sea water, acidic or alkaline solutions or in oil solvents such as petrol and benzene.

Carbon Bearings have been developed by MACWELL
the generic term "carbon bearing" includes all possible variations of the basic material "Carbon". Therefore it covers "carbon graphite", "metal-graphite" and "electro graphite". Carbon is self-lubricating and has a low coefficient of fraction at high and low temperatures. Its use as a bearing material is extensive when a conventional lubricant is not possible and also where the performance of other lubrication Is poor.

Advantages of bearings:
- Carbon has a low wear rate
- Is mechanically strong in compression
- Has a high strength-weight ratio
- Has high strength at elevated temperatures
- Has a relatively low density
- Has good hydrodynamic bearing properties
- Is easily machined to close tolerances
- Is dimensionally stable

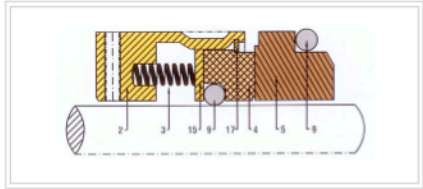
095 MULTI SPRING VEGG UNBALANCED SEAL

OPERATING LIMIT
Seal size : 20mm to 150mm
Pressure : 10kg\cm2
Speed : 15 m/s
Temp : 20°C …to 200°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,TC
Stationary Seats : Silicon, TC, SS
Type : S-9, S-60, S-6, S-4, S-13,

SECONDARY SEAL MATERIALS
Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS
Ss304, SS316, SS316L



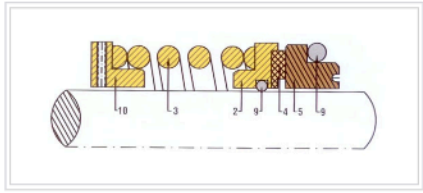
050 SINGLE SPRING UNBALANCED SEAL

OPERATING LIMIT
Seal size : 20mm to 120mm
Pressure : 10kg\cm2
Speed : 10m/s
Temp : 20°C …to 180°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,
Stationary Seats : Silicon, TC, SS,
Type : S-9, S-6, S-4
S-50, S-55

SECONDARY SEAL MATERIALS
Viton, NBR, EPDM, Silicon

METAL PARTS
SS304, Ss316, SS316L



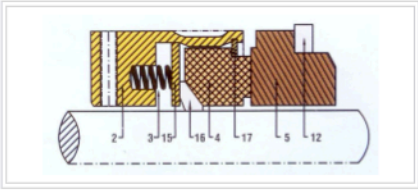
W95 MULTI SPRING UNBALANCED SEAL

OPERATING LIMIT
Seal size : 20mm to 150mm
Pressure : 10kg\cm2
Speed : 12 m/s
Temp : 20°C …to 250°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,TC
Stationary Seats : Silicon, TC, SS
Type : S-6, S-4, S-13, S-60

SECONDARY SEAL MATERIALS
PTFE

METAL PARTS
SS304, Ss316, SS316L



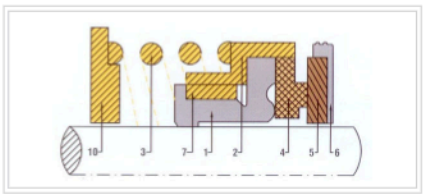
R60 SINGLE SPRING ELASTOMER BELLOW UNBALANCED SEAL

OPERATING LIMIT
Seal size : 12mm to 75mm
Pressure : 10kg\cm2
Speed : 13 m/s
Temp : 10°C …to 220°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,TC
Stationary Seats : Silicon, TC, SS, Ceramic
Type : S-60, S-6, S-9, S-4, S-50,

SECONDARY SEAL MATERIALS
Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS
SS304, Ss316,



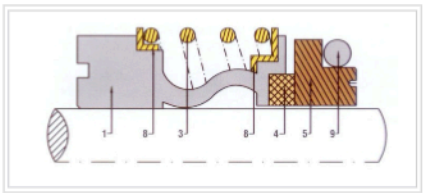
S13 ELASTOMER BELLOW UNBALANCED SEAL

OPERATING LIMIT
Seal size : 10mm to 100mm
Pressure : 12kg\cm2
Speed : 10m/s
Temp : 10°C …to 220°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,
Stationary Seats : Silicon, TC, SS,
Type : S-9, S-60, S-6 S-4, S-13, S-50

SECONDARY SEAL MATERIALS
Viton, NBR, EPDM, Silicon

METAL PARTS
SS304, SS316,



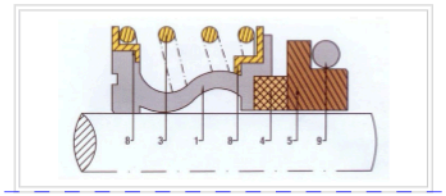
S15 ELASTOMER BELLOW UNBALANCED SEAL

OPERATING LIMIT
Seal size : 10mm to 100mm
Pressure : 12kg\cm2
Speed : 10m/s
Temp : 10°C …to 220°C

FACE MATERIAL
Rotary Face : Carbon, Silicon,TC, LC
Stationary Seats : Silicon, TC, SS, Ceramic
Type : S-9, S-60, S-6, S-4, S-13,

SECONDARY SEAL MATERIALS
Viton, NBR, EPDM, Silicon, PTFE

METAL PARTS
SS304, SS316,SS316L



MECHANICAL SEALS SPARES

ROTARY FACE

Material:
CARBON
CERAMIC
SILICON
TUNG. CARBIDE
STELLITE
GFT/CFT/SIFT

M. RING FACE

Material:
CARBON
CERAMIC
SILICON
TUNG. CARBIDE
STELLITE

O.RING & PKG.

Material:
VITON
EPR/EPDM
NEOPRENE
FFKM
FEP
PTFE / GFT
FLEX. GRAPHITE

SPRING

Material:
SS304
SS316
SS316(PTFE COATED)
ALLOY-20
HAST-C