



**AMERICAN-MARSH PUMPS**

*"DURABILITY BY DESIGN SINCE 1873"*

## **800 Series Mechanical Seals**

**Sizes: 1" to 4"**

**Temperatures to: -40°F to +400° F**

**Pressures to: 425 PSI**

**Speeds to: 4800 Feet/Minute**

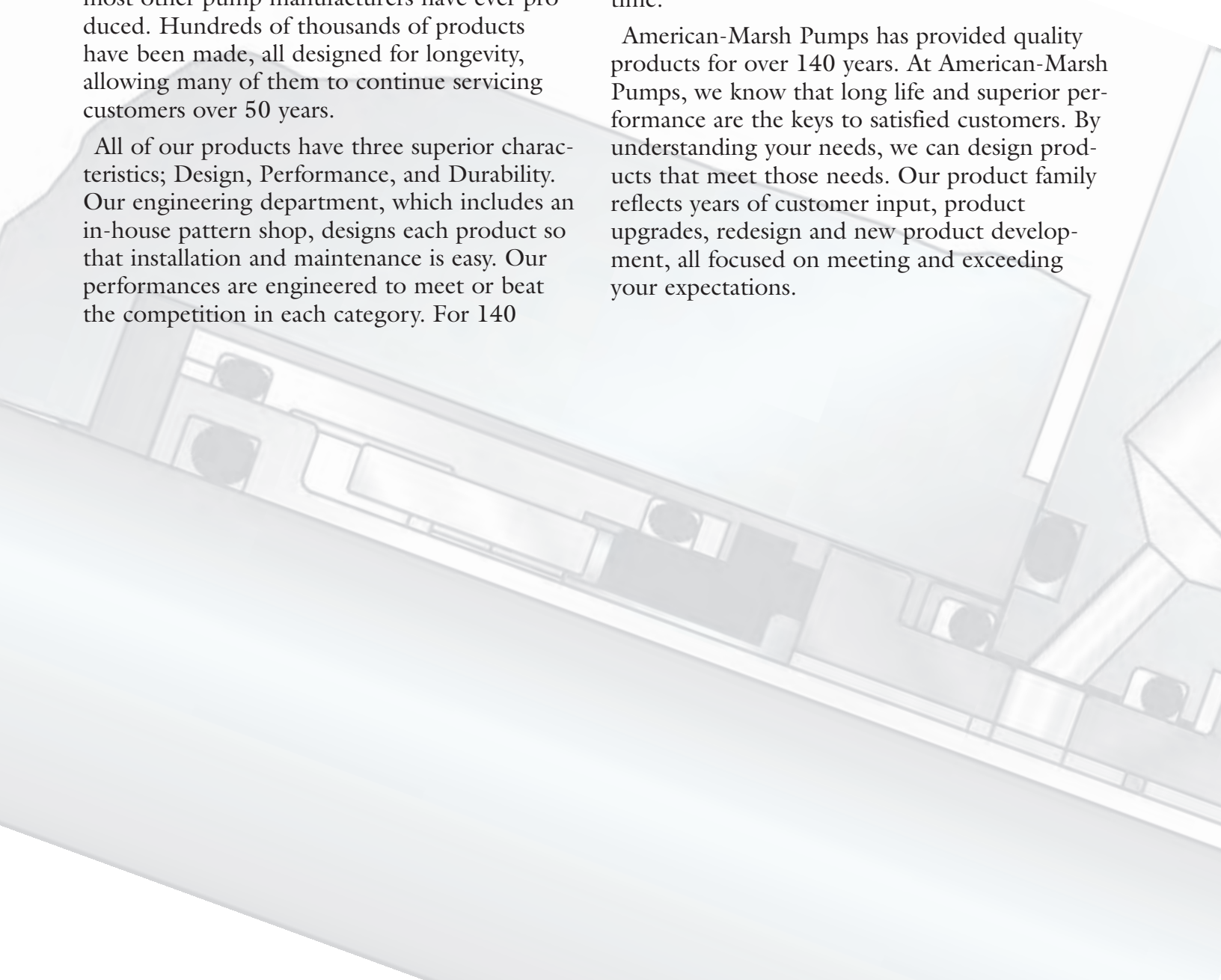
# 140 Years of Pump and Mechanical Seal Manufacturing

American-Marsh Pumps, one of the oldest pump lines on the planet, are products steeped in heritage. Since 1873, the American-Marsh line of products has withstood the test of time. During the last 140 years, over 100 varieties of products have been designed and built. From steam pumps to centrifugal pumps, motors to mechanical seals, American-Marsh pumps have been built to meet the ever changing requirements of society. Over the last century through continuous product development, more American-Marsh models have been retired than most other pump manufacturers have ever produced. Hundreds of thousands of products have been made, all designed for longevity, allowing many of them to continue servicing customers over 50 years.

All of our products have three superior characteristics; Design, Performance, and Durability. Our engineering department, which includes an in-house pattern shop, designs each product so that installation and maintenance is easy. Our performances are engineered to meet or beat the competition in each category. For 140

years, American-Marsh Pumps products have provided cost effective solutions by building products to last. Durability by design is always the most cost effective solution. From engineering and design to final assembly, experienced people control each step of the manufacturing process with quality control inspections performed at each step. All pumps shafts are heat straightened. All impellers are computer balanced. Pump testing is done in our new state of the art test facility. All of these factors ensure you receive consistent quality product every time.

American-Marsh Pumps has provided quality products for over 140 years. At American-Marsh Pumps, we know that long life and superior performance are the keys to satisfied customers. By understanding your needs, we can design products that meet those needs. Our product family reflects years of customer input, product upgrades, redesign and new product development, all focused on meeting and exceeding your expectations.



## Specifications

### 800 Series

#### 810 Low Pressure Elastomer Bellows Mechanical Seal

**Stationary Face:** Stationary faces are supplied standard in Silicon-Carbide material for reliable service and maximum durability. Carbon, Alumina Ceramic and Tungsten-Carbide stationary faces can be supplied upon request. Stationary faces are supplied standard with a Viton® cup seat for maximum forgiveness and ease in installation. O-ring stationary faces can be supplied upon request.

**Rotary Face:** Rotary faces are supplied standard in Carbon-Graphite material for reliable service and maximum durability. Silicon-Carbide and Tungsten-Carbide rotary faces can be supplied upon request. The rotary head features a notched design that minimizes forces applied to the elastomeric bellows. This notched design eliminates bellow slip thus increasing seal reliability. By eliminating elastomer bellow slip wear and scoring damage to the shaft and/or shaft sleeve is also eliminated.

All seal faces are lapped to 0.500 micrometer flatness to ensure maximum seal reliability.

**Spring:** All spring hardware is constructed of 300 stainless steel and is polished for maximum corrosion protection. The single spring design is such that it will not clog and allow the build-up of solids during operation.

**Elastomer Bellows:** The elastomer bellows is constructed standard of Viton® material. Viton® provides maximum temperature and fluid compatibility. The elastomer bellow also features a self adjusting design that compensates for shaft run-out, end play, rotary face wear and equipment tolerances.

**Hardware:** All seal hardware is constructed of machined 300 stainless steel parts. No part of the seal rotary head or spring retainer is constructed of stamped material. All parts are machined for maximum reliability and overall appearance.

#### 820 Medium Pressure Elastomer Bellows Mechanical Seal

**Stationary Face:** Stationary faces are supplied standard in Silicon-Carbide material for reliable service and maximum durability. Carbon, Alumina Ceramic and Tungsten-Carbide stationary faces can be supplied upon request. Stationary faces are supplied standard with a Viton® cup seat for maximum forgiveness and ease in installation. O-ring stationary faces can be supplied upon request.

**Rotary Face:** Rotary faces are supplied standard in Carbon-Graphite material for reliable service and maximum durability. Silicon-Carbide and Tungsten-Carbide rotary faces can be supplied upon request. The rotary head features a notched design that minimizes forces applied to the elastomeric bellows. This notched design eliminates bellow slip thus increasing seal reliability. By eliminating elastomer bellow slip wear and scoring damage to the shaft and/or shaft sleeve is also eliminated. The 820 seal head features an upgraded design that is partially balanced allowing for higher operating pressures over that of the 810 seal design.

All seal faces are lapped to 0.500 micrometer flatness to ensure maximum seal reliability.

**Spring:** All spring hardware is constructed of 300 stainless steel and is polished for maximum corrosion protection. The single spring design is such that it will not clog and allow the build-up of solids during operation.

**Elastomer Bellows:** The elastomer bellows is constructed standard of Viton® material and features a full convolution design allowing for higher operating pressures. Viton® provides maximum temperature and fluid compatibility. The elastomer bellow also features a self adjusting design that compensates for shaft run-out, end play, rotary face wear and equipment tolerances.

**Hardware:** All seal hardware is constructed of machined 300 stainless steel parts. No part of the seal rotary head or spring retainer is constructed of stamped material. All parts are machined for maximum reliability and overall appearance.

#### 850B Medium Pressure O-Ring Pusher Single Cartridge Mechanical Seal

**Stationary Face:** Stationary faces are supplied standard in Silicon-Carbide material for reliable service and maximum durability. Carbon-Graphite and Tungsten-Carbide stationary faces can be supplied upon request. Stationary faces are supplied standard with a Viton® o-ring seat for maximum forgiveness and ease in installation. The stationary face is of the floating design for maximum reliability and is easily field replaceable. All stationary faces are pinned to the 316 stainless steel gland to ensure that the stationary face does not rotate on higher pressure or higher temperature applications.

**Rotary Face:** Rotary faces are supplied standard in Carbon-Graphite material for reliable service and maximum durability. Silicon-Carbide and Tungsten-Carbide rotary faces can be supplied upon request. Rotary faces are supplied standard with a Viton® o-ring seat for maximum forgiveness and ease in installation. The rotary face is of the floating design for maximum reliability and is easily field replaceable. The rotary head is also pin driven for positive torque transmission.

All seal faces are lapped to 0.500 micrometer flatness to ensure maximum seal reliability. All seal faces are hydraulically balanced allowing for higher operating pressures during operation.

**Springs:** The 850B cartridge seal has multiple springs mounted inside of the seal head for uniform seal pressure allowing for higher reliability while in operation. Multiple springs provide for a uniform pressure to be generated in lieu of a single larger spring. These multiple springs are completely isolated from the pump fluid by two Viton® o-rings allowing them to remain clean, unclogged and less prone to corrosion. All spring hardware is constructed of 300 stainless steel.

**Shaft Sleeve:** The entire shaft sleeve is constructed of machined 316 stainless steel. The shaft sleeve also features an integral o-ring for sealing against the pump shaft or shaft sleeve. This o-ring is designed so that fretting of the pump shaft or shaft sleeve is eliminated.

**Gland:** The seal gland is constructed of machined 316 stainless steel. The gland is constructed with four integral mounting holes and does not utilize inferior or under-designed ears as used by other manufacturers. The seal gland also features an integral flush connection so that cooling liquid can be supplied directly to the rotary and stationary faces. All glands utilize an o-ring for positive sealing against the pump sealing chamber.

**Drive Collar:** The drive collar is constructed of machined 316 stainless steel. The drive collar accurately sets the seal axially and radially and ensures that the seal is not over or under compressed during seal installation. Centering blocks are installed at the factory and removed prior to startup to ensure that the seal setting is properly adjusted.

#### 860B Medium Pressure O-Ring Pusher Double Cartridge Mechanical Seal

**Stationary Faces:** The 860B double cartridge mechanical seal features two sets of stationary faces. Stationary faces are supplied standard in Silicon-Carbide material for reliable service and maximum durability. Carbon-Graphite and Tungsten-Carbide stationary faces can be supplied upon request. Stationary faces are supplied standard with a Viton® o-ring seat for maximum forgiveness and ease in installation. The stationary faces are of the floating design for maximum reliability and are easily field replaceable. All stationary faces are pinned to the 316 stainless steel gland to ensure that the stationary faces do not rotate on higher pressure or higher temperature applications.

**Rotary Faces:** 860B double cartridge mechanical seal features two sets of rotary faces. Rotary faces are supplied standard in Carbon-Graphite material for reliable service and maximum durability. Silicon-Carbide and Tungsten-Carbide rotary faces can be supplied upon request. Rotary faces are supplied standard with a Viton® o-ring seat for maximum forgiveness and ease in installation. The rotary faces are of the floating design for maximum reliability and are easily field replaceable. The rotary head is also pin driven for positive torque transmission.

All seal faces are lapped to 0.500 micrometer flatness to ensure maximum seal reliability. All seal faces are hydraulically balanced allowing for higher operating pressures during operation.

**Springs:** The 860B cartridge seal has multiple springs mounted inside of the seal head for uniform seal pressure allowing for higher reliability while in operation. Multiple springs provide for a uniform pressure to be generated in lieu of a single larger spring. These multiple springs are completely isolated from the pump fluid by two Viton® o-rings allowing them to remain clean, unclogged and less prone to corrosion. All spring hardware is constructed of 300 stainless steel.

**Shaft Sleeve:** The entire shaft sleeve is constructed of machined 316 stainless steel. The shaft sleeve also features an integral o-ring for sealing against the pump shaft or shaft sleeve. This o-ring is designed so that fretting of the pump shaft or shaft sleeve is eliminated.

**Gland:** The seal gland is constructed of machined 316 stainless steel. The gland is constructed with four integral mounting holes and does not utilize inferior or under-designed ears as used by other manufacturers. The seal gland also features an inlet & outlet barrier flush connection so that cooling liquid can be supplied directly to the rotary and stationary faces. By regulating the flush pressure the 860B seal can be used as a double seal (barrier fluid pressure higher than seal chamber pressure), a tandem seal (barrier fluid pressure lower than seal chamber pressure) or as a spare seal (barrier fluid pressure equal to seal chamber pressure). All glands utilize an o-ring for positive sealing against the pump sealing chamber.

**Drive Collar:** The drive collar is constructed of machined 316 stainless steel. The drive collar accurately sets the seal axially and radially and ensures that the seal is not over or under compressed during seal installation. Centering blocks are installed at the factory and removed prior to startup to ensure that the seal setting is properly adjusted.



# 810 Series Component Mechanical Seals

Sizes: 1" to 4"

Temperatures: -40° F to +400° F

Pressures to: 150 PSI

Speeds to: 2500 Ft/Minute

## Applications:

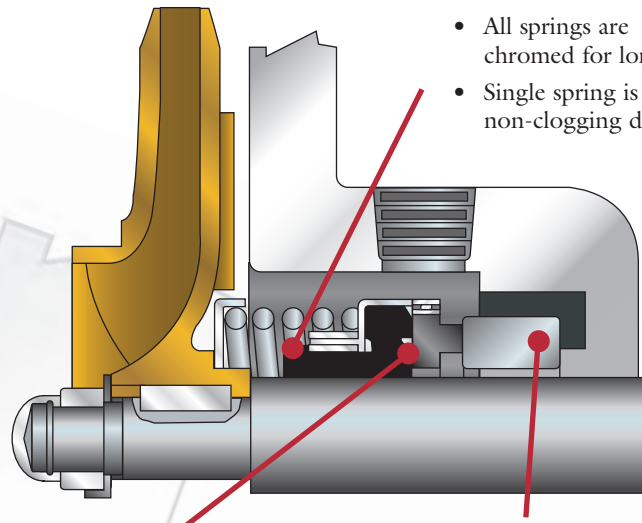
Pumps, mixers, blenders, agitators, chillers, compressors, blowers & fans

## Services:

-  Aerospace
-  Building Trades
-  Construction
-  Food & Beverage
-  General Industry
-  Marine
-  OEM
-  Power Generation
-  Pharmaceutical
-  Semiconductor
-  Water & Waste Water

## Hardware

- All 300 stainless steel construction
- All springs are chromed for long life
- Single spring is of the non-clogging design

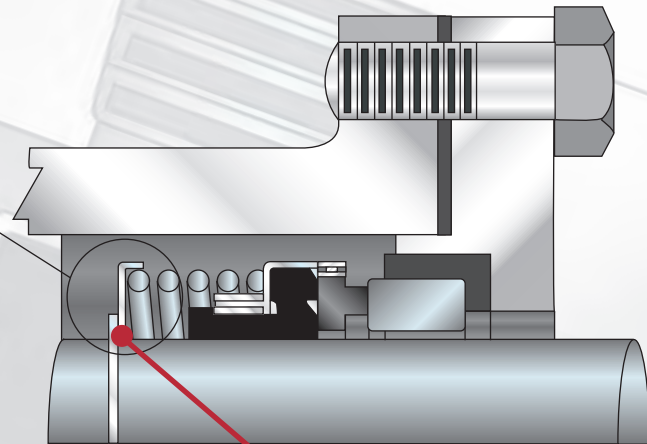
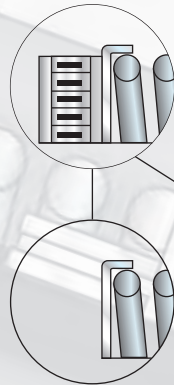


## Rotary Head

- Machined primary drive ring
- Wide array of seal face options
- Wide array of elastomer options
- Seal head and rotating face fit designed to eliminate overstressing of the elastomeric bellows
- Elastomer bellows that adjust automatically for shaft end-play, shaft run-out and rotating face wear

## Stationary Seat

- Cup seat mount for maximum forgiveness during installation
- Wide array of seal face options
- Wide array of elastomer options



## Seal Setting

- Flexibility in setting the compressed seal length
- Machined shoulder, snap ring or locking collar easily sets compressed length

Seal De-Rating (Standard Materials)			
Lubricity of Fluid	Gasoline, Kerosene, Oil or Better Aqueous, Water, etc.	x 1.00 x 0.75	
Fluid Temperature	Below 79°C/175°F	x 1.00	
	Above 79°C to 121°C/175°F to 250°F	x 0.90	
	Above 121°C to 177°C/250°F to 350°F	x 0.80	
	Above 177°C/350°F	x 0.65	
Seal Size and Rotational Speed	Seal Size	1800 RPM	3600 RPM
	0.250 to 1.500	x 1.00	x 1.00
	1.625 to 2.000	x 1.00	x 0.73
	2.125 to 2.500	x 1.00	x 0.53
	2.625 to 3.000	x 1.00	x 0.40
	3.125 to 3.500	x 1.00	x 0.33
3.625 to 4.000	x 1.00	x 0.28	

810 Component Mechanical Seals can be installed in:  
300 REF, 300 REC, 300 REI, 340 HD, 480 VT

# 820 Series Component Mechanical Seals

Sizes: 1" to 4"

Temperatures: -40° F to +400° F

Pressures to: 425 PSI

Speeds to: 4800 Ft/Minute

## Applications:

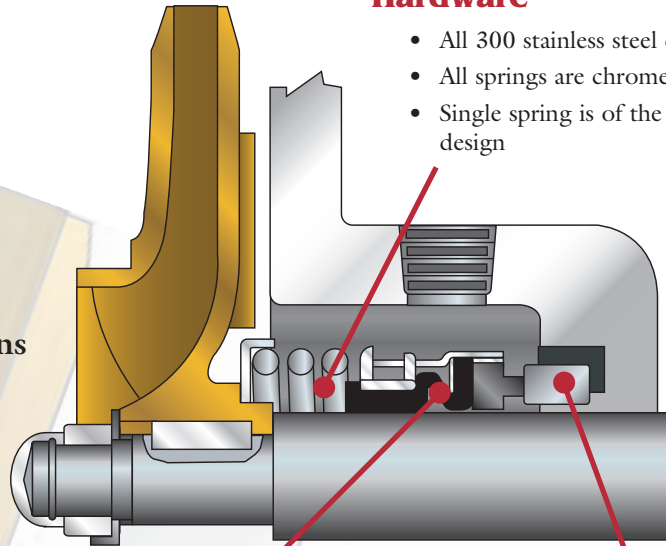
Pumps, mixers, blenders, agitators, chillers, compressors, blowers & fans

## Services:

-  Aerospace
-  Building Trades
-  Chemical
-  Construction
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  OEM
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Semiconductor
-  Water & Waste Water

## Hardware

- All 300 stainless steel construction
- All springs are chromed for long life
- Single spring is of the non-clogging design

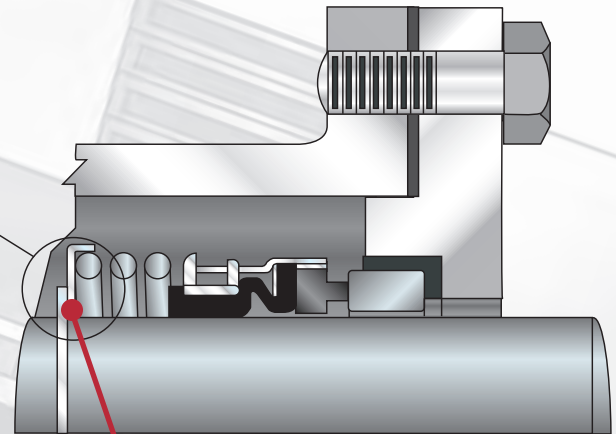


## Rotary Head

- Machined primary drive ring
- Wide array of seal face options
- Wide array of elastomer options
- Seal head and rotating face fit designed to eliminate overstressing of the elastomeric bellows
- Elastomer bellows that adjust automatically for shaft end-play, shaft run-out and rotating face wear

## Stationary Seat

- Cup seat mount for maximum forgiveness during installation
- Wide array of seal face options
- Wide array of elastomer options



## Seal Setting

- Flexibility in setting the compressed seal length
- Machined shoulder, snap ring or locking collar easily sets compressed length

### Seal De-Rating (Standard Materials)

Lubricity of Fluid	Gasoline, Kerosene, Oil or Better	x 1.00	
	Aqueous, Water, etc.	x 0.75	
Fluid Temperature	Below 79°C/175°F	x 1.00	
	Above 79°C to 121°C/175°F to 250°F	x 0.90	
	Above 121°C to 177°C/250°F to 350°F	x 0.80	
	Above 177°C/350°F	x 0.65	
Seal Size and Rotational Speed	Seal Size	1800 RPM	3600 RPM
	0.250 to 1.500	x 1.00	x 0.50
	2.125 to 2.500	x 0.92	x 0.46
	2.625 to 3.000	x 0.80	x 0.40
	3.125 to 3.500	x 0.60	x 0.30
3.625 to 4.000	x 0.51	x 0.25	

820 Component Mechanical Seals can be installed in:  
**300 REF, 300 REC, 300 REI, 340 HD, 380 HH, 380 HJ, 380 HK, 380 OSMH, 460 OSD, 460 OSG, 460 OSO, 480 VT**

# 850B Series Balanced Single Cartridge Seals

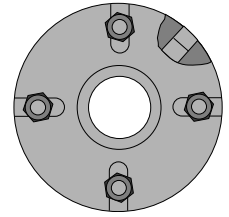
Sizes: 1-3/8" to 4"  
 Temperatures: -40° F to +400° F  
 Pressures to: 425 PSI  
 Speeds to: 4800 Ft/Minute

## Applications:

Pumps, mixers, blenders, agitators, chillers, compressors, blowers & fans

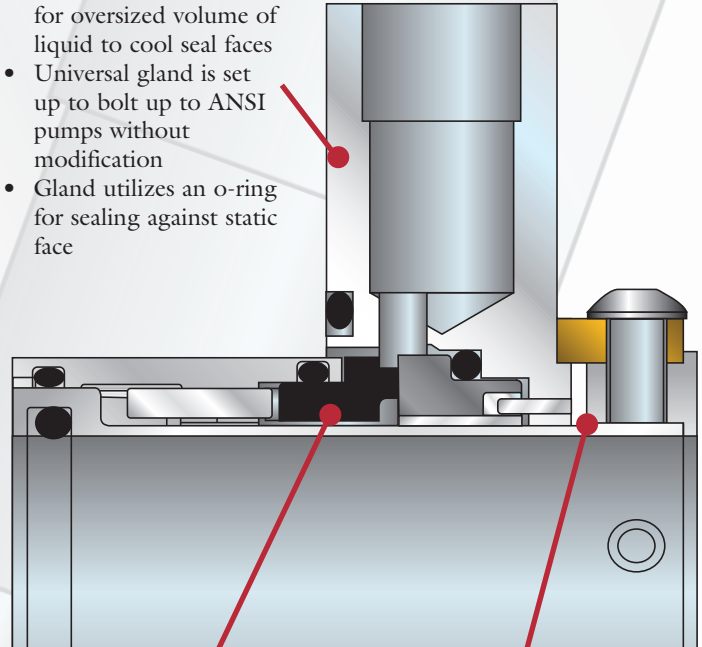
## Services:

-  Aerospace
-  Building Trades
-  Chemical
-  Construction
-  Food & Beverage
-  General Industry
-  Marine
-  Mining & Aggregate
-  OEM
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Semiconductor
-  Water & Waste Water



## Seal Gland

- All 316 stainless steel construction
- Integral flush port for seal flush
- Gland annulus allows for oversized volume of liquid to cool seal faces
- Universal gland is set up to bolt up to ANSI pumps without modification
- Gland utilizes an o-ring for sealing against static face



## Rotary & Stationary Seats

- Fully balanced rotating face
- Non-shrink fit faces that are field replaceable
- Wide array of seal face options
- Wide array of elastomer options
- Pinned stationary and rotary faces for superior life and positive torque transmission

## Seal Collar & Shaft Sleeve

- All 316 stainless steel construction
- Integral centering blocks to set the seal and allow impeller adjustment
- Static, non-fretting shaft sleeve o-ring
- Multiple springs are completely isolated from pump fluid and will not clog

Seal De-Rating (Standard Materials)			
Lubricity of Fluid	Gasoline, Kerosene, Oil or Better	x 1.00	
	Aqueous, Water, etc.	x 0.75	
	Light Hydrocarbons	x 0.60	
Fluid Temperature	Below 79°C/175°F	x 1.00	
	Above 79°C to 121°C/175°F to 250°F	x 0.90	
	Above 121°C to 177°C/250°F to 350°F	x 0.80	
	Above 177°C/350°F	x 0.65	
Seal Size and Rotational Speed	Seal Size	1800 RPM	3600 RPM
	1.000 to 2.000	x 1.00	x 1.00
	2.125 to 2.875	x 0.85	x 0.85
	3.000 to 4.000	x 0.61	x 0.61

850B Balanced Single Cartridge Mechanical Seals can be installed in:

300 REF, 340 HD, 380 HH, 380 HJ, 380 HK, 380 OSMH, 460 OSD, 460 OSG, 460 OSO, 480 VT

Complete seal rebuild kits are available for field replacement of wearing components.



# 860B Series Balanced Double Cartridge Seals

Sizes: 1-3/8", 1-7/8 & 2-5/8"

Temperatures: -40° F to +400° F

Pressures to: 425 PSI

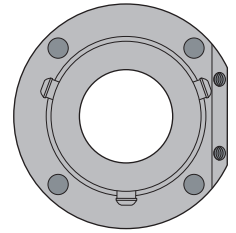
Speeds to: 4800 Ft/Minute

## Applications:

Pumps, mixers, blenders, agitators, chillers, compressors, blowers & fans

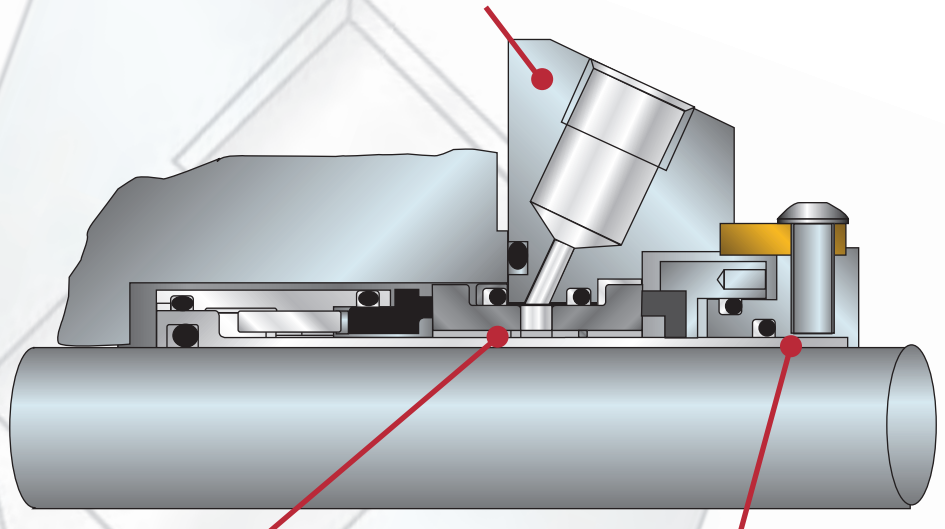
## Services:

-  Chemical
-  General Industry
-  Marine
-  Mining & Aggregate
-  Oil & Gas
-  Power Generation
-  Petro-Chemical
-  Pharmaceutical
-  Pulp & Paper
-  Water & Waste Water



## Seal Gland

- All 316 stainless steel construction
- Tangential barrier flush ports for seal flush with "In" and "Out" connections
- Gland annulus allows for oversized volume of liquid to cool seal faces
- Universal gland is set up to bolt up to ANSI pumps without modification
- Gland utilizes an o-ring for sealing against static face



## Rotary & Stationary Seats

- Two sets of faces for maximum reliability
- Fully balanced rotating faces
- Non-shrink fit faces that are field replaceable
- Wide array of seal face options
- Wide array of elastomer options
- Pinned stationary and rotary faces for superior life

## Seal Collar & Shaft Sleeve

- All 316 stainless steel construction
- Integral centering blocks to set the seal and allow impeller adjustment
- Static, non-fretting shaft sleeve o-ring
- Multiple springs are completely isolated from pump fluid and will not clog

Seal De-Rating (Standard Materials)			
Lubricity of Fluid	Gasoline, Kerosene, Oil or Better		x 1.00
	Aqueous, Water, etc.		x 0.75
	Light Hydrocarbons		x 0.60
Fluid Temperature	Below 79°C/175°F		x 1.00
	Above 79°C to 121°C/175°F to 250°F		x 0.90
	Above 121°C to 177°C/250°F to 350°F		x 0.80
	Above 177°C/350°F		x 0.65
Seal Size and Rotational Speed	Seal Size	1800 RPM	3600 RPM
	1.000 to 2.000	x 1.00	x 1.00
	2.125 to 2.875	x 0.85	x 0.85
	3.000 to 4.000	x 0.61	x 0.61

860B Balanced Double Cartridge Mechanical Seals can be installed in:

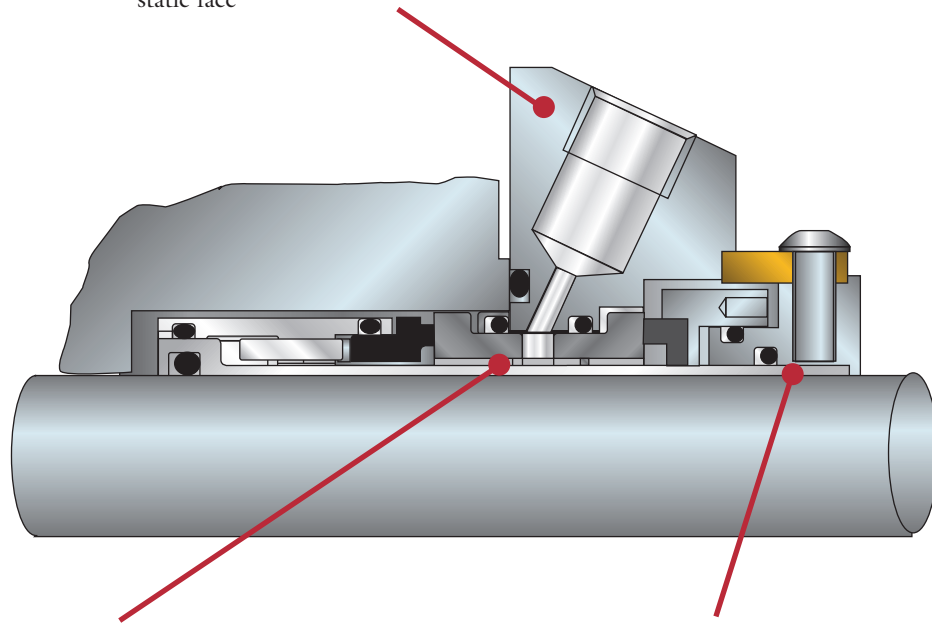
460 OSD, 460 OSO, 480 VT

Complete seal rebuild kits are available for field replacement of wearing components.

Our long tradition of quality pump, motor and mechanical seal manufacturing began in 1873 making us one of the first pump manufacturers in this country. American-Marsh Pumps provides the user dependability and durability. Durability by design is always the most cost effective solution.

### Seal Gland

- All 316 stainless steel construction
- Tangential barrier flush ports for seal flush with "In" and "Out" connections
- Gland annulus allows for oversized volume of liquid to cool seal faces
- Universal gland is set up to bolt up to ANSI pumps without modification
- Gland utilizes an o-ring for sealing against static face



### Rotary & Stationary Seats

- Two sets of faces for maximum reliability
- Fully balanced rotating faces
- Non-shrink fit faces that are field replaceable
- Wide array of seal face options
- Wide array of elastomer options
- Pinned stationary and rotary faces for superior life

### Seal Collar & Shaft Sleeve

- All 316 stainless steel construction
- Integral centering blocks to set the seal and allow impeller adjustment
- Static, non-fretting shaft sleeve o-ring
- Multiple springs are completely isolated from pump fluid and will not clog

## OTHER PUMP PRODUCTS

#### SPLIT CASE

To 32+ " Discharge  
30,000+ GPM, 550'

#### VERTICAL TURBINE

To 42+ " Bowl  
85,000+ GPM, 2500+'

#### SELF PRIMER

To 12" Discharge  
6400 GPM, 200'

#### ANSI

To 8" Discharge  
7400 GPM, 985'

#### END SUCTION

To 12" Discharge  
9000 GPM, 450'

#### American-Marsh Pumps

185 Progress Road  
Collierville, TN 38017  
PH: (800)888-7167  
FX: (901)860-2323

#### Distribution/Service Centers:

**Nebraska:** 113 South Lincoln Avenue, Hastings, NE 68901 (800)408-7167  
**California:** 3269 East North Building D, Fresno, CA 93725 (800)288-7167  
**Florida:** 2805 Badger Road, Lakeland, FL 33811 (800)444-7167  
**Louisiana:** 1626 Walker Road, Scott, LA 70583 (800)506-7167  
[www.american-marsh.com](http://www.american-marsh.com)