

Mechanical Seals

X-100 Dura Seal



Single, metal bellows design eliminates shaft packing hang-up and shaft or sleeve fretting. Very good in abrasive services. Incorporates Durametallic's patented Face Attachment technology to increase seal life. Pre-set cartridge simplifies installation, eliminates guesswork. Can easily be converted to a double or tandem seal using interchangeable components.

Type of seal: Single, bellows design.

Pressure: To 300 psig.

Temperature: To 400°F (204°C).

Velocity: To 4,500 fpm.

Standard sizes: 3/8" to 4 1/2".

P-50 Dura Seal



Single, pusher seal excellent for numerous services in chemical processing, water treatment and sewage plants, and pulp and paper mills. Pre-set cartridge design speeds installation, eliminates chance of installation error. Very easy to repair, too. Springs are mounted on stationary portion of seal to forgive seal misalignment and face eccentricity. Off-the-shelf availability to fit standard ANSI pump sizes.

Type of seal: Single, pusher design.

Pressure: To 300 psig.

Temperature: To 300°F (150°C).

Velocity: To 3,000 fpm.

Standard sizes: 1" to 4".

SL-5000 Dura Seal



Versatile, cartridge, single, pusher seal specifically designed for abrasive slurry services. Unique design exposes seal faces to pumped product for maximum heat dissipation – eliminates a common failure point. Special shroud protects compression springs in stationary portion of seal, and rotor drive pin, from weepage build-up. Pre-set cartridge design and centering tabs simplify installation.

Type of seal: Single, pusher design.

Pressure: To 250 psig.

Temperature: To 350°F (177°C).

Velocity: To 2,800 fpm.

Standard sizes: 1 1/8" to 6".

PSS Dura Seal



Split, single inside seal used in applications where installation involves time consuming equipment teardown or is cost prohibitive. Pre-assembled, unitized construction makes installation and repair easy and foolproof. Installs in under 30 minutes. Excellent for numerous non-hazardous services in chemical processing, pulp and paper, power generation, wastewater treatment and refineries.

Type of seal: Split, single pusher design.

Pressure: To 100 psig.

Temperature: To 250°F (121°C).

Velocity: To 3,200 fpm.

Standard sizes: 1 1/2" to 6".

HSC/HSB/HSI Dura Seal



Single, pusher seals designed for use in high pressure and speed applications. Compression springs are mounted on stationary portion of seal to isolate them from centrifugal forces and high pressures. Throttle bushing provides safety back-up in the event of primary seal failure. HSC and HSB designs are boundary lubricated, HSI is full fluid film lubricated. Heavy-duty construction for long life.

Type of seal: Single, pusher design.

Pressure: HSC, HSB — To 1,200 psig.
HSI — To 3,000 psig.

Temperature:

HSC, HSB — To 400°F (204°C).
HSI — To 600°F (316°C).

Velocity: All — To 12,500 fpm.

Standard sizes: 1 1/2" to 10".

PBR/PBS Dura Seal



Single, inside bellows design specifically for use in high temperature applications in the petroleum industry. PBR design has a rotating bellows assembly, PBS is stationary. Advanced face attachment permits thermal expansion without distortion of seal face. Seal faces are also easily replaced. Patented tapered insert ensures correct installation of insert mounting.

Type of seal: Single, bellows design.

Pressure: To 350 psig.

Temperature: To 750°F (400°C).

Velocity: PBR — To 4,500 fpm.
PBS — To 6,500 fpm.

Standard sizes: 1 1/8" to 4 1/2".

Mechanical Seals — *continued*

CBR/CBS Dura Seal



Single, metal bellows design eliminates shaft packing hang-up and fretting. Seal ring is easily and economically replaced. Patented Centroid Loaded Face Attachment increases seal life by preventing seal face distortion caused by different thermal expansion rates of the face and holder materials. Excellent in slurry services. Cartridge design available to simplify installation and maintenance. Standardized insert fits most ANSI pumps.

Type of seal: Single, bellows design.

Pressure: To 300 psig.

Temperature: To 400°F (204°C).

Velocity: CBR — To 4,500 fpm.
 CBS — To 6,500 fpm.

Standard sizes: 3/4" to 5 1/2".

RA/RA-C Dura Seal



Single, outside pusher seal used in applications where pressures above 15 psig eliminates usage of the RO Dura Seal. The RA version incorporates a two-piece rotary unit consisting of a collar and seal ring. The RA-C version is designed for use with chemical products in plastic, glass and other non-metallic pumps. Both are very easily repaired if necessary.

Type of seal: Single, pusher design.

Pressure: To 400 psig.

Temperature: To 350°F (177°C).

Velocity: To 4,500 fpm.

Standard sizes: 1/2" to 5".

 PTO/PTO-E/PTO-HW
 Dura Seal


Balanced, single, pusher seal best suited to moderate pressure applications. Can accommodate different types of shaft packing interchangeably. Often used in condensate and multi-stage boiler feed pumps. PTO-E version includes custom-designed face for use with light hydrocarbons with specific gravities less than heptane. PTO-HW version incorporates special hydraulic balancing for use in hot water applications. No cooling system required.

Type of seal: Single, pusher design.

Pressure: To 600 psig.

Temperature:

PTO, PTO-E — To 250°F (121°C).
 PTO-HW — To 350°F (180°C).

Velocity: To 4,500 fpm.

Standard sizes: 3/4" to 4 1/2".

RO Dura Seal



Economical single, unbalanced seal that can be used for hundreds of applications. Individual parts are completely interchangeable and easy to replace. Lets you customize seal to your service and cuts down on maintenance costs. Can be used as an inside or outside seal. Good performer in tough abrasive and corrosive services, too.

Type of seal: Single, pusher design.

Pressure: To 300 psig.

Temperature: To 500°F (260°C).

Velocity: To 4,500 fpm.

Standard sizes: 3/8" to 4 1/2".

TBR Dura Seal



Single, outside bellows seal designed for use in corrosive chemical services. Special PTFE bellows assembly resists chemical attack and is bonded to the seal face and collar ends. Replaceable faces can be carbon, silicon carbide or glass-filled Duraflon®.

Type of seal: Single, bellows design.

Pressure: To 75 psig.

Temperature: To 160°F (71°C).

Velocity: To 4,500 fpm.

Standard sizes: 1" to 3".

SB-200 Dura Seal



Unique "back-up" seal designed for use in a tandem configuration with a single pusher or bellows seal. Used to stop VOCs leaking past the primary seal and vent them to a vapor recovery system. Qualifies for EPA reporting exemption. Seal incorporates special self-lubricating seal face combination. Will operate in back-up mode for at least two weeks in event of primary seal failure.

Type of seal: Tandem design.

Pressure: Dry — To 10 psig.
 Wet — To 300 psig.

Temperature: To 300°F (150°C).

Velocity: To 2,000 fpm.

Standard sizes: 3/4" to 4 1/4".

Duraflon is a registered trademark of Durametallic Corp.

Mechanical Seals — *continued*

MX-201 Dura Seal



Double, pusher design used in mixer applications where no leakage can be tolerated. Able to handle system upsets without leakage or product contamination. Offers greater safety and reliability than possible with conventional double seals. Can be run wet or dry, or in tandem configuration, for added versatility and economy. Pre-set cartridge canister design eliminates need for setting measurements.

Type of seal: Double, pusher seal.

Pressure: Double, wet — To 300 psig.
 Double, dry — To 115 psig.
 Tandem, wet and dry —
 To 100 psig.

Temperature: To 300°F (150°C).

Velocity: Wet — To 210 fpm.
 Dry — To 130 fpm.

Standard sizes: 1 $\frac{1}{16}$ " to 6 $\frac{3}{16}$ ".

X-200 Dura Seal



Cartridge mounted, double metal bellows seal ideal for use in mild abrasive services where the added security of a double seal is necessary. Bellows design eliminates shaft packing hang-up and fretting. Patented bi-directional flow inducer aids in proper cooling, extending seal life. Can operate as a tandem configuration. Tolerates pressure reversals.

Type of seal: Double, bellows design.

Pressure: To 200 psig.

Temperature: To 400°F (204°C).

Velocity: To 4,500 fpm.

Standard sizes: 1 $\frac{1}{8}$ " to 4 $\frac{1}{2}$ ".

VRA Dura Seal



Single, outside, dry-running pusher seal designed specifically for use in top-entry agitator/mixer services. Seal features heavy-duty construction to accommodate a combined out-of-concentricity and eccentricity of 0.150" F.I.M. Milled slots and mating pins in the drive collar evenly distribute torque to the faces, eliminating stress areas. Dry-running design eliminates need for buffer fluid system.

Type of seal: Single, pusher seal (double available).

Pressure: To 200 psig.

Temperature: To 250°F (121°C).

Velocity: To 300 fpm.

Standard sizes: 1" to 7".

BRO/BPO Dura Seal



Single, pusher seals designed for use on large shaft mixers, blenders and similar units. Overcomes shaft deflection problems common to this type of equipment. Carbon seal ring designed to float within the shroud follows deflection of the shaft. Incorporates elastomer secondary seal for resistance to chemical attack. BPO Dura Seal is a balanced design to accommodate higher pressures.

Type of seal: Single, pusher seal (double available).

Pressure: BRO — To 200 psig.
 BPO — To 400 psig.

Temperature: To 250°F (121°C).

Velocity: To 3,500 fpm.

Standard sizes: $\frac{3}{4}$ " to 12".

Tandem PTO/PTO-E Dura Seal



Two single balanced pusher seals arranged in series configuration. Typically used as a safety seal or to meet today's stringent emissions control standards. As with the single PTO, different types of shaft packing are available and interchangeable. For fluids with a specific gravity less than heptane, custom designed faces (PTO-E version) can be used.

Type of seal: Tandem, pusher design, series configuration.

Pressure: To 600 psig.

Temperature: To 250°F (121°C).

Velocity: To 4,500 fpm.

Standard sizes: $\frac{3}{4}$ " to 4 $\frac{1}{2}$ ".

SL-5200 Dura Seal



Double, pusher seal used in very abrasive applications where corrosive, toxic or volatile liquids are being handled and single seal is not acceptable. Inner and outer seal faces are interchangeable. Outer seal is shrouded by gland as added safety feature. No bypass or external flush needed. Tolerates pressure reversals. Cartridge design simplifies installation.

Type of seal: Double, pusher design.

Pressure: To 250 psig.

Temperature: To 350°F (177°C).

Velocity: To 2,800 fpm.

Standard sizes: 1 $\frac{1}{8}$ " to 6".

Mechanical Seals — *continued*

MSS Dura Seal



Split, single outside seal designed for use on large, heavy or inaccessible equipment where seal changeout is costly or prohibitive. Split design facilitates installation without dismantling equipment. Self-lubricating faces dissipate heat and can run dry. Also, withstands pressure reversals common to agitator services. Very easy to install and maintain. Handles shaft run-out up to 0.150" F.I.M.

Type of seal: Split, pusher design.

Pressure: Wet — To 100 psig.
 Dry — To 75 psig.

Temperature: To 250°F (121°C).

Velocity: Wet — To 2,200 fpm.
 Dry — To 130 fpm.

Standard sizes: 1" to 12".

GB-200 Dura Seal



Double, pusher design used in applications where no emissions of hazardous pumped product can be tolerated. Seal uses inert gas barrier, such as nitrogen or clean shop air, for lubrication. Eliminates contamination of pumped product by a buffer fluid. Provides total containment, even if outer seal fails. Extremely reliable and economical alternative to sealless pump.

Type of seal: Double, pusher design.

Pressure: To 200 psig.

Temperature: To 250°F (121°C).

Velocity: To 2,600 fpm.

Standard sizes: 1" to 2¾".

P-200 Dura Seal



Economical, cartridge mounted, double pusher design combines value with ease of installation. Its unitized construction and balanced design make the P-200 an ideal choice for a wide range of demanding services in general industry including chemical processing, pulp and paper, water treatment, and sewage plant applications.

Type of seal: Double, pusher design.

Pressure: To 400 psig.

Temperature: To 450°F (215°C).

Velocity: To 4,500 fpm.

Standard sizes: 1" to 3¾".

Double RO Dura Seal



Double, pusher design recommended in applications where pumped liquid has greater lubricating properties than water, pressures exceed the limitations of the double CRO Dura Seal, or the fluid is abrasive. Positive drive design. Metal parts of seal are isolated from pumped product to prevent possible chemical or abrasive attack.

Type of seal: Double, pusher design.

Pressure: To 300 psig.

Temperature: To 500°F (260°C).

Velocity: To 4,500 fpm.

Standard sizes: ¾" to 4½".

Double CRO Dura Seal



Double, pusher seal used in moderate pressure applications where water, or a liquid with similar lubricating properties, can be used as a sealing fluid. Seal depends on friction between shaft packing and pump shaft for drive. Fluids with lubricating properties greater than water must not be used. Very easy to install since no dimensional setting or drive collar is required.

Type of seal: Double, pusher design.

Pressure: To 300 psig.

Temperature: To 120°F (49°C).

Velocity: To 4,500 fpm.

Standard sizes: ¾" to 3¾".