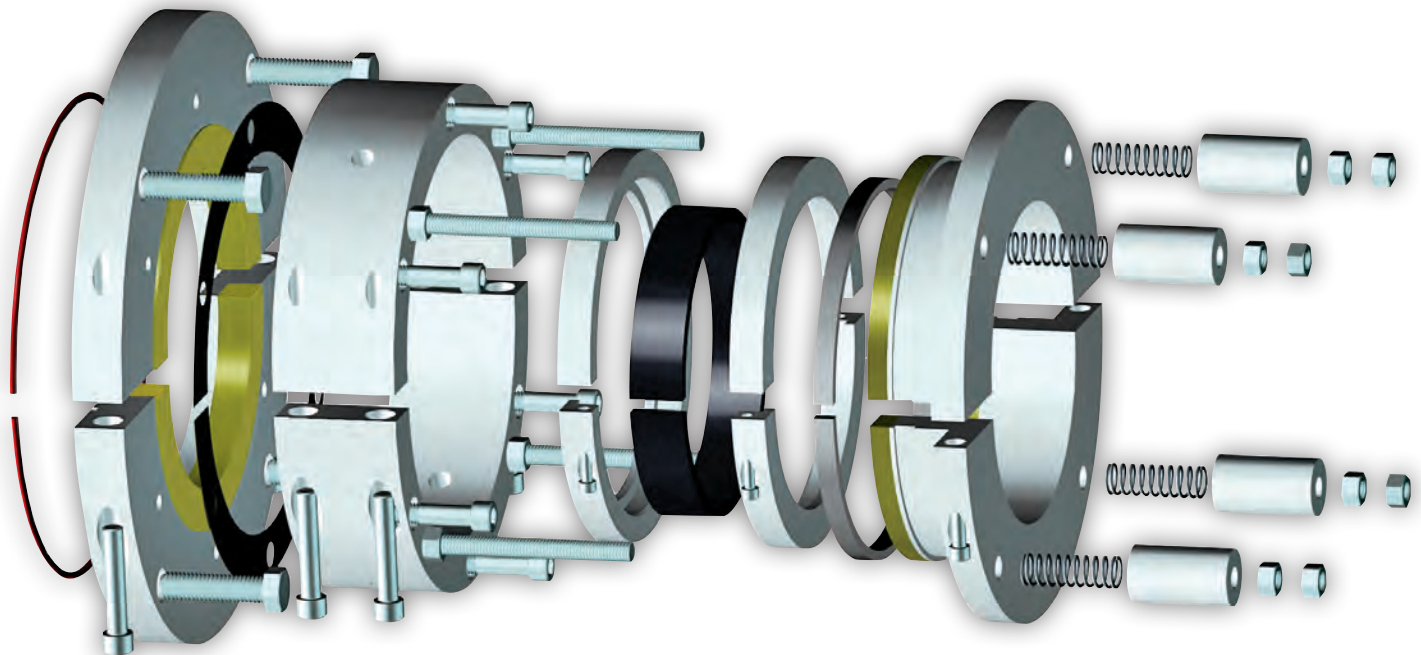


### WHAT IS MECO'S EP TYPE-1 SEAL?

The MECO EP Type-1 seal model is the best choice in wet sealing technology on moderate to very large shaft diameters entering the vessel from any direction. The fully-split configuration uses an elastomer drive to rotate two hardened stainless steel seal faces against two fixed polymeric bearing-grade stationary seal faces. The EP Type-1 is designed around its own fully-split, stuffing box-type housing that utilizes external springs to close the seal faces. The housing forms a seal cavity where gravity-fed water flushes and cools the chamber without any back pressure applied.

### WHEN ARE EP TYPE-1 SEALS THE BEST OPTION?

Where axial or linear space is available, the MECO EP Type-1 seal model is the solution for sealing wet abrasive slurries encountered in pulpers, agitators, cylindrical blenders, paddle mixers, holding vessels, flocculators, mixing conveyors and similar rotating equipment. When linear space is limited, our EA Type-1 model should be considered. The EP Type-1 model is used in process industries such as pulp & paper, home building products, sewage and water treatment, biomass and ethanol production, along with other processes handling water slurries. They are frequently used on bottom-entry pulpers containing clean wood fiber, recycled office paper and old corrugated containers (OCC). They withstand the abuse of shock loading, high shaft runout and abrasives often associated with pulpers. The entire assembly is fully-split and serviceable onsite.



*Using the Mecco EP Type-1 seal model offers the answer to the question, “How are we best able to seal our abrasive slurry with our shaft runout occurring?”*

### HOW DOES THE EP TYPE-1 SEAL MODEL WORK?

The MECO EP Type-1 seal model is a precision-machined, fully-split seal akin to a stuffing box and gland follower. The elastomer drive is comprised of two rotating seal faces and a drive elastomer. The drive elastomer and two rotating seal faces interlock with the shaft, forming a watertight seal at the shaft. The result places the rotating seal faces at right angles to the shaft and in full contact with the low-friction stationary seal faces. The rotating parts are fitted around the shaft prior to installing the seal housing.

The nose or pilot of the gland follower provides the carrier for attaching the outboard (secondary) stationary seal face. A plate attached to the bottom of the seal housing (a.k.a. stuffing box) provides the inboard (primary) stationary seal face. These precision-machined stationary seal faces (stators) are inherently malleable to mate against hardened, lapped and polished rotating seal face surfaces. The seal cavity is flushed with water to remove any debris and quench or cool the seal faces.



**SPLIT EP TYPE-1 SEAL ON A BOTTOM ENTERING, 300MM, HI-CON PULPER.**

### HOW IS THE EP TYPE-1 SEAL MODEL MAINTAINED?

The MECO EP Type-1 seal model uses a continual water flush to remove any process debris within the seal cavity, as a quench to remove the heat generated by the seal and as a diagnostic tool. The flush provides insight into the seal setup prior to startup and the overall performance during its life cycle. By reviewing the clarity of the flush water, the change in water temperature from inlet to outlet, and the ability to hold water within the seal cavity, maintenance becomes predictable and the calibration is confirmed.



**INTERIOR OF 300MM, HI-CON PULPER IN PHOTO ABOVE.**

External springs are attached to the back of the gland follower to close the seal faces and provide seal face alignment capabilities. As the sacrificial stationary seal face material wears, the springs will gradually expand and the flush water will expel process debris. After the springs have expanded measurably, an opportunity should be scheduled in the next 1-2 weeks to reset the springs to maximize seal life. Once the gland follower flange is in contact with the seal housing, a rebuild is needed. The seal may be rebuilt on-site or returned to MECO for factory refurbishing.

# MECO EP TYPE-1 , available fully split and designed for your site.

## WHAT CONSTRUCTION IS AVAILABLE?

The MECO EP Type-1 seal's rugged components are designed for long life. The standard assembly uses hardened stainless steel rotating seal faces. The housings and gland follower are typically machined from 304 or 316 stainless steel.

Common high-performance bearing-grade stationary seal face options are as follows: MECO 3000, a slick polymer filled PTFE; MECO 3120, a malleable ceramic filled PTFE; MECO 4000, a hard, carbon fiber, graphite & PTFE filled PEEK. The common elastomer is EPDM with white silicone, Viton® and Nitrile rubber are viable alternatives. These materials have an FDA-compliant option.

Since Woodex's MECO Seal division manufactures many custom shaft seals, we have the capability to fabricate from any material required.

## WHAT SIZES ARE AVAILABLE?

The MECO EP Type-1 seal model is designed and built to order. Assemblies are fully-split. Common shaft diameters range from 4" (100mm) to 16.5" (420mm) and include all sizes in between and many outside the range. Dimensions will vary according to each application, but typical dimensions are shown in the illustration on the last page. Any extra axial space is helpful for the installer and maximizes spring performance. The seals are readily designed fully-split to fit most mounting arrangements on customized, in-house process equipment. Seals can be built either to S.A.E or metric dimensions. Designer-friendly, they are equally appropriate as retrofits or for new equipment. Be sure to request a MECO EP Type-1 on your next expansion project.



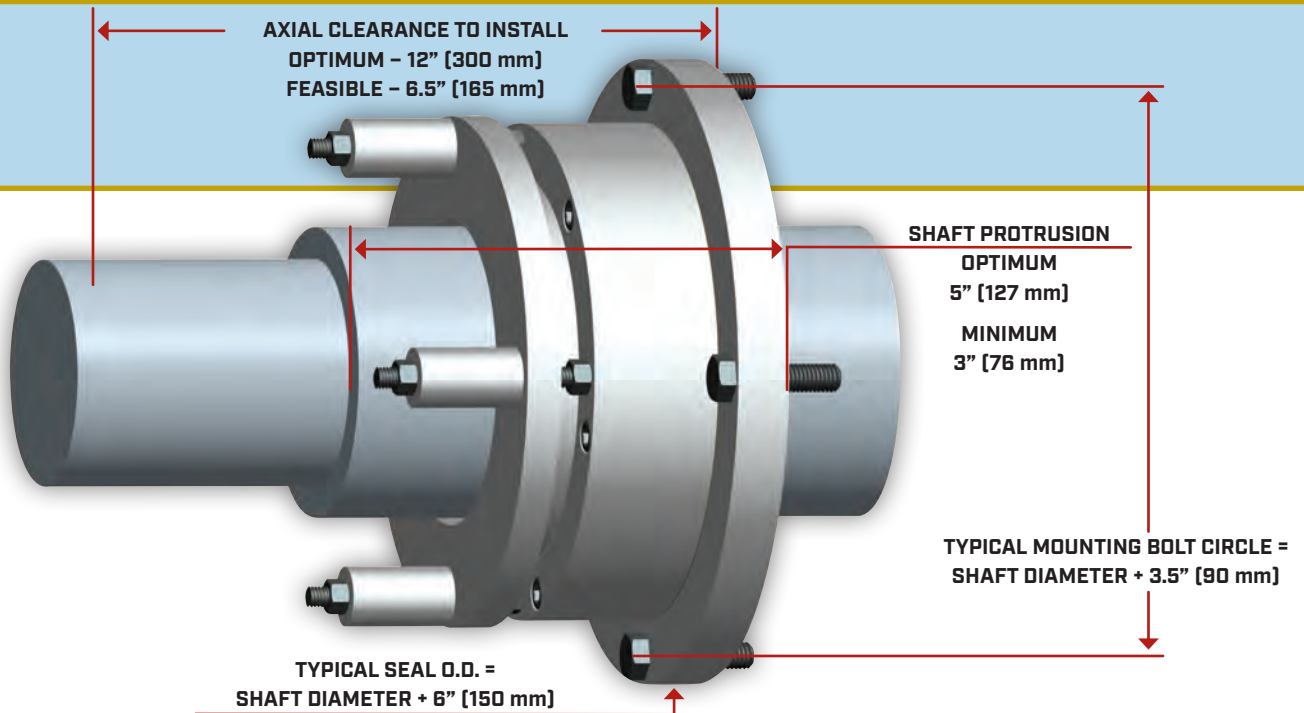
**SPLIT EP TYPE-1 ON A PULPER WITH A 415MM SHAFT PROCESSING RECYCLED OFFICE PAPER.**



**SPLIT EP TYPE-1 ON A PULPER WITH A 280MM SHAFT, PROCESSING OCC.**

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# MECO EP TYPE-1 TYPICAL DIMENSIONS



## Mechanical Capabilities

<b>Temperature</b>	32° to 300° F (0° to 150° C)
<b>Pressure</b>	Vacuum to 20 psig (135 kPa)
<b>Shaft Speed</b>	Up to 500 RPM
<b>Total Indicator Runout (TIR)</b>	1/4" [6mm] standard; greater runout can be accommodated
<b>Repeated Axial Shaft Motion</b>	1/128" [0.2mm]
<b>Thermal Shaft Growth</b>	Limits set per application

*Results may vary with operating conditions - please call for discussion.*

**MECO's design staff or your local distributor can help tailor the EP-1 to your individual needs.**

Below are a few examples of other **MECO** seal models.

**Split OFS Model**



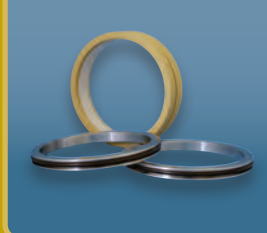
- Top and Side Entry
- Solvents
- Air Free

**EA Model**



- Abrasive Slurries
- Adjustable on-the-Fly
- Large Diameters

**MB Model**



- Air locks
- Rotary Feeders

**HB Model**



**HC Model**

- Air Purged/Air Free Standard Seals for C.E.M.A. and Metric Screw Conveyors

**AH Model**



- Blenders
- Screw Conveyors
- Tight Spaces

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