MECO® AH TYPE 2 SEALS

ENGINEERED SHAFT SEALS

Double Face
Available Split or Unsplit

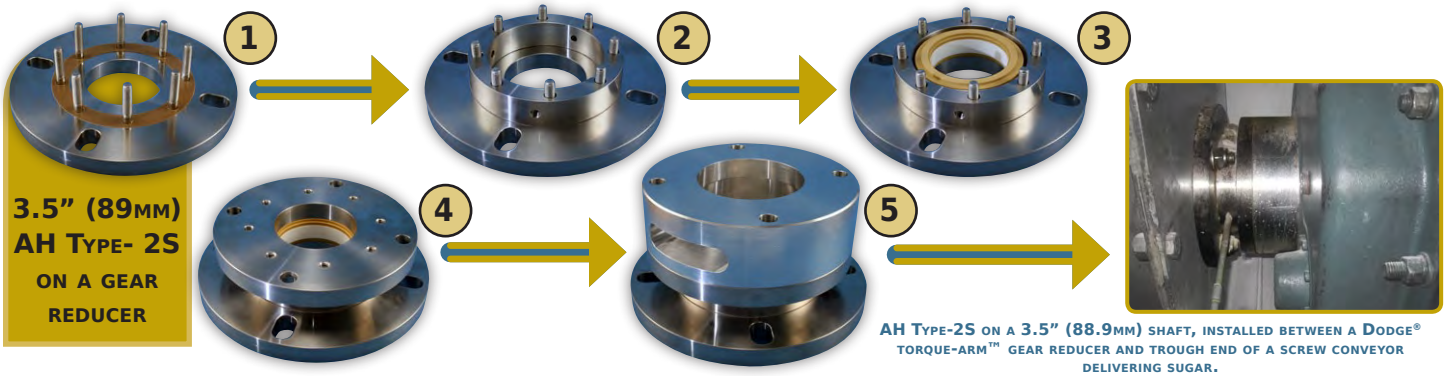
An Employee Owned Company

What is MECO's AH Type-2 Seal?

The MECO AH Type-2 model is the best choice in split sealing technology, fitting a seal in limited space on small to large shaft diameters. The configuration is a double mechanical seal using an elastomer drive to rotate bearing-grade synthetic seal faces against fixed, stainless steel seal faces. The AH Type-2 uses a barrier fluid to pneumatically load the seal faces and isolate the process from the atmosphere. The AH Type-2 is suited for MRO and OEM equipment.

When are AH Type-2 Seals the best option?

The MECO AH Type-2 seal model is the answer to the question, "How can we fit a split or unsplit face seal in the existing space?" The seal model is used on horizontal, inclined and vertical shafts. The seal design is applicable when an inert barrier fluid is required to isolate the process from the atmosphere. They are used on blenders, bucket elevators, some polymer extruders, and both ends of a screw conveyor. Two unique configurations following the core principles are available: Fig. 1 on pg. 3 is a design following USDA manufacturing guidelines; Fig 2. on pg. 3 is a design meeting application-specific requirements for explosion protection following the European ATEX directive. The seal may be designed to fit between the gear reducer and trough end of a screw conveyor, as shown below.



AH Type-2S on a 3.5" (88.9mm) shaft, installed between a Dodge® torque-arm™ gear reducer and trough end of a screw conveyor delivering sugar.

MECO ENGINEERED SHAFT SEALS

Manufactured *Since 1984* by: Woodex® Bearing Company, Inc.

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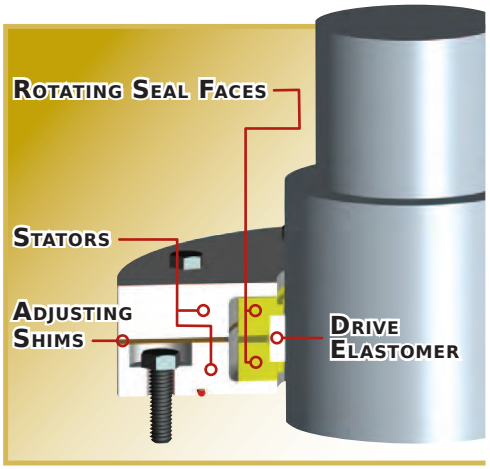
How Does the AH Type-2 Seal Model Work?

The AH Type-2 seal model incorporates separate inboard and outboard stator housings acting as the stationary seal faces. Between the stators is a rotating seal face assembly, consisting of two rotors with a driving elastomer between them. By completely tightening the stators together to compress against the two rotors and squeezing the drive elastomer to the shaft, we form an interlocking, watertight seal. As the drive elastomer interlocks with the shaft and rotors, a dynamic contacting face seal, behaving mechanically as a thrust bearing, is created. The low-friction rotor seal faces are at right angles to the shaft and in full contact with the stators, forming the rotating seal plane between the rotors and stators.

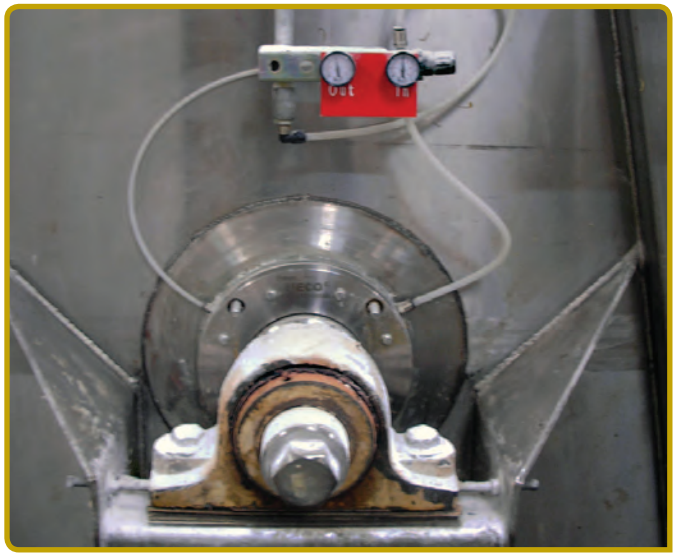


Mechanical Capabilities	
Temperature	-60° to 500° F (-50° to 260° C) Less on large shafts.
Pressure	Vacuum to +20 psig (140 kPa)
Shaft Speed	Up to 600 SFM (200 m/min) without cooling. Less on small shafts.
Total Indicator Runout (TIR)	1/4" (6mm) standard; greater runout can be accommodated
Barrier Fluid Options	Air or Inert Gas, grease, Occasional water flush.
Results vary with conditions - call for discussion.	

The seal cavity is typically charged with compressed gas, which acts as a barrier fluid to provide pneumatic seal face loading. The two stator housings are typically separated by a stack of 1/64" (0.40mm) thick shims to provide a method of adjustment.

How is the AH Type-2 Seal Maintained?

A pressure regulator is included with the seal to set inlet seal cavity pressure. A pressure gauge is attached to the inboard stator to monitor actual seal cavity pressure.



The seal cavity is charged with low pressure air or gas, which acts both as a barrier fluid and provides pneumatic seal loading. An access port is typically provided so the seal can be blown free of contaminants. A drop in seal cavity pressure indicates a need to inspect the seal. Pressure can be restored to normal by removing an adjusting shim, replacing the drive elastomer, or, if rotating faces are worn, by rebuilding the seal.

AH Type-2AP seal, on a 6.5" (165mm) shaft on a chemicals blender.

MECO® SEALS Driven.

AH Type-2 MODEL TYPICAL DIMENSIONS

What sizes are available?

The MECO AH Type-2 seal model is custom-designed and built to order. Typically, assemblies are fully-split. Shaft diameters range from ¾" (18mm) to 20" (500mm) and all sizes in between. Our typical space requirement is 2.5" (65mm) around the shaft and 4" (100mm) along the shaft for an easy split seal installation. Much smaller values are possible. The seal can be built into modified equipment components or simply swapped with existing seal housings, eliminating the need for equipment modifications, see Fig. 3.

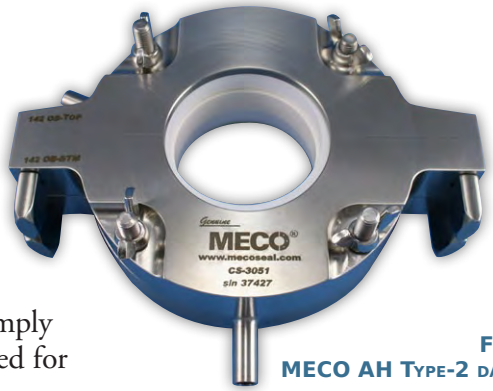


Fig. 1
MECO AH Type-2 dairy seal, installed on a dairy creamer

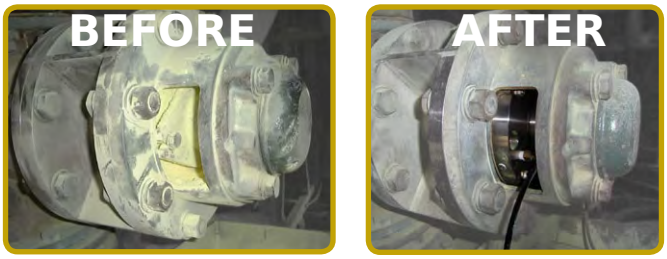
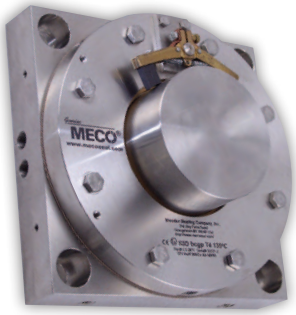


Fig. 3
MECO AH Type-2S on a 3" (76mm) shaft on a screw feeder conveying dry sulfur powders.



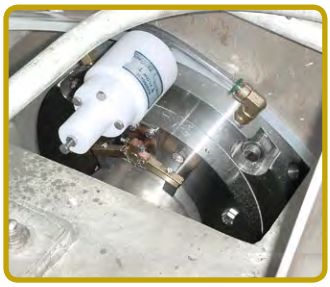
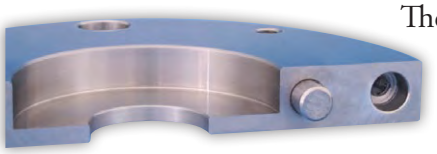


Fig. 2
MECO AH Type-2S for certain European explosive atmosphere applications, where EN 94/9/EC compliance is required.

What construction is available?

The MECO AH Type-2 seal is manufactured in several housing stator combinations. The standard is an AH Type-2S, using integral 300-series stainless steel stators. The AH Type-2T consists of aluminum housings with replaceable 300 series stainless steel stators attached. Hardened stainless steel is also a stator material option.



MECO AH Type-2S seal

MECO AH Type-2T seal

The AH Type-2AP (not shown) uses one or two 1/8" (3mm) thick stainless steel stator(s) with an extra-thick central housing or stator. Space, assembly and equipment restrictions dictate the need for the AH Type-2AP approach.

The common rotor seal face material is MECO 3000, a high-performance, bearing-grade, polymer-filled PTFE with FDA approval. Other options are: bearing grade PEEK; ceramic filled PTFE; virgin PTFE & UHMW. The different elastomer options available are Silicone, Viton®, EPDM and Nitrile, with all having an FDA-compliant option.

Since Woodex's MECO Seal division manufactures many custom shaft seal models, we have the capacity to fabricate from any material required. If looking for an "off-the-shelf" version of the AH Type-2 sealing approach, please check our MECO HB model seal as a viable option.

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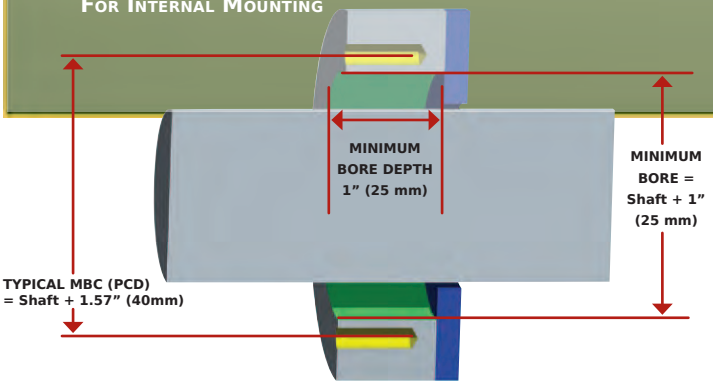
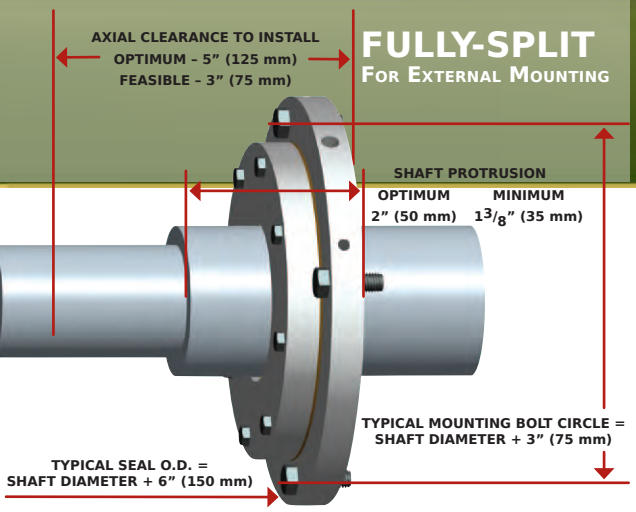
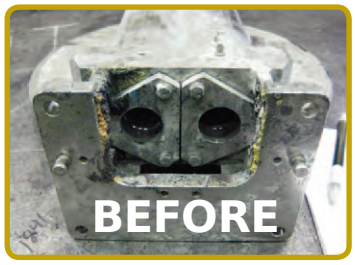
MECO AH Type-2

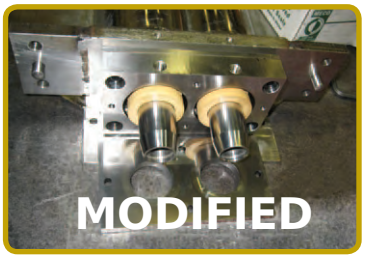
UNSPLIT
For Internal Mounting

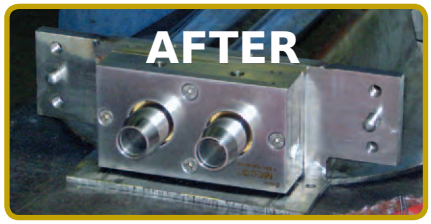


FULLY-SPLIT
For External Mounting









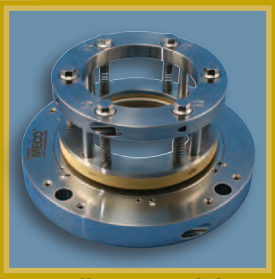
MECO AH Type-2S, on a 1.22" (31mm) shaft on a twin shaft screw feeder sealing plastic additives

MECO AH Type-2S, on a 6.69" (170mm) shaft on a filter press sealing damp corn starch

MECO® SEALS

MECO's design staff or your local distributor can help tailor the AH to your individual needs.

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



Split OFS Model
- Top and Side Entry
- Solvents
- Purge Free

EP Model
- Reactor Vessels
- Dryers
- Extruders

MP Model
- Air locks
- Rotary Feeders

HB Model
- Standard Seals for C.E.M.A. and Metric Screw Conveyors

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

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All MECO Seals
Made in USA