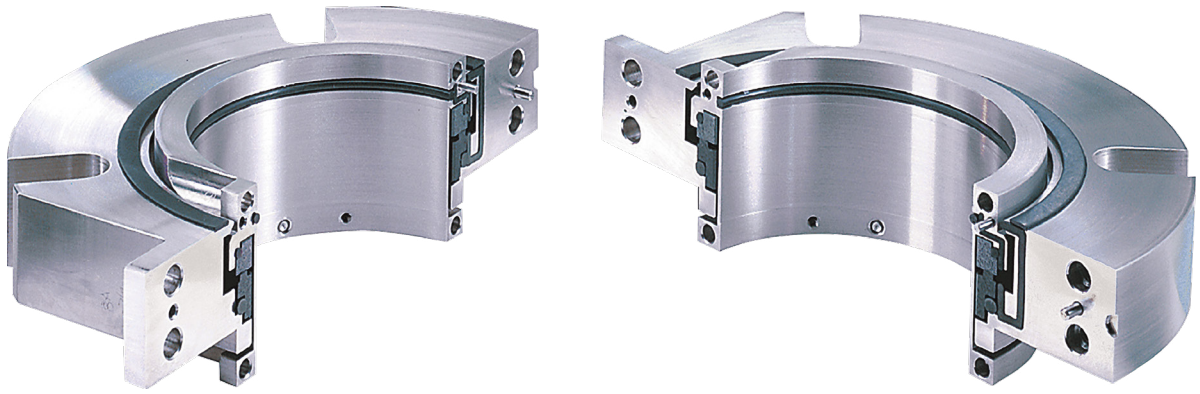
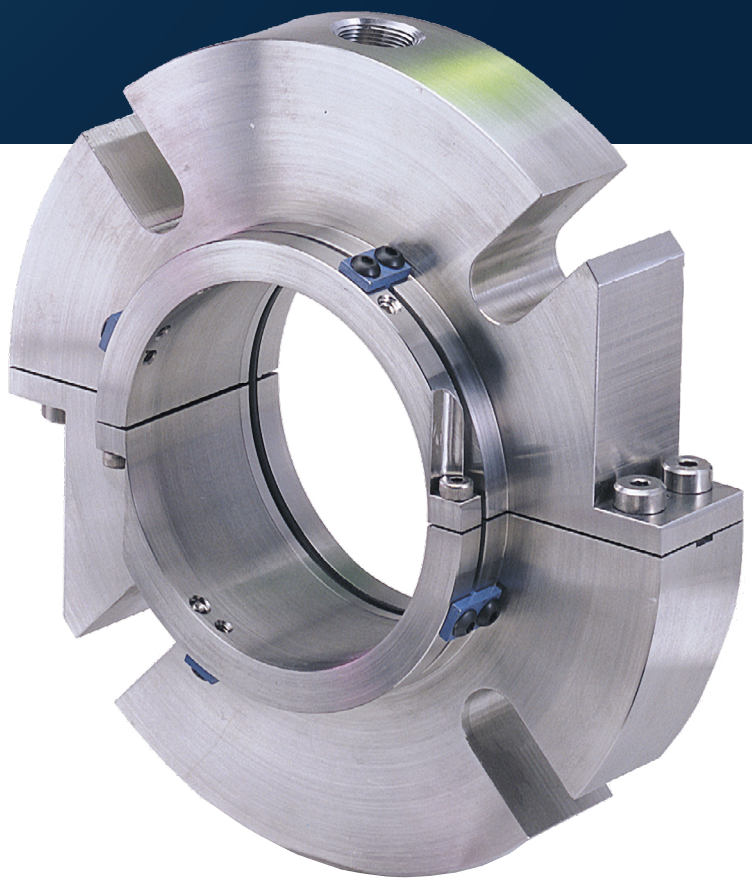
flexaseal
ENGINEERED SEALS AND SYSTEMS, LLC



CHOOSING THE RIGHT

SPLIT CARTRIDGE MECHANICAL SEAL

INTRODUCTION



Mechanical seals are a common solution for rotating equipment. Once installed, seals are subject to wear, corrosion, vibration, temperature fluctuations, pressure, and other effects of constant use. Replacing a damaged seal may require equipment disassembly to remove the seal and install a new or reconditioned seal.

Equipment teardown can be a complex and costly procedure causing downtime for the equipment and operators. In cases where the affected equipment is critical to production, this downtime can extend to a whole cell or even the entire facility.

A number of semi-and fully split mechanical seals have been designed by various manufacturers to overcome the assembly and disassembly difficulties associated with various types of rotating equipment. This tip sheet will define the main challenges of choosing a split seal to meet your sealing demands.

CHALLENGES

A number of component-style split mechanical seals have been designed to address the assembly difficulties associated with various types of rotating equipment. While these designs may achieve the goal of reducing the amount of time required to change out a mechanical seal, they have introduced other issues.

These inherent design problems can be attributed to a few factors:

- Some component-style split seal designs have a number of loose parts that must be handled with extreme care.
- Installation may require precise measurements or the use of various shims or special tooling to accurately align and set the mechanical seal assembly on the rotating shaft.
- Some seals utilize an internal clamping method, limiting the torsional and axial holding power to positively locate the seal on the equipment.

Another potential concern arises when the shaft position must be adjusted after the seal has been set. In certain designs, the set screws lock the rotary seal ring assembly to the shaft and can't be reached after the two stationary gland assemblies have been bolted together.

This means **total disassembly of the seal** once it has been installed, leaving the end user responsible for verifying that a complicated seal with precision lapped faces is correctly reassembled on the pump.

FLEXASEAL SOLUTION

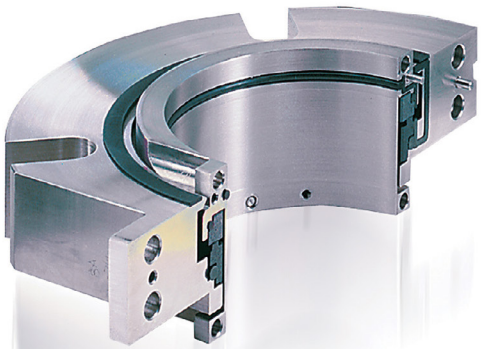
Flexaseal addresses these disadvantages and limitations with the Style 85 Two-Piece Split Cartridge Mechanical Seal Assembly.

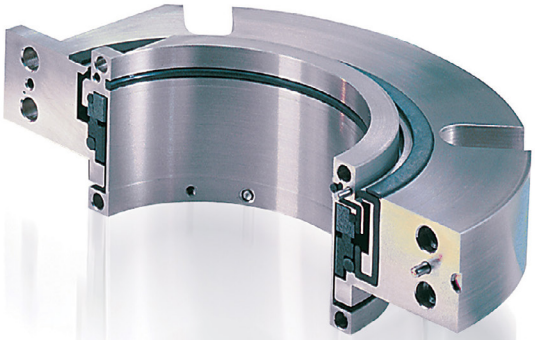
The Style 85 seal assembly consists of **only two unitized, self-contained assemblies** which fit together over a shaft to form a self-setting and -aligning cartridge seal design. This fully split cartridge mechanical seal design eliminates the handling of a lot of loose, delicate, precision manufactured components and allows for a very simple, easy, and time-saving installation with no measurements or guess work. The critical primary sealing faces are held together and safely contained within the two split gland and sleeve assemblies, well protected from any mishandling, dirt, or contaminants.

It is also important to note, the Style 85 is the only split cartridge mechanical seal on the market that is fully assembled and pressure tested at our factory before being sent into the field. This process not only ensures sealing integrity but also provides a higher installation success rate.

If the shaft needs to be adjusted after the seal has been set, simply put the setting clips back on the seal, loosen the set screws in the sleeve, move the shaft to its new position, tighten the set screws and remove the setting clips.

STYLE 85 TWO-PIECE SPLIT CARTRIDGE MECHANICAL SEAL





- The easiest installation of any split seal in the world: simply attach the 2 cartridge halves over the shaft and mount to the pump like any other cartridge seal.
- The first split cartridge mechanical seal in the world in which just two pieces are handled: the lapped faces are secured safely in cartridge halves and can't be cocked or chipped.
- Only split cartridge mechanical seal in which impeller can be adjusted without removing the seal: simply reinstall setting clips, release set screws and adjust impeller position then retighten set screws and remove the clips.
- Only split cartridge mechanical seal fully assembled and pressure tested at the factory: sealing integrity is confirmed before being sent to the field, thereby ensuring a high success rate for each installation.
- No measurements, no shims, no special tools, and no glue: cartridge setting clips assures proper axial and radial alignment to make installation even easier.

STYLE 85 VS. OTHER SPLIT SEAL DESIGNS

STYLE 85

- Presure-tested at factory ensuring sealing integrity
- Only 2 cartridge halves
- 5 assembly steps
- No handling of lapped faces

OTHER SPLIT SEAL DESIGNS

- End user is responsible for verifying that the seal is assembled correctly
- Impeller adjustments are impossible to make in the field
- 4 or more parts are handled
- Up to 24 assembly steps
- Lapped faces potentially
- exposed to dirt, grease, debris