



Pac-Seal[®] ASP **Advanced Stationary Pusher Seals**

For gear- and belt-driven, heavy-duty
engine coolant pumps



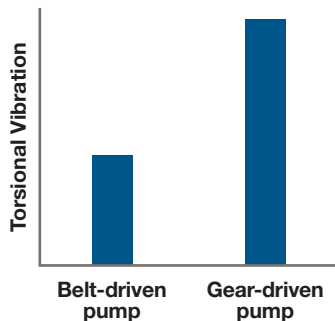
Experience In Motion



Beat vibration without breaking the bank

Engine coolant pumps — especially those in diesel engines — can take a toll on seals. The inherent torsional shaft vibration accelerates wear on seal components.

Whether your coolant pump is belt- or gear-driven, Pac-Seal ASP seals from Flowserve are built to withstand the vibration without breaking the bank.



Fit for purpose

Pac-Seal ASP seals are stationary O-ring pusher seals. They are energized by a wave spring with seal faces directly driven through the shell and sleeve elements.

And they're fit for purpose. With two ASP seal models available for belt- or gear-driven pumps, you get everything you need for your application and nothing you don't. But rest assured that quality is never compromised. Every component has been designed and rigorously tested to ensure:

- Superior performance
- Increased reliability
- Extended service life
- Minimal emissions
- Simple installation and maintenance

The result is a low total cost seal family that meets your operational and warranty needs.

Two models for maximum value

Engineered for value and performance

- High-performance materials improve thermal conductivity and reduce the effects of seal face-generated heat to improve seal life and dry-running capability.
- A fully unitized design ensures trouble-free installation and easy maintenance.
- Improved mechanical drive with drive-lug system different from other seal designs
- Standard O-ring gaskets increase versatility for higher-performance elastomers while reducing cost.
- A wave spring for reduced axial space addresses fitment in smaller pumps, while providing adequate face loading to minimize leakage.

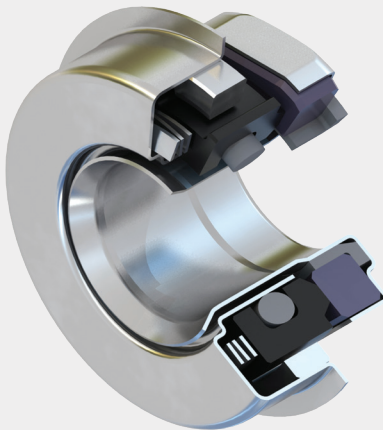
Wide-ranging applications

Designed specifically for diesel engine coolant pumps, Pac-Seal ASP seals are used in vehicles and equipment employed by a wide range of industries, including:

- Automotive
- On- and off-highway
- Locomotive
- Agricultural
- Mining
- Marine
- Generators

Operating parameters

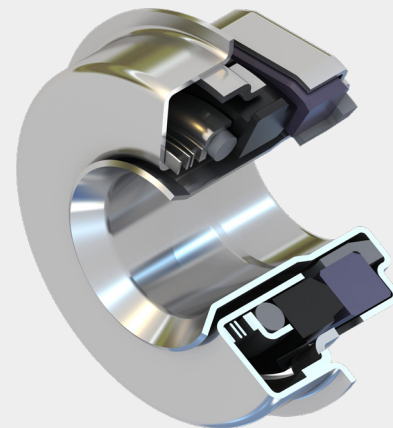
- Pressures to 5 bar (75 psi)
- Temperatures from -40°C to 205°C (-40°F to 400°F)
- Speeds to 25 m/s (82 fps)



ASP seal for gear-driven coolant pumps

The ASP seal has been proven to withstand the severe conditions of gear-driven engine coolant pumps.

- Robust drive lugs extend seal life in high torsional vibration applications.
- A captured O-ring design improves sealing for gear-driven applications.
- Increased cross-sections of secondary gaskets improve resistance to elastomer fatigue and tears common in other seal designs.



ASP-X seal for belt-driven coolant pumps

The ASP-X seal has been optimized for belt-driven engine coolant pumps, while improving performance unmatched by other seal designs.

- Drive feature at the outer diameter (OD) of the stationary face is optimized for lower vibration requirements.
- Face geometry is optimized for lower-vibration applications, while ensuring performance.
- The O-ring gasket and retaining element provide the same pressure capability as the ASP seal.



Design options

ASP seals are available in multiple sizes and materials. Custom designs are also available to provide the best sealing solution to meet your needs.

Seal face options

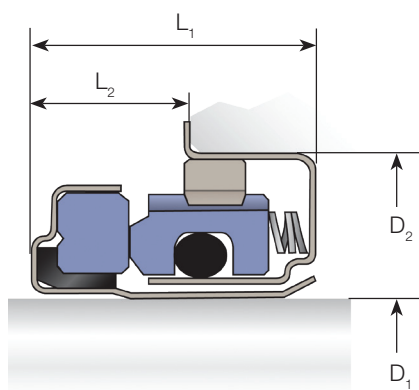
- Carbon
- Graphite-loaded silicon carbide
- Self-sintered silicon carbide
- Aluminum oxide

Elastomer options

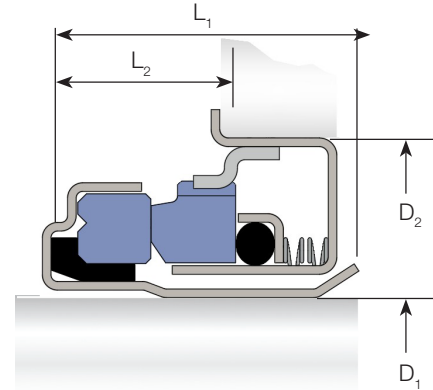
- NBR
- HNBR
- FKM
- EPDM

Sample sizes and dimensions

D_1	D_2	L_1	L_2
12 mm	30 mm	18.2 mm	10.2 mm
16 mm	36.5 mm	20.5 mm	12 mm
0.625 in.	1.435 in.	0.795 in.	0.445 in.
0.750 in.	1.575 in.	0.795 in.	0.445 in.
1.000 in.	2.000 in.	0.923 in.	0.415 in.
1.250 in.	2.480 in.	1.280 in.	0.696 in.



ASP seal for gear-driven pumps



ASP-X seal for belt-driven pumps

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