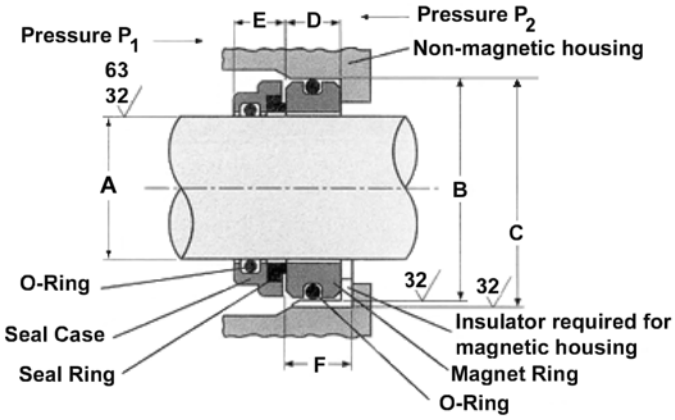
Please note that Model 10 is a standard Magseal configuration and is used here for illustrative purposes only. Motorsports designs are typically custom-engineered to meet application requirements.

Model 10 - Low Pressure - For use in most applications. Sealing pressure less than 50 PSI depending on size and operating conditions

Model 10 Magseals can be manufactured for shafts up to 5 inches in diameter. consult factory for information.

Note: Magseals cannot be ordered by size alone. Even in standard configurations material must be matched to the fluids involved. Please contact our Engineering Department at the earliest practical time during your project, and we will design a seal with materials and features suited to your operating conditions.



Other important parameters

	Standard Model 10	Special Design
Maximum housing-bore fillet radius	Up to size 10-40: 005" Size 10-42 and up: .010"	Consult Engineering Dept.
Maximum axial shaft movement (endplay)	.010"	.030"
Maximum radial shaft movement (eccentricity)	.005"	.015" or more
Maximum forward pressure $\Delta P = P_1 - P_2$	~50 PSID	Consult Engineering Dept.
Maximum reverse pressure $P = P_2 - P_1$	2 PSID	Consult Engineering Dept
Shaft surface finish limitations (O-ring position)	Between 32 and 63µ in R_a	Between 32 and 63µ in R_a
Housing bore or insulator surface finish limitation (O-ring position)	32µ in R_a (maximum)	32µin R_a (maximum)

Magseal Technical Data

- The reason the seals' housing must be non-magnetic is because the magnetic ring (the stationary part of the seal) is magnetized through its diameter and not through its thickness. As such, the magnetic flux is radial from the seals' O.D. If the housing is magnetic, it would close the magnetic field so that the seal's stationary face would not be able to attract the rotating carbon ring.
- If the housing is made from a magnetic material, we simply use an insulator sleeve or bushing between the magnet and the housing. The intent is to make the rotor portion rather than the housing to be the closest magnetic material to the magnetic flux at the magnet's outside diameter.
- Magnetization is through the diameter instead of the thickness: having the magnetic circuit at the O.D. Makes for a stronger magnetic attraction. It permits the use of steel shafting. Magnetic wear particles from within the application are kept away from the carbon seal face by the magnetic field. If magnetization was done through the thickness, wear particles could damage the mating seal faces.

- The magnetic attraction maintains sealing performance through a variety of application environments by keeping the rotating carbon face mated to the stationary magnetic ring. Magnetic seals are particularly effective for shock, vibration and no-load applications where the magnetic attraction provides superior performance as compared to spring loaded or normal lip seals.
- When springs are used instead of a magnetic attraction, vibrations and shock loads are translated from the springs to the mating ring and then to the carbon ring which frequently results in chatter. This can damage the carbon seal face and cause the seal to lose its effectiveness.
- Magnetic seals are isolated on special O-Rings and are unaffected by vibration. They have essentially zero chatter or carbon damage even in high vibration applications. This allows the seals to maintain their hydrodynamic oil film over a broad range of applications.
- Magnetic seals can also tolerate eccentric (i.e., housing bore to shaft diameter concentricity) applications much better than lip seals. Magnetic seals do not create a hot-spot on the shaft and won't generate the heat or wear associated with lip seals.
- Magnetic seals can tolerate, depending on size, from 0.005" to .015" eccentricity.
- Shaft finishes for magnetic seals do not need to be ground. We specify a shaft surface finish of 32-63 and the shaft does not need to be heat treated (dead soft is acceptable).
- Magnetic seal attractive force is much better controlled than spring loaded seal faces. Because the attractive force can be controlled very accurately, we are able to reduce seal face loads by 30-50% compared to spring seals. For example, where a spring-loaded seal might have a face load range of 4-8 pounds, magnetic seals permit us to control the face load to 4-5 pounds.
- Magnetic seals can be designed to tolerate temperatures up 600°F and surface speeds of 21,000 FPM.

  Standard magnetic seals can tolerate axial shaft movements of 0.010", with 0.050" possible with special designs.
- Having only 2 components, magnetic seals are very easy to handle and to install.

Technical inquires for Specialty Bearing and Frictionless Seals

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