

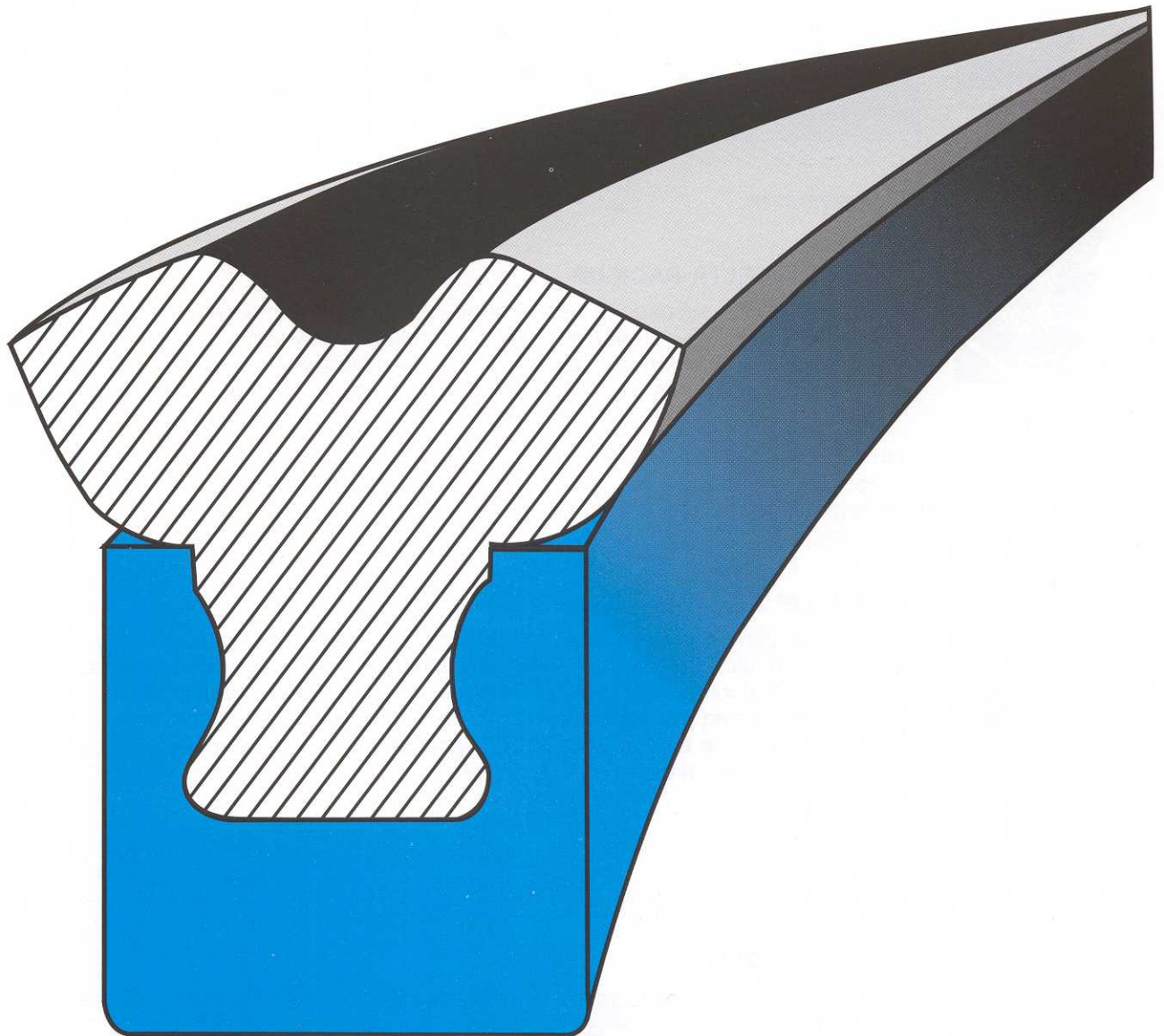


MACROTECH / POLYSEAL

ZSM - 1000

Z-Seal

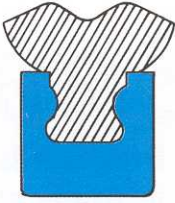
Product Line
For Dynamic Application



“The POLYSEAL Difference”

Extended Performance and Reliability for Fluid Power Applications

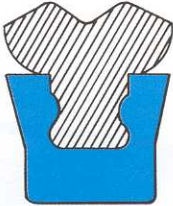
STYLE SELECTION



Patent No. 3,848,800

TYPE Z

The combination of two different materials into one seal allows the flexibility to utilize a small seal cross-section in relation to seal diameter. Designed as a "drop-in" replacement, the Z-Seal provides ultimate sealability and extended life over conventional designs.



Patent No. 4,635,945

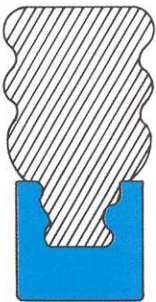
DEEP Z

Specifically designed with a greater tolerance to side loading and additional compensation for axial run-out, the double lip design provides a greater resistance to compression set and extended life for the elastomeric seal element. Ideally suited for dynamic rod applications, the deep depth design provides increased stability in higher pressure applications.



DEEP Z w/DELTA BACK-UP

For applications exposed to severe shock loads or large clearance gaps, the modular "Delta" back-up ring provides the most economical way to close diametral clearances with additional resistance to extrusion. Positively actuated to control friction, the split "Delta" design allows ease of installation and retains original seal height and groove depth.



MULTI-LIP Z

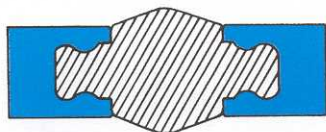
Designed using state-of-the-art technology to replace old-style Vee-packings which require periodic gland adjustments, the Multi-Lip Z-Seal provides extended life and improved sealability over conventional designs. The development of an "S" shaped cut in the lip and an angled cut in the base, permits installation without removing cylinders from the equipment. Deep Z base and/or "Delta" back-up ring can be used as application requires.



HOMOGENOUS Z

For small cross sections where a separate Z-Seal lip and base are not practical, the HZ-Seal is made entirely out of rubber. The one-piece construction provides both squeeze sealing force under low pressure conditions, and an automatic adjustment for friction as pressure is increased. The HZ-Seal has found many suitable applications in Gas/Oil accumulators, industrial shock absorbers, and fluid power control valves, where low pressure-high pressure capabilities and friction coefficient are critical.

STYLE SELECTION



BI Z-SEAL

Developed as a heavy-duty, low-leakage piston seal, the Bi Z-Seal does not sacrifice ultimate performance by trying to be a combination rod and piston seal, as do conventional U-cups or loaded-lip seals. With the combined sealing principles of the soft rubber lip and the hard anti-extrusion base, the Bi Z-Seal provides positive sealing force for high-torque, no-drift applications.



CROWN Z

Directly interchangeable in grooves designed for Quad seals or O-rings, the Crown Z-Seal provides extended reliability with higher pressure capabilities than typical rubber and fabric packings available today. The combinations of a compact design, soft elastomeric sealing element, and a hard anti-extrusion base, increase seal stability even greater than an O-ring in a two back-up groove application.



ROTARY Z

The sealing concept of the Z-Seal design provides excellent sealability under low pressure conditions with an automatic adjustment as pressure increases. Manufactured from the finest materials to eliminate scoring of pump/motor shafts, the RZ-Seal provides precision sealing for low to moderate pressures in rotary service.



Z-SEAL w/WIPER

Through careful selection of specific materials, special designs can be constructed to accommodate a wide range of applications. Typical seal/wiper combinations are used in spool valves, hydrostatic steering systems, and industrial power units.



The sealing principles and concurrent designs of the Z-Seal are the result of extensive engineering and testing programs. We manufacture to the most exacting standards for quality-control, ensuring reliable performance in a multitude of applications.

Further information and assistance with special designs or materials, contact our highly qualified technical staff at Macrotech / Polyseal.

DIMENSIONS

The various Z-Seal configurations are designed to accommodate standard groove dimensions with normal manufacturing tolerances. Directly interchangeable with conventional seal designs, a wide range of Z-Seals are available in radial widths from as little as 1/8 of an inch to over 1 inch.

NOTE: Allowing for thermal expansion of the seal material and to facilitate seal installation, the groove depth should be a minimum of 10% greater than the specified seal height. As a rule of thumb, a groove depth in excess of 110% of seal height will not be detrimental to seal operation. However, as there are many factors which may affect seal life, seals should be tested under actual service conditions to ensure compatability with the specific application.

$$\begin{array}{r} \text{EXAMPLE: } 375-04.000-625-DZ = \quad .625 \text{ '' (seal height)} \\ \quad \quad \quad \quad \quad \quad \quad \quad + .0625 \text{ '' (10\% greater)} \\ \hline \quad \quad \quad \quad \quad \quad \quad \quad .6875 \text{ '' minimum groove depth} \end{array}$$

PART NUMBERING SYSTEM

Since Z-Seals have been designed to fit nominal gland dimensions, the dimensions applied to the part number of the seal reflect the gland dimensions and not the actual seal dimensions.

DESIGN TYPE	PART NUMBER						
	WIDTH		I.D.		DEPTH		TYPE
Type Z	375	-	04.000	-	625	-	Z
Deep Z	375	-	04.000	-	625	-	DZ
Multi-Lip Z	375	-	04.000	-	1200	-	MZ
Homogenous Z	125	-	00.437	-	156	-	HZ

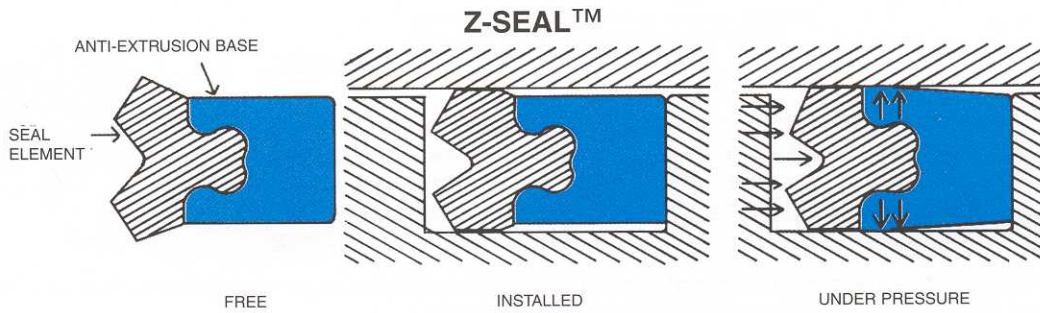
NOTE: For specific applications which may require special seal configurations of non-standard dimensions, contact Macrotech/Polyseal for technical assistance.

Our engineering department is continually providing products designed to meet specific customer requirements. As a result, a variety of Z-Seal designs are available for a wide range of applications in the Fluid Power Industry. For applications which may require a special seal configuration, our engineering department is available to design a seal to meet your individual needs.

Z-SEAL

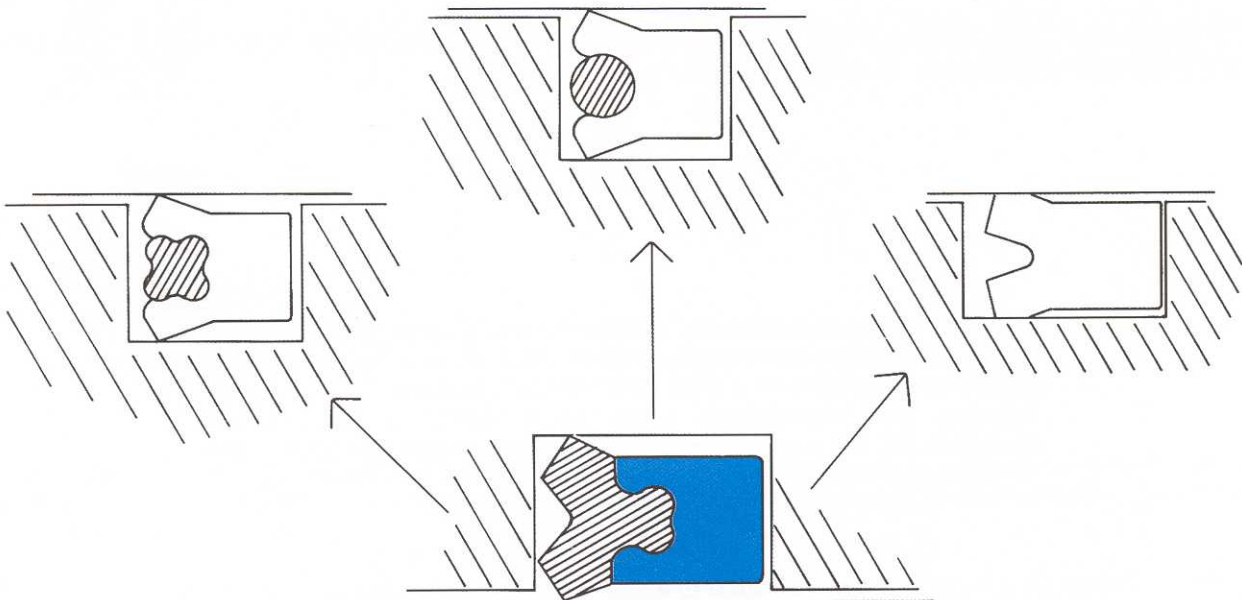
DESCRIPTION

The Z-Seal is a squeeze type seal, combining the excellent sealability and low compression set of a soft rubber lip with the greater anti-extrusion characteristics of a hard thermoplastic base. Under low-pressure conditions, the sealing lip provides its own compressive seal force. As pressure increases, hydrostatic pressure is mechanically transmitted through the elastomeric seal element into the anti-extrusion base. The applied force then deflects radially in a controlled manner, closing the extrusion gap behind the sealing lip. Under this condition, maximum sealing effectiveness is achieved.



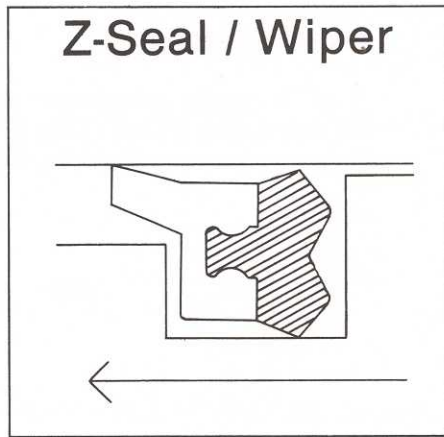
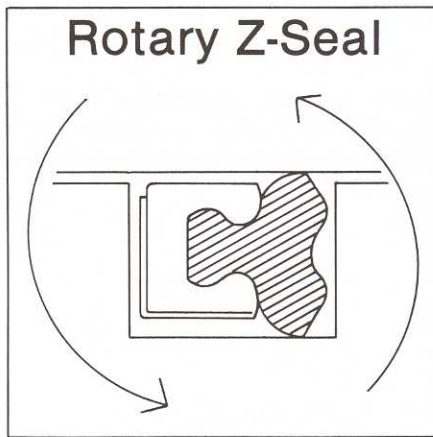
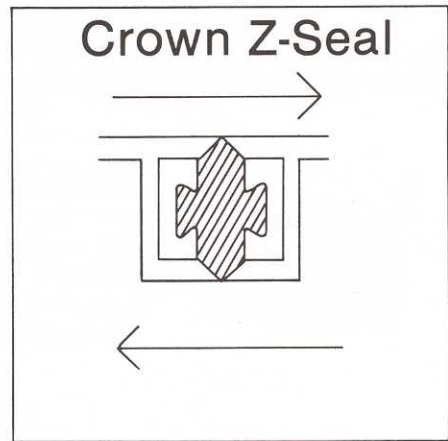
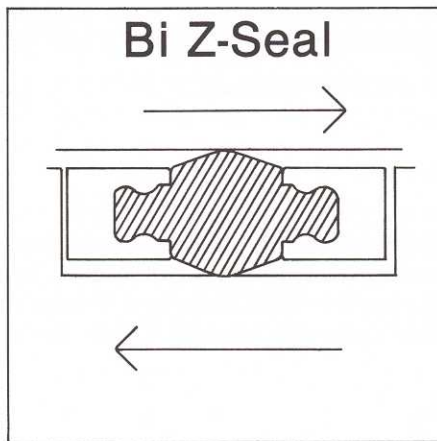
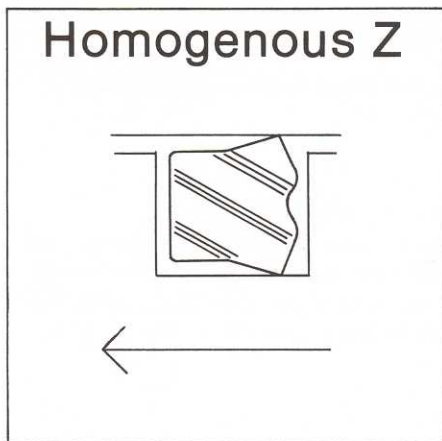
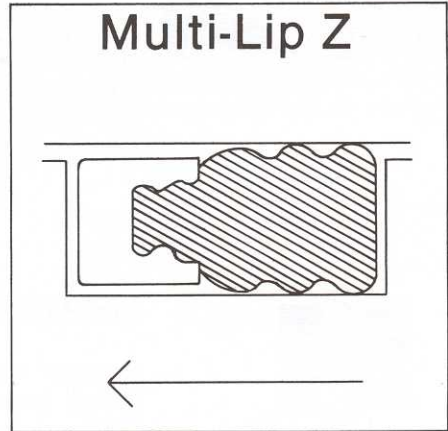
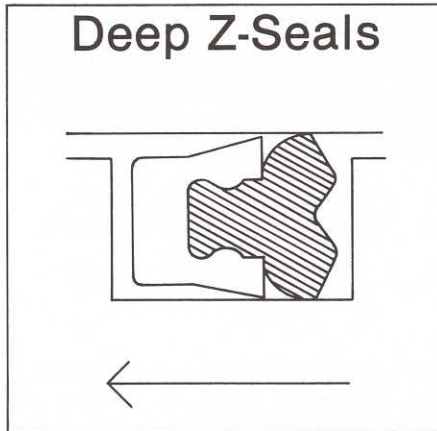
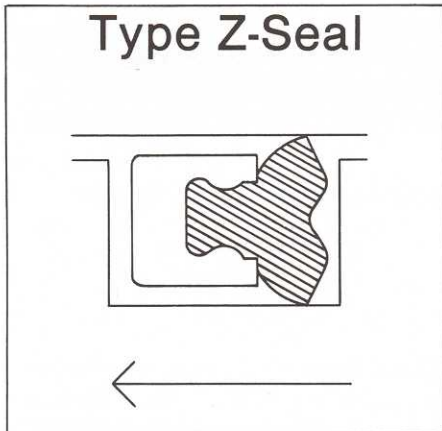
ADVANTAGES

Specifically designed for demanding dynamic applications, the Z-Seal can be used to upgrade existing designs as well as a positive seal for new product designs. By taking maximum advantage of the various elastomeric materials available today, the Z-Seal provides an extended range of endurance in extreme pressure, temperature and chemical environments.



Total Sealing Package

For Piston, Rod and Rotary Applications



MACROTECH/POLYSEAL

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