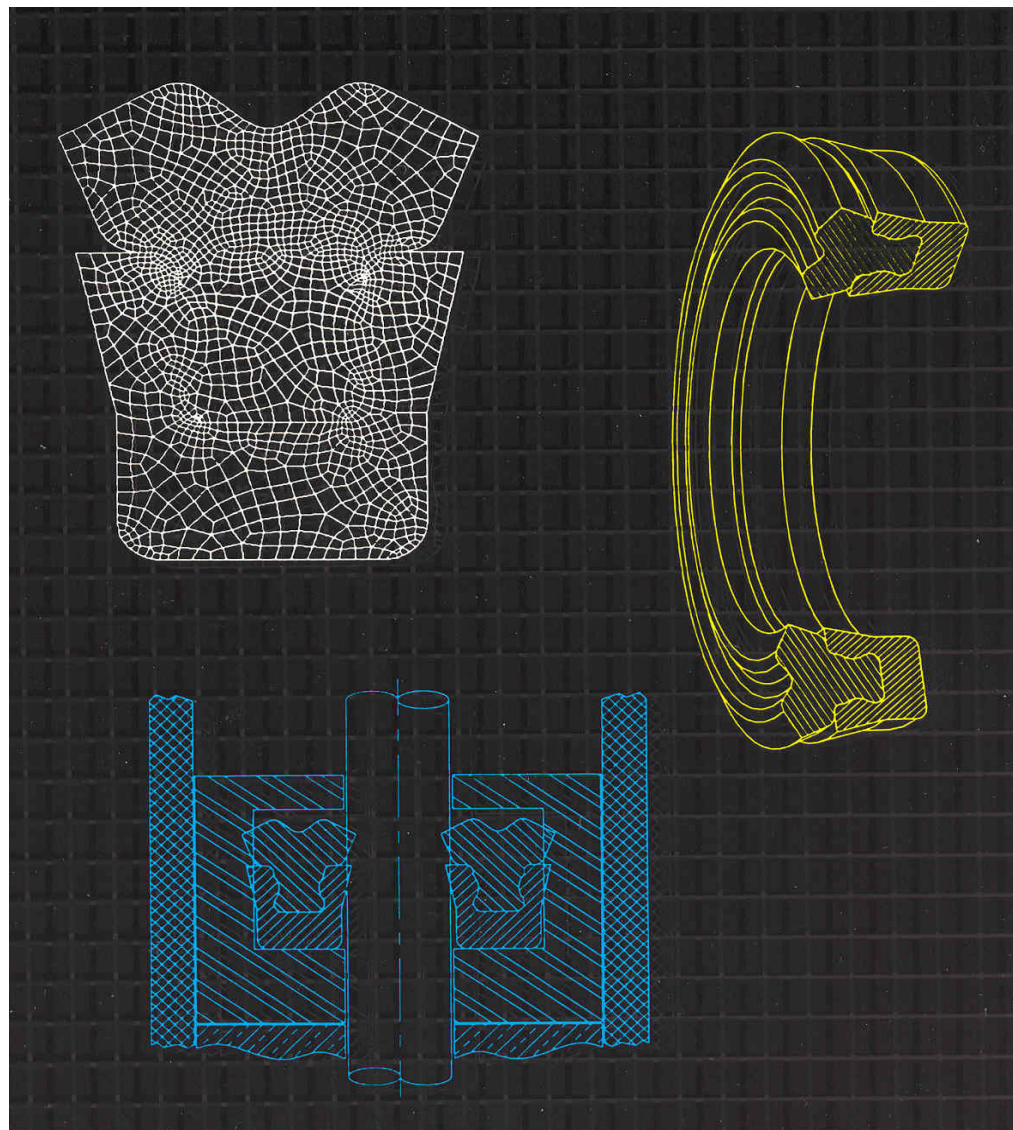


HPS ***INC***

Leaders in Seal Technology

THE **HYDRA-PACK™** **ROD SEAL**



HYDRA-PACK™ MULTIPLE LIP ROD SEALS

SEAL TECHNOLOGY FOR THE 21st CENTURY

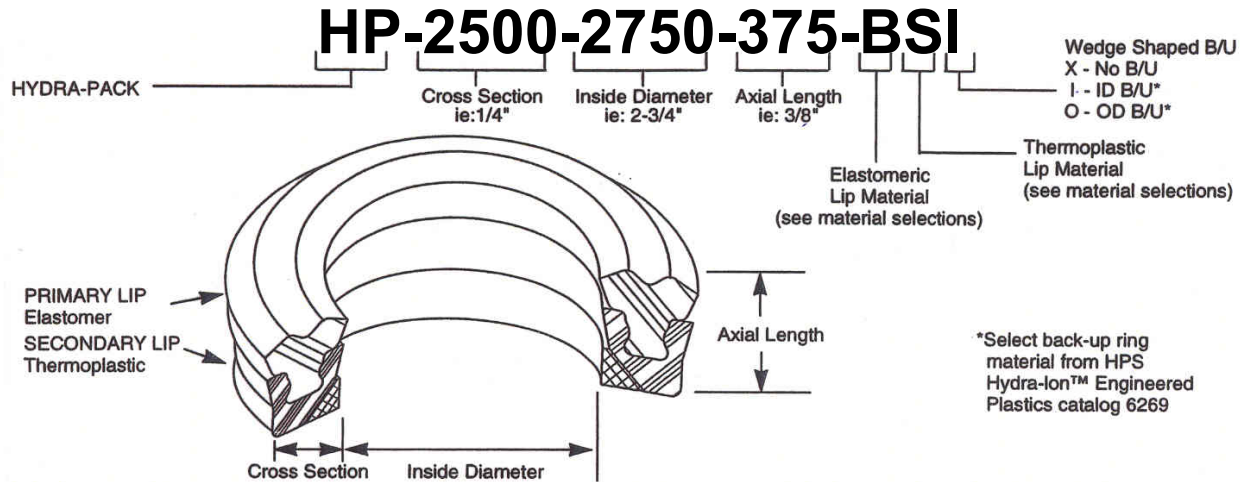
Combines the superior low pressure/low temperature performance of an elastomeric primary lip with the high abrasion and extrusion resistance of a thermoplastic lip.

The two separate sealing elements are mechanically locked together and provide independent response to changes in system pressure and temperature.

BENEFITS OF THE HYDRA-PACK™

- Absolute dry rod leakage control due to the combination of an elastomeric primary lip and a secondary thermoplastic lip.
- Redundant seal lips reduce potential for catastrophic failure.
- Increased seal life due to the interaction of the dual elements.
- Effectively eliminates cold weather start up leakage associated with conventional polyurethane seals.
- Eliminates the “flat tire” syndrome of single element seals.

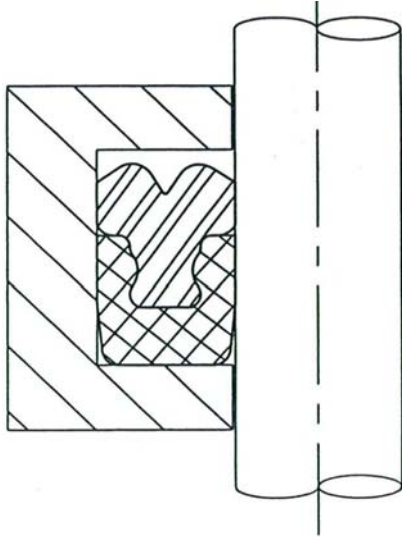
PART NUMBERING SYSTEM



MATERIAL SELECTION

PRIMARY (ELASTOMERIC) LIP				
SERVICE	TEMP RANGE	COMPOUND DESIGNATION	DUROMETER	BASE POLYMER
General purpose hydraulic oils, petroleum based lubes, air, water, glycol, ATF and soluble oils, Mil-H-5606 fluid	-65° F to +275° F			
Gasoline, kerosene	-65° F to +160° F	B (A8504)	70A	NBR (Nitrile)
Water Glycol	-65° F to +212° F			
Extended service hydraulic oils, petroleum lubes, etc.	-20° F to +320° F	H (C-7017)	85A	HNBR (Hydrogenated Nitrile)
	-40° F to +300° F	L (C-7021)	70A	
Phosphate ester emulsions	-65° F to +250° F	E (E-8001)	75A	EPR (Ethylene Propylene)
Brake fluid (SAE-J-1703)	-65° F to +300° F	E (E-8001)		
Unleaded gasoline Pydraul 30E, 50E, 90E, 115E	-10° F to +400° F	V (V-7501)	75A	FKM (Fluorocarbon)
SECONDARY (THERMOPLASTIC) LIP				
SERVICE	TEMP RANGE	COMPOUND DESIGNATION	DUROMETER	BASE MATERIAL
General service hydraulics Mil-H-5606 fluid	-65° F to +200° F	S (U-1003) (U-1004)	95A 55D	Standard service polyurethane
Hi-temp hydraulic service Mil-H-5606 Fluids	-65° F to +225° F	T (U-1023)	95A	Higher temp polyurethane
Premium/extended service hydraulic oils, Mil-H-5606 fluid	-75° F to +275° F	Z (U-1027)	90A	PPDI polyurethane
General service hydraulic oils, water glycol, water soluble oils, gasoline (leaded & unleaded), kerosene, brake fluid, phosphate ester emulsions	-70° F to +275° F	H (F-1504)	55D	Fluorotrel

ADVANTAGES AT LOW PRESSURE



Primary elastomeric seal lip provides excellent low pressure and low temperature performance.

Secondary thermoplastic seal lip provides excellent wear and abrasion resistance.

Variety of available materials for use in both primary and secondary lips provides for sealing a wide selection of fluids and temperatures.

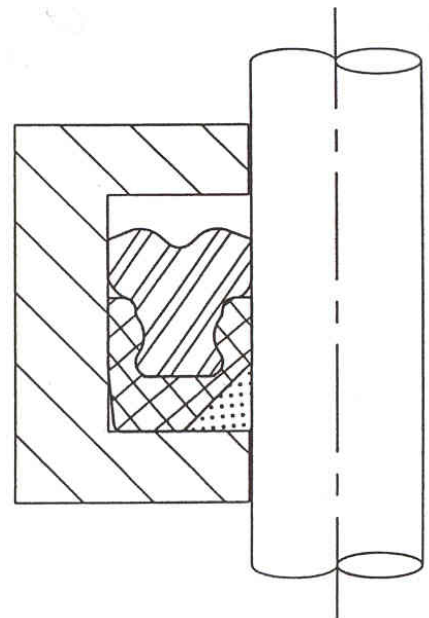
ADVANTAGES AT HIGH PRESSURE

Redundant seal lips – thermoplastic lip acts as anti-extrusion support for primary lip.

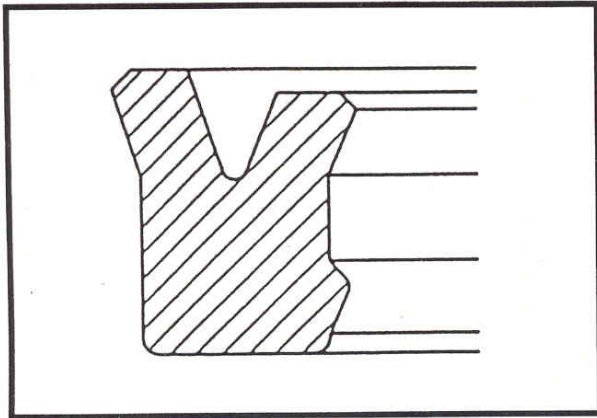
Independent action of dual seal lips under pressure increases seal life.

Dual lips minimizes the possibility of catastrophic failure.

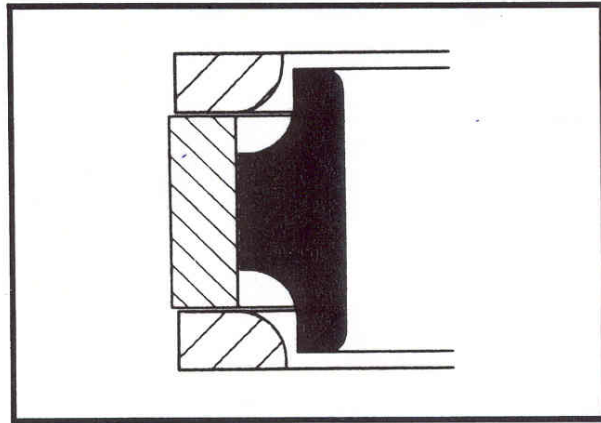
Optional positively actuated back-up reacts instantaneously to system pressure – forcing back-up into the extrusion gap.*



* Consideration should be given to system pressure, potential extrusion gap, temperature and fluid being sealed in determining the need for a back-up ring.



UBR
DUAL CONTACT U-CUP



CAP T™
HEAVY DUTY PISTON SEAL
BI-DIRECTIONAL

HPS *inc*

Leaders in Seal Technology

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HPS Inc. guarantees the products it sells to be free from defects in materials or workmanship for one year. This warranty is in lieu of any and all other warranties, including those of merchantability and fitness for any purpose.

Upon proper and timely notification of a defective material claim, and after our inspection of the material in question, the HPS liability for breach of any and all warranties is limited to refunding our invoice price of the product deemed to have such defects in material and/or workmanship, or at our option, replacement of the material free of charge, including transportation to the location of original shipment, but in no case will cost of installation or downtime charges be the responsibility of HPS. The sale of our products under any other warranty, expressed or implied, is not authorized by our company.