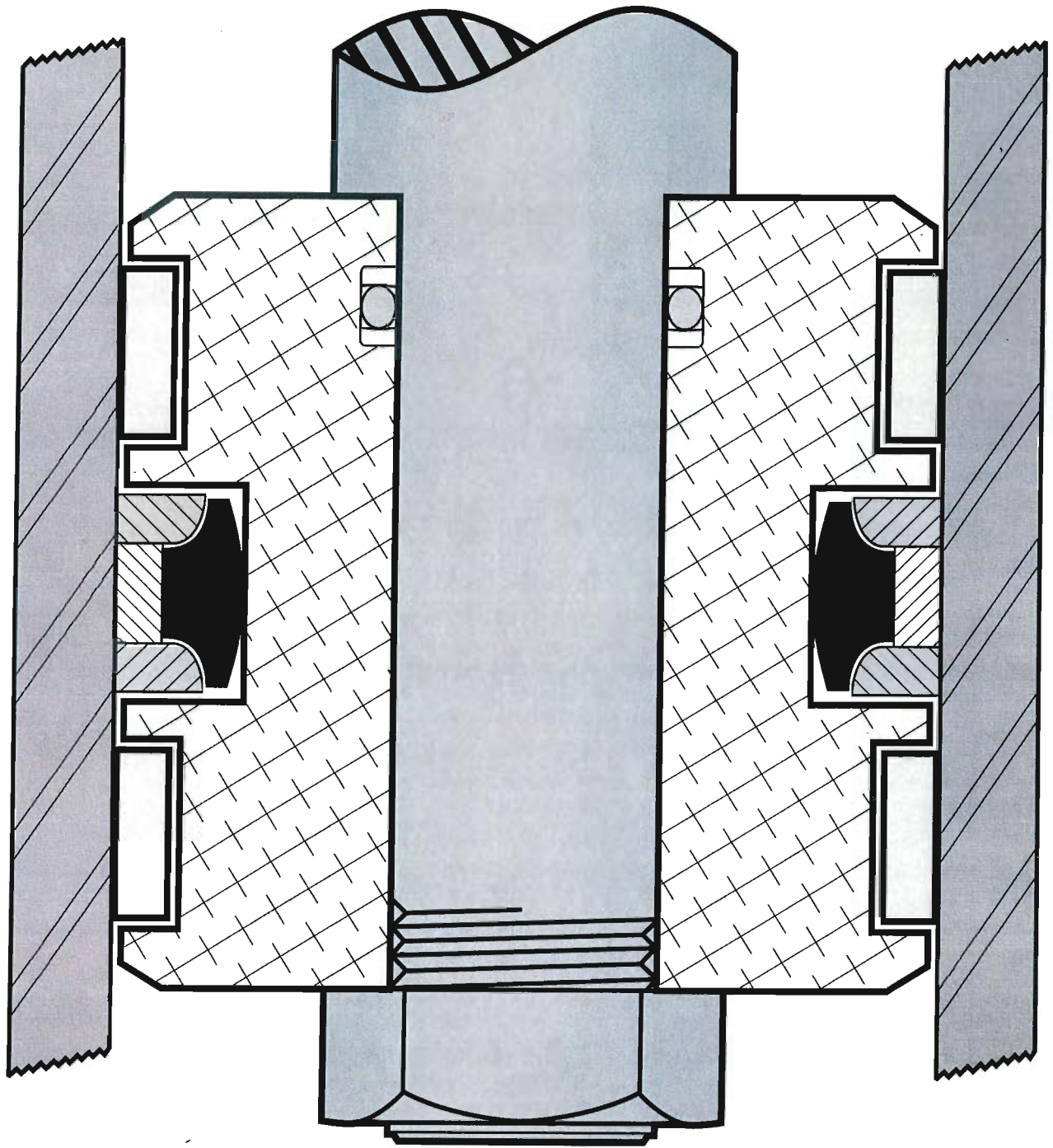


CAP-T heavy duty piston seal



HEADQUARTERS, TECH CENTER AND SERVICE CENTER

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LEADERS IN SEAL TECHNOLOGY

HPS *INC*

HPS CAP-T Piston Seal

The HPS CAP-T is a compact bidirectional piston seal that is used for medium to high pressure and performance hydraulic fluid sealing applications.

The CAP-T seal assembly consists of a filled PTFE Cap, an elastomeric energizer, and two positively actuated backups that protect the seal from extrusion and from contaminants in the system.

The HPS CAP-T is designed to handle larger than standard extrusion gaps when used with Hydra-Lon Wear Rings.

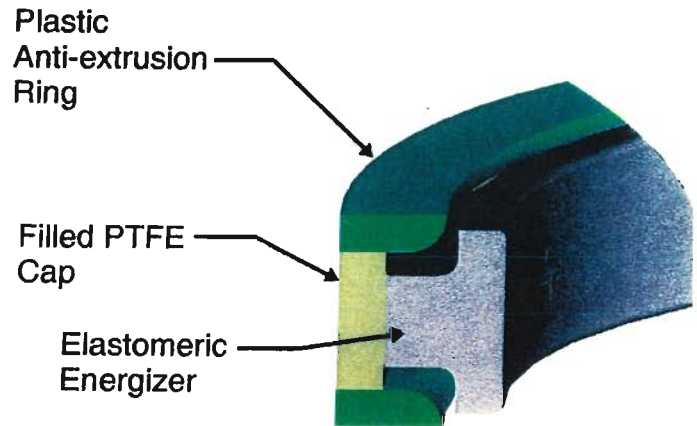
The geometry of the CAP-T along with its use of ridged, radiused backup rings effectively prevents rolling and spiraling of the seal in its gland.

The HPS CAP-T is the latest state-of-the-art bidirectional seal for medium to heavy-duty piston seal applications.

The HPS CAP-T is available in four specification standards to cover global equipment requirements.

FEATURES

Unique symmetrical shape of the CAP-T seal assembly



The three major features of the CAP-T are:

- Compact Design
- Unique Seal Shape
- Variety of Material Combinations

HPS CAP-T MATERIALS SELECTOR

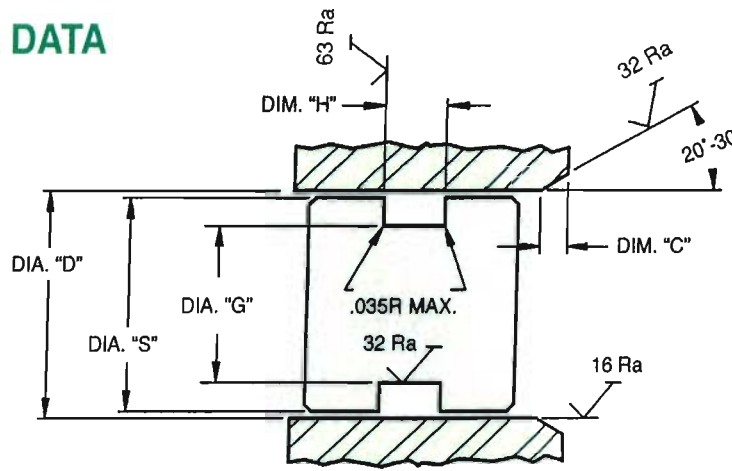
SERVICE	TEMP. RANGE*	COMPONENT MATERIALS		
		SEAL RING	EXPANDER	BACKUP
Gen. Purpose Hydraulic oils, Petroleum based lube oils, air, Water-Glycol, ATF and soluble oils	-40/+250°F -65/+265°F	CB – Glass Filled PTFE RB-Med. Bronze PTFE TB-High Bronze PTFE	AN-70A NBR BN-L.T. NBR Nitrile	AD-MOS₂/Polyamide
MIL-H-5606 Fluid MIL-H-6083 Fluid MIL-H-46170 Fluid	-40/+250°F -65/+265°F	CB – Glass Filled PTFE RB-Med. Bronze PTFE	AN-70A NBR BN-L.T. NBR Nitrile	AD-MOS₂/Polyamide
Gasoline Kerosene	-40/+250°F -65/+160°F	CB – Glass Filled PTFE RB-Med. Bronze PTFE	AN-70A NBR BN-L.T. NBR Nitrile	AD-MOS₂/Polyamide
Phosphate Ester Emulsions	-65/+250°F	CB – Glass Filled PTFE RB – Med. Bronze PTFE	EP-70A EPDM Ethylene/Propylene	AD-MOS₂/Polyamide
Brake Fluid SAE J-1703	-65/+300°F	CB – Glass Filled PTFE RB – Med. Bronze PTFE	CP-80A EPDM Ethylene/Propylene	AD-MOS₂/Polyamide
Silicone Oils DOT-5 MIL-B-46176	-65/+265°F	CB – Glass Filled PTFE RB – Med. Bronze PTFE	BN-L.T. NBR Low Temp. Nitrile	AD-MOS₂/Polyamide
Unleaded Gasoline Pydraul 30E, 50E, 90E, 115E	-20/+400°F	CB – Glass Filled PTFE RB – Med. Bronze PTFE	F-75A FKM Fluorocarbon	AD-MOS₂/Polyamide
MIL-L-7808 MIL-L-23699	-40/+400°F	CB – Glass Filled PTFE RB – Med. Bronze PTFE	K-75A FKM L.T. Fluorocarbon	AD-MOS₂/Polyamide

OTHER SPECIAL MATERIALS AVAILABLE, CONSULT TECH SERVICES.

*Temperature range is based on entire CAP-T assembly, not individual components.
STANDARD MATERIALS SHOWN AS BOLD CHARACTERS.

CAP-T TECHNICAL DATA

INCH



Note: "S" Diameter to be calculated using E1 or E2 clearance.

INDUSTRIAL STANDARD "CT"

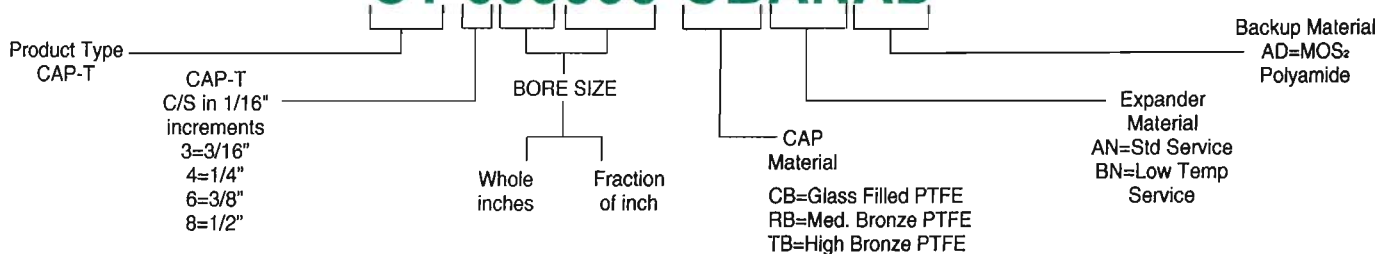
GLAND DIMENSIONS – STANDARD INDUSTRIAL (Dimensions in inches)								
D BORE DIAMETER	ØD Tolerance Range	G GROOVE DIAMETER	ØG Tolerance Range	CAP-T C/S SERIES	H GROOVE WIDTH +.010" -.000"	E1* E2* Maximum Diametral Clearance		C Lead Chamfer
						Without Wear Rings	With Wear Rings	
1.000-2.875	+ .002/- .000	ØD-.374	+ .000/- .002	3	.424	.006	.025	.156
3.000-4.875	+ .003/- .000	ØD-.480	+ .000/- .003	4	.579	.008	.030	.187
5.000-16.000	+ .004/- .000	ØD-.730	+ .000/- .004	6	.750	.010	.035	.250
16.125-22.000	+ .005/- .000	ØD-.940	+ .000/- .005	8	.750	.010	.035	.295

*The HPS CAP-T can be used up to 6,000 PSI** when used with E1 Gap dimension. The HPS CAP-T can be used up to 4,500 PSI when used with E2 Gap dimension. **Pressure ratings are for general seal selection guidance. Customers should test for their specific application.

INCH PART NUMBERING SYSTEM:

CT-605000-CBANAD STANDARD

CT-605000-CBANAD



MILITARY O-RING STANDARD "CTO"

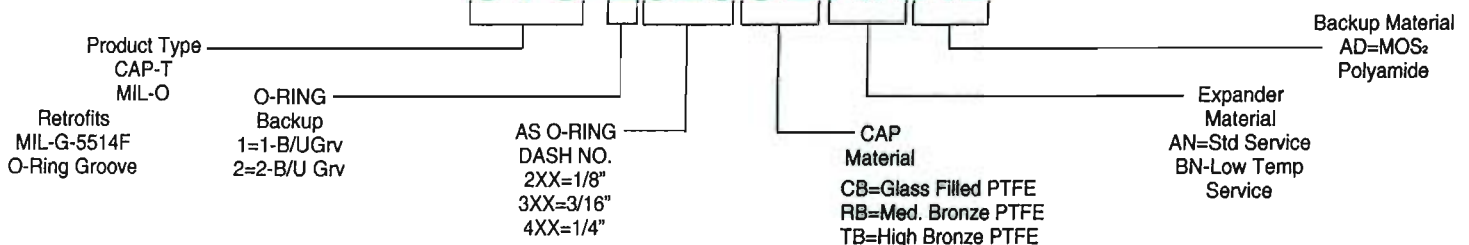
GLAND DIMENSIONS – TO FIT MILITARY O-RING GLANDS (Dimensions in inches)									
D	Tolerance	ØD	Tolerance	MIL-G-5514F	1-BU 2-BU		E1	E2	C
					1-BU	2-BU			
1.000-4.875	+ .002/- .000	ØD-.242	+ .000/- .002	200	.235	.304	.004	.022	.156
1.875-4.875	+ .002/- .000	ØD-.372	+ .000/- .002	300	.334	.424	.006	.028	.187
5.000-16.000	+ .003/- .000	ØD-.477	+ .000/- .003	400	.475	.579	.008	.032	.295

*The HPS CAP-T can be used up to 6,000 PSI** when used with E1 Gap dimension. The HPS CAP-T can be used up to 4,500 PSI when used with E2 Gap dimension. **Pressure ratings are for general seal selection guidance. Customers should test for their specific application.

MIL-G-5514F INCH PART NUMBERING SYSTEM:

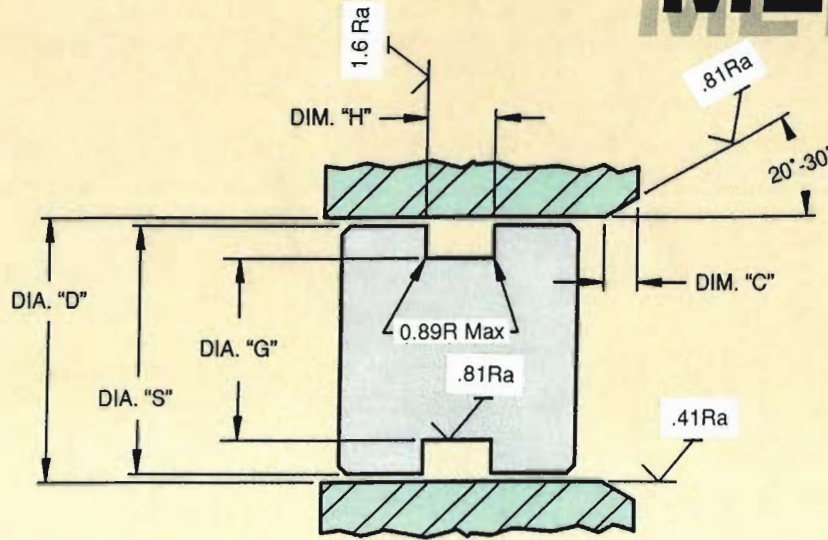
CTO-2329-CBANAD

CTO-2329CBANAD



CAP-T TECHNICAL DATA

METRIC



Note: "S" Diameter to be calculated using E1 or E2 clearance.

METRIC STANDARD "CTM" ES EUROPEAN

GLAND DIMENSIONS – ISO METRIC						(Dimensions in millimeters-mm)		
ES Series						European		
D BORE DIAMETER	ØD Tolerance Range	G GROOVE DIAMETER	ØG Tolerance Range	CAP-T C/S SERIES	H GROOVE WIDTH +0.25 -0.00	E1* Maximum Diametral Clearance		C Lead Chamfer
						Without Wear Rings	With Wear Rings	
25-74	+0.05/-0.0	ØD-10	+0.0/-0.05	5.0	8.0	0.15	0.64	4.5
75-124	+0.08/-0.0	ØD-15	+0.0/-0.08	7.5	12.0	0.20	0.76	5.0
125-405	+0.10/-0.0	ØD-20	+0.0/-0.10	10.0	16.0	0.25	0.89	5.0
406-560	+0.13/-0.0	ØD-25	+0.0/-0.13	12.5	20.0	0.25	0.89	7.5

METRIC STANDARD "CTM" MK ASIAN

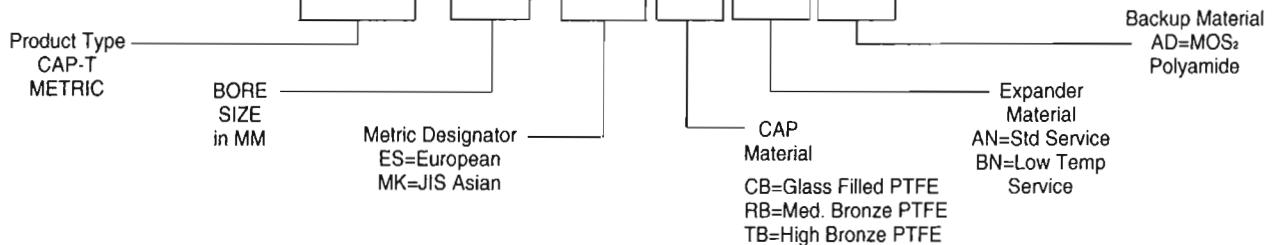
GLAND DIMENSIONS – JIS METRIC						(Dimensions in millimeters-mm)		
MK Series						Asian JIS		
50-60	+0.05/-0.0	ØD-14	+0.0/-0.05	7.0	9.0	0.20	0.64	4.5
65-90	+0.08/-0.0	ØD-15	+0.0/-0.08	7.5	11.0	0.20	0.64	5.0
95-120	+0.10/-0.0	ØD-15	+0.0/-0.10	7.5	12.5	0.20	0.76	5.0
125-245	+0.13/-0.0	ØD-23	+0.0/-0.13	11.5	16.0	0.25	0.89	6.5
250-320	+0.13/-0.0	ØD-28	+0.0/-0.13	14.0	17.5	0.25	0.89	7.5

*The HPS CAP-T can be used up to 410 Bar** when used with E1 Gap dimension. The HPS CAP-T can be used up to 310 Bar when used with E2 Gap dimension. **Pressure ratings are for general seal selection guidance. Customers should test for their specific application.

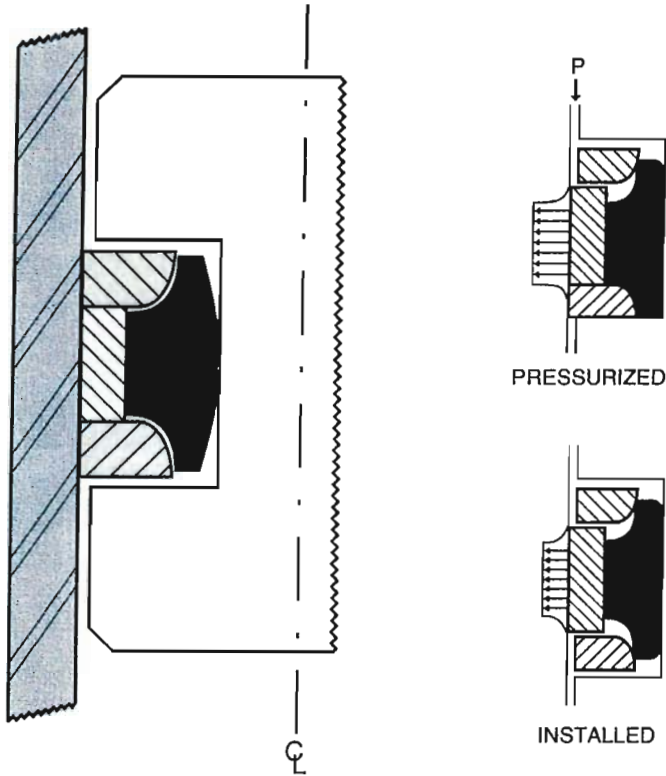
METRIC PART NUMBERING SYSTEM:

CTM-100-MKCBANAD

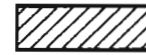
CTM-100-MKCBANAD



MORE CAP-T FEATURES & ADVANTAGES



Seal Ring



- Wide contact area minimizes shock/impact forces.
- Low frictional drag.
- Uniform loading against cylinder bore.
- Chemically inert.
- Bidirectional sealing design.
- Material reinforced for better abrasion/wear resistance.
- Available in variety of materials for various applications.

Backup Rings

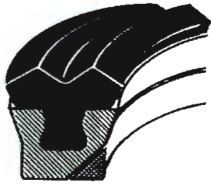


- Prevents cold flow of CAP & extrusion of expander.
- Prevents rolling and spiraling of seal in gland.
- Rectangular shape bridges large diametral clearance gaps.
- Radiused to prevent fatigue fracturing.
- Positively actuated for faster response to system pressure to close radial gaps.
- Protects Seal Ring from contaminants.
- Available in variety of materials for various applications.

Elastomeric Expander

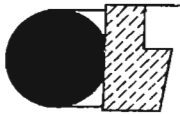


- Compression seal for positive sealing.
- Uniform continuous loading forces against cap seal ring.
- Low compression set for longer seal life.
- Resilient material for positive low pressure/temperature sealing.
- Radiused corners to prevent fatigue fracturing.
- Wide variety of expander materials.



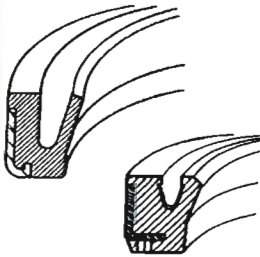
HYDRA-PACK

Multiple lip – High performance rod seal for low, medium and high pressure systems.



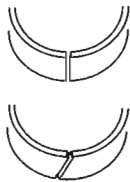
BFR BUFFER RING

PTFE cap seal which shields the primary rod seal from pressure spikes without trapping excessive pressure.



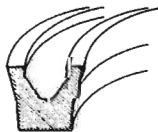
MC & MCS WIPERS

Heavy duty press fit wiper to scrape off heavy contaminants.

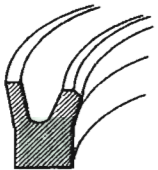


HYDRA-LON WEAR RING

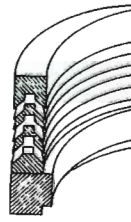
Prevents metal to metal contact. Reduces side loading and metal wear.



U-CUP

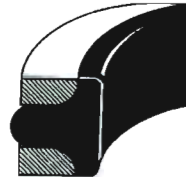


Symmetrical/asymmetrical unloaded lip seals for low, medium, and heavy-duty rod and piston applications.



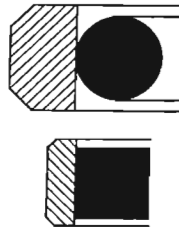
HYDRA-LOK

New generation bearing positive stack piston packing.



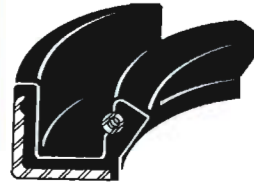
HYDRA-T

Full compression seal with anti-extrusion devices retrofit dynamic o-ring grooves.



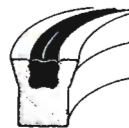
HYDRA-CAP

Square and rectangular PTFE piston rings with low frictional drag characteristics.



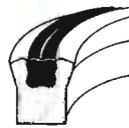
HPS OIL SEAL

Shaft seals to prevent oil/grease leakage in rotary applications.



POLYSEAL

Loaded lip seal for medium to heavy-duty fluid power applications.



Statements and recommendations in this publication are based on our experience and knowledge of typical applications for this product and shall not constitute a guarantee or warranty of performance nor modification or alteration of our standard product warranty which shall be applicable to such products.

Hydraulic Packing and Seal Products 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.