



World class
Hydraulic & Pneumatic
Products....

Service...Solution...Innovation...



S. L. SEALING SYSTEMS PVT.LTD

Company profiles

S.L.sealing system specializes in hydraulic and fluid sealing applications for industrial markets, including steel mills hydraulic presses, injection molding, and mobile hydraulic mining. The unique approach of combining custom designing seals with products from strategic partners such as Dupont. Enables us to provide a complete fluid sealing system for your applications.

As a technology leader in the field of hydraulic seals sealing system continues to invent in the research and development of products to meet the ever-increasing demand of our customers. The highly experienced engineering team is focused on solving your sealing problems, utilizing modern design tools and in house testing facilities. Our innovative approach to products designs, manufacturing techniques and customer service sets apart in the world of high performance sealing systems.

Striving to provide world-class service, sealing systems has developed proprietary manufacturing techniques to ensure product quality and delivery capabilities to meet your needs. Rapid prototyping and the short lead times for all products including large diameter hydraulic seals are one of our key strengths. Our sales and customer service team is on hand to hand to provide information on our complete product range.

Certificate of Registration

Registration Certificate

*This is to certify that
the Management Systems of*

**S.L. Sealing Systems
Private Limited**

*have been assessed by AJA Registrars and registered
against the requirements of*

ISO 9001:2008

Certificate No. : AJA12/16488 Date of Original Registration : 20/09/2005

Expiry Date : 19/12/2014 Date of Re-Registration : 19/12/2012



Registration
AJA Registrars, AJA Registrars



This certificate is issued in respect of the location & scope of registration detailed in the Associated Registration Schedule.
This certificate has been issued by AJA Registrars Limited Unit 6 Girdano Court Girdano Gate Business Park Salford Class Portland Bristol UK BS20 7FS

SERVICE SOLUTION INNOVATION

Definition of PTFE :

Poly tetra fluoro ethylene is a semi crystalline fluoro plastic belonging to the group belonging to the group of thermoplastics, although due to its extremely high viscosity, it cannot be moulded above its melt temperature as other thermoplastics can. Fluoride, from which the base consists of the mineral, calcium, fluoride, from which the monomeric tetra fluoro ethylene is obtained in a number of production steps. Initially gaseous, tetra fluoro ethylene is liquefied, purified and then polymerized. Thanks to its general properties, which form an optimum combination of many characteristics valuable in practical use, PTFE continually opens up new area of use. In addition to an extremely low co-efficient of friction, PTFE displays above all, a high degree of chemical resistance and excellent thermal properties.

Definition of NBR :

It is suggested for the biggest part of Sealing element applications and it has a very common use. Nitrile [NBR] is a Butadiene- Acylo Nitrile [ACN] is a polymer. At Sealing

Systems the percentage of CAN changes the volume gas permeability, elasticity and compression set of the compound used in mineral oils, grease & fuel. Our Standard nitrile Compound is recommended to be used below 30° C and + 105° C for short period of applications, it can be increased to + 120° C.

Definition of Silicon :

Silicon keeps its elasticity below 60°C and 200° C it is not recommended for dynamic applications. It has a good resistance against ozone, atmosphere and lubricants where as it has a less durability against oxidizing lubricants and some hipoits as well as lubricants of E.P. Type.

Definition of Viton :

This material under the trademark viton or flourel has durability against all types of greases, lubricants and solvents. And it has a good resistance against many chemicals. It functions very properly in vacuum systems and in case of applications requiring low gas permeability. Viton keeps its

elasticity below 30° C and +225° C.

PTFE PROCESSING:

Due to its unusually high melt viscosity above the crystalline melting range of 320 degree centigrade and 340 degree centigrade [max at 327 degree centigrade] PTFE must be processed with special procedures

SLIP BEHAVIOUR:

The extremely low intermolecular forces gives PTFE the lowest co-efficient of friction of all solid materials. Although the individual measured co-efficient of friction depends on factors such as pressure, working atmosphere, slip speed and opposing surface, as well as possible additional lubrication, the following general remarks hold true. The static and dynamic co-efficient of friction are the same for PTFE.

A Stick/slip effect does not occur. The co-efficient of friction increases with the strain, first quickly, and then slowly when the slip speed is increased to approximately to 50m/min, the co-efficient of friction rises, where as it remains almost constant when the

slip speed increases

ETHYLENE-PROPYLENEDIENE RUBBER (EPDM)

The temperature range is 40 degree centigrade and 145 degree centigrade. It has resistance against break fluids, steam, phosphate and Esther fluids.

Definition of polyurethane [P.U.]

It has a perfect durability against rupture, tear and wearing out in the temperature below -30°C and 100 °C and it has resistance to atmosphere and ozone. Its resistance to mineral oils, grease and aliphatic hydrocarbon is good. Especially, it is used as shaft stripper and high compressed sealing element.

Definition of Polyacetal [P.O.M.]

Among the hydraulic pneumatic systems it is most common material used. It has excellent form stability at elevated temperature up to 80° C. One of the most important features is its low water absorption. The temperature range is below 40° C and 140° C. for the Guide ring, POM filled with glass is used due to its high contact pressure value.

DESCRIPTION OF TEFLON

Teflon® is a registered trademark of Dupont and is used in relation to products manufactured with Dupont's fluoropolymer resins.

PTFE?

PTFE stands for PolyTetraFluoroEthylene, which is the chemical term for the polymer (CF₂)ⁿ.

Polytetrafluoroethylene (PTFE), (Dupont's trademark of Teflon®) is a thermoplastic member of the fluoropolymer family of plastics. PTFE has a low coefficient of friction, excellent insulating properties, and is chemically inert to most substances. It also can withstand high heat applications and it is well known for its anti-stick properties. Other trademarks, in addition to Dupont's trademark Teflon®, of PTFE resin and their manufacturer are:

The top four causes of hydraulic seal failure in cylinders

Hydraulic cylinder seals cost the manufacturer pennies. They are usually purchased on a low bid basis. But that simple, inexpensive hydraulic seal can cost you thousands in downtime and loss of production if it fails. If you have a problem seal, focus on these four points to help determine the cause of failure.

No. 1 - Improper installation is a major cause of hydraulic seal failure. The important things to watch during seal installation are: (a) cleanliness, (b) protecting the seal from nicks and cuts, and (c) proper lubrication. Other problem areas are over tightening of the seal gland where there is an adjustable gland follower or folding over a seal lip during installation. Installing the seal upside down is a common occurrence, too. The solution to these problems is common sense and taking reasonable care during assembly.

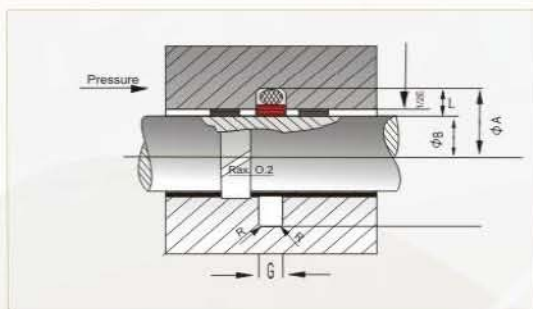
No. 2 - Hydraulic system contamination is another major factor in hydraulic seal failure. It is usually caused by external elements such as dirt, grit, mud, dust, ice and internal contamination from circulating metal chips, breakdown products of fluid, hoses or other degradable system components. As most external contamination

enters the system during rod retraction, the proper installation of a rod wiper/scrapper is the best solution. Proper filtering of system fluid can prevent internal contamination. Contamination is indicated by scored rod and cylinder bore surfaces, excessive seal wear and leakage - and sometimes tiny pieces of metal imbedded in the seal.

No. 3 - Chemical breakdown of the seal material is most often the result of incorrect material selection in the first place, or a change of hydraulic system fluid. Misapplication or use of non-compatible materials can lead to chemical attack by fluid additives, hydrolysis and oxidation-reduction of seal elements. Chemical breakdown can result in loss of seal lip interface, softening of seal durometer, excessive swelling or shrinkage. Discoloration of hydraulic seals can also be an indicator of chemical attack.

No. 4 - Heat degradation is to be suspected when the failed seal exhibits a hard, brittle appearance and/or shows a breaking away of parts of the seal lip or body. Heat degradation results in loss of sealing lip effectiveness through excessive compression set and/or loss of seal material. Causes of this condition may be use of incorrect seal material, high dynamic friction, excessive lip loading, no heel clearance and proximity to outside heat source. Correction of heat degradation problems may involve reducing seal lip interference, increasing lubrication or a change of the seal material. In borderline situations consider all upper temperature limits to be increased by 50 degrees F in hydraulic cylinder seals at the seal interface due to running friction caused by the sliding action of the lips.

ROD GLIDE RING



Bore diameter A / H10 Recommended diameter ranges			G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius	O-Ring AS / BS		E Diametral clearance	
Light SL 5045	Standard SL 5043	Heavy SL 5041					Series	Cross Section	0-200 bar	200-400 bar
8-18.9	3-7.9	8-18.9	2.2	2.45	B + 4.9	0.3-0.5	000	1.78	0.6-0.4	0.4-0.3
19-37.9	8-18.9	19-37.9	3.2	3.65	B + 7.3	0.5-0.8	100	2.62	0.8-0.5	0.5-0.3
38-199.9	19-37.9	38-199.9	4.2	5.35	B + 10.7	0.8-1.2	200	3.53	0.8-0.5	0.5-0.4
200-255.9	38-199.9	200-255.9	6.3	7.55	B + 15.1	1.2-1.5	300	5.33	1.0-0.6	0.6-0.4
256-649.9	200-255.9	256-649.9	8.1	10.25	B + 20.5	1.5-2.0	400	7.00	1.0-0.6	0.6-0.5
650-999.9	256-649.9	650-999.9	8.1	12.00	B + 24.0	1.5-2.0	400	7.00	1.2-1.0	0.8-0.6
	650-999.9		9.5	13.65	B + 27.3	2.0-3.0	500	8.40	1.4-1.0	1.0-0.7

Order example: SL 5043 0600 T-46 225 8307 N

Standard Series

Bore diameter x 10

Seal Material Code

O-ring Part No

O-ring Compound No

N = Side wall notches (Standard over 20mm bore)

Series :SL 5043(Standard)

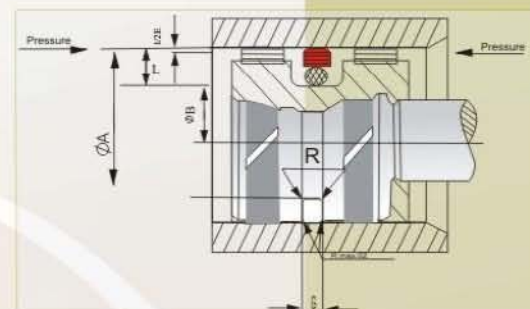
Bore diameter : 60mm

Material Code :T- 46

Side Wall Notches :N

Sealing systems glide rings are preferentialy utilised for sealing with stroke motions and have proved themselves especially in hydraulic applications. Depending on the choice of material, operating pressures of max 800 bar - even more with static stress, speed of max.15m/min and temperatures between -54 c and +200 c can be attained.

PISTON GLIDE RINGS EXTERNAL SEALING - DOUBLE ACTION



Bore diameter A / H10 Recommended diameter ranges			G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius	O-Ring AS / BS		E Diametral clearance	
Light SL 5046	Standard SL 5043	Heavy SL 5041					Series	Cross Section	0-200 bar	200-400 bar
15-39.9	8-14.9		2.2	2.45	A + 4.9	0.3-0.5	000	1.78	0.6-0.4	0.4-0.3
40-79.9	15-39.9		3.2	3.75	A + 7.3	0.5-0.8	100	2.62	0.8-0.5	0.5-0.3
80-132.9	40-79.9	15-39.9	4.2	5.50	A + 10.7	0.8-1.2	200	3.53	0.8-0.5	0.5-0.4
133-329.9	80-132.9	40-79.9	6.3	7.75	A + 15.1	1.2-1.5	300	5.33	1.0-0.6	0.6-0.4
330-669.9	133-329.9	80-132.9	8.1	10.50	A + 20.5	1.5-2.0	400	7.00	1.0-0.6	0.6-0.5
670-999.9	330-669.9	133-329.9	8.1	12.25	A + 24.0	1.5-2.0	400	7.00	1.2-1.0	0.8-0.6
	670-999.9	330-669.9	9.5	13.65	A + 27.3	2.0-3.0	500	8.40	1.4-1.0	1.0-0.7

Order example: SL 5044 0600 T-46 225 8307 N

Standard Series

Bore diameter x 10

Seal Material Code

O-ring Part No

O-ring Compound No

N = Side wall notches

Series :SL 5044(Standard)

Bore diameter : 60mm

Material Code :T- 46

Side Wall Notches :N

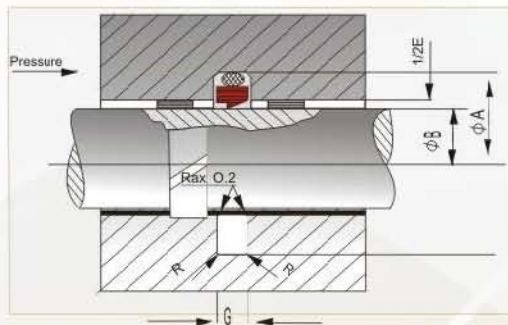
Advantages of sealing systems Glide Rings:

- High abrasion resistance.
- Excellent friction properties.
- No stick / slip effect.
- Working life is several times longer than that of common seals.
- Universally usable for nearly all lubricating and non-lubricating media.
- Optimised combinations of materials for special applications.
- One-piece pistons and cylinder heads are possible.

Fields of application:

- piston
- plunger & Rods with
- reciprocating motion.

ROD STEPPED GLIDE RING



Bore diameter A / H10 Recommended diameter ranges			G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius	O-Ring AS / BS		E Diametral clearance	
Light SL 5015	Standard SL 5013	Heavy SL 5011					Series	Cross Section	0-200 bar	200-400 bar
8-18.9	3-7.5	8-18.9	2.2	2.45	B + 4.9	0.3-0.5	000	1.78	0.3-0.4	0.4-0.3
19-37.9	8-18.9	19-37.9	3.2	3.65	B + 7.3	0.5-0.8	100	2.62	0.4-0.5	0.5-0.3
38-199.9	19-37.9	38-199.9	4.2	5.35	B + 10.7	0.8-1.2	200	3.53	0.3-0.5	0.5-0.4
200-255.9	38-199.9	200-255.9	6.3	7.55	B + 15.1	1.2-1.5	300	5.33	1.0-0.6	0.6-0.4
256-649.9	200-255.9	256-649.9	8.1	10.25	B + 20.5	1.5-2.0	400	7.00	1.0-0.6	0.6-0.5
650-999.9	256-649.9		8.1	12.00	B + 24.0	1.5-2.0	400	7.00	1.2-1.0	0.8-0.6
	650-999.9		9.5	13.65	B + 27.3	2.0-3.0	500	8.40	1.4-1.0	1.0-0.7

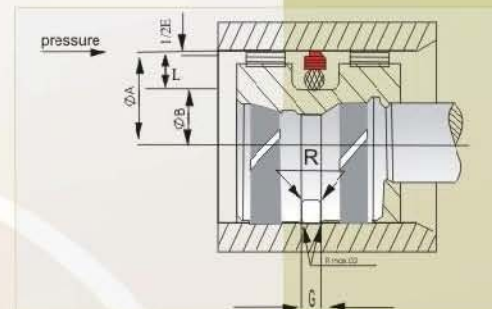
Order example: SL 5013 0300 T- 46 220 8307

Standard Series
Bore diameter x 10
Seal Material Code
O-ring Part No
O-ring Compound No

Series :SL 5013(Standard)
Bore diameter :30mm
Material Code :T- 46

Sealing systems glide rings are preferentialy. utilised for sealing with stroke motions and have proved themselves especially in hydraulic applications. Depending on the choice of material, operating pressures of max 800 bar - even more with static stress, speed of max.15m/min and temperatures between -54 c and +200 c can be attained.

PISTON STEPPED GLIDE RING



Piston Glide Rings
External Sealing - Double action

Bore diameter A / H10 Recommended diameter ranges			G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius	O-Ring AS / BS		E Diametral clearance	
Light SL 5016	Standard SL 5014	Heavy S. 5012					Series	Cross Section	0-200 bar	200-400 bar
15-39.9	8-14.9		2.2	2.45	A + 4.9	0.3-0.5	000	1.78	0.6-0.4	0.4-0.3
40-79.9	15-39.9		3.2	3.65	A + 7.3	0.5-0.8	100	2.62	0.8-0.5	0.5-0.3
80-132.9	40-79.9	15-39.9	4.2	5.35	A + 10.7	0.8-1.2	200	3.53	0.8-0.5	0.5-0.4
133-329.9	80-132.9	40-79.9	6.3	7.55	A + 15.1	1.2-1.5	300	5.33	1.0-0.8	0.6-0.4
330-669.9	133-329.9	80-132.9	8.1	10.25	A + 20.5	1.5-2.0	400	7.00	1.0-0.8	0.6-0.5
670-999.9	330-669.9	133-329.9	8.1	12.00	A + 24.0	1.5-2.0	400	7.00	1.2-1.0	0.8-0.6
	670-999.9	330-669.9	9.5	13.65	A + 27.3	2.0-3.0	500	8.40	1.4-1.0	1.0-0.7

Order example: SL 5014 1000 T- 48 340 8307

Standard Series
Bore diameter x 10
Seal Material Code
O-ring Part No
O-ring Compound No

Series :SL 5014(Standard)
Bore diameter :100mm
Material Code :T- 46

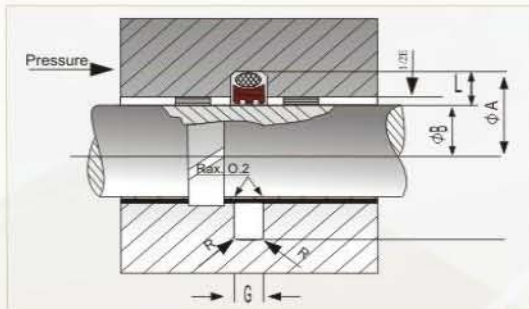
Advantages of sealing systems Glide Rings:

- High abrasion resistance.
- Excellent friction properties.
- No stick / slip effect.
- Working life is several times longer than that of common seals.
- Universally usable for nearly all lubricating and non-lubricating media.
- Optimised combinations of materials for special applications.
- One-piece pistons and cylinder heads are possible.

Fields of application:

- piston
- plunger & Rods with
- reciprocating motion.

ROTO GLIDE RING INTERNAL



Series	Ah10 Recommended bore diameter	G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius max	O-Ring AS / BS		E Diameter clearance	
						Series	Cross Section	0-150 bar	150-300 bar
SL 1770	19-39.9	2.2	2.45	B-4.9	0.3-05	000	1.78	0.4-0.25	0.25-0.15
SL 1771	40-69.9	3.2	3.75	B-7.5	0.5-0.8	100	2.62	0.6-0.40	0.40-0.20
SL 1772	70-139.9	4.2	5.50	B-11.0	0.8-1.2	200	3.53	0.6-0.40	0.40-0.20
SL 1773	140-399.9	6.3	7.75	B-15.5	1.2-1.5	300	5.33	0.8-0.55	0.55-0.30
SL 1774	400-649.9	8.1	10.50	B-21.0	1.5-2.0	400	7.00	0.8-0.55	0.55-0.30
SL 1775	650-999.9	9.5	14.00	B-28.0	2.0-3.0	500	8.40	1.2-0.85	0.85-0.50

Ordering example: SL 1772 1000 548 N

Standard Series

Rod diameter x10

Scrap compound Nr

N=Sidewall notches(standard)

ORDERING EXAMPLE (WITHOUT O-RING)

Series :SL 1772 (Standard)

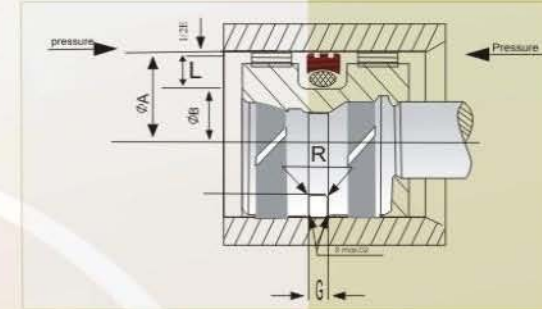
Bore Diameter : 100 mm
material Code : 548 (Tetralon 548)

Sidewall Notches : N

ROTO GLIDE RINGS

For Internal And External Sealing systems roto glide rings are preferentially utilized for sealing with turning movements like swivel joints. The roto glide ring design helps to prevent rotation between the seal and the 'O' ring. Depending on the choice of material, operating pressures of max 800bar with static stress, speed of max. 15m/min and temperatures - 60° C and + 200° C can be attained.

ROTO GLIDE RING EXTERNAL



Series	Ah10 Recommended bore diameter	G +0.2/-0 Groove width	L (Ref.)	B h 10 Groove diameter	R Radius max	O-Ring AS / BS		E Diameter clearance	
						Series	Cross Section	0-150 bar	150-300 bar
SL 1670	8-39.9	2.2	2.45	A-4.9	0.3-05	000	1.78	0.4-0.25	0.25-0.15
SL 1671	40-79.9	3.2	3.75	A-7.5	0.5-0.8	100	2.62	0.6-0.40	0.40-0.20
SL 1672	80-132.9	4.2	5.50	A-11.0	0.7-1.2	200	3.53	0.6-0.40	0.40-0.20
SL 1673	133-329.9	6.3	7.75	A-15.5	1.2-1.5	300	5.33	0.8-0.55	0.55-0.30
SL 1674	330-669.9	8.1	10.50	A-21.0	1.5-2.0	400	7.00	0.8-0.55	0.55-0.30
SL 1675	670-999.9	9.5	14.00	A-28.0	2.0-3.0	500	8.40	1.2-0.85	0.85-0.50

Ordering Example : SL 1671 0500 548 N

Standard Series

Bore diameter x 10 (size Nr)

Seal ring compound Nr

N= sidewall notches (standard)

ORDERING EXAMPLE (WITHOUT O-RING)

Series : SL 1671 (Standard)

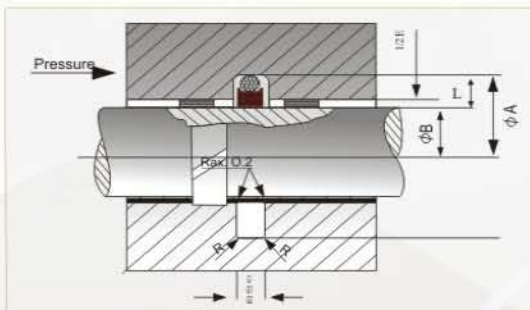
Bore Diameter : 50 mm
material Code : 548 (Tetralon 548)

Sidewall Notches : N

ADVANTAGES OF SEALING SYSTEMS ROTO GLIDE RINGS.

- 1.High abrasion resistance.
- 2.Excellent friction properties.
- 3.No stick/slip effect.
- 4.Universally usable for nearly all-lubricating and non lubricating media.
- 5.Optimized Combinations of materials for special applications.

DOUBLE DELTA INTERNAL



Series	G +0.2/-0 Groove width	Series	G1 +0.2/-0 Groove width	Series	G2 +0.2/-0 Groove width	Ah10 Recomm. Bore dia.	L (Ref.)	Bh9 Groove dia.	R Radius Max.	O-Ring AS / BS		E Diametral clearance
										Series	Cross Section	
SL 5403	2.4	SL 5413	3.8	SL 5423	5.2	4-9.9	1.45	B+2.9	0.4	000	1.78	0.13
	3.6		5.0		6.4	10-19.9	2.25	B+4.5	0.4	100	2.62	0.15
	4.8		6.2		7.6	20-39.9	3.10	B+6.2	0.6	200	3.53	0.15
	7.1		8.8		10.5	40-119.9	4.70	B+9.4	0.8	300	5.33	0.17
	9.5		12.0		14.5	120-400.9	6.10	B+12.2	0.8	400	7.00	0.23

Order example: SL 5403 0500 T-48 209 8307

Standard Series

Bore diameter x 10

Seal Material Code

O-ring Part No

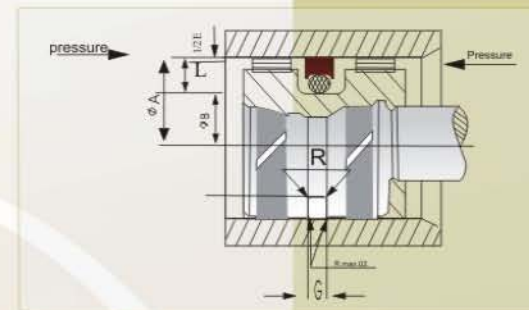
O-ring Compound No

Series :SL 5403
Bore diameter :50mm
Material Code :T- 48

sealing systems double delta rings are used for double -acting sealing element which is energized by an elastomer O- ring . The double delta seal can be fitted in existing O- ring grooves(us standard A 55b8A, MIL P- 5514) and demonstrates good friction properties, stick slip free starting and excellent dry-running , Double delta seal in used in light and medium duty industrial hydraulics.

Pressure of max 250 bar with static stress, speed of max 15 m/s and temperatures from -60.c and + 200.c can be attained.

DOUBLE DELTA EXTERNAL



Series	G +0.2/-0 Groove width	Series	G1 +0.2/-0 Groove width	Series	G2 +0.2/-0 Groove width	Ah10 Recomm. Bore dia.	L (Ref.)	Bh9 Groove dia.	R Radius Max.	O-Ring AS / BS		E Diametral clearance
										Series	Cross Section	
SL 5404	2.4	SL 5414	3.8	SL 5424	5.2	8-13.9	1.45	A-2.9	0.4	000	1.78	0.13
	3.6		5.0		6.4	14-24.9	2.25	A-4.5	0.4	100	2.62	0.15
	4.8		6.2		7.6	25-45.9	3.10	A-6.2	0.6	200	3.53	0.15
	7.1		8.8		10.5	46-124.9	4.70	A-9.4	0.8	300	5.33	0.17
	9.5		12.0		14.5	125-400.9	6.10	A12.2	0.8	400	7.00	0.23

Order example: SL 6201 0250 T-48 209 8307

Standard Series

Bore diameter x 10

Seal Material Code

O-ring Part No

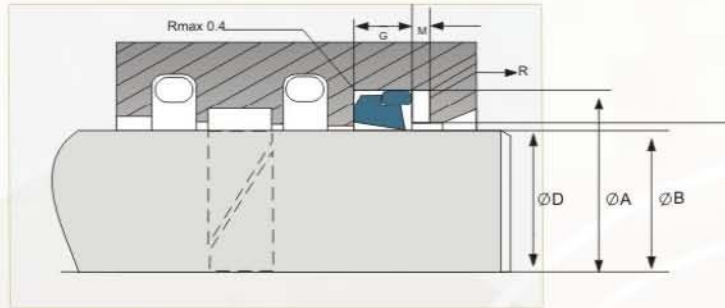
O-ring Compound No

Series :SL 6291
Bore diameter :32mm
Material Code :T- 46

Advantages.

1. Excellent friction properties.
2. No Stic / Slip effect.
3. Minimized break out forces.
4. Wear resistant.
5. Preferable Materials.

ROD SCRAPER-1



Series	BH9 Recomm Rod diameter	G +0.2/-0 Groove width	L (Ref.)	A H9 Groove Diameter	R Radius max	U-ring AS / IS			F Diametral	M Min
						Series	Ideal I.D.	Cross Section		
SL 5123	6-11.9	3.7	2.4	B + 4.8	0.4	000	B+2	1.78	B+2.7(+0.2/-0)	2
	12-64.9	5.0	3.4	B + 6.8	0.7	100	B+3	2.62	B+3.5(+0.2/-0)	2
	65-250.9	6.0	4.4	B + 8.8	1.0	200	B+4	3.53	B+4.0(+0.3/-0)	3
	251-420.9	8.4	6.1	B + 12.2	1.2	300	B+4	5.33	B+4.9(+0.3/-0)	3
	421-650.9	11.0	8.0	B + 16.0	1.5	400	B+5	7.00	B+5.2(+0.3/-0)	4
	651-999.9	14.0	10.0	B + 20.0	2.0	500	B+6	8.40	B+6.6(+0.5/-0)	5

Order example: SL 5123 0250 T-46 137 8307

Standard Series

Rod diameter x 10

Seal Material Code

O-ring Part No

O-ring Compound No

Series : SL 5123

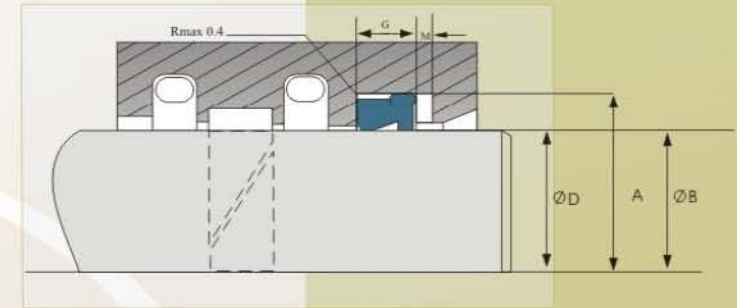
Bore diameter : 50mm

Material Code : T-46

Sealing System Rod Scraper is a Single . Acting seal which is comprised of a scraper Ring of Teflon grade Material and on 'O' Ring as energizer. This prevents rod seal damage and improves seal's service life by wiping external debris of rod surface.

Speed of max 15 m/s and temperatures -50.c and + 200.c can be attained.

ROD SCRAPER-2



Series	BH9 Recomm Rod diameter	G +0.2/-0 Groove width	L (Ref.)	A H9 Groove Diameter	R Radius max	U-ring AS / IS			n Diametral	M Min
						Series	Ideal I.D.	Cross Section		
SL 6200 6201 6202 6203 6204 6205	6-11.9	3.7	2.4	B + 4.8	0.4	000	B+2	1.78	B+1.5(+0.2/-0)	2
	12-64.9	5.0	3.4	B + 6.8	0.7	100	B+3	2.62	B+1.5(+0.2/-0)	2
	65-250.9	6.0	4.4	B + 8.8	1.0	200	B+4	3.53	B+1.5(+0.3/-0)	3
	251-420.9	8.4	6.1	B + 12.2	1.2	300	B+4	5.33	B+2.0(+0.3/-0)	3
	421-650.9	11.0	8.0	B + 16.0	1.5	400	B+5	7.00	B+2.0(+0.3/-0)	4
	651-999.9	14.0	10.0	B + 20.0	2.0	500	B+6	8.40	B+3.0(+0.5/-0)	5

Order example: SL 6201 0320 T-46 125 8307

Standard Series

Rod diameter x 10

Seal Compound No

O-ring Part No

O-ring Compound No

Series :SL 6291 (Standard)

Bore diameter :32mm

Material Code :T-46

Rob Scraper 2

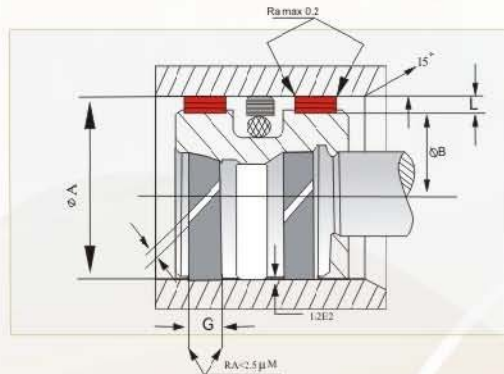
Sealing system Rod Scraper 2 is a double acting scraper seal fitted with on 'O' Ring as energizer which acts as an elastic pre stressing element. In this seal, the outer Lip acts as dirt scraper, keeping the surface of the Rod clean. The inner Lip acts like a seal keeping the oil film between the seal and the scraper.

Speed of max 15 m/s and temperatures -50.c and + 200.c

Advantages

High abrasion resistance a
Long services Life in compariton to rubber scrapers

PISTON WEAR RING



Series no.SL 5800	BRODIA	A GROOV DIA	L GROOVE DEPTH	G GROOVE WIDTH	R RADIUS	E1 DIAMETERAL CLEARANCE	E2 WEARRING THICKNESS	T WEARRING WIDTH
	H8	H9		+0.2 -0	MAX			
SL 5903	10-25	A-3	1.5	3.2		See clearance for the actual seal	0.4-1.0	1.5
SL 5904	20-40			4.2				4.0
SL 5906	25-80			6.3				6.1
SL 5908	40-270			8.1				7.9
SL 5909	40-320	A-5	2.5	9.7				9.5
SL 5915	125-900			15.0	0.3		0.5-2.0	14.8
SL 5920	230-900			20.0				19.5
SL 5925	300-900			25.0				24.5
SL 5930	330-999			30.0				29.5

Wear Guide

A special feature of PTFE Guiding Tapes from Sealing Systems is their high structural strength and unbeatable blocking resistance, even during dry running.

They offer excellent performance in pneumatic cylinders or during operation with pressure fluids that posses limited lubrication characteristics. Their friction co efficient depends upon various influences.

Sealing Systems PTFE Guiding Tapes are available by the meter or cut to length and grooved with guiding tapes cut to required length, the cutting angle of 45° or 60° already takes the clearance (G) into consideration.

A hallmark of Sealing Systems PTFE guiding tapes is their excellent blocking resistance. Metallic, "freezing" is prevented by the application of PTFE.

Guide ring strips that are cut to required length can be installed immediately without any special equipment.

Sealing systems guide ring strips are available in various width, thickness and materials, and are suitable for all piston and rod diameters. Sealing systems PTFE guide ring strips for piston and rods offer excellent chemical and thermic stability in both pneumatic and hydraulic cylinders.

Ordering example: STM-BO-56-324

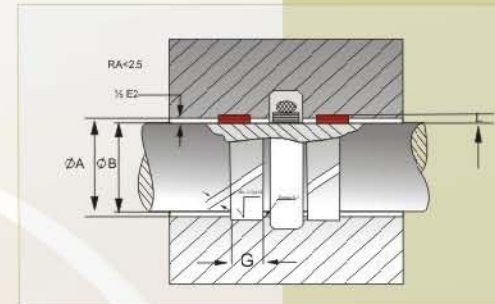
model

Rod Ø SD in mm

Material no.

0-ring-series	0-ring-dimensions internal	cordl
A	(SD+2)	x1.78
B	(SD+3.5)	x2.62
C	(SD+5)	x3.53
D	(SD+7)	x5.33
E	(SD+9.5)	x7.0
F	(SD+13)	x7.0
G	(SD+14.5)	x8.4

ROD WEAR RING



Series no.SL 5800	BRODIA	A GROOV DIA	L GROOVE DEPTH	G GROOVE WIDTH	R RADIUS	E1 DIAMETERAL CLEARANCE	E2 WEARRING THICKNESS	T WEARRING WIDTH
	H8	H9		+0.2 -0	MAX			
SL 5803	8-20	E+3	1.5	3.2		See clearance for the actual seal	0.4-1.0	1.5
SL 5804	15-35			4.2				4.0
SL 5806	20-75			6.3				6.1
SL 5808	30-250			8.1				7.9
SL 5809	35-300	E+5	2.5	9.7			0.5-2.0	9.5
SL 5815	120-900			15.0	0.3			14.8
SL 5820	200-900			20.0				19.5
SL 5825	300-900			25.0				24.5
SL 5830	300-999			30.0				29.5

Ordering example: STM-BO-56-324

model

Rod Ø SD in mm

Material no.

0-ring-series	0-ring-dimensions internal	cordl
A	(SD+2)	x1.78
B	(SD+3.5)	x2.62
C	(SD+5)	x3.53
D	(SD+7)	x5.33
E	(SD+9.5)	x7.0
F	(SD+13)	x7.0
G	(SD+14.5)	x8.4

Advantages Of Sealing Systems PTFE Guiding Tapes: -

1. Available by the meter or cut to application Length.
2. Excellent emergency operation characteristics
3. Low friction and Wear rate
4. No "Stick Slip" effect
5. Can be cut to suit any non standard piston or rod diameter.
6. Universal application for virtually all-lubricating and non Lubricating substances.

WEAR RING I.D.SERIES

This is used to ensure correct centering of piston in or rotating or application.it presents metal to metal contact between sliding part by resisting side loads from **transverse Forces**.

- ♦ **Advantages:**
 - Nostick slip due to Teflone Base \Rightarrow high temperature resistance and with minimum Static and Dynamic Friction
 - High load bearin capacity due to different filters \Rightarrow Absorbs mechanical vibrations.
 - Simple groove design and assembly \Rightarrow Cost effective and saves space.
- Absorbs loose patricles \Rightarrow Increases Seal's life.

Load capacity of different Teflon filled grade material:

WEARING	OPERATING TEMERATUER		FLASTWISE LOAD (MAX)		EDGEWISE LOAD(MAX)	
Material Code	Degree C	Degree F	N / cm2	PSI	N / cm2	PSI
PTFE + Bronze	50	122	125	187	45	652.5
PTEF + Carbon /	80	176	72	1044	27	391.5
Fabric + Epoxy + Graphite	50	122	72	1044	27	391.5
	80	176	45	652.5	18	261
	50	122	3717	53.910	1485	21,537.9

The number and size of of Weraing are to be used will depend upon the magnitude of the **Radial Forces** permissible, surface, unit load pressure and load bearing capacity of the wearing material. Depending uopn the length of the strok, diameter and other factors, you may have to use a combination of different wearings to achive an optimum guidance systems.

The projectede bearing area can be calculated on the base of the following formula:

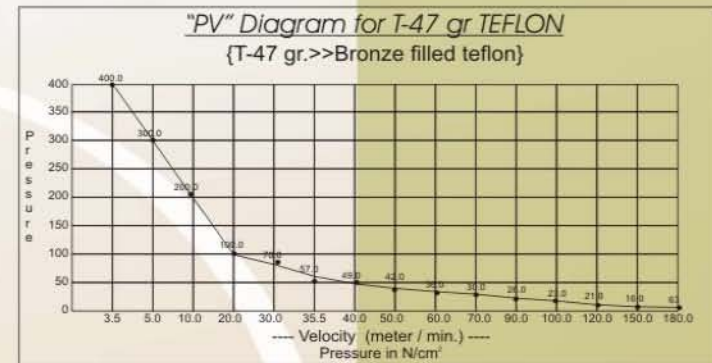
The projected Bearing Area - $T \times D = \frac{F}{P_r}$

Where, T = Total required axial of Wearing (in mm).
 D = Bore or Road Diameter (in mm)
 F = Required Load Capacity
 P_r = Allowable load capacity of the Specified Wearing -material (in N or KGF)

To find the required width of wearing

$$T \times D = \frac{F}{P_r}$$

WEAR RING



The above "PV" diagram indicates that the permissible load of T-47 grade wearing material (i.e. Bronze filled Teflon) strongly depends on the speed.

This relation is used to determine the width and the number of wearings for the Road Piston.

For Example:

Diameter = ϕ 100mm, =10cm.
 Average = 10 metres/min.
 Required = ca 1500 N

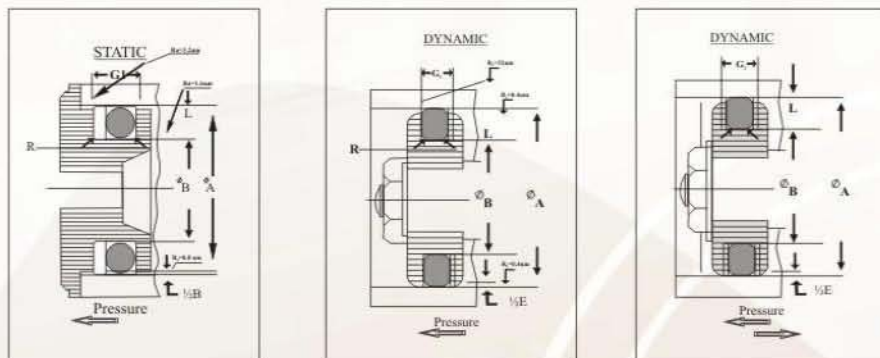
As per the PV diagram: $V = 10$ m/min. Corresponds to an allowable load of 200 N for T-47 wearing material.

Now the required axial width of the wearing is calculated by $T = \frac{F}{P_r \times D}$

$\Rightarrow T = \frac{1500}{200 \times 10} = 0.75\text{cm}$, is equal to wearing with 7.9 mm and groove width 8.1mm.

The required wearing width is normally split over two or more wearings, installed on either side of the seal.

BACK UP RING FOR BORE



SERIES NO.	A BORE DIA	Ø B GROOVE DIA	L DEPTH	G1 WIDTH	G2 WIDTH	R RADIAS	E CLEAR ANCE	W	T	DO
	F 8	+0.1-0		+0.2-0	+0.2-0	+0.2-0	Max.			
SL 5320	5-138	Ø A-2.9	1.45	3.6	5.0	0.3	0.12	1.45	1.4	1.78
SL 5321	7-225	Ø A-4.5	2.25	4.4	5.8	0.3	0.12	2.25	1.4	2.62
SL 5322	11-466	Ø A-6.2	3.10	5.3	6.7	0.6	0.15	3.10	1.4	3.53
SL 5323	20-670	Ø A-9.4	4.70	7.8	9.4	0.8	0.15	4.70	1.7	5.33
SL 5324	126-675	Ø A-12.2	6.10	10.5	13.0	1.30	0.18	6.10	2.5	7.00

ORDER EXAMPLE

Series : SL 5324
 Bore Diameter : 230 mm
 O-Ring cross selection (do):7.00 mm

PART NUMBER: SL 5324 2300 46 A

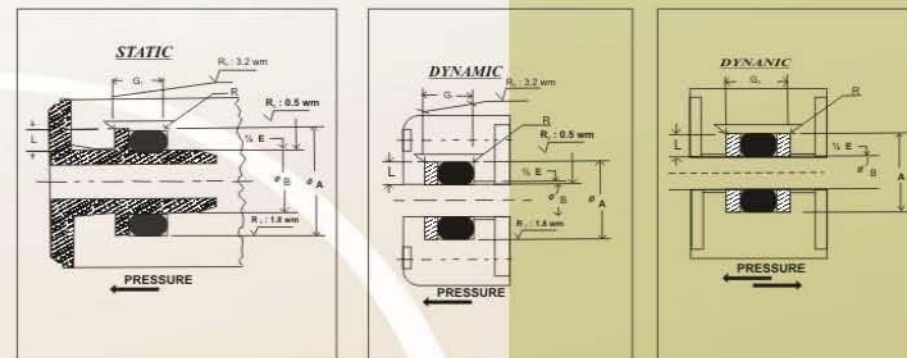
Standard Series _____

Bore diameter x 10 (size No.) _____

Standard Material PTFE _____

Angle cut (if required) _____

ROD BACK UP RING



SERIES NO.	A BORE DIA	Ø B GROOVE DIA	L DEPTH	G1 WIDTH	G2 WIDTH	R RADIAS	E CLEAR ANCE	W	T	DO
	F 8	+0.1-0		+0.2-0	+0.2-0	Max.	Max.			
SL 5300	2-135	Ø B+2.9	1.45	3.6	5.0	0.3	0.12	1.45	1.4	1.78
SL 5301	2-250	Ø B+4.5	2.25	4.4	5.8	0.3	0.12	2.25	1.4	2.62
SL 5302	5-460	Ø B+6.2	3.10	5.3	6.7	0.6	0.15	3.10	1.4	3.53
SL 5303	10-660	Ø B+9.4	4.70	7.8	9.4	0.8	0.15	4.70	1.7	5.33
SL 5304	114-660	Ø B+12.2	6.10	10.5	13.0	1.30	0.18	6.10	2.5	7.00

ORDER EXAMPLE

Series : SL 5302
 Rod Diameter : 25 mm
 O-Ring cross selection (do):3.53 mm
 Groove Depth: 2.5 mm

PART NUMBER: SL 5302 0250 46 A

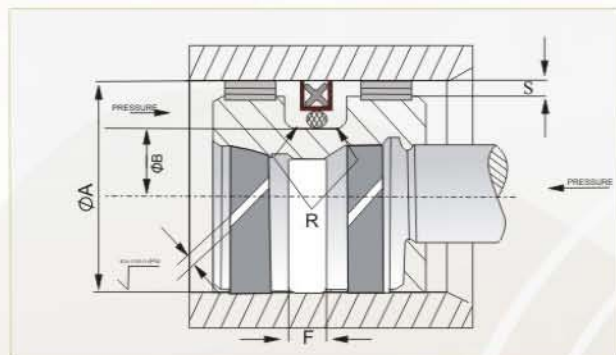
Standard Series _____

Bore diameter x 10 (size No.) _____

Standard Material PTFE _____

Angle cut (if required) _____

AQ SEAL



Series	O-ring		Quad-ring		Groove Dimensions		Radius R	Diametral clearance S max	
	Series	Cross section	Series	Cross section	Groove Ø B h9	Groove width F + 0.2		0-200 bar	200-400 bar
Heavy duty SL 5212 15-39.9 40-79.9	200	3.53	4000	1.78	A-11	4.2	07	0.6-0.3	0.3-0.1
	300	5.33	4000	1.78	A-15.5	6.3	1.2	0.8-0.4	0.4-0.2
	400	7.0	4100	2.6	A-21	1.5	1.5	0.8-0.4	0.4-0.2
SL 5222 80-132.9 133-252.9	400	7.0	4100	2.6	A24.5	1.5	1.5	1.0-1.5	0.5-0.3

Ordering example: SL 5212 1000 T-46 4153 366y

Standard Series
Bore diameter x 10
Seal Material Code
Quad Ring part no
Quad Ring Compound no
Series : SL 5212(Standard)
Bore diameter:100 mm
Material Code: T-46

PTFE O RING

Applications

Solid O.rings made of pure or modified PTFE are used for static sealing of corrosive or hot media and are utilised where ever elastomer O-rings behave critically of the PTFE materials ensure long-lasting & maintenance -free functioning, even under extreme conditions.

PTFE O-rings are, in addition, utilised as sealing elements for slow movements. In the context, they have the advantages of having less frictional loss thanks to the lack of the stick/slip effects.

In the above mentioned applications as well as with large differences in temperatures, it should be noted that the elasticity, which is substantially less than that of elastomer O-ring, must be compensated by additional mechanical contact pressure. The prerequisite for this is that the O-ring must be well installed in chambers in order to inhibit the cold flow tendency in event in the material.

The elasticity can be increased with thermal/chemical after treatment (quenching) or constrictional measures, (construction with recesses in the peripheral direction) there being different types, depending on the application, available for the later construction.

Materials.

The standard Orings from sealing systems are Manufactured with pure PTFE for special applications purposes, the material can be modified with fillers to optimise certain properties.

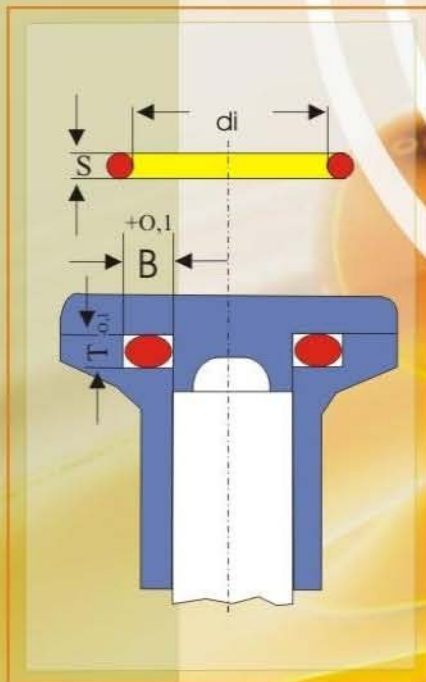
Installation & construction instruments:

In order to take the complete advantage of the properties inherent to the material, attention should be paid that PTFE O-rings are mounted carefully. Foreign particles such as dirt, dust or splinters reduce the longevity just much as the use of the tools with sharp edges or in sufficiently prepared materials.

Due to high degree of shape retention of PTFE, only limited expansion and compression is possible during assembly. During construction, there for be sure that the installation spaces are easily accessible.

PTFE O RING

Internal \varnothing di Above to	Cord thickness	Groove dimensions with depth
- 18 mm	2	2.1 - 1.9
18 - 65 mm	3	3.2 - 2.8
65 - 100 mm	4	4.3 - 3.8
100 - 180 mm	5	5.4 - 4.7
180 - 315 mm	6	6.5 - 5.7
315 - 1000 mm	7	7.6 - 6.6



PTFE DESIGN PARTS



PU SEALS



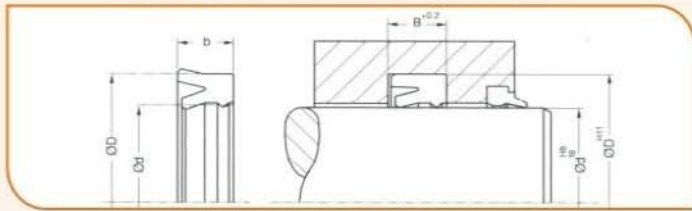
S23 PISTON NUTRING



KASTAS NO	NBR	PU	D	d	b	B
K23-014	•	•	14	6	8.0	9.0
K23-014/1	•	•	14	8	4.5	5.0
K23-015	•	•	15	9	8.0	9.0
K23-016	•	•	16	6	10	11
K23-016/5	•	•	16	8	5.5	6.5
K23-016/3	•	•	16	9	5.5	6.5
K23-016/1	•	•	16	10	4.0	4.5
K23-016/2	•	•	16	10	5.5	6.5
K23-016/4	•	•	16	10	8.0	9.0
K23-020/1	•	•	20	14	4.2	4.7
K23-020	•	•	20	14	5.5	6.5
K23-025/5	•	•	25	15	5.0	6.0
K23-025/1	•	•	25	18	5.0	6.0
K23-025/2	•	•	25	19	3.0	3.5
K23-025/3	•	•	25	19	6.0	7.0
K23-026	•	•	26	18	7.0	8.0
K23-028	•	•	28	16	9.0	10
K23-030/2	•	•	30	15	10	11
K23-030/1	•	•	30	20	7.0	8.0
K23-030	•	•	30	22	6.0	7.0
K23-032/2	•	•	32	22	5.0	6.0
K23-032/1	•	•	32	22	7.0	8.0
K23-032	•	•	32	24	5.5	6.5
K23-035	•	•	35	25	6.5	7.5
K23-035/1	•	•	35	25	7.0	8.0
K23-035/3	•	•	35	25	8.0	9.0
K23-036	•	•	36	28	7.0	8.0
K23-039	•	•	49	32	5.0	6.0
K23-040/4	•	•	40	28	10	11
K23-040/6	•	•	40	30	5.0	6.0
K23-040/3	•	•	40	30	6.0	7.0
K23-040/2	•	•	40	30	7.0	8.0
K23-043	•	•	43	35	9.0	10
K23-043/1	•	•	43	38	3.8	4.3
K23-045/2	•	•	45	35	6.0	7.0
K23-045/1	•	•	45	37	7.0	8.0
K23-045	•	•	45	38	6.0	7.0
K23-050/5	•	•	50	38	6.0	7.0
K23-050/4	•	•	50	40	5.0	6.0
K23-050/3	•	•	50	40	7.0	8.0
K23-050/6	•	•	50	42	10	11
K23-052	•	•	52	42	5.0	6.0
K23-055	•	•	55	45	7.0	8.0
K23-055/1	•	•	55	45	10	11
K23-056	•	•	56	46	7.0	8.0
K23-060/1	•	•	60	44	12	13
K23-060/3	•	•	60	50	7.0	8.0
K23-060/2	•	•	60	50	10	11

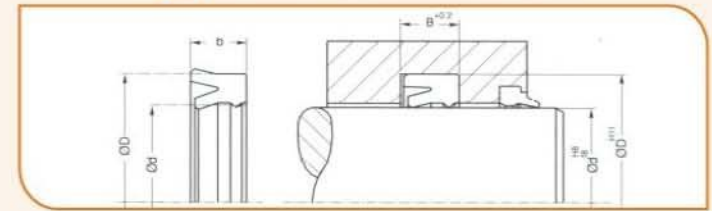
KASTAS NO	NBR	PU	D	d	b	B
K23-063/2	•	•	63	50	10	11
K23-063	•	•	63	53	6.0	7.0
K23-070/1	•	•	70	50	14	15
K23-070/3	•	•	70	58	8.5	9.5
K23-070/2	•	•	70	60	10	11
K23-070/4	•	•	70	62	8.0	9.0
K23-075	•	•	75	65	7.5	8.5
K23-080/7	•	•	80	64	8.0	9.0
K23-080/10	•	•	80	65	10	11
K23-080/3	•	•	80	68	8.5	9.5
K23-080/9	•	•	80	70	12	13
K23-080/6	•	•	80	72	12	13
K23-095	•	•	95.25	76.2	9.52	10.52
K23-100/4	•	•	100	84	8.0	9.0
K23-100	•	•	100	85	9.0	10
K23-100/7	•	•	100	85	12	13
K23-100/3	•	•	100	88	8.5	9.5
K23-100/8	•	•	100	90	6.5	7.5
K23-100/6	•	•	100	90	7.2	8.2
K23-10/1	•	•	100	90	8.5	9.5
K23-100/5	•	•	100	90	10.5	11.5
K23-110/1	•	•	110	90	15	16
K23-110	•	•	110	95	10	11
K23-112	•	•	112	98	9.0	10
K23-114	•	•	114.3	103.98	5.85	6.85
K23-115	•	•	115	100	6.0	7.0
K23-125	•	•	125	105	12	13
K23-125/6	•	•	125	105	15	16
K23-125/3	•	•	125	110	10	11
K23-125/5	•	•	125	115	7.2	8.2
K23-130	•	•	130	110	12	13
K23-140/2	•	•	140	120	15	16
K23-140	•	•	140	120	16	17
K23-140/3	•	•	140	125	9.0	10
K23-140/1	•	•	140	125	15	16
K23-145	•	•	145	130	10	11
K23-150	•	•	150	135	8.0	9.0
K23-160	•	•	160	140	14	15
K23-160/2	•	•	160	145	9.0	10
K23-160/1	•	•	160	145	14	15
K23-170/1	•	•	170	145	19	20
K23-170	•	•	170	148	15	16
K23-175	•	•	175	155	14	15
K23-180	•	•	180	160	9.0	10
K23-180/1	•	•	180	160	14	15
K23-200/3	•	•	200	170	18	19
K23-200	•	•	200	175	16	17
K23-200/1	•	•	200	180	14	15
K23-220	•	•	220	195	16	17
K23-220/1	•	•	220	200	15	16
K23-250	•	•	250	230	14	15
K23-250/2	•	•	250	230	15	16
K23-250/1	•	•	250	238	14	15
K23-300	•	•	300	270	12	13
K23-300/1	•	•	300	288	14	15
K23-330	•	•	330	310	12	13

K33 PU BOGAZ NUTRINGI PU RAD NUTRING



KASTAS NO	d	D	b	B
K33-014 PU	14	25	7.2	8.2
K33-016 PU	16	22	4.5	5.0
K33-020/2 PU	20	28	6.0	7.0
K33-020 PU	20	30	6.0	7.0
S33-020/1 PU	20	30	8.0	9.0
K33-020/3 PU	20	30	10	11
K33-022PU	22	30	7.0	8.0
K33-022 /3 PU	22	30	8.0	9.0
K33-022/1 PU	22	32	6.0	7.0
K33-022/2 PU	22	32	8.0	9.0
K33-025/2 PU	25	33	6.0	7.0
K33-025 PU	25	35	6.0	7.0
K33-025/3 PU	25	35	7.0	8.0
K33-025/1 PU	25	40	10	11
K33-028 PU	28	38	10	11
K33-030 /2 PU	30	40	7.0	8.0
K33-030 PU	30	40	8.0	9.0
K33-030/4 PU	30	40	10	11
K33-030/5 PU	30	42	10	11
K33-030/1 PU	30	45	9.0	10
K33-032 PU	30	45	10.	11
K33-032/1 PU	32	40	6.0	7.0
K33-032/2 PU	32	40	7.0	8.0
K33-032 PU	32	42	10	11
K33-035 PU	35	45	8.0	9.0
K33-035/1 PU	35	50	10	11
K33-036 PU	36	46	8.0	9.0
K33-036/1 PU	36	51	10	11
S33-036/2 PU	36	52	10	11
K33-040/2 PU	40	50	7.3	8.0
K33-040 PU	40	50	10	11
K33-040/1 PU	40	55	10	11
K33-040/3 PU	40	60	11.5	12.5
K33-045 PU	45	55	10	11
K33-045/1	45	60	10	11
K33-050/3PU	50	60	7.5	8.5
K33-050 PU	50	60	10	11
K33-050/2 PU	50	60	12	13
K33-050/1 PU	50	65	10	11
K33-055/1 PU	55	63	11.5	12.5
K33-055 PU	55	65	10	11

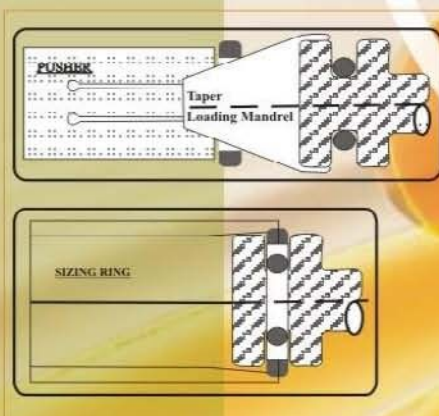
K33 PU BOGAZ NUTRINGI PU RAD NUTRING



KASTAS NO	d	D	B	b
K33-060 PU	60	80	12.0	13
K33-065 PU	65	75	10	11
K33-065/1 PU	65	75	11.5	12.5
K33-070/1 PU	70	78	11.5	12.5
K33-070 PU	70	80	12.0	13
K33-075/1 PU	75	83	11.5	12.5
K33-075 PU	75	85	12	13
K33-080/1 PU	80	88	11.5	12.5
K33-080 PU	80	90	12	13
K33-080/2 PU	80	95	11.5	12.5
K33-085/1 PU	85	93	12	13
K33-085 PU	85	95	12	13
K33-090/1 PU	90	98	11.5	12.5
K33-090/2 PU	90	100	10	11
K33-090 PU	90	100	12	13
K33-095/1 PU	95	103	11.5	12.5
K33-095 PU	95	105	12	13
K33-100/2 PU	100	108	11.5	12.5
K33-100/1 PU	100	110	11.5	12.5
K33-100/3 PU	100	115	11	12
K33-100 PU	100	115	12	13
K33-105/2 PU	105	113	11.5	12.5
K33-105 PU	105	115	12	13
K33-105/1 PU	105	120	10	11
K33-110 PU	110	118	11.5	12.5
K33-110/3 PU	110	125	11	12
K33-110/1 PU	110	125	12	13
K33-110/2 PU	110	130	15	16
K33-115 PU	115	125	12	13
K33-125/1 PU	125	145	15	16
K33-125 PU	125	150	14	15
K33-130 PU	130	145	9.0	10
K33-135 PU	135	145	11	13
S33-150 PU	150	170	14	15
S33-155 PU	155	165	12	13
K33-160 PU	160	170	12	13
K33-180 PU	180	200	15	16
K33-185 PU	185	195	12	13
K33-212 PU	212	222	12	13
K33-240 PU	240	260	15	16
K33-280 PU	280	310	18	19

GENERAL INSTRUCTIONS FOR INSTALLATION OF SEALS

1. Check groove dimensions before assembly of seals.
2. Cylinder and piston Rod should be chamfered with a 15° chamfer easy entry.
3. All sharp edges should be rounded off.
4. Any dust particles, splinters and other foreign particles to be removed carefully and grooves to be cleaned thoroughly.
5. Tools with sharp edges should NOT be used for assembly of the seals. Use only plastic tools.
6. Cylinder, Piston Rod and Seals must be oiled before assembly.
7. Always assemble Teflon seals with care to avoid nicks and scratches on the sealing surface.
8. Keep tools and Seals clean, contamination will cause leakage.
9. In case of closed groove configuration, loading tools are recommended for easy and accurate Assembly.
10. Good house keeping is always a very good practice.
11. In case of any doubt please contact us by fax or by phone; we shall be pleased to help you.



Hydraulic cylinders.



Sealing systems hydraulic cylinder.

- ☐ Designed to survive in destructive applications
- ☐ Repairable hydraulic cylinder with a removable rod cartridge.
- ☐ 25mm to 250 mm bore sizes.
- ☐ All standard metric mounting styles, piston rod diameters and thread sizes available.

Features	Advantages	Benefits
1. Needs and caps.	Square, precision-machined steel.	Assures concentricity of tube, bearing, cushion and piston rod.
2. Cylinder tube.	Cold drawn seamless tube precision honed in to 0.4 microns and hard chrome plated to 20-25 microns. Thicker walled tube than traditional low pressure cylinders.	Reduces wear on piston seals and tube i.d surface thicker wall provides Additional protection From leaks due to High pressure spikes. Hard corrosion resistance and minimizes tube Scoring.

Features	Advantages	Benefits
3. Piston	One- piece steel piston threaded onto piston rod, A dupoint- wear guide and teflon seal is located around the piston also.	Prvents oil leakage an d scoring of cylinder tube id. Anchored onto piston rod with minimum under cut providing maximum strength.
4. Fie rods	Cold drawn medium Carbon steel with rolled threads at each end	Provides maximum strength for connecting cylinder mounts. Lock nuts prevent loosening in service. Accurate torquing prevents leaks at tube seals.
5. Rod seals	Pre loaded polyurthane seal is positioned in a groove in the back end of the beaning cartridge id.	Pre-loaded seal provides positive. Static and dynamic sealing of piston rod at both high and low pressure.
6. Rod wiper	Sharp double lip pre-lubricated, nitrik seal provides additional sealing beyond road seal.additional material can be used to combat various application demounds, such as high heat.serve extreemal conditions could require the additiona of a metallic road scraper installed a head of the rod wiper to affactively provide dual protection from the elements.	Prevents dust, dirt & grit from entering the bearing cartridge and cylinder, which significantly extendas the cylinder life
7. Piston road	Medium carbon steel.precision ground, hard chrome plated to 20-25 Microms	Resists wear.Allmetric rod And threads sizes including female & studded make endes.are avialable with rolled threads.provides positive connection to exising machine copponents .solid male threads with readiused undercut, minimize rod end breakage.

Features	Advantages	Benefits
8. Ports	Optional ports sizes include flange ports, metric ports & over sized ports.	Universally adaptale toany hose or fitting.
9. Piston seals	Symmetrical, pre-loaded teflon, or polyurthane seal wear guide are standard are also available as an option.	Pre-loaded seal prevents oil leakage at low prevent leakage & prolability of real failure during high shock operating conditions.

Field service and engineering support

We understand the importance of the technical quistance and the available of products and repairparts that's why we ahve a technical representatives. You customer service department for help.

Complete repair facility

Sealing systems repairs all air and hydraulic cylinder makes and modess . Estimates are provide prior to repair activity.

FOOT SIDE LUG

METRIC HIGH PRESSURE HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

NOTE :

FOR OPTIONAL ROD THEADS CALL PENNINSULAR
FOR OPTIONAL PROXIMITY SWITCH CALL PENNINSULAR
U. S. PATENT : 4.726.282 AND D295.753.

* FOR PORT AND CUSION POITION REFER TO THE HOW TO ORDET PENINSULAR IHP SERIES HIGH PRESSURE METRIC HYDRAULIC CYLINDERS.

PENINSULAR "L" STYLE SHOWN										DIMENSIONS IN MILLIMETERS																			
BOND SIZE	ROD DIAMETER	6X10 THICKNESS WALL	ESP. MPT (INCHES)																										
			A	B	D	E	EE	ES	F	G	J	KB	LH	P	SB	SS	ST	SW	TS	US	VE	WF	XS	Y	ZB	ZJ			
40.0	18.0	M14 X 1.5	18.0	30.0	15.0	63.0	3/8	%	10.0	45.0	38.0	6.5	31.0	73.0	11.0	98.0	12.5	10.0	83.0	102.0	16.0	35.0	45.0	62.0	166.0	153.0			
	28.0	M20 X 1.5	28.0	42.0	22.0																								
	22.0	M16 X 1.5	22.0	34.0	18.0																								
50.0	28.0	M20 X 1.5	28.0	42.0	22.0	75.0	%	%	16.0	45.0	38.0	10.0	37.0	74.0	14.0	92.0	19.0	13.0	102.0	127.0	22.0	41.0	54.0	67.0	176.0	159.0			
	36.0	M27 X 2	36.0	50.0	30.0																								
	28.0	M20 X 1.5	28.0	42.0	22.0																								
63.0	36.0	M27 X 2	36.0	50.0	30.0	90.0	%	%	16.0	45.0	38.0	10.0	44.0	80.0	18.0	86.0	26.0	17.0	124.0	161.0	22.0	48.0	65.0	71.0	185.0	168.0			
	45.0	M33 X 2	45.0	60.0	39.0																								
	36.0	M27 X 2	36.0	50.0	30.0																								
80.0	45.0	M33 X 2	45.0	60.0	39.0	115.0	3/4	3/4	20.0	50.0	45.0	13.0	57.0	93.0	18.0	105.0	26.0	17.0	149.0	186.0	29.0	51.0	68.0	77.0	212.0	190.0			
	56.0	M42 X 2	56.0	72.0	48.0																								
	45.0	M33 X 2	45.0	60.0	39.0																								
100.0	56.0	M42 X 2	56.0	72.0	48.0	130.0	3/4	3/4	22.0	50.0	45.0	13.0	63.0	101.0	26.0	102.0	32.0	22.0	172.0	216.0	29.0	57.0	79.0	82.0	225.0	203.0			
	70.0	M48 X 2	70.0	88.0	62.0																								
	56.0	M42 X 2	56.0	72.0	48.0																								
125.0	70.0	M48 X 2	70.0	88.0	62.0	165.0	1	3/4	22.0	58.0	48.0	18.0	82.0	117.0	26.0	131.0	32.0	22.0	210.0	254.0	32.0	57.0	79.0	86.0	260.0	232.0			
	90.0	M60 X 3	90.0	108.0	80.0																								
	70.0	M48 X 3	70.0	88.0	62.0																								
160.0	90.0	M60 X 3	90.0	108.0	80.0	205.0	1	1	25.0	58.0	48.0	22.0	101.0	130.0	33.0	130.0	38.0	29.0	260.0	318.0	32.0	57.0	86.0	96.0	279.0	245.0			
	110.0	M80 X 3	110.0	132.0	100.0																								
	90.0	M60 X 3	90.0	108.0	80.0																								
200.0	110.0	M80 X 3	110.0	132.0	100.0	245.0	1 1/4	1 1/2	25.0	76.0	76.0	24.0	122.0	165.0	39.0	172.0	44.0	35.0	311.0	381.0	32.0	57.0	82.0	98.0	336.0	299.0			
	130.0	M100 X 3	130.0	156.0	120.0																								
	110.0	M80 X 3	110.0	132.0	100.0																								

TIE ROD EXTEND CAP END

METRIC HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

PENINSULAR "L" STYLE SHOWN			DIMENTIONS IN MILLIMETERS																	
BOND SIZE	ROD DIAMETER	KIX TDS LONGER MALE	A	AA	B	BB	D	DD	E	EE	ES	G	J	P	TG	VE	WF	WH	Y	ZJ
40.0	18.0	M14 X 1.5	18.0	59.0	30.0	35.0	15.0	M8 X 1	63.0	3/8	1/8	45.0	38.0	73.0	41.7	16.0	35.0	25.0	62.0	153.0
	28.0	M20 X 1.5	28.0		42.0		22.0									22.0				
	22.0	M16 X 1.5	22.0		34.0		18.0									22.0				
50.0	28.0	M20 X 1.5	28.0	74.0	42.0	46.0	22.0	M12 X 1.25	75.0	1/2	1/8	45.0	38.0	74.0	52.3	22.0	41.0	25.0	67.0	159.0
	36.0	M27 X 2	36.0		50.0		30.0									25.0				
	28.0	M20 X 1.5	28.0		42.0		22.0									22.0				
63.0	36.0	M27 X 2	36.0	91.0	50.0	46.0	22.0	M12X1.25	90.0	1/2	1/8	45.0	38.0	80.0	64.3	25.0	48.0	32.0	71.0	168.0
	45.0	M33 X 2	45.0		60.0		39.0									29.0				
	36.0	M27 X 2	36.0		50.0		30.0									25.0				
80.0	45.0	M33 X 2	45.0	117.0	60.0	59.0	39.0	M16 X 1.5	115.0	3/4	3/4	50.0	45.0	93.0	82.7	29.0	51.0	31.0	77.0	190.0
	56.0	M42 X 2	56.0		72.0		48.0									29.0				
	45.0	M33 X 2	45.0		60.0		39.0									29.0				
100.0	56.0	M42 X 2	56.0	137.0	72.0	59.0	48.0	M16 X1.5	130.0	3/4	3/4	50.0	45.0	101.0	96.9	29.0	57.0	35.0	82.0	203.0
	70.0	M48 X 2	63.0		88.0		62.0									32.0				
	56.0	M42 X 2	56.0		72.0		48.0									29.0				
125.0	70.0	M48 X 2	63.0	178.0	88.0	81.0	62.0	M22 X 1.5	165.0	1	3/4	58.0	58.0	117.0	125.9	32.0	57.0	35.0	86.0	232.0
	90.0	M64 X 3	85.0		108.0		80.0									32.0				
	70.0	M48 X 3	63.0		88.0		62.0									32.0				
160.0	90.0	M64 X 3	85.0	219.0	108.0	92.0	80.0	M27 X 2	205.0	1	1	58.0	58.0	130.0	154.9	32.0	57.0	32.0	86.0	245.0
	110.0	M80 X 3	95.0		133.0		100.0									32.0				
	90.0	M64 X 3	85.0		108.0		80.0									32.0				
200.0	110.0	M80 X 3	95.0	269.0	133.0	115.0	100.0	M30 X 2	245.0	1 1/4	1 1/2	76.0	76.0	165.0	190.2	32.0	57.0	32.0	98.0	299.0
	130.0	M90 X 3	123.0		133.0		100.0									32.0				
	140.0	N100 X 3	132.0		163.0		128.0									32.0				

IHP 1 (MX2)
ISO 6020 -

HEAD RECTANGULAR BLOCK FLANGE

METRIC HIGH PRESSURE HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

NOTE :
FOR OPTIONAL ROD THREADS CALL PENINSULAR
FOR OPTIONAL PROXIMITY SWITCH CALL PENINSULAR
U. S. PATENT : 4,726,282 AND D295,753.

* FOR PORT AND CUSION POITION REFER
TO THE HOW TO ORDET PENINSULAR IHP SERIES
HIGH PRESSURE METRIC HYDRAULIC CYLINDERS.

PENINSULAR "L" STYLE SHOWN			DIMENSIONS IN MILLIMETERS																			
BOND SIZE	ROD DIAMETER	HK THD LONGER WELD	BSP NPT (D-PORT) (INCHES)																			
			A	B	D	E	EE	ES	F	FB	G	J	P	R	RD	TF	UO	VE	WF	Y	ZB	ZJ
40.0	18.0	M14 X 1.5	18.0	30.0	15.0	63.0	3/8	%	10.0	11.0	45.0	38.0	73.0	41.0	62.0	87.0	110.0	16.0	35.0	62.0	166.0	153.0
	28.0	M20 X 1.5	28.0	42.0	22.0													22.0				
50.0	22.0	M16 X 1.5	22.0	34.0	18.0	75.0	1/2	%	16.0	14.0	45.0	38.0	74.0	52.0	74.0	105.0	130.0	22.0	41.0	67.0	176.0	159.0
	28.0	M20 X 1.5	28.0	42.0	22.0													22.0				
63.0	36.0	M27 X 2	36.0	50.0	30.0	90.0	%	%	16.0	14.0	45.0	38.0	80.0	65.0	75.0	117.0	145.0	25.0	48.0	71.0	185.0	168.0
	45.0	M33 X 2	45.0	60.0	39.0										88.0			29.0				
80.0	36.0	M27 X 2	36.0	50.0	30.0	115.0	3/4	3/4	20.0	18.0	50.0	45.0	93.0	83.0	82.0	149.0	180.0	25.0	51.0	77.0	212.0	190.0
	45.0	M33 X 2	45.0	60.0	39.0										82.0			29.0				
100.0	56.0	M42 X 2	56.0	72.0	48.0										105.0			29.0				
	45.0	M33 X 2	45.0	60.0	39.0	130.0	3/4	3/4	22.0	18.0	50.0	45.0	101.0	97.0	92.0	162.0	200.0	29.0	57.0	82.0	225.0	203.0
125.0	70.0	M48 X 2	70.0	88.0	62.0										125.0			32.0				
	90.0	M64 X 3	90.0	108.0	80.0	165.0	1	3/4	20.0	22.0	58.0	58.0	117.0	126.0	105.0	208.0	250.0	32.0	57.0	86.0	260.0	232.0
160.0	90.0	M64 X 2	90.0	88.0	62.0										150.0			32.0				
	110.0	M80 X 3	110.0	133.0	100.0	205.0	1	1	22.0	26.0	58.0	58.0	130.0	155.0	125.0	253.0	300.0	32.0	57.0	86.0	279.0	245.0
200.0	110.0	M80 X 3	110.0	133.0	100.0										170.0			32.0				
	140.0	M100 X 3	140.0	163.0	128.0	245.0	1 1/4	1 1/2	25.0	33.0	76.0	76.0	165.0	190.0	150.0	300.0	360.0	32.0	57.0	98.0	336.0	299.0

IHP 28 (ME5)
ISO 6020 - 2

CAP RECTANGULAR BLOCK FLANGE

METRIC HIGH PRESSURE HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

NOTE :
FOR OPTIONAL ROD THREADS CALL PENINSULAR
FOR OPTIONAL PROXIMITY SWITCH CALL PENINSULAR
U. S. PATENT : 4,726,282 AND D295,753.

* FOR PORT AND CUSION POITION REFER
TO THE HOW TO ORDET PENINSULAR IHP SERIES
HIGH PRESSURE METRIC HYDRAULIC CYLINDERS.

PENINSULAR "L" STYLE SHOWN			DIMENSIONS IN MILLIMETERS																			
BOND SIZE	ROD DIAMETER	SKT THD LONGER WELD	A	B	D	E	EE	ES	F	FB	G	J	KB	P	R	TF	UO	VE	WF	Y	ZJ	
40.0	18.0	M14 X 1.5	18.0	30.0	15.0	63.0	3/8	1/2	10.0	11.0	45.0	38.0	6.5	73.0	41.0	87.0	110.0	16.0	35.0	62.0	153.0	
	22.0	M16 X 1.5	22.0	34.0	18.0													22.0				
	28.0	M20 X 1.5	28.0	42.0	22.0	75.0	1/2	3/4	16.0	14.0	45.0	38.0	10.0	74.0	52.0	105.0	130.0	22.0	41.0	67.0	159.0	
50.0	36.0	M27 X 2	36.0	50.0	30.0													25.0				
	28.0	M20 X 1.5	28.0	42.0	22.0													22.0				
	36.0	M27 X 2	36.0	50.0	30.0	90.0	3/4	1	16.0	14.0	45.0	38.0	10.0	80.0	65.0	117.0	145.0	25.0	48.0	71.0	168.0	
63.0	45.0	M33 X 2	45.0	60.0	39.0													29.0				
	36.0	M27 X 2	36.0	50.0	30.0													25.0				
	45.0	M33 X 2	45.0	60.0	39.0	115.0	3/4	3/4	20.0	18.0	50.0	45.0	13.0	93.0	83.0	149.0	180.0	29.0	51.0	77.0	190.0	
80.0	56.0	M42 X 2	56.0	72.0	48.0													29.0				
	45.0	M33 X 2	45.0	60.0	39.0													29.0				
	56.0	M42 X 2	56.0	72.0	48.0	130.0	3/4	3/4	22.0	18.0	50.0	45.0	13.0	101.0	97.0	162.0	200.0	29.0	57.0	82.0	203.0	
100.0	70.0	M48 X 2	70.0	88.0	62.0													32.0				
	56.0	M42 X 2	56.0	72.0	48.0													29.0				
	70.0	M48 X 2	70.0	88.0	62.0	165.0	1	3/4	22.0	22.0	58.0	58.0	18.0	117.0	126.0	208.0	250.0	32.0	57.0	86.0	232.0	
125.0	90.0	M64 X 3	90.0	108.0	80.0													32.0				
	70.0	M48 X 2	70.0	88.0	62.0													32.0				
	90.0	M64 X 3	90.0	108.0	80.0	205.0	1	1	25.0	26.0	58.0	58.0	22.0	130.0	155.0	253.0	300.0	32.0	57.0	86.0	245.0	
160.0	110.0	M80 X 3	110.0	133.0	100.0													32.0				
	90.0	M64 X 3	90.0	108.0	80.0													32.0				
	110.0	M80 X 3	110.0	133.0	100.0	245.0	1 1/4	1 1/2	25.0	33.0	76.0	76.0	24.0	165.0	190.0	300.0	360.0	32.0	57.0	98.0	299.0	
200.0	140.0	M100 X 3	140.0	163.0	128.0													32.0				
	160.0	M110 X 3	160.0	183.0	143.0													32.0				

IHP 29 (ME5)
ISO 6020 - 2

TIE ROD EXTEND HEAD END

METRIC HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

NOTE :
FOR OPTIONAL ROD THEADS CALL PENNINSULAR
FOR OPTIONAL PROXIMITY SWITCH CALL PENNINSULAR
U. S. PATENT : 4,726,282 AND D295,753.

* FOR PORT AND CUSION POITION REFER
TO THE HOW TO ORDET PENINSULAR IHP SERIES
HIGH PRESSURE METRIC HYDRAULIC CYLINDERS.

PENINSULAR "L" STYLE SHOWN								DIMENSIONS IN MILLIMETERS															
BOND SIZE	ROD DIAMETER	ROD THD. LONGER BALL	BSP NPT G-PORT (INCHES)																				
			A	AA	B	BB	D	DD	E	EE	ES	G	J	P	TG	VE	WF	WH	Y	ZJ			
40.0	18.0	M14 X 1.5	18.0	59.0	30.0	35.0	15.0	M8 X1	63.0	3/8	1/2	45.0	38.0	73.0	41.7	16.0	35.0	25.0	62.0	153.0			
	28.0	M20 X 1.5	28.0		42.0		22.0									22.0							
	22.0	M16 X 1.5	22.0		34.0		18.0									22.0							
50.0	28.0	M20 X 1.5	28.0	74.0	42.0	46.0	22.0	M12 X1.25	75.0	1/2	3/4	45.0	38.0	74.0	52.3	22.0	41.0	25.0	67.0	159.0			
	36.0	M27 X 2	36.0		50.0		30.0									22.0					25.0		
	28.0	M20 X 1.5	28.0		42.0		22.0									22.0							
63.0	36.0	M27 X 2	36.0	91.0	50.0	46.0	30.0	M12X1.25	90.0	1/2	3/4	45.0	38.0	80.0	64.3	25.0	48.0	32.0	71.0	168.0			
	45.0	M33 X 2	45.0		60.0		39.0									29.0					29.0		
	36.0	M27 X 2	36.0		50.0		30.0									22.0					22.0		
80.0	45.0	M33 X 2	45.0	117.0	60.0	59.0	39.0	M16 X 1.5	115.0	3/4	3/4	50.0	45.0	93.0	82.7	29.0	51.0	31.0	77.0	190.0			
	56.0	M42 X 2	56.0		72.0		48.0									29.0					29.0		
	45.0	M33 X 2	45.0		60.0		39.0									29.0					29.0		
100.0	56.0	M42 X 2	56.0	137.0	72.0	59.0	48.0	M16 X1.5	130.0	3/4	3/4	50.0	45.0	101.0	96.9	29.0	57.0	35.0	82.0	203.0			
	70.0	M48 X 2	70.0		88.0		62.0									32.0					32.0		
	56.0	M42 X 2	56.0		72.0		48.0									29.0					29.0		
125.0	70.0	M48 X 2	70.0	178.0	88.0	81.0	62.0	M22 X 1.5	165.0	1	3/4	58.0	58.0	117.0	125.9	32.0	57.0	35.0	86.0	232.0			
	90.0	M64 X 3	90.0		108.0		80.0									32.0					32.0		
	70.0	M48 X 3	70.0		88.0		62.0									32.0					32.0		
160.0	90.0	M64 X 3	90.0	219.0	108.0	92.0	80.0	M27 X 2	205.0	1	1	58.0	58.0	130.0	154.9	32.0	57.0	32.0	86.0	245.0			
	110.0	M80 X 3	110.0		133.0		100.0									32.0					32.0		
	90.0	M64 X 3	90.0		108.0		80.0									32.0					32.0		
200.0	110.0	M80X 3	95.0	269.0	133.0	115.0	109.0	M30 X 2	245.0	1 1/4	1 1/2	76.0	76.0	165.0	190.2	32.0	57.0	32.0	98.0	299.0			
	140.0	M100 X 3	112.0		163.0		128.0									32.0							

IHP 8 (Mx3) ISO 6020 - 2

IHP 8 (MX3)
ISO 6020 - 2

FIXED REAR CLEVIS

METRIC HYDRAULIC CYLINDER
WORKING PRESSURE - 210 BAR (3000 PSI)

NOTE :
FOR OPTIONAL ROD THEADS CALL PENNINSULAR
FOR OPTIONAL PROXIMITY SWITCH CALL PENNINSULAR
U. S. PATENT : 4,726,282 AND D295,753.

* FOR PORT AND CUSION POITION REFER
TO THE HOW TO ORDET PENINSULAR IHP SERIES
HIGH PRESSURE METRIC HYDRAULIC CYLINDERS.

PENINSULAR "L" STYLE SHOWN												DIMENTIONS IN MILLIMETERS													
BOND SIZE	ROD DIAMETER	K&T TUBE LONGER BALL	BSP G-PORT (INCHES)																						
			A	B	CB	CD	CW	D	E	EE	ES	F	G	J	L	MR	P	VE	WF	WH	XC	Y	ZC	ZJ	
40.0	18.0	M14 X 1.5	18.0	30.0	20.0	14.0	10.0	15.0	63.0	3/8	1/2	10.0	45.0	38.0	19.0	14.0	73.0	16.0	35.0	25.0	172.0	62.0	186.0	153.0	
	28.0	M20 X 1.5	28.0	42.0				22.0										22.0							
	22.0	M16 X 1.5	22.0	34.0				18.0										22.0							
50.0	28.0	M20 X 1.5	28.0	42.0	30.0	20.0	15.0	22.0	75.0	1/2	3/4	16.0	45.0	38.0	32.0	20.0	74.0	22.0	41.0	25.0	191.0	67.0	211.0	159.0	
	36.0	M27 X 2	36.0	50.0				30.0										25.0							
	28.0	M20 X 1.5	28.0	42.0				22.0										22.0							
63.0	36.0	M27 X 2	36.0	50.0	30.0	20.0	15.0	30.0	90.0	3/4	1	16.0	45.0	38.0	32.0	20.0	80.0	25.0	48.0	32.0	200.0	71.0	220.0	168.0	
	45.0	M33 X 2	45.0	60.0				39.0										29.0							
	36.0	M27 X 2	36.0	50.0				30.0										29.0							
80.0	45.0	M33 X 2	45.0	60.0	40.0	28.0	20.0	30.0	115.0	3/4	3/4	20.0	50.0	45.0	39.0	28.0	93.0	29.0	51.0	31.0	229.0	77.0	257.0	190.0	
	56.0	M42 X 2	56.0	72.0				48.0										29.0							
	45.0	M33 X 2	45.0	60.0				39.0										29.0							
100.0	56.0	M42 X 2	56.0	72.0	50.0	36.0	25.0	48.0	130.0	3/4	3/4	22.0	50.0	45.0	54.0	36.0	101.0	29.0	57.0	35.0	257.0	82.0	293.0	203.0	
	70.0	M48 X 2	70.0	88.0				62.0										32.0							
	56.0	M42 X 2	56.0	72.0				48.0										29.0							
125.0	70.0	M48 X 2	70.0	88.0	60.0	45.0	30.0	62.0	165.0	1	3/4	22.0	58.0	58.0	57.0	45.0	117.0	32.0	57.0	35.0	289.0	86.0	334.0	232.0	
	90.0	M54 X 3	90.0	108.0				80.0										32.0							
	70.0	M48 X 3	70.0	88.0				62.0										32.0							
160.0	90.0	M64 X 3	90.0	108.0	70.0	56.0	35.0	80.0	205.0	1	1	25.0	58.0	58.0	63.0	56.0	130.0	32.0	57.0	32.0	308.0	86.0	364.0	245.0	
	110.0	M80 X 3	90.0	108.0				100.0										32.0							
	90.0	M64 X 3	90.0	108.0				80.0										32.0							
200.0	110.0	M80 X 3	90.0	108.0	80.0	70.0	40.0	100.0	245.0	1 1/4	1 1/2	25.0	76.0	76.0	82.0	70.0	165.0	32.0	57.0	32.0	381.0	98.0	451.0	299.0	
	140.0	M100 X 3	112.0	163.0				128.0										32.0							
	90.0	M64 X 3	90.0	108.0				80.0										32.0							