

■ HiPerSeal 簡介

培凱公司所設計生產的 **HiPerSeal** 是一種 U 型鐵氟龍內裝特殊彈簧的高性能密封件，由適當的彈簧力加上系統流體壓力，將密封唇(面)頂出而輕輕壓住被密封的金屬面以產生非常優異的密封效果。彈簧的致動效應可以克服金屬配合面的輕微偏心以及密封唇的磨耗，而持續保有預期的密封性能。

■ What is HiPerSeal?

PARJET'S **HiPerSeal** is a U-shape spring energized seals function with single acting sealing element. The spring which energizes the PTFE jacket actuates the sealing legs(lips) of the seal. The system pressure assists the spring in creating a leak tight seal between the sealing lips and the mating metal parts. The springs assist in slight misalignment, jacket wear, and maintaining a consistent sealing pressure against the desired target.



鐵氟龍 (PTFE) 是一種耐化學性比全氟橡膠優異，耐熱性良好的密封材料，可應用於絕大多數的化學流體、溶劑、以及液壓油、潤滑油，其膨潤性 (compression set) 很小故可長期發揮密封性能，而 **HiPerSeal** 更利用各種特殊彈簧來克服鐵氟龍或其他高性能橡膠塑料的彈性問題，開發出可取代絕大數應用於靜態或動態(往復或旋轉運動) 的密封件，使用溫度範圍可由冷媒至 300°C，壓力由真空至超高壓力 700kg/cm²，移動速度高達 20m/s，而彈簧可因應不同的使用環境，選用不銹鋼、Elgiloy® Hastelloy 等，故可應用於各種高溫腐蝕流體的場合。

HiPerSeal has been designed specially to overcome the problems associated with PTFE composite or other high performance plastics like UHMW-PE and elastomer. They are suitable for static, rotary, and reciprocating application in temperatures from cryogenic to 300°C, pressure from vacuum to 700kg/cm², and speed up to 20m/s, to survive the most corrosive environment.



Three different types of spring energizer are made from corrosion resistant metal alloys such as stainless steel, Elgiloy® and Hastelloy to meet most serious corrosive and high temperature application.

HiPerSeal 可依 **AS 568A** 標準O型環溝槽(如徑向軸封、活塞密封、軸向的面密封等)製作，完全取代一般的O形環，因無膨潤性的困擾，故可長期保持良好的密封性能。例如應用於石化製程高溫腐蝕環境的機械軸封，最常見的洩漏原因除了滑動環的不均勻磨耗外，O形環的劣化損傷也是主因，改用**HiPerSeal** 後可完全改善橡膠軟化、膨潤、表面粗化、磨耗等問題，因而大幅提升機械軸封的使用壽命。

Standard **HiPerSeal** are precisely machined to fit **AS 568A** glands in radial rod, piston and axial face-seal configurations. **HiPerSeals** can replace most of O-ring used in mechanical seal and extend total sealing performance and service life in very aggressive chemical, petrochemical process.

HiPerSeal 動靜皆宜，除了上述的高溫腐蝕環境的密封應用外，因其具有密封唇摩擦係數低、密封接觸壓力穩定、耐壓力高、容許較大的徑向偏擺(radial run-out)及溝槽尺寸誤差，故非常適用於空油壓缸的密封件，取代U形或V形迫緊而獲得優異的密封性能與使用壽命。

HiPerSeal are used in dynamic and static applications where elastomer seals cannot meet the extreme operating conditions of harsh environment. Furthermore, **HiPerSeals** can be a very effective alternative solution to replace any V or U packing set applied in hydraulic components where low friction, high lateral load, corrosive or steam environment are required.

自從兩岸加入WTO以來，國內產業不但致力於產品創新與生產效率提升，也希望進一步改善設備生命周期成本(Life Cycle Cost)或平均維修周期(MTBR)以降低成本，進而提升國際競爭力。昭津公司多年來本著與客戶共同成長的一貫思維，不惜投入巨資引進國外最先進的密封件專用加工機，內建百種以上各式標準型密封件(但尺寸可依客戶需求製造)，絕大多數的密封件可在24小時內交貨，不僅得以充分支援緊急搶修，亦可大幅降低客戶的庫存成本，同時，也可配合客戶的特殊規格或研發量身定做。而彈簧致動 PTFE 密封件的開發，更能顯示培凱公司經營願景「滿足客戶對長壽命、高性能密封件的即時需求」，以及「誠心、用心、創新」的經營理念。

Parjet always does his best to introduce the most innovative and cost-effective sealing solutions to local customers to help them conquer every difficult sealing problem. Thanks to latest seal-making CNC machine and well-proved worldwide material resource, Parjet can produce a spring energized seal specifically meeting your requirements very quickly. This would be the best way for our commitment "To provide excellent sealing performance with extended service life by our sincere effort" to all our customers.

■ 主要應用：

HiPerSeal 係針對高溫腐蝕、潤滑困難、低摩擦的應用環境而開發的特殊密封件，不同的鐵氟龍複合材料、高級工程塑膠與耐蝕金屬彈簧的組合，完全可以滿足工業上日益嚴苛的多樣性需求，典型的應用例如下：

- 裝卸料臂旋轉接頭用軸向密封件
- 噴漆閥件或其他噴漆系統用密封件
- 真空泵浦用密封件
- 飲料、水、啤酒裝填設備(如裝填閥)及食品工業用密封件
- 油壓缸桿端密封件的最佳取代品，特別適用於高壓、高側向負荷、高速、低摩擦、回轉偏擺大的應用場合
- 石化、化工製程設備之動靜態應用密封件
- 汽車、航太工業用密封件，如動力方向機
- 計量設備用密封件(低摩擦、壽命長)
- 其他製程設備或壓力容器用密封件

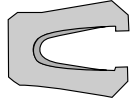
Main Applications

HiPerSeal is designed for thermal and/or corrosive extremes that make the requirement for a stable seal leg unobtainable using other designs or material. It demonstrates excellent capability to the control of friction loads and compensation of manufacturing tolerances or higher side load effects.

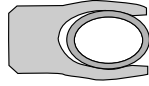
Some typical applications that are idea for **HiPerSeals** are described as followings.

- As face seals for swivel joints in loading or unloading arm equipment
- As needle seals for the paint valves in painting equipment
- As shaft and static seals in vacuum pumps
- As seals for the filling valves of beverage or beer bottling plants and other foodstuffs industry
- As better alternatives in hydraulic components, e.g. high pressure cylinders, low friction cylinders, steering units, and shock absorbers
- In chemical plant equipment and construction
- In the automobile and aerospace industries
- In metering units
- In process equipment and vessel construction
- High wear resulted from high lateral load or poor concentric running condition

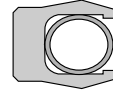
HiPerSeal = High Performance Seal



V 型 HiPerSeal
適於中等負載
之動靜態應用



H 型 HiPerSeal
適於中~重載靜態
或低速之應用



C 型 HiPerSeal
適於輕~中載
之動靜態應用

■ HiPerSeal 的優點

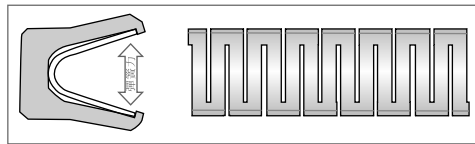
- 密封性能不受起動時潤滑不足的影響
- 有效減少磨耗與摩擦阻力
- 透過不同密封材料與彈簧的搭配，可展現不同的密封力以適應各種應用需求
- 採用專用CNC加工機製成，無模具費用—特別適合少量多樣的密封件
- 耐化學腐蝕與耐熱能力遠比常用的密封件橡膠優異，尺寸穩定，絕無體積膨潤或收縮所衍生的密封性能劣化問題
- 結構精巧，可安裝於標準的 O 形環溝槽
- 大幅提高密封能力與使用壽命
- 密封件凹槽內可充填任何抗污染材料(如矽膠)—但不適用於輻射環境
- 因密封材料為鐵氟龍，非常潔淨，不會污染製程
- 摩擦係數極低，即使在極低速應用亦非常平順，毫無「滯滑效應」
- 起動摩擦阻力小，即使停機時間長或間歇性運轉，均能保持低起動力性能

Advantages of HiPerSeal

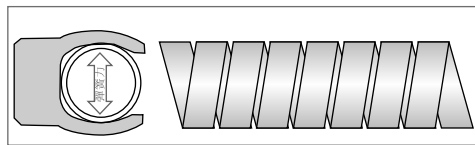
- Excellent dry running capability and high sealing efficiency after a short running-in period
- Reduced wear and friction due to better sealing material characteristics
- Versatile sealing pressure through various spring and seal profile design
- Excellent chemical and thermal resistance
- No volumetric change caused by swelling or shrinkage, good dimensional stability
- Compact seal, well fit in standard O-ring grooves in accordance with **AS 568A**
- Very long shelf life
- Sterilize in autoclaves or with any possible agen—-except radioactive radiation
- Prevent any contamination from the seal
- No stick-slip effect even at very low speed
- Very low friction
- Very small start-up or breakaway force especially for prolonged period out of operation or intermediate operation

■ HiPerSeal的型式 / Type of HiPerSeal

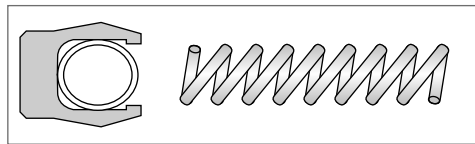
HiPerSeal 可依動靜態或內外壓力等各種應用場合，選用V型或H型的彈簧形式及密封唇設計，因而展現不同的密封力及可壓縮變形量(如圖示)。彈簧力的大小會影響 **HiPerSeal** 的密封性能、摩擦及磨耗行為；而可彈簧的可壓縮性決定了 **HiPerSeal** 對於密封唇磨耗及密封溝槽尺寸公差變異的補償能力。



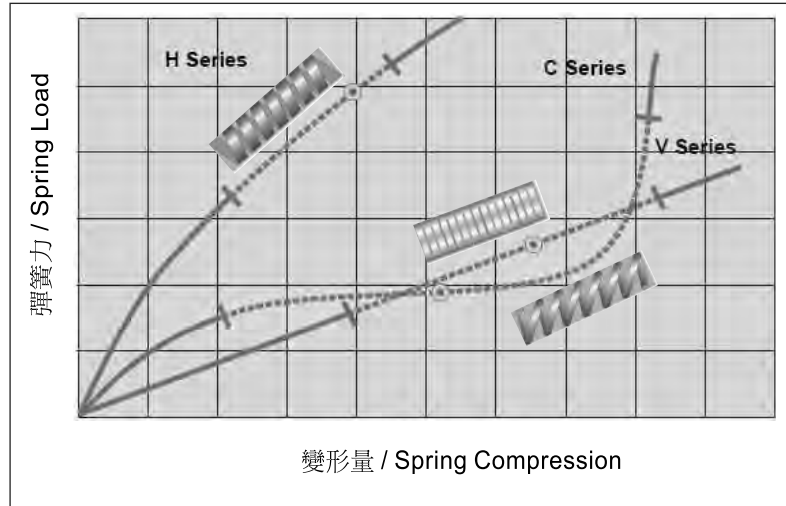
V型彈簧 / Cantilever Spring



H型彈簧 / Helico Spring



C型彈簧 / Canted Coil Spring



■ V型 HiPerSeal (V型彈簧) 特性

- V型彈簧可使長臂端的 PTFE 或 UHMW-PE 密封唇「壓在」被密封面上而提供中等密封力
- 造型精巧可直接安裝於標準的 O 形環構槽內
- 完全符合 **AS 568A** 標準，必要時可加裝背托環
- 彈簧標準材質為不銹鋼，可依應用條件選用其他更耐蝕耐熱的材質，如Hastelloy、Elgiloy 等合金
- 耐溫範圍：-150°C to 260°C
- 標準型適用壓力範圍由真空至 210kg/cm²，而加裝特殊型狀背托環則可耐壓至700kg/cm²
- 應用於有磨耗顆粒的環境時，可選用刮刀形密封唇

V-type HiPerSeal with Cantilever Spring / Features

- V-shape spring with moderate spring rate (ratio of load vs. Deflection)
- Long beam leg design puts the spring load exact at leading edge of PTFE seal
- Replace Standard Inch fractional and **AS 568A** O-ring without any modification
- Standard spring is made of austenite series stainless steel
- Other special corrosion resistant materials such as Hastelloy, Elgiloy are also available
- Temperature range from -150°C to 260°C
- Vacuum to 210kg/cm² standard and 700kg/cm² extended heel
- Optional scraper lip design for abrasive medias or environment

■ 應用場合

- 往復式機構的軸與活塞密封
- 回轉軸密封，速度可至4 m/s
- 靜態密封時，密封溝槽可容許較大的公差與對心不良
- 面密封適於內壓或外壓的應用環境
- 動態密封使用溫度可達260°C

Recommended Applications

- Reciprocating rod and piston seal
- Rotating shaft with speed 4 m/s max
- Wide tolerance and misaligned glands (static)
- Face seal for external or internal pressure environment
- Dynamic applications up to 260°C

■ H型 HiPerSeal (H型彈簧) 特性

- 彈簧常數高，適合中、高負載應用
- 每一圈渦捲彈簧受力平均
- 可取代標準的英制O型環，不須修改溝槽尺寸
- 不銹鋼彈簧，亦可選用Elgiloy®、Hastelloy合金
- 耐溫範圍：-150°C to 300°C
- 標準型適用壓力範圍由真空至 210kg/cm²，而加裝特殊型狀背托環則可耐壓至 700kg/cm²
- 不適用於公差較大與對心不良的密封溝槽。

H-type HiPerSeal with Helical Wound Ribbon Spring / Features

- High spring rate for medium and heavy load application
- Produces evenly distributed load across each individual band
- Replace Standard Inch fractional and AS 568A O-ring without any modification
- Standard spring is made of stainless steel, but NACE compliant Elgiloy and Hastelloy springs are also available
- Temperature range from -150°C to 300°C
- Vacuum to 210 kg/cm² standard and 700kg/cm² extended heel
- Not suitable for wide gland tolerances, eccentricity or misalignment.

■ 應用場合

- 靜態下的軸與活塞密封
- 慢速的動態密封場合，速度低於3mpm
- 內、外壓用面密封
- 真空與冷媒的密封

Recommended applications

- Face seal for external or internal pressure environment
- Static rod and piston seal
- Very slow dynamic seals
- Vacuum and cryogenic sealing application

■ C型 HiPerSeal (C型彈簧) 特性

- C型(斜圈)彈簧在相當大的變形範圍內具有一定的負荷
- 可依應用需求選用具有不同負載特性的C型彈簧
- 符合MIL-G-5514及AS 568標準O-ring的溝槽
- 302 C型不銹鋼彈簧，亦可選用Hastelloy合金
- 適用於內外壓力的應用環境
- 不適用於有磨耗顆粒的環境

C-type HiPerSeal with Canted Coil Spring / Features

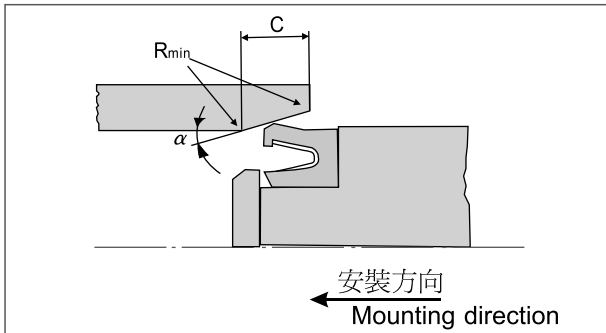
- C-shape spring with very flat spring rate (load vs. deflection curve)
- Available in several different spring loads
- Standard 302 series stainless steel springs
- Hastelloy springs also available upon request
- Available face seal shapes for internal or external pressure application
- Not the best choice for the abrasive medias due to the geometry

■ 應用場合

Recommended applications

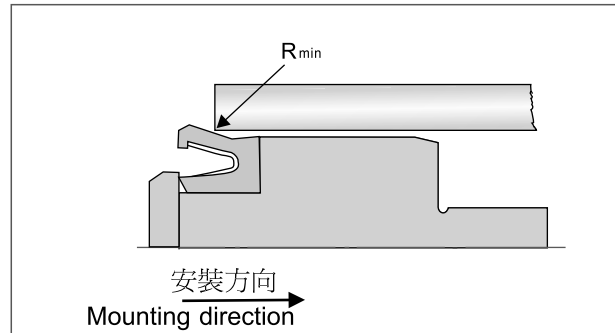
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| <ul style="list-style-type: none"> • 往復式機構的軸與活塞密封 • 回轉軸密封，速度可至1.5 m/s • 對摩擦力較敏感的應用 • 適用於直徑 < 1/2" 與截面 < 3/32" 的應用 • 密封溝槽可容許較大的公差與對心不良 | <ul style="list-style-type: none"> • Reciprocating rod and piston seal • Rotary shafts < 1.5 m/s • Friction sensitive applications • Diameter < 1/2" and Cross sections < 3/32" • Wide tolerance and misaligned glands |
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■ 安裝方法 – 安裝於開放型密封溝槽 Installation – for installation in open grooves



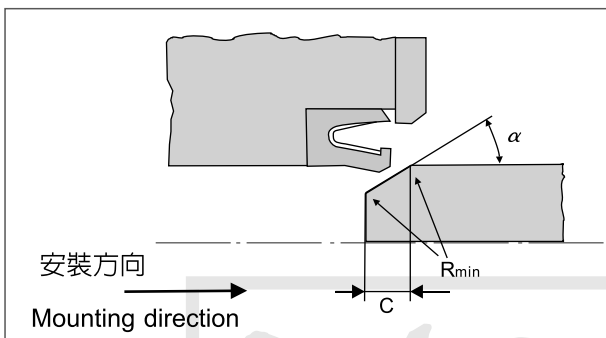
活塞用密封件安裝於開放型溝槽，密封唇面向安裝方向時，前置倒角尺寸如上表所示，所有銳角須倒圓角 $R_{min} = 0.5\text{mm}$ 。

Assembly of piston seal in open groove. Sealing lips in mounting direction. Values for lead-in chamfer: see table below. All edges rounded. We recommend: $R_{min} = 0.5\text{mm}$.



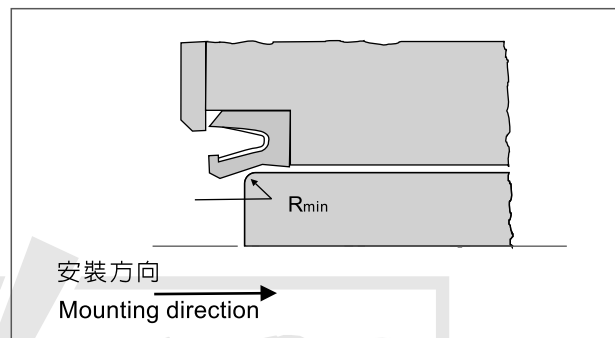
活塞用密封件安裝於開放型溝槽，密封唇背向安裝方向時，前置倒角尺寸如上表所示，所有銳角須倒圓角 $R_{min} = 1.0\text{mm}$ 。

Assembly of piston seal in open groove. Back of the seal in mounting direction. All edges rounded. We recommend: $R_{min} = 1\text{mm}$.



軸用密封件安裝於開放型溝槽，密封唇面向安裝方向時，前置倒角尺寸如上表所示，所有銳角須倒圓角 $R_{min} = 0.5\text{mm}$ 。

Assembly of rod seal in open groove. Sealing lips in mounting direction. Values for lead-in chamfer: see table below. All edges rounded. We recommend: $R_{min} = 0.5\text{mm}$.



軸用密封件安裝於開放型溝槽，密封唇背向安裝方向時，前置倒角尺寸如上表所示，所有銳角須倒圓角 $R_{min} = 1.0\text{mm}$ 。

Assembly of rod seal in open groove. Back of the seal in mounting direction. All edges rounded. We recommend: $R_{min} = 1\text{mm}$.

■ HiPerSeal 適用於標準的O環密封件溝槽

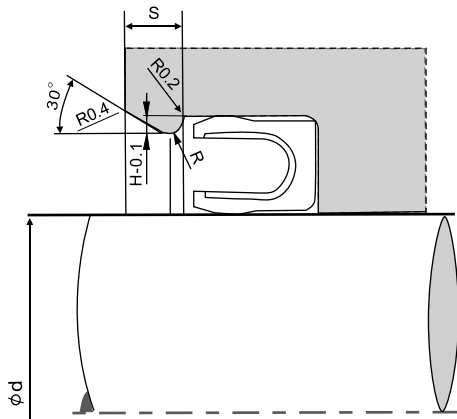
HiPerSeal can fit **AS 568A** glands (or other standard O-ring groove) without any modification.

HiPerSeal 可以取代標準的O形環而安裝於符合DIN 3771、ISO 3601、AS 568、BS 1806等的標準溝槽，其尺寸系列如下表：

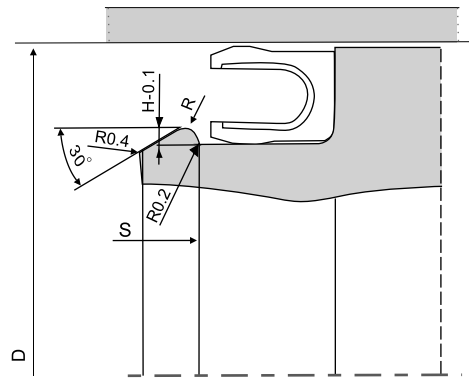
截面編號 Cross-section	適用的O形環直徑 Equiv. O-ring cross-section(mm)	最小倒角長度 ($\alpha = 15^\circ$) C min (mm)	最小倒角長度 ($\alpha = 30^\circ$) C min (mm)
A	1.78	4.5	2.0
B	2.62	5.0	2.5
C	3.53	6.0	2.5
D	5.33	8.0	4.0
E	6.99	12.0	5.5

■ 安裝方法 – 安裝於嵌入型密封溝槽
Installation – for installation in snap-in assembly

活塞桿 / Rod



活塞 / Piston



截面編號 Cross-section	適用的O形環直徑 Equiv. O-ring cross-section(mm)	dmin. (mm)	Dmin. (mm)	H-0.1 (mm)	R (mm)	S (mm)
A	1.78	12.0	15.0	0.5	0.4	2.0
B	2.62	20.0	21.0	0.6	0.4	2.0
C	3.53	30.0	25.0	0.7	0.6	2.5
D	5.33	40.0	30.0	0.9	0.8	3.0
E	6.99	55.0	45.0	0.9	0.8	3.0

■ 密封面要求 (Sealing surfaces)

密封面的表面粗度及硬度對密封件是否能充分發揮性能、提昇使用壽命，有絕對的影響，設計製造時表面粗度應符合下列建議規格：

■ 動態密封面 (Dynamic sealing surfaces)

負荷面積率 t_p : $80\% < t_p, 25\% R_t < 95\%$

動態密封面不可只做研磨加工，必須於研磨後再加以拋光。組裝時，必須確認所有相關表面平滑並倒圓角，毫無毛邊或污染附著。

流體 (Medium)		靜態 (static)	動態 (dynamic)	旋轉 (rotary)
低分子量或表面張力低的流體，低溫應用	Low-molecular gases and fluids. Fluids with low surface tension. Low temperatures.	$R_t \leq 1.2 \mu m$ ($R_a \leq 0.3 \mu m$)	$R_t \leq 0.8 \mu m$ ($R_a \leq 0.2 \mu m$)	$R_t \leq 0.4 \mu m$ ($R_a \leq 0.1 \mu m$)
高分子量氣體、空氣、天然氣或低黏度流體	Low viscosity fluids. High molecular gases, air and natural gas.	$R_t \leq 2.4 \mu m$ ($R_a \leq 0.6 \mu m$)	$R_t \leq 1.2 \mu m$ ($R_a \leq 0.3 \mu m$)	$R_t \leq 0.8 \mu m$ ($R_a \leq 0.2 \mu m$)
一般與高黏度流體、水、油、磷酸脂油	Normal and high viscosity fluids. Water, oils and phosphate esters.	$R_t \leq 3.2 \mu m$ ($R_a \leq 0.8 \mu m$)	$R_t \leq 1.6 \mu m$ ($R_a \leq 0.4 \mu m$)	$R_t \leq 0.8 \mu m$ ($R_a \leq 0.2 \mu m$)

複合材料材質規格表

複合材料規格

鐵氟龍複合材料材質表								
購料代號	材質編號	填充料比例	顏色	應用溫度(°C)		應用範圍	特色	產品
				最低	最高			
1	01T	純鐵氟龍	白色	-190	+230	<ul style="list-style-type: none"> ▪ 化學工業 ▪ 食品工業 	<ul style="list-style-type: none"> ▪ 優越的耐化學性質 ▪ 磨擦系數低 	<ul style="list-style-type: none"> ▪ 背托環 ▪ 彈簧制動油封
2	03T	鐵氟龍 + 23%碳 + 2%石墨	黑色	-190	+315	<ul style="list-style-type: none"> ▪ 高度機械應力應用 ▪ 水油液壓應用 ▪ 旋轉應用 	<ul style="list-style-type: none"> ▪ 優越的耐磨性 ▪ 抗潛變性佳 	<ul style="list-style-type: none"> ▪ 格來圈 ▪ 背托環 ▪ 氣壓用耐磨環 ▪ 彈簧制動油封
3	02T	鐵氟龍 + 40%銅粉	綠色	-156	+260	<ul style="list-style-type: none"> ▪ 應用於高度化學應力 ▪ 液壓應用 	<ul style="list-style-type: none"> ▪ 優越的耐磨性 ▪ 抗擠出性佳 ▪ 抗潛變性佳 	<ul style="list-style-type: none"> ▪ 格來圈 ▪ 耐磨環 ▪ 背托環
4	UPE	UHMW-PE	白色	-200	80	<ul style="list-style-type: none"> ▪ 液壓應用 	<ul style="list-style-type: none"> ▪ 優越的耐磨性 ▪ 優越的抗氧化性 ▪ 優越的潤滑性 ▪ 低壓密封性良好 ▪ 抗擠出性佳 	<ul style="list-style-type: none"> ▪ 背托環 ▪ 彈簧制動油封
4G	GPE	Ultragold®	黃色	極低溫	93	<ul style="list-style-type: none"> ▪ 液壓應用 	<ul style="list-style-type: none"> ▪ 優越的耐磨性 ▪ 優越的抗氧化性 ▪ 特殊的自潤性 ▪ 低壓密封性良好 ▪ 抗擠出性佳 ▪ 極低溫應用良好 	<ul style="list-style-type: none"> ▪ 彈簧制動油封
5	05T	鐵氟龍 + 10%碳纖維	灰黑色	-260	+310	<ul style="list-style-type: none"> ▪ 水液壓應用 ▪ 海水應用 ▪ 短衝程高頻率應用 	<ul style="list-style-type: none"> ▪ 在水中應用下擁有優越的耐磨性 ▪ 優越的抗壓強度 ▪ 適用於高速動態應用 	<ul style="list-style-type: none"> ▪ 格來圈 ▪ 彈簧制動油封
6	06T	鐵氟龍 + 25%玻璃纖維	白色	-190	+290	<ul style="list-style-type: none"> ▪ 中等負荷液壓缸應用 	<ul style="list-style-type: none"> ▪ 優越的抗化學性 ▪ 抗潛變性佳 ▪ 低介電常數 	<ul style="list-style-type: none"> ▪ 格來圈 ▪ 背托環 ▪ 耐磨環 ▪ 墊圈
7	07T	鐵氟龍 + 10% EKONOL	米色	-260	+320	<ul style="list-style-type: none"> ▪ 中等負荷機械應力應用 ▪ 用於軟密封面 ▪ 旋轉應用 	<ul style="list-style-type: none"> ▪ 抗化學性有限 ▪ 不適用於高溫水中 	<ul style="list-style-type: none"> ▪ 彈簧制動油封 ▪ 旋轉軸密封件 ▪ 唇型油封
8	08T	鐵氟龍 + E 碳	黑色	-190	+290	<ul style="list-style-type: none"> ▪ 中等負荷機械應力應用 ▪ 用於硬密封面 ▪ 水/油液乳膠應用 	<ul style="list-style-type: none"> ▪ 受限於碳成分，抗化學性有限 	<ul style="list-style-type: none"> ▪ 彈簧制動油封
9	09T	鐵氟龍 + 15%石墨	深灰色	-190	+260	<ul style="list-style-type: none"> ▪ 低等負荷機械應力應用 ▪ 用於軟密封面 	<ul style="list-style-type: none"> ▪ 受限於石墨成分，抗化學性有限 	<ul style="list-style-type: none"> ▪ 彈簧制動油封
10	10T	鐵氟龍 + 15%玻璃纖維 + 5%二硫化鉬	灰色	-190	+260	<ul style="list-style-type: none"> ▪ 中等負荷機械應力應用 ▪ 中等負荷液壓應用 	<ul style="list-style-type: none"> ▪ 抗潛變性佳 ▪ 優越的耐化學性質 ▪ 優越的耐磨性 ▪ 低介電常數 	<ul style="list-style-type: none"> ▪ 彈簧制動油封 ▪ 旋轉軸密封件 ▪ 背托環
PE	01K	PEEK	米色 黑色	-73	+316	<ul style="list-style-type: none"> ▪ 液壓應用 	<ul style="list-style-type: none"> ▪ 優越的耐化學性質 ▪ 優越的耐磨性 ▪ 耐高溫應用 ▪ 可燃性低 ▪ 低介電常數 ▪ 抗輻射性佳 	<ul style="list-style-type: none"> ▪ 背托環 ▪ 彈簧制動密封件

PARJET STANDARD COMPOUNDS

COMCATIONS

PTFE								
Material code	Reference	Compound	Color	Temp. (°C)		Application	Characteristics	Products
				MIN.	MAX.			
1	01T	VIRGIN PTFE	WHITE	-190	+230	<ul style="list-style-type: none"> • CHEMICAL INDUSTRY • FOOD INDUSTRY 	<ul style="list-style-type: none"> • HIGH CHEMICAL RESISTANCE • LOW COEFFICIENT OF FRICTION 	<ul style="list-style-type: none"> • BACK-UP RINGS • HIPERSEALS
2	03T	PTFE + 23% CARBON + 2% GRAPHITE	BLACK	-190	+315	<ul style="list-style-type: none"> • HEAVY MECHANICAL STRESS • WATER/OIL HYDRAULICS • ROTARY SEALING 	<ul style="list-style-type: none"> • HIGH WEAR RESISTANCE • CREEP RESISTANCE 	<ul style="list-style-type: none"> • GLIDE RINGS • BACK-UP RINGS • PNEUMATIC GUIDANCE TAPE • HIPERSEAL
3	02T	PTFE + 40% BRONZE	GREEN	-156	+260	<ul style="list-style-type: none"> • HEAVY MECHANICAL STRESS • HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • OUTSTANDING WEAR RESISTANCE • EXTRUSION RESISTANCE • CREEP RESISTANCE 	<ul style="list-style-type: none"> • GLIDE RINGS • HYDRAULIC GUIDANCE TAPE • BACK-UP RINGS
4	UPE	UHMW-PE	WHITE	-200	80	<ul style="list-style-type: none"> • HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • OUTSTANDING WEAR RESISTANCE • GOOD OXIDATION RESISTANCE • OUTSTANDING EXTRUSION RESISTANCE • OUTSTANDING SEALING UNDER LOW PRESSURE 	<ul style="list-style-type: none"> • BACK-UP RINGS • SPRING ENERGIZED SEALS
4G	GPE	Ultragold®	YELLOW	CRYOGENIC	93	<ul style="list-style-type: none"> • HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • OUTSTANDING WEAR RESISTANCE • SELF-LUBRICATING PROPERTIES • OUTSTANDING EXTRUSION RESISTANCE • OUTSTANDING PERFORMANCE UNDER CRYOGENIC APPLICATION 	<ul style="list-style-type: none"> • SPRING ENERGIZED SEALS
5	05T	PTFE + 10% CARBON FIBER	GREY	-260	+310	<ul style="list-style-type: none"> • WATER HYDRAULICS • SEAWATER • SHORT STROKES WITH HIGH FREQUENCY 	<ul style="list-style-type: none"> • VERY GOOD WEAR RESISTANCE PROPERTIES IN WATER • EXCELLENT COMPRESSIVE STRENGTHS • SUITABLE FOR DYNAMIC APPLICATIONS AT HIGH SPEED 	<ul style="list-style-type: none"> • GLIDE RINGS • HIPERSEALS
6	06T	PTFE + 25% GLASS FIBER	WHITE	-190	+290	<ul style="list-style-type: none"> • MEDIUM-DUTY HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • HIGH CHEMICAL RESISTANCE • HIGH CREEP RESISTANCE • ELECTRICAL PROPERTIES LIKE VIRGIN PTFE 	<ul style="list-style-type: none"> • GLIDE RINGS • BACK-UP RINGS • GUIDE RINGS • GASKETS
7	07T	PTFE + 10% EKONOL	BEIGE	-260	+320	<ul style="list-style-type: none"> • MEDIUM MECHANICAL STRESS • SOFT SEALING SURFACES • ROTARY SEALING 	<ul style="list-style-type: none"> • LIMITED CHEMICAL RESISTANCE • LIMITED USE IN HOT WATER 	<ul style="list-style-type: none"> • HIPERSEALS • ROTARY GLIDE RINGS • LIP SEALS
8	08T	PTFE + E-CARBON	BLACK	-190	+290	<ul style="list-style-type: none"> • MEDIUM MECHANICAL STRESS • HARD SEALING SURFACES • WATER/OIL EMULSIONS 	<ul style="list-style-type: none"> • CHEMICAL RESISTANCE LIMITED BY CARBON 	<ul style="list-style-type: none"> • HIPERSEALS
9	09T	PTFE + 15% GRAPHITE	DARK GREY	-190	+260	<ul style="list-style-type: none"> • LOW MECHANICAL STRESS • SOFT SEALING SURFACES 	<ul style="list-style-type: none"> • CHEMICAL RESISTANCE LIMITED GRAPHITE 	<ul style="list-style-type: none"> • HIPERSEALS
10	10T	PTFE + 15% GLASS FIBER + 5% MOS2	GREY	-190	+260	<ul style="list-style-type: none"> • MEDIUM MECHANICAL STRESS • MEDIUM-DUTY HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • HIGH CREEP STRENGTH • HIGH CHEMICAL RESISTANCE • OUTSTANDING WEAR RESISTANCE • ELECTRICAL PROPERTIES LIKE VIRGIN PTFE 	<ul style="list-style-type: none"> • HIPERSEALS • ROTARY SEALS • BACK-UP RINGS
PE	01K	PEEK	BEIGE OR BLACK	-73	+316	<ul style="list-style-type: none"> • HYDRAULIC APPLICATIONS 	<ul style="list-style-type: none"> • GOOD CHEMICAL RESISTANCE • GOOD WEAR RESISTANCE • HIGH MAXIMUM USE TEMPERATURE • LOW FLAMMABILITY • EXCELLENT ELECTRICAL PROPERTIES • GOOD RADIATION RESISTANCE 	<ul style="list-style-type: none"> • BACK-UP RINGS • HIPERSEALS

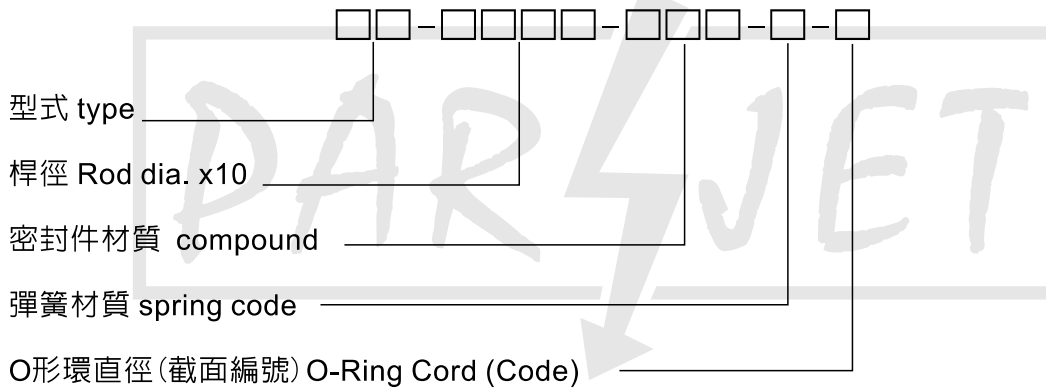
■ 彈簧材質 (Spring material of HiPerSeal)

編號 Code	材 質 Material	V型或U型 V-type & U-type	C型 C-type	H型 H-type
1	301 Stainless Steel 不銹鋼	Standard 標準		✓
2	Hastelloy C276	✓	✓	✓
3	17-7 PH Stainless Steel 不銹鋼			Standard 標準
4	Inconel 718	✓		
5	Elgiloy	✓		✓
6	302 Stainless Steel 不銹鋼		Standard 標準	
7	304 Stainless Steel 不銹鋼			✓
8	316 Stainless Steel 不銹鋼	✓	✓	✓

註: 其他彈簧材質請洽本公司業務或技服人員

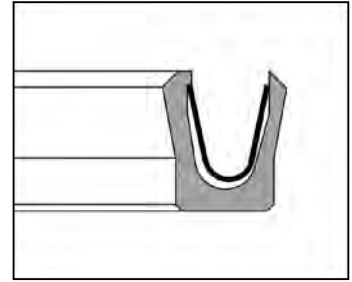
Note: Other metallic spring energizers may be available. Please contact our sales or technical support specialists.

■ 產品編碼 (Order code for HiPerSeal)



桿密封件 VR 型

Reciprocating rod seal — type VR



VR 型：
往復運動用軸密封件
type VR：
Rod seal for
reciprocating application

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
移動速度 ≤ 15 m/s
標準材質 碳纖填料鐵氟龍
材料代碼 5

註：* 特殊流體或應用場合，可選用其他材質。
* 移動速度 > 8 m/s時，需加裝油檔環，加大溝寬25-30%。

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Sliding speed: ≤ 15 m/s
Standard Materials: Carbon fiber Filled PTFE
material code:5

*Other materials are available for special operating conditions. Our application engineers will be glad to advise you.
*Reciprocating speed > 8 m/s, need a retainer ring and increase 25-30% width of the groove.

密封件溝槽尺寸

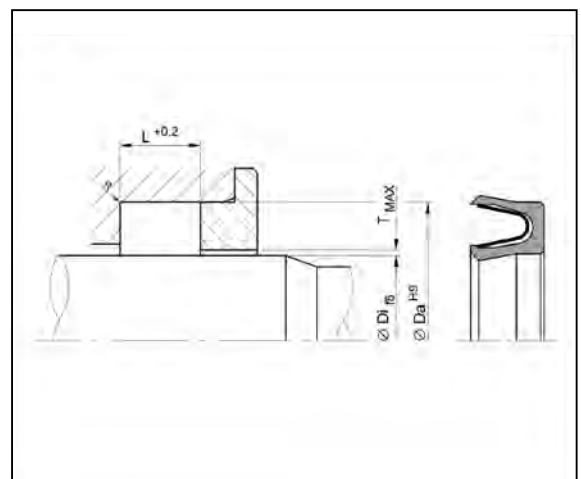
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕ Di	ϕ Da	L	T	R	Thickness	O-Ring Code
4 ~ 9.9	Di + 2.9	2.4	0.06	0.4	1.78	A
10 ~ 19.9	Di + 4.5	3.6	0.06	0.4	2.62	B
20 ~ 39.9	Di + 6.2	4.8	0.07	0.6	3.53	C
40 ~ 119.9	Di + 9.4	7.1	0.08	0.8	5.33	D
120 ~ 700	Di + 12.2	9.5	0.12	0.8	6.99	E

選購範例

型式 **VR**
桿徑 ϕ Di = 100 mm
溝槽底徑 ϕ Da = 109.4 mm
溝槽寬度 L = 7.1 mm
材質組合 碳纖填料鐵氟龍(05T)+ 301SS
產品編號 VR-1000-5-1-D

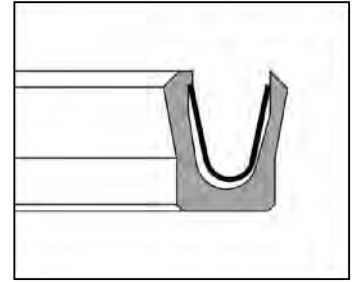
Example of an order

Type **VR**
Rod diameter ϕ Di = 100 mm
Groove bottom ϕ Da = 109.4 mm
Groove width L = 7.1 mm
Material Carbon fiber Filled PTFE(05T) + 301SS
Order code VR-1000-5-1-D



桿密封件 VRJ 型 (JIS)

Reciprocating rod seal — type VRJ



VRJ 型：
往復運動用軸密封件
type VRJ：
Rod seal for
reciprocating application

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
移動速度 ≤ 15 m/s
標準材質 碳纖填料鐵氟龍
材料代碼 5

註：* 特殊流體或應用場合，可選用其他材質。
* 移動速度 > 8 m/s時，需加裝油檔環，加大溝寬25-30%。

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Sliding speed: ≤ 15 m/s
Standard Materials: Carbon fiber Filled PTFE
material code:5

* Other materials are available for special operating conditions. Our application engineers will be glad to advise you.
* Reciprocating speed > 8 m/s, need a retainer ring and increase 25-30% width of the groove.

密封件溝槽尺寸

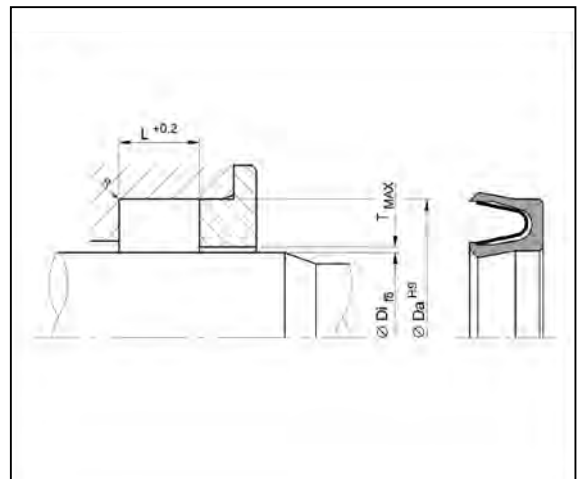
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDi	ϕDa	L	T	R	Thickness	O-Ring Code
3 ~ 10	$Di + 3$	2.5	0.06	0.4	1.9	A
10 ~ 22	$Di + 4$	3.2	0.06	0.4	2.4	B
22 ~ 25	$Di + 6$	4.7	0.07	0.6	3.5	C
48 ~ 150	$Di + 10$	7.5	0.08	0.8	5.7	D
150 ~ 400	$Di + 15$	11	0.12	0.8	8.4	E

選購範例

型式 **VRJ**
桿徑 $\phi Di = 100$ mm
溝槽底徑 $\phi Da = 110$ mm
溝槽寬度 $L = 7.5$ mm
材質組合 碳纖填料鐵氟龍(05T)+ 301SS
產品編號 VRJ-1000-5-1-D

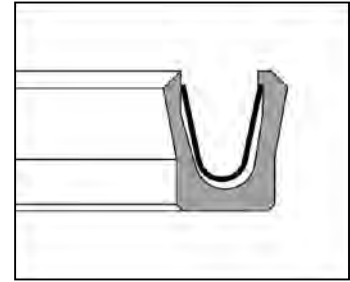
Example of an order

Type **VRJ**
Rod diameter $\phi Di = 100$ mm
Groove bottom $\phi Da = 110$ mm
Groove width $L = 7.5$ mm
Material Carbon fiber Filled PTFE(05T) + 301SS
Order code VRJ-1000-5-1-D



活塞密封件 VP 型

Reciprocating piston seal—type VP



VP型：

往復運動用活塞密封件

type VP：

Piston seal for reciprocating application

應用範圍

壓力 ≤ 350 bar
 溫度 $-150 \sim +225$ °C
 移動速動 ≤ 15 m/s
 標準材質 碳纖填料鐵氟龍
 材料代碼 5

Application Range

Pressure: ≤ 350 bar
 Temperature: $-150 \sim +225$ °C
 Sliding speed: ≤ 15 m/s
 Standard Materials: Carbon fiber Filled PTFE
 material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

活塞尺寸 Piston Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環代碼
ϕDa	ϕDi	L	T	R	Thickness	O-Ring Code
6 ~ 13.9	Da- 2.9	2.4	0.06	0.4	1.78	A
14 ~ 24.9	Da- 4.5	3.6	0.06	0.4	2.62	B
25 ~ 45.9	Da- 6.2	4.8	0.07	0.6	3.53	C
46 ~ 124.9	Da- 9.4	7.1	0.08	0.8	5.33	D
125 ~ 700	Da- 12.2	9.5	0.12	0.8	6.99	E

選購範例

型式

VP

活塞尺寸

$\phi Da = 100$ mm

溝槽底徑

$\phi Di = 90.6$ mm

溝槽寬度

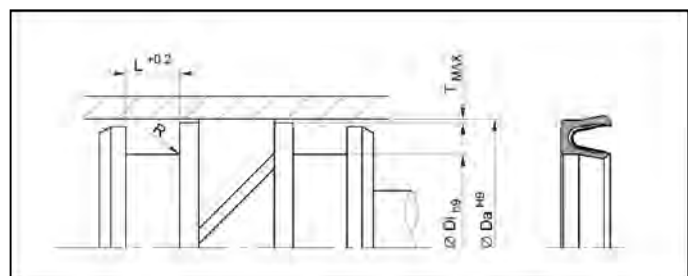
L = 7.1 mm

材質組合

碳纖填料鐵氟龍(05T)+ 301SS

產品編號

VP-1000-5-1-D



Example of an order

Type

VP

Piston diameter

$\phi Da = 100$ mm

Groove bottom

$\phi Di = 90.6$ mm

Groove width

L = 7.1 mm

Material

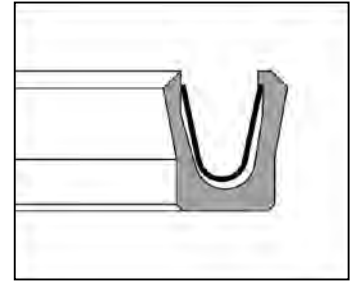
Carbon fiber Filled PTFE(05T) + 301SS

Order code

VP-1000-5-1-D

活塞密封件 VPJ型 (JIS)

Reciprocating piston seal—type VPJ



VPJ型：

往復運動用活塞密封件

type **VPJ：**

Piston seal for reciprocating application

應用範圍

壓力 ≤ 350 bar
 溫度 $-150 \sim +225$ °C
 移動速動 ≤ 15 m/s
 標準材質 碳纖填料鐵氟龍
 材料代碼 5

Application Range

Pressure: ≤ 350 bar
 Temperature: $-150 \sim +225$ °C
 Sliding speed: ≤ 15 m/s
 Standard Materials: Carbon fiber Filled PTFE
 material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

活塞尺寸 Piston Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDa	ϕDi	L	T	R	Thickness	O-Ring Code
6 ~ 13	Da - 3	2.5	0.06	0.4	1.9	A
14 ~ 26	Da - 4	3.2	0.06	0.4	2.4	B
28 ~ 56	Da - 6	4.7	0.07	0.6	3.5	C
58 ~ 160	Da - 10	7.5	0.08	0.8	5.7	D
165 ~ 415	Da - 15	11	0.12	0.8	8.4	E

選購範例

型式

VPJ

活塞尺寸

$\phi Da = 100$ mm

溝槽底徑

$\phi Di = 90$ mm

溝槽寬度

L = 7.5 mm

材質組合

碳纖填料鐵氟龍(05T)+ 301SS

產品編號

VPJ-1000-5-1-D

Example of an order

Type

VPJ

Piston diameter

$\phi Da = 100$ mm

Groove bottom

$\phi Di = 90$ mm

Groove width

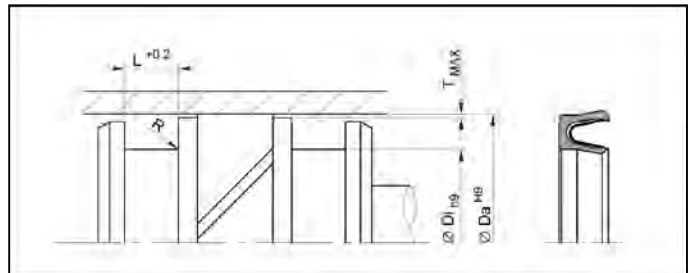
L = 7.5 mm

Material

Carbon fiber Filled PTFE(05T) + 301SS

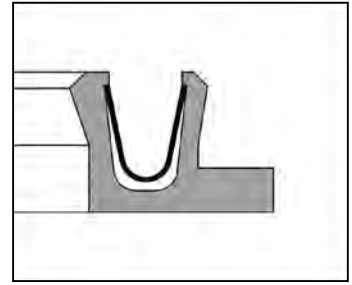
Order code

VPJ-1000-5-1-D



旋轉軸用密封件 VD 型

Rotary shaft seal – type VD



VD 型：
旋轉軸用密封件
type VD：
Shaft seal for rotating application

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
移動速動 ≤ 3 m/s
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Sliding speed: ≤ 3 m/s
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

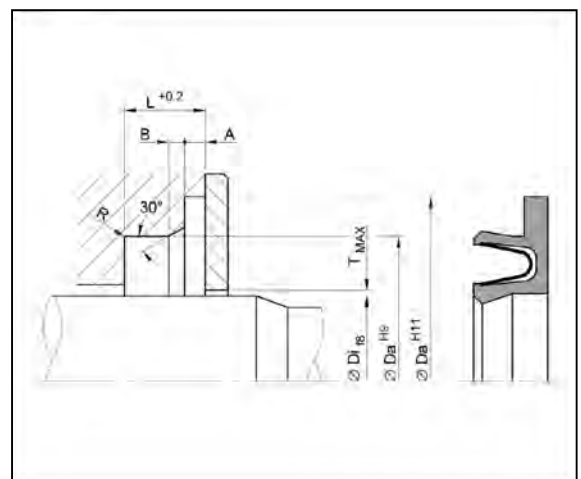
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	凸緣直徑 Flange dia.	凸緣深度 Flange depth	倒角長度 Chamfer Length	間隙 Gap	圓角 Radius	相當的O形環 代碼
ϕDi	ϕDa	L	ϕDf	A	B	T	R	O-Ring Code
8 ~ 19.9	$Di + 5.0$	3.6	$Di + 9.0$	0.85-0.10	0.8	0.06	0.3	B
20 ~ 39.9	$Di + 7.0$	4.8	$Di + 12.5$	1.35-0.15	1.1	0.07	0.4	C
40 ~ 400.9	$Di + 10.5$	7.1	$Di + 17.5$	1.80-0.20	1.4	0.08	0.5	D
401 ~ 700.0	$Di + 14.0$	9.5	$Di + 22.0$	2.80-0.20	1.6	0.12	0.5	E

選購範例

型式 **VD**
桿徑 $\phi Di = 100$ mm
溝槽底徑 $\phi Da = 110.5$ mm
溝槽寬度 $L = 7.1$ mm
材質組合 碳纖填料鐵氟龍(05T) + 301SS
產品編號 VD-1000-5-1-D

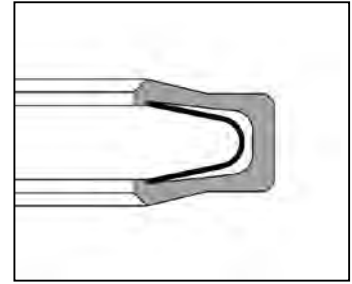
Example of an order

Type **VD**
Rod diameter $\phi Di = 100$ mm
Groove bottom $\phi Da = 110.5$ mm
Groove width $L = 7.1$ mm
Material Carbon fiber Filled PTFE (05T) + 301SS
Order code VD-1000-5-1-D



內壓法蘭密封件 VB 型

Face seal, static inside sealing – type VB



VB 型：
內壓法蘭密封件

type VB：
Face seal or flange seal for static inside sealing

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

溝槽外徑 Groove O.D.	溝槽內徑 Groove I.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDa	ϕDi	L	A	R	Thickness	O-Ring Code
32 ~ 44.9	Da - 7.2	3.6	2.25	0.4	2.62	B
45 ~ 79.9	Da - 9.6	4.8	3.10	0.6	3.53	C
80 ~ 109.9	Da - 14.2	7.1	4.70	0.8	5.33	D
110 ~ 700	Da - 19.0	9.5	6.10	0.8	6.99	E

選購範例

型式

VB

溝槽外徑

$\phi Da = 100$ mm

溝槽內徑

$\phi Di = 85.8$ mm

溝槽深度

A = 4.7 mm

材質組合

碳纖填料鐵氟龍(05T)+ 301SS

產品編號

VB-1000-5-1-D

Example of an order

Type

VB

Groove O.D.

$\phi Da = 100$ mm

Groove I.D.

$\phi Di = 85.8$ mm

Groove depth

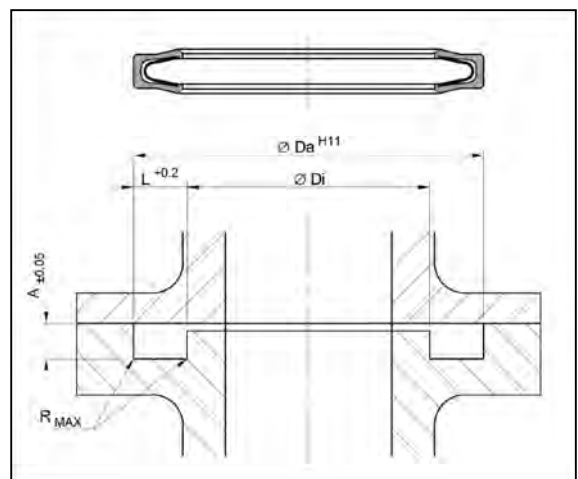
A = 4.7 mm

Material

Carbon fiber Filled PTFE(05T) + 301SS

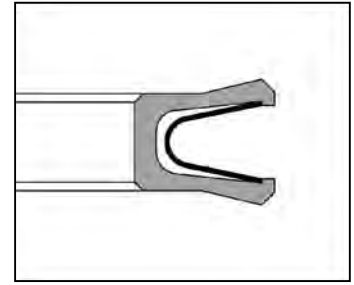
Order code

VB-1000-5-1-D



外壓法蘭密封件 VC 型

Face seal, static outside sealing – type VC



VC 型：
一般外壓用面密封件或法蘭密封件

type VC：
Face seal or Flange seal for static outside sealing

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

溝槽內徑 Groove I.D.	溝槽外徑 Groove O.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環代碼 O-Ring Code
ϕDi	ϕDa	L	A	R	Thickness	O-Ring Code
40 ~ 44.9	Di + 7.2	3.6	2.25	0.4	2.62	B
45 ~ 79.9	Di + 9.6	4.8	3.10	0.6	3.53	C
80 ~ 109.9	Di + 14.2	7.1	4.70	0.8	5.33	D
110 ~ 700	Di + 19.0	9.5	6.10	0.8	6.99	E

選購範例

型式

VC

溝槽內徑

$\phi Di = 100$ mm

溝槽外徑

$\phi Da = 114.2$ mm

溝槽深度

A = 4.7 mm

材質組合

碳纖填料鐵氟龍(05T) + 301SS

產品編號

VC-1000-5-1-D

Example of an order

Type

VC

Groove I.D.

$\phi Di = 100$ mm

Groove O.D.

$\phi Da = 114.2$ mm

Groove depth

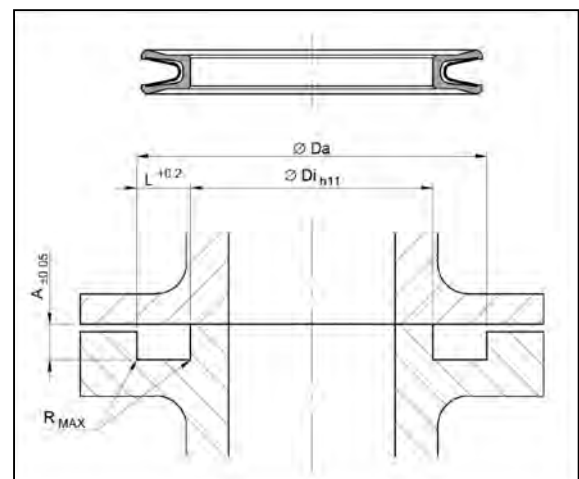
A = 4.7 mm

Material

Carbon fiber Filled PTFE (05T) + 301SS

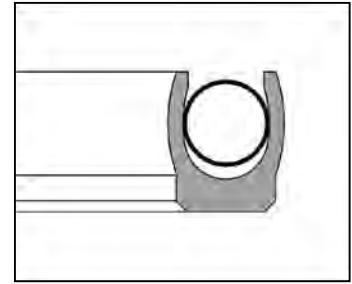
Order code

VC-1000-5-1-D



強力型軸密封件 HR 型

Rod seal with increased spring force,
Static & Dynamic sealing—type **HR**



HR 型：
較高壓力用軸密封件
靜態或低速應用

type HR：
Rod seal with increased spring
force for static & dynamic application

應用範圍

壓力 $\leq 400 \text{ bar}$
溫度 $-120 \sim +260^\circ\text{C}$
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: $\leq 400 \text{ bar}$
Temperature: $-120 \sim +260^\circ\text{C}$
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

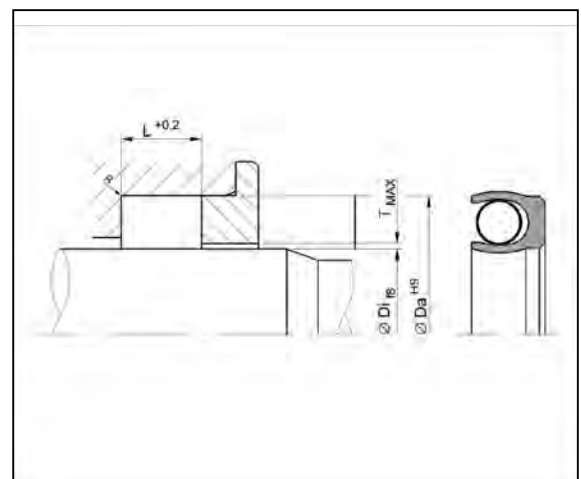
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDi	ϕDa	L	T	R	Thickness	O-Ring Code
4 ~ 9.9	$Di + 2.9$	2.4	0.06	0.4	1.78	A
10 ~ 19.9	$Di + 4.5$	3.6	0.06	0.4	2.62	B
20 ~ 39.9	$Di + 6.2$	4.8	0.07	0.6	3.53	C
40 ~ 119.9	$Di + 9.4$	7.1	0.08	0.8	5.33	D
120 ~ 700.0	$Di + 12.2$	9.5	0.12	0.8	6.99	E

選購範例

型式 **HR**
桿徑 $\phi Di = 100 \text{ mm}$
溝槽底徑 $\phi Da = 109.4 \text{ mm}$
溝槽寬度 $L = 7.1 \text{ mm}$
材質組合 碳纖填料鐵氟龍(05T)+ 301SS
產品編號 HR-1000-5-1-D

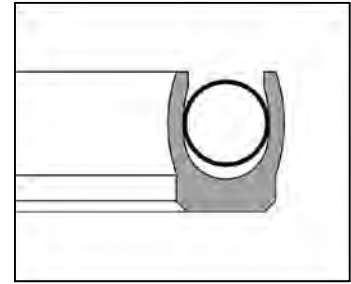
Example of an order

Type **HR**
Rod diameter $\phi Di = 100 \text{ mm}$
Groove bottom $\phi Da = 109.4 \text{ mm}$
Groove width $L = 7.1 \text{ mm}$
Material Carbon fiber Filled PTFE(05T) + 301SS
Order code HR-1000-5-1-D



強力型軸密封件 HRJ 型 (JIS)

Rod seal with increased spring force,
Static & Dynamic sealing—type **HRJ**



HRJ型：

較高壓力用軸密封件
靜態或低速應用

type HRJ:

Rod seal with increased spring
force for static & dynamic application

應用範圍

壓力 ≤ 400 bar
溫度 $-120 \sim +260^{\circ}\text{C}$
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 400 bar
Temperature: $-120 \sim +260^{\circ}\text{C}$
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

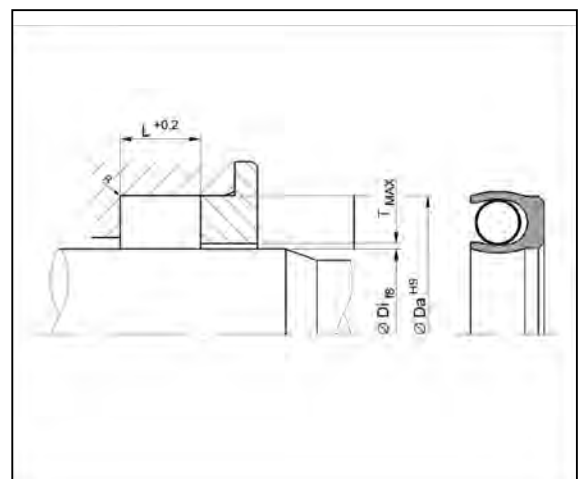
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDi	ϕDa	L	T	R	Thickness	O-Ring Code
3 ~ 10	Di + 3	2.5	0.06	0.4	1.9	A
10 ~ 22	Di + 4	3.2	0.06	0.4	2.4	B
22 ~ 25	Di + 6	4.7	0.07	0.6	3.5	C
48 ~ 150	Di + 10	7.5	0.08	0.8	5.7	D
150 ~ 400	Di + 15	11	0.12	0.8	8.4	E

選購範例

型式 **HRJ**
桿徑 $\phi Di = 100$ mm
溝槽底徑 $\phi Da = 110$ mm
溝槽寬度 $L = 7.5$ mm
材質組合 碳纖填料鐵氟龍(05T)+ 301SS
產品編號 HRJ-1000-5-1-D

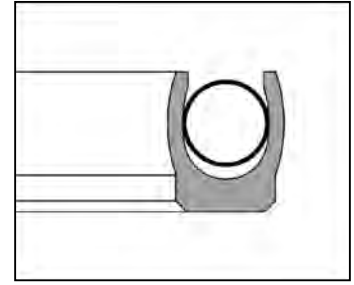
Example of an order

Type **HRJ**
Rod diameter $\phi Di = 100$ mm
Groove bottom $\phi Da = 110$ mm
Groove width $L = 7.5$ mm
Material Carbon fiber Filled PTFE(05T) + 301SS
Order code HRJ-1000-5-1-D



強力型活塞密封件 HP 型

Piston seal with increased spring force,
Static & dynamic sealing—type **HP**



HP 型：

較高壓力用活塞密封件
靜態或低速應用

type HP：

Piston seal with increased spring
force for static & dynamic application

應用範圍

壓力 ≤ 400 bar
溫度 $-120 \sim +260$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 400 bar
Temperature: $-120 \sim +260$ °C
Standard Materials: Carbon fiber Filled PTFE
material code:5

密封件溝槽尺寸

活塞尺寸 Piston Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDa	ϕDi	L	T	R	Thickness	O-Ring Code
6 ~ 13.9	Da - 2.9	2.4	0.06	0.4	1.78	A
14 ~ 24.9	Da - 4.5	3.6	0.06	0.4	2.62	B
25 ~ 45.9	Da - 6.2	4.8	0.07	0.6	3.53	C
46 ~ 124.9	Da - 9.4	7.1	0.08	0.8	5.33	D
125 ~ 700.0	Da - 12.2	9.5	0.12	0.8	6.99	E

選購範例

型式

HP

活塞尺寸

$\phi Da = 100$ mm

溝槽底徑

$\phi Di = 90.6$ mm

溝槽寬度

L = 7.1 mm

材質組合

碳纖填料鐵氟龍(05T)+ 301SS

產品編號

HP-1000-5-1-D

Example of an order

Type

HP

Piston diameter

$\phi Da = 100$ mm

Groove bottom

$\phi Di = 90.6$ mm

Groove width

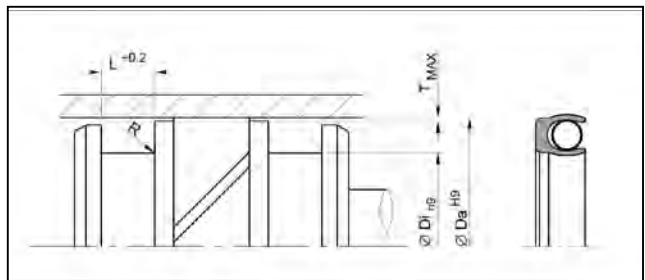
L = 7.1 mm

Material

Carbon fiber Filled PTFE(05T) + 301SS

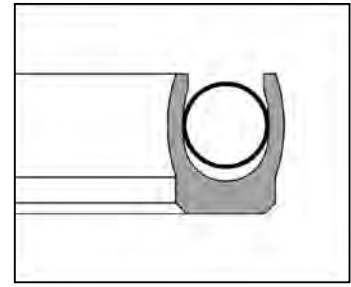
Order code

HP-1000-5-1-D



強力型活塞密封件 HPJ 型 (JIS)

Piston seal with increased spring force,
Static & dynamic sealing—type **HPJ**



HPJ型：

較高壓力用活塞密封件
靜態或低速應用

type HPJ:

Piston seal with increased spring
force for static & dynamic application

應用範圍

壓力 ≤ 400 bar
溫度 $-120 \sim +260$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 400 bar
Temperature: $-120 \sim +260$ °C
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

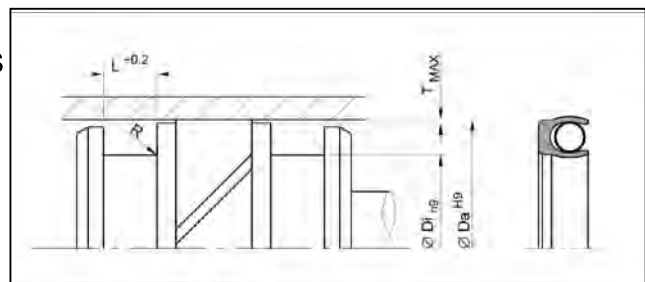
活塞尺寸 Piston Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDa	ϕDi	L	T	R	Thickness	O-Ring Code
6 ~ 13	Da - 3	2.5	0.06	0.4	1.9	A
14 ~ 26	Da - 4	3.2	0.06	0.4	2.4	B
28 ~ 56	Da - 6	4.7	0.07	0.6	3.5	C
58 ~ 160	Da - 10	7.5	0.08	0.8	5.7	D
165 ~ 415	Da - 15	11	0.12	0.8	8.4	E

選購範例

型式 **HPJ**
 活塞尺寸 $\phi Da = 100$ mm
 溝槽底徑 $\phi Di = 90$ mm
 溝槽寬度 $L = 7.5$ mm
 材質組合 碳纖填料鐵氟龍(05T)+ 301SS
 產品編號 HPJ-1000-5-1-D

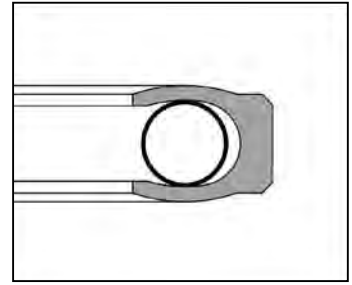
Example of an order

Type **HPJ**
 Piston diameter $\phi Da = 100$ mm
 Groove bottom $\phi Di = 90$ mm
 Groove width $L = 7.5$ mm
 Material Carbon fiber Filled PTFE(05T) + 301SS
 Order code HPJ-1000-5-1-D



強力型內壓法蘭密封件 HB

Face seal with increased spring force,
static inside sealing – type **HB**



HB 型：

較高內壓用面密封件或
法蘭密封件

type **HB：**

Face seal or flange seal
for higher inside pressure

應用範圍

壓力 $\leq 500 \text{ bar}$
溫度 $-150 \sim +260 \text{ }^\circ\text{C}$
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: $\leq 500 \text{ bar}$
Temperature: $-150 \sim +260 \text{ }^\circ\text{C}$
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

溝槽外徑 Groove O.D.	溝槽內徑 Groove I.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	環直徑 O 形環 代碼
ϕDa	ϕDi	L	A	R	Thickness	O-Ring Code
≥ 12	Da - 4.8	2.4	$1.45^{+0.03}$	0.4	1.78	A
≥ 20	Da - 7.2	3.6	$2.25^{+0.05}$	0.4	2.62	B
≥ 30	Da - 9.6	4.8	$3.10^{+0.08}$	0.6	3.53	C
≥ 40	Da - 14.2	7.1	$4.70^{+0.10}$	0.8	5.33	D
≥ 50	Da - 19.0	9.5	$6.10^{+0.15}$	0.8	6.99	E

選購範例

型式

HB

溝槽外徑

$\phi Da = 100 \text{ mm}$

溝槽內徑

$\phi Di = 81.0 \text{ mm}$

溝槽深度

A = 6.1 mm

材質組合

碳纖填料鐵氟龍(05T)+ 301SS

產品編號

HB-1000-5-1-E

Example of an order

Type

HB

Groove O.D.

$\phi Da = 100 \text{ mm}$

Groove I.D.

$\phi Di = 81.0 \text{ mm}$

Groove depth

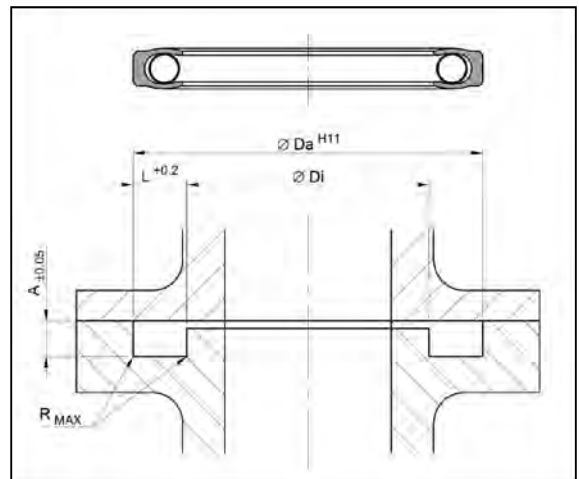
A = 6.1 mm

Material

Carbon fiber Filled PTFE(05T) + 301SS

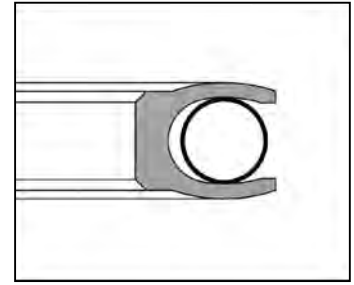
Order code

HB-1000-5-1-E



強力型外壓法蘭密封件 HC

Face seal with increased spring force,
static outside sealing—type HC



HC 型：

較高外壓用面密封件或
法蘭密封件

type HC：

Face seal or Flange seal
for higher outside pressure

應用範圍

壓力 ≤ 500 bar
溫度 $-150 \sim +260$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 500 bar
Temperature: $-150 \sim +260$ °C
Standard Materials: Carbon Filled PTFE
material code: 5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions.
Our application engineers will be glad to advise you.

密封件溝槽尺寸

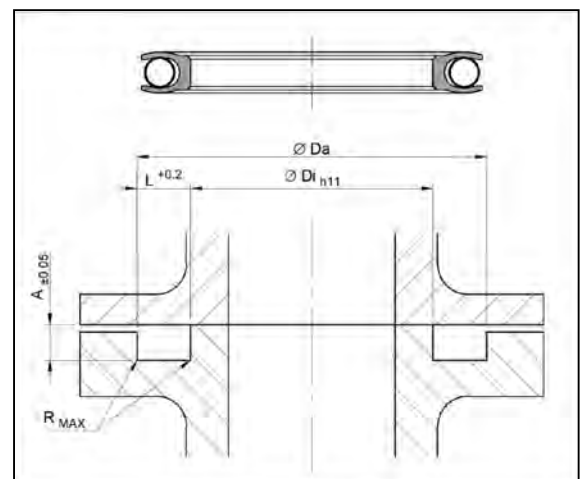
溝槽內徑 Groove I.D.	溝槽外徑 Groove O.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDi	ϕDa	L	A	R	Thickness	O-Ring Code
≥ 5	$Da + 4.8$	2.4	$1.45^{+0.03}$	0.4	1.78	A
≥ 10	$Da + 7.2$	3.6	$2.25^{+0.05}$	0.4	2.62	B
≥ 15	$Da + 9.6$	4.8	$3.10^{+0.08}$	0.6	3.53	C
≥ 22	$Da + 14.2$	7.1	$4.70^{+0.10}$	0.8	5.33	D
≥ 30	$Da + 19.0$	9.5	$6.10^{+0.15}$	0.8	6.99	E

選購範例

型式 **HC**
溝槽內徑 $\phi Di = 100$ mm
溝槽外徑 $\phi Da = 119$ mm
溝槽深度 $A = 6.1$ mm
材質組合 碳纖填料鐵氟龍(05T)+ 301SS
產品編號 HC-1000-5-1-E

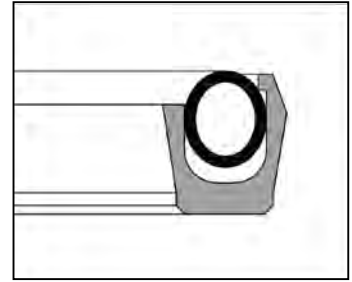
Example of an order

Type **HC**
Groove I.D. $\phi Di = 100$ mm
Groove O.D. $\phi Da = 119$ mm
Groove depth $A = 6.1$ mm
Material Carbon fiber Filled PTFE(05T) + 301SS
Order code HC-1000-5-1-E



桿密封件 CR 型

Reciprocating rod seal — type CR



CR 型：
往復運動用軸密封件
type CR：
Rod seal for
reciprocating application

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
移動速度 ≤ 15 m/s
標準材質 碳纖填料鐵氟龍
材料代碼 5

註：* 特殊流體或應用場合，可選用其他材質。
* 移動速度 > 8 m/s時，需加裝油檔環，加大溝寬25-30%。

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Sliding speed: ≤ 15 m/s
Standard Materials: Carbon fiber Filled PTFE
material code:5

*Other materials are available for special operating conditions. Our application engineers will be glad to advise you.
*Reciprocating speed > 8 m/s, need a retainer ring and increase 25-30% width of the groove.

密封件溝槽尺寸

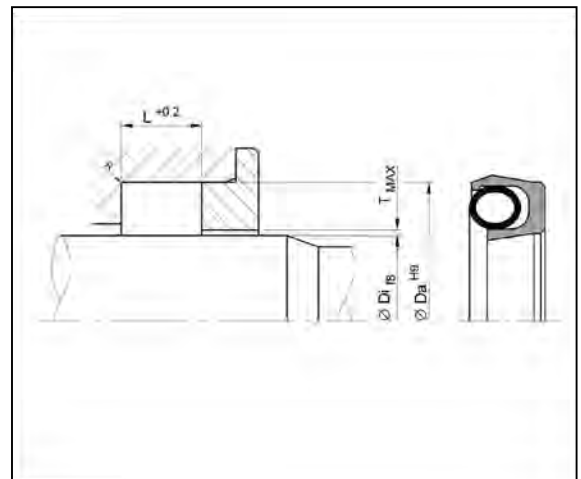
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDi	ϕDa	L	T	R	Thickness	O-Ring Code
4 ~ 9.9	$Di + 2.9$	2.4	0.06	0.4	1.78	A
10 ~ 19.9	$Di + 4.5$	3.6	0.06	0.4	2.62	B
20 ~ 39.9	$Di + 6.2$	4.8	0.07	0.6	3.53	C
40 ~ 119.9	$Di + 9.4$	7.1	0.08	0.8	5.33	D
120 ~ 700	$Di + 12.2$	9.5	0.12	0.8	6.99	E

選購範例

型式 **CR**
桿徑 $\phi Di = 100$ mm
溝槽底徑 $\phi Da = 109.4$ mm
溝槽寬度 $L = 7.1$ mm
材質組合 碳纖填料鐵氟龍(05T)+ 302SS
產品編號 CR-1000-5-6-D

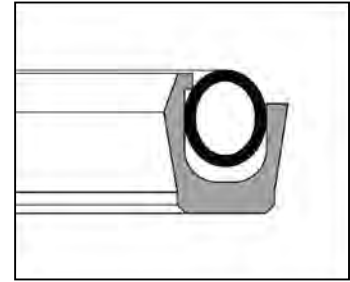
Example of an order

Type **CR**
Rod diameter $\phi Di = 100$ mm
Groove bottom $\phi Da = 109.4$ mm
Groove width $L = 7.1$ mm
Material Carbon fiber Filled PTFE(05T) + 302SS
Order code CR-1000-5-6-D



活塞密封件 CP 型

Reciprocating piston seal—type CP



CP型：
往復運動用活塞密封件

type CP：
Piston seal for reciprocating application

應用範圍

壓力 ≤ 350 bar
 溫度 $-150 \sim +225$ °C
 移動速動 ≤ 15 m/s
 標準材質 碳纖填料鐵氟龍
 材料代碼 5

Application Range

Pressure: ≤ 350 bar
 Temperature: $-150 \sim +225$ °C
 Sliding speed: ≤ 15 m/s
 Standard Materials: Carbon fiber Filled PTFE
 material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

活塞尺寸 Piston Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	間隙 Gap	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環代碼
ϕDa	ϕDi	L	T	R	Thickness	O-Ring Code
6 ~ 13.9	Da- 2.9	2.4	0.06	0.4	1.78	A
14 ~ 24.9	Da- 4.5	3.6	0.06	0.4	2.62	B
25 ~ 45.9	Da- 6.2	4.8	0.07	0.6	3.53	C
46 ~ 124.9	Da- 9.4	7.1	0.08	0.8	5.33	D
125 ~ 700	Da- 12.2	9.5	0.12	0.8	6.99	E

選購範例

型式

CP

活塞尺寸

$\phi Da = 100$ mm

溝槽底徑

$\phi Di = 90.6$ mm

溝槽寬度

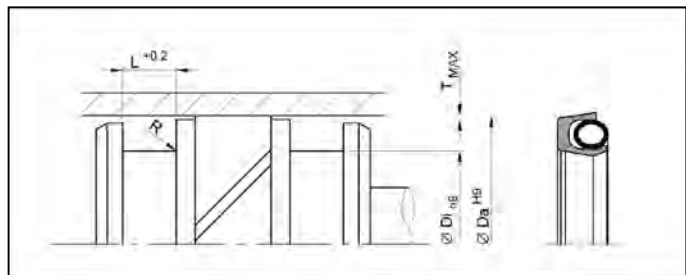
L = 7.1 mm

材質組合

碳纖填料鐵氟龍(05T)+ 302SS

產品編號

CP-1000-5-6-D



Example of an order

Type

CP

Piston diameter

$\phi Da = 100$ mm

Groove bottom

$\phi Di = 90.6$ mm

Groove width

L = 7.1 mm

Material

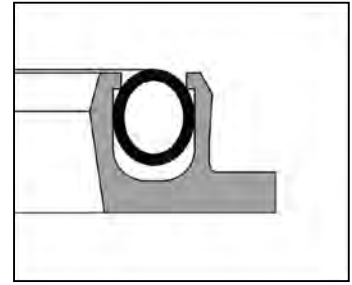
Carbon fiber Filled PTFE(05T) + 302SS

Order code

CP-1000-5-6-D

旋轉軸用密封件CD型

Rotary shaft seal – type CD



CD型：
旋轉軸用密封件
type CD：
Shaft seal for rotating application

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
移動速動 ≤ 3 m/s
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Sliding speed: ≤ 3 m/s
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

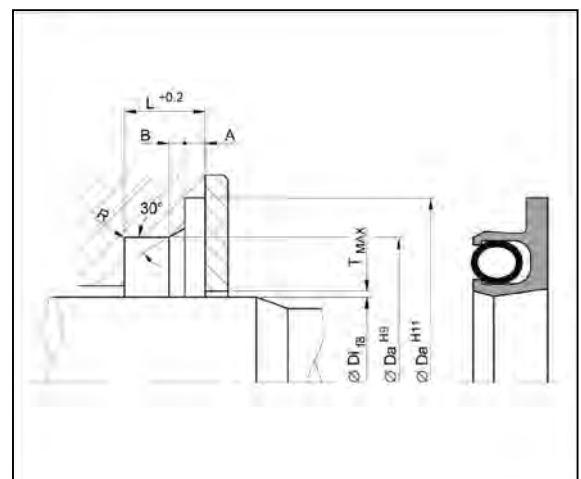
桿徑 Rod Diameter	溝槽底徑 Groove Bottom	溝槽寬度 Groove Width	凸緣直徑 Flange dia.	凸緣深度 Flange depth	倒角長度 Chamfer Length	間隙 Gap	圓角 Radius	相當的O形環 代碼 O-Ring Code
ϕDi	ϕDa	L	ϕDf	A	B	T	R	O-Ring Code
8 ~ 19.9	$Di + 5.0$	3.6	$Di + 9.0$	0.85-0.10	0.8	0.06	0.3	B
20 ~ 39.9	$Di + 7.0$	4.8	$Di + 12.5$	1.35-0.15	1.1	0.07	0.4	C
40 ~ 400.9	$Di + 10.5$	7.1	$Di + 17.5$	1.80-0.20	1.4	0.08	0.5	D
401 ~ 700.0	$Di + 14.0$	9.5	$Di + 22.0$	2.80-0.20	1.6	0.12	0.5	E

選購範例

型式 **CD**
桿徑 $\phi Di = 100$ mm
溝槽底徑 $\phi Da = 110.5$ mm
溝槽寬度 $L = 7.1$ mm
材質組合 碳纖填料鐵氟龍(05T) + 302SS
產品編號 CD-1000-5-1-D

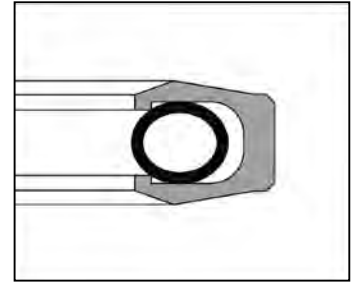
Example of an order

Type **CD**
Rod diameter $\phi Di = 100$ mm
Groove bottom $\phi Da = 110.5$ mm
Groove width $L = 7.1$ mm
Material Carbon fiber Filled PTFE (05T)+ 302SS
Order code CD-1000-5-1-D



內壓法蘭密封件CB型

Face seal, static inside sealing – type **CB**



CB型：

內壓法蘭密封件

type **CB：**

Face seal or flange seal for static inside sealing

應用範圍

壓力 ≤ 350 bar
 溫度 $-150 \sim +225$ °C
 標準材質 碳纖填料鐵氟龍
 材料代碼 5

Application Range

Pressure: ≤ 350 bar
 Temperature: $-150 \sim +225$ °C
 Standard Materials: Carbon fiber Filled PTFE
 material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

溝槽外徑 Groove O.D.	溝槽內徑 Groove I.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環 代碼
ϕDa	ϕDi	L	A	R	Thickness	O-Ring Code
32 ~ 44.9	Da - 7.2	3.6	2.25	0.4	2.62	B
45 ~ 79.9	Da - 9.6	4.8	3.10	0.6	3.53	C
80 ~ 109.9	Da - 14.2	7.1	4.70	0.8	5.33	D
110 ~ 700	Da - 19.0	9.5	6.10	0.8	6.99	E

選購範例

型式

CB

溝槽外徑

$\phi Da = 100$ mm

溝槽內徑

$\phi Di = 85.8$ mm

溝槽深度

A = 4.7 mm

材質組合

碳纖填料鐵氟龍(05T)+ 302SS

產品編號

CB-1000-5-6-D

Example of an order

Type

CB

Groove O.D.

$\phi Da = 100$ mm

Groove I.D.

$\phi Di = 85.8$ mm

Groove depth

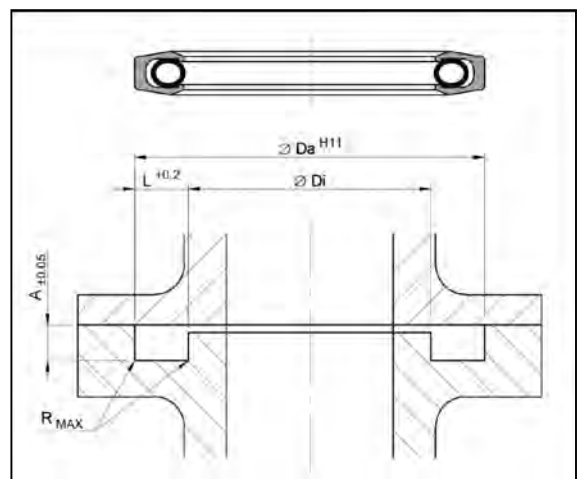
A = 4.7 mm

Material

Carbon fiber Filled PTFE(05T) + 302SS

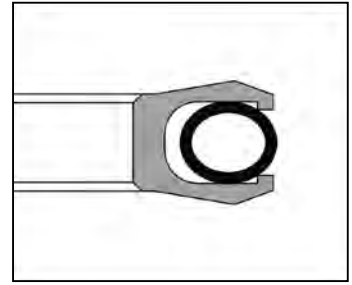
Order code

CB-1000-5-6-D



外壓法蘭密封件 CC 型

Face seal, static outside sealing – type CC



CC 型：
一般外壓用面密封件或法蘭密封件

type CC：
Face seal or Flange seal for static outside sealing

應用範圍

壓力 ≤ 350 bar
溫度 $-150 \sim +225$ °C
標準材質 碳纖填料鐵氟龍
材料代碼 5

Application Range

Pressure: ≤ 350 bar
Temperature: $-150 \sim +225$ °C
Standard Materials: Carbon fiber Filled PTFE
material code:5

註：特殊流體或應用場合，可選用其他材質。

Other materials are available for special operating conditions. Our application engineers will be glad to advise you.

密封件溝槽尺寸

溝槽內徑 Groove I.D.	溝槽外徑 Groove O.D.	溝槽寬度 Groove Width	溝槽深度 Groove Depth	圓角 Radius	相當的 O 形環直徑 equivalent O-Ring Cord	相當的 O 形環代碼 O-Ring Code
ϕDi	ϕDa	L	A	R	Thickness	O-Ring Code
40 ~ 44.9	$Di + 7.2$	3.6	2.25	0.4	2.62	B
45 ~ 79.9	$Di + 9.6$	4.8	3.10	0.6	3.53	C
80 ~ 109.9	$Di + 14.2$	7.1	4.70	0.8	5.33	D
110 ~ 700	$Di + 19.0$	9.5	6.10	0.8	6.99	E

選購範例

型式

CC

溝槽內徑

$\phi Di = 100$ mm

溝槽外徑

$\phi Da = 114.2$ mm

溝槽深度

$A = 4.7$ mm

材質組合

碳纖填料鐵氟龍(05T) + 302SS

產品編號

CC-1000-5-6-D

Example of an order

Type

CC

Groove I.D.

$\phi Di = 100$ mm

Groove O.D.

$\phi Da = 114.2$ mm

Groove depth

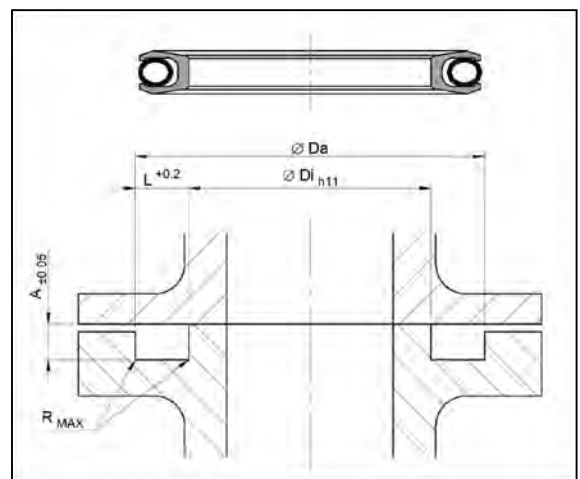
$A = 4.7$ mm

Material

Carbon fiber Filled PTFE (05T) + 302SS

Order code

CC-1000-5-6-D



培凱有限公司密封件詢問表

公司名稱 _____ 分公司名 _____
 公司地址 _____
 所在城市 _____ 郵遞區號 _____
 連絡人 _____ 稱謂 _____ 連絡電話 _____
 電字郵件 _____ 傳真 _____

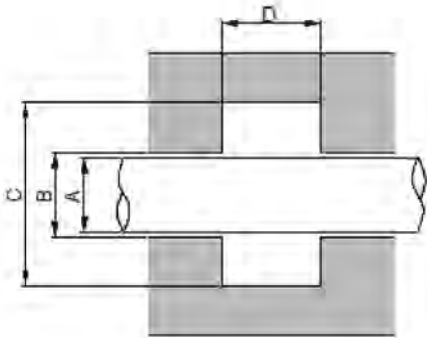
應用環境 _____
 目前使用油封 _____ 產品編號 _____
 新設計油封 _____
 預計年用量 _____ 報價數量 _____
 目前使用油封情形 _____

油封作動方式 靜態 旋轉 往返
 目前使用油封 軸 活塞 法蘭油封 壓力來源: 內 外

轉速 _____ 旋轉角度 _____ (度數) 行程 _____ 速率 _____

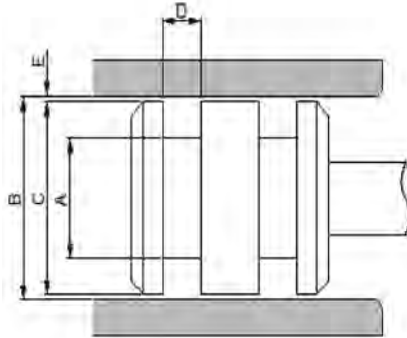
壓力 _____ 壓力方向: 單向 雙向 溫度 _____ 介質 _____

軸應用



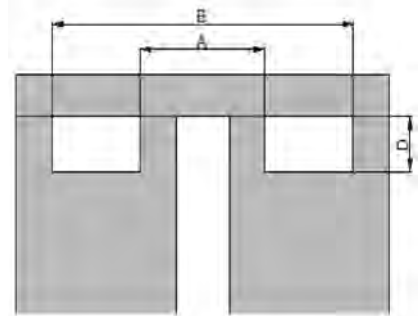
A: _____
 B: _____
 C: _____
 D: _____

活塞應用



A: _____
 B: _____
 C: _____
 D: _____
 E: _____

面密封應用



A: _____
 B: _____
 D: _____



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 E-MAIL: parjet.co@msa.hinet.net | leon@burker.com.tw
 WEBSITE: www.parjet.com.tw

PARJET CO., LTD. ENGINEERING DESIGN REQUEST FORM

Company _____ Division _____

Address _____

City _____ Zip Code _____

Contact _____ Title _____ Phone _____

Email _____ Fax _____

Application _____

Current Seal _____ P/N _____

Newly-designed Seal _____

Annual Usage _____ Quote Quantity _____

Problem(s) with Current Seal _____

Seal Motion Static Rotary Reciprocating

Seal Type Rod Piston Face Seal

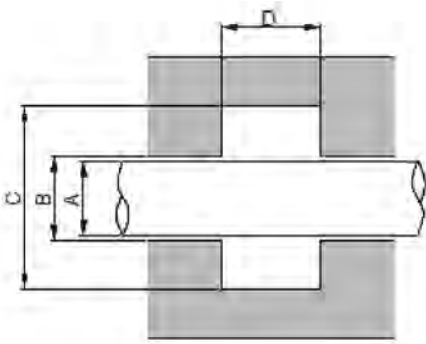
Pressure: Internal External

RPM _____ Rotation _____ (Degrees) Stroke _____ Velocity _____

Pressure _____ psi/bar Pressure Direction : Unidirectional Bidirectional

Temperature _____ Media _____

Rod/Shaft Seals



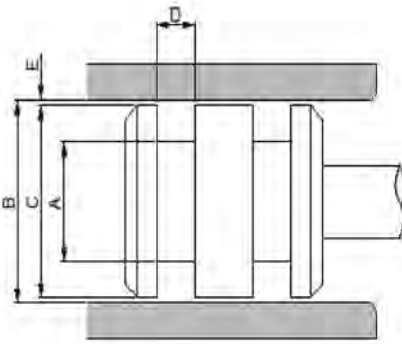
A: _____

B: _____

C: _____

D: _____

Piston Seals



A: _____

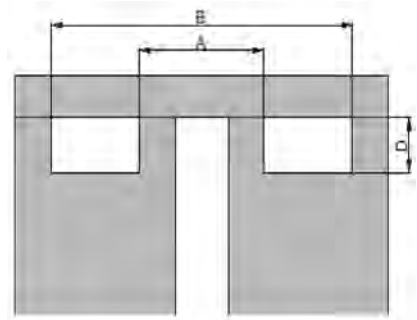
B: _____

C: _____

D: _____

E: _____

Face Seals



A: _____

B: _____

D: _____



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