

PARJET CO., LTD.



PTFE Rotary Lip Seals 鐵氟龍翻唇式旋轉密封件

ISO 9001
IATF 16949





PARJET

培凱有限公司

Parjet is an IATF 16949 and ISO 9001 certified advanced seals manufacturer and distributor that supplies high-performance customized sealing components to FTSE 500 enterprises. We are one of the leading companies in manufacturing PTFE seals in Taiwan. We design, manufacture, and deliver various high quality sealing components to our customers around the globe. Parjet has an extensive inventory of PTFE seals, hydraulic seals, pneumatic seals, mechanical seals, bearing isolators, springs O-rings, hoses and many more. We supply superior quality sealing solutions to more than 2100+ companies in over 30 countries worldwide, serving more than 15 industries including Automotive, Oil & Gas, Health & Medical, Food & Beverage, Semiconductor, valves and more.

Our vision:

To help businesses create values, by one seal at a time.

培凱有限公司立於 1991 年，是一間在台灣通過 IATF 16949 和 ISO9001 認證的專業密封件供應商，也是世界領先知名的密封件供應商，派克漢尼汾的授權經銷商。我們服務超過15個產業，包括汽車、石油和天然氣、醫療、食品、半導體、閥門等產業。我們擁有豐富的應用經驗與實績，多年來不但引進國外工業密封解決方案，亦針對客戶需求，與國外顧問合作提升產品品質。培凱擁有完善的 PTFE 密封件、液壓密封件、氣動密封件、機械密封件、軸承隔離器、彈簧、O 型環等庫存，目前已經累積銷售到超過全球 30 多個國家、2100 多家公司、15個產業。

我們的願景:

透過密封件來幫助企業創造價值。

Product Offerings:

- **HiPerSeal**[®] - Spring Energized Seals
- **HiPerLip**[®] - PTFE Rotary Lip Seals with Metal Casing
- **HiPerFlon**[®] - PTFE Rotary Lip Seals with O Ring
- **ParSeries**[®] - Mechanical Seals, Lip Seals
- **ParSave**[®] - Bearing Isolators
- **PTFE Seals**
- **Wear Rings**
- **Springs**
- **Hydraulic Seals**
- and more

培凱產品項目:

- **HiPerSeal**[®] - 鐵氟龍彈簧密封件
- **HiPerLip**[®] - 鐵氟龍翻唇式旋轉密封件(搭配鐵殼)
- **HiPerFlon**[®] - 鐵氟龍翻唇式旋轉密封件(搭配O型環)
- **ParSeries**[®] - 機械軸封、泵用唇封、攪拌機用浮動唇封
- **ParSave**[®] - 軸承隔離器
- 鐵氟龍液壓密封件
- 耐磨環
- 彈簧
- 液壓油封
- 其他更多

Parjet PTFE Rotary Seals Overview

培凱鐵氟龍旋轉密封件總覽

Seals come in different forms and materials, from simple O Ring for static applications to hydraulic rubber seals for reciprocating purposes and rotary seals for more extreme operating conditions. Parjet has many years of experiences in providing sealing solutions. We specializes in dynamic sealing solutions and offers a wide variety of rotary seals. Here is an overview of the rotary seals that we offer.

密封件有不同的形式與設計，從廣泛熟知的 O Ring 用於靜態應用到往復運動的液壓橡膠密封件以及較適合在嚴苛環境下的旋轉密封件。培凱多年來提供專業的密封件解決方案，對於設計與生產旋轉應用的密封件擁有豐富的經驗與能力，以下是我們提供的鐵氟龍旋轉密封件總覽。

HiPerFlon®

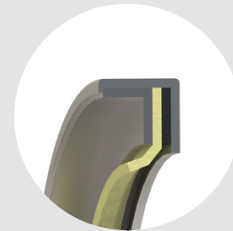
PTFE Rotary Lip Seal (O Ring)
鐵氟龍翻唇式旋轉密封件 (搭配O型環)



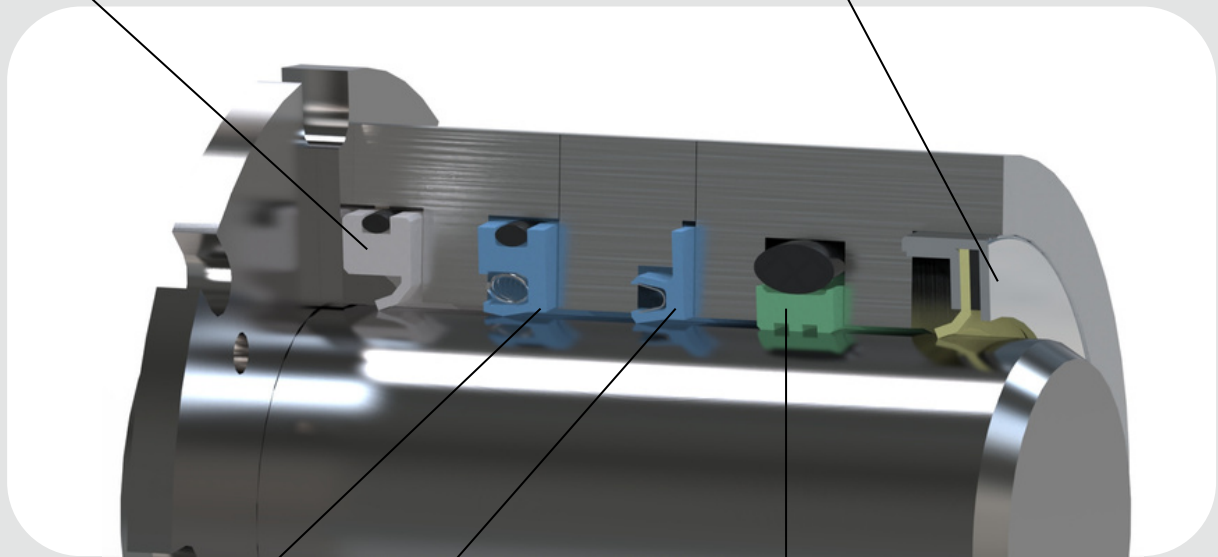
- Low Pressure & Medium Speed
- Simple and Flexible Design
- Open Groove Required
- 低壓中等速度應用
- 簡單靈活設計
- 安裝於開放式溝槽

HiPerLip®

PTFE Rotary Lip Seal (Metal Casing)
鐵氟龍翻唇式旋轉密封件 (搭配鐵殼)

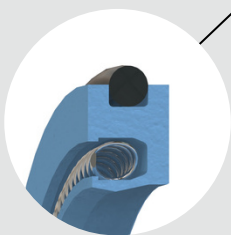


- Low Pressure & High Speed
- Open Groove Required
- 低壓高速度應用
- 安裝於開放式溝槽



HiPerSeal®

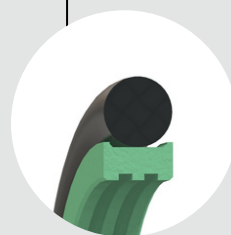
Spring Energized Seals
鐵氟龍彈簧密封件



- High Pressure & Low Speed
- Wide Range of Spring Selection
- Open Groove Required
- 高壓低速度應用
- 廣泛彈簧選項
- 安裝於開放式溝槽

PTFE Rotary Glide Seal Set

鐵氟龍旋轉液壓密封件



- High Pressure & Low Speed
- Applied for Bi-directional Pressure Applications
- Suitable for Closed Groove
- Suitable for Small Groove
- 高壓極低速度應用
- 適用於雙向壓力應用
- 可適用於一體式溝槽

The following summarizes the different types of sealing design and its suitable operating condition.

以下總結了不同密封件設計在旋轉應用中合適的工作條件:

速度 Speed 壓力 Pressure	低速 Low Speed < 5 m/s (< 984 fpm)		中速 Medium Speed 5 ~ 12.5 m/s (984fpm ~2460 fpm)		高速 High Speed 12.5 ~ 30 m/s (2460 fmp ~ 5905 fpm)	
	開放式溝槽 Open Grooves	一體式溝槽 Close Grooves	鐵殼 Metal	非鐵殼 Without Metal	鐵殼 Metal	非鐵殼 Without Metal
低壓 Low Pressure < 10kg/cm ² (< 14 psi)	HiPerFlon [®]	PTFE Glide Seal Set	HiPerLip [®]	HiPerFlon [®]	HiPerLip [®]	HiPerFlon [®]
中壓 Medium Pressure 10 ~ 35kg/cm ² (14 ~ 497 psi)	HiPerSeal [®]	PTFE Glide Seal Set	HiPerLip [®]		HiPerLip [®]	
高壓 High Pressure > 35kg/cm ² (> 497 psi)	HiPerSeal [®]	PTFE Glide Seal Set	For related demand, please consult with Parjet. 如有相關需求，歡迎與我們聯絡。			

HiPerLip[®]

型式 Profile	壓力 Pressure			
	< 35 psi (< 2 bar)	35 ~ 75 psi (2 ~ 5 bar)	75 ~ 500 psi (5 ~ 34 bar)	500~ 750 psi (34 ~ 50 bar)
標準 Standard	LA 	M1 	K2 	S2
防塵 With Wiper	LW 	MW 	KW 	SW
左旋 Anti - clockwise		ML 	KL 	
右旋 Clockwise		MR 	KR 	
偏擺 Runout	LS 	MS 	KS 	
偏擺 + 防塵 Runout with Wiper	LD 	MD 	KD 	
雙向唇 Double - acting Lip			KB 	SB
Food Application 食品級		MA 	KA 	

HiPerFlon[®]

型式 Profile	壓力 Pressure	
	< 60 psi (< 4 bar)	< 150 psi (< 10 bar)
標準 Standard	NA 	NC
防塵 With Wiper	NF 	
偏擺 Runout	ND 	NE
雙向唇 Double - acting Lip	NK 	
雙向 + 防塵 Double acting lip with Wiper	NI 	NJ
軸徑大於 100mm 或 溫度 > 120 °C 或 < -15 °C 需支撐鐵環 Shaft diameter > 100mm or Temperature > 120 °C or < -15 °C Requires Supporting Ring		
支撐鐵環 Supporting Ring	NI 	NJ

HiPerSeal[®]

型式 Profile	法蘭式 Flange	斷面 Cross Section	
		> 5mm (> 0.196")	< 5mm (< 0.196")
標準型 Standard	VD 	VH 	VL
	CD 	CH 	CL
	HD 		
刮塵環 With Wiper	VDW 	VHW 	VLW
	CDTW 	CHTW 	CLTW



HiPerLip®

PTFE Rotary Lip Seal with Metal Casing

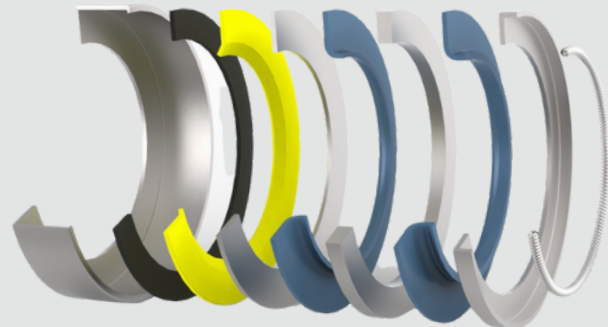
鐵氟龍翻唇式旋轉密封件 (搭配鐵殼)

HiPerLip® is a rotary shaft seal with a PTFE sealing lip on the ID and metal casing on the OD, which is then press-fit into your housing. It is ideal for sealing high-speed rotary applications with very low friction and minimal power draw to achieve better performance, higher response, and precision. Since the lips are not energized by a spring, the contact pressure for the HiPerLip® is lower and the seal can function at much higher speeds. With many excellent PTFE compounds and the unique sealing lip geometries, the HiPerLip® provides superior performance over conventional rotary oil seals. This is especially true in very high-speed rotary, poorly lubricated, highly corrosive, high temperatures, and other extreme working environments. Applicable temperatures range from -60°C to 225°C (-76°F to 437°F) with surface speeds up to 30m/s (5900 fpm) at low or no pressure. The capabilities of the HiPerLip® far outperform common elastomers rotary seals.

The radial contact pressure of the HiPerLip® sealing lip produces leak tight sealing action on the shaft. This is achieved by a combination of correct PTFE seal lip geometry, static seal (gasket), precise steel casing and forming process. The wide selection of standard PTFE material, gasket and metal can be customized to suit almost any application. The interference is compliant with that specified in DIN 3760, and ensures static sealing between steel casing of HiPerLip® and the seal housing. Our standard steel casing material is mild steel (SPCD) but other materials like stainless steel (JIS SUS 304, SUS 316, DIN 1.4301) are available upon request.

HiPerLip® 為搭配鐵殼的鐵氟龍翻唇式旋轉密封件，俗稱鐵殼油封，由內徑鐵氟龍密封唇與外徑金屬鐵殼所組成的。具有低摩擦、低耗能的優異特性，可滿足設備的高應答、高精度性能要求。得益於優異的鐵氟龍材質特質跟獨特的密封唇結構，提供優於傳統油封的性能，適於高速、低壓、潤滑不良、高溫、及高腐蝕性流體等環境的應用。由於HiPerLip® 鐵氟龍唇部未有彈簧加力，接觸壓力相對於旋轉彈簧密封件還要來的低，因此，此密封件可以承受較高的轉速。使用溫度範圍可由-60°C至225°C (-76°F to 437°F)，在低壓的應用旋轉速度可高達30m/s (5900 fpm)，遠超過DIN3760的常用徑向旋轉密封件的材質（如NBR、ACM、FPM、VITON）等，其低摩擦特性可以減少摩擦熱，避免潤滑油脂碳化。

HiPerLip® 柔軟的鐵氟龍密封唇壓在轉軸上，在精密沖壓成型鋼環的支撐下，形成穩定的徑向接觸壓力，加上靜態密封墊片(Gasket)，可發揮優異的旋轉密封性能。標準鐵氟龍材料、密封墊和金屬外殼擁有廣泛的範圍選項，可進行客製化來滿足幾乎任何應用。其溝槽尺寸也符合DIN 3760標準，可完全取代傳統油封。HiPerLip® 的標準鋼環材質為碳鋼(SPCD)，亦可依客戶需求與應用條件，選用不銹鋼(JIS SUS 304, JIS SUS 316, DIN 1.4301) 等其他材質。



HiPerLip® Component

鐵氟龍翻唇式旋轉密封件 (搭配鐵殼) 元件

Based on the different operating conditions and designs, the HiPerLip® can have different components. Each HiPerLip® will consist of one or more sealing lips, metal spacers and metal outer case. Gaskets can be adjusted based on different applications. Few applications might require a spring load.

HiPerLip®可以根據不同的工況條件進行客製化的設計。每個鐵殼油封將由至少一個密封唇、金屬墊片和金屬外殼所組成。靜態密封墊片可以依照不同的應用進行調整，少數的應用可能需要彈簧加力的設計。

Metal Spacer/Retaining Ring/ Inner Case

- Provides space for the sealing lip(s) to form curved shape.
- Also used to provide space between HiPerLip® designs with multiple sealing lips that face in the same direction.
- Acts as spacer to keep the lip edge away from the gland wall.

金屬內殼/墊片

- 將2個朝向同個方向的密封唇分開
- 為密封唇提供彎曲空間
- 防止密封唇往內變形
- 將密封唇固定到位

Gasket

- Prevents the sealing media leak between the HiPerLip® components.
- Prevent the sealing component from falling off
- It can be eliminated based on working conditions (operating temperature, fluid media, etc).
- Made of elastomers

靜態密封墊片

- 防止密封介質洩漏到外殼內部
- 防止密封唇脫落
- 可根據工況條件（工作溫度、流體介質、成本...等）選擇移除
- 橡膠材質為主

Paint Coating

- Applied to the OD of outer case for tighter sealing of air or light gases applications.
- Prevents scratches on the directly on the metal case.

噴漆

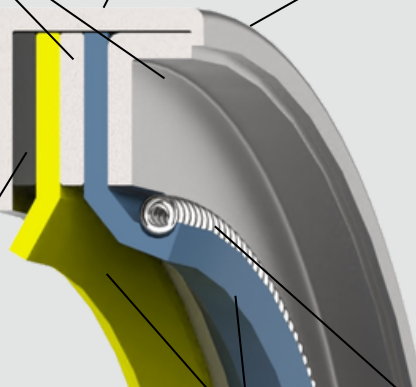
- 適用於需要更緊密密封空氣或輕氣體的應用
- 塗抹在金屬外殼外徑
- 防止直接刮損鐵殼

Outer case

- Press fit into housing and prevents the seal from rotating with the shaft.
- Holds all the components inside the seal in place.
- Tailor made to fit in the sealing housing.

金屬外殼

- 防止密封件隨著轉軸轉動
- 將密封件內的所有組件固定到位
- 量身定制以適合密封外殼



Sealing lip (element)

- Press directly against the rotating shaft to prevent contaminants and leakage.
- The selection of sealing lip materials will depend on the application.
- Uses PTFE based materials compounded with wear resistant fillers.

密封唇/元件

- 直接緊貼在旋轉的軸上，主要用於防污染物與止漏
- 密封唇的材質會取決於應用工況
- 鐵氟龍材質為主

Garter Spring

- Provides additional spring load to compensate for shaft runout or shaft misalignment.
- Improves sealing under high speed.

拉伸彈簧

- 在轉軸真圓度不佳或偏擺較大的應用下，提供輔助
- 提高高速下的密封性

Benefits of HiPerLip®

鐵氟龍翻唇式旋轉密封件 (搭配鐵殼) 的優點

1. High speed and low to medium pressure applications.

HiPerLip® can operate at speeds up to 10.2 m/s (2000 fpm) at pressures up to 35 bar (250psi); and speeds up to 30m/s (6000 fpm) at low or no pressure. The HiPerLip® performs best with well lubricated environments, but it is perfectly capable of sealing in dry applications as well. The HiPerLip® far exceeds the capabilities of traditional elastomeric seals.

2. Anti-Rotation

HiPerLip® is pressed to fit into the housing therefore it does not rotate with the shaft. This prevents potential leakage across the OD.

3. Corrosion resistance

The PTFE sealing lip material has excellent resistance to corrosive media (with pH above 4 and below 12.5) even at extreme temperatures and pressures. The metal casing can also be made from erosion resistant material such as high nickel alloys (Hastelloy) for better corrosion resistance.

4. Cryogenic and high temperature resistance

Operating in an environment up to 225°C (437°F), the sealing lips have twice the strength of traditional elastomeric materials and do not struggle from heat-aging or degradation. Even at low temperature environments of -60°C (-76°F), HiPerLip® can perform without stress cracking or embrittlement.

5. Abrasion Resistance

Suitable for both dry running and poorly lubricated conditions. Some traditional elastomeric materials require lubricated oil fillers which could impact negatively on the material properties and reduce sealing life. The HiPerLip® sealing lip eliminates this issue with PTFE compounds that have self-lubricated and low friction characteristics.

6. Low friction characteristics prevent oil carbonization

HiPerLip® has very low break-out and dynamic friction even after long down-times. The PTFE compound has a low coefficient of friction (three times lower than elastomers) which reduces heat generated from the interaction with the shaft and prevents oil carbonization.

1. 適用於高速與中~低壓力應用

HiPerLip® 能夠在35 bar (250 psi)的環境下，以高達 10.2m/s (2000 fpm) 的速度運轉，且低壓或無壓力的環境下，最高可耐的速度高達 30m/s (6000 fpm)。HiPerLip® 在良好潤滑的環境下可達成最佳的密封性能，但在無潤滑的環境下，也可以達成優良的止漏效果

2. 防止密封件旋轉

HiPerLip® 可直接安裝於符合DIN 3760的密封溝槽。藉由外鐵殼的設計，在安裝的時候會被壓入溝槽內，所以當轉軸開始旋轉時，密封件不會跟著旋轉，防止外徑洩漏的問題。

3. 防腐蝕性

鐵氟龍密封唇材質具有優異的耐化學性，即使在低溫和高溫下對pH值高於4和低於12.5的腐蝕性介質具有出色的耐受性。金屬鐵殼也可以搭配耐腐蝕材料，例如高鎳合金 (Hastelloy)，以提高整體密封件的耐腐蝕性。

4. 優良的耐高低溫特性

在高達 225°C (437°F) 的環境中，HiPerLip® 密封唇的強度是傳統彈性材料的兩倍，並且不會因熱老化或變形而失效。即使在 -60°C (-76°F) 的低溫環境下，也不會因低溫產生裂痕的情況。

5. 優良的耐磨性

HiPerLip® 適用於短期無潤滑或長期潤滑不良的旋轉應用。一些傳統橡膠油封會需要潤滑油填料來解決磨耗問題，但這可能會對材料物性產生負面影響並縮短密封壽命。HiPerLip® 使用具有自潤滑和低摩擦特性的鐵氟龍材料能夠消除這個問題，讓使用壽命變長。

6. 低摩擦特性防止油碳化

HiPerLip® 在啟動與運轉的時候，摩擦力極低，即使在長期停機後再度啟用，也能立即擁有低摩擦特性。鐵氟龍材質具有低摩擦係數(比傳統橡膠低了3倍)，可減少與轉軸之間產生的熱能並防止油碳化。

HiPerLip® - Product Profiles

鐵氟龍唇式旋轉密封件(搭配鐵殼)型式

Profile 型式	Operating Condition 運轉條件		
	Pressure 壓力	Temperature 溫度	Speed 速度
LA	≤ 2 bar (35 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 30 m/s (5900 fpm)
M1	≤ 5 bar (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
K2	≤ 17.25 bar (250 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
S2	≤ 35 bar (500 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
LW	≤ 2 bar (35 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 30 m/s (5900 fpm)
MW	≤ 5 bar (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
KW	≤ 17.25 bar (250 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)

For other operating conditions, please contact us.
如有其他工況需求，歡迎與我們聯絡

Features 特性	Applications 應用
Machined primary lip 低摩擦加工單密封唇型	<ul style="list-style-type: none"> • Low breakaway torque • Suitable for various anti-friction bearing sealing applications • 很適用於軸承保護用，且可完全取代傳統橡膠油封 • 一般低起步扭矩的旋轉軸應用
Standard formed primary lip 標準單密封唇型	<ul style="list-style-type: none"> • General rotary applications • Suitable for fans, pumps, compressors, gear-boxes, and engine crank case • 一般通用旋轉應用 • 適用於風車、泵浦、壓縮機、齒輪箱、引擎曲軸箱等應用
Dual primary lips 雙密封唇型	<ul style="list-style-type: none"> • Low leakage systems • Suitable for hydraulic motors and hydraulic oil components applications • 可使用於低洩漏系統 • 適用油壓馬達、液壓油元件等應用
Dual primary lips seal with special design on metal backup washer 高壓型雙密封唇搭配特製金屬備圈	<ul style="list-style-type: none"> • Low leakage systems • Suitable for higher pressure application • 可使用於低洩漏系統 • 適用於高壓的環境下
Machined primary lip (with wiper) 加工單密封唇型 (加上防塵)	<ul style="list-style-type: none"> • Low breakaway torque • Suitable for various anti-friction bearing sealing applications • Additional dust extruder to protect primary seal lip • 很適用於軸承保護用，且可完全取代傳統橡膠油封 • 一般低起步扭矩的旋轉軸應用 • 可應用於多粉塵環境
Standard formed primary lip (with wiper) 標準單唇型(加上防塵)	<ul style="list-style-type: none"> • Low breakaway torque • Suitable for various anti-friction bearing sealing applications • Additional dust extruder to protect primary seal lip • 一般通用旋轉應用 • 適用於風車、泵浦、壓縮機、齒輪箱、引擎曲軸箱等應用 • 可應用於多粉塵環境
Dual primary lips (with wiper) 雙密封唇型(加上防塵)	<ul style="list-style-type: none"> • Low leakage systems • Suitable for hydraulic motors and hydraulic oil components applications • Additional dust extruder to protect primary seal lip • 可使用於低洩漏系統 • 適用油壓馬達、液壓油元件等應用 • 可應用於多粉塵環境

HiPerLip® - Product Profiles

鐵氟龍唇式旋轉密封件(搭配鐵殼)型式

Profile 型式	Operating Condition 運轉條件			
	Pressure 壓力	Temperature 溫度	Speed 速度	
SW		≤ 35 bar (500 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
LS		≤ 5 bar (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
MS		≤ 8 bar (125 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
KS		≤ 17.25 bar (250 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
LD		≤ 5 bar (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
MD		≤ 8 bar (125 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
KD		≤ 17.25 bar (250 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)

For other operating conditions, please contact us.
如有其他工況需求，歡迎與我們聯絡

Features 特性	Applications 應用
Dual primary lips seal with special design on metal backup washer (with wiper) 高壓型雙密封唇搭配特製金屬備圈 (加上防塵)	<ul style="list-style-type: none"> • Low leakage systems • Suitable for higher pressure application • Additional dust extruder to protect primary seal lip • 可使用於低洩漏系統 • 適用於高壓的環境下 • 可應用於多粉塵環境
Primary lip energized with Spring 加工單密封唇型(加彈簧)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Low breakaway torque • Suitable when abrasive media is used • 適用於轉軸真圓度不佳或偏擺較大的場合 • 一般低起步扭矩的旋轉軸應用 • 適用於有腐蝕性介質應用
Standard formed primary lip with Spring 標準單密封唇型 (加彈簧)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Suitable when abrasive media is used • 適用於轉軸真圓度不佳或偏擺較大的場合 • 適用於有腐蝕性介質應用
Dual formed primary lip with spring 雙密封唇型(加彈簧)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Suitable when abrasive media is used • 適用於轉軸真圓度不佳或偏擺較大的場合 • 適用於有腐蝕性介質應用
Primary lip energized with Spring and Wiper 加工單密封唇型(加彈簧、防塵)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Low breakaway torque and when abrasive media is used • Additional dust extruder to protect primary seal lip • 適用於轉軸真圓度不佳或偏擺較大的場合 • 適用於一般低起步扭矩與有腐蝕性介質的旋轉應用 • 可應用於多粉塵環境
Standard formed primary lip with Spring and Wiper 標準單密封唇型 (加彈簧、防塵)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Suitable when abrasive media is used • Additional dust extruder to protect primary seal lip • 適用於轉軸真圓度不佳或偏擺較大的場合 • 適用於有腐蝕性介質應用 • 可應用於多粉塵環境
Dual formed primary lip with Spring and Wiper 雙密封唇型(加彈簧、防塵)	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Suitable when abrasive media is used • Additional dust extruder to protect primary seal lip • 適用於轉軸真圓度不佳或偏擺較大的場合 • 適用於有腐蝕性介質應用 • 可應用於多粉塵環境

HiPerLip® - Product Profiles

鐵氟龍唇式旋轉密封件(搭配鐵殼)型式

Profile 型式	Operating Condition 運轉條件		
	Pressure 壓力	Temperature 溫度	Speed 速度
KB 	≤ 5 bar (Each side) (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
SB 	≤ 17.25 bar (Double Lip) (250 psi) ≤ 5 bar (Single Lip) (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
MA 	≤ 5 bar (75 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
KA 	≤ 17.25 bar (250 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)

For other operating conditions, please contact us.
如有其他工況需求，歡迎與我們聯絡

Features 特性	Applications 應用
Opposite lip arrangement 鏡面對稱配置唇型	<ul style="list-style-type: none"> • Separate two different media on both ends • Suitable for centrifugal application • 可將2種不同的流體隔離 • 很適用於離心機設備
Opposite lip arrangement with dual lips 標準單密封唇型 (加彈簧、防塵)	<ul style="list-style-type: none"> • Separate two different media on both ends • Suitable for centrifugal application • Can perform under higher pressure condition than KB • 可將2種不同的流體隔離 • 很適用於離心機設備 • 比KB還要能承受更大的壓力
Standard formed primary lip 標準單密封唇型	<ul style="list-style-type: none"> • General rotary applications • Similar with M1 design, only difference is the direction of the lip • Suitable for food & beverage application • 一般通用旋轉應用 • 此型號的設計與M1型相似，唯一不同的是密封唇的方向 • 適用於食品級等應用
Dual formed primary lips 雙密封唇型	<ul style="list-style-type: none"> • Low leakage systems • Similar with K2 design, only difference is the direction of the lip • Suitable for food & beverage application • 可使用於低洩漏系統 • 此型號的設計與K2型相似，唯一不同的是密封唇的方向 • 適用於食品級等應用



HiPerFlon®

PTFE Rotary Lip Seal with O Ring

鐵氟龍翻唇式旋轉密封件 (搭配O型環)

HiPerFlon® is a rotary lip seal that features an ID lip that seals dynamically on shaft and with O-ring centered on the OD. Similar to the concept of HiPerLip®, it uses formed sealing lips to prevent leakage and is suitable for medium to high speeds in low pressure applications. It is suitable when corrosive media are being sealed in the application. HiPerFlon® is composed of a variety of PTFE compound materials and is often selected for applications where the working environment exceeds the capabilities of traditional elastomer seals, such as high corrosion, high and low temperature, and poor lubrication.

HiPerFlon® is available in a wide variety of PTFE compounds, and utilize common O-ring material choices like fluorocarbon, silicone, nitrile, and EPDM. The use of standard O-ring and PTFE compounds create an easily adaptable solution for all kinds of high-speed applications. The operating temperature range can be from -40°C to 200°C (-40°F to 390°F), and the speed can reach up to 30 m/s (5900 fpm) in low pressure applications. The HiPerFlon seal has low friction characteristics which can reduce heat generation and avoid oil carbonization.

Standard HiPerFlon® sizes are precision machined to fit inch-fractional and metric gland geometries, and in-house processing allows custom seal cross sections and diameters to meet any customer request.

HiPerFlon® 是個由內徑密封動態應用的鐵氟龍密封唇與外徑將密封件固定在工件的O型環所組成的旋轉密封件。因與HiPerLip® 的設計概念相似，利用非彈簧制動的密封唇來防止洩漏，所以接觸力量會相對的比有彈簧油封還要低，因此適合在高速的應用下運作。由於密封件的主要本體採用鐵氟龍的材質，所以非常適合用在高腐蝕性的環境之下。

HiPerFlon® 是由多種PTFE複合材料和其他可加工的塑膠材料組成的，經常被選用在當工作環境超出傳統彈性體密封件能力的應用，比如高腐蝕、高低溫、不良潤滑等應用。標準O型密封圈選擇包括有碳氟化合物、矽樹脂、腈和三元乙丙橡膠。廣泛地標準O型密封圈以及PTFE鐵氟龍材料的選擇，可以進行客製加工並使用於幾乎所有的應用上。使用溫度範圍可由 -40°C 至 200°C (-40°F to 390°F)，在低壓的應用旋轉速度可高達 30 m/s (5900 fpm)，其低摩擦特性可以減少摩擦熱，避免潤滑油脂碳化。

由於HiPerFlon® 是由模製的鐵氟龍管料加工而成，所以設計極為靈活，標準以及非標準的設計經過精密加工可適用於英制和公制溝槽幾何設計。選用標準治具與程式能夠減少前置作業以及編程時間能夠更有效率地製作密封件。



HiPerFlon® Component

鐵氟龍翻唇式旋轉密封件 (搭配O型環)元件

The components of HiPerFlon® may vary between the various designs. Each rotary seal will consist of PTFE sealing element and an O-Ring, and some may require additional spring support.

HiPerFlon® 可以根據不同的工況條件進行客製化的設計。每個旋轉密封件將由鐵氟龍密封元件與O型環所組成，少數的應用可能需要彈簧加力的設計。

PTFE Body

- Provides spaces for sealing lips to form curved shape.
- Sizes can be customized based on the groove size.
- Provide space for O Ring

PTFE鐵氟龍本體

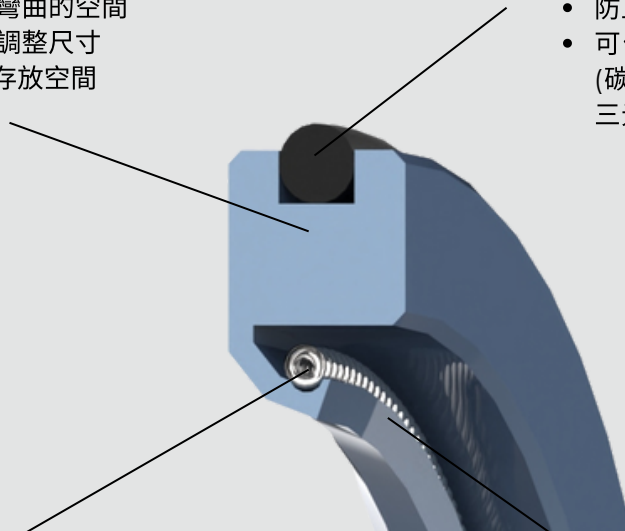
- 提供密封唇彎曲的空間
- 可依照溝槽調整尺寸
- 提供O型環存放空間

O-Ring

- Prevents the seal from rotating with the shaft.
- Material choices like fluorocarbon, silicone, nitrile, and EPDM.

O型環

- 防止密封件隨著轉軸轉動
- 可依照工況選擇對應的材質 (碳氟化合物、矽樹脂、腈和三元乙丙橡膠..等)



Garter Spring

- Provides additional spring load to compensate for shaft runout or shaft misalignment.
- Improves sealing under high speed.

拉伸彈簧

- 在轉軸真圓度不佳或偏擺較大的應用下，提供輔助
- 提高高速下的密封性

Sealing lip (element)

- Press directly against the rotating shaft to prevent contaminants and leakage.
- The selection of sealing lip materials will depend on the application.
- Uses PTFE based materials compounded with wear resistant fillers.

密封唇/元件

- 直接緊貼在旋轉的軸上，主要用於防污染物與止漏
- 密封唇的材質會取決於應用工況
- 鐵氟龍材質為主

Benefits of HiPerFlon®

鐵氟龍翻唇式旋轉密封件 (搭配O型環)的優點

1. Medium to High speed and low to medium pressure applications

HiPerFlon® can operate at speeds up to 30 m/s (5900 fpm) with low pressure and a well lubricated environment. The maximum pressure can reach 10 bar (150psi); which is higher than the limit of traditional elastomeric materials.

2. Simple and flexible sealing technique

HiPerFlon® is precision machined to fit both inch-fractional and metric gland geometries which does not require additional tooling. Standard and non-standard sizes are available upon request.

3. Corrosion Resistance

The PTFE sealing lip material has excellent resistance to corrosive media (with pH above 4 and below 12.5) even at extreme temperatures and pressures. This limit exceeds the traditional elastomer materials. (The actual corrosion resistance will depend on the material of the O Ring.)

4. Temperature Resistance

Operating in an environment up to 200°C (392°F), the sealing lips have twice the strength of traditional elastomeric materials and do not struggle from heat-aging or degradation. Even at low temperature environments of -40°C (-40°F), HiPerFlon® can perform without stress cracking or embrittlement. (The actual temperature resistance limits will depend on the material of the O Ring.)

5. Abrasion Resistance

Suitable for both dry running and poorly lubricated conditions. Some traditional elastomeric materials require lubricated oil fillers which could impact negatively on the material properties and reduce sealing life. The HiPerFlon® sealing lip eliminates this issue with PTFE compounds that have self-lubricated and low friction characteristics.

6. Low friction characteristics prevent oil carbonization

HiPerFlon® has very low break-out and dynamic friction even after long down-times. The PTFE compound has a low coefficient of friction (three times lower than elastomers) which reduces heat generated from the interaction with the shaft and prevents oil carbonization.

1. 中至高速與低壓力應用

HiPerFlon® 能夠在低壓力、良好潤滑的環境下以高達30m/s (5900fpm) 的速度運轉。最高壓力範圍可達10 bar (150psi)，遠高於傳統橡膠材料的極限。密封性能與使用壽命遠優於傳統油封。

2. 簡單密封設計

由於HiPerFlon® 的設計簡易、靈活，無須開模具。標準以及非標準的設計經過精密加工可適用於英制和公制溝槽幾何設計。

3. 優異的防腐蝕性

鐵氟龍密封唇材質具有優異的耐化學性，在流體或環境為高腐蝕性會突顯HiPerFlon® 以PTFE鐵氟龍密封唇材質的優勢。即使在低溫和高溫下對pH值高於4和低於12.5的腐蝕性介質具有出色的耐受性，遠超過傳統油封。(整體的腐蝕性會取決於O型環的材質)

4. 優異的耐高低溫特性

在高達 200°C (392°F) 的環境中，HiPerFlon® 密封唇的強度是傳統彈性材料的兩倍，並且不會因熱老化或變形而失效。即使在 -40°C (-40°F) 的低溫環境下，也不會因低溫產生裂痕的情況。(密封件整體的耐溫性會取決於O型環的材質)

5. 優異的耐磨特性

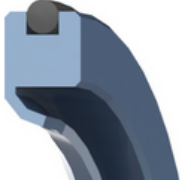
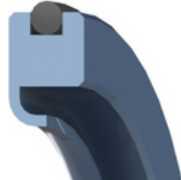
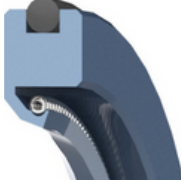
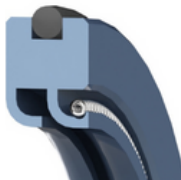


HiPerFlon® 適用於短期無潤滑或長期潤滑不良的旋轉應用。一些傳統橡膠油封會需要潤滑油填料來解決磨耗問題，但這可能會對材料物性產生負面影響並縮短密封壽命。HiPerFlon® 使用具有自潤滑和低摩擦特性的鐵氟龍材料能夠消除這個問題，讓使用壽命變長。

6. 低摩擦特性防止油碳化

HiPerFlon® 在啟動與運轉的時候，摩擦力極低，即使在長期停機後再度啟用，也能立即擁有低摩擦特性。鐵氟龍鐵氟龍材質具有低摩擦係數(比傳統橡膠低了3倍)，可減少與轉軸之間產生的熱能並防止油碳化。

HiPerFlon® - Product Profiles

鐵氟龍唇式旋轉密封件(搭配O型環)型式

Profile 型式	Operating Condition 運轉條件			
	Pressure 壓力	Temperature* 溫度*	Speed 速度	
NF		≤ 2 bar (30 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 30.5 m/s (6000 fpm)
NA		≤ 4 bar (60 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
ND		≤ 4 bar (60 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
NE		≤ 10 bar (150 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 10.2 m/s (2000 fpm)
NK		≤ 4 bar (60 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
NC		≤ 10 bar (150 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)

*Actual operating temperature range will depend on O Ring material

*實際溫度範圍取決於O型環材質





For other operating conditions, please contact us.

如有其他工況需求，歡迎與我們聯絡

Features 特性	Applications 應用
Machined Primary lip 低摩擦密封唇型	<ul style="list-style-type: none"> • Act as a wiper to block out pollutants • Suitable for low friction application • 很適用於軸承保護及防塵用 • 適用於低摩擦應用
Standard Primary lip 標準密封唇型	<ul style="list-style-type: none"> • Standard multipurpose rotary application • Suitable for fans, pumps, compressors, gear-boxes, and engine crank case • 多功能標準旋轉軸密封件 • 適用於風車、壓縮機、齒輪箱、引擎曲軸箱等
Machined Primary lip with Spring 彈簧加強單密封唇型	<ul style="list-style-type: none"> • Suitable for low friction application • Suitable for poor roundness or high round-out shaft • 適用於低摩擦應用 • 適用於轉軸真圓度不佳或偏擺較大的旋轉密封
Dual primary lips with spring 彈簧加強高偏擺型雙密封唇	<ul style="list-style-type: none"> • Suitable for poor roundness or high round-out shaft • Suitable for low to medium pressure application • 適用於轉軸真圓度不佳或偏擺較大的旋轉密封 • 適用於低~中壓力應用
Double acting primary lips 雙向密封唇型	<ul style="list-style-type: none"> • Suitable for fans, pumps, compressors, gear-boxes and engine crank case • Separate two different media on both ends • 適用於風車、壓縮機、齒輪箱、引擎曲軸箱等應用 • 可將2種不同的流體隔離
Dual primary lips 雙密封唇型	<ul style="list-style-type: none"> • Abrasive - resistant and pressure-stable, for use flooded and severe splash application • Suitable for low to medium pressure application • 耐磨且耐壓，適用於嚴重濺灑應用 • 適用於低~中壓力應用

HiPerFlon® - Product Profiles

鐵氟龍唇式旋轉密封件(搭配O型環)型式

Profile 型式	Operating Condition 運轉條件		
	Pressure 壓力	Temperature* 溫度*	Speed 速度
NI 	≤ 4 bar (60 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
NJ 	≤ 10 bar (150 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
SA 	≤ 4 bar (60 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)
SC 	≤ 10 bar (150 psi)	- 40 °C to 200 °C (- 40 °F to 392 °F)	≤ 25.4 m/s (5000 fpm)

*Actual operating temperature range will depend on O Ring material

*實際溫度範圍取決於O型環材質

For other operating conditions, please contact us.

如有其他工況需求，歡迎與我們聯絡

Features 特性	Applications 應用
Standard Primary lip (with wiper) 單密封唇型 (加防塵)	<ul style="list-style-type: none"> • Standard multipurpose rotary application • Suitable for fans, pumps, compressors, gear-boxes, and engine crank case • Additional dust extruder to protect primary seal lip • 多功能標準旋轉軸密封件 • 適用於風車、壓縮機、齒輪箱、引擎曲軸箱等 • 可應用於多粉塵環境
Dual primary lips (with wiper) 雙密封唇型 (加防塵)	<ul style="list-style-type: none"> • Abrasive - resistant and pressure-stable, for use flooded and severe splash application • Suitable for low to medium pressure application • Additional dust extruder to protect primary seal lip • 耐磨且耐壓，適用於嚴重濺灑應用 • 適用於低~中壓力應用 • 可應用於多粉塵環境
Formed Primary lip with metal banded 標準密封唇型(加鐵架支撐)	<ul style="list-style-type: none"> • Standard multipurpose rotary application • Suitable for fans, pumps, compressors, gear-boxes, and engine crank case • Suitable for shaft diameter > 100mm • 多功能標準旋轉軸密封件 • 適用於風車、壓縮機、齒輪箱、引擎曲軸箱等 • 適用於軸徑大於100mm
Dual primary lips with metal banded 雙密封唇型(加鐵架支撐)	<ul style="list-style-type: none"> • Abrasive - resistant and pressure-stable, for use flooded and severe splash application • Suitable for fans, pumps, compressors, gear-boxes, and engine crank case • Suitable for shaft diameter > 100mm • 耐磨且耐壓，適用於嚴重濺灑應用 • 適用於低~中壓力應用 • 適用於軸徑大於100mm

Material Selection

PTFE Compound

Ref.	Compound	Color	Temp. (MIN.)	Temp. (MAX.)	Application	Characteristics
03T	Carbon Filled PTFE	Black	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> High Mechanical Stress Rotary Sealing Water/Oil Hydraulics 	<ul style="list-style-type: none"> High Wear Resistance Creep Resistance
05T	Carbon Fiber Filled PTFE	Black	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> Aqueous Environment 	<ul style="list-style-type: none"> Excellent Wear Resistance Properties In Water Dynamic Applications At High Speed Excellent Compressive Strengths
07T	EKONOL Filled PTFE	Beige	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> Medium Mechanical Stress Softer Sealing Surfaces 	<ul style="list-style-type: none"> Limited Chemical Resistance Limited Use In Hot Water
09T	Graphite Filled PTFE	Black	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> Low Mechanical Stress Soft Sealing Surfaces 	<ul style="list-style-type: none"> Chemical Resistance Limited By Graphite
19T	Glass Fiber & MOS2 Filled PTFE	Grey	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> High Speed Rotary Applications High Pressure Rotary Applications 	<ul style="list-style-type: none"> High Creep Strength High Chemical Resistance Outstanding Wear Resistance Excellent extrusion resistance for high pressure application
33T	Glass Fiber Filled PTFE	Yellow	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> Air Compressor 	<ul style="list-style-type: none"> High Chemical Resistance Electrical Properties Like Virgin PTFE High Creep Resistance
01R	PEEK Filled PTFE (FDA)	Brown	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> Food & Beverage Application 	<ul style="list-style-type: none"> Excellent Physical Properties Good Chemical Resistance Compatible with most commercial natural lubricants
02R	Calcium Silicate Filled PTFE (FDA)	White	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> Food & Beverage Application Pharmaceutical Industry 	<ul style="list-style-type: none"> Excellent Performance under Non-Lubricated Environment
03R	PI Filled PTFE	Yellow	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> Softer Sealing Surfaces 	<ul style="list-style-type: none"> Lowest Coefficient of friction Excellent Physical Properties Excellent performance against soft mating surfaces

*Other material available upon request

*Applications are for references, not limited to

材料選項

鐵氟龍填料

材質編號	填充料	顏色	最低溫度	最高溫度	應用範圍	特色
03T	碳 + 鐵氟龍	黑色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 高機械應力應用 水/ 油壓機械 旋轉密封應用 	<ul style="list-style-type: none"> 優越的耐磨性 抗潛變性佳
05T	碳纖維 + 鐵氟龍	黑色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 水壓機械 	<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
07T	EKONOL + 鐵氟龍	米色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 中等機械應力應用 用於軟質的軸面 旋轉密封應用 	<ul style="list-style-type: none"> 抗化學性有限 不適用於高 水中
09T	石墨 + 鐵氟龍	黑色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 低機械應力應用 用於軟質軸面 	<ul style="list-style-type: none"> 受限於石墨成分，抗化學性有限
19T	玻璃纖維 + 二硫化鋁 + 鐵氟龍	灰色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 高速旋轉應用 高壓旋轉應用 	<ul style="list-style-type: none"> 抗潛變性佳 優越的耐化學性質 出色的耐磨性 優異的抗擠壓性能
33T	玻璃纖維 + 鐵氟龍	黃色	- 200 °C (- 328 °F)	200 °C (- 392 °F)	<ul style="list-style-type: none"> 空壓機 	<ul style="list-style-type: none"> 優越的抗化學性 抗潛變性佳 低介電常數
01R	PEEK + 鐵氟龍 (FDA)	棕色	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> 食品應用 	<ul style="list-style-type: none"> 優異的物理性能 良好的耐化學性 與大多數商用天然潤滑劑相容
02R	矽酸鈣 + 鐵氟龍 (FDA)	白色	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> 食品應用 製藥業 	<ul style="list-style-type: none"> 無潤滑環境下有優異的性能
03R	PI + 鐵氟龍	黃色	- 240 °C (- 400 °F)	288 °C (500 °F)	<ul style="list-style-type: none"> 用於軟質軸面 	<ul style="list-style-type: none"> 最低摩擦係數 優異的物理性能 針對柔軟的配合表面具有出色的性能

*若有其他材料的需求，歡迎與我們聯絡

*應用不限於，僅供參考

Metal Casing

鋼殼材料

Code	Material 材料	Application 應用
1	SS41 Carbon steel SS41 碳鋼	<ul style="list-style-type: none"> Standard material for metal case General application without corrosion issue 標準材質 一般環境下之滑油或滑脂潤滑之應用
2	Stainless steel 304 SUS 304 不鏽鋼	<ul style="list-style-type: none"> General application under corrosive environment 腐蝕環境下之滑油或滑脂潤滑之應用
3	Stainless steel 316 SUS 316 不鏽鋼	<ul style="list-style-type: none"> General application for corrosive media 腐蝕性流體之密封

Gasket

靜止密封墊片

Code	Material	Temperature	Application
1	NBR	- 40 °C ~ 100 °C (- 104 °F ~ 212 °F)	<ul style="list-style-type: none"> Standard material for metal case General application without corrosion issue 標準材質 一般環境下之滑油或滑脂潤滑之應用
2	FPM (Viton®)	- 20 °C ~ 200 °C (- 104 °F ~ 392 °F)	<ul style="list-style-type: none"> High temperature application without corrosion issue Chemical and heat resistant material 高溫下之滑油或滑脂潤滑之應用

O Ring

O 型環

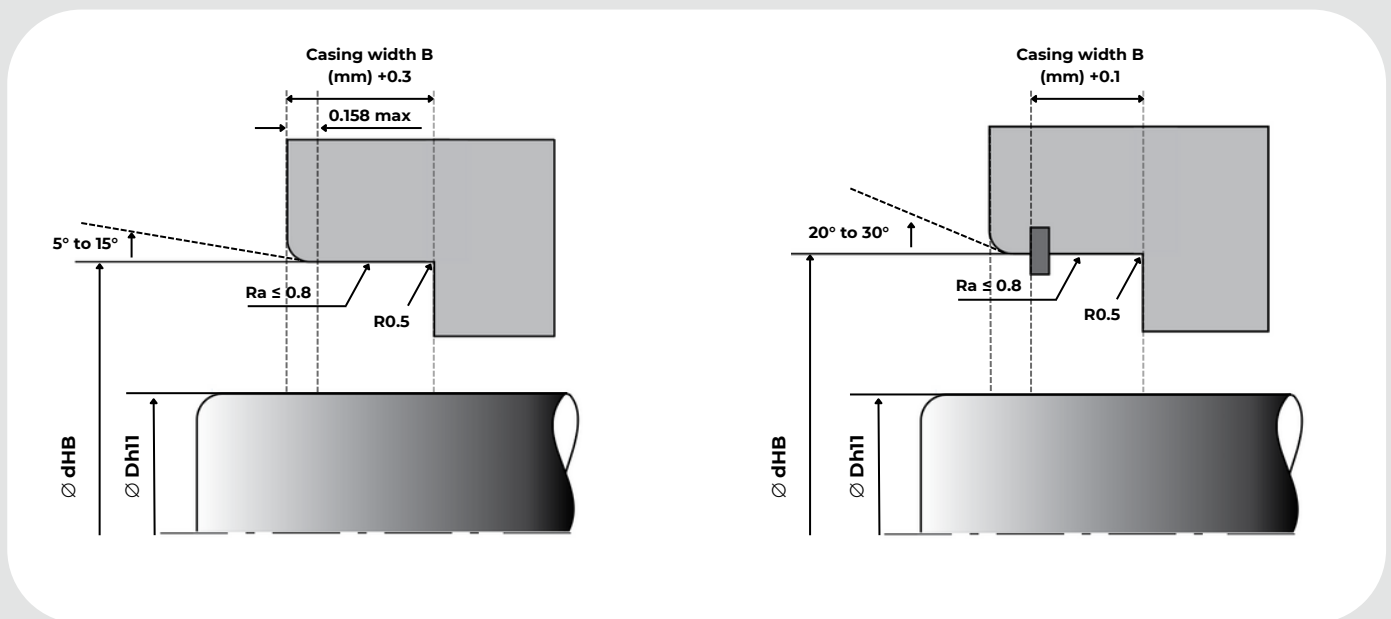
O - Ring Code O型環編號	Compound 材質	Parjet Compound 物料編號	Hardness 硬度 (Shore A)	Temperature range 耐溫
1	NBR	N100A-70	70±5	- 40 °C ~ 100 °C (- 104 °F ~ 212 °F)
2	FPM (Viton®)	V100A-75	75±5	- 25 °C ~ 250 °C (- 13 °F ~ 482 °F)
3	NBR	N100A-90	90±5	- 30 °C ~ 100°C (- 22 °F ~ 212 °F)
4	FPM (Viton®)	V100A-90	90±5	- 25 °C ~ 250 °C (- 13 °F ~ 482 °F)
5	NBR	N100A-80	80±5	- 30 °C ~ 100 °C (- 22 °F ~ 212 °F)
6	NBR	N134A-70	70±5	- 40 °C ~ 100 °C (- 104 °F ~ 212 °F)
7	EPDM	E100A-70	70±5	- 40 °C ~ 100 °C (- 104 °F ~ 212 °F)
8	Silicone	S100A-70	70±5	- 55 °C ~ 210 °C (- 67 °F ~ 410 °F)
9	HPU	P100A-93	93±5	- 40 °C ~ 110 °C (- 40 °F ~ 230 °F)

Groove and installation

溝槽與安裝

The design of both the housing and shaft play an important role in optimizing the sealing performance of the PTFE Rotary Seals. To avoid damage to the seal during installation process, the mating surface of the shaft and groove should be properly machined. HiPerFlon®, HiPerLip® & HiPerSeal® are installed in open groove and here are some recommendations for the housing and shaft:

為充分發揮鐵氟龍唇式旋轉密封件的優異密封性能與耐用性，並避免安裝不當導致密封件受損，軸的密封面與密封件溝槽必須有適當的加工。HiPerFlon®, HiPerLip® 與 HiPerSeal® 皆安裝於分離式溝槽，而以下為軸與溝槽架構的建議：



Shaft Surface

Hardness:

- General = > 40 HRC
- Poor lubrication and high speed > 58HRC
- The hardness requirement for a well lubricated environment will generally be lower than poor lubricated conditions, because a lubricating oil film will reduce the friction on the surface.

Surface roughness:

- Ra = 0.2~0.5µm for general applications
- Ra < 0.2µm in vacuums
- Tolerance h11, ISO standard 286, Plunge grind surface finish
- Lead-in chamfer 15° to 30° with no sharp edges

Housing bore

- Surface roughness Ra < 0.8µm for casing bore
- Tolerance H8, ISO standard 286
- Lead-in chamfer 5° to 15°

轉軸表面

軸表面硬度:

- 一般 = > 40 HRC
- 潤滑不良或高速運轉的場合 > 58HRC
- 潤滑油膜會減輕表面上的一些摩擦力，減少了對高硬度的需求，所以一般潤滑較好環境的硬度需求就會比潤滑不良的場合還低。

表面粗糙度:

- 一般應用: Ra = 0.2~0.5µm
- 真空應用: Ra < 0.2µm
- 軸徑尺寸公差 H11, ISO standard 286
- 端面導角: 15° 至 30°

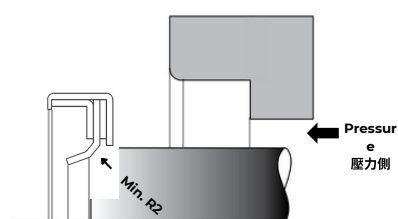
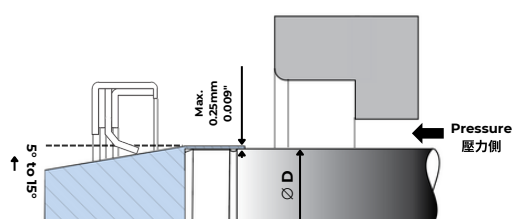
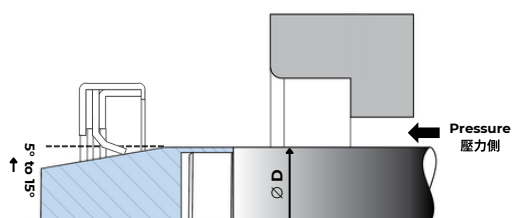
溝槽

- 表面粗度: Ra < 0.8µm
- 軸徑尺寸公差 H8, ISO standard 286
- 端面導角: 5° to 15°

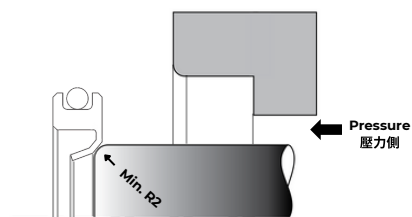
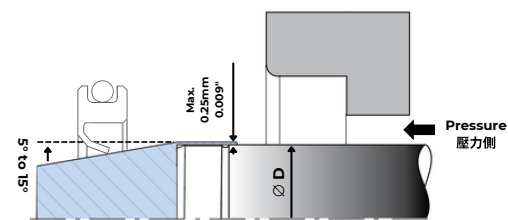
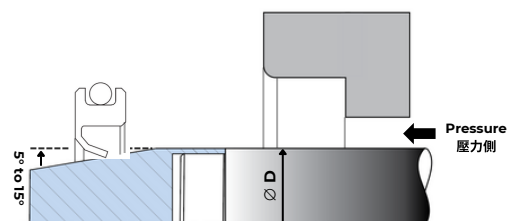
When the shaft has the recommended lead-in chamfer of 15° to 30°, the seals can easily install into the shaft without a bullet tool. However, when the hardware is unable to follow the recommended requirements (sharp edges, splines, keyways, or blind installation), the sealing lips can easily be damaged during installation. In this case, an external bullet tool is required. Please refer to the diagrams below. For more information on the bullet tool, please contact Parjet.

當軸有 15° 至 30° 的導入倒角（如上所建議）時，密封件無需安裝工具即可輕鬆裝入軸中。然而，當硬件無法遵循建議的要求時，溝槽周圍鋒利的邊緣很容易在安裝過程中損壞密封件。在這種情況下，就需要安裝工具輔助，請參閱下列圖示。有關詳細治具的協助，請與我們聯繫。

HiPerLip®



HiPerFlon®



Standard Sizes 標準尺寸

SD | Shaft diameter 軸徑 OD | Outside diameter 外徑 CW | Casing Width 寬度

SD	OD	CW	SD	OD	CW	SD	OD	CW	SD	OD	CW	SD	OD	CW	SD	OD	CW
8	22	7	17	32	7	26	47	7	17	28	7	16	35	7	85	120	12
8	24	7	17	35	7	26	40	7	17	28	7	42	72	8	90	110	10
8	26	7	17	40	7	8	22	7	17	32	7	45	60	8	90	120	12
9	22	7	17	30	7	8	24	7	28	47	7	45	62	8	90	110	10
9	24	7	18	32	7	8	26	7	28	52	7	45	65	8	90	120	12
10	22	7	18	35	7	9	22	7	30	40	7	48	65	8	95	120	12
10	24	7	18	40	7	9	24	7	30	42	7	50	68	8	100	120	12
10	26	7	20	30	7	10	22	7	30	45	7	50	72	8	100	125	12
12	22	7	20	32	7	10	24	7	30	47	7	52	72	8	100	130	12
12	24	7	20	35	7	10	26	7	30	50	7	55	72	8	105	130	12
12	26	7	20	40	7	12	22	7	30	52	7	60	75	8	110	130	12
12	28	7	20	47	7	12	24	7	32	45	8	60	80	8	110	140	12
12	30	7	22	32	7	12	26	7	32	47	8	60	85	8	115	140	12
14	24	7	22	35	7	12	28	7	32	52	8	62	80	8	115	150	12
14	28	7	22	40	7	12	30	7	35	47	8	65	85	8	95	120	12
14	30	7	22	47	7	14	24	7	35	50	8	65	90	10	100	120	12
14	35	7	24	35	7	14	28	7	35	52	8	65	100	10	100	125	12
15	26	7	24	37	7	14	30	7	35	55	8	68	90	10	100	130	12
15	30	7	24	40	7	14	35	7	35	62	8	68	100	10	105	130	12
15	32	7	24	47	7	15	26	7	38	55	8	70	90	10	110	130	12
15	35	7	25	35	7	15	30	7	40	52	8	70	95	10	110	140	12
16	28	7	25	40	7	15	32	7	40	55	8	70	100	10	115	140	12
16	30	7	25	42	7	15	35	7	40	60	8	75	95	10	115	150	12
16	32	7	25	47	7	16	28	7	40	62	8	75	100	10	120	150	120
16	35	7	25	52	7	16	30	7	42	55	8	80	100	10	125	150	125
17	28	7	26	37	7	16	32	7	42	60	8	80	110	10	125	160	125
17	28	7	26	42	7	16	35	7	42	62	8	85	110	20	130	160	130

Other sizes available upon request
若有其他尺寸需求，歡迎與我們聯絡。

Inquiry Form

詢問表單

General Information

客戶基本資料

日期 Date			
公司 Company			
聯絡人 Contact Person		電話 Tel	
地址 Address		Email	

Operating Condition

工作條件

應用 Application		
壓力 Pressure		
壓力方向 Pressure Direction	<input type="checkbox"/> Unidirectional 單向	<input type="checkbox"/> Bidirectional 雙向
轉速 RPM		
溫度 Temperature		
密封介質 Media to Seal		

Groove Dimension

溝槽尺寸

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




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