

Yuyao Liangzi PTFE Factory

Liangzi PTFE specializes in development and manufacture of PTFE products with a range that includes the following products:

- 1) PTFE sealing lip for PTFE seals
- 2) PTFE rotary shaft lip seals (PTFE oil seals)
- 3) PTFE Rod & Piston seals
- 4) PTFE Back-up Rings, Spiral Backing Rings and deformed parts
- 5) PTFE adhibiting rubber parts
- 6) PTFE valve oil seal
- 7) PTFE seals for power steering gears

Liangzi PTFE was founded in 2000, is located Yuyao City,Zhejiang Province.

Liangzi PTFE has introduced advanced equipments including CNC Machines, High-speed mixers, Hydraulic machines, Program controlling sinter furnaces, Vacuum vulcanizing machines, Optical vision measuring, Tensile tester, Oil seal tester, Oil seal radial force measuring.....etc.

Liangzi PTFE has established perfect quality systems of ISO9001-2000 to ensure its products quality.

Through many years of research we have successfully developed excellent performance PTFE sealing lip for PTFE seals. Shaft seals working in combination with this kind of PTFE sealing lip piece have been tested and qualified by the Changchun Automobile Institute. The products of these pieces have since been subcontracted to several large-scale domestic car production plants, and they have subsequently been exported around the world.

Liangzi PTFE's QuanSeal[™] PTFE seals are compatible with a large range of automobile engine, pumps, reaction kettles and blending machines, etc. Compared with other rubber seals these seals far outperform with regard to temperature, wear, pressure and chemical resistance.

Currently, the company is in a period of growth with turnover continuing to rise at a significant rate. We are a company that prides itself on its honesty and reliability. We are confident in ourselves and hence the service we provide. We are ready to place ourselves at your disposal and be your most reliable supplier for PTFE products. Our sales team awaits your call to begin discussions on how we can cooperate, as we warmly welcome you to join with us to build a successful partnership.

PTFE sealing lip for seal



PTFE sealing lips are PTFE compound discs that are mechanically formed to a diameter slightly smaller than the shaft. The forming of the lip creates a shape that takes advantage of the hoop strength of the PTFE compound discs. This hoop strength provides the load that is critical for low or no pressure applications to obtain a positive seal.

The sealing element typically has a smooth surface contacting the shaft. For applications sealing liquid at below 0.1Mpa, a hydrodynamic spiral feature can be machined into the surface of the sealing element to provide a positive pumping action to drive fluid away from the air side of the seal. It is critical to match the seal to the shaft rotation to ensure positive sealing.

Sealing element Material Selection:

LP1001 Premium grade virgin PTFE for static, slow-dynamic or light-duty application. Also for food-contact service requiring FDA approval. Color:white

LP2030 Highly wear resistant in fast-rotary service and on hardened shafts in well-lubricated rotary service, Color:Dark grey

LP2036 Highly wear resistant in fast-rotary service and on hardened shafts in well-lubricated rotary service, softer than LP2030, Color:Dark grey

LP8030 Good wear resistant in fast-rotary applications. Less abrasive to soft shaft and in poorly-lubricated service.

LP3020 Low coefficient of friction and excellent wear resistance combined with low surface pressure. Color: black

LP7010 Excellent wear resistance in gases, air, water and vacuum. Low abrasion to dynamic surface. Suitable for high speed.

PTFE lips rotary shaft seals



Liangziptfe's QuanSeal PTFE lip seal was introduced in the early 1998's. The seals were designed to bridge the gap between conventional elastomer lip seals and mechanical face seals. Hostile environments such as extreme temperatures, aggressive media, high surface speeds, high pressures, and lack of lubrication forced the designer to specify the expensive and complicated mechanical face type seals. QuanSeal PTFE lip seal provides the designer a significant improvement in performance over elastomer lip seals at a much lower cost than the mechanical face seal.

QuanSeal PTFE lip seals solve difficult applications which are not addressed by conventional elastomer seals. We exceed the performance of elastomer lip seals in the following areas:

1. Lower friction

Generates less torque - Less heat - Requires less power

Typical Applications: Conveyor Rollers, electric motors, rolling stock, generators, compressors, vacuum pumps, high performance vehicles

2. AGGRESSIVE MEDIA RESISTANCE

Unaffected by solvents, chemicals, acids, synthetic & adulterated oils
Typical applications: Chemical processing equipment, pumps, mixers, agitators, blenders, pharmaceutical & foods.

3. Capable of surface speeds to 35m/s

4. Works to temperature extremes(-100 to+250C)

Typical Applications: Aerospace, military, automotive, steel mills, crankshafts, moulding machines

5. Has extended seal life in dry or abrasive media

Reduced breakout friction and stiction
Typical Applications: Powder sealing, dust/dirt excluders, off road vehicles, radar equipment, paper mills

6. Capable of pressures to 6Mpa

QuanSeaTM SL series PTFE lip-rotary shaft seal



Standard type for a wide range of applications. This model has a reinforced sealing; it is used primarily for pressured media, but also suitable for unpressurised applications.

Characteristics: Good sealing action in conjunction with pressurised media

Operating limits:

Max. peripheral speed: 30m/s;

Temperature range : -100 to 250°C

Max. pressure: 5Mpa

Max. Centre offset: 0.1mm

Max. concentricity tolerance: 0.1mm

Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)	Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)
SL00601607	6	16	7	SL04005208	40	52	8
SL00602207	6	22	7	SL04005508	40	55	8
SL00702207	7	22	7	SL04006208	40	62	8
SL00802207	8	22	7	SL04205508	42	55	8
SL00802407	8	24	7	SL04206208	42	62	8
SL00902207	9	22	7	SL04506208	45	62	8
SL01002207	10	22	7	SL04506508	45	65	8
SL01002507	10	25	7	SL05006508	50	65	8
SL01202407	12	24	7	SL05007208	50	72	8
SL01202507	12	25	7	SL05008010	55	80	10
SL01203007	12	30	7	SL05507208	55	72	8
SL01502607	15	26	7	SL05508008	55	80	8
SL01503007	15	30	7	SL06007508	60	75	8
SL01503507	15	30	7	SL06008008	60	80	8
SL01603007	16	30	7	SL06008508	60	85	8
SL01803007	18	30	7	SL06508008	65	80	8
SL01803507	18	35	7	SL06508510	65	85	10
SL02003507	20	35	7	SL06509010	65	90	10
SL02004007	20	40	7	SL07009010	70	90	10
SL02203507	22	35	7	SL07009510	70	95	10
SL02204007	22	40	7	SL07509510	75	95	10
SL02503508	25	35	8	SL07510010	75	100	10
SL02504007	25	40	7	SL08010010	80	100	10
SL02504707	25	47	7	SL08011010	80	110	10
SL02505207	25	52	7	SL08511012	85	110	12
SL02804007	28	40	7	SL08512012	85	120	12
SL02804707	28	47	7	SL09012012	90	120	12
SL02805207	28	52	7	SL09512012	95	120	12
SL03004208	30	42	8	SL10012512	100	125	12
SL03004207	30	42	7	SL10013012	100	130	12
SL03004707	30	47	7	SL10013512	100	135	12
SL03005207	30	52	7	SL10014012	100	140	12
SL03204508	32	45	8	SL10513012	105	130	12
SL03204708	32	47	8	SL13016012	130	160	12
SL03205208	32	52	8	SL14017015	140	170	15
SL03505008	35	50	8				
SL03505208	35	52	8				
SL03505508	35	55	8				
SL03805508	38	55	8				

QuanSeal[™] DLS series PTFE lip-rotary shaft seal



Double sealing lips separated by a spacing ring provide redundant sealing in one package. Can be specified for safety considerations.

Operating limits:

Max. peripheral speed: 30m/s;

Temperature range : -100 to 250°C

Max. pressure: 3.00Mpa

Max. Centre offset: 0.2mm

Max. concentricity tolerance: 0.3mm

Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)	Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)
DLS00601608	6	16	8	DLS04005209	40	52	9
DLS00602208	6	22	8	DLS04005509	40	55	9
DLS00702208	7	22	8	DLS04006209	40	62	9
DLS00802208	8	22	8	DLS04205509	42	55	9
DLS00802408	8	24	8	DLS04206209	42	62	9
DLS00902208	9	22	8	DLS04506209	45	62	9
DLS01002208	10	22	8	DLS04506509	45	65	9
DLS01002508	10	25	8	DLS05006509	50	65	9
DLS01202408	12	24	8	DLS05007209	50	72	9
DLS01202508	12	25	8	DLS05008010	55	80	10
DLS01203008	12	30	8	DLS05507209	55	72	9
DLS01502608	15	26	8	DLS05508009	55	80	9
DLS01503008	15	30	8	DLS06007509	60	75	9
DLS01503508	15	30	8	DLS06008009	60	80	9
DLS01603008	16	30	8	DLS06008509	60	85	9
DLS01803008	18	30	8	DLS06508009	65	80	9
DLS01803508	18	35	8	DLS06508510	65	85	10
DLS02003508	20	35	8	DLS06509010	65	90	10
DLS02004008	20	40	8	DLS07009010	70	90	10
DLS02203508	22	35	8	DLS07009510	70	95	10
DLS02204008	22	40	8	DLS07509510	75	95	10
DLS02503509	25	35	9	DLS07510010	75	100	10
DLS02504008	25	40	8	DLS08010010	80	100	10
DLS02504708	25	47	8	DLS08011010	80	110	10
DLS02505208	25	52	8	DLS08511012	85	110	12
DLS02804008	28	40	8	DLS08512012	85	120	12
DLS02804708	28	47	8	DLS09012012	90	120	12
DLS02805208	28	52	8	DLS09512012	95	120	12
DLS03004209	30	42	9	DLS10012512	100	125	12
DLS03004208	30	42	8	DLS10013012	100	130	12
DLS03004708	30	47	8	DLS10013512	100	135	12
DLS03005208	30	52	8	DLS10014012	100	140	12
DLS03204509	32	45	9	DLS10513012	105	130	12
DLS03204709	32	47	9	DLS13016012	130	160	12
DLS03205209	32	52	9	DLS14017015	140	170	15
DLS03505009	35	50	9	DLS063.5079.209.5	63.5	79.2	9.5
DLS03505209	35	52	9	DLS063.5082.510	63.5	82.5	10
DLS03505509	35	55	9	DLS056082.511	56	82.5	11
DLS03805509	38	55	9				

QuanSeal™ WL series PTFE lip-rotary shaft seal



Good for all-plastic pumps where no metal contact with fluid media is allowed. This seal provides similar performance to QuanSeal SL series lip seal, but is more economical in smaller quantities. Because the seal has a soft surface on the OD, the seal will not damage the housing and can easily be installed and removed. The seal is used in lubricated and non-lubricated environments. It can be used at shaft speeds to 25m/s in lubricated media and pressures to 0.5Mpa. Maximum PV 3.0 lubricated, 2.0 non-lubricated. Typical applications are gear boxes and environmental seals

Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)	Part code	Shaft diameter (mm)	Outer diameter (mm)	Width (mm)
WL00601607	6	16	7	WL05508010	55	80	10
WL00702207	7	22	7	WL06008510	60	85	10
WL00802207	8	22	7				
WL00802407	8	24	7				
WL00902207	9	22	7				
WL01002508	10	25	8				
WL01202408	12	24	8				
WL01202508	12	25	8				
WL01203008	12	30	8				
WL01503008	15	30	8				
WL01603008	16	30	8				
WL01803508	16	35	8				
WL02003508	20	35	8				
WL02203508	22	35	8				
WL02203608	22	36	8				
WL02204008	22	40	8				
WL02504008	25	40	8				
WL02504010	25	40	10				
WL02505210	25	52	10				
WL02804710	28	47	10				
WL02805210	28	52	10				
WL03004710	30	47	10				
WL03005010	30	50	10				
WL03005210	30	52	10				
WL03204710	32	47	10				
WL03205210	32	52	10				
WL03505010	35	50	10				
WL03505210	35	52	10				
WL03505510	35	55	10				
WL03605010	36	50	10				
WL03805510	38	55	10				
WL03805810	38	58	10				
WL03806210	38	62	10				
WL04005510	40	55	10				
WL04006210	40	62	10				
WL04206210	42	62	10				
WL04506510	45	65	10				
WL05007010	50	70	10				
WL05007210	50	72	10				

QuanSeal[™] RL series PTFE lip-rotary shaft seal



Metal case agglutinated rubber(ACM or FKM). There is a felt as dustproof.PTFE lip adhere to metal case.

Characteristics:

Extremely flexible sealing lip with spin; Improved frictional properties

Operating limits:

Max. peripheral speed: 36m/s;

Temperature range : -60 to 230°C

Max. pressure: 0.05Mpa

Max. Centre offset: 0.2mm

Max. concentricity tolerance: 0.3mm

QuanSeal™ DL series PTFE lip-rotary shaft seal



The type for unpressurised conditions or where the pressure is only slightly above atmospheric pressure. This model has an extremely flexible sealing lip and an additional protective lip. Outer case: Stainless steel or Cold-rolled steel.

Characteristics:

Extremely flexible sealing lip; Improved frictional properties; Defined seal path width.

Operating limits:

Max. peripheral speed: 30m/s;

Temperature range : -60 to 220°C

Max. pressure: 0.05Mpa

Max. Centre offset: 0.2mm

Max. concentricity tolerance: 0.3mm

QuanSeal™ SR series PTFE lip-rotary shaft seal



The type for unpressurised conditions or where the pressure is only slightly above atmospheric pressure. This model has an extremely flexible sealing lip and an additional protective lip.

Characteristics:

Extremely flexible sealing lip; Improved frictional properties; Defined seal path width.

Operating limits:

Max. peripheral speed: 30m/s;

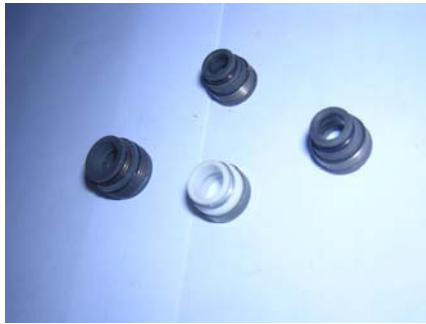
Temperature range : -60 to 220°C

Max. pressure: 0.05Mpa

Max. Centre offset: 0.2mm

Max. concentricity tolerance: 0.3mm

QuanSeal[™] PTFE Valve oil seal



This seal is a combination of a PTFE seal and two energising metal springs.

Energising springs squeeze PTFE seal to ensures a good sealing effect.

This seal as a substitute for rubber valve oil seal have been used in automobile engine.

QuanSeal™ Spring Energized PTFE seals



Spring –loaded seals are designed for static, rotary and reciprocating applications in temperatures from cryogenic to 250 °C ;and pressures from vacuum to 100Mpa, to survive the most corrosive environment.

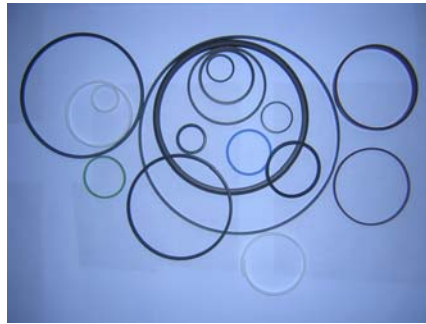
The design combines a “V” shaped spring with a PTFE-based seal jacket to achieve one of the most efficient and versatile sealing methods. The high strength stainless steel energizer provides strength and flexibility to control seal loading, even with temperature extremes, while the PTFE jacket provides the well known PTFE virtues of low friction, corrosion resistance, sealability and wear resistance.

PTFE sealing part of power steering gear



The functions of PTFE sealing parts in power steering gear are mainly to prevent working media from leaking and sealing device from dust and soil, and air to make sure power steering gear normal operation. The sealing parts have been widely used for static and dynamic sealing of hydraulic system.

QuanSeal™ Piston & Rod Ring



This seal is a combination of a PTFE slip ring and an energising O-ring. It is produced with an interference fit which together with the squeeze of the O-ring ensures a good sealing effect even at low pressure. At higher systems pressures, the O-ring is energised by the fluid, pushing the slip ring against the sealing face with increased force.

We produce a wide range of PTFE piston & rod rings for a variety of standard piston bore & rod dimensions.

Advantages

.Lubrication not required

.No stick-slip effect when starting for smooth operation

.High wear resistance ensures long service life

.Installation grooves acc.to ISO7425/1,ISO7425/2

.No adhesive effect to the mating surface during long period of inactivity or storage

QuanSea™ SL2 series PTFE lip-rotary shaft seal

Two sealing lips seal



Two sealing lips stacked together to obtain a higher pressure rating and heavier loading on the shaft for better sealing. Excellent for high speeds in abrasive media.

Operating limits:

Max. peripheral speed: 30m/s;

Temperature range : -100 to 250°C

Max. pressure:6 MPa

Max. Centre offset: 0.2mm

Max. concentricity tolerance: 0.3mm

QuanSeal[™] SLR series PTFE lip-rotary shaft seal

PTFE/Rubber Lip seal



The PTFE/Rubber seal was specifically developed for severe service. It has a single lip element that combines the low friction properties of PTFE with the flexibility and durability of rubber. It is sealed into an outer metal case and engineered for intermittent pressure service up to 0.05Mpa. Low pressure sealing ability is good

材料性能

Rubber Energised Materials

The following elastomers are recommended for the standard range of rubber energised seals

(1) Ethylene Propylene/EP Code: E

A rubber having excellent resistance to weathering, ozone, water and steam. Used in high temperature braking systems employing castor based fluids and for seals in chemical plant due to its good chemical resistance. Good high and low temperature capability (-40°C to $+150^{\circ}\text{C}$) with excellent resistance to set.

(2) Fluoroelastomer Code: F

High temperature capability (-15°C to $+220^{\circ}\text{C}$) and excellent resistance to hydraulic oils, petrol and many chemicals.

(3) Nitrile Code: N

Excellent resistance to mineral based fluids. Strength, resilience, abrasion and heat resistance are reasonable (-40°C to $+120^{\circ}\text{C}$).

(4) Silicone Code: S

Can be used at extremes of temperature (-60°C to $+220^{\circ}\text{C}$). Excellent chemical and weathering resistance. Widely used in the medical field due to its non-toxicity.

二. PTFE material

Code	Description	Properties/Applications
LP1001	Virgin PTFE	Premium grade virgin PTFE for static, slow-dynamic or light-duty application. Also for food-contact service requiring FDA approval.
LP5010	Carbon/graphite filled PTFE	Excellent material for applications with limited lubrication.
LP5012	Carbon filled PTFE	Good bearing material with excellent resistance to wear and creep. Suitable for food applications.
LP7010	Polymer filled PTFE	Excellent wear resistance in gases,air and vacuum. Limited wear resistance in water. Low abrasion to dynamic surface. Suitable for high speed low pressure
LP3020	Graphite filled PTFE	Low coefficient of friction and excellent wear resistance combined with low surface pressure
LP8020	Bronze filled PTFE with special additives	Standard material with excellent resistance to wear and creep.
LP8046	Bronze filled PTFE	Standard material for oil hydraulics with excellent resistance to wear and creep. Chemical resistance limited to that of bronze filler.
LP8030	PTFE with special additives	Good wear resistant in fast-rotary applications. Less abrasive to soft shaft and in poorly-lubricated service..
LP2030	PTFE with special additives	. Highly wear resistant in fast-rotary service and on hardened shafts in well-lubricated rotary service
LP2010	Glass/molybdenum filled PTFE	This combination of fillers offers excellent physical properties with good resistance to creep and abrasion. Requires harder running surfaces to minimise wear.
LP2020	Glass filled PTFE with special additives	General grade of PTFE with glass fibre and other fillers. Offers excellent physical properties with good resistance to wear and creep. Requires harder running surfaces than other PTFE grades.
LP2036	PTFE with special additives	Highly wear resistant in fast-rotary service and on hardened shafts in well-lubricated rotary service, Softer than LP2030

三. Spring Energised Materials



Stainless Steel 301/302: General purpose application. Good corrosion resistance.
301 used for smaller springs.