

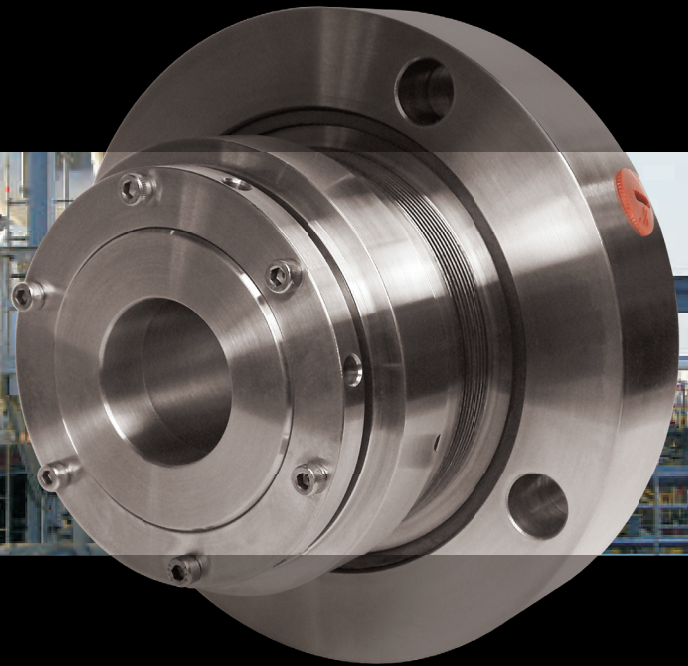


E m i s s i o n

H a z a r d o u s g a s e s

D e a d l y c h e m i c a l s

*whatever be the force **we seal it***



API 682

Benchmarked in the USA

Now, manufactured in India ● ● ●

Leak-Proof Engineering (I) Pvt. Ltd.

The force of India. The pride of India



The American Petroleum Institute (API) is the premier international authority that establishes and certifies industry standards. The API sets technical standards for the petroleum industry to help improve processes, increase efficiencies, achieve cost-effectiveness in operations and increases Mean Time between Failures (MTBF).

The API 682 is the standard developed for mechanical seals that impacts production, refinement and distribution of petroleum products. The API 682 prescribes stringent and precise configuration and also ensures safety, safeguards health and protects the environment.

Like everywhere in the world, Indian petroleum industry also follows the API benchmarks ardently and adheres to its standards. These API 682 mechanical seals, which have been, till now, imported from leading international manufacturers, are now being manufactured in India for the first time.

Leak-Proof Engineering India Private Limited, has mastered the API standards and now take pride in presenting indigenously developed range of API 682 seals.

Petroleum and petroleum products are integral elements of every industry...or, should we say our lives. They lubricate machineries, drive engines, fuel our cars, cook our food and so on.

When such a critical substance comprehensively influences mankind, a standardized regulation of its production and related processes is the utmost need.

Manufacturing Unit
North Gujarat (Chhapi)



Leak-Proof Engineering established in the year 1973, pioneer in the field of engineered Mechanical Seals, is one of the largest indigenous seal manufacturers in India. Today, with state of art manufacturing facility, the company is catering to Chemical process, Petrochemical, Fertilizer, Refinery, Oil & Gas, Steel, Solvent Extraction, Edible oil, Food Processing, Refrigeration and other industries situated all over India. Leak-Proof is a name to reckon with and has more satisfied clientele in the country and overseas, both in terms of quality and service.

We have successfully concluded qualification testing of special seal series LPA90S, LPA47S, sizes: 3.00" and 4.00", confirming to API 682 (3rd edition) specification for water, caustic, mineral oil and propane liquefied gas.

We are approved by Engineer's India Limited (EIL) for API 682 seals. We are the only company to install facility for testing seals using propane/LPG in India, apart from independent facilities for water, caustic and mineral oil mediums.

**API 682 Mechanical Seals
Series LPA90S Multi-Spring Pusher Seals**

DESCRIPTION :

Series LPA90S multi-spring pusher seals are designed and qualification tested according to the stringent testing norms specified by API 682 standard. These dependable, engineered mechanical seals are developed to attain extremely low emissions, typically to less than 150 ppm. These seals are offered in single, dual unpressurized and dual pressurized arrangements for a wide range of petroleum and light hydrocarbon services in refinery and petrochemical industries.

These special engineered seals provide the following advantages:

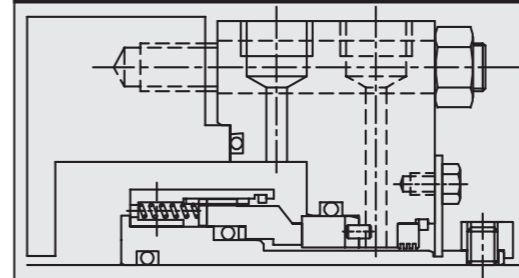
- To extend seal life beyond 25000 hours of operation.
- To reduce emission levels.
- To ensure plant and personal safety in hazardous environments.
- To standardise the seals and sealing systems.

Materials of Construction - LPA90S

SEAL COMPONENTS	MATERIALS	
DESCRIPTION	STANDARD	OPTIONS
Seal Ring	Resin Impregnated Carbon	Antimony Impregnated Carbon Reaction Bonded Silicon Carbide Self Sintered Silicon Carbide Nickel Bonded Tungsten Carbide
Mating Ring	Reaction Bonded Silicon Carbide	Self Sintered Silicon Carbide Nickel Bonded Tungsten Carbide
Retainer Snap Ring Thrust Ring Grub Screws Sleeve Gland Drive Collar Auxiliary Gland Location Plate	Stainless Steel 316	Alloy 20 Hastelloy - C Titanium
Spring	Hastelloy C-276	- - -
Secondary Sealing Elements	Fluoroelastomer	Perfluoroelastomer

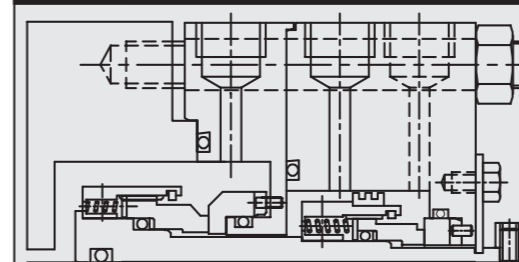
MECHANICAL SEAL NOMENCLATURE

**SEAL ARRANGEMENTS:
Series LPA90S**



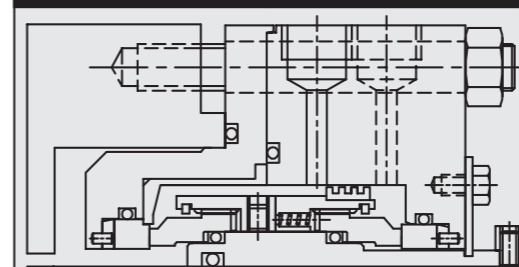
Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 42 bar
Temp. : t= -40°C to 176°C
Config. : 1CW-FX

**SEAL ARRANGEMENTS:
Series LPA90T**



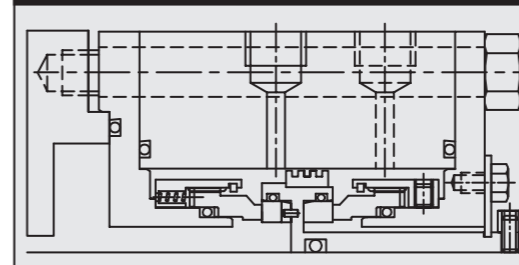
Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 42 bar
Temp. : t= -40°C to 176°C
Config. : 2CW-CS

**SEAL ARRANGEMENTS:
Series LPA90B**



Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 42 bar
Temp. : t= -40°C to 176°C
Config. : 3CW-BB

**SEAL ARRANGEMENTS:
Series LPA90F**



Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 42 bar
Temp. : t= -40°C to 176°C
Config. : 3CW-FF

**API 682 Mechanical Seals
Series LPA45S, LPA47S Metal Bellows**

DESCRIPTION :

Series LPA45S, LPA47S non-pusher metal bellows seals are designed and qualification tested according to the stringent testing norms specified by API 682 standard. These dependable, engineered mechanical seals are developed to attain extremely low emissions, These seals are offered in single, dual unpressurized and dual pressurized arrangements for a wide range of petroleum and light hydrocarbon services in refinery and petrochemical industries.

These special engineered seals provide the following advantages:

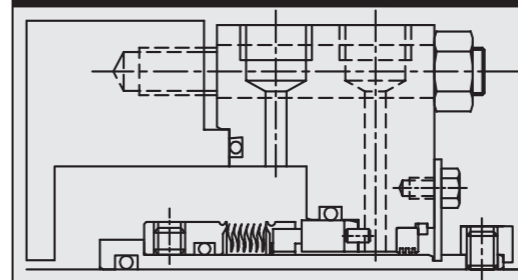
- To extend seal life beyond 25000 hours of operation.
- To reduce emission levels.
- To ensure plant and personal safety in hazardous environments.
- To standardise the seals and sealing systems.

Materials of Construction - LPA47S

SEAL COMPONENTS	MATERIALS	
	STANDARD	OPTIONS
Seal Ring	Resin Impregnated Carbon	Antimony Impregnated Carbon Reaction Bonded Silicon Carbide Self Sintered Silicon Carbide Nickel Bonded Tungsten Carbide
Mating Ring	Reaction Bonded Silicon Carbide	Self Sintered Silicon Carbide Nickel Bonded Tungsten Carbide
Sleeve Gland Grub screws Rear collar Auxiliary Gland Location Plate	Stainless Steel 316	----
Seal Ring Housing	Stainless Steel 316 Carpenter 42	----
Secondary Sealing Elements	Fluoroelastomer (up to 176°C) Flexible Graphite up to 400°C	Perfluoroelastomer Low Temperature Buna-N
Metal Bellows	Hastelloy C-276 (up to 176°C) Inconel Alloy 718 up to 400°C	----

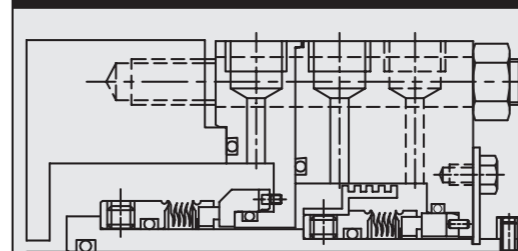
MECHANICAL SEAL NOMENCLATURE

**SEAL ARRANGEMENTS:
Series LPA45S**



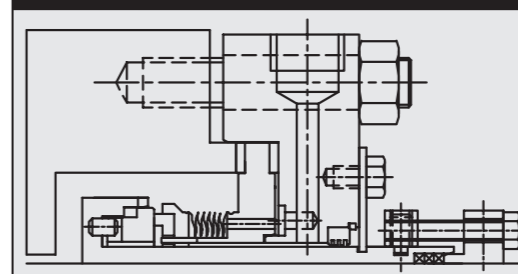
Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 20 bar
Temp. : t= -40°C to 176°C
Config. : 1CW-FX

**SEAL ARRANGEMENTS:
Series LPA45T**



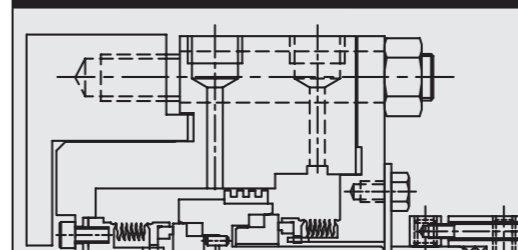
Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 20 bar
Temp. : t= -40°C to 176°C
Config. : 2CW-CW

**SEAL ARRANGEMENTS:
Series LPA47S**



Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 20 bar
Temp. : t= -40°C to 400°C
Config. : 1CW-FX

**SEAL ARRANGEMENTS:
Series LPA47F**



Shaft Dia.: d=20...110mm
Pressure : p=Vacuum to 20 bar
Temp. : t= -40°C to 400°C
Config. : 3CW-FF

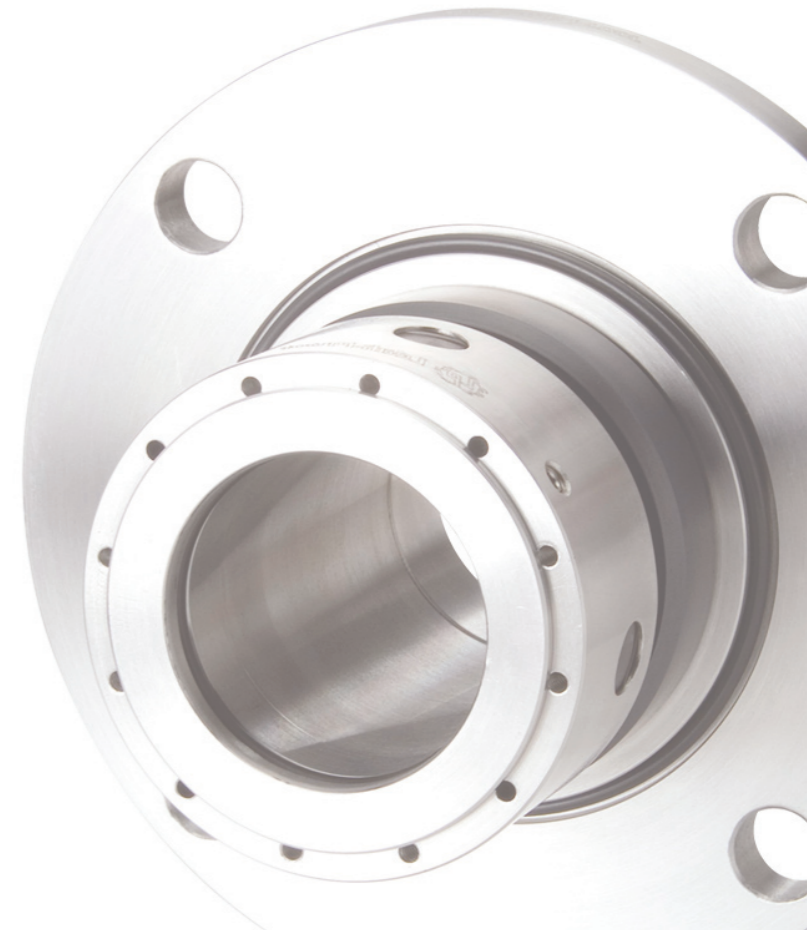
API 682 Testing Facility



Design and Development Office



API Seals Approval From - EIL





... together we achieve



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