

Fluiten today



FLUITEN

Since 1962



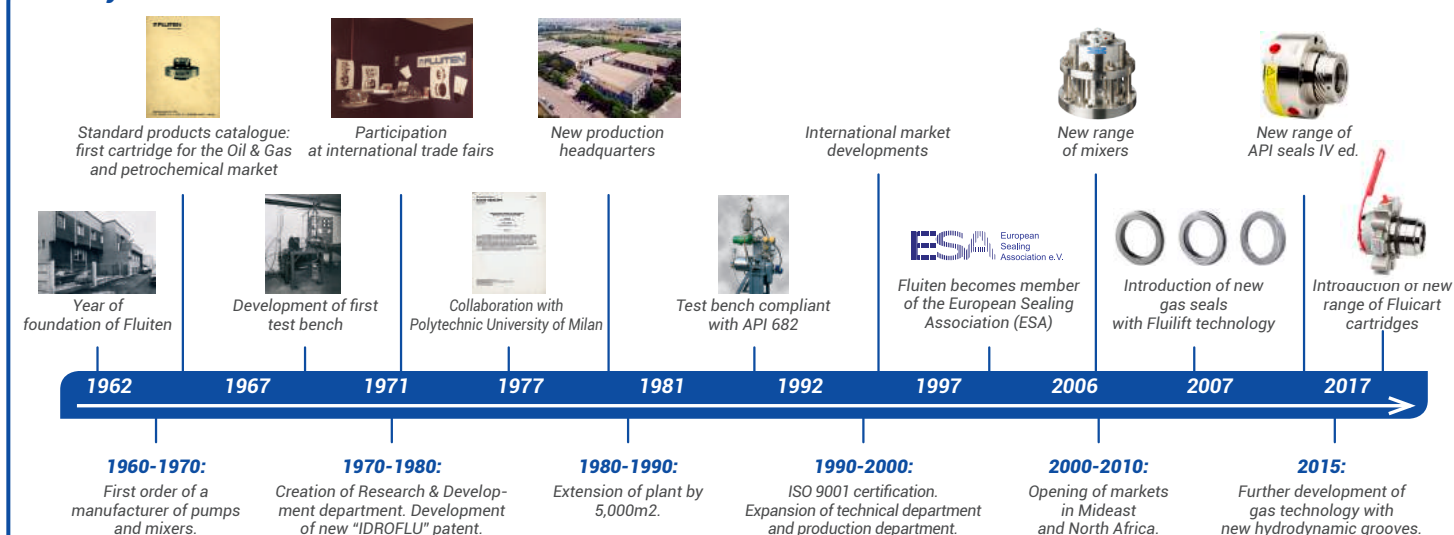
The Company

Fluiten designs and manufactures mechanical seals. **Founded in 1962** by Alberto Delfo Colombo, today it counts over 100 employees in Italy, **operating throughout Europe and in 40 other countries**, available everywhere on the market and offering a high qualified after sales service. It represents excellence in the field of mechanical seals intended for equipment with rotary shafts used in the various industries to reduce and control emissions to the environment.

All of its products stand out for constant innovation, high precision and high quality. **The search for advanced technical solutions guarantees the utmost reliability in the very heavy duty applications** necessary in the petrol, chemical, energy, pharmaceutical, food, water and shipbuilding industries.

Fluiten is the only company in the sector which **manufactures all of its products in Italy** with a cutting edge fleet of machinery and CAM-CAD devices which always guarantee quality and flexibility, in its factory of over 10,000 m² located in the vicinity of the Milan Expo area. Here engineered mechanical seals are produced, affecting over 50% of the company's turnover, highlighting a structure formed by highly specialised personnel and trained in dealing with the critical requests coming from the market.

History



The certifications issued to Fluiten by the different certifying bodies – Rina ISO 9001, Lloyd Approved, PED, ATEX and AEC – are the best witness to the quality of its processes and products. **Fluiten is also an active member of ESA** (European Sealing Association), European institution which gathers the major manufacturers of static and dynamic seals placing the issue of harmful emissions into the environment among its priorities. The family leading Fluiten has always put the development and verification of its products at the centre of the Company's priorities and investments for the necessary research instruments are a relevant part of company strategy.

Quality, Research & Development



Fluiten has always considered the design, experimentation and development stages so as to always offer the market cutting edge products.

The company's dynamic test room is one of the most advanced in Europe, suitable for complex experimental calculations and functioning simulations in the worst operating conditions without needing to be overseen. In the past three years, new equipment has been designed and built by Fluiten engineers using last generation electronic and digital devices.

The API standard, in addition to laying down the manufacturing selection guidelines, enforces implementation of dynamic tests to ascertain the detailed construction appropriateness of the individual seal manufacturers, so that they may be qualified for the petrochemical and Oil&Gas industry. The results of dynamic tests conducted in a laboratory are able to minimise problems on site. **Today Fluiten's test room is without a doubt a flagship for excellence** designed for seals called engineered, namely which do not exceed the limits of 40 bar, 20 m/sec and 270°C. The variables to be measured and controlled in relation to the nature of the product, to the rotation speed and to the operating pressure are for example the absorbed torque, the precise leakage values to the process and to the atmosphere and the temperature measured on the sealing rings, which can be built with multiple materials and have different shapes. The constant search for innovative solutions, based on the study of the intrinsic features of the materials, has led to the development of new technologically advanced products, such as those used in **Fluilift® and Fluigrd® technologies, patented by Fluiten**: solutions with hydrodynamic grooves capable of guaranteeing high performance even in heavy duty conditions.

A special data acquisition program allows us to analyse and compare parameters, and therefore to implement the design to achieve the utmost performance. The **robotic warehouse** can quickly and precisely manage over 70,000 part numbers.



Industries

Fluiten designs and manufactures mechanical seals for all sectors and industrial applications:

Mechanical seals for pumps

Complete range of mechanical seals with reduced size and ISO/DIN measurements and in compliance with API 682 for machinery intended to transfer fluids.

Mechanical seals for mixers

Complete range of mechanical seals for large-sized machinery, used in the most diverse production sectors.

Shipbuilding

Complete range of seals for propeller shafts of boats with inboard engines.

Lubrication systems

Standard lubrication systems and from drawings in compliance with the latest versions of API 682.



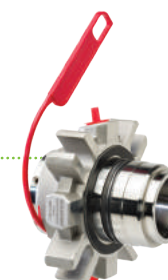
Petrochemical refineries and industries

The petroleum refining process requires a multitude of stages with different characteristics but heavy-duty in terms of temperature and pressure of the fluids. During this process, the mechanical seals undergo high stress and must guarantee the maximum efficiency in terms of high performance.



Chemical industry

The production processes of the chemical industry cover a wide field of applications, both due to the machinery used and the variety of processes which can be highly corrosive or require being contamination-free. The standardisation of a wide range of materials for the components of the mechanical seals and an engineering process with "just in time" answers meet all of the requirements of such an ample market.



Pharmaceutical and food industry

This is an industry with stringent production processes which require a high degree of hygiene and cleanliness to avoid contaminating the process. Fluiten seals are equipped with materials compliant with FDA (Food and drug administration) CIP&SIP standards.



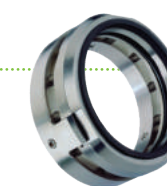
Energy industry

This is an industry characterised by complex systems, mainly high pressure hot water services and large-size machinery. The mechanical seals must guarantee high levels of performance, reliability and duration.



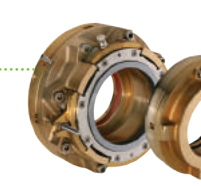
Treatment, desalination and transport of water

The presence of suspended particles requires a special study for the materials making up the mechanical seal.

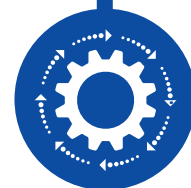


Shipbuilding industry

Fluiten offers solutions with different configurations of the engine-inverter unit which can be adapted to pleasure boats, work boats and those used by the military. The mechanical seals meet the severe technical requirements of the specifications enforced by manufacturers and shipowners.



Our products



Fluiten mechanical seals are designed in accordance with latest standards in force for the widest range of uses, to meet the severest quality standards even in more heavy duty conditions in full safety.

This is why they are used by the most important manufacturers in Italy and worldwide.

Fluiten works like a consultant in the development of engineered mechanical seals, with development times reduced to a minimum, both for engineered designs and for the customisation of every standard model.



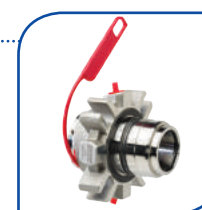
Component seals

These include single helical spring seals, bidirectional seals, seals with protected spring, external seals and bellows seals.



Seals for mixers

Mechanical seals for large-sized machinery, they are used in the most diverse industrial sectors and offer customers reliability and efficiency in every application.



Cartridge seals FLUICART

The cartridge solution reduces installation problems to a minimum and is widely compatible with the majority of applications.



Seals API 682

Complete range of mechanical seals in prefitted cartridge configuration, design and tested according to recent API682 guidelines.



Gas seals

Double mechanical seals with gas flushing (air, nitrogen, etc.) which allow to save respect to normal liquid flushing and provide greater compatibility between flushing and process.



Engineer mechanical seals

Fluiten manufactures internal and external mechanical seals, mono-directional with single spring, bi-directional with multiple springs, with metal bellows, single, double and in cartridge configuration.



Naval seals

Seals for propeller shafts specific for the shipbuilding industry, with materials resistant to corrosion and suited to high speeds. they offer the safest sealing system on the market.



Lubrication systems

Standard pressurisation systems designed and built in accordance with API 682 standards can be supplied in different executions using circulation pumps and process instruments.

Seals for mixers

Large mechanical cartridge seals pre-fitted with flange, stuffing box and sleeve. Models complete with bearings built into the stuffing box are envisioned. The different models adapt to machinery with entry from above, from below or from the side.

Model	With bearing	Optional Flange with cool/heat chamber	Optional Sanitary Flange	Diameter	Single	Double	Wet Plan 52 - 53	Dry Plan 02	Dry Plan 74	T °(C)	V m/s	P bar
GT2888A		GT2888C	GT2888D	50 - 240	X			X		From -50 to 150	From 0 to 3	From 0 to 6
GT1855A	GT2887A		GT1855D	35 - 200	X		X	X		From -50 to 150	From 0 to 3	From 0 to 6
GT1811A	GT1810A	GT1811C	GT1811D	35 - 220		X	X			From -50 to 250	From 0 to 10	From 0 to 18
GT1924A	GT1923A	GT1924C	GT1924D	50 - 250		X	X			From -50 to 250	From 0 to 20	From 0 to 75
GT1911A	GT1910A	GT1911C	GT1911D	35 - 200		X	X	X	X	From -20 to 200	From 0 to 10	From 0 to 10
GT1165				40 - 160		X	X			From -50 to 250	From 0 to 8	From 0 to 10
GTAW						X	X	X	X	From -50 to 250	From 0 to 10	From 0 to 25
GTAD						X	X	X	X	From -50 to 150	From 0 to 3	From 0 to 6
GTAf						X	X	X	X	From -50 to 200	From 0 to 10	From 0 to 10
CB4F				20 - 90		X			X	From -20 to 150	From 0 to 25	From 0 to 25
GTA/dwg	According to drawing for specific applications									100	20	350

FLUICART cartridge seals

Mechanical seals intended for versions: single, double complete with pump ring, single with bushing for quench, versions for dry operation. All the mechanical seals are pre-fitted with flange, stuffing box and sleeve. to minimise installation problems on machines with DIN and ANSI flanges, have reduced axial sizes.

Model	Diameter	Balanced	Wet Dry	Sing Plan 01, 11, 32	Double Tandem Plan 52, 53, 54, 55	Sing Plan 11-62, 02-62	Version 3	T °(C)	V m/s	P bar
C2KC	20 - 100	X	W	X			X	From -50 to 200	From 0 to 12	From 0 to 12
CB2S	25 - 100	X	W	X			X	From -50 to 250	From 0 to 12	From 0 to 25
CB2D	20 - 90	X	W		X		X	From -50 to 250	From 0 to 12	From 0 to 25
CB2Q	25 - 100	X	W				X	From -50 to 250	From 0 to 12	From 0 to 25
CB3S/45	20 - 90	X	W			X	X	From -50 to 250	From 0 to 12	From 0 to 25
CB3Q/4Q	20 - 90	X	W					From -50 to 250	From 0 to 12	From 0 to 25
CB3D/4D	20 - 90	X	D					From -50 to 250	From 0 to 12	From 0 to 25

API seals

Mechanical cartridge seals pre-fitted with flange, stuffing box and sleeve. The seals are built in compliance with the API 682 standard and provide the best reliability performance and emissions control.

Model	Segment bushing	Floating bushing	Category	Type	Execution	Description	Applicable plans
CB8S	CBBQ	CB8F	I	A	1CW-FX	Single wet	11, 23, 61, 62, 65 A/B
CB8L			I	A	2CW-CS	Single wet + containment seal	75, 76
CB8T/D			I	A	3CW-FB/2CW-CW	Double - Dual	52, 53 A/B, 54
BM8S	BM8Q	BM8F	I	A	1CW-FX	Single wet	11, 23, 61, 62, 65 A/B
TR8S	TR8Q	TR8F	I	B	1CW-FX	Single wet	11, 23, 61, 62, 65 A/B
TR8T/D/B			I	B	3CW-FB/2CW-CW	Double - Dual	52, 53 A/B, 54
BM6S	BM6Q	std	II-III	A	1CW-FL	Single wet	11, 23, 61, 62, 65 A/B
BM6T/D/B					3CW-FB/2CW-CW		52, 53 A/B, 54
BM6L			II-III	A	2CW-CS	Single wet + containment seal	75, 76
TR6S			II-III	B	1CW-FL	Single wet	11, 23, 61, 62, 65 A/B
TR8T/D/B			II-III	B	2CW-CW/3CW-FB/3CW-BB	Double - Dual	52, 53 A/B, 54
TSHS			II-III	C	1CW-FL	Single wet	02, 23, 62
TRHS		TRHF	II-III	B	1CW-FL	Single wet	02, 23, 62
TRHT/D/B			II-III	B	2CW-CW/3CW-FB/3CW-BB	Double - Dual	02, 23, 52, 53 A/B, 54
TR6L			II-III	B + A	3CW-CS	Single wet + containment seal	11, 65 A/B, 75
TRHL			II-III	C + A	3CW-CS	Single wet + containment seal	02, 65 A/B, 75
BM4L			II-III	eng	Engineered	Single wet	02, 61, 62
LL8F			I	A	3NC-FF	Double non contacting GAS	74
LL8D			II-III	A	3NC-BB	Double non contacting GAS	74

Engineered seals

Mechanical seals specifically designed according to customer's request.

Model	Single	Dual plan 52, 55	Dual plan 53, 54	Double face to face plan 52, 53, 54, 555	P bar	V m/s	T °(C)
HPKS	X				150	40	300
HPKT		X			150	40	300
HPD			X		150	40	300
HPF		X	X	X	150	40	300
GT/dwg					On demand	On demand	On demand

Seals for pumps

They include the helical single spring seals, multi-spring bi-directional, protected spring seals, external seals and metal bellows seals. The configuration allows the machinery manufacturer to make components for his machine with the utmost freedom.

Model	Diameter	Stationary Ring	ISO Ex DIN 24960	Disp Fluikey	Int - Ext	Balanced	Bi-directional	Single spring	Multiple spring	T °(C)	V m/s	P bar
S	20 - 80	A; R; C	X		⬇			X		From -50 to 220	From 0 to 10	From 0 to 10
US3	20 - 100	A; R; C	X	X	⬇		X	X		From -100 to 250	From 0 to 20	From 0 to 12
UM3	20 - 100	A; R; C	X	X	⬇		X		X	From -100 to 250	From 0 to 20	From 0 to 12
BS3	20 - 100	A; R; F	X	X	⬇	X	X	X		From -100 to 250	From 0 to 20	From 0 to 75
BM3	20 - 100	A; R; F	X	X	⬇	X	X		X	From -100 to 250	From 0 to 20	From 0 to 75
TB	20 - 100	A; R	X	X	⬇	X	X	X		From -100 to 250	From 0 to 20	From 0 to 25
N3	105 - 200	X; W		X	⬇		X		X	From -100 to 250	From 0 to 20	From 0 to 12
BL3	105 - 200	X; W		X	⬇	X	X		X	From -100 to 250	From 0 to 20	From 0 to 75
T SMA	20 - 100	A; R; F	X		⬇	X	X	Bellows	Bellows	From -70 to 300	From 0 to 20	From 0 to 22
T SHA	25 - 100	A; R; F			⬇	X	X	Bellows	Bellows	From -70 to 420	From 0 to 20	From 0 to 22
EV	20 - 200				E	X	X		X	From -50 to 200	From 0 to 8	From 0 to 10

⬇ Internal seal E External seal

Seals for shipbuilding industry

Specifically developed to resolve sealing problems on propeller shafts of small, medium and large boats, thrusters and hydro-jets. The high corrosion resistant materials also have mechanical characteristics to withstand strong vibrations and high axial movements.

Model	Diameter	Bi-dir.	Single spring	Multiple spring	T °(C)	V m/s	P bar
MUV - MUVS	40 - 125	X	X		From 5 to 80	From 0 to 10	From 0 to 5
MMS	100 - 300	X		X	From 5 to 80	From 0 to 10	From 0 to 5

Flushing systems

Standard and engineered systems to correctly flush the seals. In accordance with API 682, they can be supplied in several executions and accessories.

Model	Plan	API	PED	ASME	Volume (l)	Design pressure (bar)	Design temperature (°C)
CSW-CSA	21 - 23	X	X	X	0.4	40	200
AS 32	32	X		X		40	200
AS 31	31	X				100	180
SPD 003	51	X	X	X	3	atm.	120
SDP012	52 - 53A		X	X	12	16	200
SDPN040V24	52 - 53A	X	X	X	24	40	200
AS 53B	53B	X	X	X	20	40	200
AS 53C	53C	X	X	X	20	40	200
AS 54	54 - 55	X		X			
AS 65A/B	65A - 65B	X	X	X	3	40	200
AS 72	72	X				15	50
AS 74	74	X				15	50
AS 75	75	X	X	X	12	40	200
AS 76	76	X		X		40	200