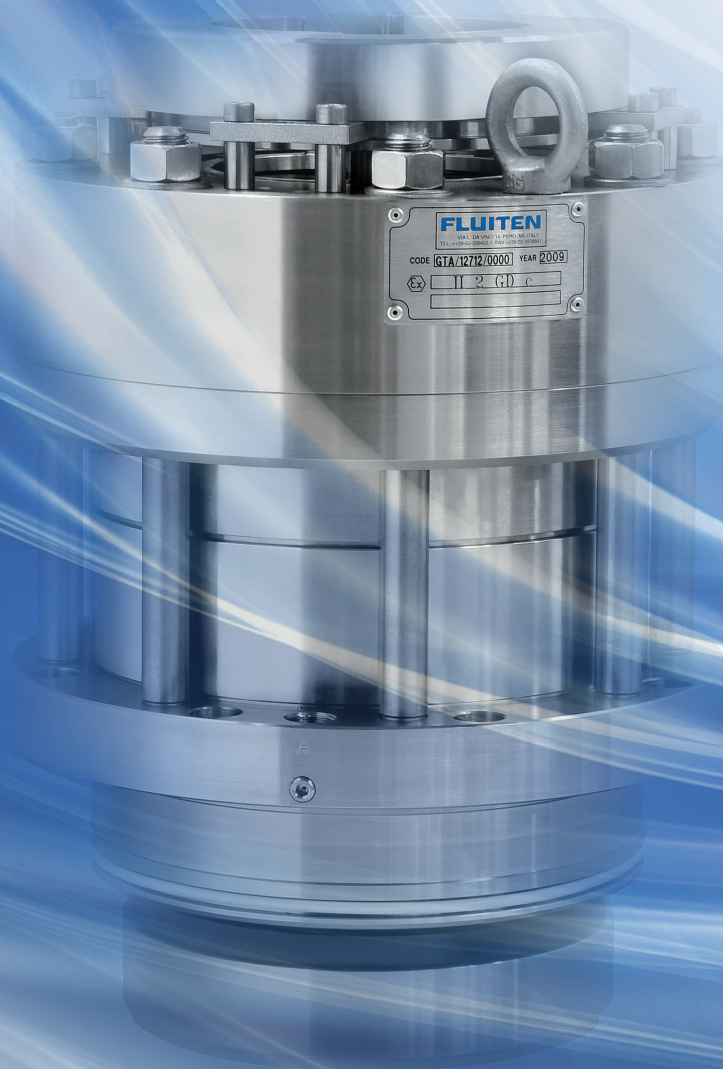




Tenute Meccaniche per Agitatori
Mechanical Seal for Mixers

This document, which was meant as a product catalogue, has also become a story of more than 50 years of dedication, passion and achievements. Yesterday's history is repeated in the facts of today and in the ideas of tomorrow.

The same elements as always are needed to achieve objectives: technology and investments but especially people who, as such, can make a real difference in companies.

I would like to thank everyone, one by one, because it is especially thanks to them that "My Fluiten" has become so great.

A handwritten signature in green ink, reading "Alberto Colombo". The signature is fluid and cursive, with a large, stylized 'A' and 'C'.

(Alberto Delfo Colombo)

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THE FLUITEN RANGE FOR AGITATORS

FLUITEN has designed and manufactured mechanical seals for rotating equipment since 1962. Thanks to our ability to develop customised, engineered mechanical seals, Fluiten has built considerable experience working with manufacturers of agitators, dryers, fermenters, reactors and other equipment for industrial processes. With a long and successful



Historical covers

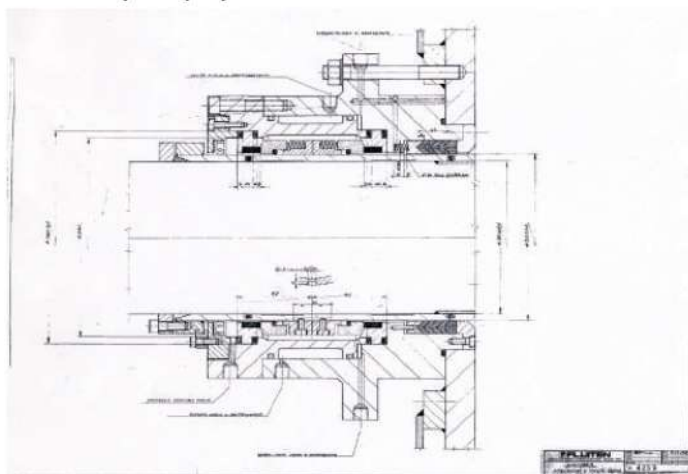
track record, Fluiten is today a benchmark manufacturer of engineered mechanical seals for this type of rotating equipment.

This catalogue introduces new seal designs that include experience gained by manufacturing thousands of products and learning the needs of many equipment manufacturers and end



Cartridge seal unit with bearing from 1978

users. Furthermore it explains the reasons why the construction and choices made must comply with certain requirements to ensure good operation and service life. We would particularly like to thank all those customers and technicians who have placed their trust in us and worked with us to develop new products for ever more demanding applications. Thanks to this cooperation and our ongoing commitment, we are confident that we can continue to grow and conquer new markets.



Drawing of application for horizontal dryer for pharmaceutical and food sector from 1976



Historical image from 1985 of dynamic test

PROCESSES AND MACHINES

Rotating equipment such as agitators, reactors, fermenters and dryers is often used in chemical, pharmaceutical, cosmetic, food, wine, waste water purification and petroleum industry production processes. These devices have many different tasks. They may mix different fluids to a uniform solution or cause them to react with each other. They may filter and dry

a mixture, prevent the heaviest components of a solution from depositing in a storage tank, or do many other things.

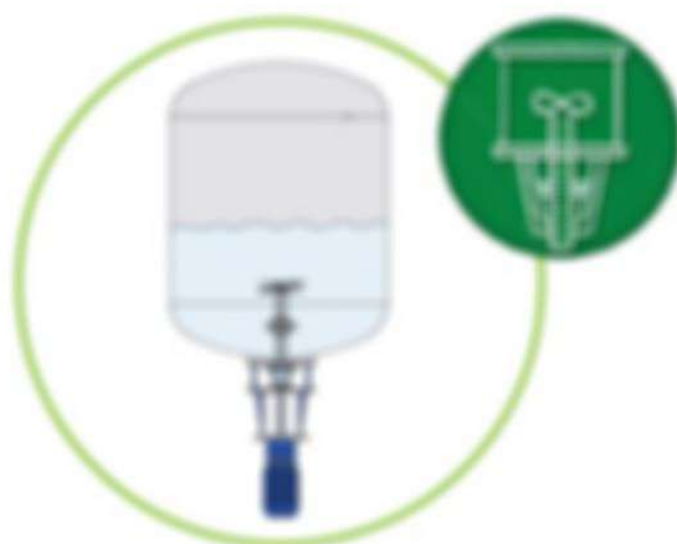
Such equipment generally comprises a vessel and a power driven shaft with blades or vanes that passes through the vessel wall at the top, the bottom or through the side.

The process fluids inside may be at temperatures



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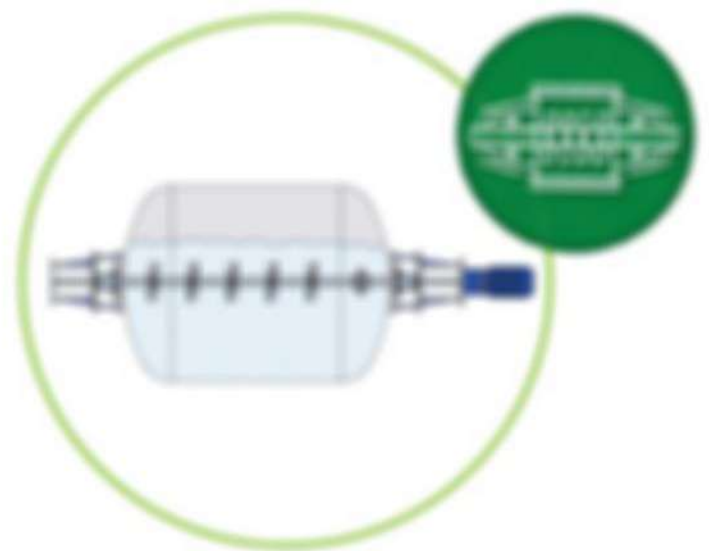
PROCESSES AND MACHINES

and pressures that differ from atmospheric conditions. For this reason, the inside of the vessel must be sealed from the atmosphere at the point where the shaft passes through its wall.



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CONFIGURATIONS ON DEVICES

Mechanical face seals are the most widely used among the various rotating equipment manufacturers since they are able to meet the required specifications reliably. They may be chosen in several configurations and materials according to the nature of the products to be sealed and the different operating conditions. A mechanical seal on a rotating shaft must isolate a pressurised vessel or a vessel under vacuum and maintain a long service life while subject to the effects of pressure, temperature,

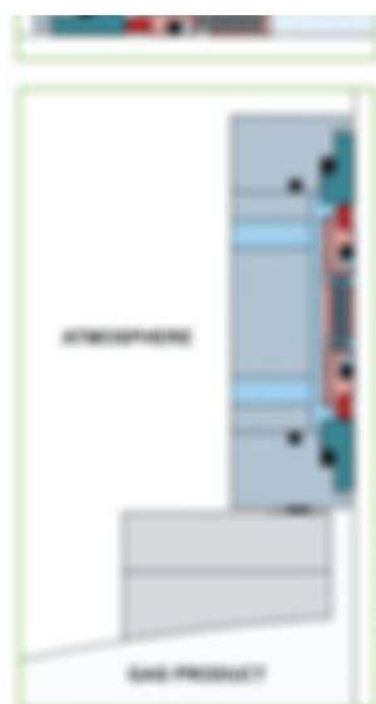
cycle.

Seals must also be designed to withstand the mechanical stresses on the shaft. Therefore, equipment construction, thermal expansion, possible manufacturing tolerances, coupling errors and misalignment between the vessel and the shaft must all be taken into consideration when they are chosen. They should also ensure operation at different parameters of pressure, shaft speed and temperatures. Depending on the type of equipment, the seal

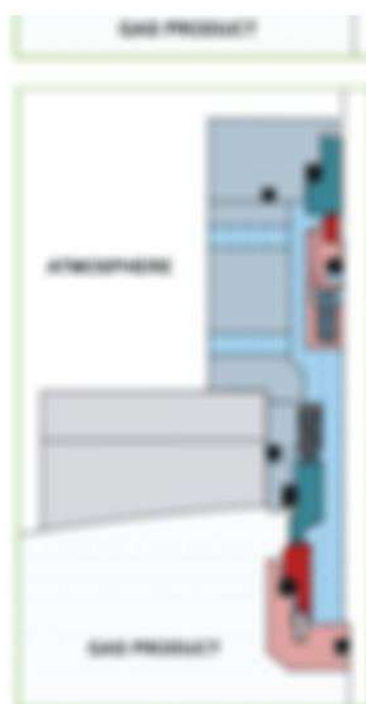


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Double seal-to-seal seal
Defined as double seal-to-seal, it is composed of two single seals assembled back-to-back with an auxiliary fluid that separates process fluid stream from atmosphere.



Double stationary seal
Defined as double stationary seal, it is composed of a pair of single seals installed in series. The seal springs on the product side are assembled on the stationary ring for better clearing and improved seal stress and an auxiliary fluid separates process fluid stream from atmosphere.

SHAFT RUN-OUT

Manufacturing tolerances inevitably lead to errors in the angles and/or concentricity between the axis of the rotating shaft and the axis of the stationary parts of the equipment. Furthermore, the mechanical stresses that stem from the weight and resistance of the substance inside the vessel cause radial forces on the shaft that can increase the relative movement between the shaft and the fixed part of the machine. Mechanical seals consist of two parts, one connected to the fixed part of the machine

contact to minimise leakage. The majority of shaft run-out is taken up by the resilience of the spring loaded seal ring assembly, known as the dynamic unit. This typically includes the seal ring, seal ring holder and drive, springs and dynamic gasket (o-ring or polymer seal). The seal ring is allowed to tilt and move axially as a consequence of shaft run-out to maintain contact with its counter face. Usually, the dynamic unit is the rotating part, but in some configurations (e.g. for high speed), it may be the stationary part. The



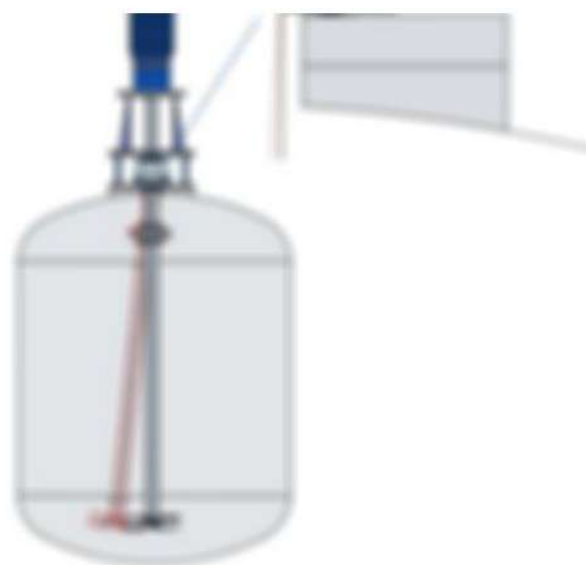
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Radial shaft movement

Radial misalignment occurs to shafts only, usually during original assembly or radial movement occurs because of bearing wear in the drive unit.



Angular shaft movement

Caused by different factors including shaft size, speed and the chemical and physical characteristics of the material being agitated.

CARTRIDGE MECHANICAL SEALS AND THE ATEX DIRECTIVE

Cartridge seals

To minimise the possibility of damage during transportation and handling and also make installation safer and more reliable, mechanical seals are increasingly supplied in cartridge form. This unified design incorporates a shaft sleeve and a gland plate or housing that enables such seals to be assembled and tested



stalled on larger machines. They automatically centre on the shaft thanks to the revolutionary efficient "FLUJSTADP" positioning system. The wide range of materials available and the slots on the flange mean a design may be found for all operating conditions on top-entry or horizontal mixers.

Cartridge seals and ATEX 94/9/EC regulations

Fluten, a member of the European Sealing



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Series "C3" cartridge seals for general services

The Fluten Type C3 range of cartridge seals is suitable for use on small agitators. The C3 was developed from the C2 cartridge seal for centrifugal pumps. The C3 includes a thicker, stronger shaft sleeve and greater radial clearances required for reliable operation on agitator applications which often have radial shaft movement. Type C3 cartridge seals are simple and low-cost due to economical mass production. However they have the same technical characteristics as the seals in-



Small agitator seal

Area with GAS and POWDER		Dangerous level	Group I Category 1
ZONE 0	ZONE 20	Explosive atmosphere ALWAYS PRESENT	1-GD
ZONE 1	ZONE 21	Explosive atmosphere POSSIBLE	2-GD
ZONE 2	ZONE 22	Explosive atmosphere LOW PROBABILITY	3-GD



II 2 GD c X

II 2 GD c X
 II 2 GD c X
 II 2 GD c X
 II 2 GD c X

ATEX rating

EFFECTS OF PRESSURE
AND TEMPERATURE VARIATIONS

Pressure variations

Process pressures are variable. Mechanical seals must be able to withstand high vacuums, high pressures, pressure changes and unexpected pressure reversals. Seals must be chosen and designed to operate during the various pressure stages encountered in their specific use and ac-



ble for the application. Above 250°C, it is advisable to include a cooling flange between the seal and the vessel incorporating a chamber through which cooling fluid may be circulated. The double seal is normally connected via suitable piping to a res-



Figure 1: Temperature variations on the seal face and seal with cooling fluid circulation



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designs using finite element analysis (FEA) to ensure stress and deformation are kept to a minimum and seal face flatness is controlled to a fine tolerance.

High temperatures

Industrial processes can reach temperatures exceeding 300°C. In these cases double seals, lubricated with an auxiliary fluid, become essential to prevent dangerous emissions into the atmosphere and to ensure correct lubrication of the sliding surfaces. Suitable materials must be selected to withstand the application limits.

To prevent evaporation of the auxiliary lubrication fluid, suitable cooling systems must be provided, manufactured from materials suit-

the hotter liquid tends to rise and the cooler liquid falls towards the seal. In particularly heavy duty conditions, it is advisable to fit a circulating pump in the circuit.



FLUGRID AND FLUGRIT

The pharmaceutical, biotech and food industries are constantly seeking to improve their manufacturing processes to maximise product quality and safety. Consequently, they are committed to developing production machinery that is able to operate reliably in highly sterile environments.

Rotating equipment manufacturers have responded to these ever more stringent sanitary



as small pockets into which the carbon face deposits lubricating micro particles, which result in significantly reduced friction and consequently less heat generation and face wear. To ensure total compatibility with the product, the seal can be equipped with a sanitary flange able to col-



FLUGRIT seal



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Therefore the seals are often made of materials that are FDA (US Food and Drug Administration) certified, having wetted parts with a clean profile that can be suitably cleaned and sterilised to prevent bacteria from forming i.e. CIP & SIP (Clean in Place & Sterilise in Place). For processes involving top entry shafts (see pg. 04) in which fluid is in the gaseous phase or where the product must not be contaminated by barrier fluid, Fluiten has developed gas lubricated mechanical seals with faces designed to run either contacting (dry contacting) or non contacting (lift off).

FLUGRID

Fluiten dry contacting face technology, called FLUGRID, is a grid created by laser etched microcavities cut into the hard face (usually made from silicon carbide). These cavities act

a minimum amount of gas leakage. Faces can have grooves that enable the seal to rotate in both directions BD (bi directional) or in one direction UD (uni directional).

(see pgs. 32, 34, and 36)



FLUGRID seal



FLUGRIT seal

HEAVY DUTY MECHANICAL SEALS

DOUBLE LUBRICATED SEALS

Mechanical seal fitted to rotating equipment with a top entry shaft will usually be sealing gas and vapours. Consequently, care must be taken to ensure mechanical seal faces are adequately lubricated. Furthermore, if the



at higher limits of pressure and speed. Under normal conditions, a pressurised double seal operates with a barrier fluid at a greater pressure than the process pressure. However, there are times when the process pressure may be greater than the barrier fluid pressure. This is usually considered as an "upset condition"



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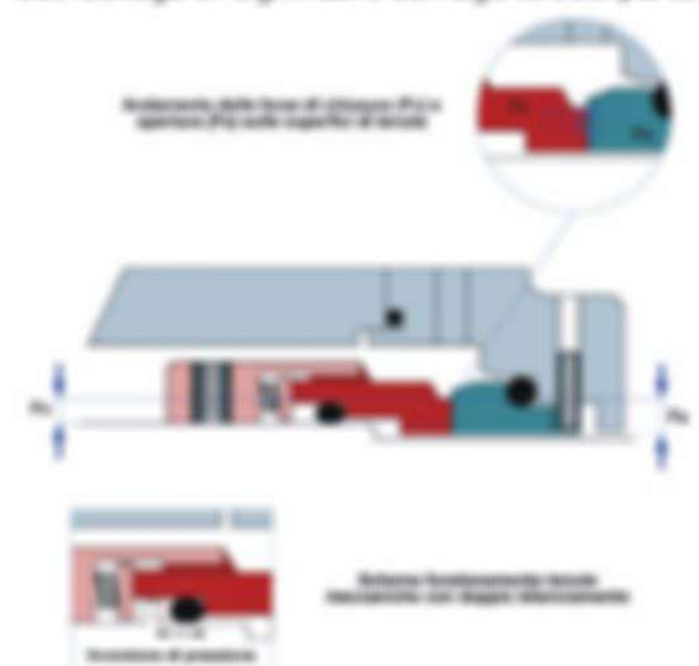
The barrier fluid can be supplied via either an auxiliary tank or an external source and must be maintained at a higher pressure than the process pressure.



HIGH PRESSURES

As pressure and speed increase there is a consequential increase in face load and friction, resulting in higher seal face temperatures and greater material stresses. Beyond certain limits it is essential to use a mechanical seal design with hydraulically balanced faces. A balanced mechanical seal is designed to operate with a reduced closing force between the seal rings. This increases face lubrication and allows operation

without leakage or significant damage to seal parts.



FLUITEN CB35 - CB45

Single cartridge seal with double hydraulic balancing and springs outside the product. Designed for use in medium pressure and temperatures. Installation is made easy with the new Fluitrip positioning device and the flange slots which adapt to different stuffing boxes. The reinforced sleeve tolerates higher shaft run-out and adapts to misers, dryers, mills and also to assembly directly onto the pump shaft.

Characteristics

- a) Sliding drive device: compensates for any movement and maintains contact with the rotating ring.
- b) Double balanced seal for enhanced performance.
- c) Threaded flange connections from casting (Fluitrip) or in flanging from an external source (Fluitec).
- d) Fluitrip: positioning device for correct and easy installation, to be pulled off after assembly but before starting up the machine.
- e) Threaded flanges for more flexible mounting.
- f) Springs outside the product.
- g) Thicker sleeve to tolerate high run-out values and to prevent deformations during installation and



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Operating limits

DIAMETER (mm)	FROM 20 TO 90
SPEED (m/s)	≤ 5.5
TEMPERATURE (°C)	FROM -50 TO 250
PACKING PRESSURE (bar)	VACUUM TO 25

Operating limits CB45

SPEED (m/s)	≤ 5.5
TEMPERATURE (°C)	FROM -50 TO 250
PACKING PRESSURE (bar)	VACUUM TO 5

For operating limits other than those specified, please consult our technical department. The pressure and speed values indicated are not absolute limits, but should be calculated by calculating the pressure x velocity value (Pv) and considering the temperature, chemical and physical characteristics of the fluid to be sealed.

The faces of the CB45 seal (inspired by the CB40 seal) shown here are designed for dry running. The seal surface is coated with the product on top of Fluitrip or suitable to allow easy cleaning and lubrication. When installed with Fluitrip, the CB45 fulfills the requirements for OIP when in place and OIP pre-lubricated in place.



FLUITRIP POSITIONING DEVICE



FLUITEC THREADED FLANGE



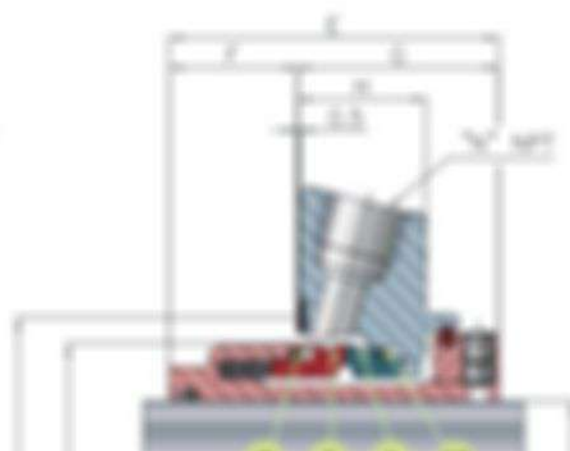
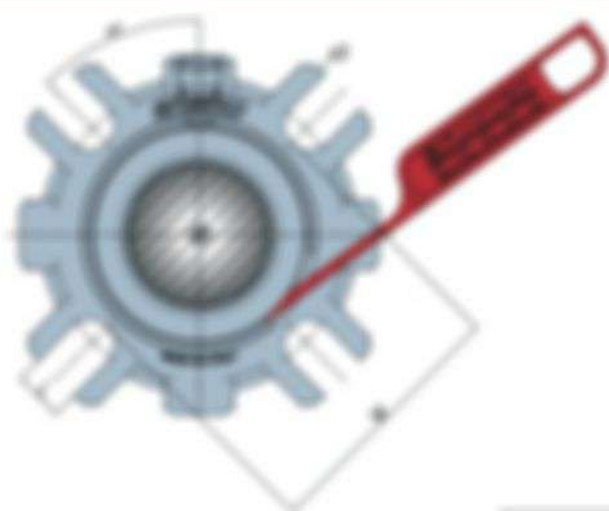
FLUITRIP POSITIONING DEVICE



FLUITEC THREADED FLANGE



FLUITRIP POSITIONING DEVICE



COMPONENT SET 60° Standard Material

60° tool: grinding ring in graphite (211) or silicon carbide (212) or tungsten carbide (213)

60° tool: grinding ring in silicon carbide (212) or tungsten carbide (213)

60° grinding ring: grinding in silicon carbide (212) or tungsten carbide (213)

60° grinding ring: grinding in silicon carbide (212) or tungsten carbide (213)

60° Product: with standard grinding wheel (211) or silicon carbide (212) or tungsten carbide (213)



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Material	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°
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212	212	212	212	212	212	212	212	212	212	212	212	212
213	213	213	213	213	213	213	213	213	213	213	213	213
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247	247	247	247	247	247	247	247	247	247	247	247	247
248	248	248	248	248	248	248	248	248	248	248	248	248
249	249	249	249	249	249	249	249	249	249	249	249	249
250	250	250	250	250	250	250	250	250	250	250	250	250

Measurements are expressed in millimeters. For measurements differing from those listed in this table, please contact our Technical Sales Department at info@efluiten.nl

FLUCART CB3D - CB4D

Double cartridge mechanical seal with double hydraulic balancing suitable for services with pressurised auxiliary fluid or for auxiliary fluid at atmospheric pressure (see operating limits). Ideal for heavy-duty applications with dangerous liquids, at high temperatures and pressure.

Easy installation thanks to the new fluting positioning device and to the flange slots which adapt to different stuffing boxes.

The reinforced sleeve tolerates higher shaft run-out and adapts to mixers, dryers, mills and also to assembly directly onto the pump shaft.

Characteristics

• Double balanced seal for enhanced performance, able to tolerate maximum pressure increase.

• 36 fluting connections for auxiliary systems. Flange for a flange or a flange from external source (flange for a flange).

• 12 flange flanges for more flexible mounting.

• Flange positioning device for correct and easy installation. In the event of other accessories, the flange marking up the machine.

• 12 flanges and 12 gaskets (flange) suitable with flange (flange) suitable the seal surface in order to prevent overloading.

• 12 flanges (flange) suitable for flange (flange).



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Pressure higher than the process pressure with 20% in all operating limits.

Operating limits		CB4D operating limits	
DIAMETER (mm)	FROM 20 TO 90	SPEED (rpm)	≤ 5.5
SPEED (rpm)	≤ 5.5	TEMPERATURE (°C)	FROM -50 TO 250
TEMPERATURE (°C)	FROM -50 TO 250	MPa 2 - 2.5 bar (see NOTE*)	
PACKING PRESSURE (bar)	VACUUM TO 25	PACKING PRESSURE (bar)	VACUUM TO 2

For operating limits other than those specified, please consult our technical department. The pressure and speed values indicated are not absolute limits, but should be evaluated by calculating the pressure x velocity value (Pv) and considering the temperature, chemical and physical characteristics of the fluids to be sealed.

The limits of the CB4D seal correspond to the CB4D seal shown here, which is designed for the mixing. The seal surface is coated with the process gas flow of flange, or suitable to allow easy flange and installation. After contact with the flange, the CB4D seals the requirements for the PTFE (see in place) and MP (see in place).

12 flanges
 12 flanges

12 gaskets
 12 gaskets

12 flanges
 12 flanges

12 gaskets
 12 gaskets

12 flanges
 12 flanges

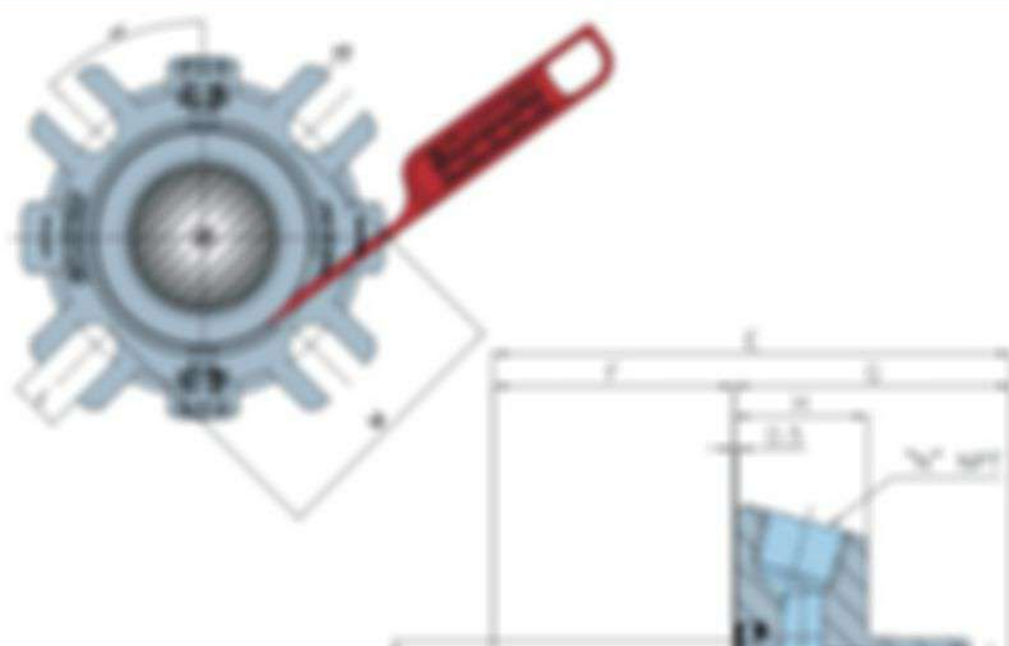
12 gaskets
 12 gaskets

12 flanges
 12 flanges

12 gaskets
 12 gaskets

12 flanges
 12 flanges

12 gaskets
 12 gaskets



COMPONENT SET Standard Material	
10	Solid stationary ring in silicon carbide (SiC)
10a	Solid stationary ring in graphite (G10) or silicon carbide (SiC) or tungsten carbide (WC)
10b	Solid rotating ring in steel 1.4571 or graphite (G10)
10c	Solid rotating ring in silicon carbide (SiC) or tungsten carbide (WC)
10d	Rotating ring pocket in steel 1.4571 or 1.4571 or steel 1.4571
10e	Rotating ring pocket in steel 1.4571 or 1.4571 or steel 1.4571
10f	Stationary ring pocket in steel 1.4571 or 1.4571 or steel 1.4571



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Item	1	2	3	4	5	6	7	8	9	10	11	12
1000	100	100	100	100	100	100	100	100	100	100	100	100
1001	100	100	100	100	100	100	100	100	100	100	100	100
1002	100	100	100	100	100	100	100	100	100	100	100	100
1003	100	100	100	100	100	100	100	100	100	100	100	100
1004	100	100	100	100	100	100	100	100	100	100	100	100
1005	100	100	100	100	100	100	100	100	100	100	100	100
1006	100	100	100	100	100	100	100	100	100	100	100	100
1007	100	100	100	100	100	100	100	100	100	100	100	100
1008	100	100	100	100	100	100	100	100	100	100	100	100
1009	100	100	100	100	100	100	100	100	100	100	100	100
1010	100	100	100	100	100	100	100	100	100	100	100	100
1011	100	100	100	100	100	100	100	100	100	100	100	100
1012	100	100	100	100	100	100	100	100	100	100	100	100
1013	100	100	100	100	100	100	100	100	100	100	100	100
1014	100	100	100	100	100	100	100	100	100	100	100	100
1015	100	100	100	100	100	100	100	100	100	100	100	100
1016	100	100	100	100	100	100	100	100	100	100	100	100
1017	100	100	100	100	100	100	100	100	100	100	100	100
1018	100	100	100	100	100	100	100	100	100	100	100	100
1019	100	100	100	100	100	100	100	100	100	100	100	100
1020	100	100	100	100	100	100	100	100	100	100	100	100
1021	100	100	100	100	100	100	100	100	100	100	100	100
1022	100	100	100	100	100	100	100	100	100	100	100	100
1023	100	100	100	100	100	100	100	100	100	100	100	100
1024	100	100	100	100	100	100	100	100	100	100	100	100
1025	100	100	100	100	100	100	100	100	100	100	100	100
1026	100	100	100	100	100	100	100	100	100	100	100	100
1027	100	100	100	100	100	100	100	100	100	100	100	100
1028	100	100	100	100	100	100	100	100	100	100	100	100
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1031	100	100	100	100	100	100	100	100	100	100	100	100
1032	100	100	100	100	100	100	100	100	100	100	100	100
1033	100	100	100	100	100	100	100	100	100	100	100	100
1034	100	100	100	100	100	100	100	100	100	100	100	100
1035	100	100	100	100	100	100	100	100	100	100	100	100
1036	100	100	100	100	100	100	100	100	100	100	100	100
1037	100	100	100	100	100	100	100	100	100	100	100	100
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1043	100	100	100	100	100	100	100	100	100	100	100	100
1044	100	100	100	100	100	100	100	100	100	100	100	100
1045	100	100	100	100	100	100	100	100	100	100	100	100
1046	100	100	100	100	100	100	100	100	100	100	100	100
1047	100	100	100	100	100	100	100	100	100	100	100	100
1048	100	100	100	100	100	100	100	100	100	100	100	100
1049	100	100	100	100	100	100	100	100	100	100	100	100
1050	100	100	100	100	100	100	100	100	100	100	100	100

Measurements are approximate. For measurements differing from those listed in this table, please contact our Technical Sales Department at info@efluiten.nl

FLUCART CB4Q - CB4Q

Single cartridge seal with double hydraulic balancing. The seal has a V-ring to contain the continuous quench, ideal for pumps with fluids that tend to crystallise or on the atmosphere and which require washing.

Simple to install onto the machine thanks to the new Flustrip positioning device and the slots which fit different stuffing boxes.

The reinforced sleeve tolerates higher shaft run-out tolerance and adapts to mixers, dryers or mills and also to assembly directly onto the pump shaft.

Characteristics

a) Springs exclude the product for maximum stability, even with closed products that crystallise in the process where thorough cleaning is required.

b) Flushing drive device maintains seal run with rotating ring and compensates for any movement.

c) Double balanced seal for enhanced performance, resistance pressure materials.

d) Threaded flange connections for harder and cooling liquids.

e) Threaded flange for easy flange mounting.

f) Flustrip positioning device for correct assembly installation. To be pulled off after assembly but before starting up the machine.



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Fill in the fields in the **format above**, you will receive them via e-mail within **48 hours** of the request.

Operating limits

DIMENSION (mm)	FROM 20 TO 90
SPEED (rpm)	≤ 52
TEMPERATURE (°C)	FROM -60 TO 250
WORKING PRESSURE (bar)	VACUUM TO 25

CB4Q operating limits

SPEED (rpm)	≤ 52
TEMPERATURE (°C)	FROM -60 TO 250
WORKING PRESSURE (bar)	VACUUM TO 5

For operating limits other than those specified, please consult our technical department. The pressure and speed values indicated are not absolute limits, but should be calculated by calculating the pressure in static value (Pa) and considering the temperature, chemical and physical characteristics of the fluids to be sealed.

The design of the CB4Q seal is based on the CB4Q seal design based on the design for the sealing. The seal surface is contact with the process and the oil. Flustrip or another to allow easy cleaning and maintenance. When tested with static positioning the CB4Q seals the requirements for OPI (oil in place) and OPI (oil in place).



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018



ISO 9001:2015

- 10) Initial investment: 1000,00 €
 - 1. Jahr: 200,00 €
 - 2. Jahr: 300,00 €
 - 3. Jahr: 400,00 €
 - 4. Jahr: 500,00 €
- 11) Initial investment: 1000,00 €
 - 1. Jahr: 200,00 €
 - 2. Jahr: 300,00 €
 - 3. Jahr: 400,00 €
 - 4. Jahr: 500,00 €
- 12) Investment: 1000,00 €
 - 1. Jahr: 200,00 €
 - 2. Jahr: 300,00 €
 - 3. Jahr: 400,00 €
 - 4. Jahr: 500,00 €
- 13) Investment: 1000,00 €
 - 1. Jahr: 200,00 €
 - 2. Jahr: 300,00 €
 - 3. Jahr: 400,00 €
 - 4. Jahr: 500,00 €
- 14) Investment: 1000,00 €
 - 1. Jahr: 200,00 €
 - 2. Jahr: 300,00 €
 - 3. Jahr: 400,00 €
 - 4. Jahr: 500,00 €



Fill in the fields in the **format above**, you will receive them via e-mail within **48 hours of the request**.

[illegible]

Measurement as approval is selfing. Its measurement offering has been used to measure a value, thus giving an external idea. Measurement is selfing.

GT 2000A

Single external seal suitable for dry running. The rotating component is pre-assembled to optimal working length. The stationary seal ring is supplied complete with mounting flange. "Flugrid" technology (see pg. 40) ensures superior operating performance and its construction details ensure high shaft run-out values.

Characteristics

- Rotating element with ring in offset position with "Flugrid" technology and axial adjustment ring to guarantee perfect alignment for the running.
- Rotating element ring to prevent blow-out during reverse operation.
- Flange designed to guarantee correct alignment of stationary seal ring.
- Optimized sliding distance to ensure reliable performance of dynamic element.
- Optional carbon flange to provide perfect compensation and cooling flange for high temperature applications.
- Multiple springs outside of the product for uniform seal face loading.
- Standard configuration for simple



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Operating limits

DIMENSION (mm)	FROM 50 TO 240
SPEED (rpm)	≤ 3
TEMPERATURE (°C)	FROM -50 TO 250
WORKING PRESSURE (bar)	VACUUM TO 6

For operating limits other than those specified, please consult our technical department. The pressure and speed values indicated are not absolute limits, but should be evaluated by calculating the pressure x velocity value (Pv) and considering the temperature, chemical and physical characteristics of the fluids to be sealed.

OPTIONAL FLANGES (see pg. 40)



Flange with cooling chamber



Carbon flange



Carbon flange with cooling chamber



SEAL RING



SEAL RING



SEAL RING



SEAL RING



SEAL RING



SEAL RING

Images and dimensions may differ slightly from the standard configuration or refer to different markets. The product may be subjected to technical or commercial modifications without notification.

3. Additionally, it is expected that the proposed project will generate additional employment opportunities.

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Journal of Internal Medicine 247: 391–397

[illegible]

88. Buffers are very useful in many situations, especially in chemical reactions.

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Journal of Internal Medicine 247: 395–402

She has a master's in history from the University of Chicago and is currently a Ph.D. student at the University of Wisconsin-Madison.



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2000	70	80	110	100	110	0	100	20	60	2
2001	80	110	100	100	110	0	100	20	70	0
2002	90	120	100	110	100	0	100	20	70	0
2003	100	130	100	110	100	0	100	20	70	0
2004	110	140	110	120	100	0	100	40	110	0
2005	120	150	120	130	100	0	100	60	110	0
2006	130	160	130	140	110	0	100	80	110	0
2007	140	170	140	150	120	0	100	100	110	0
2008	150	180	150	160	130	0	100	120	110	0
2009	160	190	160	170	140	0	100	140	110	0
2010	170	200	170	180	150	10	100	160	110	0
2011	180	210	180	190	160	20	100	180	110	0
2012	190	220	190	200	170	30	100	200	110	0
2013	200	230	200	210	180	40	100	220	110	0
2014	210	240	210	220	190	50	100	240	110	0
2015	220	250	220	230	200	60	100	260	110	0
2016	230	260	230	240	210	70	100	280	110	0
2017	240	270	240	250	220	80	100	300	110	0
2018	250	280	250	260	230	90	100	320	110	0
2019	260	290	260	270	240	100	100	340	110	0
2020	270	300	270	280	250	110	100	360	110	0

Measurement of approval is self-rated. No measurement offering has been used in measurement in this study, which is not an official data collection system.

GT 3055 A

Single balanced external mechanical seal in cartridge configuration complete with flange, shaft sleeve and auxiliary seal to allow static or continuous atmospheric pressure quenching. "DryGrid" technology (see pg. 40) ensures superior dry running performance while the large radial clearance make the seal tolerant to high shaft run-out.

Characteristics

- Inlet where seal ring is offset vertically and outer stationary seal ring is premium grade graphite
- Rotational stationary ring to prevent blow-out during routine operation
- Flange designed to guarantee correct alignment of stationary seal ring
- Optional: carbon flange to prevent product contamination
- Optimised sliding distance to ensure reliable performance of the dynamic element
- Multiple springs ensure the product is always pushed back up the seal face
- Sealing device for easy seal pressure readjustment



Would you like to receive our complete technical manual?

Fill in the fields in the **format above**, you will receive them via e-mail within **48 hours** of the request.

Operating limits

DIMENSION (mm)	FROM 55 TO 200
SPEED (rpm)	≤ 3
TEMPERATURE (°C)	FROM -50 TO 150
WORKING PRESSURE (bar)	VACUUM TO 6

For operating limits other than those specified, please consult our technical department. The pressure and speed values indicated are not absolute limits, but should be evaluated by calculating the pressure x velocity value (Pv) and considering the temperature, chemical and physical characteristics of the fluid to be sealed.

OPTIONAL FLANGES (see pg. 40)



Sanitary flange



TECHNICAL MANUAL



COMPANY MANUAL



PROBLEMS TO THE R&D DEPARTMENT



USE CONSULTING



IS-2000 MANUAL



TOP DRAWING

Images and dimensions may differ slightly from the standard configuration or refer to different markets. The product may be subjected to technical or commercial modifications without notification.