



A strong link of your system

CARTRIDGE MECHANICAL SEALS SERIES "C"

Fluiten cartridge seals are designed with flexibility in mind, to suit a large number of applications.

This optimisation, reduces the need to carry extensive spare parts, normally associated with multiple variations in seal usage.

The choice of materials, and the careful attention to detail for every solution, are the reason behind the great success of the Fluiten 'C' type cartridge range. This range is now being use with confidence, and complete satisfaction, by major manufacturers of pumps and mixers.

This catalog shows the second generation of this range of cartridges with the last improvements according to the current security requirements of european community

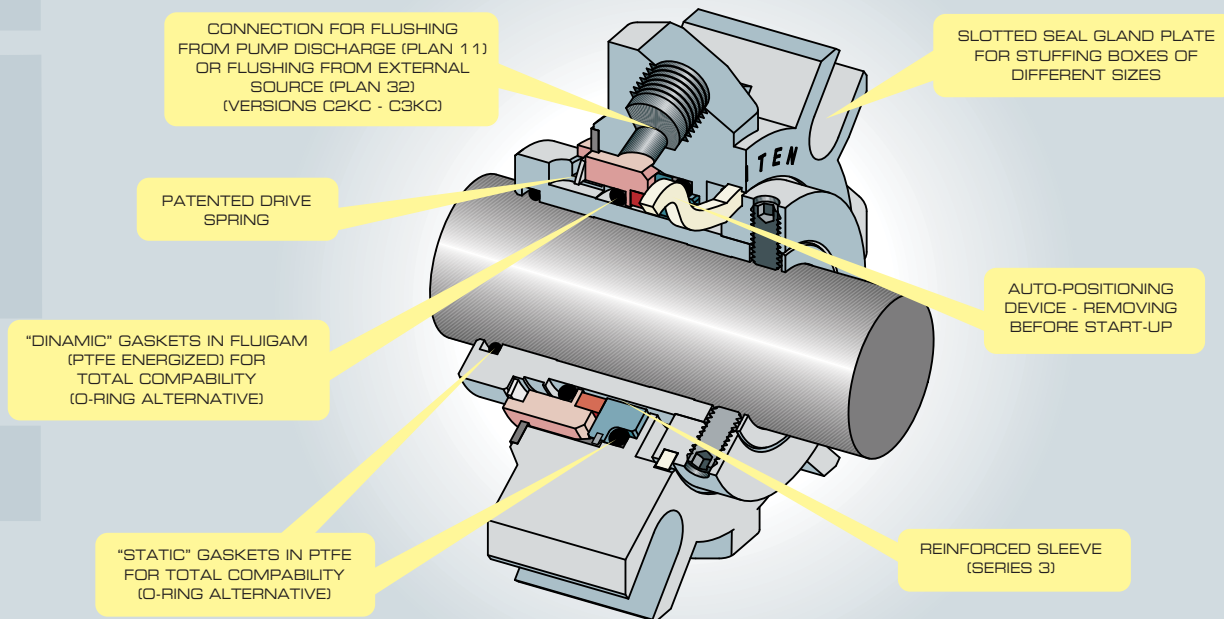


- Single Seals C2K/C2KC/C2S
- Single Seals with throttle bushing C2SQ/C2DQ
- Double Seals C2D
- Seals with reinforced sleeve series "3"
- Dry-running seals C4D/C4DQ



SINGLE SEALS CHARACTERISTICS

C2K/C2KC/C3K/C3KC



MATERIALS:

STATIONARY SEAT:

Silicon carbide

ROTARY FACE:

AISI 316+graphite

AISI 316+silicon carbide

GASKETS:

EPDM / FKM / PTFE (Fluigam)

Perfluoroelastomers (if request)

SPRING:

Superinox

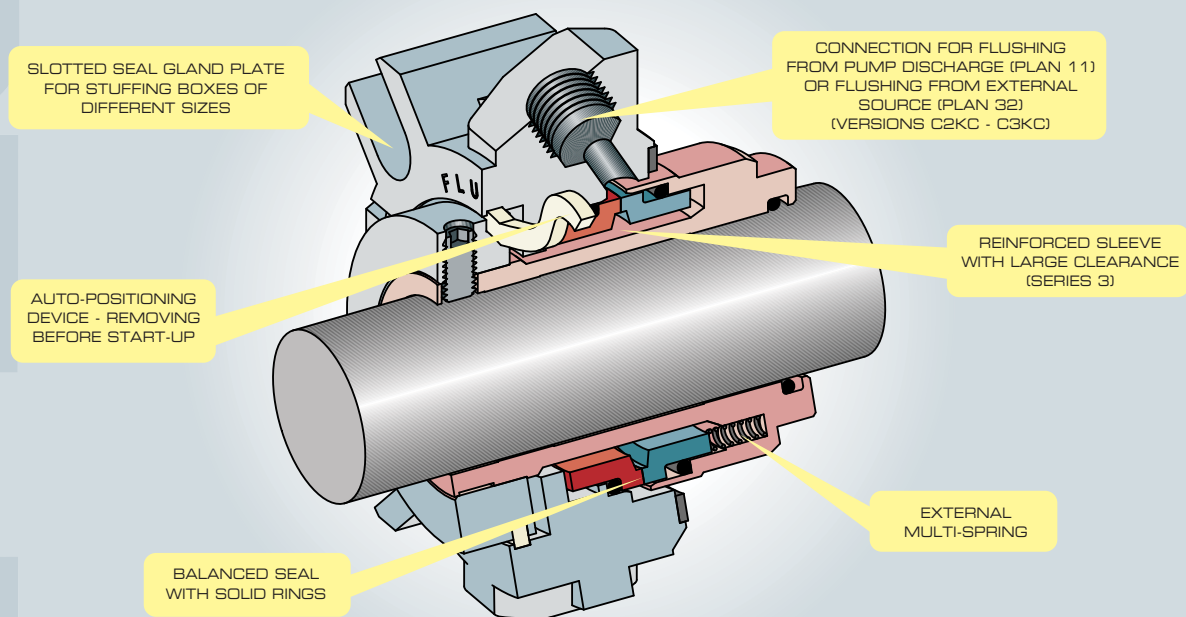
OTHER METAL PARTS:

AISI 316

2

FLUITEN

C2S/C3S (C2SQ/C3SQ with throttle bushing for quench)



MATERIALS:

STATIONARY SEAT:

Graphite

Silicon carbide

Tungsten carbide

ROTARY FACE:

Silicon carbide

Tungsten carbide

GASKETS:

EPDM / FKM

Perfluoroelastomers

THROTTLE BUSHING

(C2SQ-C3SQ):

Bronze

SPRINGS:

AISI 316

Hastelloy (if request)

OTHER METAL PARTS:

AISI 316

Hastelloy (if request)

MAIN CHARACTERISTICS



BI-DIRECTIONAL
Can be installed on clockwise or anti-clockwise rotating shafts.



PRICE
Engineered to reduce production costs without compromising its quality level.



RESISTANT TO ACIDS & BASES
The seal is resistant to products that are moderately chemically aggressive.



UNIVERSAL
Geometry and materials maximize its application range.



NO CATASTROPHIC FAILURES
The absence of a bellows guarantees that, in case of failure, there is no total fluid leakage.



SELF-CLEANING
The seal eliminates by centrifugal force possible particle sedimentations.



SELF-POSITIONING
Auto-positioning device removing before start-up.



LOW TURBULENCE HEAT GENERATIONS
Its internal geometry reduces the amount of heat generated by turbulences.



STOCK REDUCTION
Optimized material for stock reduction.



ROBUST
The seal includes 2 robust clutch pins resistant to vibrations, cavitations and mechanical stress.



CARTRIDGE
Seal complete of flange and shaft sleeve to guarantee reliable and easy installation.



LOW EMISSIONS
The geometry of the rings has been studied to avoid deformations and guarantee contact effectiveness.

APPLICATIONS

INDUSTRY



CHEMICAL INDUSTRY



PHARMACEUTICAL FIELD



FOOD INDUSTRY



PAPER FIELD



WATER TREATMENT

MACHINES



CENTRIFUGAL PUMPS



SIDE ENTRY MIXERS



BOTTOM ENTRY MIXERS



TOP ENTRY MIXERS

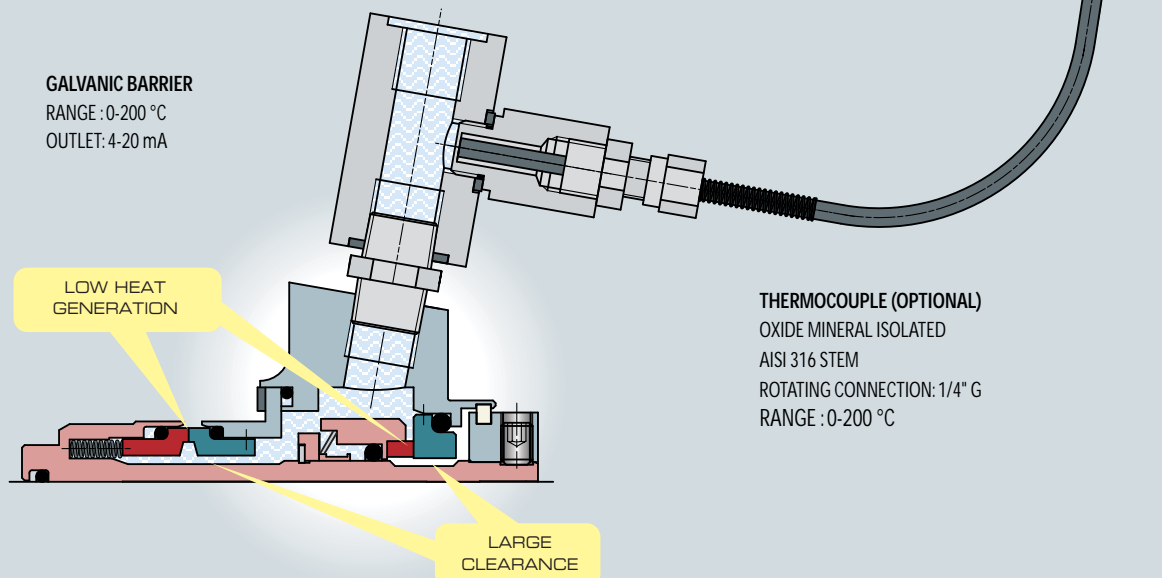


VERTICAL PUMPS

ATEX COMPLIANCE

The Cartridges FLUITEN seals range are certified according the ATEX directive 94/9/CE (TÜV) which has defined the European requirements for equipment installed in critical potential explosive areas.

A declaration of conformity and a specific instruction manual can be supplied on demand. This documentation complete the equipment certification required for the duty validation. For high risk applications Fluiten can provide double mechanical seals lubricated and monitored by a thermocouple which has the probe located inside the stationary rings or in contact with the barrier fluid to have direct temperature relief.



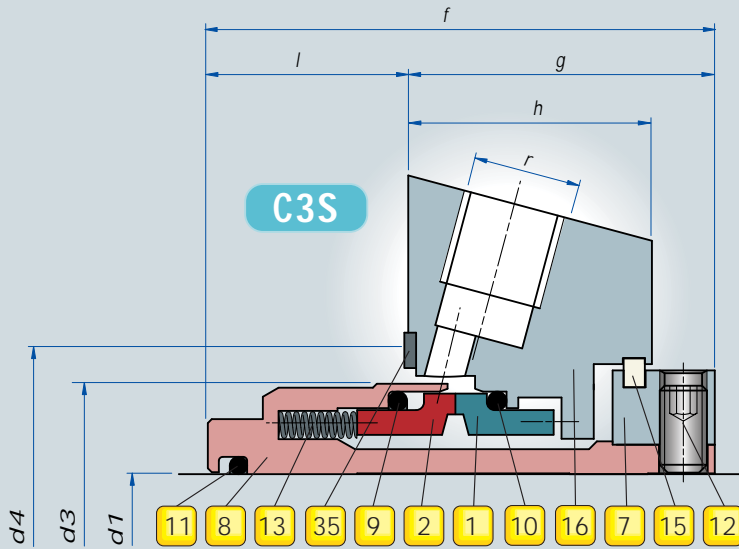
GALVANIC BARRIER
RANGE : 0-200 °C
OUTLET: 4-20 mA

LOW HEAT GENERATION

THERMOCOUPLE (OPTIONAL)
OXIDE MINERAL ISOLATED
AISI 316 STEM
ROTATING CONNECTION: 1/4" G
RANGE : 0-200 °C

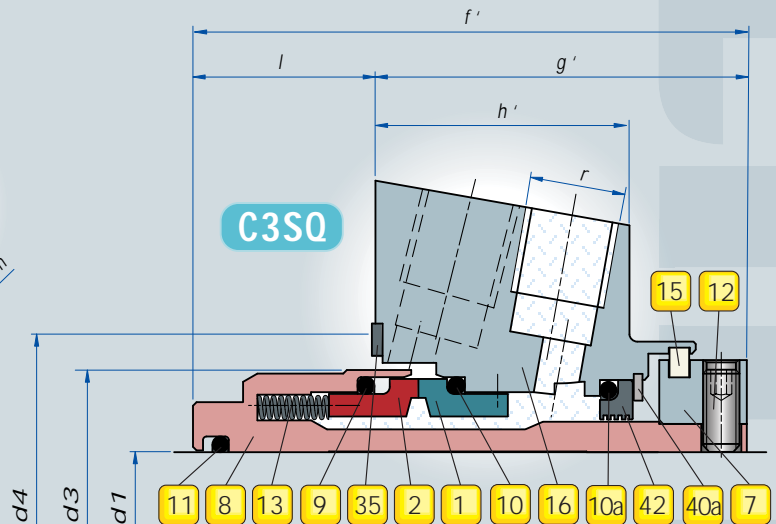
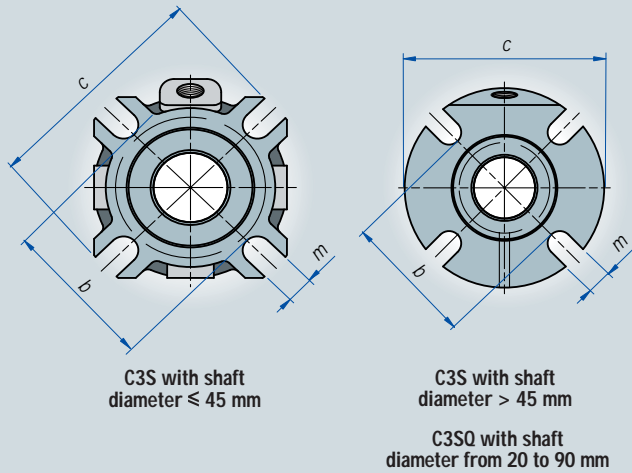
LARGE CLEARANCE

SEALS DIMENSIONS C3S - C3SQ



SEAL ELEMENTS:

- | | | | |
|-----|---------------------------|-----|--------------------|
| 1 | STATIONARY SEAT | 12 | SET SCREWS |
| 2 | ROTARY FACE | 13 | SPRINGS |
| 7 | DRIVE COLLAR | 15 | POSITIONING DEVICE |
| 8 | SHAFT SLEEVE | 16 | FLANGE |
| 9 | ROTARY FACE "O" RING | 35 | FLANGE GASKET |
| 10 | STATIONARY SEAT "O" RING | 40a | SNAP RING |
| 10a | THROTTLE BUSHING "O" RING | 42 | THROTTLE BUSHING |
| 11 | SHAFT SLEEVE "O" RING | | |



CHARACTERISTICS:

C3S
Single cartridge seal, for general purpose.
PLAN 11 or PLAN 32 (see pag. 11)

C3SQ
Single cartridge seal with throttle bushing for low pressure quench (< 1 bar), recommended for general purpose.
PLAN 11/62 or PLAN 32/62 (see pag. 11)

- Reinforced sleeve.
- Important "Run-out" allowed for mixers applications.

OPERATING LIMITS: (*)

DIAMETER (mm)	SPEED (m/sec)	PRESSURE (bar)	TEMPERATURE (°C)
90	12	25	+250
20	0	0	-50

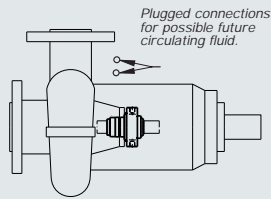
(*) Pressure limitations depend upon a pressure-velocity relationship based on size, speed, face materials and fluid. Contact our Technical-Commercial office for technical specifics.

Shaft Diam.	d1	d3	d4		b	c	f	f'	g	g'	h	h'	l	m	r
			min	max											
20	20	43	44	51	63	98	63,5	74,5	38,5	49,5	31,5	33,5	25	12	Rp 1/4"
22	22	46	47	52	63	98	63,5	74,5	38,5	49,5	31,5	33,5	25	12	Rp 1/4"
25	25	48	49	56	65	98	63,5	74,5	38,5	49,5	31,5	33,5	25	12	Rp 1/4"
28	28	50	51	57	68	106	63,5	74,5	38,5	49,5	31,5	33,5	25	12	Rp 1/4"
30	30	53	54	61,5	68	106	64,5	78	39,5	53	31,5	36	25	12	Rp 1/4"
32	32	56	57	66	76	120	64,5	79	39,5	54	31,5	37	25	12	Rp 1/4"
33	33	56	57	66	76	120	64,5	79	39,5	54	31,5	37	25	14	Rp 1/4"
35	35	58	59	68	76	120	64,5	79	39,5	54	31,5	37	25	14	Rp 1/4"
38	38	61	62	70,5	81	135	64,5	79	39,5	54	31,5	37	25	14	Rp 1/4"
40	40	63	64	73	81	135	64,5	79	39,5	54	31,5	37	25	14	Rp 1/4"
43	43	66	67	75	87	148	64,5	79	39,5	54	31,5	37	25	14	Rp 1/4"
45	45	68	69	78	87	148	64,5	81	39,5	56	31,5	39	25	14	Rp 1/4"
48	48	73	74	83	95	148	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
50	50	73	74	83	95	148	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
53	53	78	79	91	102	158	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
55	55	78	79	91	102	158	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
58	58	83	84,5	98,5	112	163	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
60	60	83	84,5	98,5	112	163	65	82,5	40	57,5	31,5	40	25	18	Rp 3/8"
63	63	93	95	108	125	178	65	87,5	40	62,5	31,5	45	25	18	Rp 3/8"
65	65	93	95	108	125	178	65	87,5	40	62,5	31,5	45	25	18	Rp 3/8"
68	68	98	100	113	130	185	65	87,5	40	62,5	31,5	45	25	18	Rp 3/8"
70	70	105	107	118	135	193	77	99	47	69	36,5	49	30	18	Rp 3/8"
75	75	110	113	123	140	198	77	99	47	69	36,5	49	30	22	Rp 3/8"
80	80	115	118	130	145	205	77	99	47	69	36,5	49	30	22	Rp 3/8"
85	85	121	124	135	150	208	78	100	47	69	36,5	49	31	22	Rp 3/8"
90	90	126	129	140	155	218	78	100	47	69	36,5	49	31	22	Rp 3/8"

Dimensions subject to modifications without notice.

API PLANS APPLICABLE

FOR HORIZONTAL CENTRIFUGAL PUMPS:

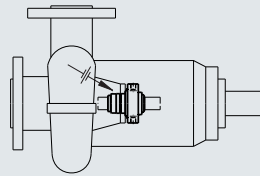


PLAN 02

Dead-ended seal chamber with no circulation of flushed fluid.

C2D0 - C3D0

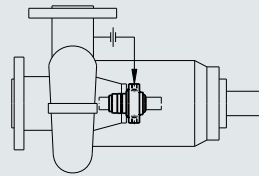
With PLAN 62



PLAN 01

Internal recirculation from pump discharge to seal.

C2K - C3K

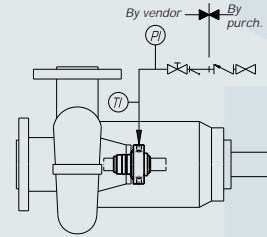


PLAN 11

Recirculation from pump case through orifice to seal.

C2KC - C3KC

C2S - C3S

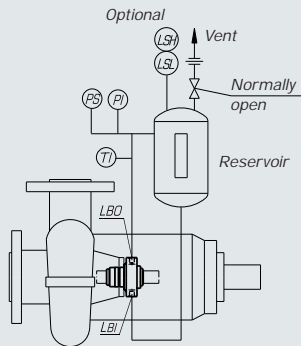


PLAN 32

Injection to seal from external source of clean fluid.

C2KC - C3KC

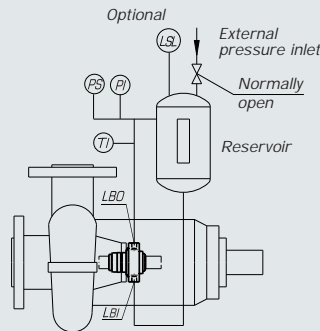
C2S - C3S



PLAN 52

Un-pressurized external fluid reservoir with forced circulation; (typically used with tandem seal arrangement)

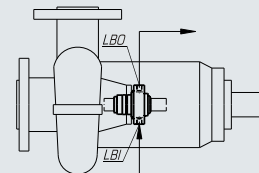
C2D - C3D



PLAN 53

Pressurized external fluid reservoir with forced circulation; (typically used with double seal arrangement)

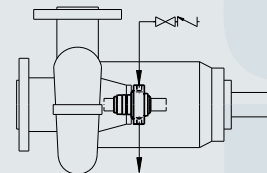
C2D - C3D



PLAN 54

Circulation of clean fluid from external system; (typically used with double seal arrangement)

C2D - C3D



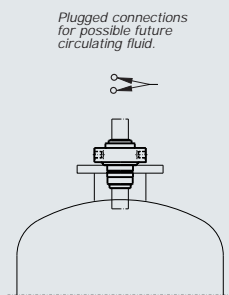
PLAN 62

External fluid quench (steam, gas, water, etc.) typically used with whit throttle bushing or auxiliary sealing device.

C2S0 - C3S0

C2D0 - C3D0

FOR TOP ENTRY MIXERS:

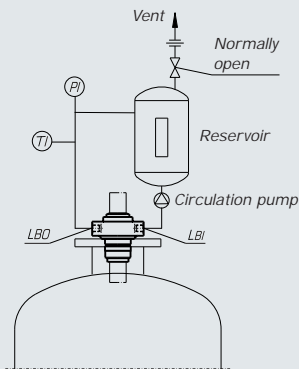


PLAN 02

Dead-ended seal chamber with no circulation of flushed fluid.

C4D - C4D0

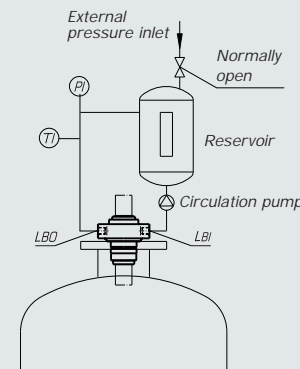
With PLAN 62



PLAN 52

Un-pressurized external fluid reservoir with forced circulation; (typically used with tandem seal arrangement)

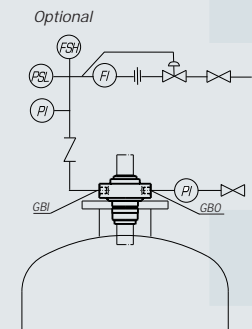
C3D



PLAN 53

Pressurized external fluid reservoir with forced circulation; (typically used with double seal arrangement)

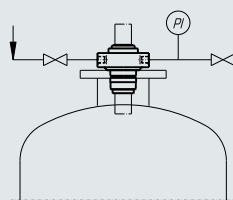
C3D



PLAN 74

Pressurized gas barrier regulated from control panel; (typically used with dry-running double seal arrangement)

C4D



PLAN 62

External fluid quench (steam, gas, water, etc.) typically used with whit throttle bushing or auxiliary sealing device.

C3D0 - C4D0

API PLAN LEGEND

- (PI) Pressure indicator
- (TI) Temperature indicator
- (PS) Pressure switch
- (PSL) Low pressure alarm
- (LSH) High level alarm
- (LS) Low level alarm
- (FSH) High flow alarm

LBI Flushing inlet/pressurization

LBO Flushing outlet/pressurization

GBI Barrier gas inlet

GBO Barrier gas outlet

Strainer

Flow-regulation valve

Block valve

Check valve

Orifice

SERVICE SOLUTIONS

The Fluiten service department, independent from the production process, offer a fast, flexible and high quality assistance for any necessity.

During the repair process are also considered up grading evaluation to make the seals compliant to the recent environmental rules and using the present superior material technology.

High experienced technicians operates according the quality manual which define the level of repair to the initial manufacturing tolerances and performances.



Customer and After sales service for assistance and technical support tel. +39 02 339403.1 or contact us by info@fluiten.it or www.fluiten.it

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