

Auxiliary

SYSTEMS

for mechanical seals

Fluiten is an Italian Company specialized for construction of engineered sealing systems. Reservoirs are manufactured according the required specification standards and code (API, ASME, PED etc) and equipped with the necessary process instrumentation for the control and/or monitoring of the seal efficiency. For special duty applications involving specific construction demand, Fluiten engineering department can provide also tailor-made solutions including panels for gas pressurized seals.



- Barrier Fluid Reservoir (12/24 lt)
- Heat Exchanger
- Leakage Detector
- Pressurization Panel



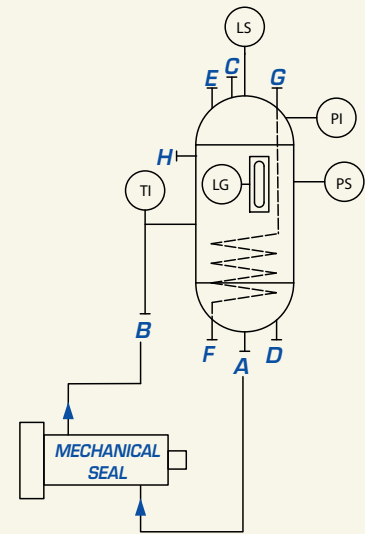
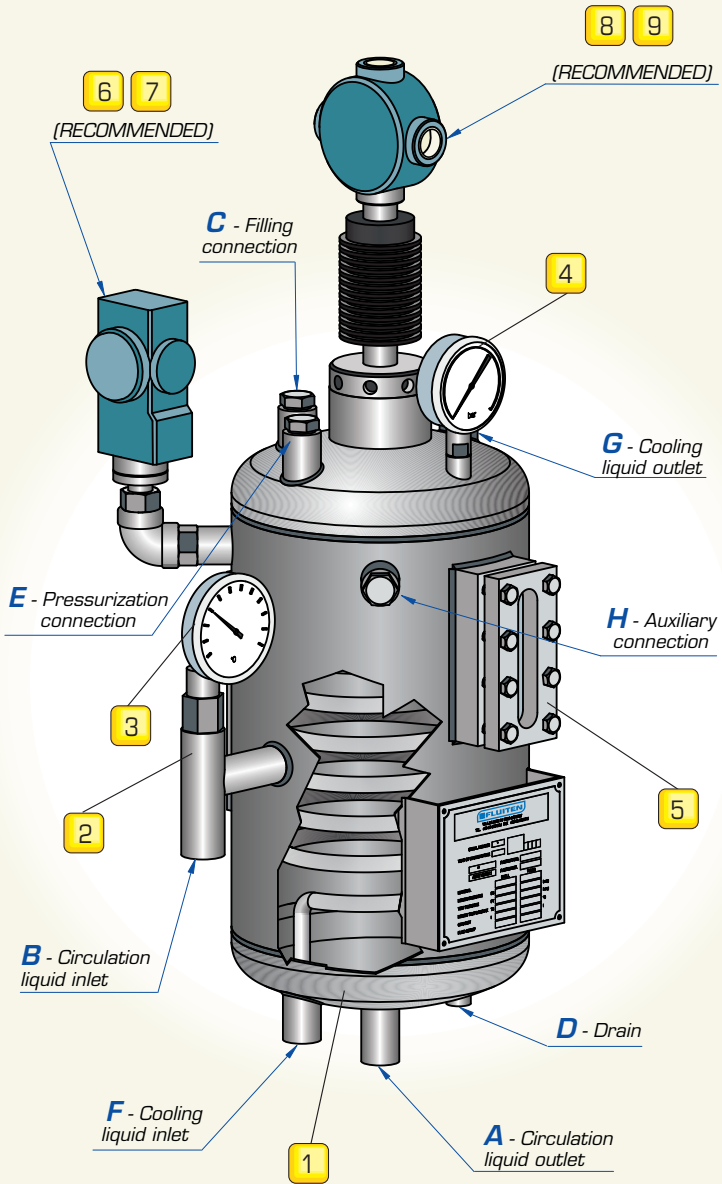
CHEMICAL INDUSTRY



PHARMACEUTICAL INDUSTRY



FOOD INDUSTRY



API PLAN 52/53A

STANDARD CONSTRUCTION:

- 1 RESERVOIR (AISI 316)
- 2 THERMOWELL
- 3 TEMPERATURE INDICATOR - TI
- 4 PRESSURE INDICATOR - PI
- 5 LEVEL GAUGE - LG

OPTIONAL ACCESSORIES: *

- 6 PRESSURE SWITCH MAX - PSH (PLAN 52)
- 7 PRESSURE SWITCH MIN - PSL (PLAN 53A)
- 8 LEVEL SWITCH MIN/MAX - LSH/LSL (PLAN 52)
- 9 LEVEL SWITCH MIN - LSL (PLAN 53A)
- 10 FILLING MANUAL PUMP
- 11 CIRCULATION PUMP
- 12 FILLING FUNNEL
- 13 GATE VALVE
- 14 SAFETY VALVE - PSV

* Devices not shown on the drawing are available on request.

Contact Fluiten Technical-Commercial office for dimensions and details.

OPERATING CONDITIONS:

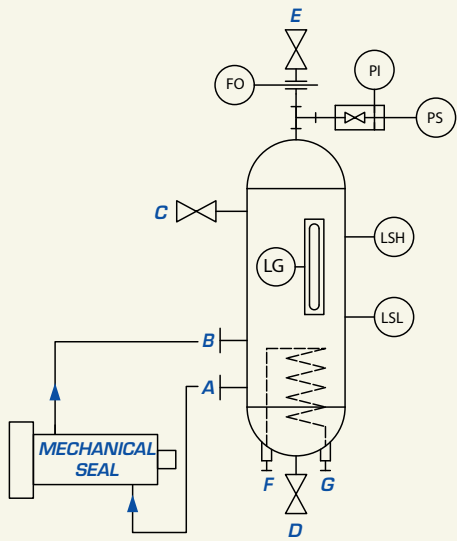
VOLUME: (It)	TEMPERATURE: (°C)	PRESSURE: (bar g)
12	160*	16
	10	

* Metal parts only

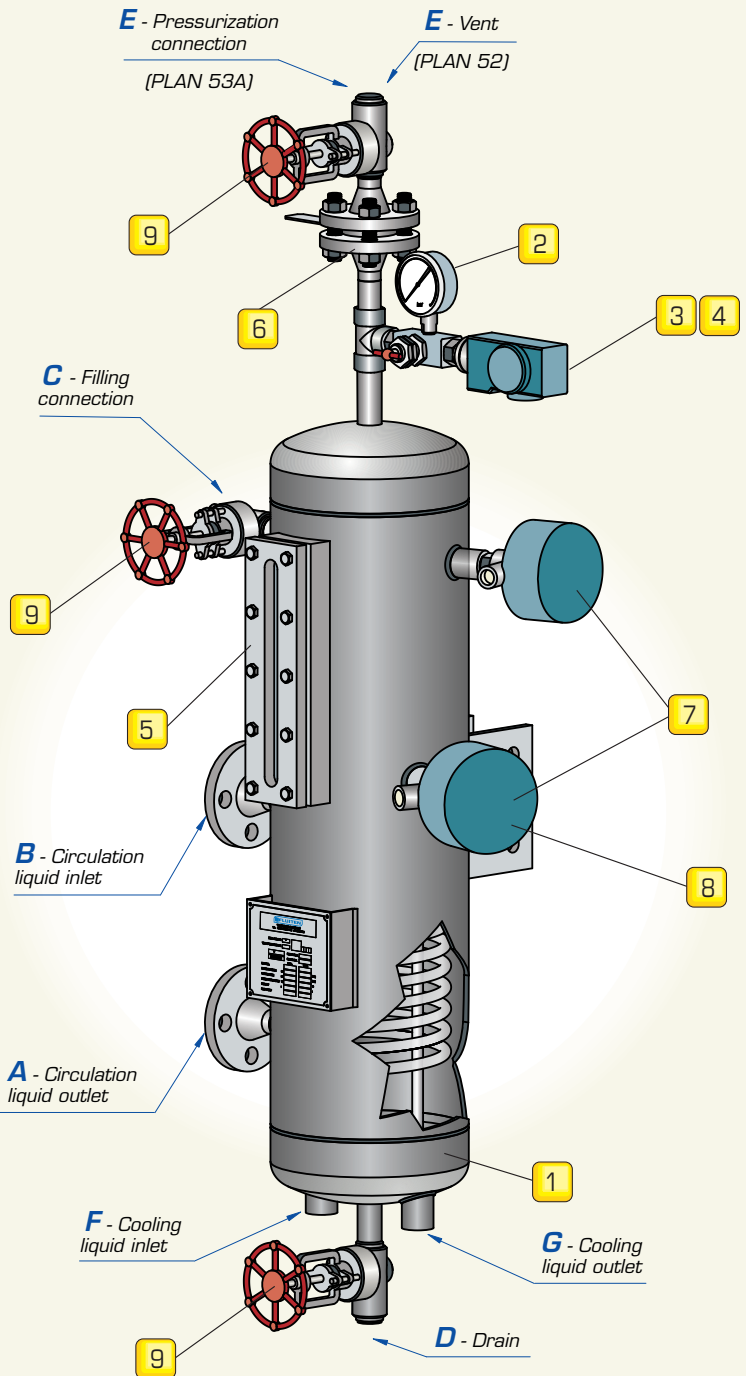
CHARACTERISTICS:

- PED cat. II - mod. A1
- ASME ADMK ed. 2000
- ATEX (94/9/CE) INSTRUMENTATION
- LOW COST
- EASY INSTALLATION

RESERVOIR 24 It FOR PLAN 52/53A



API PLAN 52/53A



Contact Fluiten Technical-Commercial office for dimensions and details.

STANDARD CONSTRUCTION:

- 1 RESERVOIR (AISI 316)
- 2 PRESSURE INDICATOR - PI
- 3 PRESSURE SWITCH MAX - PSH (PLAN 52)
- 4 PRESSURE SWITCH MIN - PSL (PLAN 53A)
- 5 LEVEL GAUGE - LG
- 6 FLOW ORIFICE - FO (PLAN 52)
- 7 LEVEL SWITCH MIN/MAX - LSL/LSH (PLAN 52)
- 8 LEVEL SWITCH MIN - LSL (PLAN 53A)
- 9 GATE VALVE

OPTIONAL ACCESSORIES: *

- 10 FILLING MANUAL PUMP
- 11 FILLING FUNNEL
- 12 PRESSURE TRANSMITTER
- 13 LEVEL TRANSMITTER
- 14 SAFETY VALVE - PSV

* Devices not shown on the drawing are available on request.

CHARACTERISTICS:

- PED up cat. IV - mod. G
- API 682
- ASME VIII div. 1
- HIGH DUTY
- ATEX (94/9/CE) INSTRUMENTATION
- ENGINEERED

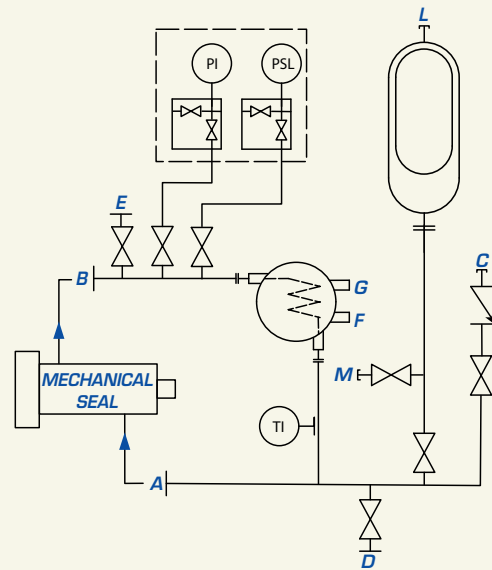
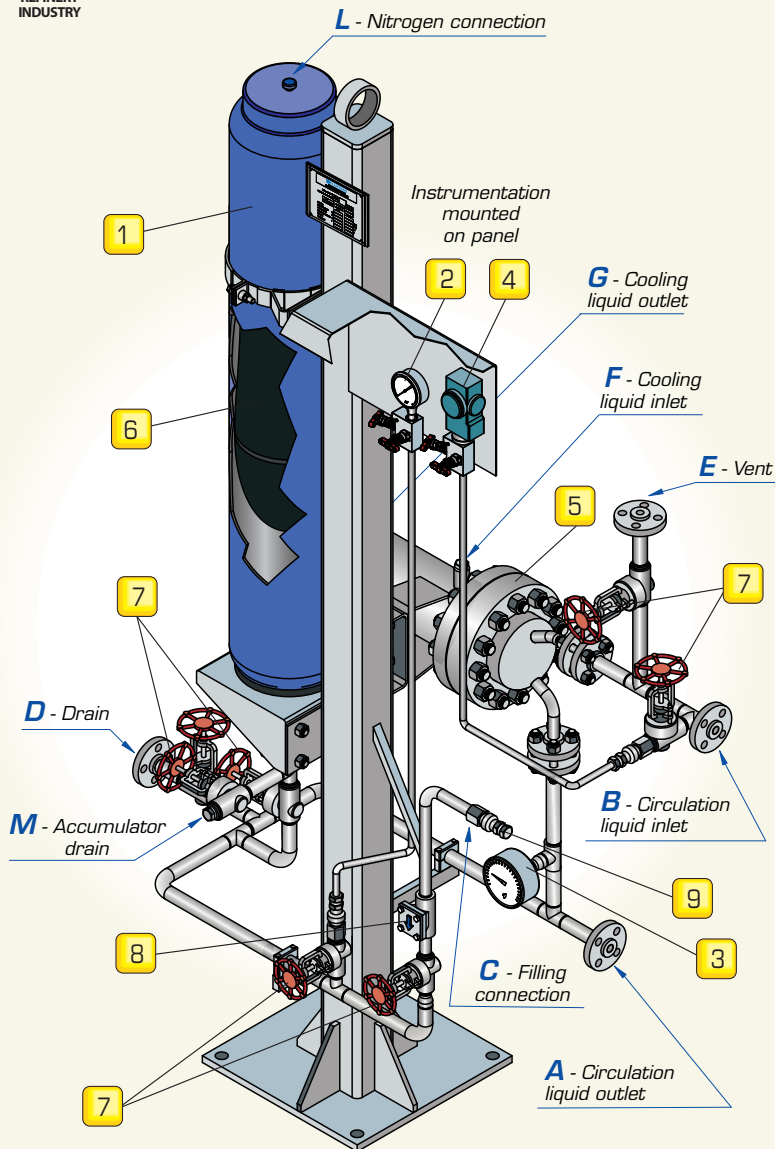
OPERATING CONDITIONS:

VOLUME: (It)	TEMPERATURE: (°C)	PRESSURE: (bar g)
24	200* ↑ -10	40

* Metal parts only



REFINERY INDUSTRY



API PLAN 53B

STANDARD CONSTRUCTION: *

- 1 ACCUMULATOR (PAINTED CARBON STEEL)**
- 2 PRESSURE INDICATOR - PI
- 3 TEMPERATURE INDICATOR - TI
- 4 PRESSURE SWITCH MIN - PSL
- 5 HEAT EXCHANGER
- 6 BLADDER (NITRILE RUBBER) ***
- 7 GATE VALVE
- 8 CHECK VALVE
- 9 QUICK CONNECTION

* Ancillaries (nitrogen kit and mobile top up trolley) pag. 10
 ** AISI 316 available on request
 *** Contact Fluiten Technical-Commercial office for material compatibility

OPTIONAL ACCESSORIES: *

- 10 CIRCULATION PUMP
- 11 FILLING MANUAL PUMP
- 12 FILTER ON FILLING CONNECTION
- 13 PRESSURE TRANSMITTER

* Devices not shown on the drawing are available on request.

Contact Fluiten Technical-Commercial office for dimensions and details.

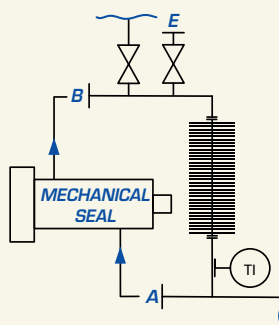
OPERATING CONDITIONS:

VOLUME: (lt)	TEMPERATURE: (°C)	PRESSURE: (bar g)
50 ↑ 5	200* ↑ -10	40 ↑

* Metal parts only

CHARACTERISTICS:

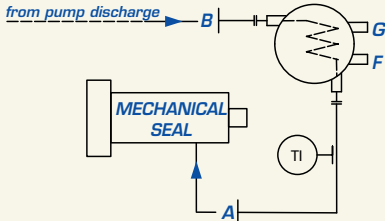
PED (accumulator and heat exchanger only)	EASY SERVICE	API 682
ASME VIII div. 1	HIGH DUTY	
ATEX (94/9/CE) INSTRUMENTATION	ENGINEERED	



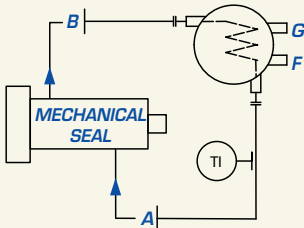
AIR FINNED TUBES HEAT EXCHANGER VERSION



HEAT EXCHANGER FOR PLAN 21/23

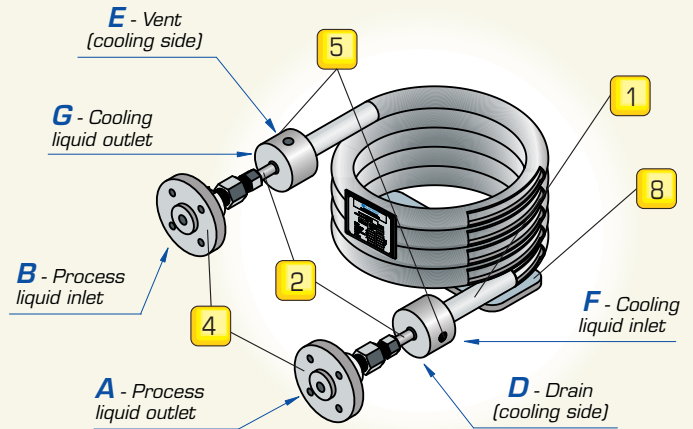


API PLAN 21



API PLAN 23

TUBE-IN-TUBE HEAT EXCHANGER



STANDARD CONSTRUCTION:

- 1 PRODUCT SIDE PIPING (AISI 316)
- 2 COOLING PIPING (AISI 316)
- 3 SHELL (AISI 316)
- 4 FLANGED CONNECTIONS - PRODUCT SIDE (AISI 316)
- 5 THREADED CONNECTIONS - COOLING SIDE
- 6 TUBE SHEET PLATE
- 7 BAFFLE PLATE
- 8 SUPPORT PLATE (AISI 316)

OPERATING CONDITIONS:

TEMPERATURE: (°C)	PRESSURE: (bar g)	TEMPERATURE: (°C)	PRESSURE: (bar g)
PRODUCT SIDE		COOLING SIDE	
200	50	100	20
↑	↑	↑	↑
10		10	

OPTIONAL ACCESSORIES: *

- 9 FLANGED CONNECTIONS - COOLING SIDE
- 10 TEMPERATURE INDICATOR - TI **
- 11 FLOW INDICATOR - COOLING SIDE
- 12 GATE VALVE - COOLING SIDE

* Accessories valid for shell and tube heat exchanger only and available on request
** Supplied separatel

CHARACTERISTICS: (tube-in-tube heat exchanger)

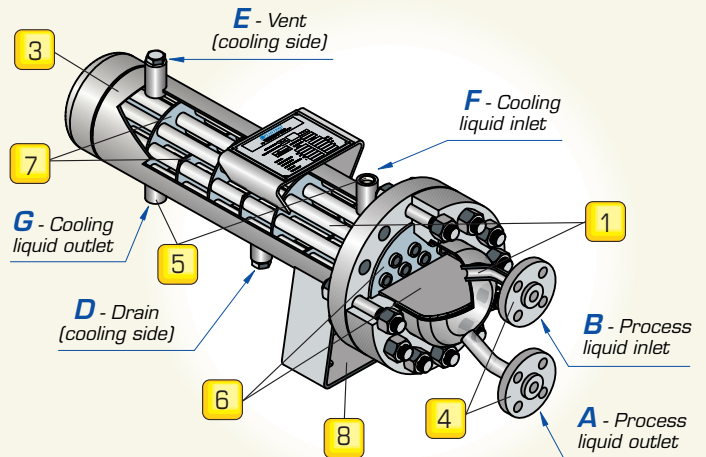
- PED art. 3 par. 3
- LOW COST
- EASY INSTALLATION

CHARACTERISTICS: (shell and tube heat exchanger)

- PED cat. II - mod. A1
- ENGINEERED
- ASME VIII div. 1
- HIGH DUTY
- API 682

Contact Fluiten Technical-Commercial office for dimensions and details.

SHELL AND TUBE HEAT EXCHANGER

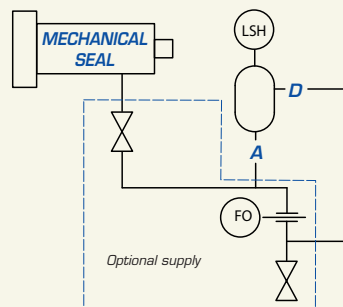
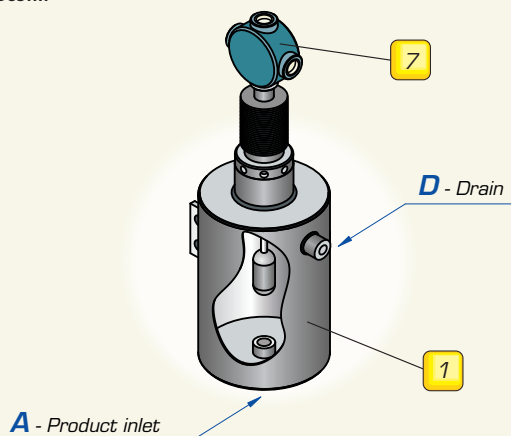


OPERATING CONDITIONS:

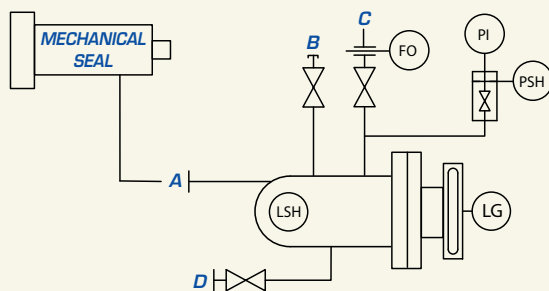
TEMPERATURE: (°C)	PRESSURE: (bar g)	TEMPERATURE: (°C)	PRESSURE: (bar g)
PRODUCT SIDE		COOLING SIDE	
250	50	100	10
↑	↑	↑	↑
10		10	



LEAKAGE DETECTOR FOR API PLAN 65



API PLAN 65



API PLAN 75

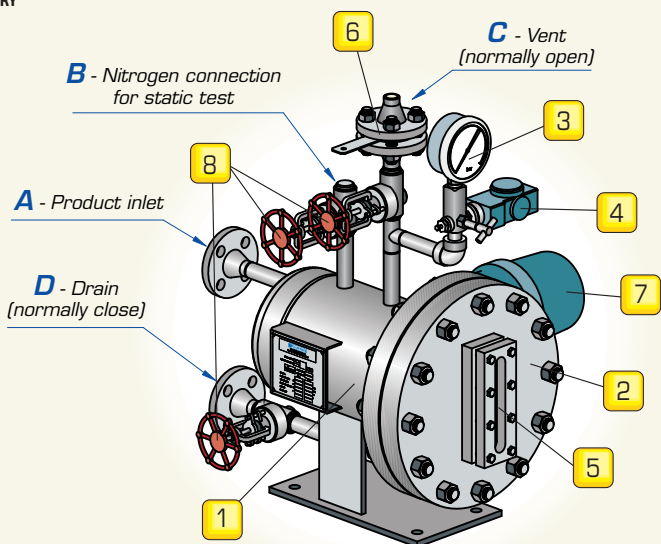
OPERATING CONDITIONS:

VOLUME: (lt)	TEMPERATURE: (°C)	PRESSURE: (bar g)
5	90*	16
	10	

* Metal parts only



LEAKAGE DETECTOR FOR API PLAN 75



OPERATING CONDITIONS:

VOLUME: (lt)	TEMPERATURE: (°C)	PRESSURE: (bar g)
12	200*	40
	-10	

* Metal parts only

STANDARD CONSTRUCTION:

- 1 RESERVOIR (AISI 316) *
- 2 INSPECTION FLANGE - 8"
- 3 PRESSURE INDICATOR - PI
- 4 PRESSURE SWITCH MAX - PSH
- 5 LEVEL GAUGE - LG
- 6 FLOW ORIFICE - FO
- 7 LEVEL SWITCH MAX - LSH
- 8 GATE VALVE

* Construction material equivalent or higher of pump (API PLAN 75 only)

OPTIONAL ACCESSORIES: *

- 10 PRESSURE TRANSMITTER (PLAN 75)
- 11 LEVEL TRANSMITTER
- 12 DOUBLE INSPECTION FLANGE - 8" (PLAN 75)
- 13 FLOW ORIFICE - FO (PLAN 65) **
- 14 GATE VALVE (PLAN 65) **

* Devices not shown on the drawing are available on request.
** Supplied separately

CHARACTERISTICS: (PLAN 65)

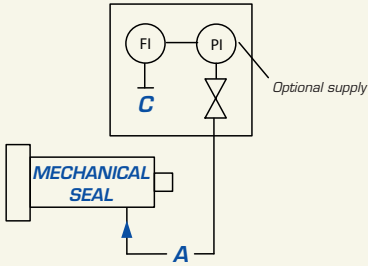
- PED art. 3 par. 3
- ASME VIII div. 1
- LOW COST
- EASY SERVICE
- ATEX (94/9/CE) INSTRUMENTATION

CHARACTERISTICS: (PLAN 75)

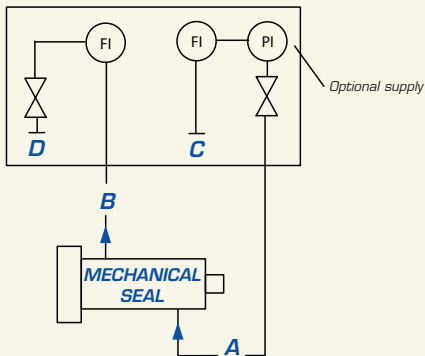
- PED up cat. IV mod. G
- API 682
- ASME VIII div. 1
- ATEX (94/9/CE) INSTRUMENTATION
- EASY CLEANING
- ENGINEERED

Contact Fluiten Technical-Commercial office for dimensions and details.

FLOWMETER FOR PLAN 32/54

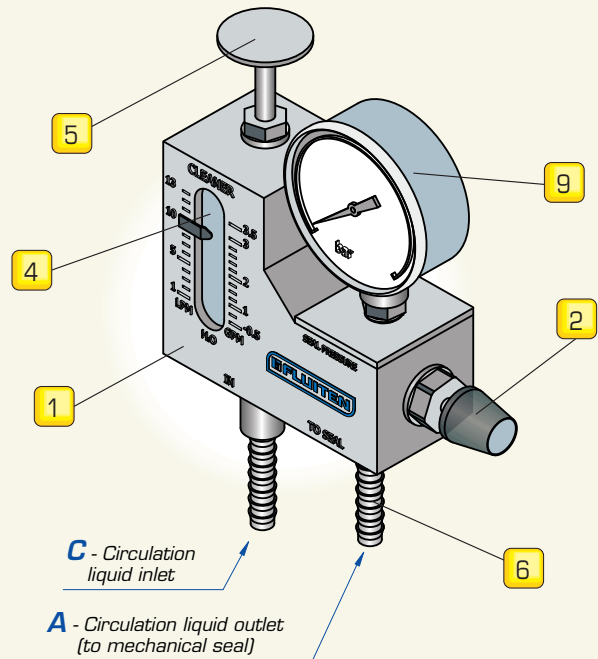


API PLAN 32 (monitoring system)

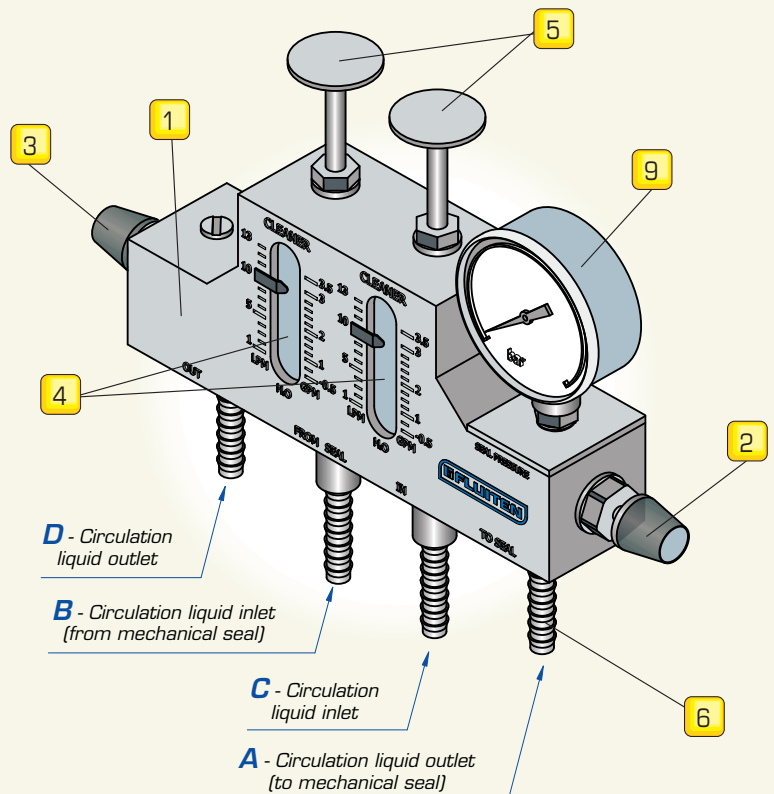


API PLAN 54 (monitoring system)

FLOWMETER FOR PLAN 32



FLOWMETER FOR PLAN 54



STANDARD CONSTRUCTION:

- 1 BODY (POM or PVDF)
- 2 FLOW REGULATING VALVE
- 3 PRESSURE REGULATING VALVE
- 4 FLOWMETER
- 5 BUILT-IN TUBE CLEANER
- 6 HOSEBARB CONNECTORS (3/8")

OPTIONAL ACCESSORIES: *

- 7 STRAIGHT TUBE CONNECTORS (3/8")
- 8 ALARM (10-55 VDC / 20-250 VAC-DC)
- 9 COMPRESSION FITTINGS CONNECTORS (3/8")
- 10 PRESSURE INDICATOR
- 11 PRESSURE SWITCH

* Devices not shown on the drawing are available on request.

CHARACTERISTICS:

- LOW COST
- EASY CLEANING
- EASY INSTALLATION

OPERATING CONDITIONS:

TEMPERATURE: (°C)	FLOW MAX: (°C)	PRESSURE: (bar g)
100 ↑ 10	1/3/8/13 ↑	30 ↑

Contact Fluiten Technical-Commercial office for dimensions and details.

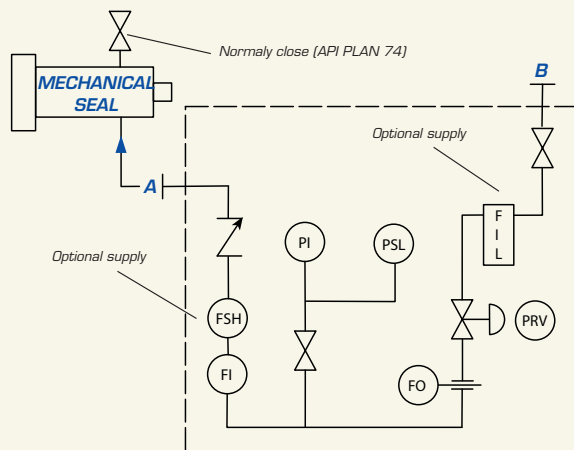
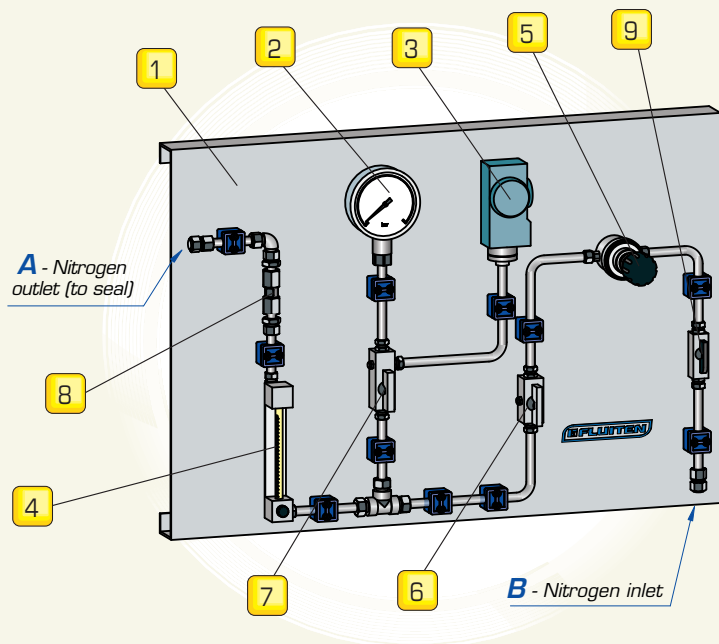


CHEMICAL INDUSTRY



PHARMACEUTICAL INDUSTRY

STANDARD VERSION



API PLAN 72/74

STANDARD CONSTRUCTION:

- 1 SUPPORT PANEL (AISI 316)
- 2 PRESSURE INDICATOR - PI
- 3 PRESSURE SWITCH MIN - PSL
- 4 FLOW INDICATOR- FI
- 5 PRESSURE REGULATING VALVE
- 6 NEEDLE VALVE
- 7 MANIFOLD VALVE
- 8 CHECK VALVE
- 9 GATE VALVE

OPTIONAL ACCESSORIES: *

- 10 FLOW METER - FSH
- 11 COALESCING FILTER
- 12 FLANGED CONNECTION
- 13 PRESSURE TRANSMITTER

* Devices not shown on the drawing are available on request.



REFINERY INDUSTRY

API 682 VERSION



OPERATING CONDITIONS:

TEMPERATURE:
(°C)

100
↑
10

PRESSURE:
(bar g)

16
↑
10

* Contact Fluiten Technical-Commercial office for different operating conditions

CHARACTERISTICS:



API 682



HIGH DUTY



ATEX (94/9/CE) INSTRUMENTATION



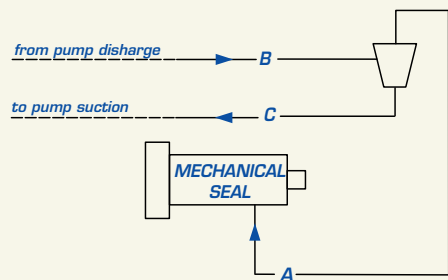
ENGINEERED

Contact Fluiten Technical-Commercial office for dimensions and details.

"CABINET" VERSION



CYCLONE FOR PLAN 31



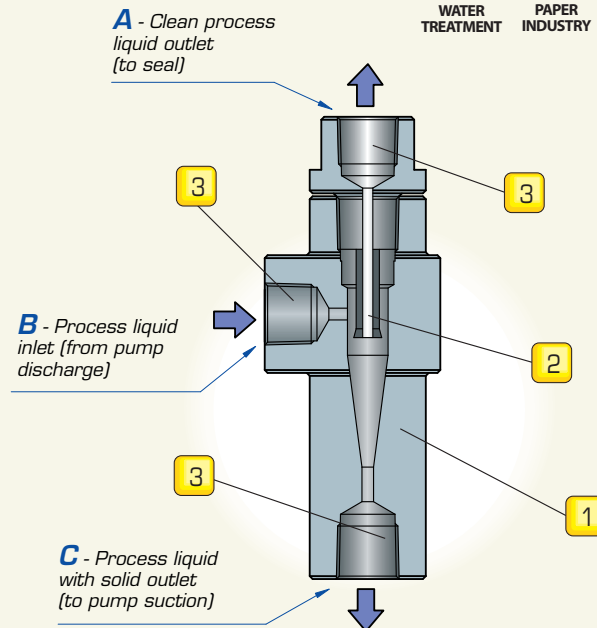
API PLAN 31

STANDARD CONSTRUCTION:

- 1 BODY (AISI 316)
- 2 SEPARATION CONE
- 3 THREADED CONNECTIONS (1/2" NPT)

OPERATING CONDITIONS:

TEMPERATURE: (°C)	PRESSURE: (bar g)
160	100
↑	↑
10	



CHARACTERISTICS:



LOW COST



EASY SERVICE

Contact Fluiten Technical-Commercial office for dimensions and details.

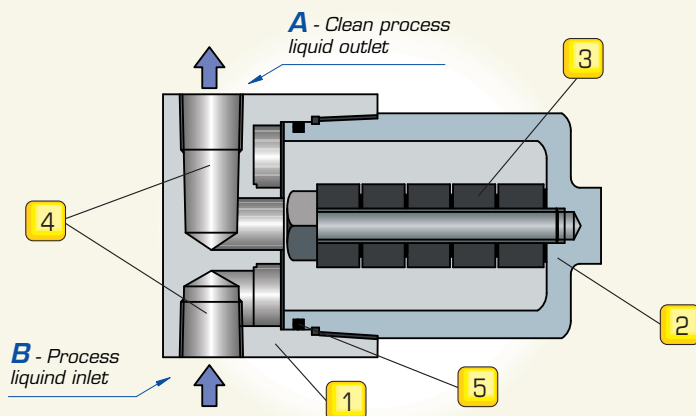
MAGNETIC FILTER



WATER TREATMENT

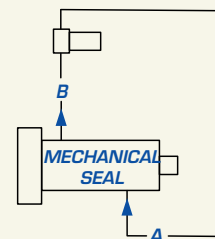
PAPER INDUSTRY

ENERGY SECTOR



OPERATING CONDITIONS:

TEMPERATURE: (°C)	PRESSURE: (bar g)
140	40
↑	↑
10	



STANDARD CONSTRUCTION:

- 1 BODY (AISI 304)
- 2 SHELL (SS 304)
- 3 COBALT MAGNET
- 4 THREADED CONNECTIONS (1/2" NPT)
- 5 GASKET (EPDM) *

* Contact Fluiten Technical-Commercial office for materials compatibility

CHARACTERISTICS:



LOW COST



EASY CLEANING

Contact Fluiten Technical-Commercial office for dimensions and details.

FILLING FUNNEL



Refilling and recharging system for 12 lt and 24 lt seal pot, complete of funnel, cover, 3 lt auxiliary refilling pot, double operating valve necessary for the refilling during normal running.

The standard configuration for 12lt seal pot is supplied with 1/2" NPT connection, engineered 24 lt seal pot available with flanged connection.

- Material: AISI 316

FILLING MANUAL PUMP



Refilling and recharging manual pump for 12 lt and 24 lt seal pot, supplied with 3/8" connection.

- Material: AISI 316
- Volume: 800 ml
- Design Pressure: 16 bar

CIRCULATION PUMP



Magnetic driven pump for 12 lt seal pot.

- Compatibility: solvent, demi water and oil
- Capacity: 6 l/min
- Head: 35m
- Design temperature: -15/+160 °C
- Design Pressure: 20 bar
- Material: AISI 316
- Electric Motor: 0,5 kW-230/400V-2.800rpm
- Execution: II 2G EExd IIB T4

ANCILLARIES FOR PLAN 53B



NITROGEN KIT

Nitrogen Kit for periodical checking of accumulator pre-charge pressure or bladder inflating after maintenance.

- Design pressure: 360 bar
- Accumulator connection: 5/8" UNF
- Nitrogen tank connection: W24.32 x 1/14"

Nitrogen tank to be pressurized at an higher pressure than pre-charge value.

Available on demand connetions and and reduction of different size.

MOBILE TOP UP TROLLEY

Mobile top up trolley for API PLAN 53B system barrier liquid recharging. Trolley is supplied with double effect manual pump, non-return valve and pressure gauge, suction strainer, weld pad level gauge, 5 m lenght flexible tube with 1/2" connection.

- Material: AISI 316
- Max charging pressure: 100 bar (water/oil)
- Volume: 20lt (min.)
- Approx. Weight: 75 kg



Contact Fluiten Technical-Commercial office for dimensions and details.

TIPICAL INSTALLATION PLAN 52/53A

For tubing, use smooth, long radius bends. For piping, minimize the use of 90° elbows, although 45° elbows may be used.

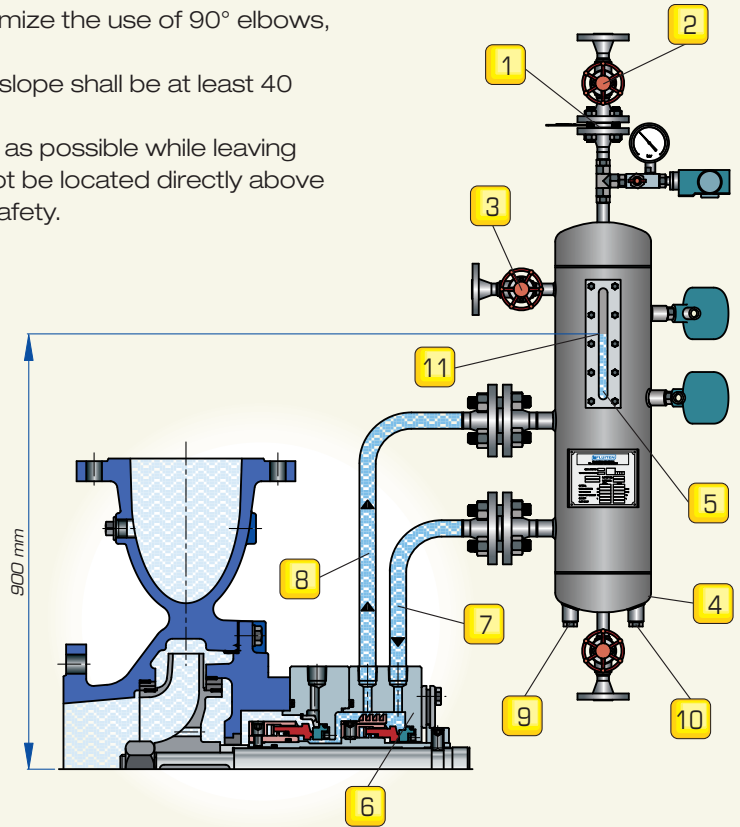
All lines shall slope up from the gland to the point vent; the slope shall be at least 40 millimeters per meter (0.5 inches per foot).

The seal flush cooler shall be located as close to the pump as possible while leaving sufficient room for operation and maintenance. It should not be located directly above the pump. Hot lines should be insulated as necessary for safety.

STANDARD CONSTRUCTION:

- 1 ORIFICE
- 2 VENT
- 3 FILL
- 4 RESERVOIR
- 5 LEVEL GAUGE
- 6 GLAND
- 7 INLET TO SEAL *
- 8 OUTLET FROM SEAL
- 9 COOLING LIQUID INLET
- 10 COOLING LIQUID OUTLET
- 11 NORMAL LIQUID LEVEL

* To provide below outlet connection from seal.



TIPICAL INSTALLATION PLAN 23

The seal flush cooler shall have the cooling liquid on the shell side and process fluid on the tube side. The cooler arrangement shall provide drainage for both the cooling liquid and process fluids.

The seal flush cooler shall be located as close to the pump as possible while leaving sufficient room for operation and maintenance. It should not be located directly above the pump. Hot lines should be insulated as necessary for safety.

For tubing, use smooth, long radius bends. For piping, minimize the use of 90° elbows, although 45° elbows may be used.

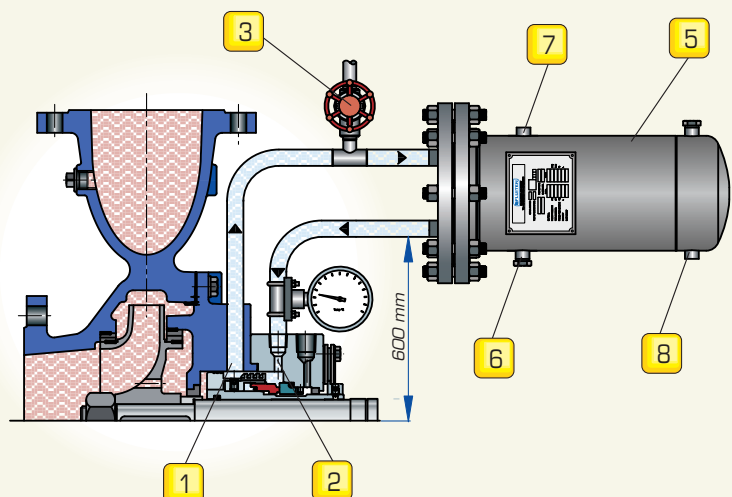
All lines shall slope up from the gland to the point vent; the slope shall be at least 40 millimeters per meter (0.5 inches per foot).

STANDARD CONSTRUCTION:

- 1 TO SEAL COOLER
- 2 FROM SEAL COOLER*
- 3 VENT
- 4 DRAIN **
- 5 HEAT EXCHANGER
- 6 HEAT EXCHANGER DRAIN
- 7 COOLING LIQUID INLET
- 8 COOLING LIQUID OUTLET

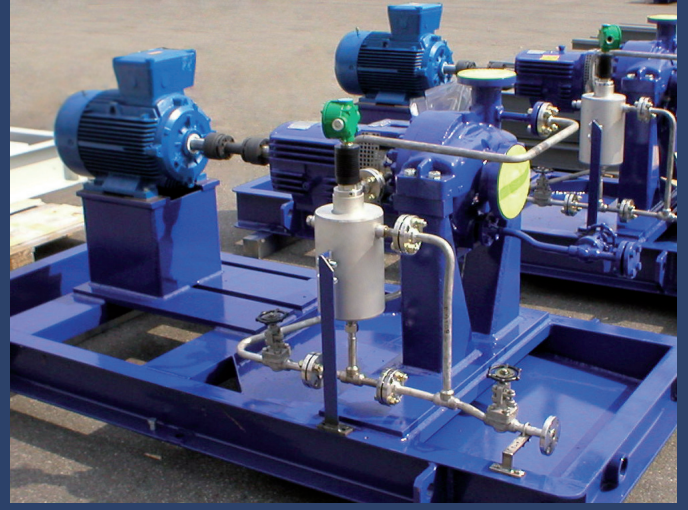
* To provide below outlet connection from seal.

** Not indicated - to provide low point in connecting tubing.





Double pressurized seal on API 610 heavy duty centrifugal pump with Plan 53B system



Application on API 610 heavy duty centrifugal pump with Plan 75 leakage detector system



Barrier tank for Plan 53A with flanged connections, refilling device and temperature gauge connection according standard API 682



Panel for Plan 72 or 74 to control the buffer or barrier gas for a double mechanical seal with "FLUILIFT" Technology



Buffer tank according standard API 682 for Plan 52 with pressure and level transmitter



Distributed by:



A strong link of your system