Oyster Reactor sampling system

The Oyster Reactor Sampling System is a safe and reliable sampling device able to meet the most demanding requirements of the pharmaceutical and chemical industry

APPLICATION

The Oyster Reactor Sampling unit enables the operator to monitor the reaction process with an integrated sight glass and to take a sample from reactors or vessels containing poisoned, biological, corrosive, environmental unfriendly or high viscosity liquids.

GENERAL FEATURES

- Is able to take a representative sample from a reactor under process conditions without stopping the process or opening the reactor.
- Easy-to-maintain design, safe and simple operation.
- Sample is transferred without pressure
- Unit can be integrated with vacuum, nitrogen and rinsing supply lines.
- Top flange of the unit equipped with a pH metering connection.
- Liquid products can be added to the reactor via the unit.
- All wetted parts are PTFE, PFA, perfluoro or glass.
- Different sample volumes are available.
- The unit can be supplied for use in Atex zones.

FIELD OF APPLICATION

Sampling system

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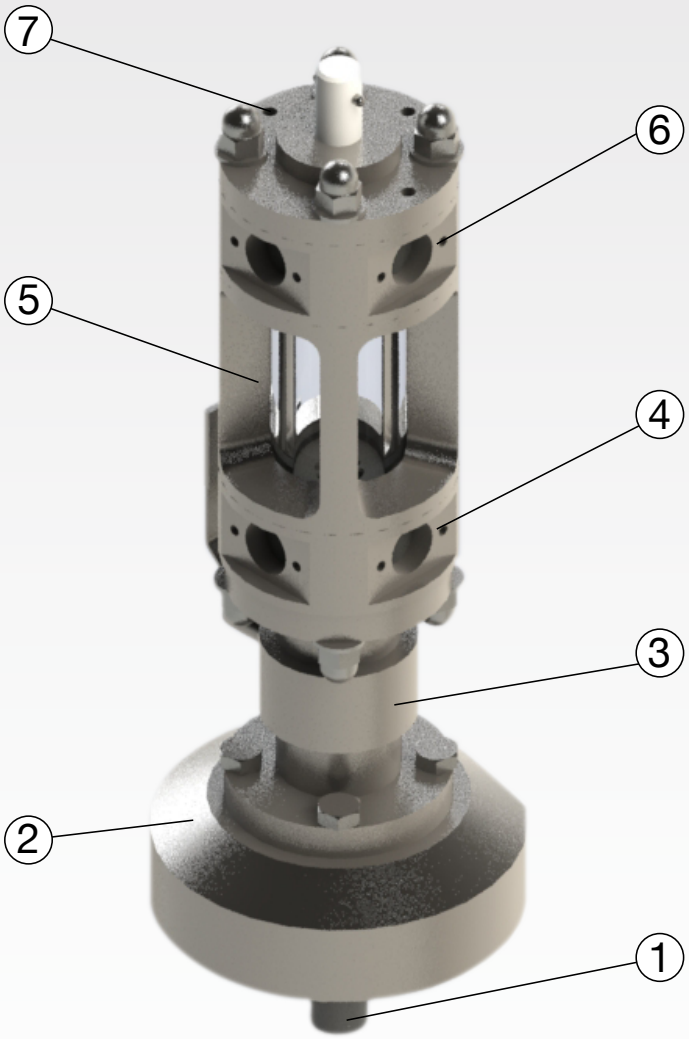
TECHNICAL DATA	
Pressure (*)	max 10 bar
Temperature (*)	from -20° up to + 200°C
Sample volume (**)	150, 250 and 500 ml
Mounting flange (**)	Acc. EN 1092-1 DN 25, 40 and 50
* Valid only for the sampling system without diaphragm pump and accessories. **Other execution can be supplied on request	

The modular design of the Oyster sampler can be tailored to virtually every customer sampling requirement.
The volume of the sight glass is smaller or equal to the size of the sampling bottle to eliminate the risk of accidental spillage.
On request the unit can be made fully automated and remote-controlled.



PART LIST AND MATERIALS		
1	Suction hose	PTFE
2	Mounting flange	AISI 316L (1.4404) / PTFE
3	Main ball valve	EN-JS1049 (GGG-40.3) / PFA
4	Lower connection flange	AISI 316L (1.4404) / PTFE
5	Sight glass	Borosilicate 3.3
6	Upper connection flange	AISI 316L (1.4404) / PTFE
7	Top flange pH metering	AISI 316L (1.4404) / PTFE

All materials of in the construction are fully compliant with the requirements of the FDA, USP Class VI, EN 1935/2004 and cGMP. Full documentation is available on request.

OPERATING

The Oyster reactor sampling unit can be supplied in two main executions:

- Discontinuous version with hollow ball
- Continuous version with integrated diaphragm pump

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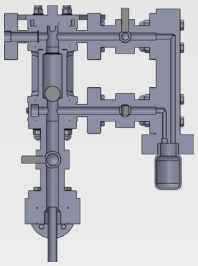
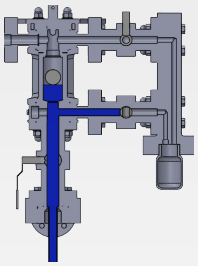
DISCONTINUOUS VERSION

If there is an integrated vacuum line in the plant, the Oyster Sampling system can be installed and connected by means of a simple adapter.

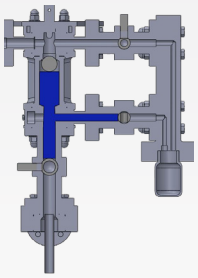
Operating instructions:



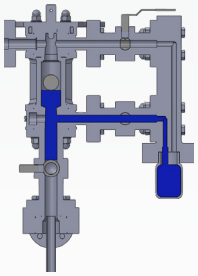
- All valves are closed (picture 1).



- By opening the main ball valve and the vacuum line, the liquid from the reactor is lifted by the vacuum through the suction hose, through the open ball valve into the sight glass. The hollow ball floats on the rising liquid level until the ball interrupts the vacuum on valve seat. This will prevent the liquid entering the vacuum line (picture 2).



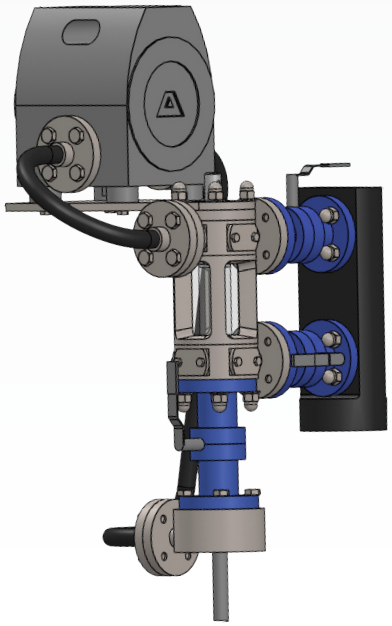
- As soon as the sight glass is full, the main ball valve can be closed, then also the vacuum valve can be closed to shut off the applied vacuum. At this stage the media is separated from the reactor and can now be transferred from the sight glass into a bottle with a transfer unit. The transfer unit has a drain valve and vent valve. In the lower end of the transfer unit there is a threaded bottle connection. (picture 3).



- The drain valve controls the flow of the media into the bottle. The vent valve permits the displaced air from the bottle to be returned into the sight glass. With this solution no emission of toxic or foul smelling gases occurs during the transfer of the sample. (picture 4).

CONTINUOUS VERSION

To obtain a continuous recirculation system, the unit can be connected to a pump.
If a continuous or almost continuous metering is necessary, for instance pH, temperature or Redox metering, the diaphragm pump produces a continuous flow through the suction hose and back through the mounting flange port. in this case the hollow ball is removed from the reactor sampling system in order to allow a continuous flow circulation.



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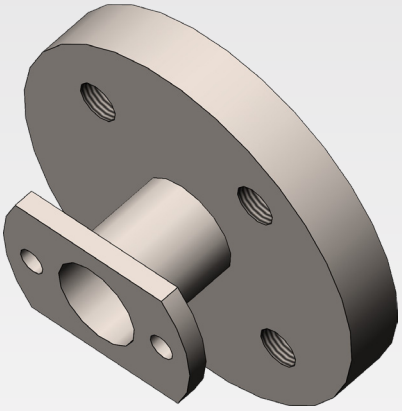
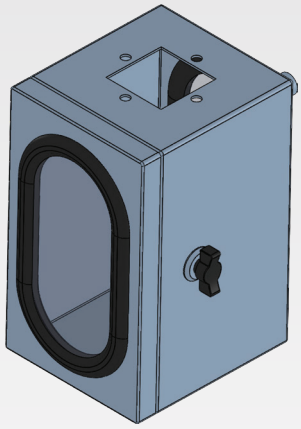
RINSING AND CLEANING

The connection flanges allow the operator to rinse and clean completely the reactor sampler with no need to remove any components. The mounting flange of the Reactor Sampler brings the gas or liquid into the reactor through the inside of the dip tube.

ACCESSORIES

The many connecting ports of the Oyster Reactor Sampler allow the easy installation of a recirculation pump, transfer unit and various auxiliary valves, all in one integrated, compact unit.





OPTIONS*		
Part name	**Materiale**	
Transfer unit	PTFE	white, FDA
		antistatic, FDA
	AISI 316L	
	PVDF	clear, FDA
Connection valve	Ball valve	Ductile iron / PFA lined
		AISI 304
	Diaphragm valve	AISI 316
		AISI 316 / PFA lined
Sampling bottle adapter GL 28 / GL 32 / GL 45	PTFE	white, FDA
Connecting flange	PTFE / AISI 316L / C-22	
Protection cabinet system	AISI 316L	
Quick disconnecting couplings	AISI 316L / C-22 / PTFE	
*Others options upon request		

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