

Vacuum Degassing according to DIN/IEC 60567

Gas extraction with vacuum without Mercury use, fully compliable to existing methods of vacuum degassing with Töpler pump and Mercury. Preparation of gas samples for gas chromatographic applications and determination of total gas content.

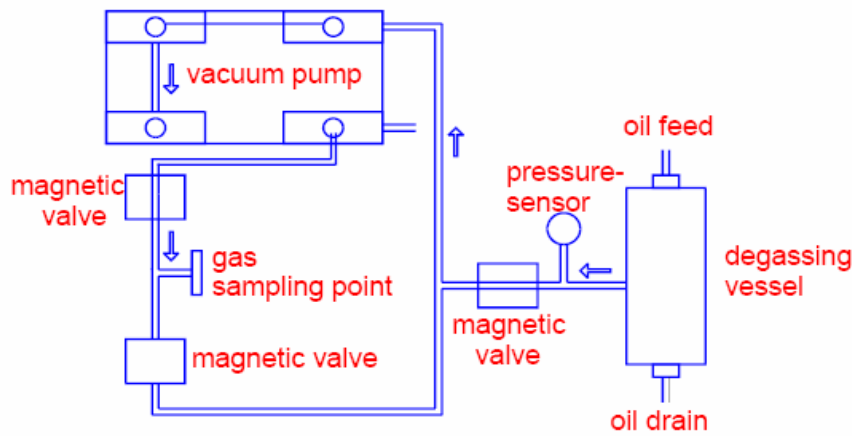


- Less weight and small size
- High sensitivity and accuracy
- Easy to handle



- 100 % comparable to Lab-degassing procedures
- Working without mercury
- Degassing according to DIN standard

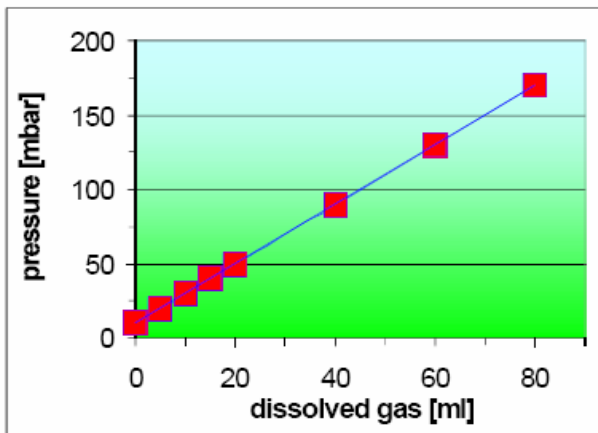
Principle of degassing procedure



oil filled dosing syringe

The oil sample is injected right into the evacuated degassing vessel by means of an oil filled syringe. The pressure sensor show the pressure increase, which correspond to the total gas content of the oil. The dissolved gas is separated from the finely dispersed oil and pumped to the gas sampling point. After analysis oil sample flows off through the now opened oil drain. After degassing procedure, the extraction system is purged and ready to receive the next oil sample in less than 5 minutes.

All systems components that have sample contact and vacuum exposure are constructed from metal valves, tubings and fittings.



The diagram show the linear graph of pressure dependent on the dissolved gas content.

Degassing equipment include:

- four stage diaphragm pump
- vacuum extractor with oil dosing
- digital pressure measurement
- sluice for oil feed and oil drain
- automatic procedure for gas sampling and rinsing with vacuum-tight magnetic valves and fittings

Applications:

- Insulating oil
- Mineral oil
- Engine oil
- Gear oil
- Hydraulic fluids
- Biodiesel
- Fuels
- Lubricating fluids

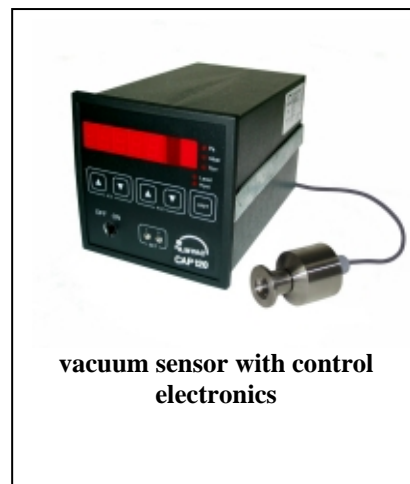
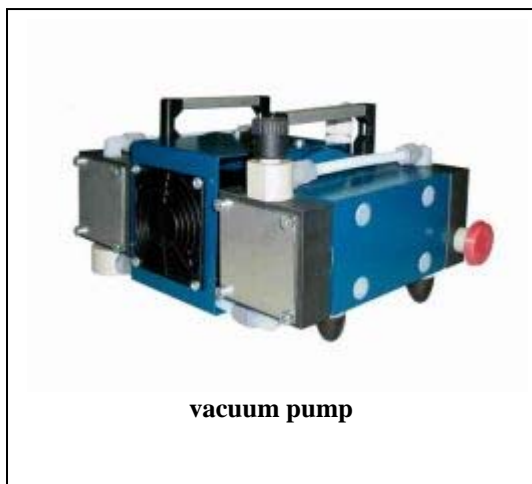
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Specification of vacuum degassing equipment:

Type:	vacuum degassing procedure, oil- and mercury- free
Vacuum connections:	DN 16 KF
Vacuum Pump:	diaphragm pump chemically resistant tree-stage compact modular design Pumping speed: 2,0 m ³ /h
Vacuum sensor:	measuring range: 0,1 – 200 mbar read-out: 5 per sec independent of type of gas accuracy / hysteresis: +/- 1 digit
Starting vacuum:	2 - 3 mbar
Degassing range:	2 - 200 mbar
Resolution:	0,1 mbar
Sample volume:	50-100 ml
Preconditioning time:	< 5 min
Typical degassing time:	< 2 min
Gas transfer to GC:	manually or automatically
Power supply:	230 V, 50/60 Hz; 115 V, 50/60 Hz



Results of comparison with Laboratory degassing method (Toepler pump) and Laboratory Gaschromatograph

(all concentrations in ppm, calculated to gas-in-oil content)

sample: transformer oil				
component	Toepler-pump		Vacuum degassing	
	Lab GC	MobilGC	Lab GC	MobilGC
H₂	234	235	225	239
CO	230	231	220	225
CO₂	1320	1297	1243	1341
Methan	25	25	23	25
Ethan	162	165	115	149
Ethylen	10,1	10,0	7,4	10,9
Acetylen	0,8	1,0	0,4	0,76
remarks	100 ml oil sample		80 ml oil sample	