

Oilfreepac OFP Type 0005 to 1000

Complete purification package with triple prefiltration, with level controlled electronic condensate drains, heatless adsorption dryer, activated carbon adsorber, automatic shut-off valve and afterfilter.

Compressed air is flowing through the inlet of the system (J) into a three stage prefiltration V, M, S (4, 5, and 6).

In these stages, the air is cleaned from particles and condensate down to a residual content of 0.01 mg/m³. The condensate is removed by condensate drains (12).

Via a lower shuttle valve (8), the air for drying is lead into the adsorption vessel (1), in which the air is dried down to the required dewpoint.

After that, the air is lead through the upper shuttle valve (8) and into an activated carbon tower (2), in which oil vapor and hydrocarbons are retained.

Via an afterfilter (7), in which possible abrasion from activated carbon is retained, the clean and oilfree air is led into the compressed air network to the point of use.

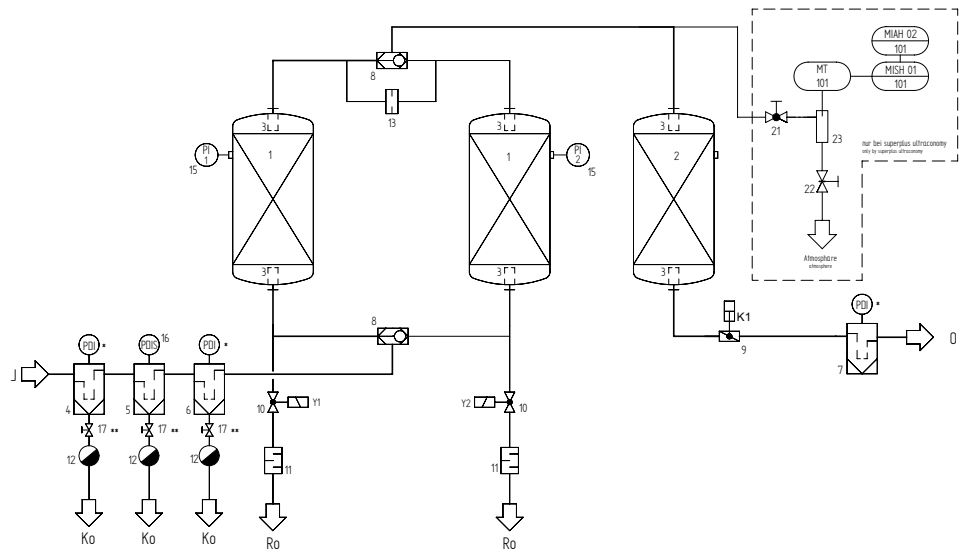
While one vessel is in the drying phase (adsorption), the other vessel is being dried again (regeneration).

A partial stream of dried air is expanded to atmospheric pressure via a nozzle (13), lead across the desiccant bed for regeneration and discharged to atmosphere via a solenoid valve (10) and a silencer (11). As a safety feature against contamination (e.g. oil breakthrough of the compressor), the differential pressure across the M element is constantly monitored.

In case of an immediate increase in differential pressure, the differential pressure gauge triggers the control and a valve (9) is closed.



Purification package OFP



OFP	Volume flow in m ³ /h (1 bar, 20°C)*	Regeneration air losses (average) m ³ /h (1 bar, 20°C)	Volume flow out (min.) m ³ /h (1 bar, 20°C)	Pressure loss initial mbar	Prefilter (Afterfilter) V, M, S, (V)
0005	5	0.8	4.0	70	0035
0010	10	1.5	8.2	70	0035
0015	15	2.3	12.2	120	0035
0025	25	3.8	20.3	120	0070
0035	35	5.3	28.5	150	0070
0050	50	7.5	40.8	105	0210
0080	80	12.0	65.2	160	0210
0100	100	15.0	81.6	190	0210
0150	150	23.0	121.7	290	0210
0175	175	26.3	142.7	170	0210
0225	225	34.0	183.2	190	0450
0300	300	45.0	244.7	240	0450
0375	375	56.0	306.1	350	0450
0550	550	83.0	447.9	340	0600
0650	650	98.0	529.5	405	0750
0850	850	128.0	692.6	470	1100
1000	1000	150.0	815.5	410	1100

* related to 1 bar (abs) and 20 °C at intake of compressor and 7 bar (g) and 35 °C inlet temperature

Oilfreepac OFP 0005-1000

Features purification package OFP:	Benefits:
Purification package designed for use with oil lubricated compressors	No need to buy expensive and less energy efficient „oil-free“ compressors
Compressed air quality better than on any „oilfree“ compressor	Use in highly sensitive production possible (food-, beverage-, electronic industry, etc.)
Purification package complete with pre-, afterfilter and condensate drains	Turnkey system, no additional installation required, all components from one hand, technically perfectly matched to each other
Prefilter with electronic, level controlled condensate drain UFM-T	No compressed air losses due to condensate removal, therefore reduction of operating cost
All dryers in cabinet construction	Optimum protection against mechanical damage and against dirt
Generous dimensioned filters	Large filtration surface, therefore lowest possible pressure drop and low operating cost
Safety feature against oil breakthrough, consisting of differential pressure measurement and shut-off valve	High operating safety in combination with use of oil lubricated compressors
Intermittent operation standard	Link between dryer and compressor possible on central applications, therefore saving of compressed air
17 sizes available, matched to the compressor flow	Custom made solutions possible, matching exactly customers' requirements; no oversizing of compressors necessary, since lowest possible regeneration air requirements
Comprehensive option package: Dewpoint depending control, start-up device, bypass, pneumatics control, changeover-control, etc.	Flexibility in application, well thought-o package for economical operation and safe system installation in the compressed air network

Product description:
Purification package Oilfreepac OFP: Complete purification package with triple prefiltration, with electronic, level controlled condensate drains, pressure-swing adsorption dryer, activated carbon adsorber for removal of oil vapors and hydrocarbons, afterfilter and shut-off device against oil breakthrough.

Medium:
Compressed air/nitrogen

Pressure dewpoint:
-40 °C to -70 °C at 100% load

Operating pressure:
min. 4 bar (g) max. 16 bar (g)

Medium temperature:
max. +50 °C

Ambient temperature:
min. +4°C, max. +50 °C

Residual oil content:
< 0.003 mg/m ³

Power supply:
230 V/ 115 V/ 50 – 60 Hz, 24 V DC

Power consumption:
approx. 40 W

Pressure vessel – design, manufacture, testing:
Absorber: acc. to 87/404/EEC Filter: acc. to 97/23/EC

Declaration of conformity:
Type 0005 – 0175: acc. to 2006/95/EC
Type 0225 – 1000: acc. to 97/23/EC

Sizing:

Operating pressure bar (g)	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor overpressure (f _p)	0.62	0.75	0.88	1.0	1.12	1.25	1.38	1.50	1.63	1.75	1.88	2.0	2.13

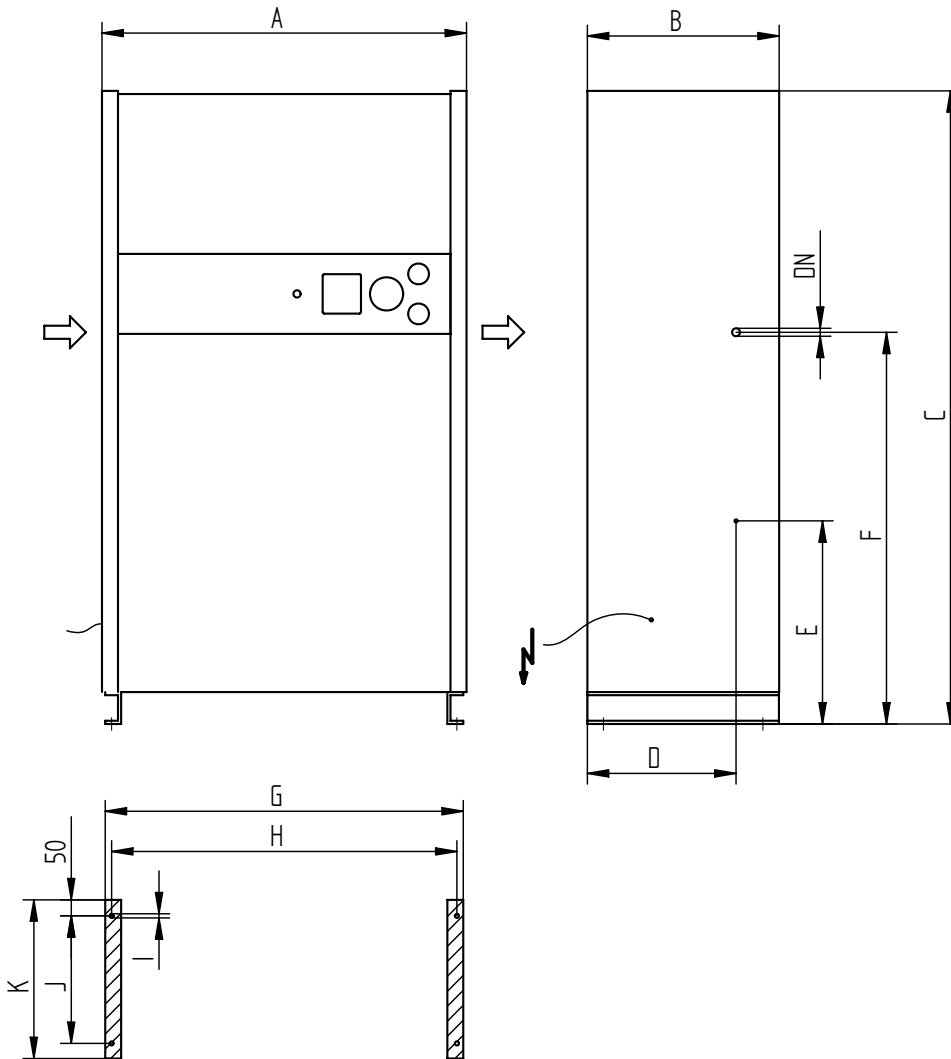
Inlet temperature °C	20	25	30	35	40	45	50
Correction factor temperature (f _T)	1.0	1.0	1.0	1.0	0.8	0.7	0.5

$$\dot{V}_{\text{corr}} = \frac{\dot{V}_{\text{nom}}}{f_p \cdot f_T}$$

Example:
 $\dot{V}_{\text{nom}} = 200 \text{ m}^3/\text{h}$, inlet temperature = 30°C, operating pressure = 10 bar (ü), PDP -40°C

$$\dot{V}_{\text{corr}} = \frac{200 \text{ m}^3/\text{h}}{1.38 \cdot 1.0} = 144.93 \text{ m}^3/\text{h}. \text{ Calculated dryer size: Oilfreepac OFP, type 0150}$$

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OFP	DN "	A mm	B mm	C mm	D mm	E mm	F mm
0005	G 3/8	650	340	700	255	145	390
0010	G 3/8	650	340	700	255	145	390
0015	G 3/8	650	340	1060	255	310	700
0025	G 1/2	650	340	1060	255	310	700
0035	G 1/2	650	340	1060	255	310	700
0050	G 3/4	940	460	1610	315	415	800
0080	G 3/4	940	460	1610	315	415	800
0100	G 1	940	460	1610	315	415	800
0150	G 1	1140	680	1980	465	535	1075
0175	G 1	1140	680	1980	465	535	1075
0225	G 1 1/2	1140	680	1980	465	535	1075
0300	G 1 1/2	1140	680	1980	465	535	1075
0375	G 1 1/2	1580	770	2190	530	660	1250
0550	G 2	1580	770	2190	530	660	1250
0650	G 2	1580	770	2190	530	660	1250
0850	G 2	1600	880	2350	650	650	1450
1000	G 2	1600	880	2350	650	650	1450