

High Pressure Adsorption Dryer

HLP PN 25, 0040 to 0125

HLP PN 40, 0050 to 0155

High pressure adsorption dryer, heatless regenerating, including pre-and afterfilter.

Product description:

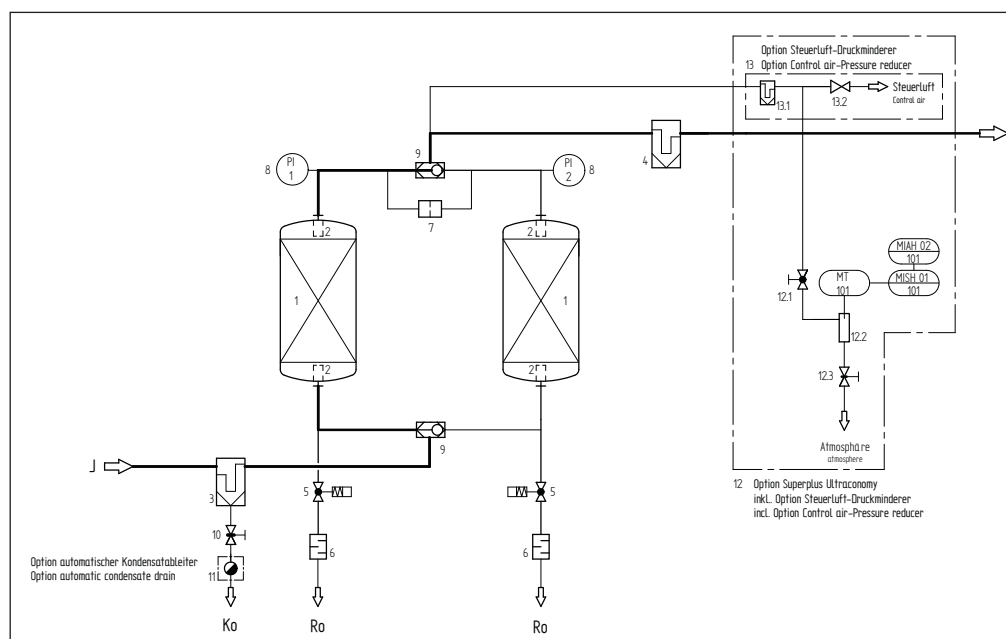
Compressed air is lead through the inlet of the dryer (J) into the prefilter (3). At this stage, the air is cleaned from particles and condensate. The condensate is removed via a hand operated condensate drain (10) or optional via an electronic condensate drain (11). Via the shuttle valve (9) the air is lead into the absorber vessel (1), in which the air is dried to the required dryness level (pressure dewpoint).

Thereafter the air flows through the upper non-return valve (9) and an afterfilter (4) which retains eventually accruing abrasion of desiccant. Via the systems outlet (O) the clean and dry air reaches the user's air net.

During one vessel is in operation, the water previously accumulated in the other adsorber is removed (regeneration phase). For this process a partial stream of already dried air is lead through a nozzle (7) and brought down to atmospheric pressure. For regeneration, purge air is lead over the desiccant bed and then released into the atmosphere via a pneumatically operated valve (5) and a silencer (6).



High pressure adsorption dryer
HLP 0040-0125



High Pressure Adsorption Dryer

HLP PN 25, 0260 to 1130

HLP PN 40, 0310 to 1200

High pressure adsorption dryer, heatless regenerating,
including pre-and afterfilter

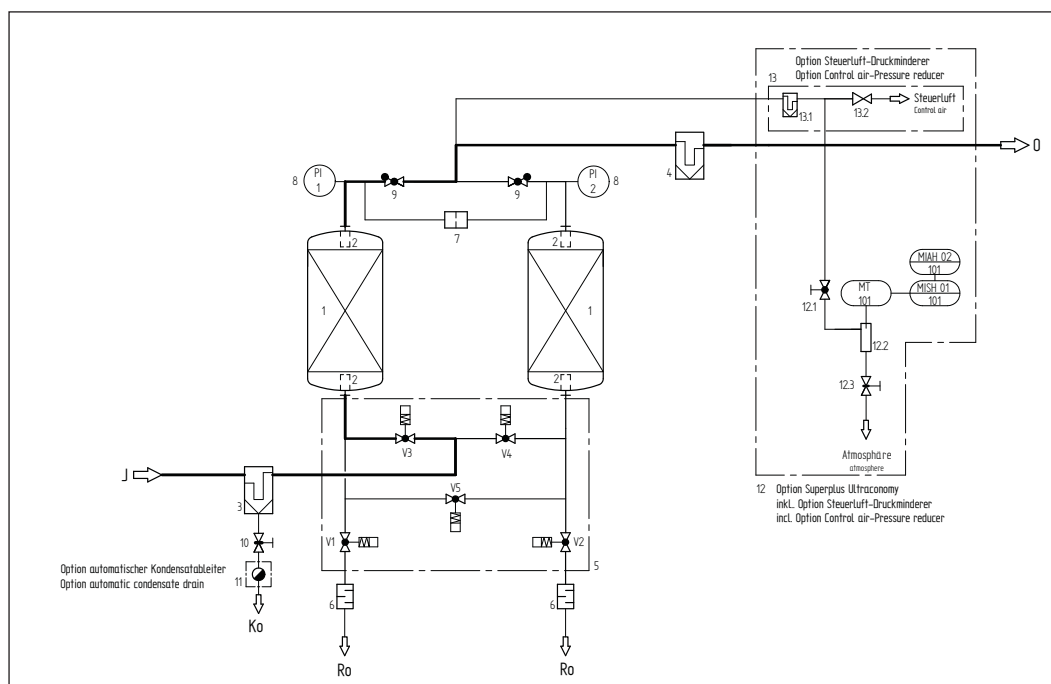
Product description:

Compressed air is lead through the inlet of the dryer (J) into the prefilter (3). At this stage, the air is cleaned from particles and condensate. The condensate is removed via a hand operated condensate drain (10) or optional via an electronic condensate drain (11). Via the pneumatically operated valve (V3, V4) in the valve block the air is lead into the absorber vessel (1), in which the air is dried to the required dryness level (pressure dewpoint). Thereafter the air flows through the upper non-return valve (9) and an afterfilter (4) which retains eventually accruing abrasion of desiccant. Via the systems outlet (O) the clean and dry air reaches the user's air net.

During one vessel is in operation, the water previously accumulated in the other adsorber is removed (regeneration phase). For this process a partial stream of already dried air is lead through a nozzle (7) and brought down to atmospheric pressure. For regeneration, purge air is lead over the desiccant bed and then released into the atmosphere via a pneumatically operated valve (V1, V2) and a silencer (6).



High pressure adsorption dryer
HLP 0260-1130



HLP PN 25, 0040 - 1130

HLP PN 25	Volume flow in m ³ /h (1 bar, 20°C)*	Regeneration air losses m ³ /h (1 bar, 20°C)	Volume flow out (min.) m ³ /h (1 bar, 20°C)	Pressure loss initial incl. filters mbar	Pre-filter (afterfilter) MF (YG)
0040	40	2.62	36.69	100	03/05
0080	80	5.15	73.51	170	04/20
0125	125	6.87	116.52	390	04/20
0260	260	15.28	240.92	150	05/20
0500	500	30.49	461.71	480	05/25
0770	770	46.49	711.58	990	07/30
1130	1130	66.02	1047.20	900	07/30

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

Features HLP PN 25	Benefits
Complete purification package including pre-, afterfilter and hand operated drain (optionally electronic condensate drain)	Turnkey-system; all components from one hand, technically perfectly matched to each other
Optimally dimensioned filters	Safe separation of particle and aerosols (on adherence to the specified parameters), large filter surface causes low differential pressure of the unit, thereby low operating cost
Indication of operating status (adsorption, regeneration, pressurizing, service, alarm) via LED display	High operating safety, all operating status can be easily detected at any time
Intermittend operation as standard	Coupling with the compressor with central applications possible, thus savings of regeneration air and operating cost
Use of pneumatically controlled seat valves	High operating safety, low pressure losses, low operating and maintenance costs
option package available	Flexibility in application; option package for economic and safe system integration in the compressed air network - dew point-dependent capacity control - electronic condensate drain - control air supply - starting valve

Product description

Complete purification package with heatless adsorption dryer which works on the basis of pressure swing adsorption, pre-, afterfilter and hand operated drain, electronic condensate drain optionally

Medium:

Compressed air/ nitrogen

Pressure dewpoint:

-40°C at 100% load

Operating pressure:

min. 17 bar (g), max. 25 bar (g)

Medium temperature:

min. 5°C, max. 55°C.

Ambient:

min. 4°C, max. 50°C.

Power supply:

230 V/ 50-60Hz

Power consumption:

approx 40 W

Pressure vessel - design, manufacture, testing

Adsorber and filter acc. to 2014/68/EU

Declaration of conformity:

acc. to 2014/68/EU

Sizing:

HLP	Inlet temperature	Operating pressure (bar)								
		17	18	19	20	21	22	23	24	25
PN 25	30°C	0.76	0.77	0.81	0.85	0.89	0.92	0.97	1.01	1.05
	35°C	0.72	0.73	0.77	0.81	0.85	0.88	0.92	0.96	1.00
	40°C	0.56	0.57	0.60	0.63	0.66	0.69	0.72	0.75	0.78
	45°C	0.44	0.45	0.47	0.49	0.52	0.54	0.56	0.59	0.61
	50°C	0.35	0.35	0.37	0.39	0.41	0.42	0.44	0.46	0.48
	55°C	0.27	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.38

Example:

$\dot{V}_{nom} = 200 \text{ m}^3/\text{h}$,
Inlet temperature = 40°C
Operating pressure = 20 bar (ü)
Pressure dewpoint = -40°C

$$\dot{V}_{corr} = \frac{\dot{V}_{nom}}{f} = \frac{200 \text{ m}^3/\text{h}}{0.63} = 317.5 \text{ m}^3/\text{h}$$

Selected adsorption dryer: HLP 0500-PN25

HLP PN 40, 0050 - 1200

HLP PN 40	Volume flow in m ³ /h (1 bar, 20°C)*	Regeneration air losses m ³ /h (1 bar, 20°C)	Volume flow out (min.) m ³ /h (1 bar, 20°C)	Pressure loss initial incl. filters mbar	Pre-filter (afterfilter) MF (YG)
0050	50	2.72	46.44	100	03/05
0095	95	4.30	89.78	150	04/20
0155	155	6.45	147.48	510	04/20
0310	310	14.20	293.08	140	05/20
0515	515	21.59	489.73	320	05/25
0800	800	30.73	764.70	740	07/30
1200	1200	46.37	1146.53	650	07/30

* Bezogen auf 1 bar (abs) und 20 °C Ansaugzustand und 7 bar (ü) und 35 °C Eintrittstemperatur

Features HLP PN 25	Benefits
Complete purification package including pre-, afterfilter and hand operated drain (optionally electronic condensate drain)	Turnkey-system; all components from one hand, technically perfectly matched to each other
Optimally dimensioned filters	Safe separation of particle and aerosols (on adherence to the specified parameters), large filter surface causes low differential pressure of the unit, thereby low operating cost
Indication of operating status (adsorption, regeneration, pressurizing, service, alarm) via LED display	High operating safety, all operating status can be easily detected at any time
Intermittend operation as standard	Coupling with the compressor with central applications possible, thus savings of regeneration air and operating cost
Use of pneumatically controlled seat valves	High operating safety, low pressure losses, low operating and maintenance costs
option package available	Flexibility in application; option package for economic and safe system integration in the compressed air network - dew point-dependent capacity control - electronic condensate drain - control air supply - starting valve

Product description:

Complete purification package with heatless adsorption dryer which works on the basis of pressure swing adsorption, pre-, afterfilter and hand operated drain, electronic condensate drain optionally

Medium:

Compressed air/ nitrogen

Pressure dewpoint:

-40°C at 100% load

Operating pressure:

min. 26 bar (g), max. 40 bar (g)

Medium temperature:

min. 5°C, max. 55°C.

Ambient:

min. 4°C, max. 50°C

Power supply:

230 V/ 50-60Hz

Power consumption:

approx 40 W

Pressure vessel - design, manufacture, testing

Adsorber and filter acc. to 2014/68/EU

Declaration of conformity:

acc. to 2014/68/EU

Sizing:

HLP	Inlet temperature	Operating pressure (bar)							
		26	28	30	32	34	36	38	40
PN 40	30°C	0.69	0.75	0.80	0.85	0.91	0.96	0.99	1.05
	35°C	0.66	0.71	0.76	0.81	0.86	0.91	0.95	1.00
	40°C	0.51	0.55	0.59	0.63	0.67	0.71	0.74	0.78
	45°C	0.40	0.43	0.46	0.49	0.52	0.56	0.58	0.61
	50°C	0.32	0.34	0.36	0.39	0.41	0.44	0.46	0.48
	55°C	0.25	0.27	0.29	0.31	0.33	0.35	0.36	0.38

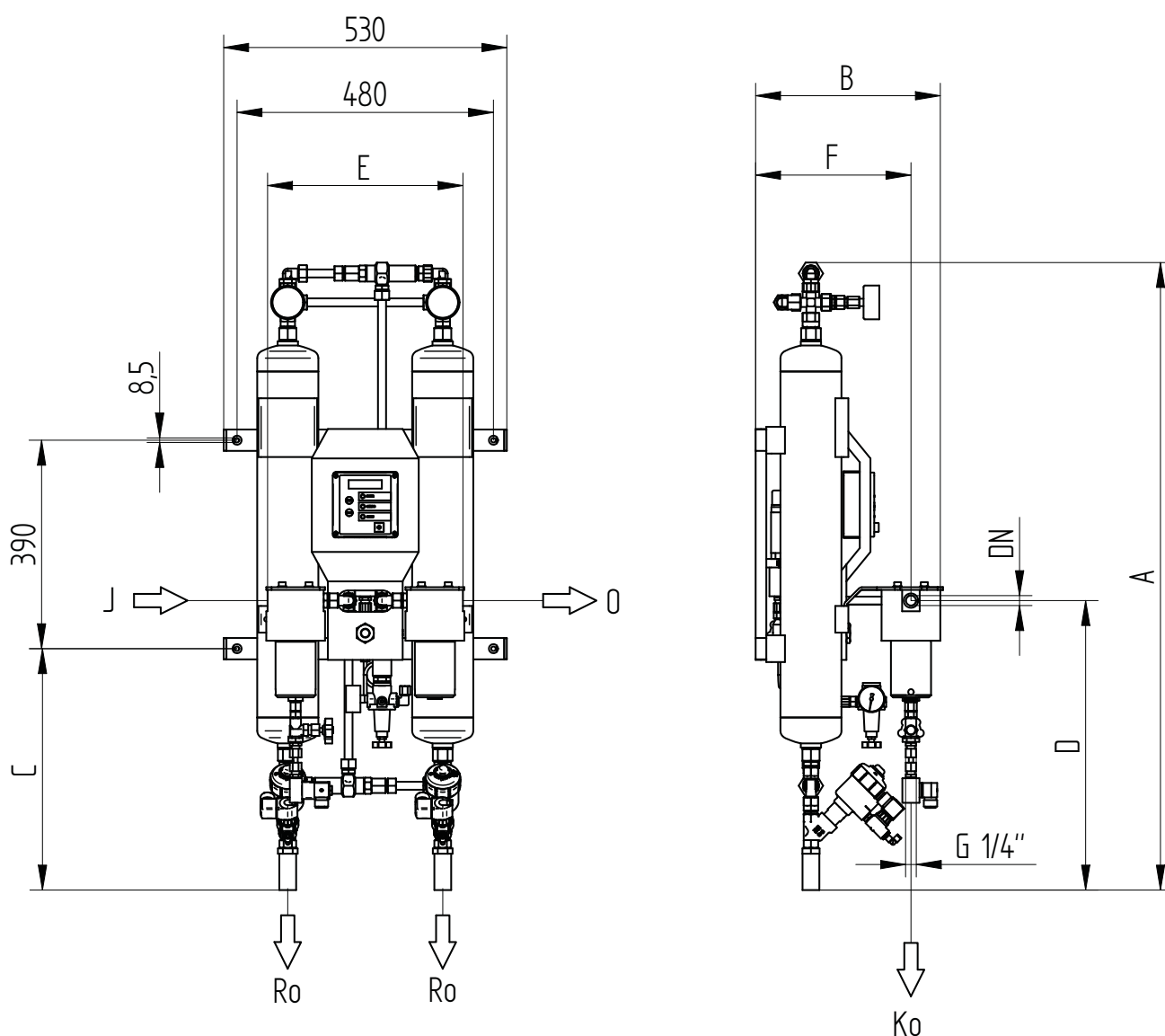
Example:

$\dot{V}_{nom} = 200 \text{ m}^3/\text{h}$,
Inlet temperature = 40°C
Operating pressure = 34 bar (ü)
Pressure dewpoint = -40°C

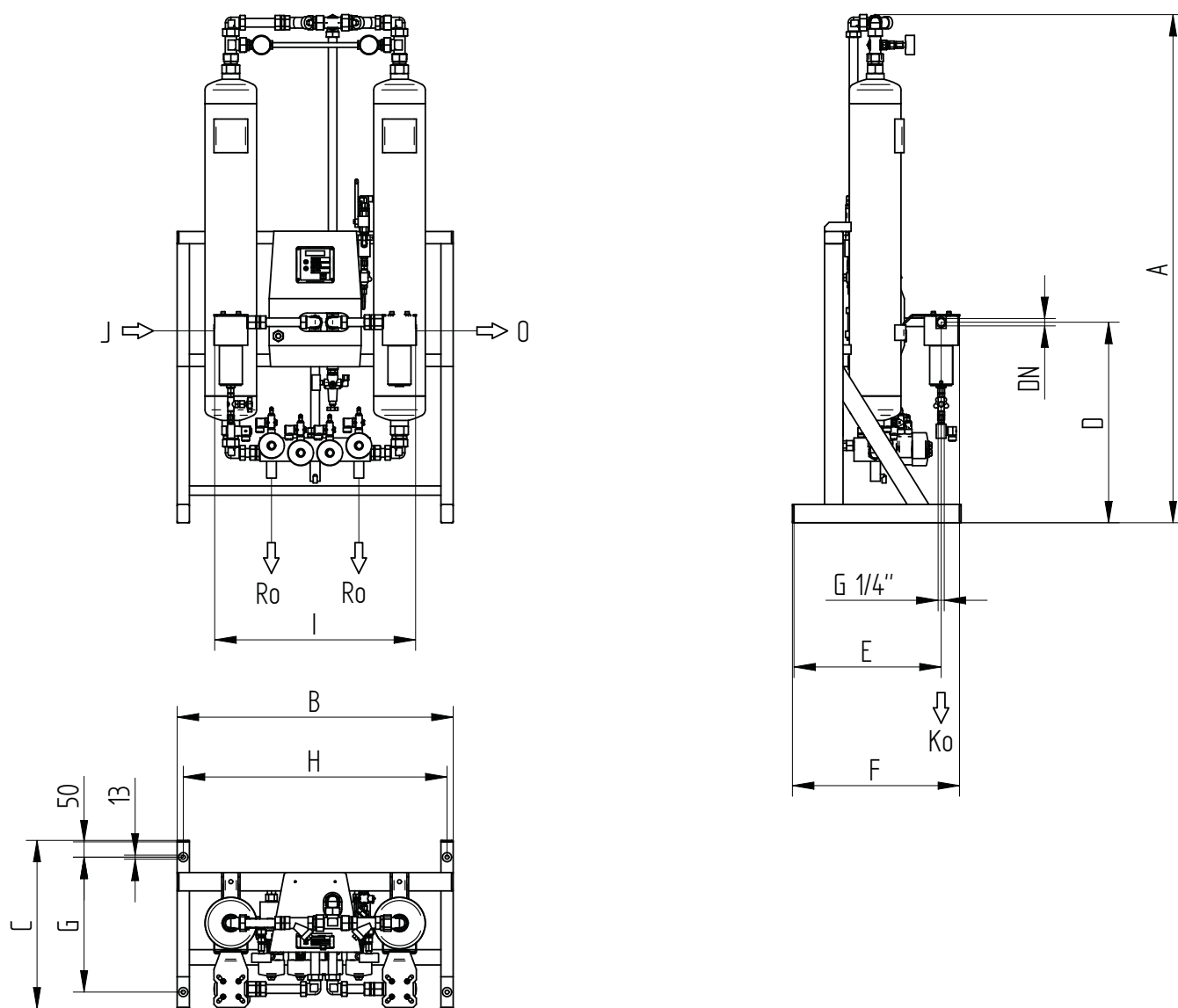
$$\dot{V}_{corr} = \frac{\dot{V}_{nom}}{f} = \frac{200 \text{ m}^3/\text{h}}{0.67} = 298.5 \text{ m}^3/\text{h}$$

Selected adsorption dryer: HLP 0310-PN40

HLP PN 25, 0040 - 0125



HLP PN 25	HLP PN 40	Connection DN “	A mm	B mm	C mm	D mm	E mm	F mm
0040	0050	G 1/4	1085	325	410	495	340	260
0080	0095	G 1/2	1175	350	455	540	365	290
0125	0155	G 1/2	1275	375	505	590	365	315

HLP PN 25, 0260-1130

HLP PN 25	HLP PN 40	Connection DN "	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
0260	0310	G 3/4	1660	900	550	655	480	540	440	860	655
0550	0515	G 1	1835	900	550	655	530	600	440	860	670
0770	0800	G 1 1/2	1875	900	550	655	585	675	440	860	700
1130	1200	G 1 1/2	1940	1200	710	805	635	720	600	1160	900