

Ultrasorp AKC Types 0003-60 to 0600-60

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Activated carbon adsorber with residual oil indicator

Prefiltered, clean air and dried compressed air (required inlet conditions) is led via the inlet (1) into the vessel and is lead through the gas diffuser to the adsorption vessel inlet (2) and through the activated carbon bed (3) from top to bottom. In the activated carbon bed, the compressed air is cleaned from oil vapours and hydrocarbons.

The cleaned air is lead via the lower gas diffuser (4) and the outlet of the adsorption vessel (5) to the compressed air network and to the point of use.

By means of an oil indicator (6) at the outlet of the adsorber, the saturation of the carbon can be measured online, at any time.



Activated carbon adsorber – AKC

AKC	Volume flow inlet cfm*	Pressure loss initial psi
0003-60	3	0.14
0005-60	5	0.14
0010-60	10	0.22
0015-60	15	0.22
0020-60	20	0.36
0030-60	30	0.22
0050-60	50	0.72
0060-60	60	0.72
0085-60	85	0.72
0100-60	100	0.58
0125-60	125	0.58
0175-60	175	0.58
0200-60	200	0.87
0300-60	300	0.87
0400-60	400	1.00
0500-60	500	1.30
0600-60	600	0.87

* related to 14.7 psi (abs) and 68 °F at intake of compressor and 100 psig bar system pressure and 95°F inlet temperature into adsorber



Ultratorp AKC, types 0003-60 to 0600-60

Features Ultratorp AKC:	Benefits:
Largely dimensioned amount of activated carbon:	High retention rates and long lifetime of activated carbon (residual oil content of < 0.003 ppm and a lifetime of >10000 operating hours)
Largely sized vessel diameters	Low flow speed, therefore no risk of abrasion of activated carbon and low differential pressure
Activated carbon adsorber with residual oil indicator standard	High operating safety, since residual oil content can be measured on-line at any time without having to de-install the adsorption vessel

Lifetime of activated carbon:
>10000 operating hours

Medium temperature:
min. 40 °F, max. 122 °F

Ambient temperature:
min. 39°F, max. 122°F

Product description:
Activated carbon adsorber Ultratorp AKC: Activated carbon adsorber for the removal of oil vapours and hydrocarbons, incl. built-in oil indicator

Operating pressure:
AKC 0003-60 to 0600-60 min. 60 psig, max. 225 psig

Residual oil indicator:
Accuracy: < ± 0.01 ppm

Medium:
Compressed air/nitrogen

Residual oil content:
>0.003 ppm Residual oil content at adsorber outlet and lifetime of activated carbon at operating pressure of 100 psig, 95 °F inlet temperature, air dryness of -40 °F pressure dewpoint and max. residual particle and condensate content of < 0.03 mg/m ³ at adsorber inlet

Vessel approval:
Type 0003-60 – 0600-60 ASME

Required inlet conditions:
Compressed air pre-dried to -40 °F at 0.03 ppm residual particle and condensate-content at inlet of adsorber

Recommendation:
Upstream installation of microfilter, type MF and an adsorption dryer

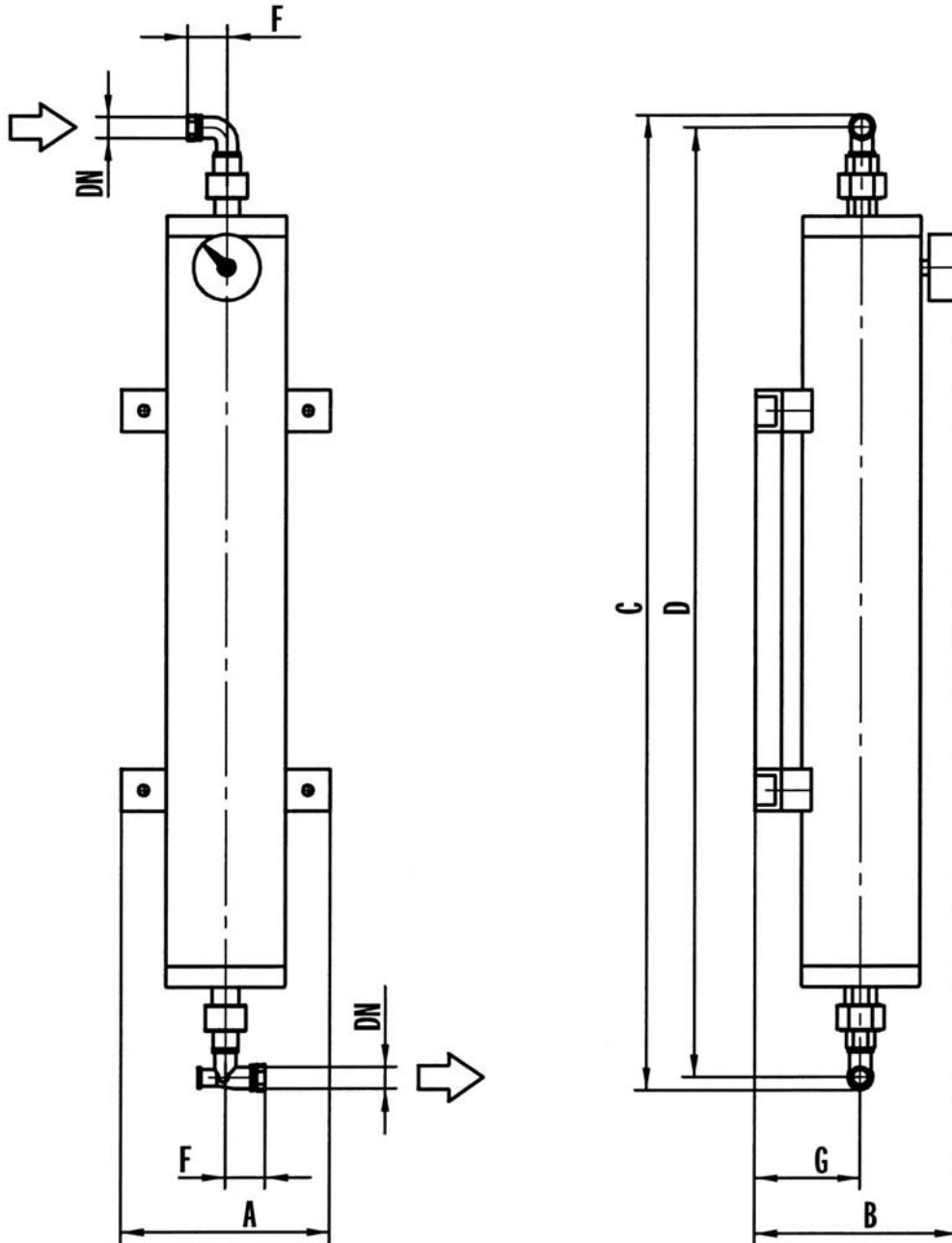
Sizing:												
Operating pressure (psig)	60	75	90	100	115	130	150	160	175	190	200	225
Correction factor overpressure (f _p)	0.62	0.75	0.88	1.0	1.12	1.25	1.38	1.50	1.62	1.75	1.88	2.0
Inlet temperature °F	68	77	86	95	104	115	122					
Correction factor inlet temperature (f _T)	1.0	1.0	1.0	1.0	0.9	0.8	0.5					

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

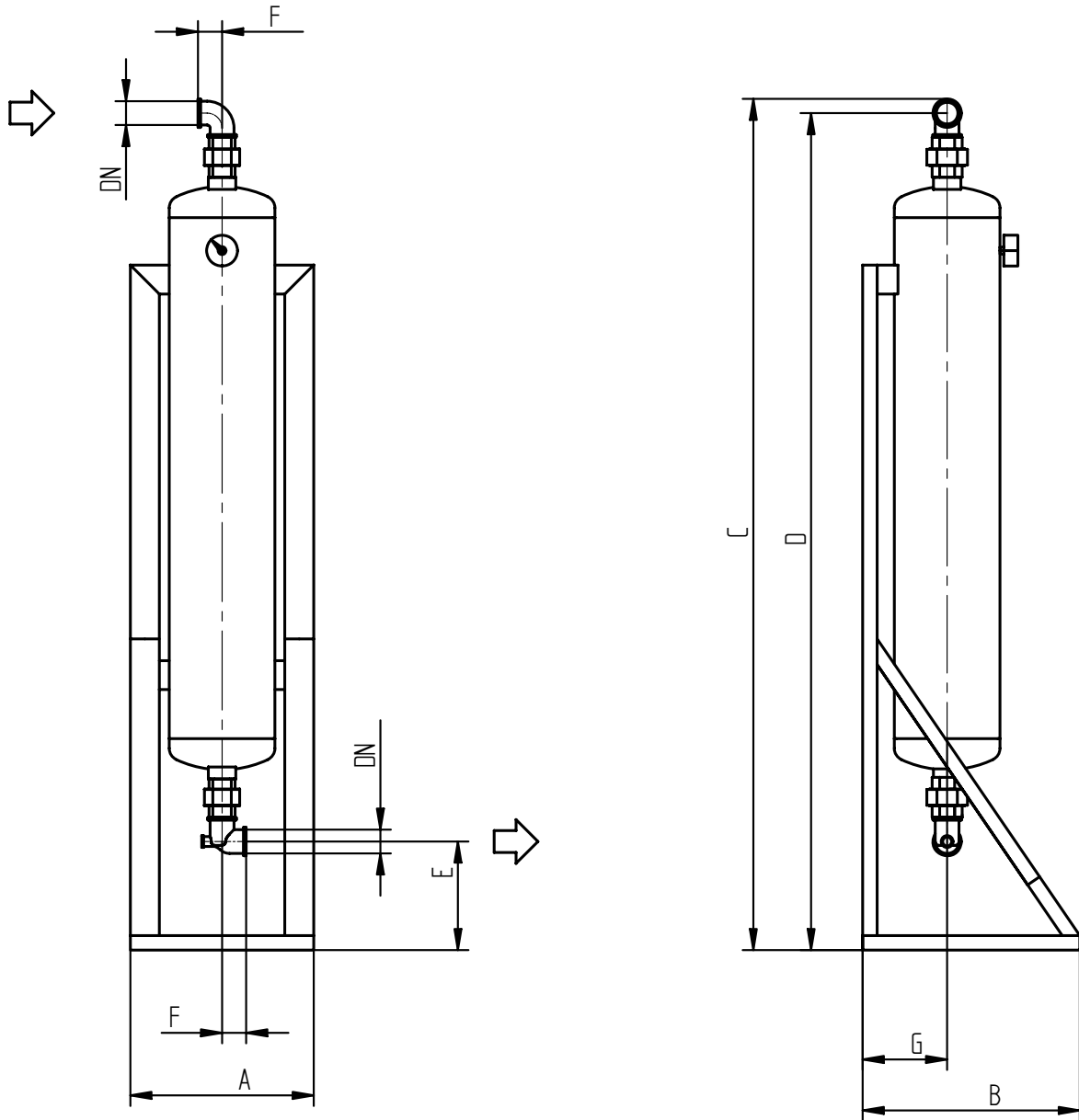
Example:
 $\dot{V}_{nom} = 120$ cfm,
 Inlet temperature = 86°F
 Operating pressure = 150 psig

$$\dot{V}_{corr} = \frac{120 \text{ cfm}}{1,38 \cdot 1,0} = 86,96 \text{ cfm. Calculated dryer size: Ultratorp AKC, type 0100-60}$$

Ultrasorp AKC, types 0003-60 to 0020-60



AKC	DN "	A inch	B inch	C inch	D inch	F inch
0003-60	3/8"	5.9	6.3	19.1	18.1	1.5
0005-60	3/8"	5.9	6.9	23.2	22.2	1.5
0010-60	3/8"	5.9	6.9	32.3	31.3	1.5
0015-60	1/2"	7.9	7.9	30.7	29.7	1.1
0020-60	1/2"	7.9	7.9	37.0	36.0	1.1

Ultrasorp AKC, types 0030-60 to 0600-60


AKC	DN "	A inch	B inch	C inch	D inch	E inch	F inch
0030-60	3/4	11.4	13.8	46.5	45.9	7.3	2.1
0050-60	3/4	12.6	13.8	59.8	59.1	7.5	2.1
0060-60	1	12.6	13.8	57.3	56.5	6.9	1.5
0085-60	1	12.6	13.8	75.0	74.2	6.9	1.5
0100-60	1 1/2	15.0	17.7	69.7	68.5	8.7	2.4
0125-60	1 1/2	15.0	17.7	69.7	68.5	8.7	2.0
0175-60	1 1/2	17.3	17.7	68.9	67.7	8.7	2.0
0200-60	1 1/2	17.3	17.7	82.3	81.1	8.7	2.0
0300-60	2	21.7	23.6	78.3	77.0	9.6	2.3
0400-60	2	21.7	23.6	79.3	78.0	8.7	2.3
0500-60	2	23.6	23.6	83.5	82.1	9.4	2.3
0600-60	2 1/2	26.0	23.6	78.9	77.0	10.4	2.7

