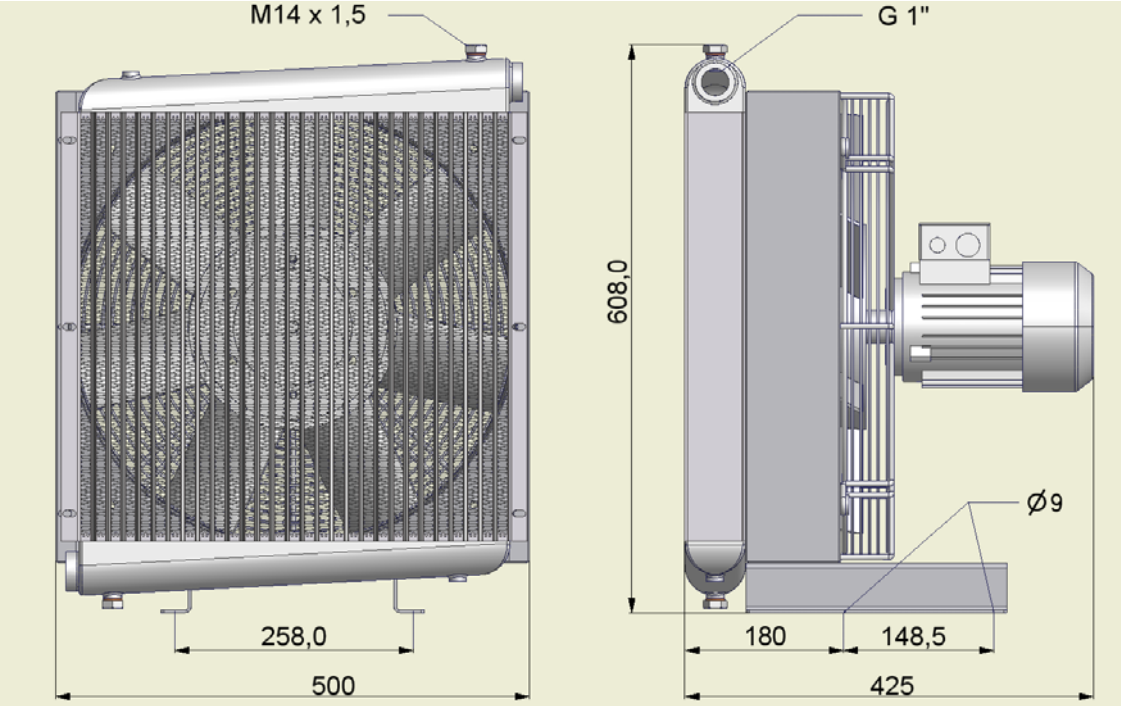
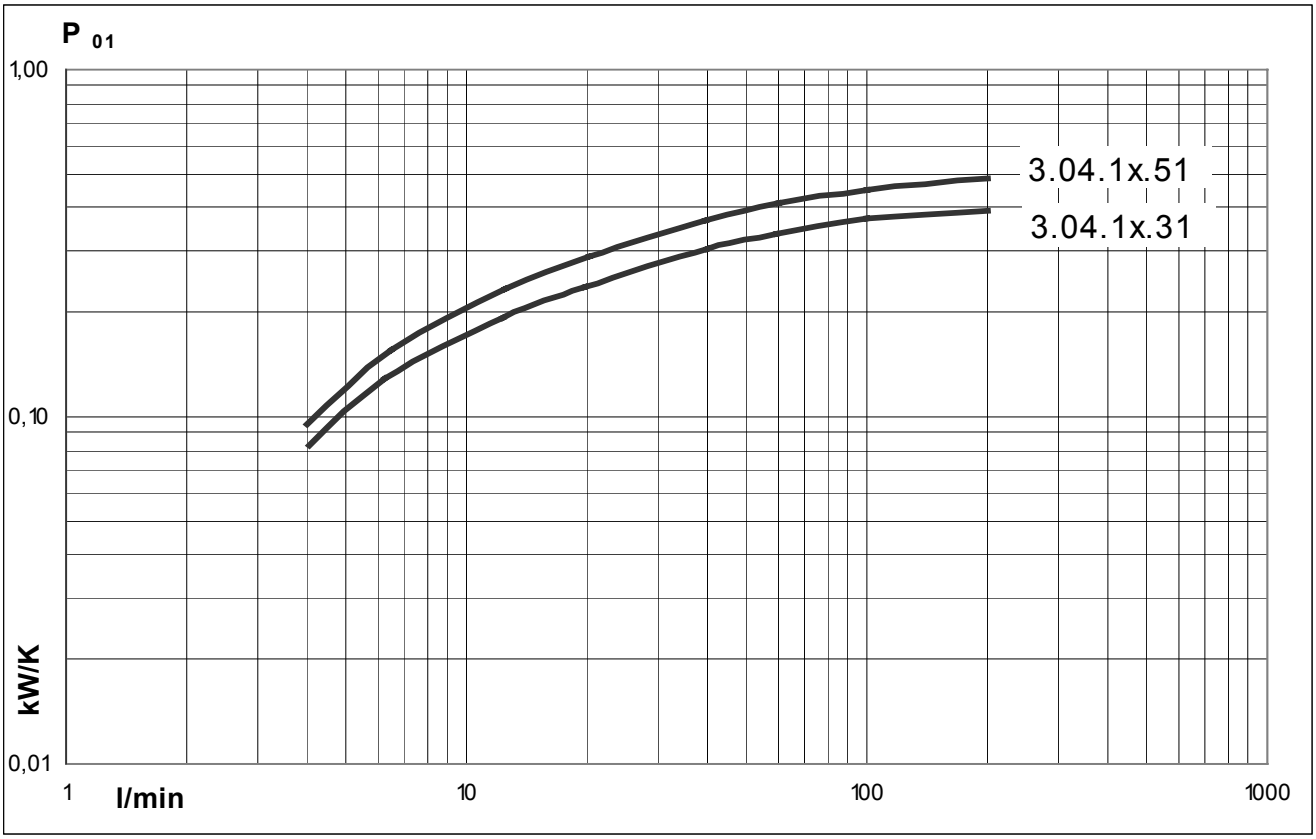
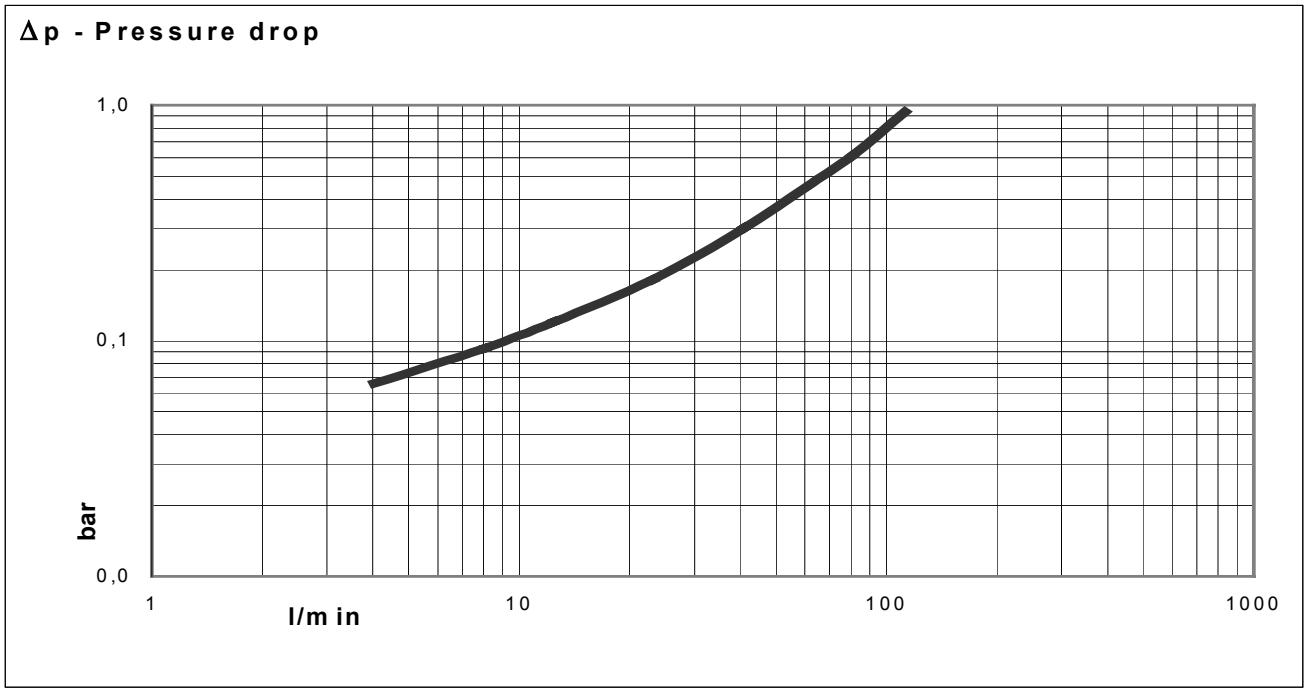
Technical Data	Oil / Air Cooling Unit Type 3.04.xx.xx	FUNKE



Application	Cooling of: Oil, HFA, HFB, HFC, HFD – liquids up to ν = 100 x 10^{-6} m^2/s water/glycol 65:35, By no means water without anticorrosive agent Cooling medium: air			
Technical Data	Type		3.04.1x.51	3.04.1x.31
	Frontal area	m²	0,209	0,209
	Fan speed	1/min	1500	1000
	Air-flow rate	Kg/s	~ 0,80	~ 0,55
	Driving power	kW	0,55	0,37
	Electric motor, size		IM B14 C120-80	IM B14 C120-80
	Noise level (1m / 7m)	dB(A)	76 / 63	65 / 52
	Weight	kg	31	31
	Oil content	L	4	4
	Allow. operating temp.	°C	120	120
	Allow.operating pressure	bar	16	16
Material	Core		aluminium	aluminium
	Fan		plastic	plastic
	Miscellaneous		steel, treated	steel, treated
Fitting note	Operating instruction to be followed in any case			
Example			Given	Calculated
	Power dissipation	kW	P_v = 13	
	Oil flow	l/min	$V_{Öl}$ = 40	
	Air volume	kg/s	V_L = 0,80 (m.a.)	
	Oil inlet temperature	°C	$t_{Öle}$ = 65	
	Cooling air temperature	°C	t_{Le} = 25	
	Inlet temperature-difference ETD	K		ETD = $t_{Öle} - t_{Le}$ = 65 – 25 = 40 K
	Spec. heat dissipation ETD = 1 Kelvin, P_{01}	kW/K		P_{01} = P_v / ETD = 13 / 40 = 0,33 kW/K
	Cooling of oil $\Delta t_{Öl}$	K		$\Delta t_{Öl}$ = 36 x P_v / $V_{Öl}$ = 36 x 13 / 40 = 12,0 K
	Heating-up of air Δt_L	K		Δt_L = P_v / V_L = 13 / 0,80 = 16,0 K





Δp-values of this chart apply to ν = 32 mm²/s (~ 32 cSt)

In case of divergent viscosity the calculated Δp-value shall be multiplied by f

10	15	20	32	40	50	60	80	100	150	200	250	300	400	500	mm²/s
0,5	0,65	0,75	1,0	1,2	1,4	1,6	2,1	2,7	4,0	5,5	7,3	9,5	16,0	30,0	f