

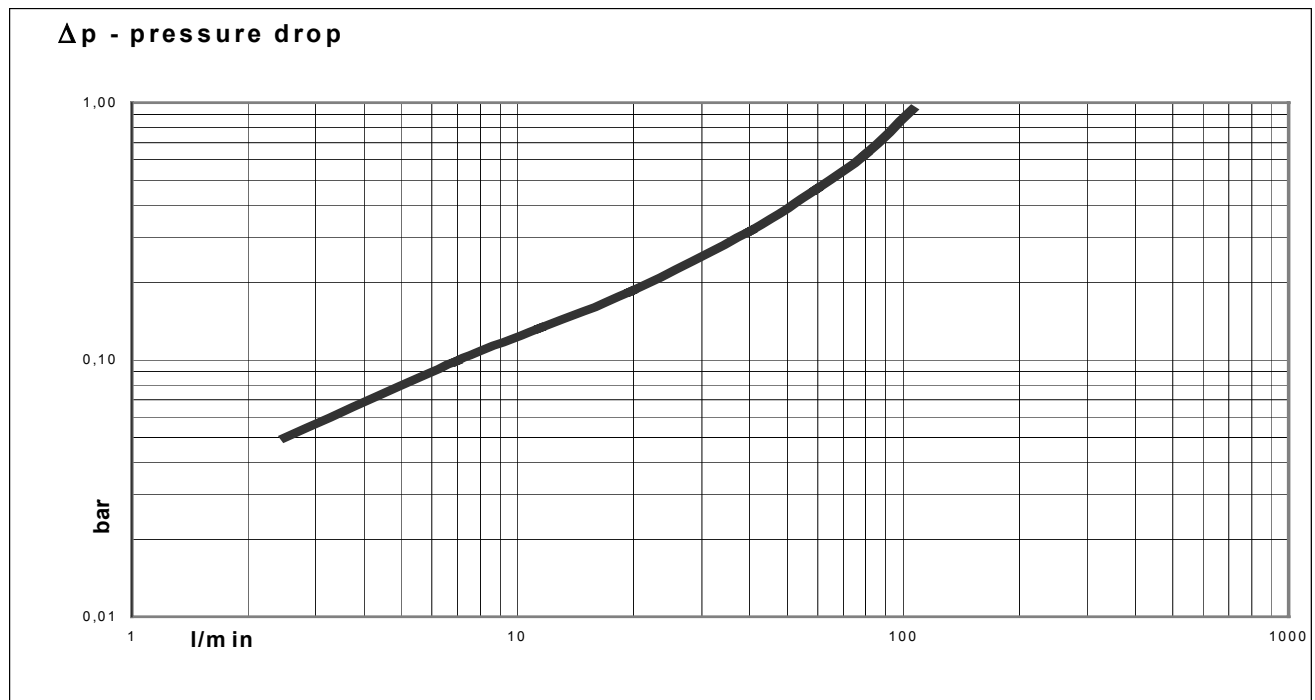
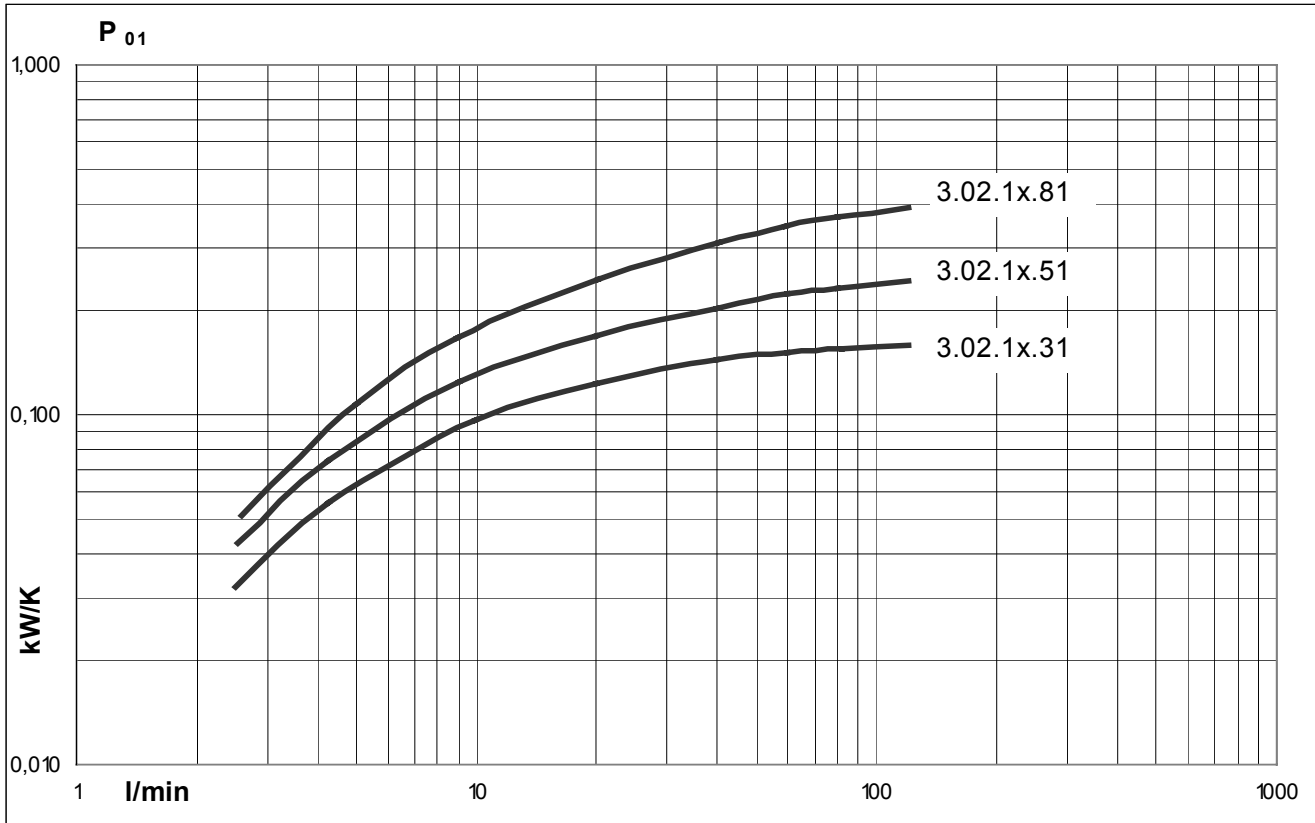
Application	Cooling of: Oil, HFA, HFB, HFC, HFD – liquids up to $v = 100 \times 10^{-6} \text{ m}^2/\text{s}$ water/glycol 65:35, <u>By no means water</u> without anticorrosive agent Cooling medium air
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Technical Data	Type	3.02.1x.81	3.02.1x.51	3.02.1x.31	
	Frontal area	m ²	0,110	0,110	0,110
	Fan speed	1/min	3000	1500	1000
	Air-flow rate	Kg/s	~ 0,75	~ 0,33	~ 0,2
	Driving power	kW	0,55	0,37	0,25
	electric motor, size		IM B14 C105-71	IM B14 C105-71	IM B14 C105-71
	Noise level (1m / 7m)	dB(A)	85 / 70	68 / 54	58 / 45
	Weight	kg	21	21	21
	Oil content	L	2,5	2,5	2,5
	Allow. operating temp.	°C	120	120	120
Allow. operating pressure	bar	16	16	16	

Material	Core	aluminium	aluminium	aluminium
	Fan	plastic	plastic	plastic
	Miscellaneous	steel, treated	steel, treated	steel, treated

Fitting note	Operating instruction to be followed in any case
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		Given	Calculated	
Example	Power dissipation	kW	$P_v = 9$	
	Oil flow	l/min	$V_{\text{öl}} = 45$	
	Air volume	kg/s	$V_L = 0,75 \text{ (m.a.)}$	
	Oil inlet temperature	°C	$t_{\text{öle}} = 60$	
	Cooling air temperature	°C	$t_{\text{Le}} = 25$	
	Inlet temperature-difference, ETD	K		$\text{ETD} = t_{\text{öle}} - t_{\text{Le}} = 60 - 25 = 35 \text{ K}$
	Spec. heat dissipation at ETD = 1 Kelvin, P ₀₁	kW/K		$P_{01} = P_v / \text{ETD} = 9 / 35 = 0,27 \text{ kW/K}$
	Cooling of oil, Δt _{öl}	K		$\Delta t_{\text{öl}} = 36 \times P_v / V_{\text{öl}} = 36 \times 9 / 45 = 7,2 \text{ K}$
	Heating-up of air, Δt _L	K		$\Delta t_L = P_v / V_L = 9 / 0,75 = 12,0 \text{ K}$



Δp-values of this chart apply to $v = 32 \text{ mm}^2/\text{s}$ (~ 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	mm ² /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