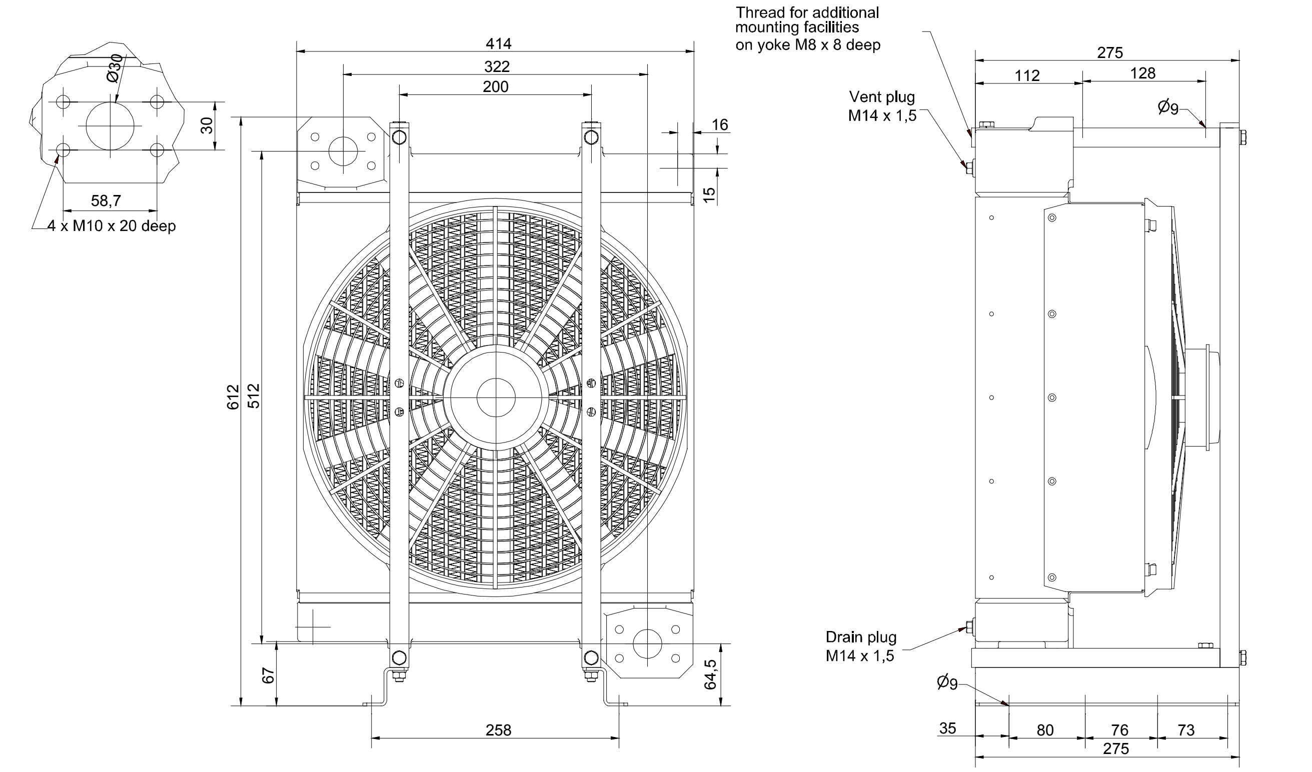
Technical data	Oil / Air Cooling Unit 2.7805.2.□□ - 75.□□.□□	Size 05 DC Issue 2008



At surface temperatures of more than 80°C, protection against accidental contact should be guaranteed in the working area

Details are subject to modification without notice!

Application	Cooling of oil, HFA,HFB, HFC, HFD - fluids up to ν ≈ 100 · 10^{-6} m^2/s (≙ 100 cSt), Water/Glycol 65:35, no water without corrosion preventive (min. 2 %). Cooling medium: Air				
Technical data	Type 2.7805.2.□□ -		75.□□		
	Face area	m^2	0,16		
	Fan speed	1/min	2800		
	Fan load	kW	0,27		
	Air flow	kg/s	~0,75		
	Noise level 1m/7m	dB(A)	78 / 66		
	from 63 Hz to 8000 Hz				
	Motor power	kW	0,27		
	Motor frame size		-		
	Total weight with motor	kg	19,8		
	Weight without motor	kg	18		
	Oil content	l	3		
Max. working pressure	16 bar				
Max. working temp.	Oil and hydraulic fluids 120 °C, water/glycol, emulsion 90 °C				
Material	Cooler: Aluminium Fan: Plastic		Fan shroud: Steel (zinc plated) Other parts: Steel (zinc plated)		
Installation instruction	Refer to: Type sheet, operation instructions Ensure there is an unhindered flow of air to and from the cooler. Provide ventilation and exhaust in room where cooler is installed. Avoid a pulsating oil flow and pressure surges.				
Type key	2 . 7 8 0 5 . 2 . □□ – 7 5 . □□ Size of unit Number of passes (normal: 1, for low oil flows: Position of oil connections, direction of air flow, Type of fan drive and fan speed Variant (key number)				
Accessories – in price	2 SAE – counter flange with gaskets and screws				
Accessories – charged extra	Filter mats for oil / air coolers Temperature regulator for tank installation				
Performance	see overleaf				

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Size 05 DC	Oil / Air Cooling Unit 2.7805.2.□□ - 75.□□.□□	Performance

Introduction

Following data are known:

Dissipation loss	P_V	[kW]
Oil flow	$\dot{V}_{Öl}$	[l/min]
Max. perm. oil temperature	$t_{ÖlE}$	[°C]
Cooling air temperature	t_{LE}	[°C]

From the following can be calculatet:

Entry - Temperature - Difference

E T D = $t_{ÖlE} - t_{LE}$ [K]

Specific cooling capacity with ETD = 1 K

$P_{01} = \frac{P_V}{ETD}$ [kW/K]

In hydraulik systems, the dissipation loss is approximately 20 – 25 % of drive power.

Performance diagrams

Example:

Given: P_V = 15 kW; $\dot{V}_{Öl}$ = 150 l/min; $t_{ÖlE}$ = 70 °C; t_{LE} = 30 °C

ETD = 70 - 30 = 40 K; $P_{01} = \frac{15}{40}$ = 0,38 kW/K

Selection: 2.7805.2.11-75.

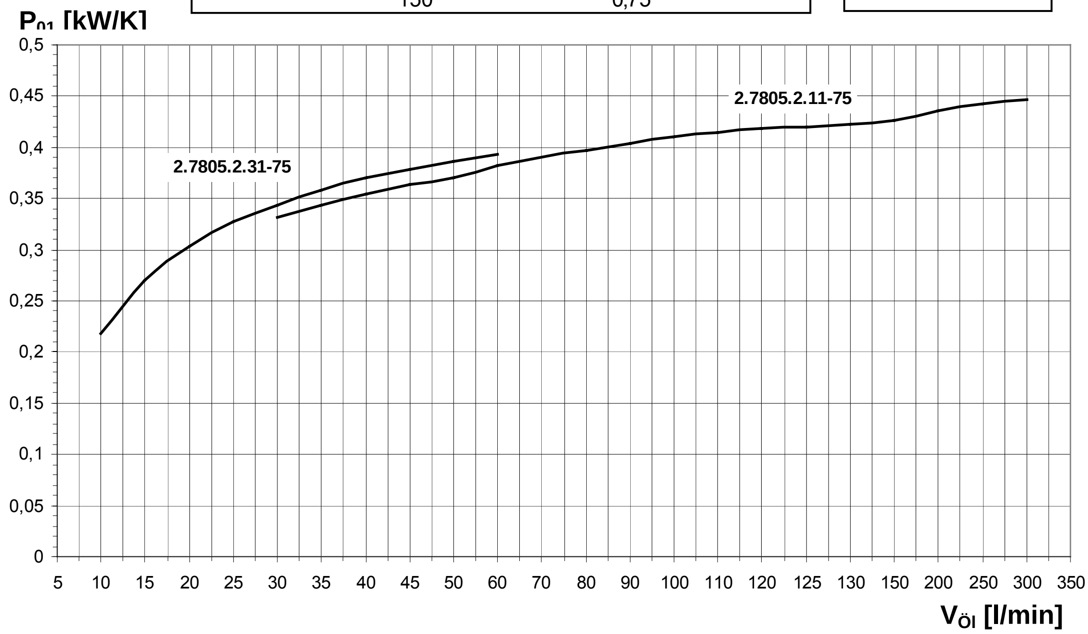
P_{01} = 0,427 kW/K; P_V = ETD · 0,427 = 17,1 kW

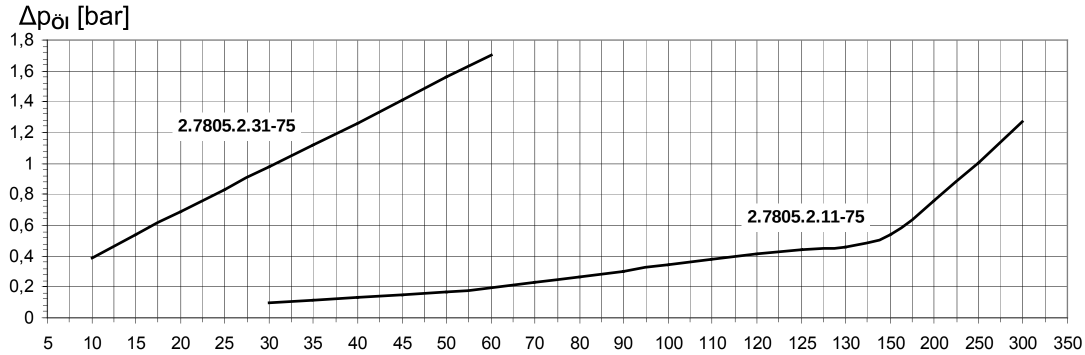
$\Delta t_{Öl} = \frac{36 \cdot 17{,}1}{150}$ = 4,1 K; $\Delta t_L = \frac{17{,}1}{0{,}75}$ = 22,8 K

$\Delta t_{Öl}$ = Oil cooling
Δt_L = Air heating
ΔG_L = Air flow

$\Delta t_{Öl} = \frac{36 \cdot P_V}{\dot{V}_{Öl}}$ [K]

$\Delta t_L = \frac{P_V}{\dot{G}_L}$ [K]





$\Delta p_{Öl}$ - Correction

The Δ p-value obtained from the curves applies for ν = 32 mm^2/s (≙ 32 cSt).
For differing viscosities, the Δ p-value has to be multiplied by the factor 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	5,5	7,3	9,5	16	30	f

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