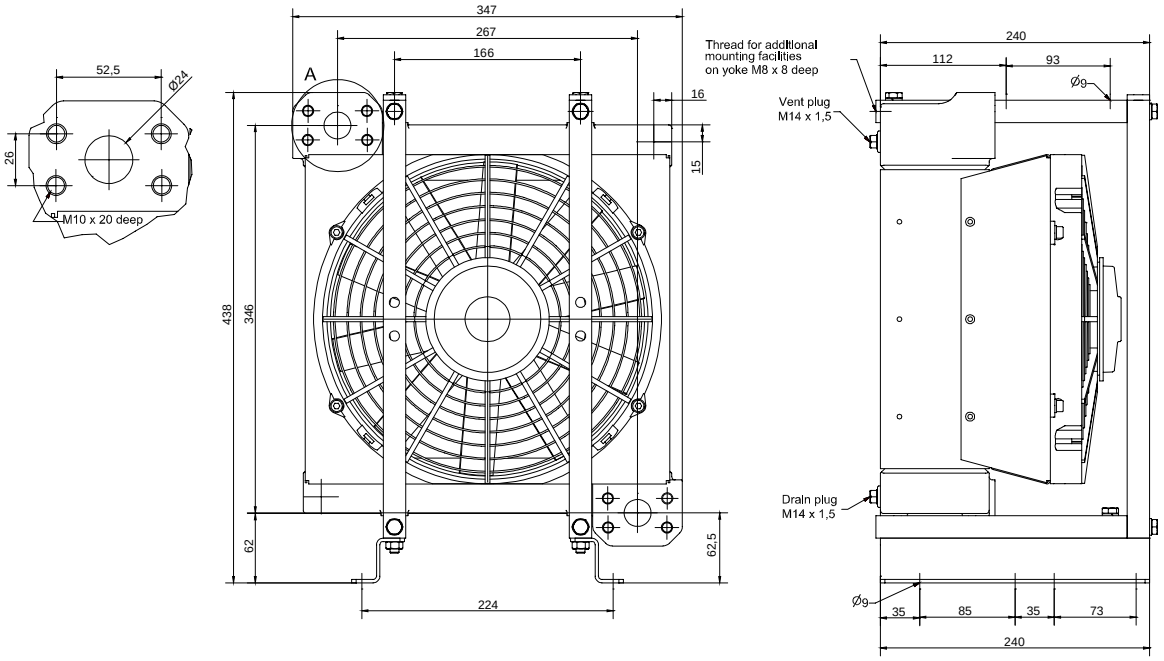
Technical data	Oil / Air Cooling Unit 2.7803.2.□□ - 75.□□.□□ direct-current fan	Size 03 DC Issue 2008



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 $\nu \approx 100 \cdot 10^{-6}$ m²/s (≙ 100 cSt), Water/Glycol 65:35, no water without corrosion preventive (min. 2 %). Cooling medium: Air				
Technical data	Type 2.7803.2.□□.-		75.□□		
	Face area	m²	0,05		
	Fan speed	1/min	2600		
	Fan load	kW	0,1		
	Air flow	kg/s	0,35		
	Noise level 1m/7m	dB(A)	78 / 66		
	from 63 Hz to 8000 Hz				
	Motor power	kW	0,1		
	Motor frame size		-		
	Total weight with motor	kg	17,8		
	Weight without motor	kg	16		
	Oil content	l	2,7		
Max. working pressure	16 bar				
Max. working temp.	Oil and hydraulic fluids 120 °C, water/glycol, emulsion 90 °C				
Material	Cooler: Aluminium		Fan shroud: Plastic		
	Fan: Plastic		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 3 . 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) □□				
Acces-sories	in price	2 SAE – counter flange with gaskets and screws			
	charged extra	Filter mats for oil / air coolers Temperature regulator for tank installation			
Performance	see overleaf				

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Size 03 DC	Oil / Air Cooling Unit 2.7803.2.□□ - 75.□□.□□ direct-current fan	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 = 6 W; $\dot{V}_{Öl}$ = 20 l/min; $t_{ÖlE}$ = 60 °C; t_{LE} = 30 °C

ETD = 60 - 30 = 30 K; $P_{01} = \frac{6}{30}$ = 0,2 kW/K

Selection: 2.7803.2.11-75.

P_{01} = 0,21 kW/K; P_V = ETD · 0,21 = 6,3 kW

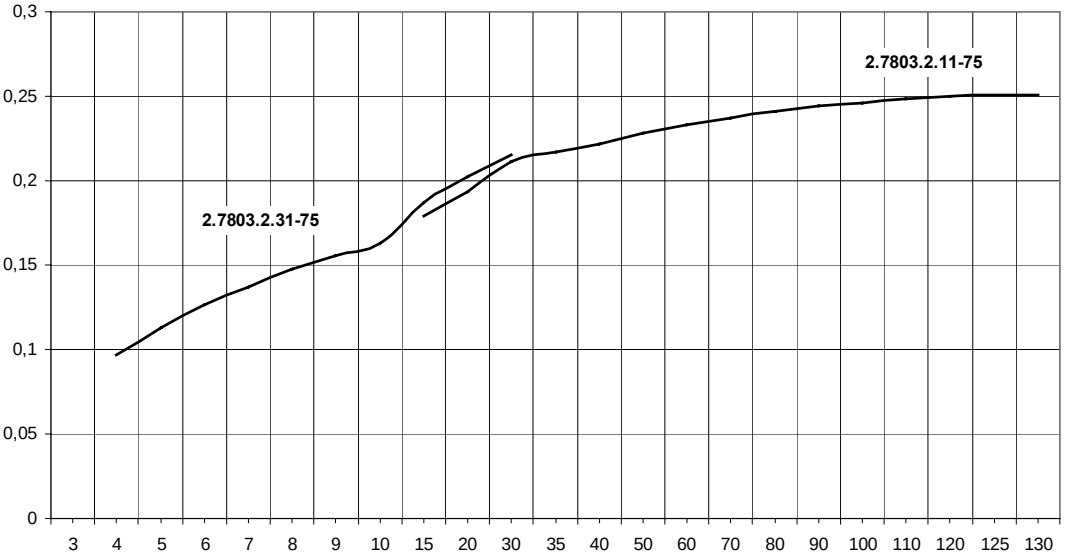
$\Delta t_{Öl} = \frac{36 \cdot 6{,}3}{20}$ = 11,3 K; $\Delta t_L = \frac{6{,}3}{0{,}35}$ = 18 K

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

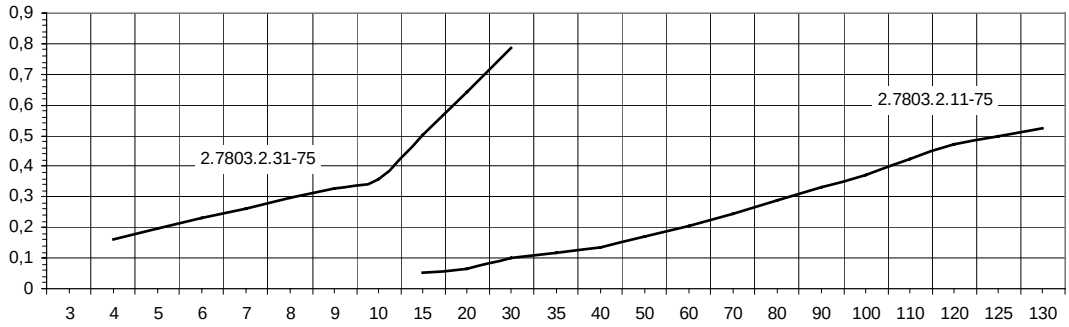
$\Delta t_{Öl} = \frac{36 \cdot P_V}{\dot{V}_{Öl}}$ [K]

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

P_{01} [kW/K]



$\Delta p_{Öl}$ [bar]



$\Delta p_{Öl}$ - Correction

The Δ p-value obtained from the curves applies for ν = 32 mm^2/s ($\hat{=}$ 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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