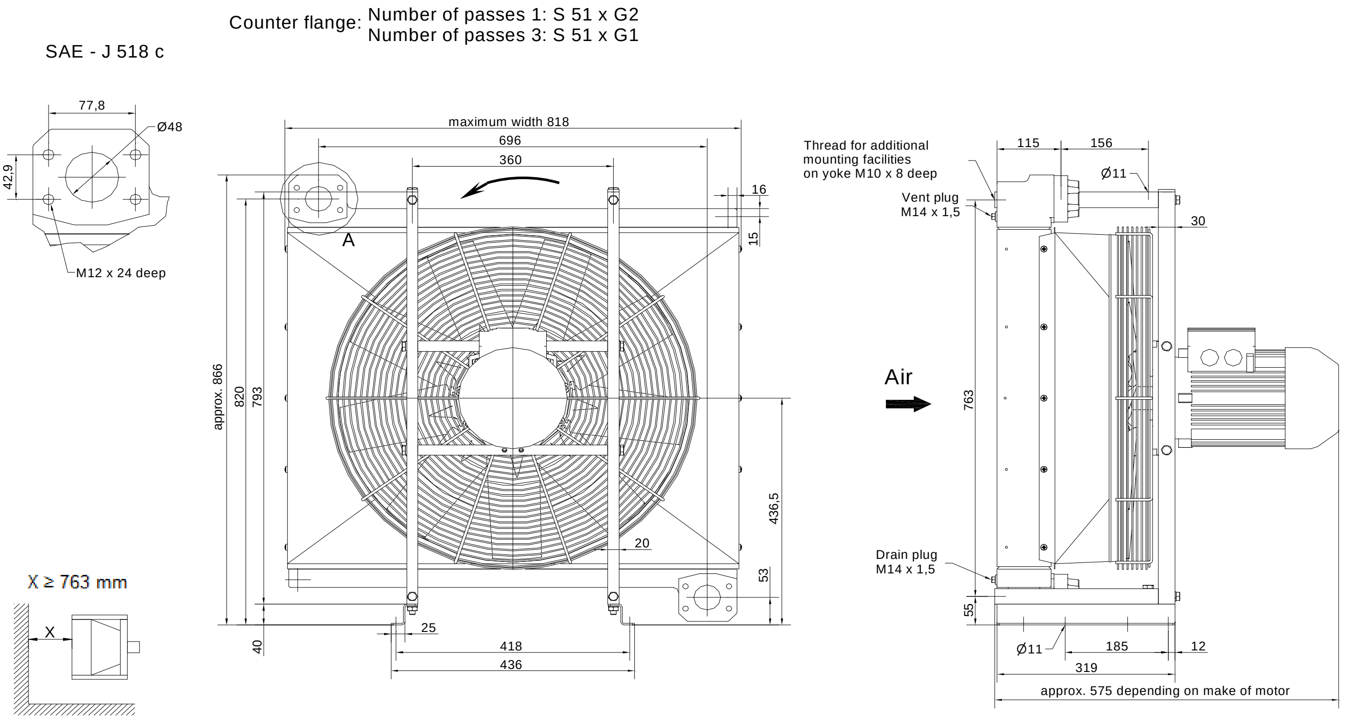
OKAN 2.79 Size 10 AC

FUNKE

Datasheet Oil / Air - Cooling Unit
OKAN 2.7910.2.□□ - □□.□□.□□



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:**	**2.7910.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area	m²	0,5	0,5	0,5
	Fan speed	1/min	1500	1000	750
	Fan load	kW	1,61	0,44	0,15
	Air flow	kg/s	3	1,9	1,4
	Motor power	kW	3,0 [IE2]	1,1 [IE2]	0,55 [IE1]
	Motor class		400VD / 690VY 50Hz 460VD 60 Hz	230VD / 400VY 50Hz 460VY 60 Hz	
	Motor frame size / type / flange		100L / IM B14 / C160	90L / IM B14 / C140	
	degree of protection / insulation (motor)		IP 55 / F(155) - B(130)		
	Total weight with motor	kg	87	77,7	75,2
	Weight without motor	kg	62	62	62
	Oil content	l	9,7	9,7	9,7
	Noise level 1m/7m *	db(A)	91 / 79	80 / 68	74 / 62
	Standard-Cooler	Type: ZNo.	**2.7910.2.11-51.01.00** **210 002 747 0**	**2.7910.2.11-31.00.00** **210 002 010 0**	**2.7910.2.11-11.00.00** **210 002 513 0**
Max. working pressure	16 bar				
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C			Ambient temperature -10°C until +40°C **	
Material	Cooler: Aluminium Fan: Plastic		Fan shroud: Steel (zinc plated) Other parts: Steel (zinc plated)		
Installation instruction	Refer to: Datasheet, operation and assembly manual. 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.				
Hint	* May vary by ±4 db due to room characteristics, own frequencies, oil connections, viscosities etc. ** Please contact our technical support department at different temperatures.				

Issue: 06.2015

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Introduction

1. Following data are known:

Dissipation loss	P_V	[kW]
Oil flow	$V_{Öl}$	[l/min]
Cooler oil inlet temperature	$t_{ÖlE}$	[°C]
Cooling air temperature	t_{LE}	[°C]
Air flow (see technical data)	G_L	[kg/s]

2. From the following can be calculatet:

Entry - Temperature - Difference	ETD	=	$t_{ÖlE}$ - t_{LE}	[K]
Specific cooling capacity	P_{01}	=	P_V / ETD	[kW/K]

3. After selection of cooling unit can be calculated:

Air heating	Δt_L	=	P_V / G_L	[K]
Oil cooling	$\Delta t_{ÖL}$	=	36 · P_V / $V_{Öl}$	[K]

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

Example

Given: P_V = 62 kW ; $V_{Öl}$ = 150 l/min ; $t_{ÖlE}$ = 80 °C ; t_{LE} = 30 °C

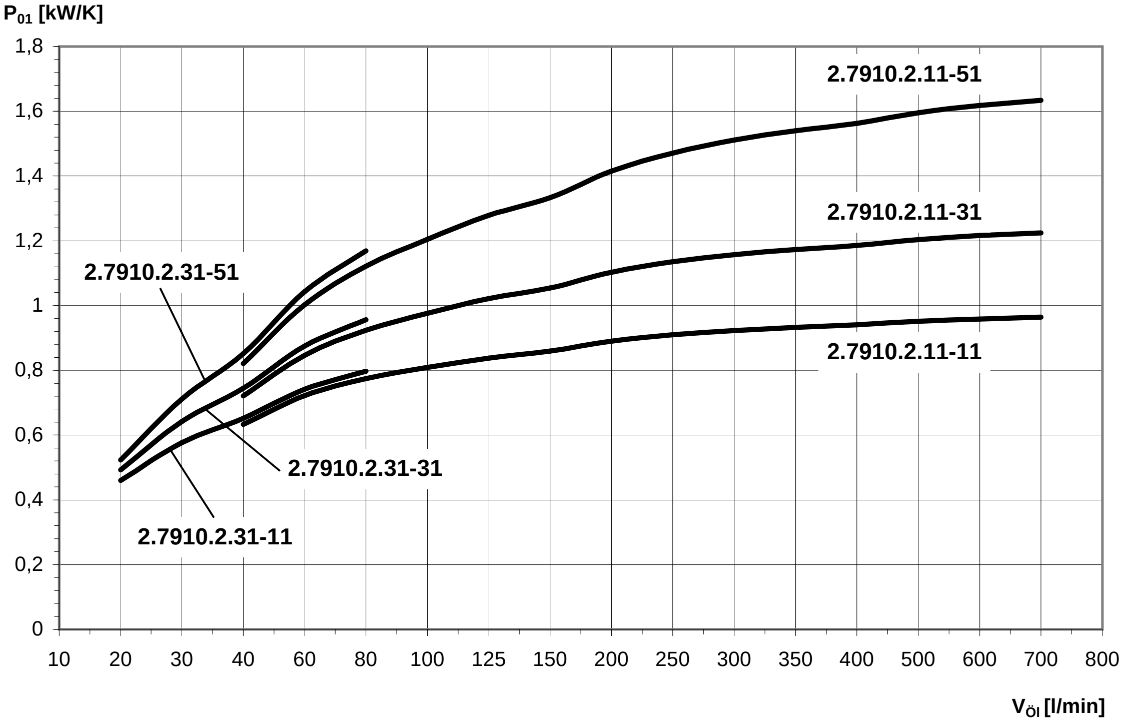
Calculated: ETD = 80 - 30 = 50 K

$$P_{01} = \frac{62\ kW}{50\ K} = 1{,}24\ kW/K$$

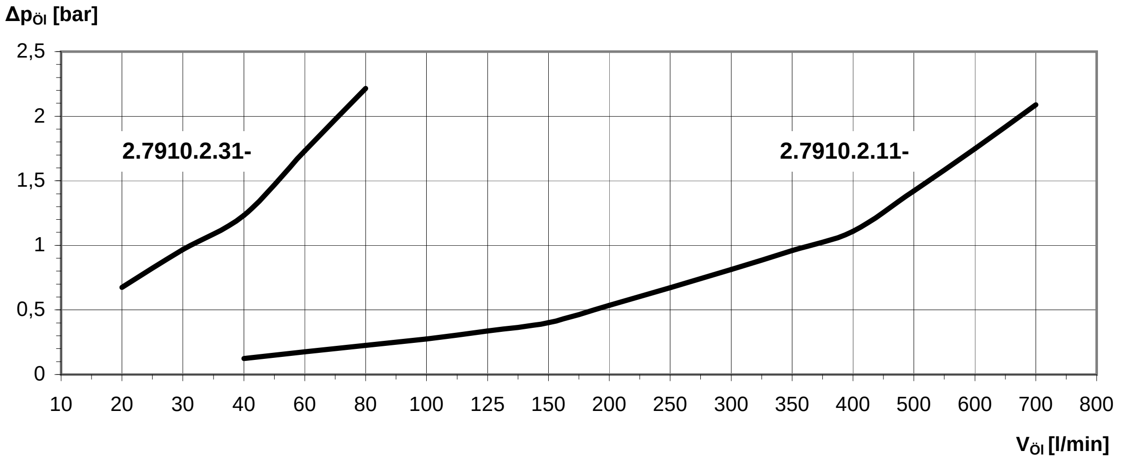
Select: 2.7910.2.11 - 51.□□ (see performance diagram)
P_{01} = 1,3 kW/K ; P_V = ETD · P_{01} = 50 K · 1,3 kW/K = 65 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 65}{150} = 15{,}6\ K$; $\Delta t_L = \frac{65}{3} = 21{,}7\ K$

Performance diagram



Pressure loss diagram



$\Delta p_{Öl}$ - Correction

The Δp -value obtained from the curves applies for ν = 32 mm²/s (≙ 32 cSt).
For differing viscosities, the Δp -value has to be multiplied by the factor 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	30	f

Issue: 06.2015

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Model code

Oil / Air - Cooling Unit
OKAN 2.79 AC / 2.81 AC

2 . 7 9 _ _ . _ . _ _ - _ _ . _ _ . _ _

Internal counterno.

OKAN Series

Rated speed at 50 Hz		Rated speed at 60 Hz	
8	3000	**9**	3600
5	1500	**6**	1800
3	1000	**4**	1200
1	750	**2**	900
0	suitable for		
7	alternative drives		

Sizes of Cooler (face area))		
m²		
0,050	0	2
0,080	0	3
0,100	0	4
0,160	0	5
0,200	0	6
0,250	0	7
0,315	0	8
0,400	0	9
0,500	1	0
0,600	1	1
0,800	1	3
1,000	1	4
1,450	1	5

	Fan	Oil connectors	Coating
1	suction	motor side	-
2			sea air resistance *
3		front side	-
4			sea air resistance *
5	blowing	motor side	-
6			sea air resistance *
7		front side	-
8			sea air resistance *

	Number of passes
1	1-pass (1-way)
3	3-pass (3-way)

2	Standard model
3	ATEX-model

Example 2.7908.2.12-54.88.29

2 . 7 9 0 8 . 2 . 1 4 - 5 4 . 8 8 . 2 9

OKAN 2.79
Size: 08
Standard model: 2
Number of passes: 1-pass (1-way)
Fan suction, Oil connectors fronte side, Painting sea air resistance
Rated speed: 1500 rpm
Internal counterno.

Standard equipment	Oil / Air - Cooling Unit including SAE - flanges (mounted), documentation
Coating	* sea air resistant coating = C3 according DIN ISO 12944/2, C5M on request;

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