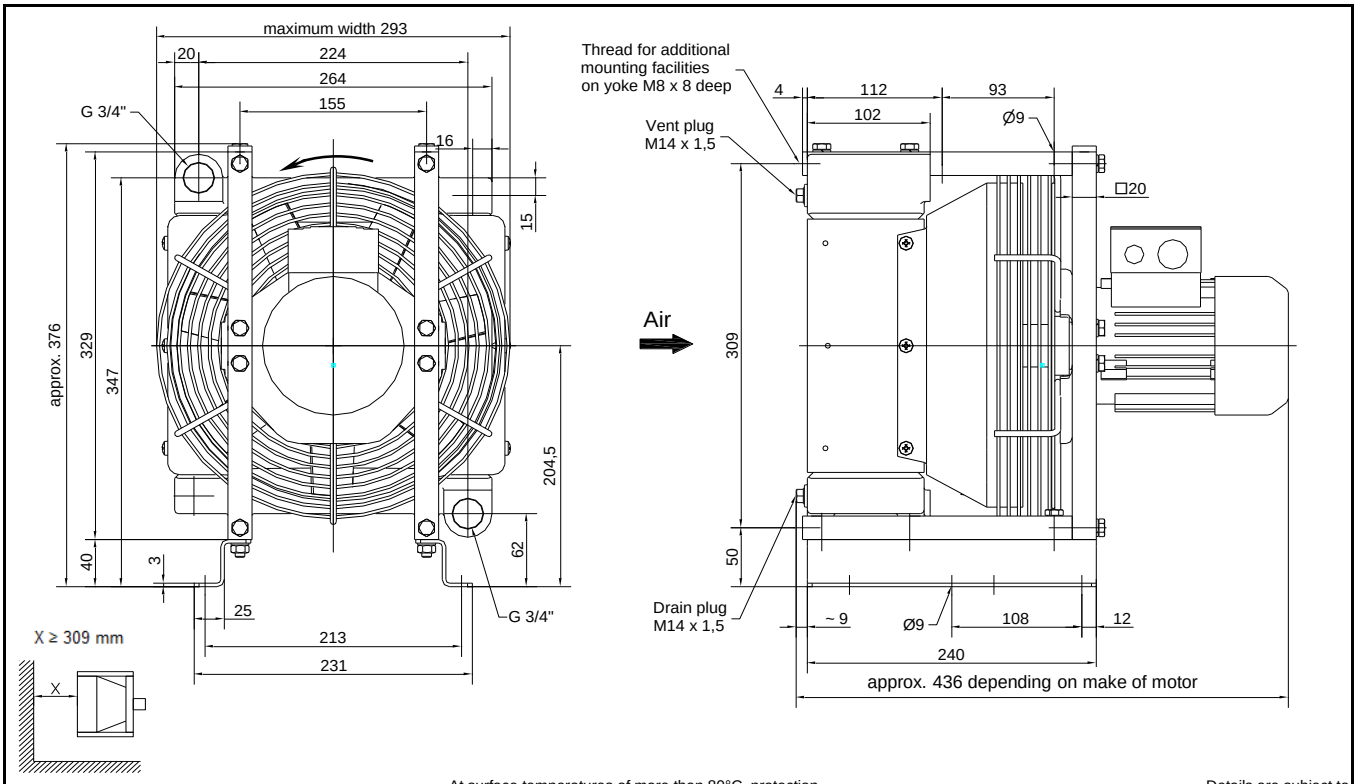
OKAN 2.79 Size 02 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7902.2.□□ - □□.□□.□□

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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: 2.7902.2.□□ -**		**81.□□**	**51.□□**
	Face area m²		0,05	0,05
	Fan speed 1/min		3000	1500
	Fan load kW		0,11	0,01
	Air flow kg/s		0,34	0,17
	Motor power kW		0,25 [IE2]	0,18 [IE2]
	Motor class		230VD / 400VY 50Hz 460VY 60 Hz	
	Motor frame size / type / flange		63 / IM B14 / C90	
	degree of protection / insulation (motor)		IP 55 / F(155) - B(130)	
	Total weight with motor kg		16,5	16,5
	Weight without motor kg		12	12
	Oil content l		1,6	1,6
	Noise level 1m/7m * db(A)		79 / 67	61 / 49
	Standard-Cooler	Type: ZNo.	**2.7902.2.11-81.00.00** **210 002 053 0**	**2.7902.2.11-51.00.00** **210 002 168 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C			Ambient temperature -20°C until +40°C **
Material	Cooler: Aluminium		Fan shroud:	Plastic
	Fan: Plastic		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: 01.2017

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OKAN 2.79 Size 02 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7902.2.☐☐ - ☐☐.☐☐.☐☐

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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 = 3,3 kW ; $V_{Öl}$ = 10 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

Calculated: ETD = 60 - 30 = 30 K

$$P_{01} = \frac{3{,}3\ \text{kW}}{30\ \text{K}} = 0{,}11\ \text{kW/K}$$

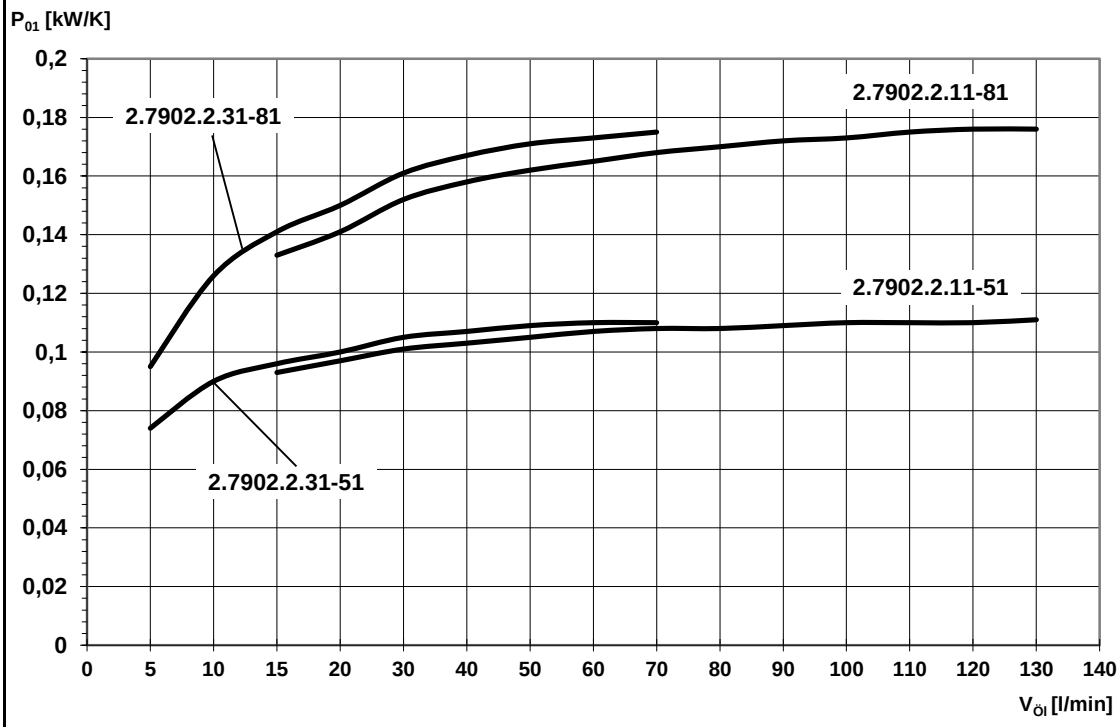
Select: 2.7902.2.31 - 81.☐☐ (see performance diagram)

P_{01} = 0,126 kW/K ; P_V = ETD · P_{01} = 30 K · 0,126 kW/K = 3,8 kW

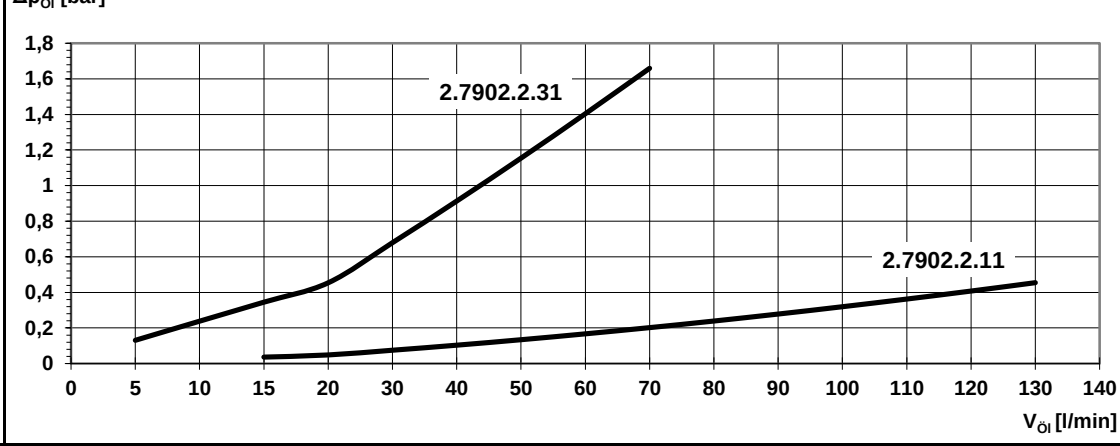
Calculated:

$$\Delta t_{Öl} = \frac{36 \cdot 3{,}8}{10} = 13{,}6\ \text{K} \quad ; \quad \Delta t_L = \frac{3{,}8}{0{,}34} = 11{,}1\ \text{K}$$

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

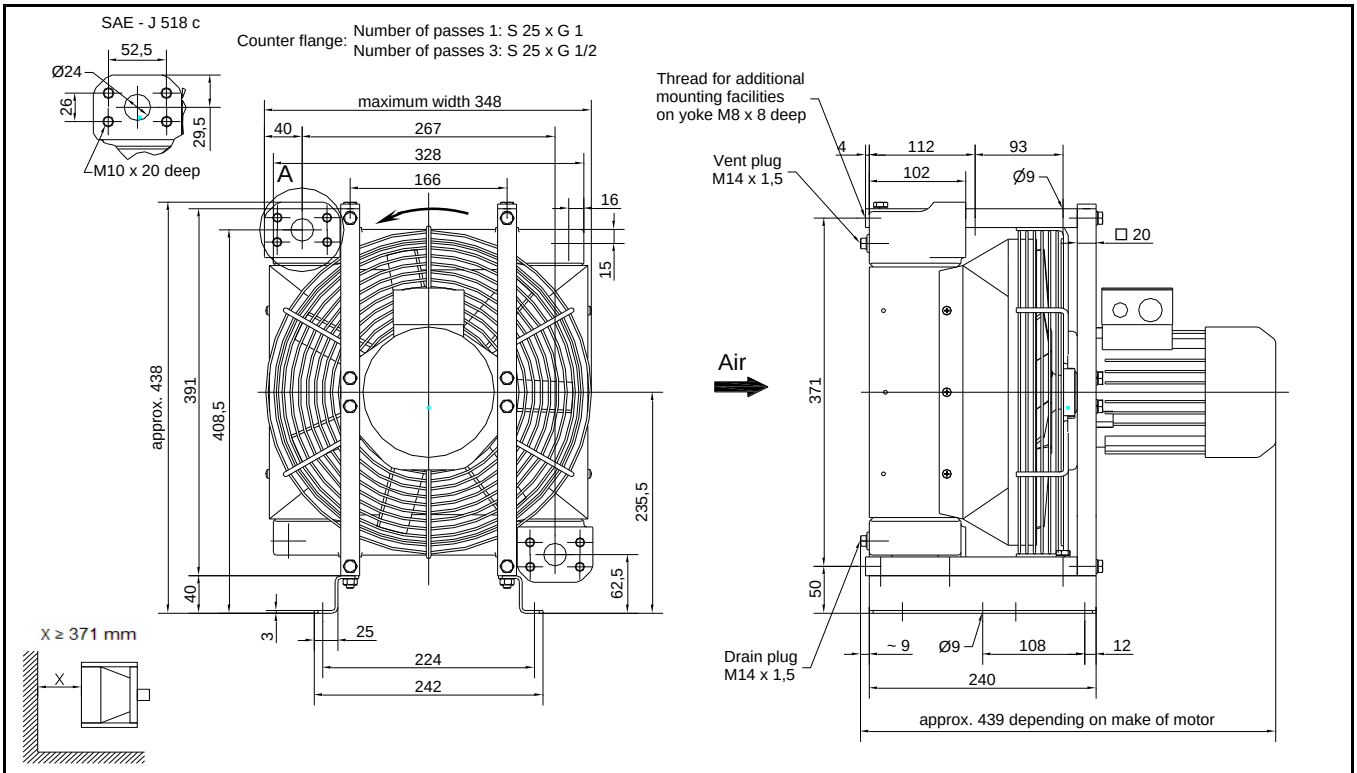
Issue: 01.2017

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OKAN 2.79 Size 03 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7903.2.□□ - □□.□□.□□

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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: 2.7903.2.□□ -**	**81.□□**	**51.□□**	**31.□□**
	Face area m²	0,08	0,08	0,08
	Fan speed 1/min	3000	1500	1000
	Fan load kW	0,24	0,04	0,01
	Air flow kg/s	0,62	0,3	0,19
	Motor power kW	0,55 [IE2]	0,37 [IE2]	0,25 [IE2]
	Motor class	230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange	71 / IM B14 / C105		
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	19,5	19,0	19,5
	Weight without motor kg	13,0	13,0	13,0
	Oil content l	2,7	2,7	2,7
	Noise level 1m/7m * db(A)	84 / 72	70 / 58	59 / 47
	Standard-Cooler Type: ZNo.	**2.7903.2.11-81.00.00 210 001 991 0**	**2.7903.2.11-51.00.00 210 002 026 0**	**2.7903.2.11-31.00.00 210 002 316 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium	Fan shroud: Plastic		
	Fan: Plastic	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: 06.2023

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OKAN 2.79 Size 03 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7903.2.☐☐ - ☐☐.☐☐.☐☐

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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 = 6 kW ; $V_{Öl}$ = 30 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

Calculated: ETD = 60 - 30 = 30 K

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

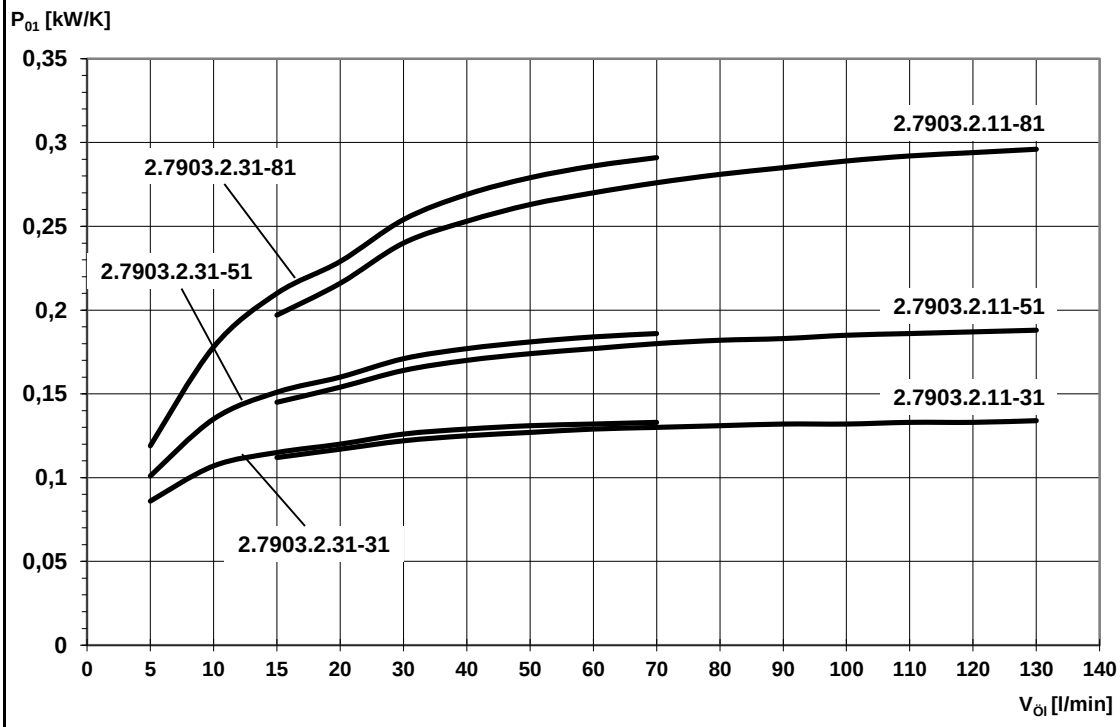
Select: 2.7903.2.11 - 81.☐☐ (see performance diagram)

P_{01} = 0,24 kW/K ; P_V = ETD · P_{01} = 30 K · 0,24 kW/K = 7,2 kW

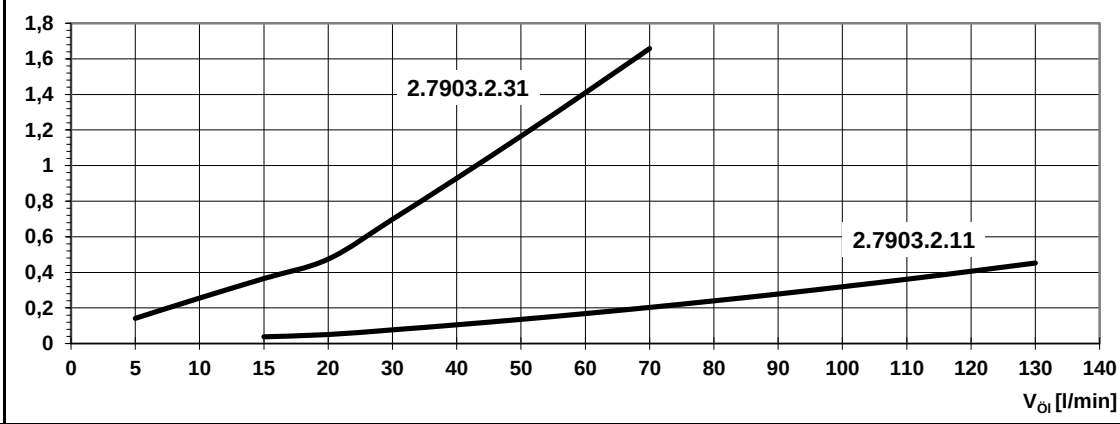
Calculated:

$$\Delta t_{Öl} = \frac{36 \cdot 7{,}2}{30} = 8{,}6\ K \quad ; \quad \Delta t_L = \frac{7{,}2}{0{,}62} = 11{,}6\ K$$

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

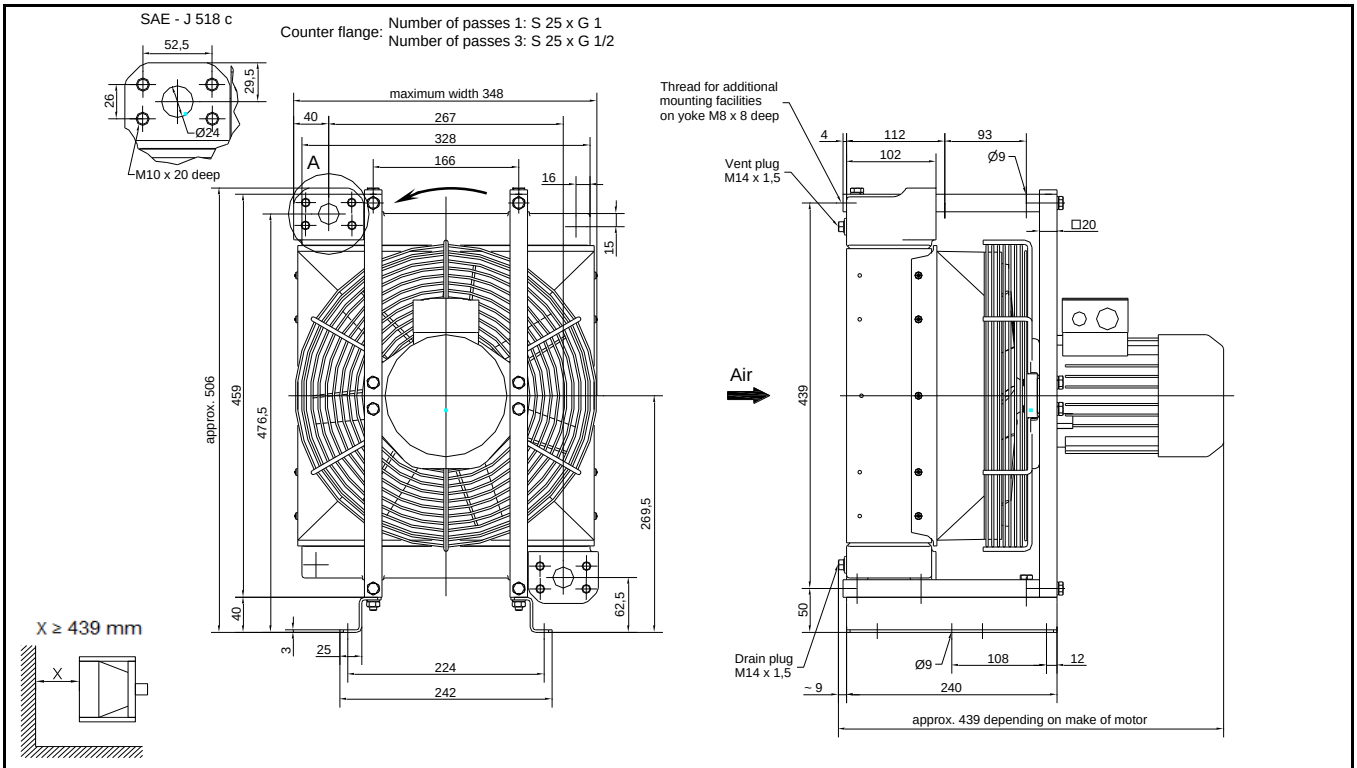
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OKAN 2.79 Size 04 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7904.2.□□ - □□.□□.□□

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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: 2.7904.2.□□ -**	**81.□□**	**51.□□**	**31.□□**
	Face area m²	0,1	0,1	0,1
	Fan speed 1/min	3000	1500	1000
	Fan load kW	0,24	0,04	0,01
	Air flow kg/s	0,62	0,3	0,19
	Motor power kW	0,55 [IE2]	0,37 [IE2]	0,25 [IE2]
	Motor class	230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange	71 / IM B14 / C105		
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	22,5	22,0	22,5
	Weight without motor kg	16,0	16,0	16,0
	Oil content l	3	3	3
	Noise level 1m/7m * db(A)	84 / 72	70 / 58	59 / 47
	Standard-Cooler Type: ZNo.	**2.7904.2.11-81.00.00 210 001 995 0**	**2.7904.2.11-51.00.00 210 002 742 0**	**2.7904.2.11-31.00.00 210 002 741 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium	Fan shroud: Plastic		
	Fan: Plastic	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.			

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OKAN 2.79 Size 04 AC

Datasheet Oil / Air - Cooling Unit
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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 = 9 kW ; $V_{Öl}$ = 150 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

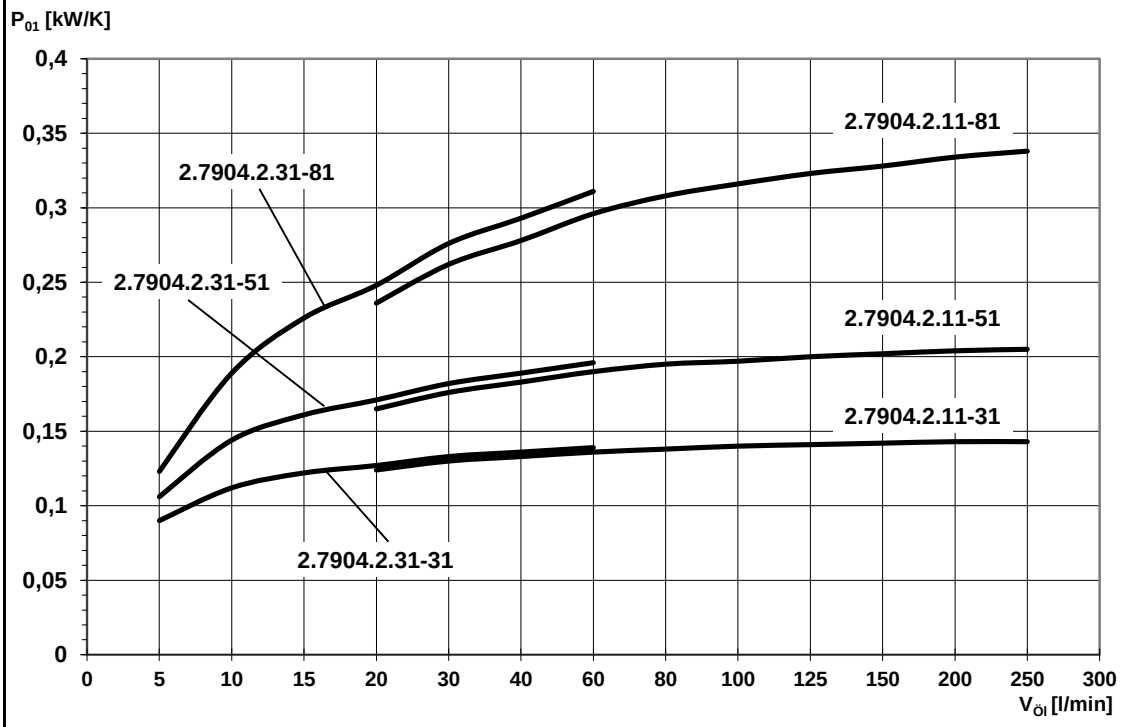
Calculated: ETD = 60 - 30 = 30 K

$$P_{01} = \frac{9\ kW}{30\ K} = 0{,}3\ kW/K$$

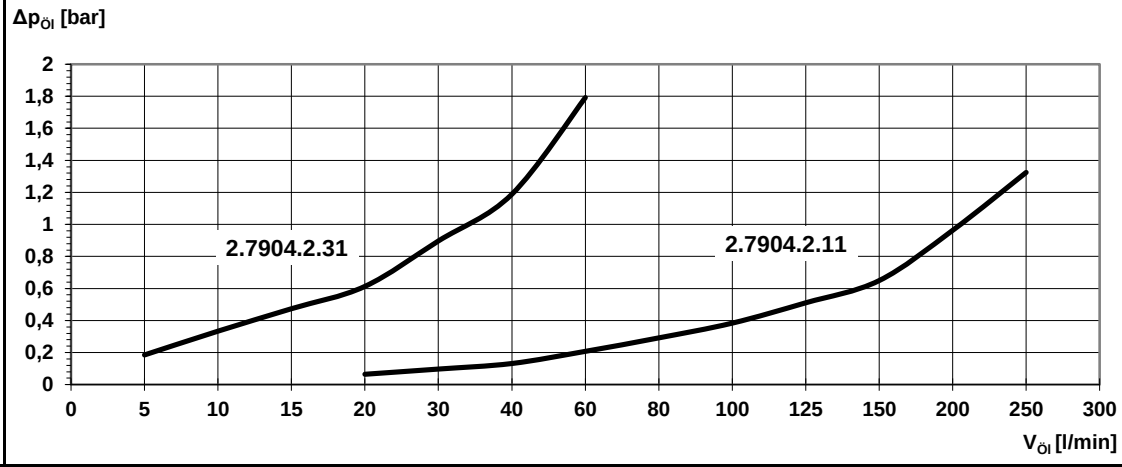
Select: 2.7904.2.11 - 81.□□ (see performance diagram)
P_{01} = 0,33 kW/K ; P_V = ETD · P_{01} = 30 K · 0,33 kW/K = 9,9 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 9{,}9}{150} = 2{,}4\ K$; $\Delta t_L = \frac{9{,}9}{0{,}62} = 16\ K$

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

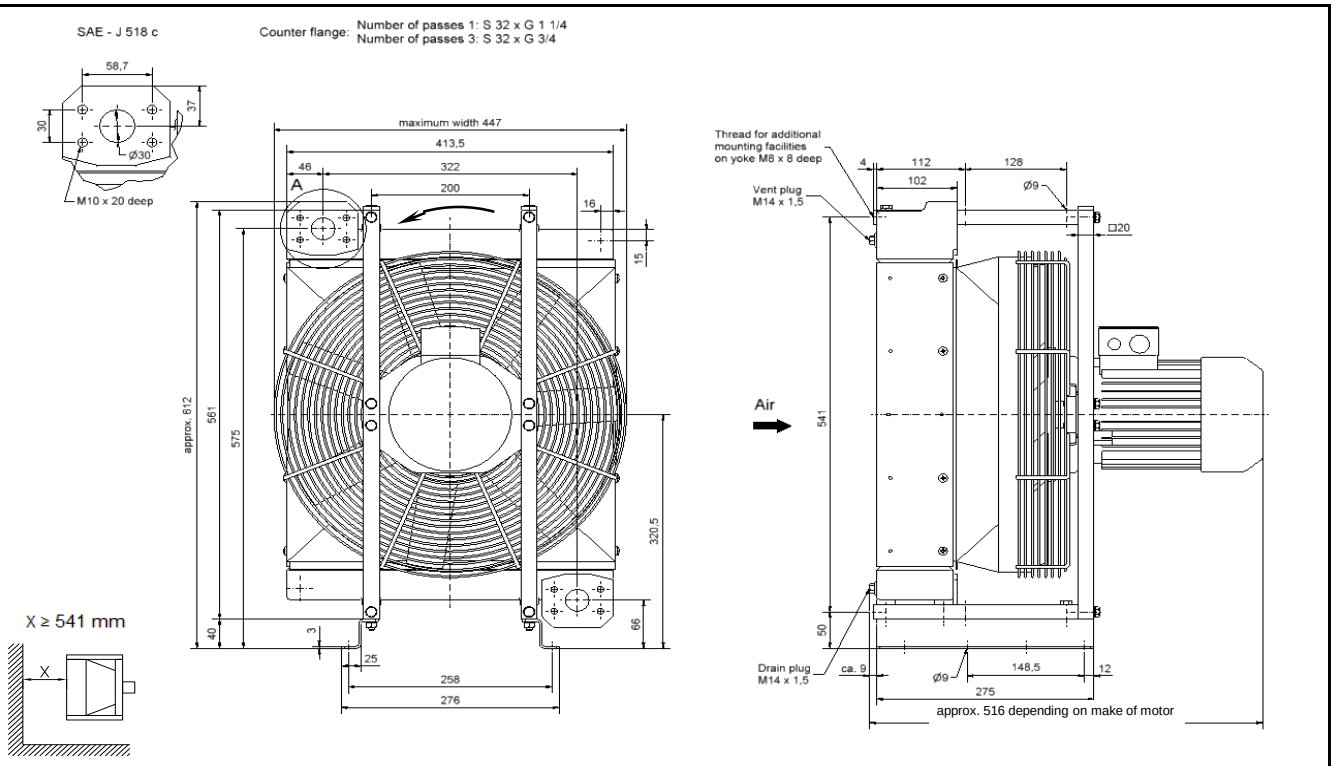
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OKAN 2.79 Size 05 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7905.2.□□ - □□.□□.□□

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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: 2.7905.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	0,16	0,16	0,16
	Fan speed 1/min	1500	1000	750
	Fan load kW	0,15	0,04	0,02
	Air flow kg/s	0,74	0,48	0,36
	Motor power kW	0,55 [IE2]	0,37 [IE2]	0,25 [IE2]
	Motor class	230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange	80 / IM B14 / C120		
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	34,0	33,5	38,5
	Weight without motor kg	26,0	26,0	26,0
	Oil content l	5	5	5
	Noise level 1m/7m * db(A)	75 / 63	64 / 52	57 / 45
	Standard-Cooler Type: ZNo.	**2.7905.2.11-51.00.00** **210 001 954 0**	**2.7905.2.11-31.00.00** **210 002 058 0**	**2.7905.2.11-11.00.00** **210 002 642 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°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: 06.2023

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OKAN 2.79 Size 05 AC

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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 = 21 kW ; $V_{Öl}$ = 60 l/min ; $t_{ÖlE}$ = 90 °C ; t_{LE} = 30 °C

Calculated: ETD = 90 - 30 = 60 K

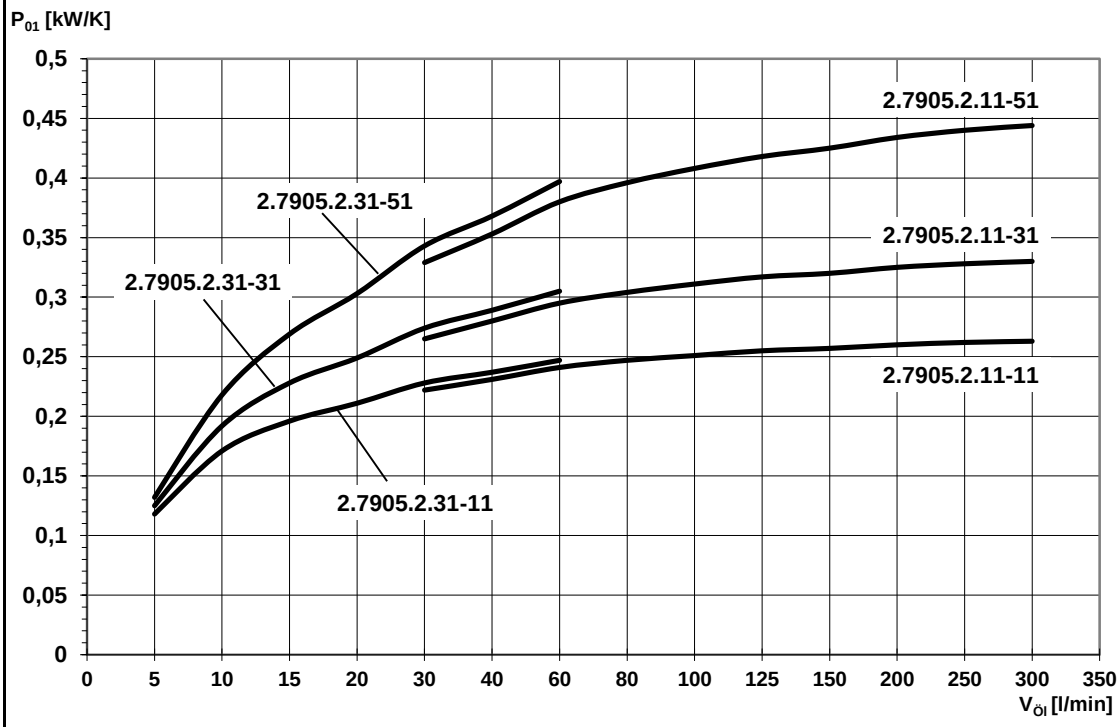
$$P_{01} = \frac{21\ kW}{60\ K} = 0{,}35\ kW/K$$

Select: 2.7905.2.11 - 51.☐☐ (see performance diagram)

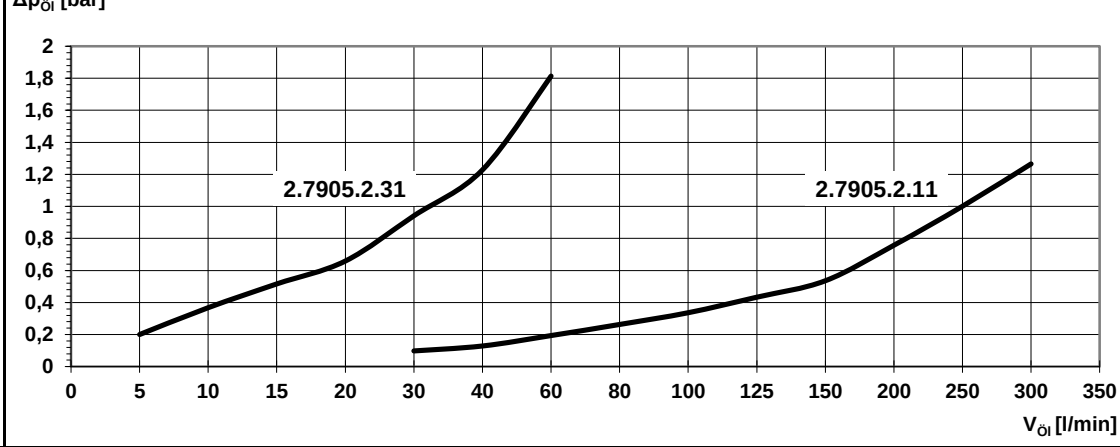
P_{01} = 0,38 kW/K ; P_V = ETD · P_{01} = 60 K · 0,38 kW/K = 22,8 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 22{,}8}{60}$ = 13,7 K ; $\Delta t_L = \frac{22{,}8}{0{,}74}$ = 30,8 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

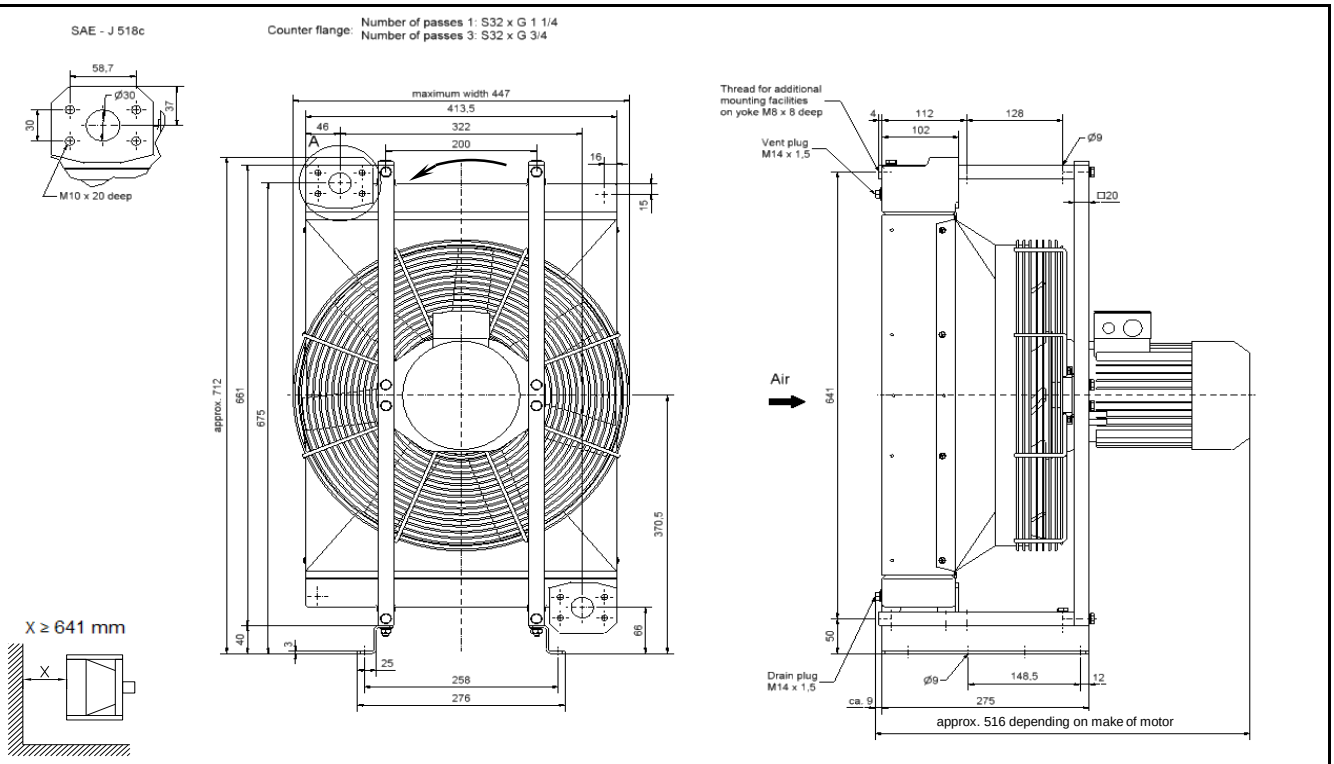
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OKAN 2.79 Size 06 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7906.2.□□ - □□.□□.□□

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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: 2.7906.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	0,2	0,2	0,2
	Fan speed 1/min	1500	1000	750
	Fan load kW	0,15	0,04	0,01
	Air flow kg/s	0,74	0,48	0,36
	Motor power kW	0,55 [IE2]	0,37 [IE2]	0,25 [IE2]
	Motor class	230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange	80 / IM B14 / C120		
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	37,0	36,5	38,5
	Weight without motor kg	29,0	29,0	29,0
	Oil content l	5,5	5,5	5,5
	Noise level 1m/7m * db(A)	75 / 63	65 / 53	58 / 46
	Standard-Cooler Type: ZNo.	**2.7906.2.11-51.00.00** **210 001 980 0**	**2.7906.2.11-31.00.00** **210 002 743 0**	**2.7906.2.11-11.00.00** **210 002 744 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°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.			

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OKAN 2.79 Size 06 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7906.2.☐☐ - ☐☐.☐☐.☐☐

www.funke.de

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 = 15 kW ; $V_{Öl}$ = 80 l/min ; $t_{ÖlE}$ = 75 °C ; t_{LE} = 35 °C

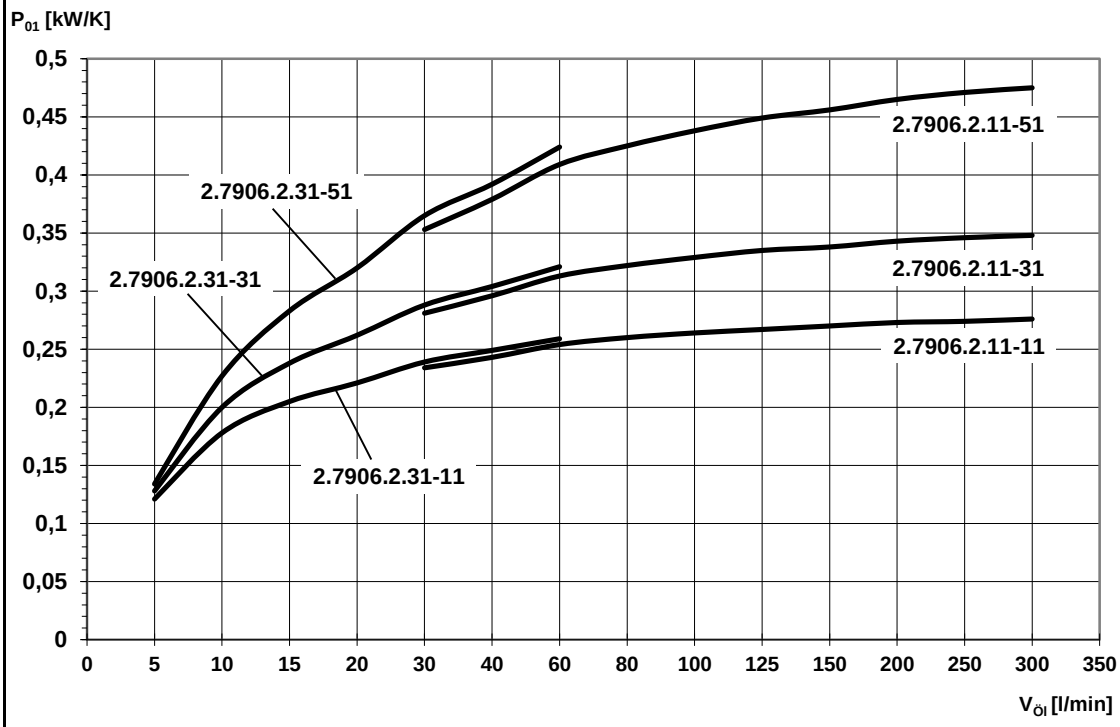
Calculated: ETD = 75 - 35 = 40 K

$$P_{01} = \frac{15\ kW}{40\ K} = 0{,}375\ kW/K$$

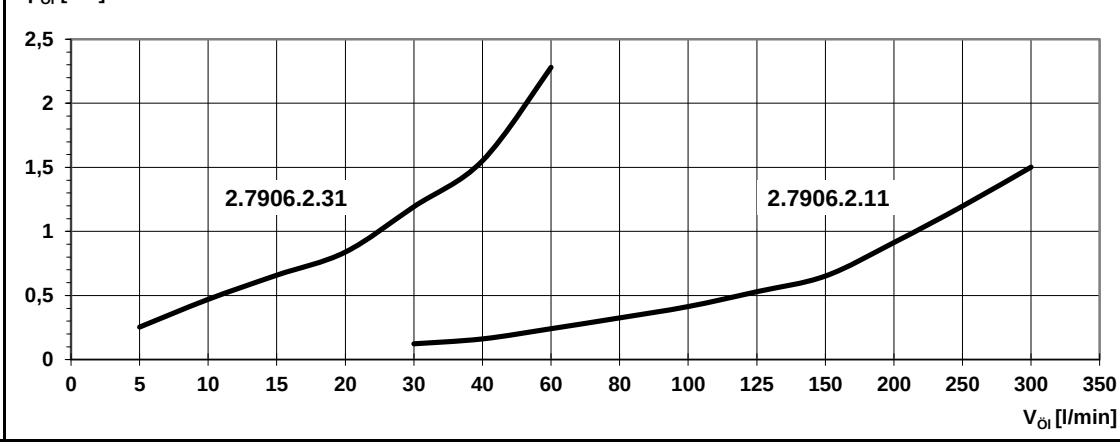
Select: 2.7906.2.11 - 51.☐☐ (see performance diagram)
P_{01} = 0,425 kW/K ; P_V = ETD · P_{01} = 40 K · 0,425 kW/K = 17 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 17}{80} = 7{,}7\ K$; $\Delta t_L = \frac{17}{0{,}74} = 23\ K$

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

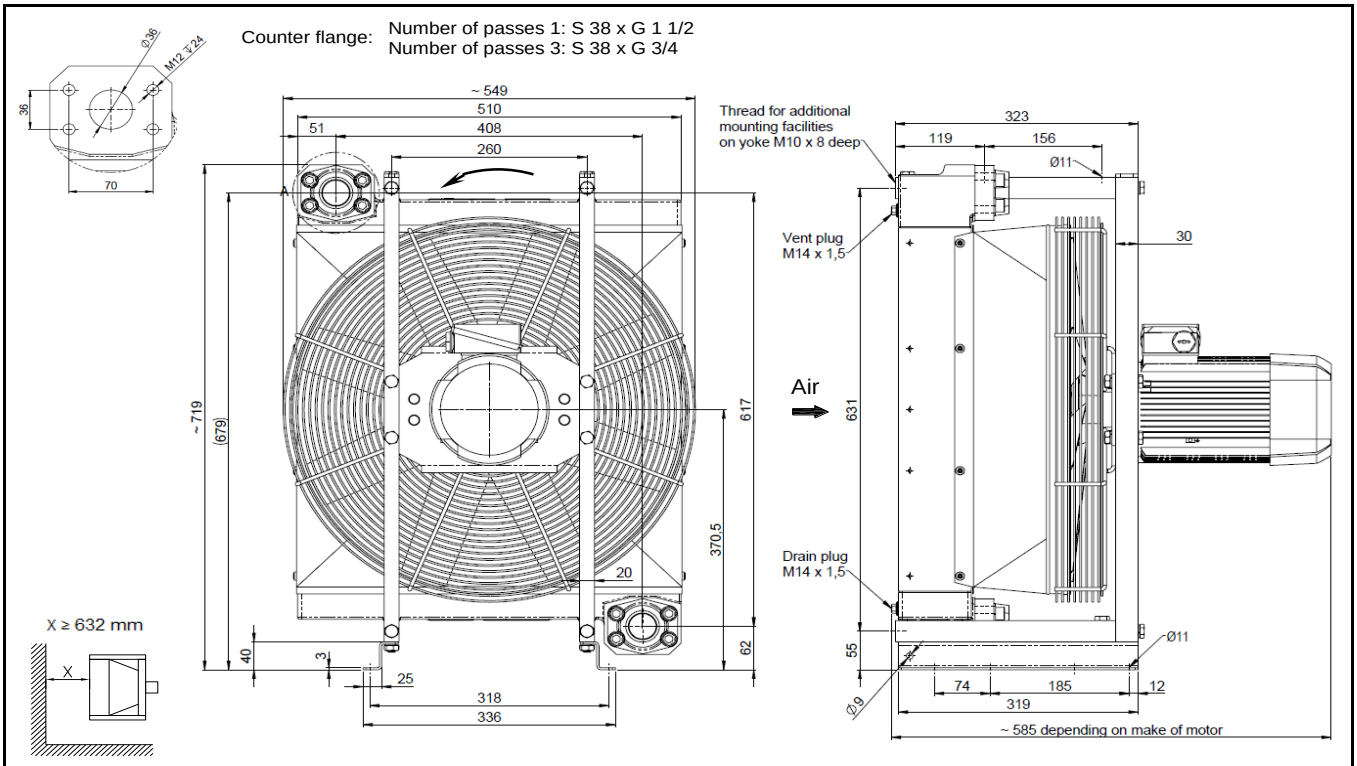
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OKAN 2.79 Size 07 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7907.2.□□ - □□.□□.□□

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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: 2.7907.2.□□ -**		**51.□□**	**31.□□**	**11.□□**
	Face area	m²	0,25	0,25	0,25
	Fan speed	1/min	1500	1000	750
	Fan load	kW	0,27	0,07	0,03
	Air flow	kg/s	1,2	0,8	0,6
	Motor power	kW	0,75 [IE3]	0,55 [IE2]	0,25 [IE2]
	Motor class		230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange		80 / IM B14 / C120		
	degree of protection / insulation (motor)		IP 55 / F(155) - B(130)		
	Total weight with motor	kg	51,0	47,0	47,0
	Weight without motor	kg	37,0	37,0	37,0
	Oil content	l	6,2	6,2	6,2
	Noise level 1m/7m *	db(A)	82 / 70	70 / 58	62 / 50
	Standard-Cooler	Type: ZNo.	**2.7907.2.11-51.00.00** **210 002 001 0**	**2.7907.2.11-31.00.00** **210 002 002 0**	**2.7907.2.11-11.00.00** **210 002 595 0**
Max. working pressure	16 bar				
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C			Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium		Fan shroud: Steel (zinc plated)		
	Fan: Plastic		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.				

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OKAN 2.79 Size 07 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7907.2.☐☐ - ☐☐.☐☐.☐☐

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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 = 18 kW ; $V_{Öl}$ = 100 l/min ; $t_{ÖlE}$ = 80 °C ; t_{LE} = 30 °C

Calculated: ETD = 80 - 30 = 50 K

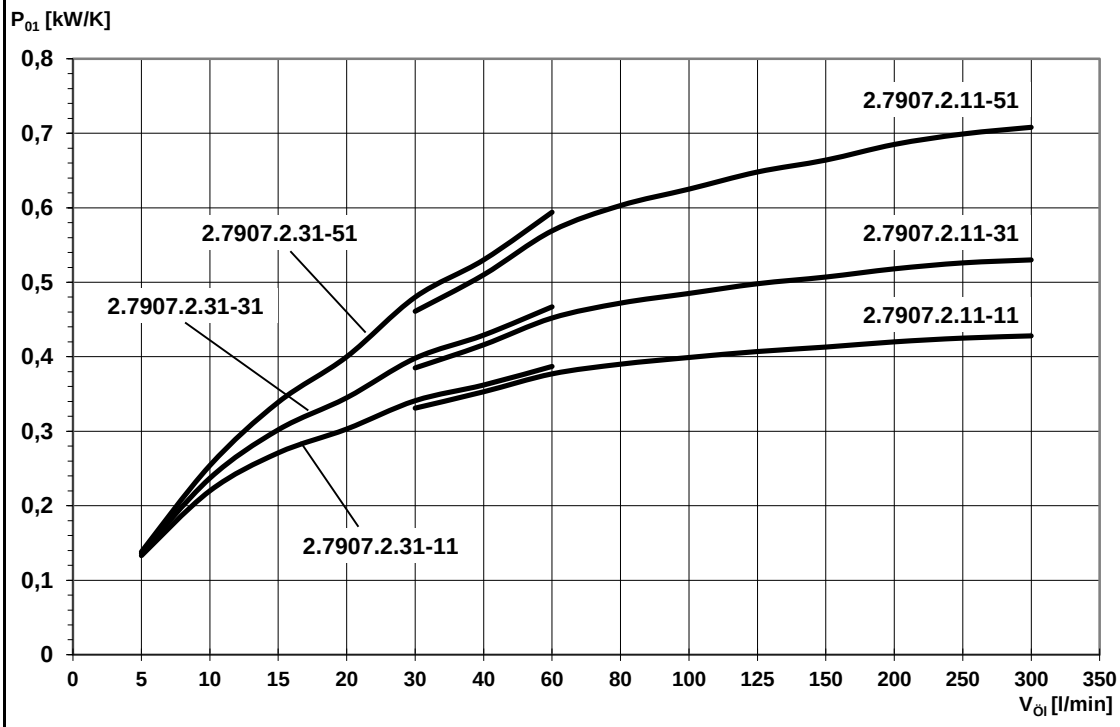
$$P_{01} = \frac{18\ kW}{50\ K} = 0{,}36\ kW/K$$

Select: 2.7907.2.11 - 11.☐☐ (see performance diagram)

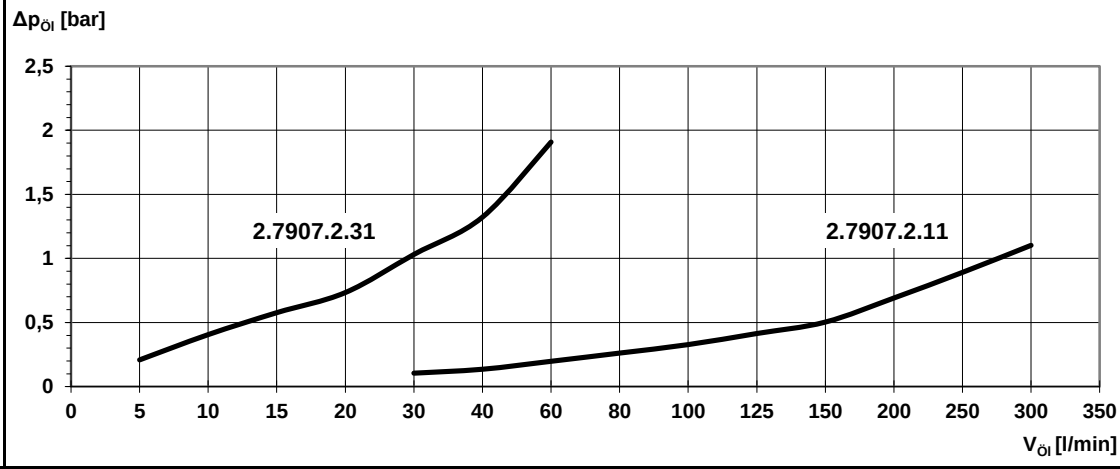
P_{01} = 0,4 kW/K ; P_V = ETD · P_{01} = 50 K · 0,4 kW/K = 20 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 20}{100} = 7{,}2\ K$; $\Delta t_L = \frac{20}{0{,}6} = 33{,}3\ K$

Performance diagram



Pressure loss diagram



ΔpÖl - 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

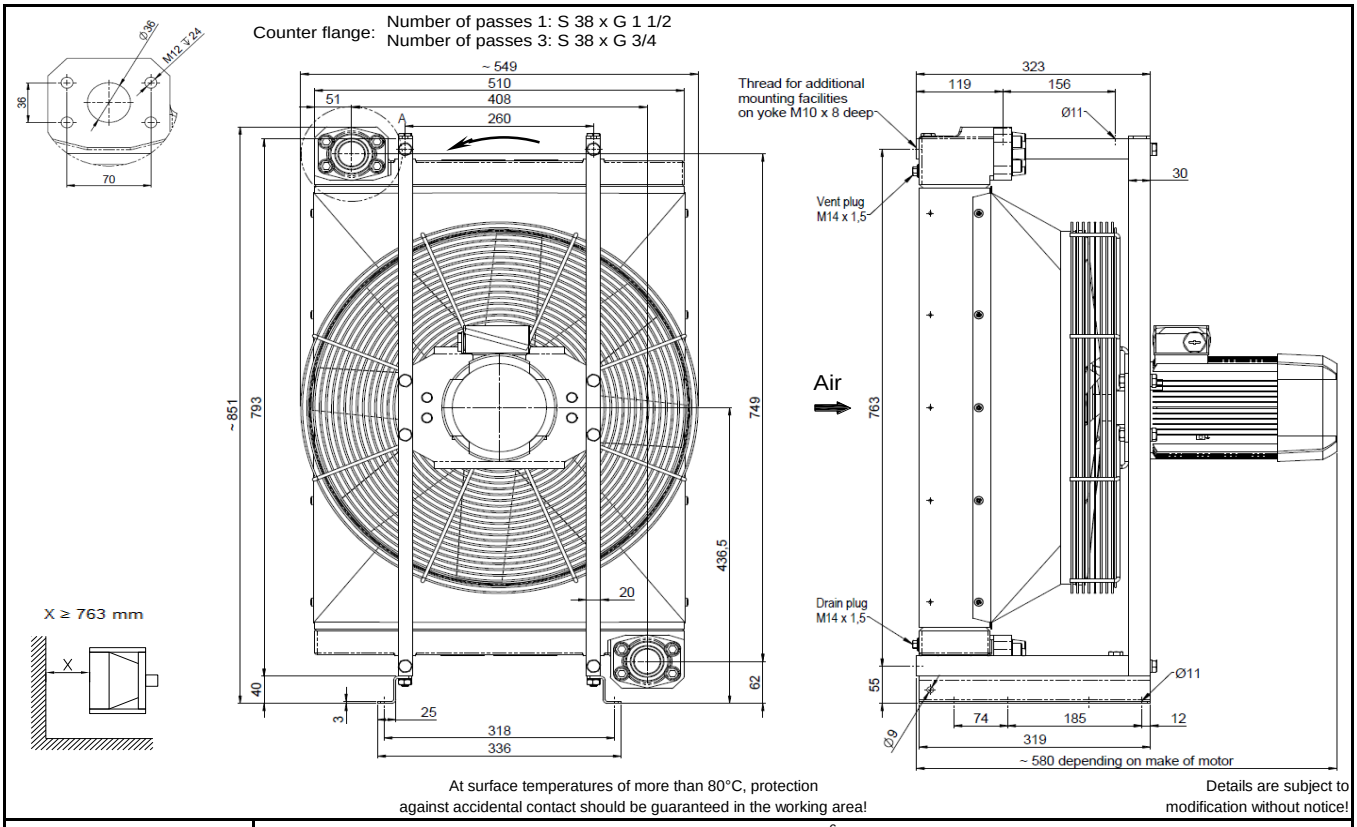
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OKAN 2.79 Size 08 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7908.2.□□ - □□.□□.□□

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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: 2.7908.2.□□ -**		**51.□□**	**31.□□**	**11.□□**
	Face area	m²	0,315	0,315	0,315
	Fan speed	1/min	1500	1000	750
	Fan load	kW	0,27	0,07	0,03
	Air flow	kg/s	1,2	0,8	0,6
	Motor power	kW	0,75 [IE3]	0,55 [IE2]	0,25 [IE2]
	Motor class		230VD / 400VY 50Hz 460VY 60 Hz		
	Motor frame size / type / flange		80 / IM B14 / C120		
	degree of protection / insulation (motor)		IP 55 / F(155) - B(130)		
	Total weight with motor	kg	57,0	53,0	53,0
	Weight without motor	kg	43,0	43,0	43,0
	Oil content	l	7	7	7
	Noise level 1m/7m *	db(A)	81 / 69	72 / 60	66 / 54
	Standard-Cooler	Type: ZNo.	**2.7908.2.11-51.00.00 210 001 945 0**	**2.7908.2.11-31.00.00 210 002 331 0**	**2.7908.2.11-11.00.00 210 002 709 0**
Max. working pressure	16 bar				
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C			Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium		Fan shroud: Steel (zinc plated)		
	Fan: Plastic		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.				

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OKAN 2.79 Size 08 AC

Datasheet Oil / Air - Cooling Unit
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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 = 25 kW ; $V_{Öl}$ = 150 l/min ; $t_{ÖlE}$ = 80 °C ; t_{LE} = 30 °C

Calculated: ETD = 80 - 30 = 50 K

$$P_{01} = \frac{25\ kW}{50\ K} = 0{,}5\ kW/K$$

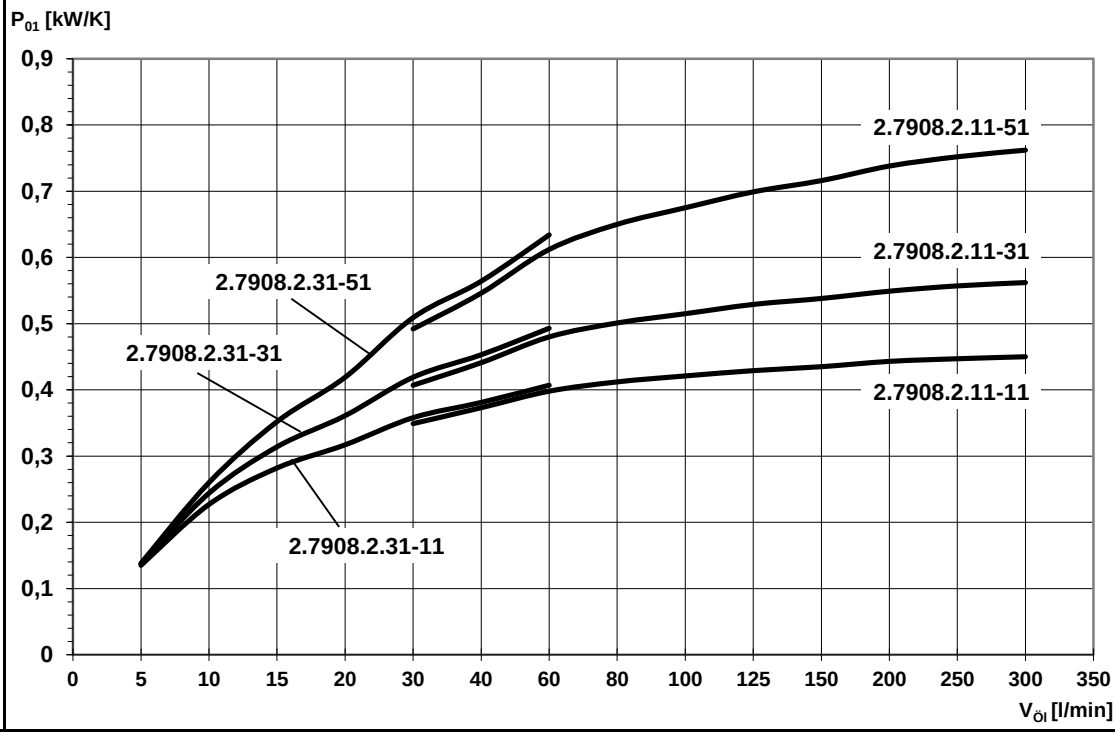
Select: 2.7908.2.11 - 31.□□ (see performance diagram)

P_{01} = 0,54 kW/K ; $P_V = ETD \cdot P_{01}$ = 50 K · 0,54 kW/K = 27 kW

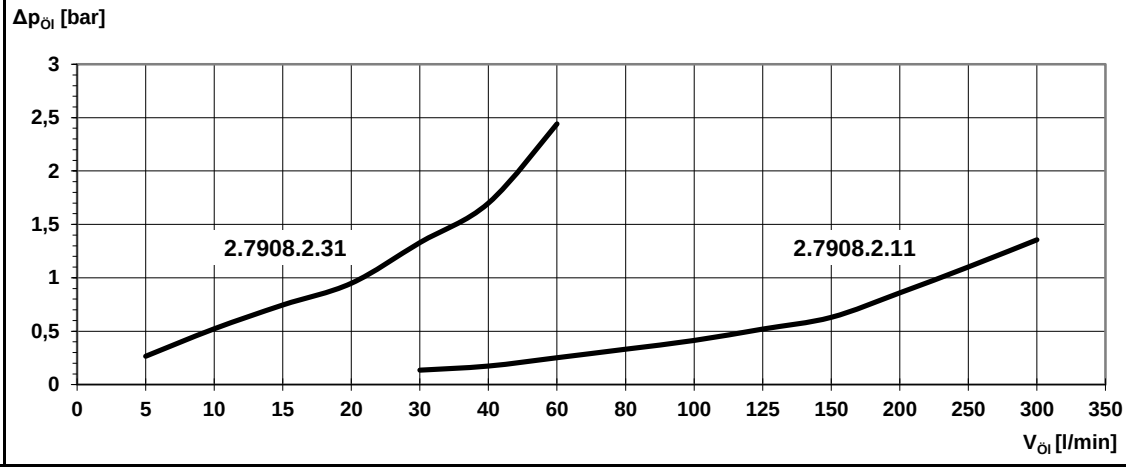
Calculated:

$$\Delta t_{Öl} = \frac{36 \cdot 27}{150} = 6{,}5\ K \quad ; \quad \Delta t_L = \frac{27}{0{,}8} = 33{,}8\ K$$

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

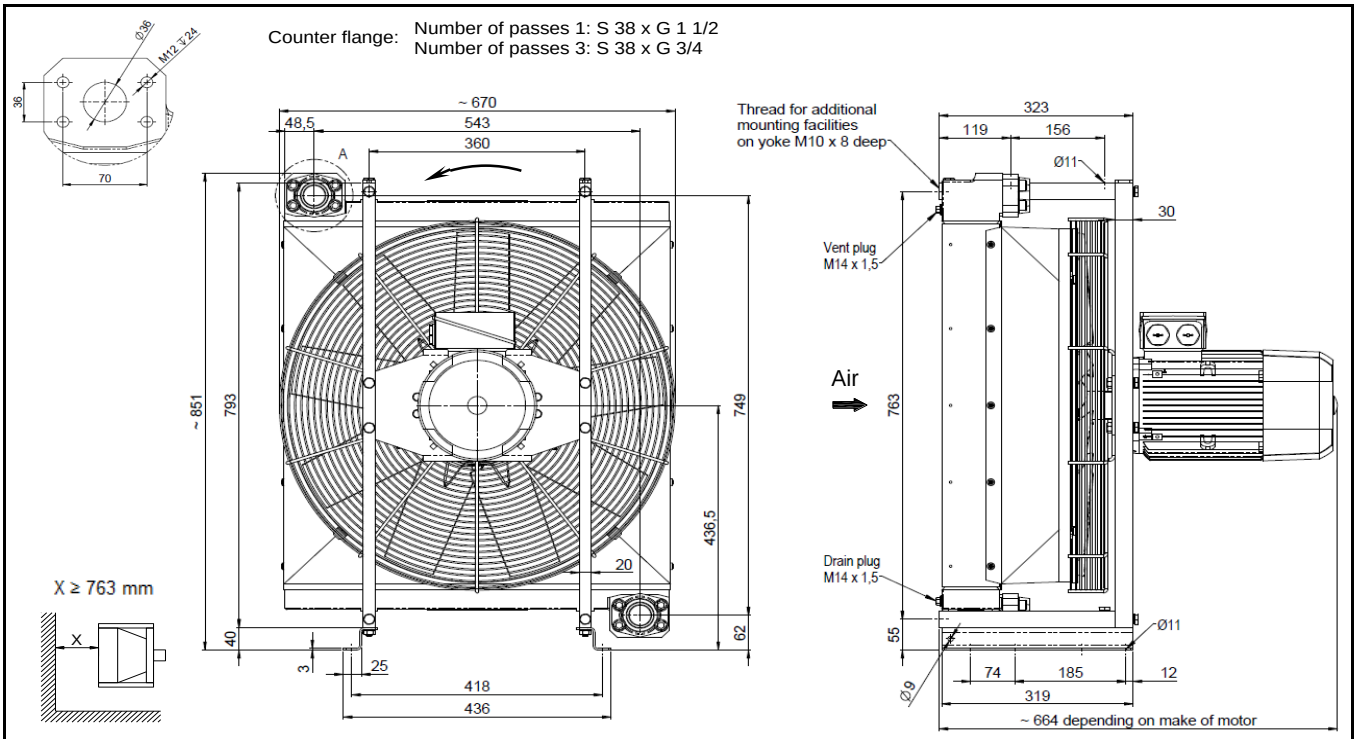
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OKAN 2.79 Size 09 AC

Datasheet Oil / Air - Cooling Unit
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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: 2.7909.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	0,4	0,4	0,4
	Fan speed 1/min	1500	1000	750
	Fan load kW	1,61	0,44	0,15
	Air flow kg/s	3,0	1,9	1,4
	Motor power kW	3,0 [IE3]	1,1 [IE3]	0,55 [IE2]
	Motor class	400VD / 690VY 50Hz	230VD / 400VY 50Hz	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	82,0	71,0	65,0
	Weight without motor kg	52,0	52,0	52,0
	Oil content l	8,8	8,8	8,8
	Noise level 1m/7m * db(A)	90 / 78	80 / 68	75 / 63
	Standard-Cooler Type: ZNo.	**2.7909.2.11-51.01.00 210 002 734 0**	**2.7909.2.11-31.00.00 210 001 952 0**	**2.7909.2.11-11.00.00 210 001 929 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium	Fan shroud: Steel (zinc plated)		
	Fan: Plastic	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.			

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OKAN 2.79 Size 09 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7909.2.☐☐ - ☐☐.☐☐.☐☐

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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	$\Delta t_{ÖL}$	=	$36 \cdot P_V / V_{Öl}$	[K]

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

Example

Given: $P_V = 43$ kW ; $V_{Öl} = 125$ l/min ; $t_{ÖlE} = 80$ °C ; $t_{LE} = 30$ °C

Calculated: ETD = 80 - 30 = 50 K

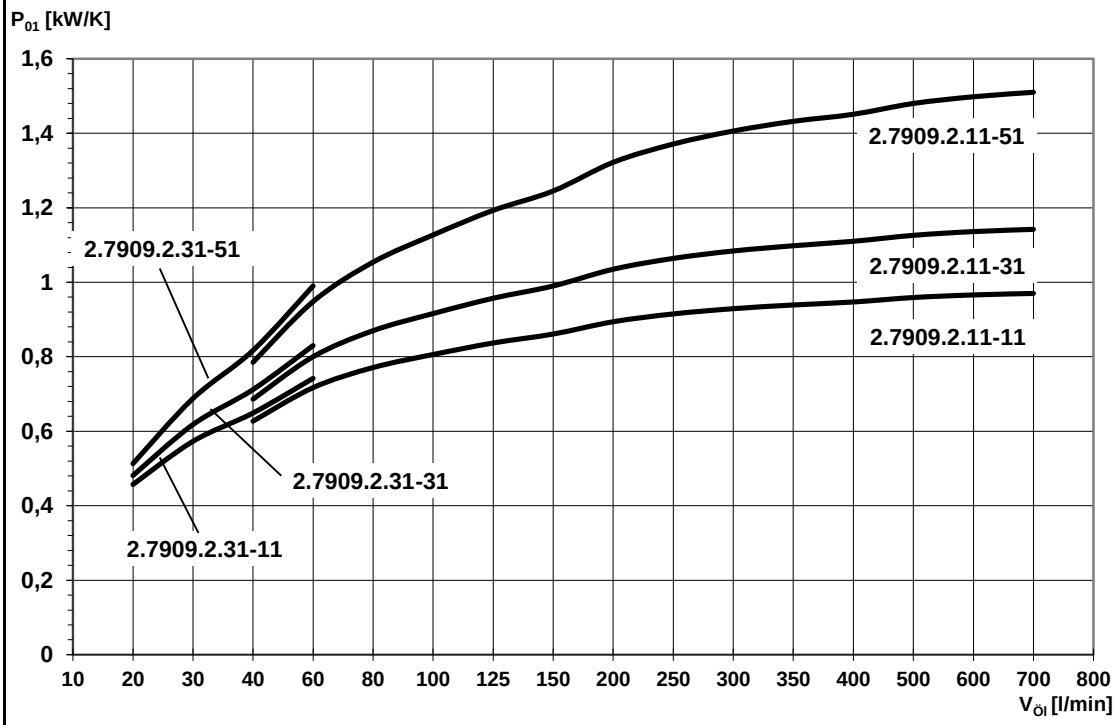
$$P_{01} = \frac{43\ kW}{50\ K} = 0{,}86\ kW/K$$

Select: 2.7909.2.11 - 31.☐☐ (see performance diagram)

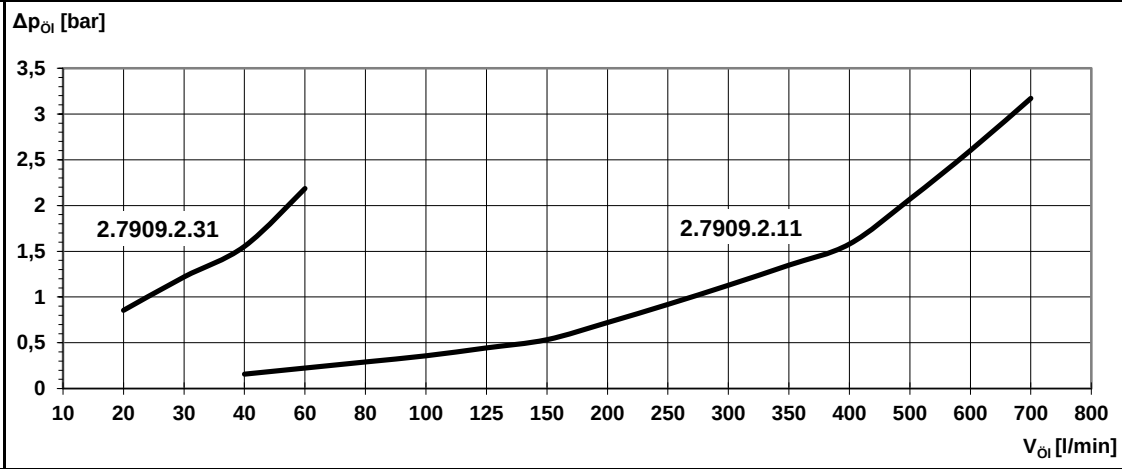
$P_{01} = 0{,}96$ kW/K ; $P_V = ETD \cdot P_{01} = 50\ K \cdot 0{,}96\ kW/K = 48$ kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 48}{125} = 13{,}8$ K ; $\Delta t_L = \frac{48}{1{,}9} = 25{,}3$ K

Performance diagram



Pressure loss diagram



$\Delta p_{Öl}$ - Correction

The Δp -value obtained from the curves applies for $\nu = 32$ 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

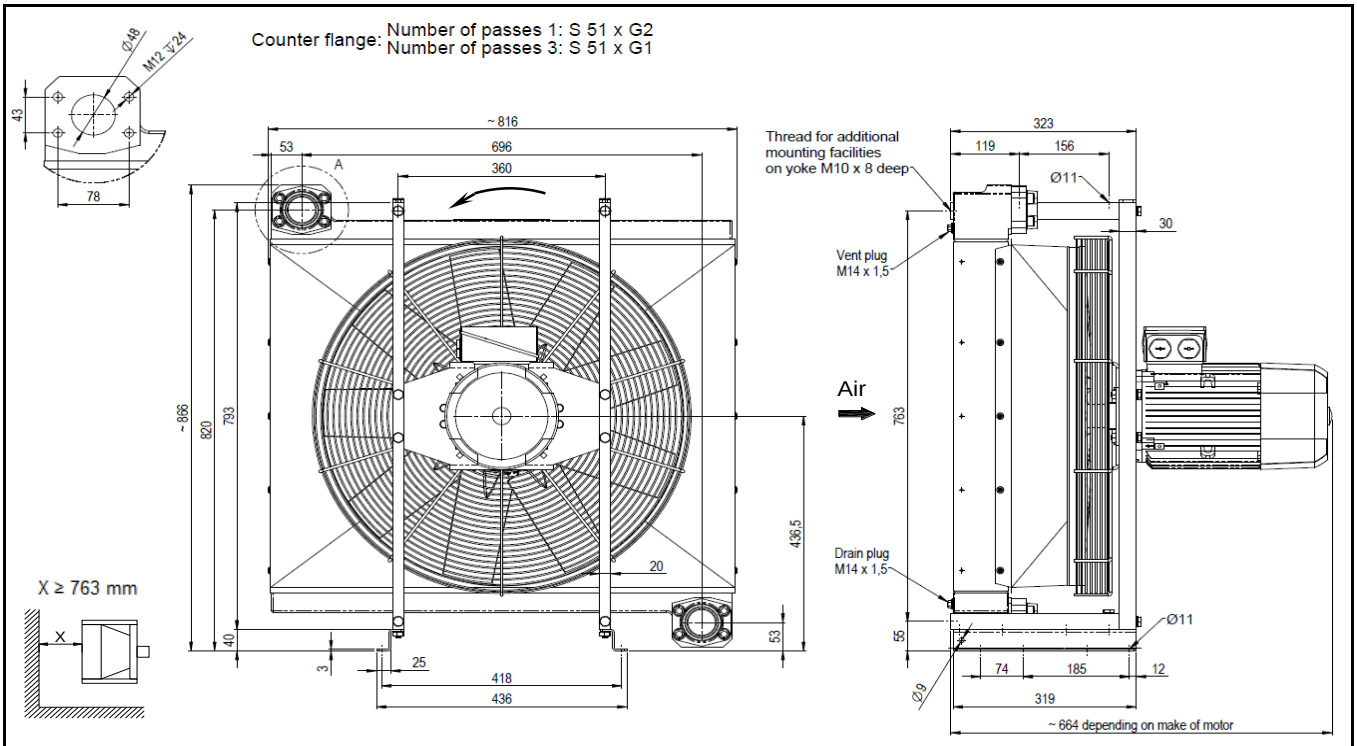
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OKAN 2.79 Size 10 AC

Datasheet Oil / Air - Cooling Unit
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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 [IE3]	1,1 [IE3]	0,55 [IE2]
	Motor class	400VD / 690VY 50Hz	230VD / 400VY 50Hz	
	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	88,0	77,0	71,0
	Weight without motor kg	58,0	58,0	58,0
	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 -20°C until +40°C **	
Material	Cooler: Aluminium	Fan shroud: Steel (zinc plated)		
	Fan: Plastic	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.			

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OKAN 2.79 Size 10 AC

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

www.funke.de

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

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

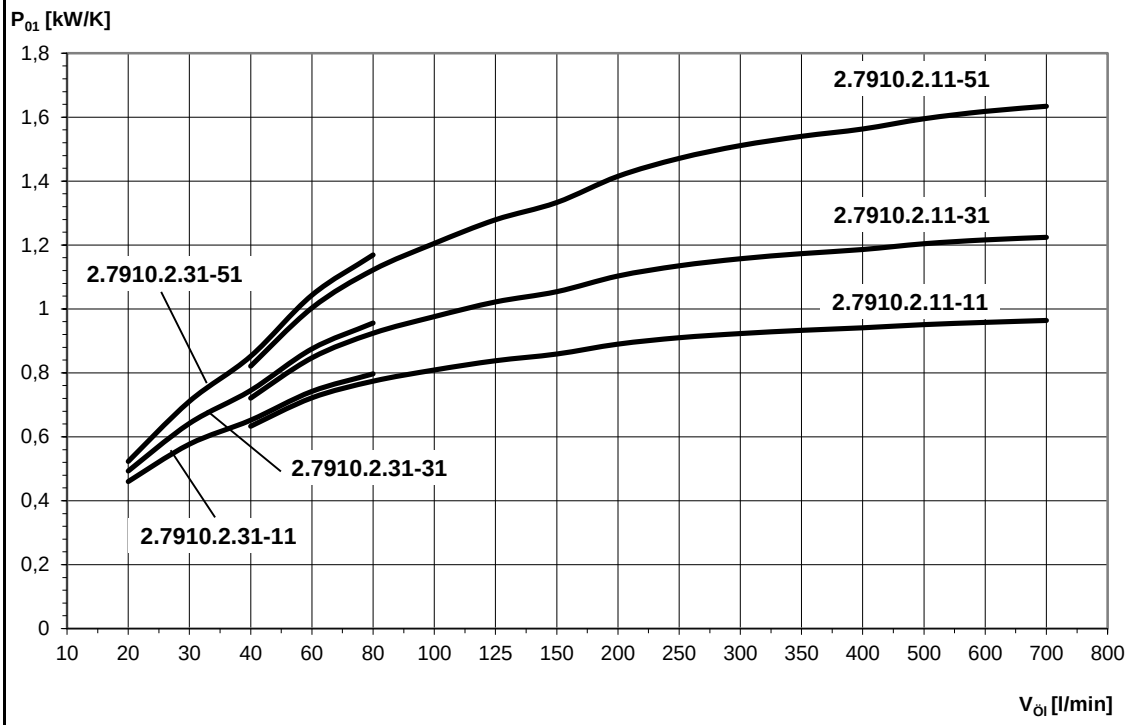
Select: 2.7910.2.11 - 51.☐☐ (see performance diagram)

P_{01} = 1,3 kW/K ; P_V = ETD · P_{01} = 50 K · 1,3 kW/K = 65 kW

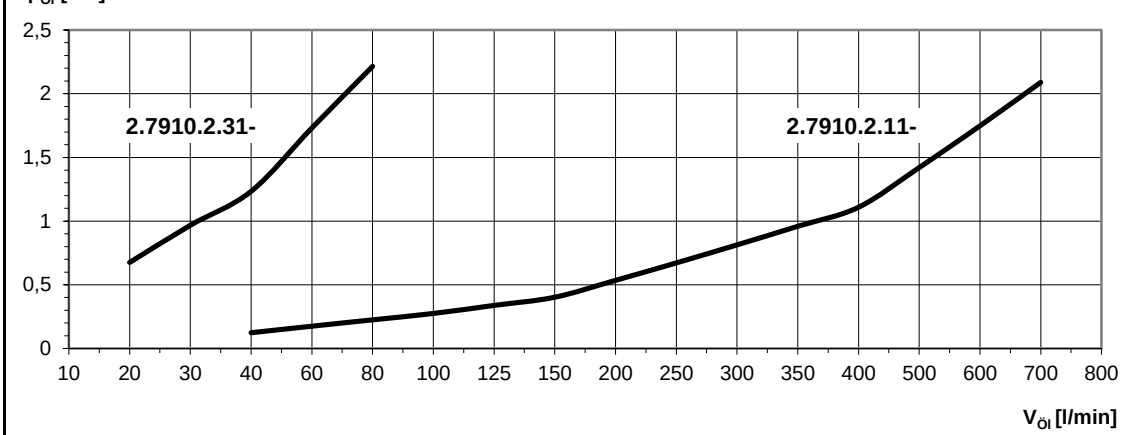
Calculated:

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

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

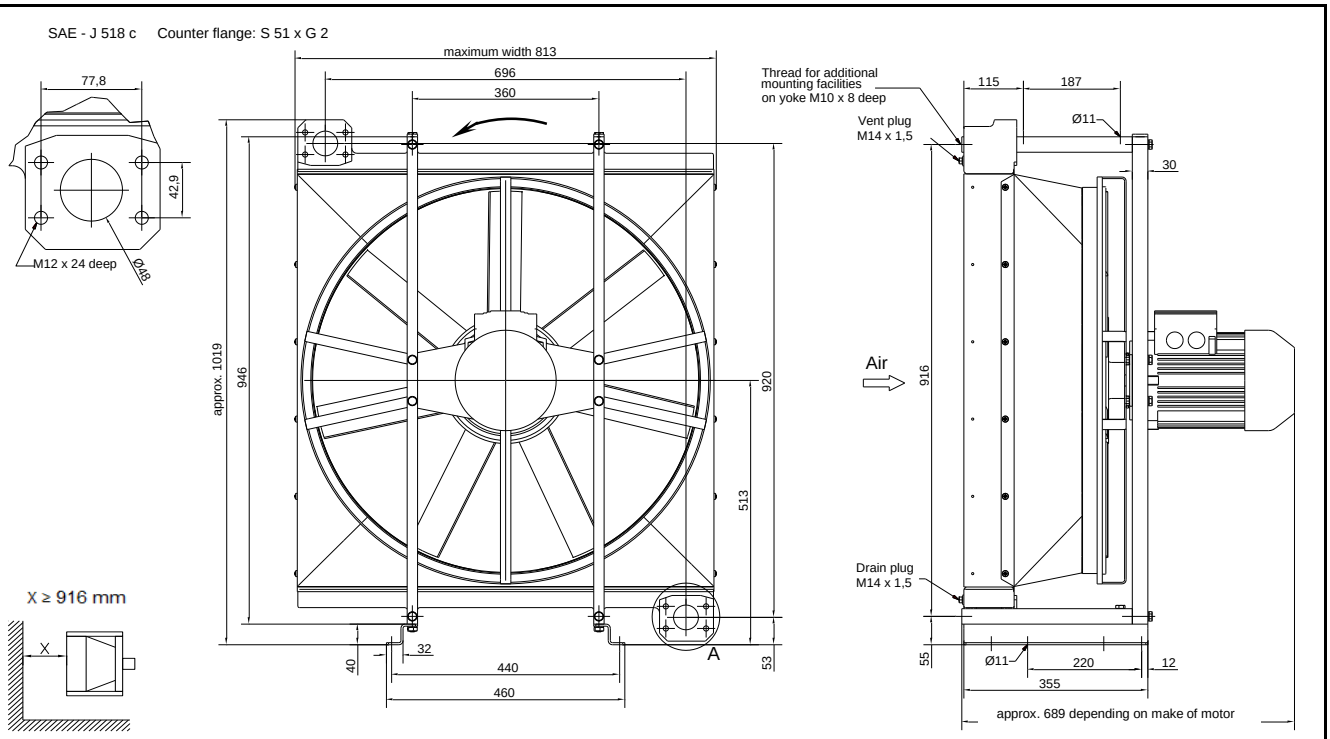
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OKAN 2.79 Size 11 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7911.2.□□ - □□.□□.□□

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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: 2.7911.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	0,6	0,6	0,6
	Fan speed 1/min	1500	1000	750
	Fan load kW	2,07	0,63	0,25
	Air flow kg/s	4,8	3,2	2,4
	Motor power kW	4,0 [IE3]	1,5 [IE3]	0,75 [IE3]
	Motor class	400VD / 690VY 50Hz	230VD / 400VY 50Hz	
	Motor frame size / type / flange	112M / IM B14 / C160	100L / IM B14 / C160	
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	109,0	100,0	95,0
	Weight without motor kg	75,0	75,0	75,0
	Oil content l	11	11	11
	Lautstärke 1m/7m * db(A)	92 / 80	82 / 70	76 / 64
	Standard-Cooler Type: Zno.	**2.7911.2.11-51.01.00 210 002 749 0**	**2.7911.2.11-31.07.00 210 001 897 0**	**2.7911.2.11-11.00.00 210 002 565 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium	Fan shroud: Steel (zinc plated)		
	Fan: Plastic	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.			

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OKAN 2.79 Size 11 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7911.2.☐☐ - ☐☐.☐☐.☐☐

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Introduction

1. Following data are known:

Dissipation loss	P_V		
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	$\Delta t_{ÖL}$	=	$36 \cdot P_V / V_{Öl}$	[K]

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

Example

Given: $P_V = 75$ kW ; $V_{Öl} = 200$ l/min ; $t_{ÖlE} = 70$ °C ; $t_{LE} = 30$ °C

Calculated: ETD = 70 - 30 = 40 K

$$P_{01} = \frac{75\ KW}{40\ K} = 1{,}875\ KW/K$$

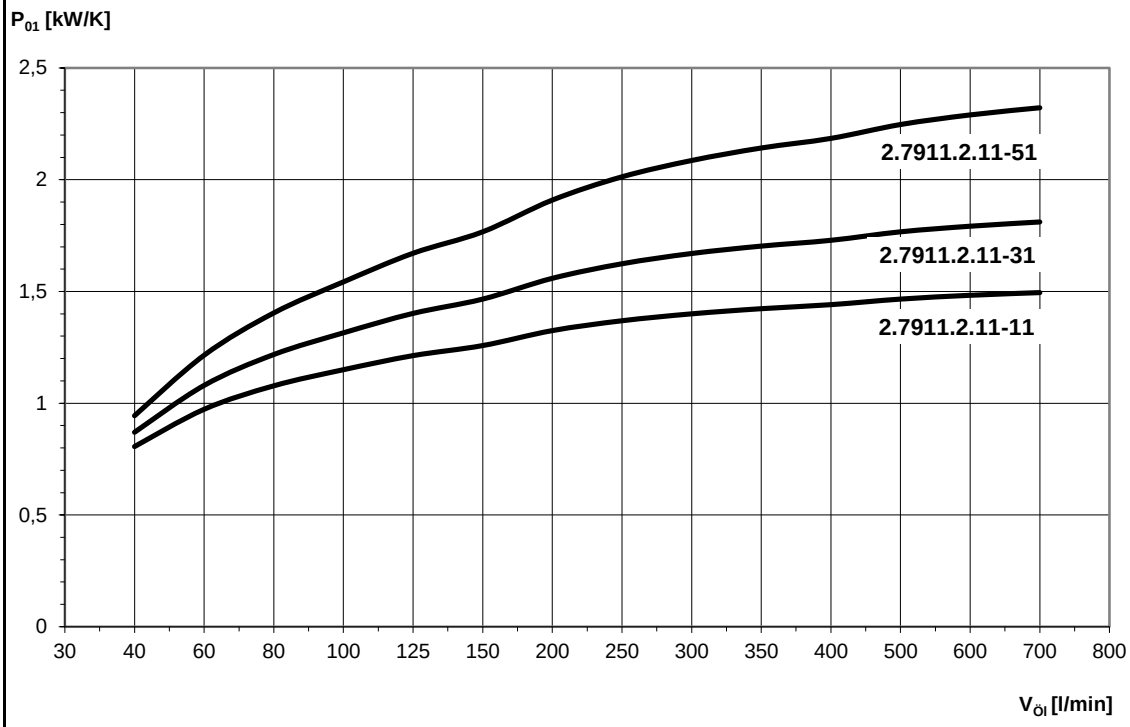
Select: 2.7911.2.11 - 51.☐☐ (see performance diagram)

$P_{01} = 1{,}9$ kW/K ; $P_V = ETD \cdot P_{01} = 40\ K \cdot 1{,}9\ kW/K = 76$ kW

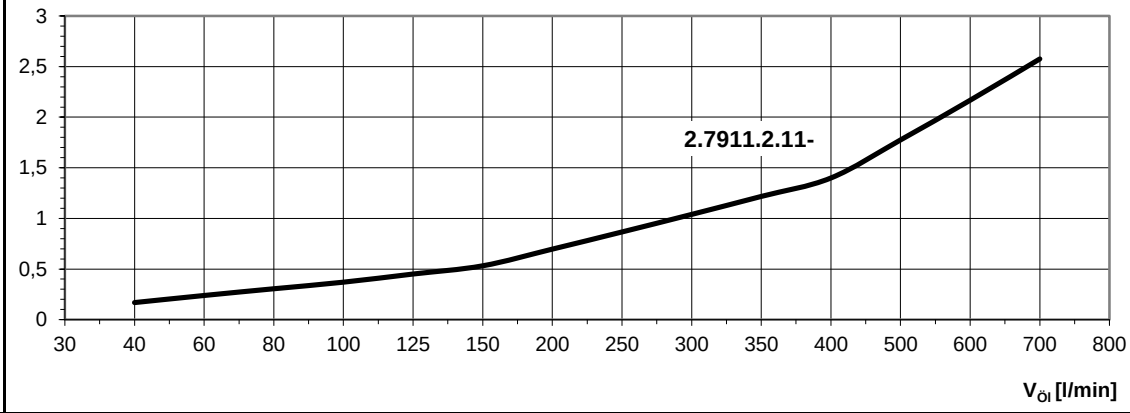
Calculated:

$$\Delta t_{Öl} = \frac{36 \cdot 76}{200} = 13{,}7\ K \quad ; \quad \Delta t_L = \frac{76}{4{,}8} = 15{,}8\ K$$

Performance diagram



Pressure loss diagram



$\Delta p_{Öl}$ - Correction

The Δp -value obtained from the curves applies for $\nu = 32$ 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

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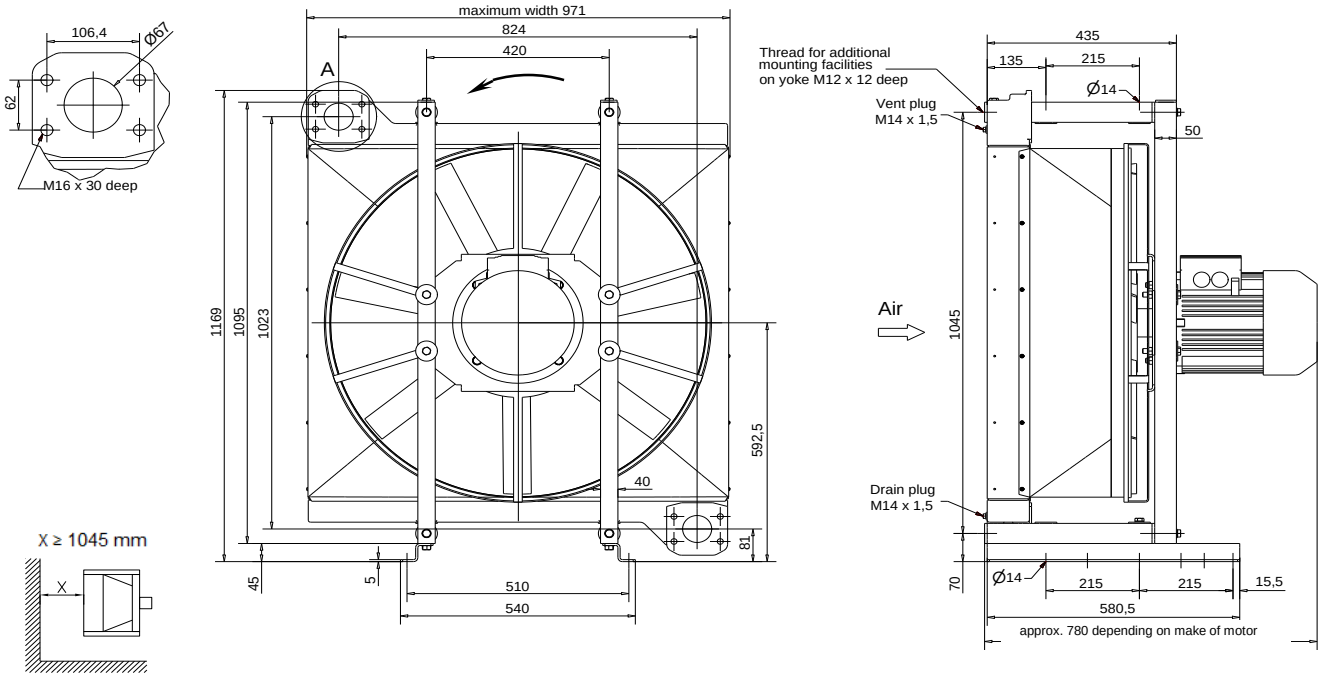
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OKAN 2.79 Size 13 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7913.2.□□ - □□.□□.□□

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Counter flange: welding flange SAE - J 518 c x 3 Zoll



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: 2.7913.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	0,8	0,8	0,8
	Fan speed 1/min	1500	1000	750
	Fan load kW	3,49	1,71	0,76
	Air flow kg/s	7,4	5,4	4,1
	Motor power kW	4,0 [IE3]	3,0 [IE3]	2,2 [IE3]
	Motor class	400VD / 690VY 50Hz		230VD / 400VY 50Hz
	Motor frame size / type / flange	112M / IM B14 / C160	IM B5 / 132S	
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	149,0	158,0	157,0
	Weight without motor kg	115,0	115,0	115,0
	Oil content l	18	18	18
	Noise level 1m/7m * db(A)	92 / 80	85 / 73	79 / 67
	Standard-Kühler Type: / ZNo.	**2.7913.2.11-51.01.00 210 002 745 0**	**2.7913.2.11-31.01.00 210 002 746 0**	**2.7913.2.11-11.07.00 210 001 938 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°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.			

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OKAN 2.79 Size 13 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7913.2.☐☐ - ☐☐.☐☐.☐☐

www.funke.de

Introduction

1. Following data are known:

Dissipation loss	P_V		
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	$\Delta t_{ÖL}$ =	$36 \cdot P_V / V_{Öl}$	[K]

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

Example

Given: P_V = 95 kW ; $V_{Öl}$ = 500 l/min ; $t_{ÖlE}$ = 70 °C ; t_{LE} = 30 °C

Calculated: ETD = 70 - 30 = 40 K

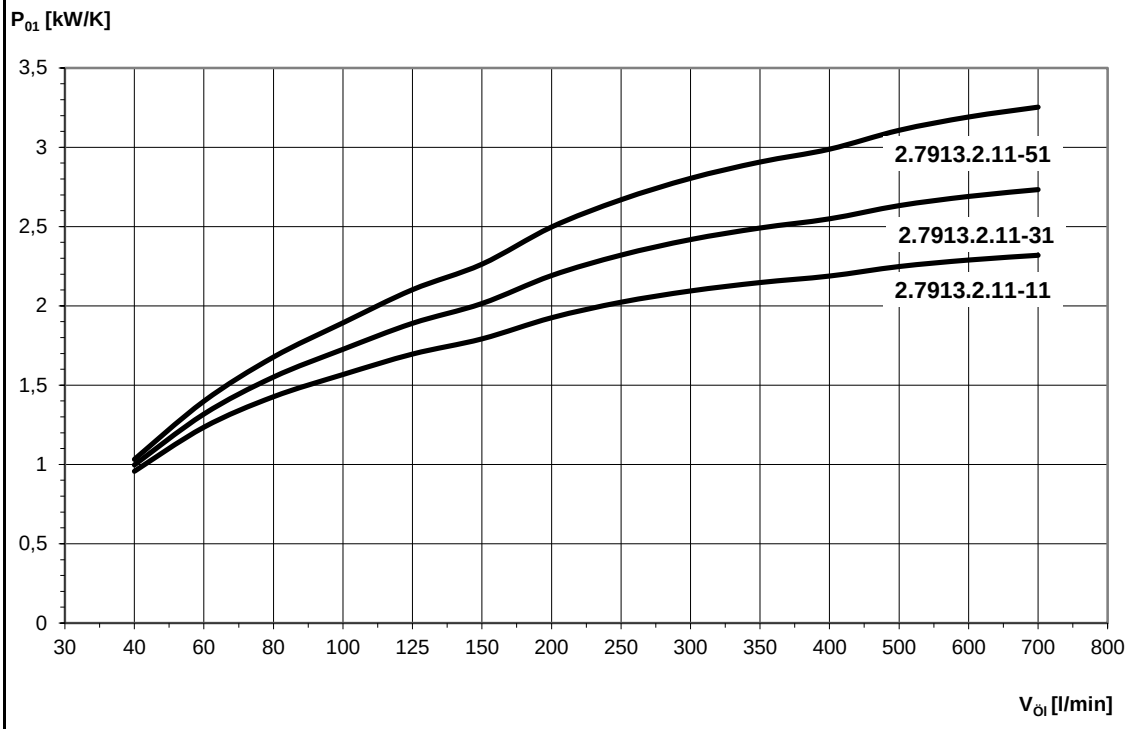
$$P_{01} = \frac{95\ kW}{40\ K} = 2{,}4\ KW/K$$

Select: 2.7913.2.11 - 31.☐☐ (see performance diagram)

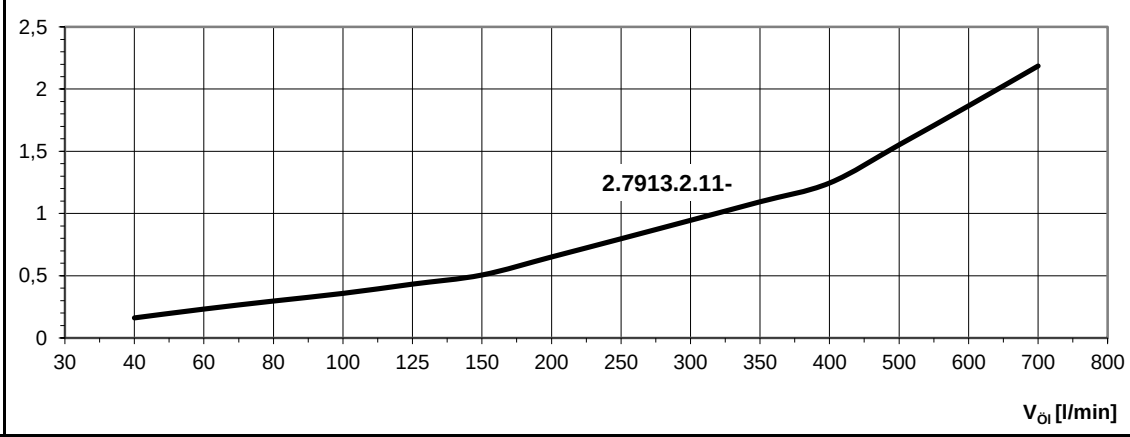
P_{01} = 2,6 kW/K ; P_V = ETD · P_{01} = 40 K · 2,6 kW/K = 104 kW

Calculated: $\Delta t_{Öl} = \frac{36 \cdot 104}{500} = 7{,}5\ K$; $\Delta t_L = \frac{104}{5{,}4} = 19{,}3\ K$

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

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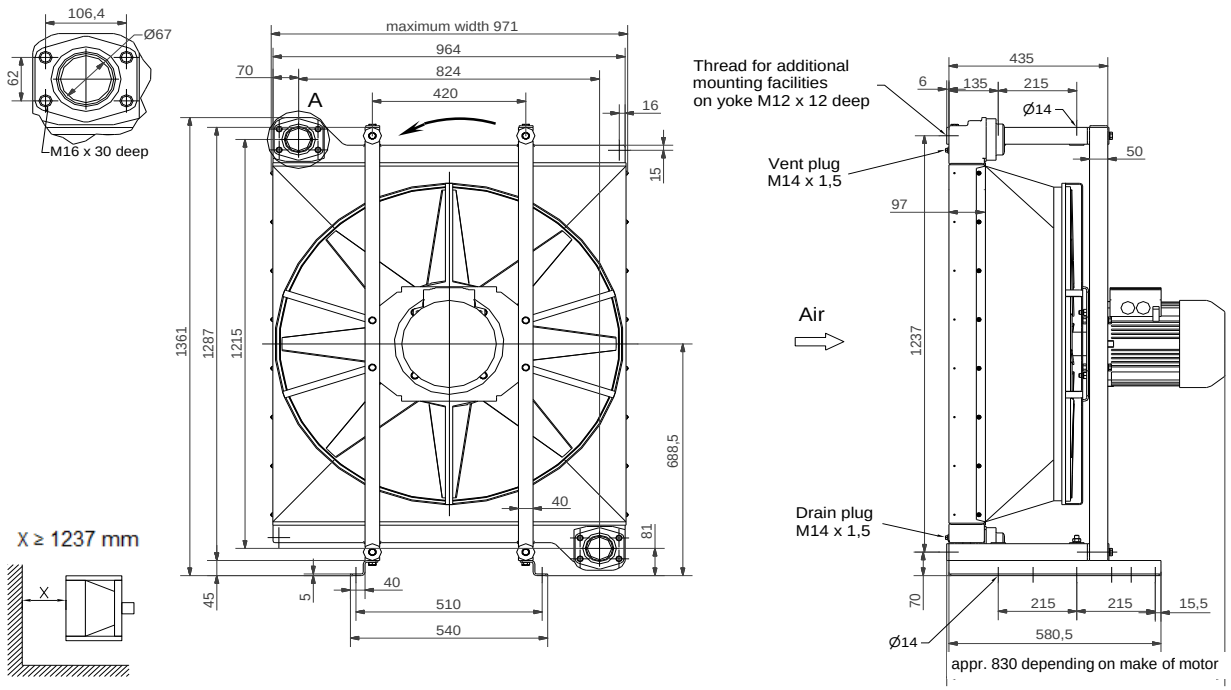
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OKAN 2.79 Size 14 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7914.2.□□ - □□.□□.□□

www.funke.de

Counter flange: welding flange SAE - J 518 c x 3 Zoll



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: 2.7914.2.□□ -**	**51.□□**	**31.□□**	**11.□□**
	Face area m²	1,0	1,0	1,0
	Fan speed 1/min	1500	1000	750
	Fan load kW	7,27	2,38	0,92
	Air flow kg/s	10	6,6	4,9
	Motor power kW	7,5 [IE3]	4,0 [IE3]	2,2 [IE3]
	Motor class	400VD / 690VY 50Hz		230VD / 400VY 50Hz
	Motor frame size / type / flange	IM B5 / 132M		IM B5 / 132S
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	198,0	185,0	175,0
	Weight without motor kg	133,0	133,0	133,0
	Oil content l	20	20	20
	Noise level 1m/7m * db(A)	95 / 83	86 / 74	79 / 67
	Standard-Cooler Type: / ZNo.	**2.7914.2.11-51.01.00 210 002 748 0**	**2.7914.2.11-31.01.00 210 002 737 0**	**2.7914.2.11-11.07.00 210 001 871 0**
Max. working pressure	16 bar			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°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.			

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OKAN 2.79 Size 14 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7914.2.☐☐ - ☐☐.☐☐.☐☐

www.funke.de

Introduction

1. Following data are known:

Dissipation loss	P_V	
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 = 85 kW ; $V_{Öl}$ = 400 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

Calculated: ETD = 60 - 30 = 30 K

$$P_{01} = \frac{85\ kW}{30\ K} = 2{,}83\ kW/K$$

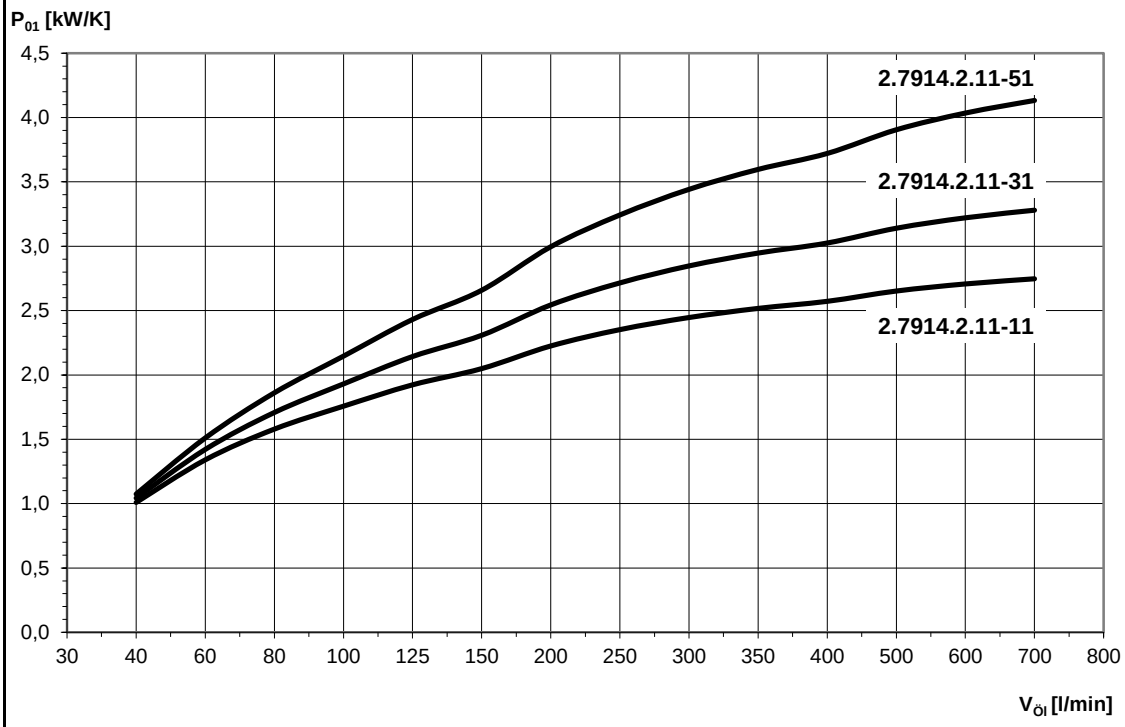
Select: 2.7914.2.11 - 31.☐☐ (see performance diagram)

P_{01} = 3,0 kW/K ; P_V = ETD · P_{01} = 30 K · 3,0 kW/K = 90 kW

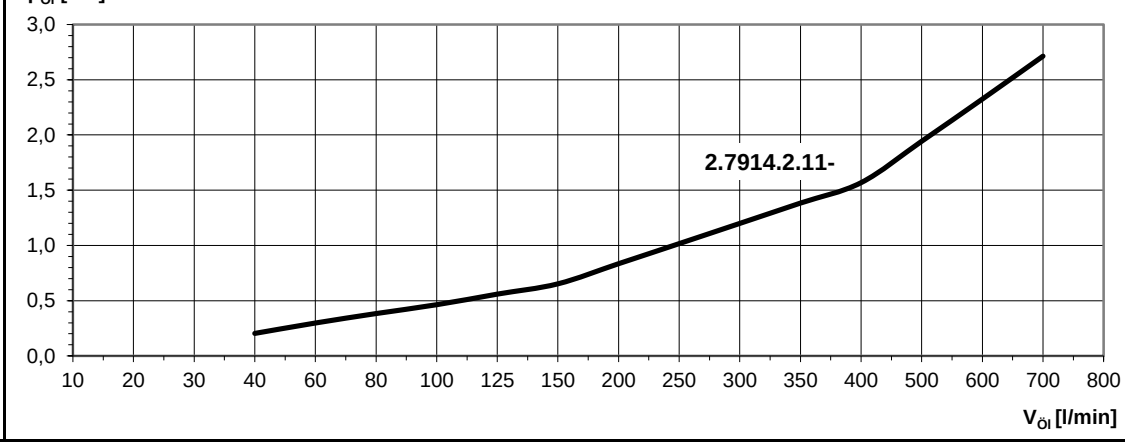
Calculated:

$$\Delta t_{Öl} = \frac{36 \cdot 90}{400} = 8{,}1\ K \quad ; \quad \Delta t_L = \frac{90}{6{,}6} = 13{,}6\ K$$

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: 06.2023

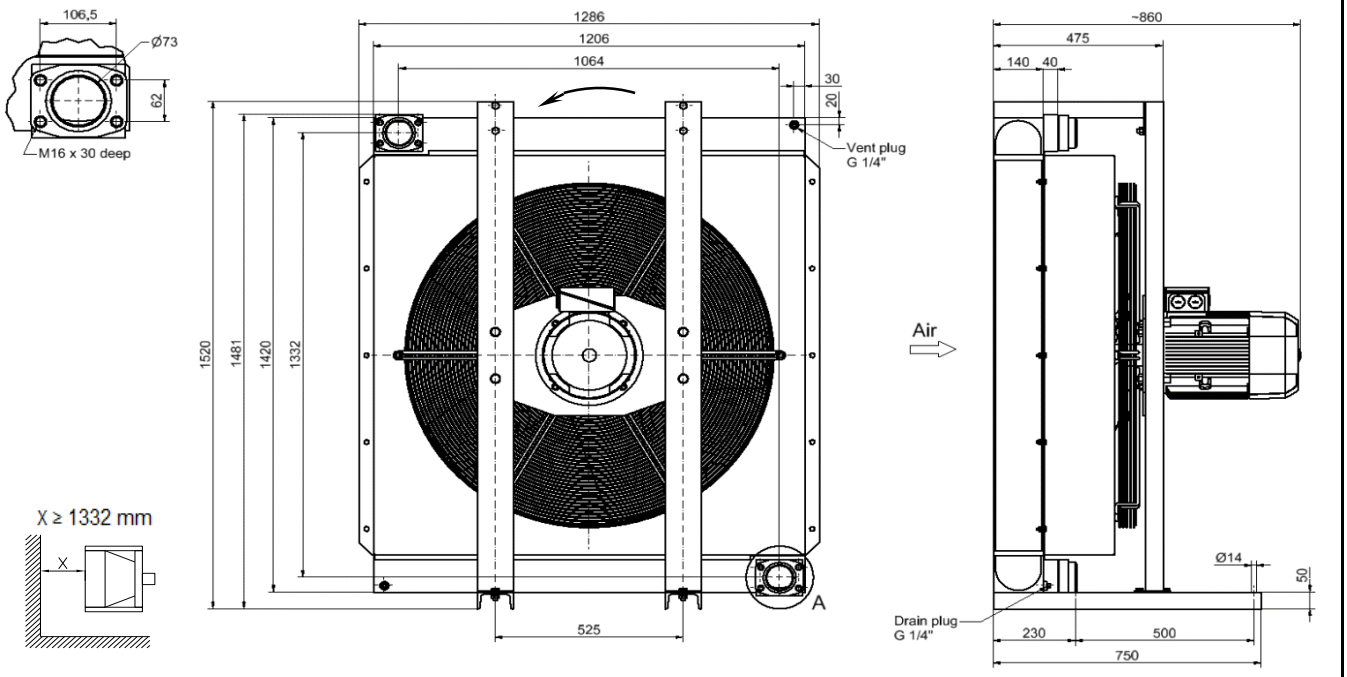
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OKAN 2.79 Size 15 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7915.2.□□ - □□.□□.□□

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Counter flange: welding flange SAE - J 518 c x 3 Zoll



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: 2.7915.2.□□ -**		**51.□□**	**31.□□**	**11.□□**
	Face area	m²	1,44	1,44	1,44
	Fan speed	1/min	1500	1000	750
	Fan load	kW	7,5	3,06	1,22
	Air flow	kg/s	12	8,5	6,3
	Motor power	kW	7,5 [IE3]	5,5 [IE3]	2,2 [IE3]
	Motor class		400VD / 690VY 50Hz		230VD / 400VY 50Hz
	Motor frame size / type / flange		IM B5 / 132M		IM B5 / 132S
	degree of protection / insulation (motor)		IP 55 / F(155) - B(130)		
	Total weight with motor	kg	335,0	334,0	312,0
	Weight without motor	kg	270,0	270,0	270,0
	Oil content	l	55	55	55
	Noise level 1m/7m *	db(A)	99 / 87	95 / 83	88 / 76
	Standard-Cooler	Type: Zno.	**2.7915.2.11-51.01.00** **210 002 750 0**	**2.7915.2.11-31.01.00** **210 002 567 0**	**2.7915.2.11-11.00.00** **210 002 030 0**
Max. working pressure	10 bar (static)				
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C			Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium (painted RAL 7035) Fan shroud: Steel (powder coated RAL 7035) Fan: Plastic Other parts: Steel (zinc plated) / painted on request				
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: 06.2023

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OKAN 2.79 Size 15 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.7915.2.□□ - □□.□□.□□

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Introduction

1. Following data are known:

Dissipation loss	P_V	
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 = 135 kW ; $V_{Öl}$ = 500 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

Calculated: ETD = 60 - 30 = 30 K

$$P_{01} = \frac{135\ kW}{30\ K} = 4{,}5\ kW/K$$

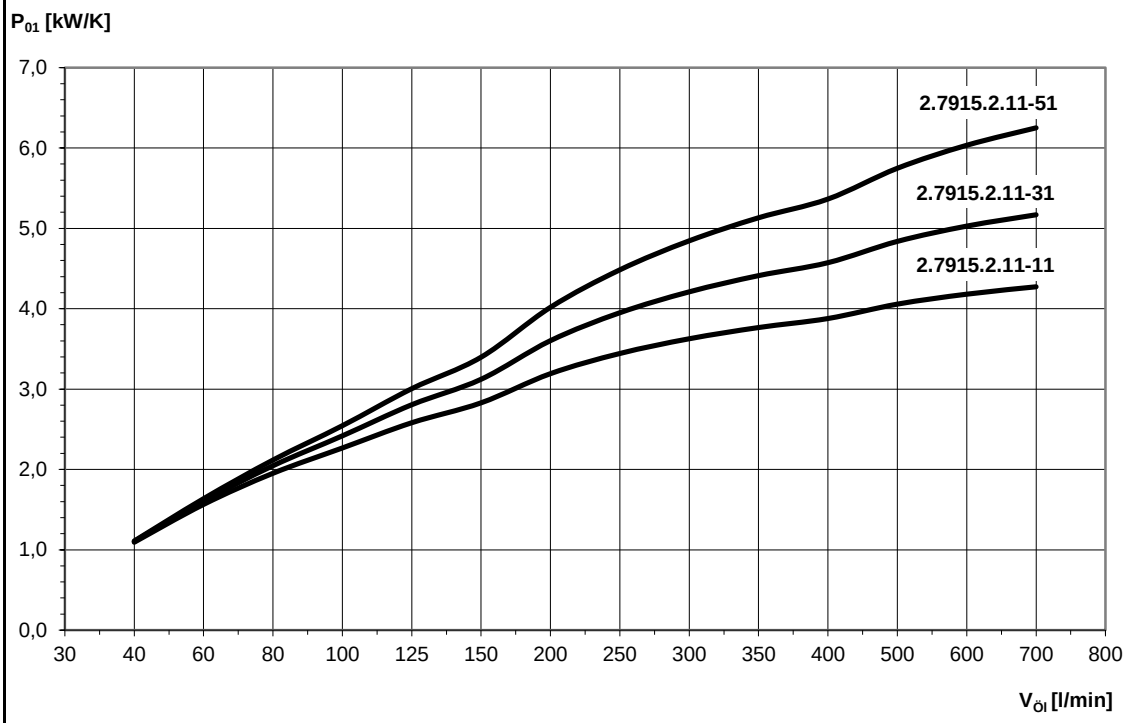
Select: 2.7915.2.11 - 31.□□ (see performance diagram)

P_{01} = 4,8 kW/K ; P_V = ETD · P_{01} = 30 K · 4,8 kW/K = 144 kW

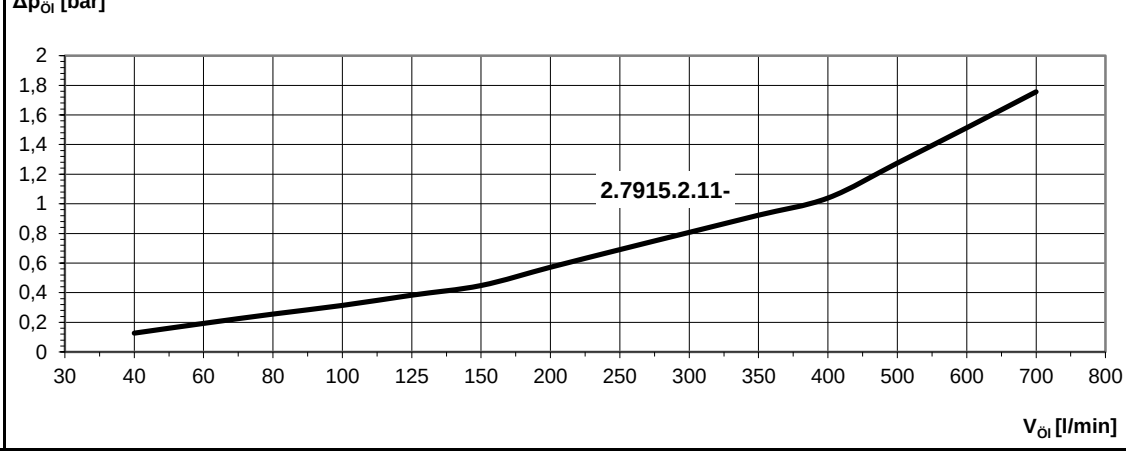
Calculated:

$$\Delta t_{Öl} = \frac{144 \cdot 36}{500} = 10{,}4\ K \quad ; \quad \Delta t_L = \frac{144}{8{,}5} = 16{,}9\ K$$

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

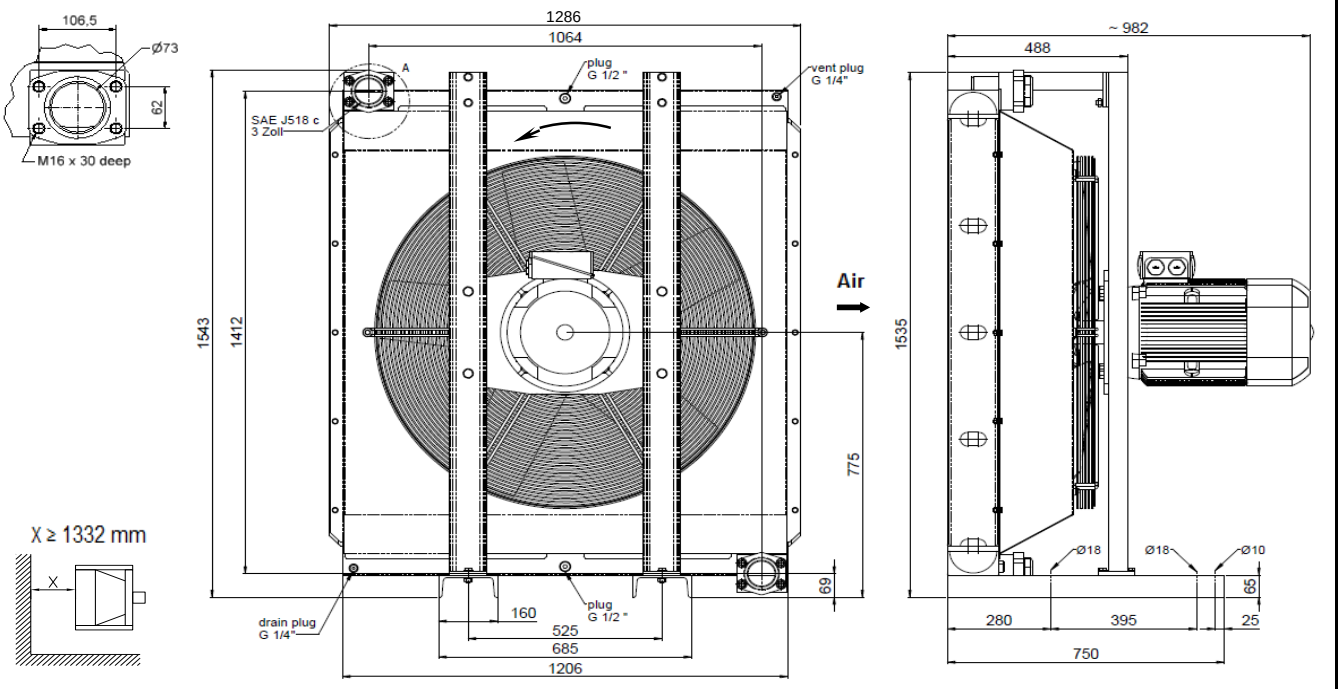
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OKAN 2.81 Size 15 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.8115.2.☐☐ - ☐☐.☐☐.☐☐

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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: 2.8115.2.☐☐ -**	**51.☐☐**	**31.☐☐**	**11.☐☐**
	Face area m²	1,52	1,52	1,52
	Fan speed 1/min	1500	1000	750
	Fan load kW	7,5	3,06	1,22
	Air flow kg/s	12	8,5	6,3
	Motor power kW	11,0 [IE3]	5,5 [IE3]	2,2 [IE3]
	Motor class	400VD / 690VY 50Hz		230VD / 400VY 50Hz
	Motor frame size / type / flange	IM B5 / 160L	IM B5 / 132M	IM B5 / 132S
	degree of protection / insulation (motor)	IP 55 / F(155) - B(130)		
	Total weight with motor kg	380,0	359,0	337,0
	Weight without motor kg	295,0	295,0	295,0
	Oil content l	46	46	46
	Noise level 1m/7m * db(A)	99 / 87	95 / 83	88 / 76
	Standard-Cooler Type: / Zno.	**2.8115.2.11-51.02.00 210 002 906 0**	**2.8115.2.11-31.01.00 210 002 800 0**	**2.8115.2.11-11.00.00 210 002 801 0**
Max. working pressure	16 bar (static)			
Max. working temp.	Oil and hydraulic fluids 100 °C ** water/glycol, emulsion 90 °C		Ambient temperature -20°C until +40°C **	
Material	Cooler: Aluminium (painted RAL 7035) Fan: Plastic		Fan shroud: Steel (powder coated RAL 7035) Other parts: Steel (zinc plated) / painted on request	
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.			

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OKAN 2.81 Size 15 AC

Datasheet Oil / Air - Cooling Unit
OKAN 2.8115.2.□□ - □□.□□.□□

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Introduction

1. Following data are known:

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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	$\Delta t_{ÖL}$	=	$36 \cdot P_V / V_{Öl}$	[K]

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

Example

Given: P_V = 135 kW ; $V_{Öl}$ = 500 l/min ; $t_{ÖlE}$ = 60 °C ; t_{LE} = 30 °C

Calculated: ETD = 60 - 30 = 30 K

$$P_{01} = \frac{135\ kW}{30\ K} = 4{,}5\ kW/K$$

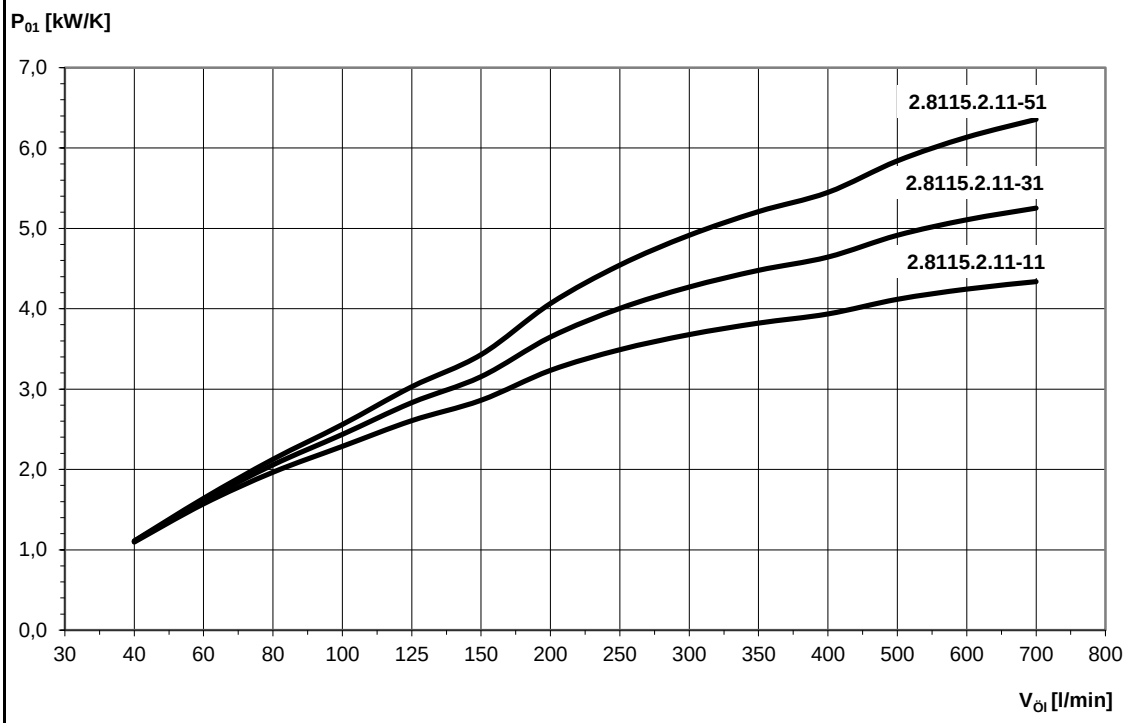
Select: 2.8115.2.11 - 31.□□ (see performance diagram)

P_{01} = 4,9 kW/K ; $P_V = ETD \cdot P_{01}$ = 30 K · 4,9 kW/K = 147 kW

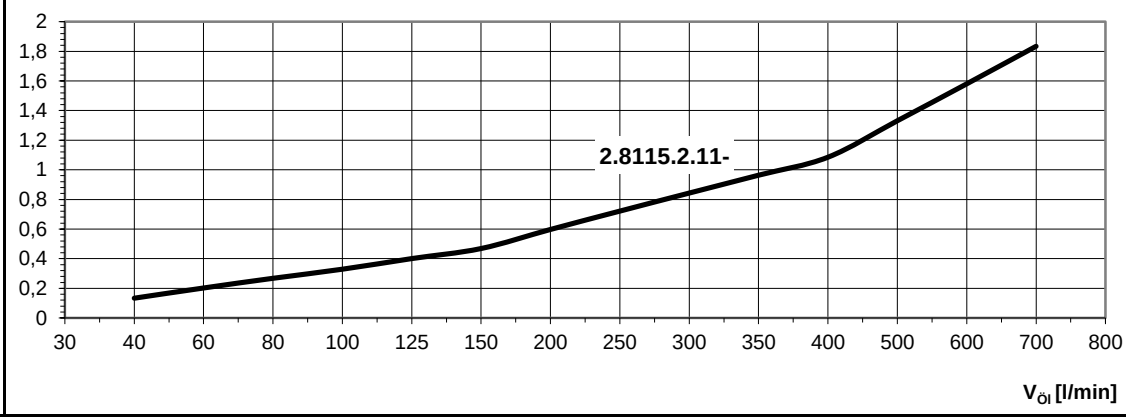
Calculated:

$$\Delta t_{Öl} = \frac{147 \cdot 36}{500} = 10{,}6\ K \quad ; \quad \Delta t_L = \frac{147}{8{,}5} = 17{,}3\ K$$

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

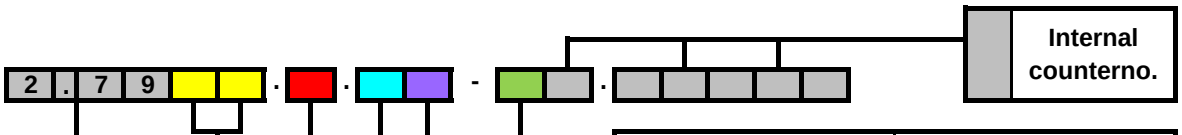
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Model code

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

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	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	02
0,080	03
0,100	04
0,160	05
0,200	06
0,250	07
0,315	08
0,400	09
0,500	10
0,600	11
0,800	13
1,000	14
1,450	15

	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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