DOC® BRAZED PLATE HEAT EXCHANGER

PRODUCT FEATURES

- High operating pressures
- High operating temperatures
- Compact connection blocks, brazed on the plate heat exchanger
- Cooling capacity of 5 to 360 kW
- Suitable for most industrial hydraulic applications
- Sturdy design due to brazed contact points between the plates
- This allows best possible resistance against high operating pressures
- 32 bar for DOC® 16, 30 and 60, 16 bar for DOC® 20 and 110
- Brazed design allows temperatures of up to 225°C
- Sturdy connection blocks allow high fastening torques for assembling

OPERATING PRINCIPLE

The heating surface consists of thin corrugated brazed stainless steel plates. Channels are formed between the plates; which are connected in a way so that the two media flow through the channels in counter-current flow.

The media are kept in the unit by a brazed seal around the edge of the plates. The contact points of the plates are also brazed to withstand the pressure of the handled media.

STANDARD VERSION

The plate pack is covered by the cover plates. The connections are located in the front cover plate. The channel plates are corrugated to improve the heat transfer efficiency and to increase the mechanical strength.

STANDARD MATERIALS

Cover plates:	Stainless steel Alloy 304 (1.4301)
Connections:	Stainless steel Alloy 304 (1.4301)
Plates:	Stainless steel Alloy 316 (1.4401)
Solder:	Copper

REQUIRED DETAILS FOR QUOTATION

In order to provide you with a specific quotation, we need the following information:

- Required flow rates
- Temperature programme
- Physical characteristics of the media used
- Desired working pressure
- Maximum permitted pressure drop

For the calculation of a plate heat exchanger, you will find a questionnaire in the download section of our website.

HIGHEST COOLING CAPACITY AND LOW DEGREE OF CONTAMINATION

- Low pressure drop over the connectors
- Optimised plate design
- Compact dimensions, low water consumption and low Delta T
- Highly efficient heat transfer due to turbulent flow (high k value; P=k*A*Delta T)
- Self cleaning effect inside the cooler due to equally distributed and highly turbulent flow

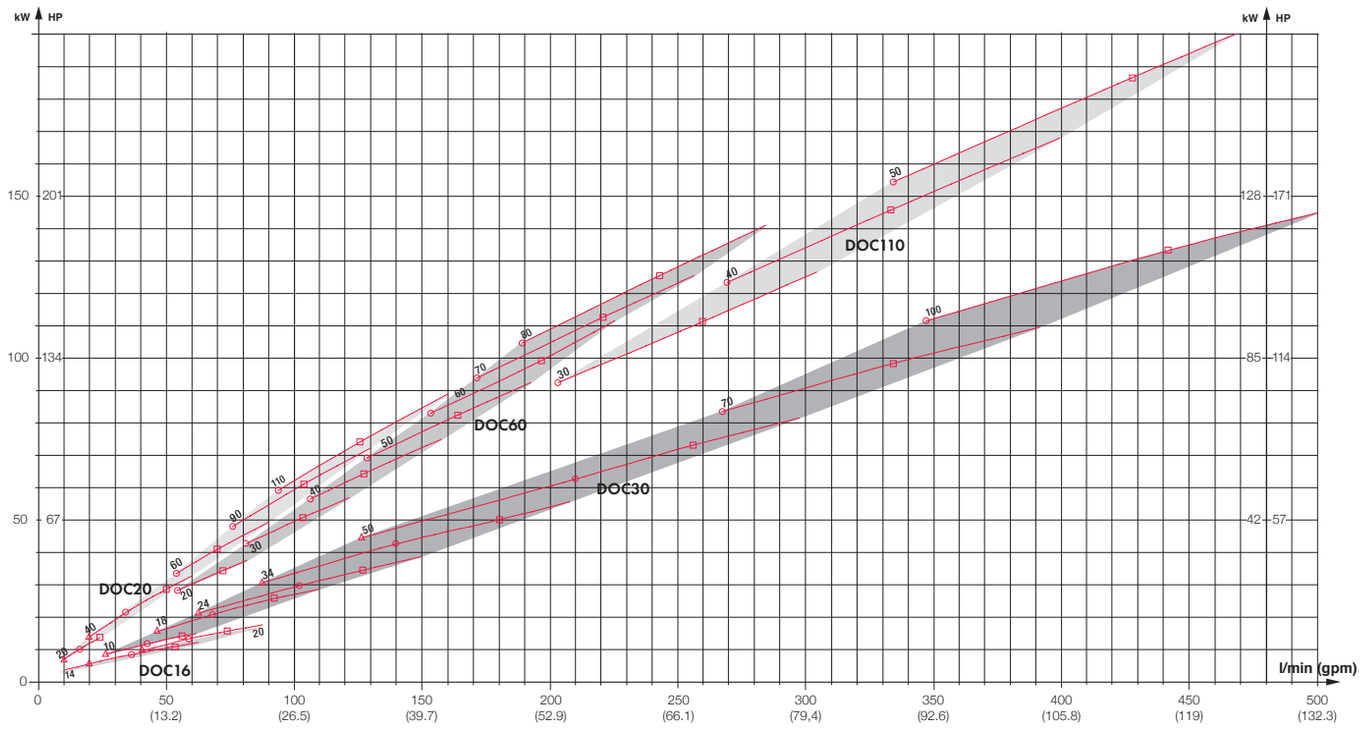
TECHNICAL DATA

	DOC®16	DOC®20	DOC®30	DOC®60	DOC®110
Max. operating temperature	225°C	225°C	225°C	225°C	225°C
Min. operating temperature	-196°C	-196°C	-196°C	-196°C	-196°C
Max. operating pressure S1-S2/S3-S4, [bar]	33/33	16/16	33/33	40/40	16/30
Min. operating pressure	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Volume per channel, [litre]	0.02	0.028	0.05	0.103	0.25
Cooling capacity [kW]	< 16	6 - 75	10 - 100	20 - 140	40 - 170
Standard number of plates	14, 20	20, 40, 60, 90, 110	10, 18, 24,34, 50, 70, 100	20, 30, 40, 50, 60, 70, 80	20, 30, 40, 50

Order code			
Type	**Size**		**Number of plates**
DOC®	30	-	70

DOC® BRAZED PLATE HEAT EXCHANGER

SELECTION DIAGRAM



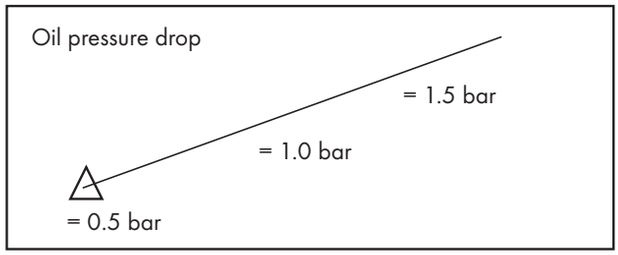
THE DIAGRAM

- is based on an oil temperature of 60°C and water temperature of 20°C. For an oil temperature of 50°C, multiply with the correction factor of 0.7. For other water temperatures, please see the correction factors on the right side.

- is calculated for two different oil / water flow rates: 2:1 and 4:1. This means that for every litre of oil circulated through the oil cooler, a minimum of 0.5 litres (2:1) or 0.25 litres (4:1) of water must be circulated to agree with the data in the diagram.

- is based on oil (ISO VG 32). For other oils, correction factors must be used. Multiply the required cooling load by the cooling load correction factor. After selecting the oil cooler, mulitply the pressure drop by the pressure drop correction factor.

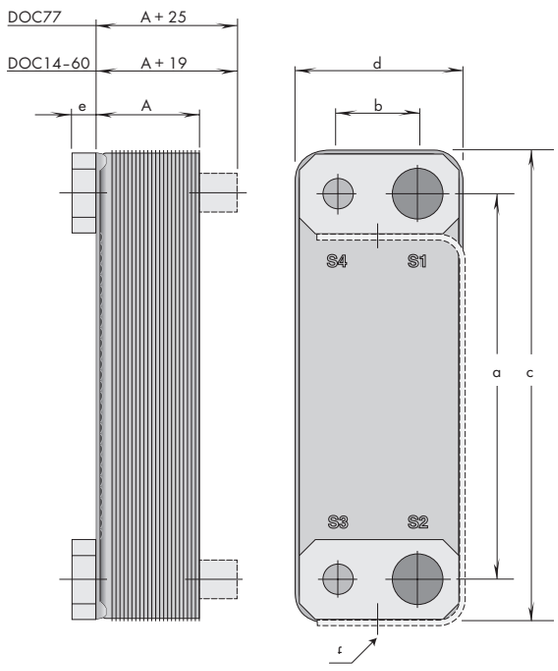
CORRECTION FACTORS



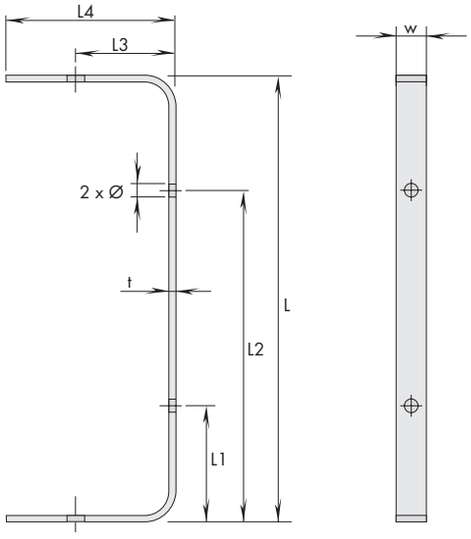
Water temperature [°C]	Correction factors
15	0.91
20	1.00
25	1.12
30	1.20
35	1.50

Viscosity class	Cooling capacity	Oil pressure drop
ISO VG 22	0.95	0.9
ISO VG 32	1.00	1.0
ISO VG 46	1.05	1.2
ISO VG 68	1.20	1.5
ISO VG 100	1.35	2.1

DIMENSIONS



DOC® Dimensioning



Support bracket

PLATE HEAT EXCHANGER DOC®

Type	Dimensions [mm]						Dry weight [kg]
	a	b	c	d	e	A	
DOC16	172	42	208	78	22	8 + (n x 2.25)	0.8 + (n x 0.06)
DOC20	270	46	324	94	26	8 + (n x 1.50)	1.5 + (n x 0.08)
DOC110	519	92	618	191	26	10 + (n x 2.85)	11.0 + (n x 0.44)

n = number of plates

SUPPORT BRACKETS

Type	Dimensions [mm]							
	L	L1	L2	L3	L4	w	t	Ø
DOC16	177	57	119	44	78	20	5	9
DOC20	275	85	189	51	94	25	6	9
DOC110	524	149	372	106	180	25	8	11

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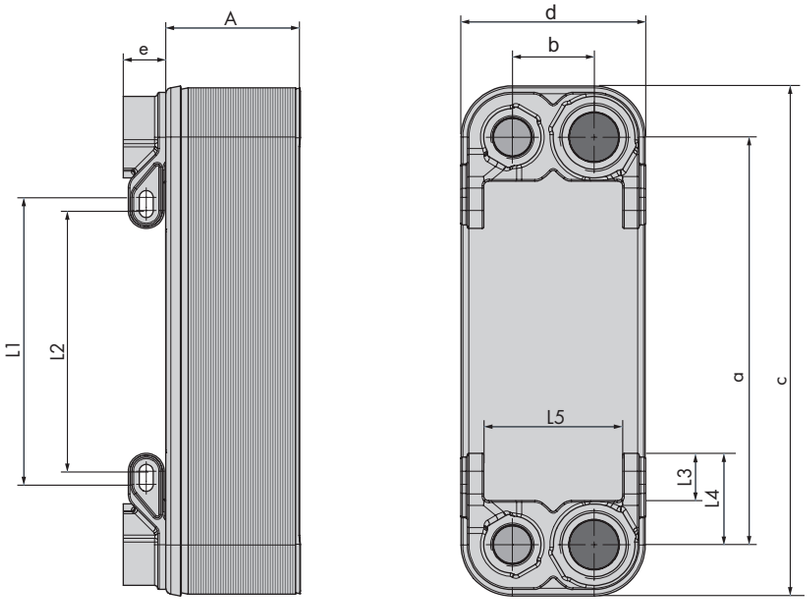
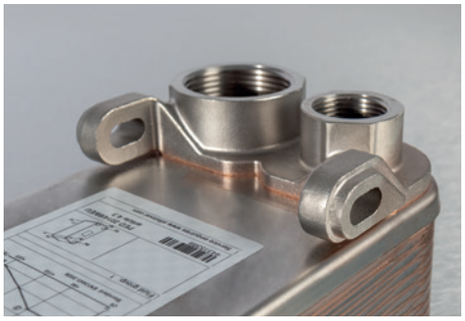
DIMENSIONS





new mounting type

Type	Dimensions [mm]											Dry weight [kg]
	a	b	c	d	e	A	L1	L2	L3	L4	L5	
DOC30	250	50	313	113	26	13 + (n x 2.31)	176	160	29	56	85	1.2 + (n x 0.18)
DOC60	466	50	527	113	26	13 + (n x 2.32)	392	376	29	56	85	2.1 + (n x 0.18)

n = number of plates

CONNECTIONS

Type	S1-S2, oil	S3-S4, water	Spanner grip	F
DOC16	ISO-G 3/4"	ISO-G 3/4"	32	M8
DOC20	ISO-G 1"	ISO-G 3/4"	41	M8
DOC30	ISO-G 1 1/4"	ISO-G 3/4"	50	M8
DOC60	ISO-G 1 1/4"	ISO-G 3/4"	50	M8
DOC110	ISO-G 1 1/2"	ISO-G 1"	50	M8