Thermal Systems

Made in India!

Standard Ranges

be different.

make a difference.

Company

Who we are and what we offer

asa stands for developments, advances and innovations already at work through our customers' various mobile and stationary applications. More than 38 years experience in thermal systems, connection technology and Fluid control has made us a global leader in advanced technologies. Our experience creates progress to ensure you competitive pricing, consistent product performance and reliability.

asa india's main facility is located in Palej, near Vadodara. Palej is a census town in the Bharuch district, Gujarat, India. With its strong growth rate and fast developing infrastructure asa made the right choice and took the way into a prosperous future in India.

Our sales office in Mumbai is an addition for best service and sales support for India. Contact us at +91 22 28195557 or salesindia@asahydraulik.com

Be different. Make a difference.

Over the years, asa continually developed into a globally active systems supplier. Despite this evolution, we consciously maintained the medium sized structure of a family owned company. As a result we are able to respond quickly and flexibly to our customer's demands and promote our innovations. Our increasing product portfolio and quality targets developed asa as a brand to the next level. Thus made us create a new logo and appearance to strengthen our key values and highlight it in all our present and future markets. We are proud on looking back on almost 40 years of innovative products, but our major attitude is a the view into the future. Please check out our newest products and technologies in this catalogue and contact us if more detailed information is required.

asa hydraulik

asahydraulik.com

asa

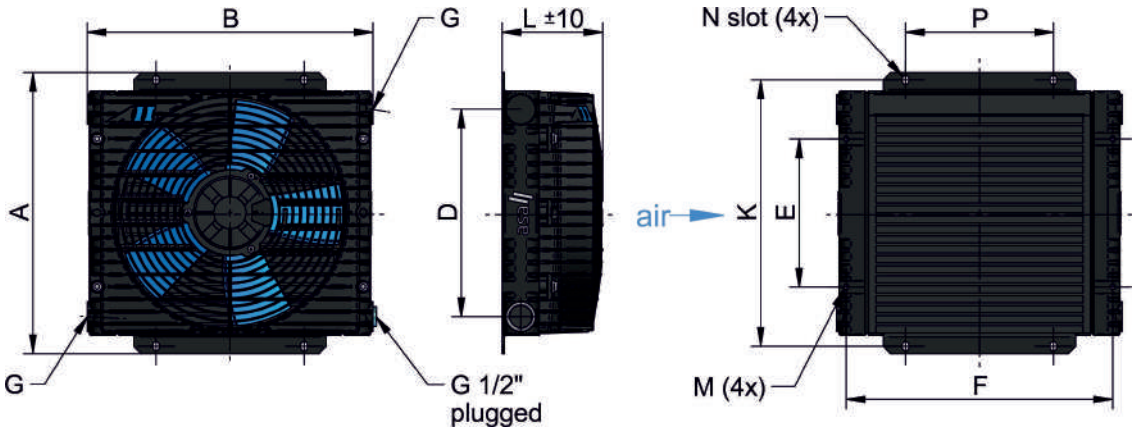
40th ANNIVERSARY 1980 / 2020

in this catalogue...

get in contact for this catalogue

LowLine 03, 06 and 08 Oil / Air Cooler

12V / 24V DC, HP (high performance)



Dimensions

order number	description	A	B	D	E	F	G	K	L	M	N	P
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]
ASA0034GD01I00	LL 03 12V DC	255	250	180	144	225	G ¾“	240	134	M6	7x10	120
ASA0034GD02I00	LL 03 24V DC	255	250	180	144	225	G ¾“	240	134	M6	7x10	120
ASATT06GD03I00*	LL 06 12V DC	290	320	215	180	301	G ¾“	269	145	M6	7x10	155
ASATT06GD04I00*	LL 06 24V DC	290	320	215	180	301	G ¾“	269	145	M6	7x10	155
ASA0084GD01I00	LL 08 12V DC	380	386	280	200	360	G 1“	360	136	M8	9x12	200
ASA0084GD02I00	LL 08 24V DC	380	386	280	200	360	G 1“	360	136	M8	9x12	200
ASA0084GD03I00	LL 08 12V DC HP	380	386	280	200	360	G 1“	360	157	M8	9x12	200
ASA0084GD04I00	LL 08 24V DC HP	380	386	280	200	360	G 1“	360	157	M8	9x12	200

Technical Data

order number	description	power	current	protection	air flow	noise level	weight
		[kW]	[A]		[kg/s]	[dB(A)]	[kg]
ASA0034GD01I00	LL 03 12V DC	0,11	8,5	IP 68	0,24	68	4,2
ASA0034GD02I00	LL 03 24V DC	0,11	4,2	IP 68	0,24	68	4,2
ASATT06GD03I00*	LL 06 12V DC	0,10	7,7	IP 68	0,29	74	5,6
ASATT06GD04I00*	LL 06 24V DC	0,10	3,6	IP 68	0,29	74	5,6
ASA0084GD01I00	LL 08 12V DC	0,16	12,5	IP 68	0,51	74	8,3
ASA0084GD02I00	LL 08 24V DC	0,21	7,9	IP 68	0,51	74	8,3
ASA0084GD03I00	LL 08 12V DC HP	0,29	22,2	IP 68	0,69	77	9
ASA0084GD04I00	LL 08 24V DC HP	0,30	11,4	IP 68	0,69	77	9

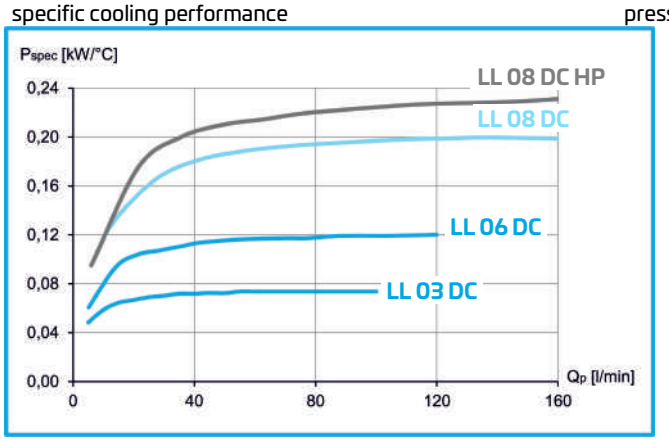
*...ASATT06GD01/02 versions from on 09/2009 are upgraded to identical performance data as ASATT06GD03/04

LowLine 03, 06 and 08 Oil / Air Cooler

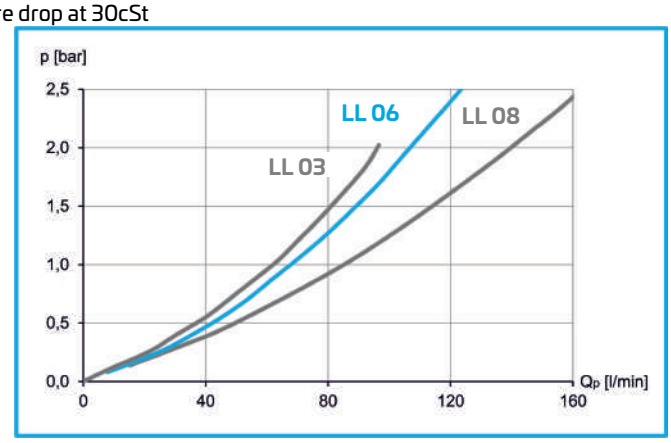
12V / 24V DC, HP (high performance)

Performance

specific cooling performance



pressure drop at 30cSt



Radiator Style A

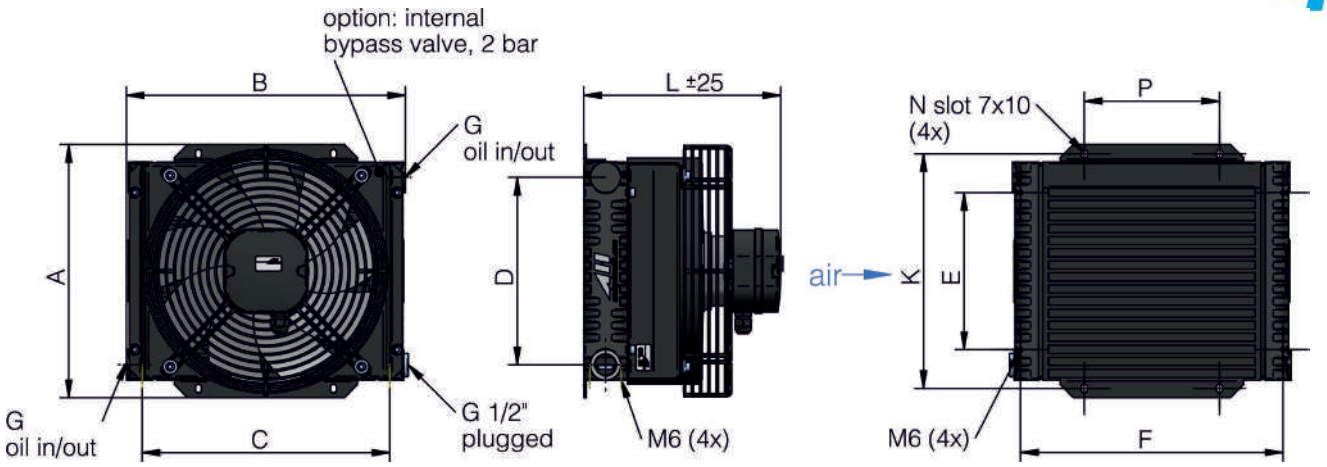
material:	aluminum
working temperature range:	-20°C to +100°C (oil temperature)
air fin :	wavy
max. working pressure:	26 bar (static)

Options

mounting feet kit	ILLEFUSSTT06KI00
temperature switches IP65	ILLZTH6065KI00
temperature switches IP69K	ILLZTH5069KI00
temperature control	ILLZTC24-2KI00
protection housing	on request

LowLine 03, 06 and 08 Oil / Air Cooler

230V 50Hz AC



Dimensions

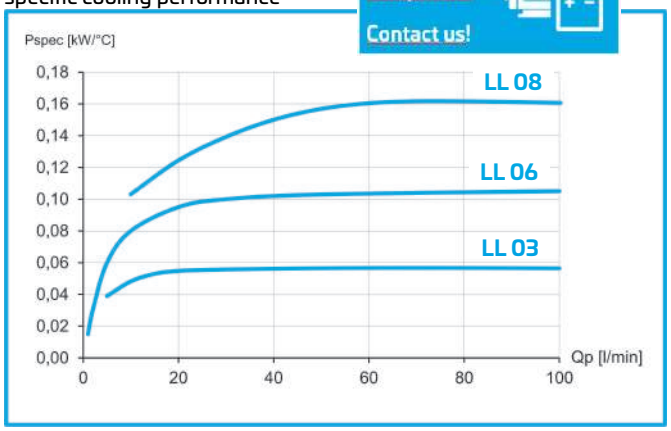
order number	description	A	B	C	D	E	F	G	K	L	N	P
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
ASA0034GC2EI00	LL 03 AC compact	255	250	214	180	144	225	G ¾“	240	246	7x10	120
ASATT06GC2EI00	LL 06 AC compact	290	323	284	215	180	301	G ¾“	269	226	7x10	155
ASA0084GC2EI00	LL 08 AC compact	380	386	350	280	200	360	G 1“	360	226	9x12	200

Technical Data

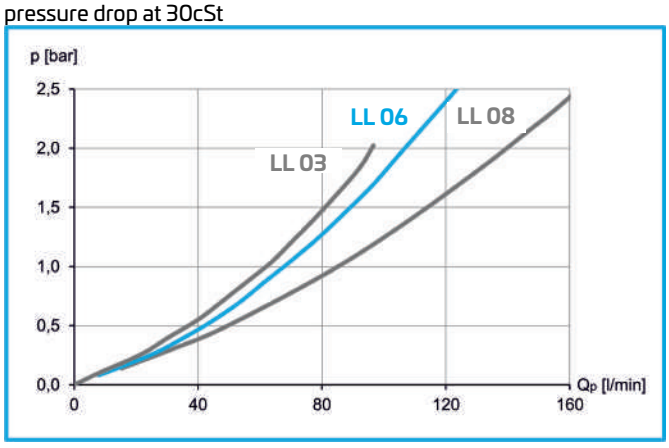
order number	description	power	current	protection	rotation	air flow	noise level	weight
		[kW]	[A]		[rpm]	[kg/s]	[dB(A)]	[kg]
ASA0034GC2EI00	LL 03 AC compact	0,055	0,25	IP 44	2500	0,17	61	6,9
ASATT06GC2EI00	LL 06 AC compact	0,10	0,45	IP 44	2480	0,32	66	7,9
ASA0084GC2EI00	LL 08 AC compact	0,12	0,55	IP 44	2400	0,38	67	11

Performance

specific cooling performance



pressure drop at 30cSt



Radiator Style A

material:	aluminum
working temperature range:	-20°C to +100°C (oil temperature)
air fin shape:	wavy
working pressure:	26 bar (static)

Options

mounting feet kit	ILLEFUSSTT06KI00 (on request)
temperature switches IP65	ILLZTH4765K, ILLZTH6065KI00
temperature switches IP69K	ILLZTH5069KI00

asa rail system

The worldwide first mounting and connection system!

The asa rail system is the first worldwide flexible mounting and connection system for air blast heat exchangers. It gives you the free choice of the connector direction through turn able ports. The rail slots in the radiator are the frame structure not only for connecting the ports, also for various possible mounting arrangements such as bypass systems, mounting of the cooler to aggregates, measurement devices and much more.

Request more information at www.asahydraulik.in

Essential cooling!
Made in India!

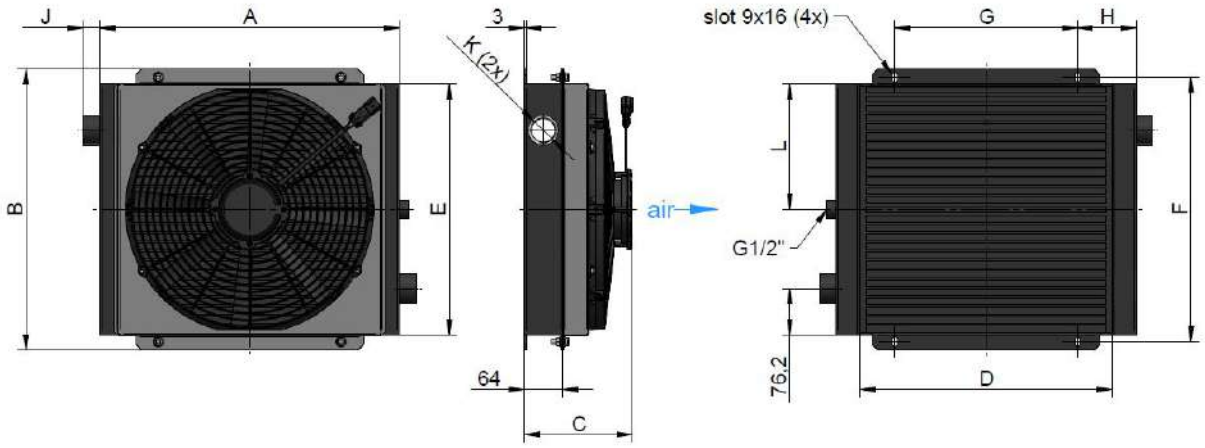
- High performance fans
- up to 40 kW cooling
- compact design

be different.

make a difference.

Oil/Air Cooler MAC
12V / 24V DC, HP (high performance)

The new MAC series unites the most important requirements of a mobile cooling system in a very cost efficient way with sufficient and proven quality. We offer 5 different radiator sizes with various fan motor options. Gain from our nearly 40 years of experience for mobile hydraulics and contact us for detailed information.



Dimension

order number		description	A	B	C	D	E	F	G	H	J	K	L
12V	24V		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]
ASAMC07GD03I00	ASAMC07GD04I00	MAC 07 HP ..	350	300	159	270	248	276,1	126	112,0	25	G ¾“	124
ASAMC09GD03I00	ASAMC09GD04I00	MAC 09 HP ..	400	346	172	320	294	324,1	149,1	125,5	28	G1“	147
ASAMC13GD03I00	ASAMC13GD04I00	MAC 13 HP ..	450	392	181	370	340	368,3	203,2	123,4	28	G1“	170
ASAMC17GD01I00	ASAMC17GD02I00	MAC 17 ..	500	468	181	420	416	439,9	304,8	97,6	28	G 1 ¼“	208
ASAMC26GD01I00	ASAMC26GD02I00	MAC 26 ..	600	560	210	520	508	533,9	406,4	96,8	28	G 1 ¼“	254
ASAMC26GD03I00	ASAMC26GD04I00	MAC 26 HP ..	600	560	200	520	508	533,9	406,4	96,8	28	G 1 ¼“	254

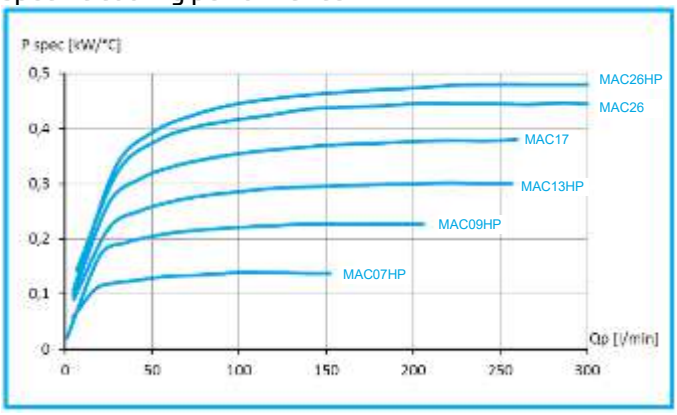
Technical Data

order number	description	power	current	protection	air flow	noise level*	weight
		[kW]	[A]		[kg/s]	[dB(A)]	[kg]
ASAMC07GD03I00	MAC 07 HP 12V	0,11	8,5	IP 68	0,33	tba	7,1
ASAMC07GD04I00	MAC 07 HP 24V	0,12	4,6	IP 68	0,33	tba	7,1
ASAMC09GD03I00	MAC 09 HP 12V	0,15	11,5	IP 68	0,56	tba	9,0
ASAMC09GD04I00	MAC 09 HP 24V	0,18	6,8	IP 68	0,56	tba	9,0
ASAMC13GD03I00	MAC 13 HP 12V	0,24	18,3	IP 68	0,76	tba	11,3
ASAMC13GD04I00	MAC 13 HP 24V	0,23	8,9	IP 68	0,76	tba	11,3
ASAMC17GD01I00	MAC 17 12V DC	0,25	18,8	IP 68	0,98	tba	13,8
ASAMC17GD02I00	MAC 17 24V DC	0,25	9,5	IP 68	0,98	tba	13,8
ASAMC26GD01I00	MAC 26 12V DC	0,25	18,8	IP 68	1,07	tba	19,8
ASAMC26GD02I00	MAC 26 24V DC	0,25	9,5	IP 68	1,07	tba	19,8
ASAMC26GD03I00	MAC 26 HP 12V	2x0,15	2x 11,5	IP 68	1,26	tba	21,4
ASAMC26GD04I00	MAC 26 HP 24V	2x0,17	2x 6,8	IP 68	1,26	tba	21,4

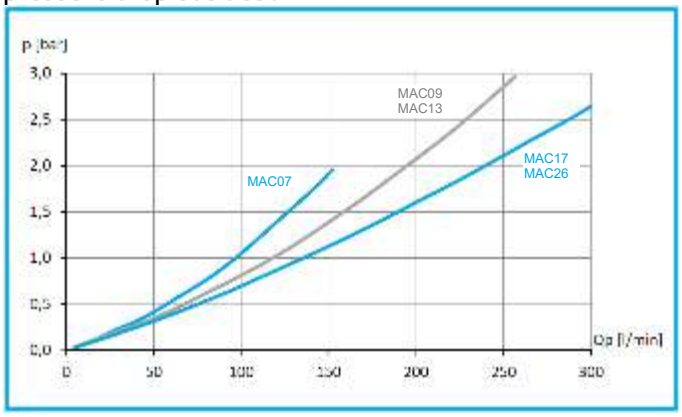
**…to be advised*

Oil/Air Cooler MAC
12V / 24V DC, HP (high performance)

specific cooling performance



pressure drop at 30cSt



Radiator Style A

material:	aluminium
working temp. range:	-20°C to +100°C (oil temperature)**
air fin:	wavy
max. working pressure:	16 bar (static)

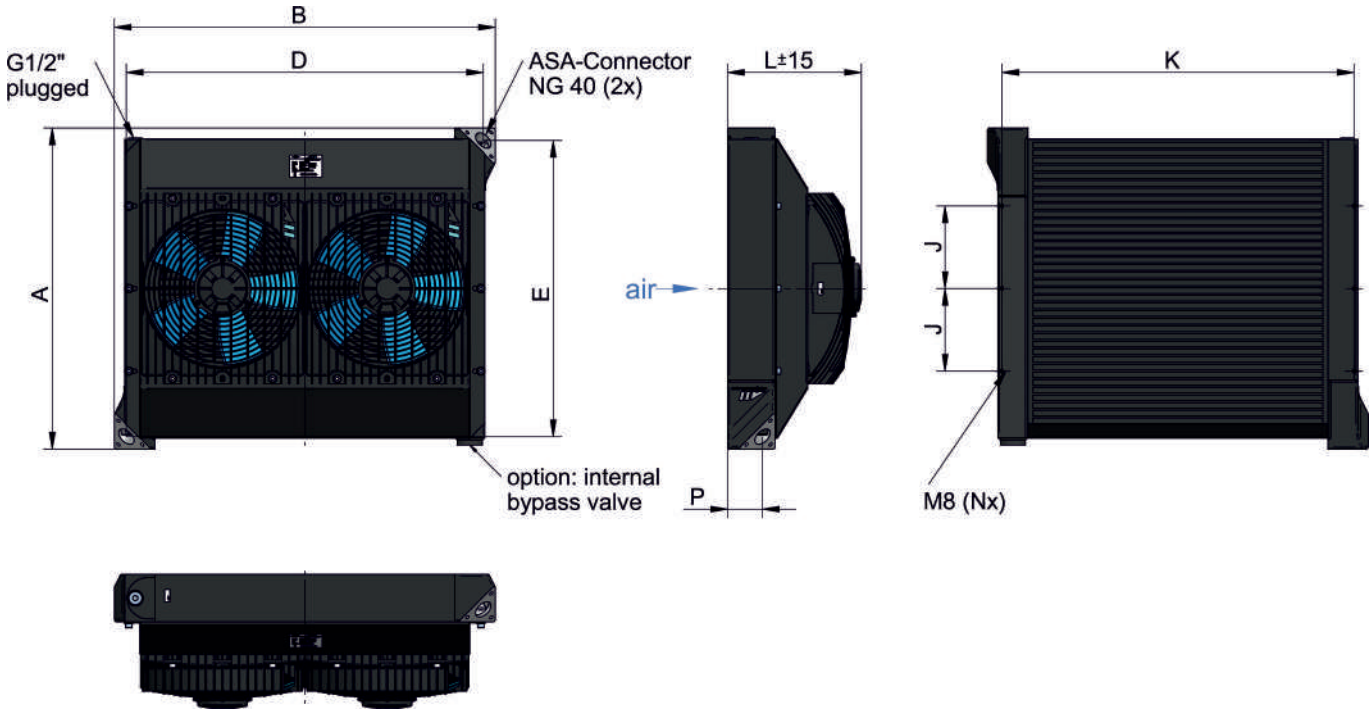
***...the indicated temperature is the maximum inlet temperature for the cooler radiator.*
Depending on the sealings in use, the application needs appropriate checking.

Options

temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K
temperature control	ILLZTC12-2K, ILLZTC24-2K
temperature switches IP65	ILLZTH4765K, ILLZTH6065K

ASA Series Oil / Air Cooler

12V / 24V DC



Dimensions

order number	description	A	B	D	J	K	L	N	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[kg]
ASA0177AD01I00	ASA 0177 12V DC	466	582	535	153	520	228	4	68	24,5
ASA0177AD02I00	ASA 0177 24V DC	466	582	535	153	520	228	4	68	24,5
ASA0257AD03I00	ASA 0257 12V DC h.p.	555	690	635	208,5	620	259	6	68	36,2
ASA0257AD04I00	ASA 0257 24V DC h.p.	555	690	635	208,5	620	259	6	68	36,2
ASA0367AD01I00	ASA 0367 12V DC	642	762	714	165	704	268	6	68	41,7
ASA0367AD02I00	ASA 0367 24V DC	642	762	714	165	704	268	6	68	41,7

Technical Data

order number	description	motor power	current	protection	air flow	noise level
		[kW]	[A]		[kg/s]	[db(A)]
ASA0177AD01I00	ASA 0177 12V DC	0,28*	21,2*	IP 68	0,76	79
ASA0177AD02I00	ASA 0177 24V DC	0,30*	11,4*	IP 68	0,76	79
ASA0257AD03I00	ASA 0257 12V DC h.p.	2 x 0,29	2 x 22,6	IP 68	1,44	84
ASA0257AD04I00	ASA 0257 24V DC h.p.	2 x 0,30	2 x 11,4	IP 68	1,44	84
ASA0367AD01I00	ASA 0367 12V DC	2 x 0,29	2 x 22,6	IP 68	1,53	84
ASA0367AD02I00	ASA 0367 24V DC	2 x 0,30	2 x 11,4	IP 68	1,53	84

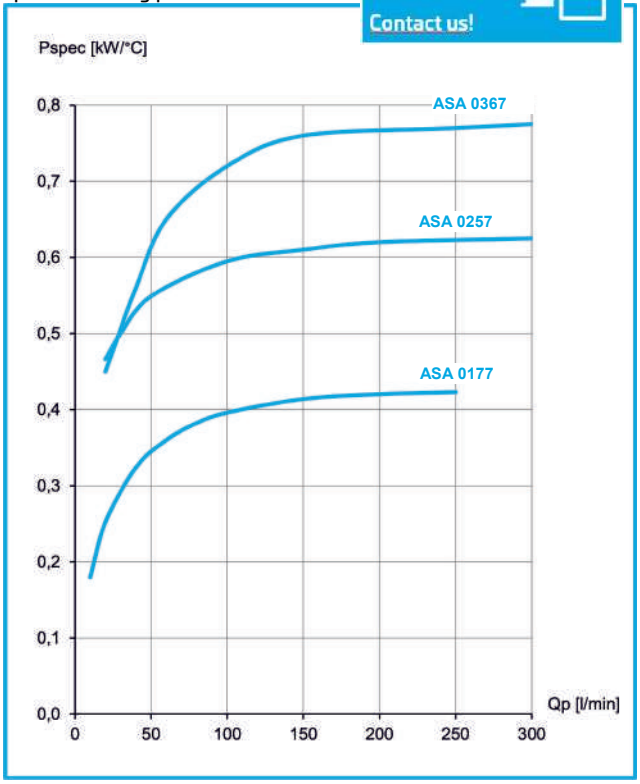
**...single fan*

ASA Series Oil / Air Cooler
12V / 24V DC

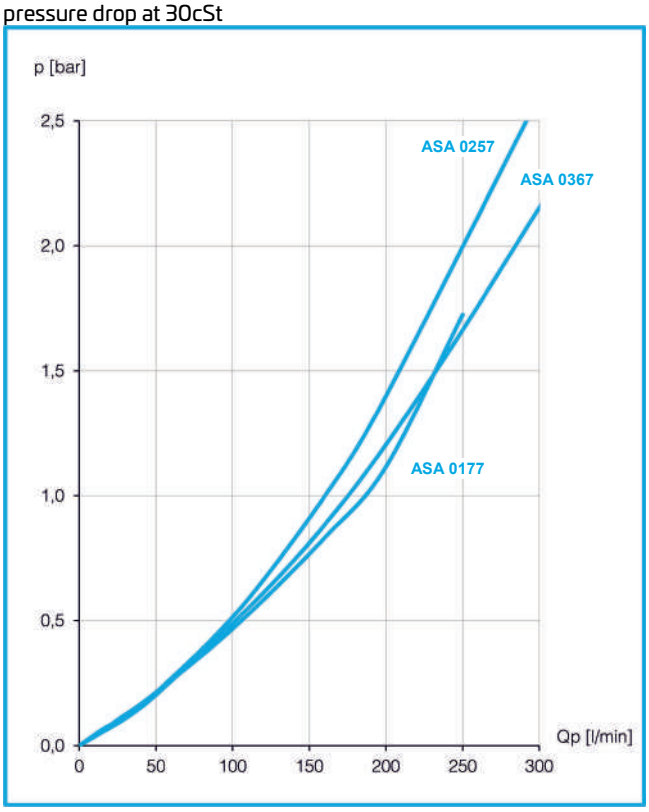
Performance

all products water/glycol compatibel
Contact us!

specific cooling performance



pressure drop at 30cSt



Radiator Style C

material:	aluminium
working temperature range:	-20°C to +80°C (oil temperature)*
air fin shape:	wavy
working pressure:	26 bar (static)

**...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.*

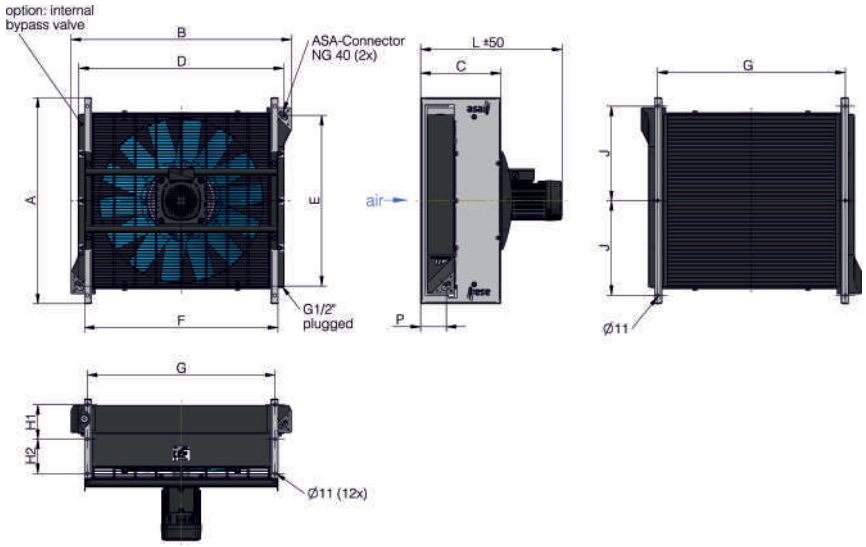
Options

temperature control	ILLZTC24-2KI00 + ILLZTT5069KI00
temperature switches	ILLZTH5069KI00, ILLZTH4765KI00, ILLZTH6065KI00
Intermediate plate NG40	ILLZASA40-40G12I00
internal bypass	on request

Installation System (see more information on page 16)

connection BSP 1 ¼"	ILLZASA32G32I00 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40I00 (2 pieces per cooler required)

ASA Series Oil / Air Cooler
230/400 50Hz AC



Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	L	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
ASA0177AA64I00	ASA 0177 0,18kW AC	530	582	260	534	416	462	442	120	90	490	486	89	39,3
ASA0177AA44I00	ASA 0177 0,25kW AC	530	582	260	534	416	462	442	120	90	490	486	89	38,7
ASA0177AA25I00	ASA 0177 0,55kW AC	530	582	260	534	416	462	442	120	90	490	486	89	38,5
ASA0257AA66I00	ASA 0257 0,37kW AC	635	682	270	634	501	562	542	110	110	280	520	93	53,2
ASA0257AA47I00	ASA 0257 0,75kW AC	635	682	270	634	501	562	542	110	110	280	520	93	55
ASA0367AA66I00	ASA 0367 0,37kW AC	720	762	280	715	596	676	656	120	120	330	533	92	63,2
ASA0367AA47I00	ASA 0367 0,75kW AC	720	762	280	715	596	676	656	120	120	330	533	92	64,9
ASA0467AA66I00	ASA 0467 0,37kW AC	785	837	290	789	668	758	738	125	125	375	550	94	79,9
ASA0467AA47I00	ASA 0467 0,75kW AC	785	837	290	789	668	758	738	125	125	375	550	94	81,6
ASA0467AA4AI00	ASA 0467 2,20kW AC	785	837	290	789	668	758	738	125	125	375	633	94	105,3
ASA0567AA66I00	ASA 0567 0,37kW AC	860	920	290	865	746	826	806	125	125	400	543	92	81
ASA0567AA47I00	ASA 0567 0,75kW AC	860	920	290	865	746	826	806	125	125	400	543	92	82,7
ASA0567AA4AI00	ASA 0567 2,20kW AC	860	920	290	865	746	826	806	125	125	400	626	92	112,4
ASA0727AA6AI00	ASA 0727 1,50kW AC	960	1012	360	964	852	936	912	160	160	460	640	95	134,6
ASA0727AA4AI00	ASA 0727 2,20kW AC	960	1012	360	964	852	936	912	160	160	460	640	95	131,5
ASA0927AA6AI00	ASA 0927 1,50kW AC	1100	1170	320	1115	912	1058	1031	130	130	522,5	664	87	156,4
ASA0927AA6EI00	ASA 0927 4,00kW AC	1100	1170	320	1115	912	1058	1031	130	130	522,5	723	87	196

Technical Data

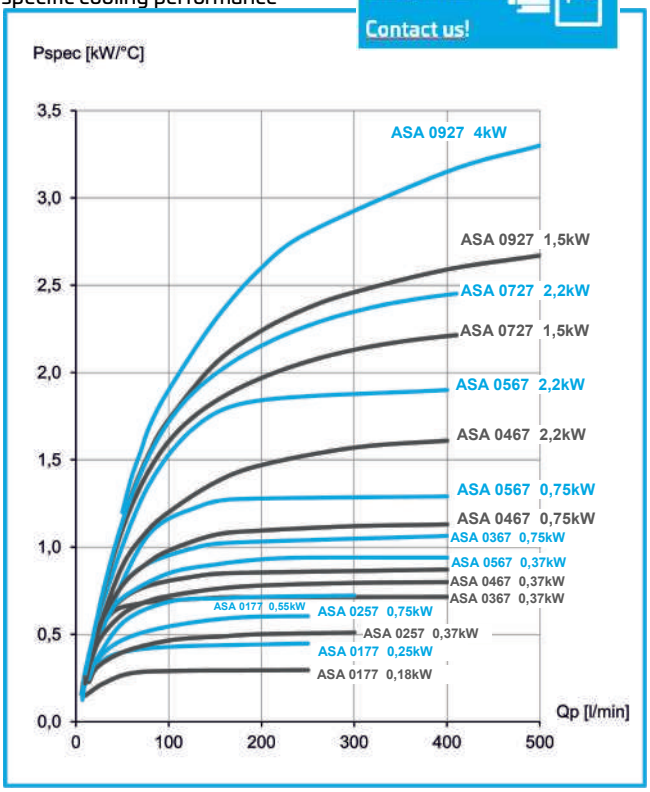
order number	description	motor power	current	motor size	protection	rotation	air flow	noise level
		[kW]	[A]			[rpm]	[kg/s]	[db(A)]
ASA0177AA64I00	ASA 0177 0,18kW AC	0,18	0,80	71	IP 55	920	0,55	62
ASA0177AA44I00	ASA 0177 0,25kW AC	0,25	0,73	71	IP 55	1395	0,86	74
ASA0177AA25I00	ASA 0177 0,55kW AC	0,55	1,32	71	IP 55	2775	1,06	91
ASA0257AA66I00	ASA 0257 0,37kW AC	0,37	1,17	80	IP 55	935	0,75	68
ASA0257AA47I00	ASA 0257 0,75kW AC	0,75	1,70	80	IP 55	1445	1,14	79
ASA0367AA66I00	ASA 0367 0,37kW AC	0,37	1,17	80	IP 55	935	0,94	73
ASA0367AA47I00	ASA 0367 0,75kW AC	0,75	1,70	80	IP 55	1445	1,47	83
ASA0467AA66I00	ASA 0467 0,37kW AC	0,37	1,17	80	IP 55	935	1,12	74
ASA0467AA47I00	ASA 0467 0,75kW AC	0,75	1,70	80	IP 55	1445	1,77	84
ASA0467AA4AI00	ASA 0467 2,20kW AC	2,20	4,80	100	IP 55	1455	2,20	88
ASA0567AA66I00	ASA 0567 0,37kW AC	0,37	1,17	80	IP 55	935	1,21	74
ASA0567AA47I00	ASA 0567 0,75kW AC	0,75	1,70	80	IP 55	1445	1,89	81
ASA0567AA4AI00	ASA 0567 2,20kW AC	2,20	4,80	100	IP 55	1455	2,80	88
ASA0727AA6AI00	ASA 0727 1,50kW AC	1,50	3,44	100	IP 55	955	4,80	82
ASA0727AA4AI00	ASA 0727 2,20kW AC	2,20	4,80	100	IP 55	1455	5,60	92
ASA0927AA6AI00	ASA 0927 1,50kW AC	1,50	3,44	100	IP 55	955	4,73	86
ASA0927AA6EI00	ASA 0927 4,00kW AC	4,00	9,70	132	IP 55	955	6,86	89

ASA Series Oil / Air Cooler
230/400 50Hz AC

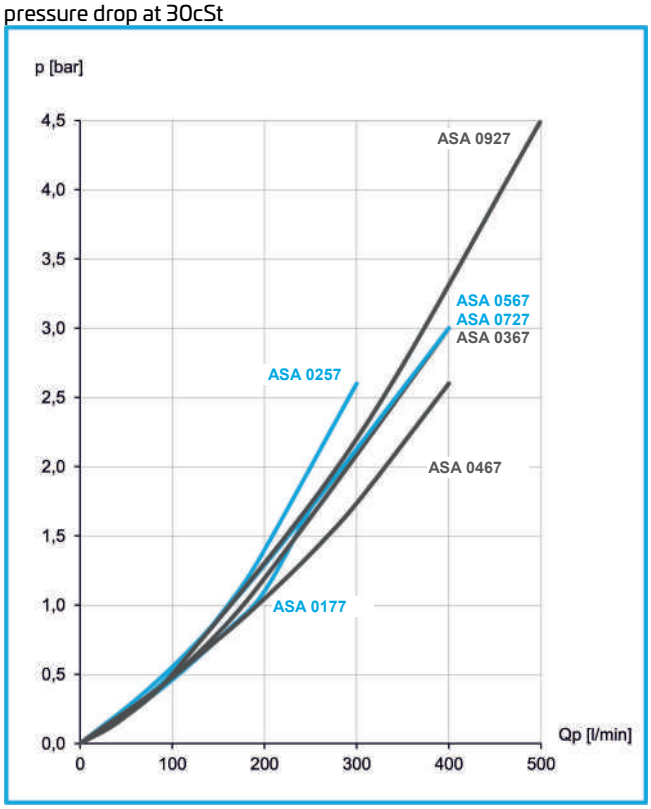
Performance

all products water/glycol compatibel
Contact us!

specific cooling performance



pressure drop at 30cSt



Radiator Style C

material:	aluminium
working temperature range:	-20°C to +80°C (oil temperature)*
air fin shape:	wavy
working pressure:	26 bar (static)

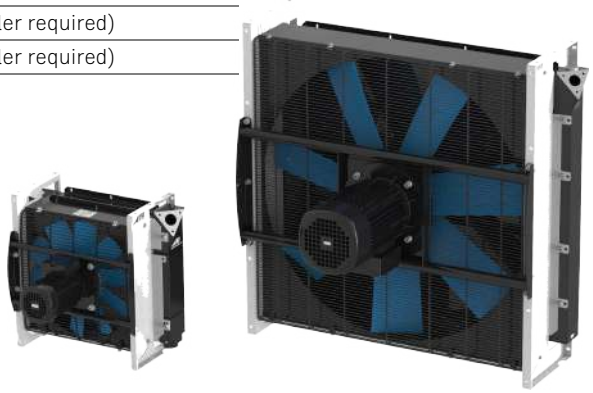
**...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.*

Options

motor data	alternative voltages, frequencies, IP classes, etc on request
temperature switch	ILLZTH4765KI00, ILLZTH6065KI00
tread plate & radiator guard	on request
internal bypass	on request
Intermediate plate NG40	ILLZASA40-40G12I00 (page 14)

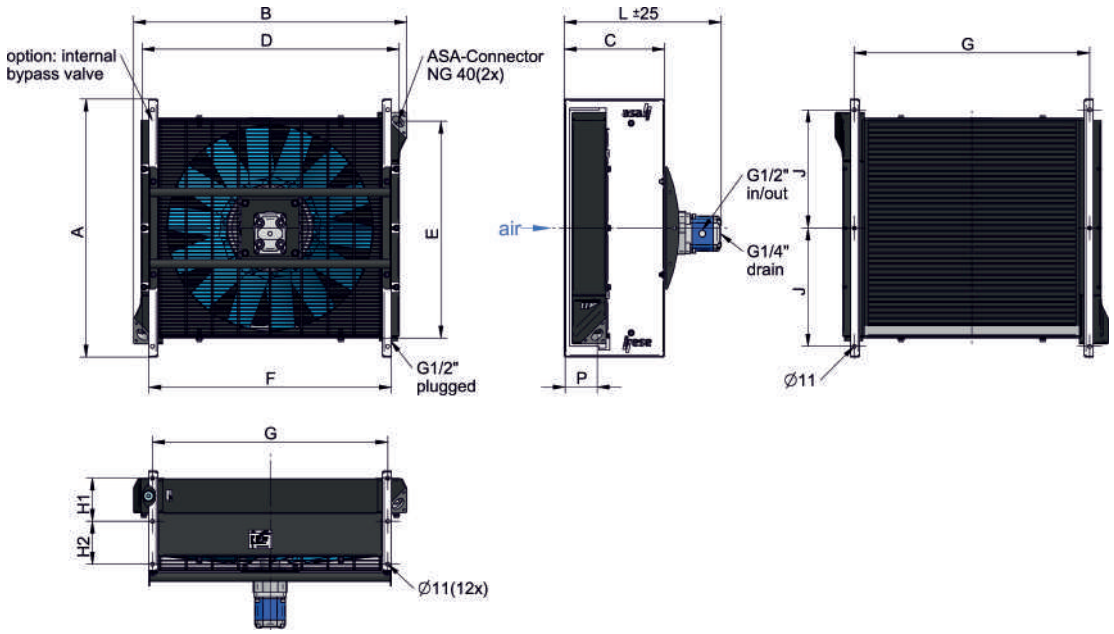
Installation System (see more information on page 16)

connection BSP 1 ¼"	ILLZASA32G32I00 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40I00 (2 pieces per cooler required)



ASA Series Oil / Air Cooler

11cm³ hydraulic drive



Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	L	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
ASA0177AH11I00	ASA 0177 hydr. motor 11cm³	530	582	260	534	416	462	442	120	90	490	364	89	35,8
ASA0257AH11I00	ASA 0257 hydr. motor 11cm³	635	682	270	634	501	562	542	110	110	280	383	93	44,5
ASA0367AH11I00	ASA 0367 hydr. motor 11cm³	720	772	280	715	596	676	656	120	120	330	430	92	56,4
ASA0467AH11I00	ASA 0467 hydr. motor 11cm³	785	837	290	789	668	758	738	125	125	375	448	94	72,9
ASA0567AH11I00	ASA 0567 hydr. motor 11cm³	860	920	290	865	746	826	806	125	125	400	448	92	74,1
ASA0727AH11I00	ASA 0727 hydr. motor 11cm³	960	1012	360	964	852	936	912	160	160	460	521	95	103
ASA0927AH11I00	ASA 0927 hydr. motor 11cm³	1100	1170	320	1115	912	1058	1031	130	130	522,5	475	87	125

Technical Data

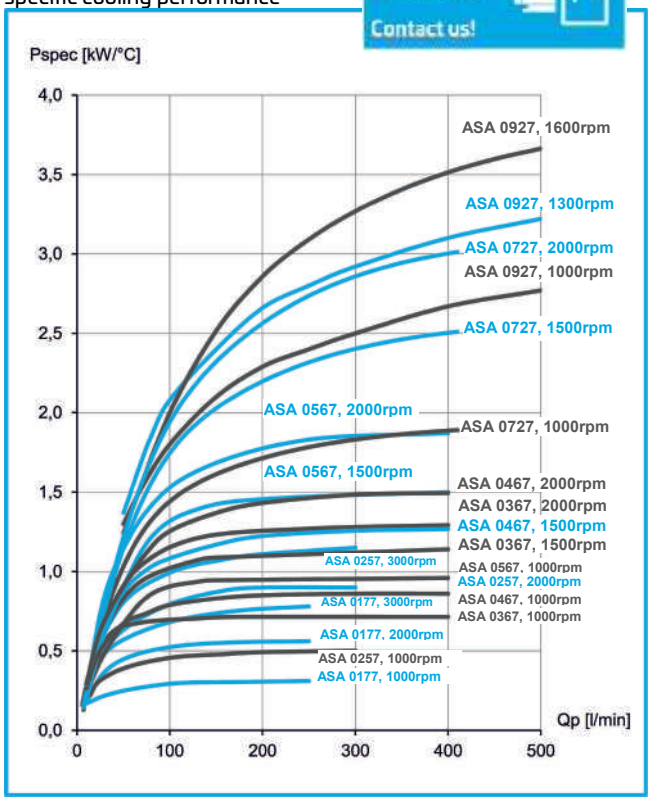
order number	description	motor power	oil pressure	oil flow	rotation	air flow	noise level
		[kW]	[bar]	[lpm]	[rpm]	[kg/s]	[db(A)]
ASA0177AH11I00	ASA 0177 hydr. motor 11 cm³	0,06	3	12	1000	0,42	61
		0,47	14	23	2000	0,73	79
		1,58	30	35	3000	0,97	91
ASA0257AH11I00	ASA 0257 hydr. motor 11 cm³	0,12	7	12	1000	0,81	73
		0,95	27	23	2000	1,63	80
		3,20	61	35	3000	2,44	89
ASA0367AH11I00	ASA 0367 hydr. motor 11 cm³	0,20	12	12	1000	0,94	73
		0,68	26	17	1500	1,53	85
		1,60	48	23	2000	2,20	90
ASA0467AH11I00	ASA 0467 hydr. motor 11 cm³	0,24	14	12	1000	1,15	77
		0,80	31	17	1500	1,75	87
		1,91	55	23	2000	2,32	90
ASA0567AH11I00	ASA 0567 hydr. motor 11 cm³	0,23	13	12	1000	1,21	77
		0,78	30	17	1500	1,89	87
		1,86	54	23	2000	2,90	90
ASA0727AH11I00	ASA 0727 hydr. motor 11 cm³	0,70	40	12	1000	3,75	84
		2,30	88	17	1500	5,82	93
		5,50	158	23	2000	7,83	99
ASA0927AH11I00	ASA 0927 hydr. motor 11 cm³	1,61	93	12	1000	5,78	88
		3,54	157	15	1300	7,73	92
		6,60	238	19	1600	9,72	97

ASA Series Oil / Air Cooler

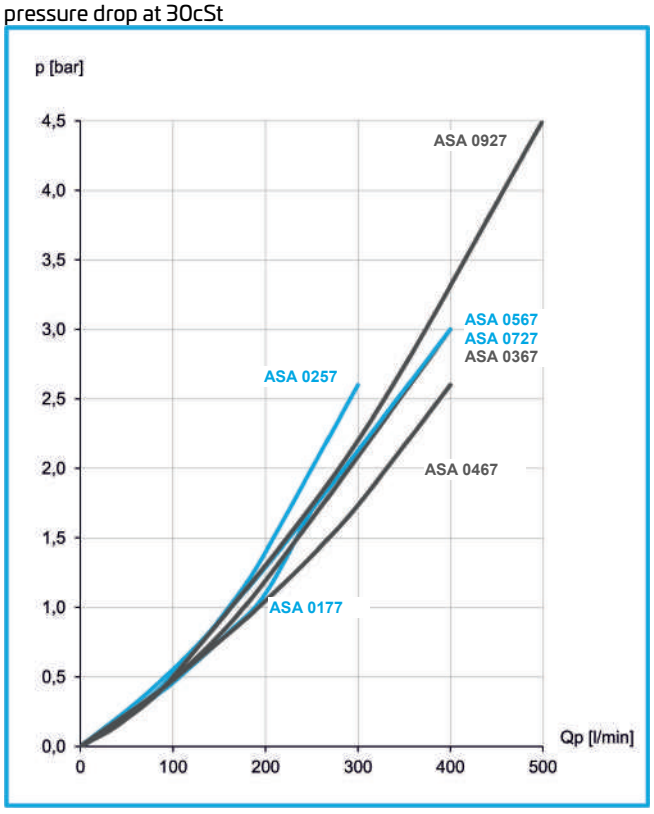
11cm³ hydraulic drive

Performance

specific cooling performance



pressure drop at 30cSt



Radiator Style C

material:	aluminium
working temperature range:	-20°C to +80°C (oil temperature)
air fin shape:	wavy
working pressure:	26 bar (static)

**...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.*

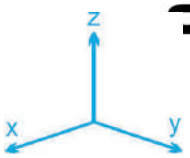
Options

hydraulic motor	alternative displacements on request
temperature switch	ILLZTH4765K, ILLZTH6065K
tread plate & radiator guard	on request
internal bypass	on request
Intermediate plate NG 40	ILLZASA40-40G12

Installation System (see more information on page16)

connection BSP 1 ¼"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40 (2 pieces per cooler required)

Accessories
Connector ASA Series



Description

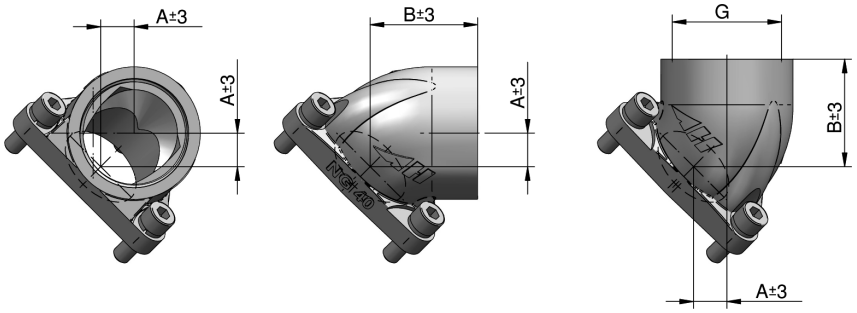
The asa universal connector is a patented system that offers many possibilities regarding dimension and direction of the hydraulic connection.

With each connector you can choose from 3 directions how to install it into the hydraulic circuit. The stream optimized design reduces the total pressure drop on the cooler. The omission of screwed joints reduces the number of sealing surfaces. The available connector dimensions depend on the cooler size and are shown in the table below.

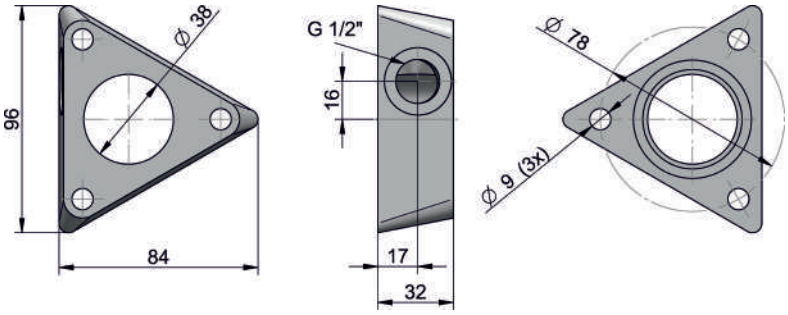
Our newest option is an intermediate plate for having an additional BSP ½" port, which can also be turned in any required direction.

Dimensions

AUC NG 32 – 40 Connectors



Intermediate plate NG 40



Technical Data

order number	description	A	B	G	connector material	o-ring	weight
		[mm]	[mm]				[kg]
ILLZASA32G32I00	AUC NG 32 – G 1 ¼"	14	34	BSP 1 ¼"	aluminium	NBR, 70 shore, 44x3mm	0,31
ILLZASA40G40I00	AUC NG 40 – G 1 ½"	15	47	BSP 1 ½"			0,29
ILLZASA40-40G12I00	intermediate plate NG 40	-	-	-			0.30

Content (except intermediate plate)

asa universal connector	2x
o-ring	2x
screw	6x
spring ring	6x

requires 2pcs per cooler

packed size: 2 pieces

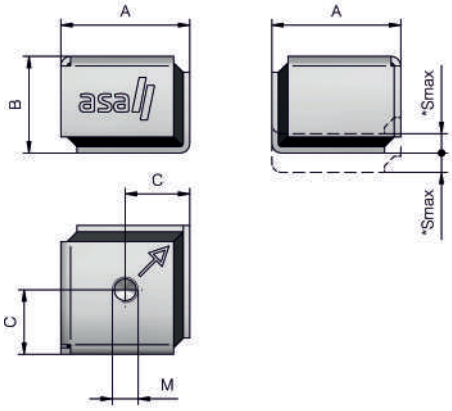
Fits On Cooler Types

ILLZASA32G32I00	ASA 0177, 0257, 0367, 0467, 0567, 0727, 0927
ILLZASA40G40I00	ASA 0177, 0257, 0367, 0467, 0567, 0727, 0927

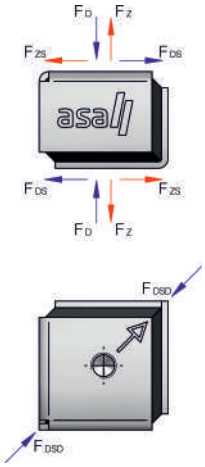
Accessories
rubber vibration absorber, foot mounting brackets

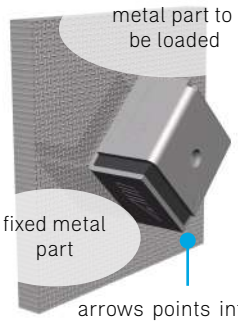
Rubber Vibration Absorber

The asa vibration absorbers are rubber metal connected parts to absorb impact loads on components to protect them and to extend the life time of the system. The patented solution is especially designed for highest shear loads. An assembly system can be checked by arrows on the metal parts to help to optimize and raise the load capability of the vibration absorber.



*Smax.....maximum working distance





- ✓ Zinc coated metal parts
- ✓ Elastomer: natural rubber
- ✓ Working temp. -30°C to +80°C

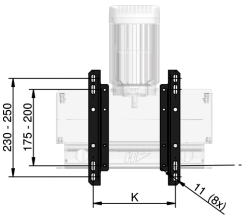
Dimensions

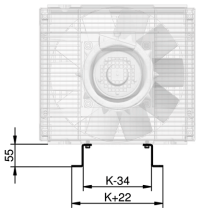
order number	description	A	B	C	M	Smax	weight
		[mm]	[mm]	[mm]		[mm]	[kg]
MDGQ403008IIKI00	40x40x30 M8	40	30	20	M8 x 10	± 3	0,127
MDGQ504510IIKI00	50x50x45 M10	50	45	25	M10 x 12	± 6	0,280
MDGQ755512IIKI00	75x75x55 M12	75	55	37,5	M12 x 15	± 8	0,659
MDGQ1007516IIKI00	100x100x75 M16	100	75	50	M16 x 16,5	± 9	1,920

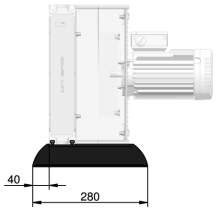
Contact us for full data sheet with load capacities, maximum static loads and spring rates.

Foot Mounting

The foot mounting option is available on all Low Line coolers.
1 set consists of the 2 feet brackets with mounting material.







order number	description	fits on cooler type		
		TT 03	TT 06	TT 08
ILLEFUSSTTK06KI00	mounting feet set TT 03, 06, 08	●	●	●

-... not available ●... optional available

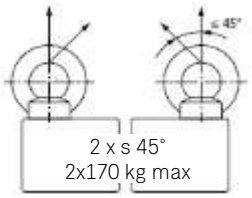
Lifting Kit (suits all standard coolers)

For safe and simple handling during installation and relocation
only used for installation and maintenance.

order number	description	delivery content
ILLZLKI00	Lifting kit standard coolers	one kit contains 2 ring bolts, 4 nylon washers and 2 screw

using bolt, only

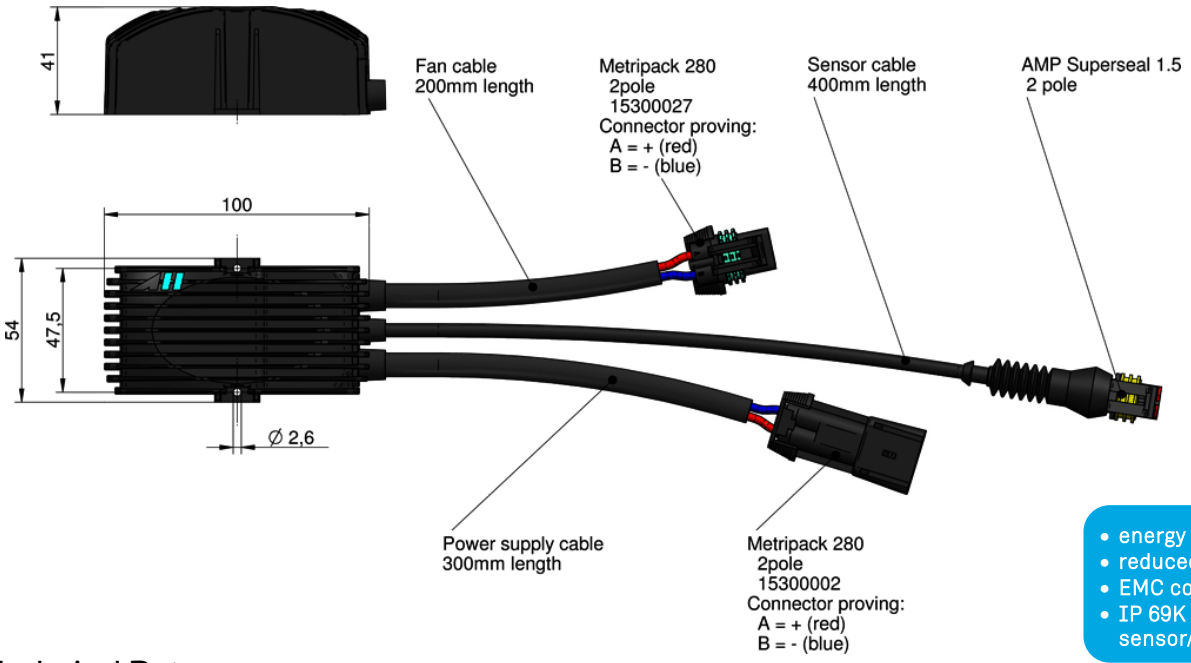
using screw nut



load capacity / using bolt

Accessories
temperature control

This system consists of a temperature sensor (ILLZTT5069KI00) and a control unit (24V available). The fan speed varies according to the actual oil temperature on the sensor. This reduces the noise level of the cooler system and increases the durability of the fan motor, because it is not running on the maximum speed all the time. The start up temperature of this system is 44°C and the maximum rotation of the fan is applied when the oil temperature reaches 55°C. The electro-magnetic compatibility (EMC) is tested according to CE (89/336/EC) and E (95/54/EC). Moreover the control unit can also be connected with our temperature switches (IP69K switch type). This is a simple on/off mode, according to the switch temperature. The control unit benefit is the soft start curve, extending the life time of the fan motor.



- energy saving
- reduced noise level
- EMC compatibility
- IP 69K protection to sensor/switch

Technical Data

order number	description	max. power fan motor	max. current fan	protection	weight	supply
		[W]	[A]		[kg]	DC
ILLZTC24-2KI00	temperature control 24V DC	340	12 (24V DC)	IP 67	0,25	24V (18V – 32V)

Characteristics

material:	polyamide
mounting instructions	any mounting position

Measurement input

temperature sensor	ILLZTT5069KI00 (control range 44-55°C)
temperature switch	ILLZTH5069KI00 (set point 50°C, soft start)
	ILLZTH6065KI00 (set point 60°C, soft start)

Ambient Conditions

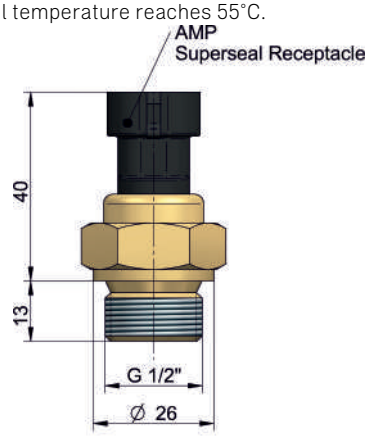
ambient temperature range	-20°C to +85°C
storage temperature range	-60°C to +110°C

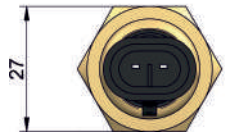
Please note:
The maximum start current is approximately 10% higher than the nominal current of the motor. Observe the maximum allowable supply of the fan motor. The allowed voltage range of the fan might differ from the allowed voltage range of the temperature control. In case of inverse polarity of the supply, the control unit is deactivated. After changing the polarity, the control is ready for use again. If the supply voltage exceeds 16,5V (ILLZTC12-2KI00) and 32V (ILLZTC24-2KI00) respectively, the control is switched off to protect the fan. After supply voltage is reducing below 12V or 24V, respectively, the control is activated again, automatically. The closed current is 5mA (ILLZTC12-2KI00) and 4mA (ILLZTC24-2KI00), respectively. The recommended fuse is fast acting 25A (ILLZTC12-2KI00) and 16A (ILLZTC24-2KI00), respectively. Due to the high currents (21A at the ILLZTC12-2KI00), the dimension of the electrical wires must be appropriate and in case of a luster terminal it has to be tightened properly.

Accessories

temperature sensor

The temperature sensor requires a control unit for the control system which is available in 12V (ILLZTC12-2KI00) and 24V (ILLZTC24-2KI00). The fan speed varies according to the actual oil temperature on the sensor. This reduces the noise level of the cooler system and increases the durability of the fan motor, because it is not running on the maximum speed all the time. The start up temperature of this system is 44°C and the maximum rotation of the fan is applied when the oil temperature reaches 55°C.





Temperature Control

- NTC sensing
- IP 69K protection
- compact design

Technical Data

rder number	description	connection	protection	weight
				[kg]
ILLZTT5069KI00	temperature sensor BSP ½“	AMP superseal 1.5	IP 69K	0,09

Characteristics

screw part material	brass
mounting instructions	any mounting position
maximum tightening torque	50Nm

Measurement Output

connection	AMP superseal 1.5

Ambient Conditions

oil temperature range	-20°C to +100°C
ambient temperature range	-20°C to +85°C
storage temperature range	-60°C to 110°C

Required Accessories

temperature control unit 24V DC	ILLZTC24-2KI00

Combinations

24V DC coolers	LL 04, LL 06, LL08 / TT 07 - 25 rail / ASA 0177 - 0367

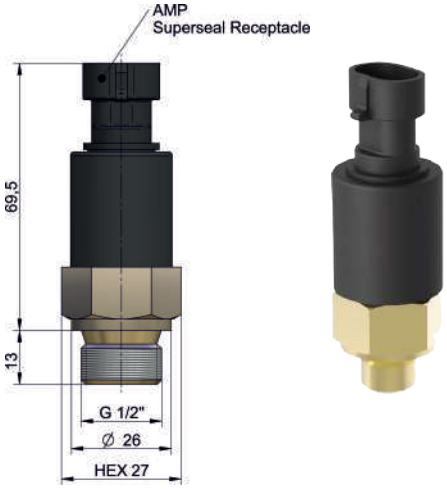
Accessories
temperature switches

According to the cooler type and size, our temperature switches fit on all coolers and connectors with BSP ½“ threads. Please contact us for the compatibility of the products. IP69K switch types (ILLZTH5069KI00, ILLZTH6069KI00 and ILLZTH9069KI00) work in combination with our temperature control units ILLZTC12-2KI00 (12V) and also with ILLZTC24-2KI00 (24V). This is a simple on/off mode, according to the switch temperature. The control unit benefit is the soft start curve, extending the life time of the fan motor.

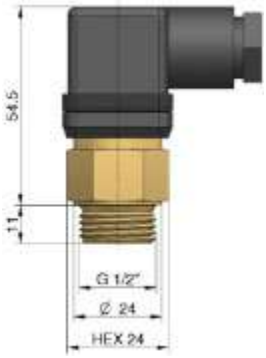
On request we offer various other bi-metal temperature switches with different temperature settings, protection classes and connection makes.

Temperature Control

Protection IP69k



Protection IP65



Technical Data

order number	description	connection	protection	switch temperature	difference	weight
				[°C]	[°C]	[kg]
ILLZTH4765KI00	temperature switch 50°C	ISO 4400	IP 65	50 ± 5	10 ± 5	0,09
ILLZTH6065KI00	temperature switch 60°C	ISO 4400	IP 65	60 ± 5	10 ± 5	0,09

Characteristics

screw part material	brass
mounting	any position
max. tightening torque	40Nm
number of cycles	100.000
counter connector	included

Combinations

all coolers and connectors with BSP ½“ threads

Measurement Output

contact	N.O. (normal open)
minimum current	200mA
maximum current	12V AC: 10A
	24V AC: 10A
	120V AC: 12A
	230V AC: 10A
Use power relay for switching!	

Ambient Conditions

oil temperature range	-20°C to +100°C
ambient temperature range	-20°C to +80°C
storage temperature range	-60°C to 110°C

Calculation of an oil/air cooler

In all hydraulic systems any kind of restriction heats the oil. The oil temperature becomes higher and higher until the added thermal energy has the same value as the radiation energy and the energy which is caused by convection which both are absorbed by the surrounding atmosphere. After a certain operation time the temperature becomes stationary. If this temperature is too high, the oil must be cooled.

Hot oil costs money!
The oil changing period gets shorter. Gaskets and wearing components must be changed and the hydraulic system efficiency is reduced. In order to choose the required cooler type we must know the required cooling performance.

Approximate calculation

The required cooling performance P_K can generally be calculated as in the following term:

$$P_M = \frac{p \times Q_{oil}}{600 \times \eta} \qquad P_K = P_M (1 - \eta)$$

Hydraulic circuits with constant pumps have a general efficiency from approximately 70-75%, η = 0,7 bis 0,75 /
circuits with variable pumps: η = 0,75 bis 0,80.

η	= general efficiency
P_K	= required cooling performance [kW]
P_M	= required motor power [kW]
p	= oil pressure [bar]
Q_P	= oil flow [l/min]

How to find out the required cooling performance with the rise in temperature:

For existing hydraulic circuits the heat input to the oil can be accurately determined if the rise in temperature is known over a certain period of time. This then gives the amount of heat to be exchanged by the cooler in order to maintain the system at an optimum operating temperature.

$$P_K = \frac{m \times c \times (t_2 - t_1)}{1000\ T}$$

P_K	= required cooling performance [kW]
m	= const. mass of the reservoir [kg]
c	= specific heat capacity [Wh/kg°C] (c~0,53 for hydraulic oil, c~1,16 for water)
t_1	= oil temperature at the begin [°C]
t_2	= oil temperature at the end [°C]
T	= heat up time [h]

Temperature behaviour:

1. oil temperature difference Δt_{oil} by one pass
2. air temperature increase Δt_L

$$1.\ \Delta t_{oil} = \frac{36 \times P_K}{Q_{oil}}\ [°C] \qquad 2.\ \Delta t_L = \frac{P_K}{Q_L}\ [°C]$$

Selection of the cooler:

After calculation the required cooling performance (P_K), the specific cooling performance (P_{spec}) must be determined.

$$P_{spec} = \frac{P_K}{t_{oil} - t_L}\ [kW/°C]$$

P_{spec}	= specific cooling performance (kW/°C)
T_{oil}	= oil temperature inlet (°C)
T_L	= air temperature inlet (°C)

Enter the value of P_{spec} (kW/°C) on the vertical line on the cooling performance diagram and determine the junction with the horizontal line for oil flow (l/min) of the required cooler type. In most of the cases it is enough if this line is lying close to a curve in the diagram because the cooling capacity is calculated with enough safeties.

Calculation of the oil pressure drop:
If the right cooler is found, we recommend to check the oil pressure drop and to avoid too high oil pressure loss after through the cooler.

The values indicated in the diagram are valid for hydraulic oil with a viscosity of 30cSt (appr. ISO VG 32). Multiply the pressure drop by the correction factor f according to the used hydraulic oil viscosity.

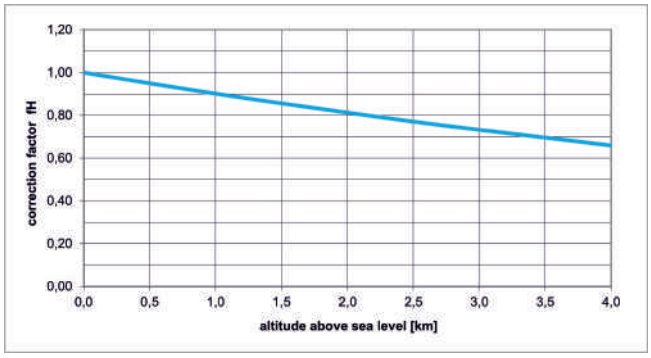
$$\Delta p = \Delta p30cst \times f_p$$

Δp	= oil pressure drop [bar]
Δp_{30cst}	= oil pressure drop at 30cst oil viscosity [bar]
fp	= correction factor for the oil viscosity [ ]

We also recommend you to check the oil pressure drop also for extreme situation (e.g. cold start). If necessary bypass valves should be installed to avoid overpressure.

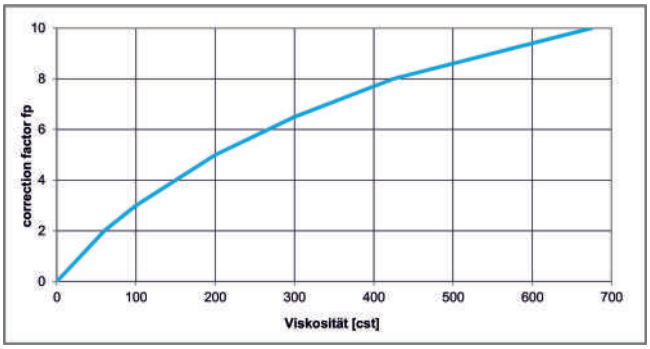
Correction factor f_H

for cooling performance depending on the altitude (approximate value).



Correction factor f_P

for oil pressure drop (approximate value)



Fluid Controls

Pumps

The asa gerotor pump unit fulfills the requirements of a modern hydraulic system. The compactness of the gerotor pump design saves weight and space. Furthermore the solid shape of the pump is high resistant for hydraulic and mechanic impact loads. The low noise level and the flexible connection complete this product to a highly versatile and reliable system for various applications. The coupling with a high quality standard motor is the optimal choice for a durable pump unit.

- **20 to 110 lpm**
- **low pulsation**
- **high duration**

Connection Technology

Suction Line Components

Our tank accessories offer very compact and reliable solutions to connect e.g. tank to suction pump. The available sizes can be optimized with our given options to your application. On request we offer our valves in different materials with the same design benefits.

The asa butterfly flange with SAE and DIN connections allows the combination with an elastic element (rubber compensator) to make a short compensating and economical connection with the pump port. The lever position can be changed through our new mechanism. The handle direction (clockwise or counter clockwise) can be changed by turning the switch bracket.

- **most compact valve**
- **cast steel/aluminium/stainless**
- **new high pressure compensator series**

Antivibration technology

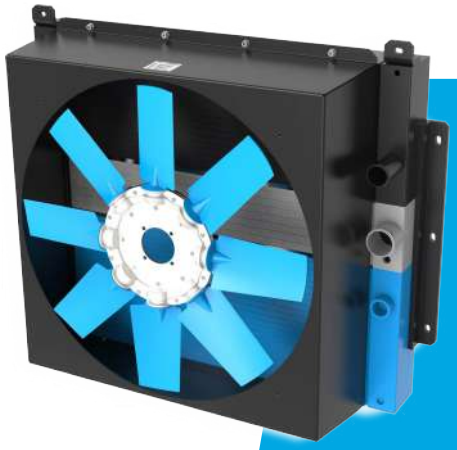
The asa rubber vibration absorbers are rubber metal connected parts to absorb impact loads on components as protection and to extent the life time. The patented solution is especially equipped for highest shear loads. An assembly system controlled by arrows on the metal parts helps to optimize and raise the load capability of the vibration absorber.

- **up to 30kN**
- **real shear load capability**
- **excellent vibration absorbing**

Thermal System
Motor Cooling Series

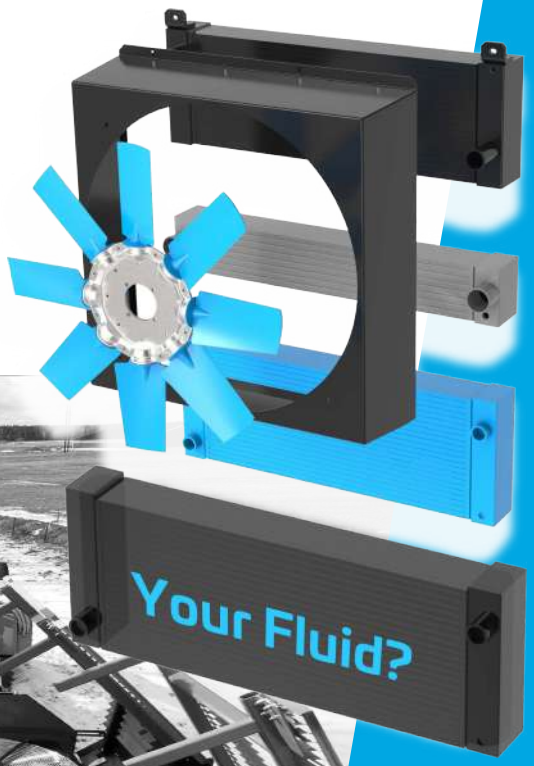
Customized to your applications

Apart from the actual application parameters of the fan drive,ambient conditions and scope of delivery, we offer customized cooler solutions for many types of fluids. Please contact us with your specific requirements and use our benefits regarding consultation and most realistic verification



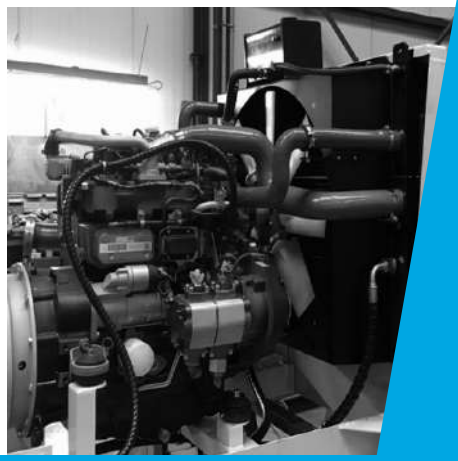
type of media / applications
charge air / intercoolers
fuels (Diesel, ...)
Gear oil / transmission cooling
hydraulic oil
lubrication oil
water / glycol / motor cooling

available features
low fouling air fins
internal bypass
expansion tanks
double fan solutions
side by side coolers



your advantages:

- ✓ project management
- ✓ calculation and simulation
- ✓ verification on test bench
- ✓ procurement option system
- ✓ approved quality



Thermal Systems
Connection Technology
Fluid Controls

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