



# Thermal Systems

## 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.



- **worldwide availability**
- **fast reaction time**
- **technical support**



### 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.



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# Innovation

## Customize our products to your requirements.

Our innovations affect not only the efficiency of the function, it offers add on values for the customer as well.

Our design philosophy, is to use our patented systems to integrate various functions of a hydraulic circuit with standard modules to a customized product. This merges asa's well known flexible systems and engineering capabilities to gain real cost and space reduction, through simplification of parts and variable functions, to any application.

The system integration is defined by the required functions based on a cooling station, docking one or more variable sets.

- patented technology
- protecting your market
- add on values

select basic module...



...add on values...



connect

mount



control

bypass



protect

integrate





**discover the  
customized standard**

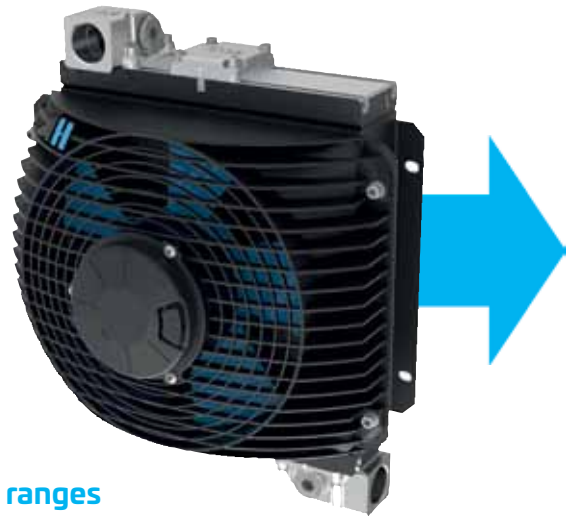
# Thermal Systems

## Standard Ranges

Our standard oil/air cooler range is still setting the benchmark in the markets. We offer short lead times and the densest program of pressure resistant coolers with all relevant features. Our internal bypass options and pollution resistant air fins are well known in the market and work globally, in various conditions.

The versatility of our patented connection solutions are the best choice to gain from the system itself, as well as to add on values to the end product.

- **1 to 800 lpm**
- **quality through standardization**
- **high duration, most dense cooler and option product ranges**



## H-Ranges

The H-Ranges are products specialized for hydraulics, using our patented systems to integrate various functions in a hydraulic circuit out of standard modules into a customized product. This merges asa's well known flexible systems and engineering capabilities to gain real cost and space reduction, through simplification of parts and variable functions, to any application.

The system integration is defined by the required functions based on a cooling station, docking one or more variable sets.

- **real compact design**
- **cost saving**
- **one system**

## Special Ranges

Our global business approach demands highest standards to our production facilities. We are equipped with newest production machines and processes. Furthermore we are continually upgrading the level of automation and quality. This ensures an appropriate support for research and development as well as for customized projects.

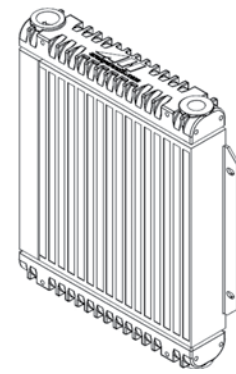
We calculate, test and deliver complete thermal cooler packages to any application. Contact us...

- **real measured data**
- **test bench and wind channel**
- **best production capacities**



**LowLine**  
**10kW / 100lpm**

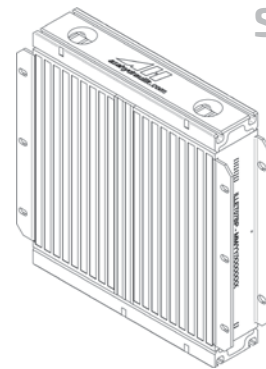
**page 8 to 14**



**Style A**

**TT Rail**  
**45kW / 300lpm**

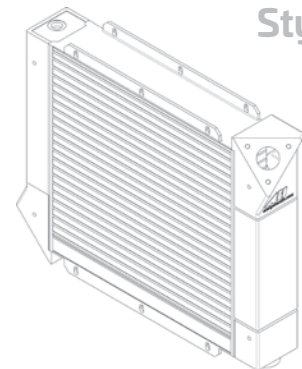
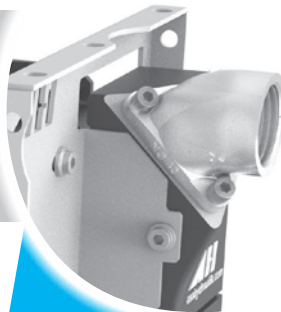
**page 16 to 23**



**Style B**

**AUC Line**  
**160kW / 500lpm**

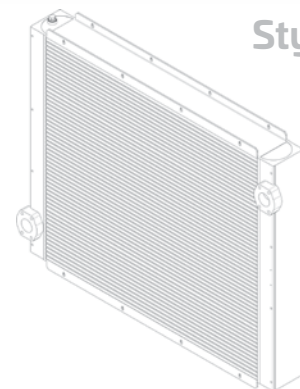
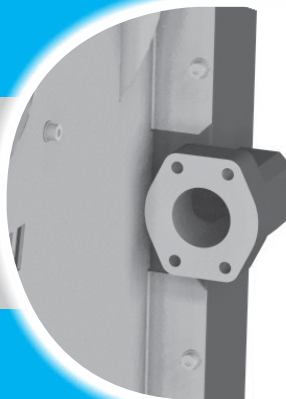
**page 24 to 29**



**Style C**

**High Line**  
**280kW / 800lpm**

**page 30 to 31**

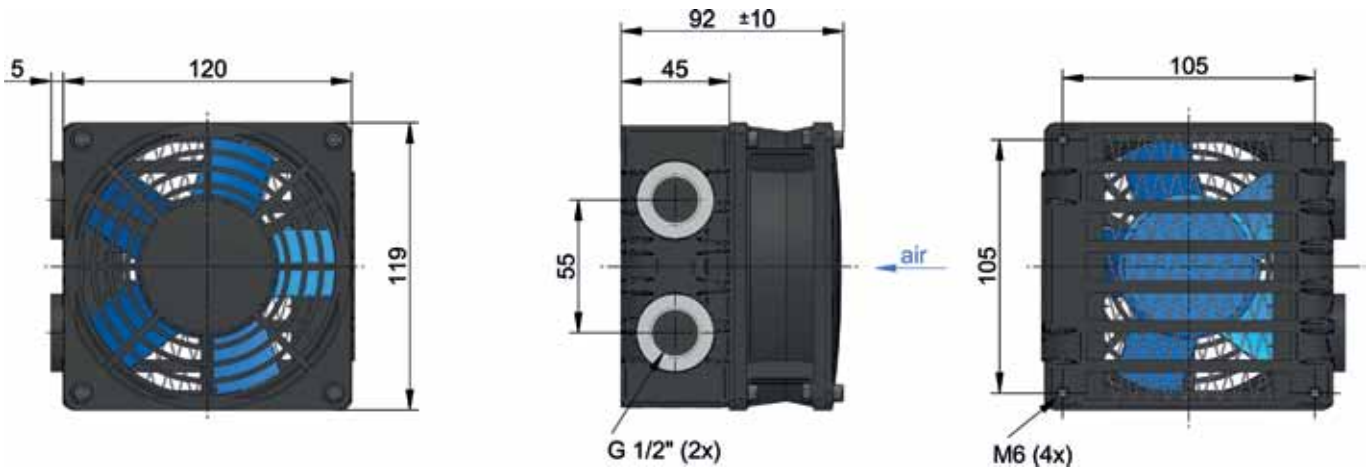


**Style D**

**quality trough  
standardization**

# LowLine LL 01 Oil / Air Cooler

## 12V / 24V DC



### Technical Data

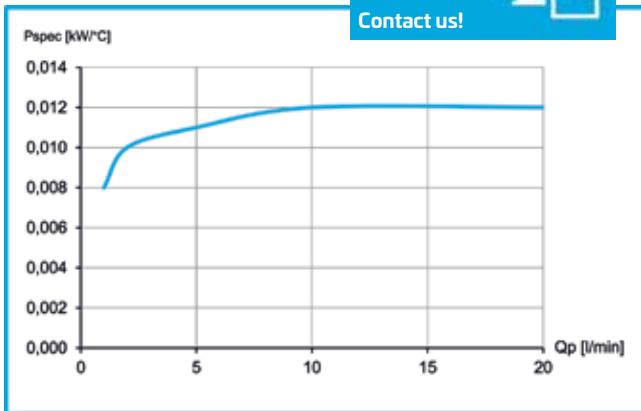
order number	description	power	current	protection level	air flow	noise level	weight
		[kW]	[A]		[kg/s]	[dB(A)]	[kg]
ASA0013GD01	LL 01 12V DC	0,04	0,31	IP 20	0,033	44	1,4
ASA0013GD02	LL 01 24V DC	0,04	0,15	IP 20	0,033	44	1,4

### Performance

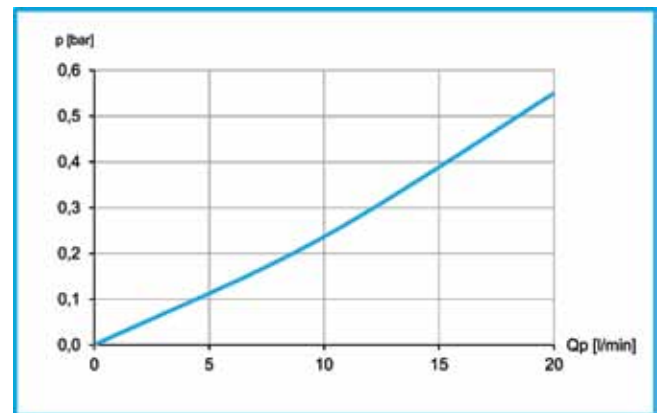
specific cooling performance

all products  
water/glycol  
compatibel

Contact us!



pressure drop at 30cSt



### Radiator Style A

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

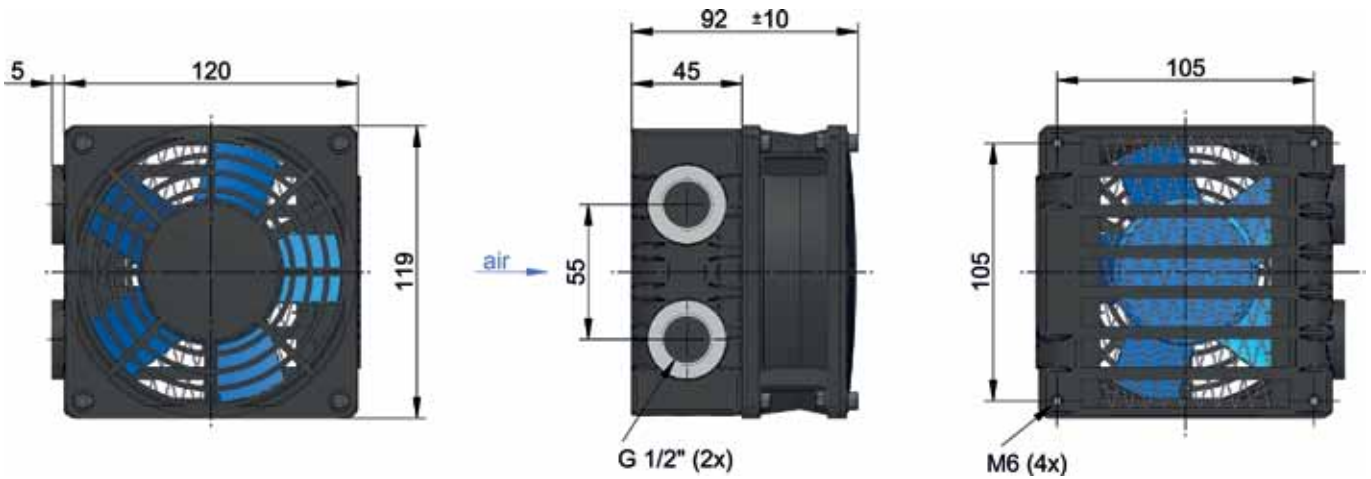


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# LowLine LL 01 Oil / Air Cooler

## 230V / 50Hz AC



### Technical Data

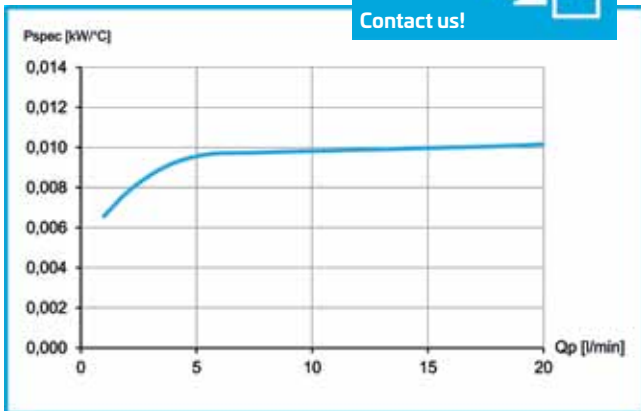
order number	description	power	current	protection	rotation	air flow	noise level	weight
		[kW]	[A]		[rpm]	[kg/s]	[dB(A)]	[kg]
ASA0013GE01	ASA LL 01 230V AC	0,02	0,08	IP 20	2650	0,03	41	1,5

### Performance

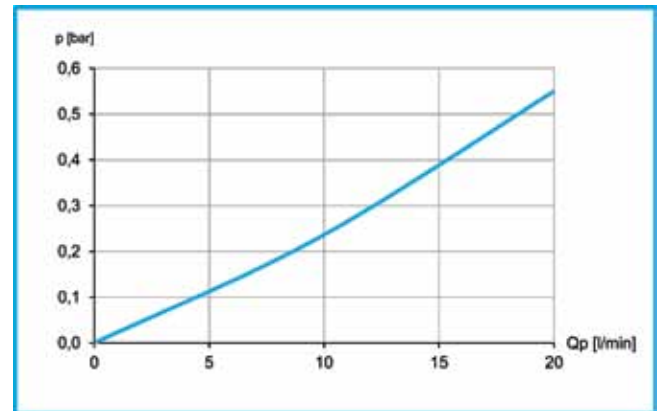
#### specific cooling performance

all products  
water/glycol  
compatibel

Contact us!



#### 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)



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# LowLine LL 03 L Oil / Air Cooler

## 12V / 24V DC



## Technical Data

order number	description	power	current	protection	air flow	noise level	weight
		[kW]	[A]		[kg/s]	[dB(A)]	[kg]
ASA0033GD01	LL 03L 12V DC	0,07	5,4	IP 68	0,13	68	3,5
ASA0033GD02	LL 03L 24V DC	0,07	2,7	IP 68	0,13	68	3,5

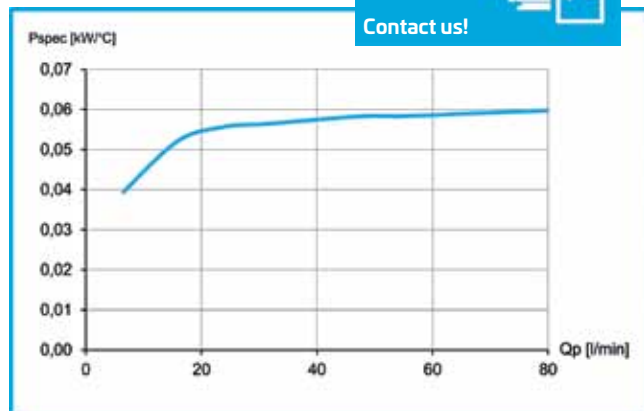
## Performance

specific cooling performance

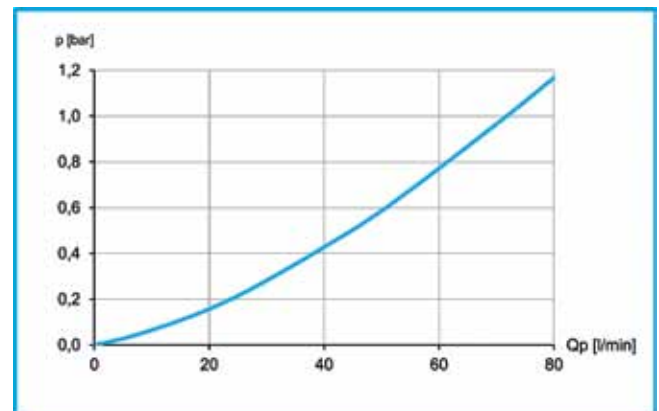
all products  
water/glycol  
compatibel



Contact us!



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

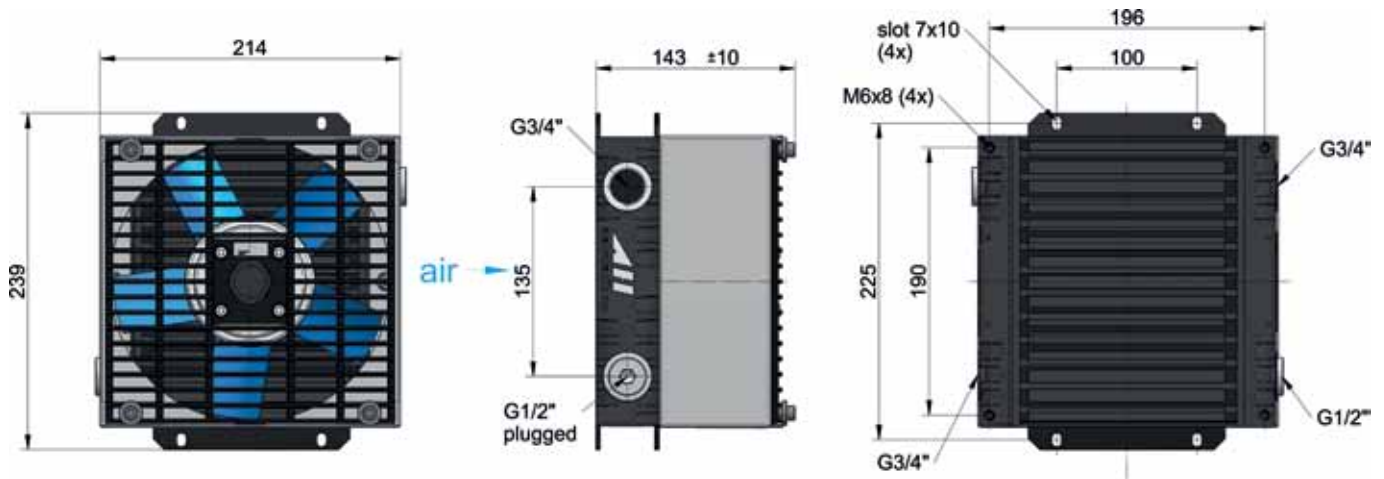
temperature switches IP65	ILLZTH4765K, ILLZTH6065K (page 39)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 39)
temperaure control	ILLZTC12-2K, ILLZTC24-2K (page 37)



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# LowLine LL 03 L Oil / Air Cooler

## 230/400V 50Hz AC



### Technical Data

order number	description	power	current	protection	rotation	air flow	noise level	weight
		[kW]	[A]		[rpm]	[kg/s]	[dB(A)]	[kg]
ASA0033GI02	LL 03L 230/400V AC	0,05	0,20	IP 44	2550	0,16	61	5,4

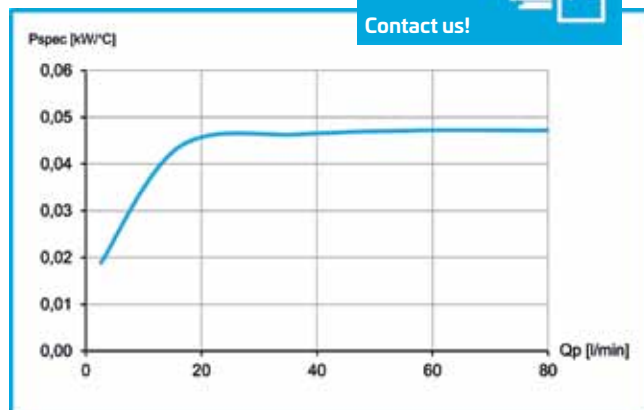
### Performance

specific cooling performance

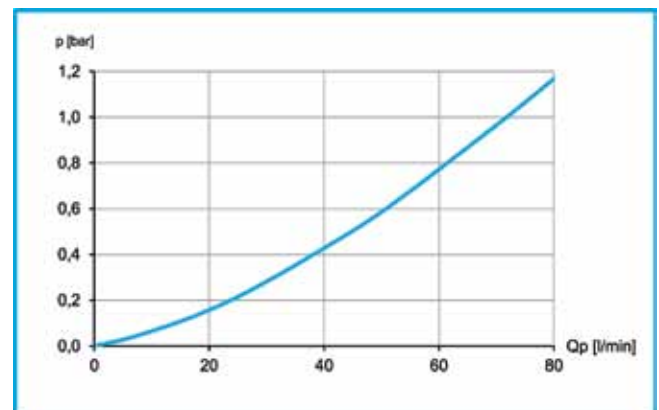
all products  
water/glycol  
compatibel



Contact us!



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

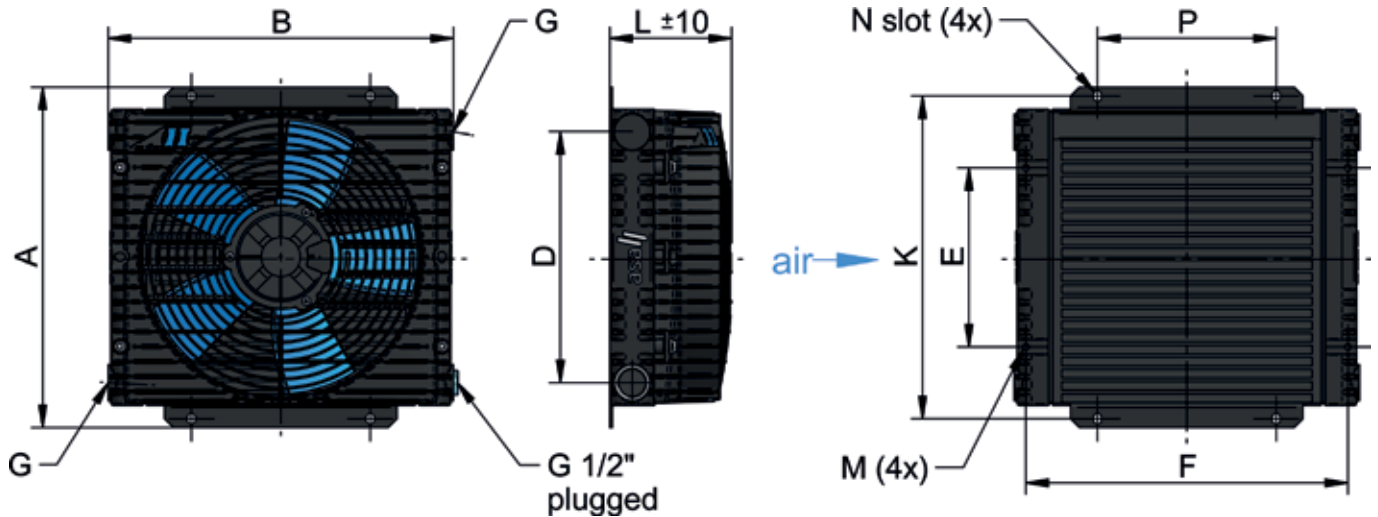
temperature switches IP65	ILLZTH4765K, ILLZTH6065K (page 39)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 39)



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# LowLine 03, 06 and 08 Oil / Air Cooler

## 12V / 24V DC, HP (high performance) and internal bypass



### 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]
ASA0034GD01	LL 03 12V DC	255	250	180	144	225	G ¾"	240	134	M6	7x10	120
ASA0034GD02	LL 03 24V DC	255	250	180	144	225	G ¾"	240	134	M6	7x10	120
ASATT06GD03*	LL 06 12V DC	290	320	215	180	301	G ¾"	269	145	M6	7x10	155
ASATT06GD04*	LL 06 24V DC	290	320	215	180	301	G ¾"	269	145	M6	7x10	155
ASA0084GD01	LL 08 12V DC	380	386	280	200	360	G 1"	360	136	M8	9x12	200
ASA0084GD02	LL 08 24V DC	380	386	280	200	360	G 1"	360	136	M8	9x12	200
ASA0084GD03	LL 08 12V DC HP	380	386	280	200	360	G 1"	360	157	M8	9x12	200
ASA0084GD04	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	optional internal bypass (2 bar)
		[kW]	[A]		[kg/s]	[dB(A)]	[kg]	cooler order number
ASA0034GD01	LL 03 12V DC	0,11	8,5	IP 68	0,24	68	4,2	ASA0034GD01BP
ASA0034GD02	LL 03 24V DC	0,11	4,2	IP 68	0,24	68	4,2	ASA0034GD02BP
ASATT06GD03*	LL 06 12V DC	0,10	7,7	IP 68	0,29	74	5,6	ASATT06GD03BP
ASATT06GD04*	LL 06 24V DC	0,10	3,6	IP 68	0,29	74	5,6	ASATT06GD04BP
ASA0084GD01	LL 08 12V DC	0,16	12,5	IP 68	0,51	74	8,3	ASA0084GD01BP
ASA0084GD02	LL 08 24V DC	0,21	7,9	IP 68	0,51	74	8,3	ASA0084GD02BP
ASA0084GD03	LL 08 12V DC HP	0,29	22,2	IP 68	0,69	77	9	ASA0084GD03BP
ASA0084GD04	LL 08 24V DC HP	0,30	11,4	IP 68	0,69	77	9	ASA0084GD04BP

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

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# LowLine 03, 06 and 08 Oil / Air Cooler

## 12V / 24V DC, HP (high performance) and internal bypass



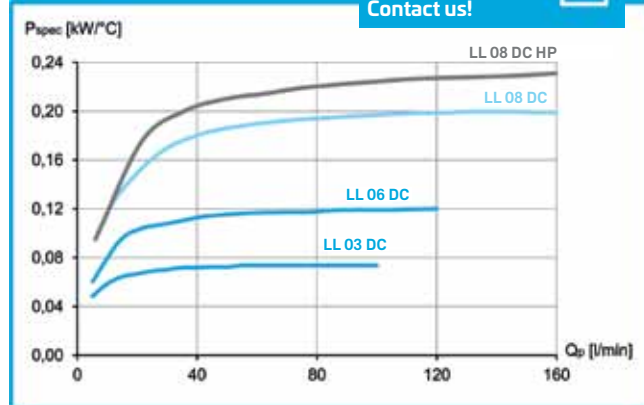
### Performance

specific cooling performance

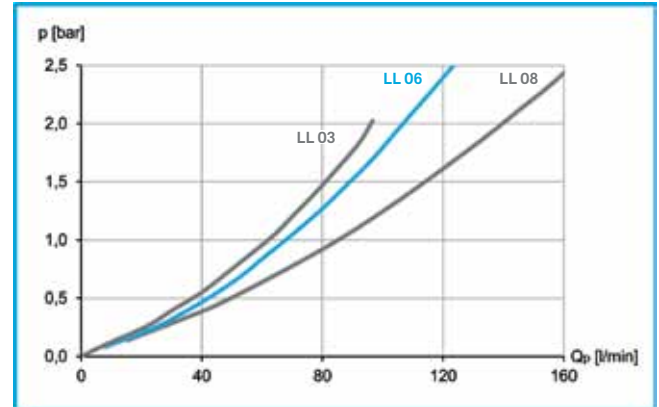
all products  
water/glycol  
compatibel



Contact us!



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

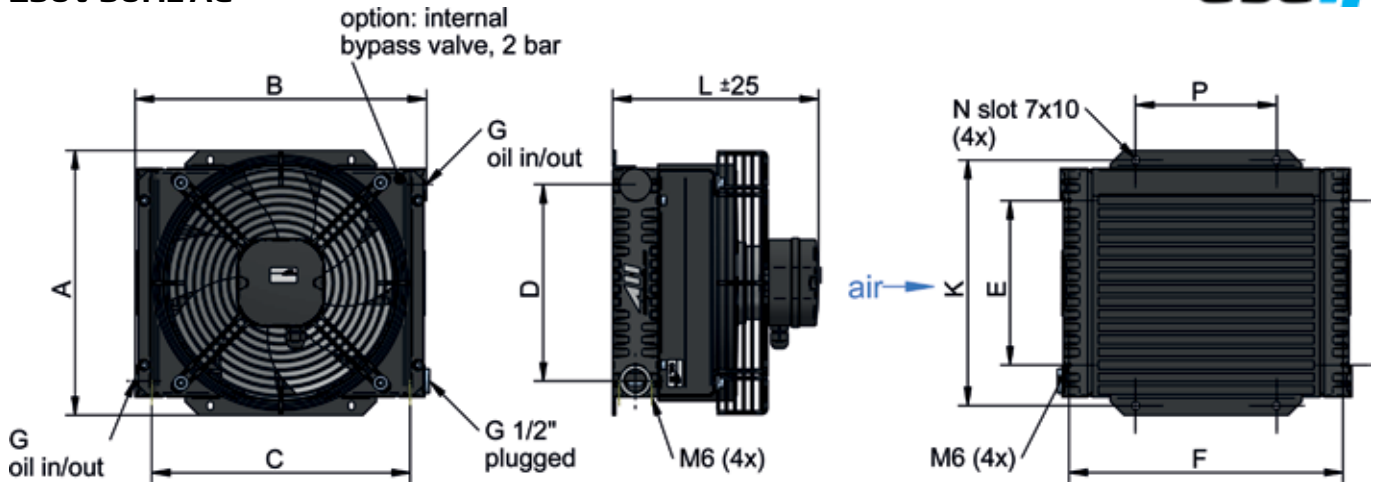
mounting feet kit	ILLEFUSSTT06K
temperature switches IP65	ILLZTH4765K, ILLZTH6065K (page 39)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 39)
temperature control	ILLZTC12-2K, ILLZTC24-2K (page 37)
protection housing	on request



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# 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]
ASA0034GC2E	LL 03 AC compact	255	250	214	180	144	225	G 3/4"	240	246	7x10	120
ASATT06GC2E	LL 06 AC compact	290	323	284	215	180	301	G 3/4"	269	226	7x10	155
ASA0084GC2E	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	Optionaal internal bypass (2bar)
		[kW]	[A]		[rpm]	[kg/s]	[dB(A)]	[kg]	cooler order number
ASA0034GC2E	LL 03 AC compact	0,055	0,25	IP 44	2500	0,17	61	6,9	ASA0034GC2EBP
ASATT06GC2E	LL 06 AC compact	0,10	0,45	IP 44	2480	0,32	66	7,9	ASATT06GC2EBP
ASA0084GC2E	LL 08 AC compact	0,12	0,55	IP 44	2400	0,38	67	11	ASA0084GC2EBP

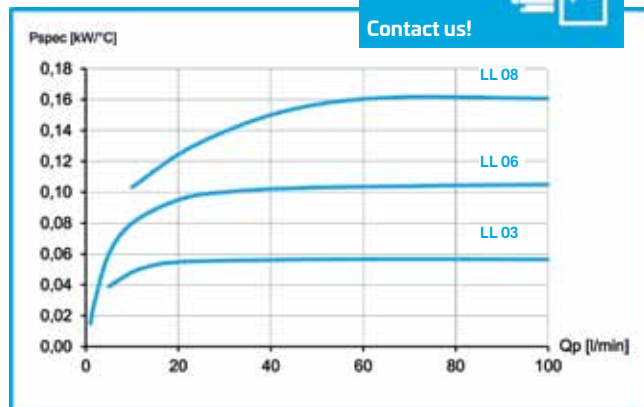
### Performance

#### specific cooling performance

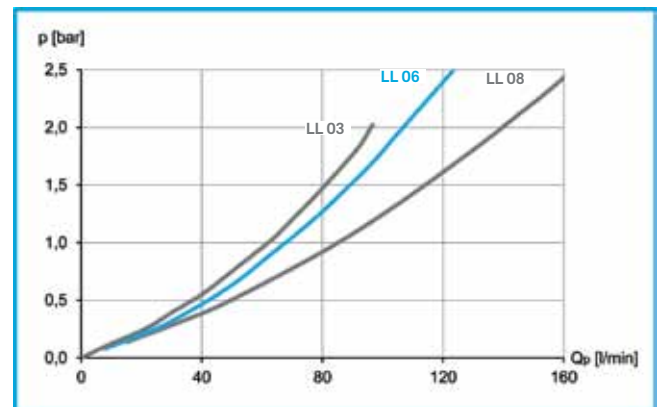
all products  
water/glycol  
compatibel



Contact us!



#### 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	ILLEFUSSTT06K (on request)
temperature switches IP65	ILLZTH4765K, ILLZTH6065K (page 39)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 39)

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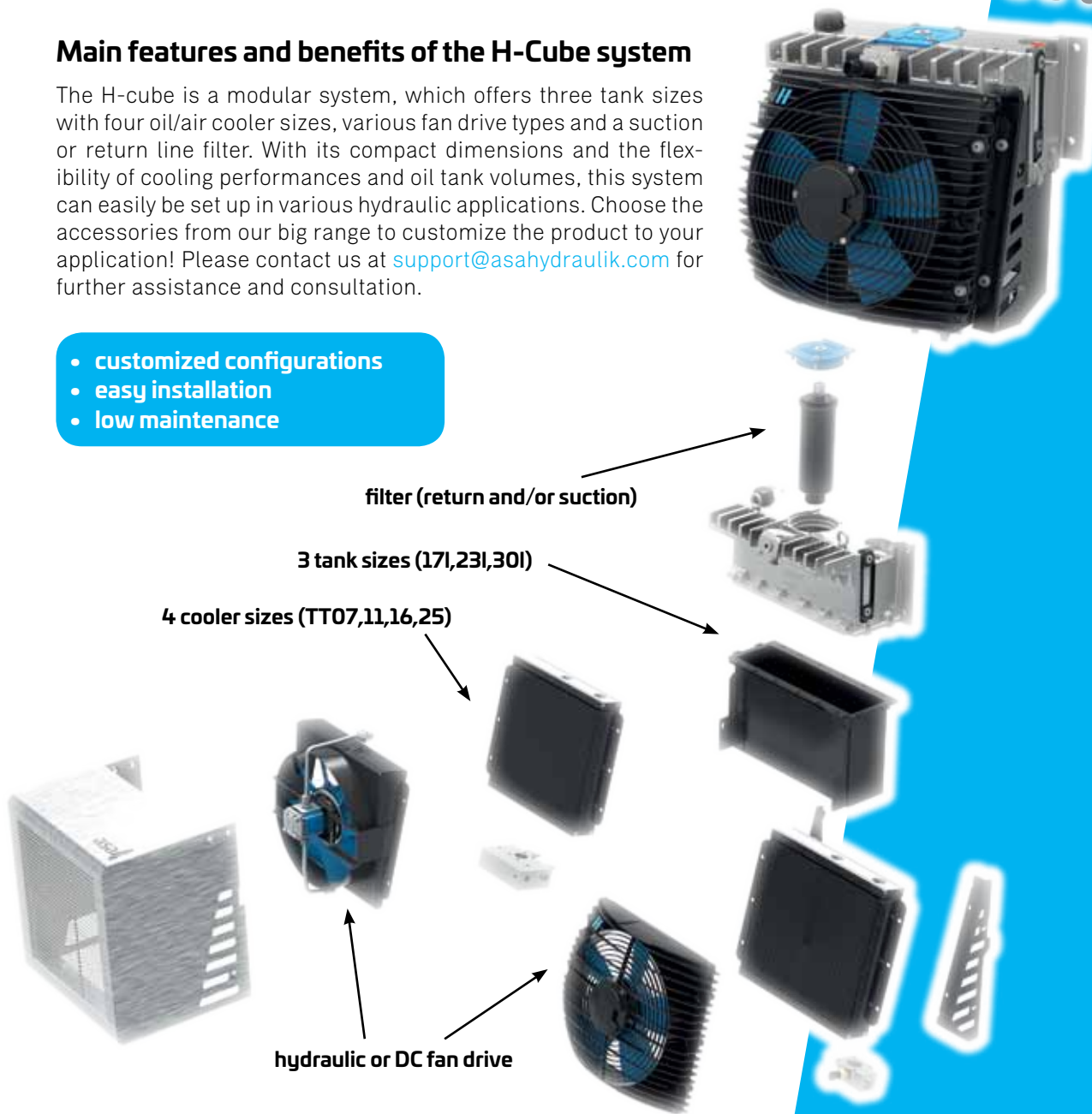
# H-Cube Series

# New!

## Main features and benefits of the H-Cube system

The H-cube is a modular system, which offers three tank sizes with four oil/air cooler sizes, various fan drive types and a suction or return line filter. With its compact dimensions and the flexibility of cooling performances and oil tank volumes, this system can easily be set up in various hydraulic applications. Choose the accessories from our big range to customize the product to your application! Please contact us at [support@asahydraulik.com](mailto:support@asahydraulik.com) for further assistance and consultation.

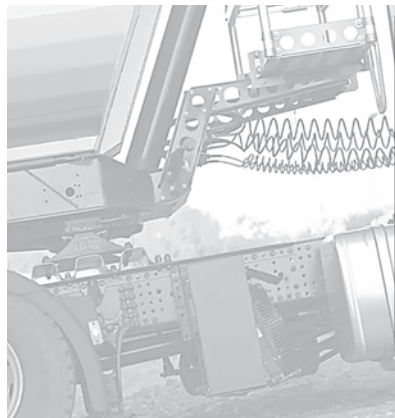
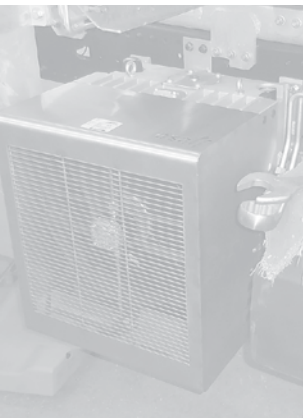
- customized configurations
- easy installation
- low maintenance



## Applications

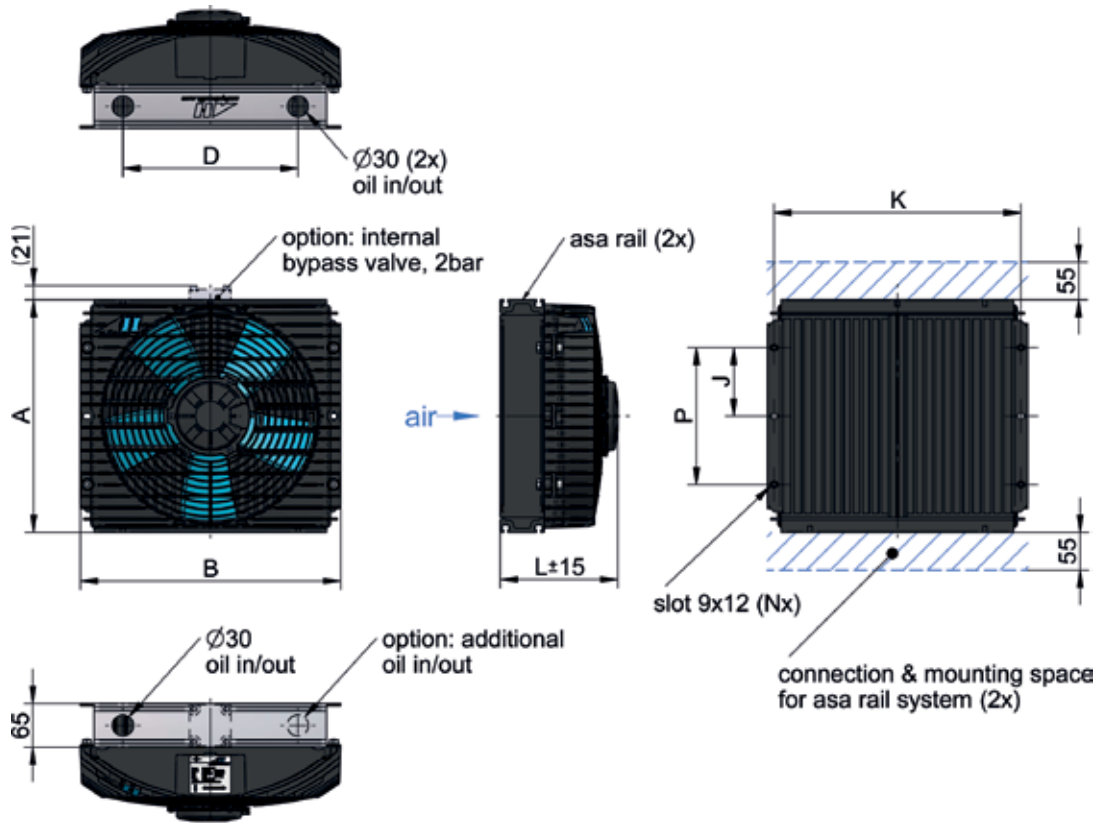
The H-cube system can be configured to various applications. It can be flanged directly onto the framework of a truck, as well as transverse to the driving direction.

- live floor trailers
- front axle drive service unit
- silo transporters
- liquid tankers like crude oil trucks
- food & chemical transporters
- compressor drive systems, .....



# TT Series Oil / Air Cooler

## 12V/24V DC, asa rail system



## Dimensions

order number	description	A	B	D	J	P	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
ASATT05RD01	TT 05 rail 12V DC	235	245	118	-	150	225	150	4	4,3
ASATT05RD02	TT 05 rail 24V DC	235	245	118	-	150	225	150	4	4,3
ASATT07RD01	TT 07 rail 12V DC	300	320	176	-	172	290	160	4	6,5
ASATT07RD02	TT 07 rail 24V DC	300	320	176	-	172	290	160	4	6,5
ASATT07RD03	TT 07 rail 12V DC h.p.	300	320	176	-	172	290	176	4	7,0
ASATT07RD04	TT 07 rail 24V DC h.p.	300	320	176	-	172	290	176	4	7,0
ASATT11RD01	TT 11 rail 12V DC	340	380	255	100	200	360	175	6	9,2
ASATT11RD02	TT 11 rail 24V DC	340	380	255	100	200	360	175	6	9,2
ASATT13RD01	TT 13 rail 12V DC	420	410	255	-	233	386	200	4	12,0
ASATT13RD02	TT 13 rail 24V DC	420	410	255	-	233	386	200	4	12,0
ASATT16RD01	TT 16 rail 12V DC	465	460	328	153	306	436	190	6	14,9
ASATT16RD02	TT 16 rail 24V DC	465	460	328	153	306	436	190	6	14,9
ASATT21RD01	TT 21 rail 12V DC	605	462	328	208,5	417	436	243	6	19,4
ASATT21RD02	TT 21 rail 24V DC	605	462	328	208,5	417	436	243	6	19,4
ASATT21RD03	TT 21 rail 12V DC h.p.	605	462	328	208,5	417	436	261	6	20,4
ASATT21RD04	TT 21 rail 24V DC h.p.	605	462	328	208,5	417	436	261	6	20,4
ASATT25RD01	TT 25 rail 12V DC	605	555	422	208,5	417	530	266	6	22,7
ASATT25RD02	TT 25 rail 24V DC	605	555	422	208,5	417	530	266	6	22,7

## Radiator Style B

material:	aluminum
working temperature range:	$-20^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ (oil temperature)*
air fin shape:	wavy
working pressure:	26 bar (static)

## Installation System (see more information on page 32)

connection BSP 1"	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 1/4"	ILLZSET5G32 (1 set per cooler required)
connection BSP 1" straight	ILLZSET5G25A (1 set per cooler required)
connection BSP 1" straight+stnd.	ILLZSET5G25B (1 set per cooler required)

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

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# TT Series Oil / Air Cooler

## 12V / 24V DC, asa rail system



### Technical Data

order number	description	motor power [kW]	current [A]	protection	air flow [kg/s]	noise level [dB(A)]	optional internal bypass (2 bar) cooler order number
ASATT05RD01	TT 05 rail 12V DC	0,11	8,5	IP 68	0,19	74	on request
ASATT05RD02	TT 05 rail 24V DC	0,11	4,2	IP 68	0,19	74	on request
ASATT07RD01	TT 07 rail 12V DC	0,13	9,6	IP 68	0,32	74	ASATT07RD01BP
ASATT07RD02	TT 07 rail 24V DC	0,14	5,2	IP 68	0,32	74	ASATT07RD02BP
ASATT07RD03	TT 07 rail 12V DC h.p.	0,20	15,6	IP 68	0,40	78	ASATT07RD03BP
ASATT07RD04	TT 07 rail 24V DC h.p.	0,21	8,1	IP 68	0,40	78	ASATT07RD04BP
ASATT11RD01	TT 11 rail 12V DC	0,29	22,6	IP 68	0,57	77	ASATT11RD01BP
ASATT11RD02	TT 11 rail 24V DC	0,30	11,4	IP 68	0,57	77	ASATT11RD02BP
ASATT13RD01	TT 13 rail 12V DC	0,29	22,6	IP 68	0,65	77	ASATT13RD01BP
ASATT13RD02	TT 13 rail 24V DC	0,30	11,4	IP 68	0,65	77	ASATT13RD02BP
ASATT16RD01	TT 16 rail 12V DC	0,28	21,2	IP 68	0,75	79	ASATT16RD01BP
ASATT16RD02	TT 16 rail 24V DC	0,30	11,4	IP 68	0,75	79	ASATT16RD02BP
ASATT21RD01	TT 21 rail 12V DC	0,28	21,2	IP 68	0,82	78	ASATT21RD01BP
ASATT21RD02	TT 21 rail 24V DC	0,30	11,4	IP 68	0,82	78	ASATT21RD02BP
ASATT21RD03	TT 21 rail 12V DC h.p.	0,33	25,5	IP 68	1,02	81	ASATT21RD03BP
ASATT21RD04	TT 21 rail 24V DC h.p.	0,34	13,2	IP 68	1,02	81	ASATT21RD04BP
ASATT25RD01	TT 25 rail 12V DC	0,28	21,2	IP 68	0,88	78	ASATT25RD01BP
ASATT25RD02	TT 25 rail 24V DC	0,30	11,4	IP 68	0,88	78	ASATT25RD02BP

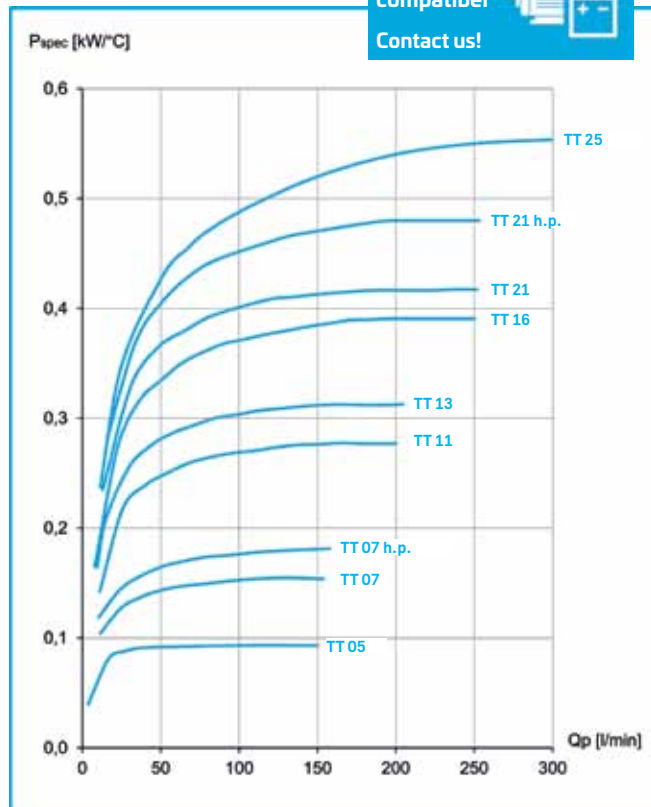
### Performance

#### specific cooling performance

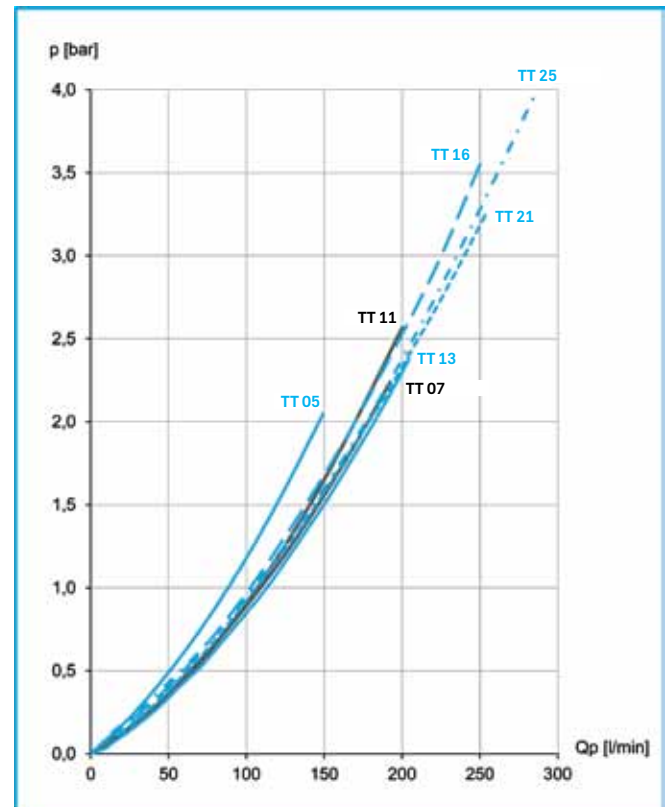
all products  
water/glycol  
compatibel



Contact us!



#### pressure drop at 30cSt



### Options

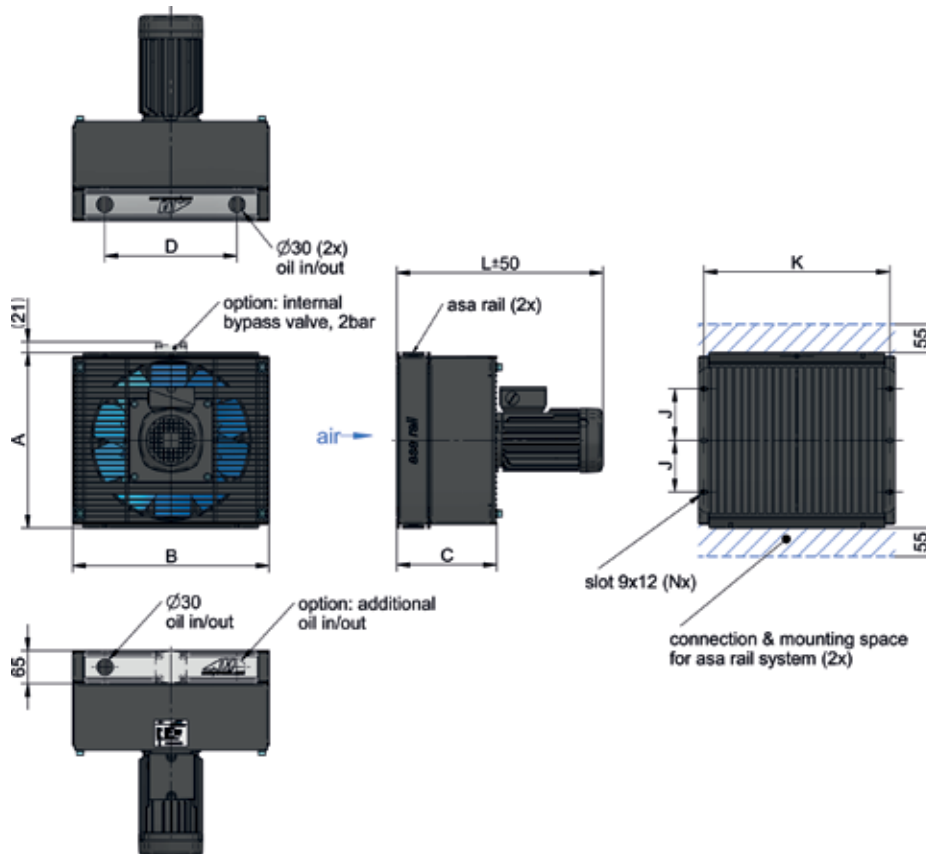
temperature control	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 37, 38)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 39)
protection housings	available for sizes TT 07, 11 and 16 (page 35)
foot mounting	ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)



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# TT Series Oil / Air Cooler

## 230/400V 50Hz AC



## Dimensions

order number	description	A	B	C	D	J	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
ASATT07RA44	TT 07 rail 0,25kW AC	300	320	193	176	86	290	396	4	16,1
ASATT07RA25	TT 07 rail 0,55kW AC	300	320	193	176	86	290	396	4	17,0
ASATT11RA44	TT 11 rail 0,25kW AC	340	380	194	255	100	360	398	6	19,9
ASATT11RA25	TT 11 rail 0,55kW AC	340	380	194	255	100	360	398	6	20,9
ASATT16RA64	TT 16 rail 0,18kW AC	465	462	219	328	153	436	414	6	28,1
ASATT16RA44	TT 16 rail 0,25kW AC	465	462	219	328	153	436	414	6	27,4
ASATT16RA25	TT 16 rail 0,55kW AC	465	462	219	328	153	436	414	6	27,5
ASATT21RA66	TT 21 rail 0,37kW AC	605	558	222	328	208,5	436	444	6	40,8
ASATT21RA47	TT 21 rail 0,75kW AC	605	558	222	328	208,5	436	444	6	42,6
ASATT25RA66	TT 25 rail 0,37kW AC	605	558	219	422	208,5	530	440	6	41,2
ASATT25RA47	TT 25 rail 0,75kW AC	605	558	219	422	208,5	530	440	6	43,0

## Technical Data

order number	description	motor power	current	motor size	protection	rotation	air flow	noise level	optional internal bypass (2 bar)
		[kW]	[A]			[rpm]	[kg/s]	[dB(A)]	cooler order number
ASATT07RA44	TT 07 rail 0,25kW AC	0,25	0,73	71	IP 55	1395	0,19	65	ASATT07RA44BP
ASATT07RA25	TT 07 rail 0,55kW AC	0,55	1,32	71	IP 55	2775	0,40	81	ASATT07RA25BP
ASATT11RA44	TT 11 rail 0,25kW AC	0,25	0,73	71	IP 55	1395	0,48	73	ASATT11RA44BP
ASATT11RA25	TT 11 rail 0,55kW AC	0,55	1,32	71	IP 55	2775	0,98	83	ASATT11RA25BP
ASATT16RA64	TT 16 rail 0,18kW AC	0,18	0,80	71	IP 55	920	0,44	63	ASATT16RA64BP
ASATT16RA44	TT 16 rail 0,25kW AC	0,25	0,73	71	IP 55	1395	0,64	73	ASATT16RA44BP
ASATT16RA25	TT 16 rail 0,55kW AC	0,55	1,32	71	IP 55	2775	0,86	78	ASATT16RA25BP
ASATT21RA66	TT 21 rail 0,37kW AC	0,37	1,17	80	IP 55	935	1,21	71	ASATT21RA66BP
ASATT21RA47	TT 21 rail 0,75kW AC	0,75	1,70	80	IP 55	1445	1,89	81	ASATT21RA47BP
ASATT25RA66	TT 25 rail 0,37kW AC	0,37	1,17	80	IP 55	935	1,30	71	ASATT25RA66BP
ASATT25RA47	TT 25 rail 0,75kW AC	0,75	1,70	80	IP 55	1445	2,00	81	ASATT25RA47BP

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# TT Series Oil / Air Cooler

## 230/400V 50Hz AC



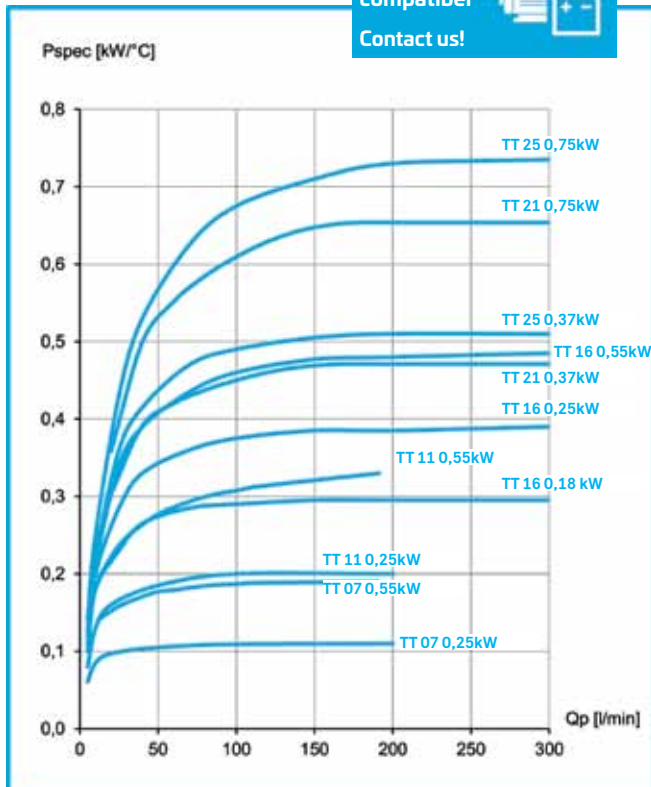
### Performance

specific cooling performance

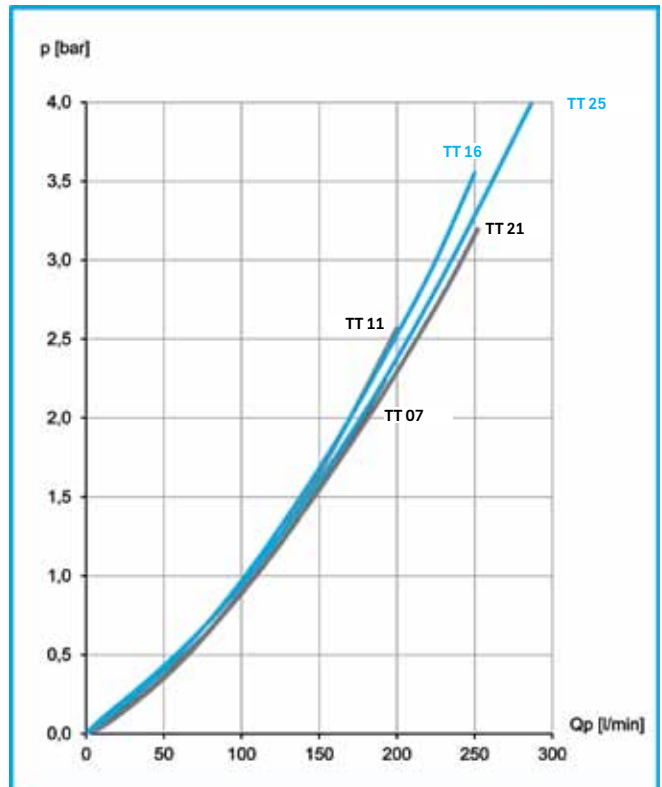
all products  
water/glycol  
compatibel



Contact us!



pressure drop at 30 cSt



### Radiator Style B

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 control	ILLZTCACK (page 40)
temperature switches	ILLZTH4765K, ILLZTH6065K (page 39)
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

### H-Set



Contact us for further information

### Installation System (see more information on page 32)

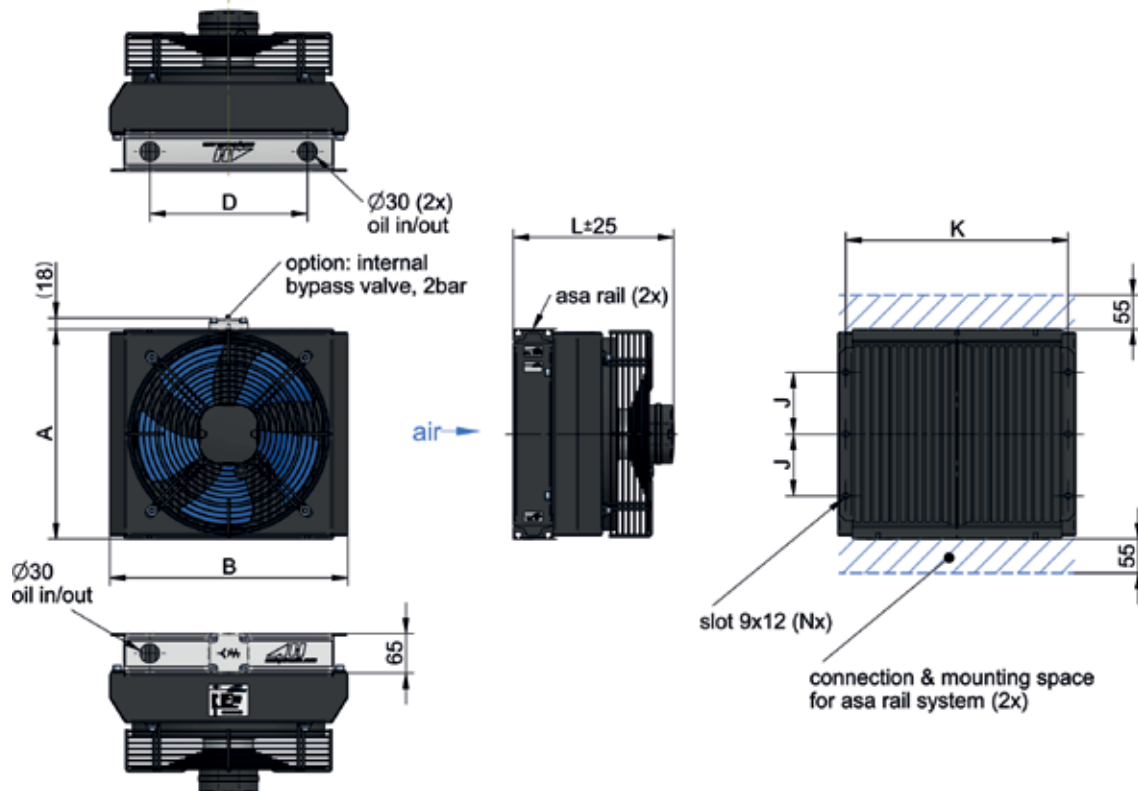
connection BSP 1"	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 1/4"	ILLZSET5G32 (1 set per cooler required)



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# TT Series COMPACT Oil / Air Cooler

## 230V 50Hz AC



## Dimensions

order number	description	A	B	D	J	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
ASATT05RC2E	TT 05 rail 230V/50Hz/2pol compact	235	250	118	75	225	260	4	7,0
ASATT07RC2E	TT 07 rail 230V/50Hz/2pol compact	300	325	176	86	290	260	4	9,0
ASATT11RC4E	TT 11 rail 230V/50Hz/4pol compact	340	385	256	100	360	260	6	11,8
ASATT11RC2E	TT 11 rail 230V/50Hz/2pol compact	340	385	256	100	360	260	6	12,0
ASATT13RC4E	TT 13 rail 230V/50Hz/4pol compact	420	410	255	233	386	260	4	14,9
ASATT16RC4E	TT 16 rail 230V/50Hz/4pol compact	465	465	328	153	436	280	6	19,6

## Technical Data

order number	description	motor power	current	protection	rotation	air flow	noise level	optional internal bypass (2 bar)
		[kW]	[A]		[rpm]	[kg/s]	[db(A)]	cooler order number
ASATT05RC2E	TT 05 rail 230V/50Hz/2pol compact	0,055	0,25	IP 44	2500	0,16	66	on request
ASATT07RC2E	TT 07 rail 230V/50Hz/2pol compact	0,100	0,45	IP 44	2480	0,29	66	ASATT07RC2EBP
ASATT11RC4E	TT 11 rail 230V/50Hz/4pol compact	0,090	0,42	IP 44	1350	0,34	57	ASATT11RC4EBP
ASATT11RC2E	TT 11 rail 230V/50Hz/2pol compact	0,124	0,55	IP 44	2400	0,39	66	ASATT11RC2EBP
ASATT13RC4E	TT 13 rail 230V/50Hz/4pol compact	0,130	0,66	IP 44	1429	0,65	62	ASATT13RC4EBP
ASATT16RC4E	TT 16 rail 230V/50Hz/4pol compact	0,220	1,10	IP 54	1350	0,68	64	ASATT16RC4EBP

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# TT Series COMPACT Oil / Air Cooler

## 230V 50Hz AC



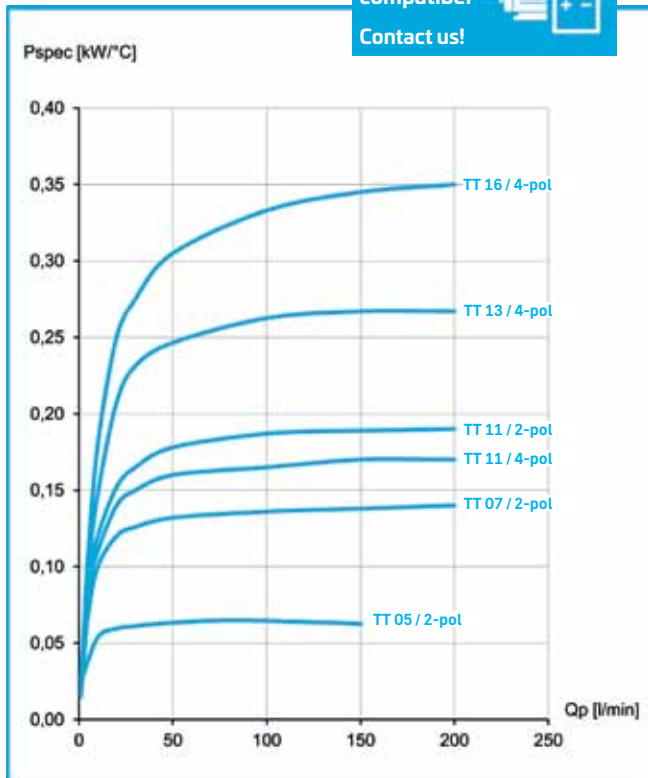
### Performance

specific cooling performance

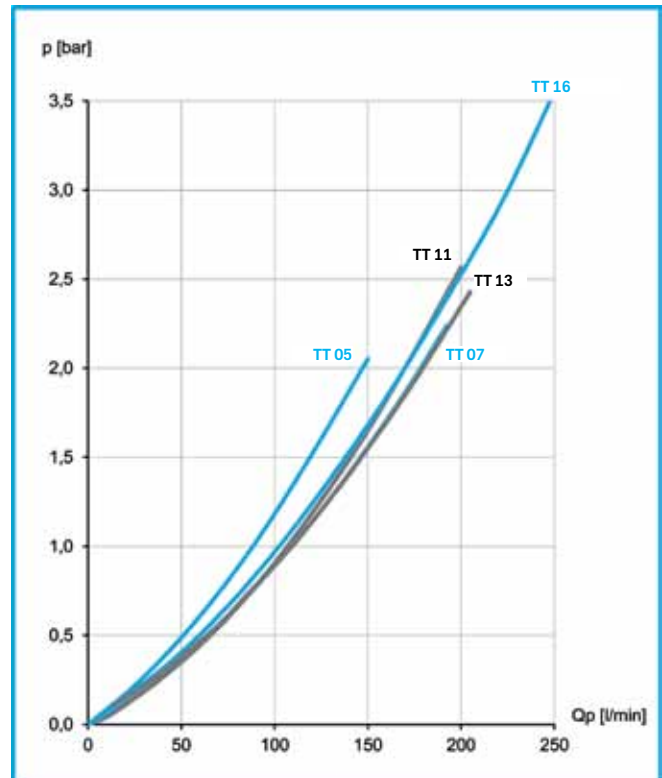
all products  
water/glycol  
compatibel



Contact us!



pressure drop at 30cSt



### Radiator Style B

material:	aluminum
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

115V, 60Hz	on request
230/400V 50Hz 3-phase	on request
temperature control	ILLZTCAK (page 40)
temperature switches	ILLZTH4765K, ILLZTH6065K (page 39)
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

### H-Set



Contact us for further information

### Installation System (see more information on page 32)

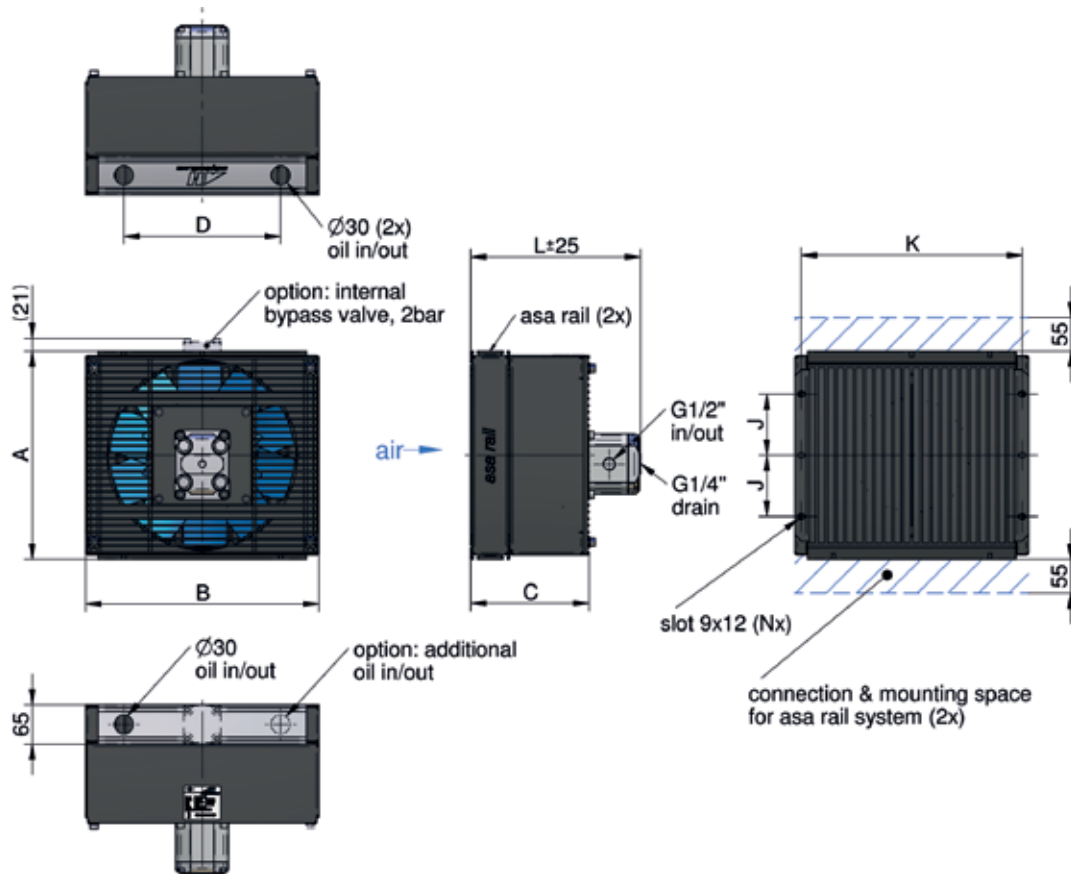
connection BSP 1"	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 1/4"	ILLZSET5G32 (1 set per cooler required)



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# TT Series Oil / Air Cooler

## 11cm<sup>3</sup> hydraulic drive



## Dimensions

order number	description	A	B	C	D	J	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
ASATT11RH11	TT 11 rail 11cm <sup>3</sup> hydr. motor	340	380	194	255	100	360	276	6	17,0
ASATT16RH11	TT 16 rail 11cm <sup>3</sup> hydr. motor	465	462	219	328	153	436	292	6	24,5
ASATT25RH11	TT 25 rail 11cm <sup>3</sup> hydr. motor	605	558	219	422	208,5	530	292	6	32,5

## Technical Data

order number	description	motor power	oil pressure	oil flow	rotation	air flow	noise level	optional internal bypass (2 bar)
		[kW]	[bar]	[lpm]	[rpm]	[kg/s]	[dB(A)]	cooler order number
ASATT11RH11	TT 11 rail 11cm <sup>3</sup> hydr. motor	0,02	1	12	1000	0,33	66	ASATT11RH11BP
		0,19	6	23	2000	0,67	82	
		0,65	12	35	3000	1,02	90	
ASATT16RH11	TT 16 rail 11cm <sup>3</sup> hydr. motor	0,08	4	12	1000	0,47	63	ASATT16RH11BP
		0,67	19	23	2000	0,93	81	
		2,26	43	35	3000	1,42	93	
ASATT25RH11	TT 25 rail 11cm <sup>3</sup> hydr. motor	0,15	9	12	1000	1,37	72	ASATT25RH11BP
		1,19	34	23	2000	2,81	90	
		4,01	77	35	3000	4,24	101	

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# TT Series Oil / Air Cooler

## 11cm<sup>3</sup> hydraulic drive



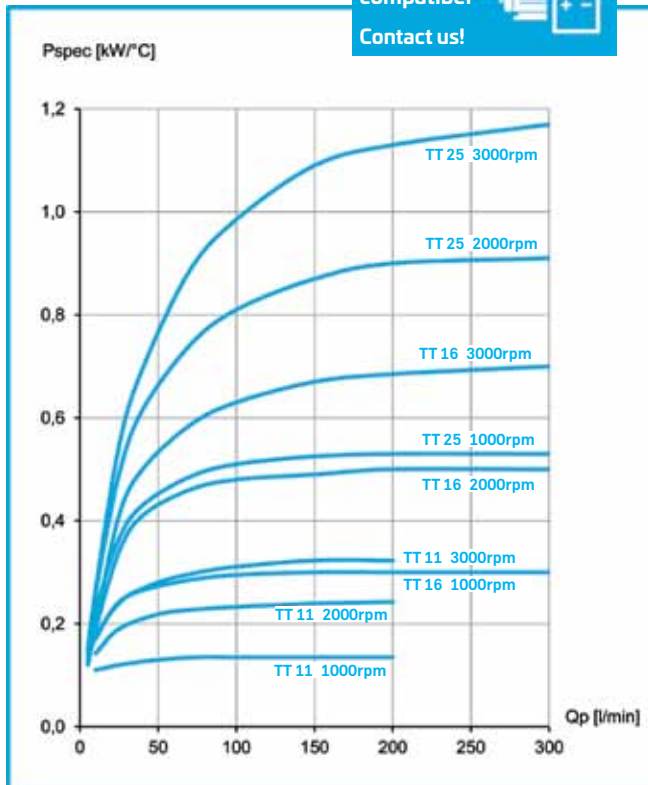
### Performance

specific cooling performance

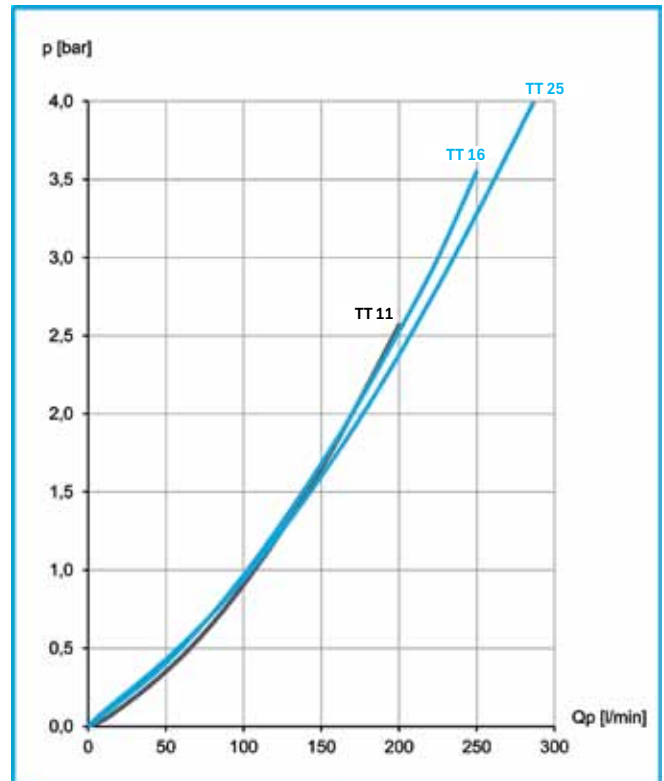
all products  
water/glycol  
compatibel



Contact us!



pressure drop at 30cSt



### Radiator Style B

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 switches	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 39)
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

### H-Set



Contact us for further information

### Installation System (see more information on page 32)

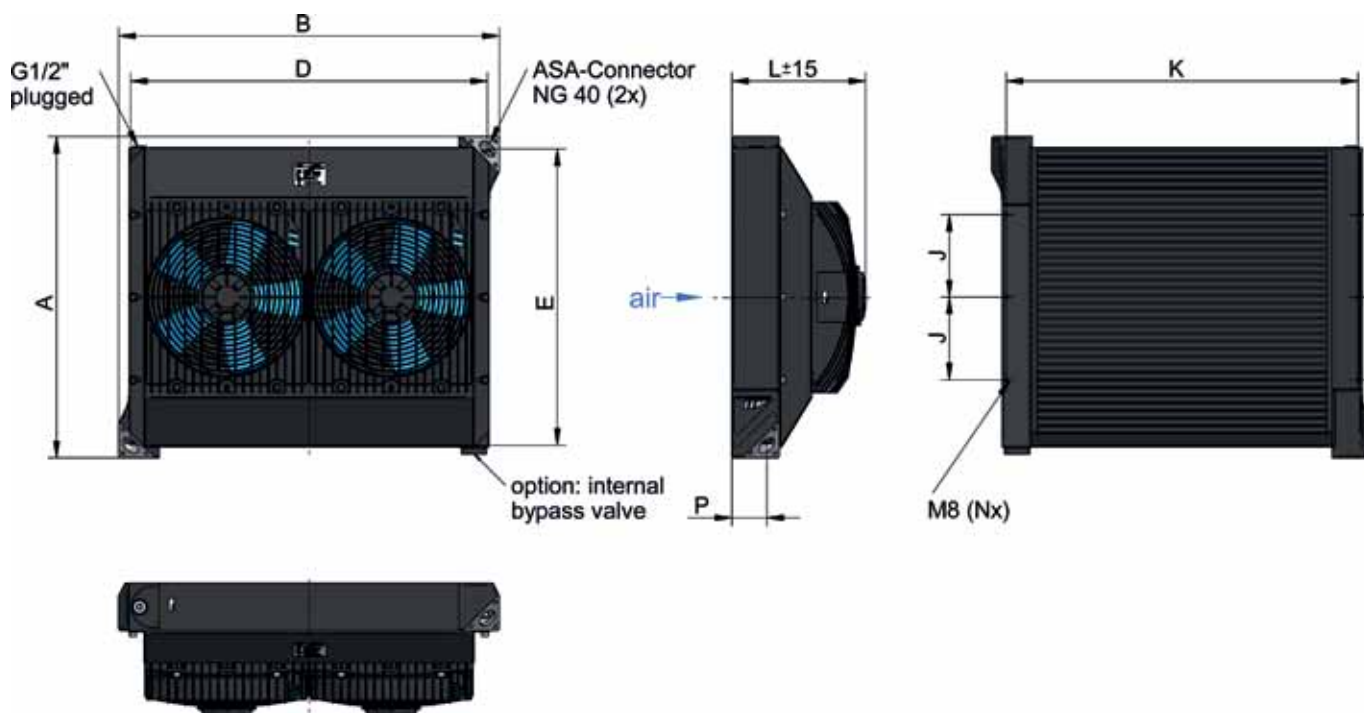
connection BSP 1"	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 1/4"	ILLZSET5G32 (1 set per cooler required)



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# ASA Series Oil / Air Cooler

## 12V / 24V DC



## Dimensions

order number	description	A	B	D	E	J	K	L	N	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[kg]
ASA0177AD01	ASA 0177 12V DC	466	582	535	412	153	520	228	4	68	24,5
ASA0177AD02	ASA 0177 24V DC	466	582	535	412	153	520	228	4	68	24,5
ASA0257AD03	ASA 0257 12V DC h.p.	555	690	635	501	208,5	620	259	6	68	36,2
ASA0257AD04	ASA 0257 24V DC h.p.	555	690	635	501	208,5	620	259	6	68	36,2
ASA0367AD01	ASA 0367 12V DC	642	762	714	596	165	704	268	6	68	41,7
ASA0367AD02	ASA 0367 24V DC	642	762	714	596	165	704	268	6	68	41,7

## Technical Data

order number	description	motor power	current	protection	air flow	noise level	optional internal bypass (2 bar)
		[kW]	[A]		[kg/s]	[db(A)]	cooler order number
ASA0177AD01	ASA 0177 12V DC	0,28*	21,2*	IP 68	0,76	79	ASA0177AD01BP
ASA0177AD02	ASA 0177 24V DC	0,30*	11,4*	IP 68	0,76	79	ASA0177AD02BP
ASA0257AD03	ASA 0257 12V DC h.p.	2 x 0,29	2 x 22,6	IP 68	1,44	84	ASA0257AD03BP
ASA0257AD04	ASA 0257 24V DC h.p.	2 x 0,30	2 x 11,4	IP 68	1,44	84	ASA0257AD04BP
ASA0367AD01	ASA 0367 12V DC	2 x 0,29	2 x 22,6	IP 68	1,53	84	ASA0367AD01BP
ASA0367AD02	ASA 0367 24V DC	2 x 0,30	2 x 11,4	IP 68	1,53	84	ASA0367AD02BP

\*... single fan

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# ASA Series Oil / Air Cooler

## 12V / 24V DC



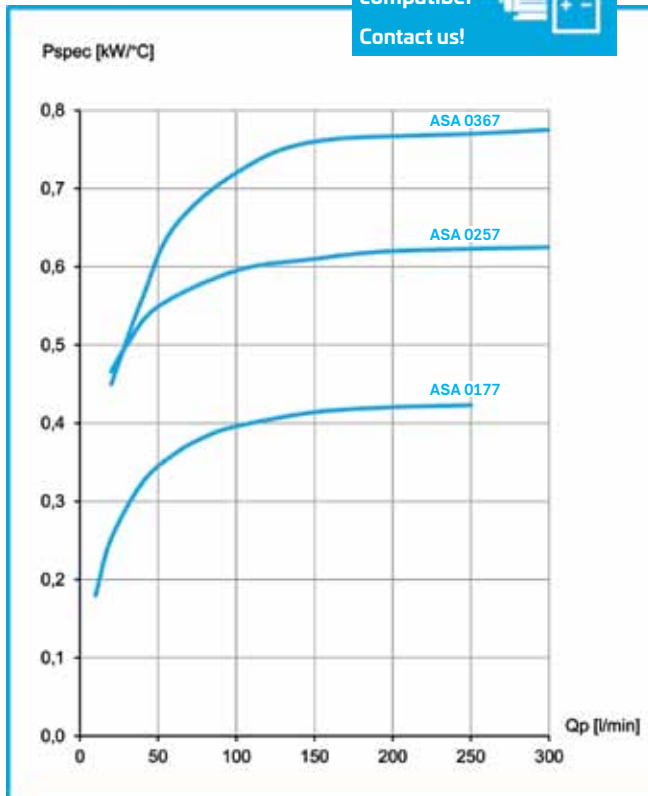
### Performance

specific cooling performance

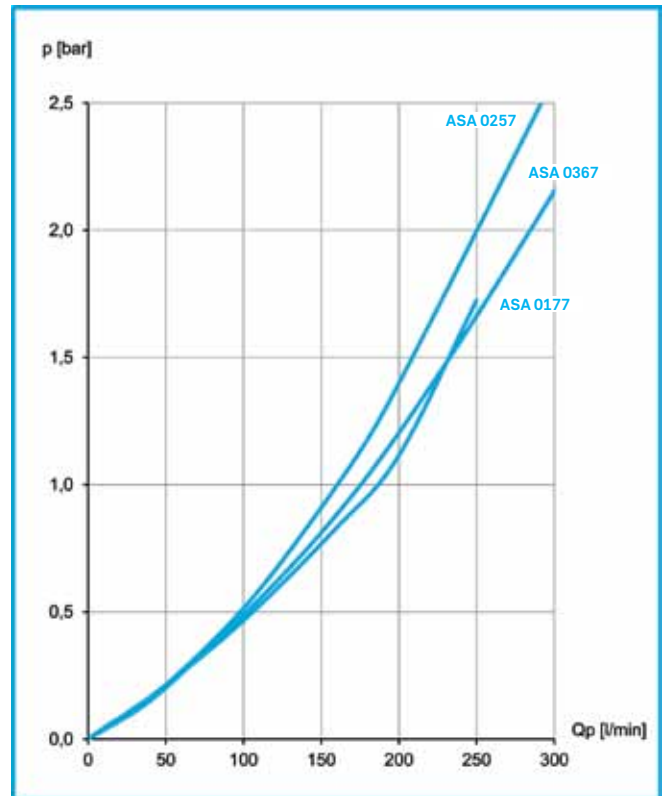
all products  
water/glycol  
compatibel



Contact us!



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	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 37, 38)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 39)
Intermediate plate NG40	ILLZASA40-40G12 (page 33)
internal bypass	alternative bypass settings (0,5bar / 3,5bar)

### Installation System (see more information on page 33)

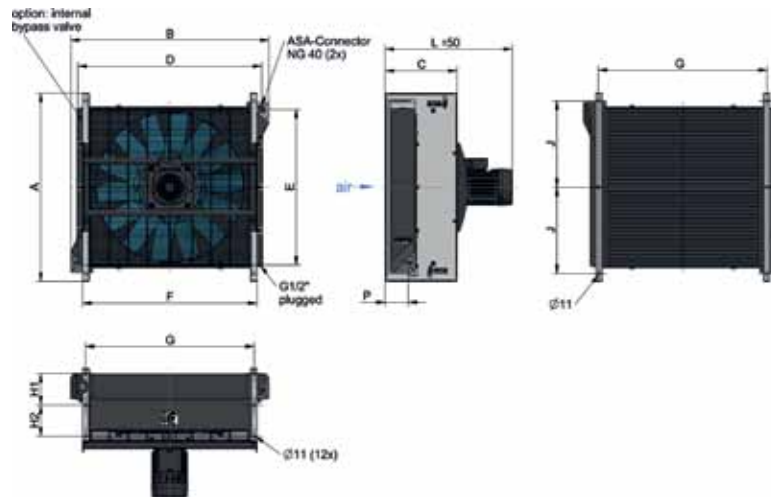
connection BSP 1 ¼"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40 (2 pieces per cooler required)



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# 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]
ASA0177AA64	ASA 0177 0,18kW AC	530	582	260	534	416	462	442	120	90	490	486	89	39,3
ASA0177AA44	ASA 0177 0,25kW AC	530	582	260	534	416	462	442	120	90	490	486	89	38,7
ASA0177AA25	ASA 0177 0,55kW AC	530	582	260	534	416	462	442	120	90	490	486	89	38,5
ASA0257AA66	ASA 0257 0,37kW AC	635	682	270	634	501	562	542	110	110	280	520	93	53,2
ASA0257AA47	ASA 0257 0,75kW AC	635	682	270	634	501	562	542	110	110	280	520	93	55
ASA0367AA66	ASA 0367 0,37kW AC	720	762	280	715	596	676	656	120	120	330	533	92	63,2
ASA0367AA47L	ASA 0367 0,75kW AC*	720	762	280	715	596	676	656	120	120	330	533	92	63,2
ASA0367AA47	ASA 0367 0,75kW AC	720	762	280	715	596	676	656	120	120	330	533	92	64,9
ASA0467AA66	ASA 0467 0,37kW AC	785	837	290	789	668	758	738	125	125	375	550	94	79,9
ASA0467AA47	ASA 0467 0,75kW AC	785	837	290	789	668	758	738	125	125	375	550	94	81,6
ASA0467AA4A	ASA 0467 2,20kW AC	785	837	290	789	668	758	738	125	125	375	633	94	105,3
ASA0567AA66	ASA 0567 0,37kW AC	860	920	290	865	746	826	806	125	125	400	543	92	81
ASA0567AA47	ASA 0567 0,75kW AC	860	920	290	865	746	826	806	125	125	400	543	92	82,7
ASA0567AA4A	ASA 0567 2,20kW AC	860	920	290	865	746	826	806	125	125	400	626	92	112,4
ASA0727AA6A	ASA 0727 1,50kW AC	960	1012	360	964	852	936	912	160	160	460	640	95	134,6
ASA0727AA4A	ASA 0727 2,20kW AC	960	1012	360	964	852	936	912	160	160	460	640	95	131,5
ASA0927AA6A	ASA 0927 1,50kW AC	1100	1170	320	1115	912	1058	1031	130	130	522,5	664	87	156,4
ASA0927AA6E	ASA 0927 4,00kW AC	1100	1170	320	1115	912	1058	1031	130	130	522,5	723	87	196

\*... low noise version

### Technical Data

order number	description	motor power	current	motor size	protection	rotation	air flow	noise level	optional internal bypass (2 bar)
		[kW]	[A]			[rpm]	[kg/s]	[db(A)]	cooler order number
ASA0177AA64	ASA 0177 0,18kW AC	0,18	0,80	71	IP 55	920	0,55	62	ASA0177AA64BP
ASA0177AA44	ASA 0177 0,25kW AC	0,25	0,73	71	IP 55	1395	0,86	74	ASA0177AA44BP
ASA0177AA25	ASA 0177 0,55kW AC	0,55	1,32	71	IP 55	2775	1,06	91	ASA0177AA25BP
ASA0257AA66	ASA 0257 0,37kW AC	0,37	1,17	80	IP 55	935	0,75	68	ASA0257AA66BP
ASA0257AA47	ASA 0257 0,75kW AC	0,75	1,70	80	IP 55	1445	1,14	79	ASA0257AA47BP
ASA0367AA66	ASA 0367 0,37kW AC	0,37	1,17	80	IP 55	935	0,94	73	ASA0367AA66BP
ASA0367AA47L	ASA 0367 0,75kW AC*	0,75	1,70	80	IP 55	1445	1,20	79	ASA0367AA47BPL
ASA0367AA47	ASA 0367 0,75kW AC	0,75	1,70	80	IP 55	1445	1,47	83	ASA0367AA47BP
ASA0467AA66	ASA 0467 0,37kW AC	0,37	1,17	80	IP 55	935	1,12	74	ASA0467AA66BP
ASA0467AA47	ASA 0467 0,75kW AC	0,75	1,70	80	IP 55	1445	1,77	84	ASA0467AA47BP
ASA0467AA4A	ASA 0467 2,20kW AC	2,20	4,80	100	IP 55	1455	2,20	88	ASA0467AA4ABP
ASA0567AA66	ASA 0567 0,37kW AC	0,37	1,17	80	IP 55	935	1,21	74	ASA0567AA66BP
ASA0567AA47	ASA 0567 0,75kW AC	0,75	1,70	80	IP 55	1445	1,89	81	ASA0567AA47BP
ASA0567AA4A	ASA 0567 2,20kW AC	2,20	4,80	100	IP 55	1455	2,80	88	ASA0567AA4ABP
ASA0727AA6A	ASA 0727 1,50kW AC	1,50	3,44	100	IP 55	955	4,80	82	ASA0727AA6ABP
ASA0727AA4A	ASA 0727 2,20kW AC	2,20	4,80	100	IP 55	1455	5,60	92	ASA0727AA4ABP
ASA0927AA6A	ASA 0927 1,50kW AC	1,50	3,44	100	IP 55	955	5,46	86	not available
ASA0927AA6E	ASA 0927 4,00kW AC	4,00	9,70	132	IP 55	965	7,85	89	not available

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# ASA Series Oil / Air Cooler

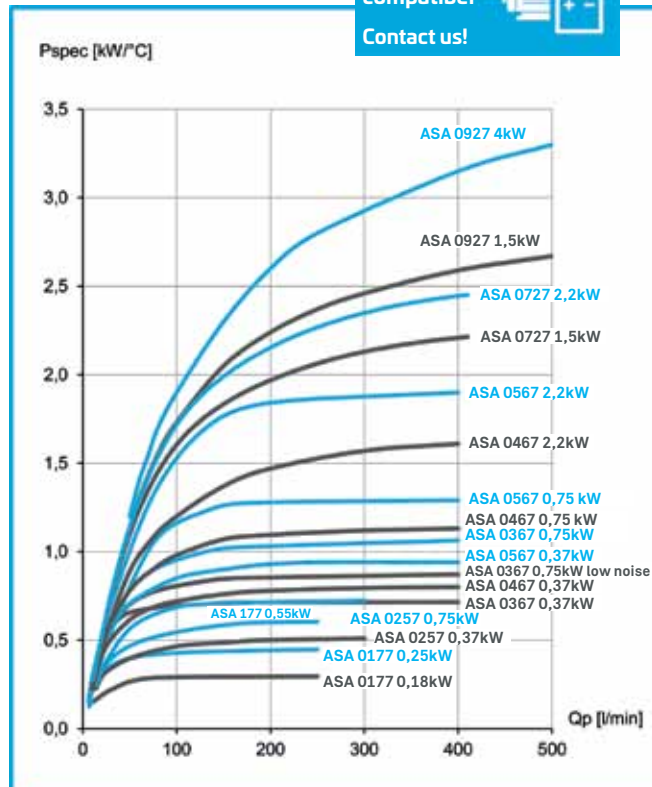
## 230/400 50Hz AC



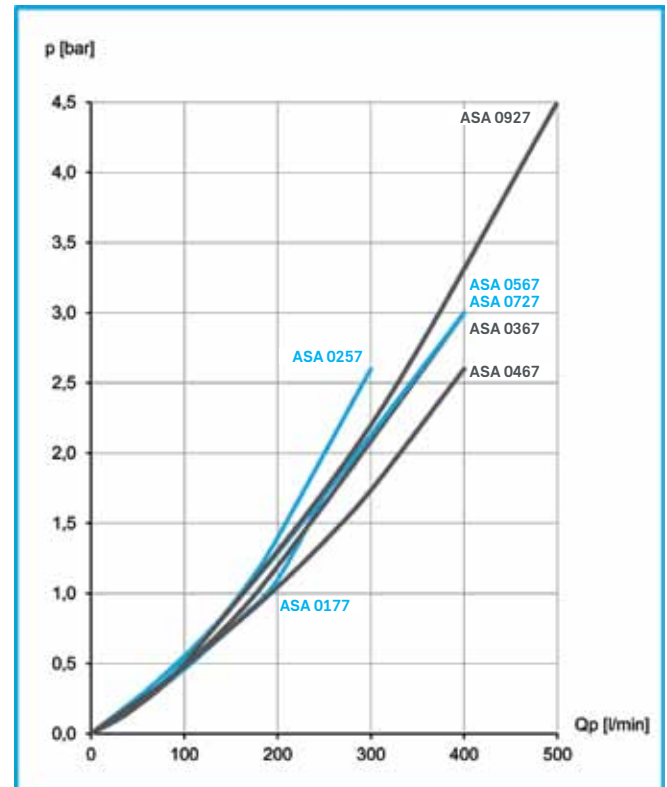
### Performance

specific cooling performance

all products  
water/glycol  
compatibel



pressure drop at 30cSt



### Radiator Style C

material:	aluminum
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	ILLZTH4765K, ILLZTH6065K (page 39)
tread plate & radiator guard	see page 35
internal bypass	alternative bypass settings (0,5bar / 3,5bar)
Intermediate plate NG40	ILLZASA40-40G12 (page 33)

### Installation System (see more information on page 33)

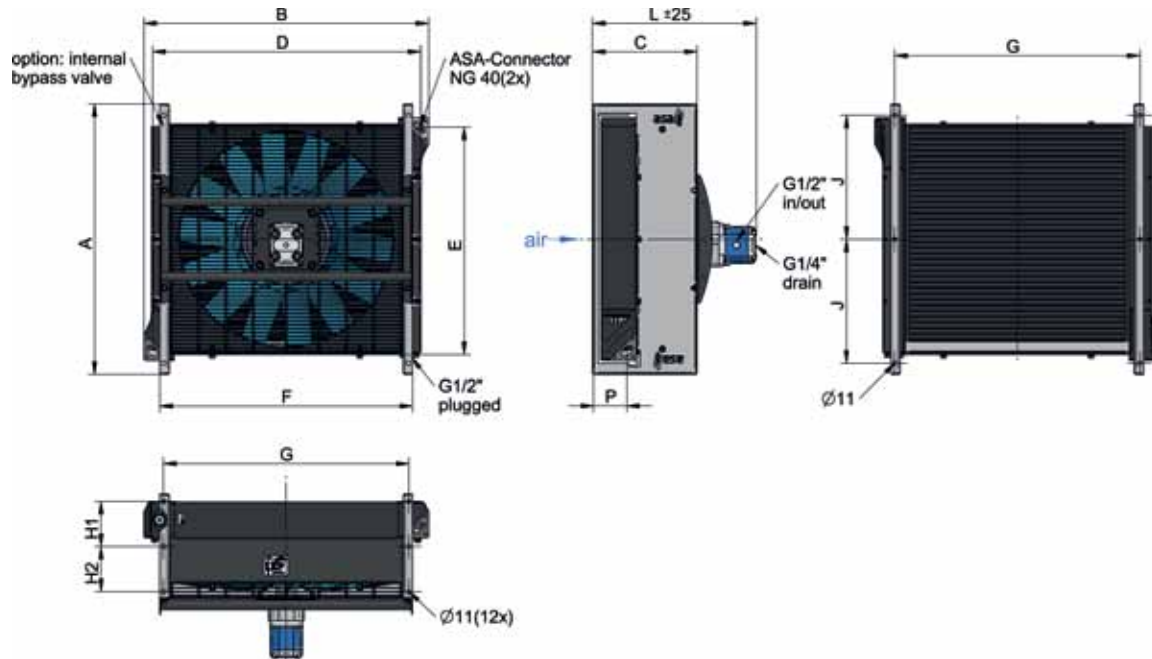
connection BSP 1 ¼"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40 (2 pieces per cooler required)



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# ASA Series Oil / Air Cooler

## 11cm<sup>3</sup> 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]
ASA0177AH11	ASA 0177 hydr. motor 11cm <sup>3</sup>	530	582	260	534	416	462	442	120	90	490	364	89	35,8
ASA0257AH11	ASA 0257 hydr. motor 11cm <sup>3</sup>	635	682	270	634	501	562	542	110	110	280	383	93	44,5
ASA0367AH11	ASA 0367 hydr. motor 11cm <sup>3</sup>	720	762	280	715	596	676	656	120	120	330	430	92	56,4
ASA0467AH11	ASA 0467 hydr. motor 11cm <sup>3</sup>	785	837	290	789	668	758	738	125	125	375	448	94	72,9
ASA0567AH11	ASA 0567 hydr. motor 11cm <sup>3</sup>	860	920	290	865	746	826	806	125	125	400	448	92	74,1
ASA0727AH11	ASA 0727 hydr. motor 11cm <sup>3</sup>	960	1012	360	964	852	936	912	160	160	460	521	95	103
ASA0927AH11	ASA 0927 hydr. motor 11cm <sup>3</sup>	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	optional internal bypass (2 bar)
		[kW]	[bar]	[lpm]	[rpm]	[kg/s]	[db(A)]	cooler order number
ASA0177AH11	ASA 0177 hydr. motor 11 cm <sup>3</sup>	0,06	3	12	1000	0,42	61	ASA0177AH11BP
		0,47	14	23	2000	0,73	79	
		1,58	30	35	3000	0,97	91	
ASA0257AH11	ASA 0257 hydr. motor 11 cm <sup>3</sup>	0,12	7	12	1000	0,81	73	ASA0257AH11BP
		0,95	27	23	2000	1,63	80	
		3,20	61	35	3000	2,44	89	
ASA0367AH11	ASA 0367 hydr. motor 11 cm <sup>3</sup>	0,20	12	12	1000	0,94	73	ASA0367AH11BP
		0,68	26	17	1500	1,53	85	
		1,60	48	23	2000	2,20	90	
ASA0467AH11	ASA 0467 hydr. motor 11 cm <sup>3</sup>	0,24	14	12	1000	1,15	77	ASA0467AH11BP
		0,80	31	17	1500	1,75	87	
		1,91	55	23	2000	2,32	90	
ASA0567AH11	ASA 0567 hydr. motor 11 cm <sup>3</sup>	0,23	13	12	1000	1,21	77	ASA0567AH11BP
		0,78	30	17	1500	1,89	87	
		1,86	54	23	2000	2,90	90	
ASA0727AH11	ASA 0727 hydr. motor 11 cm <sup>3</sup>	0,70	40	12	1000	3,75	84	ASA0727AH11BP
		2,30	88	17	1500	5,82	93	
		5,50	158	23	2000	7,83	99	
ASA0927AH11	ASA 0927 hydr. motor 11 cm <sup>3</sup>	1,61	93	12	1000	5,78	88	not available
		3,54	157	15	1300	7,73	92	
		6,60	238	19	1600	9,72	97	

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# ASA Series Oil / Air Cooler

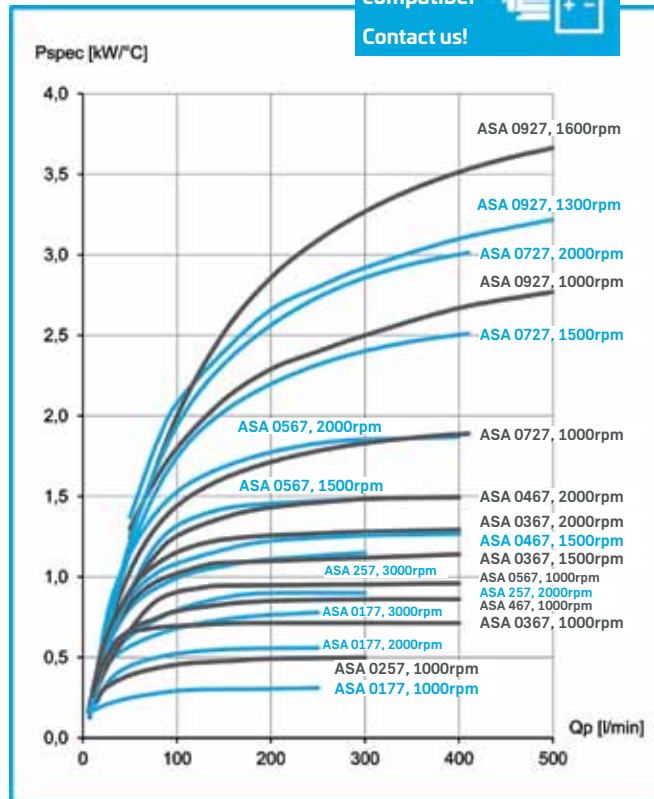
## 11cm<sup>3</sup> hydraulic drive



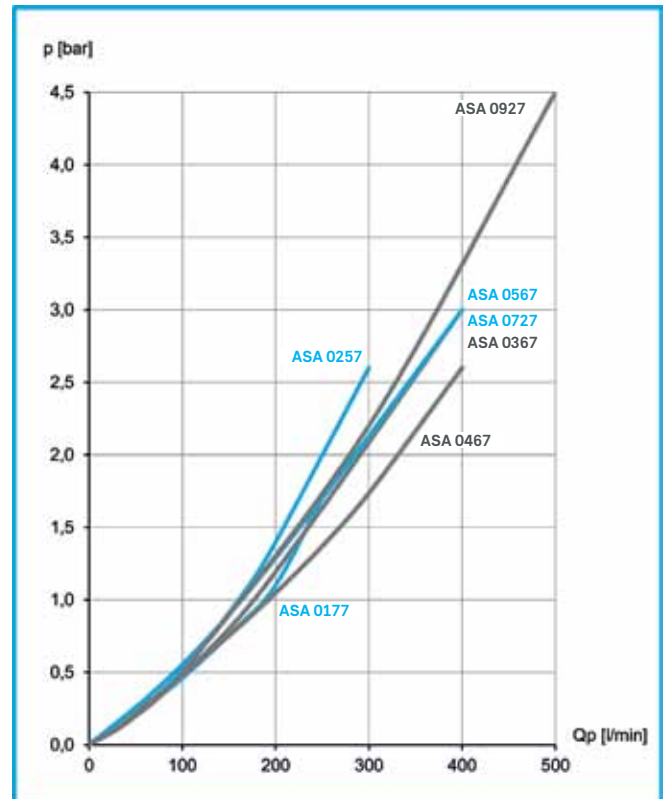
### Performance

specific cooling performance

all products  
water/glycol  
compatibel



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)

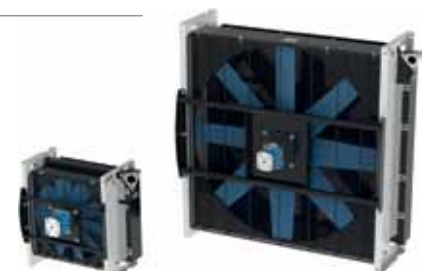
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.

### Options

hydraulic motor	alternative displacements on request
temperature switch	ILLZTH4765K, ILLZTH6065K (page 39)
tread plate & radiator guard	see page 35
internal bypass	alternative bypass settings (0,5bar / 3,5bar)
Intermediate plate NG 40	ILLZASA40-40G12 (page 33)

### Installation System (see more information on page 33)

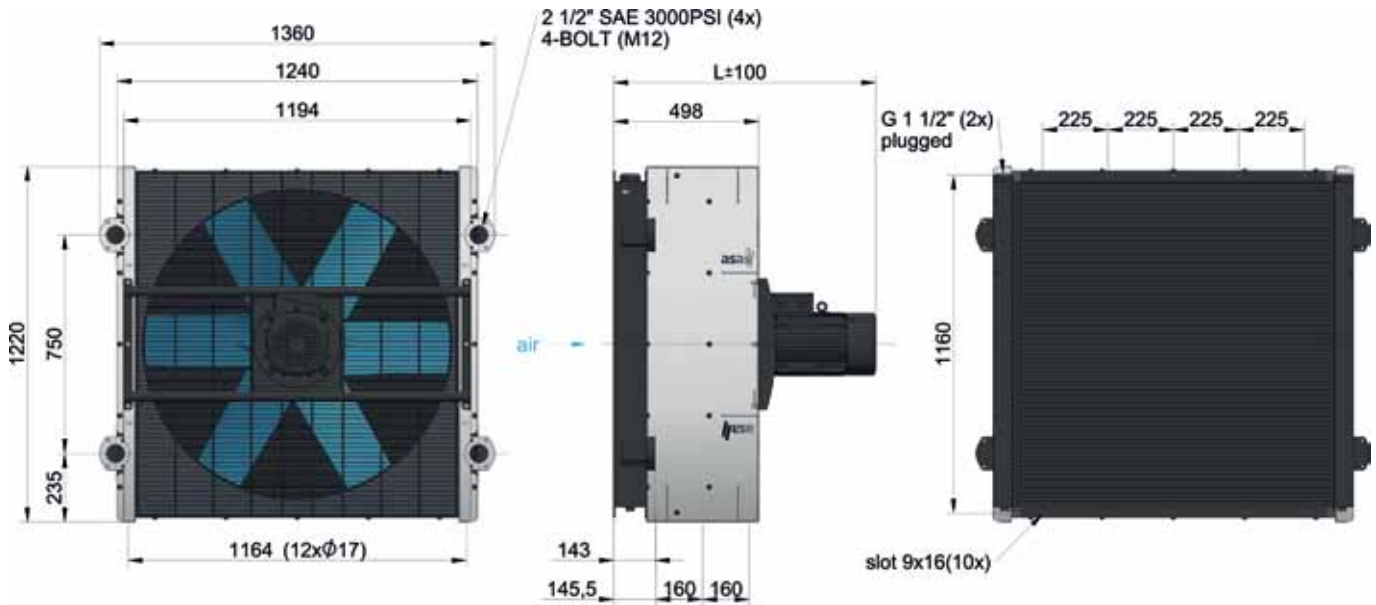
connection BSP 1 ¼"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 ½"	ILLZASA40G40 (2 pieces per cooler required)



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# HighLine HL 1248 Oil / Air Cooler

## 230/400V 50Hz AC / 400/690V 50Hz AC



### Technical Data

order number	description	motor power [kW]	current [A]	protection	rotation [rpm]	air flow [kg/s]	noise level [dB(A)]	weight [kg]	L [mm]
ASA1248SA8D	HL 1248 230/400V 2,20 kW	2,20	5,5	IP 55	720	8,42	83	222	901
ASA1248SA8G	HL 1248 400/690V 4,00 kW	4,00	10,3	IP 55	730	9,68	85	286	1001
ASA1248SA6E	HL 1248 230/400V 4,00 kW	4,00	9,7	IP 55	955	10,66	91	261	901
ASA1248SA6G	HL 1248 400/690V 7,50 kW	7,50	16	IP 55	965	12,24	93	307	1001

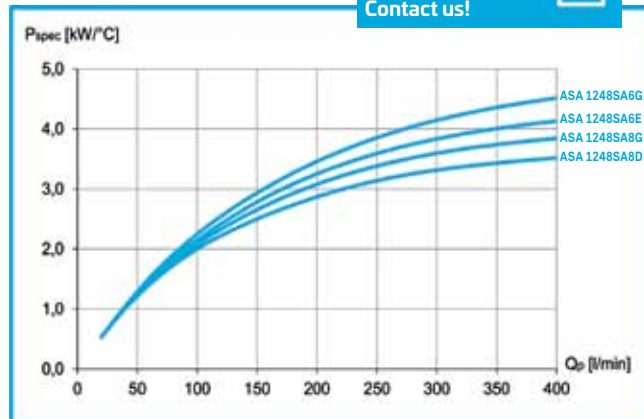
### Performance

specific cooling performance

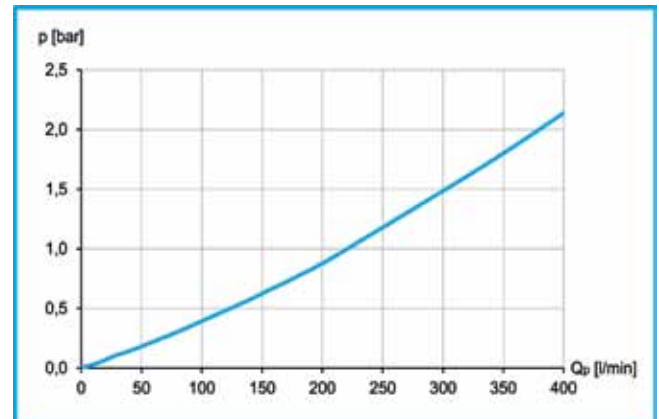
all products  
water/glycol  
compatibel



Contact us!



pressure drop at 30cSt



### Radiator Style D

material:	aluminium
working temperature range:	-20°C to +100°C (oil temperature)
air fin shape:	wavy
working pressure:	16 bar



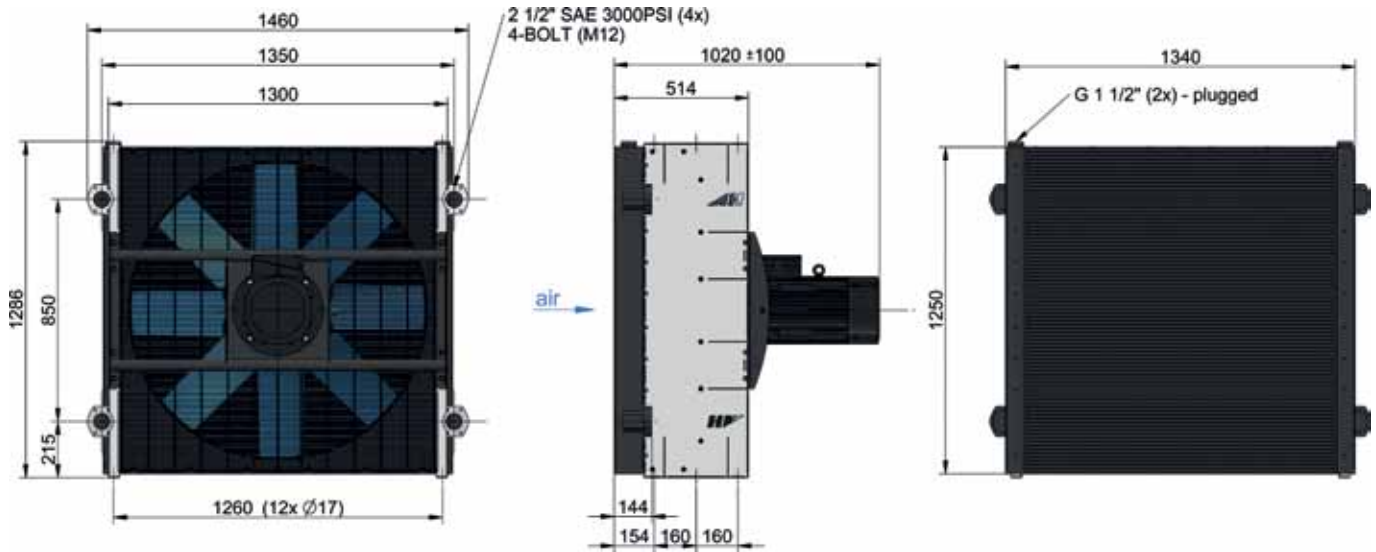
### Options

hydraulic fan drive	on request
---------------------	------------

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# HighLine HL 1508 Oil / Air Cooler

## 400/690V 50Hz AC



### Technical Data

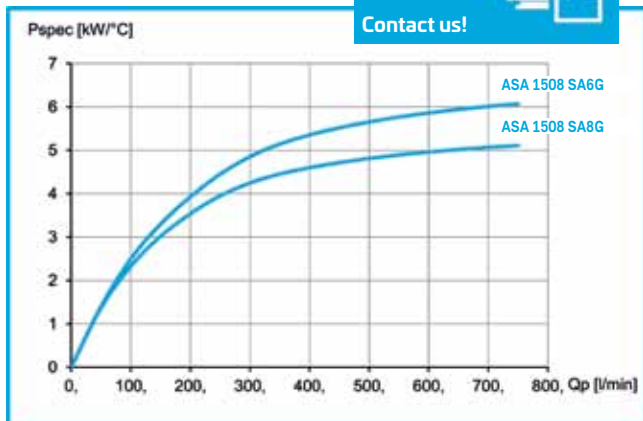
order number	description	power	current	protection	rotation	air flow	noise	weight
		[kW]	[A]		[rpm]	[kg/s]	[dB(A)]	[kg]
ASA1508SA8G	HL 1508 400/690V 4,00 kW	4,0	10,3	IP 55	730	10,1	88	328
ASA1508SA6G	HL 1508 400/690V 7,50 kW	7,5	16,0	IP 55	965	13,1	93	349

### Performance

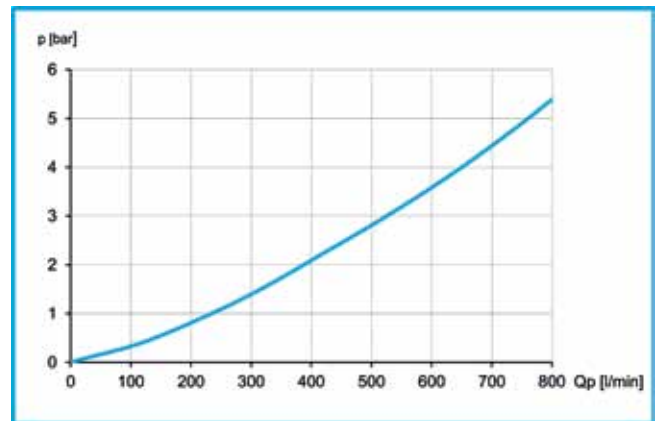
#### specific cooling performance

all products  
water/glycol  
compatibel

Contact us!



#### pressure drop at 30cSt



### Radiator Style D

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



### Options

hydraulic fan drive	on request
---------------------	------------

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# Accessories

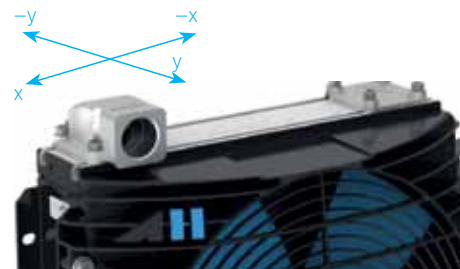
## Connector TT rail Series



### Description

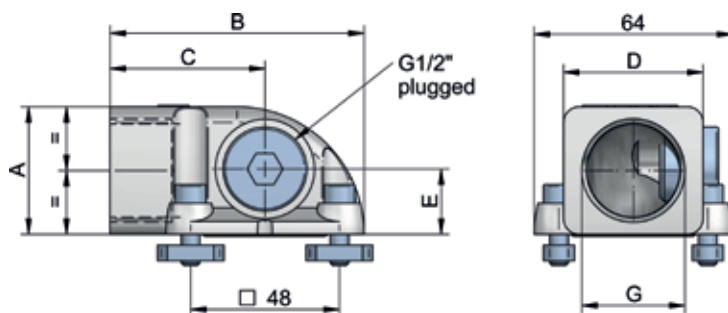
The asa rail system is the first worldwide flexible mounting and connection system for air blast heat exchangers. The flexibility comes from free choice of the port's direction. Each port on the radiator has 3 possibilities. This well designed radiator concept brings another flexibility innovation hit to the standard cooler market: The oil flow direction can be chosen between u-flow direction and diagonal oil flow on each TT rail cooler!

The radiator rail slots are not only for connecting the hydraulic ports, it is also possible to have the system attached with e.g.: bypass systems, mounting of the cooler to an aggregate, measurement devices, and much more. Please contact us to discover the huge potential of this rail system for your application.

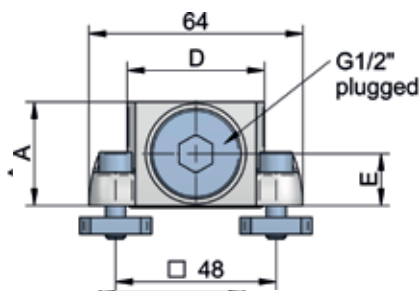


### Dimensions

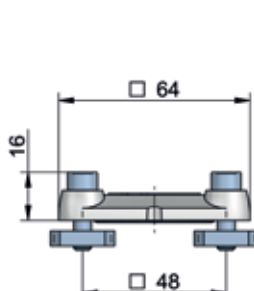
#### ported 90° connector



#### ported straight connector



#### blind connector:



### Technical Data

order number	description	o-ring	A	B	C	D	E	G	connection type	weight
			[mm]	[mm]	[mm]	[mm]	[mm]			[kg]
ILLZSET5G25	asa rail connector BSP 1"	NBR, 70 shore, 35 x 3mm	41	82	50	45	21	BSP 1"	2x 90°	0,90
ILLZSET5G32	asa rail connector BSP 1 1/4"		50	88	56	50	21	BSP 1 1/4"	2x 90°	1,05
ILLZSET5U16	asa rail connector UN 15/16"		41	82	50	45	21	UN 15/16"	2x 90°	0,90
ILLZSET5U20	asa rail connector UN 15/8"		50	88	56	50	21	UN 15/8"	2x 90°	1,10
ILLZSET5G25A	asa rail connector BSP 1" straight		31	-	-	41	15	BSP 1"	2x straight	0,66
ILLZSET5G25B	asa rail connector BSP 1" straight+Stnd.							BSP 1"	1x 90°, 1x straight	0,77

### Content

ported connector with plugged G 1/2"	2x
blind connector	1x
o-ring	3x
slot nut	12x
screw M6x20	12x

requires 1 set per cooler



packed size: 1 set

### Fits On Cooler Types

TT 05 , 07 , 11 , 13 , 16 , 21 , 25

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# Accessories

## Connector ASA Series

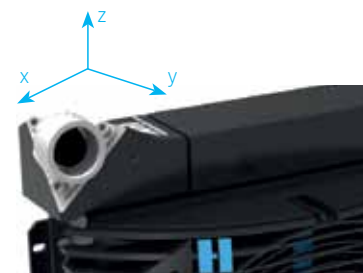


### Description

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 1/2" port, which can also be turned in any required direction.

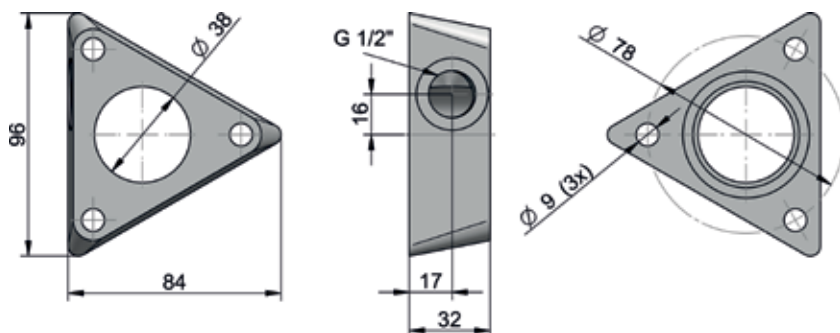


### Dimensions

#### 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]
ILLZASA32G32	AUC NG 32 – G 1 1/4"	14	34	BSP 1 1/4"	aluminum	NBR, 70 shore, 44 x 3 mm	0,31
ILLZASA40G40	AUC NG 40 – G 1 1/2"	15	47	BSP 1 1/2"			0,29
ILLZASA32U20	AUC NG 32 – UN 15/8"	14	34	UN 15/8"			0,31
ILLZASA40U24	AUC NG 40 – UN 17/8"	15	47	UN 17/8"			0,29
ILLZASA40-40G12	intermediate plate NG 40	-	-	-			0,30

### Content (except intermediate plate)

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

requires 2 pcs per cooler



packed size, 2 pieces

### Fits On Cooler Types

ILLZASA32G32	ASA 0177, 0257, 0367, 0467, 0567, 0727, 0927
ILLZASA40G40	ASA 0177, 0257, 0367, 0467, 0567, 0727, 0927

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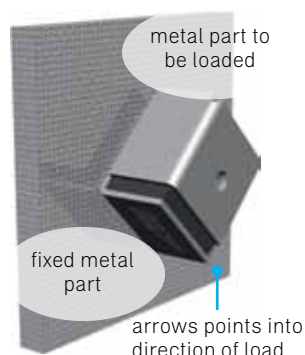
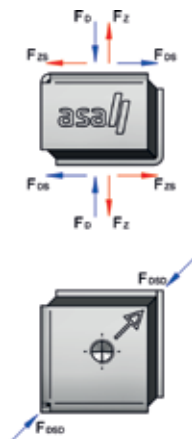
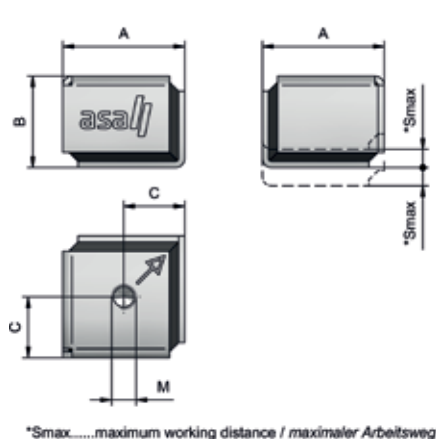
# Accessories

## rubber vibration absorber, foot mounting brackets

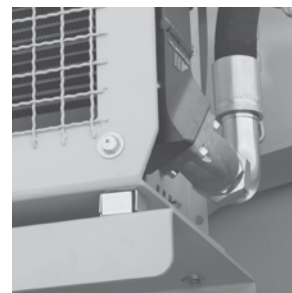


### Rubber Vibration Absorber

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, helping to optimize and raise the load capability of the vibration absorber.



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



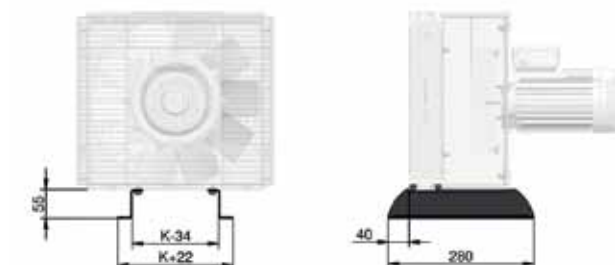
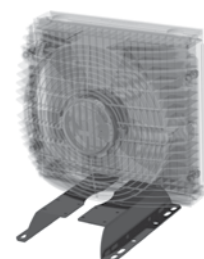
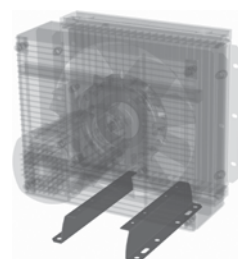
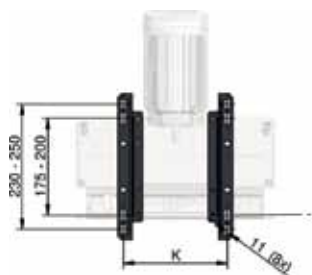
### Dimensions

order number	description	A	B	C	M	Smax	weight
		[mm]	[mm]	[mm]		[mm]	[kg]
MDGQ403008IIK	40x40x30 M8	40	30	20	M8	± 3	0,127
MDGQ504510IIK	50x50x45 M10	50	45	25	M10	± 6	0,280
MDGQ755512IIK	75x75x55 M12	75	55	37,5	M12	± 8	0,659
MDGQ1007516IIK	100x100x75 M16	100	75	50	M16	± 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 rail system coolers. The optional heavy duty design is recommended for use on mobile machines and vehicles or other heavy duty applications. 1 set consists of the 2 feet brackets with mounting material



standard mounting set			heavy duty mounting set		
cooler	$K_{min}$	$K_{max}$	cooler	$K_{min}$	$K_{max}$
	[mm]	[mm]		[mm]	[mm]
TT 07	100	135	TT 07	135	135
TT 11	150	215	TT 11	135	200
TT 13	150	215	TT 13	135	200
TT 16	200	290	TT 16	135	270
TT 21	200	290	TT 21	135	270
TT 25	200	380	TT 25	135	360

order number	description	fits on cooler type						
		TT 05	TT 07	TT 11	TT11	TT 16	TT 21	TT 25
ILLEFUSSTTK	mounting feet set TT 07 – 25	–	•	•	•	•	•	•
ILLEFUSSTTHDK	mounting feet set TT 07 – 25 (heavy duty)	–	•	•	•	•	•	•

–... not available      •... optional available

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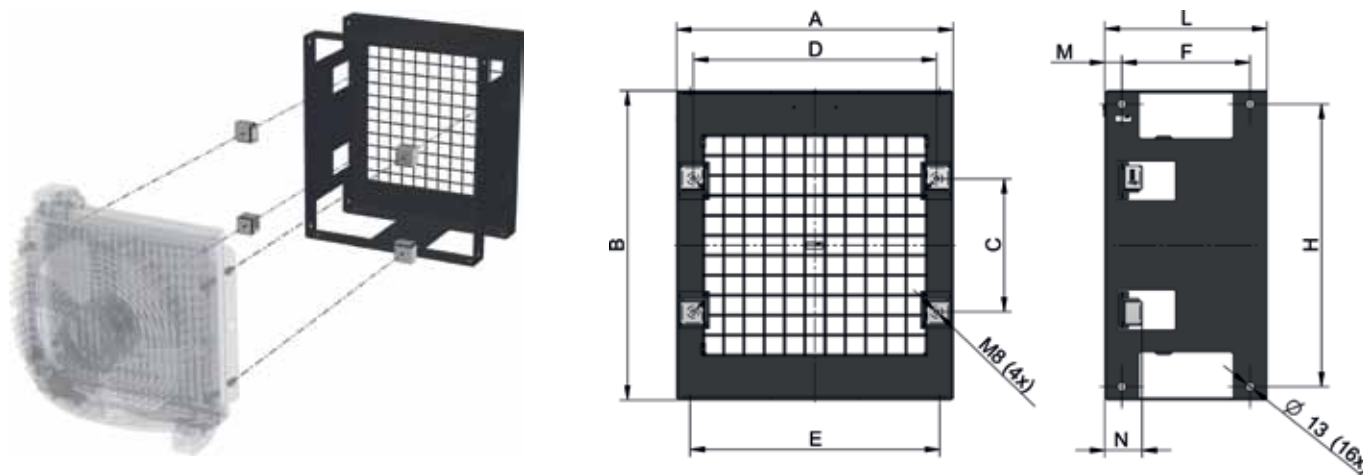
# Accessories

## protection housing, tread plate and radiator guard



### Protection Housing

The housing is a flexible, economic and easy mounting device for many assembly situations. The mechanical stress, especially at mobile applications can be reduced by the used shock absorbers between housing and cooler. The radiator side is protected by a robust grid.



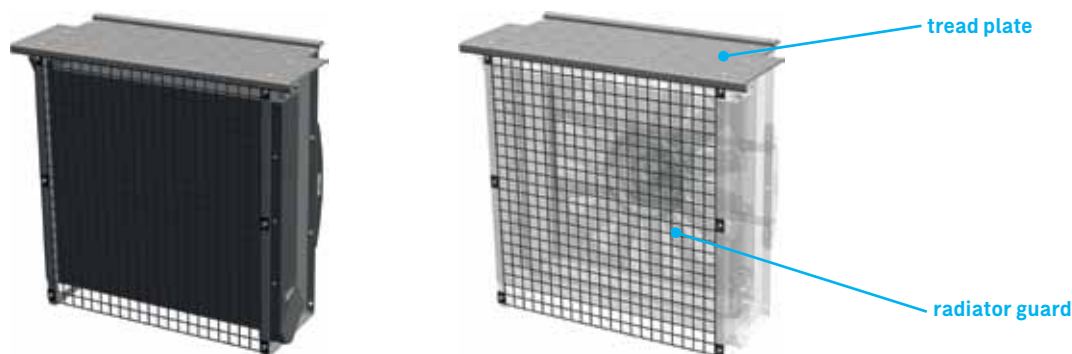
order number	description	A	B	C	D	E	F	H	L	M	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
ILLEGAKTT07GT	protection housing kit TT 07 rail	334	425	172	290	300	190	385	240	20	33	5,2
ILLEGAKTT11GT	protection housing kit TT 11 rail	410	465	200	360	370	190	425	240	25	55	9,0
ILLEGAKTT16GT	protection housing kit TT 16 rail	490	590	306	436	450	210	550	260	25	55	13,4

order number	description	fits on cooler type						
		TT 05	TT 07	TT 11	TT 13	TT 16	TT 21	TT 25
ILLEGAKTT07GT	protection housing kit TT 07 rail	–	•	–	–	–	–	–
ILLEGAKTT11GT	protection housing kit TT 11 rail	–	–	•	–	–	–	–
ILLEGAKTT16GT	protection housing kit TT 16 rail	–	–	–	–	•	–	–

– ... not available      • ... optional available

### Tread Plate / Radiator Guard

The tread plates are accessories for the asa series cooler types with side frames. The solid plates are used for applications where maintenances and servicing procedures require the cooler as a safe surface to step on. The radiator guard is a solid protection to avoid damages on the radiator air fins and oil channels.



description	description	fits on cooler type*					
		ASA 0177	ASA 0257	ASA 0367	ASA 0467	ASA 0567	ASA 0927
tread plate kit	plate, flat screws;	•	•	MW2089	o	o	o
radiator guard	grid, screws, washers;	ILLEGIT017SK	ILLEGIT025SK	ILLEGIT036SK	o	o	o

• ... optional available      o ... available on request      \*... DC drive versions are not compatible with these accessories

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# Accessories

## motor assembly kits, lifting kit (suits all standard coolers)



### Motor assembly kits

With each ordered no motor cooler, a separate mounting kit can be ordered. There are three different mounting kits according to the motors size and type of drive. Check the available kits to the corresponding cooler by its motor size and motor flange on the data sheets on [www.asahydraulik.com](http://www.asahydraulik.com) and the boss length or contact us through [support@asahydraulik.com](mailto:support@asahydraulik.com).



order number	description	motor size / flange / boss length
ILLESETAC10	Motor assembly kit IEC 71 - IEC 80 "AC small"	IEC 71 / B14k / 56mm
		IEC 71 / B14k / 60mm
		IEC 71 / B14k / 62mm
		IEC 80 / B14k / 55mm
		IEC 80 / B14k / 62mm
ILLESETAC20	Motor assembly kit IEC 100 - IEC 160 "AC big"	IEC 100 / B14k / 72mm
		IEC 100 / B14k / 82mm
		IEC 100 / B14k / 66,5mm
		IEC 132 / B5 / 87mm
ILLESETH	Motor assembly kit hydraulic drive	1:8 cone shaft, front cover rectangular flange $\varnothing$ 36.47 mm (M8) / 0mm
		1:8 cone shaft, front cover rectangular flange $\varnothing$ 36.47 mm (M8) / 56,5mm
		1:8 cone shaft, front cover rectangular flange $\varnothing$ 36.47 mm (M8) / 61,5mm

### Lifting Kit (suits all standard coolers)

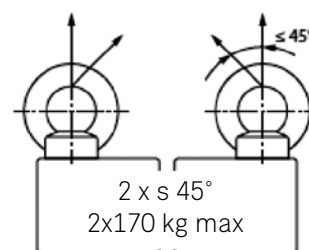
For safe and simple handling during installation and relocation, only to be used for installation and maintenance.



using screw nut



using bolt, only



load capacity /using bolt

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

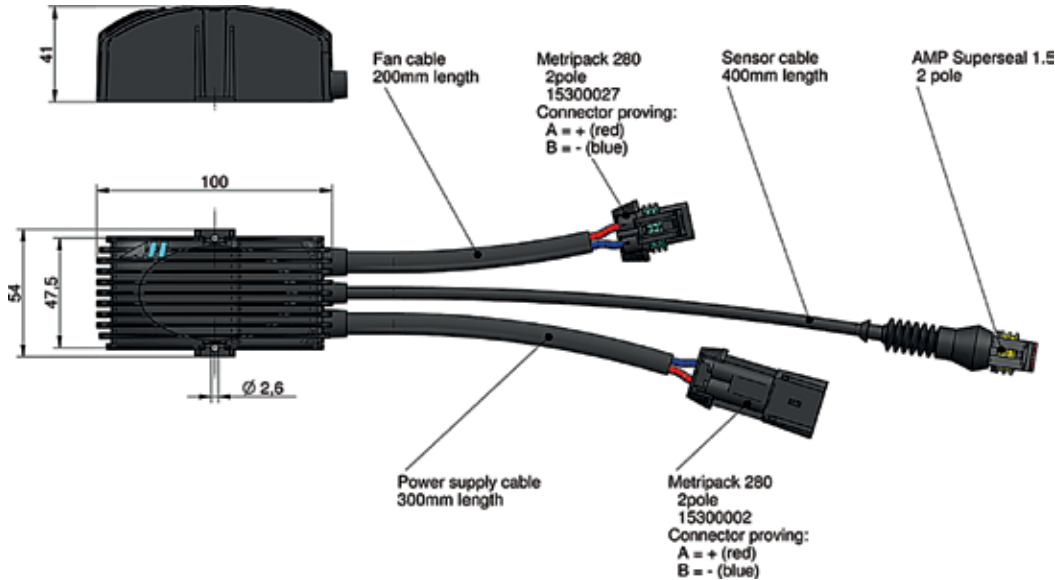
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# Accessories

## temperature control



This system consists of a temperature sensor (ILLZTT5069K) and a control unit (12V or 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 (ILLZTC12-2K and ILLZTC24-2K) 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
ILLZTC12-2K	temperature control 12V DC	310	21 (14,7V DC)	IP 67	0,25	12V (9V – 15V)
ILLZTC24-2K	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	ILLZTT5069K (control range 44-55°C) page 38
temperature switch	ILLZTH5069K (set point 50°C, soft start) page 39
	ILLZTH6069K (set point 60°C, soft start) page 39
	ILLZTH9069K (set point 90°C, soft start) page 39

## Ambient Conditions

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



## Combinations

12V and 24V DC coolers	LL 03L, LL 04, LL 06, LL08 / TT 05 – 25 rail / ASA 0177 – 0367
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### Please note:

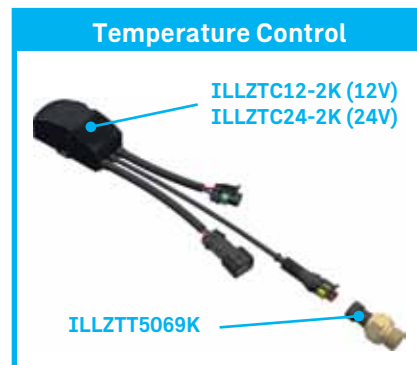
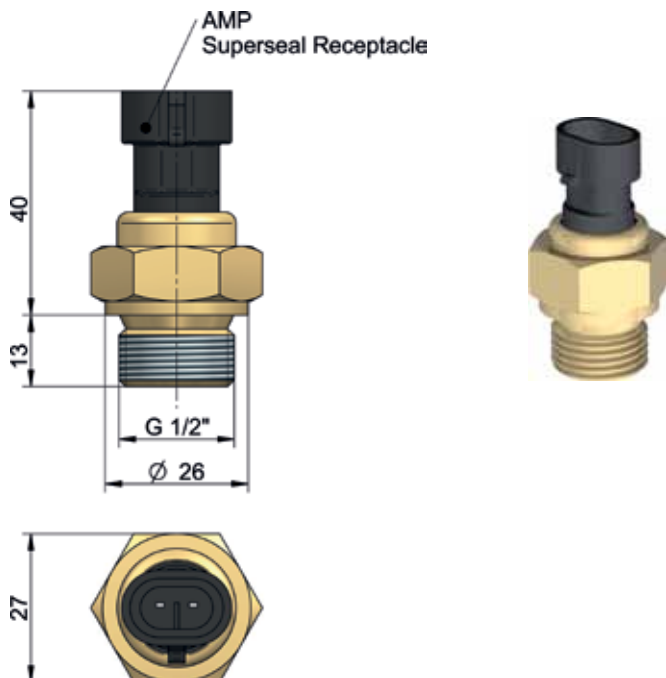
The maximum start current is approximately 10% higher than the nominal current of the motor. Observe the maximum allowable supply of the fan motor. The allowed voltage range of the fan might differ from the allowed voltage range of the temperature control. In case of inverse polarity of the supply, the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

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# Accessories

## temperature sensor

The temperature sensor requires a control unit for the control system which is available in 12V (ILLZTC12-2K) and 24V (ILLZTC24-2K). 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 at 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.



- NTC sensing
- IP 69K protection
- compact design

### Technical Data

order number	description	connection	protection	weight
				[kg]
ILLZTT5069K	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 12V DC	ILLZTC12-2K (page 43)
temperature control unit 24V DC	ILLZTC24-2K (page 43)

### Combinations

12V and 24V DC coolers	LL 03L, LL 04, LL 06, LL08 / TT 05 – 25 rail / ASA 0177 – 0367
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# Accessories

## temperature switches

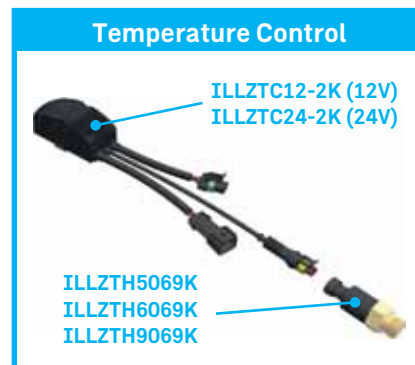
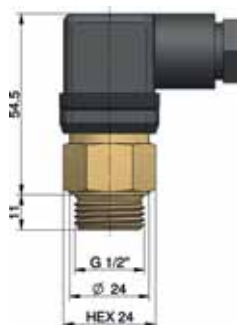
According to the cooler type and size, our temperature switches fit on all coolers and connectors with BSP 1/2" threads. Please contact us for the compatibility of the products. IP69K switch types (ILLZTH5069K, ILLZTH6069K and ILLZTH9069K) work in combination with our temperature control units ILLZTC12-2K (12V) and also with ILLZTC24-2K (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.

### Protection IP69k



### Protection IP65



## Technical Data

order number	description	connection	protection	switch temperature	differential	weight
				[°C]	[°C]	[kg]
ILLZTH5069K	temperature switch 50°C	AMP superseal 1,5	IP 69K	50 ± 5	10 ± 5	0,10
ILLZTH6069K	temperature switch 60°C	AMP superseal 1,5	IP 69K	60 ± 5	10 ± 5	0,10
ILLZTH9069K	temperature switch 90°C	AMP superseal 1,5	IP 69K	90 ± 5	10 ± 5	0,10
ILLZTH4765K	temperature switch 50°C	ISO 4400	IP 65	50 ± 5	10 ± 5	0,09
ILLZTH6065K	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

## 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

## Combinations

all coolers and connectors with BSP 1/2" 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!*

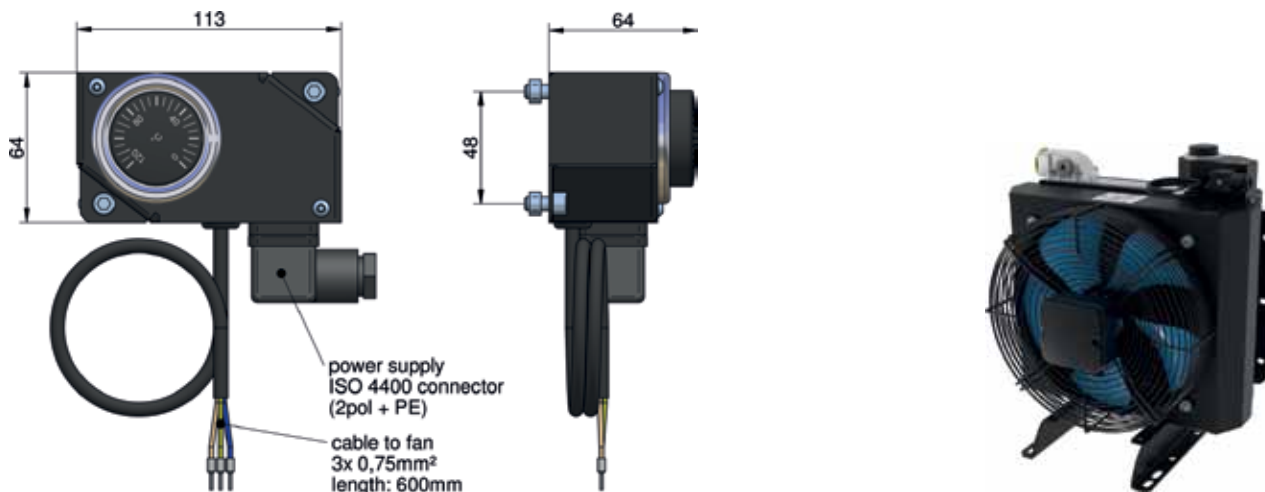
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# Accessories

## temperature control AC



The AC temperature control is a system with a thermostat, which is non oil touch connected to the rail surface on the cooler. The setting of the switch temperature can be changed by rotating the button on the top of the device. The wiring to the fan must be individually completed by the end customer.



### Technical Data

order number	description	switch control range	protection	weight
		[°C]		[kg]
ILLZTCAK	temperature control 115V/230V AC	-30 / +120	IP 40	0,56

### Characteristics

material housing	steel sheet metal, powder coated
mounting instructions	any mounting position

### Operation

switch control range	-30/+120°C
contacts rating	C.1-10(2,5)A/250V~
	C.2-6(2,5)A/250V~

### Ambient Conditions

max. head temperature	+85°C
max. bulb temperature	+150°C
storage temperature range	-15°C to +55°C

### Please note:

- The reference room temperature for the setting is 20°C.
- superficial current: PTI 250
- type of action (ref. EN60730-1): 2B

### Overview / Combinations

asa electronics	LL01	LL02	LL03L	LL03	LL04	LL06	LL08	TT05	TT07-25	ASA0177	ASA0257	ASA0367	ASA0467-0927
temperature control ILLZT5069K + ILLZTC12-2K or 24-2K	-	-	•	•	•	•	•	•	•	•	•	•	-
temperature switch ILLZTH5069K	-	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH6069K	-	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH9069K	-	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH4765K	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH6056K	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature control AC ILLZTCAK	-	-	-	-	-	-	-	-	•	-	-	-	-

- ... optional available    - ... combination not available

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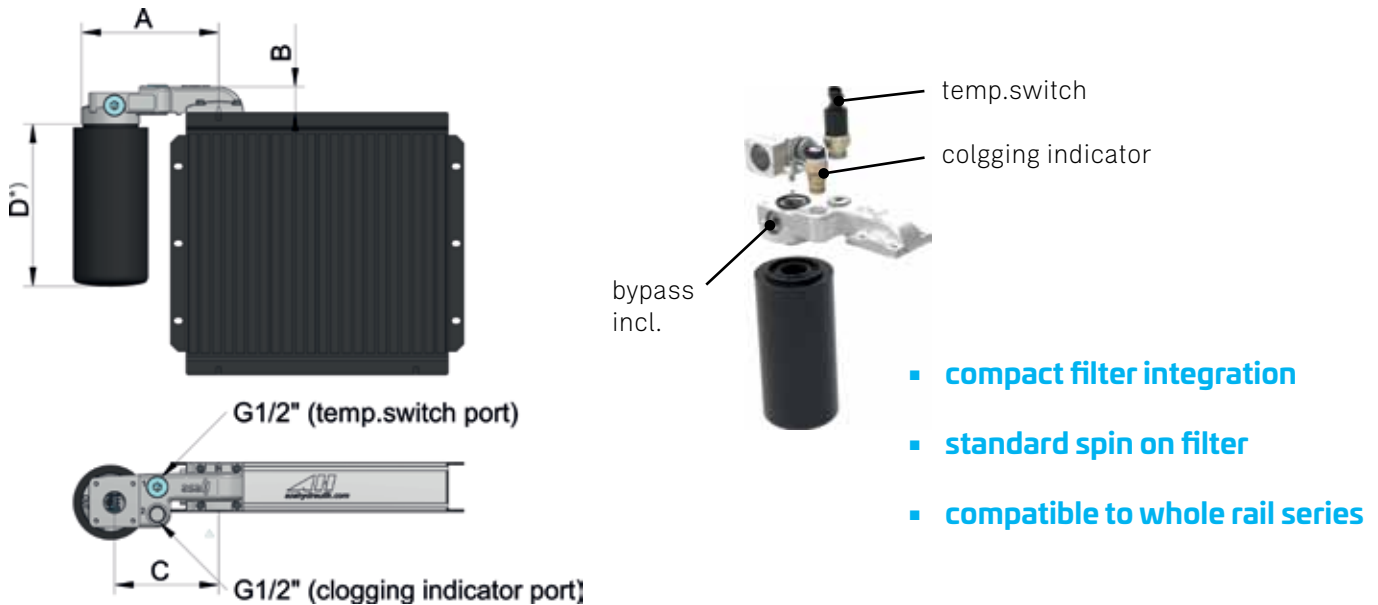


# Accessories

## System for Rail Series



The H-Set is an optional system to integrate another hydraulic set to the asa rail system. The H-Set currently offers 2 sizes of kits to mount a spin on filter to the cooler application. This is a very compact and cost efficient integration. This system can also be combined with various other filters or the shown configurations. Contact us for further options and assistance to select the optimal product for you.



- compact filter integration
- standard spin on filter
- compatible to whole rail series

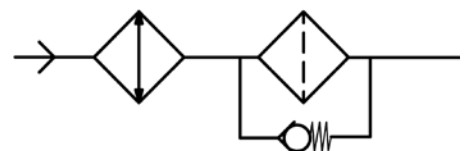
\*) depending on the make of the filter element

### Dimension

order number	description	filter rating	working pressure	bypass incl.	spin on port	A	B	C	D
		[ $\mu$ m]	[bar]	[bar]	[BSP]	[mm]	[mm]	[mm]	[mm]
ILLZRF11G2010	Spin on filter kit rail 10 $\mu$ m, 60lpm	10	10	2	3/4"	177,5	33	135	146
ILLZRF11G2025	Spin on filter kit rail 25 $\mu$ m, 60lpm	25	10	2	3/4"	177,5	33	135	146
ILLZRF12G2010	Spin on filter kit rail 10 $\mu$ m, 100lpm	10	10	2	3/4"	177,5	33	135	191
ILLZRF12G2025	Spin on filter kit rail 25 $\mu$ m, 100lpm	25	10	2	3/4"	177,5	33	135	191

### Rail-filter Block

material:	aluminium
working temperature range:	-20°C to +100°C (oil temperature)*
Sealing to rail flange:	o-ring NBR
bypass:	incl.2 bar standard setting



### Hydraulic Connection

compatible to	any rail system cooler
---------------	------------------------

### Application

main application	offline circuits, lubrication, cooling and filtration circuits
oil flow	from cooler to filter

### Options

temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K
clogging indicator / indication pressure 1,5 bar	electric: HFZVEG15 N.O. & N.C. contact optical: HFZVOG15



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

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# 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:

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

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

- $\eta$  = 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]  
( $c \sim 0,53$  for hydraulic oil,  $c \sim 1,16$  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  $\Delta t_{oil}$  by one pass
2. air temperature increase  $\Delta t_L$

$$1. \Delta t_{oil} = \frac{36 \times P_K}{Q_L} [^\circ\text{C}] \quad 2. \Delta t_L = \frac{P_K}{Q_L} [^\circ\text{C}]$$

## Selection of the cooler:

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

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

- $P_{spec}$  = 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 close to a curve in the diagram because the cooling capacity is calculated with enough safety.

## 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 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.

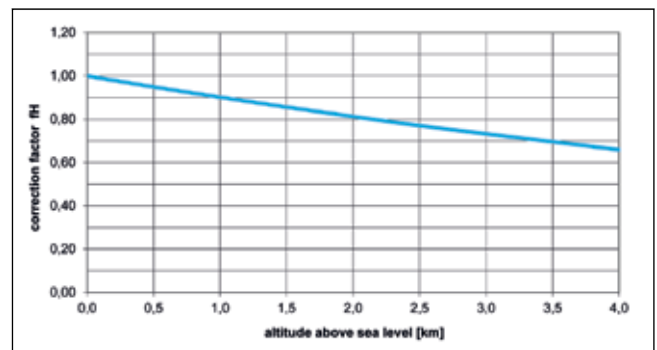
$$\Delta p = \Delta p_{30cst} \times f_p$$

- $\Delta p$  = oil pressure drop [bar]
- $\Delta p_{30cst}$  = oil pressure drop at 30cst oil viscosity [bar]
- $f_p$  = correction factor for the oil viscosity [ ]

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

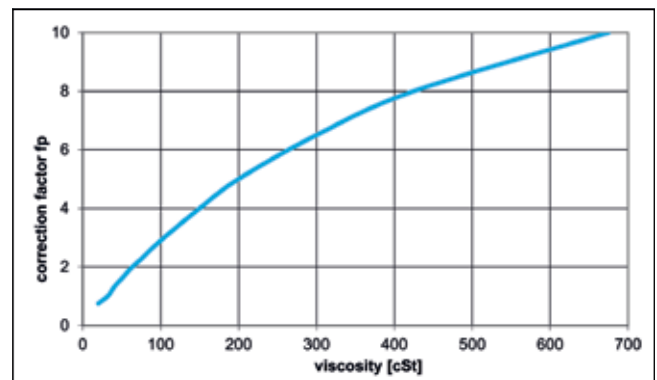
## Correction factor $f_H$

for cooling performance depending on the altitude (approximate value) use this graph:



## Correction factor $f_p$

for oil pressure drop (approximate value) correction:



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## 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 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 steel
- new high pressure compensator series

## Anti vibration 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 Systems Connection Technology Fluid Controls



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