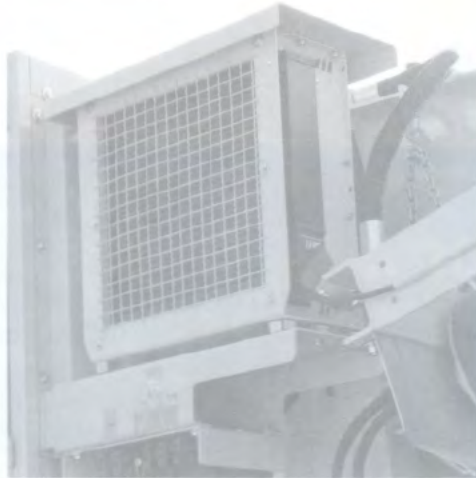


Leading  
Quality  
Engineering

**AH**  
*asa*hydraulik.com



your  
partner.

No.1 for standard coolers



# asa



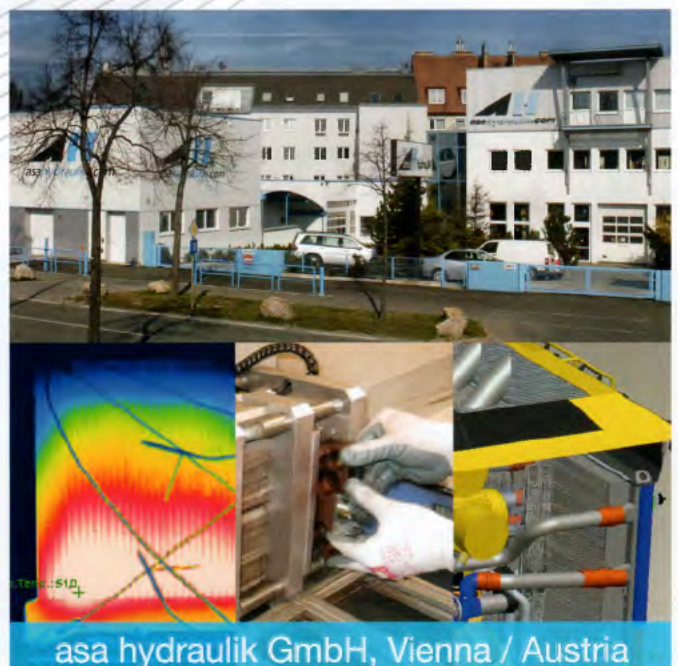
1980

2016

## asa stand for ...

developments, advances and innovations already at work through our customers' various mobile and stationary applications, worldwide. More than 30 years experience in heat transfer equipment and special hydraulic components has made us a global leader in advanced technologies. Our experience creates progress to ensure you competitive pricing, consistent product performance and reliability. asa's global capacities follow worldwide standards, confirmed by successful ISO 9001 quality management and client audits. The modular design and patented solutions of our products, offer many advantages for customizing the product to your application.

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. We built to your order in record time. Flexibility, short lead time and quality engineering are our most important advantages. This catalogue provides a technical overview of our standard products. Please contact us, if more detailed information is required, or if you cannot find the optimal product for you.



asa hydraulik GmbH, Vienna / Austria

# Leading Quality Engineering



Best practice standard oil cooler series assures success at all applications.

No limits through the first worldwide, flexible mounting and connection system.

Optimized air flow from uniquely quality engineered fan guards and electronic fan speed control.

Radiators with integrated bypass system to protect the cooler, e.g.: extremely viscous oil at cold start conditions.



asa hydraulik of America NJ / USA

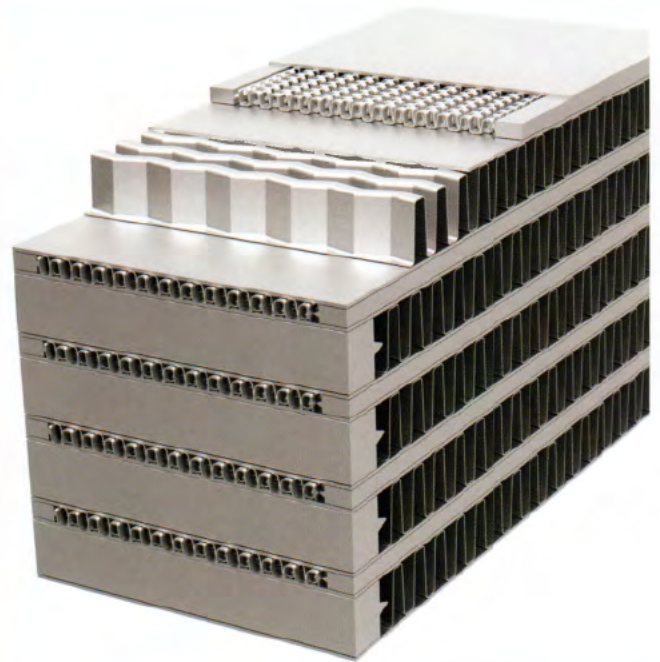


asa hydraulik of Kunshan, Kunshan / China

# Progress In Cooling

## Standard Cooler Overview:

- from 0,01 to 7 kW/C
- integrated bypass options
- flexible connection systems
- pollution resistant air fins
- customizing accessory options
- short lead times
- pressure resistant



**P**lug in. **W**ork. **C**ontrol.

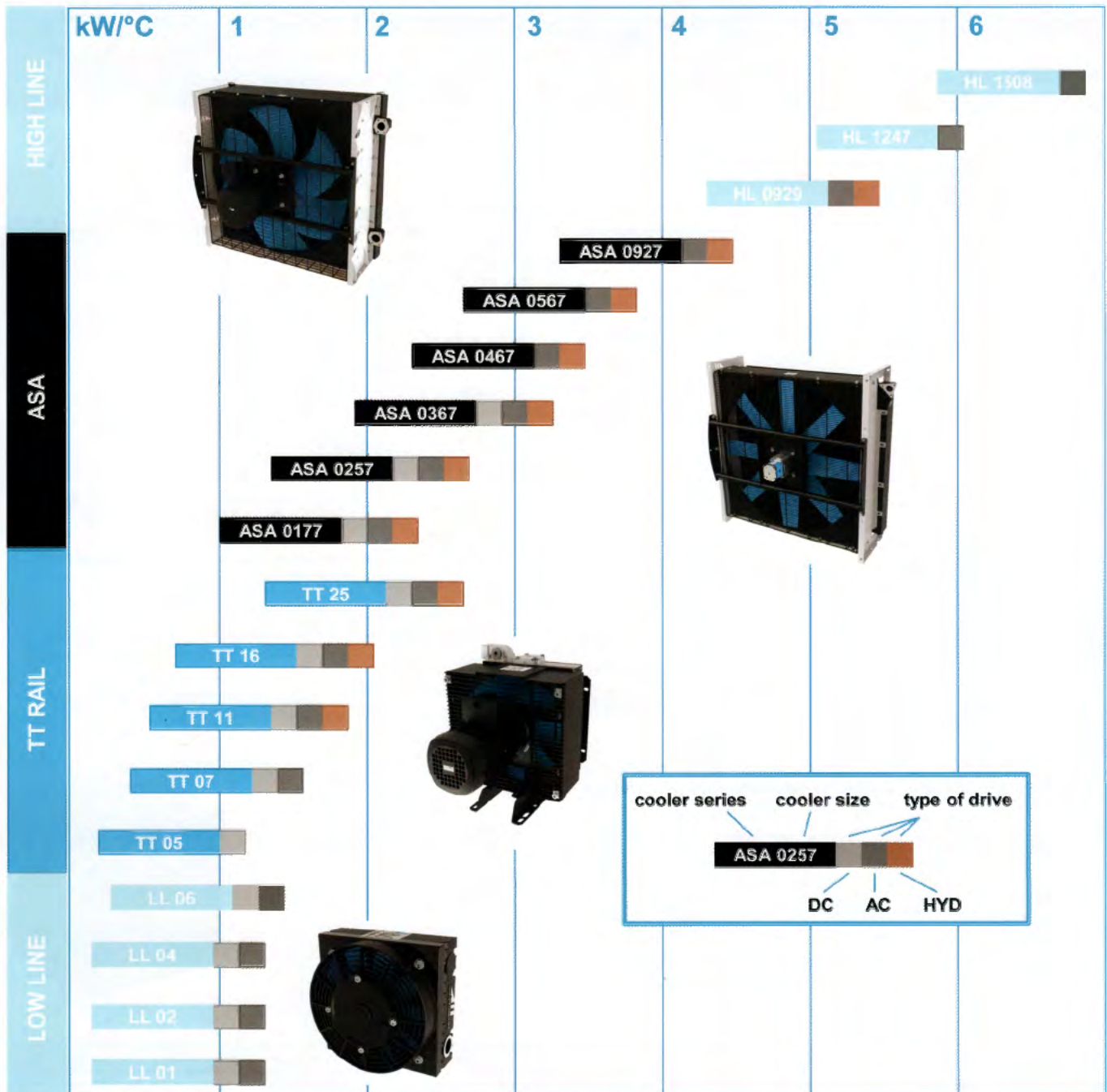


Our Coolers  
match with  
**PWC**  
Design

# Quality Through Standardization

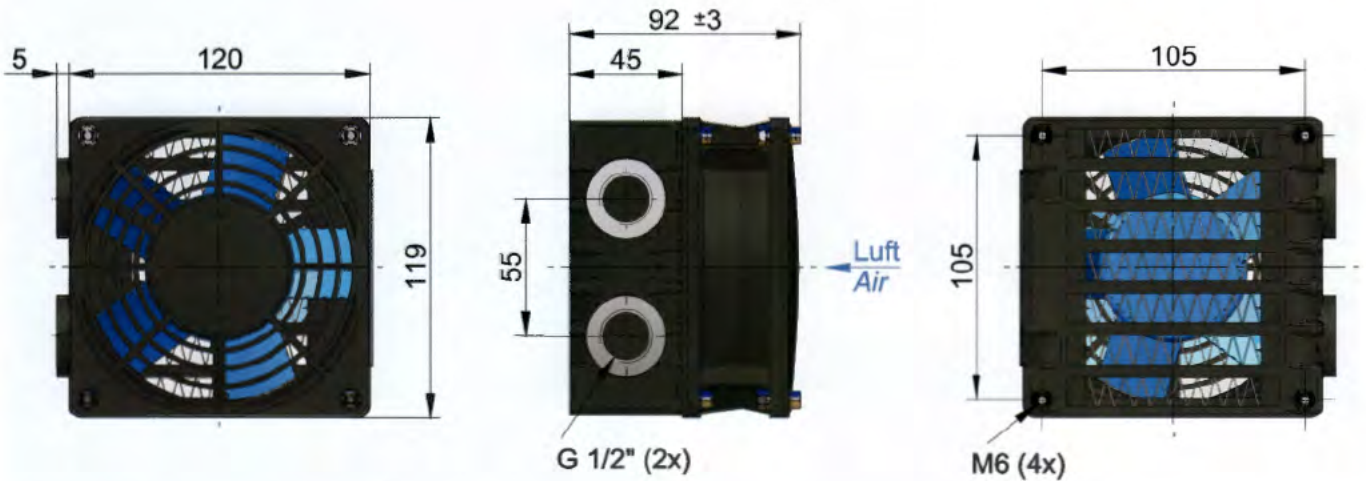
## Oil cooler series overview:

- LowLine... conventional female thread connections for small cooling performance.
- TT rail... patented flexible mounting and connection system.
- ASA...patented AUC system for easy connection.
- HighLine...for heavy duty cooling performances, equipped with SAE connections.



# Oil / Air Cooler LL 01 LowLine

12V / 24V DC

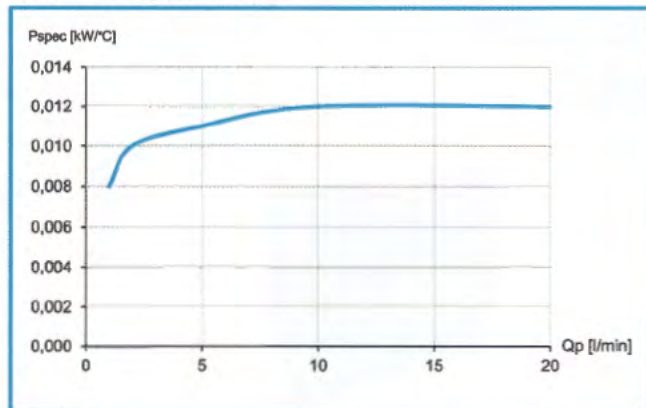


## Technical Data

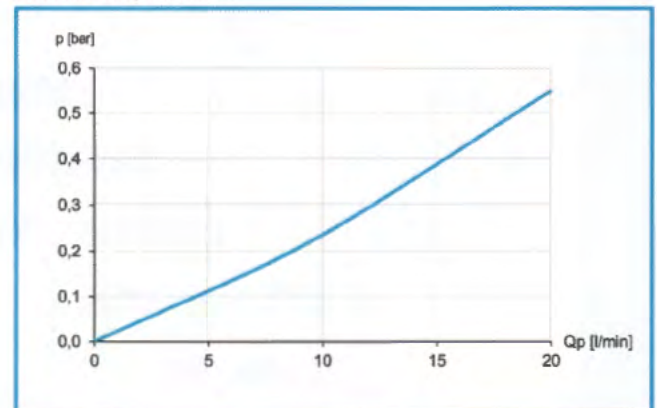
order number	description	current [A]	protection level	air flow [kg/s]	noise level [dB (A)]	weight [kg]
ASA0013GD01	LL 01 12V DC	0,30	IP 20	0,04	44	1,4
ASA0013GD02	LL 01 24V DC	0,15	IP 20	0,04	44	1,4

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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

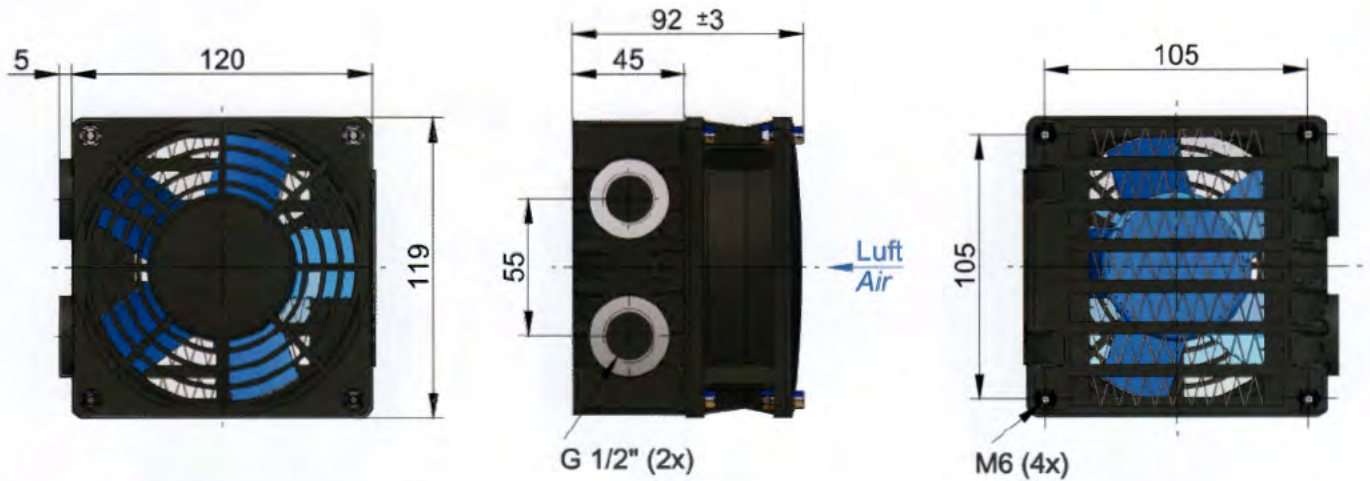
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# Oil / Air Cooler LL 01 LowLine

230V / 50Hz AC

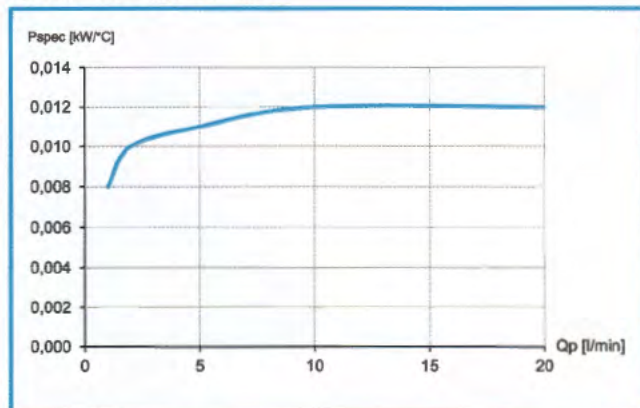


## Technical Data

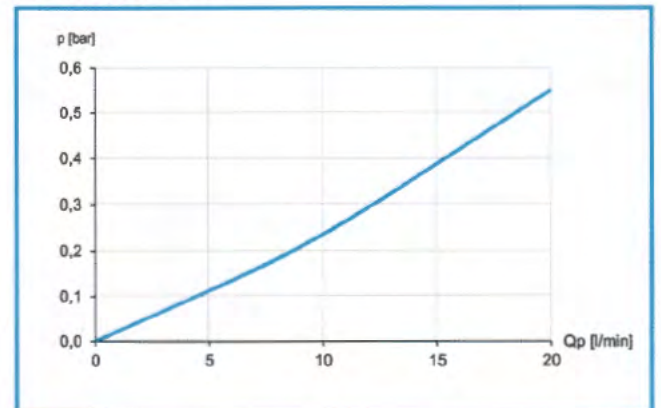
order number	description	power	current	frequency	protection	rotation	air flow	noise level	weight
		[kW]	[A]	[Hz]		[rpm]	[kg/s]	[dB (A)]	[kg]
ASA0013GE01	ASA LL 01 230V AC	0,02	0,12	50	IP 20	2650	0,04	41	1,4

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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

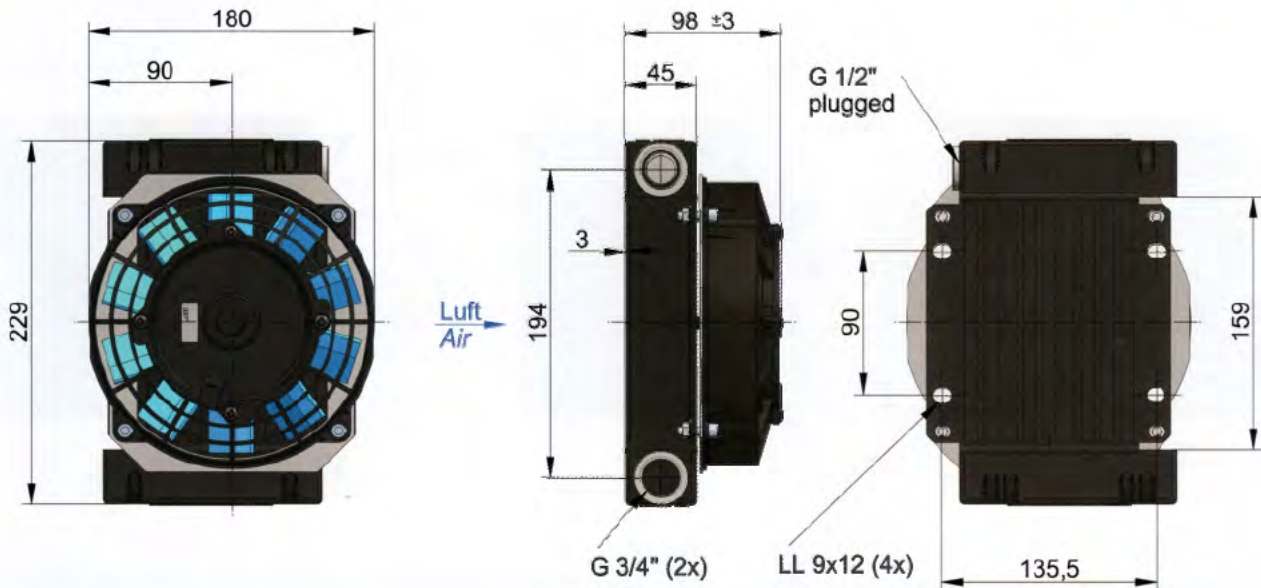
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# Oil / Air Cooler LL 02 LowLine

12V / 24V DC

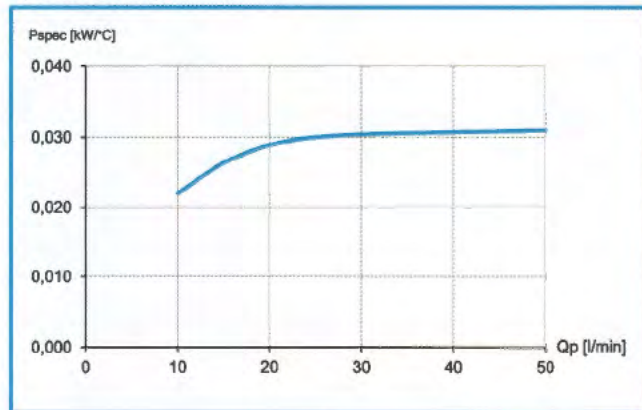


## Technical Data

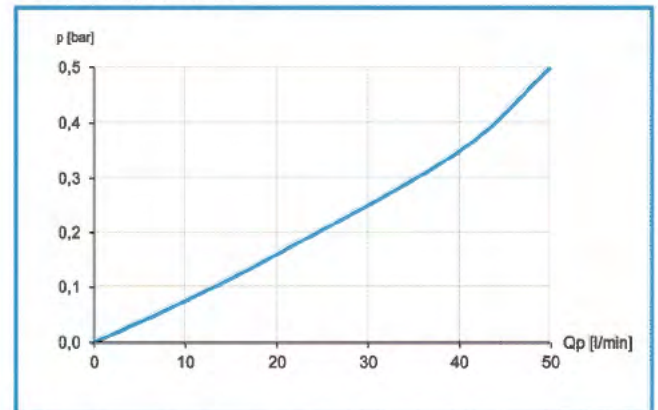
order number	description	current [A]	protection level	air flow [kg/s]	noise level [dB (A)]	weight [kg]
ASA0023GD01	LL 02 12V DC	5,4	IP 68	0,16	68	2,7
ASA0023GD02	LL 02 24V DC	2,7	IP 68	0,16	68	2,7

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)

Please contact us for further options and assistance, read manual before installation!

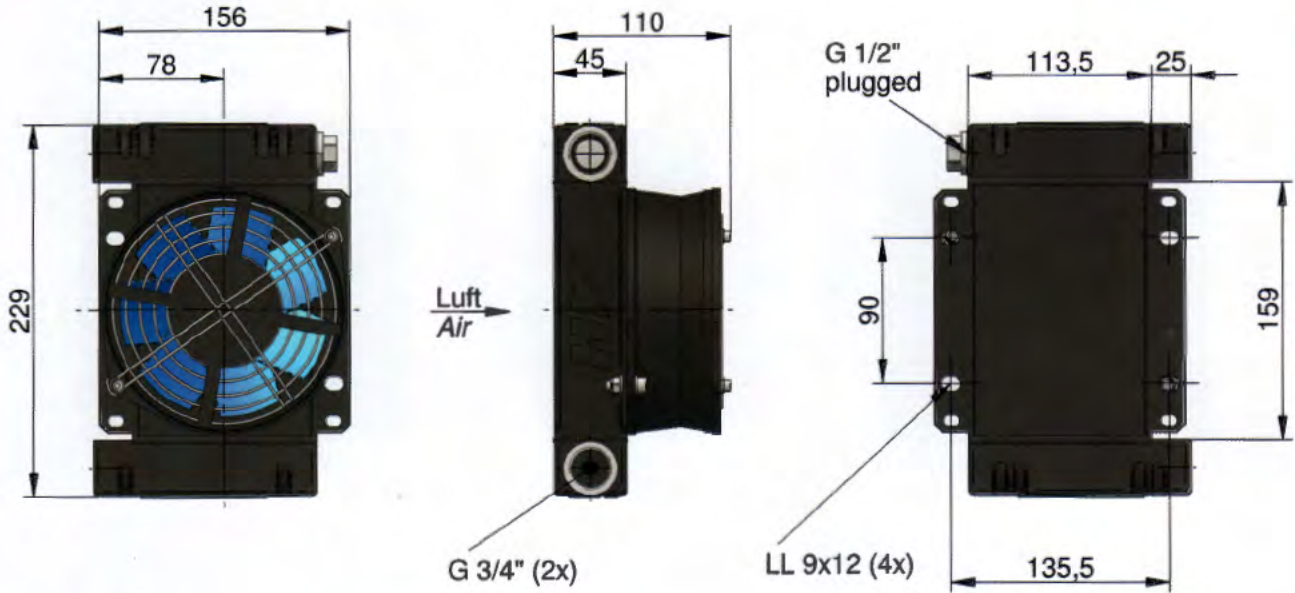


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# Oil / Air Cooler LL 02 LowLine

230V 50 Hz AC

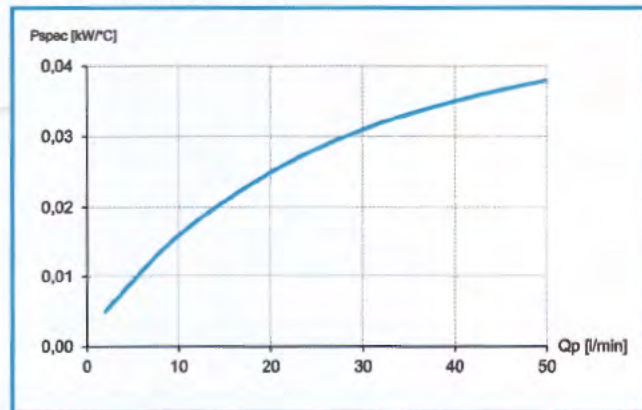


## Technical Data

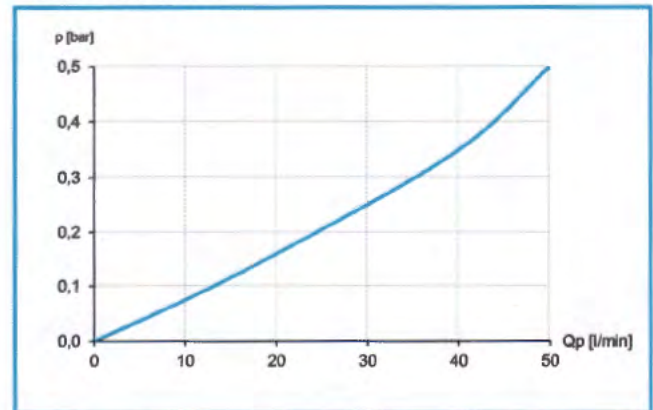
order number	description	power [kW]	current [A]	frequency [Hz]	protection	rotation [rpm]	air flow [kg/s]	noise level [dB (A)]	weight [kg]
ASA0023GE02	LL 02 230V AC	0,04	0,25	50	IP 20	2750	0,04	52	2,5

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)

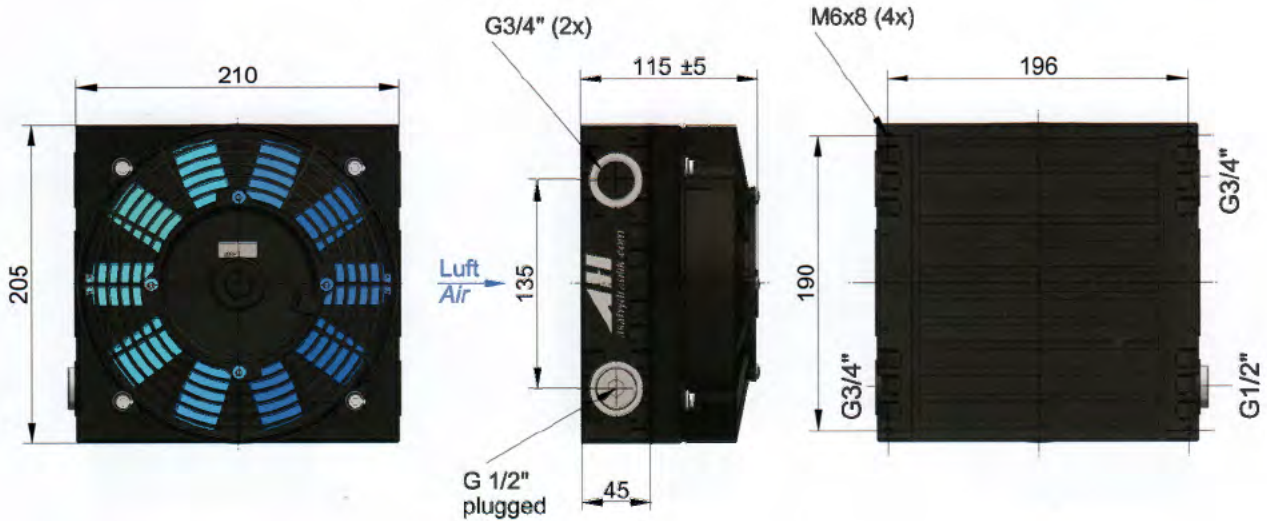
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# Oil / Air Cooler LL 04 LowLine

12V /24V DC

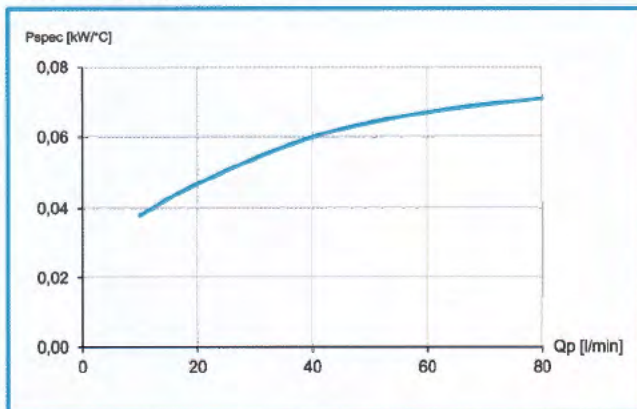


## Technical Data

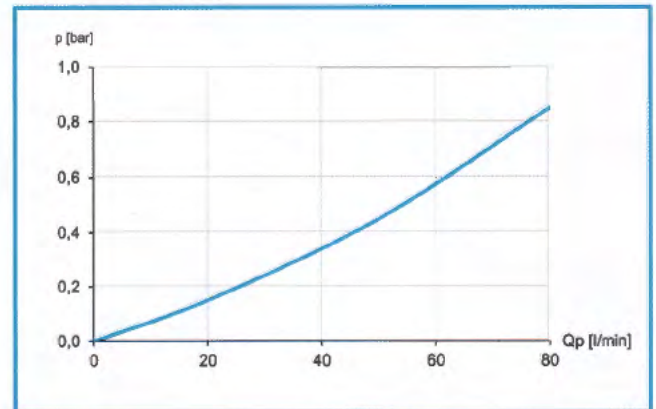
order number	description	current	protection level	air flow	noise level	weight
		[A]		[kg/s]	[dB (A)]	[kg]
ASA0043GD01	LL 04 12V DC	5,4	IP 68	0,16	68	4
ASA0043GD02	LL 04 24V DC	2,7	IP 68	0,16	68	4

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)
temperaure control	ILLZTC12-2K, ILLZTC24-2K (page 36, 37)

Please contact us for further options and assistance, read manual before installation!

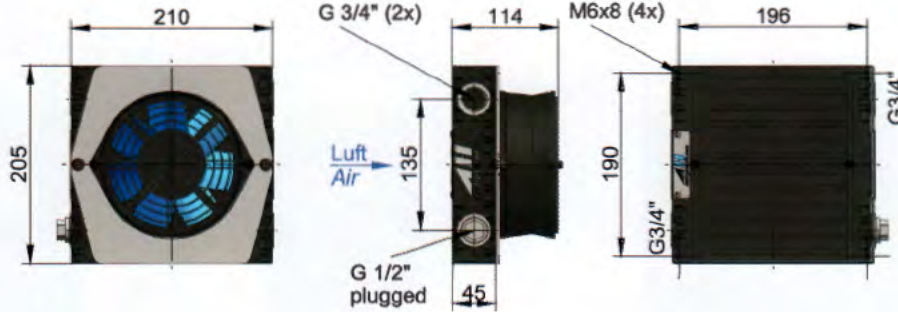


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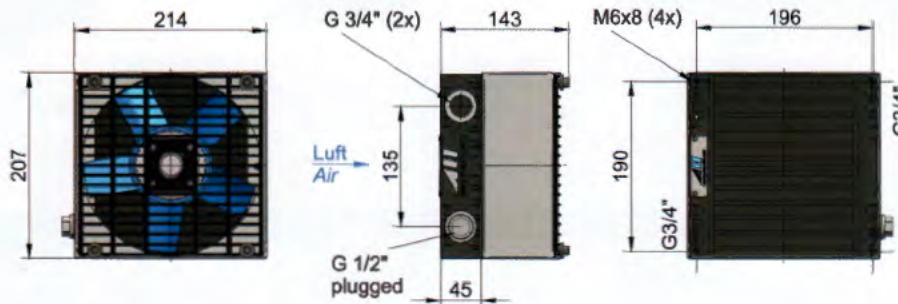
# Oil / Air Cooler LL 04 LowLine

230V 50 Hz AC, 230/400V 50 Hz AC

## ASA0043GE02



## ASA0043GI02

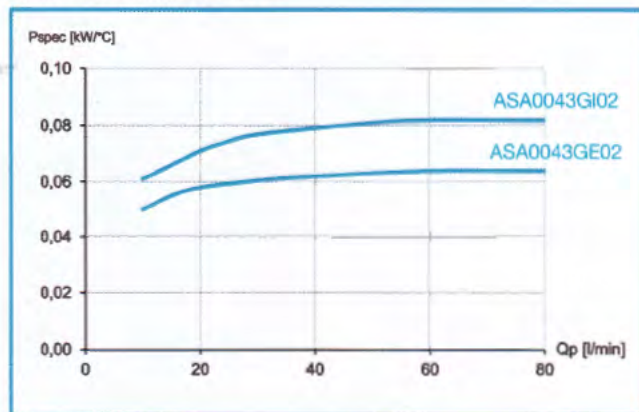


## Technical Data

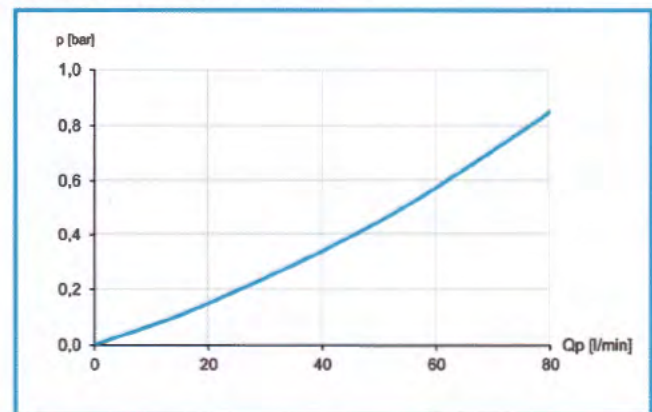
order number	description	power [kW]	current [A]	frequency [Hz]	protection	rotation [rpm]	air flow [kg/s]	noise level [dB (A)]	weight [kg]
ASA0043GE02	LL 04 230V AC	0,04	0,25	50	IP 20	2760	0,09	56	4,3
ASA0043GI02	LL 04 230/400V AC	0,05	0,15	50	IP 44	2760	0,15	56	5,9

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)

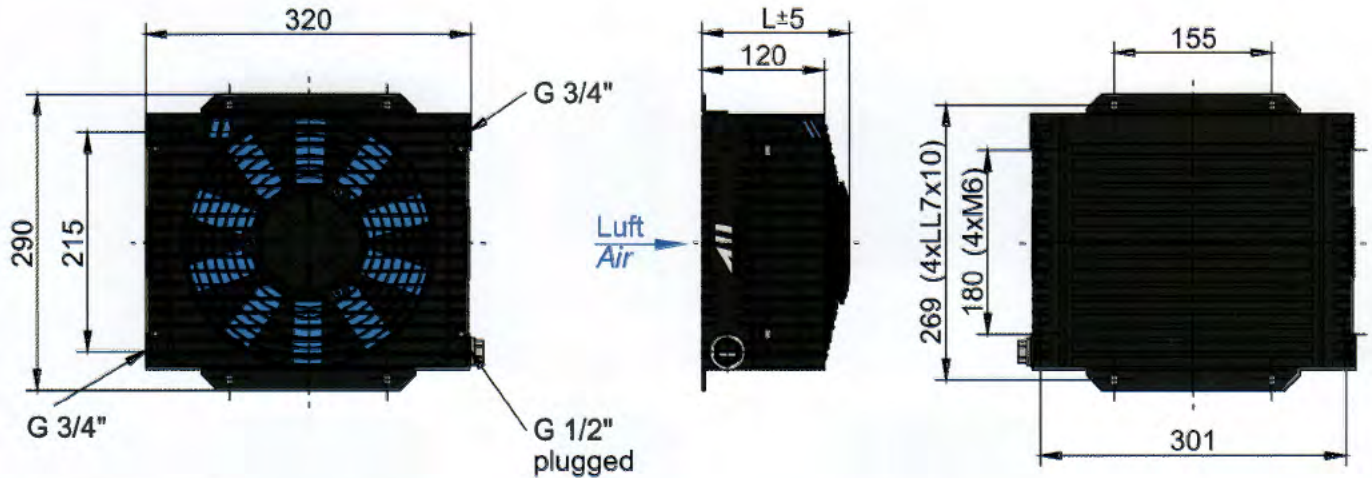
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# Oil / Air Cooler LL 06 LowLine

12V / 24V DC

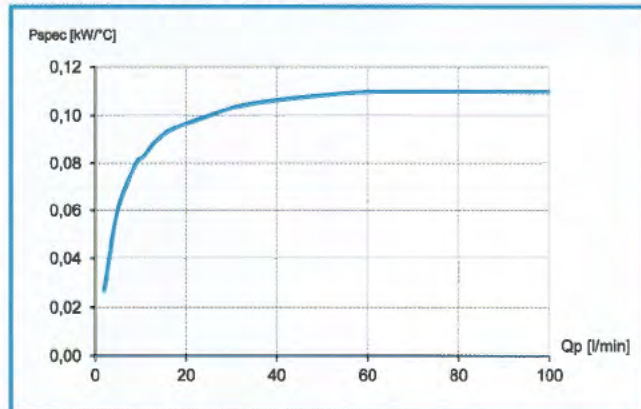


## Technical Data

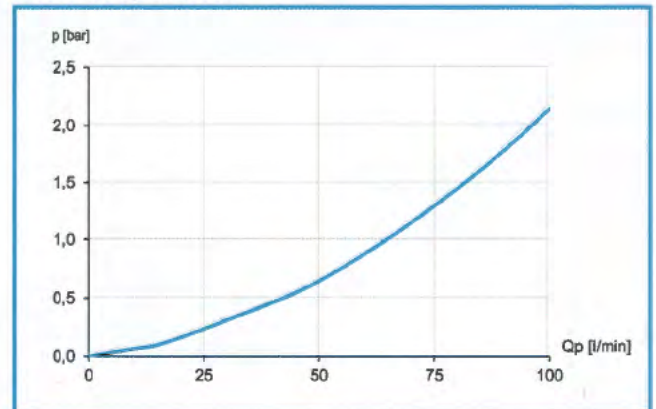
order number	description	current	protection level	air flow	noise level	weight
		[A]		[kg/s]	[dB (A)]	[kg]
ASATT06GD03	LL 06 12V DC	7,4	IP 68	0,29	74	6
ASATT06GD04	LL 06 24V DC	3,7	IP 68	0,29	74	6

## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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

## Options

internal bypass (2bar)	ASATT06GD03BP, ASATT06GD04BP
mounting feet kit	ILLEFUSSTT06K (page 34)
temperature switch IP65	ILLZTH4765K, ILLZTH6065K (page 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)
temperature control	ILLZTC12-2K, ILLZTC24-2K (page 36, 37)
protection housing	on request

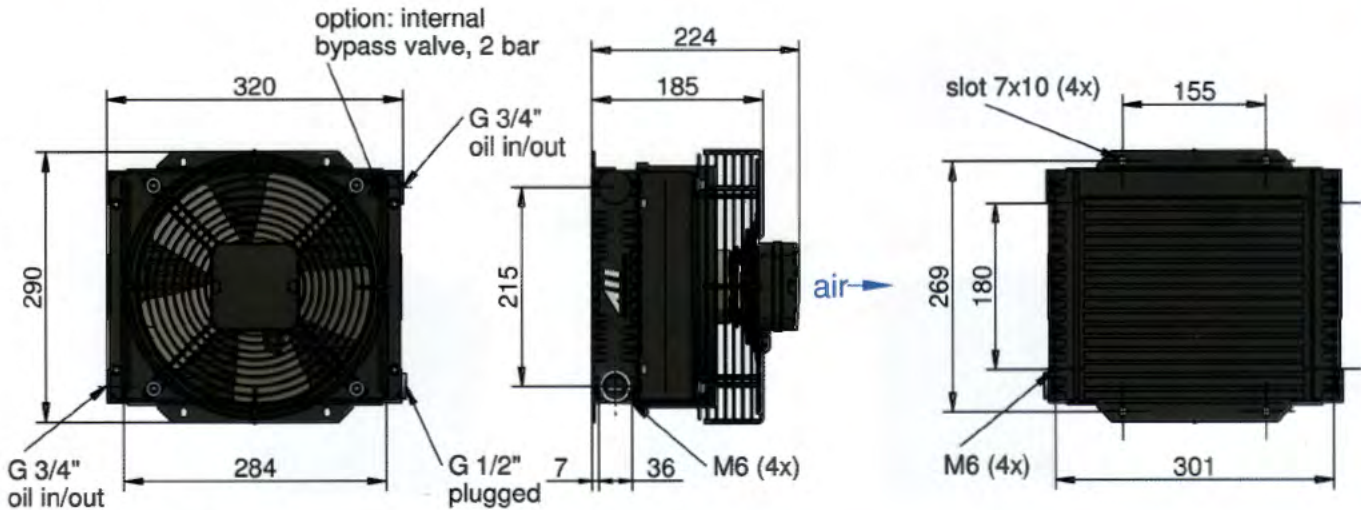
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# Oil / Air Cooler LL 06 LowLine

## 230V 50 Hz AC

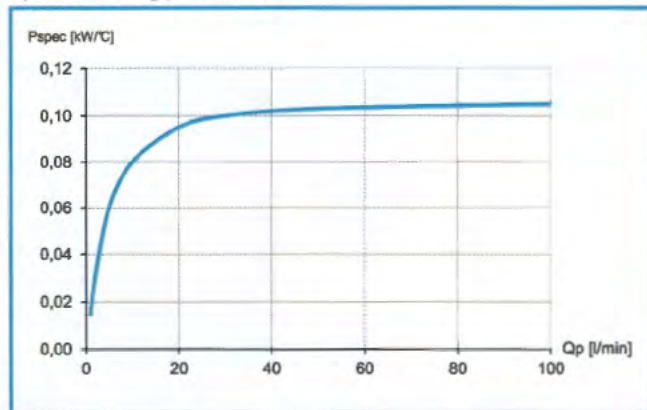


### Technical Data

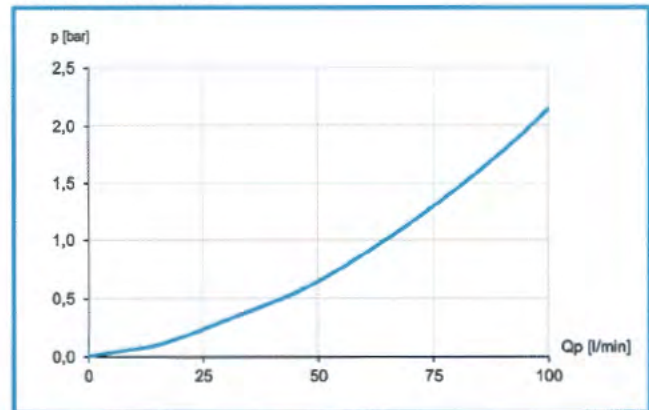
order number	description	power [kW]	current [A]	frequency [Hz]	protection	rotation [rpm]	air flow [kg/s]	noise level [dB (A)]	weight [kg]
ASATT06GC2E	ASA TT 06 AC compact	0,10	0,45	50	IP 44	2480	0,23	66	7,9

### Performance

#### Specific cooling performance



#### Pressure drop at 30cSt



### Radiator

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

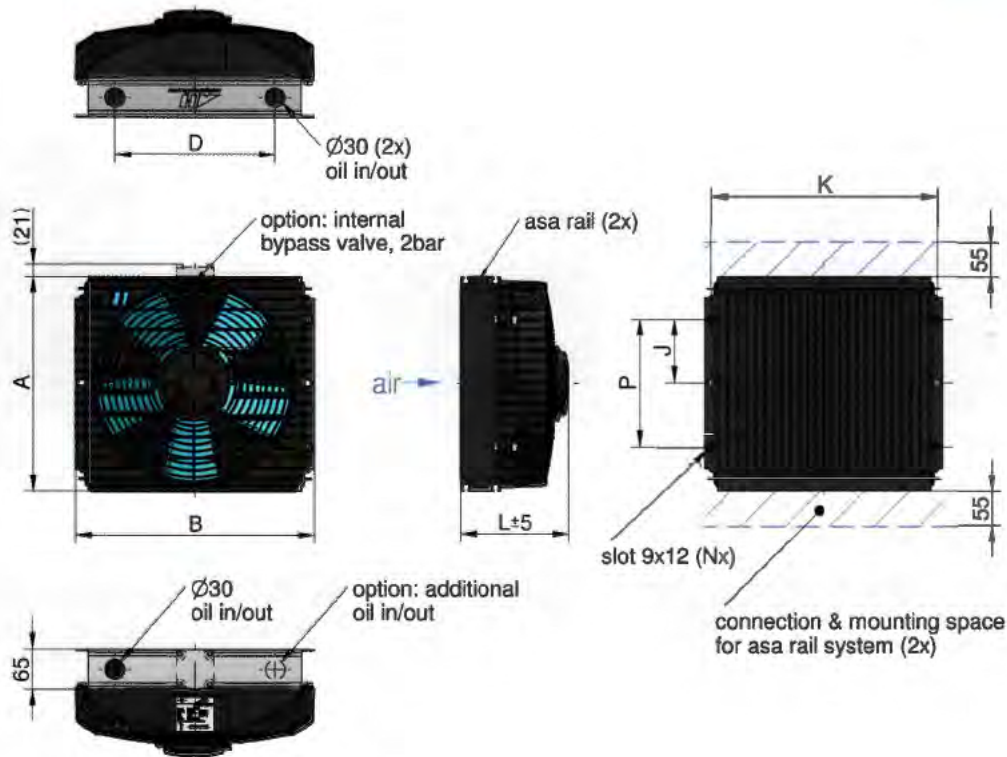
### Options

internal bypass (2bar)	ASATT06GC2EBP
mounting feet kit	ILLEFUSSTT06K (on request)
temperature switches IP65	ILLZTH4765K, ILLZTH6065K (page 38)
temperature switches IP69K	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)

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## 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*	3,9
ASATT05RD02	TT 05 rail 24V DC	235	245	118	-	150	225	150	4*	3,9
ASATT07RD01	TT 07 rail 12V DC	300	320	178	-	172	290	160	4	6,5
ASATT07RD02	TT 07 rail 24V DC	300	320	178	-	172	290	160	4	6,5
ASATT07RD03	TT 07 rail 12V DC h.p.	300	320	178	-	172	290	176	4	7,0
ASATT07RD04	TT 07 rail 24V DC h.p.	300	320	178	-	172	290	176	4	7,0
ASATT11RD01	TT 11 rail 12V DC	340	380	255	100	200	360	175	6	8,7
ASATT11RD02	TT 11 rail 24V DC	340	380	255	100	200	360	175	6	8,7
ASATT16RD01	TT 16 rail 12V DC	465	460	333	153	306	436	190	6	14,6
ASATT16RD02	TT 16 rail 24V DC	465	460	333	153	306	436	190	6	14,6
ASATT25RD01	TT 25 rail 12V DC	605	555	429	208,5	417	530	257	6	21,7
ASATT25RD02	TT 25 rail 24V DC	605	555	429	208,5	417	530	257	6	21,7

\*... slot holes with 7 x 10 mm

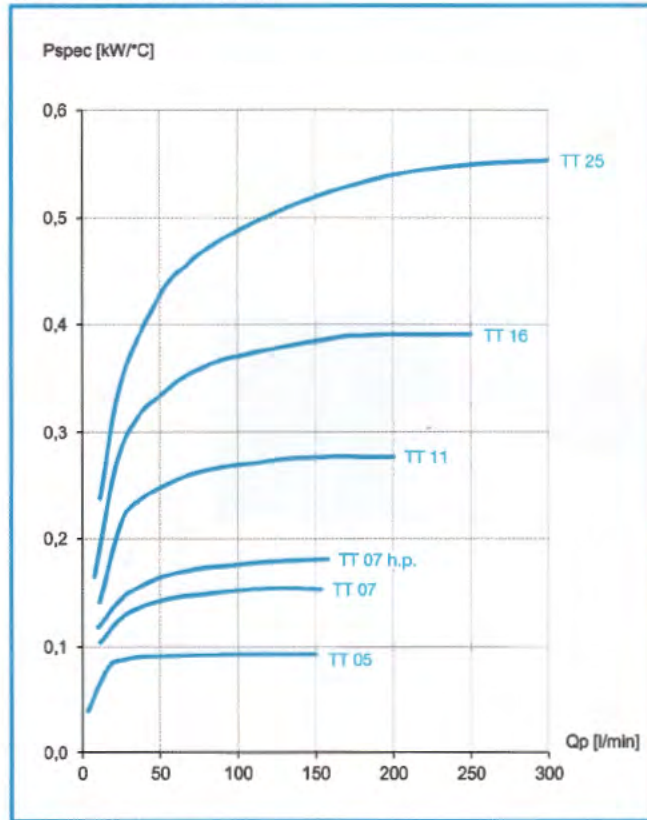
## Technical Data

order number	description	current	motor power	protection level	air flow	noise level	optional internal bypass (2 bar)
		[A]	[kW]		[kg/s]	[dB (A)]	cooler order number
ASATT06RD01	TT 06 rail 12V DC	9,0	0,12	IP 68	0,19	74	on request
ASATT05RD02	TT 05 rail 24V DC	4,5	0,12	IP 68	0,19	74	on request
ASATT07RD01	TT 07 rail 12V DC	10,4	0,14	IP 68	0,32	74	ASATT07RD01BP
ASATT07RD02	TT 07 rail 24V DC	5,2	0,14	IP 68	0,32	74	ASATT07RD02BP
ASATT07RD03	TT 07 rail 12V DC h.p.	16,2	0,21	IP 68	0,40	78	ASATT07RD03BP
ASATT07RD04	TT 07 rail 24V DC h.p.	8,1	0,21	IP 68	0,40	78	ASATT07RD04BP
ASATT11RD01	TT 11 rail 12V DC	20,8	0,27	IP 68	0,62	77	ASATT11RD01BP
ASATT11RD02	TT 11 rail 24V DC	10,4	0,27	IP 68	0,62	77	ASATT11RD02BP
ASATT16RD01	TT 16 rail 12V DC	18,6	0,24	IP 68	0,68	79	ASATT16RD01BP
ASATT16RD02	TT 16 rail 24V DC	9,3	0,24	IP 68	0,68	79	ASATT16RD02BP
ASATT25RD01	TT 25 rail 12V DC	18,6	0,24	IP 68	0,78	77	ASATT25RD01BP
ASATT25RD02	TT 25 rail 24V DC	9,3	0,24	IP 68	0,78	77	ASATT25RD02BP

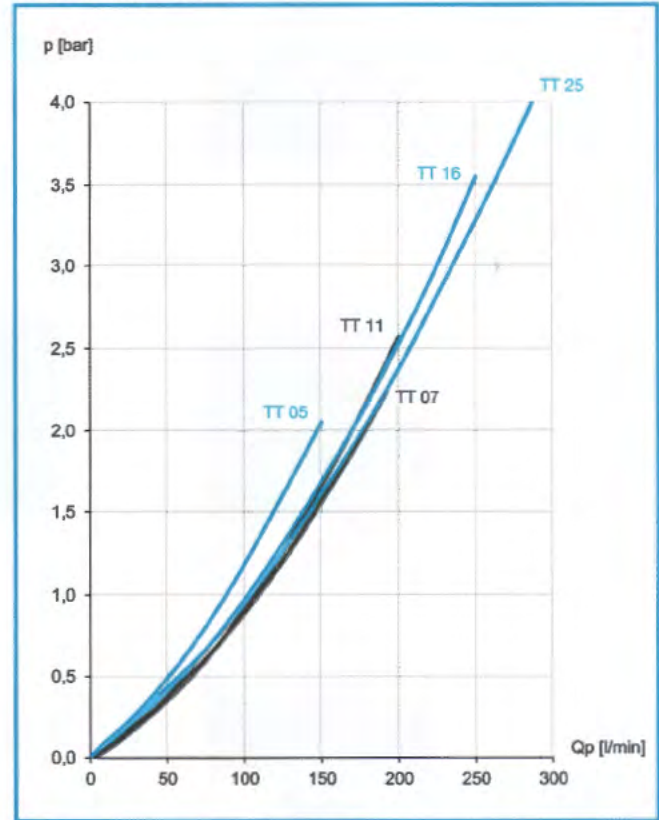
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## Performance

### Specific cooling performance



### Pressure drop at 30cSt



## Radiator

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

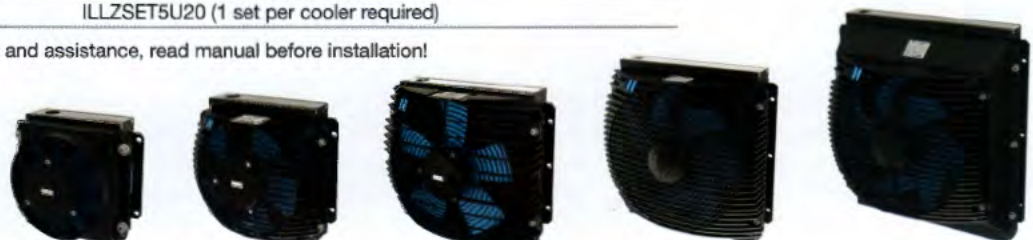
## Options

temperature control	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 36, 37)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 38)
rail mounting bracket	MW3046K
protection housings	TT 07: ILLEGAKTT07GT (page 35) TT 11: ILLEGAKTT11GT (page 35) TT 16: ILLEGAKTT16GT (page 35) TT 25: on request
foot mounting	ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

## 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 UNF 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UNF 1 5/8"	ILLZSET5U20 (1 set per cooler required)

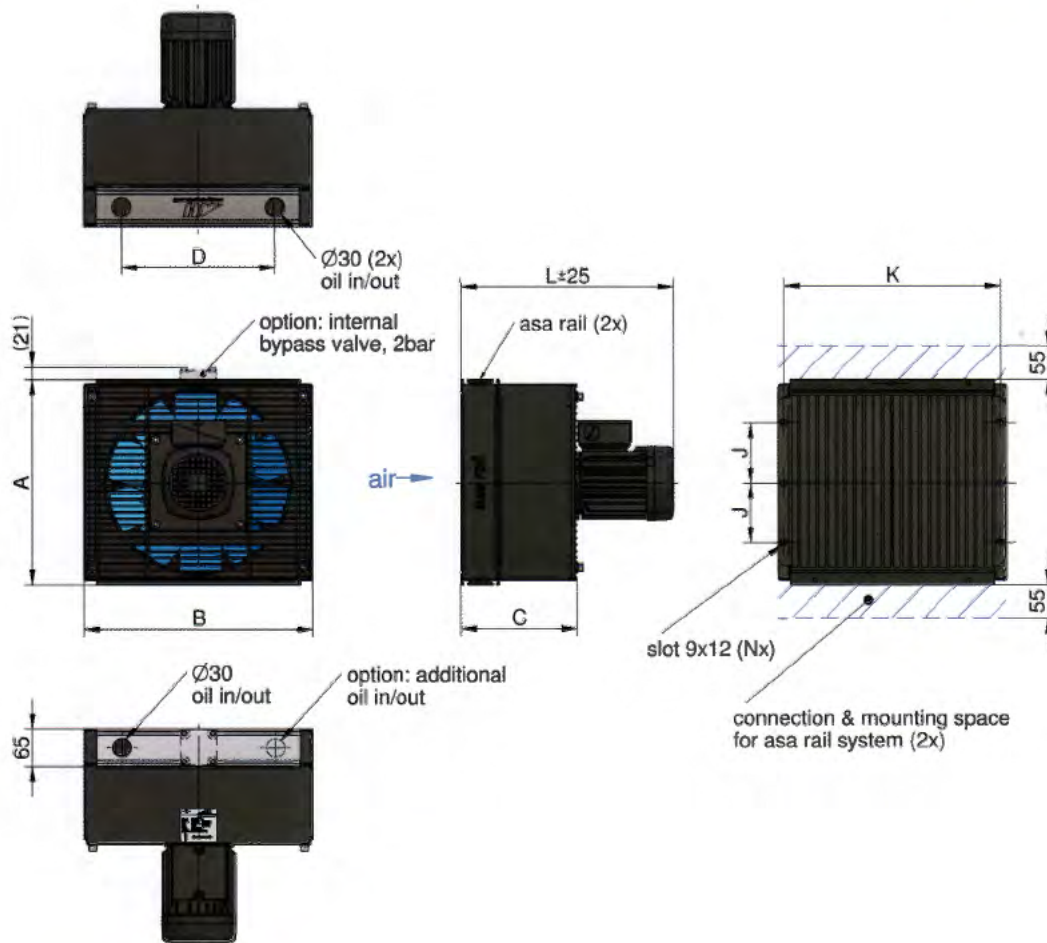
Please contact us for further options and assistance, read manual before installation!



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# Oil / Air Cooler TT Series

230/400V, 50Hz AC



## Dimensions

order number	description	A	B	C	D	J	K	L	N	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[in]		[kg]
ASATT07RA44	TT 07 rail 0,25kW AC	300	320	193	178	86	290	396	4	19,5
ASATT07RA25	TT 07 rail 0,55kW AC	300	320	193	178	86	290	396	4	20,5
ASATT11RA44	TT 11 rail 0,25kW AC	340	380	193	255	100	360	398	6	20,7
ASATT11RA25	TT 11 rail 0,55kW AC	340	380	193	255	100	360	398	6	21,7
ASATT16RA64	TT 16 rail 0,18kW AC	465	460	218	333	153	436	414	6	25,0
ASATT16RA44	TT 16 rail 0,25kW AC	465	460	218	333	153	436	414	6	25,2
ASATT16RA25	TT 16 rail 0,55kW AC	465	460	218	333	153	436	414	6	26,2
ASATT25RA66	TT 25 rail 0,37kW AC	605	555	218	429	208,5	530	449	6	32,5
ASATT25RA47	TT 25 rail 0,75kW AC	605	555	218	429	208,5	530	449	6	32,3

## Technical Data

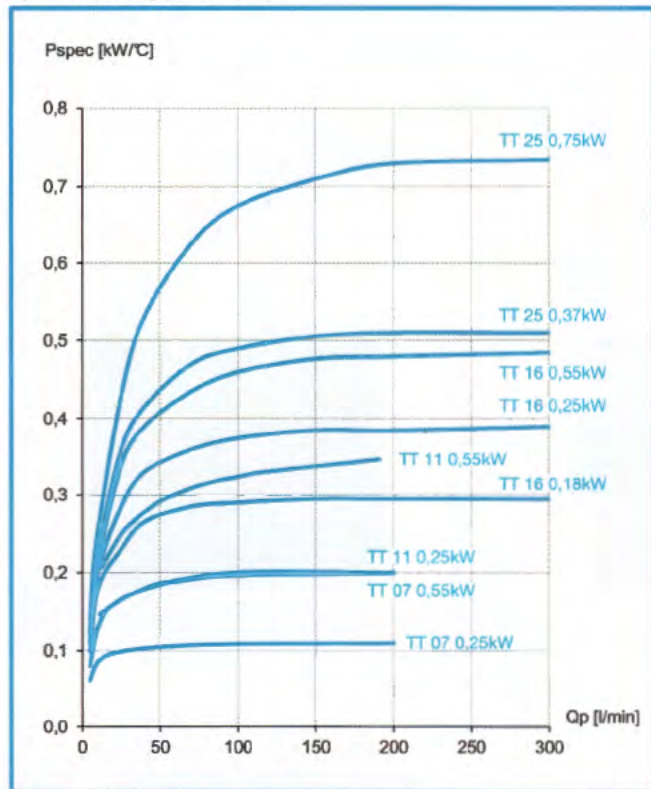
order number	description	current	motor power	Motor size	protection level	rotation	air flow	noise level	optional internal bypass (2 bar)
		[A]	[kW]			[rpm]	[kg/s]	[dB (A)]	cooler order number
ASATT07RA44	TT 07 rail 0,25kW AC	0,75	0,25	71	IP 55	1330	0,19	60	ASATT07RA44BP
ASATT07RA25	TT 07 rail 0,55kW AC	1,33	0,55	71	IP 55	2740	0,40	78	ASATT07RA25BP
ASATT11RA44	TT 11 rail 0,25kW AC	0,75	0,25	71	IP 55	1330	0,34	73	ASATT11RA44BP
ASATT11RA25	TT 11 rail 0,55kW AC	1,33	0,55	71	IP 55	2740	0,68	83	ASATT11RA25BP
ASATT16RA64	TT 16 rail 0,18kW AC	0,88	0,18	71	IP 55	925	0,42	62	ASATT16RA64BP
ASATT16RA44	TT 16 rail 0,25kW AC	0,75	0,25	71	IP 55	1330	0,58	74	ASATT16RA44BP
ASATT16RA25	TT 16 rail 0,55kW AC	1,33	0,55	71	IP 55	2740	0,86	91	ASATT16RA25BP
ASATT25RA66	TT 25 rail 0,37kW AC	1,22	0,37	80	IP 55	925	0,68	68	ASATT25RA66BP
ASATT25RA47	TT 25 rail 0,75kW AC	1,81	0,75	80	IP 55	1430	1,10	79	ASATT25RA47BP

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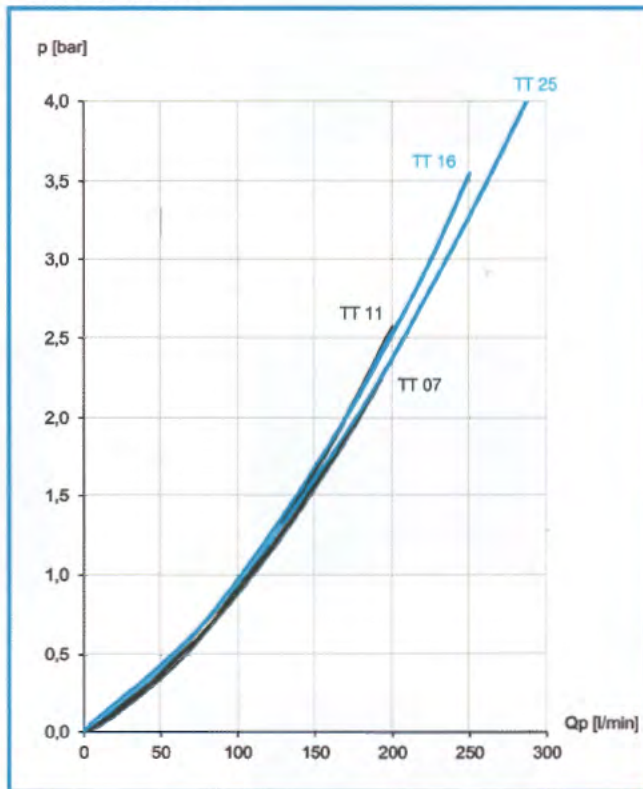


## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

## Options

motor data	alternative voltages, frequencies, IP classes, etc on request
temperature switches	ILLZTH4765K, ILLZTH6065K (page 38)
rail mounting bracket	MW3046K
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

## 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 UNF 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UNF 1 3/8"	ILLZSET5U20 (1 set per cooler required)

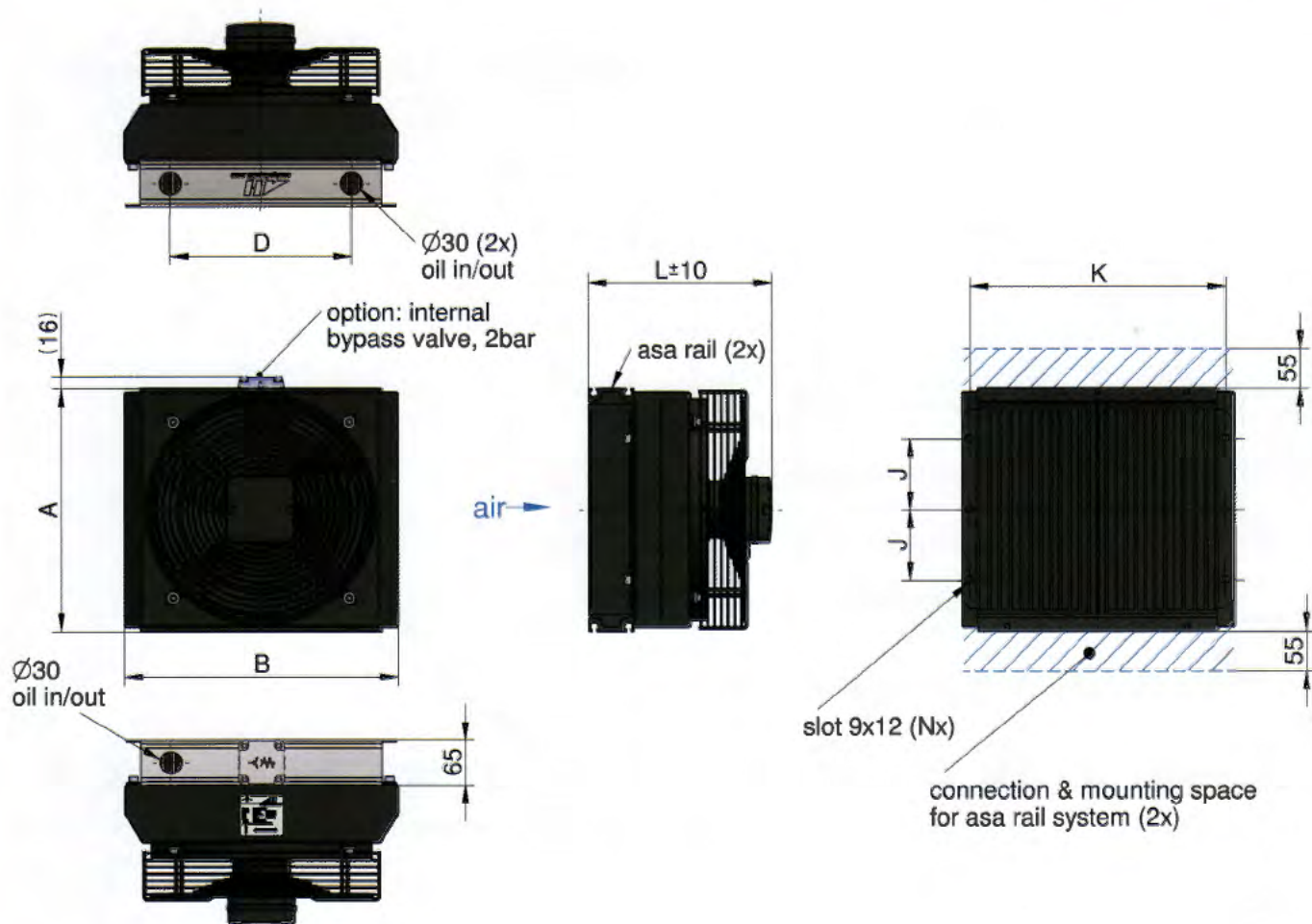
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# Oil / Air Cooler TT Series COMPACT

230V, 50Hz AC



## Dimensions

order number	description	A	B	D	J	K	L	N	weight	optional internal bypass (2bar)
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]	cooler order number
ASATT07RC2E	TT 07 rail 230V/50Hz/2pol compact	300	325	178	86	290	260	4	9,0	ASATT07RC2EBP
ASATT11RC4E	TT 11 rail 230V/50Hz/4pol compact	340	385	255	100	360	260	6	11,8	ASATT11RC4EBP
ASATT11RC2E	TT 11 rail 230V/50Hz/2pol compact	340	385	255	100	360	260	6	12,0	ASATT11RC2EBP
ASATT16RC4E	TT 16 rail 230V/50Hz/4pol compact	465	465	333	153	436	285	6	19,6	ASATT16RC4EBP

## Technical Data

order number	description	current	motor power	protection level	rotation	air flow	noise level
		[A]	[kW]		[rpm]	[kg/s]	[db(A)]
ASATT07RC2E	TT 07 rail 230V/50Hz/2pol compact	0,45	0,100	IP 44	2480	0,29	66
ASATT11RC4E	TT 11 rail 230V/50Hz/4pol compact	0,42	0,090	IP 44	1350	0,34	57
ASATT11RC2E	TT 11 rail 230V/50Hz/2pol compact	0,55	0,124	IP 44	2400	0,39	66
ASATT16RC4E	TT 16 rail 230V/50Hz/4pol compact	0,85	0,200	IP 44	1350	0,68	64

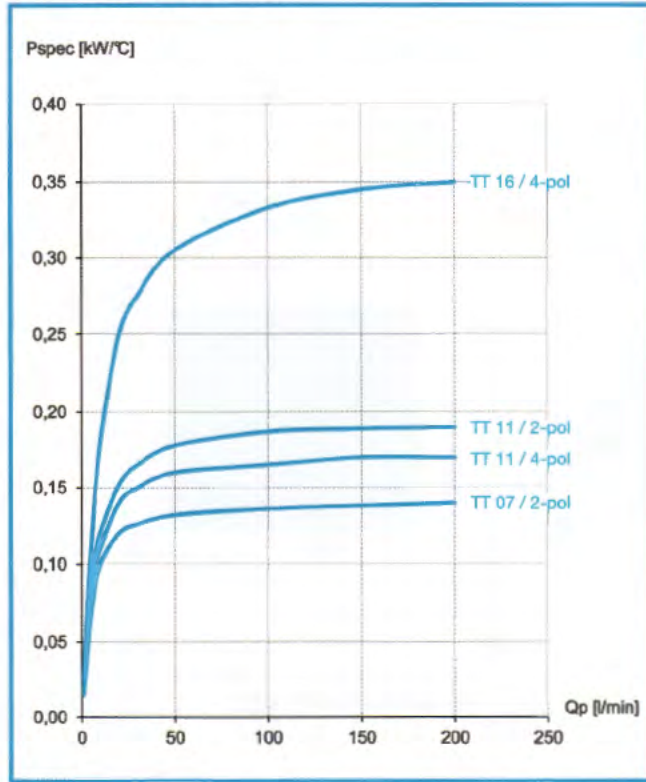
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# Oil / Air Cooler TT Series COMPACT

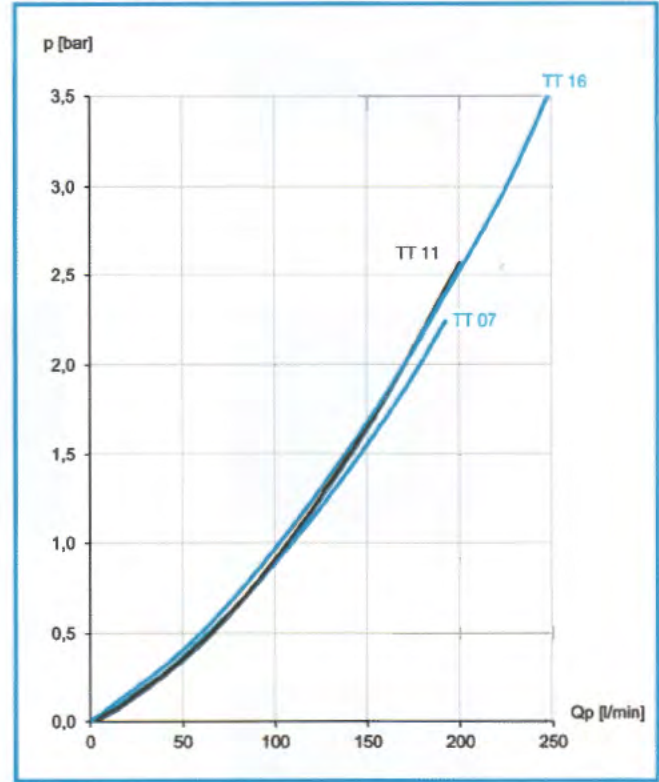
## 230V, 50Hz AC

### Performance

Specific cooling performance



Pressure drop at 30cSt



### Radiator

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

### Options

115V, 60Hz	on request
230/400V 50Hz 3-phase	on request
temperature control	ILLZTCACK (page 39)
temperature switches	ILLZTH4765K, ILLZTH6065K (page 38)
rail mounting bracket	MW3046K
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

### 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 UNF 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UNF 1 5/8"	ILLZSET5U20 (1 set per cooler required)

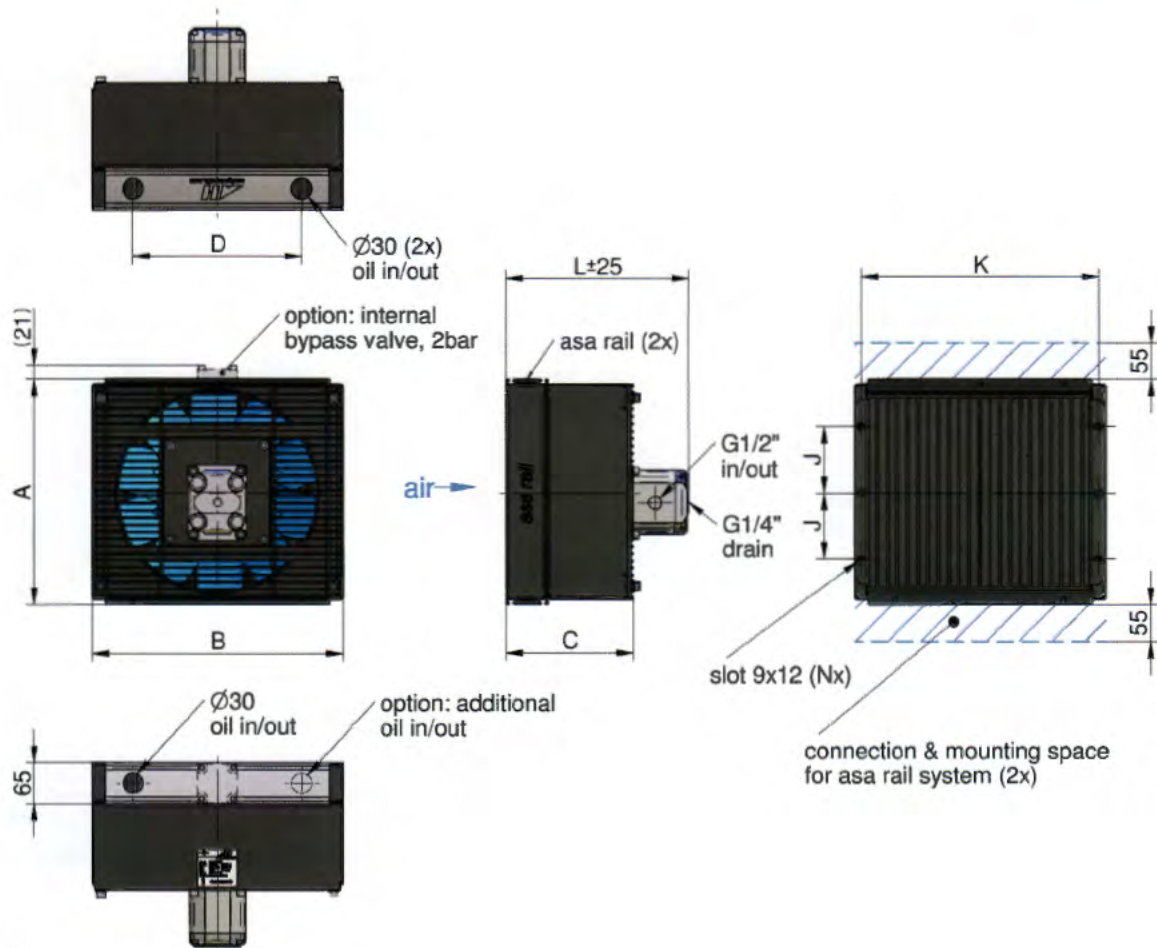
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# Oil / Air Cooler TT Series

## 11 cm<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	193	255	100	360	277	6	16,7
ASATT16RH11	TT 16 rail 11cm <sup>3</sup> hydr. motor	465	460	218	333	153	436	302	6	21,2
ASATT25RH11	TT 25 rail 11cm <sup>3</sup> hydr. motor	605	555	218	429	208,5	530	302	6	27,8

### 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	0,21	66	ASATT11RH11BP
		0,19	6	23	2000	0,40	82	
		0,65	12	35	3000	0,75	90	
ASATT16RH11	TT 16 rail 11cm <sup>3</sup> hydr. motor	0,06	2	12	1000	0,44	61	ASATT16RH11BP
		0,51	9	23	2000	0,76	79	
		1,50	20	35	3000	1,02	91	
ASATT25RH11	TT 25 rail 11cm <sup>3</sup> hydr. motor	0,12	4	12	1000	0,81	73	ASATT25RH11BP
		0,95	15	23	2000	1,63	80	
		3,20	34	35	3000	2,44	89	

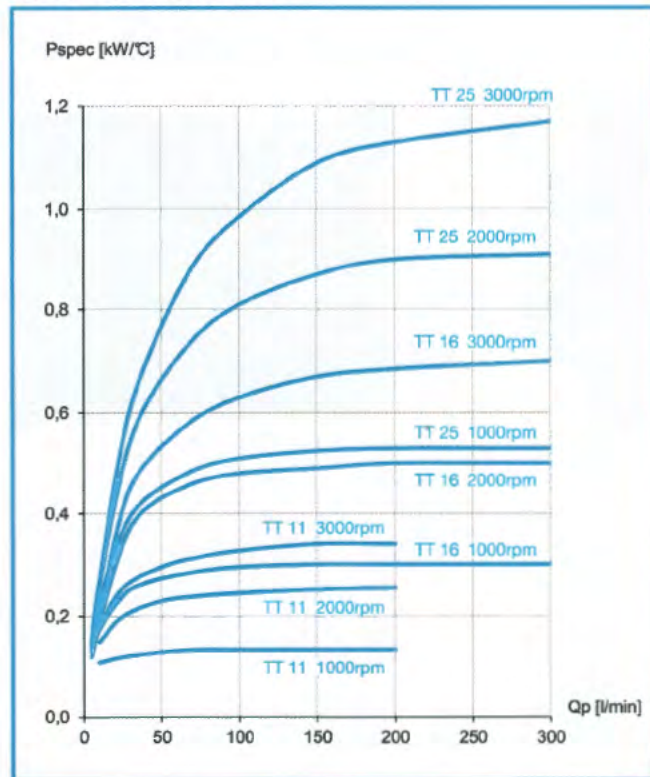
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# Oil / Air Cooler TT Series

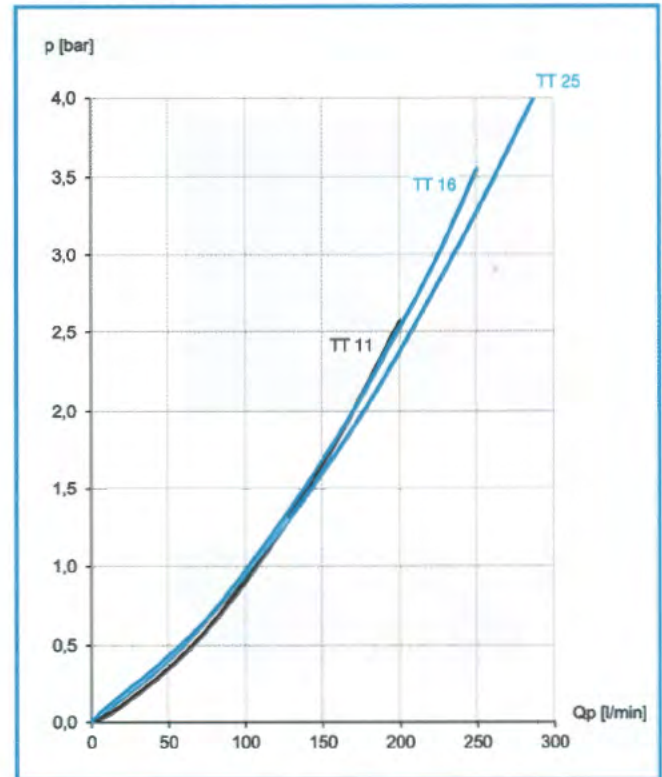
## 11 cm<sup>3</sup> hydraulic drive

### Performance

Specific cooling performance



Pressure drop at 30cSt



### Radiator

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

### Options

hydraulic motor	alternative displacements on request
temperature switches	ILLZTH5069K, ILLZTH6069K, ILLZTH9069K (page 38)
rail mounting bracket	MW3046K
foot mounting options	ILLEFUSSTTK, ILLEFUSSTHDK (page 34)
internal bypass	alternative bypass settings (1bar / 5bar)

### 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 UNF 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UNF 1 5/8"	ILLZSET5U20 (1 set per cooler required)

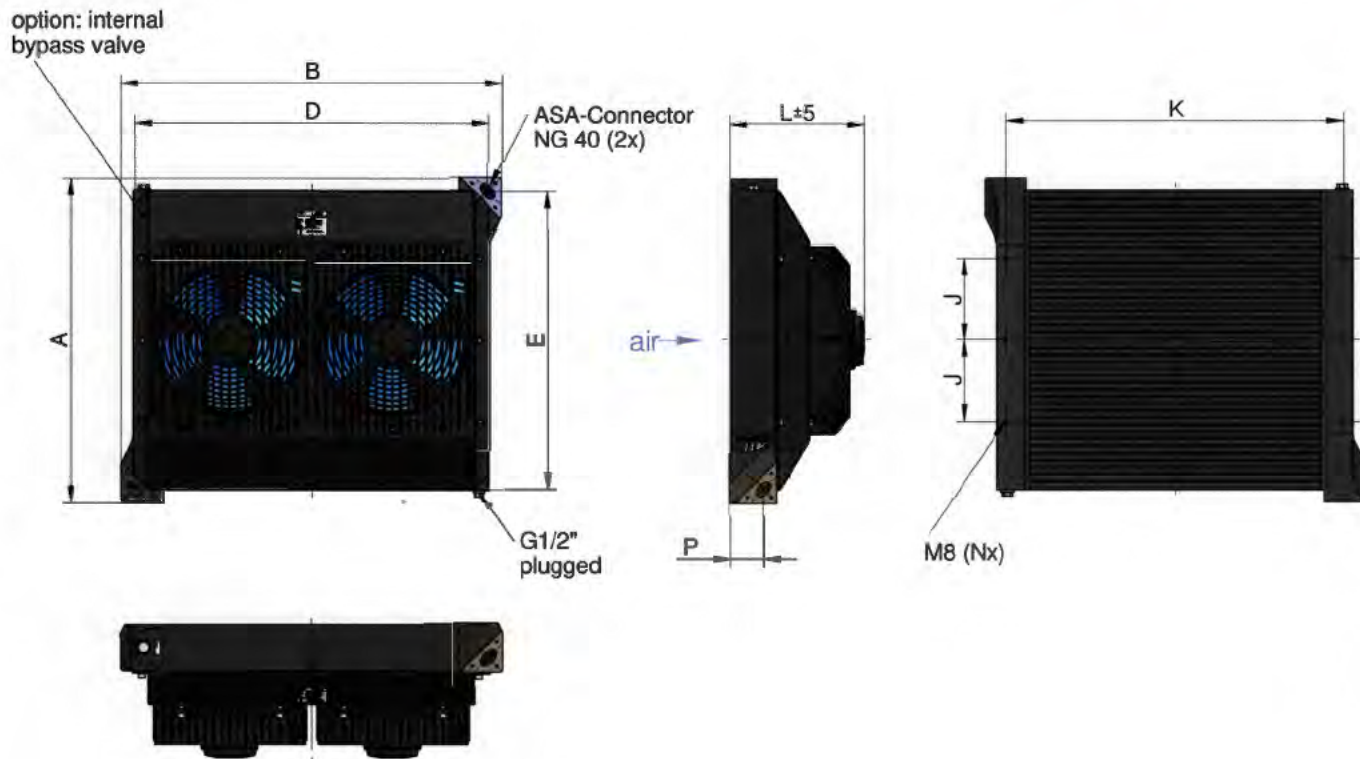
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# Oil / Air Cooler ASA Series

## 12V / 24V DC



### Dimensions

order number	description	A	B	D	J	K	L	N	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[kg]
ASA0177AD01	ASA 0177 12V DC	470	590	535	153	510	228	4	68	23,7
ASA0177AD02	ASA 0177 24V DC	470	590	535	153	510	228	4	68	23,7
ASA0257AD03	ASA 0257 12V DC h.p.	555	690	635	208,5	530	259	6	68	38,5
ASA0257AD04	ASA 0257 24V DC h.p.	555	690	635	208,5	530	259	6	68	38,5
ASA0367AD01	ASA 0367 12V DC	650	770	715	165	694	271	6	68	51,0
ASA0367AD02	ASA 0367 24V DC	650	770	715	165	694	271	6	68	51,0

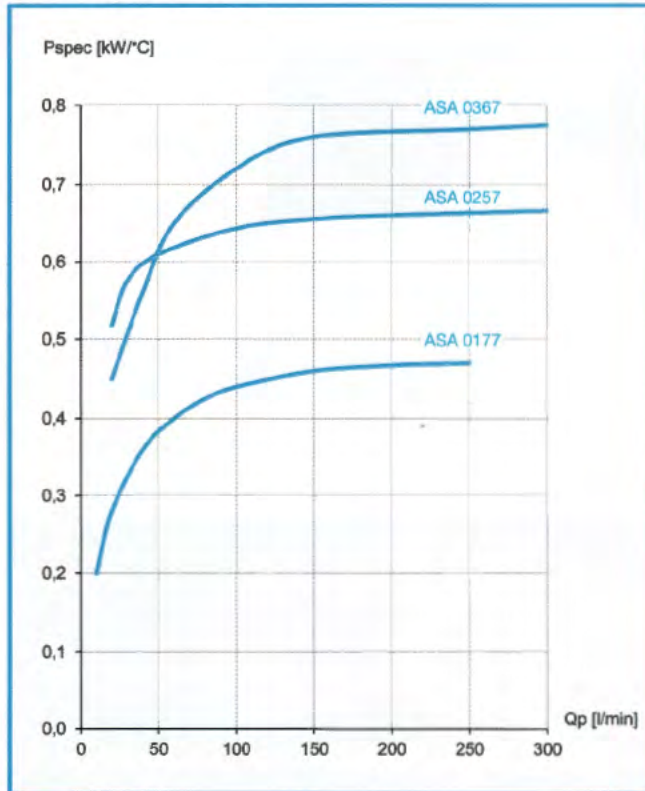
### Technical Data

order number	description	current	motor power	protection level	air flow	noise level	optional internal bypass (2 bar)
		[A]	[kW]		[kg/s]	[db(A)]	cooler order number
ASA0177AD01	ASA 0177 12V DC	18,6*	0,24*	IP 68	0,62	79	ASA0177AD01BP
ASA0177AD02	ASA 0177 24V DC	9,3*	0,24*	IP 68	0,62	79	ASA0177AD02BP
ASA0257AD03	ASA 0257 12V DC h.p.	2x20,8	2x0,27	IP 68	1,20	83	ASA0257AD03BP
ASA0257AD04	ASA 0257 24V DC h.p.	2x10,4	2x0,27	IP 68	1,20	83	ASA0257AD04BP
ASA0367AD01	ASA 0367 12V DC	2x20,8	2x0,27	IP 68	1,15	84	ASA0367AD01BP
ASA0367AD02	ASA 0367 24V DC	2x10,4	2x0,27	IP 68	1,15	84	ASA0367AD02BP

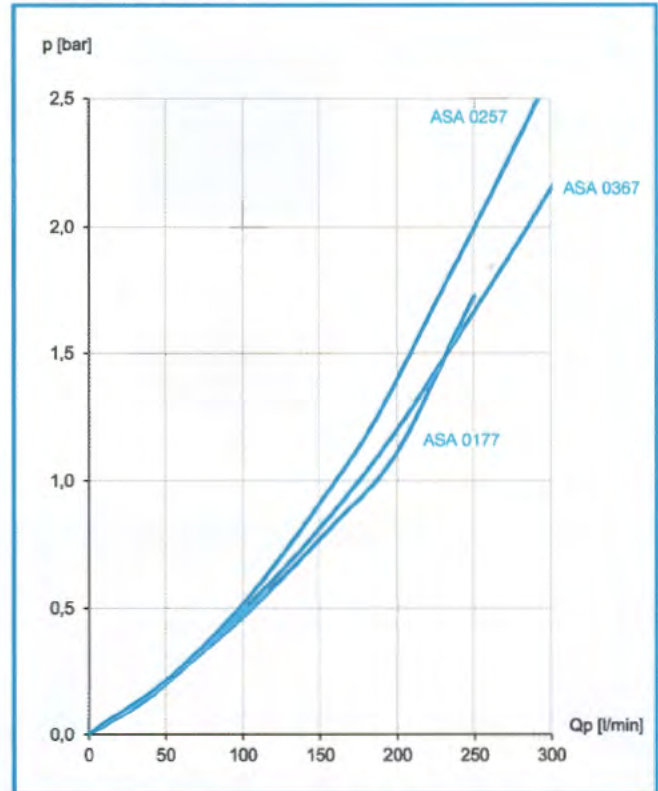
\*... single fan

## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

## Options

temperature control	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 36, 37)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 38)
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 1/4"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 1/2"	ILLZASA40G40 (2 pieces per cooler required)
connection UNF 1 5/8"	ILLZASA32U20 (2 pieces per cooler required)
connection UNF 1 7/8"	ILLZASA40U24 (2 pieces per cooler required)

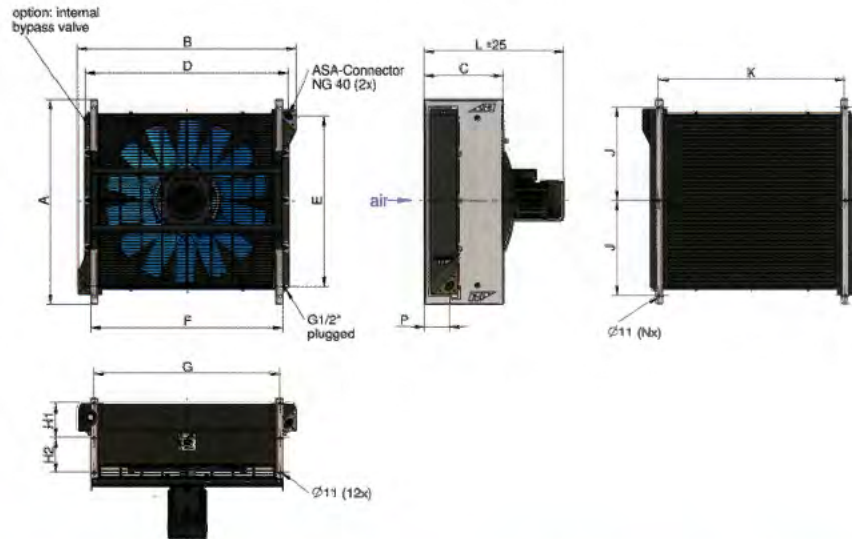
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# Oil / Air Cooler ASA Series

## 230/400V 50Hz AC



### Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	K	N	L	P	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[kg]
ASA0177AA64	ASA 0177 0,18kW AC	530	582	260	534	412	462	442	120	90	490	442	4	486	89	39,3
ASA0177AA44	ASA 0177 0,25kW AC	530	582	260	534	412	462	442	120	90	490	442	4	486	89	40,7
ASA0177AA25	ASA 0177 0,55kW AC	530	582	260	534	412	462	442	120	90	490	442	4	486	89	40,5
ASA0257AA66	ASA 0257 0,37kW AC	635	682	270	634	501	562	542	110	110	280	542	6	531	93	48,7
ASA0257AA47	ASA 0257 0,75kW AC	635	682	270	634	501	562	542	110	110	280	542	6	531	93	48,4
ASA0367AA66	ASA 0367 0,37kW AC	720	770	280	720	596	676	656	120	120	330	656	6	541	90	63
ASA0367AA47L	ASA 0367 0,75kW AC*	720	770	280	720	596	676	656	120	120	330	656	6	541	90	59,5
ASA0367AA47	ASA 0367 0,75kW AC	720	770	280	720	596	676	656	120	120	330	656	6	541	90	64,1
ASA0467AA66	ASA 0467 0,37kW AC	785	837	290	789	727	758	738	125	125	375	738	10	544	94	77,2
ASA0467AA47	ASA 0467 0,75kW AC	785	837	290	789	727	758	738	125	125	375	738	10	574	94	86,0
ASA0467AA4A	ASA 0467 2,20kW AC	785	837	290	789	727	758	738	125	125	375	738	10	622,3	94	107,2
ASA0567AA66	ASA 0567 0,37kW AC	860	920	290	870	746	826	806	125	125	400	806	10	570	92	79,5
ASA0567AA47	ASA 0567 0,75kW AC	860	920	290	870	746	826	806	125	125	400	806	10	570	92	80,6
ASA0567AA4A	ASA 0567 2,20kW AC	860	920	290	870	746	826	806	125	125	400	806	10	634	92	113,5
ASA0927AA6A	ASA 0927 1,50kW AC	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	664	87	161,4
ASA0927AA6E	ASA 0927 4,00kW AC	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	760	87	203,6

### Technical Data

order number	description	current	motor power	motor size	protection level	rotation	air flow	noise level	optional internal bypass (2bar)
		[A]	[kW]			[rpm]	[kg/s]	[db(A)]	cooler order number
ASA0177AA64	ASA 0177 0,18kW AC	0,88	0,18	71	IP 55	925	0,39	62	ASA0177AA64
ASA0177AA44	ASA 0177 0,25kW AC	0,75	0,25	71	IP 55	1330	0,57	74	ASA0177AA44
ASA0177AA25	ASA 0177 0,55kW AC	1,33	0,55	71	IP 55	2740	0,82	91	ASA0177AA25
ASA0257AA66	ASA 0257 0,37kW AC	1,22	0,37	80	IP 55	925	0,75	68	ASA0257AA66
ASA0257AA47	ASA 0257 0,75kW AC	1,81	0,75	80	IP 55	1430	1,14	79	ASA0257AA47
ASA0367AA66	ASA 0367 0,37kW AC	1,22	0,37	80	IP 55	925	0,94	73	ASA0367AA66
ASA0367AA47L	ASA 0367 0,75kW AC*	1,81	0,75	80	IP 55	1430	1,20	79	ASA0367AA47L
ASA0367AA47	ASA 0367 0,75kW AC	1,81	0,75	80	IP 55	1430	1,47	83	ASA0367AA47
ASA0467AA66	ASA 0467 0,37kW AC	1,22	0,37	80	IP 55	925	1,12	74	ASA0467AA66
ASA0467AA47	ASA 0467 0,75kW AC	1,81	0,75	80	IP 55	1430	1,77	84	ASA0467AA47
ASA0467AA4A	ASA 0467 2,20kW AC	4,80	2,20	100	IP 55	1455	2,20	88	ASA0467AA4A
ASA0567AA66	ASA 0567 0,37kW AC	1,22	0,37	80	IP 55	925	1,21	74	ASA0567AA66
ASA0567AA47	ASA 0567 0,75kW AC	1,81	0,75	80	IP 55	1430	1,89	84	ASA0567AA47
ASA0567AA4A	ASA 0567 2,20kW AC	4,8	2,20	100	IP 55	1455	2,80	88	ASA0567AA4A
ASA0927AA6A	ASA 0927 1,50kW AC	3,44	1,50	100	IP 55	955	4,73	86	not available
ASA0927AA6E	ASA 0927 4,00kW AC	8,5	4,00	132	IP 55	965	6,86	89	not available

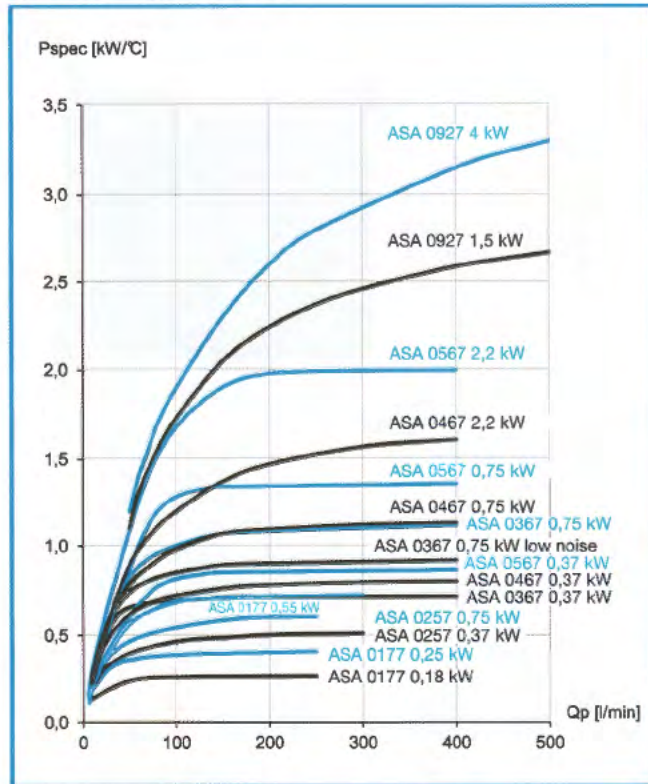
\* ... low noise version

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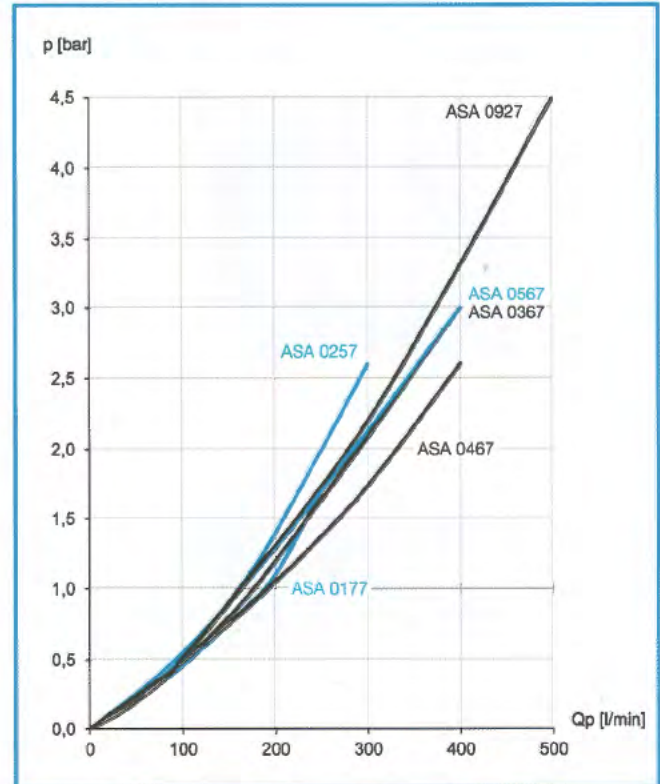


## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

## Options

motor data	alternative voltages, frequencies, IP classes, etc on request
temperature switch	ILLZTH4765K, ILLZTH6065K (page 38)
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 1/4"	ILLZASA32G32 (2 pieces per cooler required)
connection BSP 1 1/2"	ILLZASA40G40 (2 pieces per cooler required)
connection UNF 1 5/8"	ILLZASA32U20 (2 pieces per cooler required)
connection UNF 1 7/8"	ILLZASA40U24 (2 pieces per cooler required)

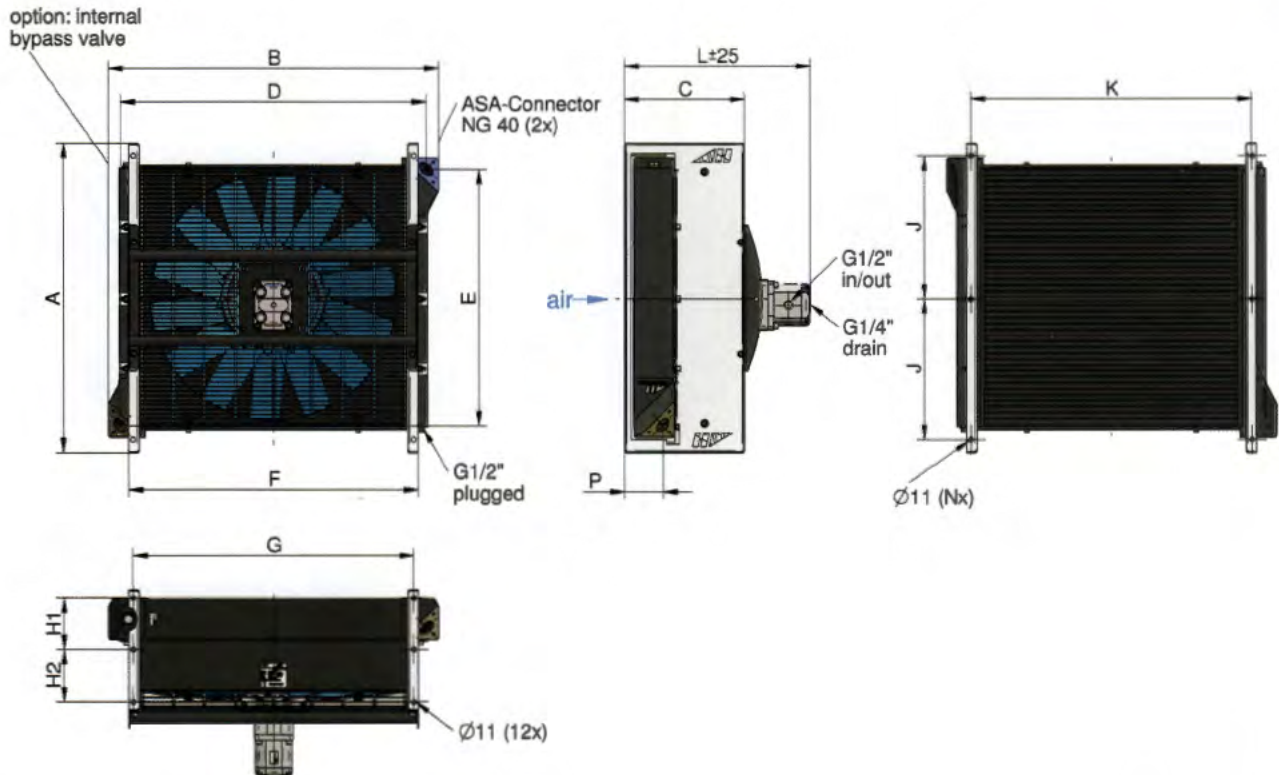


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# Oil / Air Cooler ASA Series

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



### Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	K	N	L	P	weight
		[mm]	[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	412	462	442	120	90	490	442	4	364	89	37,2
ASA0257AH11	ASA 0257 hydr. motor 11cm <sup>3</sup>	635	682	270	634	501	562	542	110	110	280	542	6	370	83	49,9
ASA0367AH11	ASA 0367 hydr. motor 11cm <sup>3</sup>	720	770	280	720	596	676	656	120	120	330	656	6	430	90	55,4
ASA0467AH11	ASA 0467 hydr. motor 11cm <sup>3</sup>	785	837	290	789	727	758	738	125	125	375	738	10	544	94	72,9
ASA0567AH11	ASA 0567 hydr. motor 11cm <sup>3</sup>	860	920	290	870	746	826	806	125	25	400	806	10	460	92	71,9
ASA0927AH11	ASA 0927 hydr. motor 11cm <sup>3</sup>	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	475	87	120

### 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
		0,51	15	23	2000	0,73	79	
		1,50	29	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	2000	1,53	85	
		1,60	48	12	3000	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	
ASA0927AH11	ASA 0927 hydr. motor 11 cm <sup>3</sup>	1,10	63	12	1000	5,00	88	not available
		2,60	115	15	1300	6,50	92	
		4,70	169	19	1600	7,95	97	

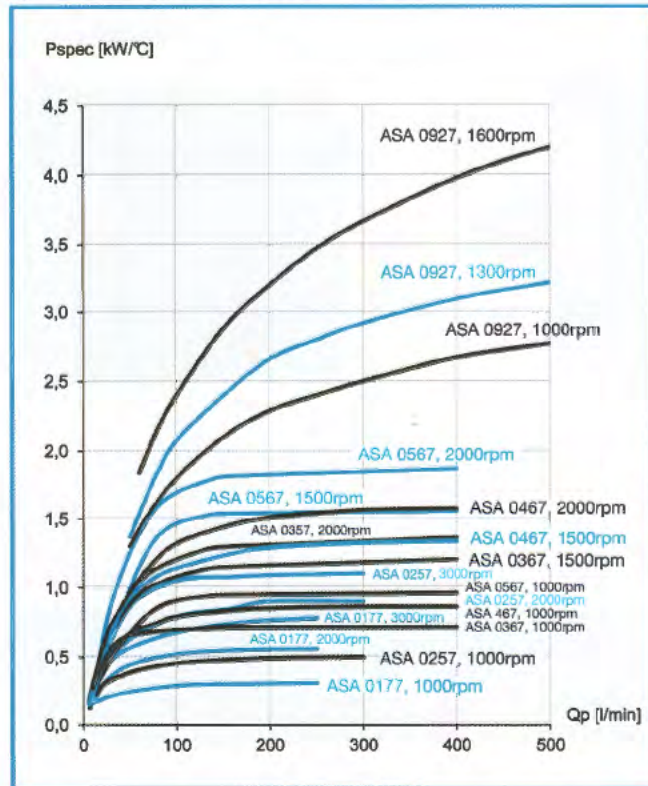
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# Oil / Air Cooler ASA Series

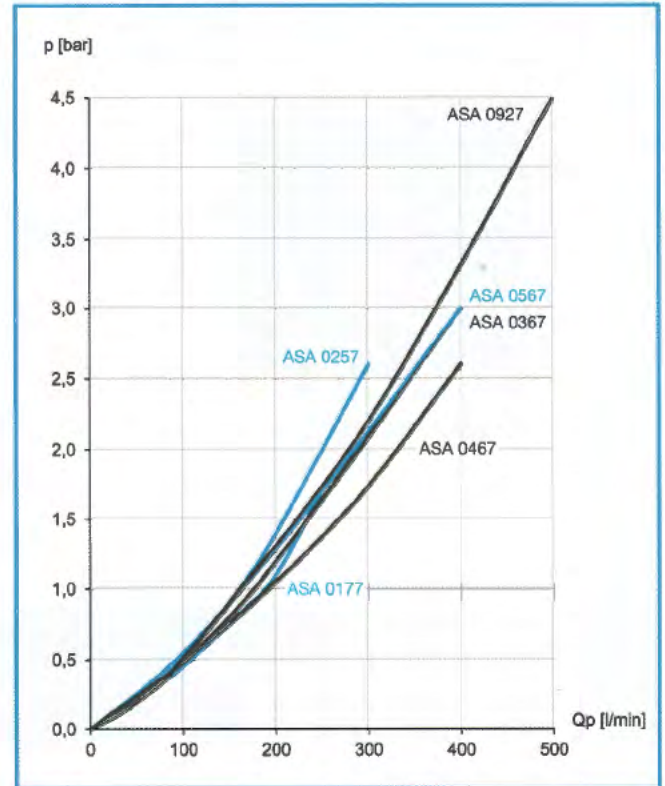
## 11 cm<sup>3</sup> hydraulic drive

### Performance

Specific cooling performance



Pressure drop at 30cSt



### Radiator

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

### Options

hydraulic motor	alternative displacements on request
temperature switch	ILLZTH4765K, ILLZTH6065K (page 38)
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)
connection UNF 1 ⅝"	ILLZASA32U20 (2 pieces per cooler required)
connection UNF 1 7/8"	ILLZASA40U24 (2 pieces per cooler required)

Please contact us for further options and assistance, read manual before installation!

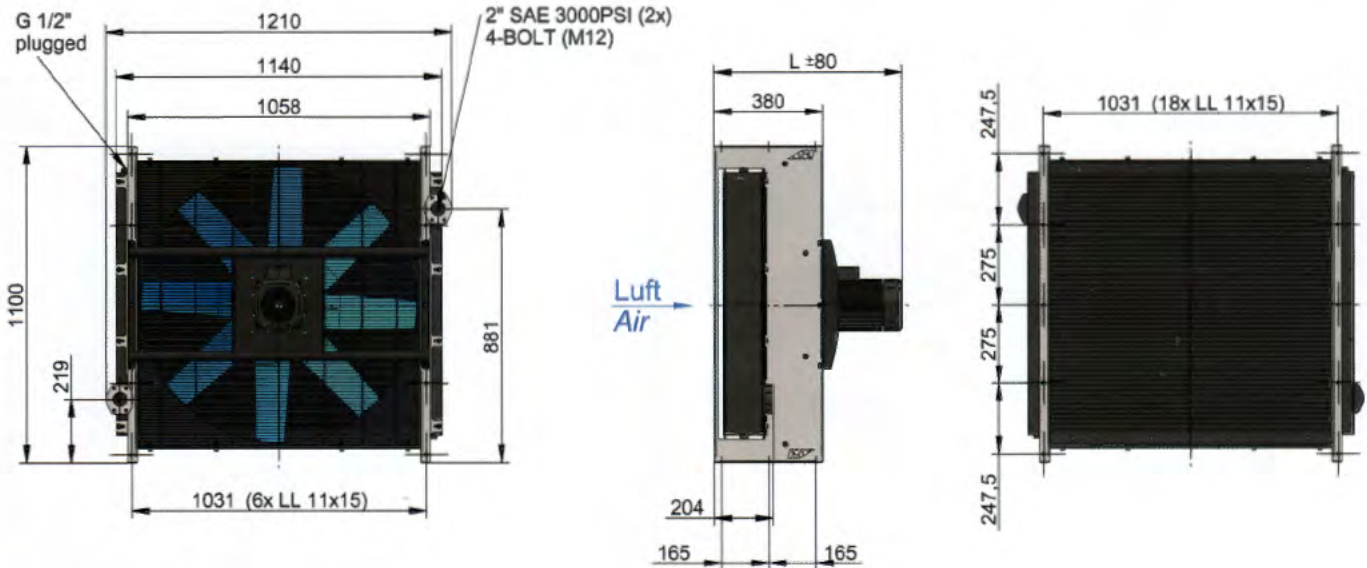


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# Oil / Air Cooler HL 0929 HighLine

230/400V 50Hz AC

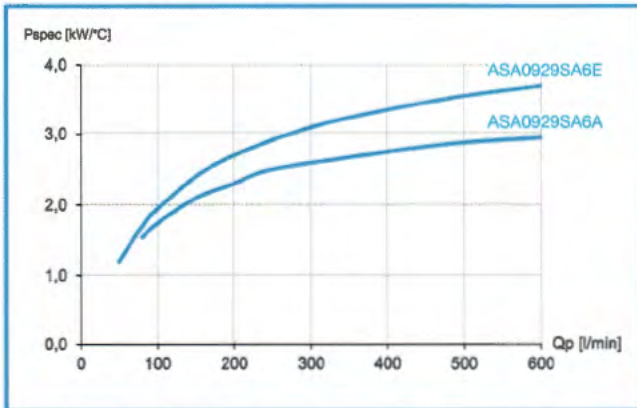


## Technical Data

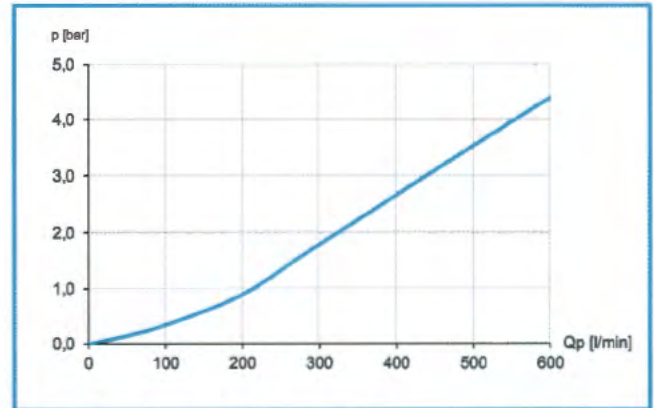
order number	description	motor power [kW]	current [A]	protection	rotation [rpm]	air flow [kg/s]	noise level [dB(A)]	weight [kg]
ASA0929SA6A	ASA 0929 1,5 kW AC	1,50	3,9	IP 55	945	4,07	86	174,6
ASA0929SA6E	ASA 0929 4,0 kW AC	4,00	9	IP 55	950	5,74	91	212,8

## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

## Options

temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 38)
type of drive	standard 11cm³, hydraulic

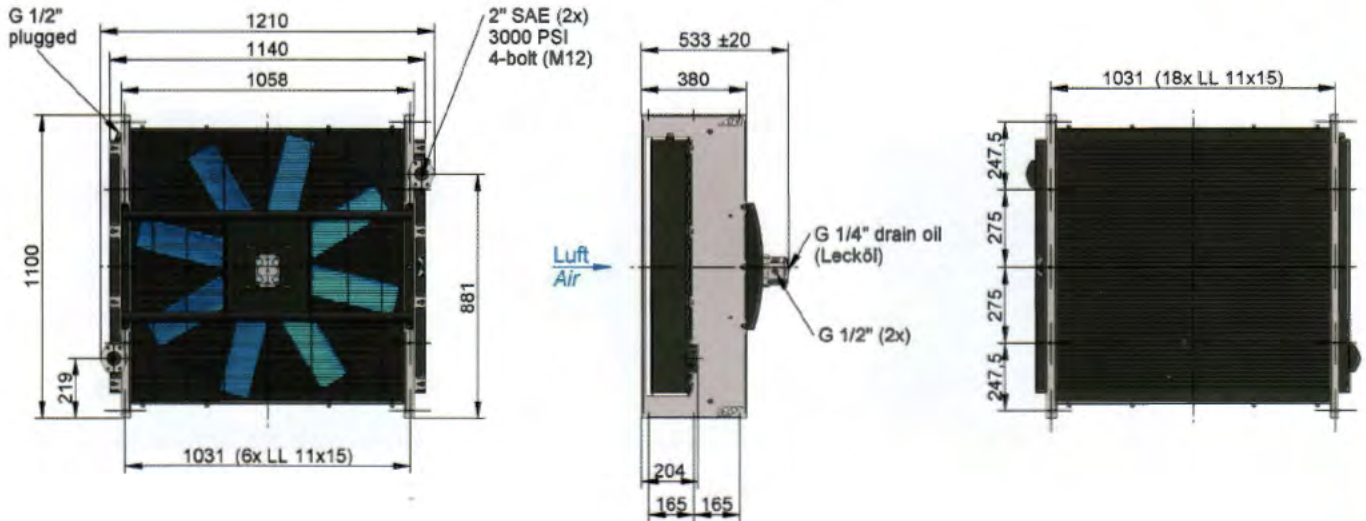
Please contact us for further options and assistance, read manual before installation!



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# Oil / Air Cooler HL 0929 HighLine

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

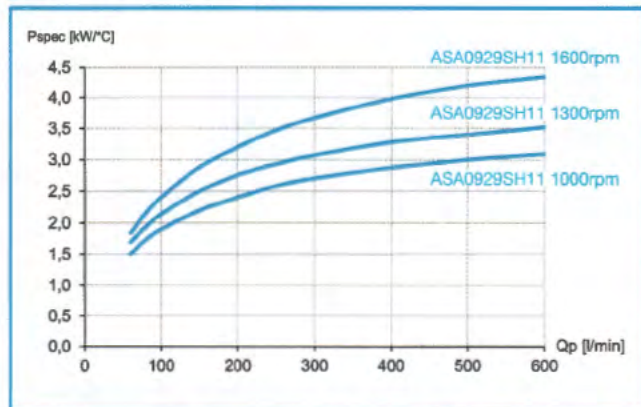


### Technical Data

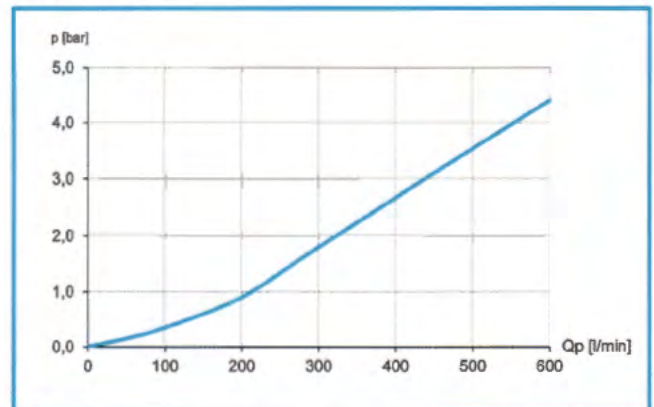
order number	description	motor power	oil pressure	oil flow	rotation	air flow	noise level	weight
		[kW]	[bar]	[lpm]	[rpm]	[kg/s]	[dB(A)]	[kg]
ASA0929SH11	ASA 0929 11cm <sup>3</sup> hydr. motor	1,20	69	12	1000	4,36	88	155
ASA0929SH11	ASA 0929 11cm <sup>3</sup> hydr. motor	2,60	115	15	1300	5,60	92	155
ASA0929SH11	ASA 0929 11cm <sup>3</sup> hydr. motor	4,75	171	19	1600	6,38	97	155

### Performance

Specific cooling performance



Pressure drop at 30cSt



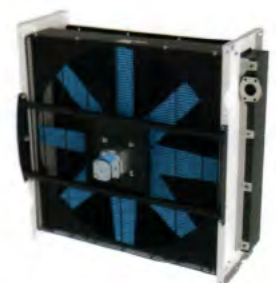
### Radiator

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

### Options

temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 38)
8 cm <sup>3</sup> , 14 cm <sup>3</sup> ,... drive	on request

Please contact us for further options and assistance, read manual before installation!

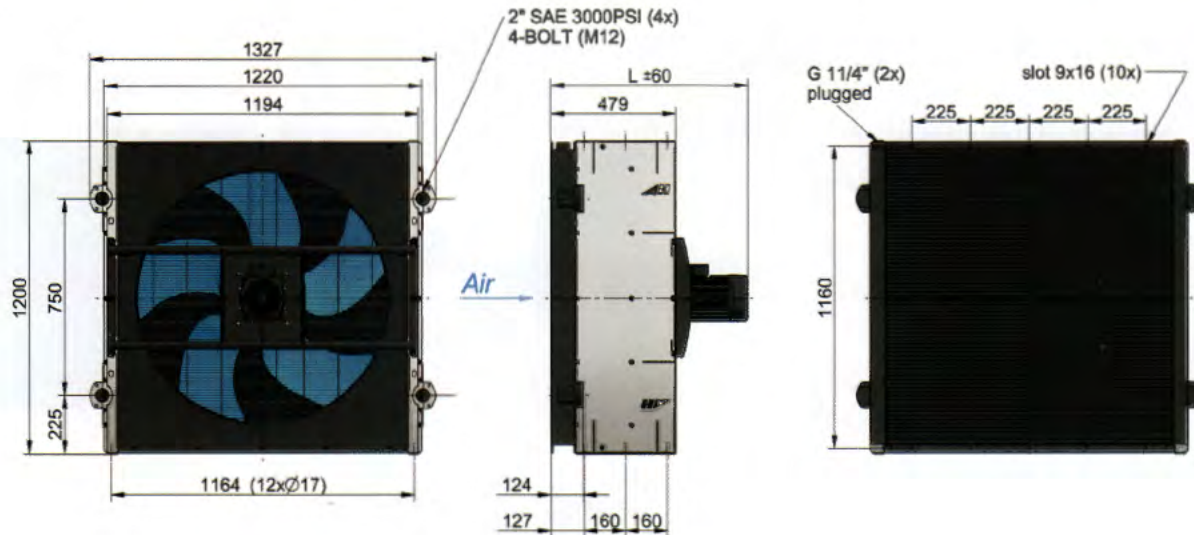


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# Oil / Air Cooler HL 1247 HighLine

230/400V 50Hz AC – 230/460V 60Hz AC

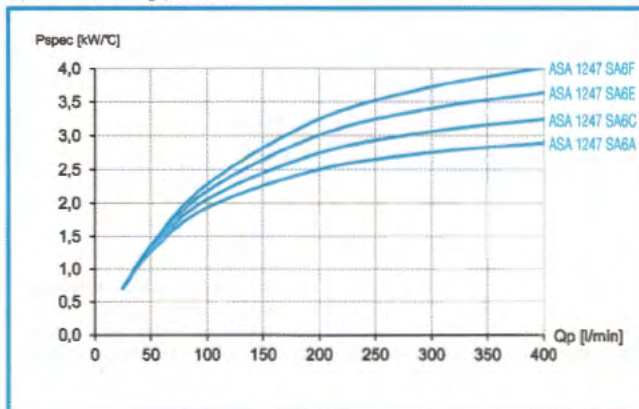


## Technical Data

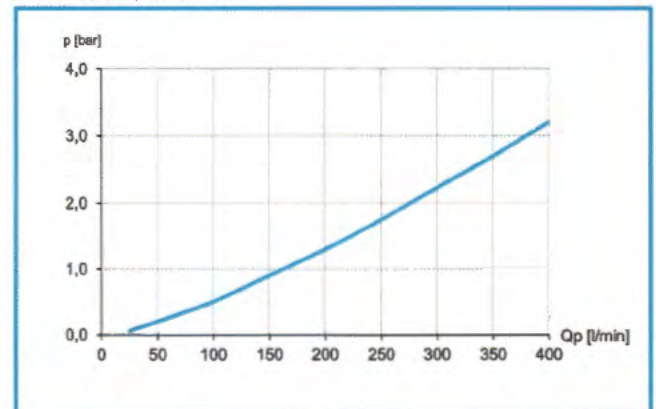
order number	description	motor power	frequency	protection level	current	air flow	noise level	weight
		[kW]	[Hz]		[A]	[kg/s]	[dB(A)]	[kg]
ASA1247SA6A	ASA 1247 230/400V AC	1,50	50	IP 55	3,9	4,56	84	193
ASA1247SA6C	ASA 1247 230/460V AC	2,70	60	IP 55	4,8	6,62	88	193
ASA1247SA6E	ASA 1247 230/400V AC	4,00	50	IP 55	9	5,2	92	193
ASA1247SA6F	ASA 1247 230/460V AC	6,60	60	IP 55	11	7,53	95	193

## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

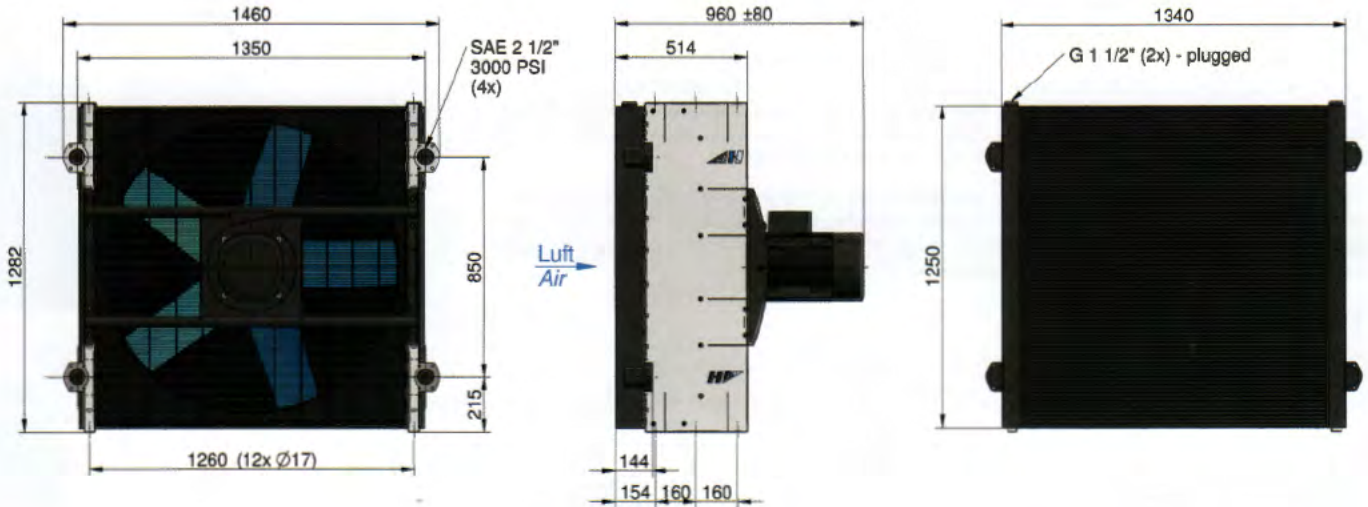
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# Oil / Air Cooler HL 1508 HighLine

400/690V 50Hz – 230/460V 60Hz AC

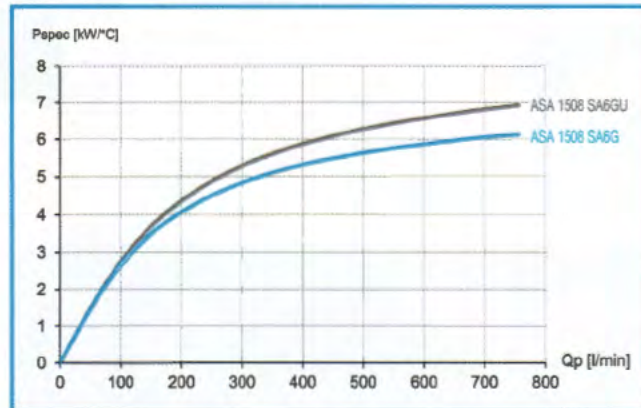


## Technical Data

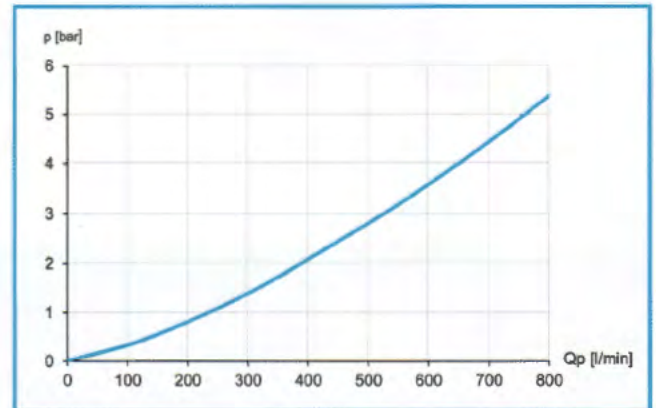
order number	description	power	current	frequency	protection	revolution	air flow	noise level	weight
		[kW]	[A]	[Hz]		[rpm]	[kg/s]	[dB(A)]	[kg]
ASA1508SA6G	ASA 1508 400/690V	7,5	9,0	50	IP 55	955	10,7	95	290
ASA1508SA6GU	ASA 1508 230/460V	9,0	15,5	60	IP 55	1155	12,8	99	290

## Performance

Specific cooling performance



Pressure drop at 30cSt



## Radiator

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

Please contact us for further options and assistance, read manual before installation!



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# Connector Accessories Rail Series

## BSP, UNF

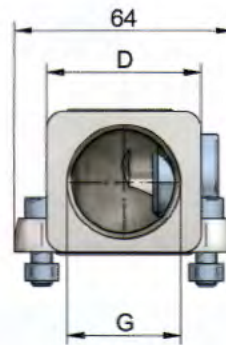
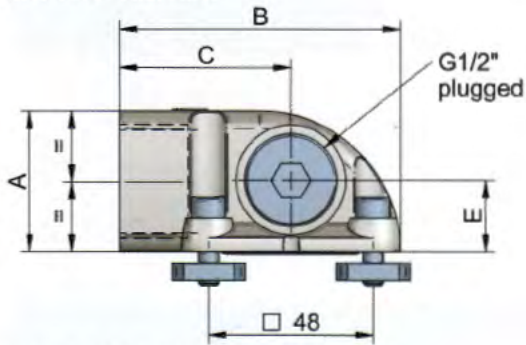
### Description

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!

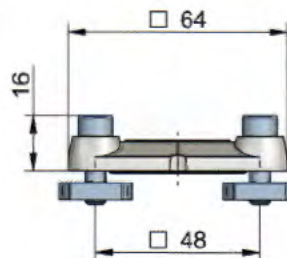
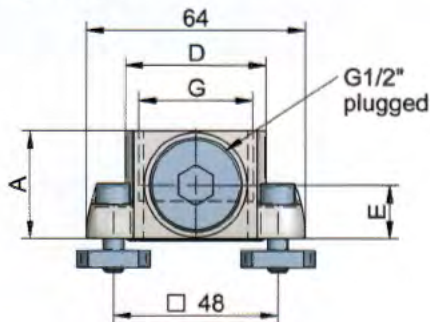
The radiator rail slots are not only for connecting the hydraulic ports, it is also possible to have the system attached with e.g.: bypass systems, mounting of the cooler to an aggregate, measurement devices, and much more. Please contact us to discover the huge potential of this rail system for your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

### Dimensions

ported 90° connector:



ported straight connector:



### 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°	1,20
ILLZSET5G32	asa rail connector BSP 1 1/4"		50	88	56	50	21	BSP 1 1/4"	2x 90°	1,30
ILLZSET5U16	asa rail connector UN 15/16"		41	82	50	45	21	UN 1 5/16"	2x 90°	1,10
ILLZSET5U20	asa rail connector UN 15/8"		50	88	56	50	21	UN 1 5/8"	2x 90°	1,30
ILLZSET5G25A	asa rail connector BSP 1" straight		41	-	-	41	15,5	BSP 1"	2x straight	1,20
ILLZSET5G25B	asa rail connector BSP 1" straight+Stnd.							BSP 1"	1x 90°, 1x straight	1,20

### Content

ported connector with plugged BSP 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 07, 11, 16, 25

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# Connector Accessories ASA Series

## BSP, UNF

### 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.

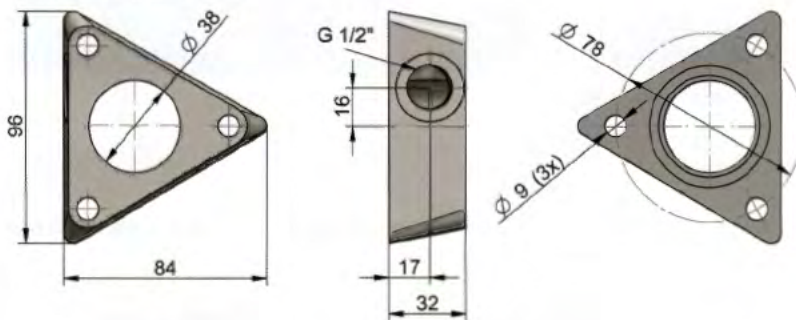
The available connector dimensions depend on the cooler size and are shown in the table below.

### Dimensions

AUC NG 32-40



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"	aluminium	NBR, 70 shore, 44x3mm	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

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

### Fits On Cooler Types

ASA 0177, 0257, 0367, 0467, 0567, 0927



packed size, 2 pieces

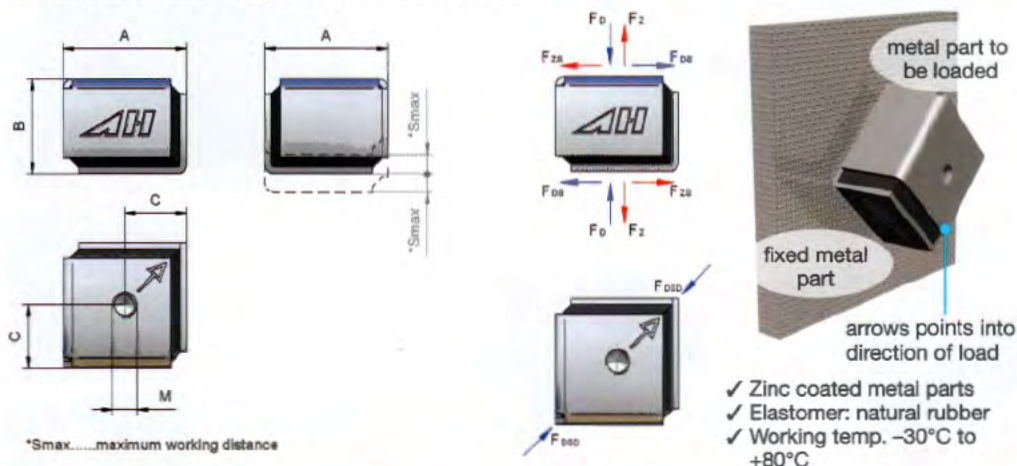
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# Mounting Accessories

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.

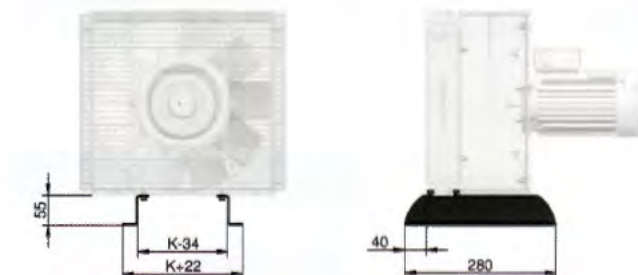
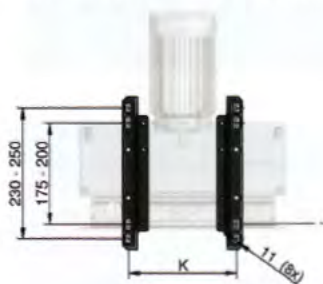


order number	description	A	B	C	M	Smax	weight
		[mm]	[mm]	[mm]		[mm]	[kg]
MDGQ403008IIK	40x40x30 M8	40	30	20	M8 x 10	± 3	0,127
MDGQ504510IIK	50x50x45 M10	50	45	25	M10 x 12	± 6	0,280
MDGQ755512IIK	75x75x55 M12	75	55	37,5	M12 x 15	± 8	0,659
MDGQ1007516IIK	100x100x75 M16	100	75	50	M16 x 16,5	± 9	1,920

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 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 16	200	290	TT 16	135	270
TT 25	250	380	TT 25	135	360

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

- ... not available    • ... optional available

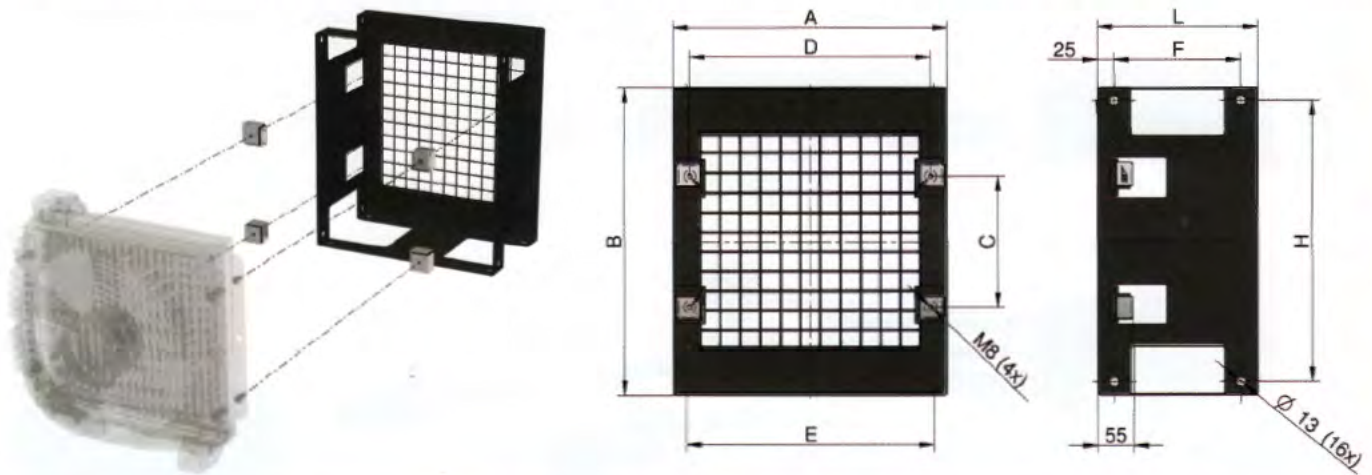
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# Mounting Accessories

protection housing, tread plate and radiator guard

## Protection Housing

The housing serves for flexible, economic and easy mounting 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	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
ILLEGAKT07GT	protection housing kit TT 07 rail	340	425	172	290	300	190	385	240	8,3
ILLEGAKT11GT	protection housing kit TT 11 rail	410	465	200	360	370	190	425	240	9,5
ILLEGAKT16GT	protection housing kit TT 16 rail	490	590	306	436	450	210	550	260	14,0

order number	description	fits on cooler type				
		TT 05	TT 07	TT 11	TT 16	TT 25
ILLEGAKT07GT	protection housing kit TT 07 rail	-	•	-	-	-
ILLEGAKT11GT	protection housing kit TT 11 rail	-	-	•	-	-
ILLEGAKT16GT	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 (AC and hydraulic drive versions). 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.

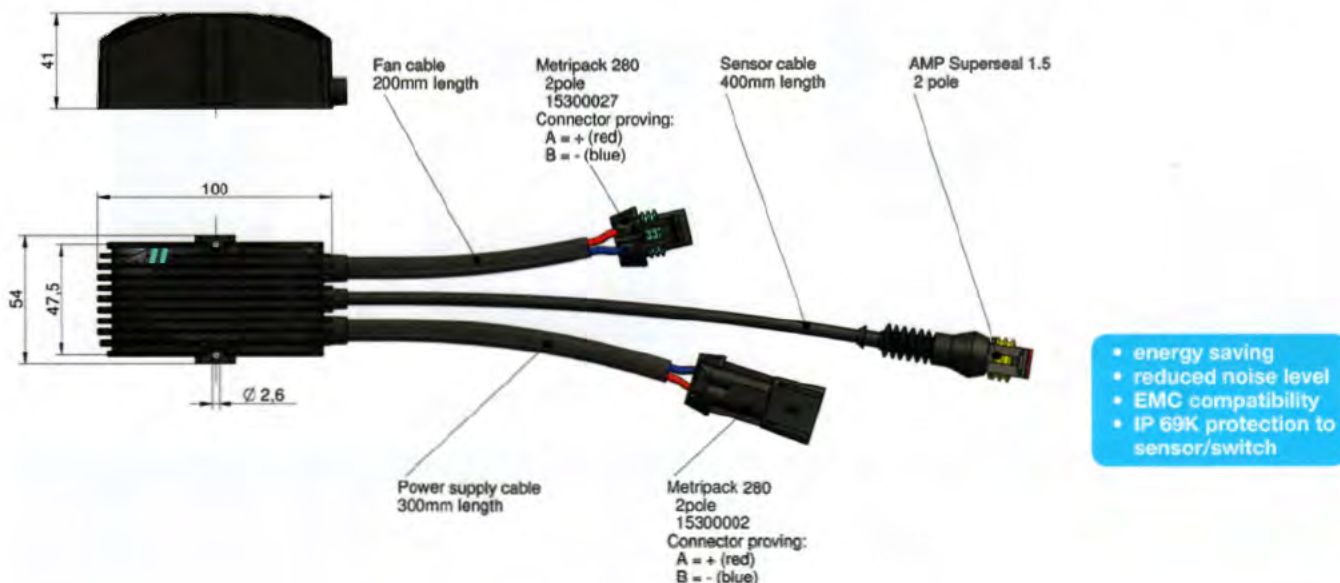


order number	description	fits on cooler type					
		ASA 0177*	ASA 0257*	ASA 0367*	ASA 0467	ASA 0567	ASA 0927
tread plate kit	plate, flat screws;	○	•	•	○	○	○
radiator guard	grid, screws, washers;	○	•	•	○	○	○

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

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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.



## Technical Data

order number	description	max. power fan motor [W]	max. current fan [A]	protection	weight [kg]	supply 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 37
temperature switch	ILLZTH5069K (set point 50°C, soft start) page 38
	ILLZTH6069K (set point 60°C, soft start) page 38
	ILLZTH9069K (set point 90°C, soft start) page 38



## 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 04, LL 06 / TT 07–25 rail / ASA 0177–0367
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### Please note:

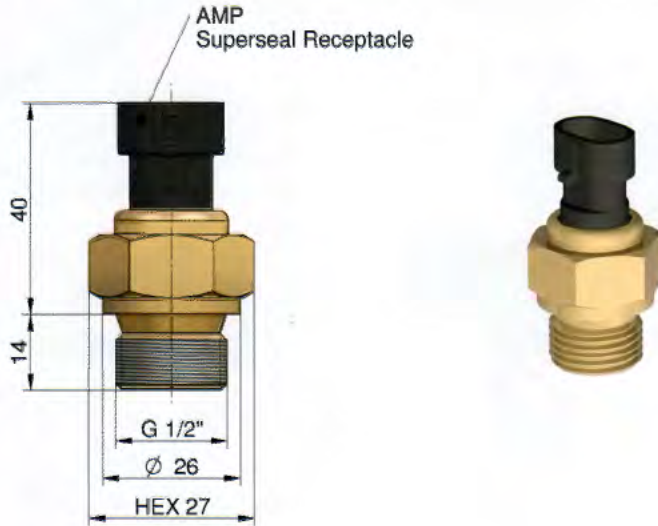
The maximum start current is approximately 10% higher than the nominal current of the motor. Observe the maximum allowable supply of the fan motor. The allowed voltage range of the fan might differ from the allowed voltage range of the temperature control. In case of inverse polarity of the supply, the 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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# Electronic 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 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.



- NTC sensing
- IP 69K protection
- compact design

### Technical Data

order number	description	connection	protection	weight
ILLZTT5069K	temperature sensor BSP 1/2"	AMP superseal 1.5	IP 69K	[kg] 0,09

### Characteristics

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

### 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 36)
temperature control unit 24V DC	ILLZTC24-2K (page 36)

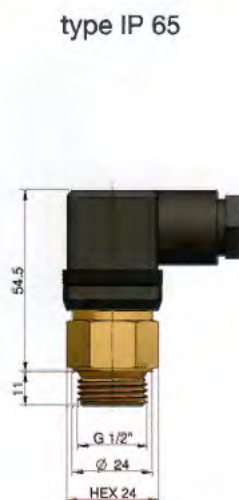
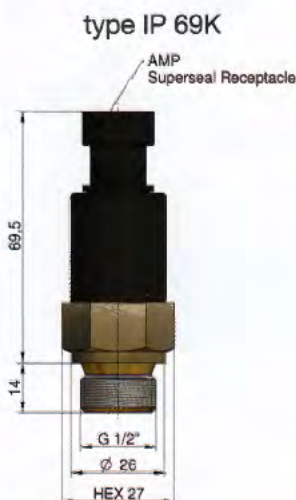
### Combinations

12V and 24V DC coolers	LL 04, LL 06 / TT 07-25 rail / ASA 0177-0367
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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.



### 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	0,10
ILLZTH6069K	temperature switch 60°C	AMP superseal 1,5	IP 69K	60 ± 5	10	0,10
ILLZTH9069K	temperature switch 90°C	AMP superseal 1,5	IP 69K	90 ± 5	10	0,10
ILLZTH4765K	temperature switch 50°C	ISO 4400	IP 65	50 ± 5	10	0,09
ILLZTH6065K	temperature switch 60°C	ICO 4400	IP 65	60 ± 5	10	0,09

### Characteristics

screw part material	brass
mounting	any position
max. tightening torque	50 Nm
number of cycles	100.000
counter connector	included

### 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
	125V AC: 12A
	250V AC: 10A

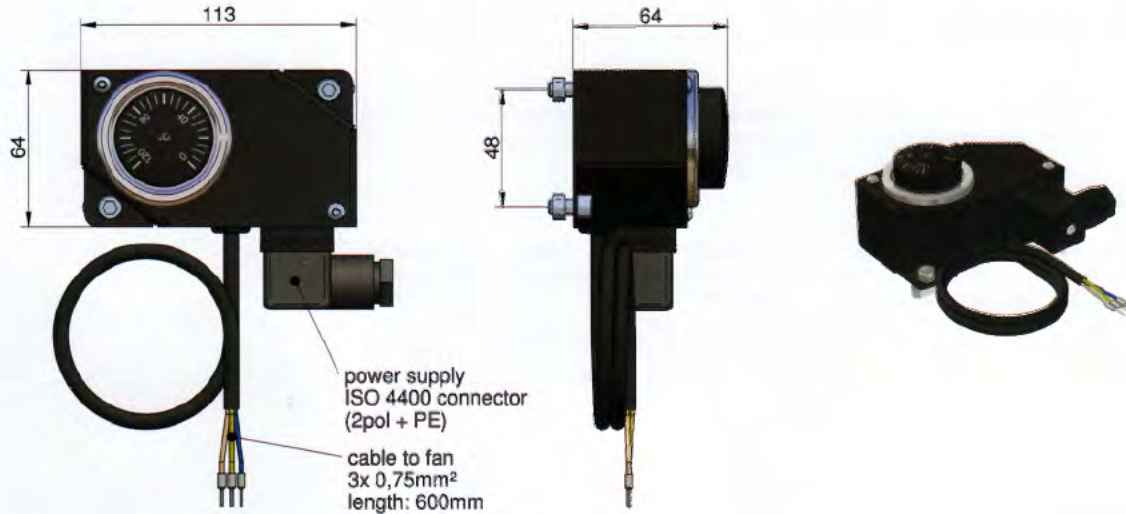
*Use power relay for switching!*

### 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

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The AC temperature control is a system with a thermostat, which is non oil touch connected to the rail. 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]
ILLZTCACK	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~

### 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	LL 02	LL 04	TT 06	TT 05	TT 07	TT 11	TT 16	TT 25	ASA 0177	ASA 0257	ASA 0367	ASA 0467	ASA 0567	ASA 0927
temperature control ILLZTT5069K + ILLZTC12-2K or 24-2K	-	•	•	•	•	•	•	•	•	•	•	-	-	-
temperature switch ILLZTH5069K	•	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH6069K	•	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH9069K	•	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH4765K	•	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH6056K	•	•	•	•	•	•	•	•	•	•	•	•	•	•
temperature control AC ILLZTCACK	-	-	-	-	•	•	•	•	-	-	-	-	-	-

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

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### General Data And Details

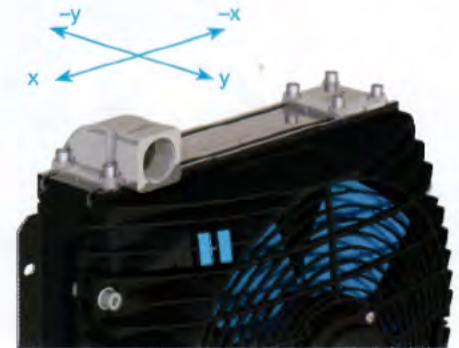
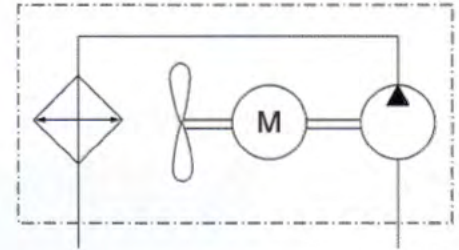
The oil / air coolers of our CC series are autonomous cooling systems with an integrated circulation pump. They work as a separate cooling unit or as a filter cooling unit with an adequate filter. The benefits of such circulation coolers are a constant cooling performance and a higher durability, because there are no pressure vibrations or peaks in the cooler unit.

#### Conditions of use:

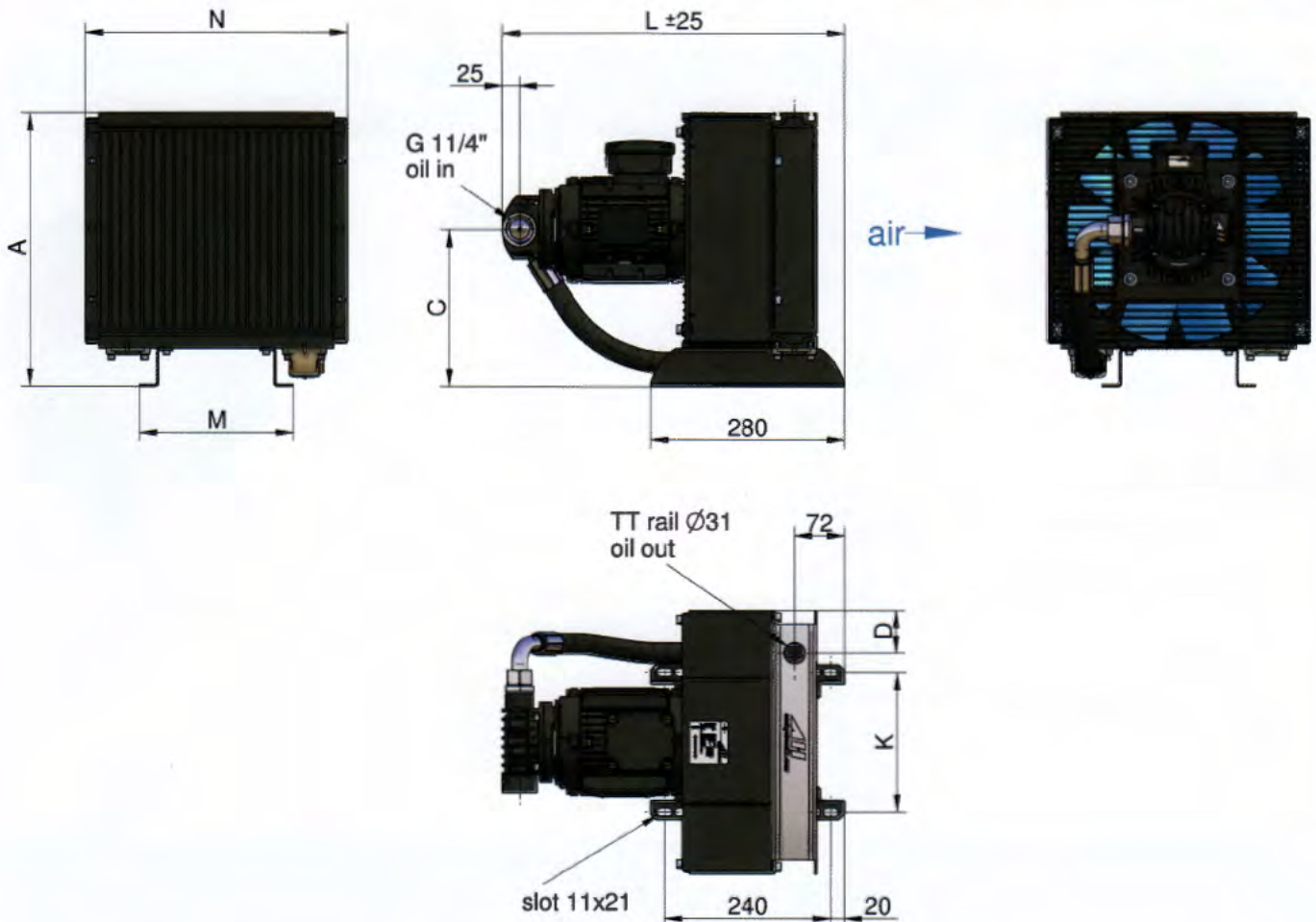
Maximum oil temperature: 100°C, maximum air temperature: 50°C. Motors can be used up to an altitude of 1.500m. For other conditions of use please contact our engineers.

### Connection asa rail

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 turnable 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. Please contact us to discover the huge potential of this system for your application.



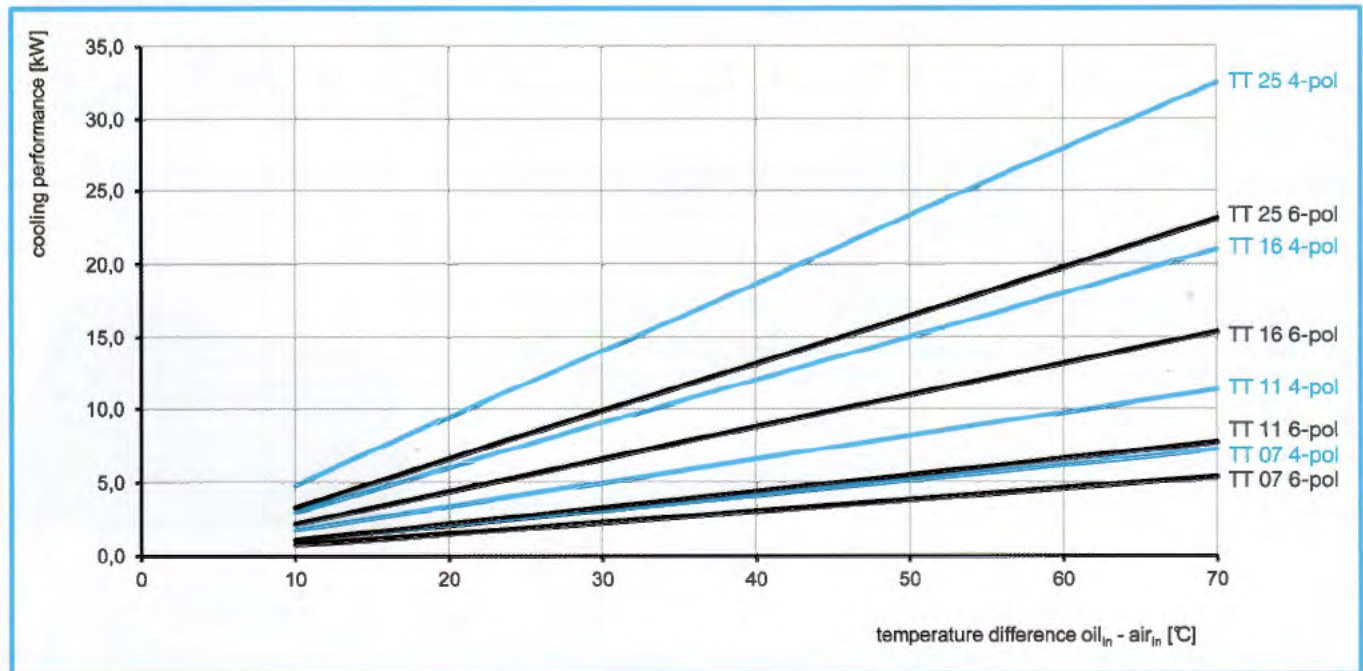
### Scale Drawing



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### Performance



### Technical Data

description	order number	oil flow	max. working pressure	motor power	motor current	rotation	air flow	noise level	weight	A	C	D	K	L	M	N
		[lpm]	[bar]	[kW]	[A]	[rpm]	[kg/s]	[dB(A)]	[kg]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
TT 07 rail CC 4-pol	ASATT07RA47CC	30	10	0,75	1,81	1430	0,28	65	25,2	355	205	72	135	493	157	320
TT 11 rail CC 4-pol	ASATT11RA47CC	30	10	0,75	1,81	1430	0,35	68	29,6	395	225	62	200	495	222	380
TT 16 rail CC 4-pol	ASATT16RA47CC	30	10	0,75	1,81	1430	0,72	74	34,4	520	288	65	200	511	222	460
TT 25 rail CC 4-pol	ASATT25RA47CC	30	7	0,75	1,81	1430	1,08	79	44,1	660	358	68	300	511	322	558
TT 07 rail CC 6-pol	ASATT07RA66CC	20	9	0,37	1,22	925	0,19	57	26	355	205	72	135	493	157	320
TT 11 rail CC 6-pol	ASATT11RA66CC	20	9	0,37	1,22	925	0,26	58	30,4	395	225	62	200	495	222	380
TT 16 rail CC 6-pol	ASATT16RA66CC	20	8	0,37	1,22	925	0,52	65	35,2	520	288	65	200	511	222	460
TT 25 rail CC 6-pol	ASATT25RA66CC	20	7	0,37	1,22	925	0,76	68	44,9	660	358	68	300	511	322	558

The maximum suction pressure is -0,4 bar. The viscosity range is <100cSt. Motor voltage: 230/400V @ 50Hz\*. The protection level is IP55.

### Design

radiator material	aluminium
radiator air fin shape	wavy
pump type	gerotor
pump material (housing)	aluminium
sheet metal material	powder coated steel
suitable fluids	mineral oil



### Connection (BSP 1")

ILLZATT53G25K	1 per cooler required
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### Options

asa rail connector	BSP 1 1/4"
temperature switch	50°C, 60°C
motor data*	alternative voltages, frequencies, protection levels, etc on request

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### General Data And Details

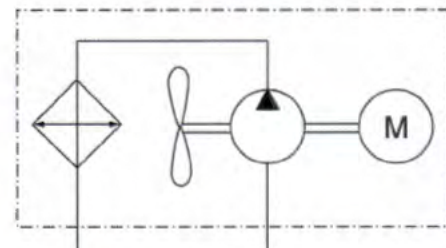
The oil / air coolers of our CC series are autonomous cooling systems with an integrated circulation pump. They work as a separate cooling unit or as a filter cooling unit with an adequate filter. The benefits of such circulation coolers are a constant cooling performance and a higher durability, because there are no pressure vibrations or peaks in the cooler unit.

#### Conditions of use:

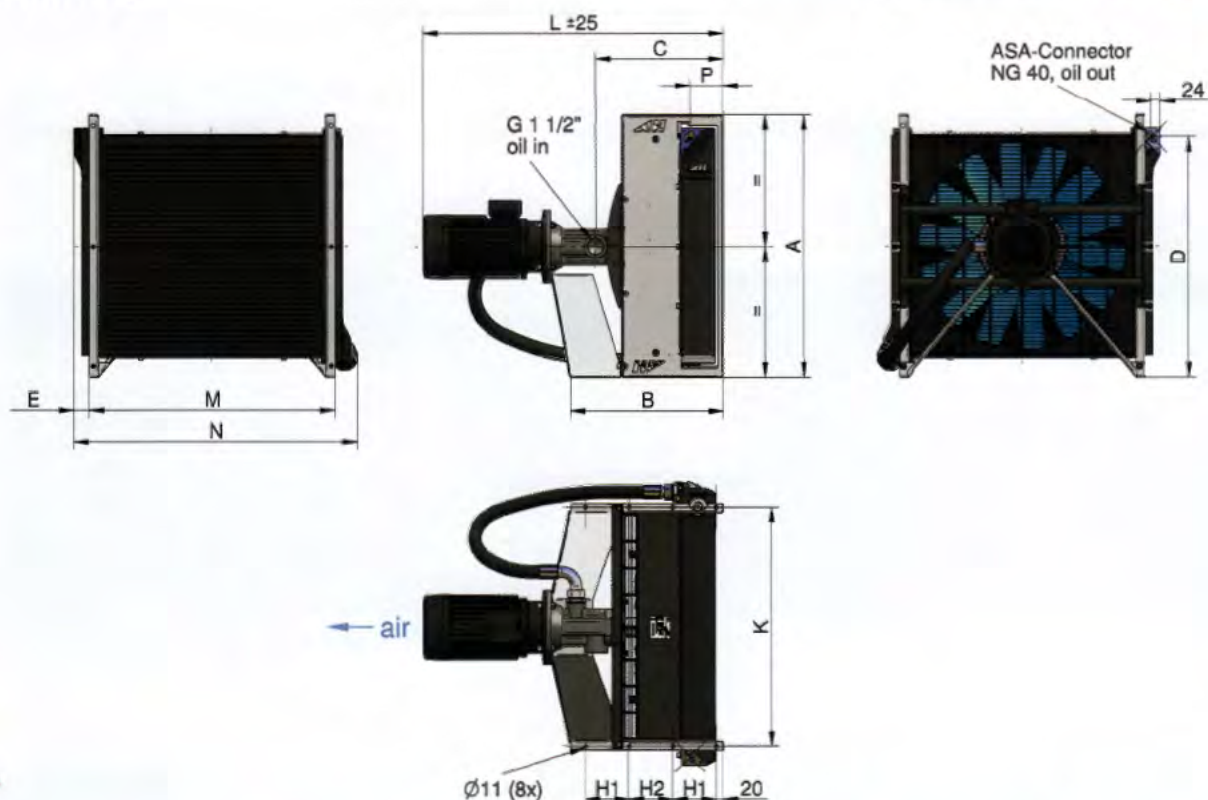
Maximum oil temperature: 100°C, maximum air temperature: 50°C. Motors can be used up to an altitude of 1.500m. For other conditions of use please contact our engineers.

### Connection asa uc

The **AUC (asa universal connector)** system was the first worldwide flexible connection system for air blast heat exchangers. It gives you the free choice of the connector direction through turnable ports in 3 directions. Also the dimension of the ports can be varied with optional types. Please contact us to discover the huge potential of this system for your application.



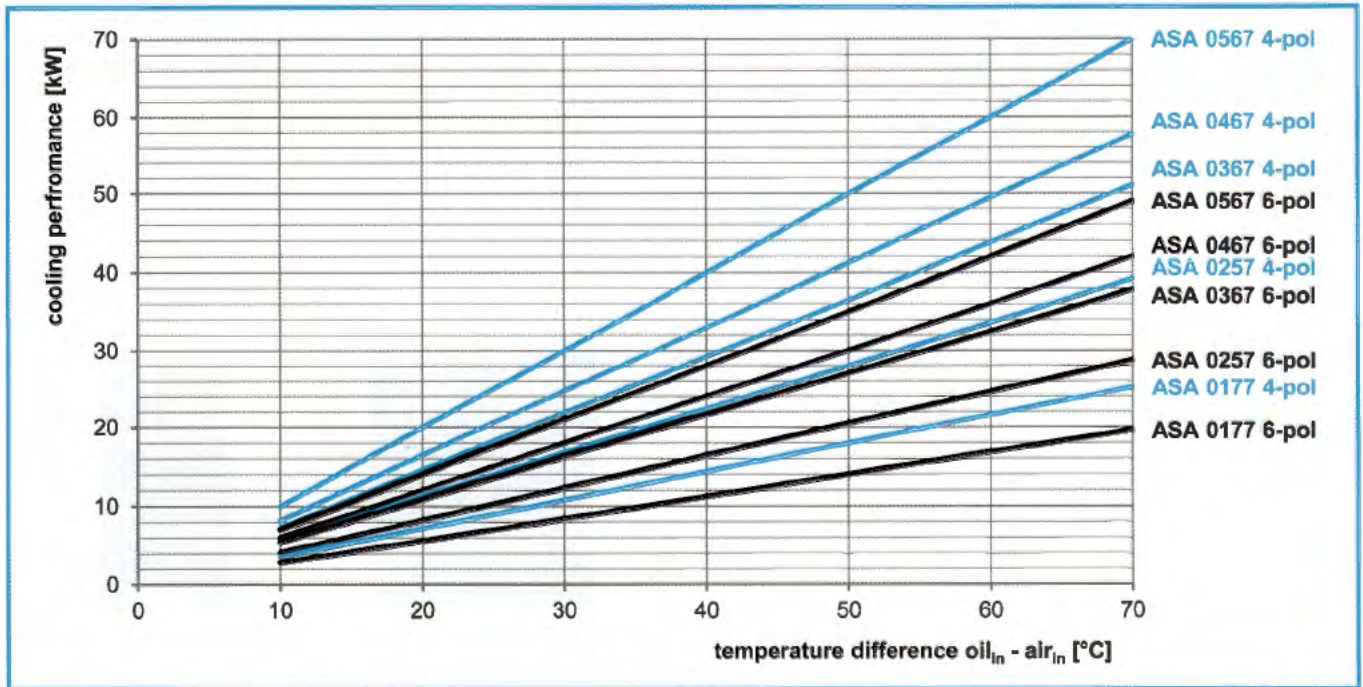
### Scale Drawing



order number	description	A	B	C	D	E	H1	H2	K	L	M	N	P
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
ASA0177AA49CC	ASA 0177 CC 4-pol	530	400	331	471	60	120	90	442	807	462	601	89
ASA0257AA49CC	ASA 0257 CC 4-pol	635	410	341	568	60	110	110	542	817	562	701	93
ASA0367AA49CC	ASA 0367 CC 4-pol	720	420	351	658	43	120	120	565	827	676	781	93
ASA0467AA49CC	ASA 0467 CC 4-pol	785	420	361	725	40	125	125	738	837	758	856	94
ASA0567AA49CC	ASA 0567 CC 4-pol	860	410	361	802	43	125	125	806	837	826	931	94
ASA0177AA68CC	ASA 0177 CC 6-pol	530	400	331	471	60	120	90	442	807	462	601	89
ASA0257AA68CC	ASA 0257 CC 6-pol	635	410	341	568	60	110	110	542	817	562	701	93
ASA0367AA68CC	ASA 0367 CC 6-pol	720	420	351	658	43	120	120	565	827	676	781	93
ASA0467AA68CC	ASA 0467 CC 6-pol	785	420	361	725	40	125	125	738	837	758	856	94
ASA0567AA68CC	ASA 0567 CC 6-pol	860	410	361	802	43	125	125	806	837	826	931	94

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### Performance



### Technical

order number	description	oil flow [lpm]	max. working pressure [bar]	motor power [kW]	motor current [A]	rotation [rpm]	air flow [kg/s]	noise level [dB(A)]	weight [kg]
ASA0177AA49CC	ASA 0177 CC 4-pol	60	10	1,5	3,35	1445	0,57	74	70,7
ASA0257AA49CC	ASA 0257 CC 4-pol	60	10	1,5	3,35	1445	1,14	79	80,0
ASA0367AA49CC	ASA 0367 CC 4-pol	60	8	1,5	3,35	1445	1,47	83	90,4
ASA0467AA49CC	ASA 0467 CC 4-pol	60	8	1,5	3,35	1445	1,77	84	107,7
ASA0567AA49CC	ASA 0567 CC 4-pol	60	8	1,5	3,35	1445	1,89	84	108,1
ASA0177AA68CC	ASA 0177 CC 6-pol	40	9	0,75	1,95	955	0,39	62	66,7
ASA0257AA68CC	ASA 0257 CC 6-pol	40	9	0,75	1,95	955	0,75	68	76,0
ASA0367AA68CC	ASA 0367 CC 6-pol	40	8	0,75	1,95	955	0,94	73	86,4
ASA0467AA68CC	ASA 0467 CC 6-pol	40	8	0,75	1,95	955	1,12	74	103,7
ASA0567AA68CC	ASA 0567 CC 6-pol	40	8	0,75	1,95	955	1,21	74	104,1

The maximum suction pressure is -0,5 bar. The viscosity range is <240cSt. Motor voltage: 230/400V @ 50Hz\*. The protection level is IP55.

### Design

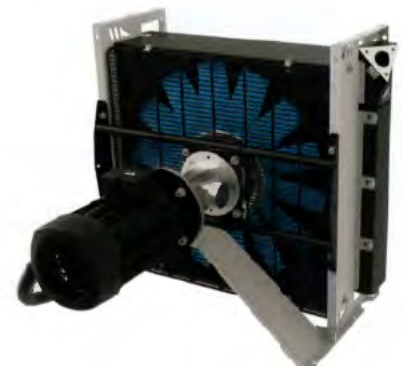
radiator material	aluminium
radiator air fin shape	wavy
pump type	screw pump
pump material (housing)	aluminium
sheet metal material	powder coated steel
suitable fluids	mineral oil

### Connection (BSP 1")

ILLZASA32G32 (BSP1 1/4")	1 per cooler required
ILLZASA40G40 (BSP1 1/2")	1 per cooler required

### Options

temperature switch	50°C, 60°C
motor data*	alternative voltages, frequencies, protection levels, etc on request

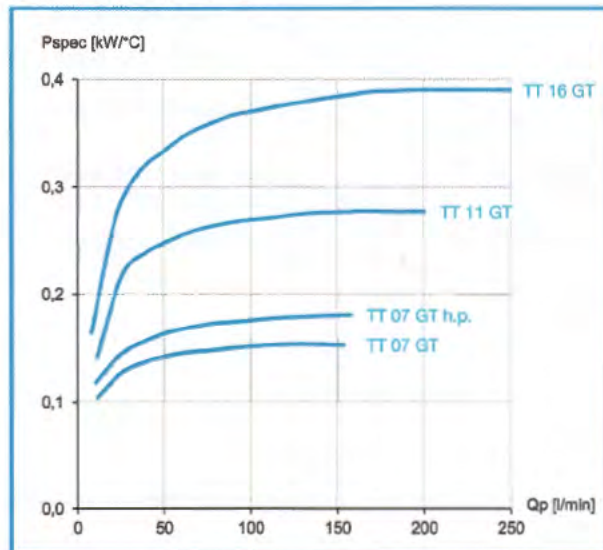


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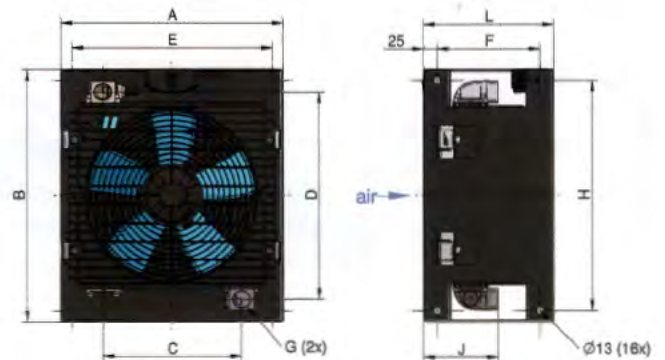
The GT cooler is a ready mounted cooler package, consisting of a cooler, protection housing, mounted rail connectors and the ready wired electronic temperature control. All standard cooler sizes from TT 07 to ASA 0177 are available as a GT cooler. Also the internal bypass version is easy to integrate with the same housing dimensions. The temperature control is a relay box in connection with a temperature sensor controlling the fan with the optimal fan speed and a soft start curve (see page 36). This reduces the noise level and increases the duration of the fan unit. The protection housing is a solid metal framework for rough mobile and special applications. The radiator side is protected by a metal grid and the whole cooler is mounted on the asa rubber vibration absorbers to reduce the mechanical stress.

### Performance

Specific cooling performance



### Dimensions



### Technical Data

order number	description	A	B	C	D	E	F	G	H	J	K	L	weight	optional internal bypass (30PSi) cooler order no.
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	BSP	[mm]	[mm]	[mm]	[mm]	[kg]	
ASATT07GD01GT	TT 07 rail 12V DC GT	334	425	176	341	300	190	1"	385	114	20	240	13,7	ASATT07GD01BPGT
ASATT07GD02GT	TT 07 rail 24V DC GT	334	425	176	341	300	190	1"	385	114	20	240	13,7	ASATT07GD02BPGT
ASATT07GD03GT	TT 07 rail 12V DC GT h.p.	334	425	176	341	300	190	1"	385	114	20	240	14,1	ASATT07GD03BPGT
ASATT07GD04GT	TT 07 rail 24V DC GT h.p.	334	425	176	341	300	190	1"	385	114	20	240	14,1	ASATT07GD04BPGT
ASATT11GD01GT	TT 11 rail 12V DC GT	410	465	256	381	370	190	1"	425	137	25	240	20,1	ASATT11GD01BPGT
ASATT11GD02GT	TT 11 rail 24V DC GT	410	465	256	381	370	190	1"	425	137	25	240	20,1	ASATT11GD02BPGT
ASATT16GD01GT	TT 16 rail 12V DC GT	490	590	328	515	450	210	1 1/4"	550	143	25	260	30,6	ASATT16GD01BPGT
ASATT16GD02GT	TT 16 rail 24V DC GT	490	590	328	515	450	210	1 1/4"	550	143	25	260	30,6	ASATT16GD02BPGT

### Configuration



### Radiator

material	aluminium
working temperature range:	-20°C to +80°C (oil temperature)
air fin shape:	wavy
working pressure:	26 bar (static)
internal bypass	alternative bypass settings (1bar / 5 bar)

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# Cooling Systems

W Series, oil/air coolers for aggressive environments

## General Data And Details

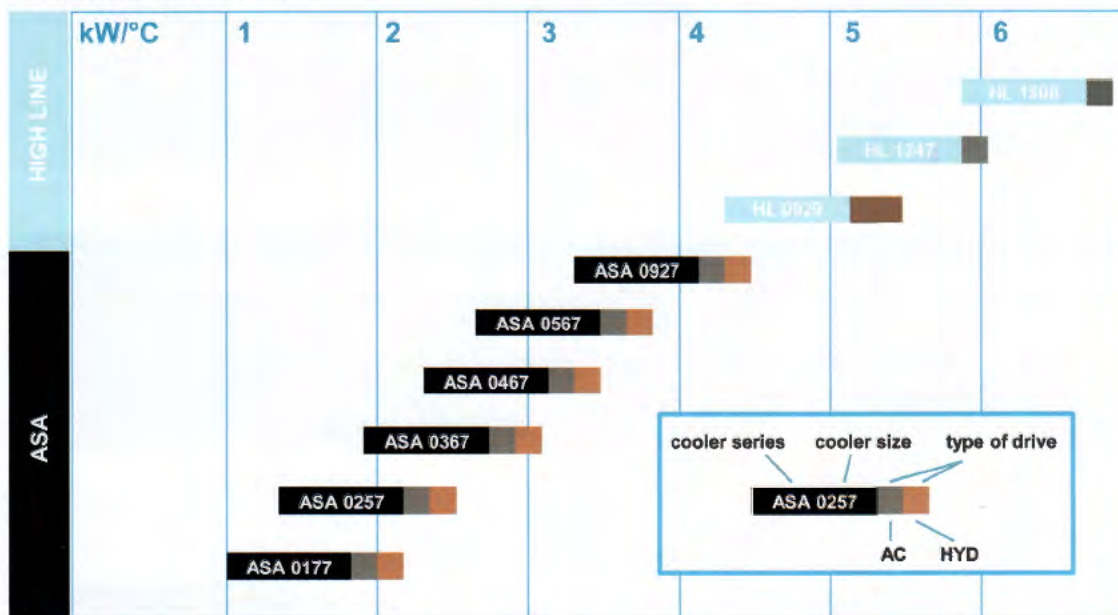
Our W series coolers are designed for high duration at aggressive environments as found in offshore, marine and coastal applications. More than 30 years in heat transfer equipment has made us a global leader in advanced technologies. This ensures you competitive pricing, consistent product performance and reliability.

The coolers of our W series can be determined according DIN EN ISO 12944 with C5-M category short, resistance comparable with 500h of salt spray test, resulting in only 3% corrosion allowance and no problem in function and appearance of the product.

The available types are equipped with our well established asa universal connector system. Please check out the flexibility and benefits of this system at [www.asahydraulik.com](http://www.asahydraulik.com) or contact us at [support@asahydraulik.com](mailto:support@asahydraulik.com).



## Performance overview



## Selection / Available Types

ASA series AC and Hydraulic	0177, 0257, 0367, 0467, 0567, 0927
HighLine series AC	HL 0929, 1247, 1508

## Options / Accessories

The coolers can be customized by various options like internal bypass, temperature switches, asa universal connectors, etc. Also available are different voltages and frequencies for the electric motors. Hydraulic driven coolers can also be supplied with these specifications. The hydraulic motor has no special protection due to the complex and various applications. Please contact us for detailed information.



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# Cooling Systems

Coolers manufactured according to ATEX standard

## General Data And Information

asa oil/air coolers are available for atex zone 1, 2 and 22. Therefore the coolers are certified for categories 2G and 3. ATEX certified asa coolers belong to cluster II. The table below shows the specifications of the zones and categories.

The shown cooler models are available with AC drive, but also with hydraulic motor drive. The ATEX coolers are equipped either with our well established asa universal connectors or the new asa rail system. Please check out the flexibility and benefits of this system at [www.asahydraulik.com](http://www.asahydraulik.com) or contact us for detailed information on [support@asahydraulik.com](mailto:support@asahydraulik.com).



zone		category
gas		dust
1	<b>zone 1:</b> Is an explosive atmosphere consisting of a mixture with air of flammable substances like gas, vapour or mist occurring in normal operation, occasionally.	2
2	<b>zone 2:</b> A place in which an explosive atmosphere consisting of a mixture with are of flammable substances as a gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.	<b>zone 22:</b> A place in which an explosive atmosphere as a cloud of combustible dust in the air is not likely to occur in normal operation but, if it does occur, will persist for a short period.

Certification	
Our ATEX marking according RL 94/9/EG is <b>CE Ex II 2G EEx c IIB T4</b>	TÜV Austria Notified Body 0408 <b>TÜV AUSTRIA</b>

## Selection / Available Types

TT rail series	TT 07, 11, 16, 25
ASA series	ASA 0177, 0257, 0367, 0467, 0567, 0927
HighLine series	HL 0929, 1247, 1508

Please select the ATEX series coolers like our standard coolers with our online calculation program or contact us. We are happy to support you to select the optimal product and available accessories. The listed standard sizes are available with AC and hydraulic drive.

## Options / Accessories

The coolers can be customized by various options like internal bypass, mounting arrangements, asa universal connectors, etc. Our standard voltage on ATEX AC motors is 230/400V at 50Hz. Other protection levels, voltages and frequencies are available on request. Please contact us for details or get further information at [www.asahydraulik.com](http://www.asahydraulik.com) or [support@asahydraulik.com](mailto:support@asahydraulik.com).



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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:

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

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  $\Delta t_L$

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

## Selection of the cooler:

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

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

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

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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.

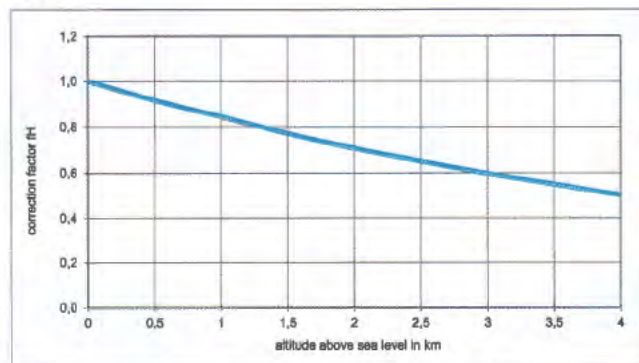
$$\Delta p = \Delta p_{30cst} \times f_p$$

- $\Delta p$  = 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 situation (e.g. cold start). If necessary bypass valves should be installed to avoid overpressure.

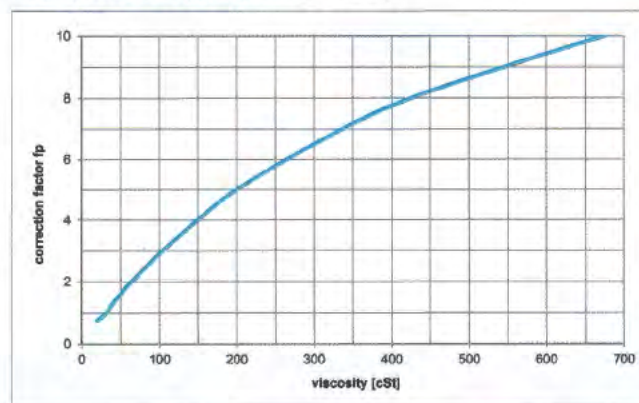
## Correction factor $f_H$

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



## Correction factor $f_p$

for oil pressure drop (approximate value)



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