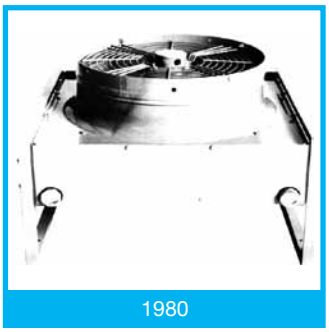
asahydraulik.com

heat exchanger

N°. 1 for standard coolers!

asa



1980

2013

asa progress in cooling

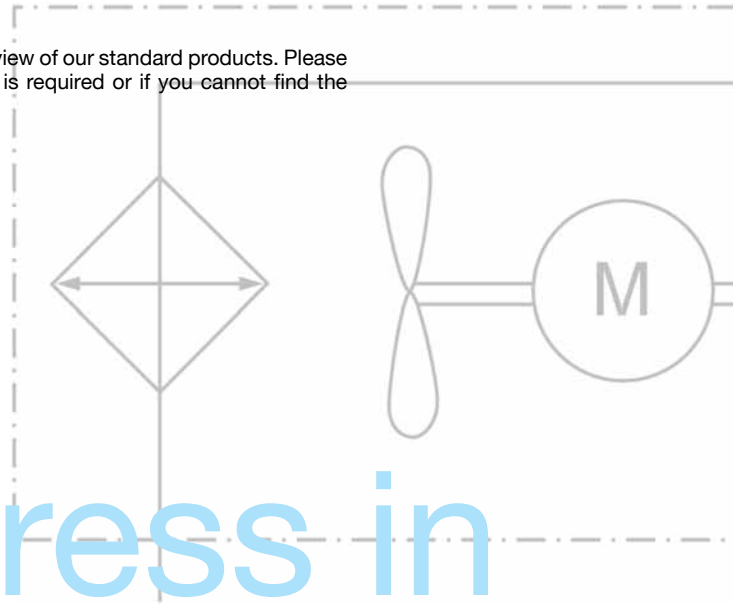
Progress in cooling stands for developments, advances and innovations already working in our customers' mobile and stationary applications, worldwide.

More than 30 years experience in heat transfer equipment and special hydraulic components has made us become 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 has 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 to promote our innovations.

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.

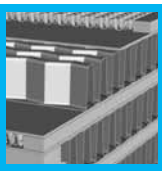


progress in cooling

asa hydraulik GmbH, Austria / EU

asa of America, New Jersey / USA

asa hydraulik of Kunshan / CHINA



blue efficiency

asa blue efficiency keeps you 2 steps ahead!

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 our uniquely quality engineered fan guard and electronic fan speed control options.

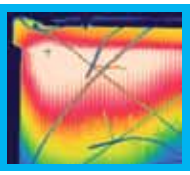
Combinations of cooler systems with tank and filter gain from the flexibility of each asa component.

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

Constant high quality through standard parts.

The most complete standard oil/air cooler program.

Compactness of serial produced parts as a function of capacity and life time.



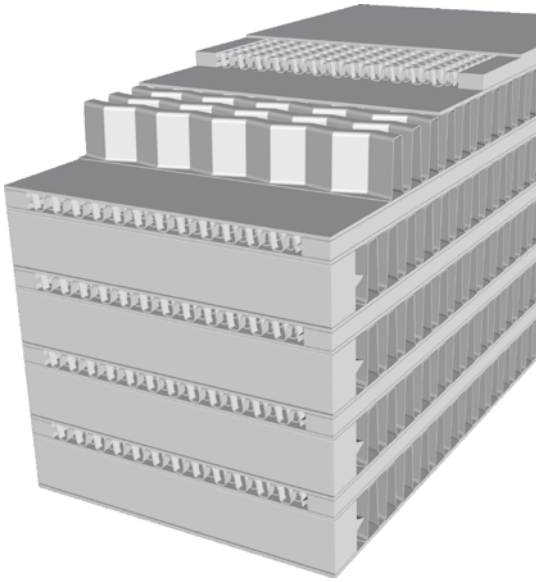
standard is our definition

Standard Cooler Series / from 0,01 kW/°C to 7 kW/°C!

asa coolers offer the advantages of a standard product and a customized one.

This means proven quality, best lead time and competitive prices, combined with flexibility and perfect fit into a given installation space so that the optimal performance output and best integration in to the system can be achieved.

According to the cooler size, we offer various options and accessories to adapt the cooler to the customer's requirements. The benefits achieved, are not only for the application itself, but also for our customers' end product as an advantage against their competitors.



Pollution reduces performance!

Heavy polluted ambient air can clog the air side of the radiator and reduce the performance dramatically.

Our standard oil cooler radiators are designed with smooth wavy air fins to offer higher resistance against clogging.

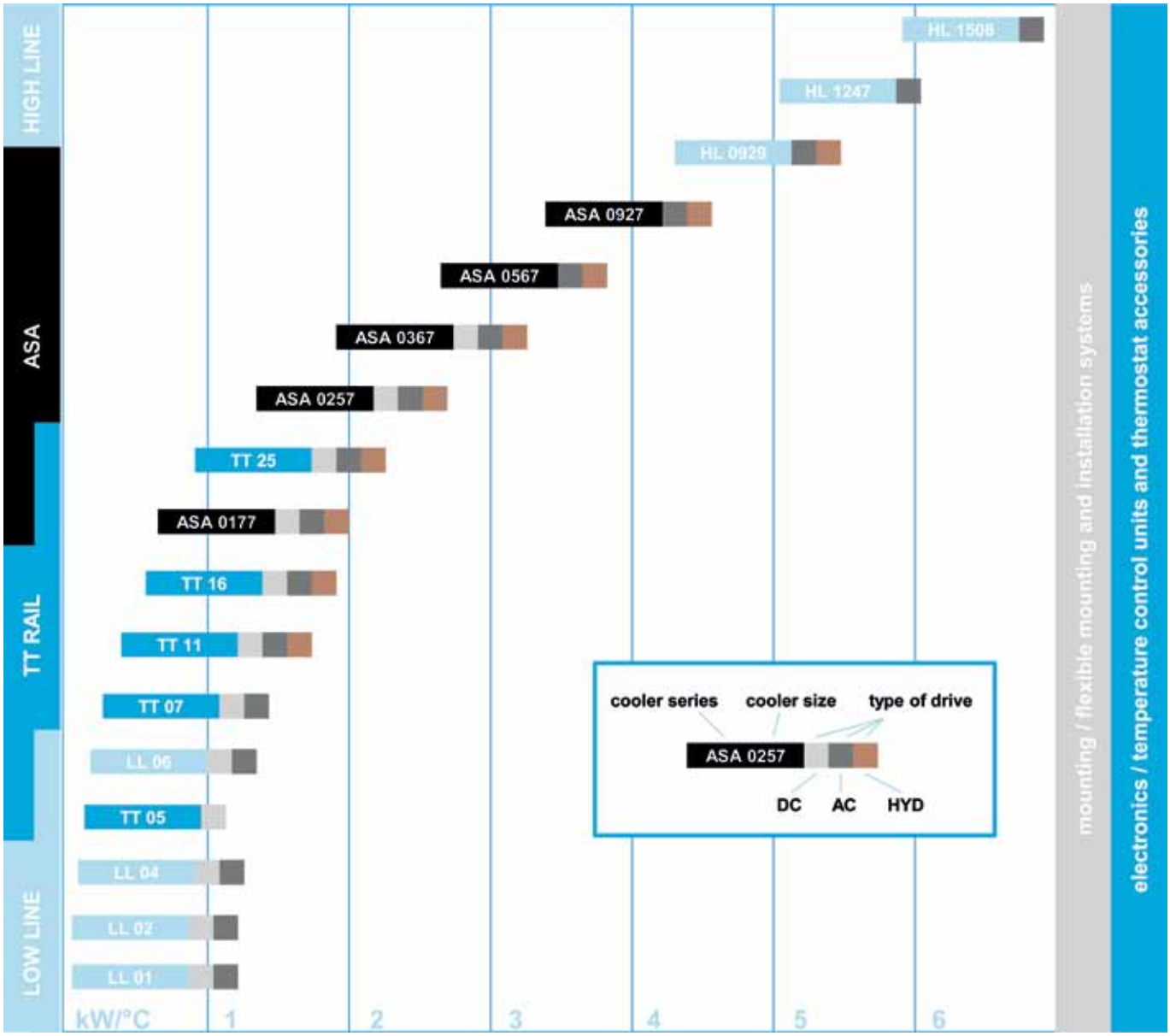
The smooth air fin surfaces are easy to clean and have a constant performance output. Therefore the cooler can also be used in applications like on agricultural machines, recycling power packs, quarry and construction machines without any additional protection (depending on the degree of pollution).

Customized 4 you with 2 systems

Our asa rail system and asa universal connectors are the frame structure for easy and cost efficient adaption for various mounting systems and electronic control options.

Gain from the benefit of a fan speed control to extend the fan life time and keep the noise level to a minimum. The asa protection housing is designed with rubber vibration absorbers and a very robust metal housing to resist impacts on mobile applications.

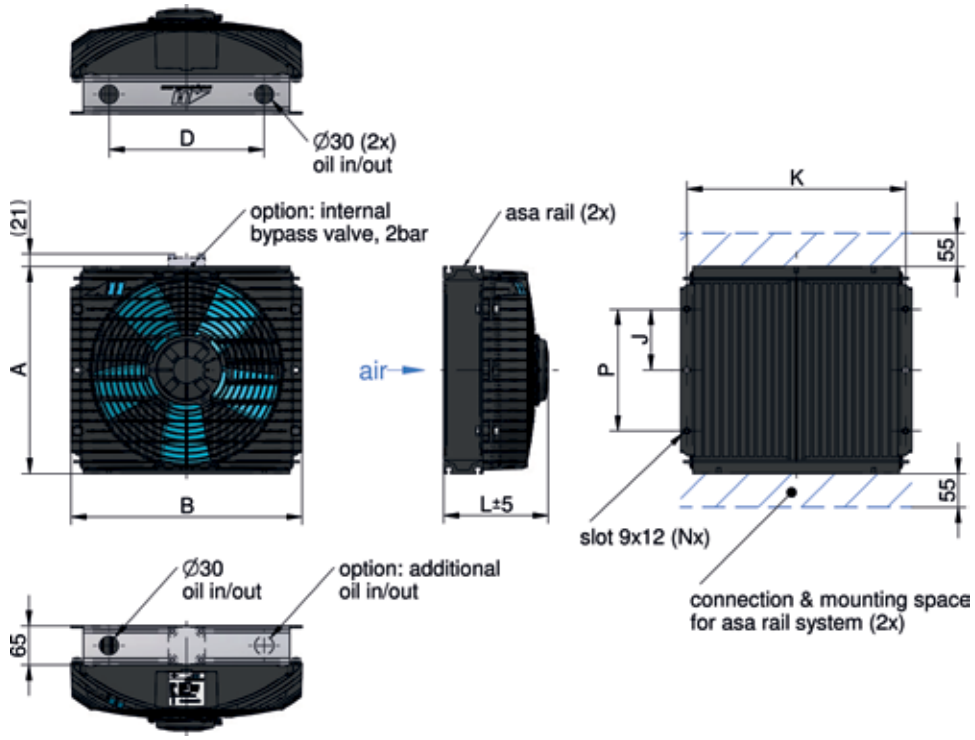
our standard range



Oil / Air Cooler TT Series

12V / 24V DC asa rail

asahydraulik.com



Dimensions

description	order number	A	B	D	J	P	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
TT 05 rail 12V DC	ASATT05RD01	235	245	118	150	–	225	150	4*	3,9
TT 05 rail 24V DC	ASATT05RD02	235	245	118	150	–	225	150	4*	3,9
TT 07 rail 12V DC	ASATT07RD01	300	320	178	86	172	290	160	4	6,5
TT 07 rail 24V DC	ASATT07RD02	300	320	178	86	172	290	160	4	6,5
TT 07 rail 12V DC h.p.	ASATT07RD03	300	320	178	86	172	290	176	4	7,0
TT 07 rail 24V DC h.p.	ASATT07RD04	300	320	178	86	172	290	176	4	7,0
TT 11 rail 12V DC	ASATT11RD01	340	380	255	100	200	360	175	6	8,7
TT 11 rail 24V DC	ASATT11RD02	340	380	255	100	200	360	175	6	8,7
TT 16 rail 12V DC	ASATT16RD01	465	460	333	153	306	436	190	6	14,6
TT 16 rail 24V DC	ASATT16RD02	465	460	333	153	306	436	190	6	14,6
TT 25 rail 12V DC	ASATT25RD01	605	555	429	208,5	417	530	257	6	21,7
TT 25 rail 24V DC	ASATT25RD02	605	555	429	208,5	417	530	257	6	21,7

** slot holes with 7x10mm*

Technical Data

description	order number	current	motor power	protection level	air flow	noise level	optional internal bypass ~~CW~~ (2 bar)
		[A]	[kW]		[kg/s]	[dB (A)]	cooler order number
TT 05 rail 12V DC	ASATT05RD01	9,0	0,12	IP 68	0,19	74	–
TT 05 rail 24V DC	ASATT05RD02	4,5	0,12	IP 68	0,19	74	–
TT 07 rail 12V DC	ASATT07RD01	10,4	0,14	IP 68	0,32	74	ASATT07RD01BP
TT 07 rail 24V DC	ASATT07RD02	5,2	0,14	IP 68	0,32	74	ASATT07RD02BP
TT 07 rail 12V DC h.p.	ASATT07RD03	16,2	0,21	IP 68	0,40	78	ASATT07RD03BP
TT 07 rail 24V DC h.p.	ASATT07RD04	8,1	0,21	IP 68	0,40	78	ASATT07RD04BP
TT 11 rail 12V DC	ASATT11RD01	20,8	0,27	IP 68	0,62	77	ASATT11RD01BP
TT 11 rail 24V DC	ASATT11RD02	10,4	0,27	IP 68	0,62	77	ASATT11RD02BP
TT 16 rail 12V DC	ASATT16RD01	18,6	0,24	IP 68	0,68	79	ASATT16RD01BP
TT 16 rail 24V DC	ASATT16RD02	9,3	0,24	IP 68	0,68	79	ASATT16RD02BP
TT 25 rail 12V DC	ASATT25RD01	18,6	0,24	IP 68	0,78	77	ASATT25RD01BP
TT 25 rail 24V DC	ASATT25RD02	9,3	0,24	IP 68	0,78	77	ASATT25RD02BP

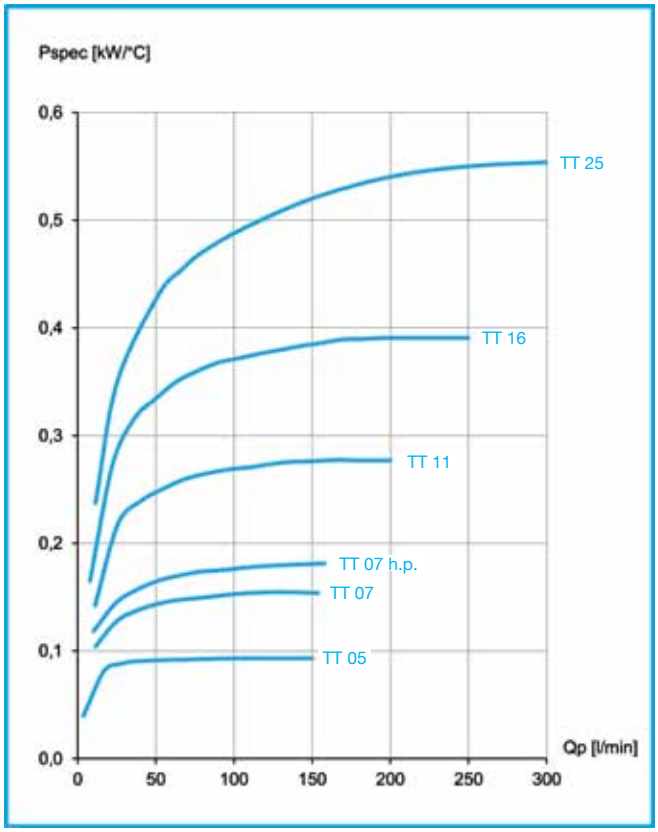
Oil / Air Cooler TT Series

12V / 24V DC asa rail

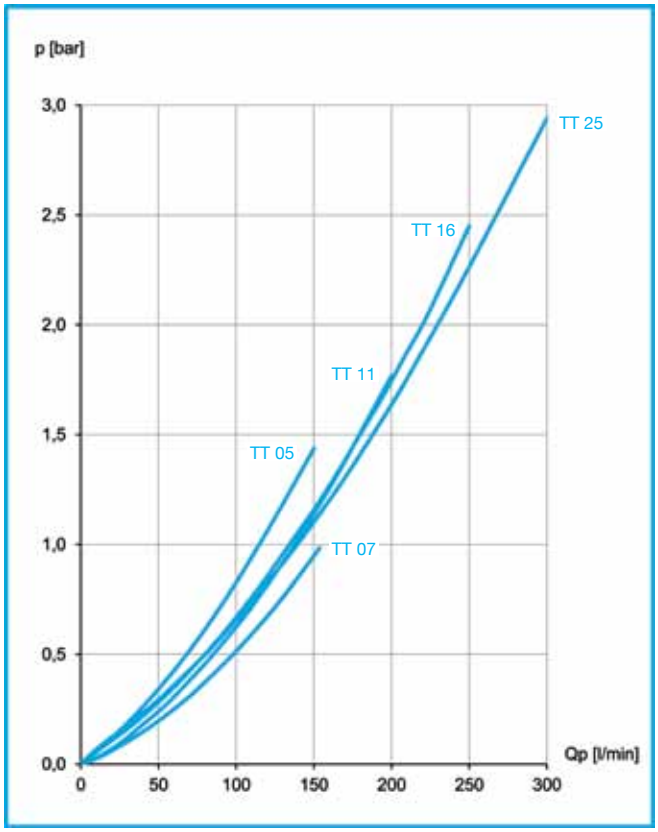
asahydraulik.com

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

DC motor	brushless type
temperature control	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 24, 25)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 26)
rail mounting bracket	MW3046K (page 22)
protection housings	TT 07: ILLEGAKTT07GT (page 23) TT 11: ILLEGAKTT11GT (page 23) TT 16: ILLEGAKTT16GT (page 23) TT 25: on request
foot mounting	ILLEFUSSTTHDK (page 22)
internal bypass	alternative bypass settings (1 bar / 5 bar)

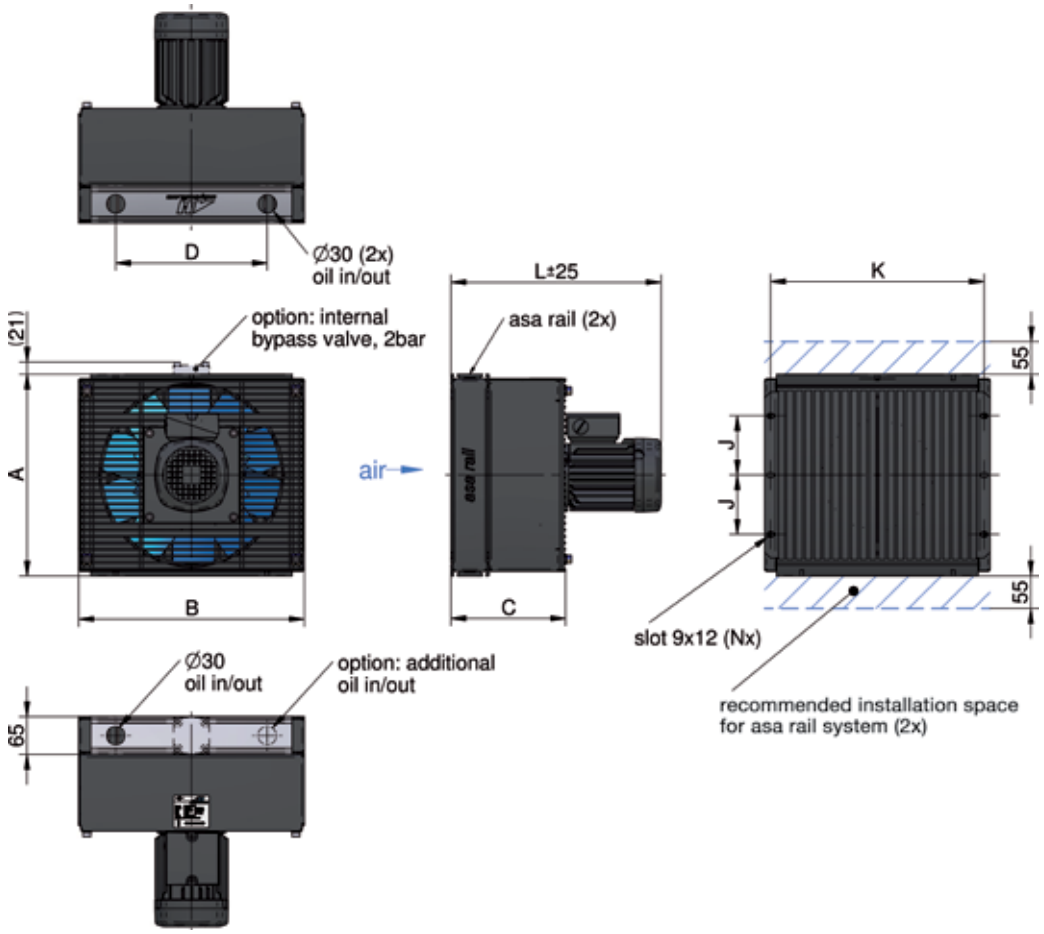
Installation System (see more information on page 20)

connection BSP 1“	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 ¼“	ILLZSET5G32 (1 set per cooler required)
connection UNF 1 5/16“	ILLZSET5U16 (1 set per cooler required)
connection UN 1 5/8“	ILLZSET5U20 (1 set per cooler required)

Oil / Air Cooler TT Series

230/400V 50 Hz asa rail

asahydraulik.com



Dimensions

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

Technical Data

description	order number	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
TT 07 rail 0,25kW AC	ASATT07RA44	0,75	0,25	71	IP 55	1330	0,19	60	ASATT07RA44BP
TT 07 rail 0,55kW AC	ASATT07RA25	1,33	0,55	71	IP 55	2740	0,40	78	ASATT07RA25BP
TT 11 rail 0,25kW AC	ASATT11RA44	0,75	0,25	71	IP 55	1330	0,34	73	ASATT11RA44BP
TT 11 rail 0,55kW AC	ASATT11RA25	1,33	0,55	71	IP 55	2740	0,68	83	ASATT11RA25BP
TT 16 rail 0,18kW AC	ASATT16RA64	0,88	0,18	71	IP 55	925	0,42	62	ASATT16RA64BP
TT 16 rail 0,25kW AC	ASATT16RA44	0,75	0,25	71	IP 55	1330	0,58	74	ASATT16RA44BP
TT 16 rail 0,55kW AC	ASATT16RA25	1,33	0,55	71	IP 55	2740	0,86	91	ASATT16RA25BP
TT 25 rail 0,37kW AC	ASATT25RA66	1,22	0,37	80	IP 55	925	0,68	68	ASATT25RA66BP
TT 25 rail 0,75kW AC	ASATT25RA47	1,81	0,75	80	IP 55	1430	1,10	79	ASATT25RA47BP

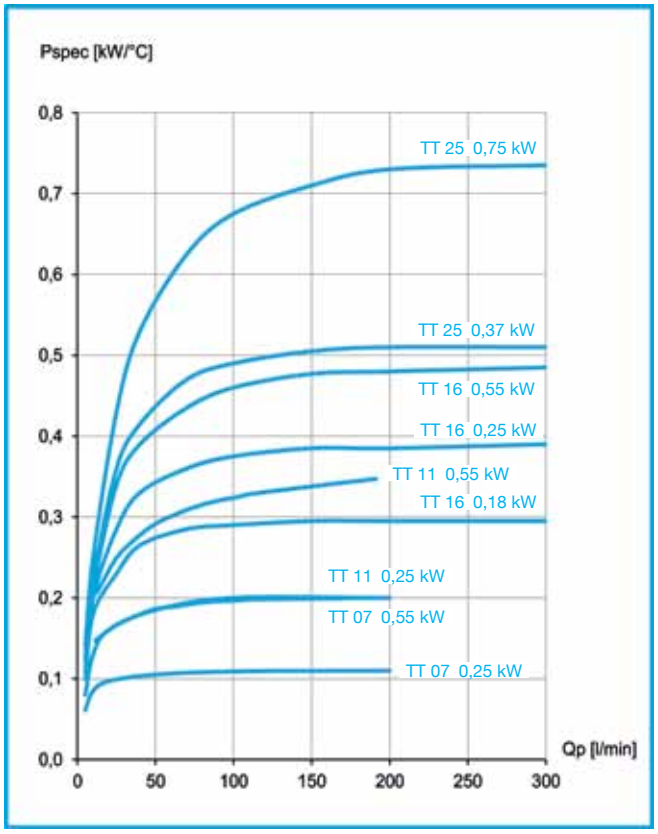
Oil / Air Cooler TT Series

230/400V 50 Hz asa rail

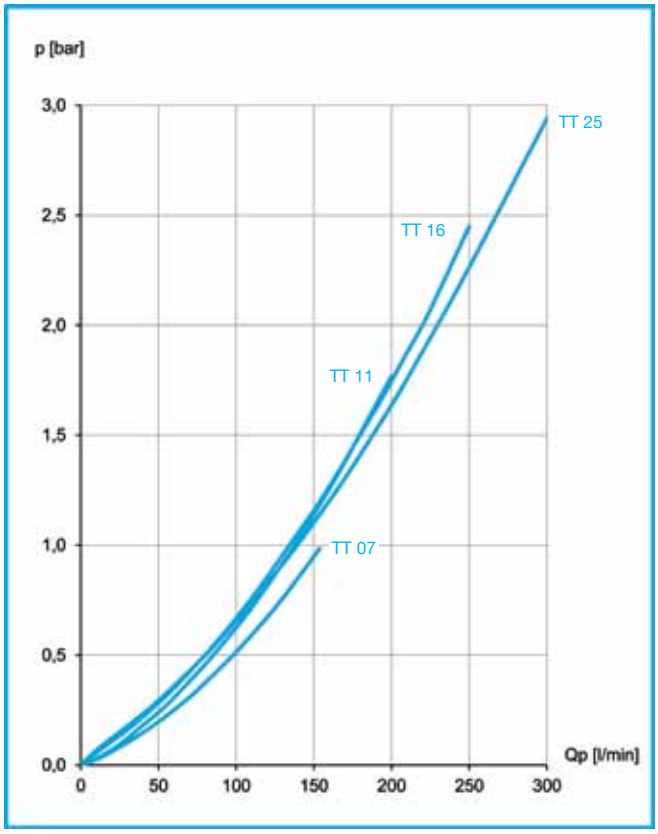
asahydraulik.com

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

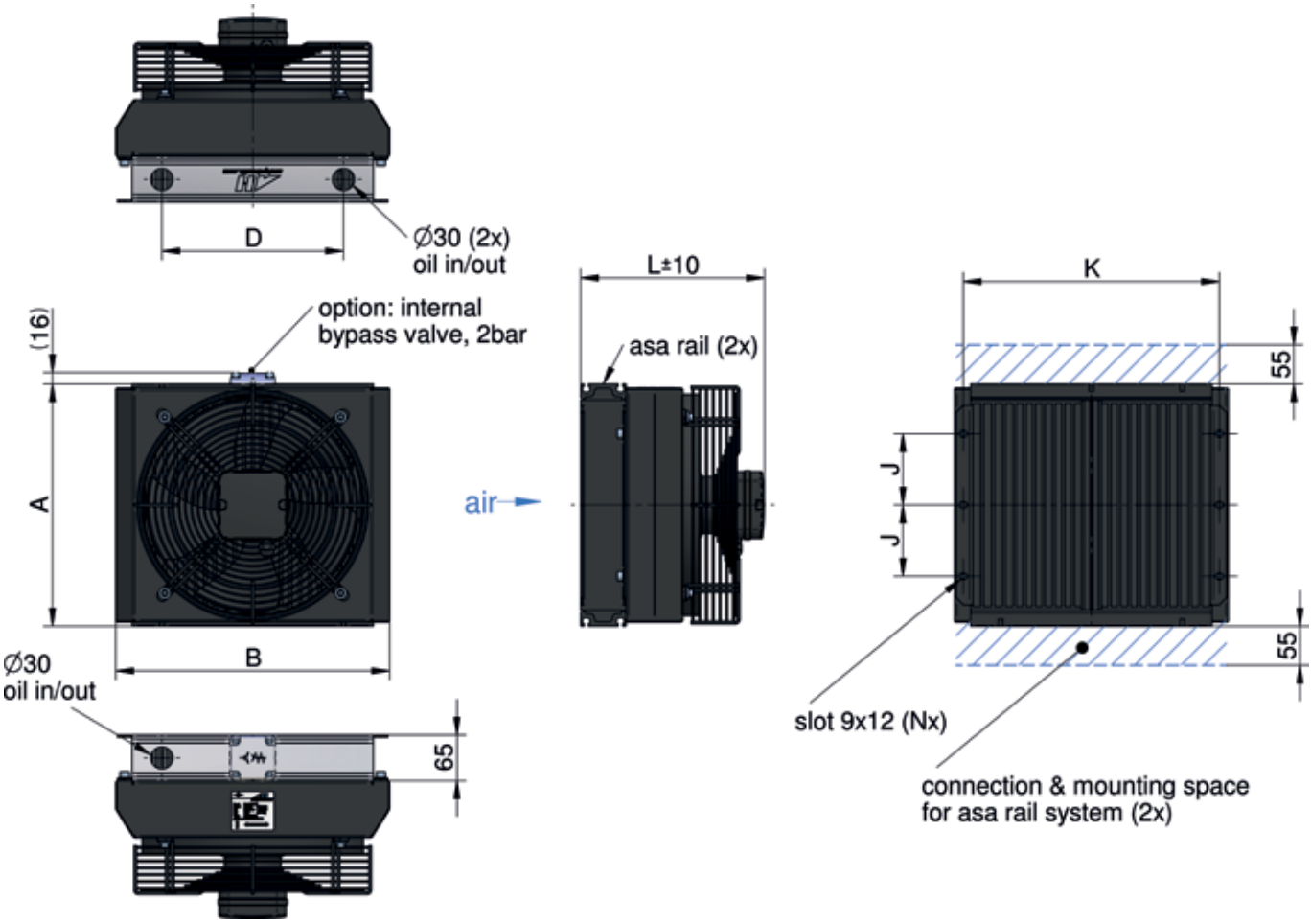
motor data	alternative voltages, frequencies, protection classes, etc on request
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 26)
temperature control 230VAC	ILLZTCACK (page 27)
rail mounting bracket	MW3046K (page 22)
foot mounting	ILLEFUSSTTK, ILLEFUSSTTHDK (page 22)
internal bypass	alternative bypass settings (1 bar / 5 bar)

Installation System (see more information on page 20)

connection BSP 1“	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 ¼“	ILLZSET5G32 (1 set per cooler required)
connection UNF 1 5/16“	ILLZSET5U16 (1 set per cooler required)
connection UN 1 5/8“	ILLZSET5U20 (1 set per cooler required)

Oil / Air Cooler TT Series COMPACT

230V 50Hz asa rail



Dimensions

description	order number	A	B	D	J	K	L	N	weight	optional internal bypass (2 bar)
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]	cooler order number
TT 07 rail 230V/50Hz/2pol compact	ASATT07RC2E	300	325	178	86	290	260	4	9,0	ASATT07RC2EBP
TT 11 rail 230V/50Hz/4pol compact	ASATT11RC4E	340	385	255	100	360	260	6	11,8	ASATT11RC2EBP
TT 11 rail 230V/50Hz/2pol compact	ASATT11RC2E	340	385	255	100	360	260	6	12,0	ASATT11RC4EBP
TT 16 rail 230V/50Hz/4pol compact	ASATT16RC4E	365	465	333	153	436	285	6	19,6	ASATT16RC4EBP

Technical Data

description	order number	current	motor power	protection level	rotation	air flow	noise level
		[A]	[kW]		[rpm]	[kg/s]	[dB (A)]
TT 07 rail 230V/50Hz/2pol compact	ASATT07RC2E	0,45	0,100	IP 44	2480	0,29	66
TT 11 rail 230V/50Hz/4pol compact	ASATT11RC4E	0,42	0,090	IP 44	1350	0,34	57
TT 11 rail 230V/50Hz/2pol compact	ASATT11RC2E	0,55	0,124	IP 44	2400	0,39	66
TT 16 rail 230V/50Hz/4pol compact	ASATT16RC4E	0,85	0,200	IP 54	1350	0,68	64

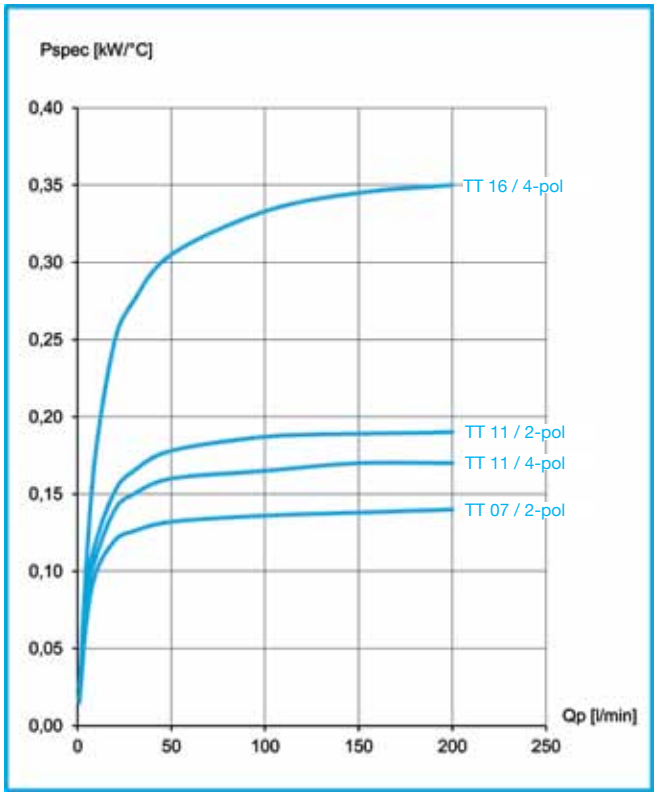
Oil / Air Cooler TT Series COMPACT

230V 50Hz asa rail

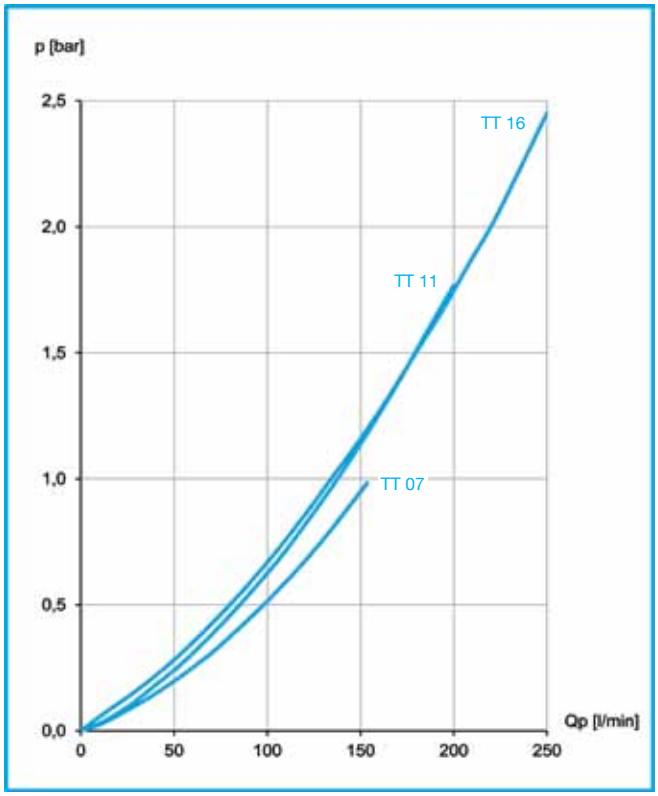
asahydraulik.com

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, 60 Hz	on request
temperature control 230VAC	ILLZTCACK (page 27)
rail mounting bracket	MW3046K (page 22)
temperature switches	ILLZTH4765K, ILLZTH6065K (page 26)
foot mounting	ILLEFUSSTTK, ILLEFUSSTTHDK (page 22)
internal bypass	alternative bypass settings (1 bar / 5 bar)

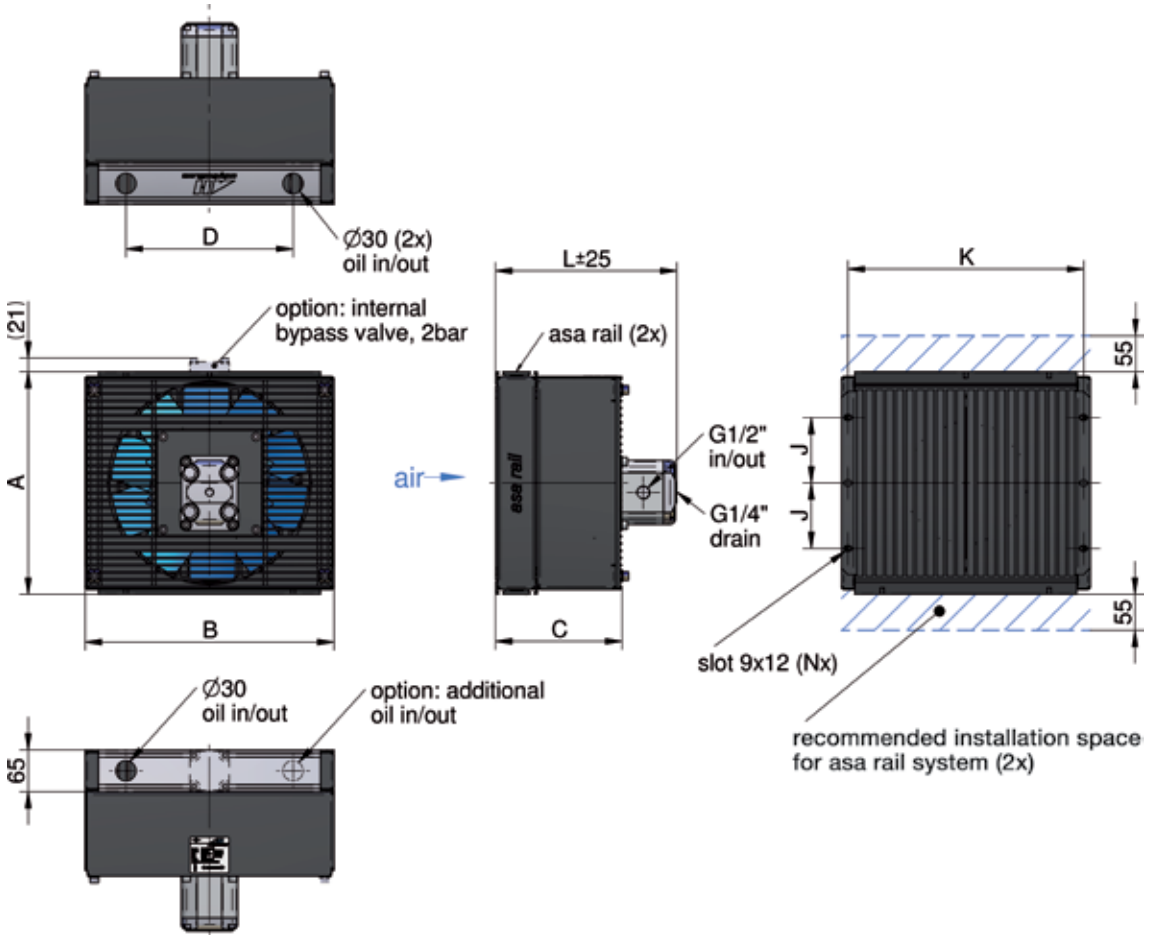
Installation System (see more information on page 20)

connection BSP 1“	ILLZSET5G25 (1 set per coder required)
connection BSP 1 ¼“	ILLZSET5G32 (1 set per coder required)
connection UNF 1 5/16“	ILLZSET5U16 (1 set per coder required)
connection UN 1 5/8“	ILLZSET5U20 (1 set per coder required)

Oil / Air Cooler TT Series

11 cm³ hydraulic drive asa rail

asahydraulik.com



Dimensions

description	order number	A	B	C	D	J	K	L	N	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
TT 11 rail 11cm³ hydr. motor	ASATT11RH11	340	380	193	255	100	360	277	6	16,7
TT 16 rail 11cm³ hydr. motor	ASATT16RH11	465	460	218	333	153	436	302	6	21,2
TT 25 rail 11cm³ hydr. motor	ASATT25RH11	605	555	218	429	208,5	530	302	6	27,8

Technical Data

description	order number	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
TT 11 rail 11cm³ hydr. motor	ASATT11RH11	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	
TT 16 rail 11cm³ hydr. motor	ASATT16RH11	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	
TT 25 rail 11cm³ hydr. motor	ASATT25RH11	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	

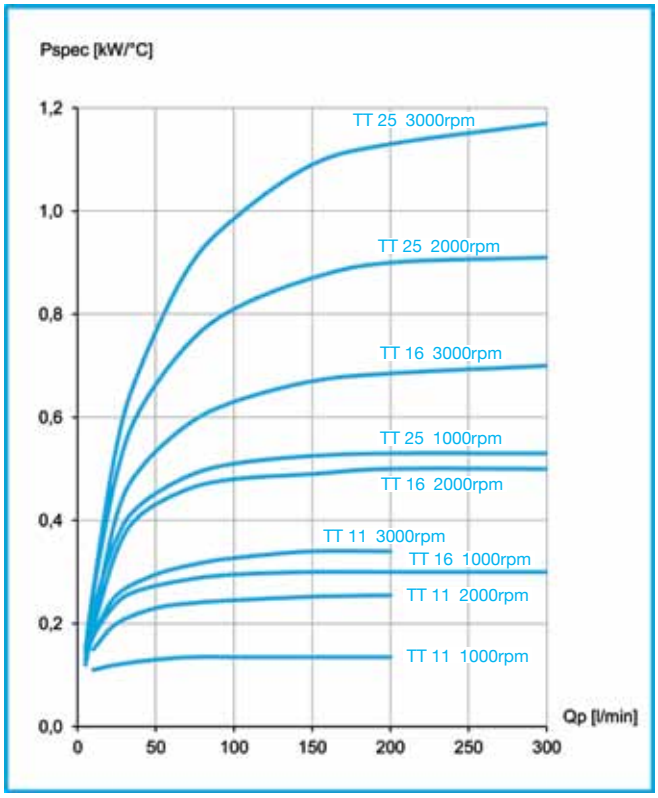
Oil / Air Cooler TT Series

11 cm³ hydraulic drive asa rail

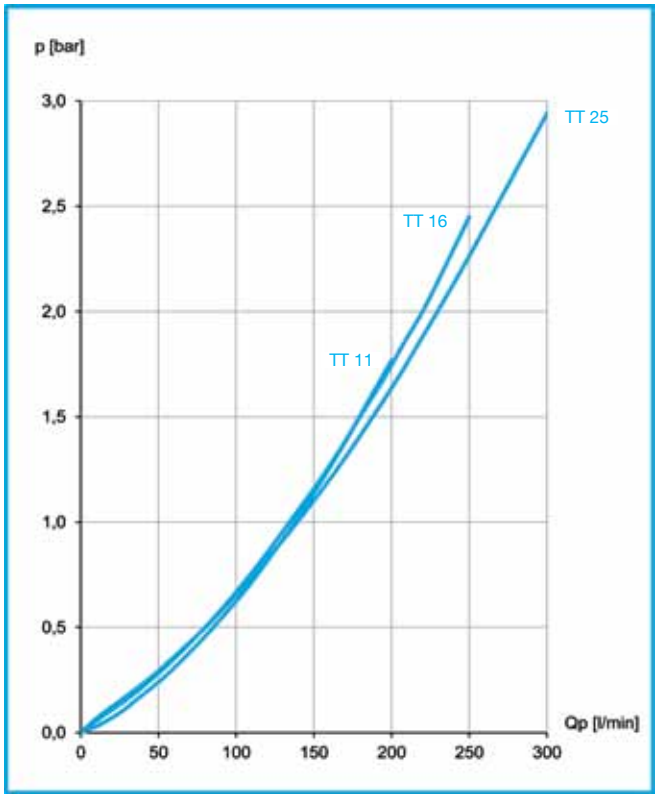
asahydraulik.com

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

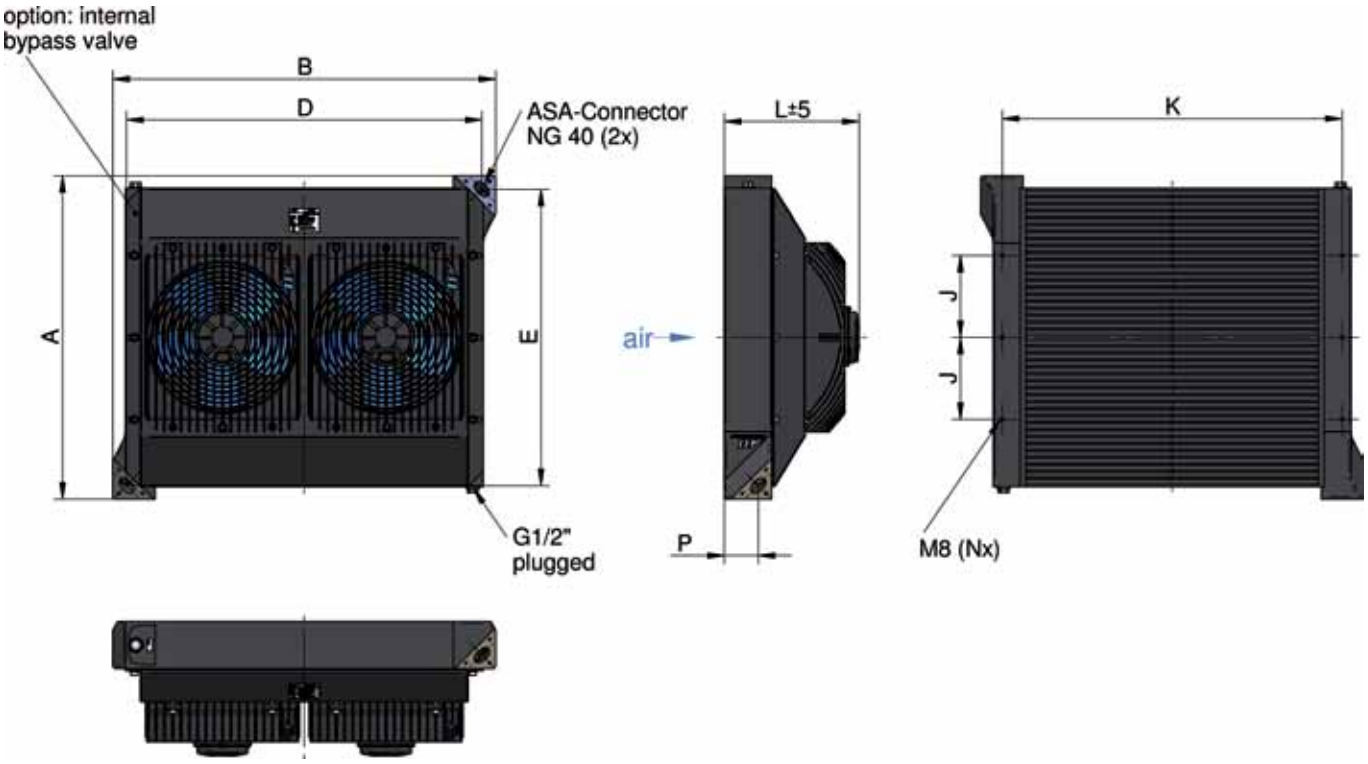
hydraulic motor displacement	alternative displacements on request
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 26)
rail mounting bracket	MW3046K (page 22)
foot mounting	ILLEFUSSTTHDK (page 22)
internal bypass	alternative bypass settings (1 bar / 5 bar)

Installation System (see more information on page 20)

connection BSP 1“	ILLZSET5G25 (1 set per cooler required)
connection BSP 1 ¼“	ILLZSET5G32 (1 set per cooler required)
connection UNF 1 5/16“	ILLZSET5U16 (1 set per cooler required)
connection UN 1 5/8“	ILLZSET5U20 (1 set per cooler required)

Oil / Air Cooler ASA Series

12V / 24V DC asa uc



Dimensions

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

Technical Data

description	order number	current	motor power	protection level	air flow	noise level	optional internal bypass (2 bar)
		[A]	[kW]		[kg/s]	[dB (A)]	cooler order number
ASA 0177 12V DC	ASA0177AD01	18,6*	0,24	IP 68	0,62	79	ASA0177AD01BP
ASA 0177 24V DC	ASA0177AD02	9,3*	0,24	IP 68	0,62	79	ASA0177AD02BP
ASA 0257 12V DC h.p.	ASA0257AD03	2×20,8	2×0,27	IP 68	1,20	83	ASA0257AD03BP
ASA 0257 24V DC h.p.	ASA0257AD04	2×10,4	2×0,27	IP 68	1,20	83	ASA0257AD04BP
ASA 0367 12V DC	ASA0367AD01	2×20,8	2×0,27	IP 68	1,15	84	ASA0367AD01BP
ASA 0367 24V DC	ASA0367AD02	2×10,4	2×0,27	IP 68	1,15	84	ASA0367AD02BP

***… single fan**

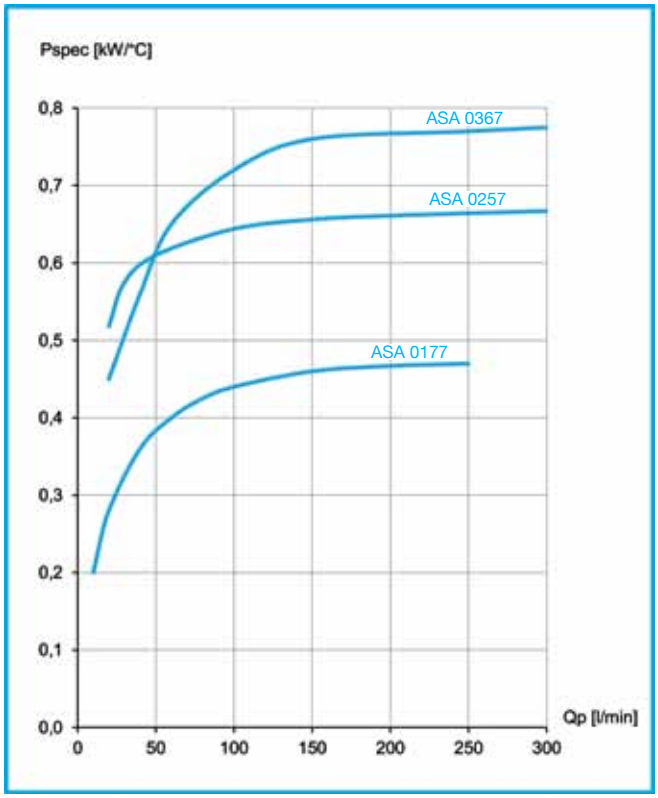
Oil / Air Cooler ASA Series

12V / 24V DC asa uc

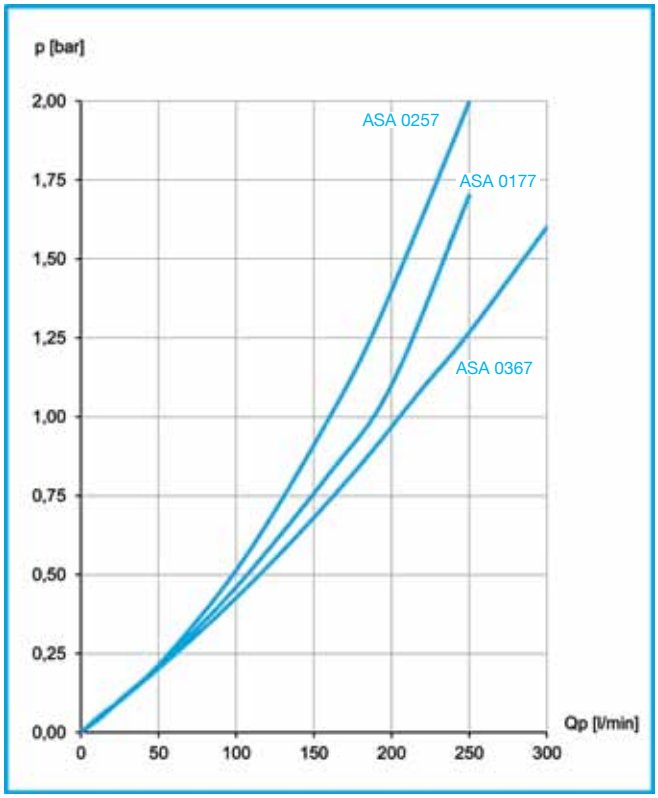
asahydraulik.com

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

DC motor	brushless type
temperature control	ILLZTC12-2K or 24-2K + ILLZTT5069K (page 24, 25)
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 26)
internal bypass	alternative bypass settings (0,5 bar / 3,5 bar)

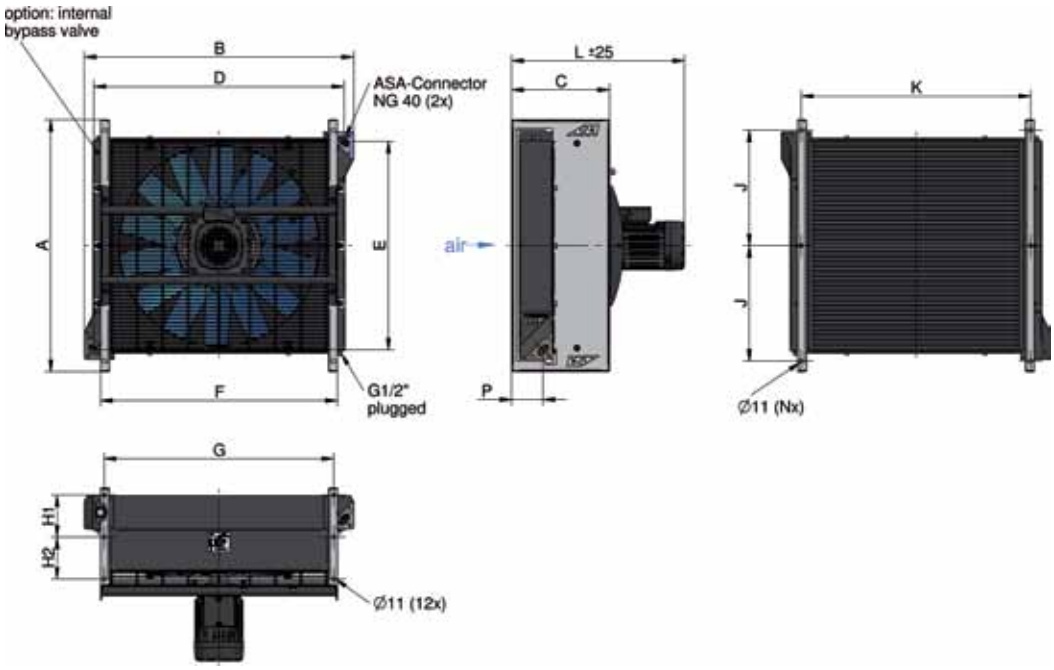
Installation System (see more information on page 21)

connection BSP 1 ¼“	ILLZASA32G32 (2 pcs per cooler required)
connection BSP 1 ½“	ILLZASA40G40 (2 pcs per cooler required)
connection ASA NG 32-UNF 1 ⅝“	ILLZASA32U20 (2 pcs per cooler required)
connection ASA NG 40-UN 1 ⅞“	ILLZASA40U24 (2 pcs per cooler required)

Oil / Air Cooler ASA Series

230/400V 50Hz asa uc

asahydraulik.com



Dimensions

description	order number	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]
ASA 0177 0,18kW AC	ASA0177AA64	530	582	260	534	412	462	442	120	90	490	442	4	486	89	39,3
ASA 0177 0,25kW AC	ASA0177AA44	530	582	260	534	412	462	442	120	90	490	442	4	486	89	40,7
ASA 0177 0,55kW AC	ASA0177AA25	530	582	260	534	412	462	442	120	90	490	442	4	486	89	40,5
ASA 0257 0,37kW AC	ASA0257AA66	635	682	270	634	501	562	542	110	110	280	542	6	531	93	48,7
ASA 0257 0,75kW AC	ASA0257AA47	635	682	270	634	501	562	542	110	110	280	542	6	531	93	48,4
ASA 0367 0,37kW AC	ASA0367AA66	720	770	280	720	596	676	656	120	120	330	656	6	541	90	63
ASA 0367 0,75kW AC*	ASA0367AA47L	720	770	280	720	596	676	656	120	120	330	656	6	541	90	59,5
ASA 0367 0,75kW AC	ASA0367AA47	720	770	280	720	596	676	656	120	120	330	656	6	541	90	64,1
ASA 0567 0,37kW AC	ASA0567AA66	860	920	290	870	746	826	806	125	125	400	806	10	570	92	79,5
ASA 0567 0,75kW AC	ASA0567AA47	860	920	290	870	746	826	806	125	125	400	806	10	570	92	80,6
ASA 0567 2,20kW AC	ASA0567AA4A	860	920	290	870	746	826	806	125	125	400	806	10	634	92	113,5
ASA 0927 1,50kW AC	ASA0927AA6A	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	664	87	161,4
ASA 0927 4,00kW AC	ASA0927AA6E	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	760	87	203,6

Technical Data

description	order number	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
ASA 0177 0,18kW AC	ASA0177AA64	0,88	0,18	71	IP 55	925	0,39	62	ASA0177AA64BP
ASA 0177 0,25kW AC	ASA0177AA44	0,75	0,25	71	IP 55	1330	0,57	74	ASA0177AA44BP
ASA 0177 0,55kW AC	ASA0177AA25	1,33	0,55	71	IP 55	2740	0,82	91	ASA0177AA25BP
ASA 0257 0,37kW AC	ASA0257AA64	1,22	0,37	80	IP 55	925	0,75	68	ASA0257AA64BP
ASA 0257 0,75kW AC	ASA0257AA47	1,81	0,75	80	IP 55	1430	1,14	79	ASA0257AA47BP
ASA 0367 0,37kW AC	ASA0367AA66	1,22	0,37	80	IP 55	925	0,94	73	ASA0367AA66BP
ASA 0367 0,75kW AC*	ASA0367AA47L	1,81	0,75	80	IP 55	1430	1,20	79	ASA0367AA47BPL
ASA 0367 0,75kW AC	ASA0367AA47	1,81	0,75	80	IP 55	1430	1,47	83	ASA0367AA47BP
ASA 0567 0,37kW AC	ASA0567AA66	1,22	0,37	80	IP 55	925	1,21	74	ASA0567AA66BP
ASA 0567 0,75kW AC	ASA0567AA47	1,81	0,75	80	IP 55	1430	1,89	84	ASA0567AA47BP
ASA 0567 2,20kW AC	ASA0567AA4A	4,8	2,20	100	IP 55	1455	2,80	88	ASA0567AA4ABP
ASA 0927 1,50kW AC	ASA0927AA6A	3,44	1,50	100	IP 55	955	4,73	86	–
ASA 0927 4,00kW AC	ASA0927AA6E	8,5	4,00	132	IP 55	965	6,86	89	–

* ... *low noise version*

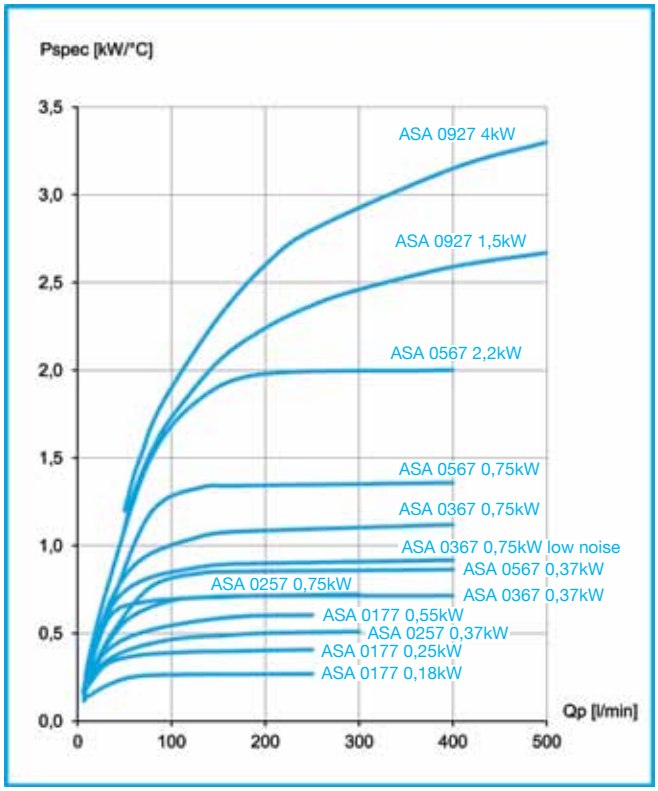
Oil / Air Cooler ASA Series

230/400V 50Hz asa uc

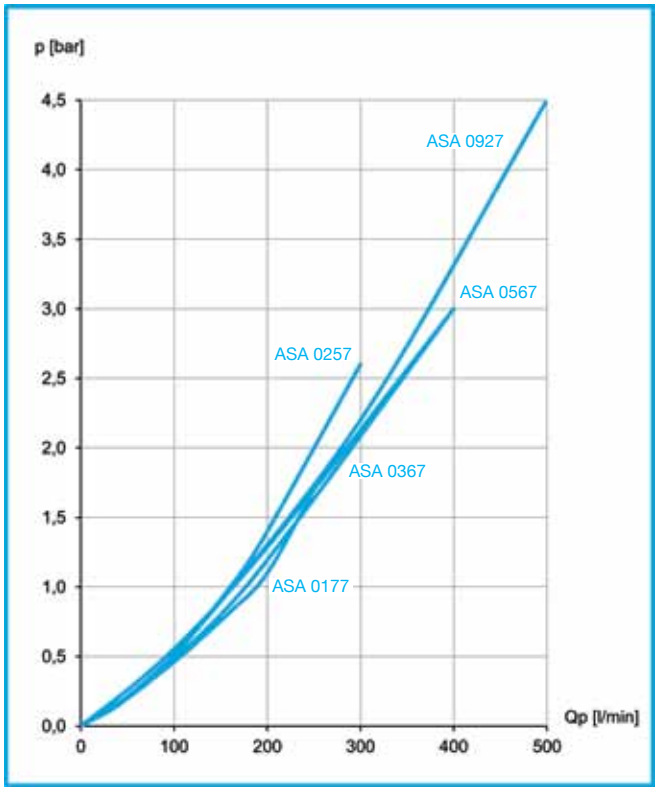
asahydraulik.com

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, protection classes, etc on request
temperature switches	ILLZTH4765K, ILLZTH6065K (page 26)
tread plate & radiator guard	see page 23
internal bypass	alternative bypass settings (0,5 bar / 3,5 bar) !not available for ASA 0927!

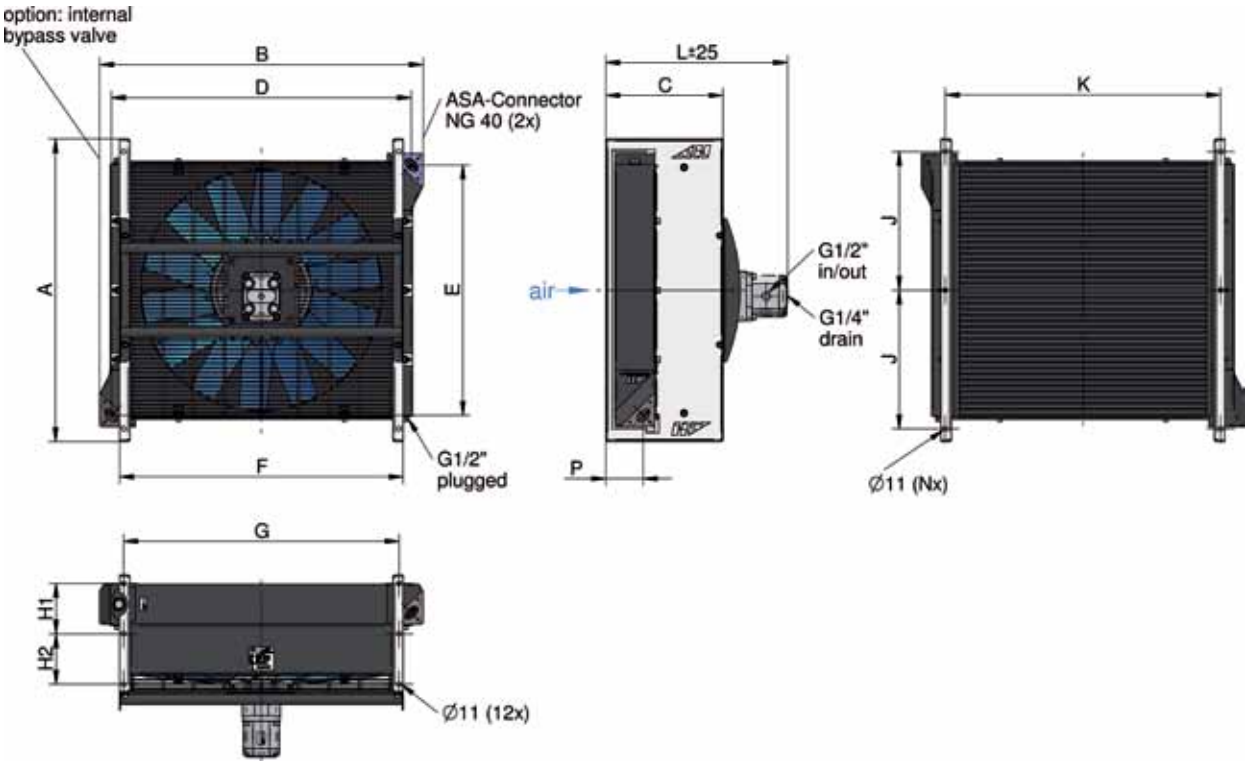
Installation System (see more information on page 21)

connection BSP 1 ¼“	ILLZASA32G32 (2 pcs per cooler required)
connection BSP 1 ½“	ILLZASA40G40 (2 pcs per cooler required)
connection ASA NG 32-UNF 1 ⅝“	ILLZASA32U20 (2 pcs per cooler required)
connection ASA NG 40-UN 1 ⅞“	ILLZASA40U24 (2 pcs per cooler required)

Oil / Air Cooler ASA Series

11 cm³ hydraulic drive asa uc

asahydraulik.com



Dimensions

description	order number	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]
ASA 0177 11cm³ motor	ASA0177AH11	530	582	260	534	412	462	442	120	90	490	442	4	364	89	37,2
ASA 0257 11cm³ motor	ASA0257AH11	635	682	270	634	501	562	542	110	110	280	542	6	370	93	49,9
ASA 0367 11cm³ motor	ASA0367AH11	720	770	280	720	596	676	656	120	120	330	656	6	430	90	55,4
ASA 0567 11cm³ motor	ASA0567AH11	860	920	290	870	746	826	806	125	125	400	806	10	460	92	71,9
ASA 0927 11cm³ motor	ASA0927AH11	1100	1165	320	1120	921	1058	1031	130	130	504,5	1031	10	475	87	120

Technical Data

description	order number	motor power	oil pressure	oil flow	rotation	air flow	noise level	optional internal bypass ~~CW~~ (2 bar)
		[kW]	[bar]	[lpm]	[rpm]	[kg/s]	[dB (A)]	cooler order number
ASA 0177 11cm³ motor	ASA0177AH11	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	
ASA 0257 11cm³ motor	ASA0257AH11	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	
ASA 0367 11cm³ motor	ASA0367AH11	0,20	12	12	1000	0,94	73	ASA0367AH11BP
		0,68	26	17	1500	1,53	85	
		1,60	48	12	2000	2,20	90	
ASA 0567 11cm³ motor	ASA0567AH11	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	
ASA 0927 11cm³ motor	ASA0927AH11	1,10	63	12	1000	5,00	88	–
		2,60	115	15	1300	6,50	92	
		4,70	169	19	1600	7,95	97	

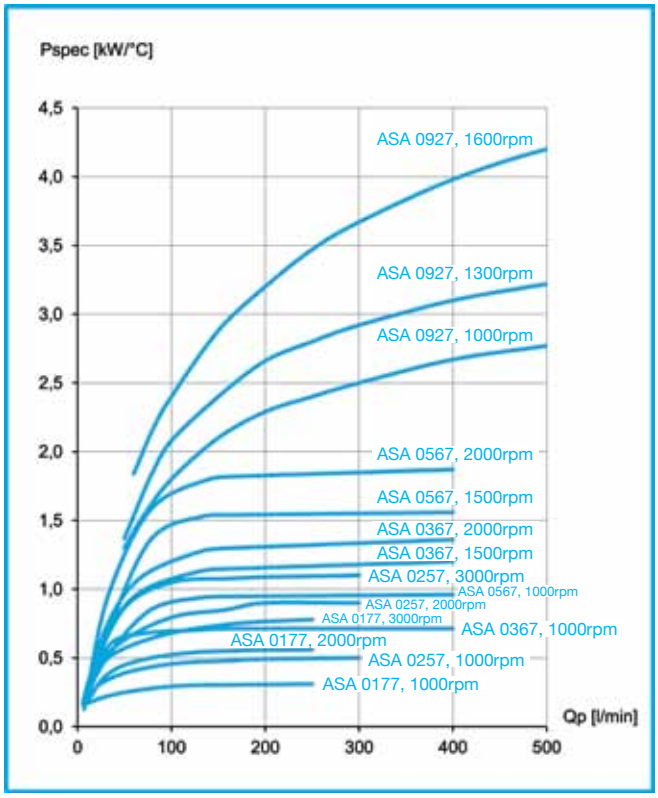
Oil / Air Cooler ASA Series

11 cm³ hydraulic drive asa uc

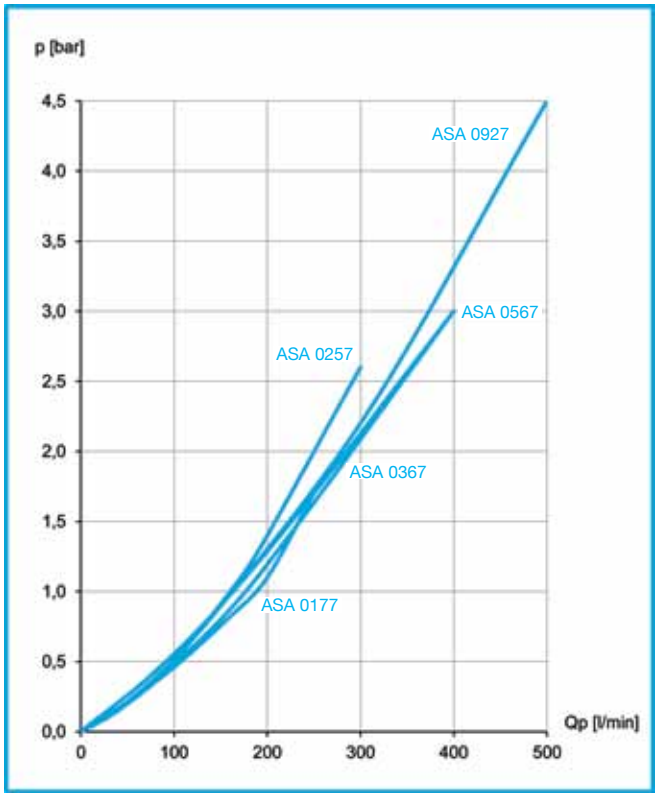
asahydraulik.com

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 volume	alternative volumes on request
internal bypass	alternative bypass settings (0,5 bar / 3,5bar) !not available for ASA 0927!
tread plate & radiator guard	see page 23
temperature switches	ILLZTH5069K, ILLZTH4765K, ILLZTH6065K (page 26)

Installation System (see more information on page 21)

connection BSP 1 ¼“	ILLZASA32G32 (2 pcs per cooler required)
connection BSP 1 ½“	ILLZASA40G40 (2 pcs per cooler required)
connection ASA NG 32-UNF 1 ⅝“	ILLZASA32U20 (2 pcs per cooler required)
connection ASA NG 40-UN 1 ⅞“	ILLZASA40U24 (2 pcs per cooler required)

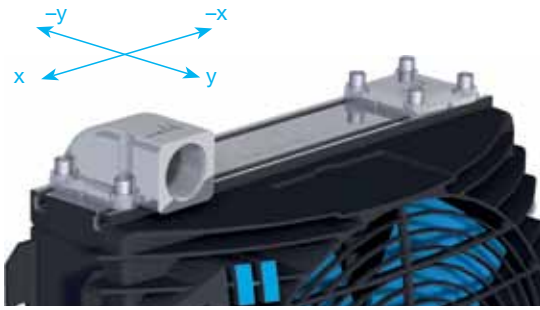
Connector Accessories Rail Series

BSP 1”, BSP 1 ¼” asa rail

Description

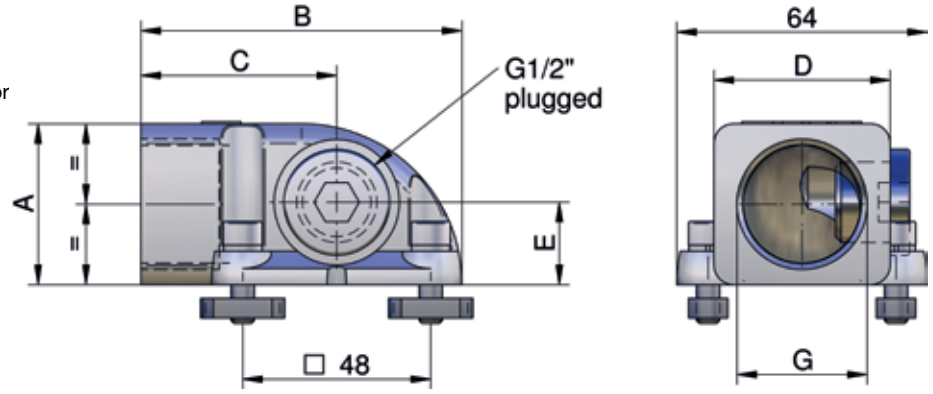
The asa rail system is the first worldwide flexible mounting and connection system for air blast heat exchangers. The flexibility comes from free choice of the port’s direction. Each port on the radiator has 3 possibilities. This well designed radiator concept brings another flexibility innovation hit 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 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.

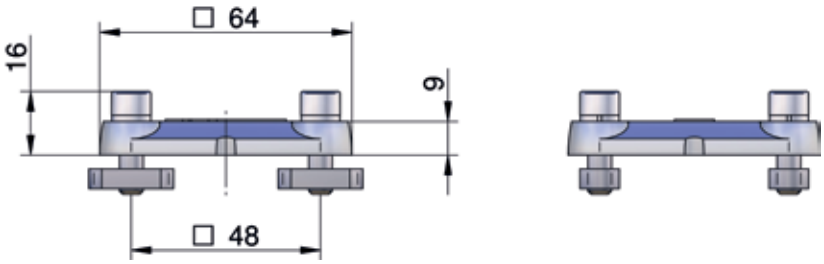


Technical Data

ported connector



blind connector



Technical Data

description	order number	connector material	o-ring	A	B	C	D	E	G	weight
				[mm]	[mm]	[mm]	[mm]	[mm]		[kg]
asa rail connector BSP 1“	ILLZSET5G25	aluminium	NBR, 70 shore, 35 x 3mm	41	82	50	45	21	BSP 1“	1,20
asa rail connector BSP 1 ¼“	ILLZSET5G32	aluminium	NBR, 70 shore, 35 x 3mm	50	88	56	50	21	BSP 1 ¼“	1,30
asa rail connector UNF 5/16“	ILLZSET5U16	aluminium	NBR, 70 shore, 35 x 3mm	41	82	50	45	21	UNF 1 5/16“	1,10
asa rail connector UN 5/8“	ILLZSET5U20	aluminium	NBR, 70 shore, 35 x 3mm	50	88	56	50	21	UNF 1 5/8 “	1,30

Content

ported connector	2x
blind connector	2x
o-ring	4x
slot nut	16x
plug screw G ½“	2x
sealing G ½“	2x
screw M6x25	16x
spring ring	16x

requires 1 set per cooler

Packed size, 1 set

Fits On Cooler Types

TT 07, 11, 16, 25

Connector Accessproes ASA Series

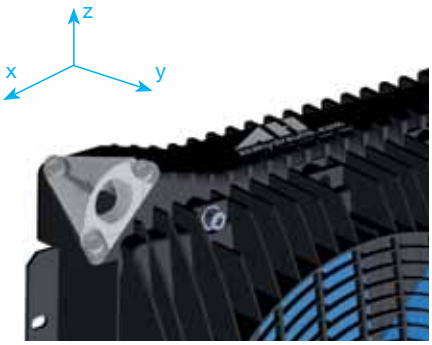
BSP 1 ¼”, BSP 1 ½” asa uc

Description

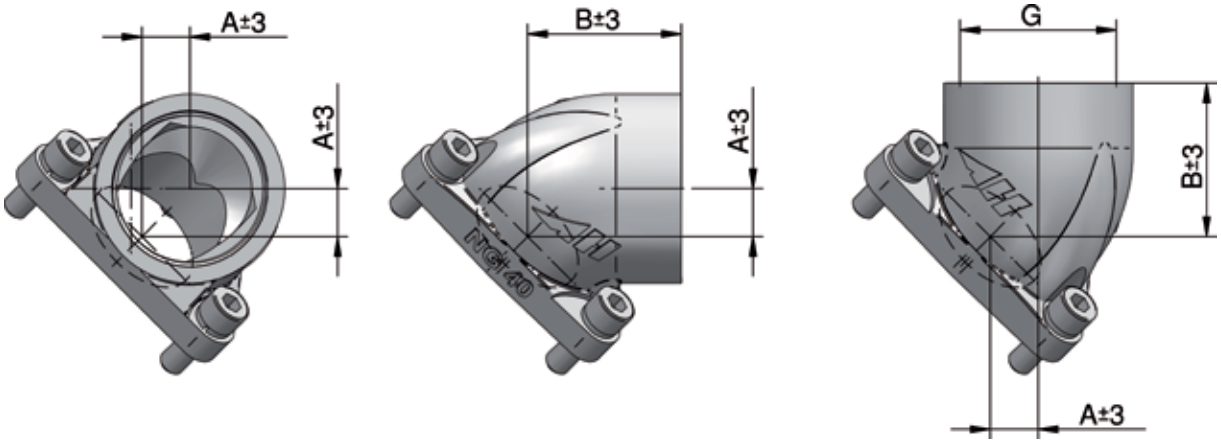
The asa universal connector is a patented system that offers many possibilities regarding dimension and direction of the hydraulic connection.

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.



Technical Data



description	order number	A	B	G	connector material	o-ring	weight
		[mm]	[mm]				[kg]
AUC NG 32 – G 1¼“	ILLZASA32G32	14	34	BSP 1 ¼“	aluminium	NBR, 70 shore, 44x3mm	0,31
AUC NG 40 – G 1½“	ILLZASA40G40	15	47	BSP 1 ½“	aluminium	NBR, 70 shore, 44x3mm	0,29
AUC NG 32 – UNF 1⅝“	ILLZASA32U20	14	34	UNF 1⅝“	aluminium	NBR, 70 shore, 44x3mm	0,31
AUC NG 40 – UN 1⅞“	ILLZASA40U24	15	47	UNF 1⅞“	aluminium	NBR, 70 shore, 44x3mm	0,29

Content

asa universal connector	1x
o-ring	1x
screw	3x
spring ring	3x

requires 2 pcs per cooler

Packed size, 2 pieces

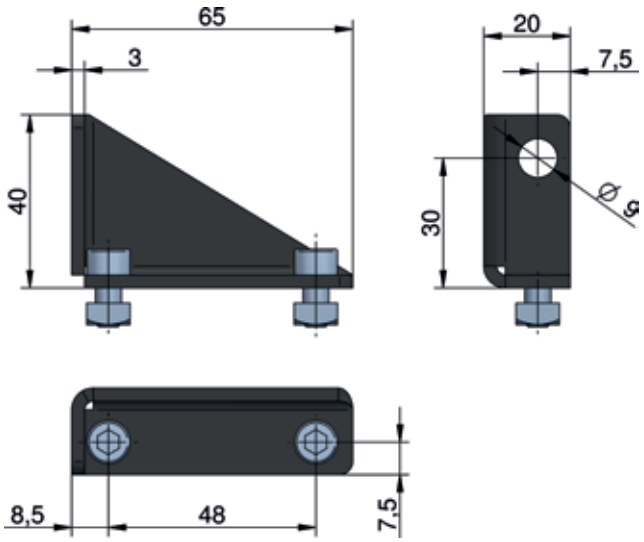
Fits On Cooler Types

ASA 0177, 0257, 0367, 0567, 0927

Mounting Accessories
mounting attachments, foot mounting brackets

Mounting Brackets

The mounting brackets for asa rail system coolers offers the possibility to customize the cooler to the application. Each rail system cooler can be attached with one or more of these brackets. 1 set includes 2 brackets with the required mounting material to attach it to the rail (nuts, screws).

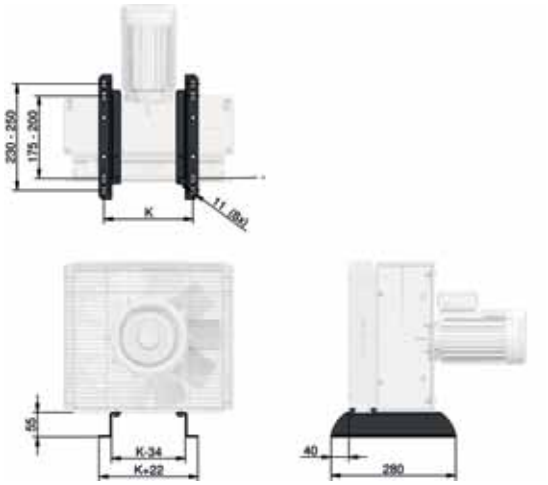


description	order number	fits on cooler type			
		TT 07	TT 11	TT 16	TT 25
rail mounting bracket kit (includes 2 brackets and screws/washers)	MW3046K	•	•	•	•

• … *optional available*
○ … *available on request*

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	200	380	TT 25	135	360

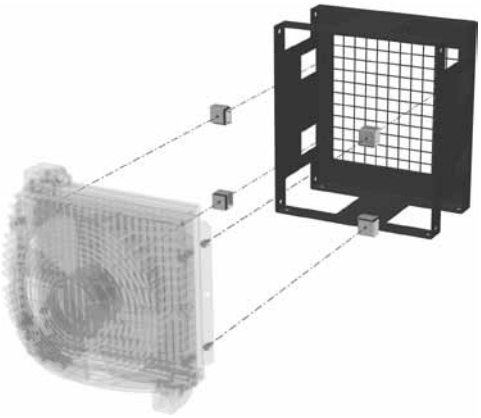
description	order number	fits on cooler type			
		TT 07	TT 11	TT 16	TT 25
mounting feet set TT 07 – 25	ILLEFUSSTTK	•	•	•	•
mounting feet set TT 11 – 25 HD (heavy duty)	ILLEFUSSTTHDK	○	•	•	•

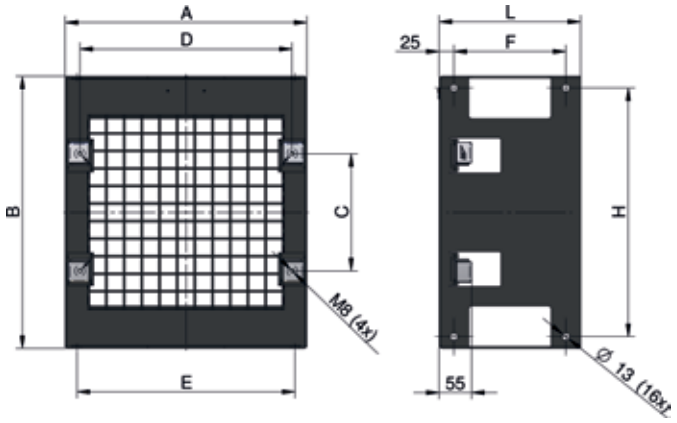
• … *optional available*
○ … *available on request*

Mounting Accessories
protection housing, tread plate

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 rubber shock absorbers between housing and cooler. The radiator side is protected by a robust grid.





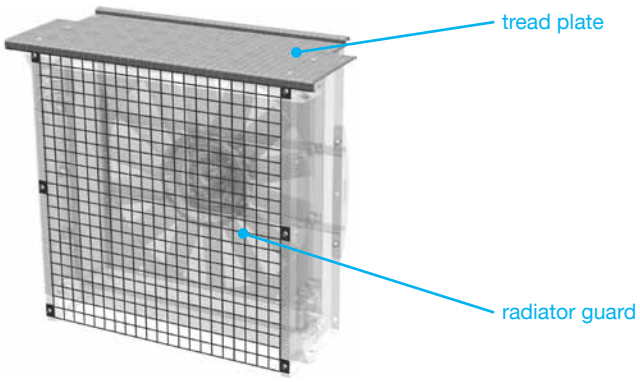
description	order number	A	B	C	D	E	F	H	L	weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
protection housing kit TT 07	ILLEGAKTT07GT	340	425	172	290	300	190	385	240	8,3
protection housing kit TT 11	ILLEGAKTT11GT	410	465	200	360	370	190	425	240	9,5
protection housing kit TT 16	ILLEGAKTT16GT	490	590	306	436	450	210	550	260	14,0

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

• … *optional available*
– … *not 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.



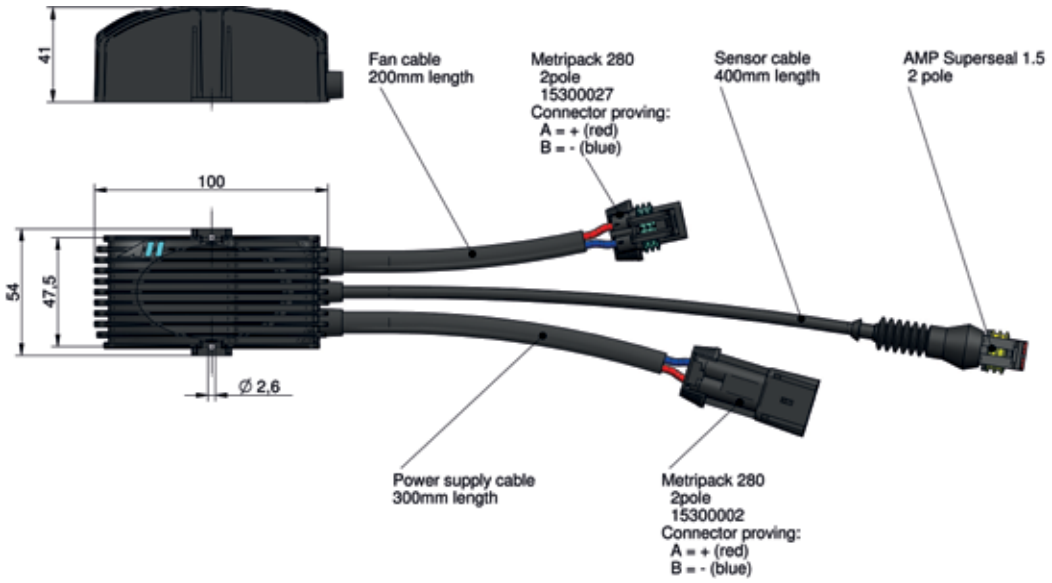
description	kit includes:	fits on cooler type				
		ASA 0177*	ASA 0257*	ASA 0367*	ASA 0567*	ASA 0927*
tread plate kit	plate, flat screws;	○	•	•	○	○
radiator guard	grid, screws, washers;	○	•	•	○	○

• … *optional available*
○ … *available on request*
* … *DC drive versions are not compatible with these accessories*

Electronic Accessories
temperature control

This system consists of a temperature sensor (ILLZTT5069K) and a control unit (12V or 24V units 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 maximum speed all the time. The start up temperature of this system is 44°C and 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 (IP 69K 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**

description	order number	max. power fan motor	max. current fan	protection	weight	supply
		[W]	[A]		[kg]	DC
temperature control 12V DC	ILLZTC12-2K	310	21 (14,7V DC)	IP 67	0,25	12V (9V – 15V)
temperature control 24V DC	ILLZTC24-2K	340	12 (24V DC)	IP 67	0,25	24V (18V – 32V)

Characteristics

material:	polyamide
mounting instructions	any mounting position

Measurement input

temperature sensor (page 25)	ILLZTT5069K (control range 45–55°C)
temperature switch (page 26)	ILLZTH5069K (set point 50°C, soft start)

Ambient Conditions

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

Combinations

fits on coolers	see matrix on page 27

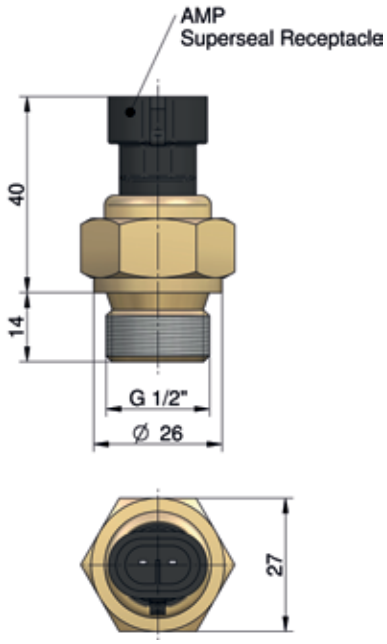
Please note:

- The maximum start current is approximately 10% higher than the nominal current of the fan 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 supply, the control unit is deactivated. After changing the polarity, the control is ready for use again.
- If supply voltage exceeds 16,5V (ILLZTC12-2K) or 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.
- closed current: 5mA (ILLZTC12-2K), 4mA (ILLZTC24-2K)
- recommended fuse: 25A (ILLZTC12-2K), 16A (ILLZTC24-2K) fast acting

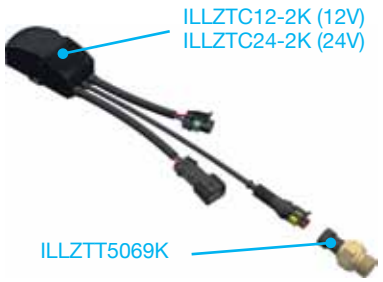
Electronic Accessories
temperature sensor

The temperature sensor (ILLZTT5069K) requires a control unit for the temperature control system (see page 24).

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 maximum speed all the time. The start up temperature of this system is 44°C and maximum rotation of the fan is applied when the oil temperature reached 55°C.



Temperature Control



- **NTC sensing**
- **IP 69K protection**
- **compact design**

description	order number	connection	protection	weight
				[kg]
temperature sensor BSP ½"	ILLZTT5069K	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	ILLZTC12-2K (page 24)
temperature control unit 24V	ILLZTC24-2K (page 24)

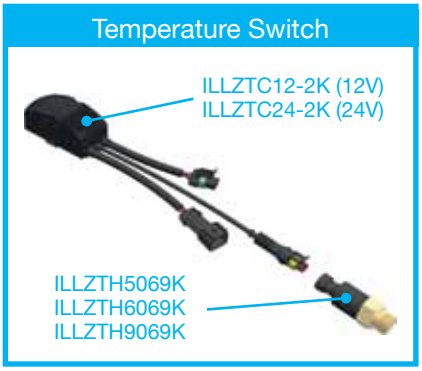
Combinations

fits on coolers	see matrix on page 27

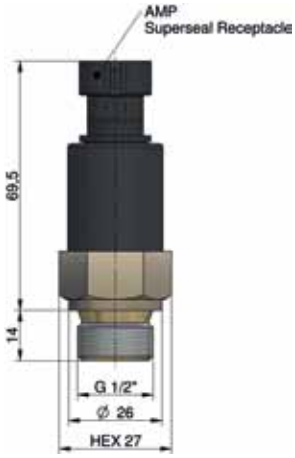
Electronic Accessories
temperature switches

According to the cooler type and size, our temperature switches fit on various coolers in this catalogue. Please check out the compatibility in the table on page 27. IP69K switch types (ILLZTH5069K, ILLZTH6069K and ILLZTH9069K) can work in combination with our temperature control units ILLZTC12-2K (12V) and also with ILLZTC24-2 (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.

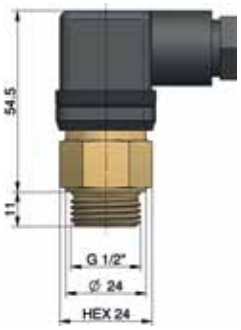
On request we offer various other bi-metal temperature switches with different temperature settings, protection classes and connection makes



IP 69K switch type



IP 65 switch type



order number	order number	connection	protection	operating temperature	differential	weight
				[°C]	[°C]	[kg]
temperature switch 50°C	ILLZTH5069K	AMP superseal 1.5	IP 69K	50 ± 5	10	0,10
temperature switch 60°C	ILLZTH6069K	AMP superseal 1.5	IP 69K	60 ± 5	10	0,10
temperature switch 90°C	ILLZTH9069K	AMP superseal 1.5	IP 69K	90 ± 5	10	0,10
temperature switch 50°C	ILLZTH4765K	plug (ISO 4400)	IP 65	50 ± 5	10	0,09
temperature switch 60°C	ILLZTH6065K	plug (ISO 4400)	IP 65	60 ± 5	10	0,09

Characteristics

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

Combinations

fits on coolers	see matrix on page 27

Measurement Output

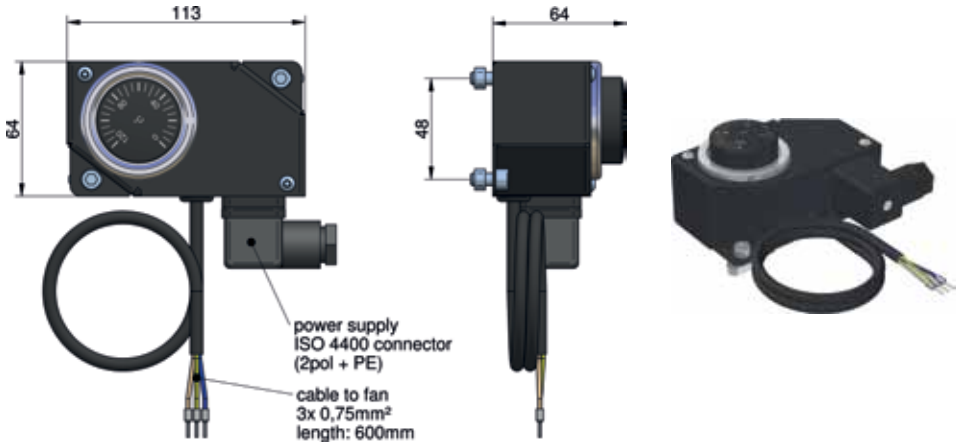
contact	N.O. (normal open)
minimum current	200mA
maximum current	12V AC: 10A
	24V AC: 10A
	120V AC: 15A
	230V AC: 10A
Use power relay for switching!	

Ambient Conditions

oil temperature range	–20°C to +120°C
ambient temperature range	–20°C to +85°C
storage temperature range	–60°C to +110°C

Electronic Accessories
temperature control AC

The AC temperature control is a system with a thermostat, which is non oil contact connected to the rail. The setting of the switch temperature can be changed by rotating the button on the top of the device. The control box suits on the rail coolers, given in the table below. 12V or 24V DC coolers can also be used with this system in combination with an appropriate power relay. The wiring to the fan must be individually completed by the end customer.



description	order number	switch control range	protection	weight
		[°C]		[kg]
temperature control 115V/230V AC	ILLZTCACK	–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

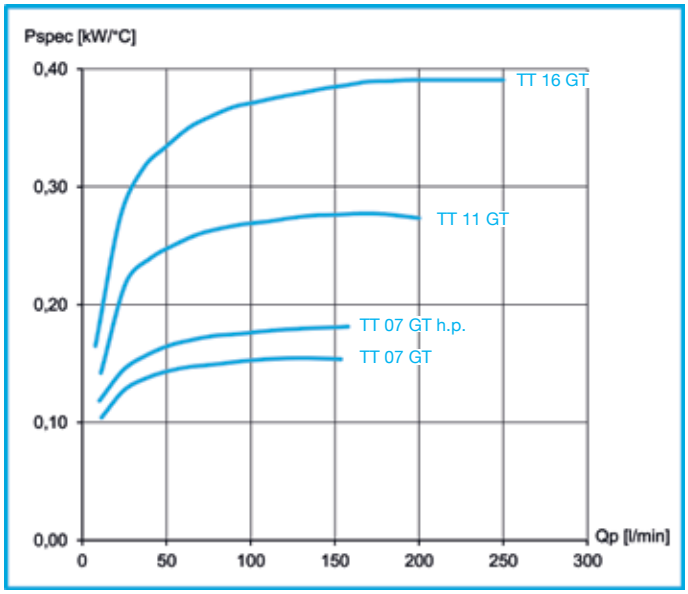
Overview / Combinations

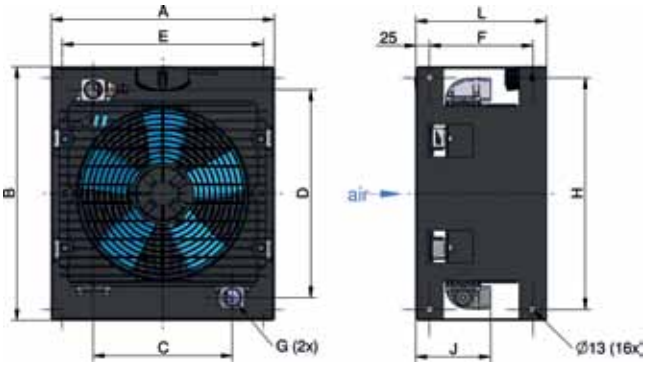
asa electronics	fits on cooler type								
	TT 07	TT 11	TT 16	TT 25	ASA 0177	ASA 0257	ASA 0367	ASA 0567	ASA 0927
temperature control ILLZTT5069K + ILLZTC12-2K or 24-2K	•	•	•	•	•	•	•	–	–
temperature switch ILLZTH5069K temperature switch ILLZTH6069K temperature switch ILLZTH9069K	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH4765K	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH6065K	•	•	•	•	•	•	•	•	•
temperature control AC ILLZTCACK	•	•	•	•	–	–	–	–	–

• … *optional available*
– … *not available*

Cooling Systems
GT cooler

The GT cooler is a ready mounted cooler package, consisting of a cooler, protection housing and the ready wired electronic temperature control. All standard cooler sizes from TT 07 to ASA 0177 are available as 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 24). 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.





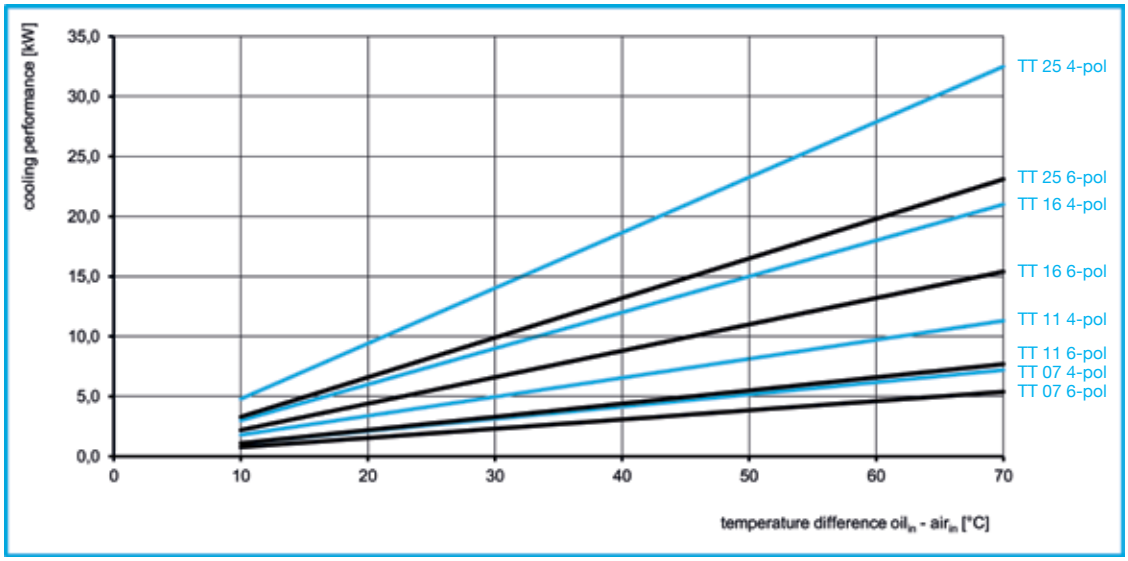
description	order number	A	B	C	D	E	F	G	H	J	L	weight	optional internal bypass (2 bar)
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	cooler order number
TT 07 rail 12V DC GT	ASATT07GD01GT	340	425	176	341	300	190	1"	385	137	240	17,2	ASATT07GD01BPGT
TT 07 rail 24V DC GT	ASATT07GD02GT	340	425	176	341	300	190	1"	385	137	240	17,2	ASATT07GD02BPGT
TT 07 rail 12V DC h.p.GT	ASATT07GD03GT	340	425	176	341	300	190	1"	385	137	240	17,7	ASATT07GD03BPGT
TT 07 rail 24V DC h.p.GT	ASATT07GD04GT	340	425	176	341	300	190	1"	385	137	240	17,7	ASATT07GD04BPGT
TT 11 rail 12V DC GT	ASATT11GD01GT	410	465	256	381	370	190	1"	425	137	240	20,5	ASATT11GD01BPGT
TT 11 rail 24V DC GT	ASATT11GD02GT	410	465	256	381	370	190	1"	425	137	240	20,5	ASATT11GD02BPGT
TT 16 rail 12V DC GT	ASATT16GD01GT	490	590	328	515	450	210	1¼"	550	143	260	30,8	ASATT16GD01BPGT
TT 16 rail 24V DC GT	ASATT16GD02GT	490	590	328	515	450	210	1¼"	550	143	260	30,8	ASATT16GD02BPGT

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 (1 bar / 5 bar)

Cooling Systems
CC Series

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.



description	order number	oil flow	max. working pressure	motor power	motor current	rotation	air flow	noise level	weight
		[l/min]	[bar]	[kW]	[A]	[rpm]	[kg/s]	[dB(A)]	[kg]
TT 07 rail CC 4-pol	ASATT07RA47CC	30	10	0,75	1,81	1430	0,28	65	25,2
TT 11 rail CC 4-pol	ASATT11RA47CC	30	10	0,75	1,81	1430	0,35	68	29,6
TT 16 rail CC 4-pol	ASATT16RA47CC	30	10	0,75	1,81	1430	0,72	74	34,4
TT 25 rail CC 4-pol	ASATT25RA47CC	30	7	0,75	1,81	1430	1,08	79	44,1
TT 07 rail CC 6-pol	ASATT07RA66CC	20	9	0,37	1,22	925	0,19	57	26
TT 11 rail CC 6-pol	ASATT11RA66CC	20	9	0,37	1,22	925	0,26	58	30,4
TT 16 rail CC 6-pol	ASATT16RA66CC	20	8	0,37	1,22	925	0,52	65	35,2
TT 25 rail CC 6-pol	ASATT25RA66CC	20	7	0,37	1,22	925	0,76	68	44,9

The maximum suction pressure is –0,4 bar. The viscosity range is <100cStk. 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

connection (BSP 1")	
ILLZATT53G25K	1 per cooler required

Options

asa rail connectors	BSP 1 ¼"
temperature switch	50°C, 60°C
motor data	alternative voltages, frequencies, protection classes, etc on request

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 PK can generally be calculated as follows:

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

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

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

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

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

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

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

Temperature behaviour:

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

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

Selection of the cooler:

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

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

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

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

Calculation of the oil pressure drop:

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

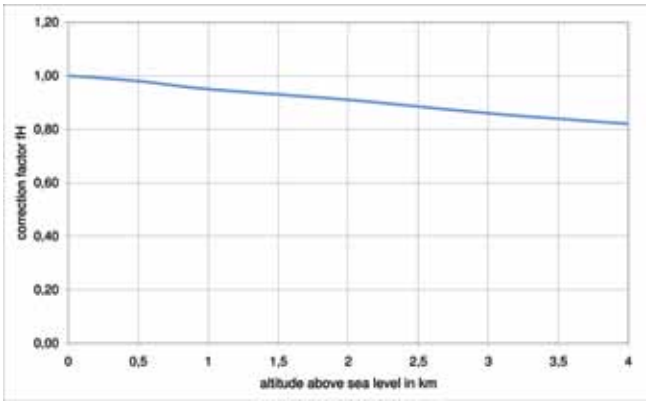
The values indicated in the diagram are valid for hydraulic oil with a viscosity of 30cSt (appr. ISO VG 32). Multiply the pressure drop by the correction factor f according to the used hydraulic oil viscosity.

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

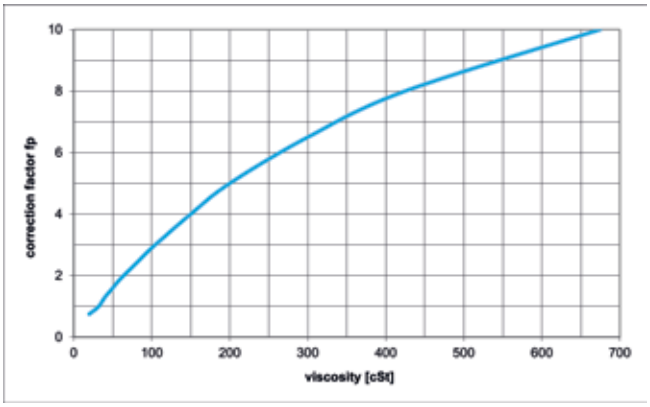
Δp = oil pressure drop [bar]
Δp_{30cst} = oil pressure drop at 30cst oil viscosity [bar]
fp = correction factor for the oil viscosity [ ]

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

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



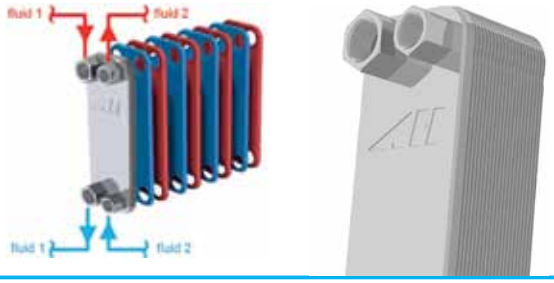
Correction factor f_p for oil pressure drop (approximate value)



special accessories other products &

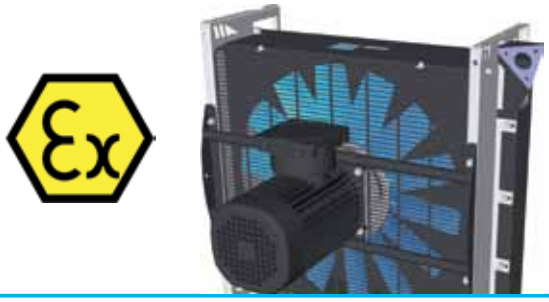
COMPONENT SYSTEMS
Leading quality engineering!

E SERIES
Brazed stainless steel plate heat exchanger



MOTOR/PUMP SYSTEMS
compact motor units with gerotor pumps

ATEX SERIES
ATEX certificated air blast coolers acording to CE Ex II 2G EEx c IIB T4



TANK FILTER SYSTEMS
Form follows function and creates innovative combi-nations of filter and tank.

W SERIES
Special equipped heat exchangers for the wind energy industry, coastal and off shore applications

Please contact us for further information or see more products on our website. The calculation program for simple and exact cooler selection and our international correspondence is available for you 24h a day.

www.asahydraulik.com

asahydraulik.com

progress in cooling

AUSTRIA
AUSTRIAN RESEARCH CENTERS
PERRY JOHNSON REGISTRARS, INC.
EN ISO 9001:2008
DNV Certified Company

Austria
asa hydraulik GmbH
Prager Strasse 280
A-1210, Vienna
Tel.: +43 1 292 40 20
Fax: +43 1 292 40 70
support@asahydraulik.com

USA
asa hydraulik of America
160 Meister Avenue 20 A
Branchburg, New Jersey 08876
Tel.: +1 800 473 94 00
Fax: +1 908 541 15 50
sales_us@asahydraulik.com

CHINA
asa hydraulik of Kunshan
江苏省昆山市千灯镇七浦西路25号
postcode: 215341
Tel.: +86 512 57950818
Fax: +86 512 57950898
kunshan@asahydraulik.com