



# Thermal Systems

## Standard Ranges



be different.  
make a difference.

# Company

Who we are and what we offer

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asa stands for developments, advances and innovations already at work through our customers' various mobile and stationary applications. More than 40 years experience in thermal systems, connection technology and fluid control has made us a global leader in advanced technologies. Our experience creates progress to ensure you competitive pricing, consistent product performance and reliability.



- worldwide availability
- fast reaction time
- technical support



Be different. Make a difference.

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



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# Innovation

Customize our products to your requirements.

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

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

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

- patented technology
- protecting your market
- add on values

select basic  
**module...**



**...add on  
values...**



connect



mount



control



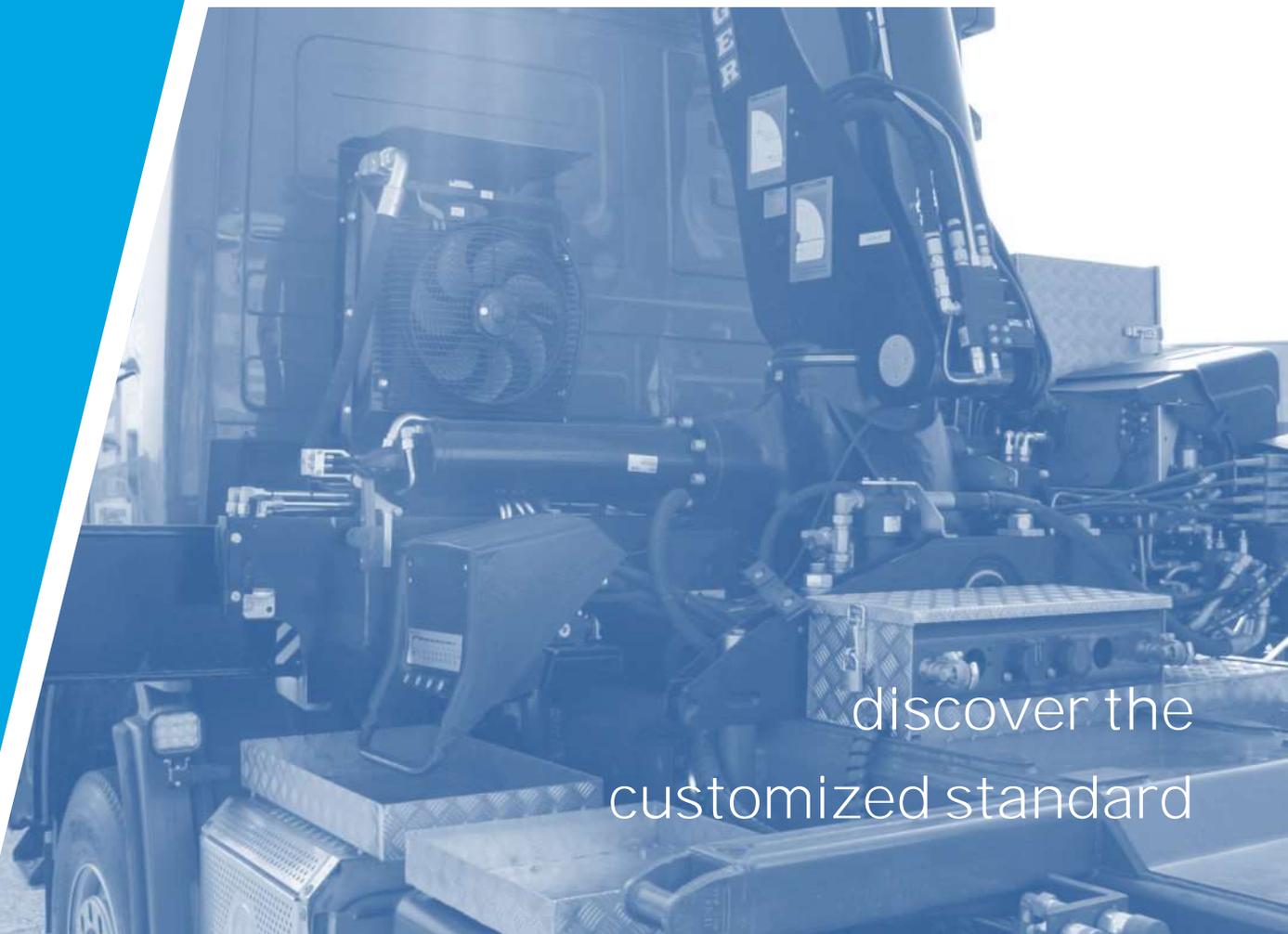
bypass



protect



integrate



discover the  
customized standard

# Thermal Systems

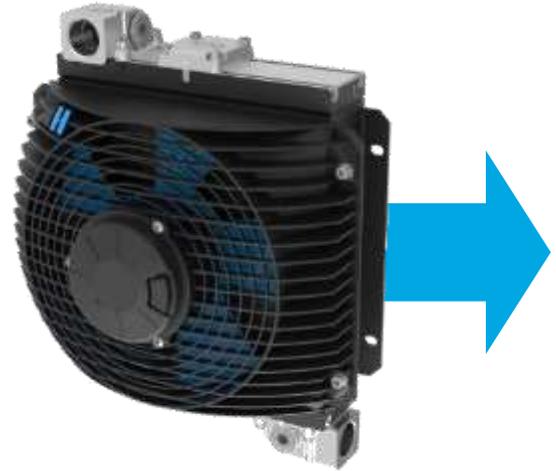
Internal bypass technology

## Standard Ranges

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

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

- 1 to 800 lpm
- high duration
- most dense cooler and option range



## H-Ranges

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

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

- real compact design
- cost saving
- one system



## Special Ranges

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

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

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



LowLine  
13HP / 100lpm  
up to 370 PSI

page 8 to 11



Style A

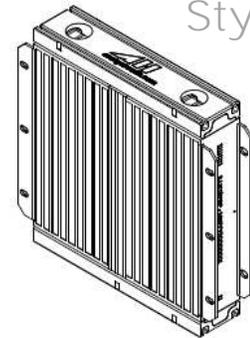


TT Rail Line  
60HP / 300lpm  
up to 370 PSI

page 12 to 19



Style B

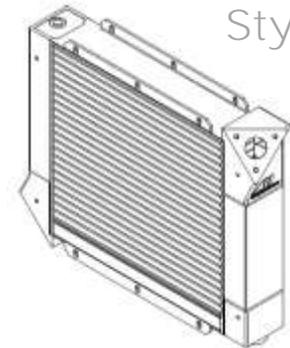


AUC Line  
215HP / 500lpm  
up to 370 PSI

page 20 to 25



Style C

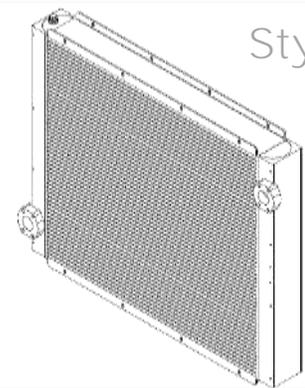


High Line  
375HP / 800lpm  
up to 232 PSI

page 26,27



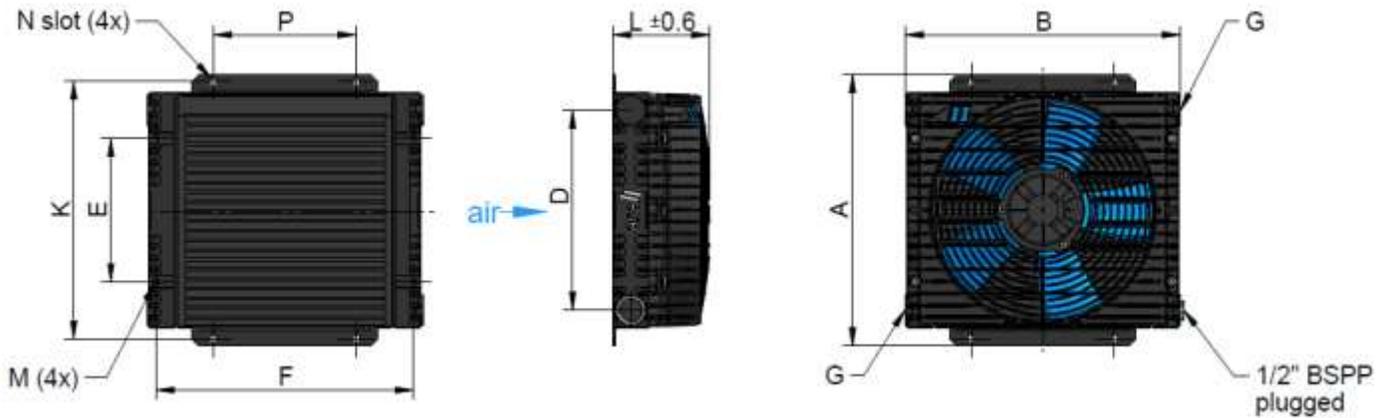
Style D



quality trough  
standardization

# LowLine O3, O6 and O8 Oil / Air Cooler

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



## Dimensions

order number	description	A	B	D	E	F	G	K	L	M	N	P
		[in]	[in]	[in]	[in]	[in]		[in]	[in]		[in]	[in]
ASA0034UD01U00	LL 03 12V DC	10.04	9.84	7.09	5.67	8.86	1 1/16" -12UN	9.45	5.28	M6	0.28x0.39	4.72
ASA0034UD02U00	LL 03 24V DC	10.04	9.84	7.09	5.67	8.86	1 1/16" -12UN	9.45	5.28	M6	0.28x0.39	4.72
ASATT06UD03U00	LL 06 12V DC	11.42	12.60	8.46	7.09	11.85	1 1/16" -12UN	10.59	5.71	M6	0.28x0.39	6.1
ASATT06UD04U00	LL 06 24V DC	11.42	12.60	8.46	7.09	11.85	1 1/16" -12UN	10.59	5.71	M6	0.28x0.39	6.1
ASA0084UD01U00	LL 08 12V DC	14.96	15.20	11.02	7.87	14.17	1 5/16" -12UN	14.17	5.35	M8	0.35x0.47	7.87
ASA0084UD02U00	LL 08 24V DC	14.96	15.20	11.02	7.87	14.17	1 5/16" -12UN	14.17	5.35	M8	0.35x0.47	7.87
ASA0084UD03U00	LL 08 12V DC HP	14.96	15.20	11.02	7.87	14.17	1 5/16" -12UN	14.17	6.18	M8	0.35x0.47	7.87
ASA0084UD04U00	LL 08 24V DC HP	14.96	15.20	11.02	7.87	14.17	1 5/16" -12UN	14.17	6.18	M8	0.35x0.47	7.87

## Technical Data

order number	description	current	power	protection	air flow	noise level	weight	optional internal bypass (30PSI)
		[HP]	[A]		[CFM]	[dB(A)]	[lbs]	cooler order number
ASA0034UD01U00	LL 03 12V DC	0.15	8.5	IP 68	430	68	9.26	ASA0034UD01BPU00
ASA0034UD02U00	LL 03 24V DC	0.15	4.2	IP 68	430	68	9.26	ASA0034UD02BPU00
ASATT06UD03U00	LL 06 12V DC	0.13	7.7	IP 68	519	74	12.3	ASATT06UD03BPU00
ASATT06UD04U00	LL 06 24V DC	0.13	3.6	IP 68	519	74	12.3	ASATT06UD04BPU00
ASA0084UD01U00	LL 08 12V DC	0.21	12.5	IP 68	913	74	18.30	ASA0084UD01BPU00
ASA0084UD02U00	LL 08 24V DC	0.28	7.9	IP 68	913	74	18.30	ASA0084UD02BPU00
ASA0084UD03U00	LL 08 12V DC HP	0.39	22.2	IP 68	1110	77	19.84	ASA0084UD03BPU00
ASA0084UD04U00	LL 08 24V DC HP	0.40	11.4	IP 68	1110	77	19.84	ASA0084UD04BPU00

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# LowLine O3, O6 and O8 Oil / Air Cooler

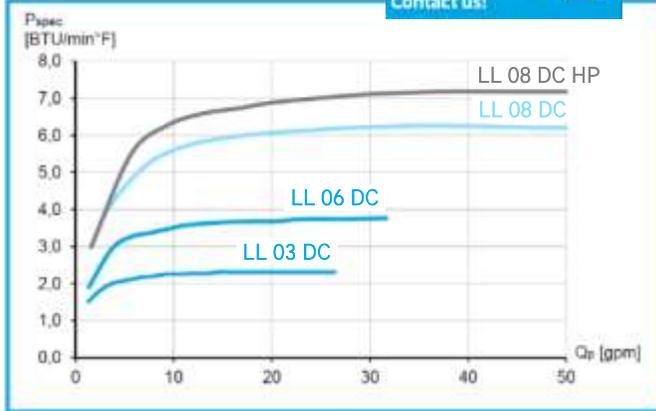
12V / 24V DC, HP (high performance) and internal bypass



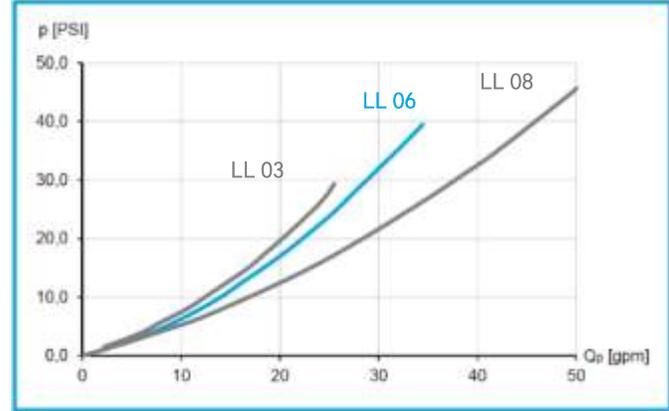
## Performance

all products  
water/glycol  
compatibel  
Contact us!

specific cooling performance



pressure drop at 150 SSU



## Radiator Style A

material:	aluminum
working temperature range:	-4°F to +212°F (oil temperature)*
air fin :	wavy
max. working pressure:	370 PSI (static)

## Options

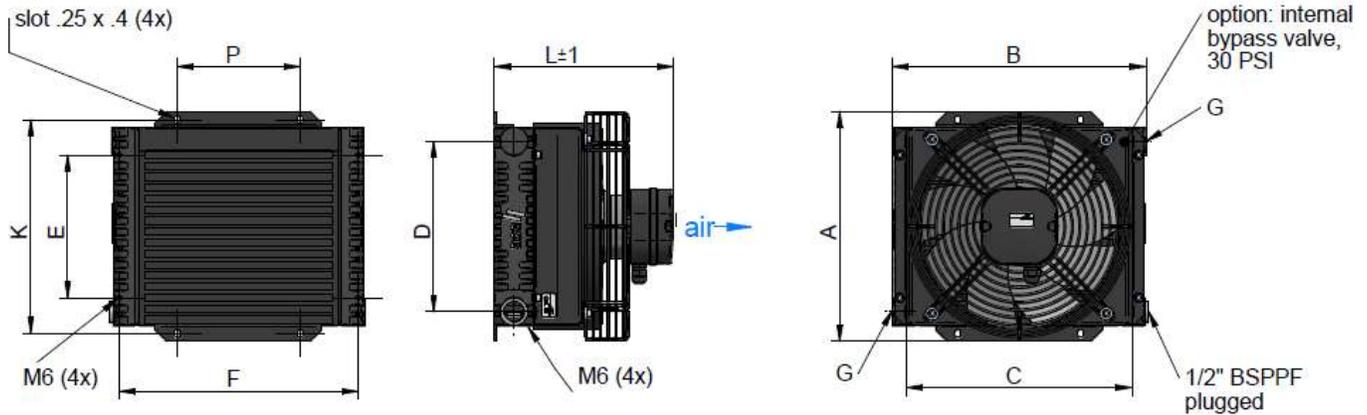
mounting feet kit	I LLEFUSST06KU00 (page 30)
temperature switches IP65	I LLZTH4765KU00, I LLZTH6065KU00 (page 35)
temperature switches IP69K	I LLZTH5069KU00, I LLZTH6069KU00, I LLZTH9069KU00 (page 35)
temperature control	I LLZTC12-2KU00, I LLZTC24-2KU00 (page 33)
protection housing	on request

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



# LowLine LL 03, 06 and 08 Oil / Air Cooler

115V 60Hz AC



## Dimensions

order number	description	A	B	C	D	E	F	G	K	L	N	P
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
ASA0034UC2UU00	LL 03 115V AC compact	10.04	9.84	8.42	7.09	5.67	8.86	1 1/16-12UN	9.45	9.69	0.25x0.4	4.72
ASATT06UC2UU00	LL 06 115V AC compact	11.42	12.72	11.18	8.46	7.09	11.85	1 1/16-12UN	10.59	8.83	0.25x0.4	6.10
ASA0084UC4UU00	LL 08 115V AC compact	14.96	15.20	13.78	11.02	7.87	14.17	1 5/16-12UN	14.17	8.90	0.35x0.47	7.87

## Technical Data

order number	description	power	current	protection	rotation	air flow	noise level	weight	optional internal bypass (30PSI)
		[HP]	[A]		[rpm]	[CFM]	[dB(A)]	[lbs]	cooler order number
ASA0034UC2UU00	LL 03 115V AC compact	0.09	0.65	IP 44	3000	327	67	15.2	ASA0034UC2UBPU00
ASATT06UC2UU00	LL 06 115V AC compact	0.12	1.00	IP 44	3200	666	67	17.4	ASATT06UC2UBPU00
ASA0084UC4UU00	LL 08 115V AC compact	0.16	0.92	IP 44	1600	829	59	24.5	ASA0084UC4UBPU00

# LowLine LL 03, 06 and 08 Oil / Air Cooler

115V 60Hz AC

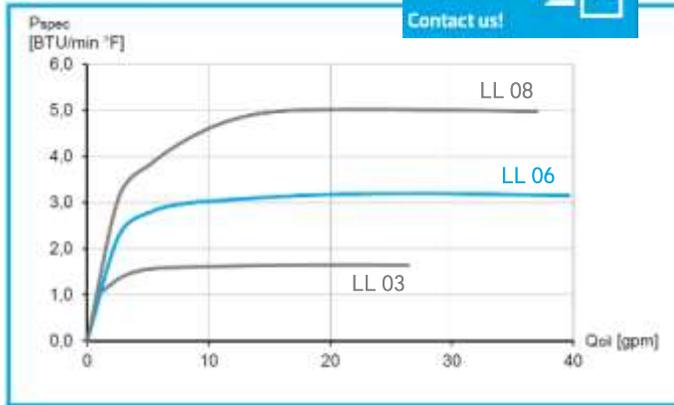


## Performance

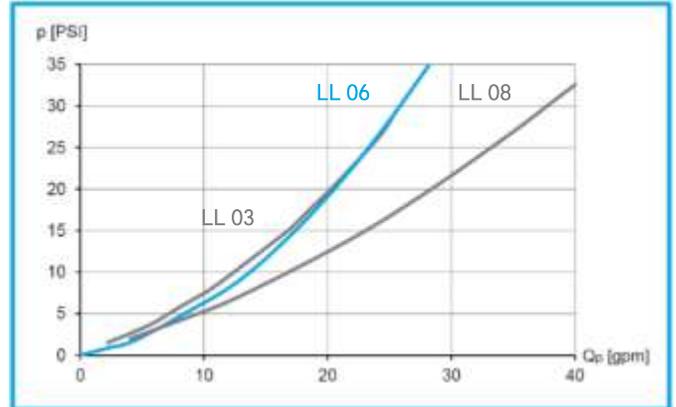
specific cooling performance

all products  
water/glycol  
compatibel

Contact us!



## pressure drop at 150 SSU



## Radiator Style A

material:	aluminum
working temperature range:	-4°C to +212°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

## Options

mounting feet kit	ILLEFUSSTT06KU00 (on request)
temperature switches IP65	ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
temperature switches IP69K	ILLZTH5069KU00, ILLZTH6069KU00, ILLZTH9069KU00 (page 35)

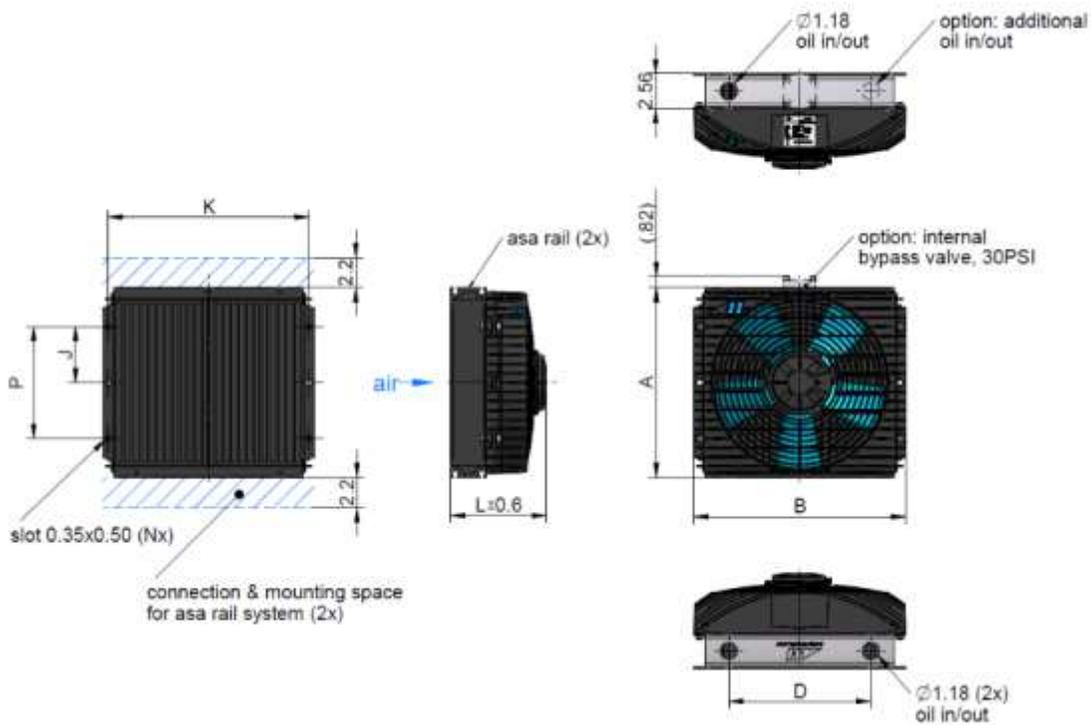
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.



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# TT Rail Series Oil / Air Cooler

12V / 24V DC , asa rail system



## Dimensions

order number	description	A	B	D	J	P	K	L	N	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[in]		[lbs]
ASATT05RD01U00	TT 05 rail 12V DC	9.25	9.65	4.65	-	5.90	8.86	5.91	4	9.48
ASATT05RD02U00	TT 05 rail 24V DC	9.25	9.65	4.65	-	5.90	8.86	5.91	4	9.48
ASATT07RD01U00	TT 07 rail 12V DC	11.81	12.60	6.93	-	6.77	11.42	6.30	4	14.33
ASATT07RD02U00	TT 07 rail 24V DC	11.81	12.60	6.93	-	6.77	11.42	6.30	4	14.33
ASATT07RD03U00	TT 07 rail 12V DC h.p.	11.81	12.60	6.93	-	6.77	11.42	6.93	4	15.43
ASATT07RD04U00	TT 07 rail 24V DC h.p.	11.81	12.60	6.93	-	6.77	11.42	6.93	4	15.43
ASATT11RD01U00	TT 11 rail 12V DC	13.39	14.96	10.04	3.94	7.87	14.17	6.89	6	20.28
ASATT11RD02U00	TT 11 rail 24V DC	13.39	14.96	10.04	3.94	7.87	14.17	6.89	6	20.28
ASATT13RD01U00	TT 13 rail 12V DC	16.54	16.14	10.04	-	9.17	15.20	7.87	4	26.46
ASATT13RD02U00	TT 13 rail 24V DC	16.54	16.14	10.04	-	9.17	15.20	7.87	4	26.46
ASATT16RD01U00	TT 16 rail 12V DC	18.31	18.11	13.11	6.02	12.05	17.17	7.48	6	32.12
ASATT16RD02U00	TT 16 rail 24V DC	18.31	18.11	13.11	6.02	12.05	17.17	7.48	6	32.12
ASATT21RD01U00	TT 21 rail 12V DC	23.82	18.19	12.91	8.21	16.42	17.17	9.57	6	32.85
ASATT21RD02U00	TT 21 rail 24V DC	23.82	18.19	12.91	8.21	16.42	17.17	9.57	6	32.85
ASATT21RD03U00	TT 21 rail 12V DC h.p.	23.82	18.19	12.91	8.21	16.42	17.17	10.28	6	44.97
ASATT21RD04U00	TT 21 rail 24V DC h.p.	23.82	18.19	12.91	8.21	16.42	17.17	10.28	6	44.97
ASATT25RD01U00	TT 25 rail 12V DC	23.82	21.85	16.57	8.21	16.42	20.87	10.47	6	50.04
ASATT25RD02U00	TT 25 rail 24V DC	23.82	21.85	16.57	8.21	16.42	20.87	10.47	6	50.04

## Radiator Style B

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

## Installation System (asa rail connectors)

connection UN 1 5/16"	ILLZSET5U16U00(1 set per cooler)
connection UN 1 5/8"	ILLZSET5U20U00(1 set per cooler)

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

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# TT Rail Series Oil / Air Cooler

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



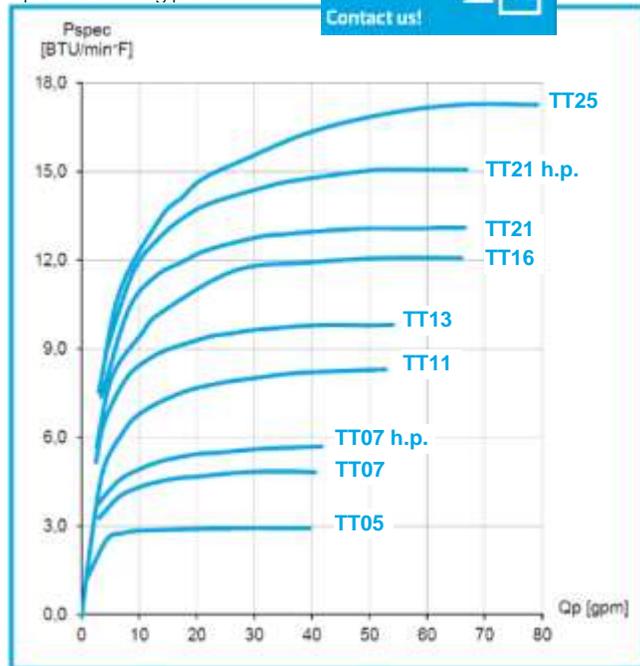
### Technical Data

order number	description	motor power	current	protection	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[A]		[CFM]	[dB(A)]	cooler order number
ASATT05RD01U00	TT 05 rail 12V DC	0.15	8.5	IP 68	340	74	on request
ASATT05RD02U00	TT 05 rail 24V DC	0.15	4.2	IP 68	340	74	on request
ASATT07RD01U00	TT 07 rail 12V DC	0.17	9.6	IP 68	573	74	ASATT07RD01BPU00
ASATT07RD02U00	TT 07 rail 24V DC	0.19	5.2	IP 68	573	74	ASATT07RD02BPU00
ASATT07RD03U00	TT 07 rail 12V DC h.p.	0.27	15.6	IP 68	716	78	ASATT07RD03BPU00
ASATT07RD04U00	TT 07 rail 24V DC h.p.	0.28	8.1	IP 68	716	78	ASATT07RD04BPU00
ASATT11RD01U00	TT 11 rail 12V DC	0.39	22.6	IP 68	1 020	77	ASATT11RD01BPU00
ASATT11RD02U00	TT 11 rail 24V DC	0.40	11.4	IP 68	1 020	77	ASATT11RD02BPU00
ASATT13RD01U00	TT 13 rail 12V DC	0.39	22.6	IP 68	1 164	77	ASATT13RD01BPU00
ASATT13RD02U00	TT 13 rail 24V DC	0.40	11.4	IP 68	1 164	77	ASATT13RD02BPU00
ASATT16RD01U00	TT 16 rail 12V DC	0.38	21.2	IP 68	1 343	79	ASATT16RD01BPU00
ASATT16RD02U00	TT 16 rail 24V DC	0.40	11.4	IP 68	1 343	79	ASATT16RD02BPU00
ASATT21RD01U00	TT 21 rail 12V DC	0.38	21.2	IP 68	1 468	78	ASATT21RD01BPU00
ASATT21RD02U00	TT 21 rail 24V DC	0.40	11.4	IP 68	1 468	78	ASATT21RD02BPU00
ASATT21RD03U00	TT 21 rail 12V DC h.p.	0.44	25.5	IP 68	1 826	81	ASATT21RD03BPU00
ASATT21RD04U00	TT 21 rail 24V DC h.p.	0.46	13.2	IP 68	1 826	81	ASATT21RD04BPU00
ASATT25RD01U00	TT 25 rail 12V DC	0.38	21.2	IP 68	1 575	78	ASATT25RD01BPU00
ASATT25RD02U00	TT 25 rail 24V DC	0.40	11.4	IP 68	1 575	78	ASATT25RD02BPU00

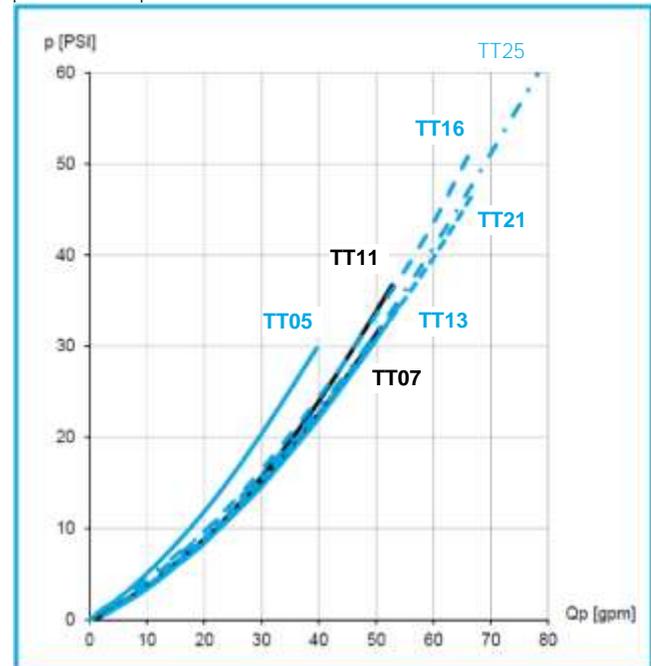
### Performance



specific cooling performance



pressure drop at 150 SSU



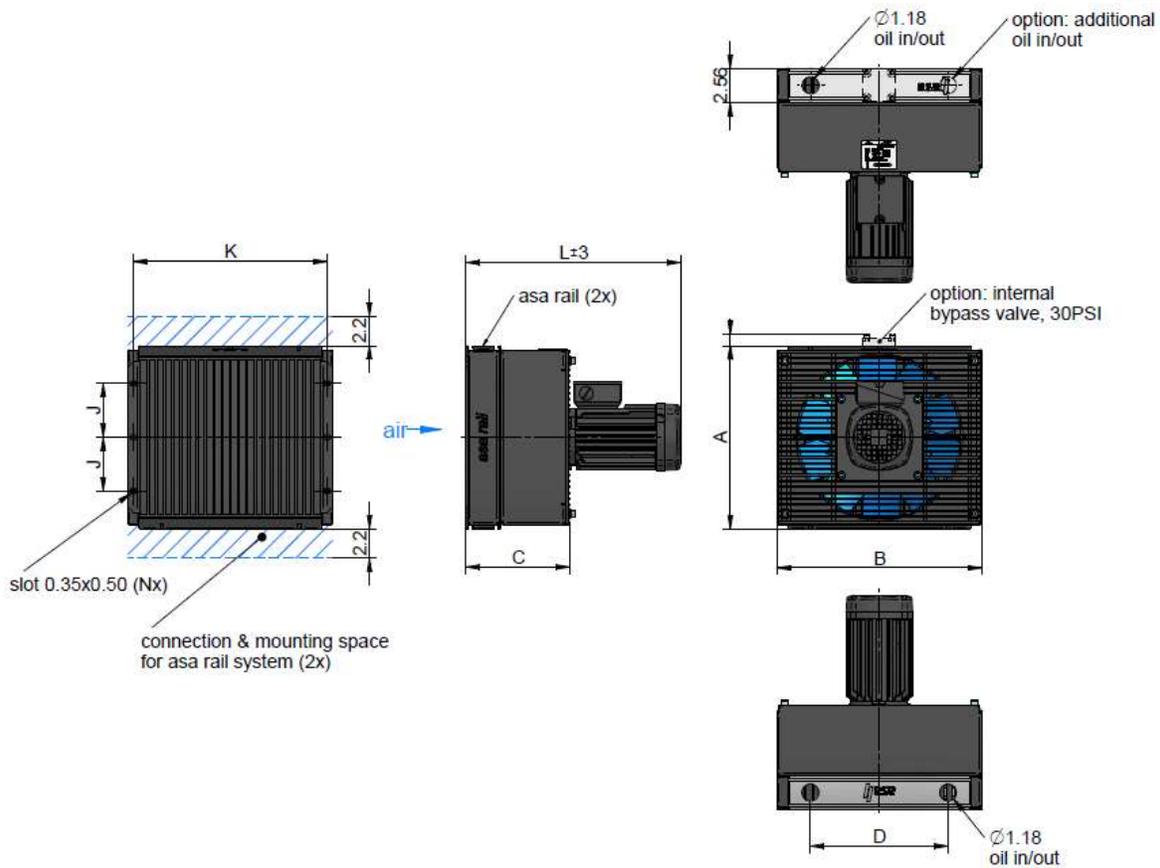
### Options

temperature control	ILLZTC12-2KU00 or 24-2KU00 + ILLZTT5069KU00 (page 33,34) Except TT21 h.p.
temperature switches	ILLZTH5069KU00, ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
protection housings	available for sizes TT 07, 11 and 16
foot mounting	ILLEFUSSTTHDKU00 (page 30)
internal bypass	alternative bypass settings (14.5 PSI / 72.5 PSI)

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# TT Rail Series Oil / Air Cooler

## 230/460V 60Hz AC



## Dimensions

order number	description	A	B	C	D	J	K	L	N	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[in]		[lbs]
ASATT07RA44U00	TT 07 rail 0.34HP AC	11.81	12.60	7.60	6.93	3.39	11.42	15.59	4	35.49
ASATT07RA25U00	TT 07 rail 0.75HP AC	11.81	12.60	7.60	6.93	3.39	11.42	15.59	4	37.48
ASATT11RA44U00	TT 11 rail 0.34HP AC	13.39	14.96	7.64	10.04	3.94	14.17	15.67	6	43.87
ASATT11RA27U00	TT 11 rail 1.50HP AC	13.39	14.96	7.64	10.04	3.94	14.17	15.67	6	46.08
ASATT16RA64U00	TT 16 rail 0.25HP AC	18.31	18.19	8.62	12.91	6.02	17.17	16.30	6	61.95
ASATT16RA45U00	TT 16 rail 0.50HP AC	18.31	18.19	8.62	12.91	6.02	17.17	16.30	6	60.41
ASATT16RA27U00	TT 16 rail 1.50HP AC	18.31	18.19	8.62	12.91	6.02	17.17	16.30	6	60.63
ASATT21RA66U00	TT 21 rail 0.50HP AC	23.82	21.97	8.62	12.91	8.21	17.17	17.32	6	89.95
ASATT21RA46U00	TT 21 rail 0.75HP AC	23.82	21.97	8.62	12.91	8.21	17.17	17.32	6	93.92
ASATT25RA66U00	TT 25 rail 0.50HP AC	23.82	21.97	8.62	16.61	8.21	20.87	17.32	6	90.83
ASATT25RA46U00	TT 25 rail 0.75HP AC	23.82	21.97	8.62	16.61	8.21	20.87	17.32	6	94.80
ASATT36RA66U00	TT 36 rail 0.50HP AC	23.82	28.98	9.41	23.46	8.21	28.00	17.93	6	89.7
ASATT36RA48U00	TT 36 rail 1.50HP AC	23.82	28.98	9.41	23.46	8.21	28.00	21.00	6	97.7
ASATT36RA4BU00	TT 36 rail 4.00HP AC	23.82	28.98	9.41	23.46	8.21	28.00	20.77	6	127.7

## Radiator Style B

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

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

## Installation System(asa rail connector)

connection UN 1 5/16"	ILLZSET5U16U00 (1 set per cooler)
connection UN 1 5/8"	ILLZSET5U20U00 (1 set per cooler)

# TT Rail Series Oil / Air Cooler

## 230/460V 60Hz AC

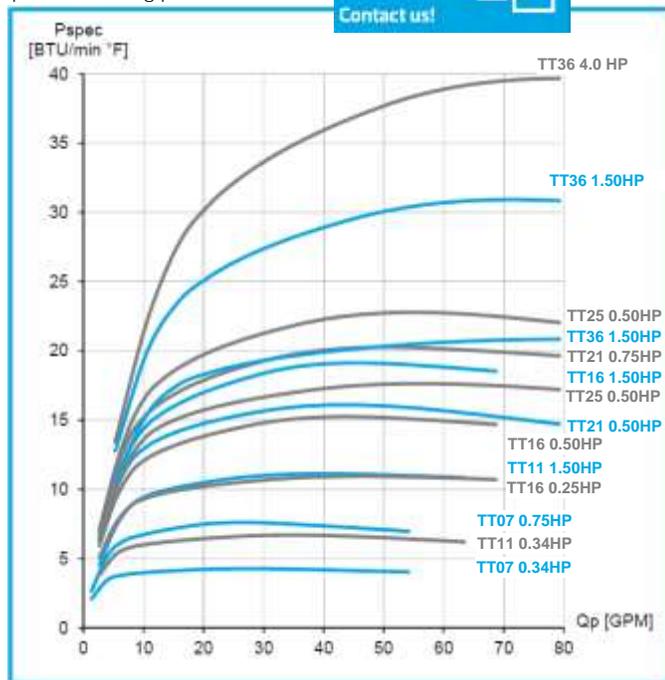


### Technical Data

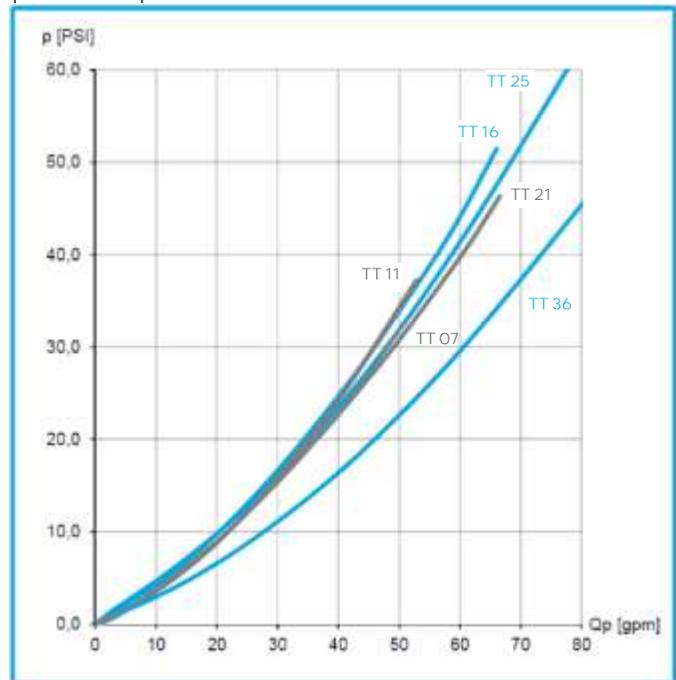
order number	description	motor power	current	protection level	rotation	air flow	noise level	optional internal bypass (30 PSI)
		[HP]	[A]		[rpm]	[CFM]	[db(A)]	cooler order number
ASATT07RA44U00	TT 07 rail 0.34HP AC	0.34	0.7	IP 55	1655	629	74	ASATT07RA44BPU00
ASATT07RA25U00	TT 07 rail 0.75HP AC	0.75	1.2	IP 55	3370	1320	89	ASATT07RA25BPU00
ASATT11RA44U00	TT 11 rail 0.34HP AC	0.34	0.7	IP 55	1655	1037	73	ASATT11RA44BPU00
ASATT11RA27U00	TT 11 rail 1.50HP AC	1.50	4.0	IP 55	3450	2202	89	ASATT11RA27BPU00
ASATT16RA64U00	TT 16 rail 0.25HP AC	0.25	0.6	IP 55	1120	1631	68	ASATT16RA64BPU00
ASATT16RA45U00	TT 16 rail 0.50HP AC	0.50	1.0	IP 55	1655	2450	77	ASATT16RA45BPU00
ASATT16RA27U00	TT 16 rail 1.50HP AC	1.50	4.0	IP 55	3450	3382	94	ASATT16RA27BPU00
ASATT21RA66U00	TT 21 rail 0.50HP AC	0.50	1.1	IP 55	1105	2576	71	ASATT21RA66BPU00
ASATT21RA46U00	TT 21 rail 0.75HP AC	0.75	1.4	IP 55	1680	3455	83	ASATT21RA46BPU00
ASATT25RA66U00	TT 25 rail 0.50HP AC	0.50	1.1	IP 55	1105	2782	71	ASATT25RA66BPU00
ASATT25RA46U00	TT 25 rail 0.75HP AC	0.75	1.4	IP 55	1680	3786	83	ASATT25RA46BPU00
ASATT36RA66U00	TT 36 rail 0.50HP AC	0.50	1.1	IP 55	1105	3097	77	ASATT36RA66BPU00
ASATT36RA48U00	TT 36 rail 1.50HP AC	1.50	2.1	IP 55	1720	4853	86	ASATT36RA48BPU00
ASATT36RA4BU00	TT 36 rail 4.00HP AC	4.00	5.5	IP 55	1730	7024	83	ASATT36RA4BBPU00

### Performance

specific cooling performance



### pressure drop at 150 SSU



### Options

motor data	alternative voltages, frequencies, IP classes, etc on request
temperature control	ILLZTACKU00 (page 36)
temperature switches	ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
rail mounting bracket	MW3046KU00
foot mounting options	ILLEFUSSTTKU00, ILLEFUSSTTHDKU00 (page 30)
internal bypass	alternative bypass settings (14.5 PSI / 72.5 PSI)

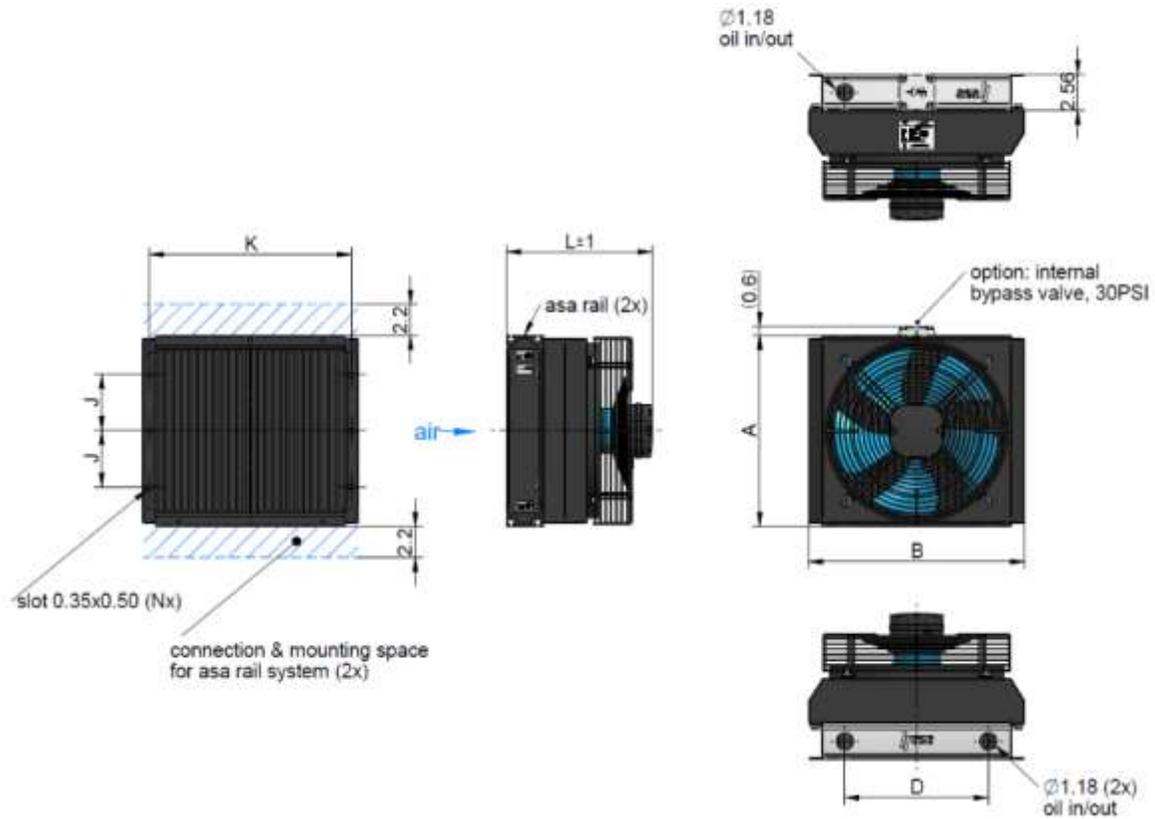
### Rail Filter



Contact us for further information

# TT Rail Series COMPACT Oil / Air Cooler

## 115V 60Hz AC



## Dimensions

order number	description	A	B	D	J	K	L	N	weight
		[in]	[in]	[in]	[in]	[in]	[in]		[lbs]
ASATT05RC2U00	TT 05 rail 115V/60Hz/2-pole compact	9.25	9.84	4.65	2.95	8.86	10.24	4	15.43
ASATT07RC2U00	TT 07 rail 115V/60Hz/2-pole compact	11.81	12.80	6.93	3.39	11.42	10.24	4	19.84
ASATT11RC4U00	TT 11 rail 115V/60Hz/4-pole compact	13.39	15.16	10.08	3.94	14.17	10.24	6	26.01
ASATT13RC4U00	TT 13 rail 115V/60Hz/4-pole compact	16.54	16.14	10.04	9.17	15.20	10.24	4	32.85
ASATT16RC4U00	TT 16 rail 115V/60Hz/4-pole compact	18.31	18.31	12.91	6.02	17.17	11.02	6	43.21

## Technical Data

order number	description	motor power	current	protection	rotation	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[A]		[rpm]	[CFM]	[db(A)]	cooler order number
ASATT05RC2U00	TT 05 rail 115V/60Hz/2-pole compact	0,09	0,65	IP 44	3000	326	67	ASATT05RC2BPU00
ASATT07RC2U00	TT 07 rail 115V/60Hz/2-pole compact	0,12	1,00	IP 44	3200	643	67	ASATT07RC2BPU00
ASATT11RC4U00	TT 11 rail 115V/60Hz/4-pole compact	0,16	0,92	IP 44	1600	927	59	ASATT11RC4BPU00
ASATT13RC4U00	TT 13 rail 115V/60Hz/4-pole compact	0,25	1,65	IP 44	1650	1294	64	ASATT13RC4BPU00
ASATT16RC4U00	TT 16 rail 115V/60Hz/4-pole compact	0,39	2,60	IP 54	1500	1542	66	ASATT16RC4BPU00

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# TT Rail Series COMPACT Oil / Air Cooler

## 115V 60Hz AC

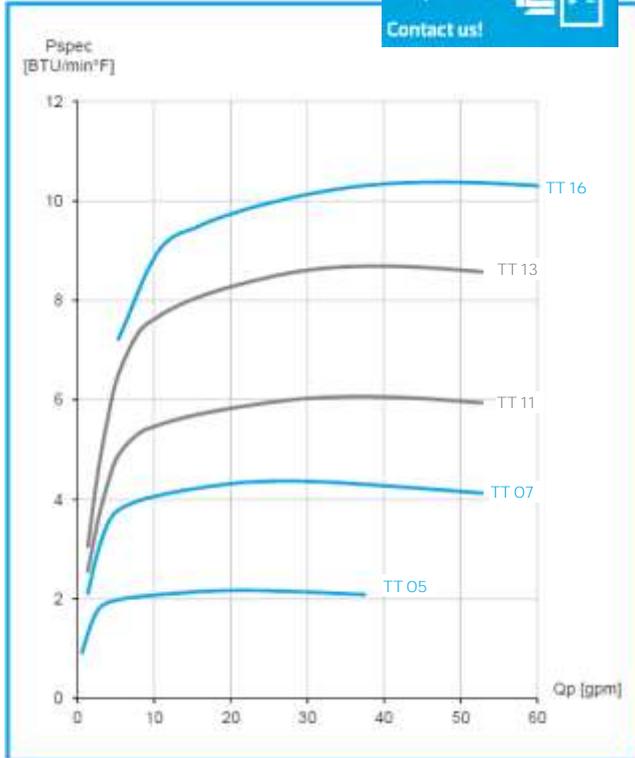


### Performance

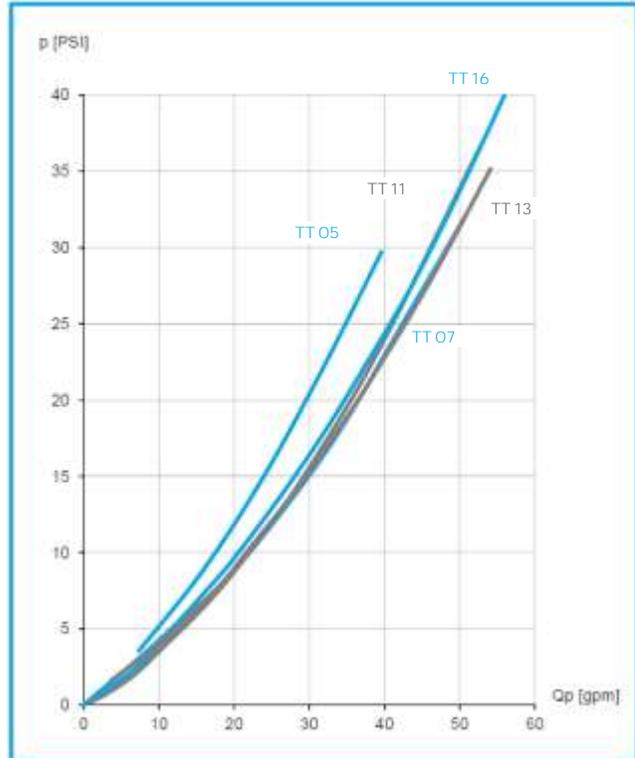
specific cooling performance

all products  
water/glycol  
compatible

Contact us!



### pressure drop at 150 SSU



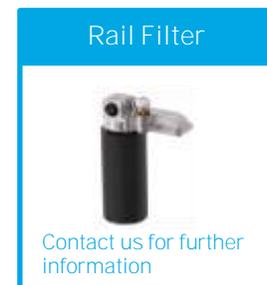
### Radiator Style B

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

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

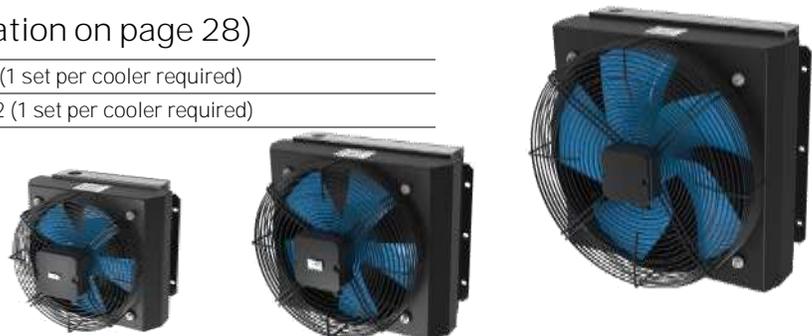
### Options

230V, 50Hz	on request
230/460V 60Hz 3-phase	on request
temperature control	ILLZTACKU00 (page 36)
temperature switches	ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
rail mounting bracket	MW3046KU00
foot mounting options	ILLEFUSSTTKU00, ILLEFUSSTTHDKU00 (page 30)
internal bypass	alternative bypass settings (14.5 PSI / 72.5 PSI)



### Installation System (see more information on page 28)

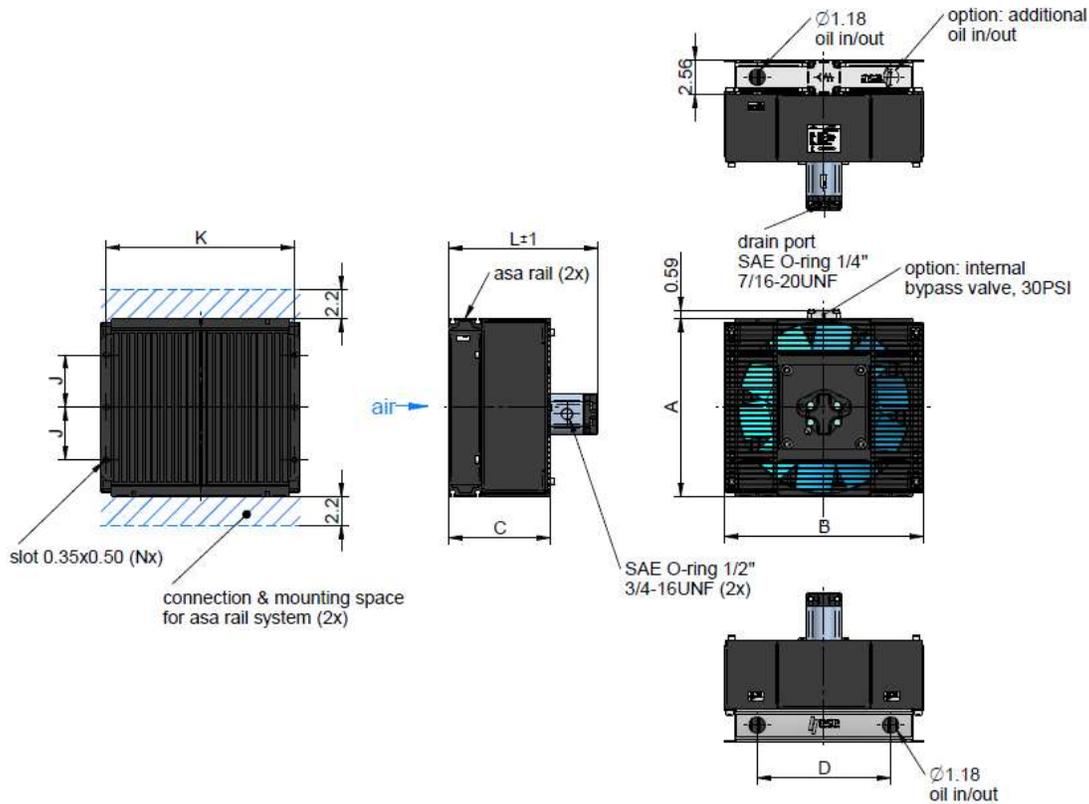
connection UN 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UN 1 5/8"	ILLZSET5U202 (1 set per cooler required)



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# TT Rail Series Oil / Air Cooler

with 0.73in<sup>3</sup> and 0.67 in<sup>3</sup> hydraulic drive



## Dimensions

order number	description	A	B	C	D	J	K	L	N	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[in]		[lbs]
ASATT11RH12U00	TT 11 rail 0.73 in <sup>3</sup> hydr.motor	13.39	14.96	7.64	10.04	3.94	14.17	10.87	6	37.48
ASATT16RH12U00	TT 16 rail 0.73 in <sup>3</sup> hydr.motor	18.31	18.19	8.62	12.91	6.02	17.17	11.50	6	54.01
ASATT21RH12U00	TT 21 rail 0.73 in <sup>3</sup> hydr.motor	23.82	21.97	8.62	12.91	8.21	17.17	11.50	6	69.40
ASATT25RH12U00	TT 25 rail 0.73 in <sup>3</sup> hydr.motor	23.82	21.97	8.62	16.61	8.21	20.87	11.50	6	71.65
ASATT36RH11U00	TT 36 rail 0.67 in <sup>3</sup> hydr.motor	23.82	28.98	9.41	23.46	8.21	28.00	14.45	6	96.30

## Technical Data

order number	description	motor power	oil pressure	oil flow	rotation	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[PSI]	[gpm]	[rpm]	[CFM]	[dB(A)]	cooler order number
ASATT11RH12U00	TT 11 rail 0.73 in <sup>3</sup> hydr.motor	0.03	17	3.3	1000	625	62	ASATT11RH12BPU00
		0.23	66	6.7	2000	1259	77	
		0.78	149	10.0	3000	1913	86	
ASATT16RH12U00	TT 16 rail 0.73 in <sup>3</sup> hydr.motor	0.11	63	3.3	1000	1448	66	ASATT16RH12BPU00
		0.87	249	6.7	2000	2998	81	
		2.93	560	10.0	3000	4527	90	
ASATT21RH12U00	TT 21 rail 0.73 in <sup>3</sup> hydr.motor	0.20	115	3.3	1000	2325	69	ASATT21RH12BPU00
		1.59	455	6.7	2000	4799	84	
		5.37	1025	10.0	3000	7213	93	
ASATT25RH12U00	TT 25 rail 0.73 in <sup>3</sup> hydr.motor	0.19	109	3.3	1000	2510	69	ASATT25RH12BPU00
		1.55	444	6.7	2000	5145	84	
		5.25	1003	10.0	3000	7752	93	
ASATT36RH11U00	TT 36 rail 0.67 in <sup>3</sup> hydr.motor	0.50	312	3.1	1000	4099	71	ASATT36RH11BPU00
		1.71	712	4.6	1500	6249	86	
		4.06	1267	6.1	2000	8416	95	

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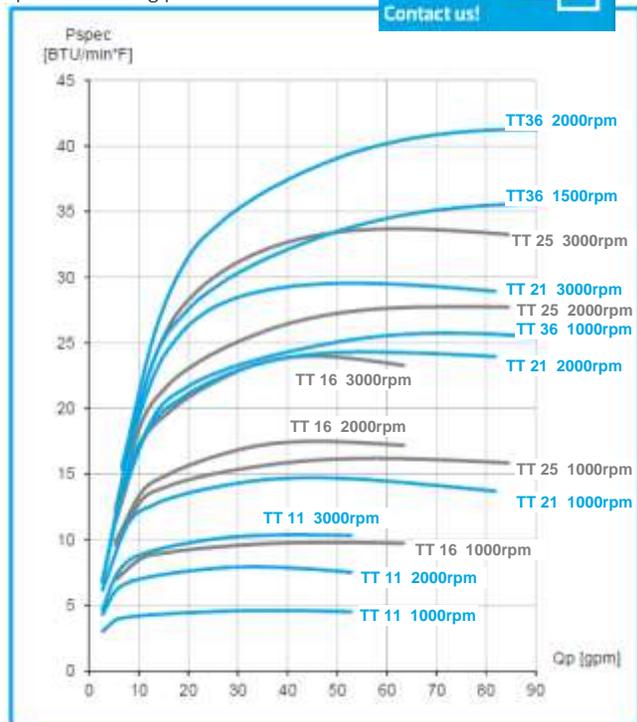
# TT Rail Series Oil / Air Cooler

with 0.73in<sup>3</sup> and 0.67 in<sup>3</sup> hydraulic drive

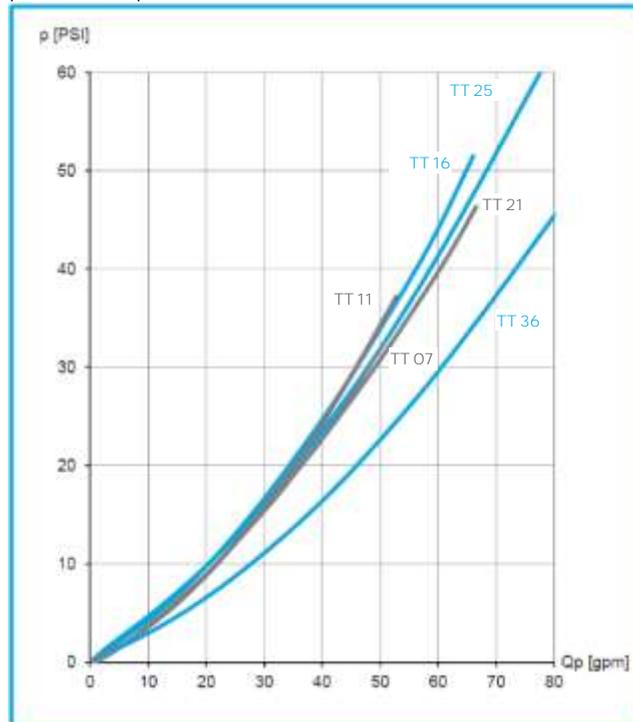
## Performance

specific cooling performance

all products  
water/glycol  
compatibel  
Contact us!



pressure drop at 150 SSU



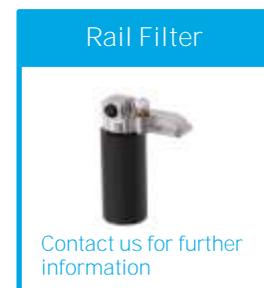
## Radiator Style B

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

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

## Options

hydraulic motor	alternative displacements on request
temperature switches	ILLZTH5069KU00, ILLZTH6069KU00, ILLZTH9069KU00
rail mounting bracket	MW3046KU00
foot mounting options	ILLEFUSSTTK, ILLEFUSSTTHDKU00 (page 30)
internal bypass	alternative bypass settings (14.5 PSI / 72.5 PSI)



## Installation System (see more information on page 28)

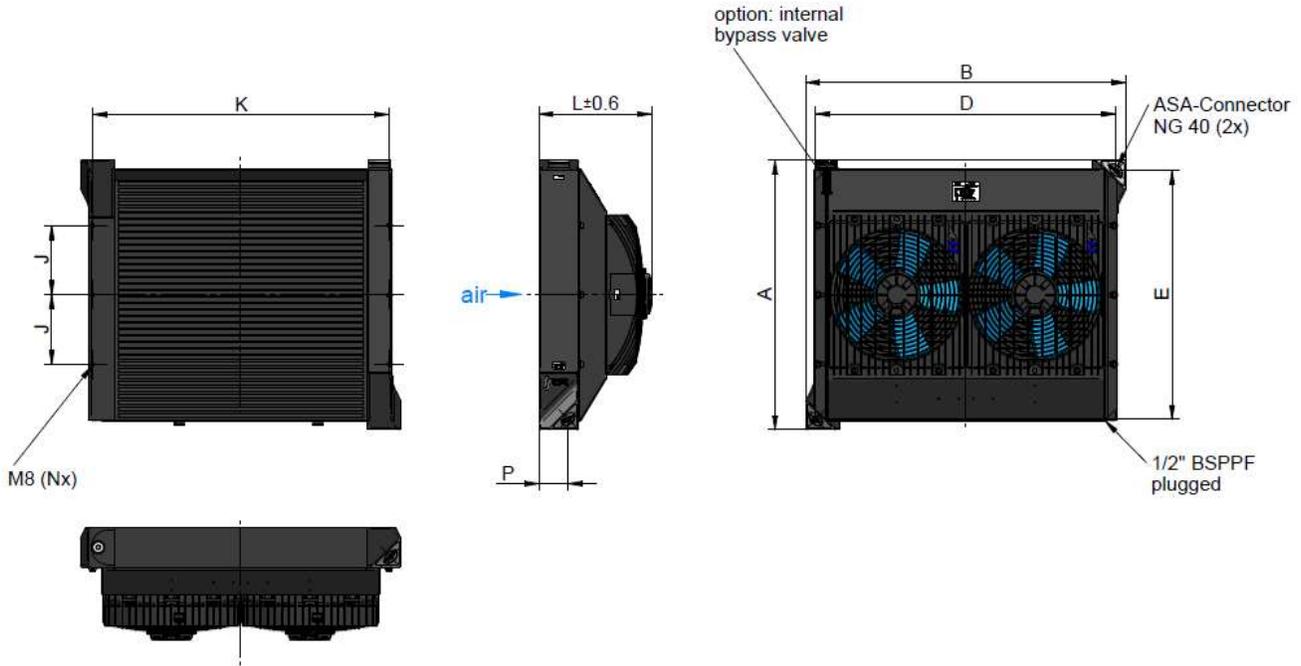
connection UN 1 5/16"	ILLZSET5U16 (1 set per cooler required)
connection UN 1 5/8"	ILLZSET5U20 (1 set per cooler required)



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# ASA Series Oil / Air Cooler

## 12V / 24V DC



### Dimensions

order number	description	A	B	D	J	K	L	N	P	weight
		[in]	[in]	[in]	[in]	[in]	[in]		[in]	[lbs]
ASA0177AD01U00	ASA 0177 12V DC	18.35	22.91	21.06	6.02	20.47	8.98	4	2.68	54.01
ASA0177AD02U00	ASA 0177 24V DC	18.35	22.91	21.06	6.02	20.47	8.98	4	2.68	54.01
ASA0257AD03U00	ASA 0257 12V DC h.p.	21.85	27.17	25.00	8.21	24.41	10.20	6	2.68	79.81
ASA0257AD04U00	ASA 0257 24V DC h.p.	21.85	27.17	25.00	8.21	24.41	10.20	6	2.68	79.81
ASA0367AD01U00	ASA 0367 12V DC	25.28	30.00	28.11	6.50	27.72	10.55	6	2.68	91.93
ASA0367AD02U00	ASA 0367 24V DC	25.28	30.00	28.11	6.50	27.72	10.55	6	2.68	91.93

### Technical Data

order number	description	motor power	current	protection level	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[A]		[CFM]	[db(A)]	cooler order number
ASA0177AD01U00	ASA 0177 12V DC	0.28*	21.2*	IP 68	1110	79	ASA0177AD01BPU00
ASA0177AD02U00	ASA 0177 24V DC	0.40*	11.4*	IP 68	1110	79	ASA0177AD02BPU00
ASA0257AD03U00	ASA 0257 12V DC	2x0.39	2x22.6	IP 68	2148	83	ASA0257AD03BPU00
ASA0257AD04U00	ASA 0257 24V DC	2x0.40	2x11.4	IP 68	2148	83	ASA0257AD04BPU00
ASA0367AD01U00	ASA 0367 12V DC	2x0.39	2x22.6	IP 68	2059	84	ASA0367AD01BPU00
ASA0367AD02U00	ASA 0367 24V DC	2x0.40	2x11.4	IP 68	2059	84	ASA0367AD02BPU00

\*...single fan

# ASA Series Oil / Air Cooler

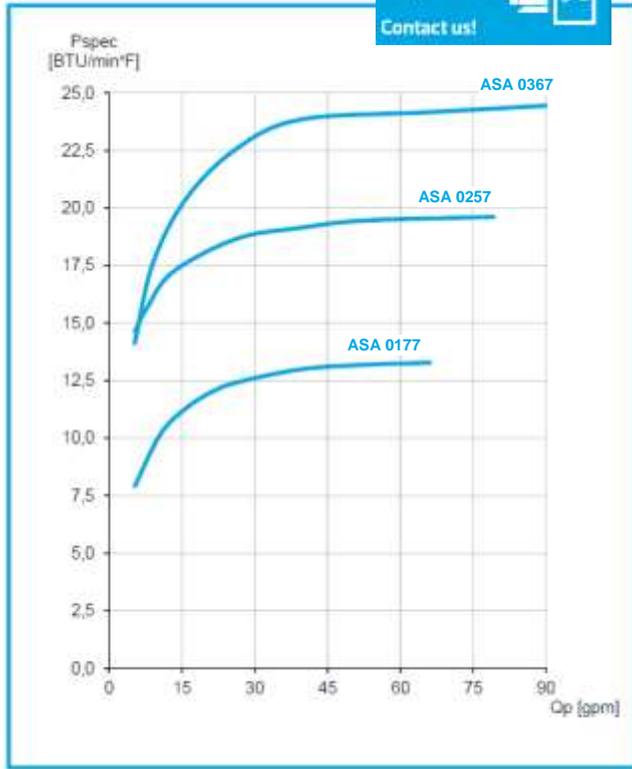
## 12V / 24V DC



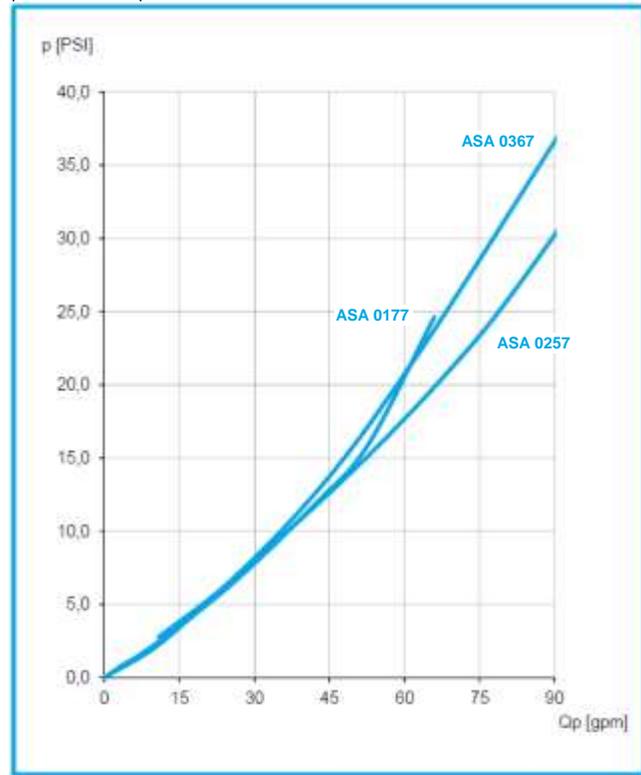
Performance  
specific cooling performance

all products  
water/glycol  
compatibel

Contact us!



pressure drop at 150 SSU



## Radiator Style C

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

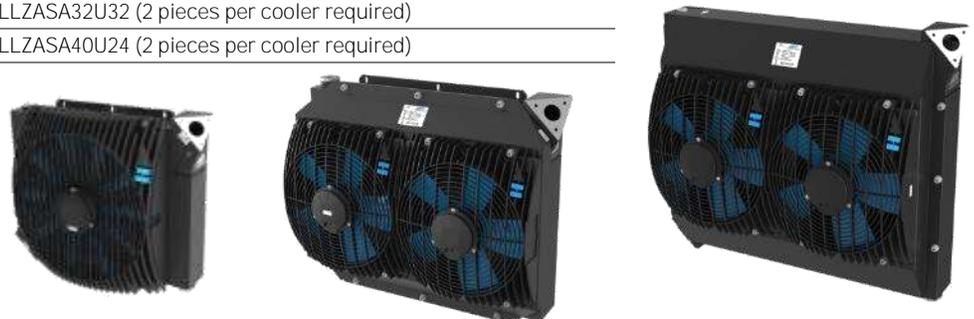
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.

## Options

temperature control	ILLZTC12-2KU00or 24-2KU00 + ILLZTT5069KU00 (page 30,34)
temperature switches	ILLZTH5069KU00, ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
Intermediate plate NG40	ILLZASA40-40G12U00 (page 29)
internal bypass	alternative bypass settings (7 PSI / 50 PSI)

## Installation System (see more information on page 29)

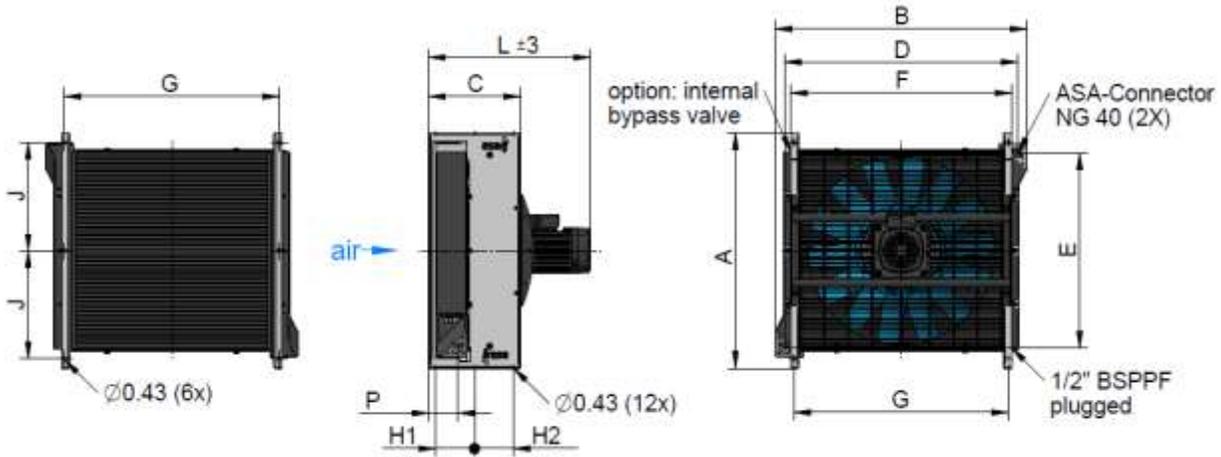
connection UN 1 5/8"	ILLZASA32U32 (2 pieces per cooler required)
connection UN 1 7/8"	ILLZASA40U24 (2 pieces per cooler required)



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# ASA Series Oil / Air Cooler

## 230/460 60Hz AC



### Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	L	P	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[lbs]						
ASA0177AA64U00	ASA 0177 0.25HP AC	20.87	22.91	10.24	21.02	16.38	18.19	17.40	4.72	3.54	19.29	19.1	3.50	86.60
ASA0177AA45U00	ASA 0177 0.50HP AC	20.87	22.91	10.24	21.02	16.38	18.19	17.40	4.72	3.54	19.29	19.1	3.50	85.30
ASA0257AA66U00	ASA 0257 0.50HP AC	25.00	26.85	10.63	24.96	19.72	22.13	21.34	4.33	4.33	11.02	20.5	3.66	107.14
ASA0257AA46U00	ASA 0257 0.75HP AC	25.00	26.85	10.63	24.96	19.72	22.13	21.34	4.33	4.33	11.02	20.5	3.66	106.48
ASA0257AA47U00	ASA 0257 1.02HPAC	25.00	26.85	10.63	24.96	19.72	22.13	21.34	4.33	4.33	11.02	20.5	3.66	106.48
ASA0367AA66U00	ASA 0367 0.50HP AC	28.35	30.00	11.02	28.15	23.46	26.61	25.83	4.72	4.72	12.99	21	3.62	138.60
ASA0367AA46U00	ASA 0367 0.75HP AC	28.35	30.00	11.02	28.15	23.46	26.61	25.83	4.72	4.72	12.99	21	3.62	130.90
ASA0367AA48U00	ASA 0367 1.50HP AC	30.91	30.00	11.02	28.15	23.46	26.61	25.83	4.72	4.72	12.99	21	3.62	141.02
ASA0467AA66U00	ASA 0467 0.50HP AC	30.91	32.95	11.42	31.06	26.30	29.84	29.06	4.92	4.92	14.76	21.7	3.70	175.78
ASA0467AA48U00	ASA 0467 1.50HP AC	30.91	32.95	11.42	31.06	26.30	29.84	29.06	4.92	4.92	14.76	21.7	3.70	189.70
ASA0467AA4BU00	ASA 0467 4.00HP AC	30.91	32.95	11.42	31.06	26.30	29.84	29.06	4.92	4.92	14.76	25	3.70	236.30
ASA0567AA66U00	ASA 0567 0.50HP AC	33.86	36.22	11.42	34.06	29.37	32.52	31.73	4.92	4.92	15.75	21.4	3.62	174.90
ASA0567AA48U00	ASA 0567 1.50HP AC	33.86	36.22	11.42	34.06	29.37	32.52	31.73	4.92	4.92	15.75	21.4	3.62	177.32
ASA0567AA4BU00	ASA 0567 4.00HP AC	33.86	36.22	11.42	34.06	29.37	32.52	31.73	4.92	4.92	15.75	24.7	3.62	203.06
ASA0727AA6AU00	ASA 0727 3.00HP AC	37.80	39.84	14.17	37.95	33.54	36.85	35.91	6.30	6.30	18.11	25.2	3.74	296.12
ASA0727AA4BU00	ASA 0727 4.00HP AC	37.80	39.84	14.17	37.95	33.54	36.85	35.91	6.30	6.30	18.11	25.2	3.74	289.30
ASA0927AA6CU00	ASA 0927 3.00HP AC	43.31	46.06	12.60	43.90	35.91	41.65	40.59	5.12	5.12	20.57	26.1	3.43	309.10
ASA0927AA6EU00	ASA 0927 5.50HP AC	43.31	46.06	12.60	43.90	35.91	41.65	40.59	5.12	5.12	20.57	28.6	3.43	392.92

### Technical Data

order number	description	motor power	current	protection level	rotation	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[A]		[rpm]	[CFM]	[db(A)]	cooler order number
ASA0177AA64U00	ASA 0177 0.25HP AC	0.25	0.6	IP 55	1120	1164	71	ASA0177AA64BPU00
ASA0177AA45U00	ASA 0177 0.50HP AC	0.50	1.0	IP 55	1655	1760	79	ASA0177AA45BPU00
ASA0257AA66U00	ASA 0257 0.50HP AC	0.50	1.1	IP 55	1105	1896	72	ASA0257AA66BPU00
ASA0257AA46U00	ASA 0257 0.75HP AC	0.75	1.4	IP 55	1680	2976	81	ASA0257AA46BPU00
ASA0367AA66U00	ASA 0367 0.50HP AC	0.50	1.1	IP 55	1105	2866	80	ASA0367AA66BPU00
ASA0367AA46U00	ASA 0367 0.75HP AC	0.75	1.4	IP 55	1680	3537	88	ASA0367AA46BPU00
ASA0367AA48U00	ASA 0367 1.50HP AC	1.50	2.1	IP 55	1720	4544	89	ASA0367AA48BPU00
ASA0467AA66U00	ASA 0467 0.50HP AC	0.50	1.1	IP 55	1105	3294	80	ASA0467AA66BPU00
ASA0467AA48U00	ASA 0467 1.50HP AC	1.50	2.1	IP 55	1720	5441	90	ASA0467AA48BPU00
ASA0467AA4BU00	ASA 0467 4.00HP AC	4.00	5.5	IP 55	1730	7972	93	ASA0467AA4BBPU00
ASA0567AA66U00	ASA 0567 0.50HP AC	0.50	1.1	IP 55	1105	3559	80	ASA0567AA66BPU00
ASA0567AA48U00	ASA 0567 1.50HP AC	1.50	2.1	IP 55	1720	5937	90	ASA0567AA48BPU00
ASA0567AA4BU00	ASA 0567 4.00HP AC	4.00	5.5	IP 55	1730	9093	93	ASA0567AA4BBPU00
ASA0727AA6AU00	ASA 0727 3.00HP AC	3.00	3.80	IP 55	1130	9241	84	ASA0727AA6ABPU00
ASA0727AA4BU00	ASA 0727 4.00HP AC	4.00	5.50	IP 55	1730	10968	97	ASA0727AA4BBPU00
ASA0927AA6CU00	ASA 0927 3.00HP AC	3.00	3.8	IP 55	1130	11971	93	on request
ASA0927AA6EU00	ASA 0927 5.50HP AC	5.50	6.60	IP 55	1175	15032	93	on request

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# ASA Series Oil / Air Cooler

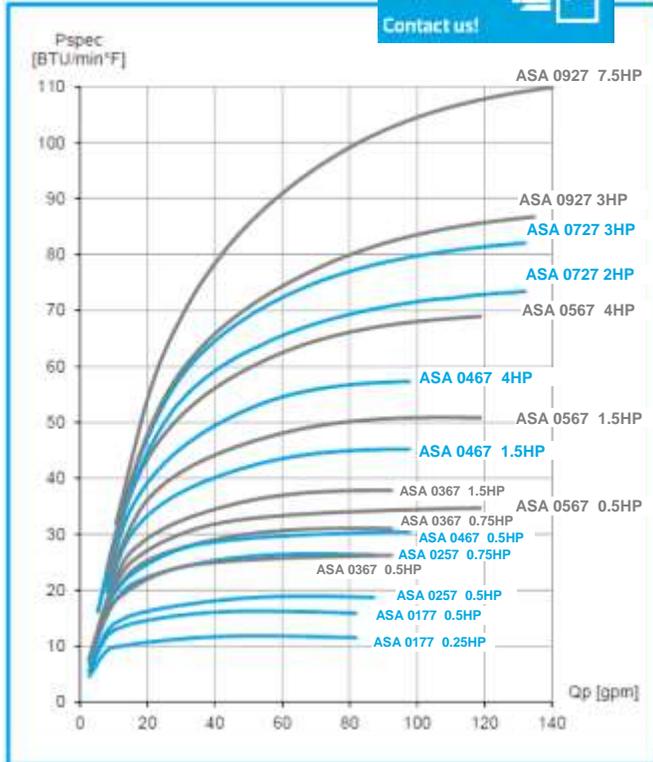
## 230/460 60Hz AC



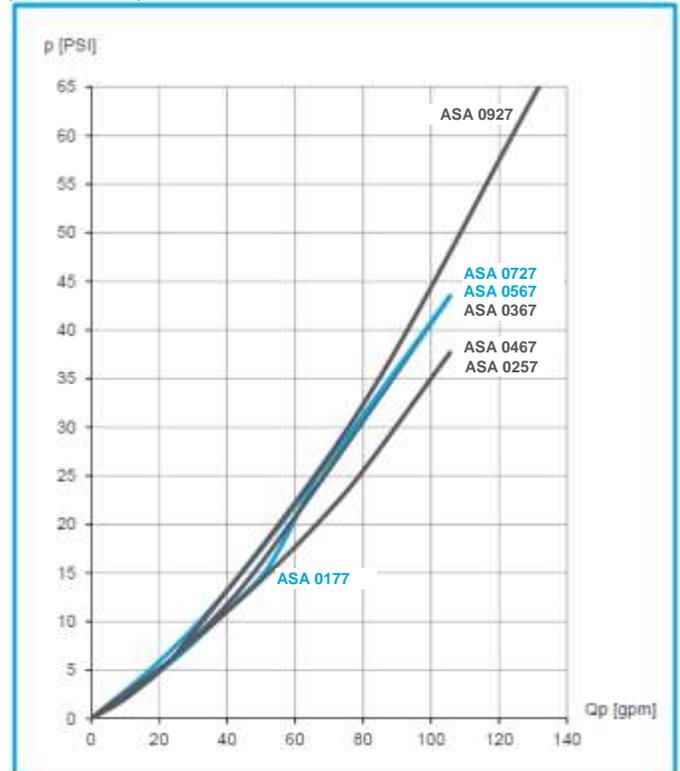
### Performance

specific cooling performance

all products  
water/glycol  
compatible  
Contact us!



pressure drop at 150 SSU



### Radiator Style C

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

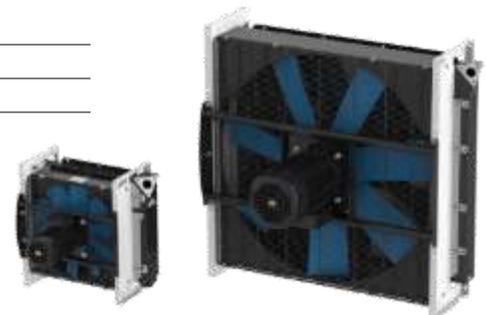
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.

### Options

motor data	alternative voltages, frequencies, IP classes, etc on request
temperature switch	ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
tread plate & radiator guard	see page 31
internal bypass	alternative bypass settings (7 PSI / 50 PSI)
Intermediate plate NG40	ILLZASA40-40G12 (page 29)

### Installation System (see more information on page 29)

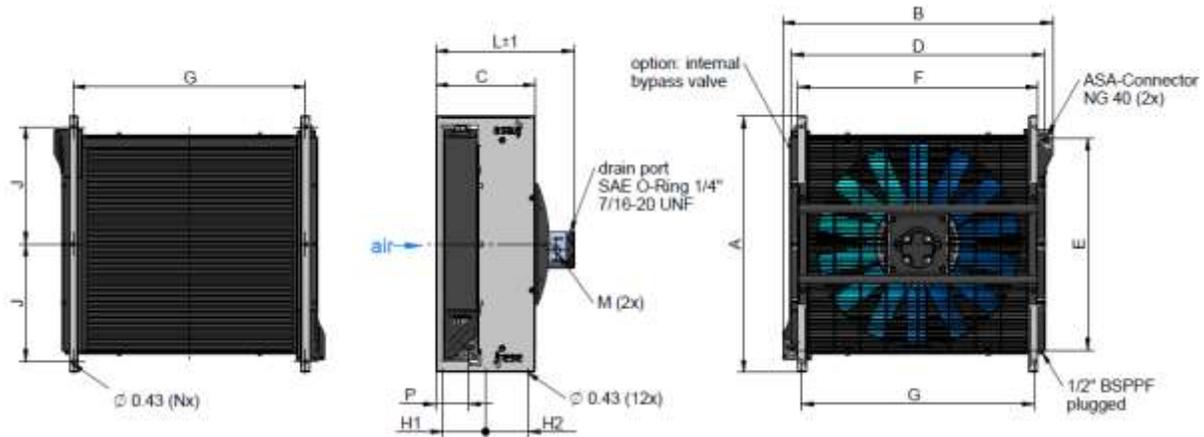
connection NG 32-UN 1 5/8"	ILLZASA32U20 (2 pieces per cooler required)
connection NG 40-UN 1 7/8"	ILLZASA40U24 (2 pieces per cooler required)



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# ASA Series Oil / Air Cooler

with 0.73in<sup>3</sup> and 0.67 in<sup>3</sup> hydraulic drive



## Dimensions

order number	description	A	B	C	D	E	F	G	H1	H2	J	L	P	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[lbs]						
ASA0177AH12U00	ASA 0177 hydr. motor 0.73in <sup>3</sup>	20.87	22.91	10.24	21.02	16.38	18.19	17.40	4.72	3.54	19.29	14.33	3.50	78.9
ASA0257AH12U00	ASA 0257 hydr. motor 0.73in <sup>3</sup>	25.00	26.85	10.63	24.96	19.72	22.13	21.34	4.33	4.33	11.02	15.08	3.66	98.1
ASA0367AH11U00	ASA 0367 hydr. motor 0.67in <sup>3</sup>	28.35	30.39	11.02	28.15	23.46	26.61	25.83	4.72	4.72	12.99	16.93	3.62	124.3
ASA0467AH11U00	ASA 0467 hydr. motor 0.67in <sup>3</sup>	31.91	32.95	11.42	31.06	26.30	29.84	29.06	4.92	4.92	14.76	17.64	3.70	160.7
ASA0567AH11U00	ASA 0567 hydr. motor 0.67in <sup>3</sup>	33.86	36.22	11.42	34.06	29.37	32.52	31.73	4.92	4.92	15.75	17.64	3.62	163.4
ASA0727AH11U00	ASA 0727 hydr. motor 0.67in <sup>3</sup>	37.80	39.84	14.17	37.95	33.54	36.85	35.91	6.30	6.30	18.11	20.51	3.74	227.1
ASA0927AH11U00	ASA 0927 hydr. motor 0.67in <sup>3</sup>	43.31	46.06	12.60	43.09	35.91	41.65	40.59	5.12	5.12	19.86	18.70	3.43	275.6

## Technical Data

order number	description	motor power	oil pressure	oil flow	rotation	air flow	noise level	optional internal bypass (30PSI)
		[HP]	[PSI]	[gpm]	[rpm]	[CFM]	[db(A)]	cooler order number
ASA0177AH12U00	ASA 0177 hydr. motor 0.73in <sup>3</sup>	0.08	46	3,3	1000	1038	69	ASA0177AH11BPU00
		0.60	172	6,7	2000	2161	84	
		2.00	382	10,0	3000	3323	92	
ASA0257AH12U00	ASA 0257 hydr. motor 0.73in <sup>3</sup>	0.14	80	3,3	1000	1713	70	ASA0257AH12BPU00
		1.11	318	6,7	2000	3590	85	
		3.70	707	10,0	3000	5510	94	
ASA0367AH11U00	ASA 0367 hydr. motor 0.67in <sup>3</sup>	0.60	375	3,1	1000	3522	74	ASA0367AH11BPU00
		2.06	857	4,6	1500	5545	83	
		4.91	1532	6,1	2000	7428	89	
ASA0467AH11U00	ASA 0467 hydr. motor 0.67in <sup>3</sup>	0.28	175	3,1	1000	2955	78	ASA0467AH11BPU00
		1.14	445	4,9	1600	4866	88	
		2.97	843	6,7	2200	6803	95	
ASA0567AH11U00	ASA 0567 hydr. motor 0.67in <sup>3</sup>	0.27	169	3,1	1000	3200	78	ASA0567AH11BPU00
		1.10	429	4,9	1600	5260	88	
		2.86	811	6,7	2200	7308	95	
ASA0727AH11U00	ASA 0727 hydr. motor 0.67in <sup>3</sup>	0.65	406	3,1	1000	6120	85	ASA0727AH11BPU00
		1.80	803	4,3	1400	8746	93	
		3.81	1321	5,5	1800	11430	98	
ASA0927AH11U00	ASA 0927 hydr. motor 0.67in <sup>3</sup>	2.05	1280	3,1	1000	10483	90	on request
		4.50	2161	4,0	1300	13967	96	
		8.34	3254	4,9	1600	17534	100	

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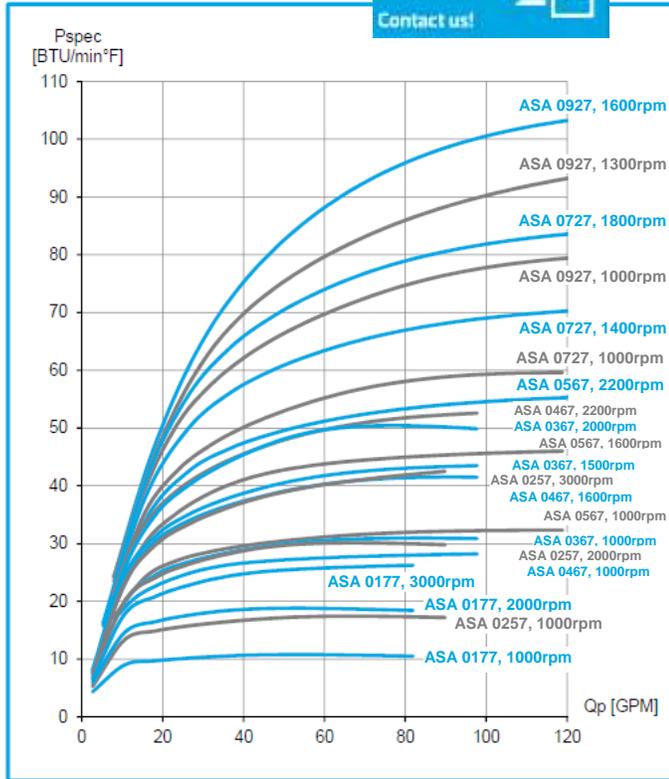
# ASA Series Oil / Air Cooler

with 0.73in<sup>3</sup> and 0.67 in<sup>3</sup> hydraulic drive

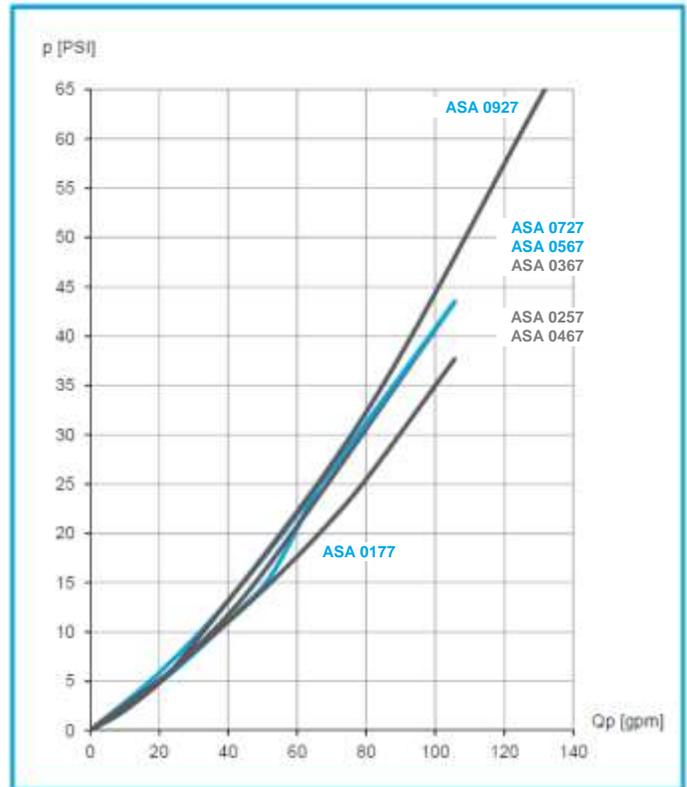


## Performance

specific cooling performance



pressure drop at 150 SSU



## Radiator Style C

material:	aluminum
working temperature range:	-4°F to +176°F (oil temperature)*
air fin shape:	wavy
working pressure:	370 PSI (static)

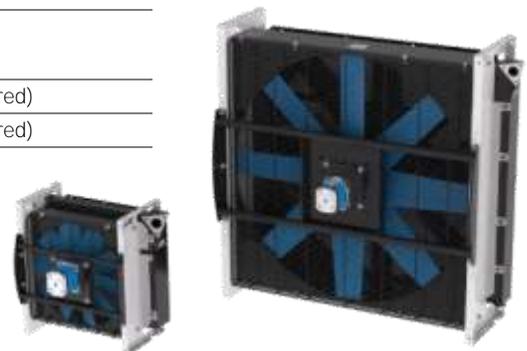
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.

## Options

hydraulic motor	alternative displacements on request
temperature switch	ILLZTH4765KU00, ILLZTH6065KU00 (page 35)
tread plate & radiator guard	see page 31
internal bypass	alternative bypass settings (7 PSI / 50 PSI)
Intermediate plate NG 40	ILLZASA40-40G12U00 (page 29)

## Installation System (see more information on page 29)

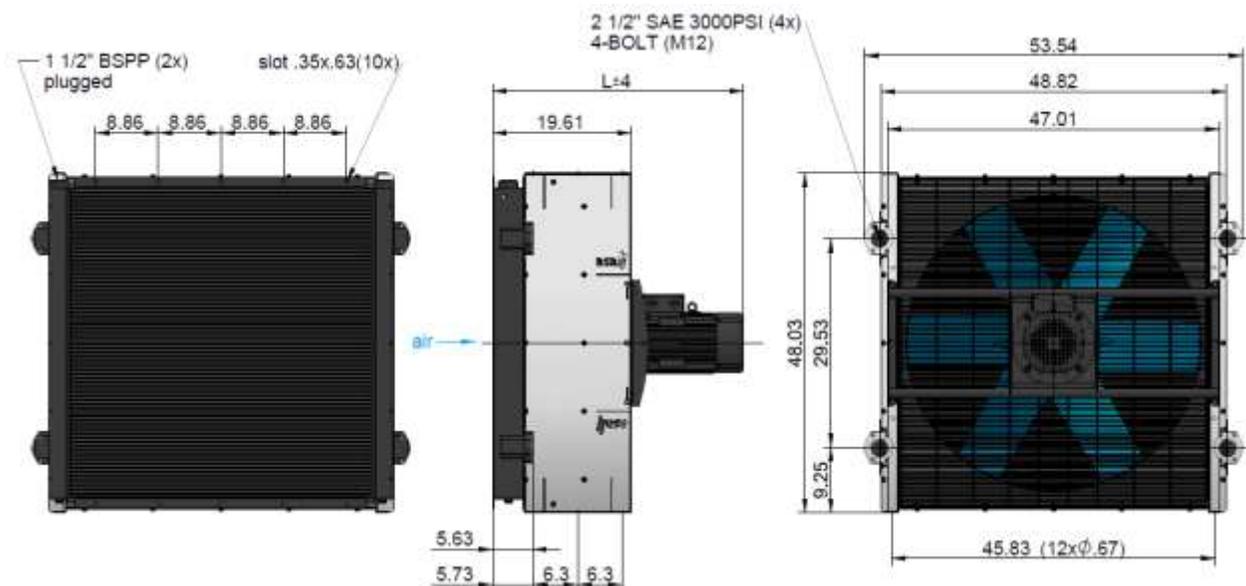
connection UN 1 5/8"	ILLZASA32U20U00 (2 pieces per cooler required)
connection UN 1 7/8"	ILLZASA40U24U00 (2 pieces per cooler required)



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# HighLine HL 1248 Oil / Air Cooler

## 230/400V 60Hz AC

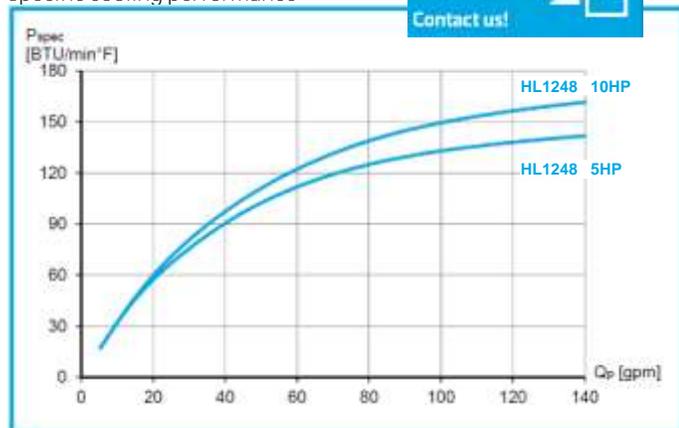


### Technical Data

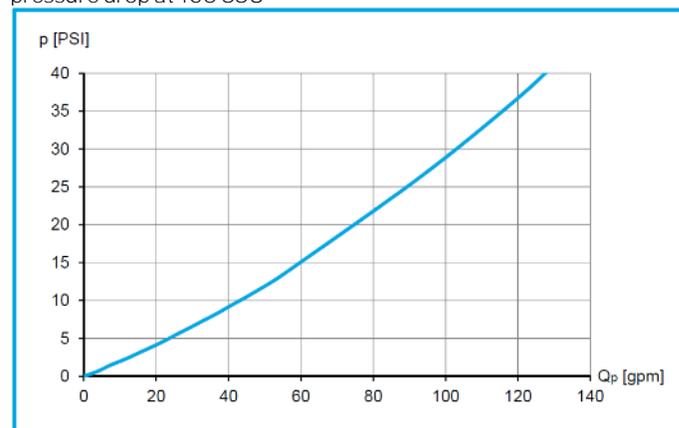
order number	description	motor power [HP]	current [A]	protection	rotation [rpm]	air flow [CFM]	noise level [dB(A)]	weight [lbs]	L [in]
ASA1248SA6EU00	HL 1248 230/460V 5.5HP	5.50	6.6	IP 55	1140	17372	95	575.4	35.47
ASA1248SA6GU00	HL 1248 230/460V 10HP	10.00	14.1	IP 55	1145	21089	94	676.8	39.41

### Performance

specific cooling performance



pressure drop at 150 SSU



### Radiator Style D

material:	aluminum
working temperature range:	-4°F to +212°F (oil temperature)*
air fin shape:	wavy
working pressure:	232 PSI

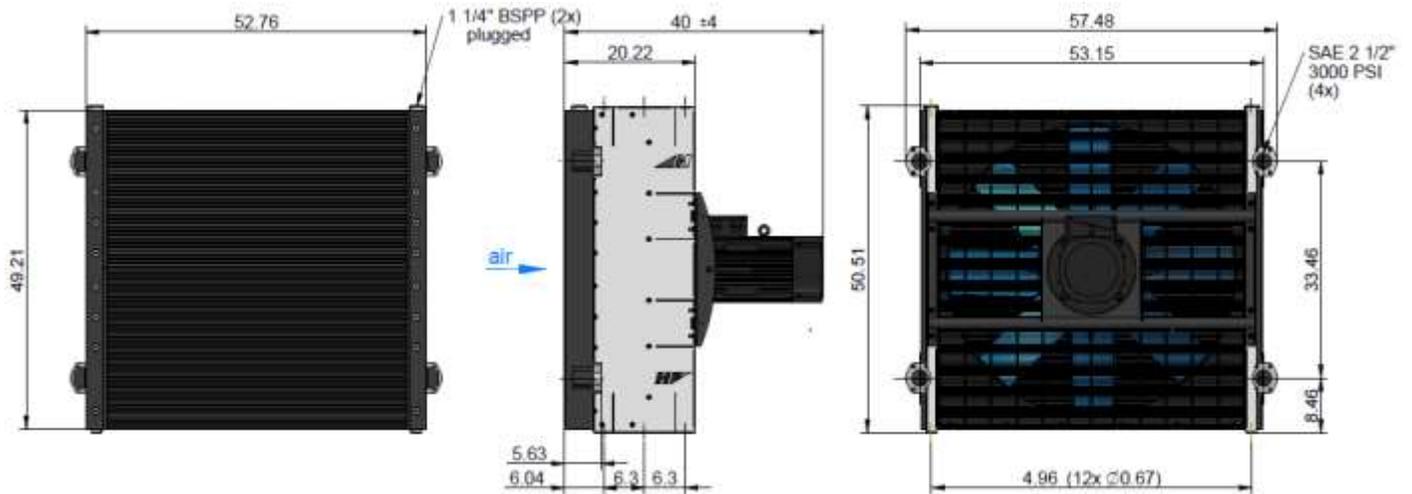
\*...the indicated temperature is the maximum inlet temperature for the cooler radiator. Depending on the sealings in use, the application needs appropriate checking.



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# HighLine HL 1508 Oil / Air Cooler

## 230/400V 60Hz AC

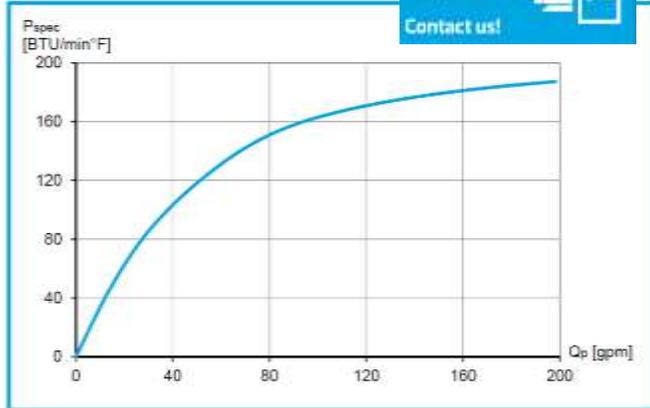


### Technical Data

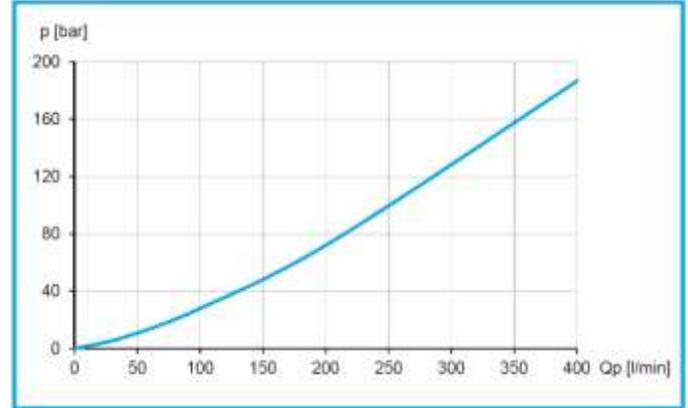
order number	description	pow	current	protection	revolution	air flow	noise level	weight
		[HP]	[A]		[rpm]	[CFM]	[dB(A)]	[lbs]
ASA1508SA6GU00	HL 1508 230/460V 60Hz 10HP	10	14.1	IP 55	1145	23195	97	769.4

### Performance

specific cooling performance



pressure drop at 150 SSU



### Radiator Style D

material:	aluminum
working temperature range:	-4°F to +212°F (oil temperature)*
air fin shape:	wavy
working pressure:	232 PSI (static)

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

### Options

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



# Accessories

## Connector TT rail Series



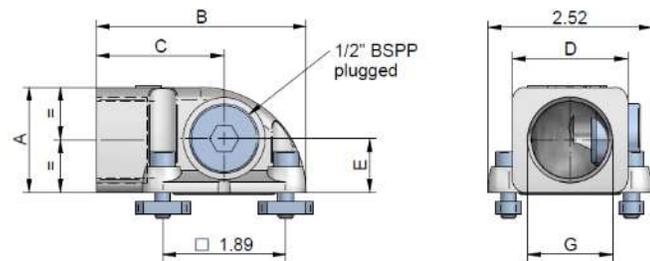
### Description

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

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

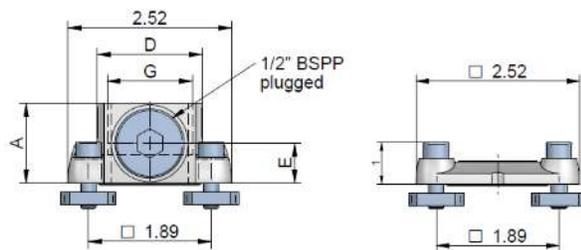
### Dimensions

#### Ported connector



ported straight connector

blind connector:



### Technical Data

order number	description	o-ring	A	B	C	D	E	G	connection type	weight
			[in]	[in]	[in]	[in]	[in]			[lbs]
ILLZSET5U12U00	asa rail connector UNF 1 <sup>1</sup> / <sub>16</sub>	NBR, 70 shore 1.38x 0.12in	1.71	3.39	-	1.77	-	UNF 1 <sup>1</sup> / <sub>16</sub>	2x 90°	2.10
ILLZSET5U16U00	asa rail connector UN 1 <sup>5</sup> / <sub>16</sub> "		1.61	3.23	1.97	1.77	0.83	UN 1 <sup>5</sup> / <sub>16</sub> "	2x 90°	2.43
ILLZSET5U20U00	asa rail connector UN 1 <sup>5</sup> / <sub>8</sub> "		1.97	3.46	2.20	1.97	0.83	UN 1 <sup>5</sup> / <sub>8</sub> "	2x 90°	2.87
ILLZSET5G25U00	asa rail connector BSP 1"		1.61	3.23	1.97	1.77	0.83	BSP 1"	2x 90°	2.00
ILLZSET5G32U00	asa rail connector BSP 1 1/4"		1.97	3.46	2.20	1.97	0.83	BSP 1 1/4"	2x 90°	2.30
ILLZSET5G25AU00	asa rail connector BSP 1" straight		1.22	-	-	1.61	0.59	BSP 1"	2x straight	1.50
ILLZSET5G25BU00	asa rail connector BSP 1" straight+Std.							BSP 1"	1x 90°, 1x straight	1.70

### Content

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

requires 1 set per cooler



packed size: 1 set

### Fits On Cooler Types

TT 05, 07, 11, 13, 16, 21, 25, 36
-----------------------------------

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# Accessories

## Connector ASA Series



### Description

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

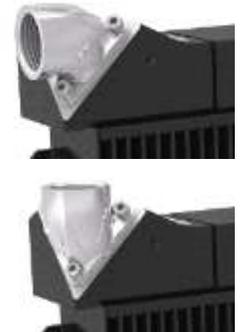
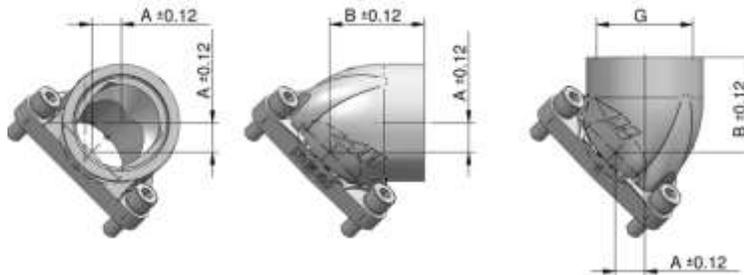
With each connector you can choose from 3 directions how to install it into the hydraulic circuit. The stream optimized design reduces the total pressure drop on the cooler. The omission of screwed joints reduces the number of sealing surfaces. The available connector dimensions depend on the cooler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

Our newest option is an intermediate plate for having an additional BSP 1/2" port, which can also be turned in any required direction.

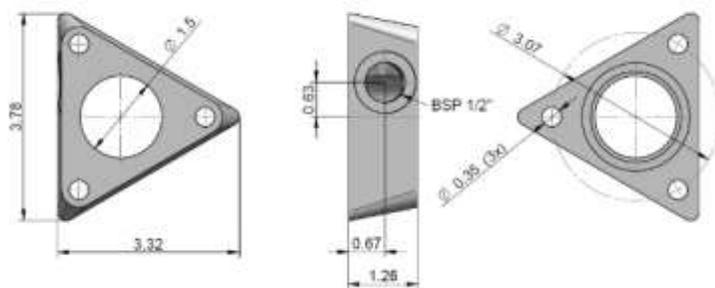


### Dimensions

AUC NG 32 – 40 Connectors



Intermediate plate NG 40



### Technical Data

order number	description	A	B	G	connector material	o-ring	weight
		[in]	[in]				[lbs]
ILLZASA32U20U00	AUC NG 32 – UN 1 <sup>5</sup> / <sub>8</sub> "	0.55	1.34	UN 1 <sup>5</sup> / <sub>8</sub> "	aluminum	NBR 70 shore, 1.73x0.12in	0.68
ILLZASA40U24U00	AUC NG 40 – UN 1 <sup>7</sup> / <sub>8</sub> "	0.59	1.85	UN 1 <sup>7</sup> / <sub>8</sub> "			0.64
ILLZASA32G32U00	AUC NG 32 – G 1 <sup>3</sup> / <sub>4</sub> "	0.59	1.34	BSP 1 <sup>3</sup> / <sub>4</sub> "			0.70
ILLZASA40G40U00	AUC NG 40 – G 1 <sup>1</sup> / <sub>2</sub> "	0.59	1.85	BSP 1 <sup>1</sup> / <sub>2</sub> "			0.60
ILLZASA40-40G12U00	intermediate plate NG 40	-	-	-			0.66

### Content (except intermediate plate)

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

requires 2pcs per cooler

### Fits On Cooler Types

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



packed size: 2 pieces

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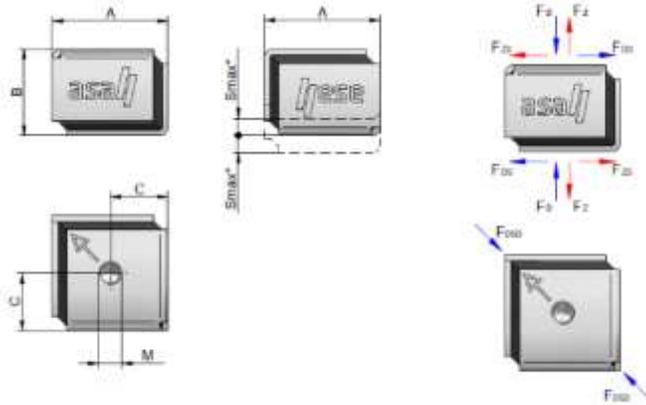
# Accessories

rubber vibration absorber, foot mounting brackets

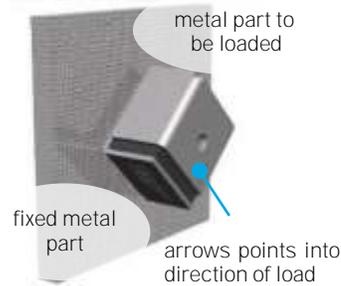


## Rubber Vibration Absorber / Silent Blocks

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



\*Smax.....maximum working distance



- ✓ Zinc coated metal parts
- ✓ Elastomer: natural rubber
- ✓ Working temp. -22°F to +176°F



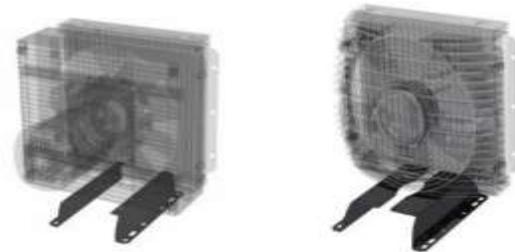
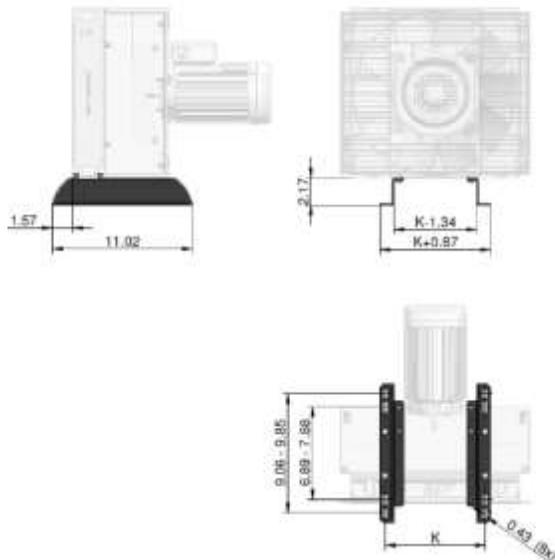
## Dimensions

order number	description	A	B	C	M	Smax	shore degree	weight
		[in]	[in]	[in]		[in]		[lbs]
MDGQ4030081IU00	40x40x30 M8	1.57	1.18	0.79	M8 x 0.39	±0.12	1.77±0.2	0.28
MDGQ5045101IU00	50x50x45 M10	1.97	1.77	0.98	M10 x 0.47	±0.24	2.17±0.2	0.62
MDGQ7555121IU00	75x75x55 M12	2.95	2.17	1.48	M12 x 0.59	±0.31	2.17±0.2	1.45
MDGQ10075161IU00	100x100x75 M16	3.93	2.95	1.97	M16 x 0.65	±0.35	2.56±0.2	4.23

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 <sub>min</sub>	K <sub>max</sub>	cooler	K <sub>min</sub>	K <sub>max</sub>
	[in]	[in]		[in]	[in]
TT 07	3.94	5.31	TT 07	5.31	7.87
TT 11	5.91	8.46	TT 11	5.31	7.87
TT 13	5.91	8.46	TT 13	5.31	7.87
TT 16	7.87	11.42	TT 16	5.31	10.63
TT 21	7.87	11.42	TT 21	5.31	10.63
TT 25	7.87	14.96	TT 25	5.31	14.17
TT 36	-	-	TT 36	7.28	21.65

order number	description	fits on cooler type							
		TT 05	TT 07	TT 11	TT 13	TT 16	TT 21	TT 25	TT 36
ILLEFUSSTTKU00	mounting feet set TT 07 – 25	-	•	•	•	•	•	•	-
ILLEFUSSTTHDKU00	mounting feet set TT 07 – 25 (heavy duty)	-	•	•	•	•	•	•	*

... not available •... optional available \* contact us for extended the heavy duty feet.

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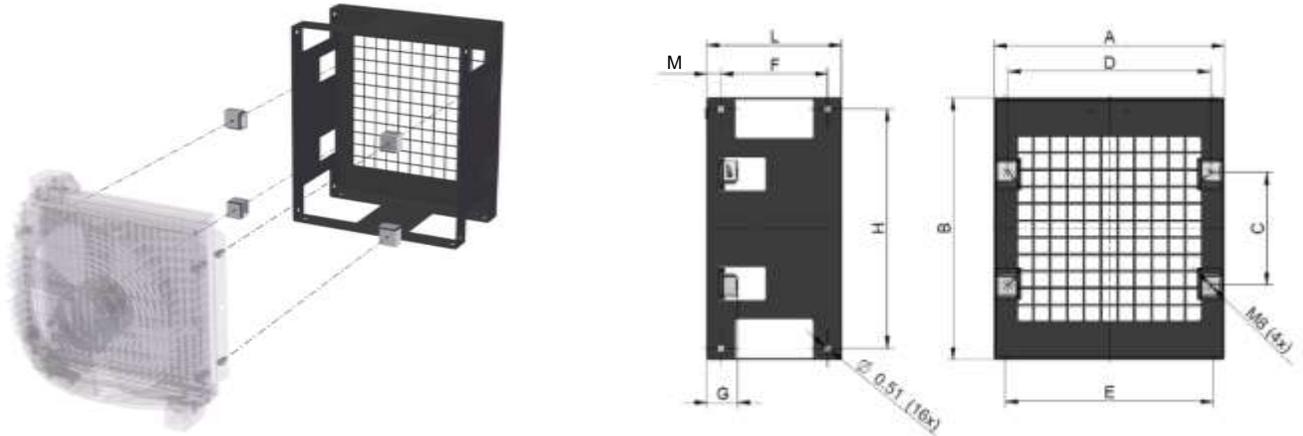
# Accessories

## 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	M	weight
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[lbs]
ILLEGAKTT07GTU00	protection housing kit TT 07 rail	13.15	16.73	6.77	11.42	11.81	7.48	15.16	9.45	0.79	11.95
ILLEGAKTT11GTU00	protection housing kit TT 11 rail	16.14	18.31	7.87	14.17	14.57	7.48	16.73	9.45	0.98	19.80
ILLEGAKTT16GTU00	protection housing kit TT 16 rail	19.29	23.23	12.05	14.17	17.72	8.27	21.65	10.24	0.98	29.50

order number	description	fits on cooler type							
		TT 05	TT 07	TT 11	TT 13	TT 16	TT 21	TT 25	TT 36
ILLEGAKTT07GTU00	protection housing kit TT 07 rail	-	●	-	-	-	-	-	-
ILLEGAKTT11GTU00	protection housing kit TT 11 rail	-	-	●	-	-	-	-	-
ILLEGAKTT16GTU00	protection housing kit TT 16 rail	-	-	-	-	●	-	-	-

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

### Tread Plate / Radiator Guard

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



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;	●	MW20086	MW2089	○	MW05294	○
radiator guard	grid, screws, washers;	ILLEGI T017SKU00	ILLEGI T025SKU00	ILLEGI T036SKU00	ILLEGI T046SKU00	○	ILLEGI T092SKU00

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

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# Accessories

## Motor assembly kits, Lifting Kit (suits all standard coolers)



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



order number	description	motor size / flange / boss length
ILLESETAC10U00	Motor assembly kit IEC 71 - IEC 80 "AC small"	IEC 71 / B14k /
		IEC 71 / B14k /
		IEC 71 / B14k /
		IEC 80 / B14k /
		IEC 80 / B14k /
ILLESETAC20U00	Motor assembly kit IEC 100 - IEC 160 "AC big"	IEC 100 / B14k /
		IEC 100 / B14k /
		IEC 100 / B14k /
		IEC 132 / B5 /
ILLESETHU00	Motor assembly kit hydraulic drive	1:8 cone shaft, front cover rectangular flange
		1:8 cone shaft, front cover rectangular flange
		1:8 cone shaft, front cover rectangular flange

## Lifting Kit (suits all standard coolers)

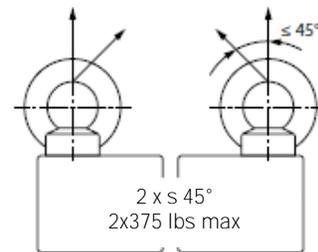
For safe and simple handling during installation and relocation, only used for installation and maintenance.



using screw nut



using bolt, only



load capacity / using bolt

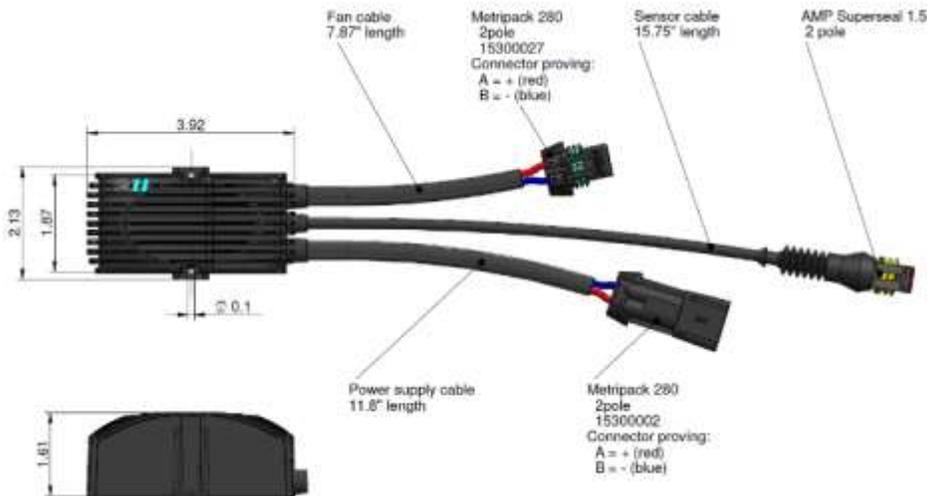
order	description	delivery content
ILLZLKU00	Lifting kit standard coolers	one kit contains 2 ring bolts, 4 nylon washers and 2 screw

# Accessories

## temperature control



This system consists of a temperature sensor (ILLZTT5069KU00) 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 111°F and the maximum rotation of the fan is applied when the oil temperature reaches 131°F. The electro-magnetic compatibility (EMC) is tested according to CE (89/336/EC) and E (95/54/EC). Moreover the control unit (ILLZTC12-2KU00 and ILLZTC24-2KU00) can also be connected with our temperature switches (IP69K switch type). This is a simple on/off mode, according to the switch temperature. The control unit benefit is the soft start curve, extending the life time of the fan motor.



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

## Technical Data

order number	description	max. power fan motor	max. current fan	protection	weight	supply
		[W]	[A]		[lbs]	DC
ILLZTC12-2KU00	temperature control 12V DC	310	21 (14,7V DC)	IP 67	0.55	12V (9V – 15V)
ILLZTC24-2KU00	temperature control 24V DC	340	12 (24V DC)	IP 67	0.55	24V (18V – 32V)

## Characteristics

material:	polyamide
mounting instructions	any mounting position

## Measurement input

temperature sensor	ILLZTT5069KU00 (control range 111-131°F)
temperature switch	ILLZTH5069KU00 (set point 122°F, soft start)
	ILLZTH6069KU00 (set point 140°F, soft start)
	ILLZTH9069KU00 (set point 194°F, soft start)



## Ambient Conditions

ambient temperature range	-4°F to +185°F
storage temperature range	-76°F to +230°F

## Combinations

12V and 24V DC coolers	LL03, LL 04, LL 06, LL08 / TT 05 - 25 rail / ASA 0177 – 0367 (except TT21 h.p.)
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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 (ILLZTC12-2KU00) and 32V (ILLZTC24-2KU00) 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 (ILLZTC12-2KU00) and 4mA (ILLZTC24-2KU00), respectively. The recommended fuse is fast acting 25A (ILLZTC12-2KU00) and 16A (ILLZTC24-2KU00), respectively. Due to the high currents (21A at the ILLZTC12-2KU00), the dimension of the electrical wires must be appropriate and in case of a luster terminal it has to be tightened properly.

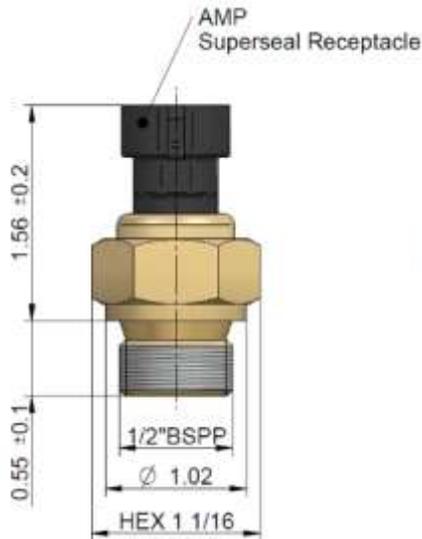
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# Accessories

## temperature sensor



The temperature sensor requires a control unit for the control system which is available in 12V (ILLZTC12-2KU00) and 24V (ILLZTC24-2KU00). 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 111°F and the maximum rotation of the fan is applied when the oil temperature reaches 131°F.



- NTC sensing
- IP 69K protection
- compact design

## Technical Data

order number	description	connection	protection	weight
				[lbs]
ILLZTT5069KU00	temperature sensor 1/2" BSPP	AMP superseal 1.5	IP 69K	0.20

## Characteristics

screw part material	brass
mounting instructions	any mounting position
maximum tightening torque	36.8 lb <sub>r</sub> ft (50Nm)

## Measurement Output

connection	AMP superseal 1.5
------------	-------------------

## Ambient Conditions

oil temperature range	-4°F to +212°F
ambient temperature range	-4°F to +185°F
storage temperature range	-76°F to 230°F

## Required Accessories

temperature control unit 12V DC	ILLZTC12-2KU00 (page 33)
temperature control unit 24V DC	ILLZTC24-2KU00 (page 33)

## Combinations

12V and 24V DC coolers	LL03, LL 04, LL 06, LL08 / TT 05 - 25 rail / ASA 0177 – 0367
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# Accessories

## temperature switches



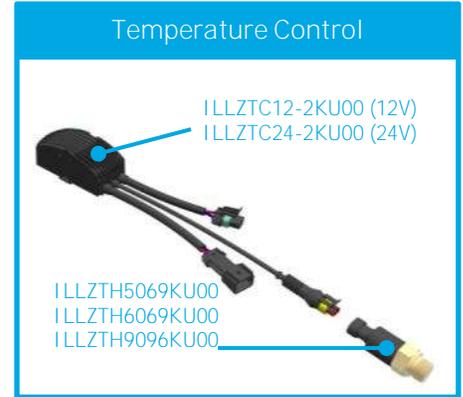
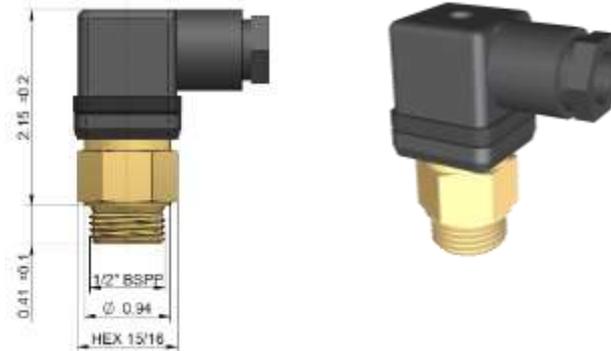
According to the cooler type and size, our temperature switches fit on all coolers and connectors with BSP 1/2" threads. Please contact us for the compatibility of the products. IP69K switch types (ILLZTH5069K, ILLZTH6069K and ILLZTH9069K) work in combination with our temperature control units ILLZTC12-2K (12V) and also with ILLZTC24-2K (24V). This is a simple on/off mode, according to the switch temperature. The control unit benefit is the soft start curve, extending the life time of the fan motor.

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

Type IP69K



Type IP65



## Technical Data

order number	description	connection	protection	switch temperature	difference	weight
				[°F]	[°F]	[lbs]
ILLZTH5069KU00	temperature switch 122°F	AMP superseal 1,5	IP 69K	122±48	50±48	0.22
ILLZTH6069KU00	temperature switch 140°F	AMP superseal 1,5	IP 69K	140±48	50±48	0.22
ILLZTH9069KU00	temperature switch 194°F	AMP superseal 1,5	IP 69K	194±48	50±48	0.22
ILLZTH4765KU00	temperature switch 122°F	ISO 4400	IP 65	122±48	50±48	0.20
ILLZTH6065KU00	temperature switch 140°F	ISO 4400	IP 65	122±48	50±48	0.20

## Characteristics

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

## Ambient Conditions

oil temperature range	-4°F to +212°F
ambient temperature range	-4°F to +176°F
storage temperature range	-76°F to 230°F

## Combinations

all coolers and connectors with BSP 1/2" threads

## Measurement Output

contact	N.O. (normal open)
minimum current	200mA
maximum current	12V AC: 10A
	24V AC: 10A
	120V AC: 12A
	230V AC: 10A

*Use power relay for switching!*

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# Accessories

## temperature control AC



The AC temperature control is a system with a thermostat, which is non oil touch connected to the rail. 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
		[°F]		[lbs]
ILLZTACKU00	temperature control 115V/230V AC	-22/ +248 (-30/+120°C)	IP 40	1.23

### Characteristics

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

### Operation

switch control range	-22/+248°F
contacts rating	C.1-10(2,5)A/250V~
	C.2-6(2,5)A/250V~

### Ambient Conditions

max. head temperature	+185°F
max. bulb temperature	+302°F
storage temperature range	5°F to 131°F

### Please note:

- The reference room temperature for the setting is 68°F.
- superficial current: PT1 250
- type of action (ref. EN60730-1): 2B

### Overview / Combinations

asa electronics	LL01	LL02	LL04	LL06	LL08	TT05	TT07-25	ASA0177	ASA0257	ASA0367	ASA0467-0927
temperature control ILLZTT5069KU00 + ILLZTC12-2KU00 or 24-2KU00	-	-	•	•	•	•	•	•	•	•	-
temperature switch ILLZTH5069KU00 temperature switch ILLZTH6069KU00 temperature switch ILLZTH9069KU00	-	•	•	•	•	•	•	•	•	•	•
temperature switch ILLZTH4765KU00 temperature switch ILLZTH6056KU00	-	•	•	•	•	•	•	•	•	•	•
temperature control AC ILLZTACKU00	-	-	-	-	-	-	•	-	-	-	-

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

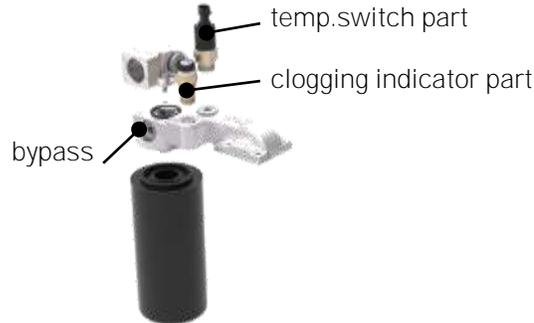
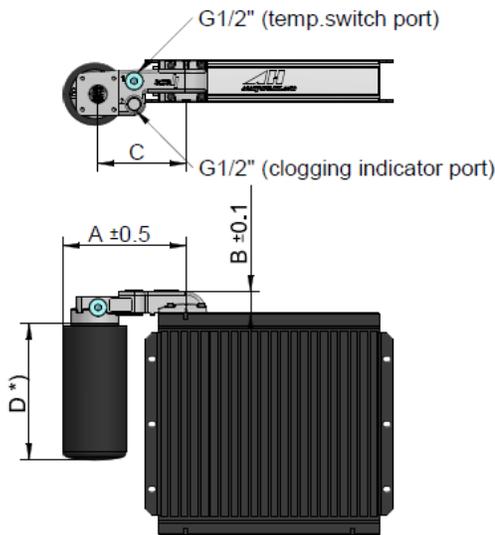
This data sheet and the corresponding scale drawings are to be used as a general guideline and technical overview of our products. Please contact us if more exact information is needed. As we are constantly improving our products, their characteristics, dimensions and weights may also change, although we do our best to incorporate these changes continually. asa assumes no liability for any information therein, any errors, omissions, misprints, nor any direct or indirect damages, losses or costs resulting therefrom. Any cooling performances and general technical values indicated in this catalogue are measured at a test bench according to asa testing procedures or calculated, based on such tests. Due to different conditions in testing and application environments the performance may also vary by +/- 15%. Because there is no standardized testing procedure, tests used by other manufacturers could have different results. Therefore we recommend all products to be checked under the system operating conditions. This is also true for vibrations and mechanical stress as well as for pressure peaks and thermal stress and any other relevant factors. General tolerances according to DIN ISO 2768-vL. General tolerances for casted parts according EN ISO 8062-3 (DCTG 10). Tolerances for rubber parts are according to ISO 3302-1 (class M4-F+C). The tolerances of welding seams are defined by quality group D according to EN ISO 10042, if it is not specified on the actual scale drawing or data sheet. In addition to that we point out that any data sheet and corresponding scale drawing is no substitution for the manual.

# Accessories

## System for Rail Series



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



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

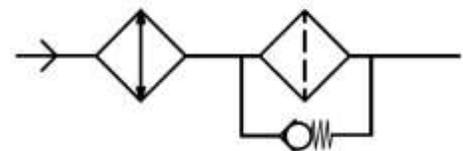
\*) depending on the make of the filter element

### Dimension

order number	description	filter rating	working pressure	bypass	spin on	A	B	C	D
		[µm]	[PSI]	[PSI]	[UN]	[in]	[in]	[in]	[in]
ILLZRF11U1110U00	Spin on filter kit rail 10µm, 16gpm	10	145	30	1 -12UNF	7.42	1.30	5.31	5.75
ILLZRF11U1125U00	Spin on filter kit rail 25µm, 16gpm	25	145	30	1 -12UNF	7.42	1.30	5.31	5.75
ILLZRF12U1110U00	Spin on filter kit rail 10µm, 26gpm	10	145	30	1 -12UNF	7.42	1.30	5.31	7.13
ILLZRF12U1125U00	Spin on filter kit rail 25µm, 26gpm	25	145	30	1 -12UNF	7.42	1.30	5.31	7.13

### Rail-filter Block

material:	aluminum
working temperature range:	-4°F to +212°F (oil temperature)**
Sealing to rail flange:	o-ring NBR
bypass:	incl.29 PSI standard setting



### Hydraulic Connection

compatible to	any rail connection set
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### Application

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

### Options

temperature switches	ILLZTH5069KU00, ILLZTH4765KU00, ILLZTH6065KU00
clogging indicator	electric, optical



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

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

# Calculation of an oil/air cooler



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

## Hot oil costs money!

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

## Approximate calculation

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

$$P_M = \frac{p \times Q_p}{1714 \times \eta} \quad P_K = P_M (1 - \eta) \times 42.44$$

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
$P_K$	= cooling performance [BTU/min]
$P_M$	= required motor power [HP]
$p$	= oil pressure [PSI]
$Q_p$	= oil flow [GPM]

## 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.

$$P_K = \frac{(t_2 - t_1)}{T} \times m \times 3.25$$

$P_K$	= cooling performance [BTU/min]
$m$	= const. mass of the reservoir [GAL]
$t_1$	= oil temperature at the begin [°F]
$t_2$	= oil temperature at the end [°F]
$T$	= heat up time [min]

## Temperature behaviour:

- oil temperature difference  $\Delta t_{oil}$  by one pass
- air temperature increase  $\Delta t_L$

$$1. \Delta t_{oil} = \frac{0.3 \times P_K}{Q_{oil}} \text{ [°F]} \quad 2. \Delta t_L = \frac{P_K \times 56.23}{Q_L} \text{ [°F]}$$

$Q_L$  ... air flow in SCFM (see data sheets)

$Q_{oil}$  ... oil flow in GPM

## Selection of the cooler:

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

$$P_{spec} = \frac{P_K}{t_{oil} - t_L} \text{ [BTU/min}^\circ\text{F]}$$

$P_{spec}$	= specific cooling performance (BTU/min°F)
$T_{oil}$	= oil temperature inlet (°F)
$T_L$	= air temperature inlet (°F)

Enter the value of  $P_{spec}$  (BTU/min°F) on the vertical line on the cooling performance diagram and determine the junction with the horizontal line for oil flow (GPM) 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 if necessary (e.g. bypass).

The values indicated in the diagram are valid for a hydraulic oil with a viscosity of 150 SSU (approx. ISO VG 32). Multiply the pressure drop by the correction factor  $f$  according to the used hydraulic oil viscosity.

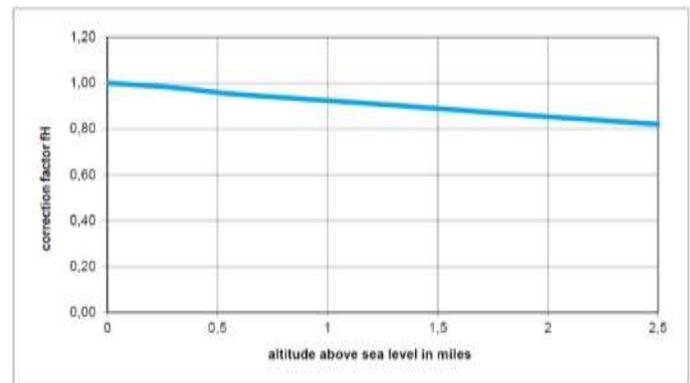
$$\Delta p = \Delta p_{150SSU} \times f_p$$

$\Delta p$	= oil pressure drop [PSI]
$\Delta p_{150SSU}$	= oil pressure drop at 150 oil viscosity [PSI]
$f_p$	= correction factor for the oil viscosity [1]

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.

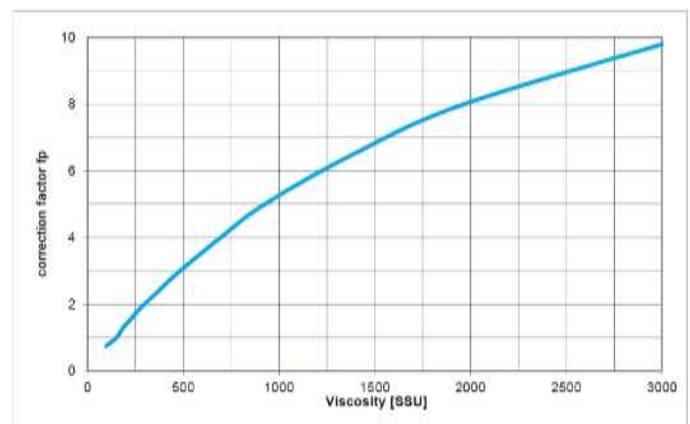
## Correction factor $f_H$

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



## Correction factor $f_p$

for oil pressure drop (approximate value)

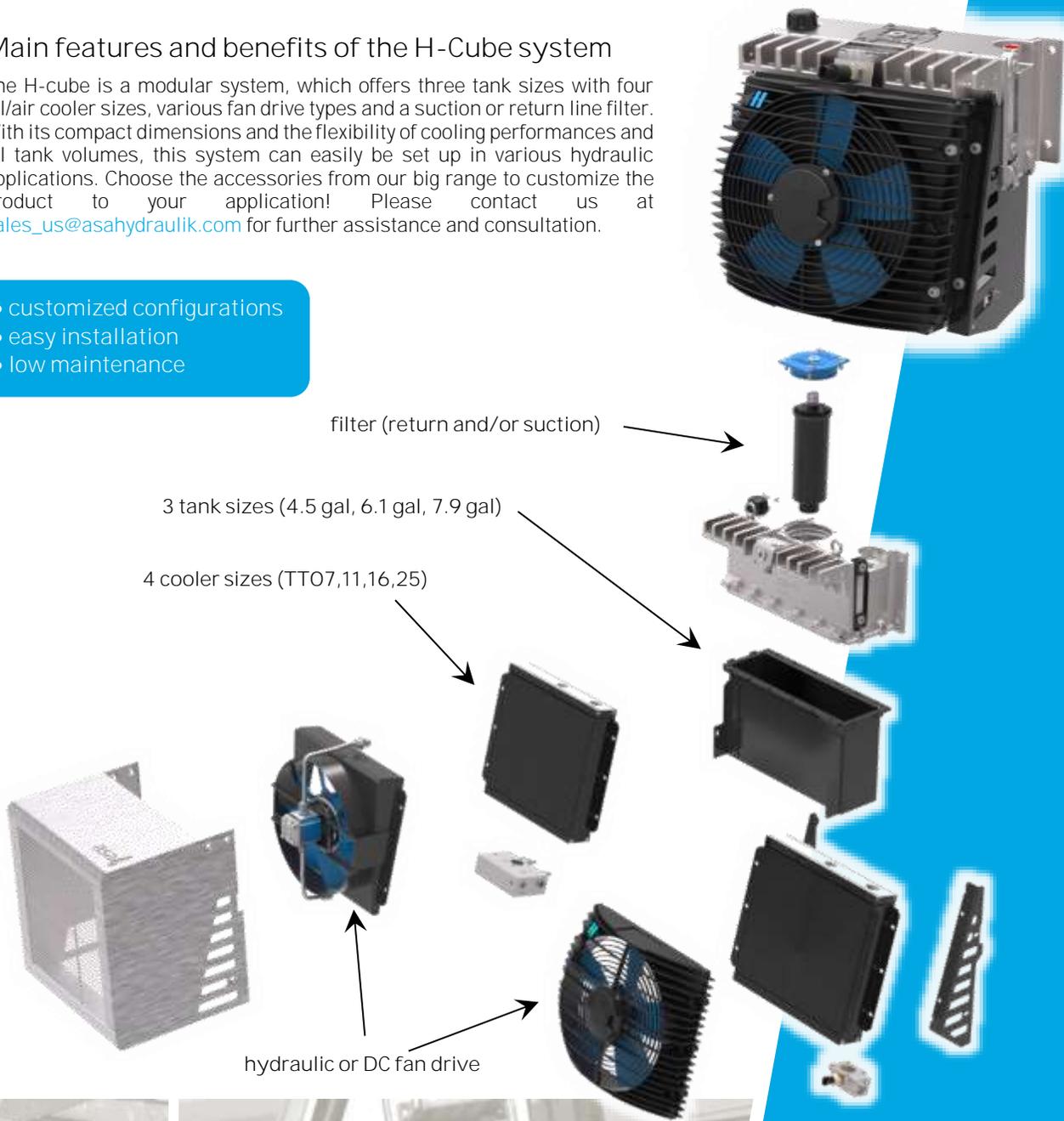


# H-Cube Series

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

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

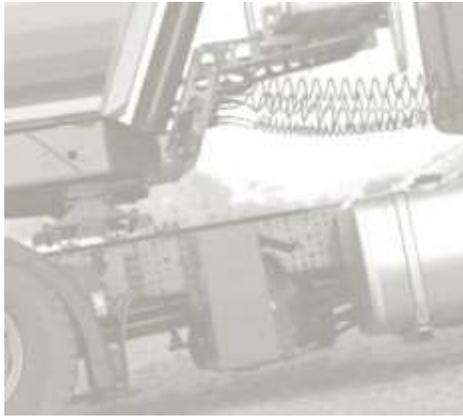
- customized configurations
- easy installation
- low maintenance



## Applications

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

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





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