

# Thermal Systems H-Ranges







be different.
make a difference.

## Company

#### Who we are and what we offer

asa stands for developments, advances and innovations already at work through our customers' various mobile and stationary applications. More than 38 years experience in thermal systems, connection technology and fluid controls 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, as a 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 as as a brand to the next level. Thus made us create a new logo and appearance to strengthen our key values and highlight it in all our present and future markets. We are proud on looking back on almost 40 years of innovative products, but our major attitude is a the view into the future. Please check out our newest products and technologies in this catalogue and contact us if more detailed information is required.





### in this catalogue...

### Company

**Innovation** 

Thermal Systems

Standard Ranges



Special Ranges



**H-Ranges** 

H-Cube

page 7-11

**H-Protect** 

page 12

H-Set

page 13

Accessories

page 14

**Connection Technology** 



Fluid Controls



R & D Services





### **Innovation**

#### Customize our products to your requirements.

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

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

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

- patented technology
- protecting your market
- add on values







## Thermal Systems

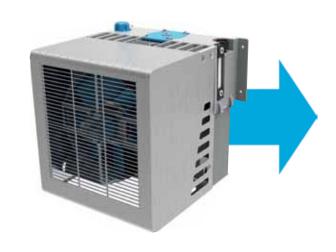


#### **H-Ranges**

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

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

- real compact design
- cost saving
- one system





#### **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
- quality through standardization
- high duration, most dense cooler and option product ranges

#### 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

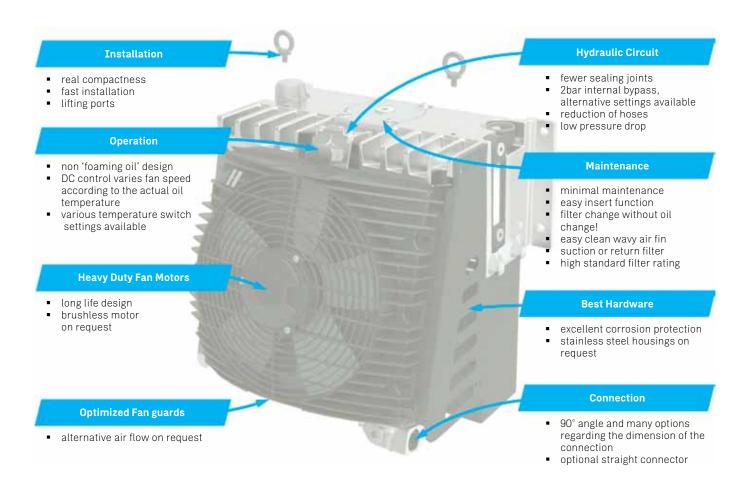


#### Modular cooler, filter, tank and control link



#### 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!



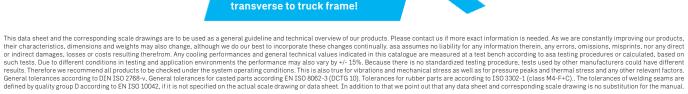
#### **Applications**

Due to the flexible design concept, the H-cube system can be configured to various applications. One main benefit is, that the H-cube system 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

..

direct mounting or transverse to truck frame!

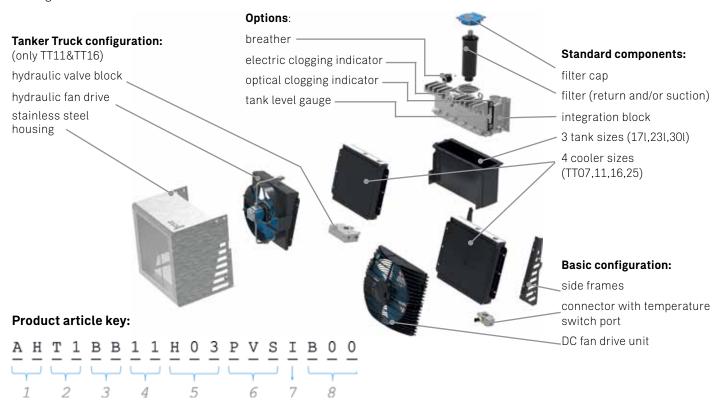


#### Modular cooler, filter, tank and control link



#### Design your own H-cube!

The integration block connects tank, filter and heat exchanger. These components can be, individually, varied in size and function. As a result the system can be customized to the application, while remaining a standard range product. Also integrated are tank level gauge, bypass valve, clogging indicator and temperature switch port. Due to this flexible system, all parts can be combined with the same control flange. The table below shows the possible options and its resulting code.



#### 1 Product Series

AH ASA H-Cube

2 Tank Size*							
T1	tank with 17l (EU**)						
T2	tank with 23l (EU**)						
T3	tank with 30l (EU**)						
R5	tank with 4.5gal (US**)						
R6	tank with 6.1gal (US**)						
R8	tank with 7.9gal (US**)						

#### 3 Filter Combinations

	return filter	suction filter
00	none	none
В0	6µm (max.88lpm)	none
CO	10µm (max.180lpm)	none
D0	16µm (max.185lpm)	none
E0	25µm (max.195lpm)	none
OB	none	90µm
BB	6µm (max.88lpm)	90µm
СВ	10µm (max.180lpm)	90µm
DB	16µm (max.185 lpm)	90µm
EB	25µm (max.195 lpm)	90µm

#### 4 Cooler Size/Type

07	TT 07 rail, 2bar(30psi) bypass
11	TT 11 rail, 2bar(30psi) bypass
16	TT 16 rail, 2bar(30psi) bypass
25	TT 25 rail, 2bar(30psi) bypass

#### 5 Fan Drive

D01	12V DC
D02	24V DC
H03	3cm³ hydraulic

#### 6 Accessories & Options\*\*\*

000	no options
00S	only stainless steel housing
KT0	temperature control DC
KTS	temp. control & stainless steel housing
PVS	tanker truck <sup>1)</sup> block 210bar (3040 PSI) & stainless steel housing
PHS	tanker truck <sup>1)</sup> block 350 bar (5070 PSI) & stainless steel housing

#### 7 Clogging Indicator

0	no indicator
I	optical clogging indicator
Е	electric clogging indicator

#### 8 Index / Customized

Вхх	special / customized specifications, to be advised e.g. position of connectors, special connectors, etc

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, as 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 ass at esting 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-v, General tolerances of casted parts according to 10 N Tolerances for rubber parts are according to ISO 3002-7 (DICTA for log to 150). Tolerances for rubber parts are according to 10 N Tolerances of well as gens 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.

<sup>\*</sup> complete system content,

<sup>\*\*</sup> EU version truck frame flange 150 x 450mm and BSP suction port US version truck frame flange 5.5 x 17.5inch and NPT suction port

<sup>\*\*\*</sup> stainless steel and protection housing not in combination with cooler size TT 25!

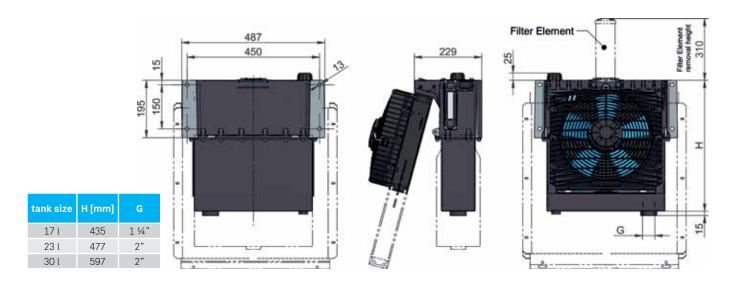
Tanker Truck configuration includes the functions of a adjustable pressure relief valve for the whole hydraulic system, return line connection and hydraulic fan drive control -> see more information on the H-Cube data sheet, page 10 or contact us for further assistance

#### Modular cooler, filter, tank and control link



#### **Dimensions**

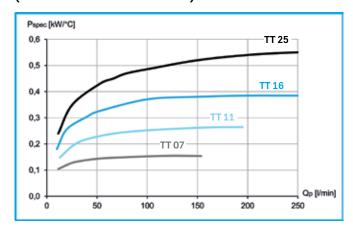
There are 4 different cooler sizes which can be combined with 3 different tank sizes. According to each individual combination, the dimensional drawing is different. Please see below main measurements that are invariant on that system.



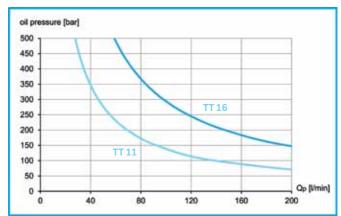
#### Performance Selection

The actual performance output of the H-cube system is a combination of the cooler size (radiator core) and the type of fan drive. Choose the possible performances from the table below. The shown performance is the maximum possible specific cooling performance depending on the oil flow (chart on the left side). For the tanker truck versions you can also select the cooler size as a function of pressure and oil flow (chart on the right side).

### specific cooling performance (with 12V or 24V DC fan drive)



### cooling performance range (tanker truck types), to select by pressure and oil flow



#### **Specifications**

The materials in our standard configuration are designed for mobile applications, but can also be used for industrial applications. Our high corrosion protection standard provides life time excellence to any configured package.

radiator material	brazed aluminium
radiator air fin	wavy
tank material	steel
integration block	cast aluminium

return filter rating	6 μ to 25 μ with 1,75 bar bypass
suction filter rating	90 μ (other micron on request)
fan drive	12V or 24V DC or hydraulic
weight (dry)	27 kg to max. 53 kg

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, as assumes no liability for any information therein, any errors, omissions, misprints, nor any direct damages, losses or costs resulting thereform. Any cooling performances and general technical values indicated in this catalogue are measured at a test bench according to assa 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 thermat stress and any other relevant factors. General tolerances for 258-w, General tolerances according to DIN 150 258-w, General tolerances for casted parts according to 150 3002-3 (DCTG 10). Tolerances for rubber parts are according to 150 3002-1 (class M4-Ft). 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.

#### Modular cooler, filter, tank and control link



#### H-Cube configuration example: Tanker Truck

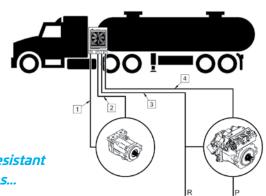
The H-Cube system can also be configured with a control block for relief valve function and flow control. This system is mainly used on tanker trucks and is a very compact cooling and filtration solution for your hydraulic system.

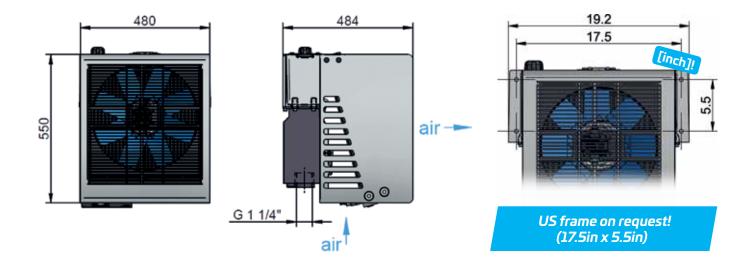
#### Setup Example H-Cube T1-0B-16-H03-PVS-I-B00

This compact and real light weight system is an efficient hydraulic control and conditioning module for continous operation. This system allows heavy duty operation while controlling oil filtration and temperature.



- stainless steel housing
- 17 I oil tank
- hydraulic fan drive
- relief valve
- flow control
- 35 bar to 210 bar
- up to 250 lpm
- corrosion and vibration resistant
- many customizing options...





#### **Cross Reference List for Tanker Truck Configurations**

asa reference number	competitor product
H-Cube T1-C0-11-H03-PVS-I	GD HK3 Hydrapak
H-Cube R5-C0-16-H03-PVS-I	GD MH5 Hydrapak
H-Cube R5-C0-11-H03-PVS-I	GD MH3 Hydrapak
H-Cube R5-C0-16-H03-PHS-I	PSG (Blackmer) Hydrive 2020
contact us for further comparisons!	

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, as 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 ass attesting 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 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances of weighting to 150 302-2 (DCTA). Tolerances for rubber parts are according to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA).

#### Modular cooler, filter, tank and control link

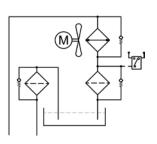


#### H-Cube configuration example: Auxiliary Truck Drive

The H-Cube system can be configured to various applications. Auxiliary truck drives are circuits to assist the drive train at low speed on gravel or other rough road conditions. Such temporary hydraulic drive circuits require a high cooling performance over a short operation period.

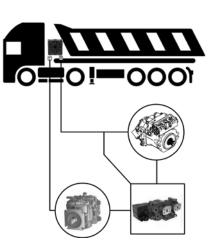
#### Setup Example H-Cube T1-CB-16-D02-E-B00

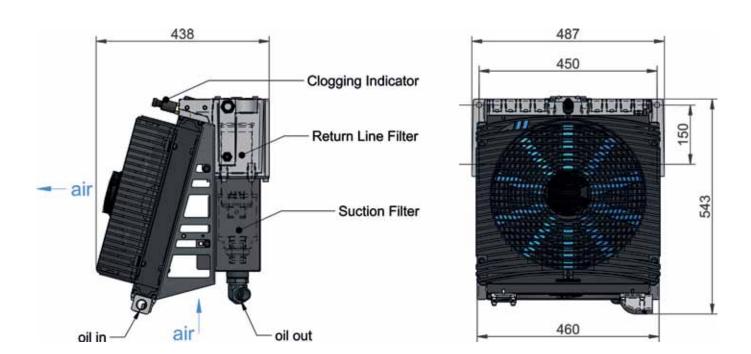
In this example the 17 l oil reservoir, TT 16 size cooler and filters (return and suction) have been selected. The compactness and cost savings against a conventional system with separate components proves the comprehensive efficiency of this system.





- 24V DC fan drive
- IP 68 motor protection
- 17l oil reservoir
- return filter 10µm
- suction filter 90µm
- up to 250 lpm
- corrosion and vibration resistant
- temperature control options
- clogging indicator switch





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, as 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 ass attesting 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 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances of weighting to 150 302-2 (DCTA). Tolerances for rubber parts are according to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA).

© asa hydraulik, December 2018

#### H-Protect

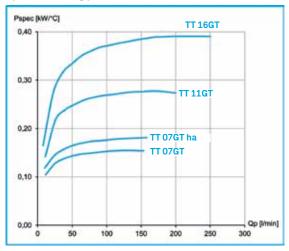
#### Cooling System with protectin housing (GT)



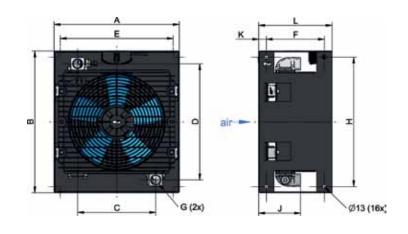
The H-Protect Series is a ready mounted cooler package, consisting of a cooler, protection housing, mounted rail connectors and the ready wired electronic temperature control. All standard cooler sizes from TT 07 to ASA 0177 are available as a GT cooler. Also the internal bypass version is easy to integrate with the same housing dimensions. The temperature control is a relay box in connection with a temperature sensor controlling the fan with the optimal fan speed and a soft start curve (see page 37). This reduces the noise level and increases the duration of the fan unit. The protection housing is a solid metal framework for rough mobile and special applications. The radiator side is protected by a metal grid and the whole cooler is mounted on the asa rubber vibration absorbers to reduce the mechanical stress.

#### **Performance**

#### Specific cooling performance



#### **Dimensions**



#### **Technical Data**

order number	description	А	В	С	D	Е	F	G	Н	J	K	L	weight	optional internal bypass (2bar)
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	BSP	[mm]	[mm]	[mm]	[mm]	[kg]	cooler order no.
ASATTO7GD01GT	TT 07 rail 12V DC GT	334	425	179	341	300	190	1"	385	114	20	240	13,7	ASATT07GD01BPGT
ASATT07GD02GT	TT 07 rail 24V DC GT	334	425	179	341	300	190	1"	385	114	20	240	13,7	ASATT07GD02BPGT
ASATT07GD03GT	TT 07 rail 12V DC GT h.p.	334	425	179	341	300	190	1"	385	114	20	240	14,1	ASATT07GD03BPGT
ASATT07GD04GT	TT 07 rail 24V DC GT h.p.	334	425	179	341	300	190	1"	385	114	20	240	14,1	ASATT07GD04BPGT
ASATT11GD01GT	TT 11 rail 12V DC GT	410	465	256	381	370	190	1"	425	137	25	240	20,1	ASATT11GD01BPGT
ASATT11GD02GT	TT 11 rail 24V DC GT	410	465	256	381	370	190	1"	425	137	25	240	20,1	ASATT11GD02BPGT
ASATT16GD01GT	TT 16 rail 12V DC GT	490	590	328	515	450	210	1 1/4"	550	143	25	260	30,3	ASATT16GD01BPGT
ASATT16GD02GT	TT 16 rail 24V DC GT	490	590	328	515	450	210	1 1/4"	550	143	25	260	30,3	ASATT16GD02BPGT

#### Configuration

ready mounted and wired!





1x fan speed control unit

#### Radiator

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

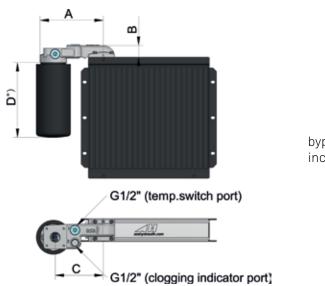
This data sheet and the corresponding scale drawings are to be used as a general guideline and technical overview of our products. Please contact us if more exact information is needed. As we are constantly improving our products, their characteristics, dimensions and weights may also change, although we do our best to incorporate these changes continually, as assumes no liability for any information therein, any errors, omissions, misprints, nor any direct 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 assa 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 150 2786-w, General tolerances of created parts according to 150 150 2768-w, General tolerances of casted parts according to 150 150 2768-w. The contraction of the casted parts are according to 150 150 276 161 (class M4-Ft). The tolerances of well-age assars 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.

#### H-Set

#### **Rail Filter 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.





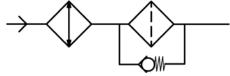
- compact filter integration
- standard spin on filter
- compatible to whole rail series

#### **Dimension**

order number	description	filter rating	working pressure	bypass incl.	spin on port	А	В	С	D
		[µm]	[bar]	[bar]	[BSP]	[mm]	[mm]	[mm]	[mm]
ILLZRF11G2010	Spin on filter kit rail 10µm, 60lpm	10	10	2	3/4"	177,5	33	135	146
ILLZRF11G2025	Spin on filter kit rail 25µm, 60lpm	25	10	2	3/4"	177,5	33	135	146
ILLZRF12G2010	Spin on filter kit rail 10µm, 100lpm	10	10	2	3/4"	177,5	33	135	191
ILLZRF12G2025	Spin on filter kit rail 25µm, 100lpm	25	10	2	3/4"	177,5	33	135	191

#### Rail-filter Block

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



#### **Hydraulic Connection**

compatible to	any rail system cooler

#### **Application**

	m: · ·
main application	are offline circuits, lubrication, cooling and filration circuits
oil flow	from cooler to filter

#### **Options**

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

<sup>\* ...</sup>the indicated temperature is the maximum inlet temperature for the cooler radiator.

Depending on the sealings in use, the application needs appropriate checking.



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, as a 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 as a 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 correlated tolerances for casted parts according to SIOS 3002-1 (class M4-F4C). The tolerances of veiding seams are defined by quality group D according to SIOS 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.

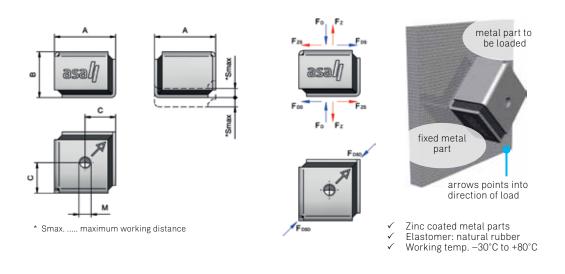
<sup>\*)</sup> depending on the make of the filter element

#### Accessories

#### **Rubber Vibration Absorber**



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







#### **Dimensions**

order number	description	А	В	С	М	Smax	weight
		[mm]	[mm]	[mm]		[mm]	[kg]
MDGQ403008II	40x40x30 M8	40	30	20	M8	± 3	0,127
MDGQ504510II	50x50x45 M10	50	45	25	M10	± 6	0,280
MDGQ755512II	75x75x55 M12	75	55	37,5	M12	± 8	0,659
MDGQ1007516II	100x100x75 M16	100	75	50	M16	± 9	1,920

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

#### Lifting Kit (suits all standard coolers)

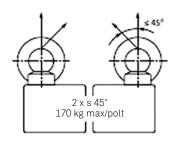
For safe and simple handling during installation and relocation, only tobe used for installation and maintenance.







using bolt, only



load capacity / using bolt

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

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, as 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 ass attesting 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 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances for casted parts according to DIN 150 2768-v., General tolerances of weighting to 150 302-2 (DCTA). Tolerances for rubber parts are according to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA). Tolerances of weighting to 150 302-2 (DCTA).

### Fluid Controls

## asa

#### **Pumps**

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

- 20 to 110 lpm
- low pulsation
- high duration



## **Connection Technology**



#### **Suction Line Components**

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

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

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

#### Anti vibration technology

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

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



























#### AUSTRIA

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

#### USA

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

#### CHINA

安飒液压科技(苏州)有限公司 asa Hydraulik Technology (Suzhou) Co.Ltd 江苏省苏州市工业园区方洲路128号6区B幢 Area 6, Building B, Fangzhou Road No 128, Suzhou industrial park, Suzhou City, Jiangsu Province Tel.: +86 512 62381988

#### **AUSTRALIA**

asa Products Pty Ltd Bentley Street 4/15 3016 Williamstown, Victoria Tel.: +61 3 9397 6129 melbourne@asahydraulik.com

#### INDIA

ASAhydraulik India Pvt Ltd C1/109/9, GIDC, Palej, Dt.Bharuch Gujarat – 392220 Tel.: +91 22 28195557 salesindia@asahydraulik.com