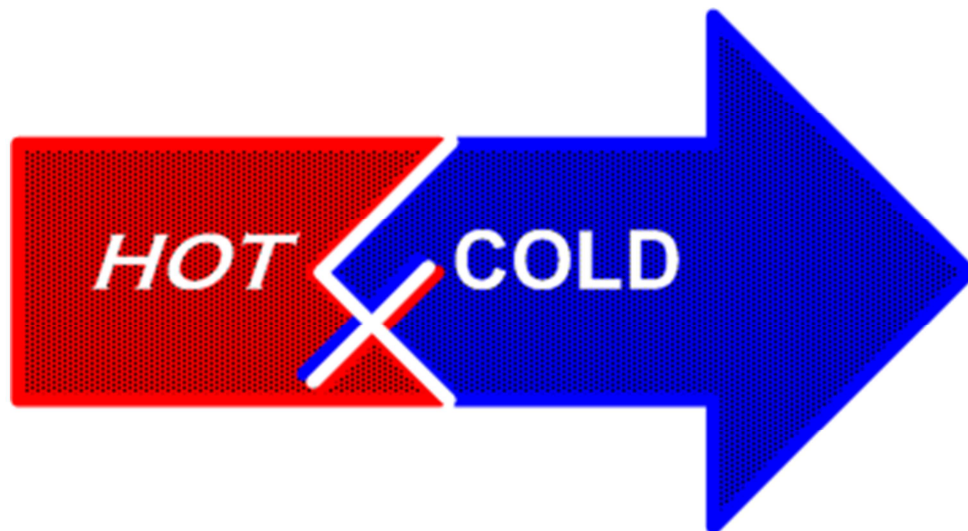


# Universal Coolers cc



## Product Catalog 2012v2



[www.hot4cold.co.za](http://www.hot4cold.co.za)

# Contact Details

Telephone number : +27 (0)12 666 8725  
  +27 (0)12 666 8077  
Premicell                  : +27 (0)82 907 6828  
Internal sales cell      : +27 (0)72 411 2046  
Fax number               : +27 (0)12 666 8729

Physical address       : 65 Erasmus Avenue, Raslouw, Centurion, 0157  
Postal address          : PO Box 553, Raslouw, 0109

e-mail address          : [info@hot4cold.co.za](mailto:info@hot4cold.co.za)  
Website                  : [www.hot4cold.co.za](http://www.hot4cold.co.za)

Most information in this catalog is also on the website and is updated on a regular basis.

If you do not find what you are looking for in the catalog, please give us a call with your specific requirements.

Please note that not all of the products shown in the catalog are ex-stock, confirm availability before placing an order.

Please note that we reserve the right to make any changes at any time to the product range listed in this catalog.

# Index

	<b>Page</b>
1. Introduction to Universal Coolers	1
2. Oil coolers	2
2.1. Setrab Pro Line engine & transmission oil coolers	2
2.2. Setrab Slimline (SLM) oil coolers	5
2.3. Motorbike replacement engine oil coolers	7
2.4. OEM engine oil coolers	8
2.5. Ultra-Cool transmission oil cooler	8
2.6. Hydra-Cool transmission oil coolers	9
2.7. Power steering oil cooler & fuel cooler	9
2.8. MA-series Oil Coolers	10
2.9. Twin Swirl oil cooler	12
2.10. Bar & Plate oil coolers	13
2.10.1. NRF bar & plate oil coolers	13
2.10.2. RAAL bar & plate oil coolers	13
2.11. Magirus Deutz oil coolers	14
3. Oil cooler accessories	15
3.1. Sandwich adapters & remote filter mounts	15
4. Aluminium radiators and accessories	17
4.1. High performance aluminium radiators	17
4.2. Aluminium filler necks	18
4.3. Radiator caps	18
4.4. Heavy duty aluminium radiators – truck & bus	19
4.5. Plastic radiator tanks – truck	19
4.6. Bar & Plate radiators	22
4.6.1. NRF bar & plate radiators	22
4.6.2. RAAL bar & plate radiators	22

5.	Intercoolers	
5.1.	High performance intercooler cores	23
5.2.	Intercooler kits	26
5.3.	Heavy duty intercooler cores – truck & bus	27
5.4.	Bar & Plate intercoolers	29
5.4.1.	NRF bar & plate intercoolers	29
5.4.2.	RAAL bar & plate intercoolers	29
5.5.	Charge Cooler Core – water-cooled intercooler	30
6.	Condensers	31
7.	SFS High Performance Silicone Kits	33
8.	SFS High Performance Silicone Hose	34
8.1.	SFS Straight Silicone Hose	34
8.2.	SFS 45 and 90° bends	35
8.3.	SFS Vacuum tubing	35
9.	Silicone products	36
9.1.	Straight hose	36
9.2.	Reducing elbows	36
9.3.	Hump hose	37
9.4.	Charge air cooler hose	37
9.5.	45° Bends	37
9.6.	90° Bends	38
9.7.	Reducers	38
10.	Aluminium bends, elbows and tubing	39
11.	Electric fans – 12 and 24 Volt	40
11.1.	Davies, Craig 12 & 24 V Automotive	40
11.2.	Spal 12 & 24 V heavy duty industrial	42
12.	Viscous fan clutches	44
13.	Electric Water Pumps and Accessories	45
13.1.	Electric Water Pumps – 12 & 24 V	45
13.2.	EWP Digital Controller – 12 V	51
13.3.	Electric Booster Pump – 12 V	52

14. Thermal switches	53
14.1. Adjustable thermal switch	53
14.2. Industrial thermal switches	53
15. K&N Performance air filters	54
16. Tyre Pressure Monitoring System	55
17. Cooling packs	56
18. Accessories	57
18.1. Heavy duty hose clamps – T-bolt stainless steel	57
18.2. Round vinyl caps	57
18.3. Hot melt sticks	58
19. Installation instructions	59
19.1. Installation instructions for oil coolers	59
19.2. Installation instructions for electric fans	60
20. Services	61
20.1. Design	61
20.2. Manufacturing	61
20.3. Pressure testing	61
20.4. Repairs	61
21. Frequently asked questions	62

# **1. Introduction to Universal Coolers**

Universal Coolers was founded in 1999 to supply quality small to medium sized heat exchangers to the market, supported by best-of-breed technical consultancy and support services.

Originally the business focused mainly on oil coolers, but as the business grew in size the range of products expanded. These now include: engine and transmission oil coolers, industrial oil coolers, intercoolers, charge air coolers, aluminium radiators, cooling packs, 12 and 24 V electric cooling fans and 12 V electric water pumps. We also sell accessories that complement our range of heat exchange products, for example: sandwich adapters, remote filter mounts, aluminium and stainless steel bends as well as silicone hose, bends and reducers.

We have a fully equipped workshop that enables us to manufacture complete aluminium intercoolers and radiators, as well as making fuel tanks, surge tanks and boost pipes. We are also able to re-core, repair and test intercoolers, oil coolers and aluminium radiators.

We currently supply the following markets and industries:

- Motorsport
- Transport
- Military vehicle manufacturers
- Light aircraft industry
- Mining industry
- Earth moving equipment
- Manufacturing plants
- Processing plants

Product and application is perfectly matched by using our technical experience. We also perform design integration services where bespoke solutions are required utilizing state of the art 3D parametric CAD software. This enables us to take a project from the initial concept phase to prototypes and finally production.

We have sole distribution agreements for Southern Africa with Setrab Oil Coolers from Sweden, Davies Craig from Australia, NRF from the Netherlands RAAL from Romania and SFS Performance Products from the UK.

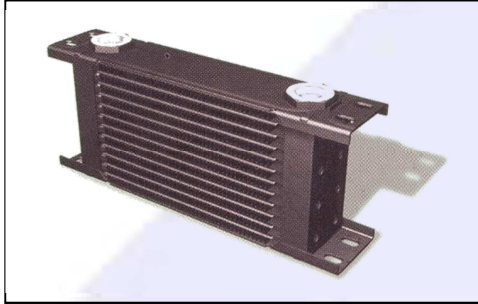
We supply Twin-Swirl oil coolers as an alternative to Hayden oil coolers, used on some earth moving equipment (Bell) and industrial applications.

Although we concentrate on import and distribution, we have exported to the following countries: Kenya, Great Britain, United States, China and Switzerland, to name a few.

Some of our bigger clients are: BAE LandSystems OMC, RSD Dorbyl, Denel LandSystems and D&A Power Products.

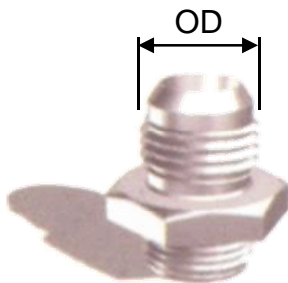
## 2. Oil coolers

### 2.1. Setrab Pro Line Engine & Transmission Oil Coolers



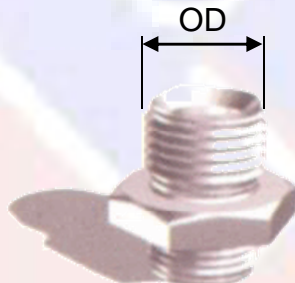
This is the most popular engine oil cooler on the market. Its aluminium construction ensures optimal weight and performance. The Pro Line range of oil coolers can withstand a dynamic pressure of up to 10 bar. Their four mounting brackets make it easy to mount the cooler in virtually any position. The cooler sizes have been standardized to ensure availability, but other sizes are also available. Custom coolers can be ordered in 9 different lengths ranging from 210 mm to 405 mm and with 7 up to 80 tubes.

What makes the Pro Line oil cooler unique is its adapter system: The connections on the cooler are internal M22x1.5 mm thread and adapters are utilized to adapt to the required connections. The following adapters are available:



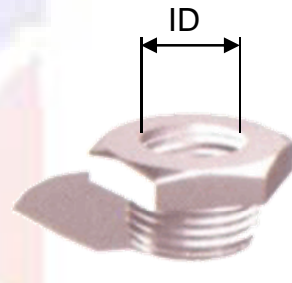
**JIC**

-06, -08, -10, -12, -16



**BSP**

3/8", 1/2", 5/8", 3/4"



**METRIC**

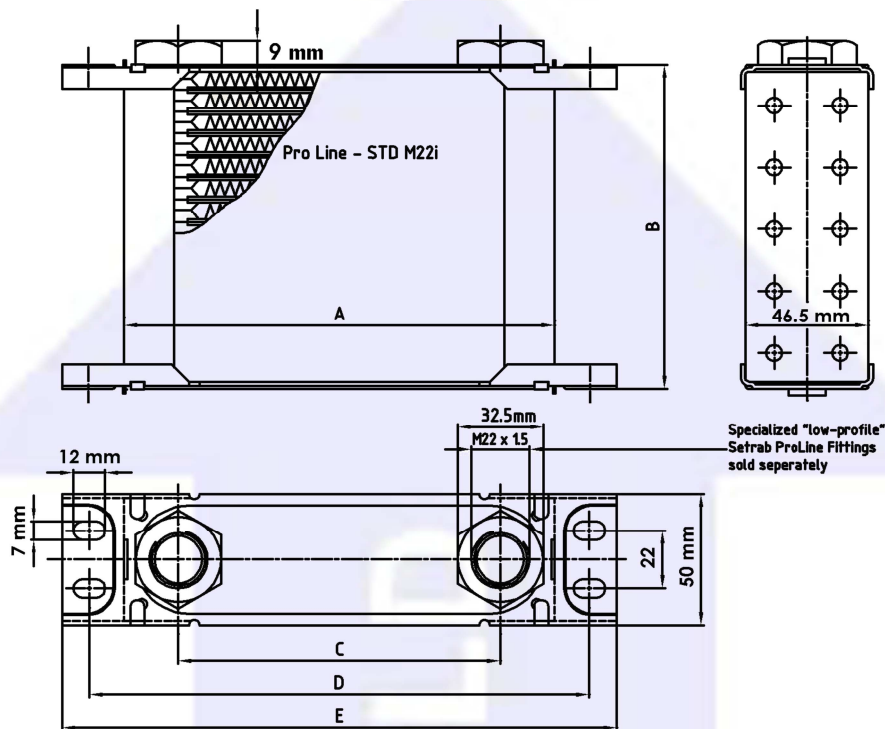
M14, M16, M18

Size	Part no	OD
-06	06PL	14.3
-08	08PL	19.1
-10	10PL	21.9
-12	12PL	26.6
-16	16PL	32.7

Size	Part no	OD
3/8"	3/8PL	16.5
1/2"	1/2PL	20.7
5/8"	5/8PL	22.7
3/4"	3/4PL	26.2

Size	Part no	ID
M14	M14PL	12.6
M16	M16PL	14.6
M18	M18PL	16.5

**List of standard sizes Setrab Pro Line oil coolers:**



Part no.	A mm	B mm	C mm	D mm	E mm	Weight kg	Volume liter
110M22I	163	75	122	190	210	0.43	0.10
113M22I	163	99	122	190	210	0.52	0.14
116M22I	163	123	122	190	210	0.61	0.19
119M22I	163	146	122	190	210	0.70	0.21
125M22I	163	193	122	190	210	0.91	0.26
150M22I	163	391	122	190	210	1.70	0.62
172M22I*	163	562	122	190	210	2.40	0.90
607M22I	283	52	242	310	330	0.54	0.14
610M22I	283	75	242	310	330	0.70	0.19
613M22I	283	99	242	310	330	0.86	0.24
616M22I	283	123	242	310	330	1.04	0.28
619M22I	283	146	242	310	330	1.20	0.38
625M22I	283	193	242	310	330	1.54	0.52
634M22I	283	264	242	310	330	2.04	0.71
640M22I	283	310	242	310	330	2.40	0.85
650M22I	283	388	242	310	330	2.95	1.04
910M22I	358	75	317	385	405	0.88	0.24
915M22I	358	115	317	385	405	1.25	0.38
919M22I	358	146	317	385	405	1.54	0.49
925M22I	358	193	317	385	405	1.97	0.71

\* - Used on a Porsche 911 with a RS scoop



The Setrab Pro Line oil coolers are also used for transmission oil cooling.  
The series 1 and smaller sizes series 6 (7, 10, 13 row) coolers are suitable.

**Applications for Pro Line oil coolers:**

- Engine oil coolers: Motor vehicles (standard or modified), racing cars, motorbikes, microlites, quads, etc.
- Transmission oil coolers: Motor vehicles (standard or modified), racing cars, quads, trucks, busses, etc
- Diff oil coolers: Racing cars, trucks and busses
- Power steering oil coolers: Racing cars and off-road vehicles
- Fuel coolers: Racing cars, turbocharged cars, trucks and busses

**Engine oil cooler selection chart:**

Applicable for water cooled engines.  
For racing and turbocharged engines a cooler 1 or 2 sizes larger will be necessary.

<b>Petrol</b>		<b>610</b>	<b>613</b>	<b>616</b>	<b>619</b>	<b>625</b>	<b>634</b>	<b>640</b>
<b>4 cyl</b>	1300	X						
	1600	X						
	1800		X					
	2000		X					
	2200		X					
	2400			X				
	2600			X				
<b>6 cyl</b>	2800			X				
	2500			X				
	2800			X				
	3000				X			
	3500				X			
<b>8 cyl</b>	4100				X			
	3500				X			
	4000					X		
	5000					X		
	5700					X		
	6500					X		
<b>Diesel</b>								
<b>4 cyl</b>	2000		X					
	2200		X					
Turbo	2400			X				
Turbo	2500			X				
Turbo	2800				X			
Turbo	3000				X			
<b>6 cyl</b>	3000				X			
<b>8 cyl</b>	5700					X		
	6500						X	

## 2.2. Setrab Slimline (SLM) Oil Coolers



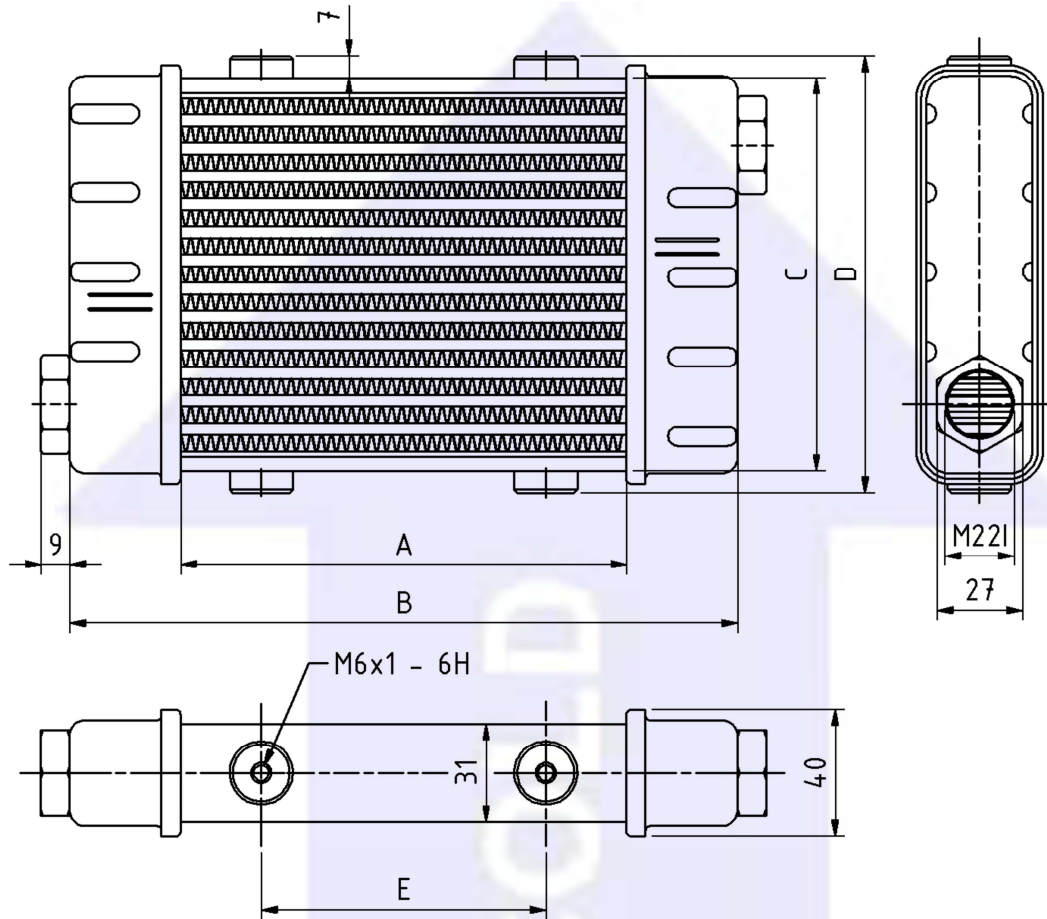
The Setrab SLM range of aluminium oil coolers is ideal for applications with limited space. It's high density tube&fin construction ensures optimal performance from the available space. The SLM range features a unique mounting design that allows for compact, vibration free installations. It can withstand dynamic working pressures of up to 8 bar. The SLM range also utilises the same adapter system as the Setrab Pro Line range – see page 2.

The Setrab SLM range is already in use by Quattro, AMG, VW and Norton MC. The range consists of 4 different core lengths and 3 different heights.

All of the above qualities make the Setrab SLM range a very versatile heat exchanger with many applications.

### **Applications for Setrab Slimline oil coolers:**

Engine oil coolers:	Motor vehicles (standard or modified), racing cars, motorbikes, microlites, quads, etc.
Transmission oil coolers:	Motor vehicles (standard or modified), racing cars, quads, trucks, busses, etc
Diff oil coolers:	Racing cars, trucks and busses
Power steering oil coolers:	Racing cars and off-road vehicles
Fuel coolers:	Racing cars, turbocharged cars, trucks and busses
Water coolers:	Microlites, quads



Part no.	A	B	C	D	E
SLM 141-06*	141	204	52	64	90
SLM 141-10*	141	211	88	100	90
SLM 141-14	141	211	124	138	90
SLM 250-06*	250	313	52	64	200
SLM 250-10	250	320	89	103	200
SLM 250-14	250	320	124	138	200
SLM 420-06	420	483	53	67	320
SLM 420-10	420	490	89	103	320
SLM 420-14	420	490	124	138	320
SLM 592-06	592	655	53	67	492
SLM 592-10	592	662	89	103	492
SLM 592-14	592	662	124	138	492

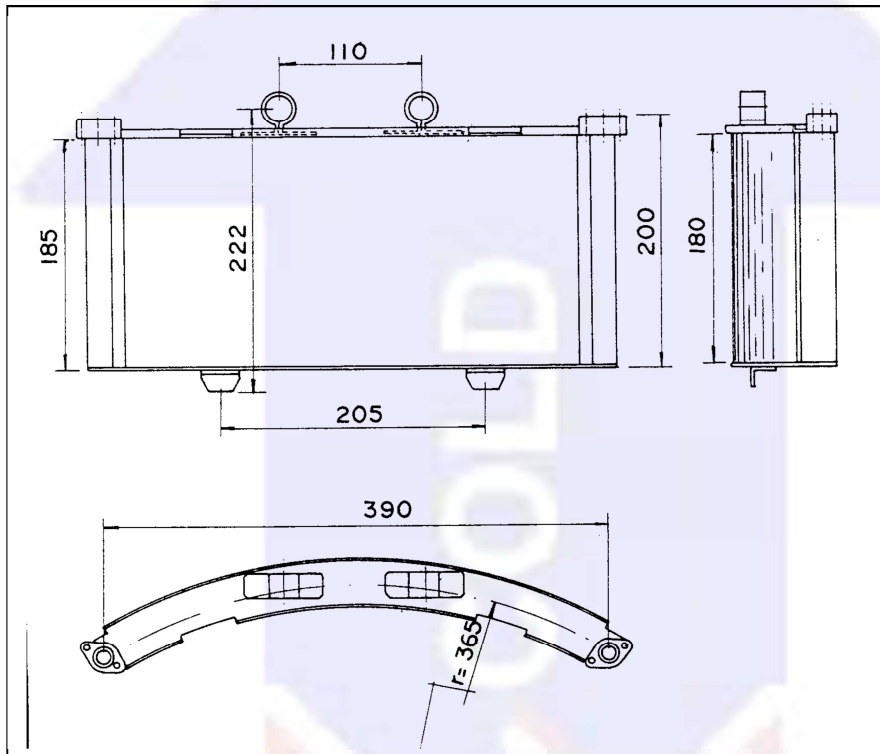
\*Two mounting studs on top plate only

### 2.3. Motorbike replacement engine oil coolers

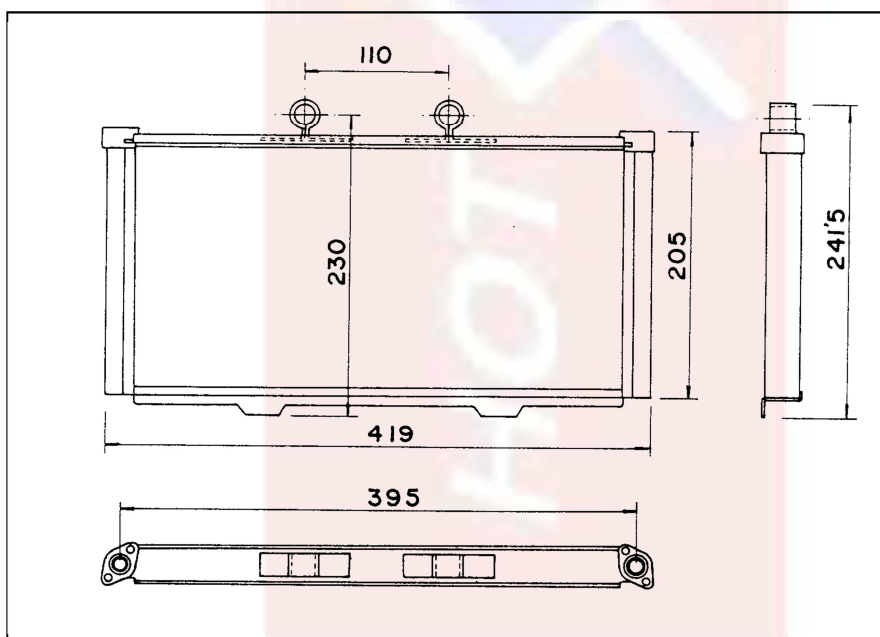


Part no.	Make & Model	Core Size
52010	Suzuki GSX 1100R	390x180x26
52011	Suzuki GSX 750R	375x190x26

#### 52010



#### 52011

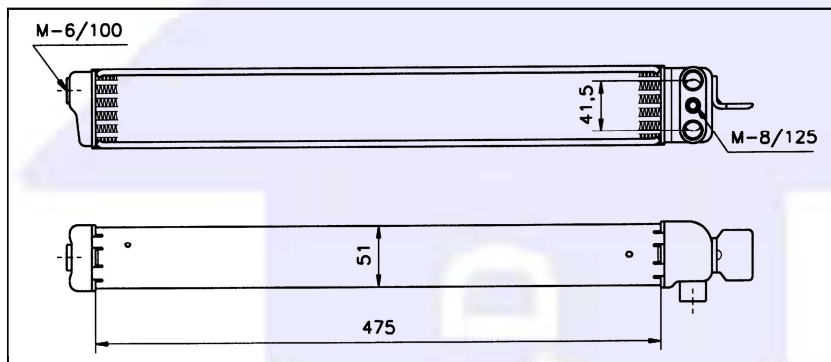


## 2.4. OEM engine oil coolers



Part no.	Description	OE number	Core size
31019	BMW E36 M3	17.21.2.244.084	475x67x43
31050	Opel Astra	90194143	190x79x30

### 31019 – BMW E36 M3



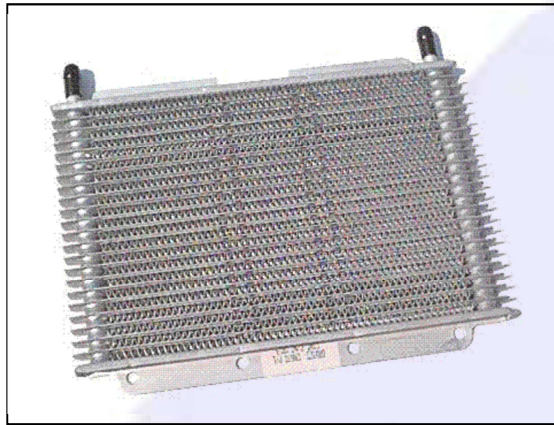
## 2.5. Ultra-Cool Transmission Oil Cooler



The Ultra-Cool transmission oil cooler was the industry's first transmission oil cooler. It is ultrasonically soldered for reliability and features high-efficiency turbulators in every tube for maximum heat dissipation. Ultra-Cool transmission oil coolers are only recommended for vehicles manufactured prior to 1990 and is not suitable for engine oil cooling. It is only sold in kit format including hose, quick fit kit and clamps.

Part no.	Overall size & connections
404	403x191x20 mm, 3/8" push-on

## 2.6. Hydra-Cool Transmission Oil Coolers



The Hydra-Cool transmission oil cooler is an effective way to keep the transmission at its optimum operating temperature. High efficiency turbulators in each tube direct the fluid for superior heat transfer. The Hydra-Cool's compact design is perfect for applications where the available mounting space is limited. The Hydra-Cool transmission oil cooler is not suitable for engine oil cooling. The Hydra-Cool are sold as a core only, kit with hose, clamps and quick fit kit as well as a fan combo kit.

Part no.	Overall size & connections
0856	Core only, 280x142x19 mm, 3/8" push-on
0851	Core only, 280x176x19 mm, 3/8" push-on
0853	Core only, 280x219x19 mm, 3/8" push-on
0854	Core only, 280x300x19 mm, 3/8" push-on
678	Core 0853 with hose, clamps and quick fit kit
679	Core 0854 with hose, clamps and quick fit kit
691	Kit 679 with 10" 12 V fan, wiring and relay

## 2.7. Power steering Oil Cooler

The power steering oil cooler is made from an aluminium tube with internal turbulators and external waved air fins. This cooler can also be used for fuel and differential oil cooling. The cooler comes in a kit format including: hoses, clamps and a quick fit kit.



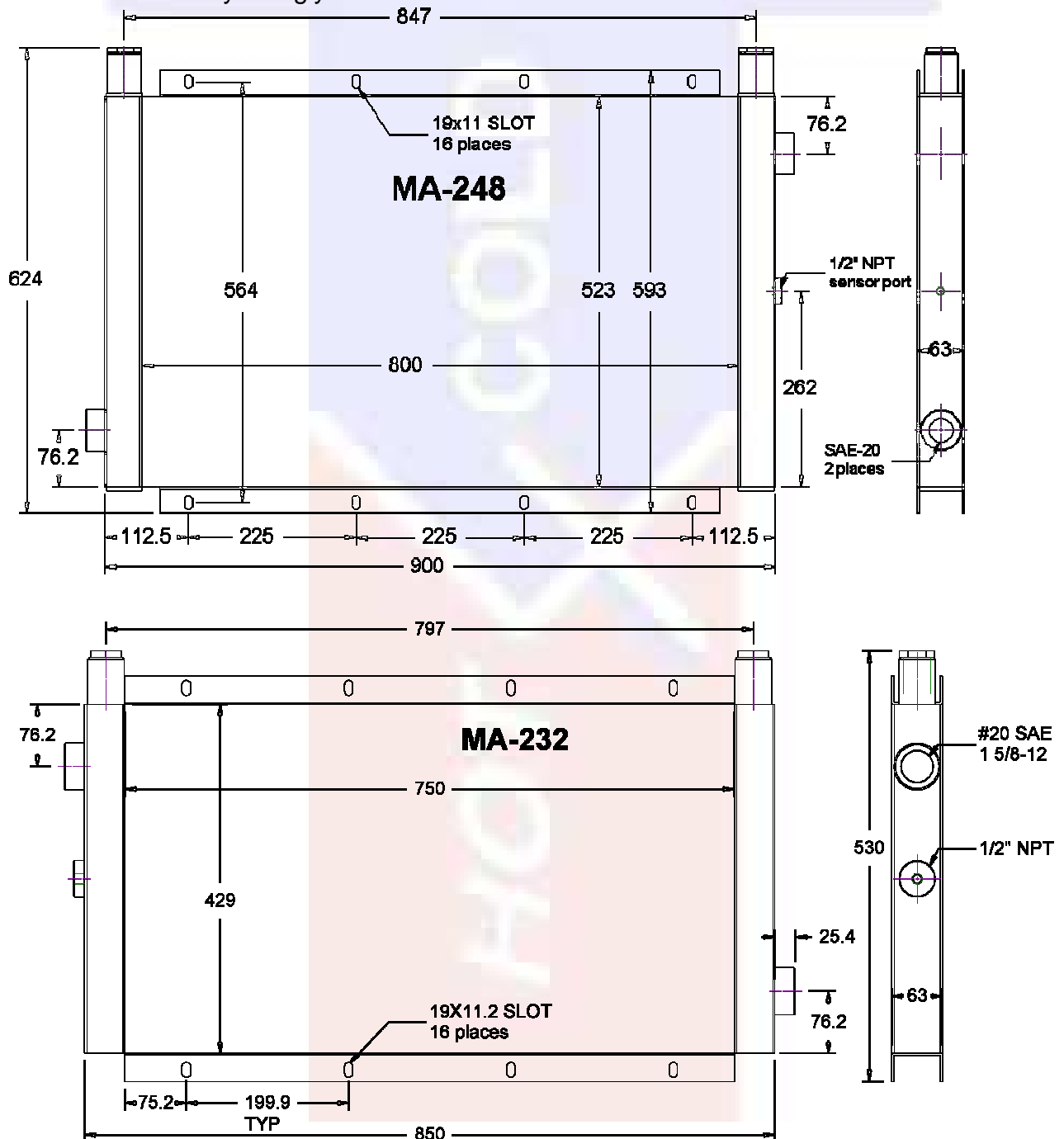
Part no.	Overall size & connections
1009	226x64x19 mm, 3/8" push-on

## 2.8. MA-series Oil Coolers

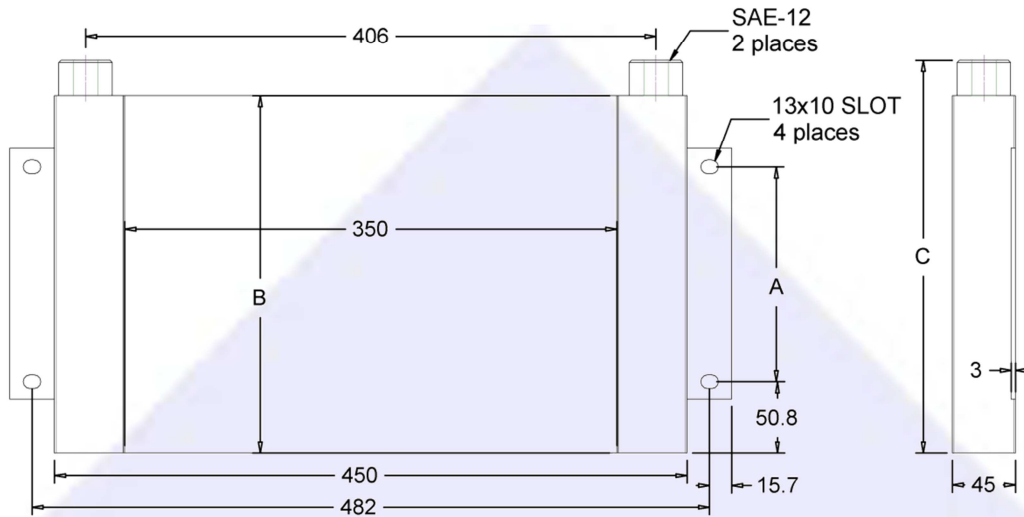
The MA-series, aluminium heat transfer units provide rugged high performance for demanding mobile equipment, oil cooling applications. All the coolers in the range feature proven brazed bar&plate core technology, engineered with an aggressive turbulator that produces ultra-high heat transfer. The MA-series of oil coolers can handle 570 l/min oil flow at up to 2070 kPa and 120°C for extreme oil cooling performance.

### Fluid Compatibility

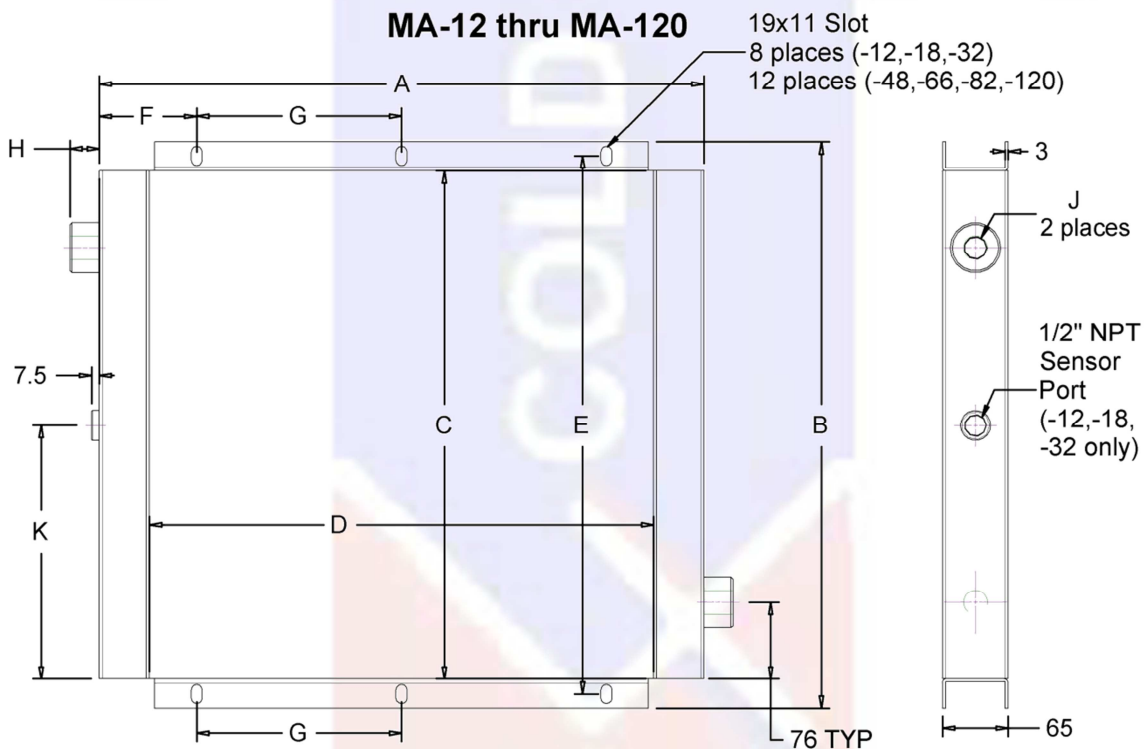
- Petroleum / mineral oils
- Oil / water emulsion
- Phosphate ester
- Water / ethylene glycol



**MA-8, MA-14, MA-20**



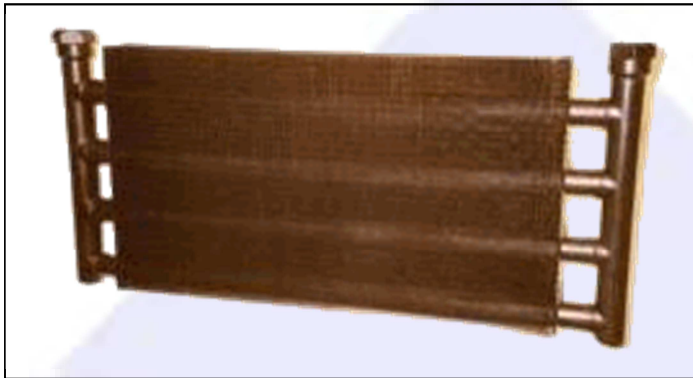
**MA-12 thru MA-120**



Model	A	B	C	D	E	F	G	H	J	K
MA-8	76	144	169							
MA-14	152	254	279							
MA-20	254	364	389							
MA-12	350	298	253	250	276	112	126	25	SAE12	127
MA-18	400	345	300	300	325	126	149	25	SAE12	150
MA-32	500	468	410	400	440	98	305	29	SAE16	205
MA-48	600	562	504	500	534	97	203	29	SAE16	
MA-66	700	656	598	600	628	96	254	40	SAE20	
MA-82	800	703	645	700	675	146	254	40	SAE24	
MA-120	800	1003	945	700	975	146	254	40	SAE24	



## 2.9. Twin-Swirl oil coolers

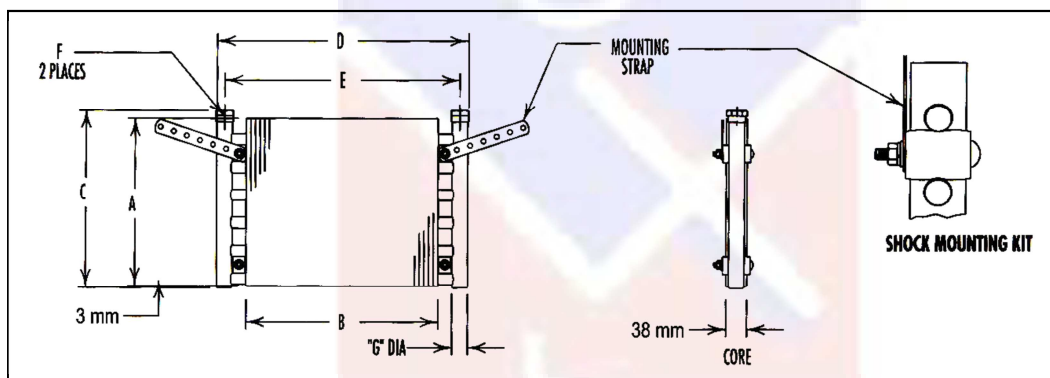


Due to this cooler's simple design, it is very sturdy and reliable. The tubes are made from copper with internal aluminium extrusions acting as turbulators. The air fins are made from wavy aluminium plate and the connections are brass. Because of their low air pressure drop across the core, these coolers are ideal for replacing water-cooled oil coolers. This also makes it possible to mount them in front of the radiator, with a limited effect on the cooling of the radiator.

Applications: Engine and transmission oil cooling for heavy duty vehicles, earth moving equipment and 4x4 vehicles.

The range of Twin Swirl coolers can withstand working pressures up to 20 bar.

### Dimensions of Twin-Swirl oil coolers with Hayden cross reference:



### List of sizes:

Part nr.	A	B	C	D	E	F	G	Hayden nr.
DH-051-1-1	102	286	114	381	359	½" NPT	22	10215S1
DH-062-1-1	152	286	165	381	359	½" NPT	22	10315S1
DH-073-1-1	152	362	165	457	435	½" NPT	22	10318S1
DH-084-1-1	152	514	165	610	587	½" NPT	22	10324S1
DH-095-2-1	203	362	216	457	435	JIC-10	22	10418V1
DH-216-1-1	305	502	322	610	581	¾" NPT	28	10624S1
DH-249-1-1	457	502	475	610	581	¾" NPT	28	10924S1
DH-326-1-1	610	489	635	610	575	1" NPT	28	11224S1
DH-337-1-1	610	641	635	762	727	1" NPT	28	11230S1

## 2.10. Bar & Plate oil coolers

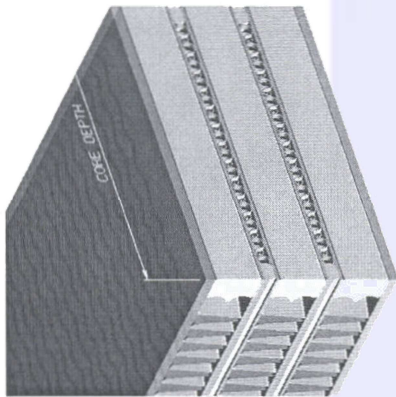


### 2.10.1. NRF bar & plate oil coolers

NRF bar & plate oil coolers are aluminium, vacuum brazed heat exchangers. These coolers are suitable for the replacement of oil coolers on earthmoving equipment, mining equipment, agricultural machines, industrial machines, air compressors and many more applications.

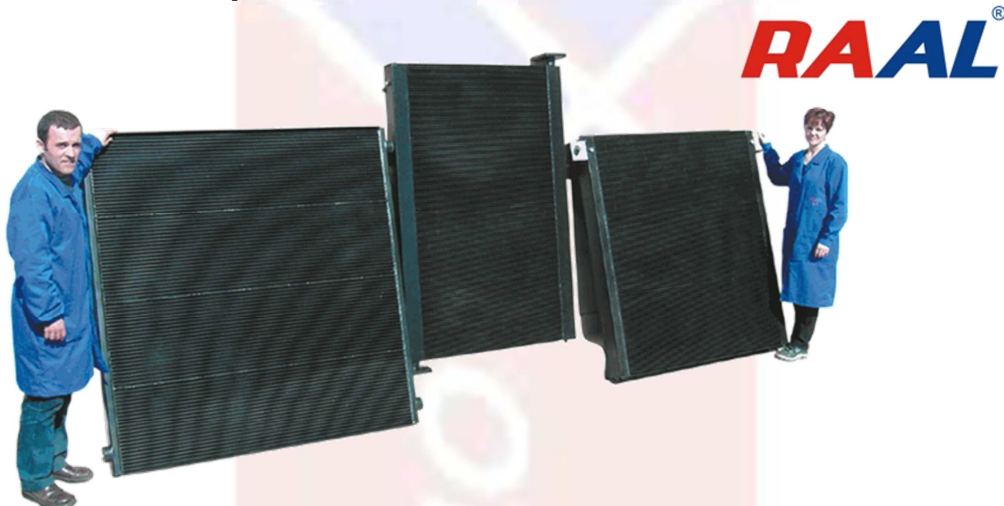
These cores can be custom ordered in 1 off quantities with very short lead times – typically 2 weeks.

We are able to supply these oil coolers complete with header tanks, connections and brackets.



<b>BP163</b>	Waved, non louvred fin
Core depths mm	50, 62, 97, 114, 144
<b>BPY163</b>	Louvred fin
Core depths mm	50, 62
Tube pitch	16.3 mm
Airfin height	12 mm
Tube thickness	4.3 mm
Turbulator height	3 mm
Max. working pressure	25 bar
Max. working temperature	160°C

### 2.10.2. RAAL bar & plate oil coolers



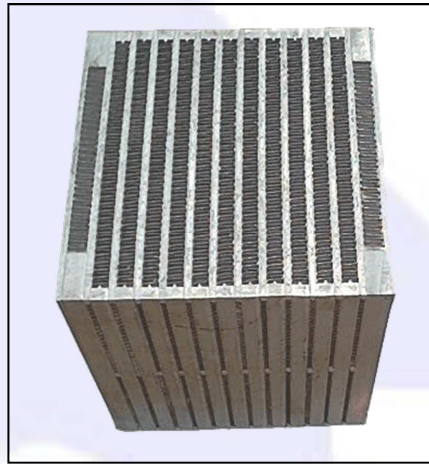
RAAL bar & plate oil coolers are aluminium vacuum brazed units. RAAL has the capability to manufacture fairly large modular units according to the customer's specification. These coolers are suitable for the replacement of oil coolers on earthmoving equipment, mining equipment, agricultural machines, industrial machines, air compressors and many more applications.

We are able to supply complete units or cores only for remanufacturing.

## 2.11. Magirus Deutz oil coolers



**Recored unit**



**Core**

We stock replacement cores for a range of Magirus Deutz oil coolers. These cores are high performance, vacuum brazed, aluminium plate and bar heat exchangers. The air fins are waved and the oil channels have staggered turbulators.

Should you not find your specific Deutz oil cooler listed here, please contact us with your requirements.

### **List of sizes:**

<b>Part nr.</b>	<b>Model</b>	<b>OE nr.</b>	<b>Core size</b>
RU8852-1.0	BF6L913 – Hydraulic	2237422KZ/90.881	268x220x197
RU8433-1.0	BF6L913 – Engine	04230100EA/91.540	212x155x180
RU8912-1.0	F6L912 – Hydraulic	2735338KZ/90.839	190x220x197
RU9046-1.0	F6L912 – Engine	2234409EA/90.74	365x61x125

### 3. Oil Cooler Accessories

#### Sandwich Adapters and Remote Filter Mounts



We stock the following oil cooler accessories:

Part number	Description
210376	Sandwich adapter, 3/4"-16 UNF, 1" thick, 2 1/2" o-ring
185-000	Sandwich adapter, 13/16"-16 UNF, 1 7/8" thick, 3 1/8" o-ring, Chev
186-000	Sandwich adapter, M20x1.5 mm, 1" thick, 2 1/2" and 3 1/8" o-rings
111-000	Blanking plate, 3/4"-16 UNF, 1/2" ports up, 2 1/2" o-ring
214-000	Blanking plate, M24 x 1.5 mm ports up, 2 1/2" o-ring
216-000	Blanking plate, M26 x 1.5 mm ports up, 2 1/2" o-ring
210398	Blanking plate, 3/4"-16 UNF, 1/2" ports left and right, 2 1/2" o-ring
1211-000	Remote filter mount, 3/4"-16 UNF, 1/2" NPT ports up, 2 1/2" o-ring
210343	Remote filter mount, 3/4"-16 UNF, 1/2" NPT ports left, 2 1/2" o-ring
210333	Dual remote filter mount, 3/4"-16 UNF, 1/2" NPT ports, 2 1/2" o-ring
210117	Remote oil thermostat – opens on 77 to 82°C – 1/2" NPT ports
M18x1.5	Extension bolt for 181-000 – M18x1.5 mm
M20x1.5	Extension bolt for 181-000 – M20x1.5 mm
8BFB8	90° Elbow, 1/2" BSP to 1/2" tail for oil cooler
8FJB8	90° Elbow, JIC-08 to 1/2" tail for oil cooler
AF608	Straight fitting, 3/8" NPT to 1/2" tail for sandwich adapter
AF808	Straight fitting, 1/2" NPT to 1/2" tail for remote filter mounts
PARKERHITEMP38	3/8" Hydraulic hose for transmission oil coolers
PARKERHITEMP12	1/2" Hydraulic hose for engine oil coolers
T12-22/9W1	1/2" Hose clamps – 12 to 22 mm

These sandwich adapters, remote filter mounts, blanking plates and remote oil thermostats are made from A380/A384 aluminium for solid fill, porosity-free castings.

### **GUD Filter / Sandwich adapter reference guide**

The following tables will help to locate the correct sandwich adapter or remote filter mount for your application. Should you not find your filter number, please call us for assistance.

**The following filters use the 210376 sandwich adapter with a M20x1.5 centre bolt:**

Z161	Mazda, Ford
Z164	Renault, Isuzu
Z193	Mazda, Ford
Z198	Mitsubishi, Ford, Isuzu
Z218	Honda
Z222	Mazda, Ford
Z226	Mitsubishi
Z228	Fiat

**The following filters use the 210376 sandwich adapter:**

Z48	Nissan 1400
Z88	Audi, Volkswagen
Z88G	Audi, Volkswagen
Z95	Toyota, Mazda, Ford, Landrover
Z96	Alfa Romeo, Fiat
Z123	Alfa Romeo, Ford, Toyota
Z135	Audi, Volkswagen
Z147	Alfa Romeo
Z152	BMW
Z153	Datsun, Nissan
Z157	BMW
Z159	Diahatsu, Suzuki
Z167	Volkswagen – Microbus
Z173	Toyota
Z185	Mercedes Benz 190E
Z197	Nissan
Z211	Toyota – 4AGE & 20V
Z214	Nissan
Z215	Nissan
Z217	Toyota, Fiat, Renault, MG

**The following filter uses the 210376 sandwich adapter with a M18x1.5 centre bolt:**

Z156	Opel
------	------

**The following filters use the 186-000 sandwich adapter:**

Z76	Mazda, Honda
Z91B	Mazda, Ford, Isuzu, Subaru, Hyundai
Z143	Isuzu, Mitsubishi, Nissan
Z162	Mazda, Ford
Z207	Isuzu

**The following filters must be changed to a remote mount filter system:**

		<b>Blank Plate</b>	<b>Remote Filter Mount</b>	<b>New Filter</b>
Z230	Toyota, Landcruiser4.2D	214-000	1211-000	Z95
Z259	Mitsubishi	216-000	1211-000	Z95
Z248	Mazda, Ford 2.5TD	216-000	1211-000	Z95

## **4. Aluminium radiators and accessories**

### **4.1. High performance aluminium radiators**



We supply custom made aluminium radiator cores and complete aluminium radiators with aluminium end tanks, CNC machined filler necks, drain plugs and fan switch mountings for motorsport, 4x4 vehicles, light aircraft, motorbikes, quads, etc. The following cores are standard stock units:

<b>Part number</b>	<b>Core size – mm</b>	<b>Header size – mm</b>
82670	650x460x43	460x60
82671	570x450x43	450x60
82672	500x460x43	460x60
83690	405x710x43	710x60

The standard core thicknesses are 20, 30, 42, 48 and 56 mm.  
The tubes are 2 mm thick and the fin height is 7.4 mm.  
The fin pitch is 33 fins per 100 mm.

Custom cores can be ordered in virtually unlimited configurations (within the thickness constraints).

## 4.2. Aluminium filler necks



Part number	Description
RN1	Large CNC machined filler neck – OD 50 mm
RN2	Small CNC machined filler neck – OD 38 mm
5823.1	Small pressed filler neck – OD 34 mm

## 4.3. Radiator caps



We stock “Nippy” radiator caps in the following pressures:

Part number	Pressure
50.63	90 kPa
50.62	110 kPa
50.62.2	150 kPa

#### 4.4. Heavy duty aluminium radiators – truck & bus

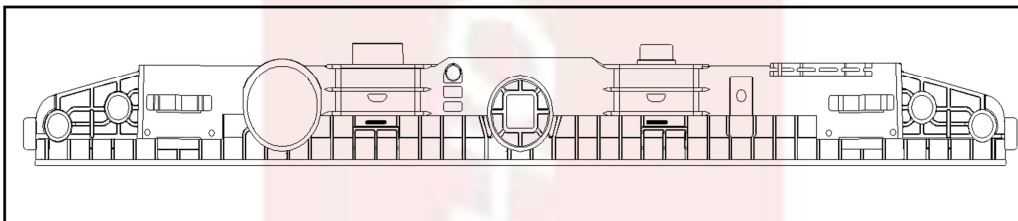


We stock the following aluminium radiator cores or completes for trucks and busses:

Part nr.	Make	Model	OE nr.	Core size
509616	DAF – with tanks	65CF	1434916	850x648x43
29586	DAF – core	85CF		905x648x43
509586	DAF – complete	85CF		905x648x43
29679	DAF – core	85CF series 2		950x648x43
509679	DAF – with tanks	85CF series 2		950x648x43
519541	DAF – with tanks	95XF	1326966	1068x791x43
29578	Mercedes – core	Actros	9425001203	1015x829x43
29604	Volvo – core	FH12	1676435	900x900x43
519702	Volvo – with tanks	FH12		900x900x43
509702	Volvo – complete	FH12		900x900x43
29610	Volvo – core	FM12	1665249	900x740x43
519701	Volvo – with tanks	FM12		900x740x43
509701	Volvo – complete	FM12		900x740x43
29709	Renault – core		5010315361	975x738x43
29587	Scania – core		1327249	860x964x43
509587	Scania – with tanks		1327249	860x964x43
519587	Scania – complete		1327249	860x964x43

#### 4.5. Plastic radiator tanks

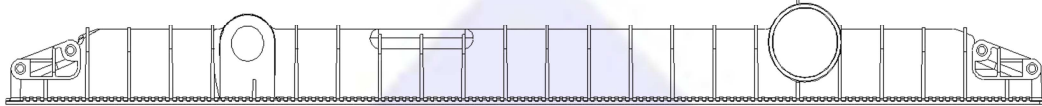
Part number	Make	Model	Size	In / Out
05571001	DAF	85CF	647x78	In
05571102	DAF	85CF		Out
05582101	DAF	95XF	774x71.5	In
05582202	DAF	95XF		Out
05576202	Renault		747x70	Out
05586302	MAN	F2000	732.5x72	In
05586402	MAN	F2000		Out
05574901	Volvo	FH12	910x81	In
05575001	Volvo	FH12		Out
05575101	Volvo	FM12	752x81	In
05575201	Volvo	FM12		Out



05582101 / 05582202

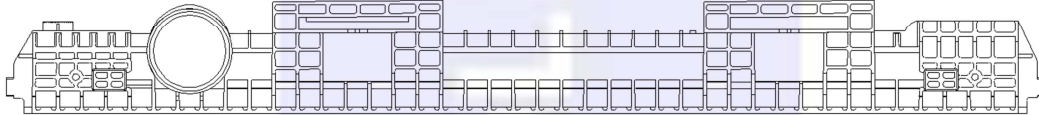
Model	DAF XF 95 / F95
Year	94~00
Type	Inlet / outlet
Size	71.5 x 774mm





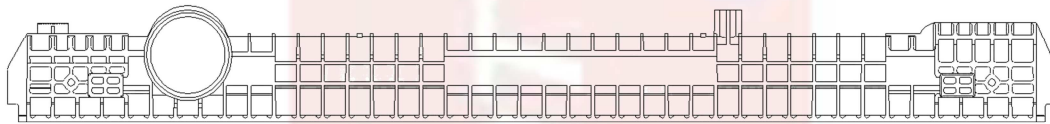
05576202

<b>Model</b>	RVI Premium 210/250/260/300
<b>Year</b>	96~00
<b>Type</b>	Inlet / Outlet
<b>Size</b>	747 x 70 mm



05586302

<b>Model</b>	Man F2000
<b>Year</b>	94~00
<b>Type</b>	Inlet
<b>Size</b>	732.5 x 72mm



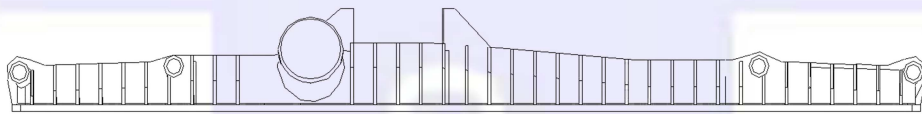
05586402

<b>Model</b>	Man F2000
<b>Year</b>	94~00
<b>Type</b>	Outlet
<b>Size</b>	732.5 x 72mm



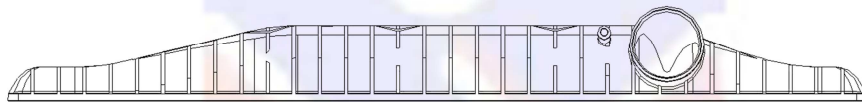
05574901

Model	Volvo FH12
Year	1993~2000
Type	Inlet
Size	81 x 910mm



05575001

Model	Volvo FH12
Year	1993~2000
Type	Outlet
Size	81 x 910mm



05575101

Model	Volvo FM12
Year	1993~2000
Type	Inlet
Size	81 x 752mm



05575201

Model	Volvo FM12
Year	1993~2000
Type	Outlet
Size	81 x 752mm

## 4.6. Bar & Plate heavy duty radiators

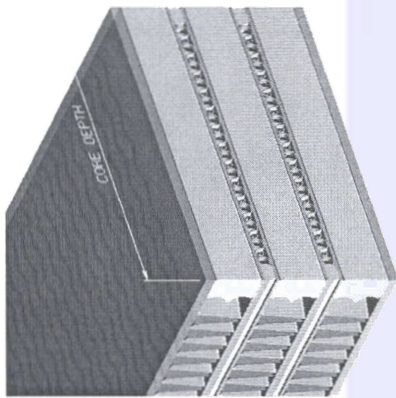


### 4.6.1. NRF bar & plate radiators

NRF bar & plate radiators are aluminium, vacuum brazed heat exchangers. These coolers are suitable for the replacement of radiators on earthmoving equipment, mining equipment, agricultural machines, industrial machines and many more applications.

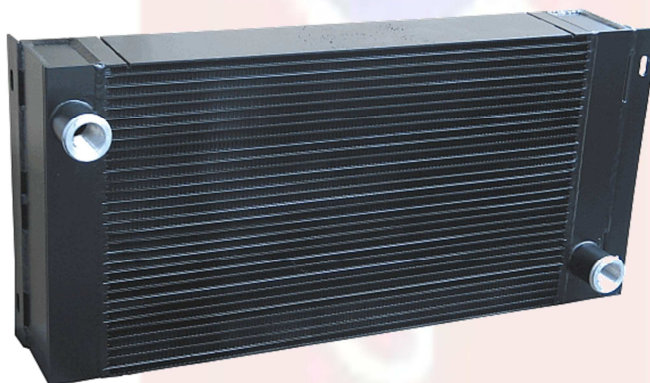
These cores can be custom ordered in 1 off quantities with very short lead times – typically 2 weeks.

We are able to supply these radiators complete with header tanks, connections and brackets.



<b>BP163</b>	Waved, non louvred fin
Core depths mm	50, 62, 97, 114, 144
<b>BPY163</b>	Louvred fin
Core depths mm	50, 62
Tube pitch	16.3 mm
Airfin height	12 mm
Tube thickness	4.3 mm
Turbulator height	3 mm
Max. working pressure	25 bar
Max. working temperature	160°C

### 4.6.2. RAAL bar & plate radiators



RAAL bar & plate radiators are aluminium vacuum brazed units. RAAL has the capability to manufacture fairly large modular units according to the customer's specification. These coolers are suitable for the replacement of radiators on earthmoving equipment, mining equipment, agricultural machines, industrial machines and many more applications.

We are able to supply complete units or cores only for remanufacturing.

## 5. Intercoolers



### 5.1. High performance intercooler cores

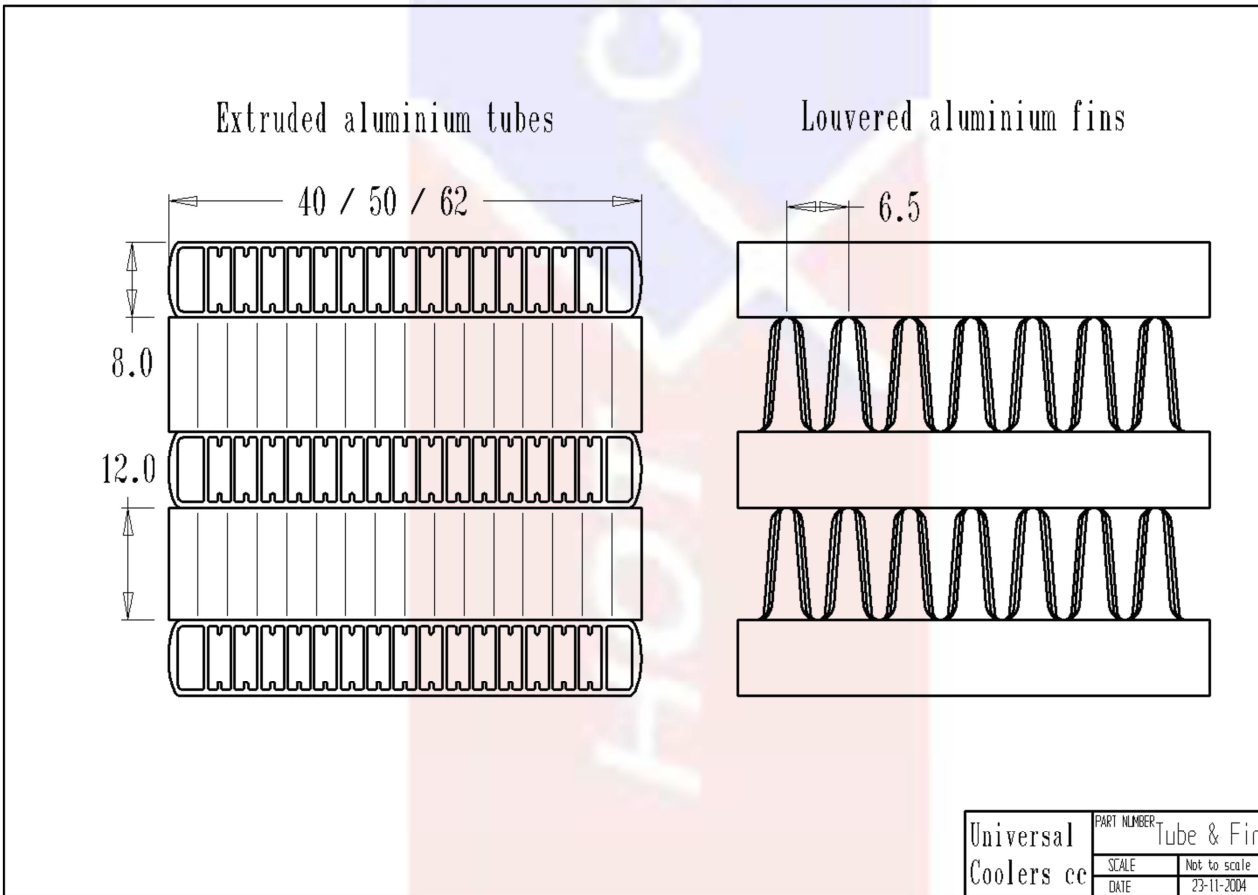
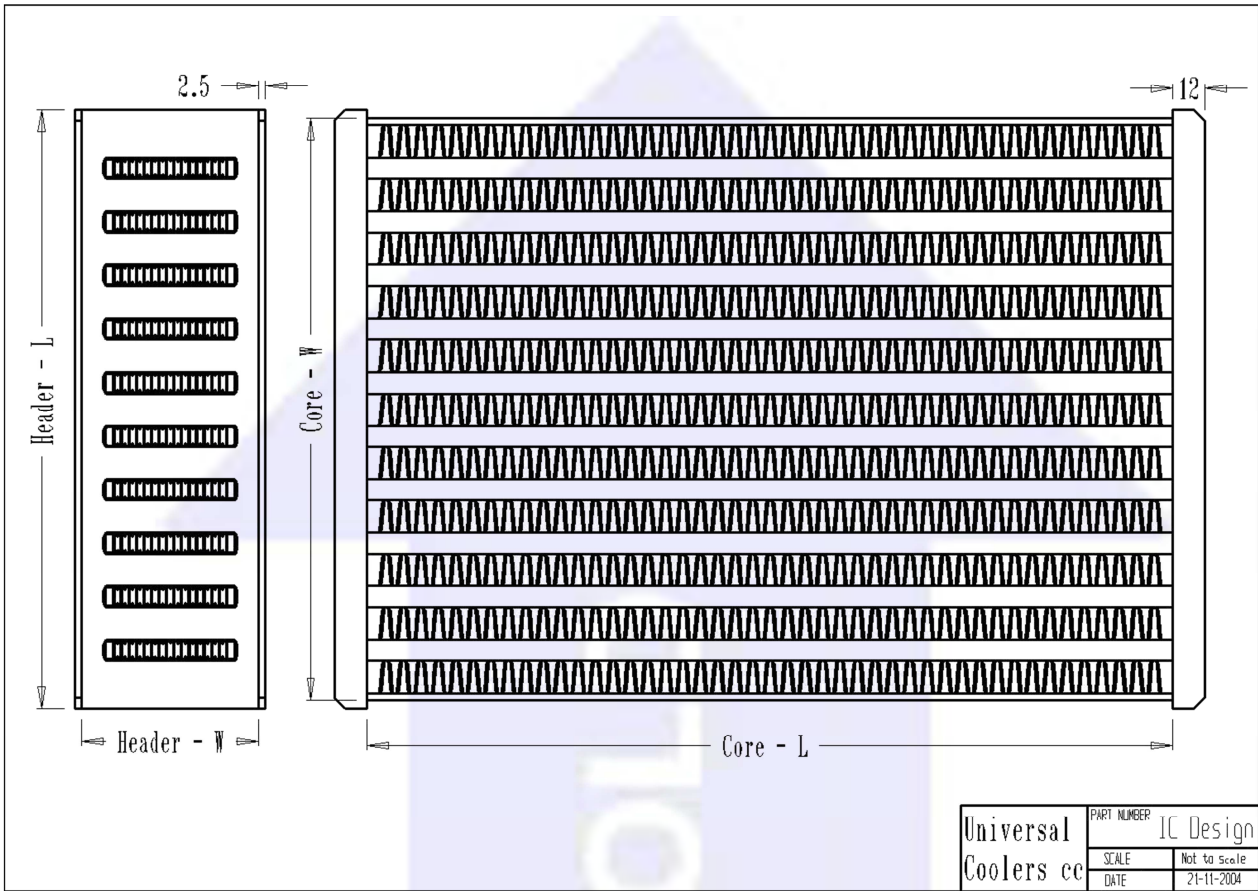
These cores feature the latest in design technology. The tubes are 8 mm thick aluminium extrusions with internal fins. The air fins are 12 mm aluminium serpentine, louvered fins. The large air fins allows for higher air speeds, thus increased performance. These cores are available in 40, 50 and 62 mm thicknesses. 100 mm cores are also available.

See the attached detailed drawings on the next page for more information on the construction of the intercoolers.

If you do not find a size close to your requirements we can import a custom size according to your requirements.



<b>Part number</b>	<b>Size l*w*t mm</b>
19054	440x697x62
19092	540x437x50
19140	600x297x62
82862	170x517x50
82863	495x277x50
83740	600x257x50
83741	642x257x50



**We can supply intercooler cores within the following dimensional constraints:**

Maximum core length when width is less than 1000 mm

Core thickness	40 mm	50 mm	62 mm
Core length	1190	1190	1190

Maximum core length when core width is more than 1000 mm

Core thickness	40 mm	50 mm	62 mm
Core length	876	848	822

Maximum core width when core length is less than 1000 mm

Core thickness	40 mm	50 mm	62 mm
Core width	1097	1097	1097
Nr. of tubes	54	54	54

Maximum core width when core length is more than 1000 mm

Core thickness	40 mm	50 mm	62 mm
Core width	997	997	997

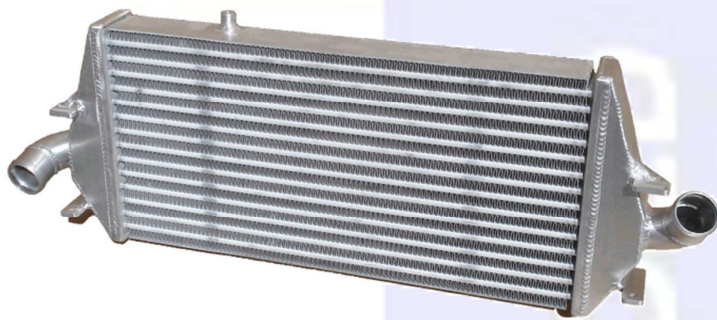
Minimum core length and width

Core thickness	40 mm	50 mm	62 mm
Core length	140	140	140
Core width	117	117	117
Nr. of tubes	8	8	8

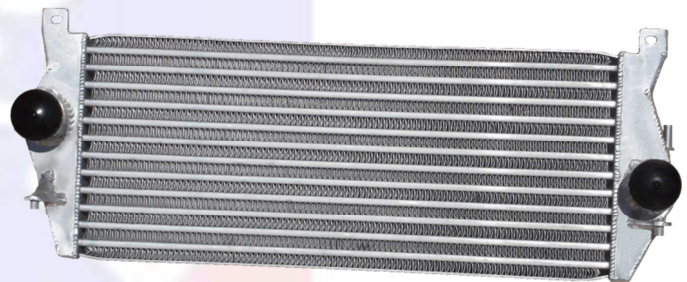
## 5.2. Intercooler kits

We manufacture intercooler kits using NRF intercooler cores.  
We currently have the following range:

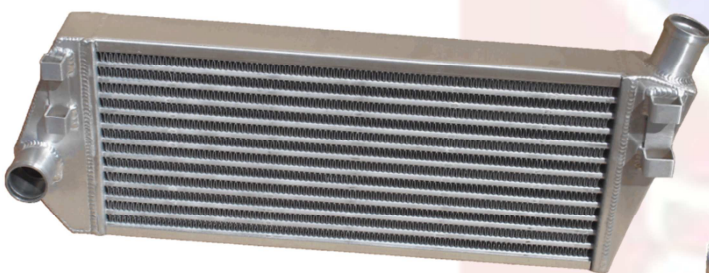
Make	Model	Core Size
Ford / Mazda	Ranger / 2500Td	495x277x50 mm
Ford	Focus ST	600x297x62 mm
Land Rover	Defender Td5	600x257x50 mm
	Discovery Td5	642x257x50 mm
Renault	Megane RS	600x290x62 mm



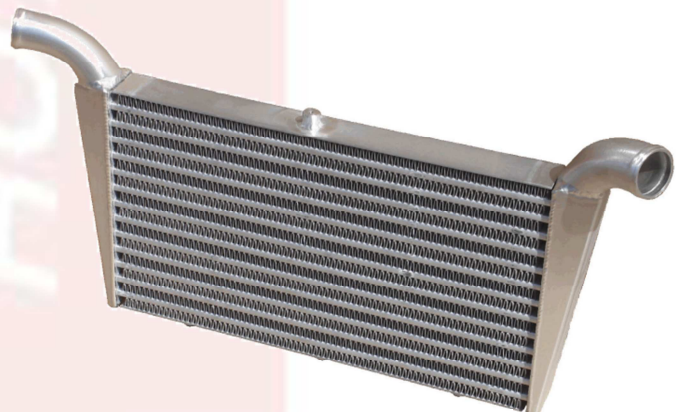
Ford ST



Land Rover Defender



Renault Megane RS



Ford / Mazda 2500TD

### 5.3. Heavy duty intercooler cores – truck & bus



We stock a wide range of vacuum brazed aluminium truck intercooler cores. They are the same construction as the light duty cores. We are able to supply complete custom build intercoolers according to the client's requirements

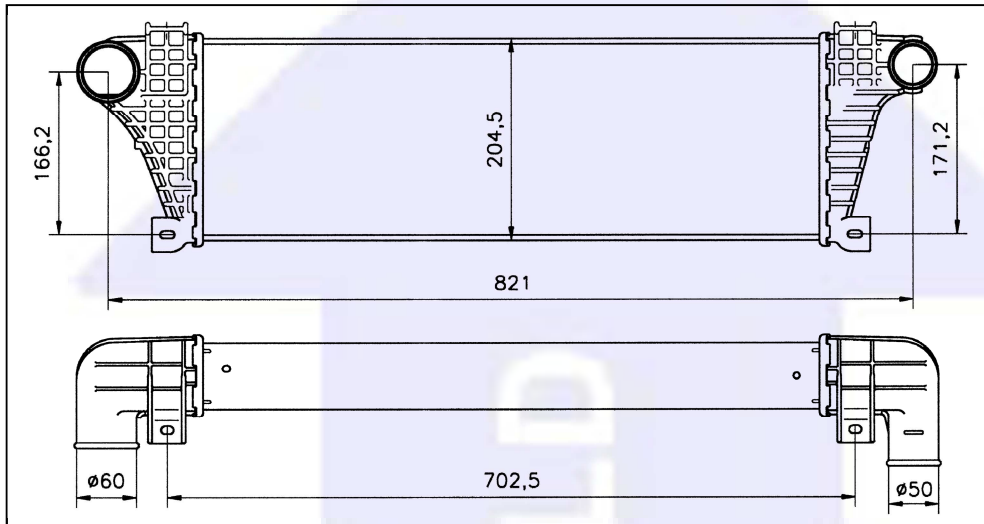
Part no.	Description	Size l*w*t mm	OEM part no.
83670	CAT 740	845x657x62	
19060	DAF 85CF	606x657x62	1235918
19055	DAF 95XF	553x857x50	
81427	DAF 85CF	520x737x62	
82914	ERF	590x677x62	
19172	Freightliner Argosy	610x857x50	
19162	Freightliner (short nose)	665x597x62	
82806	Freightliner (long nose)	770x537x62	
19353	International 9600	1040x637x50	
19163	International 9700	698x497x62	
19154	International 9800	705x637x50	
30117	Iveco Turbo Daily - complete	630x202x62	93822683
19028	Iveco Samag	490x717x50	19033
19058	Iveco Eurotech	658x697x50	93160530
88932	Kenworth	720x697x50	
30041	MAN F90 – complete	650x617x62	81.06130.0072
19015	MAN F90	653x617x50	81.06130.0023
19005	MAN F90	650x617x62	81.06130.0072
81935	MAN F2000	650x737x50	
19073	Mercedes NG90	650x757x50	6555010201
19076	Mercedes 1416	395x617x50	6775011001
19151	Mercedes Actros	750x857x62	9425010201
19008	Mercedes Actros	750x657x50	9425010301
19006	Mercedes SK 1733-1933	600x797x50	6565010001
85724	Nissan UD440	550x677x50	
19167	Peterbilt	635x677x62	
19063	Renault Major	650x797x50	5010213198
19082	Renault Magnum	755x797x62	5010066292
19013	Renault 340 / 385	630x917x62	5010230488
19001	Scania 112 / 142	675x637x62	352304 / 1100086
19018	Scania 124	825x797x62	1373517
87718	Toyota Hino	690x797x62	
19025	Volvo F10 / F12	740x777x62	1542735
19011	Volvo FH12	885x917x62	8112563
19187	Volvo FH12 – series 2	900x897x62	
19200	Volvo FM12	900x737x62	
19003	Volvo B12 Bus	885x757x62	1665242
84107	Volvo B7TL Bus	1000x477x62	
84349	Volvo B7R	875x637x62	



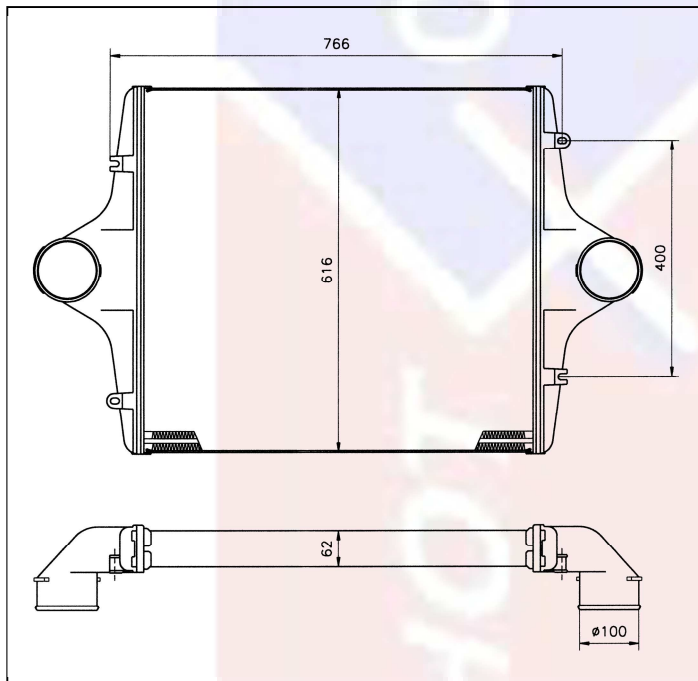
## Drawings of complete intercoolers



### Iveco Turbo Daily



### MAN F90



## 5.4. Bar & Plate intercoolers

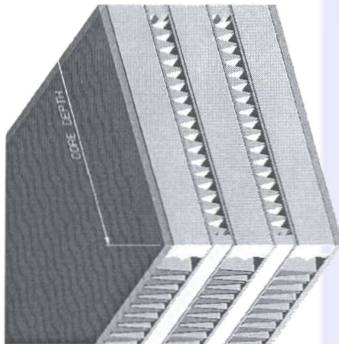


### 5.4.1. NRF bar & plate intercoolers

NRF bar & plate intercoolers are aluminium, vacuum brazed heat exchangers. These coolers are suitable for the replacement of intercoolers on earthmoving equipment, mining equipment, agricultural machines, industrial machines, air compressors and many more applications.

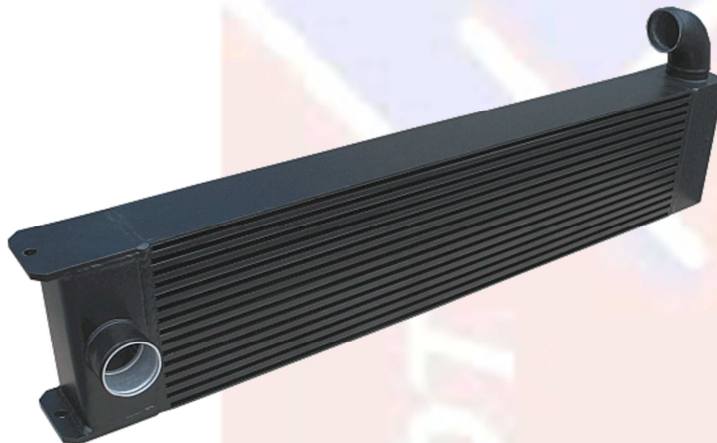
These cores can be custom ordered in 1 off quantities with very short lead times – typically 2 weeks.

We are able to supply these intercoolers complete with header tanks, connections and brackets.



<b>BP193</b>	Waved, non louvred fin
Core depths mm	97
Tube pitch	19.3 mm
Airfin height	12 mm
Tube thickness	7.3 mm
Turbulator height	6 mm
Max. working pressure	16 bar
Max. working temperature	180°C

### 5.4.2. RAAL bar & plate intercoolers



RAAL bar & plate intercoolers are aluminium vacuum brazed units. RAAL has the capability to manufacture fairly large modular units according to the customer's specification. These coolers are suitable for the replacement of intercoolers on earthmoving equipment, mining equipment, agricultural machines, industrial machines, air compressors and many more applications.

We are able to supply complete units or cores only for remanufacturing.

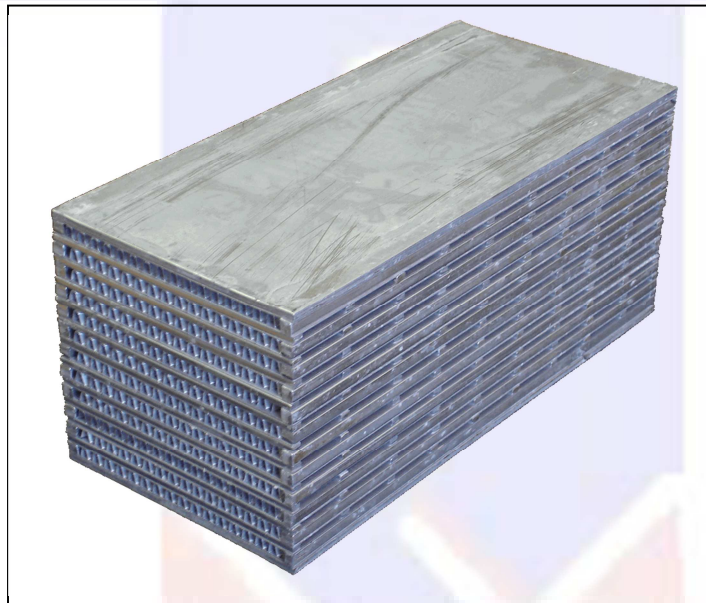
## 5.5. Charge Cooler Core – water-cooled intercooler

A charge cooler has the same function as an air-to-air intercooler, but the air is cooled with water instead of air. Although the system is more expensive and complex due to the fact that you require a radiator, water pump and header tank, it is much more compact and will ensure a better throttle response.

We can supply and install complete charge air cooler systems.

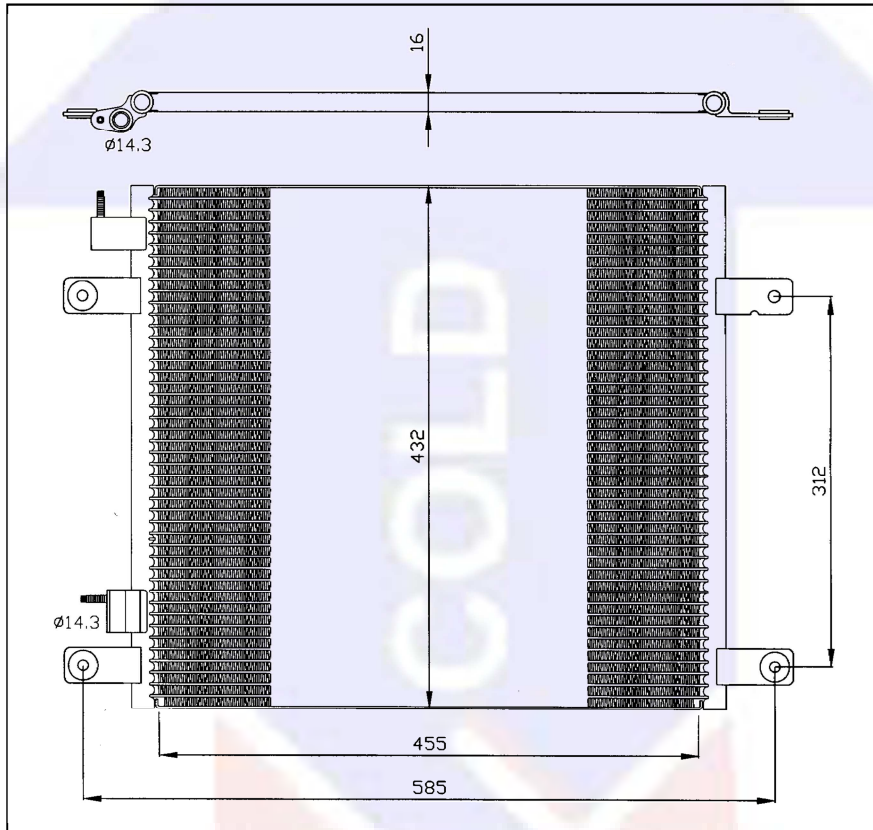
We stock the following core:

Part nr.	Core size	Waved fin height	Water channel gap
RAS3489-1.0	230x105x100 mm	5 mm	2.5 mm

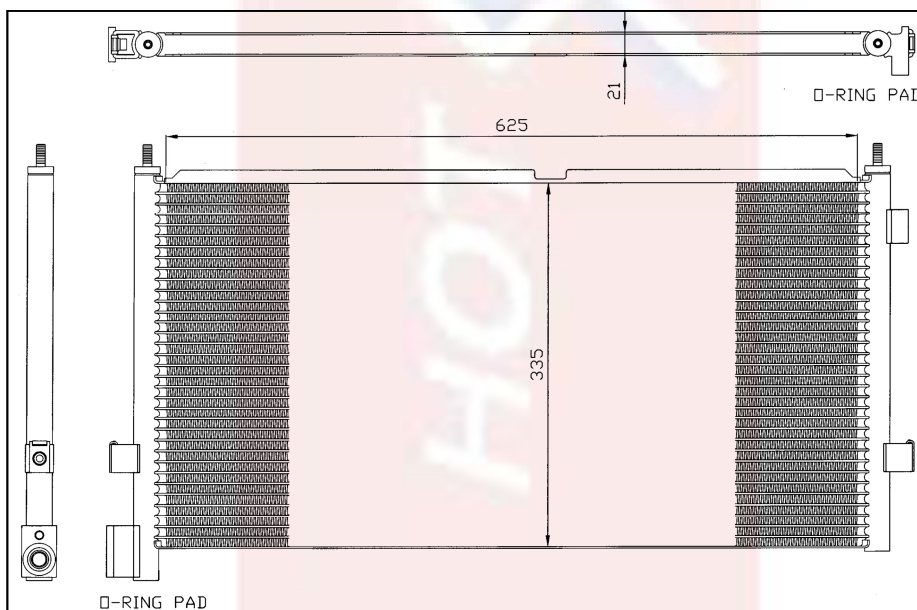


## 6. Condensers – truck

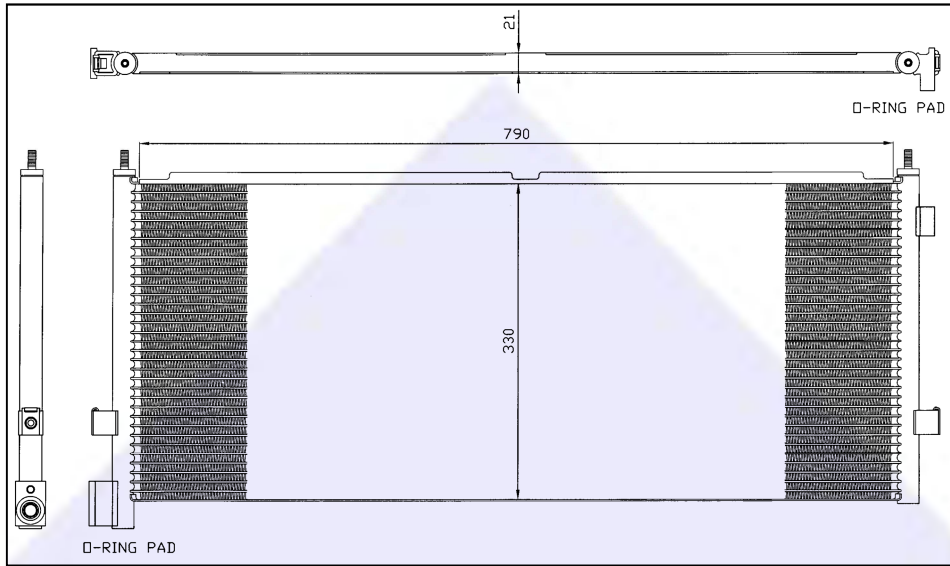
Part number	Description	Size - mm
35364	DAF – CF85	455x432x16
35313	Volvo – FM12	625x335x21
35314	Volvo – FH12	790x330x21
35522	Volvo – FH12	790x330x21
35061	Scania	820x460x24



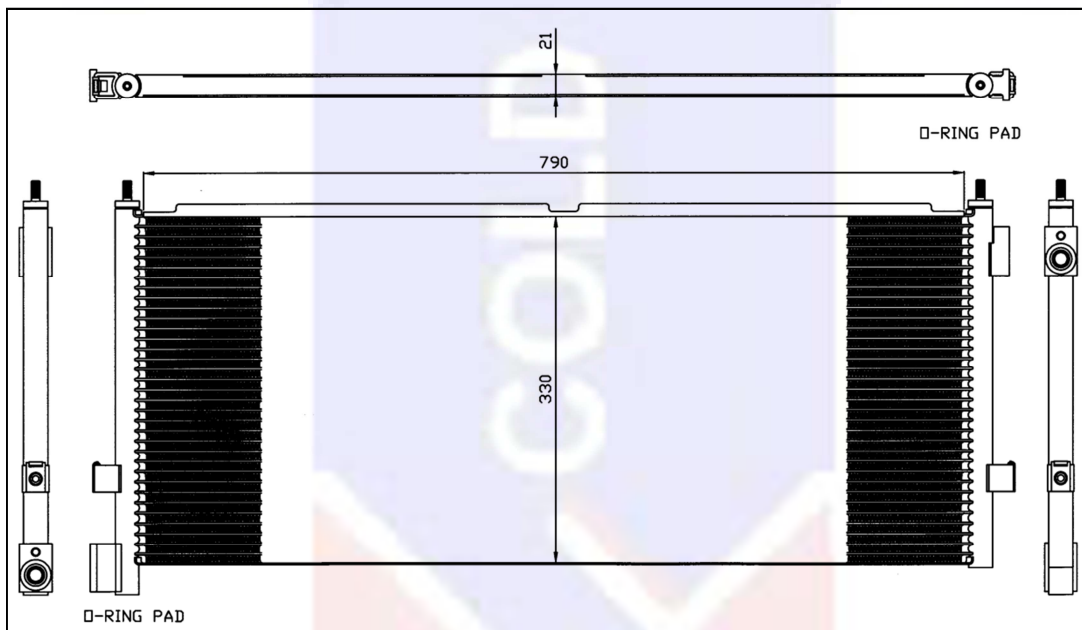
**35364**



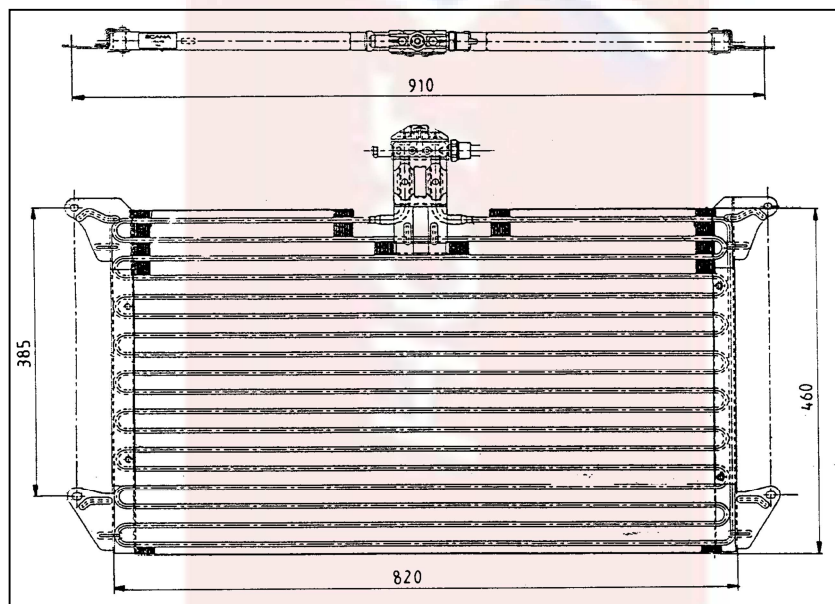
**35313**



**35314**



**35522**



**35061**

## 7. SFS High Performance Silicone Kits



SFS Performance manufactures and distributes the world's finest high performance silicone hoses. Whether you're running a race team or want to get the best performance from your road car, SFS Performance can provide the hose you need, when you need it. Designed to thrive on the high pressures and extreme temperatures found in the high performance engine, SFS Performance hoses won't deteriorate, no matter how much you put them through. Every hose is made by hand by one of our experts. If we don't think a hose is good enough, it won't leave our workshop.

SFS Performance can meet the high specification and time sensitive demands of race teams and our hoses have proven themselves at the highest levels of racing. Many of the world's most prestigious teams and manufacturers use SFS Performance including: Peugeot WRC, Prodrive, Ford Motorsport, Roush, Aston Martin, Bentley, Noble, Radical, Ascari.

Car make	Model	Application	QTY	Part number
Ford	Focus ST	Turbo	5	THS161
		Turbo – Y-pipe	1	THS161-3
		Coolant	5	CHS160
Land Rover	Defender 300Tdi	Turbo	3	THS194
	Defender Td5	Turbo	3	THS192
	Discovery 300Tdi	Turbo	3	THS172
	Discovery Td5	Turbo	3	THS193
Renault	Megane RS	Induction	1	AH31
Subaru	GT	Coolant	8	CHS52
		Heater	2	HH06
		Turbo	3	THS153
		Induction	1	THS107
		Airbox	1	THS108/B
Subaru	Sti	Coolant	2	CHS97
		Airbox	1	THS108/C
		Turbo	3	THS106
		Turbo	4	THS147
		Coolant	21	CHS146
		Breather	17	BH07
Volkswagen	Golf V Gti	Turbo	2	THS170
	Polo Gti	Induction	1	AH35

## **8. SFS High Performance Silicone Hose**

SFS silicone products are hand made and of the highest quality. It can be used on a multitude of applications, from motorsport to industrial and food processing applications.

### **8.1. SFS straight silicone hose**

SFS straight hose can be ordered as fuel/oil hose (fluoro-lined), high temperature hose (nomex reinforced, -60 to 220°C) or wire reinforced.

6.5-13 mm: 3.5 mm (3 ply)

16-70 mm: 4.5 mm (3 ply)

76-127 mm: 5 mm (4ply)

Standard colour is blue

Other colours available to order (black, red, yellow, purple, green, orange)

<b>Part No.</b>	<b>Description</b>
SHL-6.5	6.5 mm ID, 1 m long
SHL-8.0	8 mm ID, 1 m long
SHL-9.5	9.5 mm ID, 1 m long
SHL-11	11 mm ID, 1 m long
SHL-13	13 mm ID, 1 m long
SHL-16	16 mm ID, 1 m long
SHL-19	19 mm ID, 1 m long
SHL-22	22 mm ID, 1 m long
SHL-25	25 mm ID, 1m long
SHL-28	28 mm ID, 1 m long
SHL-30	30 mm ID, 1 m long
SHL-32	32 mm ID, 1m long
SHL-35	35 mm ID, 1 m long
SHL-38	38 mm ID, 1m long
SHL-41	41 mm ID, 1 m long
SHL-45	45 mm ID, 1 m long
SHL-48	48 mm ID, 1 m long
SHL-51	51 mm ID, 1 m long
SHL-54	54 mm ID, 1 m long
SHL-57	57 mm ID, 1 m long
SHL-60	60 mm ID, 1 m long
SHL-63	63 mm ID, 1 m long
SHL-65	65 mm ID, 1 m long
SHL-68	68 mm ID, 1 m long
SHL-70	70 mm ID, 1 m long
SHL-76	76 mm ID, 1 m long
SHL-80	80 mm ID, 1 m long
SHL-83	83 mm ID, 1 m long
SHL-89	89 mm ID, 1 m long
SHL-102	102 mm ID, 1 m long
SHL-114	114 mm ID, 1 m long
SHL-127	127 mm ID, 1 m long

## 8.2. SFS 45 and 90° Bends

SFS bends can be ordered as fuel/oil hose (fluoro-lined) and high temperature hose (nomex reinforced, -60 to 220°C).

6.5-13 mm: 3.5 mm (3 ply)

16-70 mm: 4.5 mm (3 ply)

76-102 mm: 5 mm (4ply)

Standard colour is blue

Other colours available to order (black, red, yellow, purple, green, orange)

Part No.	Description
E45-6.5	6.5 mm ID, 45° bend
E45-8.0	8 mm ID, 45° bend
E45-9.5	9.5 mm ID, 45° bend
E45-11	11 mm ID, 45° bend
E45-13	13 mm ID, 45° bend
E45-16	16 mm ID, 45° bend
E45-19	19 mm ID, 45° bend
E45-22	22 mm ID, 45° bend
E45-25	25 mm ID, 45° bend
E45-28	28 mm ID, 45° bend
E45-30	30 mm ID, 45° bend
E45-32	32 mm ID, 45° bend
E45-35	35 mm ID, 45° bend
E45-38	38 mm ID, 45° bend
E45-41	41 mm ID, 45° bend
E45-45	45 mm ID, 45° bend
E45-48	48 mm ID, 45° bend
E45-51	51 mm ID, 45° bend
E45-54	54 mm ID, 45° bend
E45-57	57 mm ID, 45° bend
E45-60	60 mm ID, 45° bend
E45-63	63 mm ID, 45° bend
E45-70	70 mm ID, 45° bend
E45-76	76 mm ID, 45° bend
E45-80	80 mm ID, 45° bend
E45-83	83 mm ID, 45° bend
E45-89	89 mm ID, 45° bend
E45-102	102 mm ID, 45° bend

Part No.	Description
E90-6.5	6.5 mm ID, 90° bend
E90-8.0	8 mm ID, 90° bend
E90-9.5	9.5 mm ID, 90° bend
E90-11	11 mm ID, 90° bend
E90-13	13 mm ID, 90° bend
E90-16	16 mm ID, 90° bend
E90-19	19 mm ID, 90° bend
E90-22	22 mm ID, 90° bend
E90-25	25 mm ID, 90° bend
E90-28	28 mm ID, 90° bend
E90-30	30 mm ID, 90° bend
E90-32	32 mm ID, 90° bend
E90-35	35 mm ID, 90° bend
E90-38	38 mm ID, 90° bend
E90-41	41 mm ID, 90° bend
E90-45	45 mm ID, 90° bend
E90-48	48 mm ID, 90° bend
E90-51	51 mm ID, 90° bend
E90-54	54 mm ID, 90° bend
E90-57	57 mm ID, 90° bend
E90-60	60 mm ID, 90° bend
E90-63	63 mm ID, 90° bend
E90-70	70 mm ID, 90° bend
E90-76	76 mm ID, 90° bend
E90-80	80 mm ID, 90° bend
E90-83	83 mm ID, 90° bend
E90-89	89 mm ID, 90° bend
E90-102	102 mm ID, 90° bend

## 8.3. SFS Vacuum Tubing

Part No.	Description
VT3-30	3 mm ID, 2 mm wall thickness
VT4-30	4 mm ID, 2 mm wall thickness
VT5-30	5 mm ID, 2.5 mm wall thickness
VT6-30	6 mm ID, 2.5 mm wall thickness
VT8-30	8 mm ID, 3 mm wall thickness
VT10-30	10 mm ID, 3 mm wall thickness



## 9. Industrial Quality Silicone Products

Our imported silicone products are of the highest quality. They meet and exceed all performance and physical characteristics of SAE J20 R1, SAE J20 R1 H.T., TMC RP303B Grade I and Grade II, Mil Spec, A-A52426 and are resistant to electrochemical degradation. The temperature range of all the silicone products is -53 to 177°C. All silicone hose, bends and reducers are 4 ply. The silicone hose may be purchased in 0.1 meter increments. The vacuum hose may be purchased in 1 meter increments. Most products are available in blue and red.

**We are also able to supply silicone hose with stainless steel reinforced wire in customs lengths for high pressure industrial applications.**

### 9.1. Straight silicone hose

Part No.	Description
C40-031	8 mm ID, 1 m long
C40-038	10 mm ID, 1 m long
C40-050	13 mm ID, 1 m long
C40-062	16 mm ID, 1 m long
C40-075	19 mm ID, 1 m long
C40-087	22 mm ID, 1 m long
C40-100	25 mm ID, 1m long
C40-112	28 mm ID, 1 m long
C40-125	32 mm ID, 1m long
C40-138	35 mm ID, 1 m long
C40-150	38 mm ID, 1m long
C40-162	42 mm ID, 1 m long
C40-175	45 mm ID, 1 m long
C40-187	48 mm ID, 1 m long
C40-200	51 mm ID, 1 m long
C40-212	54 mm ID, 1 m long
C40-225	57 mm ID, 1 m long
C40-238	60 mm ID, 1 m long
C40-250	63 mm ID, 1 m long
C40-275	70 mm ID, 1 m long
C40-300	76 mm ID, 1 m long
C40-312	80 mm ID, 1 m long
C40-325	83 mm ID, 1 m long
C40-338	86 mm ID, 1 m long
C40-350	89 mm ID, 1 m long
C40-400	102 mm ID, 1 m long



### 9.2. Reducing elbows

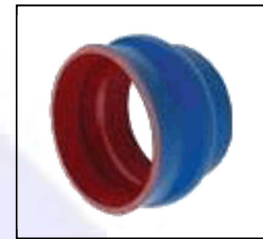
Part No.	Description
90-200/250	51 to 63 mm ID
90-250/300	63 to 76 mm ID



### 9.3. Silicone hump hose

The hump hose is used for applications where radial and axial movement is required.

Part no.	Description
H40-200	51 mm ID, 76 mm long
H40-225	57 mm ID, 76 mm long
H40-250	63 mm ID, 76 mm long
H40-275	70 mm ID, 76 mm long
H40-300	76 mm ID, 76 mm long
H40-350	89 mm ID, 76 mm long
H40-400	102 mm ID, 76 mm long



### 9.4. Silicone charge air cooler hose

The charge air cooler hose is specifically designed for trucks and earthmoving equipment. The charge air cooler hose have 2 humps for large axial and radial movements and are reinforced with 3 steel rings for high boost applications.

Part No.	Description
CAC40-300x6	76 mm ID, 152 mm long
CAC40-350x6	89 mm ID, 152 mm long
CAC40-400x6	102 mm ID, 152 mm long
CAC40-400x8	102 mm ID, 200 mm long



### 9.5. 45° Silicone bends

Part no.	Description
45-075x10	19 mm ID, 45°, 200 mm legs
45-100x10	25 mm ID, 45°, 200 mm legs
45-125x10	32 mm ID, 45°, 200 mm legs
45-150x10	38 mm ID, 45°, 200 mm legs
45-175x10	45 mm ID, 45°, 200 mm legs
45-200x10	51 mm ID, 45°, 200 mm legs
45-225x10	57 mm ID, 45°, 200 mm legs
45-250x10	63 mm ID, 45°, 200 mm legs
45-275x10	70 mm ID, 45°, 200 mm legs
45-300x10	76 mm ID, 45°, 200 mm legs
45-350x10	89 mm ID, 45°, 200 mm legs
45-400x10	102 mm ID, 45°, 200 mm legs



## 9.6. 90° Silicone bends

Part no.	Description
90-075x10	19 mm ID, 90°, 200 mm legs
90-100x10	25 mm ID, 90°, 200 mm legs
90-125x10	32 mm ID, 90°, 200 mm legs
90-150x10	38 mm ID, 90°, 200 mm legs
90-175x10	45 mm ID, 90°, 200 mm legs
90-200x10	51 mm ID, 90°, 200 mm legs
90-225x10	57 mm ID, 90°, 200 mm legs
90-250x10	63 mm ID, 90°, 200 mm legs
90-275x10	70 mm ID, 90°, 200 mm legs
90-300x10	76 mm ID, 90°, 200 mm legs
90-350x10	89 mm ID, 90°, 200 mm legs
90-400x10	102 mm ID, 90°, 200 mm legs



## 9.7. Silicone reducers

Part no.	Description
R40-125/175	45 to 32 mm ID, 76 mm long
R40-150/175	45 to 38 mm ID, 76 mm long
R40-150/200	51 to 38 mm ID, 76 mm long
R40-175/200	51 to 45 mm ID, 76 mm long
R40-175/225	57 to 45 mm ID, 76 mm long
R40-175/300	76 to 45 mm ID, 76 mm long
R40-200/225	57 to 51 mm ID, 76 mm long
R40-200/250	63 to 51 mm ID, 76 mm long
R40-200/275	70 to 51 mm ID, 76 mm long
R40-200/300	76 to 51 mm ID, 76 mm long
R40-200/325	83 to 51 mm ID, 76 mm long
R40-225/250	63 to 57 mm ID, 76 mm long
R40-225/275	70 to 57 mm ID, 76 mm long
R40-225/300	76 to 57 mm ID, 76 mm long
R40-250/275	70 to 63 mm ID, 76 mm long
R40-250/300	76 to 63 mm ID, 76 mm long
R40-250/325	83 to 63 mm ID, 76 mm long
R40-275/300	76 to 70 mm ID, 76 mm long
R40-275/350	89 to 70 mm ID, 76 mm long
R40-300/350	89 to 76 mm ID, 76 mm long
R40-300/400	102 to 76 mm ID, 76 mm long
R40-325/400	102 to 83 mm ID, 76 mm long
R40-350/400	102 to 89 mm ID, 76 mm long



## 10. Aluminium elbows, bends and tubing

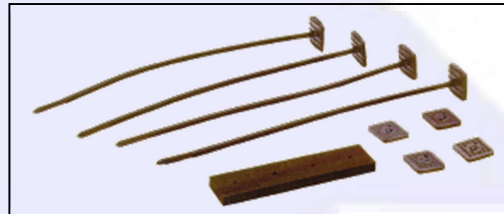
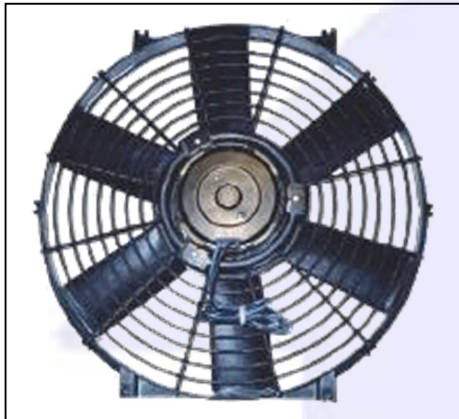


Our aluminium bends and elbows, except for the mandrel type, are pressed from plate and fused together.

Part no.	Description - Outside Diameter	Thickness	Radius
AB38	Bend - diameter 38 mm	3	70
AE45	Elbow - diameter 45 mm	3	55
AE51	Elbow - diameter 51 mm	3	47
AB51	Bend - diameter 51 mm	3	100
AB57	Bend - diameter 57 mm	3	85
AE63	Elbow - diameter 63 mm	3	55
AB63	Bend - diameter 63 mm	3	90
AE76	Elbow - diameter 76 mm	3	90
AB76	Bend - diameter 76 mm	3	120
AE101	Elbow - diameter 101 mm	3	120
AB3890	Bend, Mandrel - diameter 38 mm, 90 mm legs	1.6	85
AB51100	Bend, Mandrel - diameter 51 mm, 100 mm legs	3.18	85
AS32x40x1.6	Stub – Rolled one end - 32x40 mm	1.6	
AS35x40x1.6	Stub – Rolled one end - 35x40 mm	1.6	
AS38x40x1.6	Stub – Rolled one end - 38x40 mm	1.6	
AS45x40x2	Stub – Rolled one end - 45x40 mm	2	
AS51x40x1.6	Stub – Rolled one end - 51x40 mm	1.6	
AS51x40x3	Stub – Rolled one end - 51x40 mm	3.18	
AS57x40x3	Stub – Rolled one end - 57x40 mm	3.18	
AS63x50x2.5	Stub – Rolled one end - 63x50 mm	2.5	
AS76x60x3	Stub – Rolled one end - 76x60 mm	3.18	
AS101x60x3	Stub – Rolled one end - 101x60 mm	3.18	
ASD32	Stub – Rolled both ends – 32x85 mm	1.6	
ASD35	Stub – Rolled both ends – 35x85 mm	1.6	
ASD38	Stub – Rolled both ends – 38x85 mm	1.6	
ASD45	Stub – Rolled both ends – 45x85 mm	2	
ASD51	Stub – Rolled both ends – 51x85 mm	3.18	
ASD57	Stub – Rolled both ends – 57x85 mm	3.18	
ASD63	Stub – Rolled both ends – 63x100 mm	3.18	
ASD76	Stub – Rolled both ends – 76x100 mm	3.18	
AT38	Aluminium pipe, OD – 38 mm	1.6	
AT45	Aluminium pipe, OD – 45 mm	2	
AT51	Aluminium pipe, OD – 51 mm	1.6	
AT57	Aluminium pipe, OD – 57 mm	3.18	
AT63	Aluminium pipe, OD – 63 mm	3.18	
AT76	Aluminium pipe, OD – 76 mm	3.18	

## 11. Electric fans – 12 and 24 V

### 11.1. Davies, Craig 12 & 24 V automotive



Quick fit kit

These electrical fans provide a new standard in efficient, low profile, low noise, air movement devices. They are suitable as replacement units or as additional cooling fans. All the fans listed here are fully reversible. Each fan has its own shroud. A quick fit kit is sold as an optional extra, for easy installation. As a primary cooling source they provide:

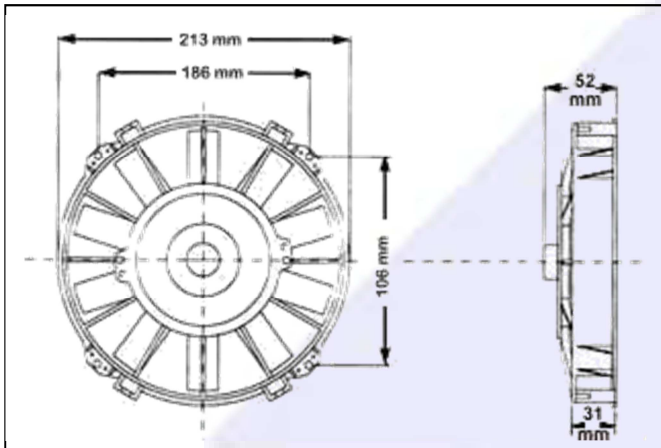
- Economical replacement for O.E. parts
- About 5% increase in engine power and fuel saving when replacing fan clutch assemblies
- Compatibility with all electric fan controls

#### Applications:

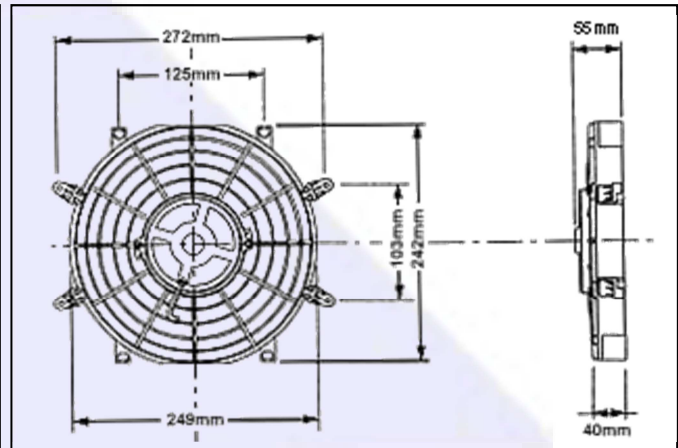
- Engine cooling fans
- Automotive air conditioner fans
- Oil cooler fans
- Intercooler fans

Part nr.	Size	Rated power	Max CFM (m <sup>3</sup> /h)
0135	8" (213x213x52)	90 W, 12 V	390 (663)
0136	8" (213x213x52)	90 W, 24 V	390 (663)
0160	9" (249x242x60)	90 W, 12 V	587 (997)
0161	9" (249x242x60)	90 W, 24 V	587 (997)
0145	10" (290x270x64)	90 W, 12 V	692 (1176)
0146	10" (290x270x64)	90 W, 24 V	692 (1176)
0162	12" (293x293x55)	90 W, 12 V	812 (1380)
0163	12" (293x293x55)	90 W, 24 V	812 (1380)
0164	14" (350x348x76)	130 W, 12 V	1018 (1730)
0165	14" (350x348x76)	130 W, 24 V	1018 (1730)
0166	16" (425x400x101)	225 W, 12 V	2120 (3602)
0172	16" (425x400x101)	225 W, 24 V	2120 (3602)

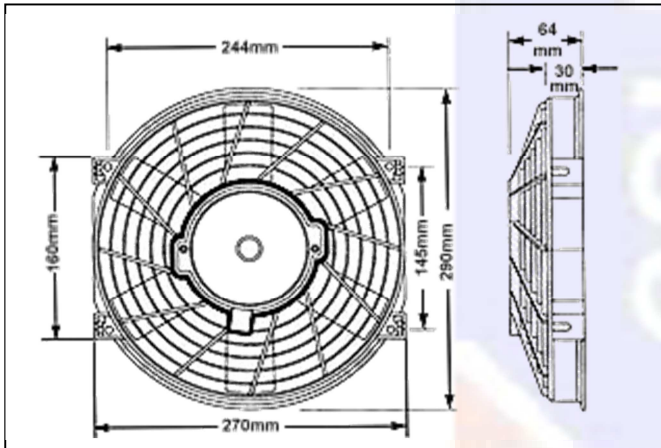
## Electric fan dimensions:



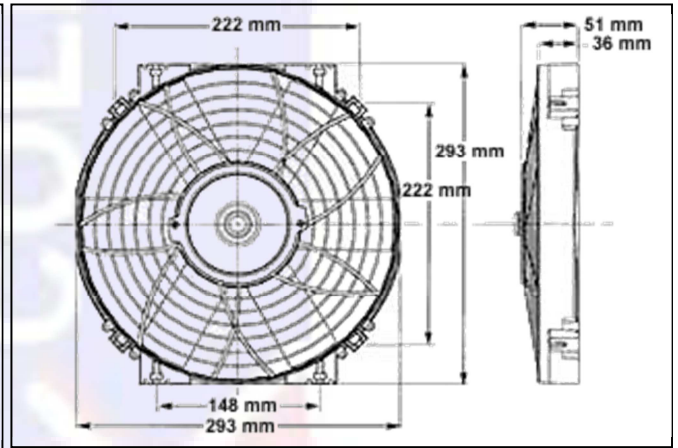
**8''**



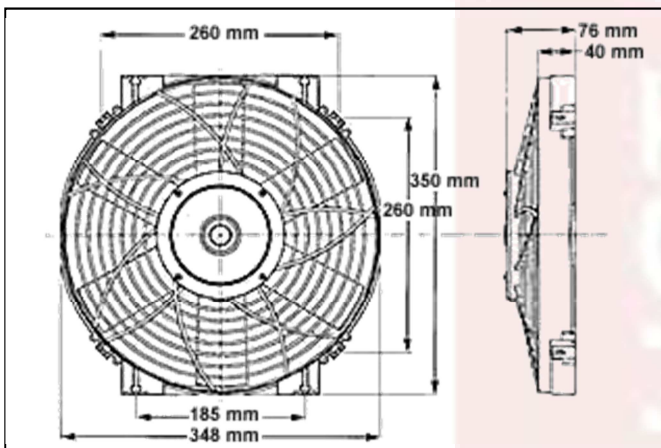
**9''**



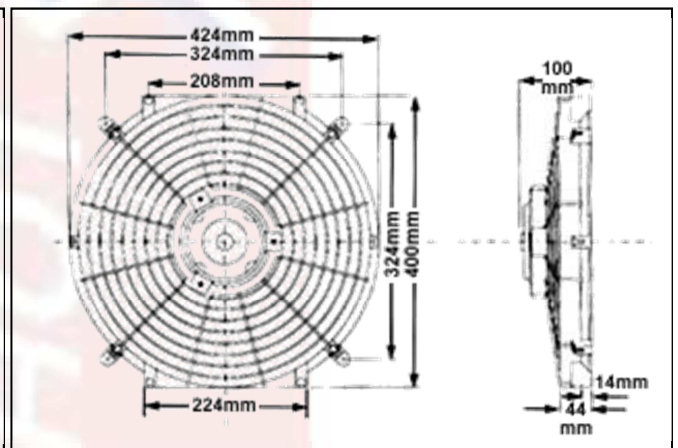
**10''**



**12''**



**14''**

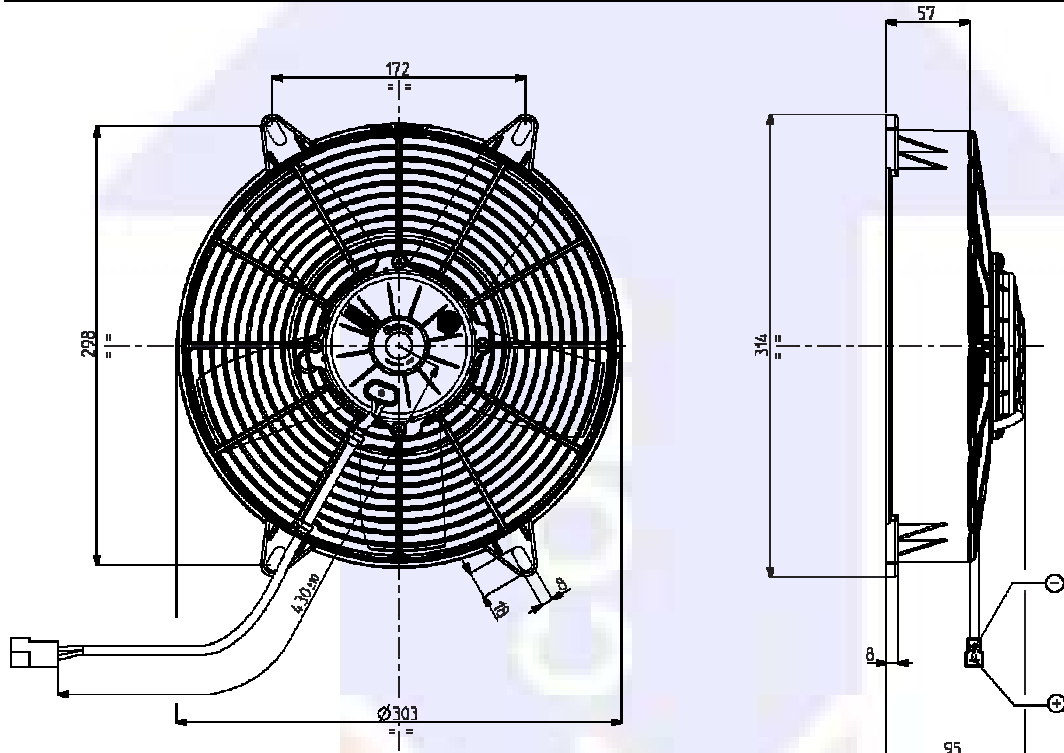


**16''**

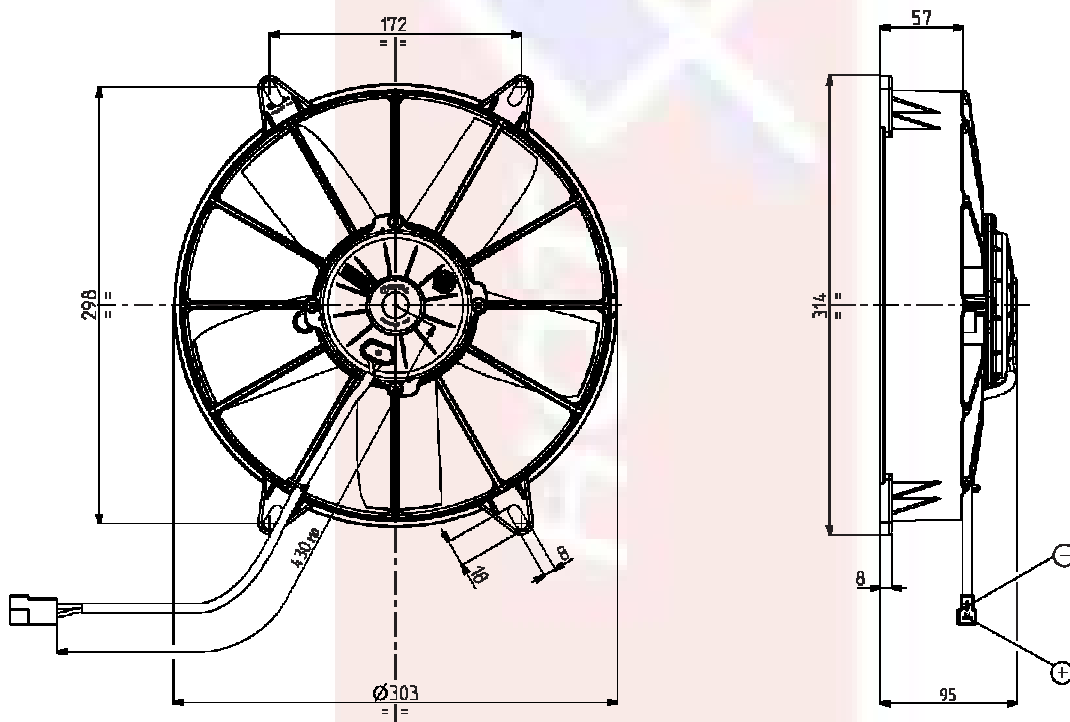
## 11.2. Spal 12 & 24 V heavy duty industrial



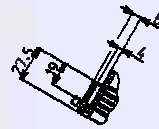
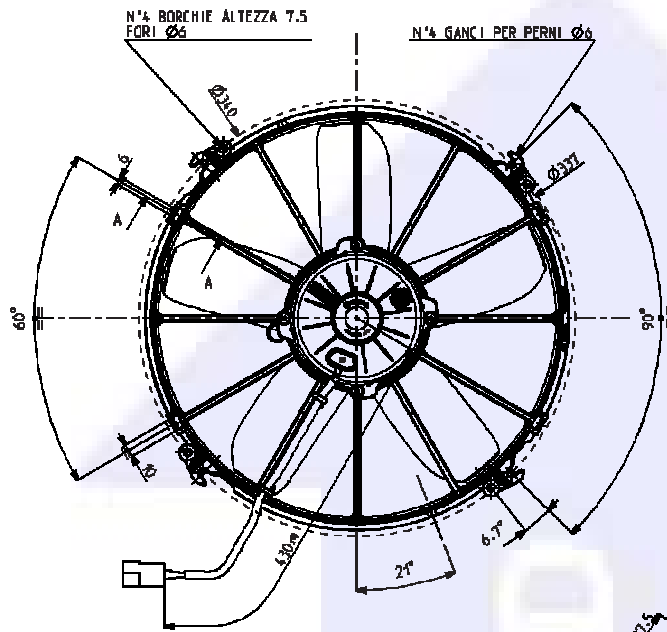
Part number	Blade dia.	Max flow - m <sup>3</sup> /hr	Flow direction	Voltage
VA59BP70LL37A	280 mm	2270	Suction	24 V
VA03BP70LL37A	280 mm	2510	Suction	24 V
VA01AP70LL36A	305 mm	2780	Suction	12 V
VA01BP70LL36A	305 mm	2990	Suction	24 V
VA33AP91LL65A	385 mm	3310	Suction	12 V



VA59BP70LL37A

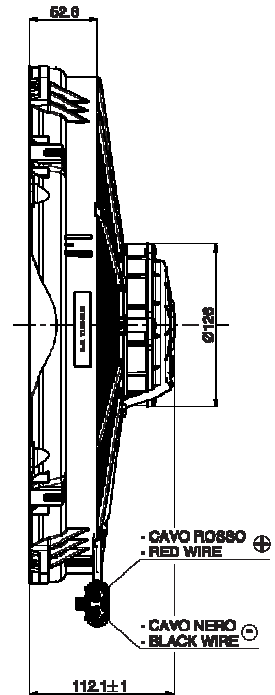
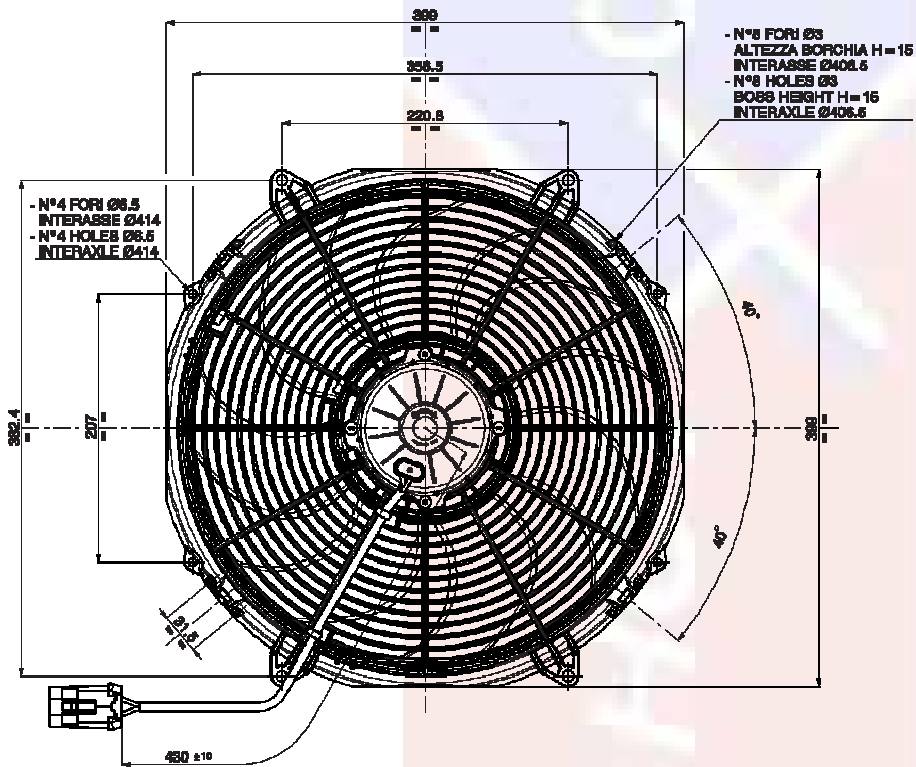


VA03BP70LL37A



SEZIONE A-A

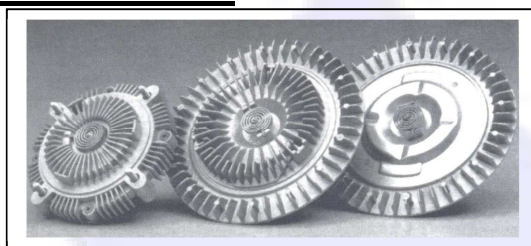
VA01AP70LL36A & VA01BP70LL36A



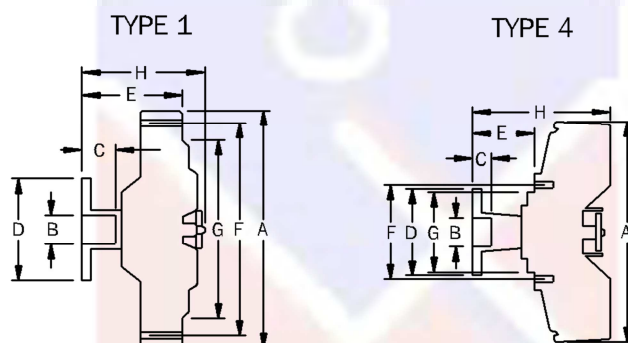
VA33AP91LL65A



## 12. Viscous fan clutches



Part nr.	Make	Engine Model	Displacement	Type
2565	Mazda, Mitsubishi	4G54	2.6 Petrol	1
2650	Nissan Hardbody	VG30E	3.0 Petrol	1
2654	Mitsubishi Pajero	6G72	3.0, 3.5 Petrol	1
2657	Toyota Landcruiser	2F, 3F	4.0, 4.2 Petrol	1
2661	Toyota Landcruiser	1FZFE EFI	4.5 Petrol	1
2664	Nissan	VG33E	3.3 Petrol	1
2796	Jeep Cherokee	L6	4.0 Petrol	4
2809	Land Rover Disco 2,3		4.0 Petrol	4
5001	Nissan Patrol	L28, TD42, Z24	2.8, 4.2, 2.4	1
5103	Toyota Hilux	12R, 18R, 2Y, 3Y, 4Y	1.6 – 2.2 Petrol	1
5124	Toyota Hilux	2L, 3L, 5L	2.4, 2.8, 3.0 Diesel	1
5231	Nissan	VG30E	3.0 Petrol	1
5410	Toyota Hilux		2700i Petrol	1
5412	Toyota Hilux	KZTE	3.0 Diesel	1
5499	Toyota Landcruiser	2H, 1HZ	4.0, 4.2 Diesel	1



### Dimensions:

Part nr.	A	B	C	D	E	F	G	H
2565	149	16	12.7	57.9	45.7	122	104	58
2650	157.5	16/32	19.8	76.2	59.9	143.5	128.8	74.9
2654	169	16/24	21.6	68.1	59.4/40.4	153	137	74
2657	169	16	22.9	78	62	136	104	77
2661	168.9	16	21.1	78	72.4	135.9	103.9	87.4
2664	157.5	16/32	12.7	76.2	59.9	143.5	128.8	74.4
2796	163.8	16	16	62.5	41.4	82.6	66.3	94.2
2809	163.1			37	27.5	82.6	66.6	80.5
5001	147	17.2/31.4	23.9	76.8	45.3	134	420	59
5103	136	16	22.5	58	53	122	104	73
5124	160	16 T	11/21.5	77.5	69.3	136	104	84
5231	147	13.7/24.8	7.4/16.6	66	50	134	120	63
5410	164	16	23.5	78	68.7	136	104	84
5412	164	22	23.5	78	76	136	104	82.3
5499	159	16 T	10.7/23.4	78	76.3	136	104	95

## 13. Electric Water Pumps & Accessories

### 13.1. Electric Water Pumps



The revolutionary designed Electric Water Pump (EWP) is a performance accessory that increases cooling capacity while giving you more power. The EWP fits most makes and models of cars on the road today.

Two models exist: the EWP80 and the EWP115. The EWP80 (80 l/min) will provide enough flow to replace the mechanical water pump for up to 3 liter 6 cylinder engines. The EWP115's (115 l/min) rugged design and high flow rate makes it ideal for larger engines such as used in race cars and 4x4 off-road vehicles.

Combined with the Electronic Digital Controller, the EWP continues to run after you've switched off, eliminating "heat soak" and extending engine life. Davies, Craig's revolutionary, Australian-designed EWP are made from anti-corrosive, lightweight, glass-filled nylon. The aluminium alloy version is also available in 24 V.

All kits come with everything you need for easy installation including, all the necessary wiring, different couplings to fit various hose sizes and easy to understand, Do-It-Yourself instructions.

The EWP is the most economical way to increase horsepower and save on fuel consumption while caring for your engine.

The world's most advanced  
**TOTAL ENGINE COOLING MANAGEMENT**

**EWP** ELECTRIC WATER PUMP

**NEW!**

- ✓ more power
- ✓ more cooling
- ✓ increase fuel efficiency
- ✓ world-leading Australian technology
- ✓ extend engine life
- ✓ universal fit

**TWO YEAR WARRANTY**

**EWP<sup>®</sup> 115** 115 litres/min

The advertisement features a central image of a black electric water pump against a blue background with water droplets. A red starburst with the word 'NEW!' is positioned to the left of the pump. The text is arranged in a structured layout with various colors and fonts to highlight key features and benefits.

# Electric Water Pump - Alloy Part #8040

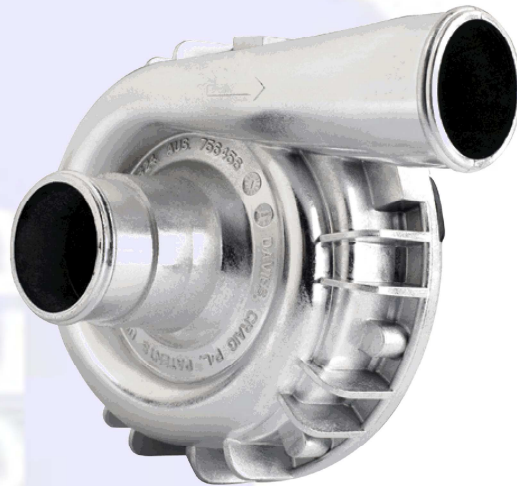
**EWP® 115** 115 litres/min

The world's first universal-fit, automotive Electric Water Pump. Suitable for all makes and models but will excel on large six-cylinder V8 engines, heavy-duty 4WDs and most engines over 400HP.



## Technical Specifications

Operating voltage	3V DC to 15V DC
Maximum current	10A
Flow rate (max)	115 L/min (1822 US gal/hr) @ 13V DC
Operating temperature	-40° to 130°C (-40° to 266°F)
Pump design	Clockwise centrifugal
Motor life	3,000 hours continuous at 80°C (176°F) and 12V DC; 7,000 hours with an EWP®/Fan Digital Controller
Pump weight	1,200 grams (2.65 lb)
Pump material	Aluminium
Burst pressure	500 kPa (72.5 psi)
Seal	Ceramic face seal
Fits hose sizes	38mm to 51mm (1½" to 2") Internal thread - inlet: 1" NPT - outlet: 1" NPT



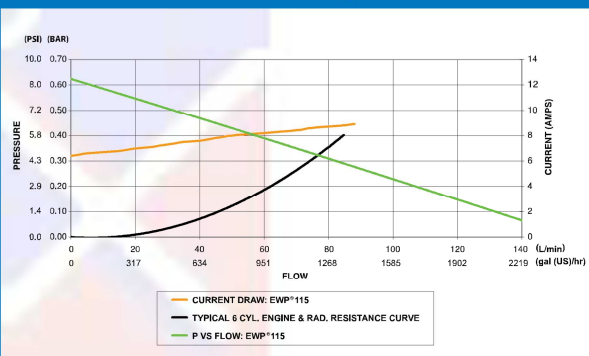
## Kit Contents

Part #	Description	Qty
	EWP®115 Alloy Pump	1
8515	Wiring harness	1
8510	Sleeve 3mm rubber adaptors	2
8512	Hose clamps	2
8525	Assorted hardware bag - includes relay #0533	1

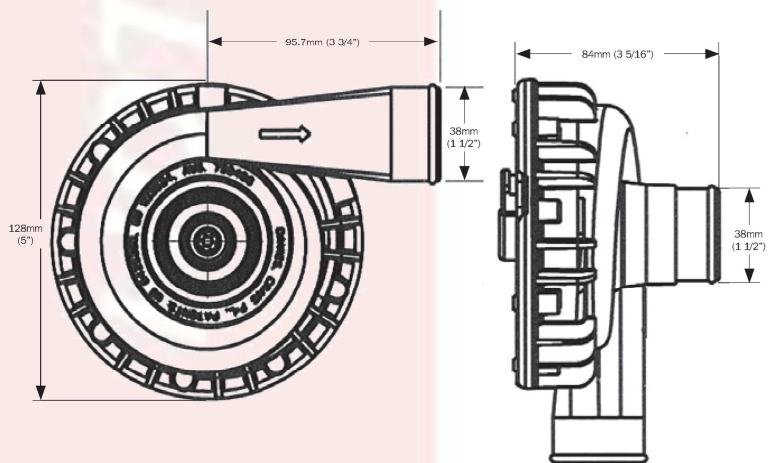
## Options

Part #	Description	Qty
8505	90° Hose adaptor	1
1025	Alloy adaptor 1" NPT (2 required)	1

EWP®115 Pressure v Flow @ 13.0V Actual



## Dimensions



The EWP® is a recirculating pump which is ideal for a 'closed system' similar to an automotive cooling system; it is not 'self-priming'.

# Electric Water Pump - 24 volt *EWP<sup>®</sup> 115* 115 litres/min

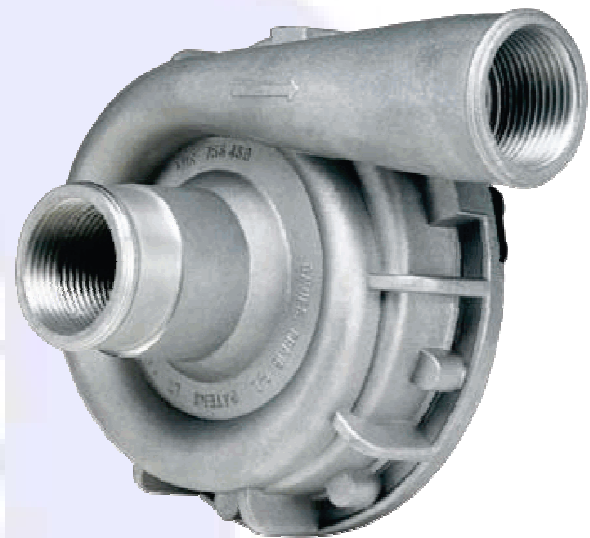
Part #8041

The world's first universal-fit, automotive Electric Water Pump – to suit 24-volt vehicles too! Can be a practical alternative to the mechanical belt-driven pump or fitted as an auxiliary pump.



## Technical specifications

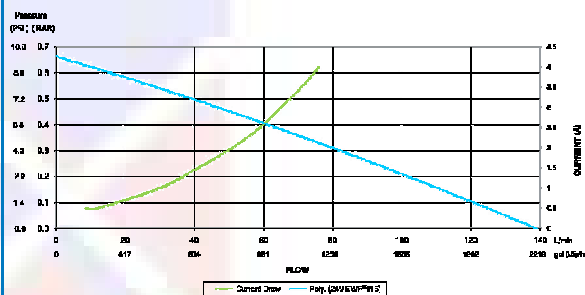
Operating voltage	10V DC to 27V DC
Maximum current	5.5A @ 24V
Flow rate (max)	115 L/min (1822 US gal/hr) @ 24V DC
Operating temperature	-40° to 130°C (-40° to 266°F)
Pump design	Clockwise centrifugal with volute chamber
Motor life	3,000 hours continuous at 80°C (176°F) and 24V DC;
Pump weight	1,151 grams (2.56 lb)
Pump material	Aluminium
Burst pressure	500 kPa (72.5 psi)
Seal	Ceramic face seal
Fits hose sizes	38mm to 51mm (1½" to 2") Internal thread - inlet: 1" NPT - outlet: 1" NPT



## Kit contents

Part #	Description	Qty
8141	EWP <sup>®</sup> 115 Alloy 24V Pump	1
8515	Wiring harness (with 10A fuse)	1
8510	Sleeve 3mm rubber adaptors	2
8512	Hose clamps	2
8527	Assorted hardware bag - includes 24V relay #0534	1

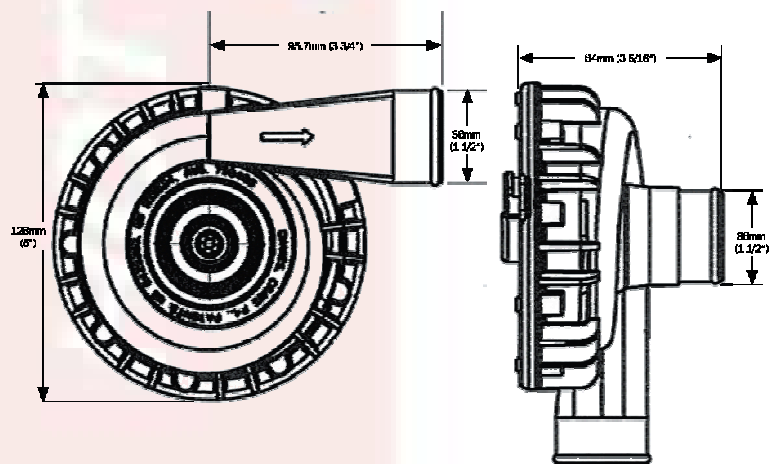
EWP<sup>®</sup>115 - 24V Pressure v Flow @ 24.0V Actual



## Option

Part #	Description	Qty
8505	90° Hose adaptor	1
1025	1" NPT alloy adaptors	2

## Dimensions



The EWP<sup>®</sup> is a recirculating pump which is ideal for a 'closed system' similar to an automotive cooling system; it is not 'self-priming'.

# Electric Water Pump Part #8025

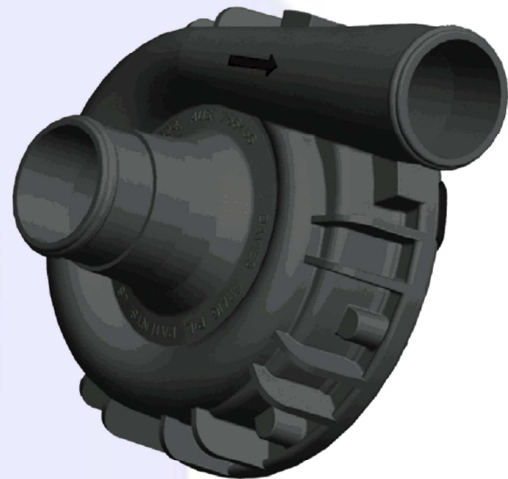
**EWP<sup>®</sup> 115** 115 litres/min

The world's first universal-fit, automotive Electric Water Pump. Suitable for all makes and models but will excel on large six-cylinder V8 engines, heavy-duty 4WDs and most engines over 400HP.



## Technical Specifications

Operating voltage	3V DC to 15V DC
Maximum current	10A
Flow rate (max)	115 L/min (1822 US gal/hr) @ 13V DC
Operating temperature	-40° to 130°C (-40° to 266°F)
Pump design	Clockwise centrifugal
Motor life	3,000 hours continuous at 80°C (176°F) and 12V DC; 7,000 hours with an EWP <sup>®</sup> /Fan Digital Controller
Pump weight	980 grams (2.16 lb)
Pump material	Nylon 66, 30% glass-filled
Burst pressure	500 kPa (72.5 psi)
Seal	Ceramic face seal
Fits hose sizes	38mm to 51mm (1½" to 2")



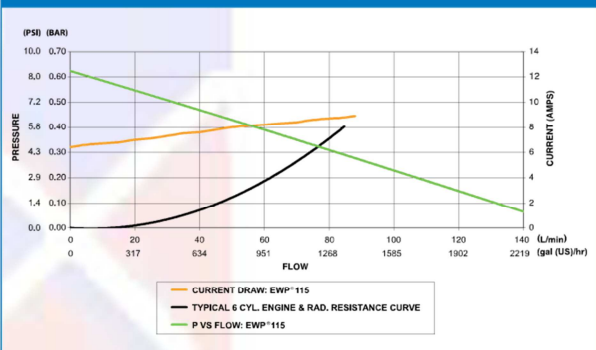
## Kit Contents

Part #	Description	Qty
	EWP <sup>®</sup> 115 Pump	1
8515	Wiring harness	1
8510	Sleeve 3mm rubber adaptors	2
8512	Hose clamps	2
8525	Assorted hardware bag - includes relay #0533	1

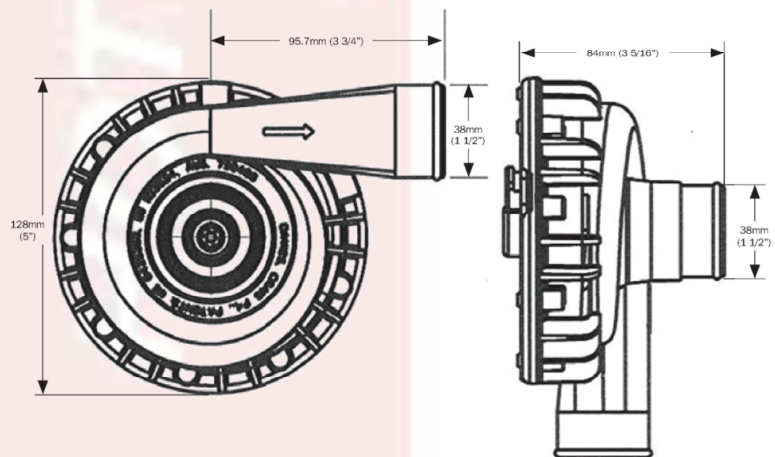
## Option

Part #	Description	Qty
8505	90° Hose adaptor	1

EWP<sup>®</sup> 115 Pressure v Flow @ 13.0V Actual



## Dimensions



The EWP<sup>®</sup> is a recirculating pump which is ideal for a 'closed system' similar to an automotive cooling system; it is not 'self-priming'.

# Electric Water Pump - 24 volt Part #8026

**EWP® 115** 115 litres/min

The world's first universal-fit, automotive Electric Water Pump – to suit 24-volt vehicles too! Can be a practical alternative to the mechanical belt-driven pump or fitted as an auxiliary pump.



## Technical Specifications

Operating voltage	10V DC to 27V DC
Maximum current	5.5A @ 24V
Flow rate (max)	115 L/min (1822 US gal/hr) @ 24V DC
Operating temperature	-40° to 130°C (-40° to 266°F)
Pump design	Clockwise centrifugal
Motor life	3,000 hours continuous at 80°C (176°F) and 24V DC
Pump weight	980 grams (2.16 lb)
Pump material	Nylon 66, 30% glass-filled
Burst pressure	500 kPa (72.5 psi)
Seal	Ceramic face seal
Fits hose sizes	38mm to 51mm (1½" to 2")



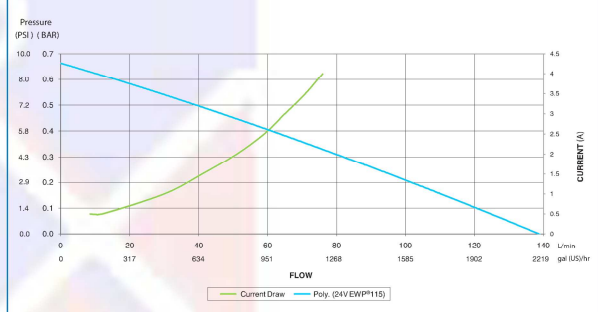
## Kit Contents

Part #	Description	Qty
	EWP®115 24V Pump	1
8515	Wiring harness	1
8510	Sleeve 3mm rubber adaptors	2
8512	Hose clamps	2
8527	Assorted hardware bag - includes relay #0534	1

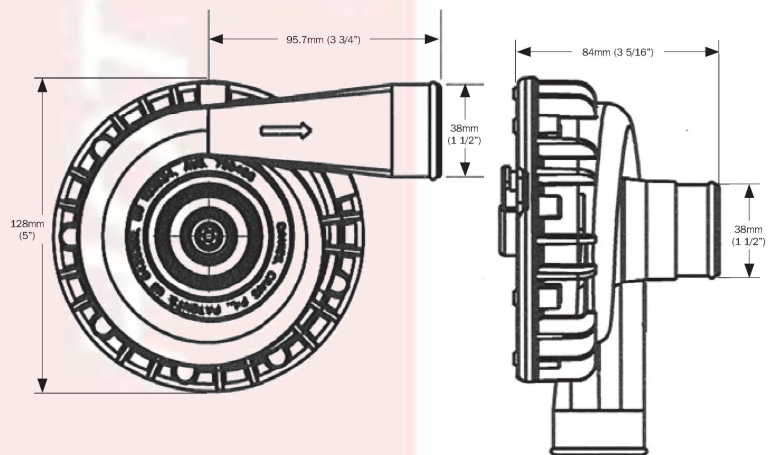
## Option

Part #	Description	Qty
8505	90° Hose adaptor	1

EWP® 115 - 24V Pressure v Flow @ 24.0V Actual



## Dimensions



The EWP® is a recirculating pump which is ideal for a 'closed system' similar to an automotive cooling system; it is not 'self-priming'.

# Electric Water Pump Part #8005

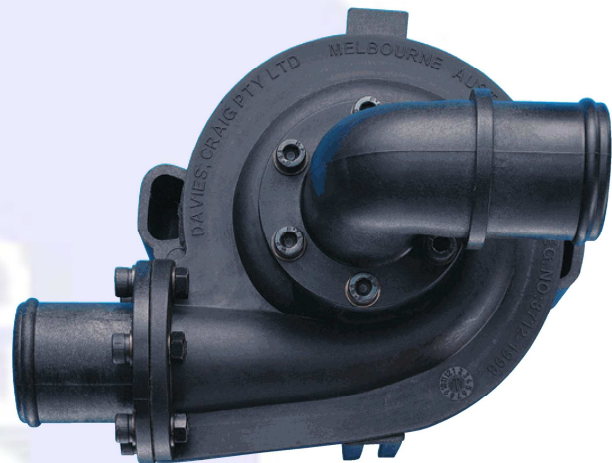
**EWP<sup>®</sup> 80** 80 litres/min

The world's first universal-fit, automotive Electric Water Pump. Suitable for naturally-aspirated and turbo engines up to 3 litres.



## Technical Specifications

Operating voltage	3V DC to 15V DC
Maximum current	7.5A
Flow rate (max)	80 L/min (1270 US gal/hr) @ 13.5V DC
Operating temperature	-40° to 130°C (-40° to 266°F)
Pump design	Clockwise centrifugal
Motor life	3,000 hours continuous at 80°C (176°F) and 12V DC; 6,000 hours with an EWP <sup>®</sup> /Fan Digital Controller
Pump weight	900 grams (2.0 lb)
Pump material	Nylon 66, 30% glass-filled
Burst pressure	350 kPa (50 psi)
Seal	Ceramic face seal
Fits hose sizes	32mm to 51mm (1¼" to 2")



## Kit Contents

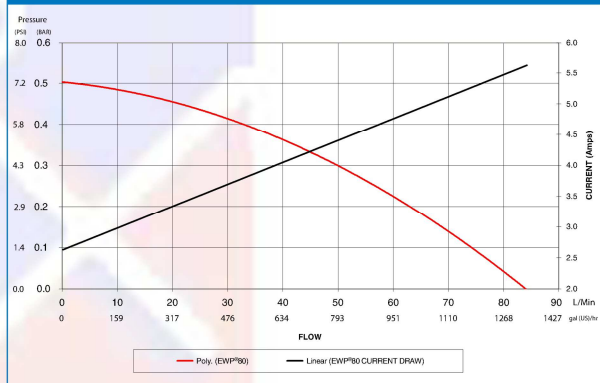
Part #	Description	Qty
	EWP <sup>®</sup> 80 Pump	1
8307	Straight adaptor	1
8309	Elbow adaptor	1
8509	O ring	2
8515	Wiring harness	1
8510	Sleeve 3mm rubber adaptors	2
8511	Sleeve 6mm	2
8512	Hose clamps	2
8908	Assorted hardware bag - includes relay #0533	1

## Options

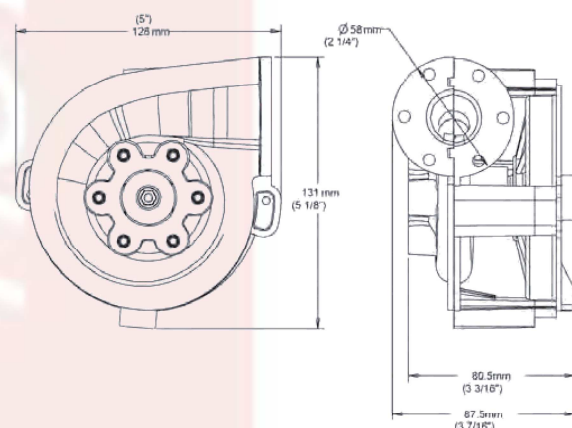
Part #	Description	Qty
1025	Alloy adaptor - 1" NPT	1 *
1026	Alloy adaptor - 1¼" NPT	1 *
1027	Alloy adaptor straight - 26mm	1 *
1028	Alloy adaptor straight - 19mm	1 *

\* 2 required

## EWP<sup>®</sup> 80 Pressure v Flow @ 13.0V Actual



## Dimensions



The EWP<sup>®</sup> is a recirculating pump which is ideal for a 'closed system' similar to an automotive cooling system; it is not 'self-priming'.

## 13.2. EWP Digital Controller



The updated Digital Controller now has two specific functions.

This unique Digital Controller will manage the operation of the EWP® by varying the speed of the pump in response to the coolant temperature and manage control of your electric engine fan. The Controller has a push-button on the fascia panel that offers five target temperatures: 75°C, 80°C, 85°C, 90°C and 95°C (167°, 176°, 185°, 194° and 203°F).

Generally, higher engine temperature will offer improved fuel efficiency and lower engine temperature more power. The Digital Controller will operate the engine's electric fan automatically once the engine has reached 3°C (5.4°F) above the targeted (set) temperature. Another significant benefit is that the Controller allows the EWP® to run on after ignition shutdown to eliminate heat soak.



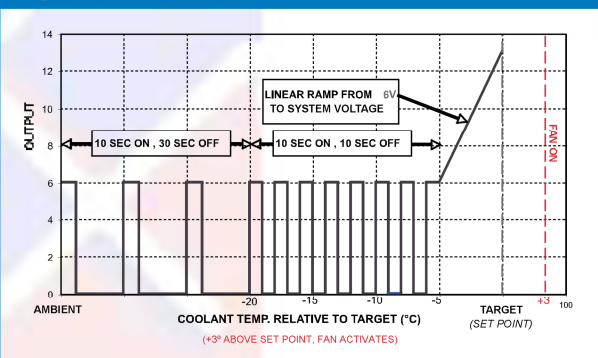
### Technical Specifications

Input voltage	12V DC to 15V DC
Output voltage	5V to 15V
Maximum current	12A
Operating temperatures	-20° to 60°C (-5° to 140°F)
Targeted (set) temperatures	75°C, 80°C, 85°C, 90°C and 95°C (167°, 176°, 185°, 194° and 203°F)
Fan cut-in temperature	3°C (5.4°F) above the targeted (set) temperature
Controller type	PCB with micro-processor
Sensor type	Thermister in housing
Time-out	2 minutes maximum or set -5°C (23°F)
Indicator LEDs	Temperature, power, pump, test, fan
Weight	90 grams (3.2 oz)
Dimensions	101mm (l) x 95mm (w) x 35mm (d)

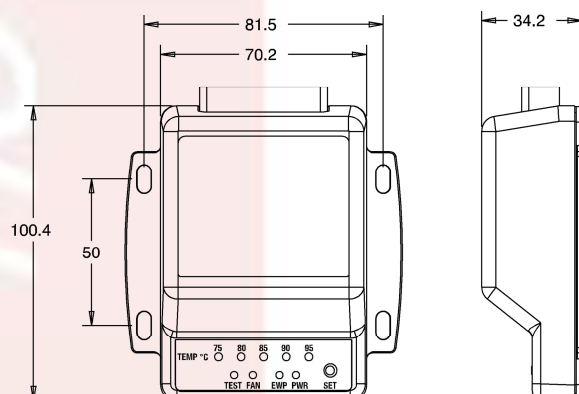
### Kit Contents

Part #	Description	Qty
	Digital Controller	1
8920	Instructions	1
8411	Wiring harness	1
8410	In-line adaptor	1
8510	Sleeve 3mm rubber adaptors	2
8512	Hose clamp	2
8414	Thermal sensor	1
	Assorted hardware	

### Digital Controller operation

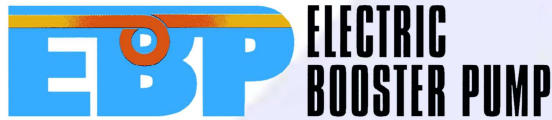


### Dimensions





## 13.3. Electric Booster Pump



Davies, Craig developed the Electric Booster Pump (EBP<sup>®</sup>), designed for use with either an EWP<sup>®</sup> or a conventional mechanical water pump to enhance the heater and LPG systems.

This high-performance 15 litre per minute, 12 volt, brushless, magnetically-driven EBP has drawn high acclaim globally for its diversity of applications. These include booster for car heater and LPG systems, solar and marine applications, water-cooled motorcycle, go-kart engines, turbo air/water intercoolers, caravans, motor homes and domestic irrigation.



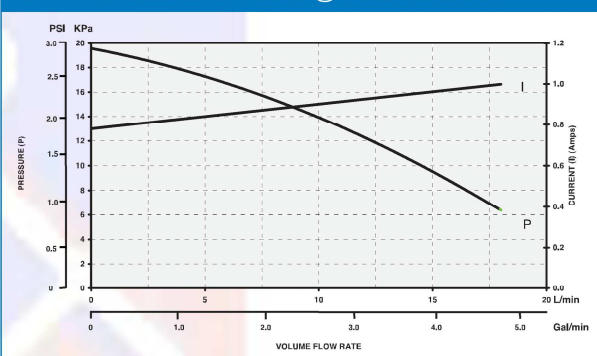
### Technical Specifications

Motor	12V brushless
Operating voltage	9V DC to 15V DC
Maximum current	1.3A
Flow rate	15 L/min (4 US gal/min) @ 10 kPa
Operating temperature	-40° to 120°C (-40° to 248°F)
Pump design	Recirculating centrifugal
Motor life	15,000 hours at 80°C (176°F) continuous
Pump weight	245 grams (0.54 lb)
Pump material	Nylon 66, 30% glass-filled
Burst pressure	250 kPa (36 psi) minimum
Fits hose size	19mm (¾") 12.5mm to 19mm (½" to ¾") using stepped adaptors

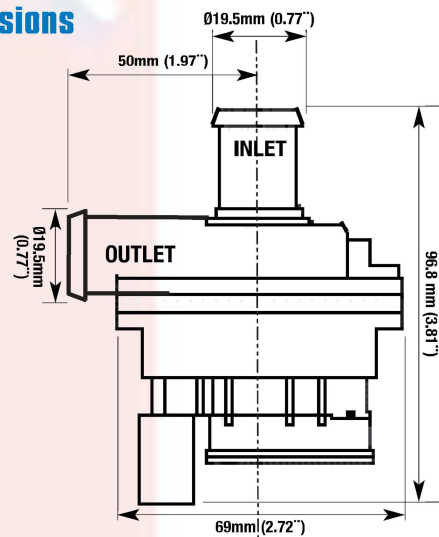
### Kit Contents

Part #9001 (Kit)	Description	Qty
	Electric Booster Pump	1
9020	Adaptor - stepped: 19mm, 15mm, 12.5mm	2
9511	Hose clamps	4
9516	Wiring harness	1
9510	Hose	2
9901	Fitting instructions	1
Part #9002 (Short)		
	Electric Booster Pump	1
9516	Wiring harness	1
Part #9012 (Electric Booster Pump only)		
	Electric Booster Pump	1

EBP<sup>®</sup> Performance Curve @ 13.0V Actual



### Dimensions



## 14. Thermal switches



### 14.1. Adjustable thermal switches

The Adjustable Thermal Switch (ATS) is a temperature control device which senses the temperature of the engine's cooling water and turns on the electric fan at the set temperature. The both switches are adjustable from 40 to 100°C by turning the adjustable screw located on the controller.



#### **Mechanical Thermal Switch (12V & 24V)**

The Mechanical Thermal Switch is adjustable from 40° to 100°C (104° to 212°F).

The thermal switch is mounted near the radiator and the stainless steel probe fitted inside the radiator hose.

The thermal switch is then connected to the ignition circuit for operation.

The thermal switch and relay kit enables a fan to operate both thermally and also when the air conditioning is running.

- 
- #0401 Mechanical Thermal Switch  
for more efficient Thematic® Fan or EWP® control
- 
- #0404 Mechanical Thermal Switch & Relay
- 



#### **Electronic Thermal Switch (12V only)**

The Electronic Thermal Switch Kit has an adjustable temperature range of 40°C to 99°C (104° to 210° F).

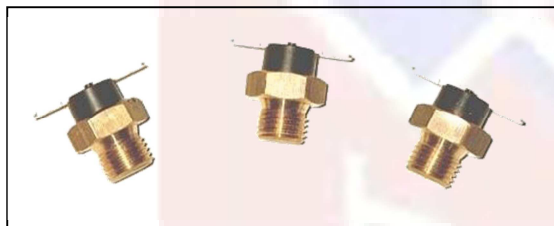
The Electronic Thermal Switch, relay and wiring loom are assembled and pre-connected ready for installation.

This switch is operated thermally and also when the air conditioning is in operation.

The Electronic Thermal Switch has the advantage over the Mechanical Thermal Switch in that the probe is designed to be placed between the radiator fins and accurately senses the air temperature.

- 
- #0402 Electronic Thermal Switch  
for more efficient Thematic® Fan or EWP® control.
- 

### 14.2. Industrial Thermal switches



Our range of industrial thermal switches is available in various temperature settings. They are mainly used for temperature control on cooling packs with electric fans. All the switches have an M14x1.5 mm connection, which fits onto Setrab cooling packs. The thermal switches can handle temperatures ranging from -30 to 177°C and up to 10 A (AC/DC).

Part No.	Close ±3°C	Open ±6°C
70-06519	50	35
70-06458	60	45
70-06520	90	75

The 50 and 60°C thermal switches are used for hydraulic applications. The 90°C thermal switch are used for lubricating applications as in engine & transmission cooling.

## 15. K&N Performance Air Filters

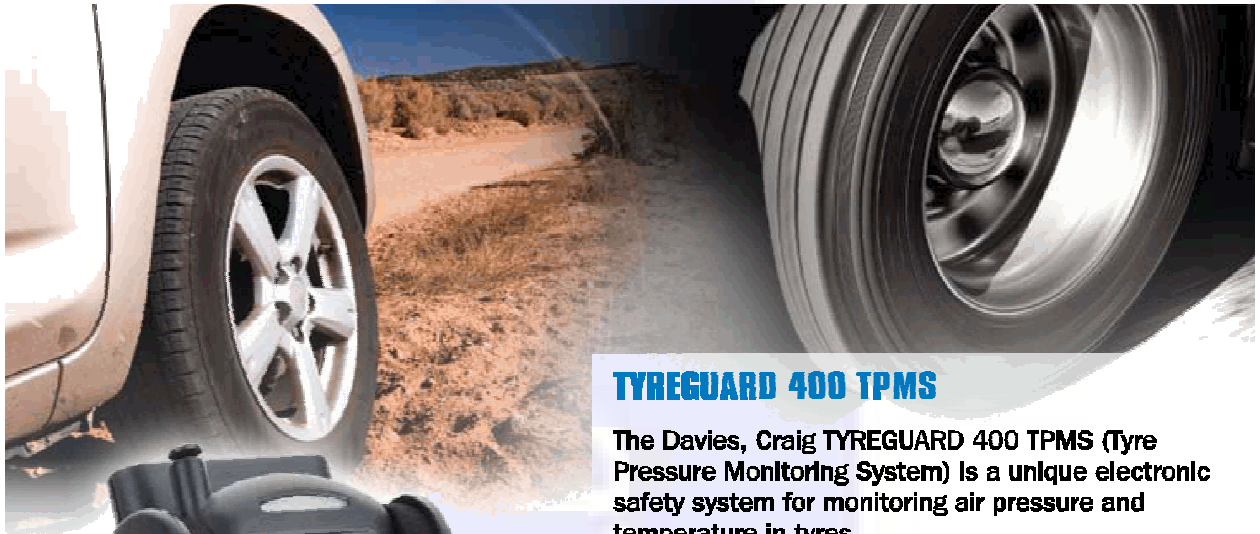


K&N Engineering, of Riverside, California, is the inventor and leading innovator of reusable cotton gauze filter technology for automotive applications. From humble beginnings as a family run business over 40 years ago, K&N Engineering, now a truly global company with offices in the U.K. and the Netherlands, continues to exist as a family owned business with an enthusiast mindset and a direct connection with motor sports that carries over throughout all levels of management and manufacturing. Today, K&N exists as both the sales and brand leader for performance filters, and maintains a stocking catalogue of over 3,500 part numbers, including an extensive line of both factory replacement drop-in filters, FIPK (Fuel Injection Performance Kit) applications, and its line of innovative Performance Gold oil filters.

We are a distributor of K&N performance air filters. We stock a wide range of the performance air filters as well as induction and cleaning kits.

## 16. Tyre Pressure Monitoring System

Suitable for cars, 4WDs, single- or multi-axle trailers, motor homes, caravans, trucks, buses, 5th wheelers, motorbikes



### TYREGUARD 400 TPMS

The Davies, Craig TYREGUARD 400 TPMS (Tyre Pressure Monitoring System) is a unique electronic safety system for monitoring air pressure and temperature in tyres.

It consists of simple easy-to-install, screw-on wireless sensors and a hand-held monitor. Fixed to the tyre valve, each sensor monitors the air pressure and temperature inside the tyre, and then transmits the air pressure and temperature information to the monitor.

This information is then graphically illustrated on the monitor screen and the operator can scroll through the data for each individual tyre.

The driver or passenger can read the specific data of each tyre's air pressure and temperature parameters displayed on the screen. An audible alarm will sound and the red LED light will flash should the tyre pressure and/or temperature vary markedly from each tyre's targeted air and temperature settings.

The TPMS will monitor the air pressure and temperature of up to 22 tyres with a pressure range of 0 to 1,000 kPa (145psi) and sensors within 7.6 metres (25 feet) of the device.

Part #	Description
1015	Tyreguard 400 TPMS Kit (Inc. monitor, 4 sensors, batteries & anti-theft locking devices, mounting bracket, cradle and 12/24V DC charger)
1012	Monitor – Tyreguard 400
1013	Charger – Tyreguard 400

### Sensor Booster

A Sensor Booster unit may be required if your vehicle has a wheelbase in excess of eight metres (26.25 feet). The Sensor Booster is mounted at the rear of the tow vehicle to relay the sensor signals from rear/trailer wheels.

There's no need to fit a second Booster should the vehicle's rear wheels exceed 16 metres (52.5 feet) as the Booster's transmitting radius is around 18 metres (59 feet).

Part #	Description
1020	Tyre Pressure Monitor Sensor Booster

### Tyre Pressure Monitor Sensors (wireless)

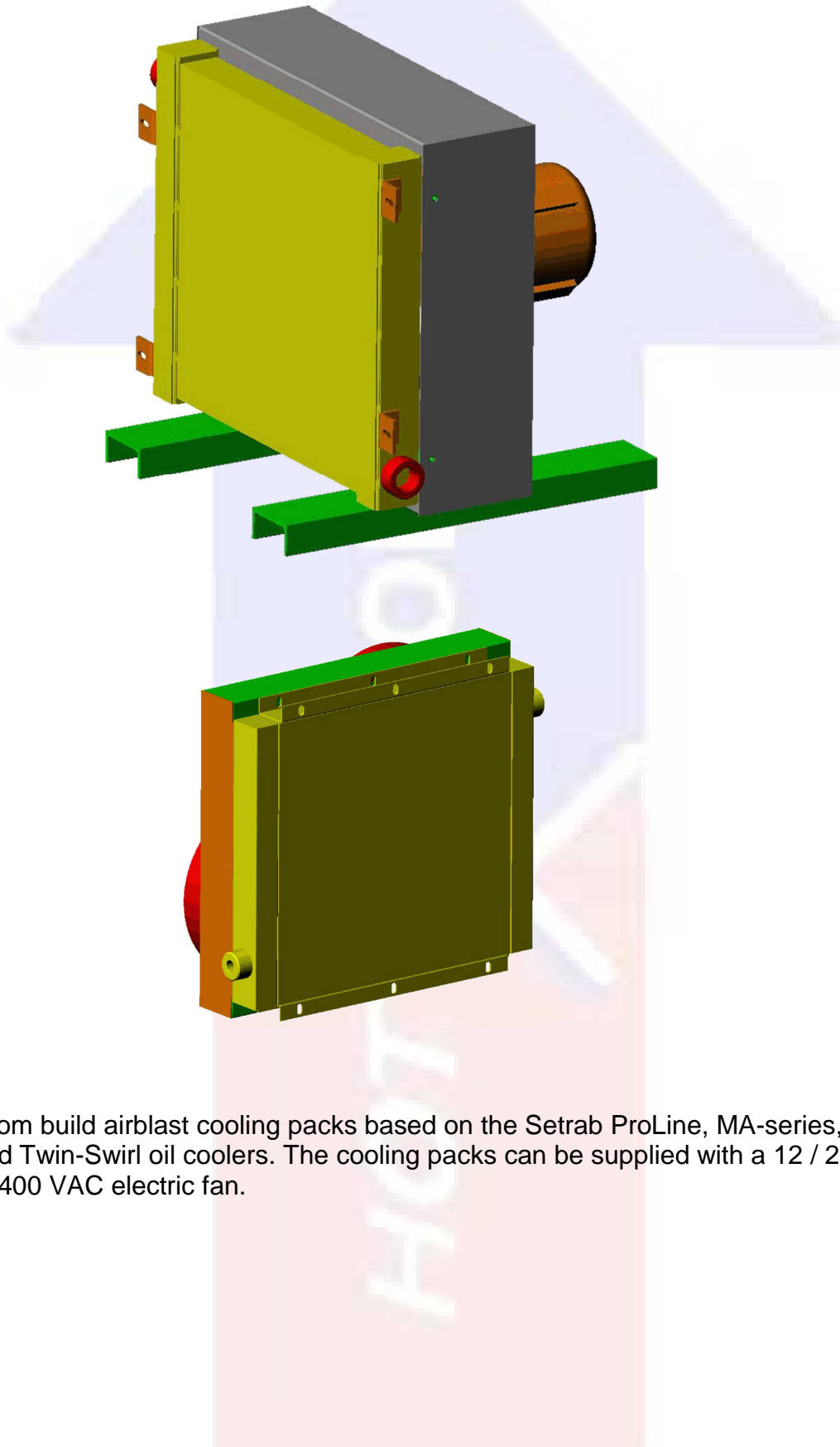
Extra wireless sensors are available in a twin pack for use with the TPMS Kit, #1015. The extra sensors can be fitted retrospectively to tyre valves to allow the monitoring of tyre pressures and temperatures on multi-wheeled tandem and boggy axle trailers, caravans, 5th wheelers, motor homes etc.



The TPMS #1015 will monitor up to 22 tyres with a pressure range of 0 to 1,000 kPa (145psi) and sensors within 7.6 metre (25 feet) range of the hand-held monitor. Simply fit each sensor to a tyre valve, then re-program the monitor. Each sensor is supplied with a 3-volt CR1632 lithium battery and anti-theft sensor locking device.

Part #	Description
1018	Tyre Pressure Monitor wireless sensors (2-pack)

## 17. Cooling packs



We custom build airblast cooling packs based on the Setrab ProLine, MA-series, Bar & Plate and Twin-Swirl oil coolers. The cooling packs can be supplied with a 12 / 24 VDC or 230 / 400 VAC electric fan.

## 18. Accessories

### 18.1. Heavy duty hose clamps – T-bolt

These heavy duty stainless steel T-bolt clamps are ideal for all applications with a high boost pressure or where you want a clamp that will look good and last as long as our silicone hoses.



Part number	Size
TB-138	35-40
TB-163	41-48
TB-188	48-56
TB-225	57-65
TB-263	67-75
TB-300	76-84
TB-325	82-91
TB-350	89-97
TB-375	95-103
TB-400	105-113

### 18.2. Round vinyl caps

Round vinyl caps are also referred to as dust caps and are manufactured from PVC. They are used to cover the in and outlets of intercoolers and radiators in order to keep dust out.



I.D. - mm	Length – mm
8	12.7
31.8	25.4
34.9	38.1
38.1	38.1
50.8	38.1
63.5	38.1
76.2	38.1
101.6	38.1

### **18.3. Hot Melt Sticks**

Hot Melt Sticks are used for the repair of radiator and intercooler cores.



#### **18.3.1. Specifications**

- The sticks are made of a Thermoplastic Polyamide Resin.
- The material is non hazardous, but sufficient ventilation is required.
- Polyamide Resin has a good chemical resistance for water, weak acids, diluted alkaline, hydrocarbons, oil and grease.
- It is not resistant to Alcohol, Ketones and Esters.
- Polyamide Resins are hygroscopic, meaning that they absorb humidity from the air. Keep the material stored in a closed plastic bag to prevent contamination with water.

#### **18.3.2. How to repair a heat exchanger with Polyamide Resin sticks**

##### **With a hot melt gun**

- Fill the hot melt gun with resin sticks.
- Adjust the temperature on the hot melt gun heater between 190 to 220°C.
- Make sure the leaking spot is dry, clean and not greasy.
- Pre-heat the cooler on the leaking spot.
- Apply the resin on the leaking spot so that the area is covered completely. Watch that the melted resin is flowing easily over the cooler surface and has a good wetting. If this is not the case the temperature of either the heat exchanger or the hot melt gun is too low.

##### **With a gas-burner**

- Make sure the leaking spot is dry, clean and not greasy.
- Pre-heat the cooler on the leaking spot.
- Apply a small amount of resin by touching the preheated spot with the stick and gently heat it with the burner until the resin starts to become liquid. Keep the flame in the area, but do not overheat the resin. If it starts to discolor dark, it is a sign of overheating. Watch that the melted resin is flowing easily over the cooler surface and has good wetting. If this is not the case the temperature is too low.

## 19. Installation instructions

### 19.1. Installation instructions for oil coolers

#### 19.1.1. Orientation

The cooler can be mounted on its bottom plate with the connections facing up or on its side, but not up side down. When mounted on its side, ensure that the inlet/pressure hose are connected to the bottom connection, this will ensure that no air can be trapped inside the oil cooler. The advantage of having the connections on the side is, being able to drain the oil without removing the oil cooler.

#### 19.1.2. Connections

Apply some oil or grease to the adapters before fitting them. Always use a spanner to counteract the force on the connections when tightening or loosening an adapter or a fitting. Support the hydraulic hoses connected to the oil cooler in order to remove any tension put on the connections on the oil cooler.

#### 19.1.3. Types of connections

JIC – mostly used for hydraulic and motorsport applications:

- 06 – transmission, diff, powersteering
- 08 – engine, transmission
- 10, -12, -16 – engine

BSP – mostly used for road cars:

- 3/8" – transmission, diff, powersteering
- 1/2" – engine, transmission
- 5/8", 3/4" – engine

#### 19.1.4. Positioning

The installation must be free of pulsations and vibrations. Where possible, mount the oil cooler in the direct airflow stream in front of the radiator and condenser.

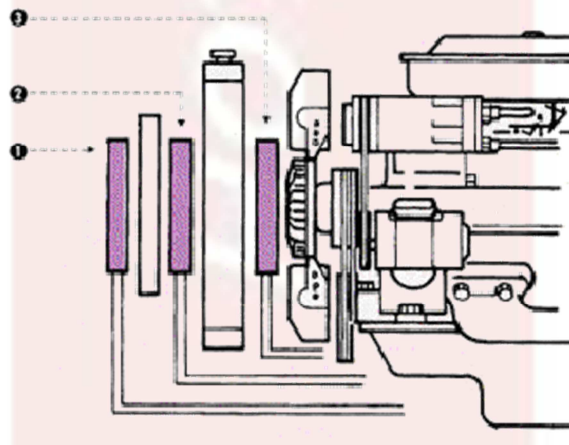
#### Rever to the drawing:

In front of the radiator and A/C condenser, the oil cooler is 100% efficient.

Between the A/C condenser and the radiator, the oil cooler is 75% efficient.

Behind the radiator, the oil cooler is only 60% efficient.

Support the oil cooler on all four mounting brackets, especially for off-road and racing installations. We recommend using the Setrab Bracket kit.





## **19.2. Installation instructions for electric fans**

All the fans are assembled in a “pusher” configuration. This means that the fan must be mounted up-stream (in front of the radiator). To change to “puller” configuration the blade must be turned around and the polarities reversed.

### **19.2.1. Direction / Polarities**

Please note that the recommendation below is not always valid as the blue and black wires might sometimes be reversed in the factory. So please check whether the flow direction is correct before installing the fan.

For “**pusher**” configuration the **black** wire is positive.

When looking at the blade with the motor behind the fan, the blade must be turning **anti-clockwise**.

For “**puller**” configuration the **blue** wire is positive.

When looking at the blade with the motor behind the fan, the blade must be turning **clockwise**.

### **19.2.2. Controlling the fan**

If the electric fan replaces a viscous or fixed fan, a thermal switch will be required to control the fan. This is not supplied with the fan. An adjustable (40 – 100°C) thermal switch kit is available. It includes a relay, wiring, fuse and installation instructions.

When fitting a thermal switch ensure that the temperature is higher than the thermostat’s temperature – about 5 to 10°C. Also ensure that the thermal switch is fitted on the “hot” side of the radiator.

### **19.2.3. Installation**

The fan is mounted onto the radiator or condenser using the quick fit kit supplied with the fan. Remove the cowling of the viscous fan. The electric fan must fit directly onto the core and must not be larger than the core of the radiator.

For the 8”, 9”, 10” and 12” fans fit a 15 amp fuse.

For the 14” fan a 20 amp fuse will be required.

For the 16” fan a 30 amp fuse will be required.

## **20. Services**

We offer the following services in conjunction with our product range.

### **20.1. Design**

We have the resources to design a complete cooling solution according to the client's specifications. We are able to take accurate measurements at the client's premises in order to design the best possible solution. Given all the necessary input data, we can calculate performance data for most of our product range. Using CAD software we are able to set up drawings to check compatibility and integration with the client's cooling system, before manufacturing. Our fully equipped workshop enables us to manufacture most components for the cooling system in house.

### **20.2. Manufacturing**

Our fully equipped workshop enables us to manufacture complete cooling systems in-house. We can also do the following:

- Re-coring of intercoolers and oil coolers
- Manufacturing of aluminium intercooler and radiator header tanks
- Manufacturing of boost pipes
- General aluminium and stainless steel welding

We have the following manufacturing equipment:

- 1 x HAAS SR-100 Gantry
- 2 x 300 amp AC/DC water-cooled welding machines
- 1 x 1 meter lathe
- 1 x 1.3 meter guillotine
- 1 x cold saw
- 1 x heavy duty polisher
- 1 x plate roller
- 1 x box and pan folder
- 1 x "Jenny" lip roller
- 2 x bandsaw
- 1 x pedestal drill
- 1 x disc sander
- 1 x 12 ton hydraulic press

### **20.3. Pressure testing**

We have a large (1.5 x 1.5 m) pressure test tank for pressure testing intercoolers, oil coolers and radiators with air up to 6 bar. We also have a custom build pressure test unit that can test up to 30 bar pressure with water.

### **20.4. Repairs**

Repairing of intercoolers, oil coolers and aluminium radiators with either welding or glue.

## **21. Frequently Asked Questions**

- 21.1. Why do I need an engine oil cooler for my car?
- 21.2. How do I install an engine oil cooler?
- 21.3. Where do I mount the engine oil cooler?
- 21.4. Why do I need a transmission oil cooler for my car?
- 21.5. How do I install a transmission oil cooler?
- 21.6. Where do I mount the transmission oil cooler?
- 21.7. Why do I need an electrical fan?
- 21.8. What size electrical fan do I need?
- 21.9. How much airflow (cfm) do I need to cool my engine?
- 21.10. How do I mount the electrical fan?
- 21.11. How do I activate the electrical fan?
- 21.12. How does an intercooler work?
- 21.13. Why do I need an intercooler?
- 21.14. Where do I mount the intercooler?
- 21.15. Why do I need an electric water pump (EWP)?
- 21.16. How do I install the EWP?
- 21.17. How do I control the EWP?

### **21.1. Why do I need an engine oil cooler for my car?**

Due to the high ambient temperatures, high underhood temperatures are produced. In addition new aerodynamic body styles reduce air flow to the engine compartment. Engine oil not only lubricates but also absorbs a lot of heat from the engine and due to this, oil crankcase temperatures can reach 120°C or higher during normal operation. Maximum load conditions can cause oil to exceed 135°C. By installing an oil cooler you can expect to maintain oil temperatures in the 80 to 100°C range, thereby reducing wear and extending the life of all internal engine components.

Excessive engine heat is caused by the following:

- Towing
- Climbing steep grades
- Carrying loads
- Hot driving conditions
- Harsh driving - racing
- Engine conversions (turbocharging, gasflowing, etc.)

### **21.2. How do I install an engine oil cooler?**

The oil cooler can be mounted flat on its bottom plate or on its side, but not up-side-down. A sandwich adapter, which fits inbetween the spin-on oil filter and the block, is utilised to circulate the engine oil to the oil cooler. On air-cooled VW engines a special adapter is used to circulate the engine oil to the oil cooler, because it does not have a spin-on oil filter.

### **21.3. Where do I mount the engine oil cooler?**

For the maximum efficiency, the engine oil cooler should be mounted where it will receive the coolest air and maximum air flow. Between the A/C condensor and the radiator the oil cooler's efficiency will be reduced to 75% and between the radiator and the fan it will decrease to 60%.

### **21.4. Why do I need a transmission oil cooler for my car?**

Due to high ambient temperatures and the tremendous heat generated in an automatic transmission, an auxiliary transmission oil cooler is an economical way to help protect against costly repairs. Automatic transmission fluid (ATF) cools, lubricates and cleans internal transmission components. When transmission temperatures exceed about 93°C, the ability of the ATF to perform is greatly diminished. Subsequently, the life span of the fluid, seals and moving parts are significantly reduced. Higher internal temperatures also increase the wear rate of the friction and clutch plates. Excessive transmission heat is caused by the following driving conditions:

- Towing
- Climbing steep grades
- Stop and go traffic
- Carrying loads (carpooling)
- Hot driving conditions
- Driving in snow, ice or sand

### **21.5. How do I install a transmission oil cooler?**

An auxiliary transmission oil cooler must be installed in the return line to the gearbox, in series with the existing oil cooler. It can also be installed as a replacement for the existing oil cooler.

### **21.6. Where do I mount the transmission oil cooler?**

For the maximum efficiency, the transmission oil cooler should be mounted where it will receive the coolest air and maximum air flow. Between the A/C condensor and the radiator the oil cooler's efficiency will be reduced to 75% and between the radiator and the fan it will decrease to 60%.

### **21.7. Why do I need an electrical fan?**

As a primary cooling source, electrical fans provide the following:

- Economical replacement for OE parts
- Increase in engine power when replacing fan clutch and fan assemblies, which means fuel saving
- Compatibility with all electrical fan controls
- Reversible blades for pusher or puller applications
- As a add-on cooling source, electric fans provide the following:
- Constant airflow regardless of vehicle speed
- Increased air conditioning performance due to constant airflow across the condenser

### **21.8. What size electrical fan do I need?**

A general rule of thumb is that you have to cover about 70% of the radiator core area with the fan blade diameter.

### **21.9. How much airflow (cfm) do I need to cool my engine?**

A 4 cylinder engine requires about 1000 cfm (1700 m<sup>3</sup>/h), a 6 cylinder engine requires 1700 cfm (2890 m<sup>3</sup>/h) and a small V8 about 2100 cfm (3570 m<sup>3</sup>/h). To reach the minimum cfm required you may need to install two or possibly more fans.

### **21.10. How do I mount the electrical fan?**

The electrical fan has its own shroud on which the mounting feet are attached. A quick fit kit (page 30) is used to mount the fan directly onto the radiator core.

### **21.11. How do I activate the electrical fan?**

The electrical fan can be activated in a number of ways:

- Direct wired: the fan is wired to the ignition wiring on the switched side.
- Non-adjustable thermal switch: the fan turns on when the engine temperature reaches a pre-set temperature.
- Adjustable thermal switch: the fan turns on when the engine temperature reaches the pre-determined and set temperature.
- When running the EWP system with the Digital Controller, it can also activate the fan at 3°C above the EWP set temperature.
- Toggle switch: the fan is activated by a standard switch.

### **21.12. How does an intercooler work?**

An intercooler only works in conjunction with a turbocharger. The outlet air from the turbocharger heats up because of the work that has been done to compress it. The increase in temperature results in a decrease in density, which means that less air enters the combustion chamber. An intercooler is used to cool down the compressed air, which increases the density. Two types of intercoolers are available on the market: air-to-air and water-to-air.

### **21.13. Why do I need an intercooler?**

An intercooler has the following advantages:

- Lower intake temperatures which results in lower combustion temperatures and longer engine life
- Inhibits pre-ignition in spark-ignition engines
- Higher turbo boost is possible
- More power (kW) from the engine
- Better fuel efficiency

### **21.14. Where do I mount the intercooler?**

Mount the intercooler as close as possible to the turbo and intake manifold. The shorter the path from the turbo outlet to the inlet manifold, the less the pressure drop and throttle-lag will be. Ensure that the intercooler gets direct airflow across the core for optimal cooling.

### **21.15. Why do I need an Electric Water Pump?**

An electric water pump has the following advantages above a mechanical water pump:

- Has the ability to run after the engine has stopped, eliminating heat soak
- Gives you optimum cooling under all circumstances
- Replaces the kW's required to drive the mechanical pump at higher rpm when high flow rates are not required, which means more grunt at the wheels or better fuel consumption

### **21.16. How do I install the EWP?**

The EWP is designed to be installed in the bottom radiator hose. The kit comes with everything you need for easy installation including, easy to understand, Do-It-Yourself instructions.

### **21.17. How do I control the EWP?**

For the best performance the EWP Digital Controller are used. It can control both the EWP80 and EWP115. The Controller allows you to electronically set the target temperature and it adjusts the rate of flow, hunting for and then locking onto the temperature you set. You have a choice of 75, 80, 85, 90 or 95°C engine temperature, selected at the touch of a button. The Controller will also run the EWP after engine shutdown till 5°C below the set temperature is reached or for 2 minutes.

The Digital Controller can also control the electric cooling fan. When connected it will switch on the electric fan at 3°C above the set temperature.

This option requires the removal of the thermostat and either the mechanical pump impeller from the pump shaft or the bypass of the water pump pulley from the belt set-up, using a shorter belt.

The EWP can be combined with an adjustable on/off switch to add a cooling boost to an overheating cooling system when required. With the switch connected directly to the battery, the EWP will run-on after hot engine shut-down, eliminating heat soak.

The pump can be wired directly to the ignition for maximum cooling - suitable for very hot climates and chronically over-heating engines. This option requires the removal of the thermostat and either the mechanical pump impeller from the pump shaft or the bypass of the water pump pulley from the belt set-up, using a shorter belt.