ALLIED HEAT TRANSFER

STOCK PRODUCTS CATALOGUE





DESIGN | MANUFACTURE | MAINTENANCE
OF HEAT TRANSFER EQUIPMENT

A Heat Exchangers - Oil Coolers - HEX

HEX – a heat exchanger for cooling oil with water.
This section contains stock heat exchangers for cooling oil with water.
Includes Dimensions and performance.
Options available:
Copper or copper/nickel.
Stainless steel range.
Exhaust Gas cooling.
Marine Header Tank Heat Exchangers.
Some Installation instructions for engine mounting.



A

Heat Exchangers - Oil Coolers - HEX

B ACX - a heat exchanger for cooling oil with air

This section contains stock heat exchangers for cooling oil with water.
Includes Dimensions and performance graphs.
Options of 12 & 24 volt, single phase and 3 phase motors.
Description of the Integral By-Pass system.
The information needed to select an ACX.
Some instructions on installation.
This section also contains the OC B range of low cost coolers.



B

Air Cooled Oil Coolers - ACX

C Oil Cooler Panels

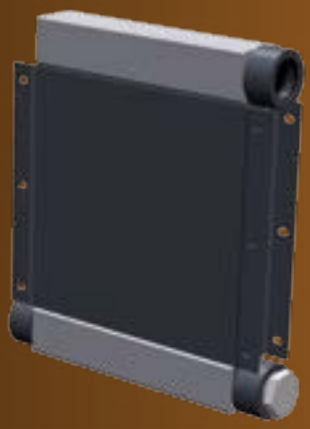
The Coolers only without fan/motor, no fan shroud. Just the cooler panel.

TF Coolers - Tube Fin coolers used for add on cooling with separate mounting blocks.

HE Coolers - High Efficiency coolers. Lighter construction and very efficient.

ST Coolers - Very tough coolers made from steel for tough conditions.

Replacement coolers - dimensions of the most popular oil coolers panels that are available in stock.



C

Oil Cooler Panels

D Custom Coolers

What to do when you need a new cooler made that doesn't appear in our catalogue.

What dimensions are needed.

Sketch showing dimensions required.

Information needed to make a cooler based on performance criteria.



D

Custom Coolers

E Accessories

By-Pass Valves.
Pressure Relief.
2 way Thermal By-Pass Valves.
Thermo Fan Switches.
Cooling Fans.
12 and 24 volt fans.

E

Accessories

www.alliedheattransfer.com.au

SECTION A - Heat Exchangers - Oil Coolers

DC and EC to PK range of Shell and Tube Oil Coolers ..... A1 - A9
Performance of EC to PK Coolers ..... A10 - A16
Stainless Steel Shell and Tube Oil Coolers A17
Exhaust Gas Heat Exchangers ..... A18 - A19
Marine Cooling System A20
Header Tank Heat Exchanger ..... A21 - A25

This catalogue is designed to assist our distributors by giving an easy reference to our product. We endeavour to keep the items listed in the catalogue on our shelves, however it pays to check availability with our office. It is important to remember that we are a heat exchanger company, we design and manufacture, so if you can not find what you need in the following pages, please contact us. In addition to making oil coolers, we also service them, so coolers can be sent to us for cleaning, repair and rebuild.

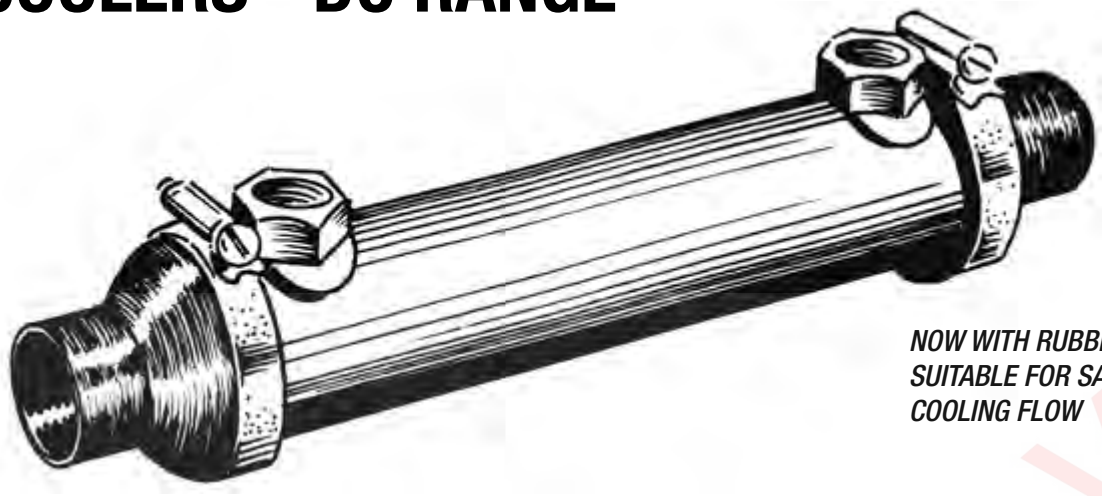
We support our distributors with backup advice, technical support and design software. For any heat exchanger enquiry contact us at the offices below

Western Australia: Ph (08) 9455 5933
Queensland: Ph (07) 3375 1544
Philippines: Ph (+632) 800 5040





OIL COOLERS - DC RANGE



NOW WITH RUBBER ENDS SUITABLE FOR SALTWATER COOLING FLOW

Typical examples of oil coolers fitted to marine transmissions with an oil inlet temperature of 80˚C and seawater temperature of 32˚C.

Type	Maximum sea water flow for end cover type				Suitable for gearbox transmitting	
	A/D Straight/90°	B/E Straight/90°	C/F Straight/90°	None		
	l/min	l/min	l/min	l/min	kW	Hp
DC 50	60	90	120	180	75	100
DC 60	60	90	120	180	120	160
DC 90	60	90	120	180	150	200
DC 120	60	90	120	180	180	240

Model No	Size (mm)	OD water pipe A / B / C	Oil Port thread (BSPP)	net dry Weight
DC 50	205 x 51	22mm/28mm/32mm	1/2”	0.7
DC 60	240 x 51	22mm/28mm/32mm	1/2”	0.9
DC 90	314 x 51	22mm/28mm/32mm	1/2”	1.1
DC 120	396 x 51	22mm/28mm/32mm	1/2”	1.4

3/8” available on special order

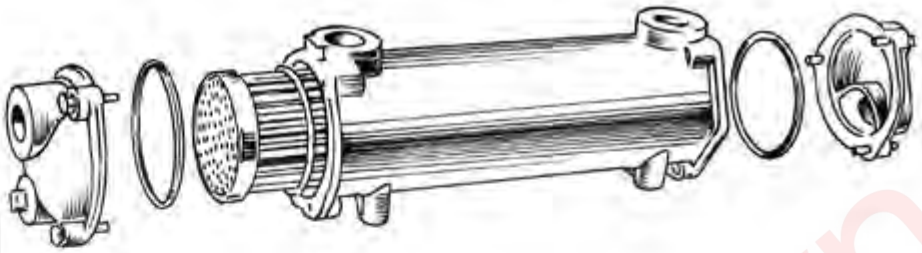
Maximum working oil pressure : 25 BAR
Maximum working water pressure : 3 BAR
Maximum working temperature : 125˚C

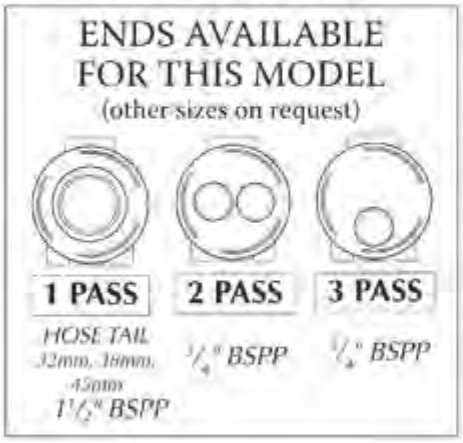
Materials of construction

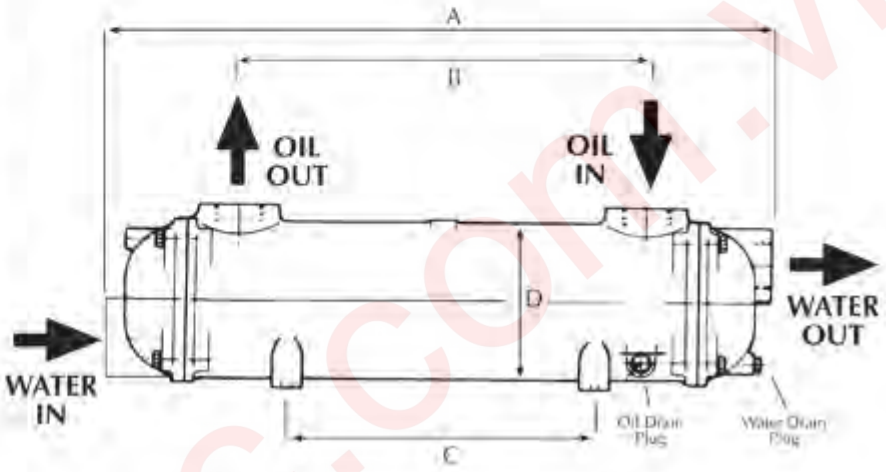
Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Rubber
Shell : Brass

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REMOVABLE TUBESTACK COOLER







Working pressure rating.....20 bar
Working temerature rating.....120°C

3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M8x10	D DIAMETER mm	OIL CONNECTION SIZE BSPP
EC80	2.4	174	60	60	86	1/2”
EC100	3.2	260	140	104	86	3/4”
EC120	3.8	346	226	190	86	3/4”
EC140	4.8	444	324	288	86	3/4”
EC160	5.7	572	452	416	86	3/4”

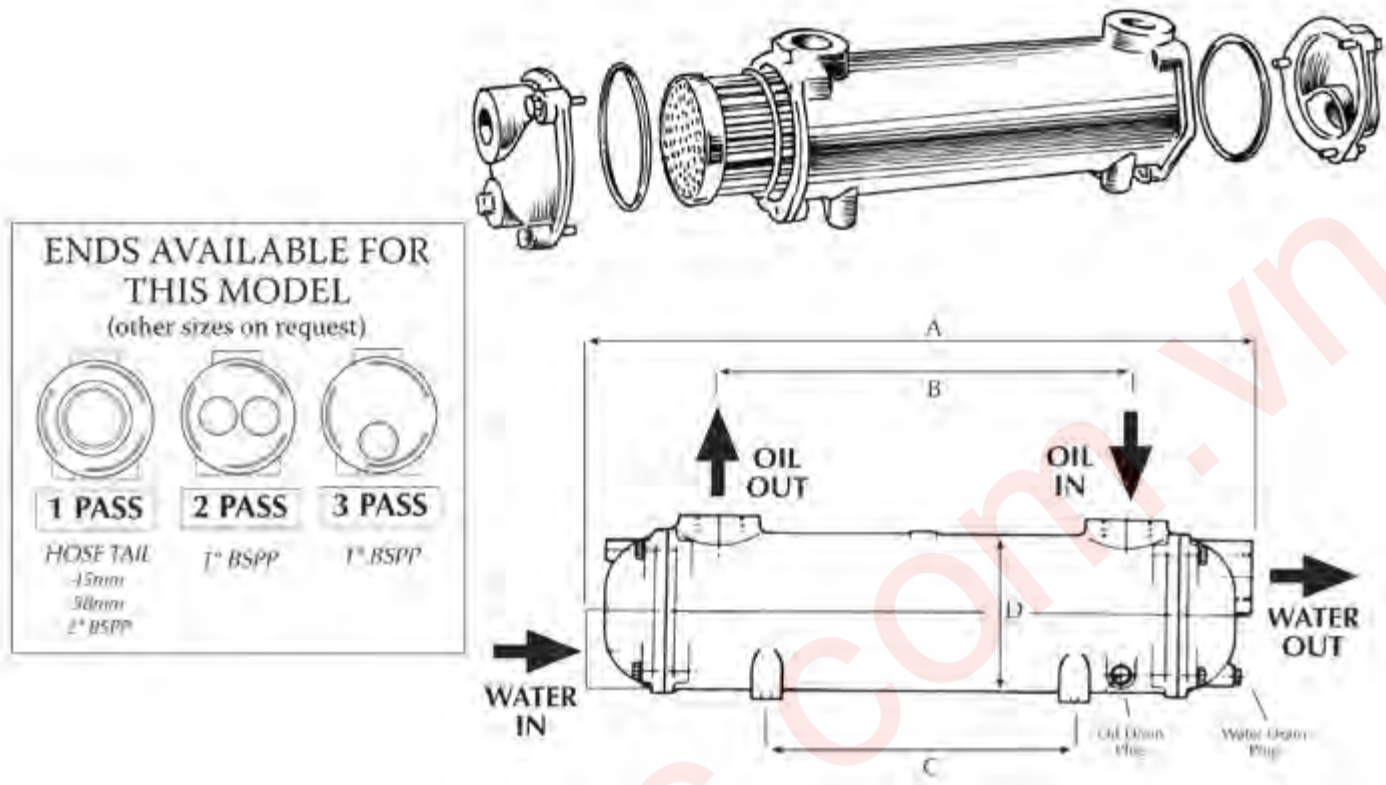
Materials of construction

Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

Other materials available including stainless steel on request.

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REMOVABLE TUBESTACK COOLER



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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M8x12	D DIAMETER mm	OIL CONNECTION SIZE BSPP
FC80	5.5	272	116	104	108	1"
FC100	6.3	358	202	190	108	1"
FC120	7.3	456	300	288	108	1"
FC140	9.4	584	428	288	108	1"
FC160	11.0	730	574	434	108	1"

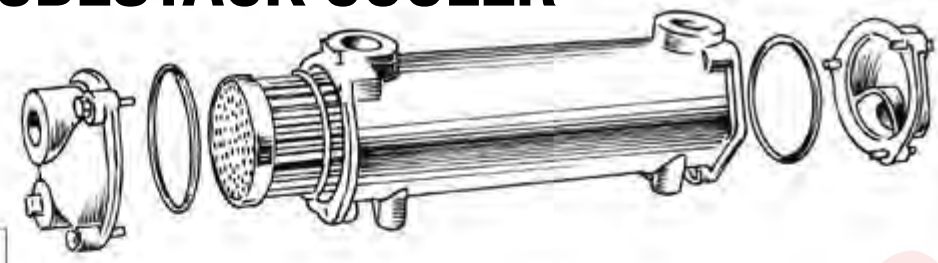
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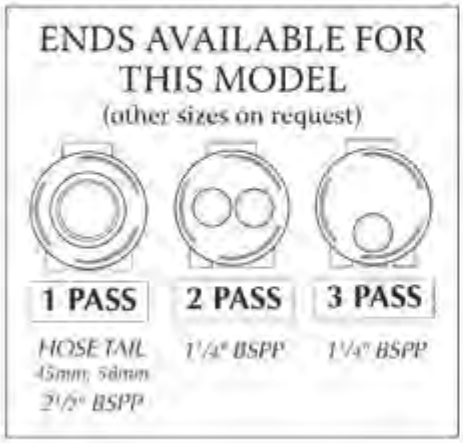
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Shell : Cast aluminium

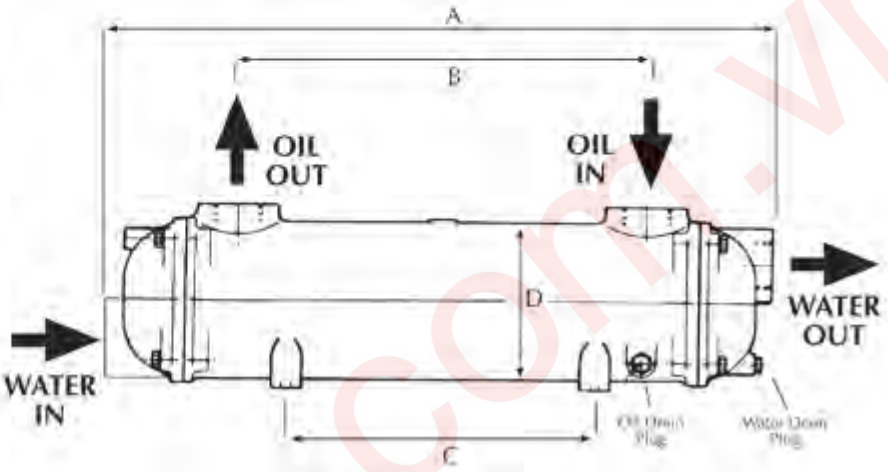
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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M8x12	D DIAMETER mm	OIL CONNECTION SIZE BSPP
FG 80	8.5	374	196	92	128	1¼"
FG100	10.0	472	294	190	128	1¼"
FG120	12.0	600	422	318	128	1¼"
FG140	14.5	746	568	464	128	1¼"
FG160	17.5	924	746	642	128	1¼"
FG200	24.0	1330	1152	1048	128	1¼"

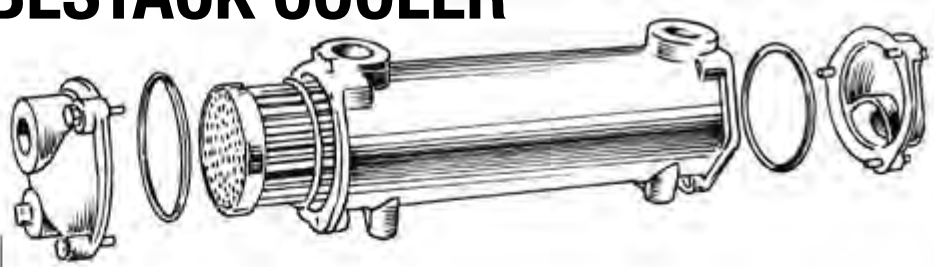
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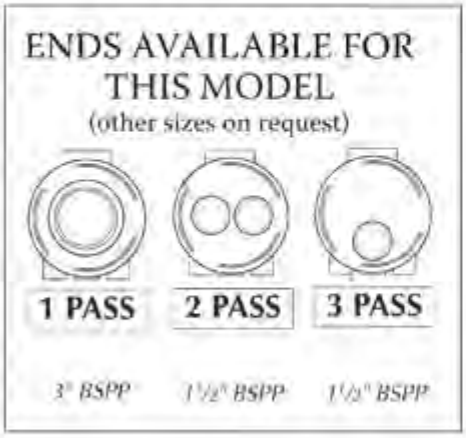
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Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

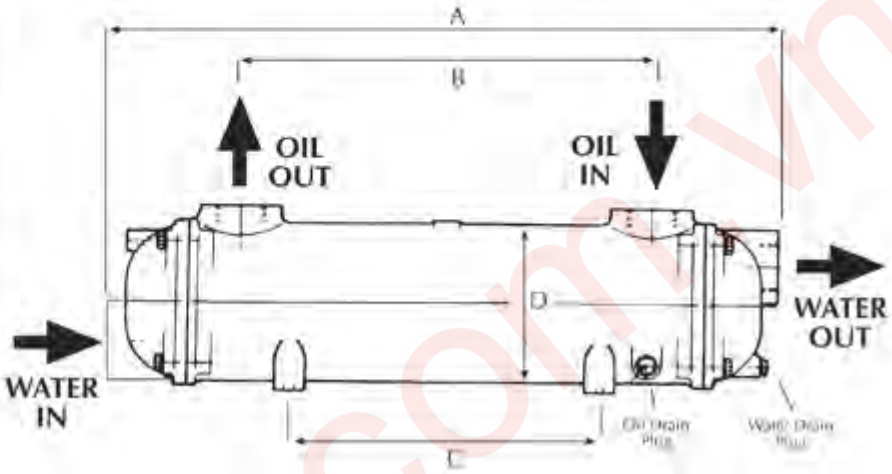
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REMOVABLE TUBESTACK COOLER







Working pressure rating.....20 bar
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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M10x15	D DIAMETER mm	OIL CONNECTION SIZE BSPP
GL140	18	502	272	108	162	1½"
GL180	21	630	400	236	162	1½"
GL240	25	776	546	382	162	1½"
GL320	30	954	724	560	162	1½"
GL400	36	1156	926	762	162	1½"
GL480	42	1360	1130	966	162	1½"

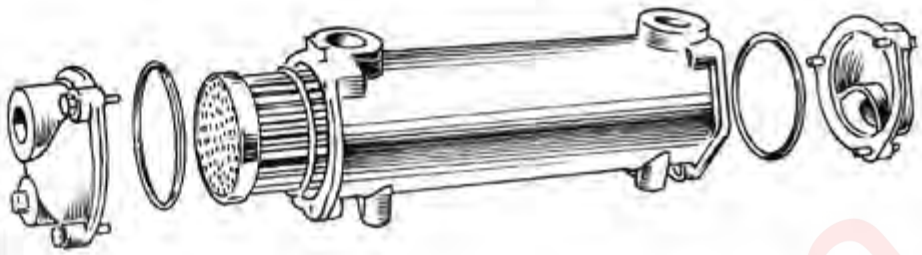
Materials of construction

Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

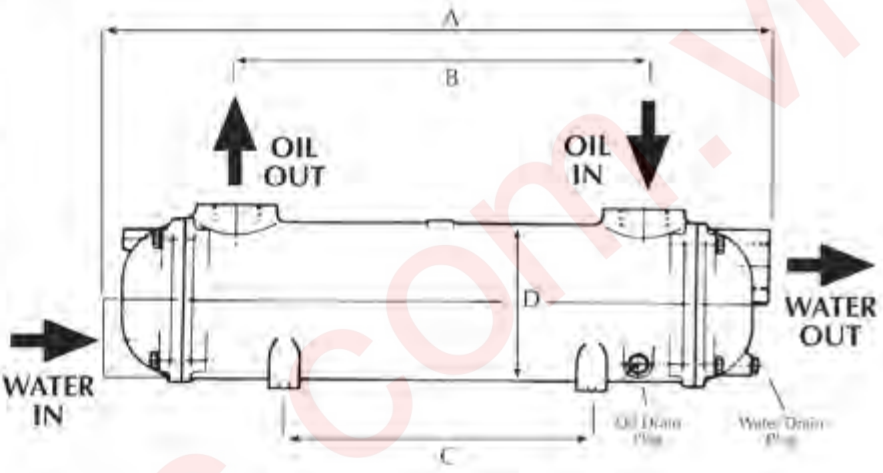
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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M12x18	D DIAMETER mm	OIL CONNECTION SIZE BSPP
GK190	34	674	370	236	198	2"
GK250	39	820	516	382	198	2"
GK320	46	998	694	560	198	2"
GK400	54	1200	896	762	198	2"
GK480	62	1404	1100	966	198	2"
GK600	74	1708	1404	1270	198	2"

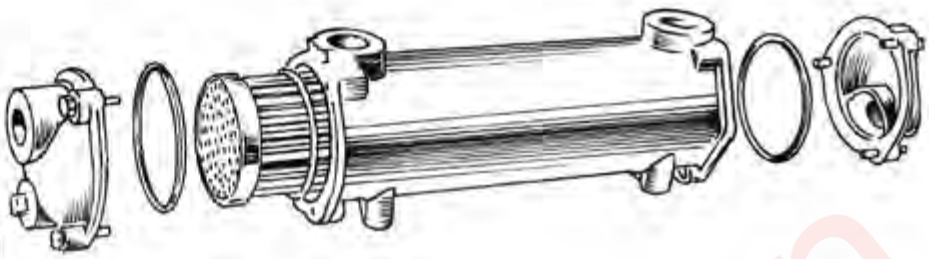
Materials of construction

Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

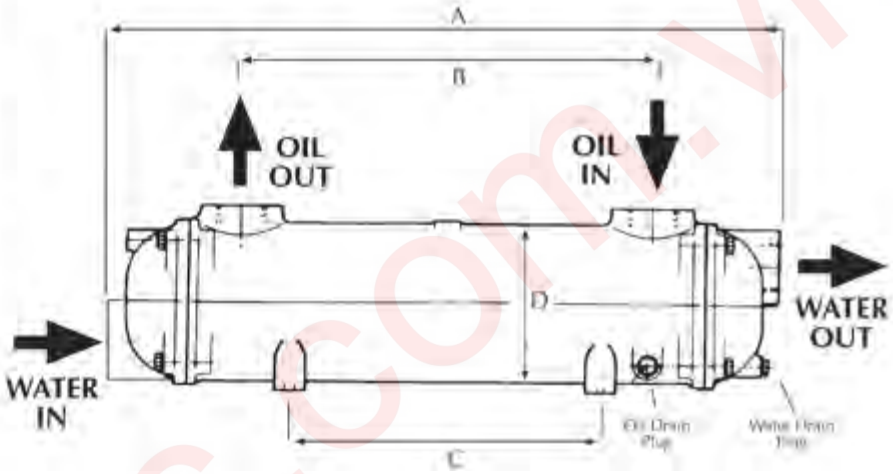
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REMOVABLE TUBESTACK COOLER







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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M16x24	D DIAMETER mm	OIL CONNECTION SIZE BSPP
JK190	58	704	340	236	232	2½"
JK250	66	850	486	382	232	2½"
JK320	78	1028	664	560	232	2½"
JK400	92	1230	866	762	232	2½"
JK480	105	1434	1070	966	232	2½"
JK600	126	1738	1374	1270	232	2½"

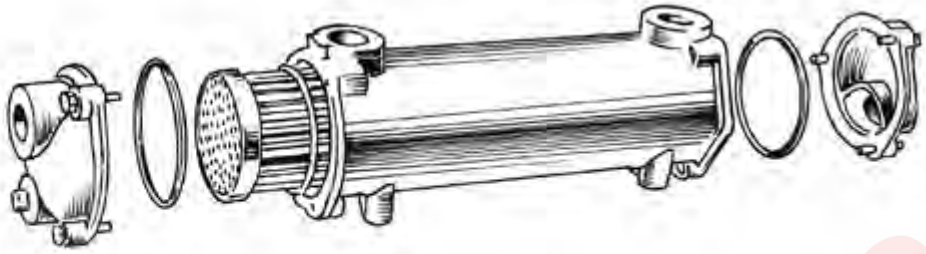
Materials of construction

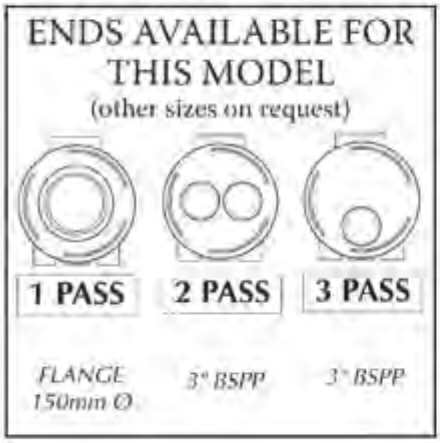
Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

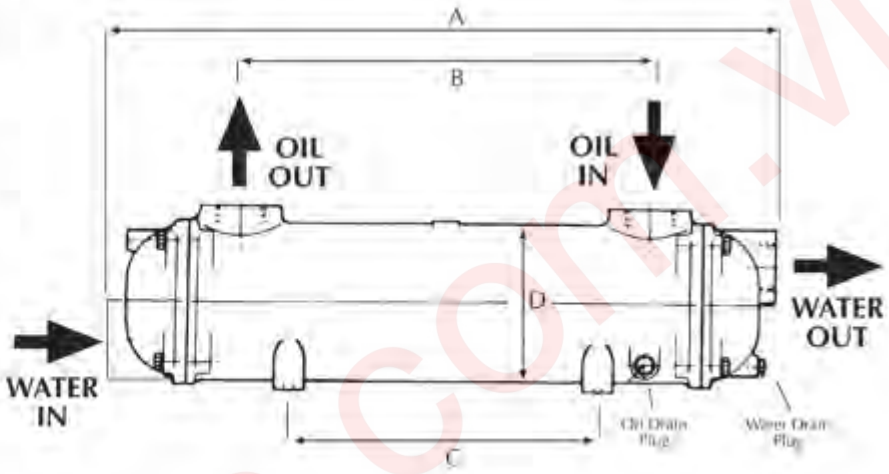
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3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M16x24	D DIAMETER mm	OIL CONNECTION SIZE BSPP
PK190	81	754	330	236	278	3"
PK250	94	900	476	382	278	3"
PK320	110	1078	654	560	278	3"
PK400	125	1280	856	762	278	3"
PK480	140	1484	1060	966	278	3"
PK600	158	1788	1364	1270	278	3"

Materials of construction

Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

Other materials available including stainless steel on request.

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MAXIMUM FLOW OF EC TO PK COOLERS

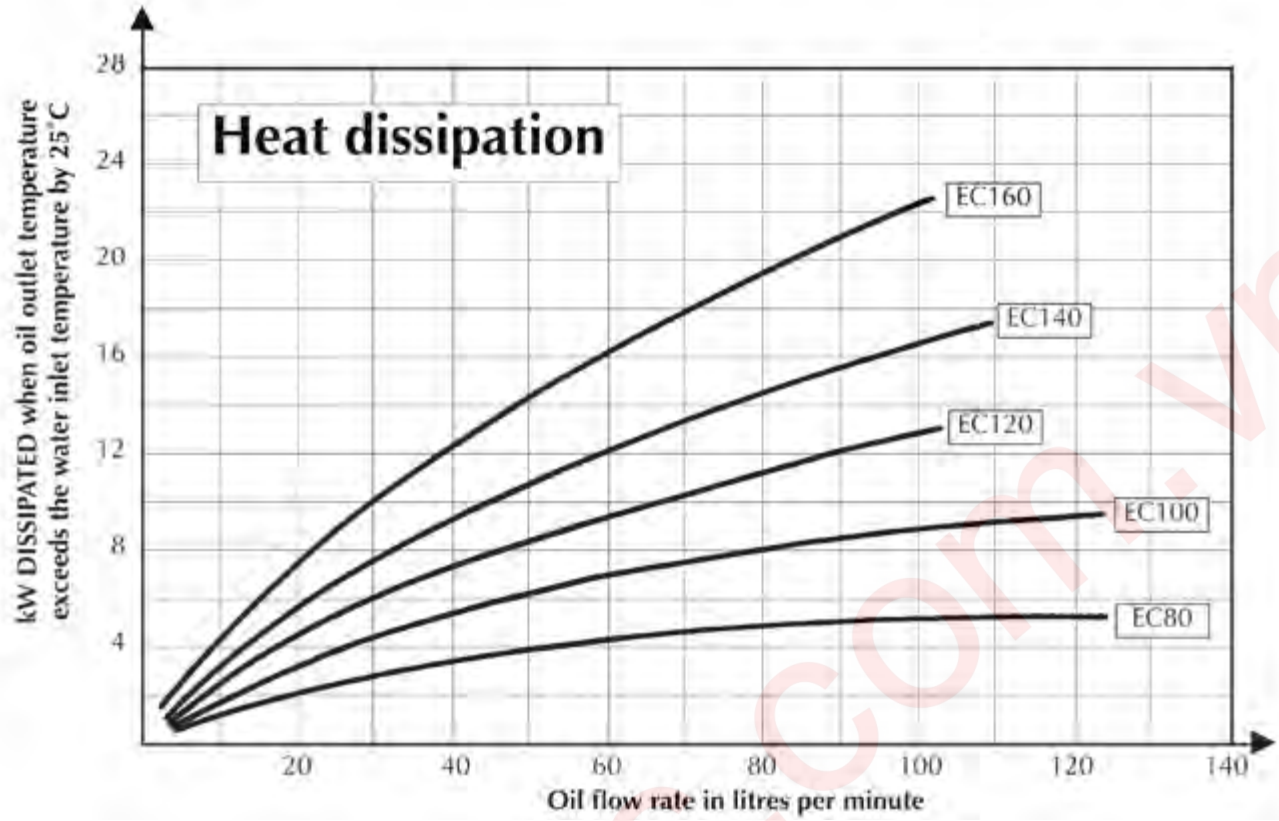
Typical information for 3-pass units, for other configurations please contact us.

TYPE	maximum oil flow	maximum sea water flow	maximum fresh water flow	internal oil volume	internal water volume
EC 80-1425-1	80	54	80	0.26	0.31
EC 100-1425-2	92	"	"	0.49	0.44
EC 120-1425-3	77	"	"	0.74	0.57
EC 140-1425-4	68	"	"	0.97	0.71
EC 160-1425-5	64	"	"	1.30	0.91
FC 80-1426-1	140	95	140	0.75	0.65
FC 100-1426-2	145	"	"	1.10	0.84
FC 120-1426-3	116	"	"	1.50	1.06
FC 140-1426-4	105	"	"	2.00	1.35
FC 160-1426-5	96	"	"	2.60	1.68
FG 80-1427-1	192	125	190	1.64	1.26
FG 100-1427-2	190	"	"	2.40	1.56
FG 120-1427-3	160	"	"	3.00	1.96
FG 140-1427-4	160	"	"	3.90	2.42
FG 160-1427-5	145	"	"	5.00	2.97
FG 200-1427-7	130	"	"	7.58	4.53
GL 140-1428-2	300	225	330	3.60	3.10
GL 180-1428-3	285	"	"	4.80	3.80
GL 240-1428-4	280	"	"	6.30	4.60
GL 320-1428-5	270	"	"	8.00	5.50
GL 400-1428-6	240	"	"	10.00	6.60
GL 480-1428-7	235	"	"	12.20	7.70
GK 190-1658-3	460	325	490	7.00	6.30
GK 250-1658-4	445	"	"	9.00	7.50
GK 320-1658-5	430	"	"	11.60	9.00
GK 400-1658-6	420	"	"	14.60	10.60
GK 480-1658-7	400	"	"	17.40	12.30
GK 600-1658-8	365	"	"	22.10	14.70
JK 190-1661-3	830	460	700	9.70	8.80
JK 250-1661-4	740	"	"	12.50	10.40
JK 320-1661-5	690	"	"	16.10	12.50
JK 400-1661-6	650	"	"	20.30	14.70
JK 480-1661-7	620	"	"	24.20	17.10
JK 600-1661-8	600	"	"	30.70	20.40
PK 190-1669-3	1600	700	1050	13.60	16.00
PK 250-1669-4	1240	"	"	17.70	18.60
PK 320-1669-5	1060	"	"	22.60	21.80
PK 400-1669-6	950	"	"	28.50	25.30
PK 480-1669-7	890	"	"	34.00	29.00
PK 600-1669-8	750	"	"	42.50	34.40
PK 800-1669-9	630	"	"	55.20	44.70

* Maximum permttted oil flow on Shell Tellus 37 at 60˚C

Exceeding the maximum permitted water flow may cause tube failure.

EC RANGE



Correction factors

Temperature Difference

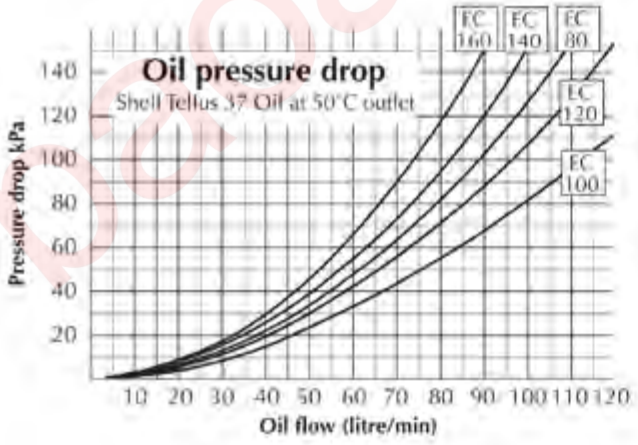
When the oil outlet temperature exceeds the water inlet temperature by other than 25°C multiply the kW dissipation figure by the following correction factor –

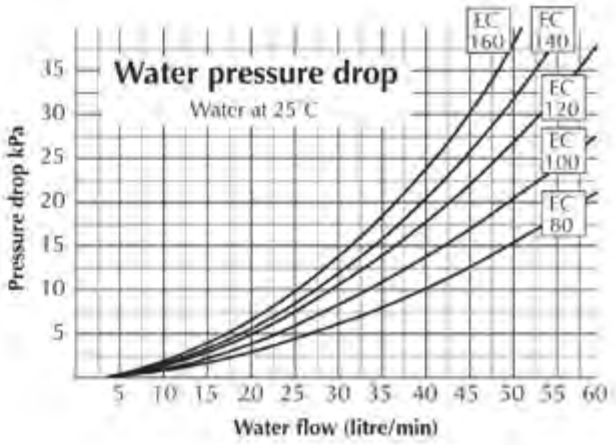
15°C	20°C	25°C	30°C	35°C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

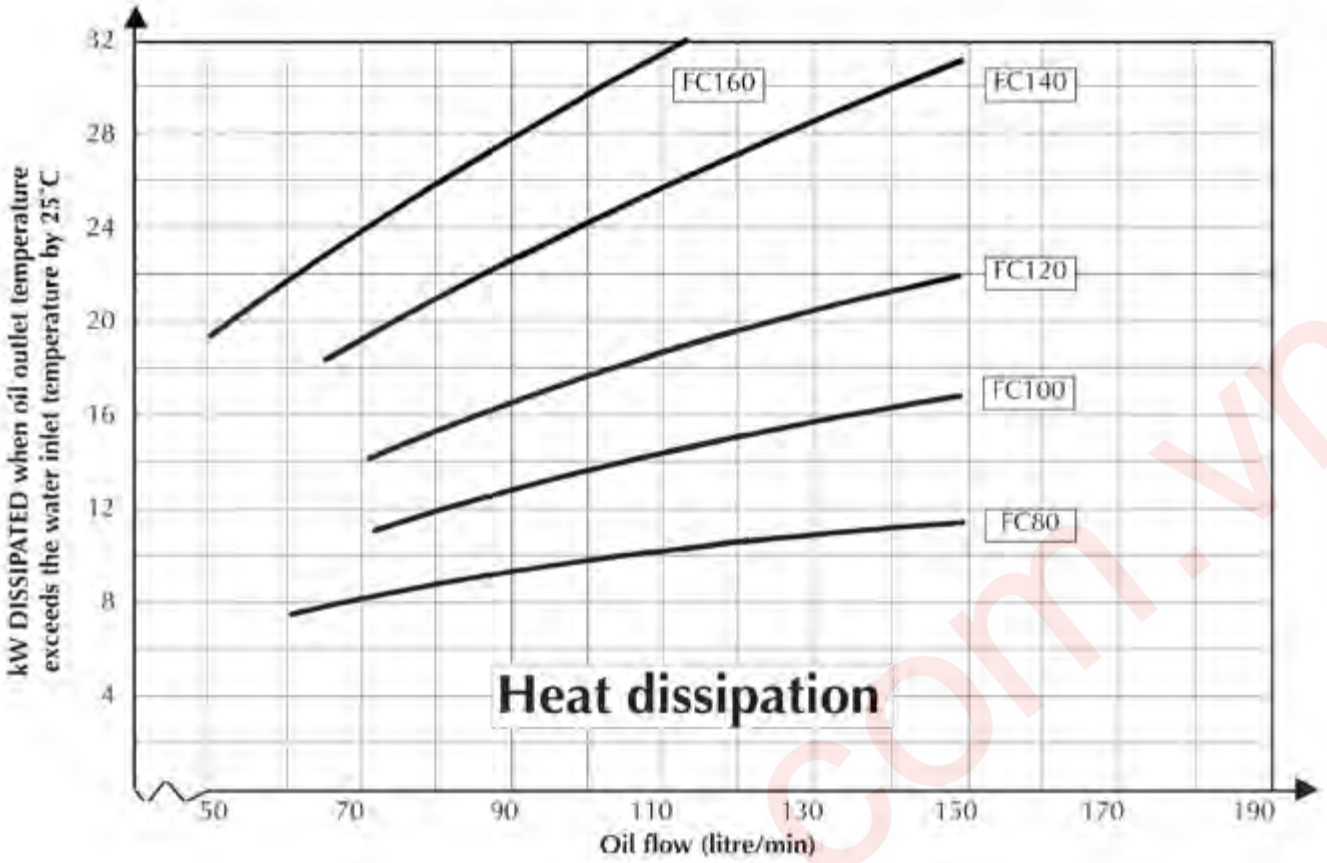




For dimensions see water/oil cooler technical data sheet in this catalogue

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FC RANGE



Correction factors

Temperature Difference

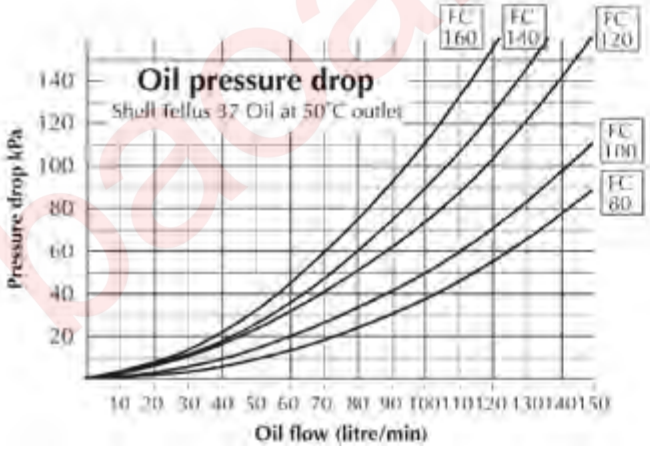
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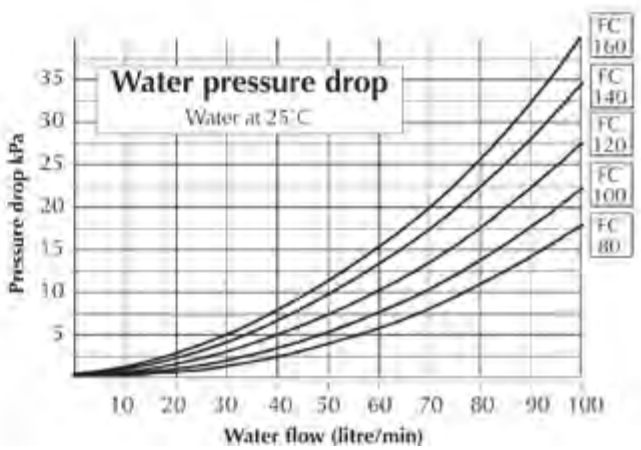
15°C	20°C	25°C	30°C	35°C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

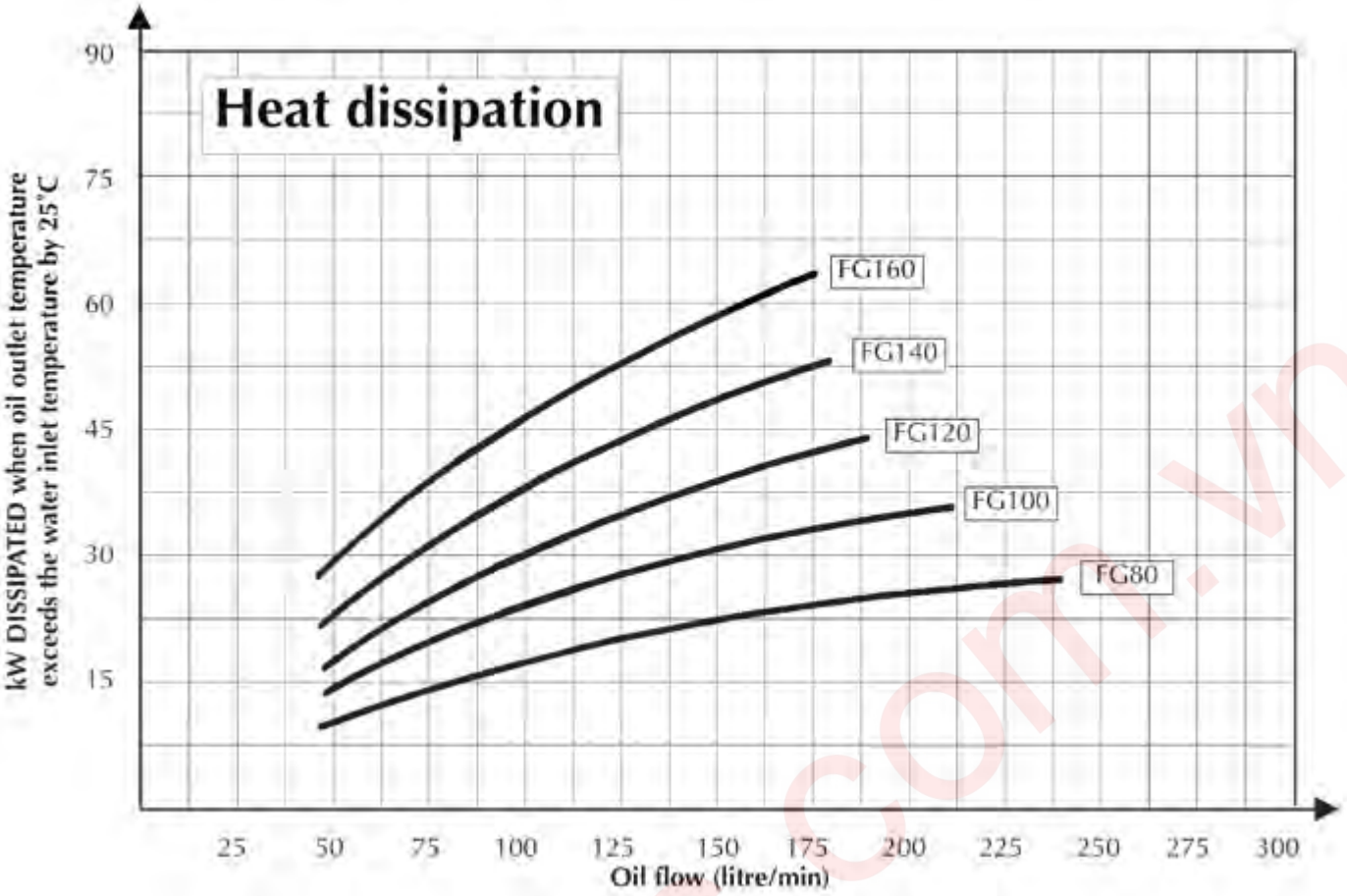




For dimensions see water/oil cooler technical data sheet in this catalogue

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FG RANGE



Correction factors

Temperature Difference

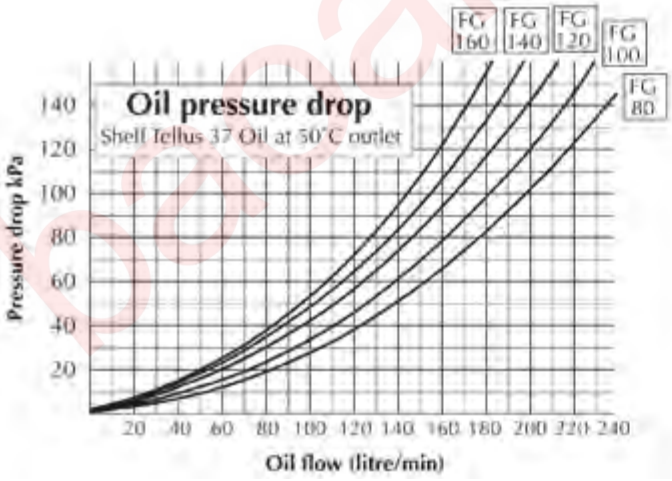
When the oil outlet temperature exceeds the water inlet temperature by other than 25˚C multiply the kW dissipation figure by the following correction factor –

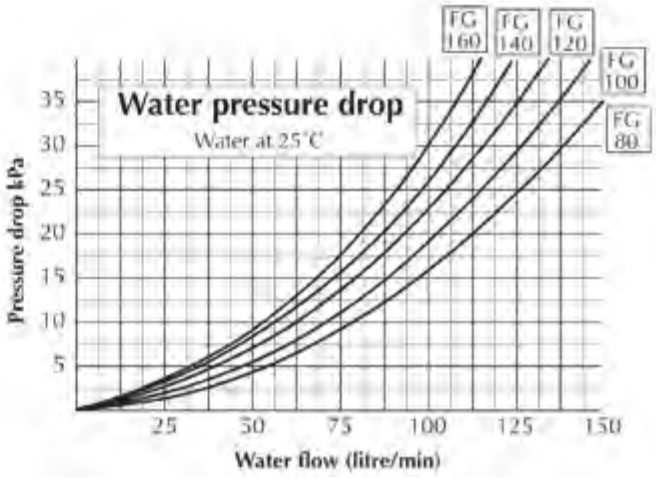
15˚C	20˚C	25˚C	30˚C	35˚C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

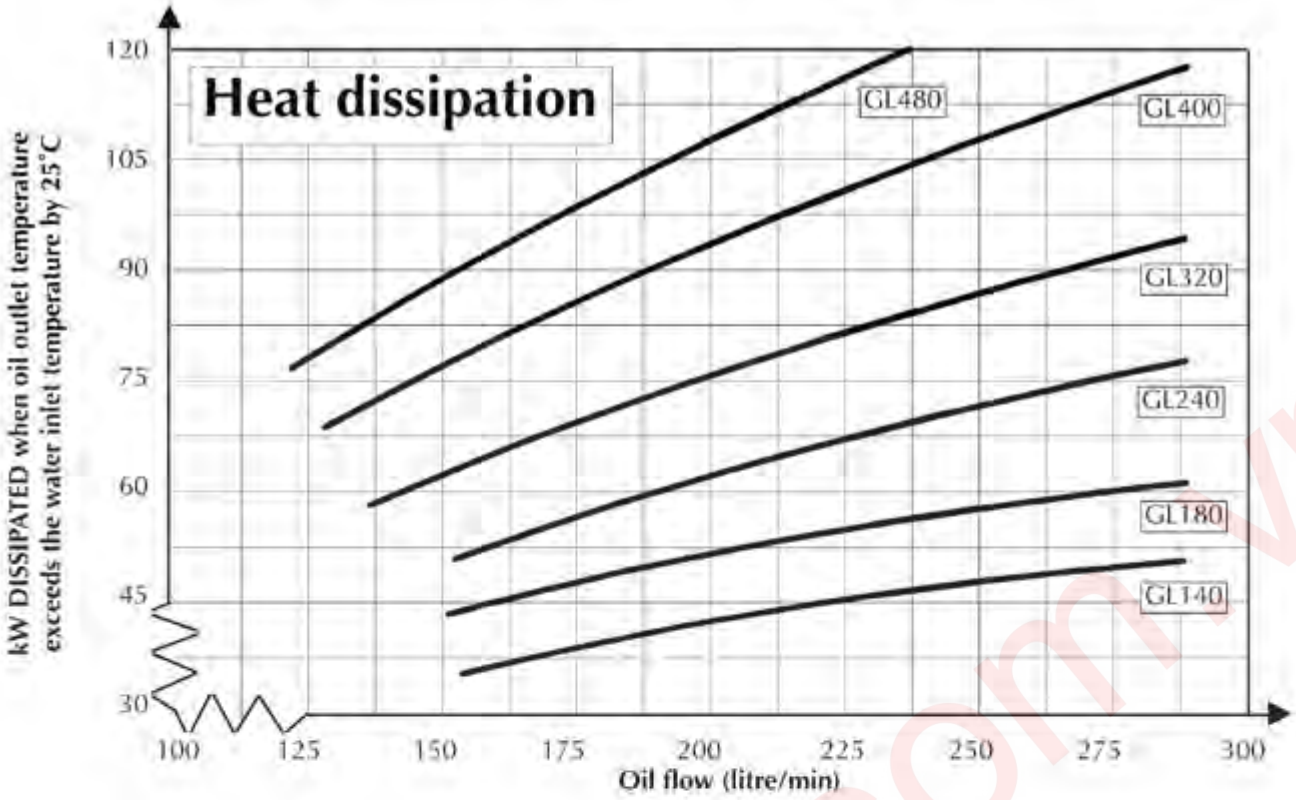




For dimensions see water/oil cooler technical data sheet in this catalogue

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GL RANGE



Correction factors

Temperature Difference

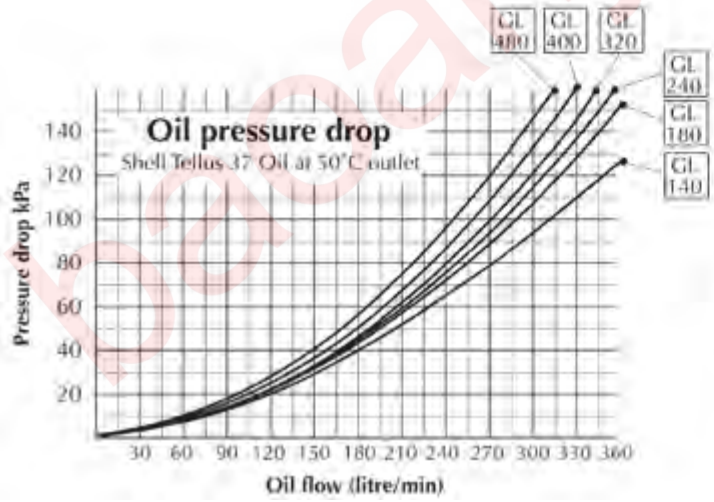
When the oil outlet temperature exceeds the water inlet temperature by other than 25˚C multiply the kW dissipation figure by the following correction factor –

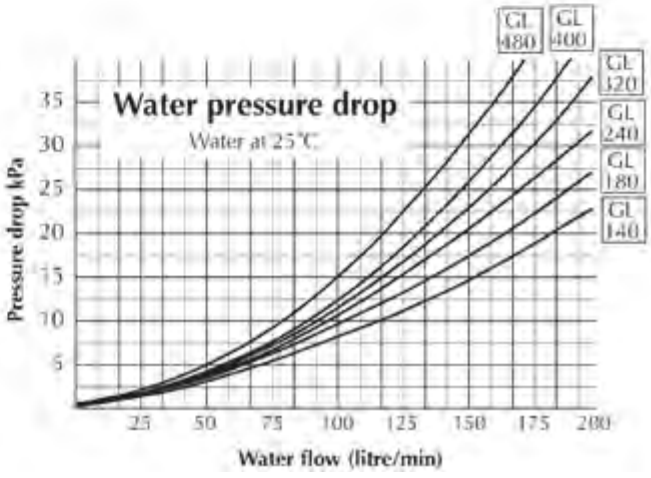
15˚C	20˚C	25˚C	30˚C	35˚C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

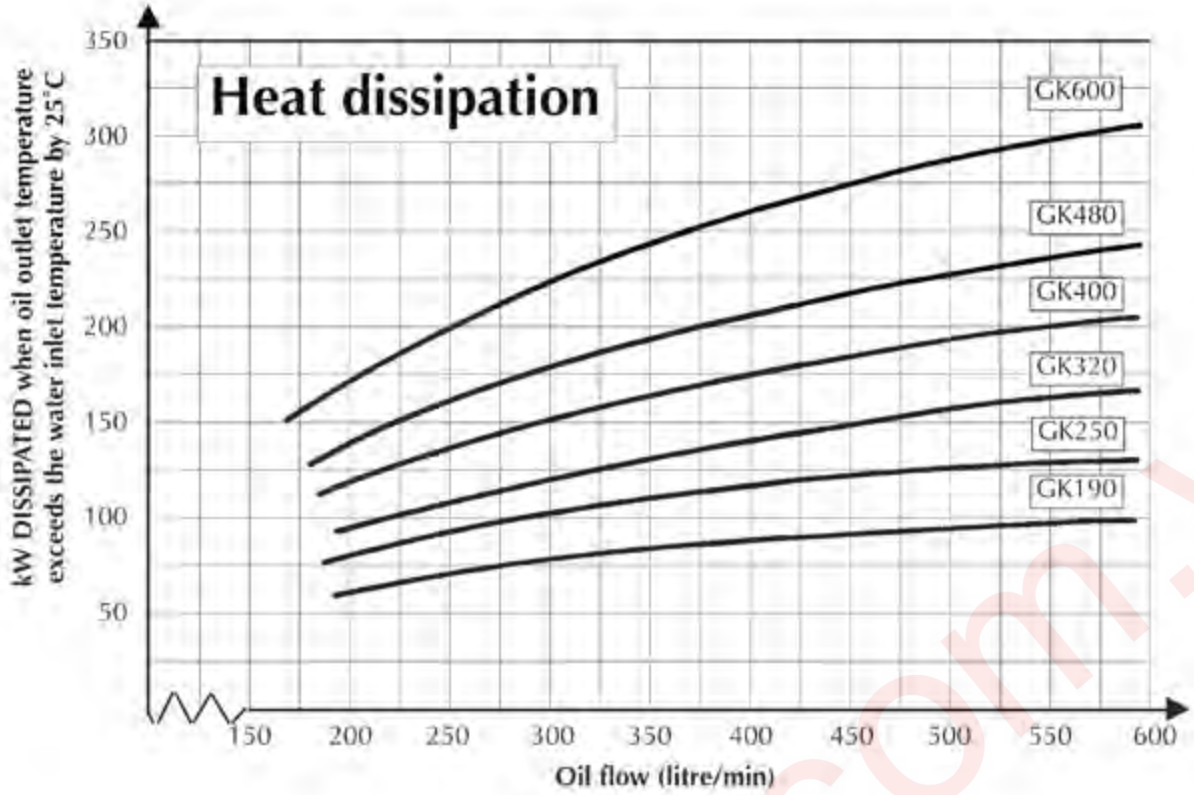




For dimensions see water/oil cooler technical data sheet in this catalogue

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GK RANGE



Correction factors

Temperature Difference

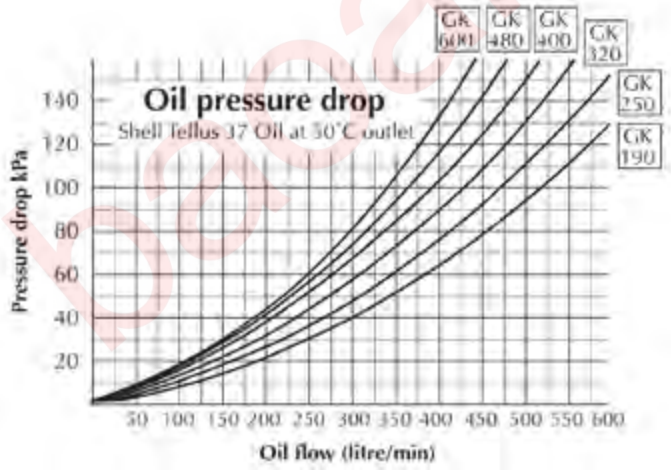
When the oil outlet temperature exceeds the water inlet temperature by other than 25˚C multiply the kW dissipation figure by the following correction factor –

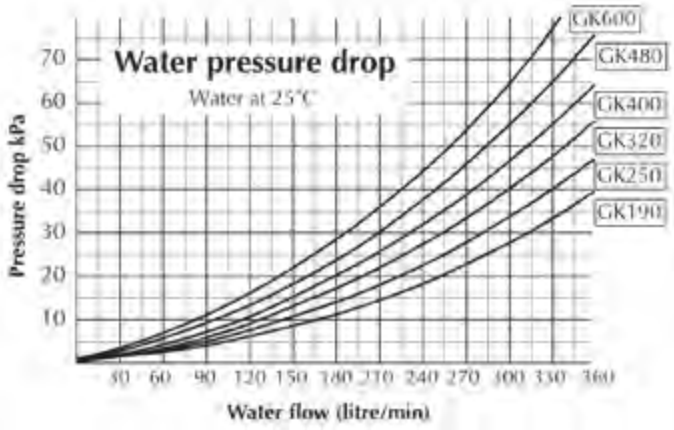
15˚C	20˚C	25˚C	30˚C	35˚C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

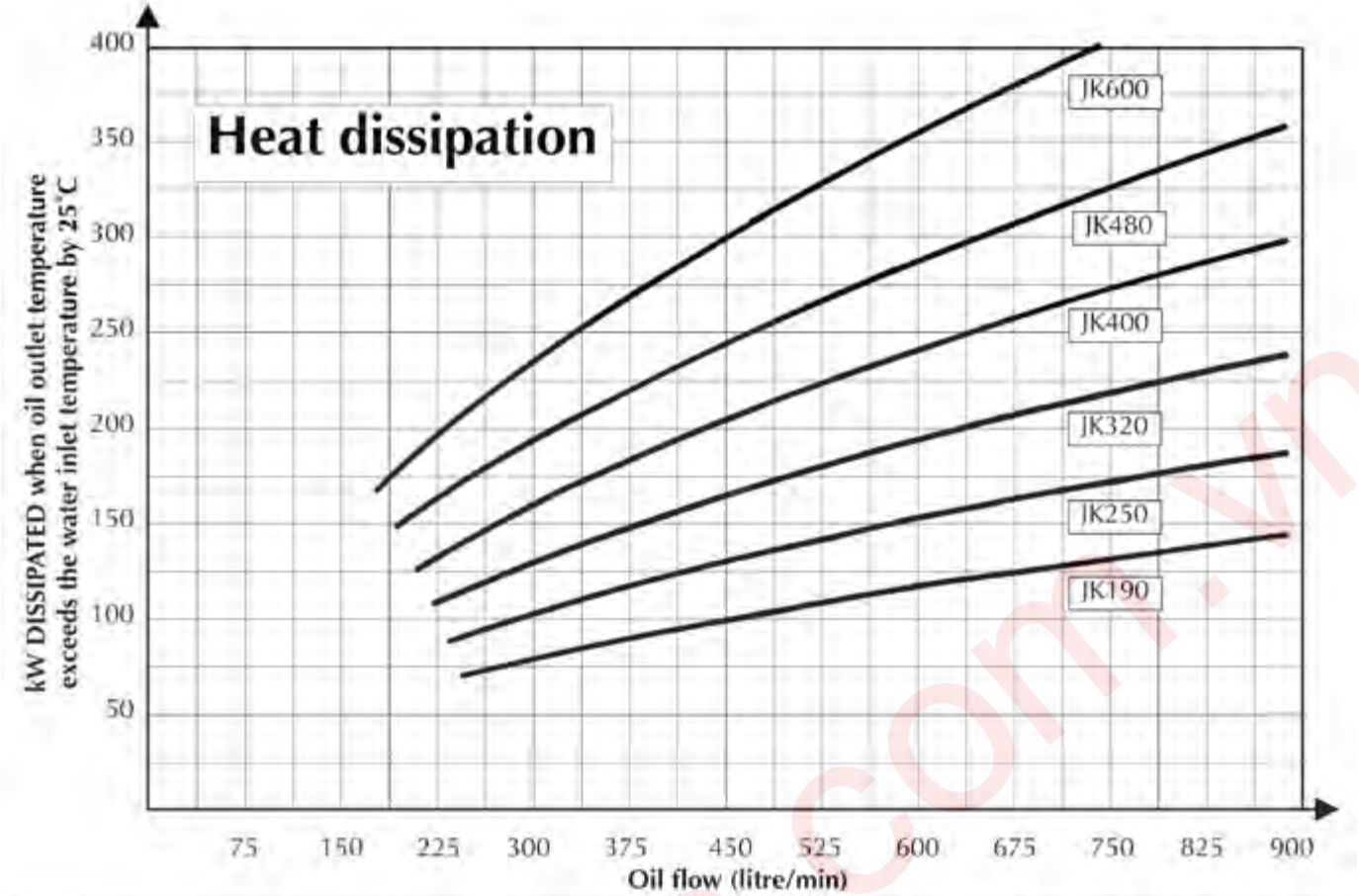




For dimensions see water/oil cooler technical data sheet in this catalogue

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JK RANGE



Correction factors

Temperature Difference

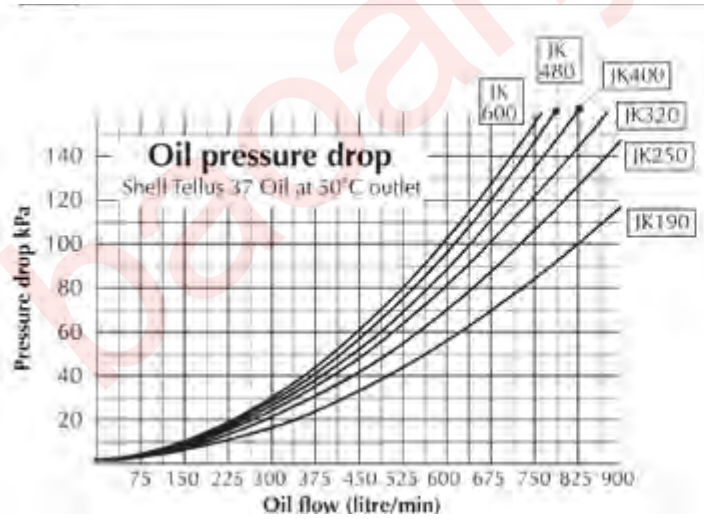
When the oil outlet temperature exceeds the water inlet temperature by other than 25˚C multiply the kW dissipation figure by the following correction factor –

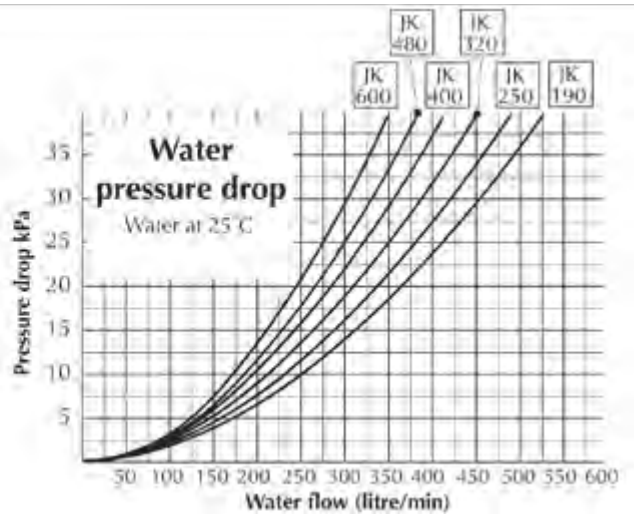
15˚C	20˚C	25˚C	30˚C	35˚C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2

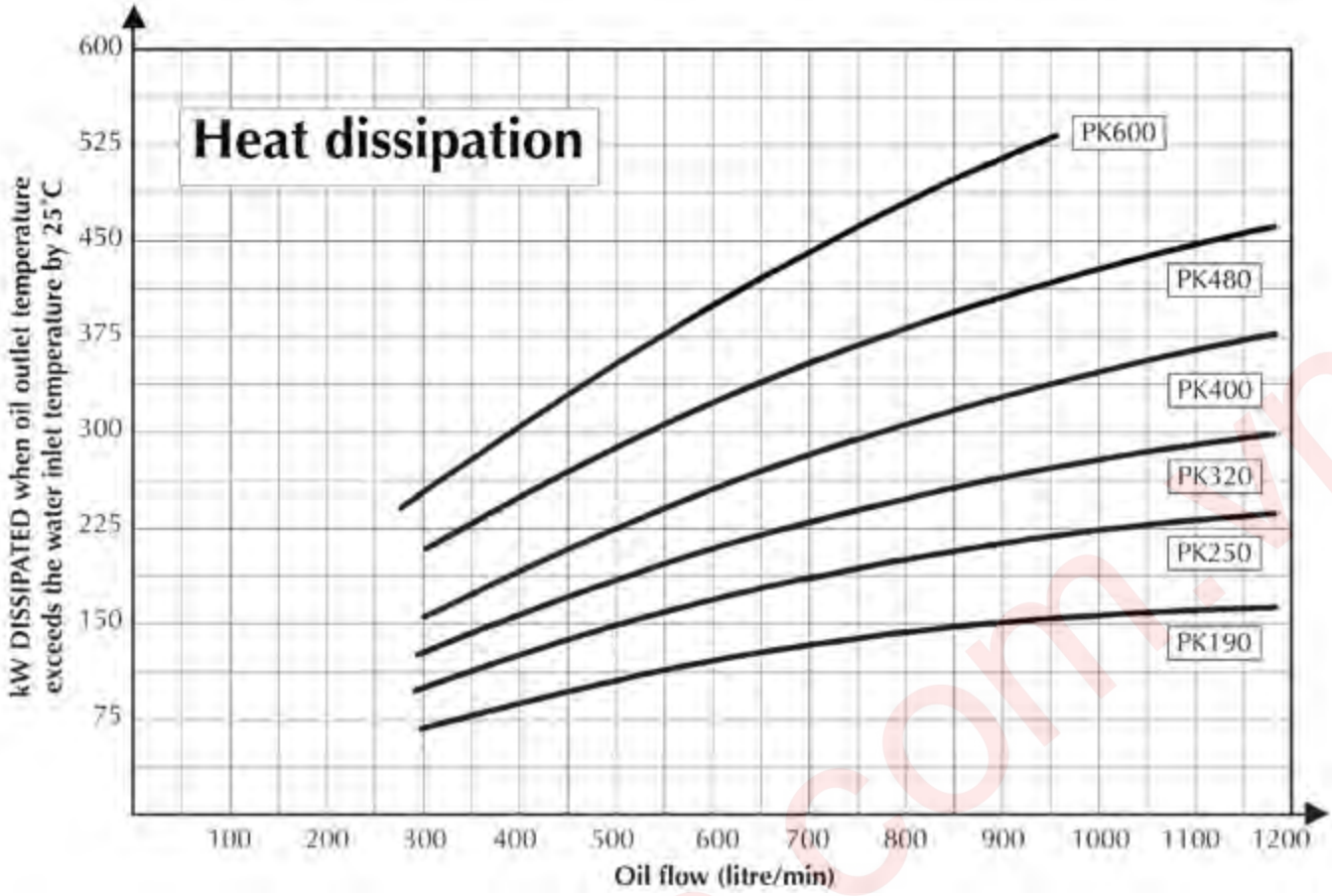




For dimensions see water/oil cooler technical data sheet in this catalogue

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PK RANGE



Correction factors

Temperature Difference

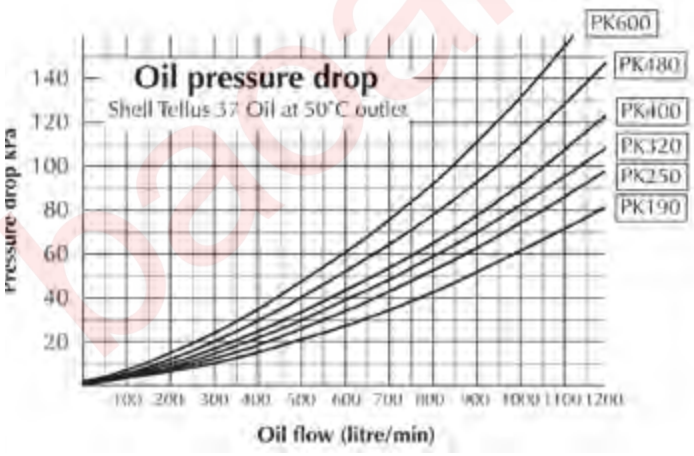
When the oil outlet temperature exceeds the water inlet temperature by other than 25°C multiply the kW dissipation figure by the following correction factor –

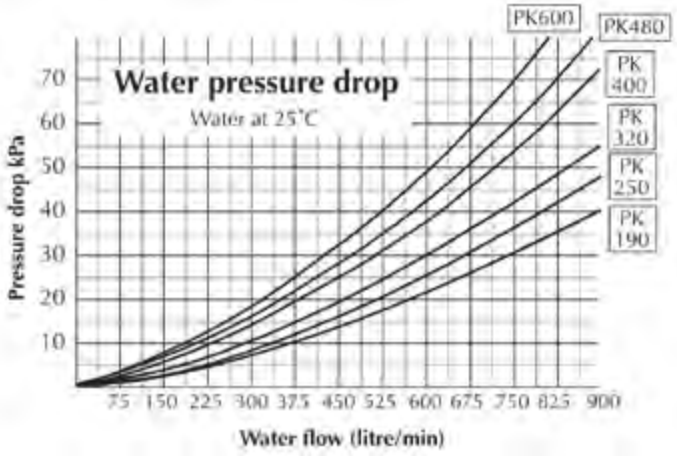
15°C	20°C	25°C	30°C	35°C
0.6	0.8	1	1.2	1.4

Water Flow Rate

The heat dissipation figures are based on a water flow rate which is 50% of the oil flow. For other water flow rates, multiply the dissipation figure by the following correction factor –

25%	50%	100%
0.8	1	1.2



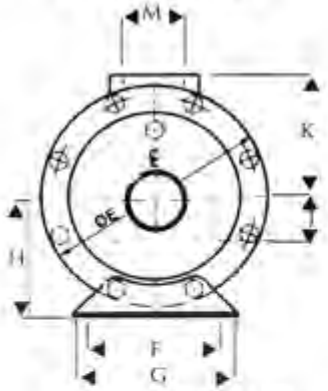


For dimensions see water/oil cooler technical data sheet in this catalogue

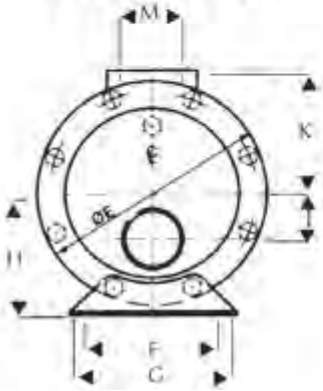
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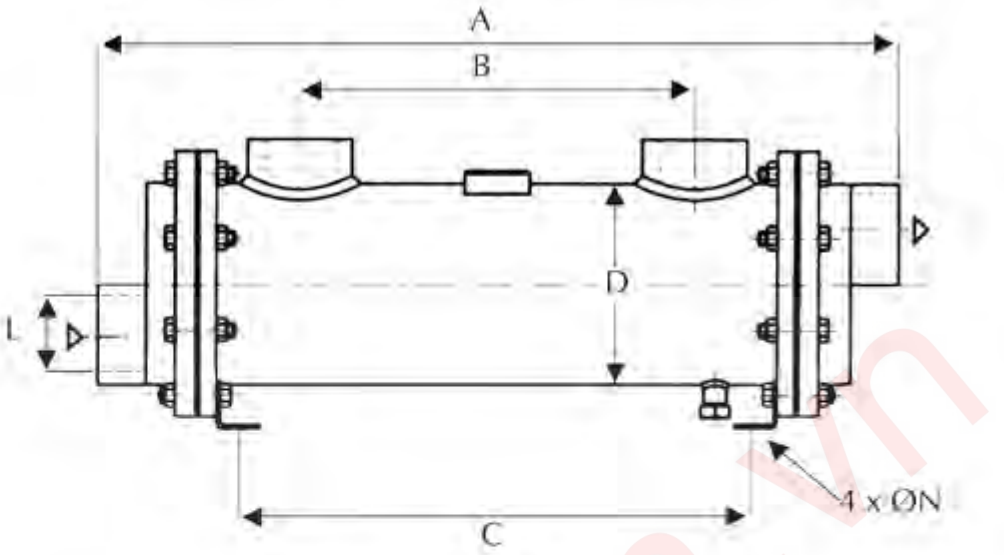
STAINLESS STEEL COOLER

1 PASS OPTION



3 PASS OPTION





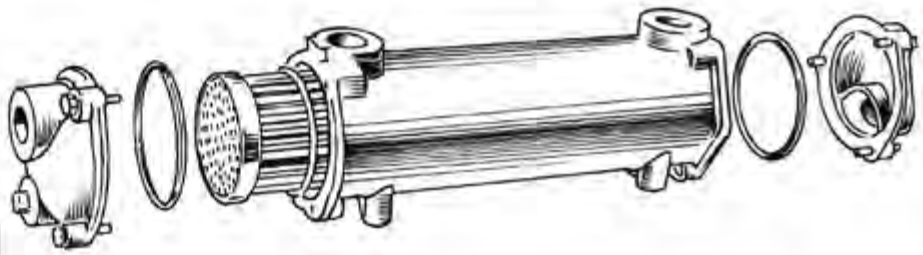
These extremely robust heat exchangers are built entirely from 316 stainless steel. Tubes are expanded into tubeplates and ends are removable for tube cleaning. Please contact us to perform thermal calculations.

Working pressure rating.....30 bar
Working temerature rating.....200°C

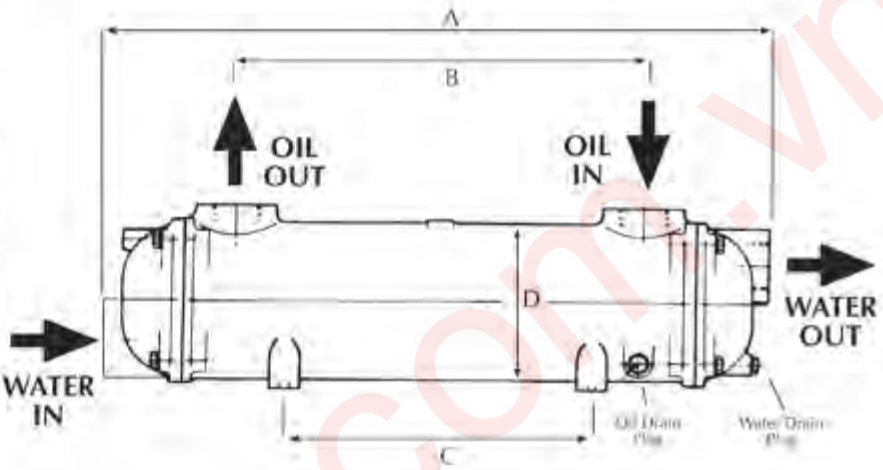
MODEL	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L BSPP(“)	M BSPP(“)	N mm
SB 4507-2	460	266	310	89	136	60	90	75	22	70	G1	G1	9
SB 4507-4	734	540	584	89	136	60	90	75	22	70	G1	G1	9
SB 4507-6	1114	920	964	89	136	60	90	75	22	70	G1	G1	9
SC 4508-4	764	520	584	114	160	80	110	90	28	85	G11/4	G11/4	9
SC 4508-6	1144	900	964	114	160	80	110	90	28	85	G11/4	G11/4	9
SC 4508-8	1652	1408	1472	114	160	80	110	90	28	85	G11/4	G11/4	9
SD 4509-4	764	510	584	141	194	100	130	105	35	100	G11/2	G11/2	11
SD 4509-6	1134	890	964	141	194	100	130	105	35	100	G11/2	G11/2	11
SD 4509-8	1652	1398	1472	141	194	100	130	105	35	100	G11/2	G11/2	11
SE 4510-4	804	490	584	168	220	130	160	120	45	120	G2	G2	11
SE 4510-6	1184	870	964	168	220	130	160	120	45	120	G2	G2	11
SE 4510-8	1692	1378	1472	168	220	130	160	120	45	120	G2	G2	11
SE 4510-9	2200	1886	1980	168	220	130	160	120	45	120	G2	G2	11
SF 4511-4	8341	470	574	219	284	180	220	150	60	150	G21/2	G21/2	14
SF 4511-6	1214	850	954	219	284	180	220	150	60	150	G21/2	G21/2	14
SF 4511-8	1722	1358	1462	219	284	180	220	150	60	150	G21/2	G21/2	14
SF 4511-9	2230	1866	1970	219	284	180	220	150	60	150	G21/2	G21/2	14
SG 4512-4	844	430	574	273	340	250	290	180	70	180	G3	G3	14
SG 4512-6	1224	810	954	273	340	250	290	180	70	180	G3	G3	14
SG 4512-8	1732	1318	1462	273	340	250	290	180	70	180	G3	G3	14
SG 4512-9	2240	1826	1970	273	340	250	290	180	70	180	G3	G3	14

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REMOVABLE TUBESTACK COOLER







Working pressure rating.....20 bar
Working temerature rating.....120°C

3 PASS VERSION SHOWN

MODEL NUMBER	NET DRY WEIGHT kg	A OVERALL LENGTH mm	B CONNECTION CENTRES mm	C MOUNTING CENTRES mm TAPPED M12x18	D DIAMETER mm	OIL CONNECTION SIZE BSPP
GK190	34	674	370	236	198	2"
GK250	39	820	516	382	198	2"
GK320	46	998	694	560	198	2"
GK400	54	1200	896	762	198	2"
GK480	62	1404	1100	966	198	2"
GK600	74	1708	1404	1270	198	2"

Materials of construction

Tubes : 90/10 Cupro Nickel
Tubeplate : Naval Brass
End Caps : Cast bronze or cast iron
Shell : Cast aluminium

Other materials available including stainless steel on request.

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EXHAUST GAS HEAT EXCHANGER

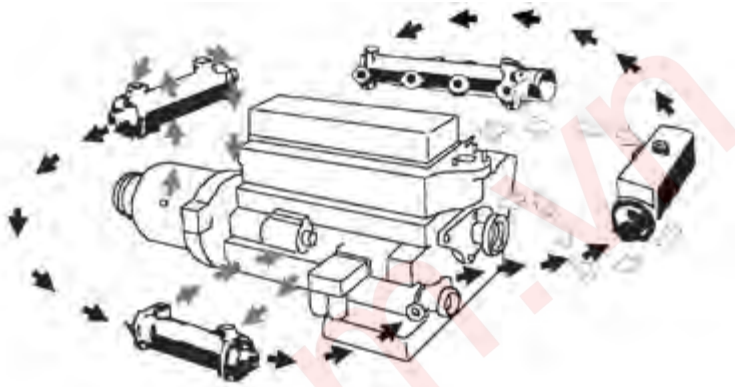
Following are some typical examples of exhaust gas heat exchanger performance.
For specific designs or larger sizes contact our sales department.
The figures below are a general guide and are not based on any particular natural gas engine.
They assume an air/fuel ratio of 10.23 : 1 by volume, a fuel consumption of 0.34m3/kWh (measured at 1.013 bar and 15˚C) and and exhaust gas temperature of 600˚C and a water inlet temperature of 80˚C.

Type	Gen Set Rating		Performance		
	Typical engine power kW	Exhaust gas flow kg/min	Exhaust gas outlet temperature ˚C	Heat recovery kW	Exhaust pressure drop kPa
2-25-3737-4	16	1.2	210	9.5	2.4
2-32-3737-5	16	1.2	170	10.5	2.8
3-32-3738-5	32	2.4	210	19	2.4
3-40-3738-6	32	2.4	170	21	2.8
3-60-3738-8	32	2.4	120	23	3.4
4-32-3739-5	60	4.5	210	35	2.2
4-40-3739-6	60	4.5	170	39	2.4
4-60-3739-8	60	4.5	120	43	3.0
5-32-3740-5	90	6.7	210	52	2.1
5-40-3740-6	90	6.7	170	57	2.4
5-60-3740-8	90	6.7	120	65	2.9
6-32-3741-5	140	10.5	210	82	2.2
6-40-3741-6	140	10.5	170	90	2.4
6-60-3741-8	140	10.5	120	101	3.0
8-32-3742-5	250	18.7	210	147	2.3
8-40-3742-6	250	18.7	170	160	2.5
8-60-3742-8	250	18.7	120	181	3.0
10-32-3743-5	400	30.0	210	236	2.4
10-40-3743-6	400	30.0	170	256	2.6
10-60-3743-8	400	30.0	120	288	3.1
12-32-3744-5	600	45.0	210	353	2.3
12-40-3744-6	600	45.0	170	380	2.5
12-60-3744-8	600	45.0	120	425	3.1

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MARINE COOLING SYSTEMS

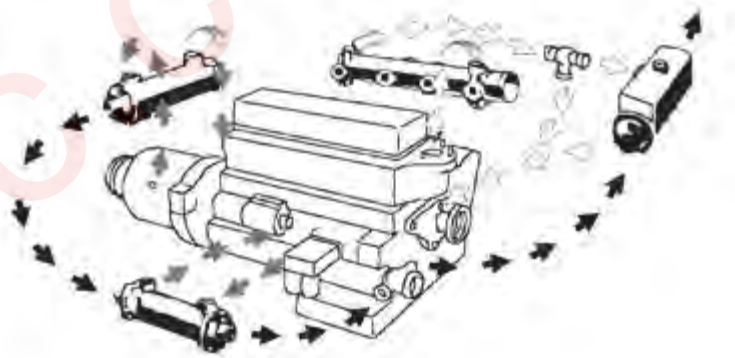
We can design individual components or complete systems to keep your vessel running cool. We have a range of universal heat exchangers as well as units specifically designed for particular engines. Please contact us for more information.



SYSTEM 1

A typical arrangement showing the position of the heat exchanger, sea water cooled exhaust manifold and oil coolers on a marine engine.

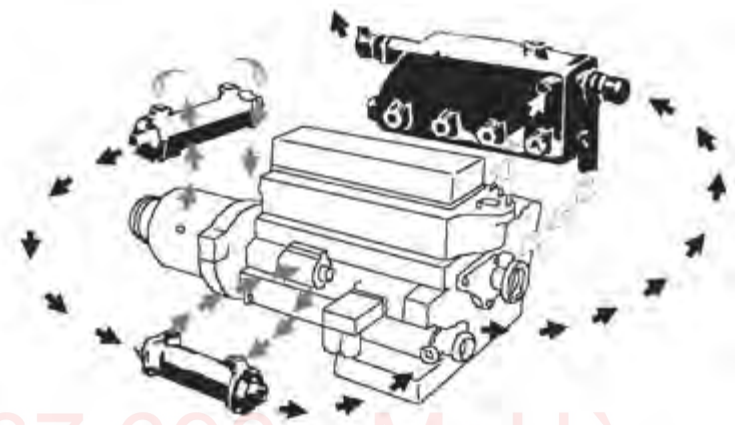
- seawater
- oil
- freshwater



SYSTEM 2

A typical arrangement showing the position of the heat exchanger, water cooled exhaust manifold and oil coolers on a marine engine.

- seawater
- oil
- freshwater



SYSTEM 3

A typical arrangement showing the position of the heat exchanger/water cooled exhaust manifold and oil coolers on a marine engine.

- seawater
- oil
- freshwater

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HEADER TANK HEAT EXCHANGER

These header tank heat exchangers can be used for marine engines as well as for various land-based duties such as engine testing and development work, generator sets, fire pumps and combined heat and power systems. They incorporate a quiet zone header tank and removeable tube stack which is held in position by O-rings to expand and contract freely within the cast housing, thus minimising thermal stress.

Installation

The header tank exchanger should be mounted with the header tank above the cylinder level and with the engine water circuit arranged so that it is self-venting on initial filling. A by-pass type thermostat should be used and arranged so that only the heat exchanger is by-passed when the engine is cold. All other components including a water jacketed exhaust manifold, if fitted, any oil coolers, charge air coolers and exhaust gas heat exchangers should be so positioned in the circuit so that they always receive the full flow of the engine water pump.

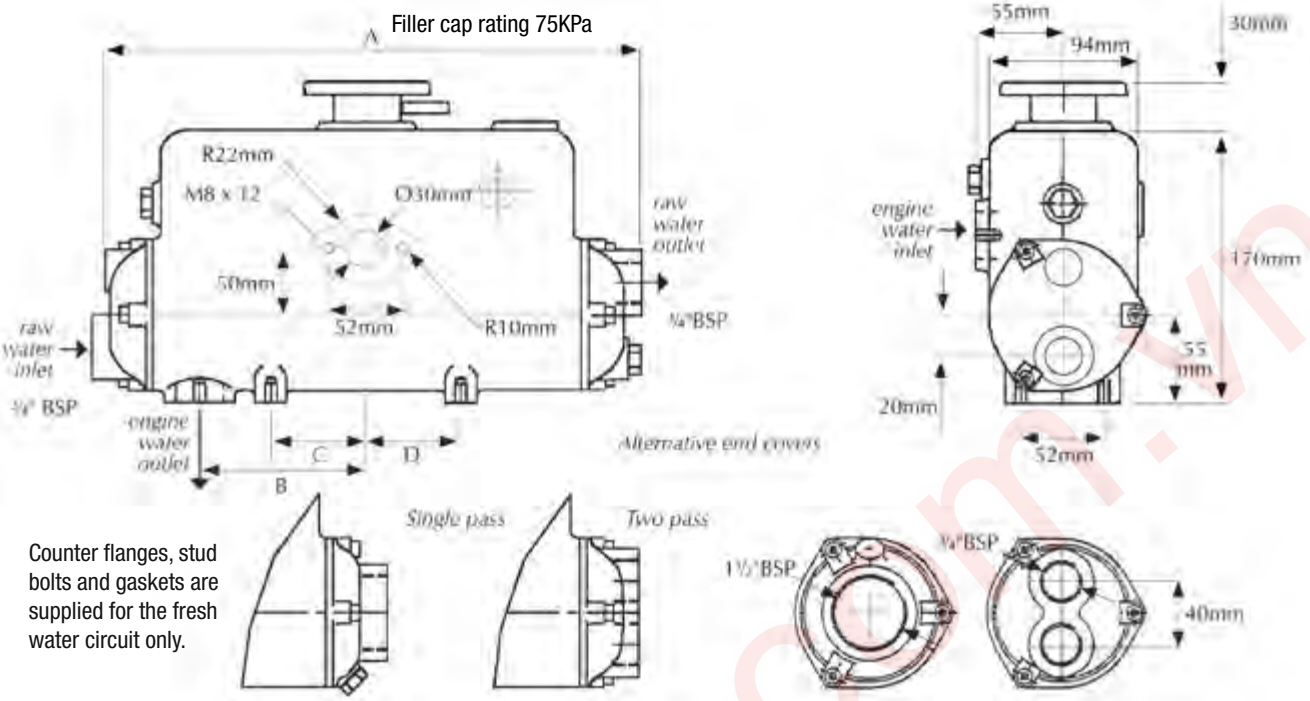
Thermostats of the type used on some automotive engines which simply interrupt the cooling water flow when the engine is cold, are not recommended. For unattended operation, automatic engine shut down equipment should be provided.

The range of header tank heat exchangers showing their power ratings, various water volumes and our equivalent non header tanks shell and tube units.

Type	Typical engine suitability kW	HP	Raw water volume litres	Engine Water Volume litres	Header tank capacity litres	Shell and tube heat exchanger
DH90	15	20	0.21	0.80	0.54	DC90
DH120	20	27	0.28	1.25	0.90	DC120
EH100	40	54	0.45	1.30	0.90	EC100
EH200	50	67	0.60	2.20	1.32	EC120
FH100	60	80	0.85	3.25	20.8	FC100
FH200	90	120	1.10	4.50	2.93	FC120
FH300	120	160	1.55	6.55	4.12	FG100
FH400	150	200	2.00	9.15	5.70	FG120
FH500	190	255	2.40	11.40	7.50	FG140
GH200	180	240	3.10	10.90	6.20	GL140
GH300	250	335	3.0	14.85	8.54	GL180
GH400	320	428	4.60	18.10	11.24	GL240
KH200	360	482	6.30	18.80	13.00	GK190
KH300	450	600	7.50	25.60	17.33	GK250
KH400	550	737	9.00	33.50	22.56	GK320
JH200	550	737	8.80	27.20	18.56	JK190
JH300	700	938	10.40	36.90	24.80	JK250
JH400	850	1140	12.50	46.30	32.26	JK320
PH200	950	1273	18.60	49.00	34.24	PK250
PH300	1200	1608	21.80	64.00	44.63	PK320
PH400	1400	1876	25.30	81.00	56.43	PK400

Maximum working raw water pressure = 15 bar
Maximum working engine water pressure = 1 bar (filler cap rating dependent)
Maximum working temperature = 110°C

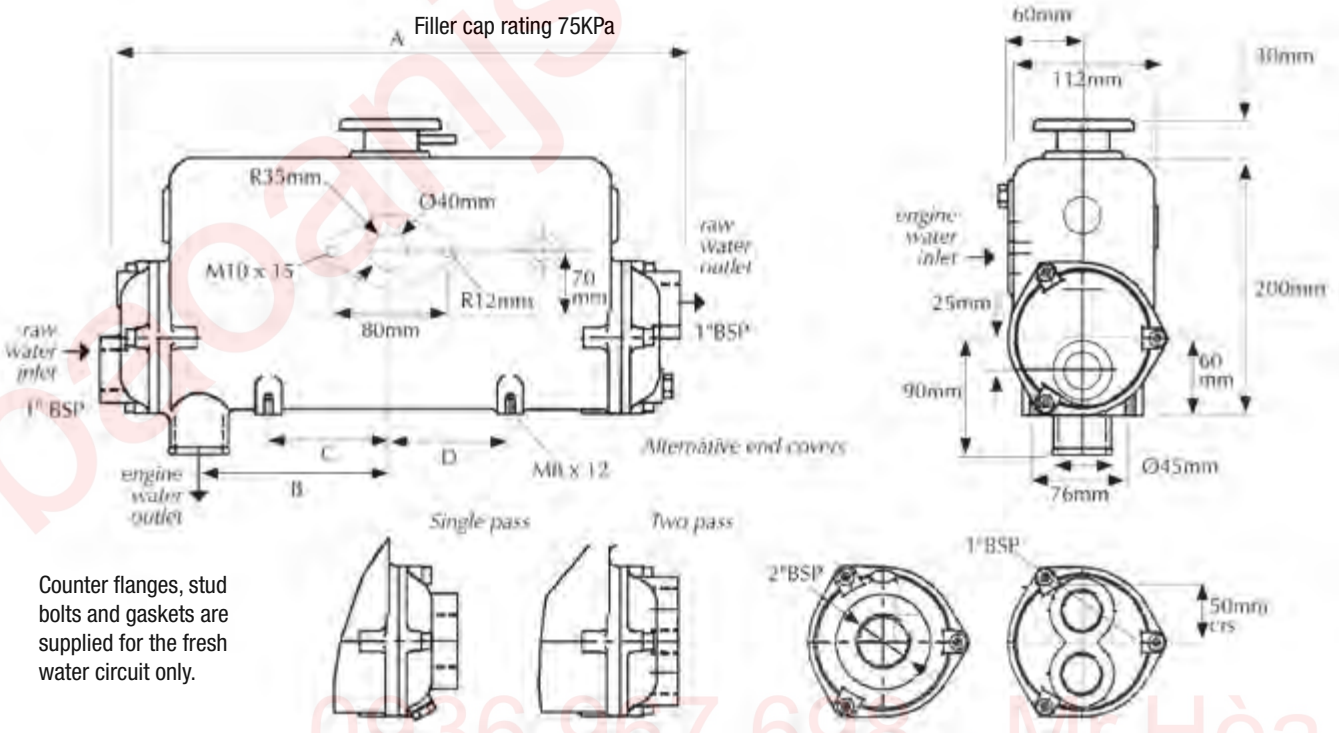
HEADER TANK HEAT EXCHANGER



Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

	WT	A	B	C	D		WT	A	B	C	D
EH100	5kg	260mm	62mm	20mm	60mm	**EH200**	6kg	346mm	105mm	60mm	60mm

Engine inlet and outlet flanges have identical dimensions.



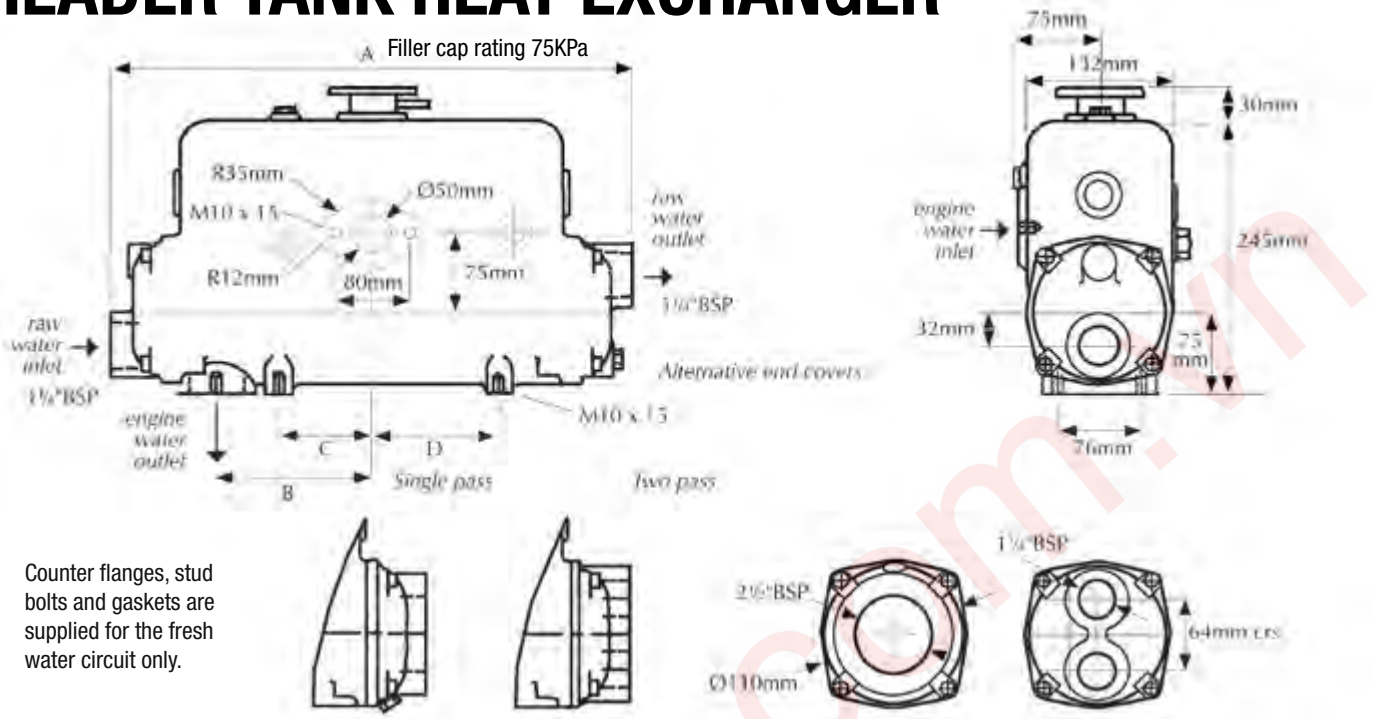
Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

	WT	A	B	C	D		WT	A	B	C	D
FH100	8kg	358mm	100mm	45mm	95mm	**FH200**	11kg	454mm	150mm	95mm	95mm

Engine inlet and outlet flanges have identical dimensions.

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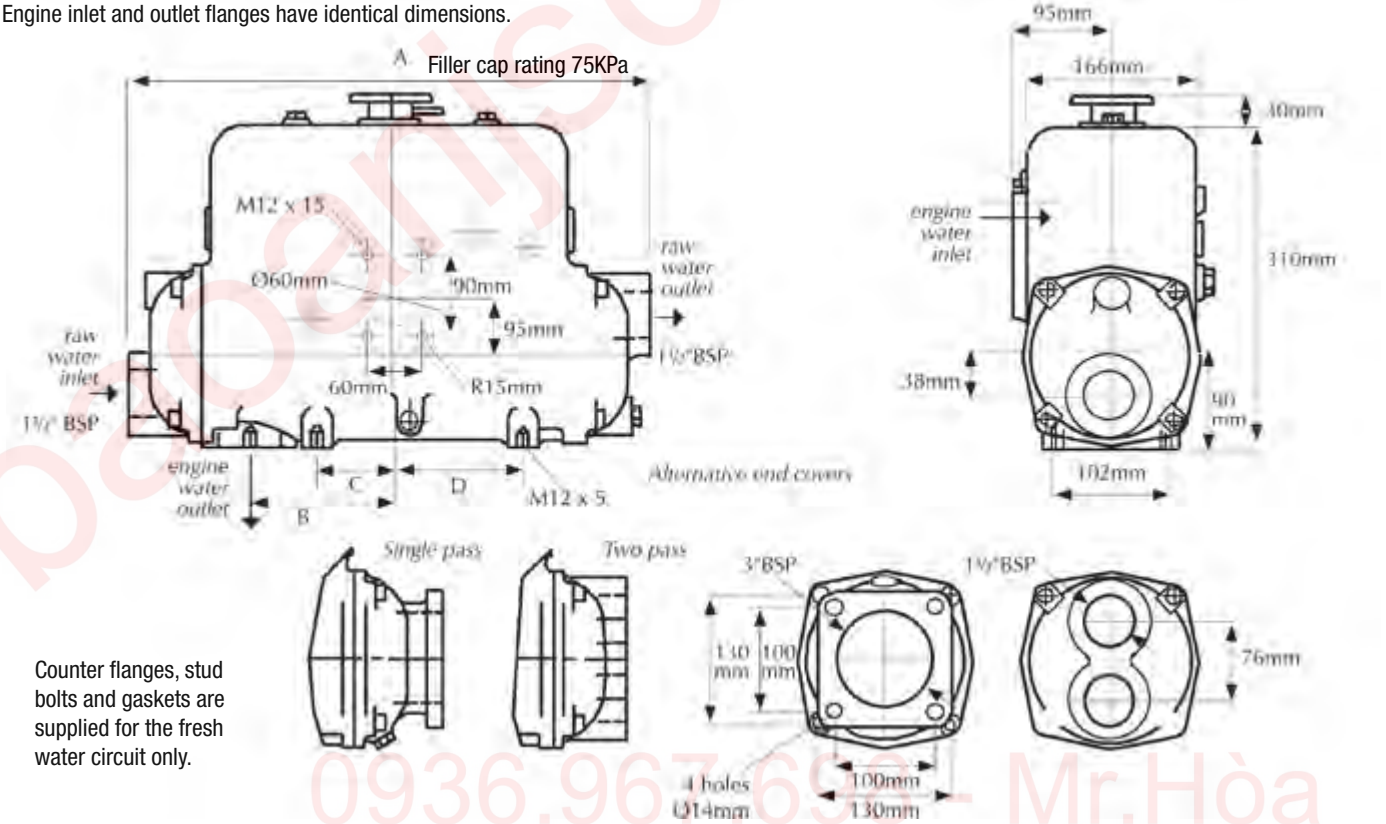
HEADER TANK HEAT EXCHANGER



Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

	WT	A	B	C	D		WT	A	B	C	D		WT	A	B	C	D
FH300	14kg	472mm	140mm	84mm	116mm	**FH400**	17kg	600mm	200mm	144mm	144mm	**FH500**	20kg	746mm	270mm	217mm	217mm

Engine inlet and outlet flanges have identical dimensions.



Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

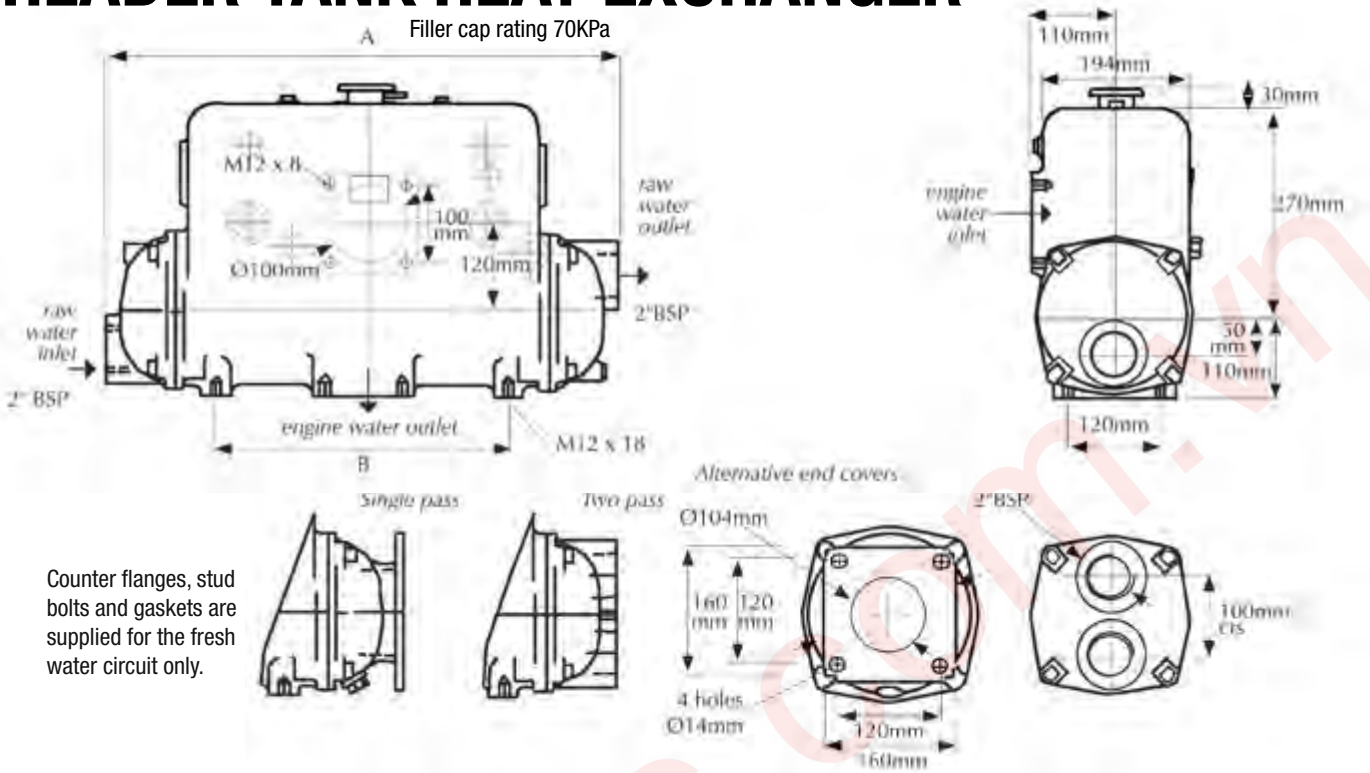
	WT	A	B	C	D		WT	A	B	C	D		WT	A	B	C	D
GH200	24kg	502mm	135mm	70mm	130mm	**GH300**	29kg	630mm	195mm	70mm	130mm	**GH400**	34kg	776mm	270mm	146mm	200mm

Engine inlet and outlet flanges have identical dimensions.

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HEADER TANK HEAT EXCHANGER

Filler cap rating 70KPa

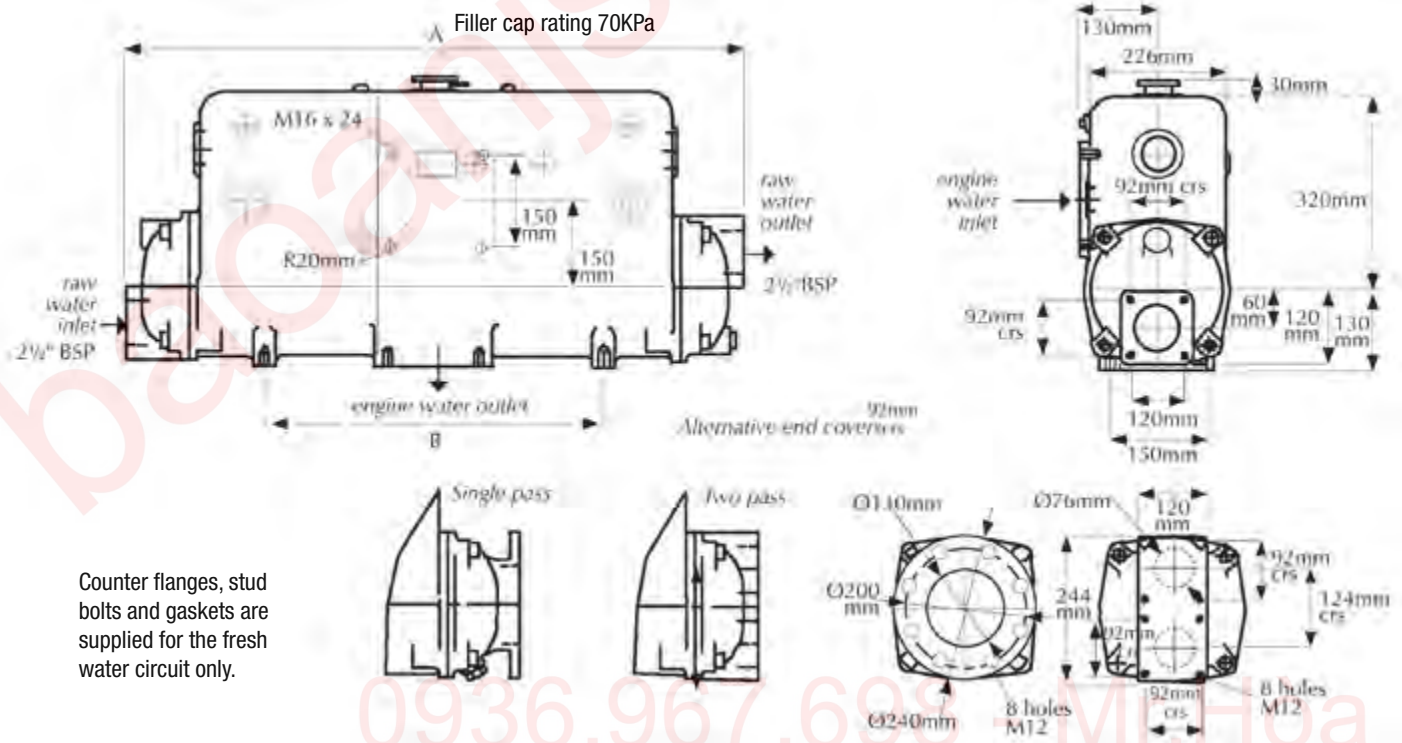


Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

	WT	A	B		WT	A	B		WT	A	B
KH200	51kg	260mm	62mm	**KH300**	59kg	820mm	382mm	**KH400**	67kg	998mm	560mm

Engine inlet and outlet flanges have identical dimensions.

Filler cap rating 70KPa



Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

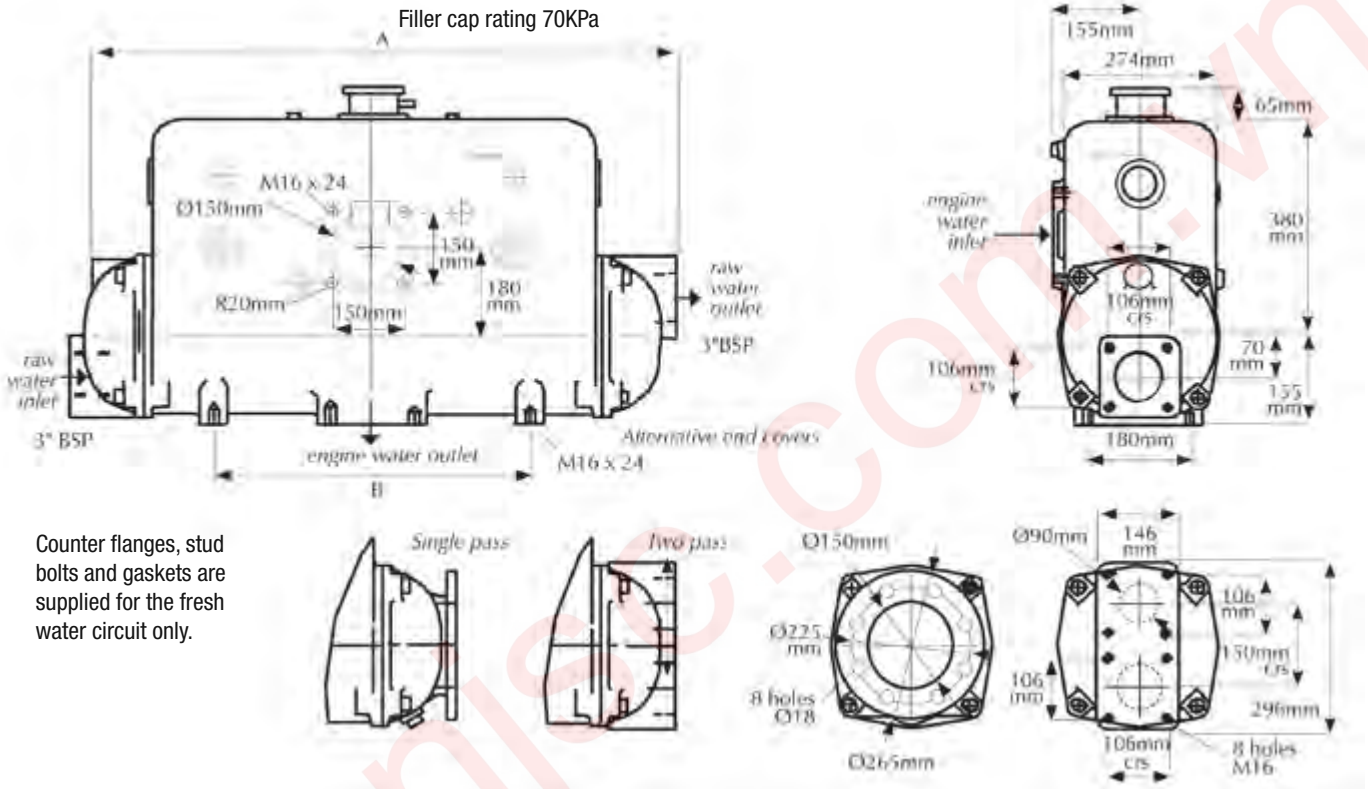
	WT	A	B		WT	A	B		WT	A	B
JH200	82kg	704mm	382mm	**JH300**	93kg	850mm	382mm	**JH400**	106kg	1028mm	560mm

Engine inlet and outlet flanges have identical dimensions.

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HEADER TANK HEAT EXCHANGER

Filler cap rating 70KPa



Counter flanges, stud bolts and gaskets are supplied for the fresh water circuit only.

	WT	A	B		WT	A	B		WT	A	B
PH200	136kg	890mm	382mm	**PH300**	156kg	1078mm	560mm	**PH400**	190kg	1280mm	762mm

Engine inlet and outlet flanges have identical dimensions.

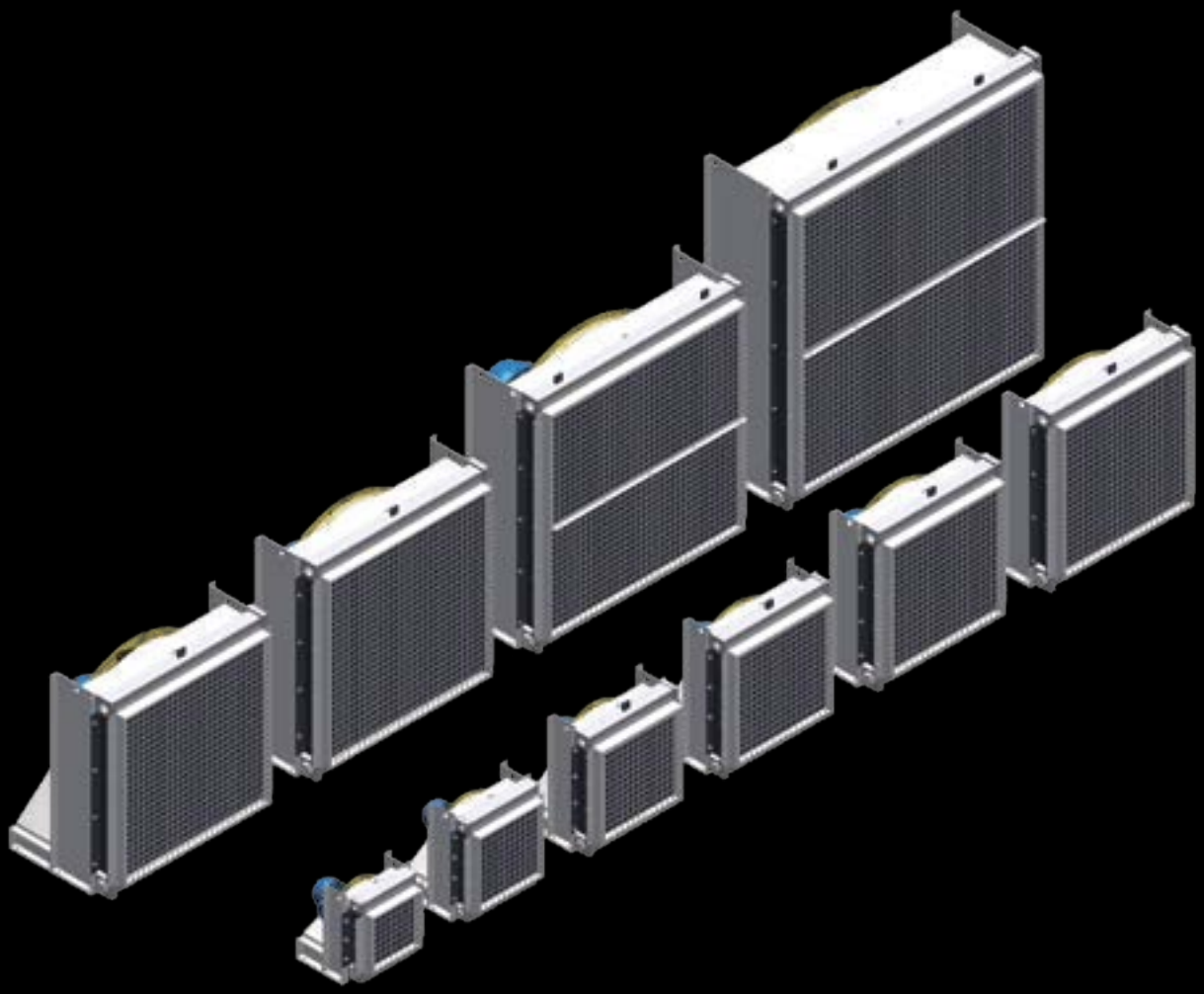
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BACK TO INDEX

SECTION B - Air Cooled Oil Coolers - ACX

ACX Coolers information ..... B1 - B4
ACX Coolers ..... B5 - B14

OC B Range B15



ALLIED HEAT TRANSFER



Allied Heat Transfer has over 100 years combined experience in the design and manufacture of oil coolers.

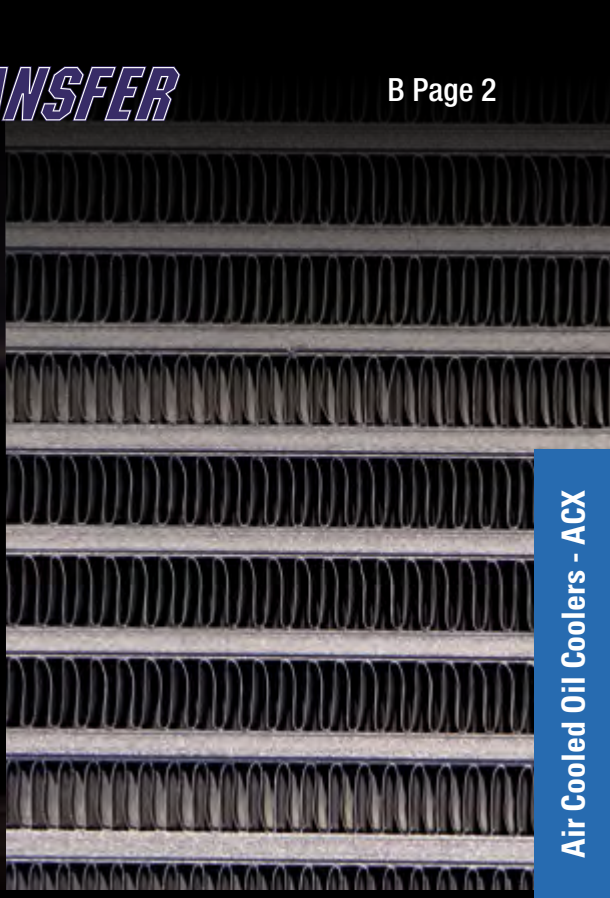
Air cooled oil coolers are shown here in this catalogue and water cooled in the heat exchanger catalogue.

For a custom made cooler please contact us.

Our experience has been used to develop a range of coolers with these features:

- ***High quality, heavy duty aluminium construction***
- ***High pressure, 30 bar maximum operating pressure***
- ***High thermal efficiency***
- ***In-built pressure bypass for start-up conditions***
- ***Low noise, most packages less than 85 dB(A) at 1m***
- ***Low power consumption***
- ***Available with either 1 or 3 Phase AC, hydraulic or 12-24v DC fans***
- ***All coolers in the range can be supplied with a double-shaft motor with integrated oil pump to provide the required oil flow rate***
- ***Our coolers can be provided with a corrosion resistant coating upon request***



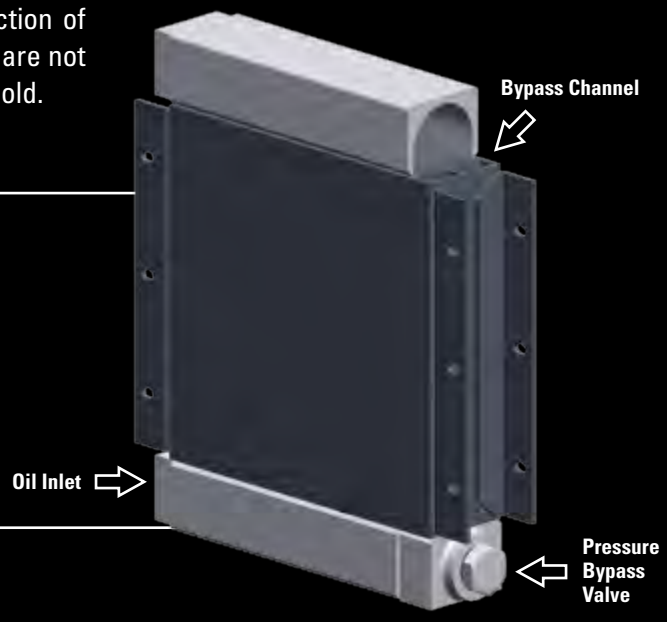


Installation:
When installing these coolers it is important that they are placed to allow free flowing air in to and out of the cooler, it is recommended to keep a distance equal to half the height of the cooler at the front and rear.

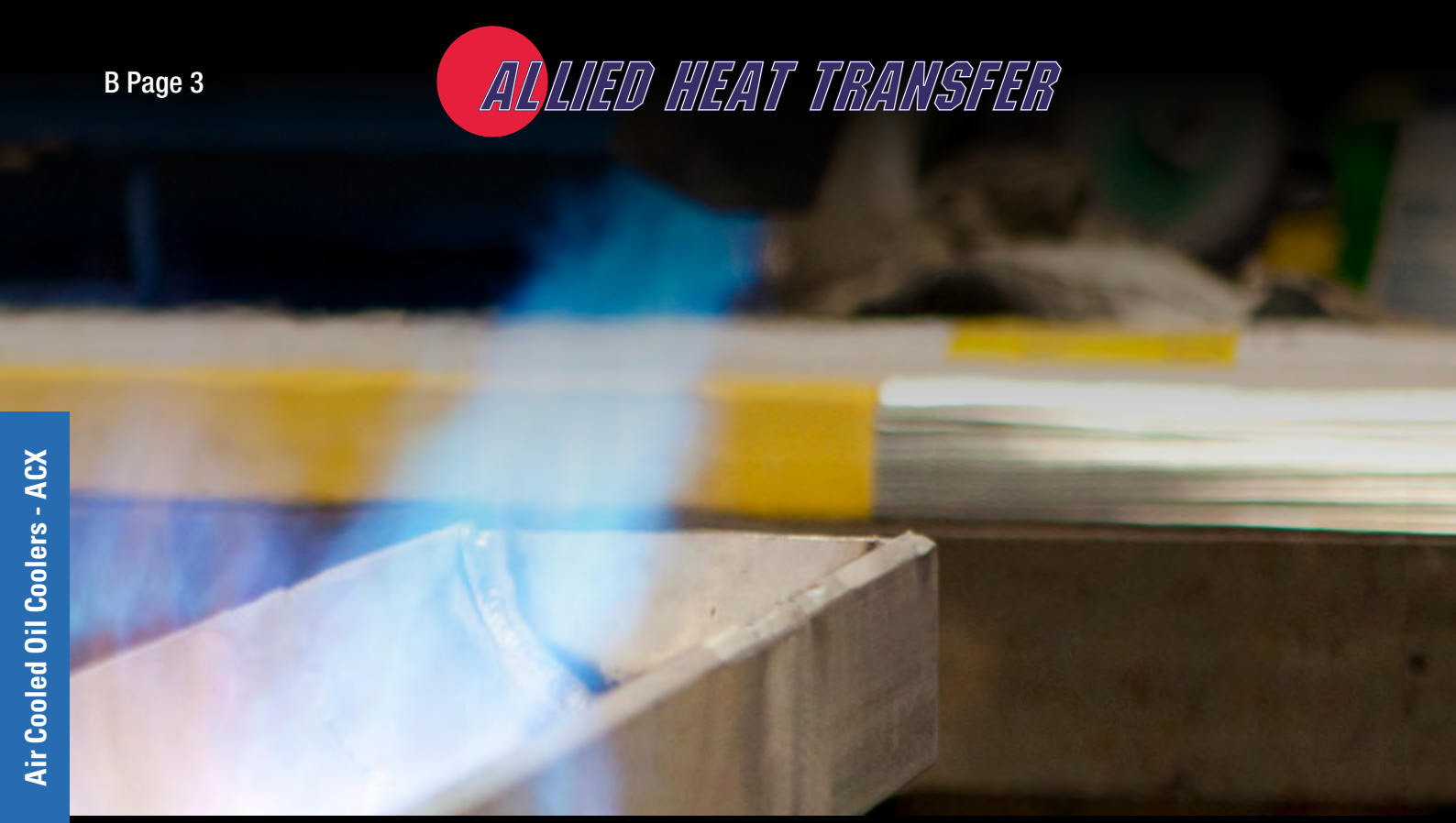
Maintenance:
These coolers do not require any maintenance other than ensuring they are kept clean; if the cooler becomes dirty and/or blocked either inside or outside the cooling performance will be reduced.

If cleaning the coolers with high-pressure water the direction of cleaning flow must be parallel to the fins to ensure the fins are not damaged, cleaning must be performed when the cooler is cold.

Integral Pressure Bypass
Every ACX cooler is manufactured and supplied with an integral Pressure Bypass Valve and Bypass Channel to divert flow past the heat transfer core when the oil is cold, for instance on start-up, preventing excessive pressure build up. Standard bypass pressure is 6 bar, 2 bar can be provided upon request.



ALLIED HEAT TRANSFER



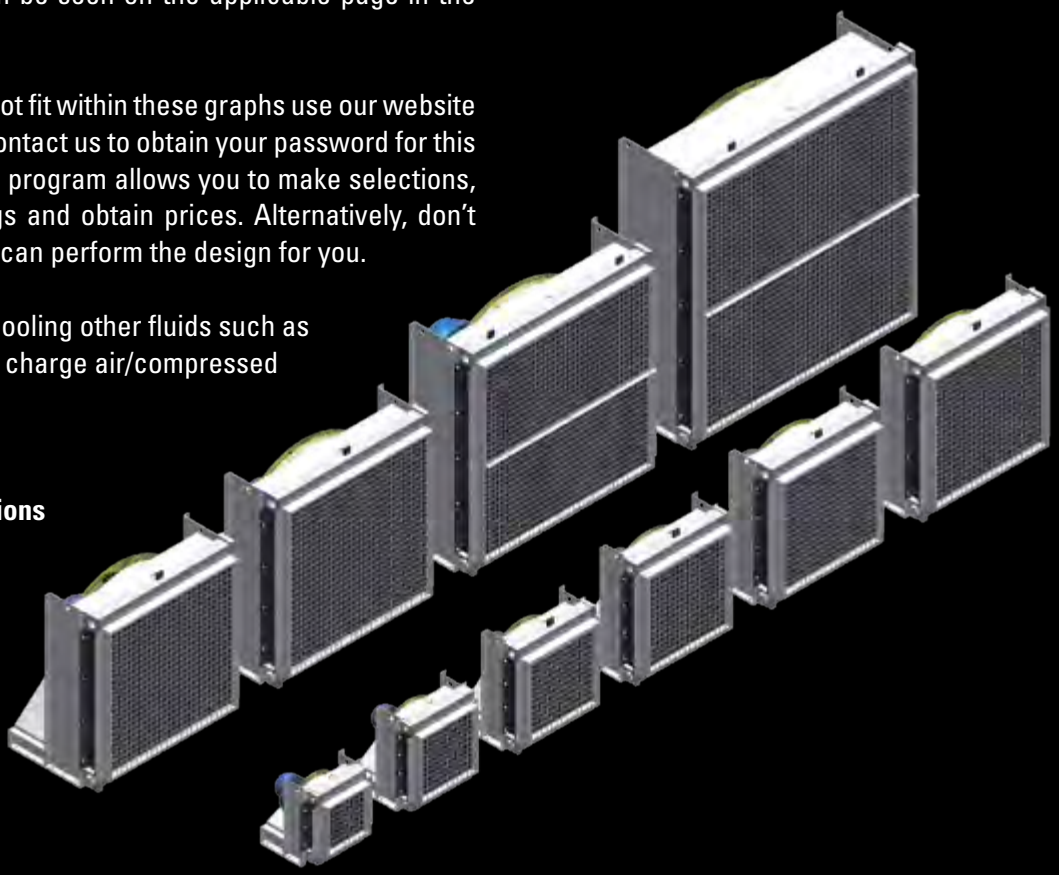
ACX Air Cooled eXchangers

The graph on the following page shows the performance of each cooler, it can be used to determine which size cooler is required, further information on that cooler can be seen on the applicable page in the catalogue.

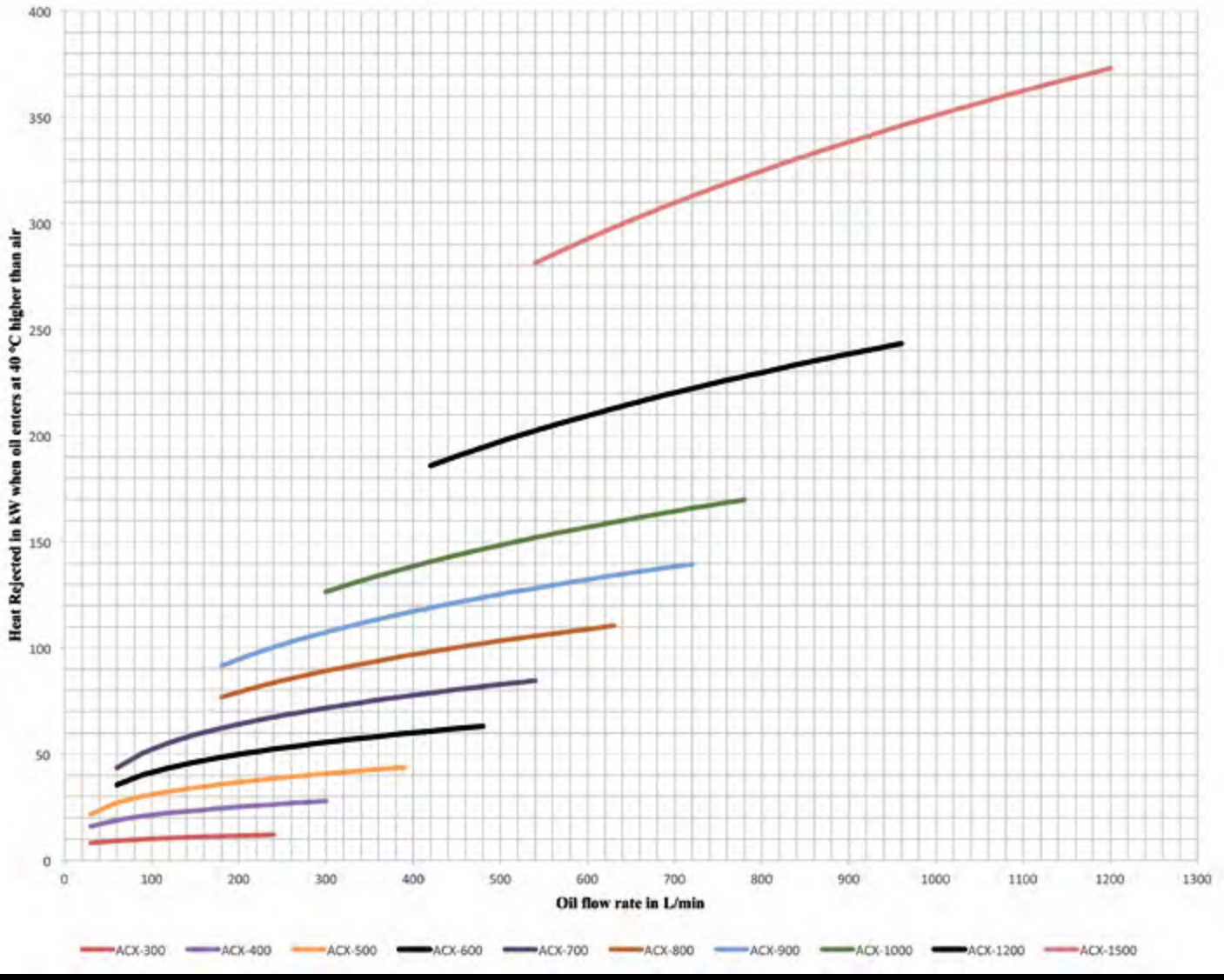
For design conditions that do not fit within these graphs use our website calculation program, please contact us to obtain your password for this cooler selection program. The program allows you to make selections, download 2D and 3D drawings and obtain prices. Alternatively, don't hesitate to contact us and we can perform the design for you.

ACX coolers can be used for cooling other fluids such as ethylene/glycol mixtures or as charge air/compressed air coolers.

Please contact us for further information on these applications

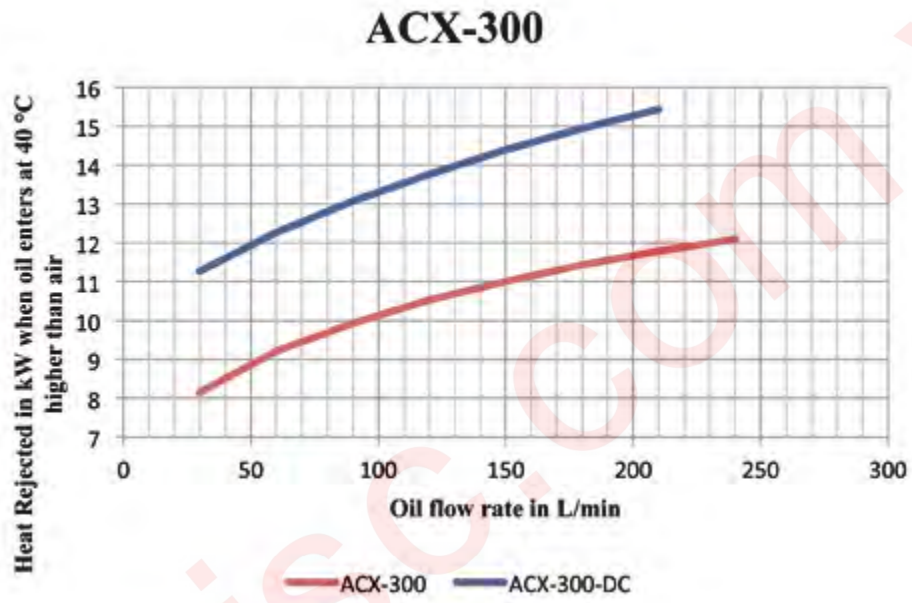


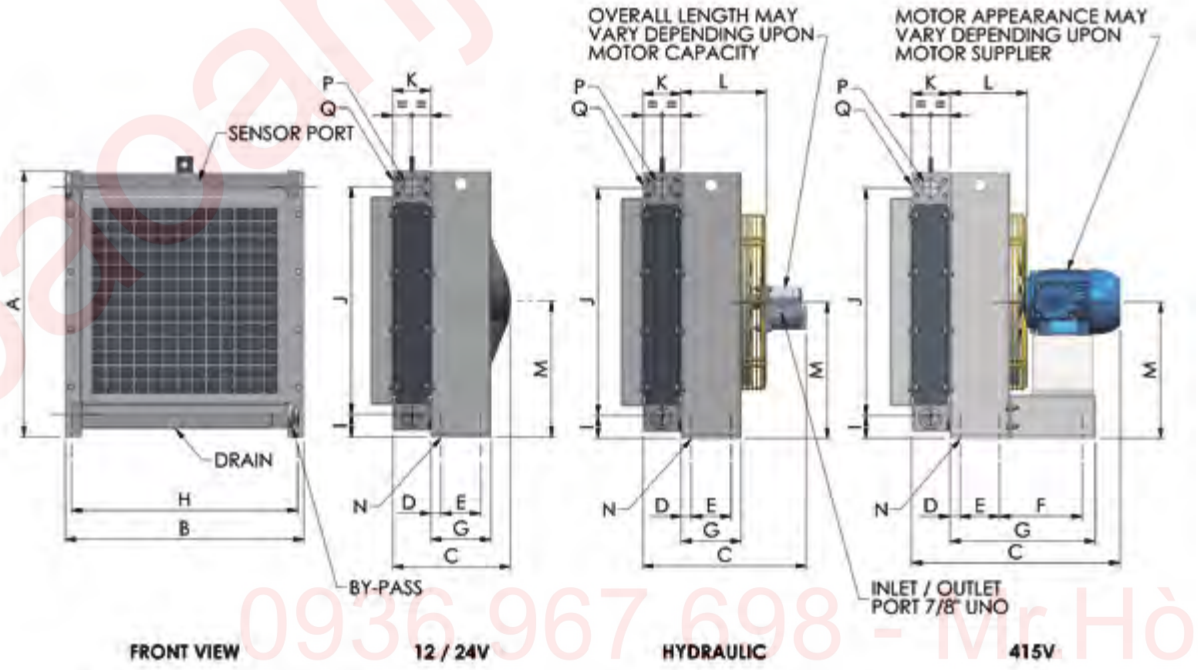




Information needed to size oil coolers	
The oil type & viscosity ?	Max pressure loss through the oil cooler that you can accept ?
The oil flow ?	What will the max oil pressure in the cooler be ?
Amount of heat to be removed from the oil ?	The cooling air temp entering the cooler ?
Max oil temp your system can accommodate ?	Fan motor type: Hydraulic, 1 or 3 phase, 12 or 24v

ACX 300



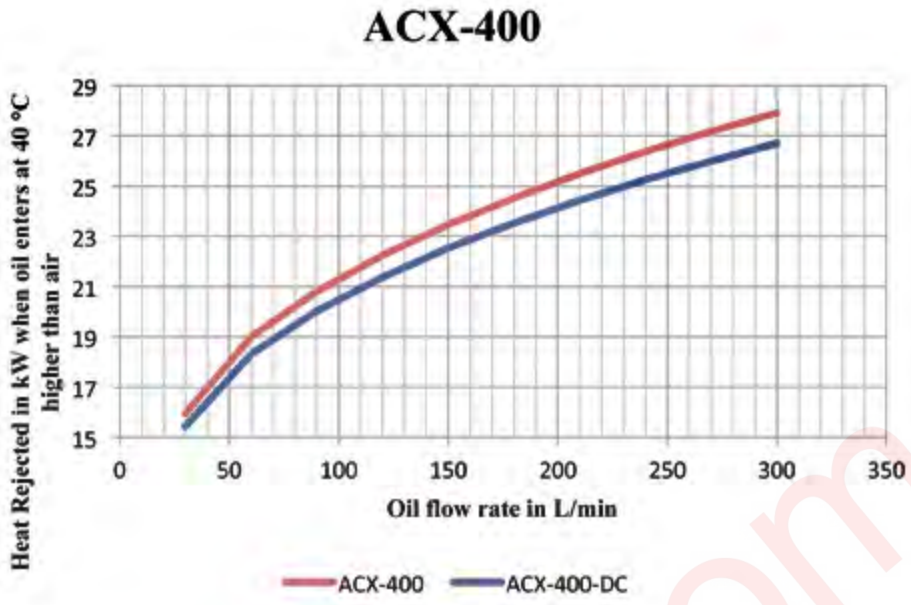


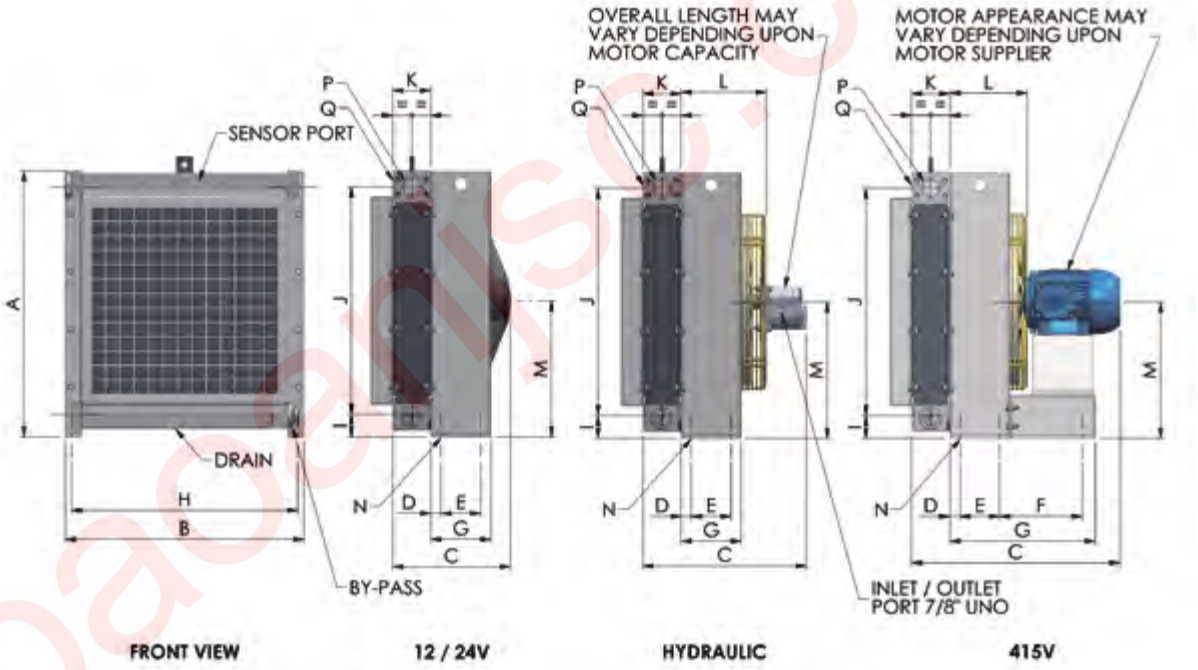
MODEL ACX 300	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	447	420	452	25	70	192	313	390	57	360	80	166	237	6 x Ø15	1"	1"	37
12-24V	477	420	359	25	70	-	120	390	57	360	80	-	237	4 x Ø15	1"	1"	19
HYDAULIC	447	420	222	25	70	-	120	390	57	360	80	181	237	4 x Ø15	1"	1"	23

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ACX 400



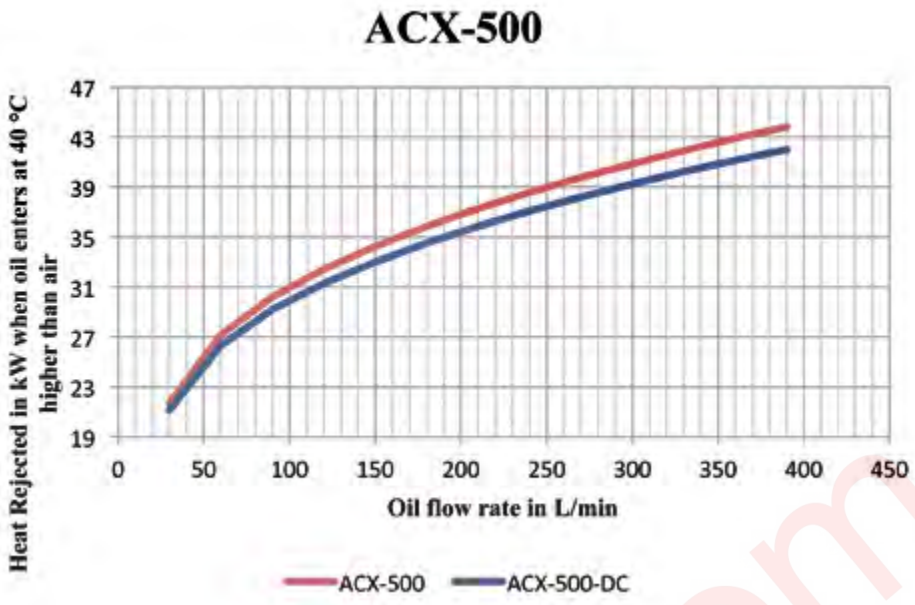


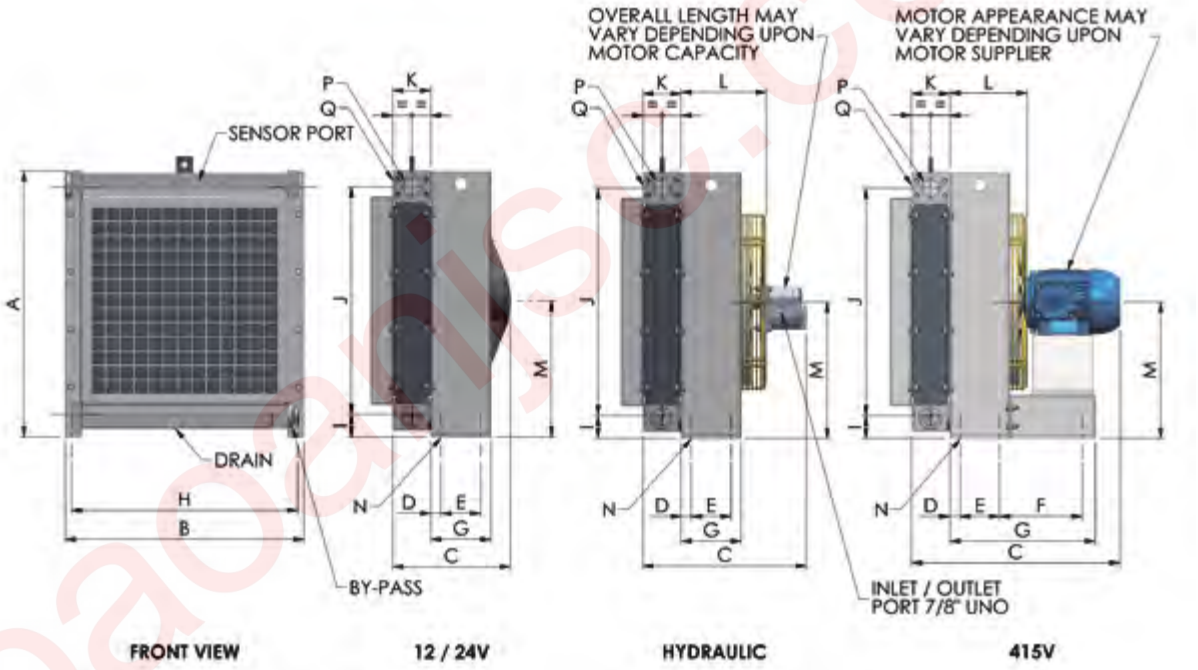
MODEL ACX 400	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	545	490	476	25	96	189	343	460	55	460	80	196	285	6 x Ø15	1"	1"	47
12-24V	545	490	285	25	96	-	146	460	55	460	80	-	285	4 x Ø15	1"	1"	26
HYD	545	490	389	25	96	-	146	460	55	460	80	211	285	4 x Ø15	1"	1"	30

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 500



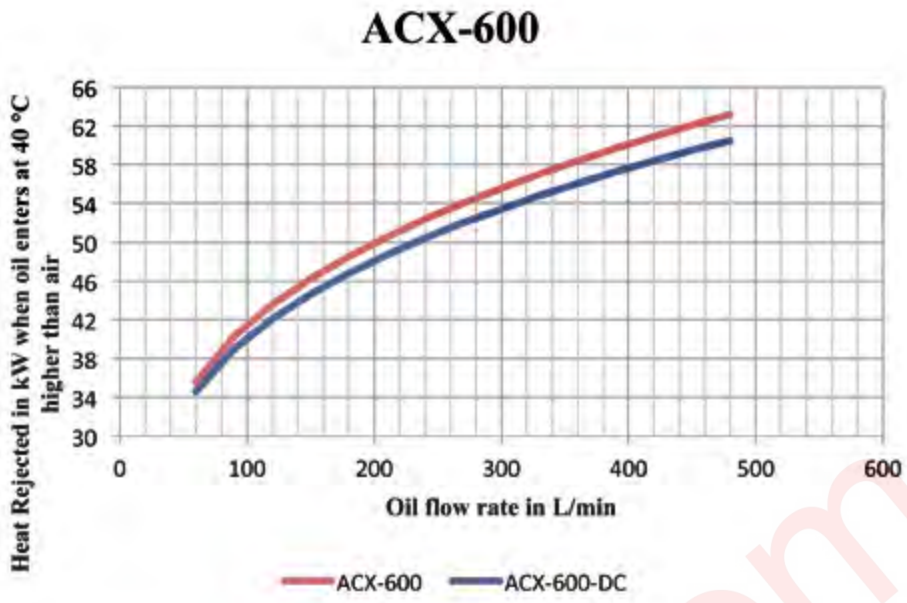


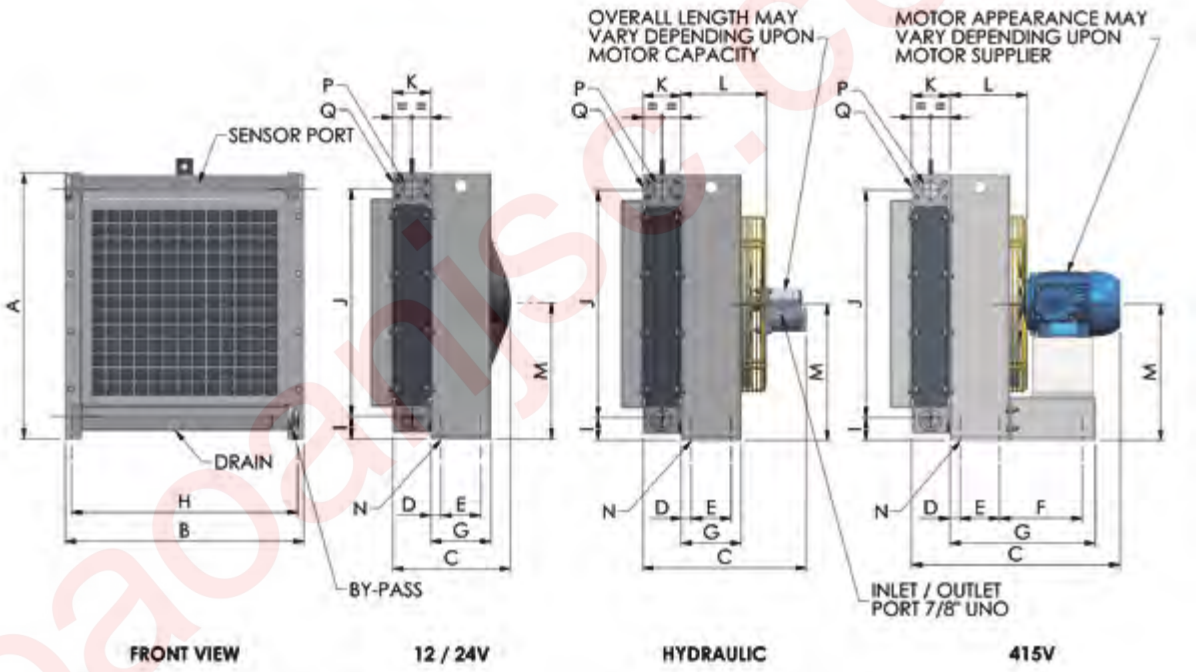
MODEL ACX 500	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	647	580	507	25	96	200	353	550	56	552	93	187	332	6 x Ø15	1½"	1½"	56
12-24V	647	580	287	25	96	-	146	550	56	552	93	-	332	4 x Ø15	1½"	1½"	34
HYD	647	580	398	25	96	-	146	550	56	552	93	206	332	4 x Ø15	1½"	1½"	39

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 600



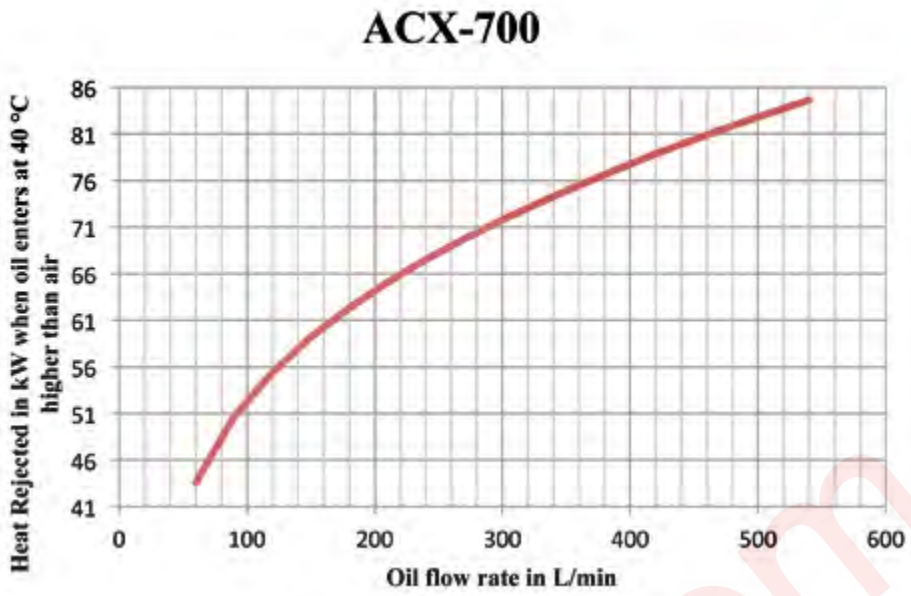


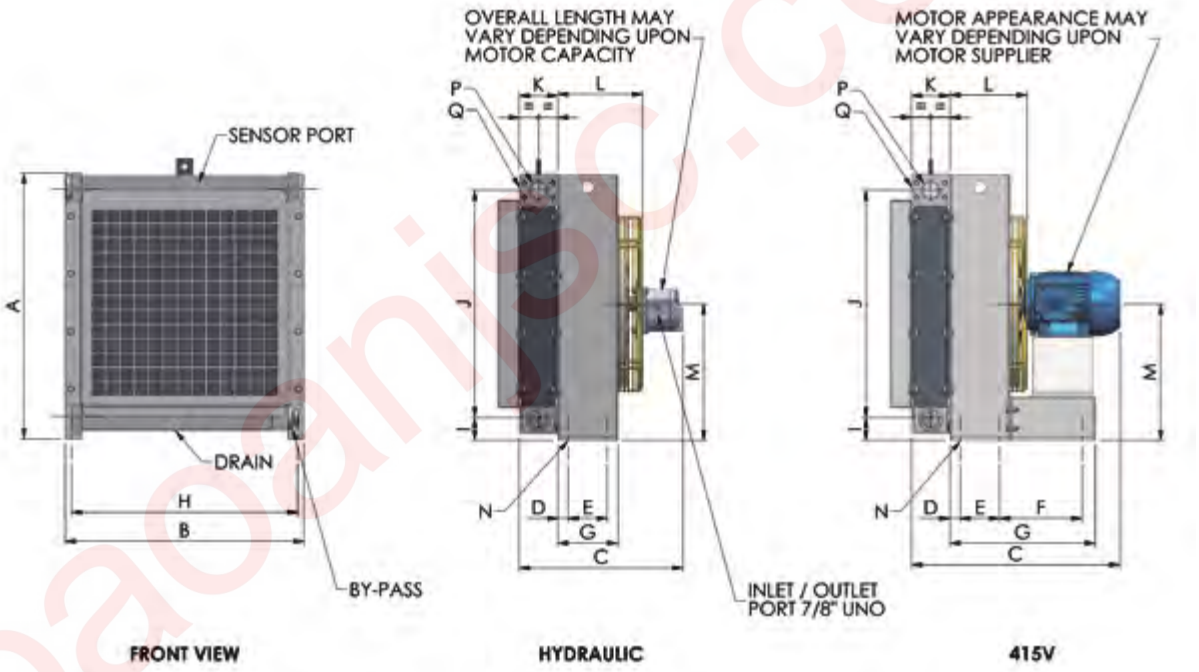
MODEL ACX 600	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	747	680	506	25	96	210	363	650	56	652	93	191	382	6 x Ø15	1½"	1½"	76
12-24V	747	680	287	25	96	-	146	650	56	652	93	-	382	4 x Ø15	1½"	1½"	45
HYD	747	680	398	25	96	-	146	650	56	652	93	206	382	4 x Ø15	1½"	1½"	50

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 700



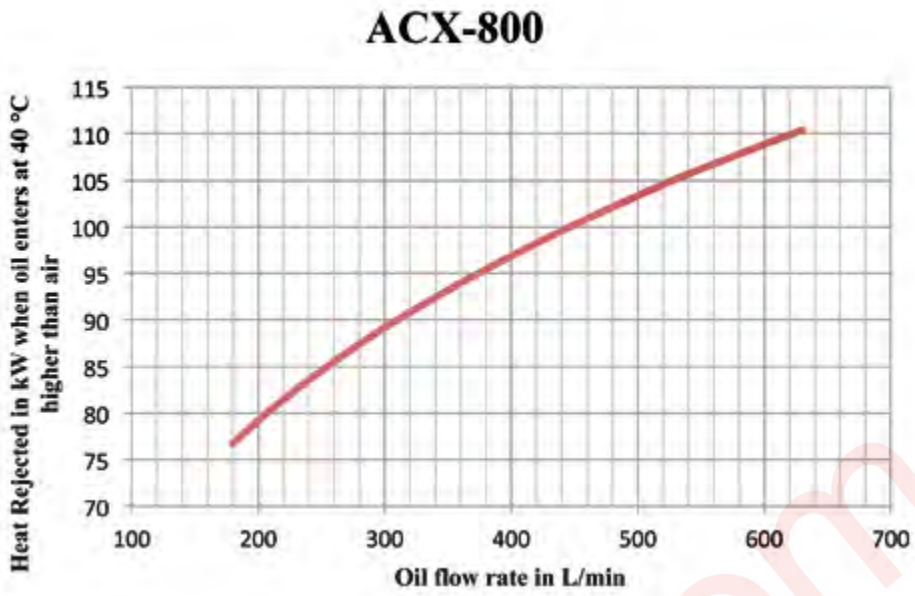


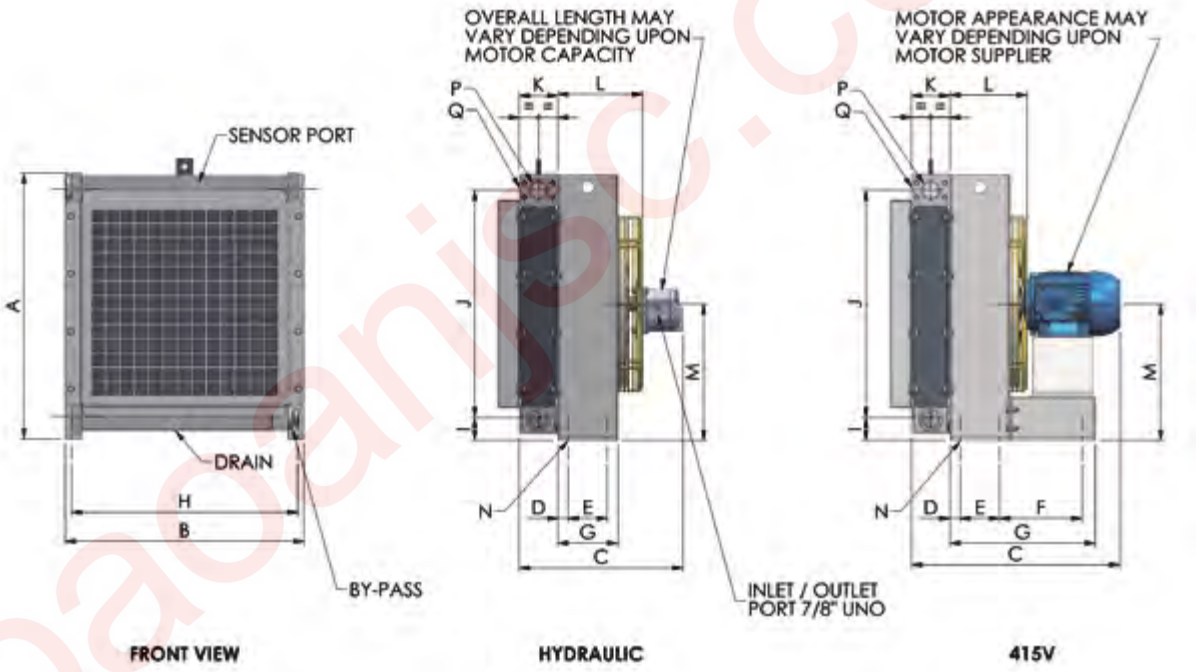
MODEL ACX 700	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	859	810	581	38	96	297	466	780	60	744	102	237	437	6 x Ø15	2"	2"	121
HYD	859	810	525	38	96	525	171	780	60	744	102	245	437	4 x Ø15	2"	2"	81

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 800



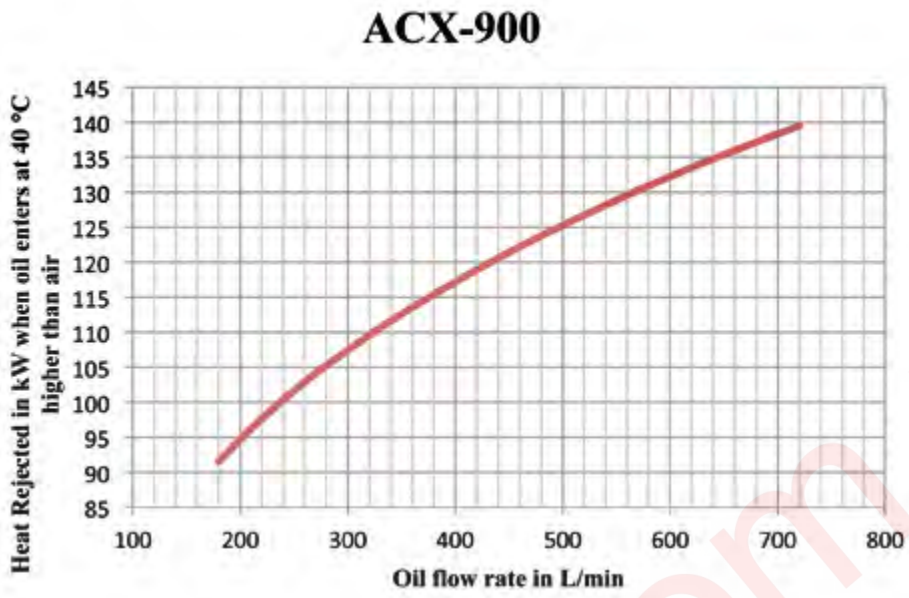


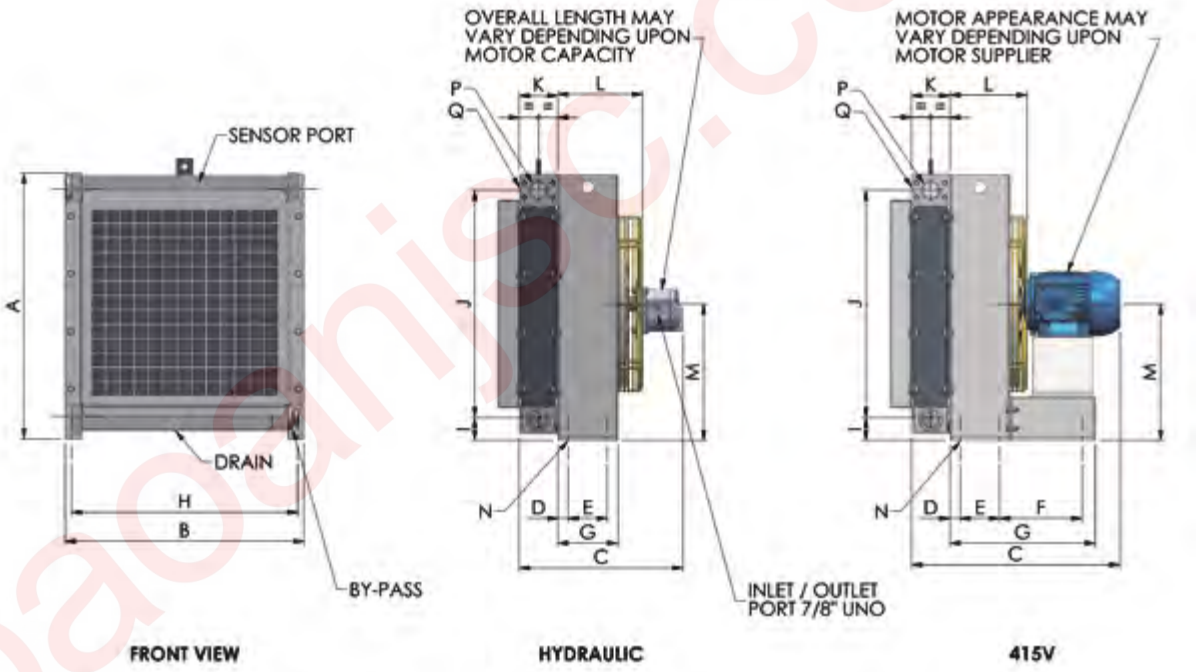
MODEL ACX 800	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	959	910	636	38	96	294	463	880	60	854	102	161	487	6 x Ø15	2”	2”	138
HYD	959	910	517	38	96	-	171	880	60	854	102	237	487	4 x Ø15	2”	2”	97

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 900



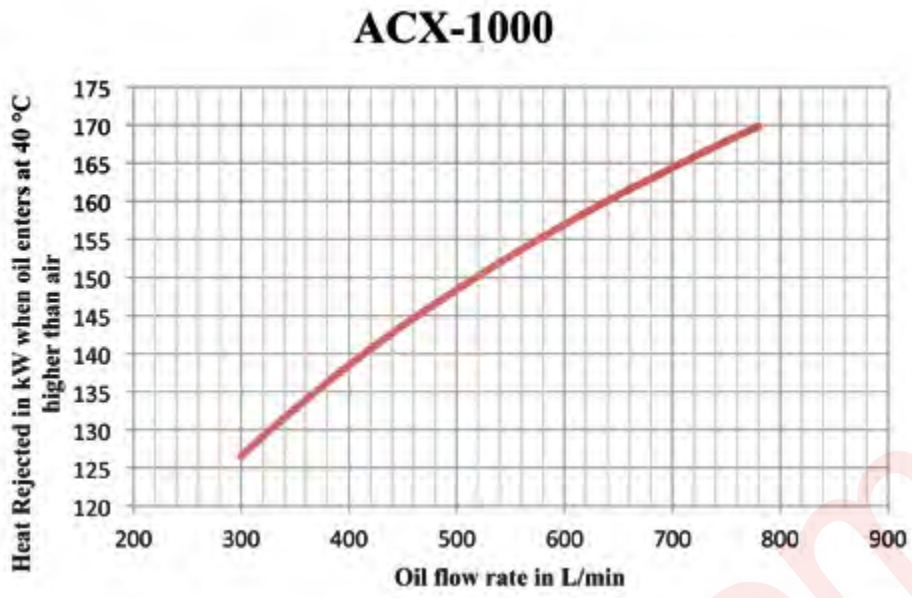


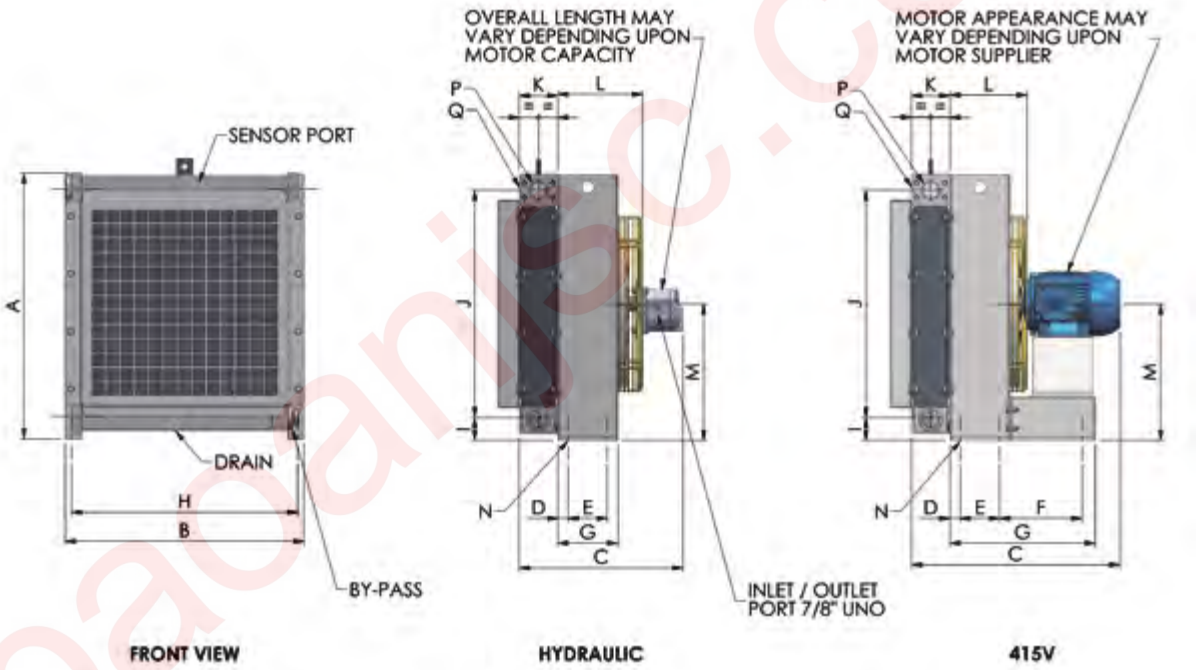
MODEL ACX 900	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	1059	1010	715	38	175	284	534	980	60	954	102	287	537	6 x Ø15	2"	2"	177
HYD	1059	1010	567	38	175	-	250	980	60	954	102	287	537	4 x Ø15	2"	2"	120

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 1000



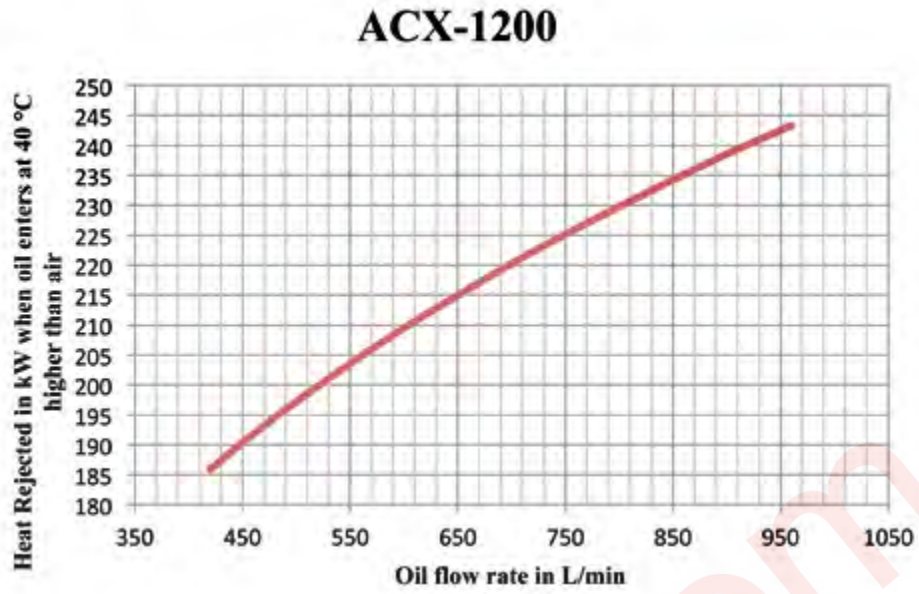


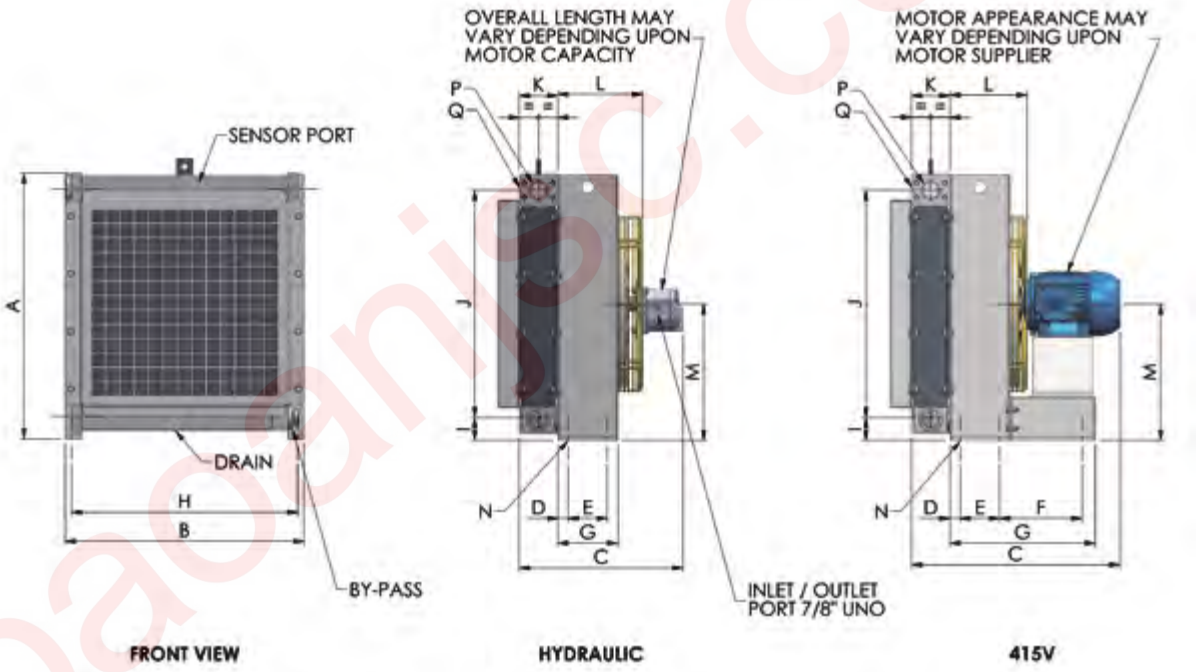
MODEL ACX 1000	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	1159	1110	716	38	175	285	535	1080	60	1054	102	268	587	6 x Ø15	2”	2”	196
HYD	1159	1110	557	38	175	-	250	1080	60	1054	102	277	587	4 x Ø15	2”	2”	137

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 1200



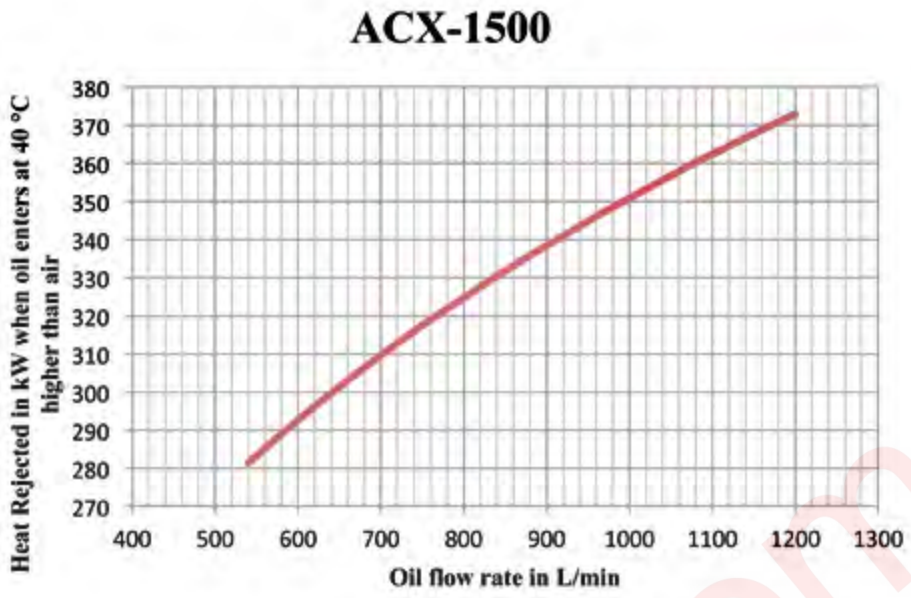


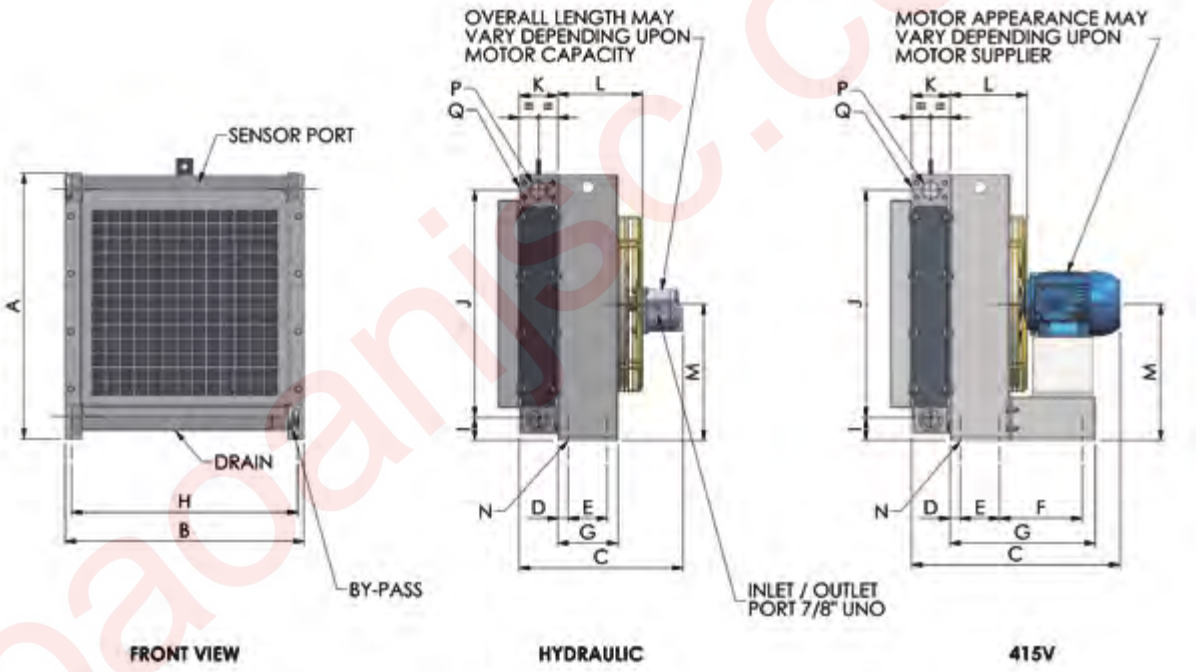
MODEL ACX 1200	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	1359	1310	948	38	240	413	726	1280	60	1254	102	326	587	6 x Ø15	2"	2"	349
HYD	1359	1310	606	38	240	-	316	1280	60	1254	102	326	587	4 x Ø15	2"	2"	198

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ACX 1500





MODEL ACX 1500	A	B	C	D	E	F	G	H	I	J	K	L	M	N (HOLES)	P* (Ports)	Q† (FLANGES)	WEIGHT (kg)
415V	1654	1580	1104	35	340	460	890	1550	55	1554	102	492	832	6 x Ø15	2"	2"	445
HYD	1654	1580	756	35	340	-	410	1550	55	1554	102	476	832	4 x Ø15	2"	2"	283

ALL DIMENSIONS IN MILLIMETRES - * ALL THREADS, BSPP - † ALL FLANGES, SAE CODE 61

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ALLIED HEAT TRANSFER

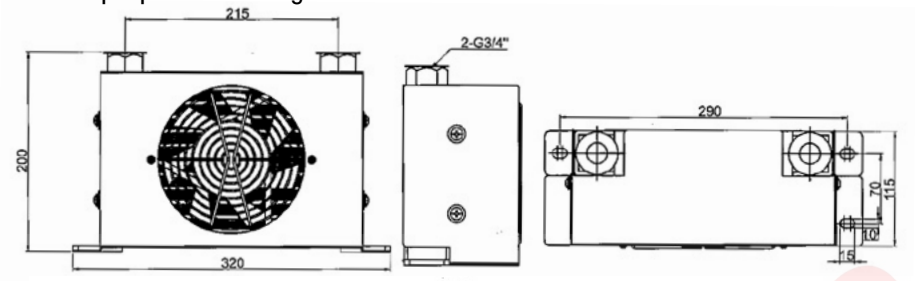
OC B RANGE

Economy Coolers with 12 or 24 volt fans

Light weight aluminium coolers for hydraulics with 150psi pressure rating.

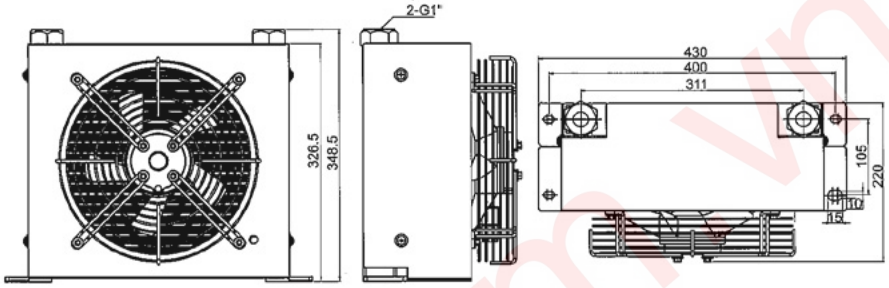
OCB15

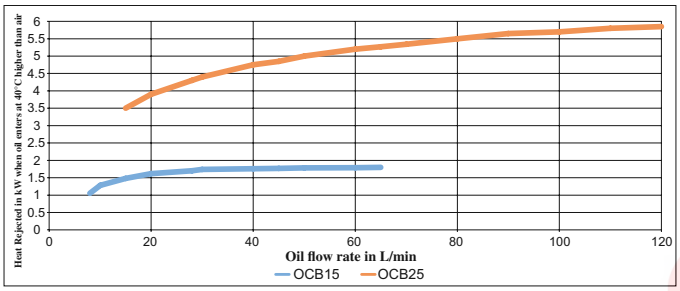
Max Flow	60 l/min
Max Cooling	1.8 kW
Weight	6 kg

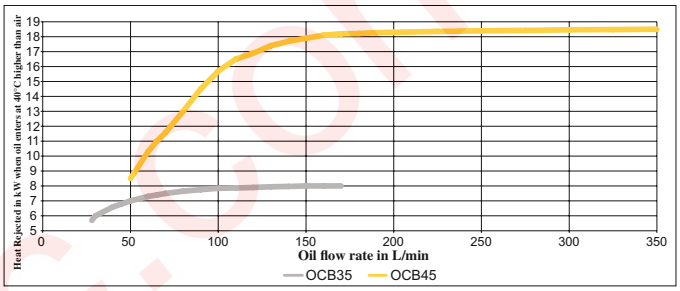


OCB25

Max Flow	100 l/min
Max Cooling	5.8 kW
Weight	12 kg

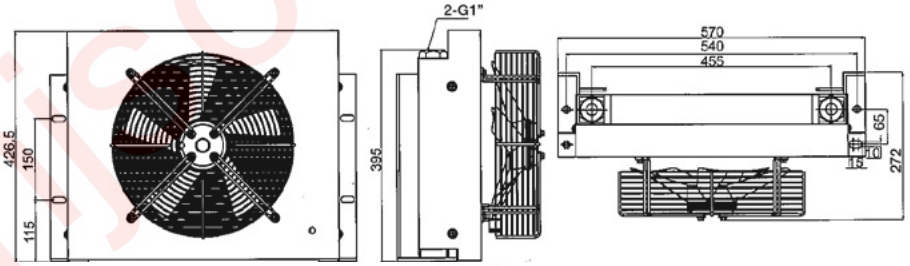






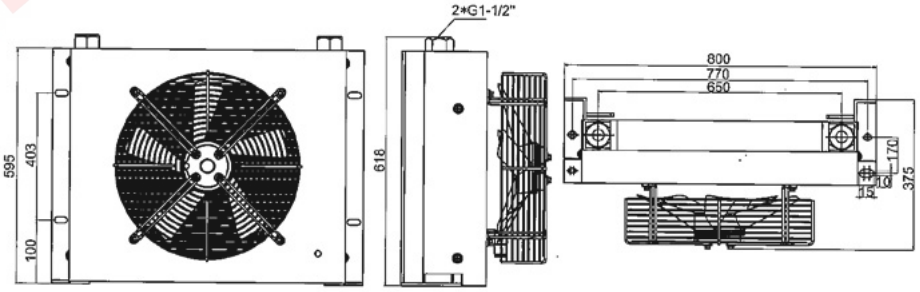
OCB35

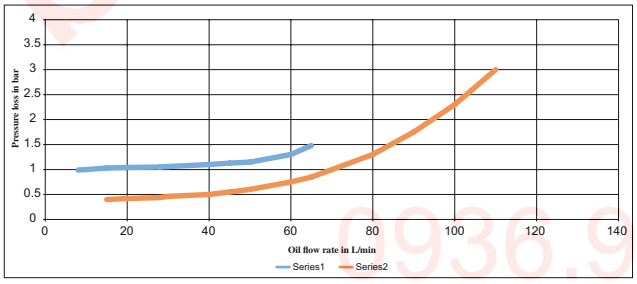
Max Flow	150 l/min
Max Cooling	8 kW
Weight	25 kg

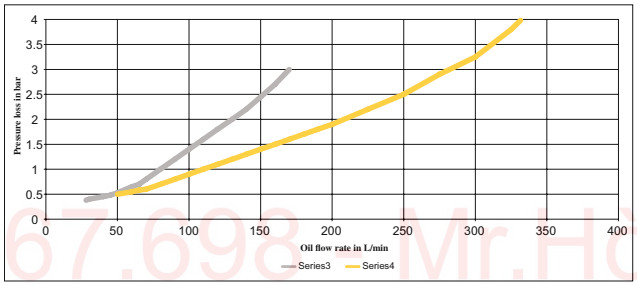


OCB45

Max Flow	300 l/min
Max Cooling	19 kW
Weight	55 kg







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BACK TO INDEX

SECTION C - Oil Cooler Panels

TF (Tube fin) Coolers .....C1 - C9
ST Steel Coolers .....C10 - C13
Oil Pressure Loss ST Steel Coolers C14
HE Coolers C15
Replacement Coolers .....C16 - C19
HP Heavy Duty Aluminium Oil Coolers C20

Oil cooler panels only, without the plenum, fan, motor, etc. Included in the following pages are 10 bar rated aluminium coolers, 26 bar rated aluminium coolers, steel coolers, copper tube finned coolers, and a range of popular replacement coolers.



TF (tube fin) Coolers
These contain copper tubes and headers with aluminium plate fins. These coolers are a very cost effective option and come with rubber mounting blocks.

HE Cooler
This is a highly efficient aluminium cooler panel with a maximum working pressure of 10 bar. These panels can be used in applications where there is an existing cooling air system such as in front of a radiator on a truck, 'sandwiched' in front of an existing cooling system, or to replace only the cooler panel from a common cooling system.

All Steel ST Coolers
These are high pressure and a very 'strong' cooler. Often used in applications where there is a risk of airside fin clogging. The fins are flat, widely spaced and easy to clean.

Replacement Coolers
These are a range that we have identified as common in the field. They are designed to bolt straight on with exact dimensions. More detail on our 'off the shelf' range is listed in the following pages. Where possible we have nominated the performance of each cooler. Remember that performance is very much dependant on what cooling air flow is available.

If you don't find it in the catalogue, please remember that we make, repair, rebuild and clean oil coolers, so ring us with any questions or queries.

ALLIED HEAT TRANSFER

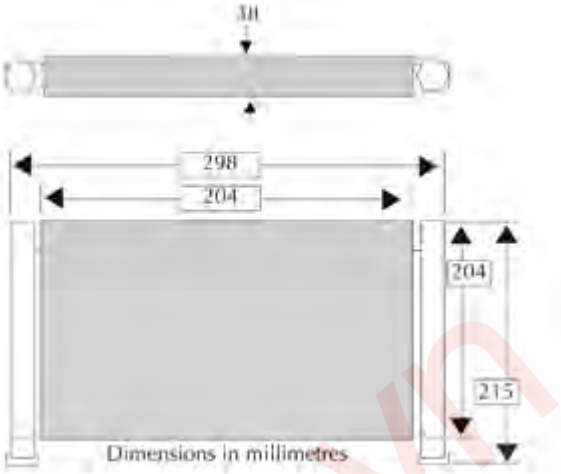
TF OIL COOLER DATA SHEET

PART No: TF 1430

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

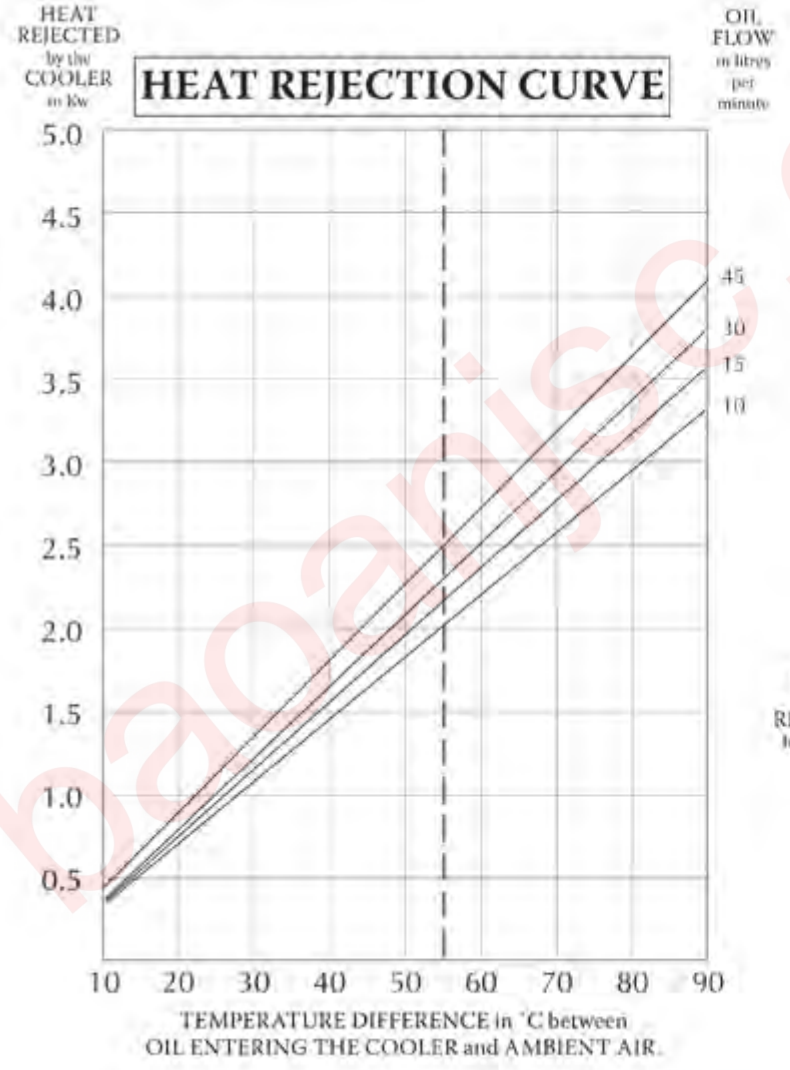
Connection Size	1/2" npt
Weight	1.36 Kg

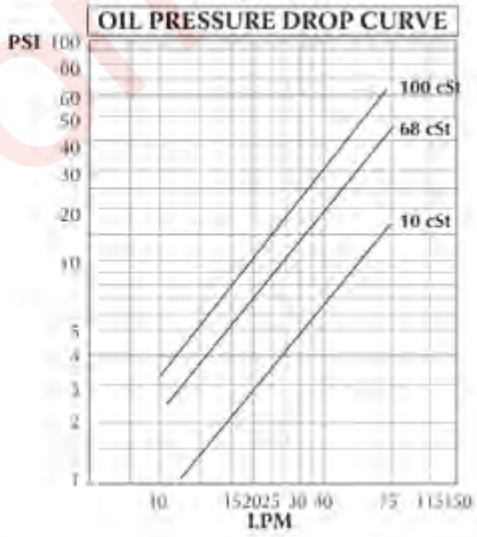


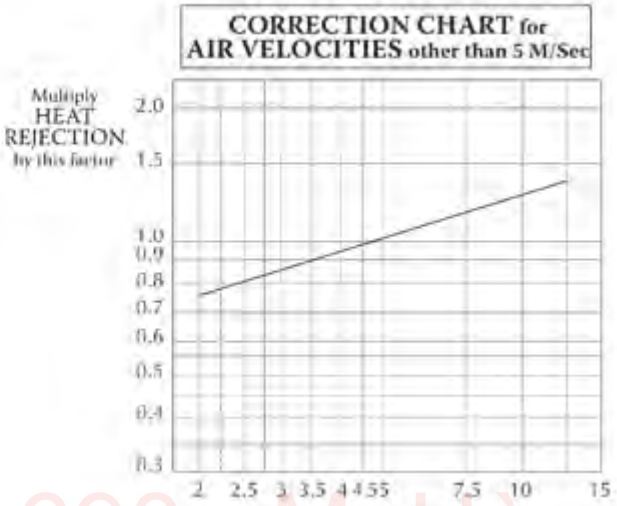
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	10 - 45 L/Min
Heat Rejection Range	2 - 2.5 Kw







Oil Cooler Panels

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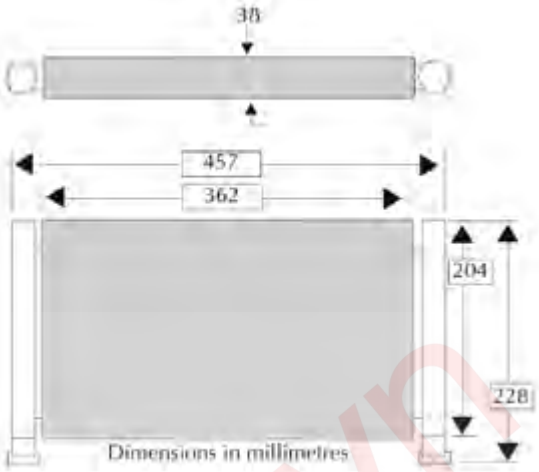
TF OIL COOLER DATA SHEET

PART No: TF 1446

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

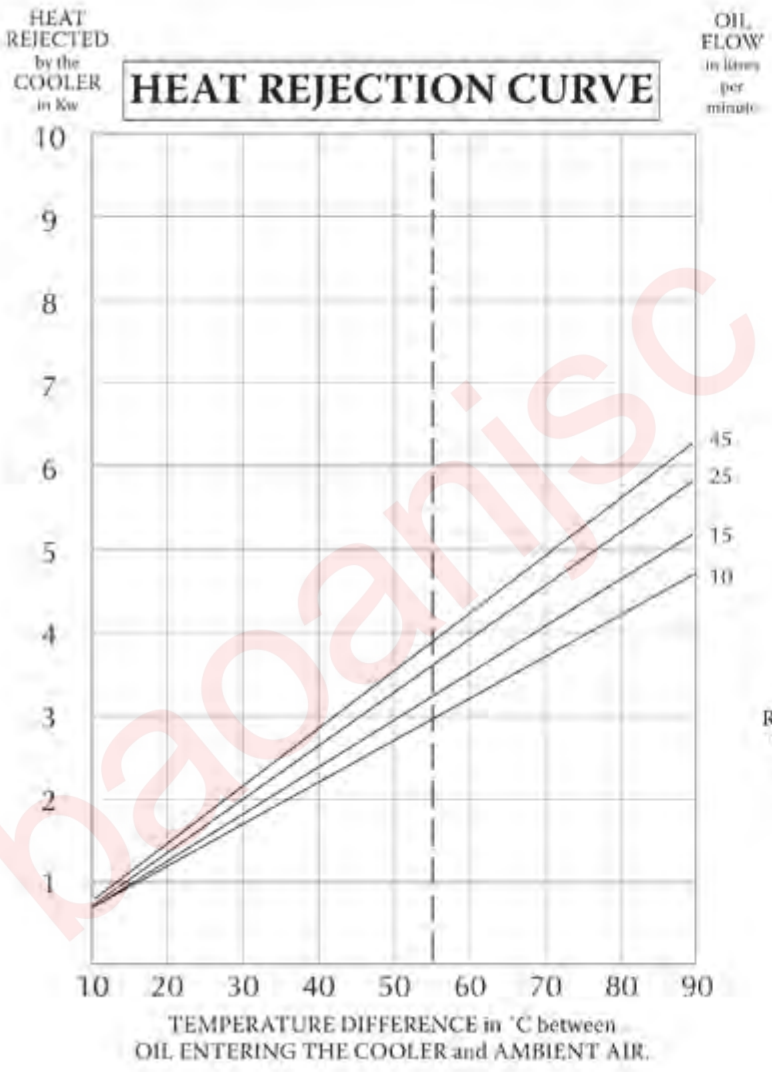
Connection Size	1/2" npt
Weight	1.8 Kg

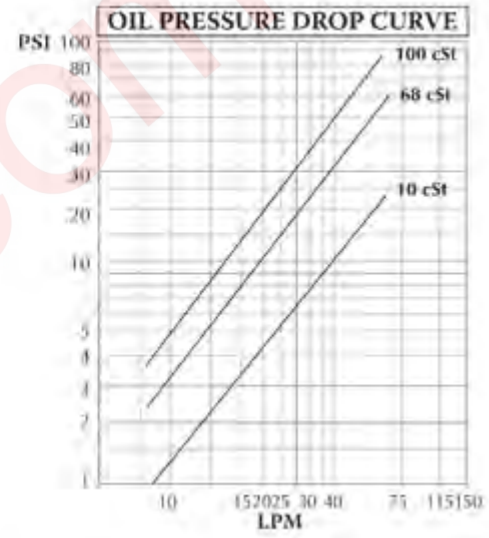


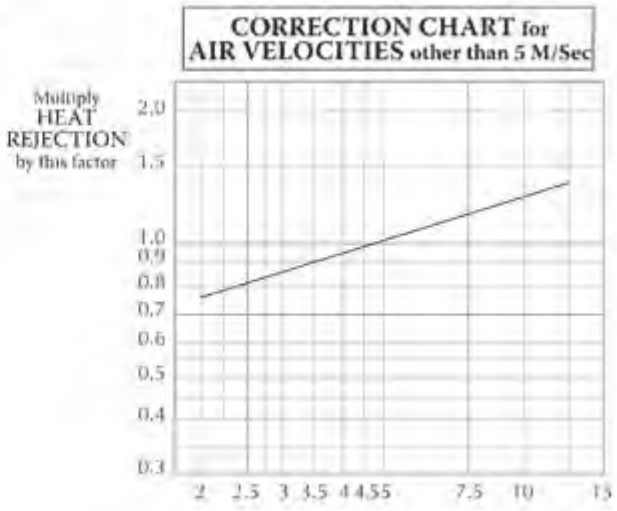
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	10-45 L/Min
Heat Rejection Range	3 - 3.85 Kw







Oil Cooler Panels

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ALLIED HEAT TRANSFER

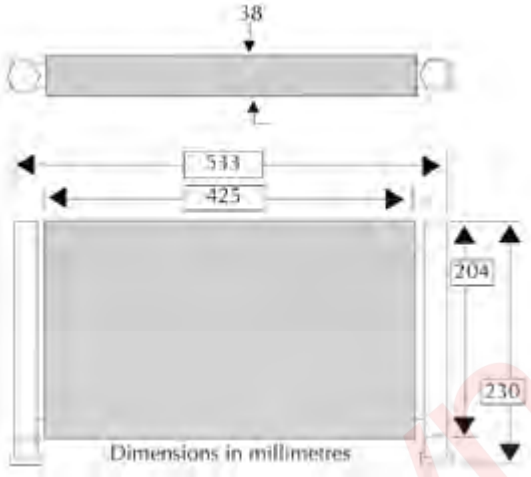
TF OIL COOLER DATA SHEET

PART No: TF 1454

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

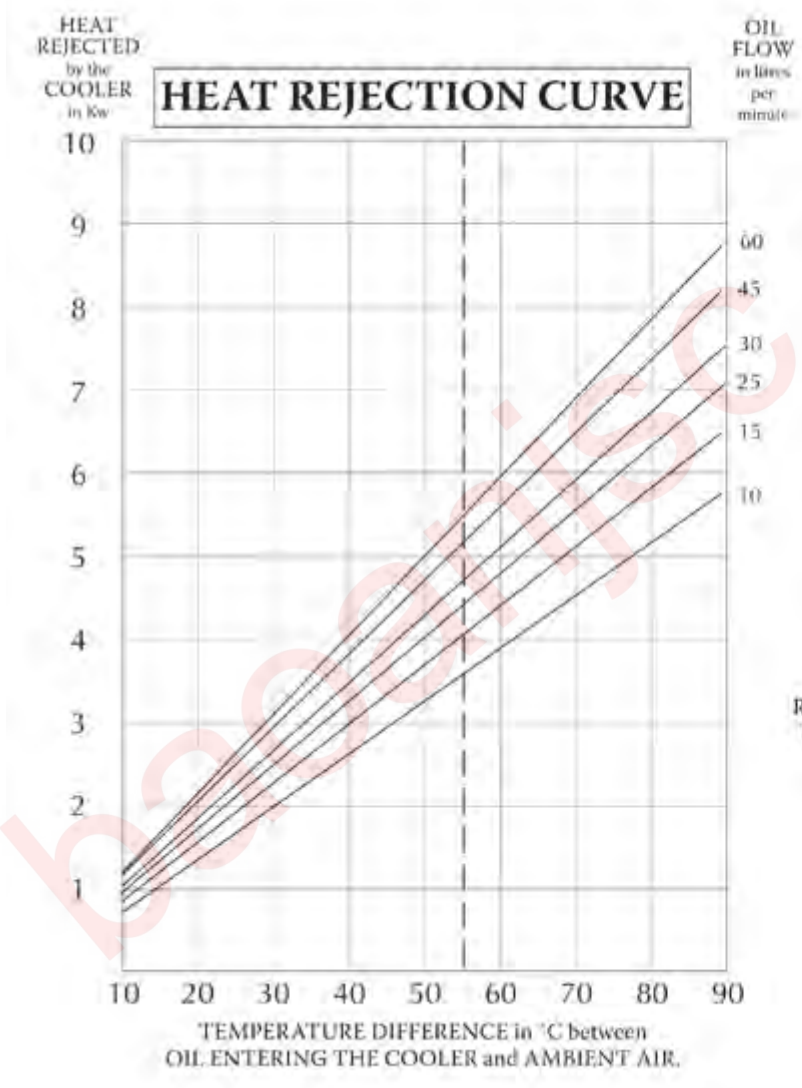
Connection Size	3/4" npt
Weight	2.0 Kg

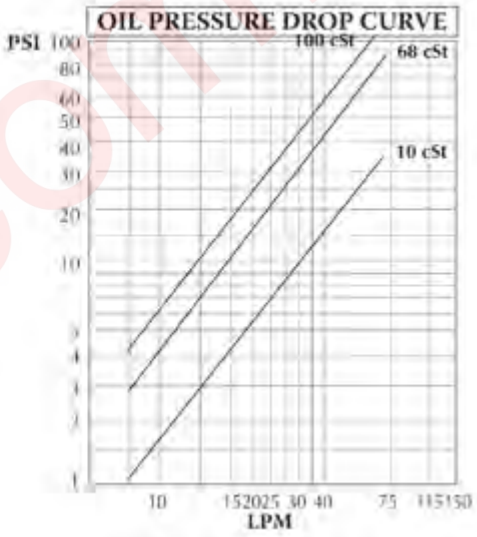


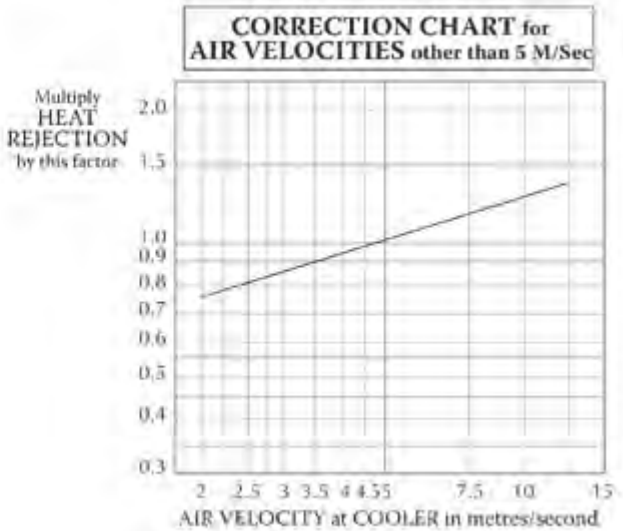
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	10 - 60 L/Min
Heat Rejection Range	3.5 - 5.3 Kw







Oil Cooler Panels

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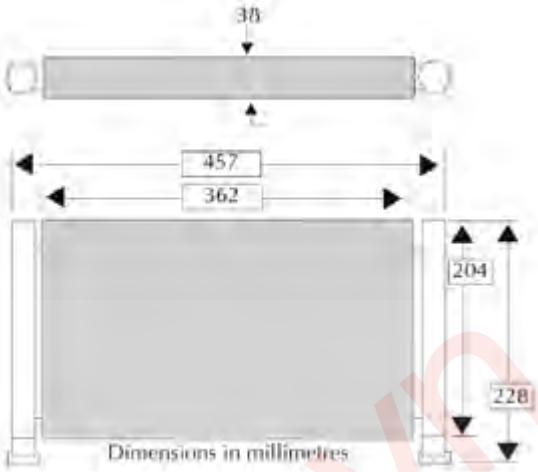
TF OIL COOLER DATA SHEET

PART No: TF 1645

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

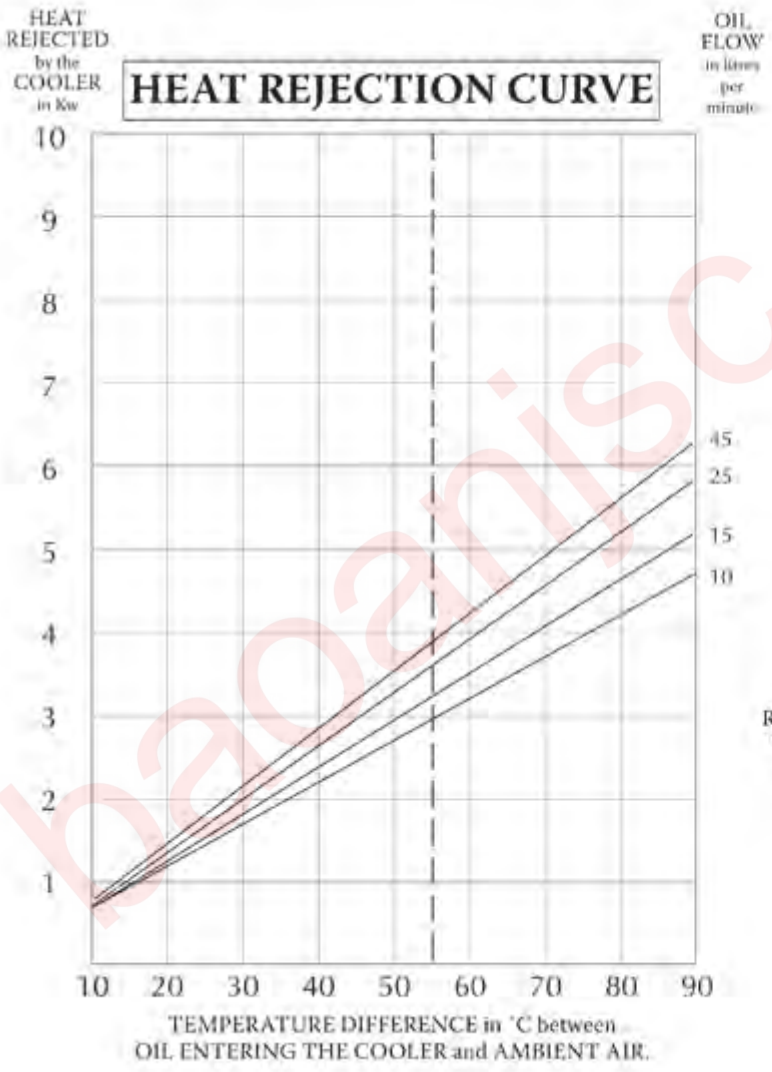
Connection Size	3/4" npt
Weight	3.0 Kg

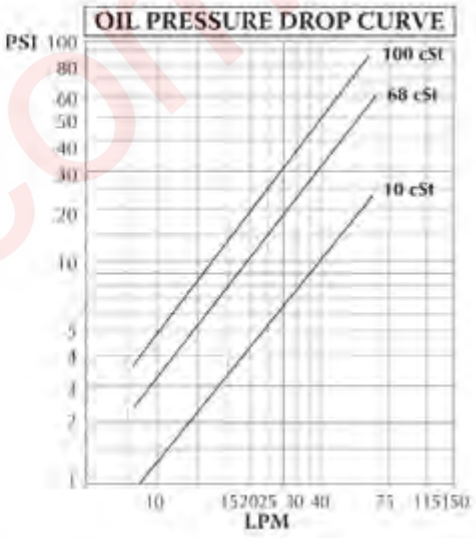


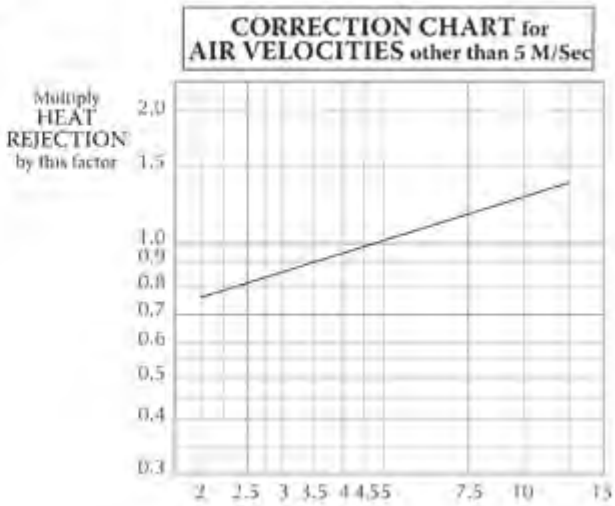
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	15-90 L/Min
Heat Rejection Range	4.7 - 6.2 Kw







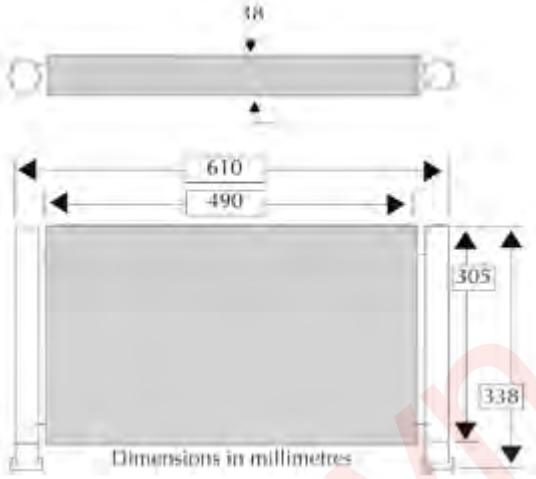
Oil Cooler Panels

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ALLIED HEAT TRANSFER

TF OIL COOLER DATA SHEET

PART No: TF 1662



HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

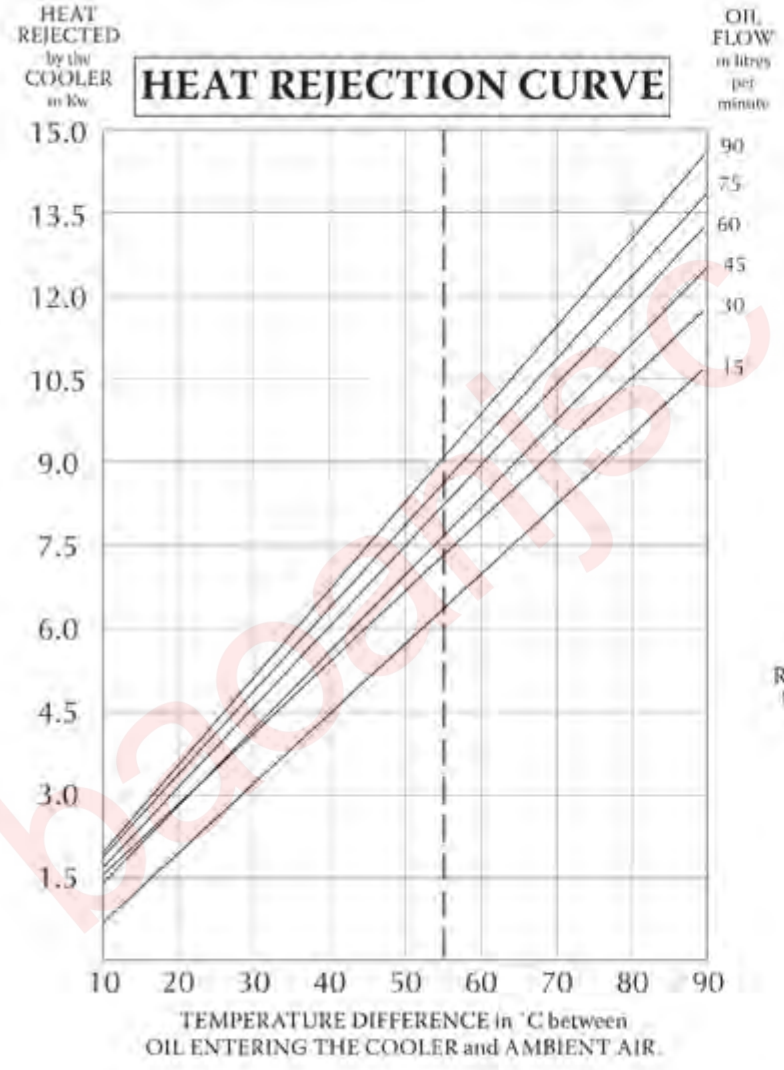
Test Pressure 300psi
12/24V fan available

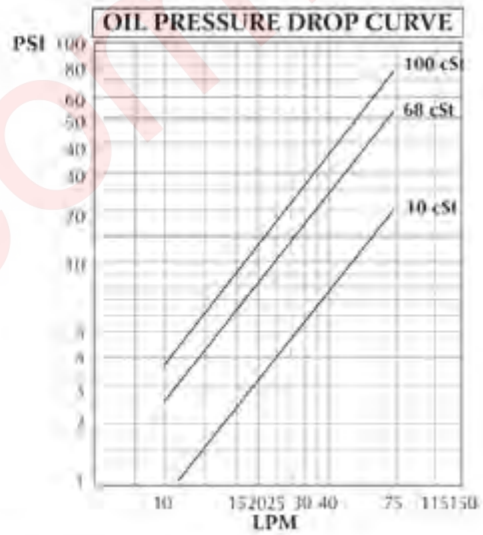
Connection Size	1" npt
Weight	3.6 Kg

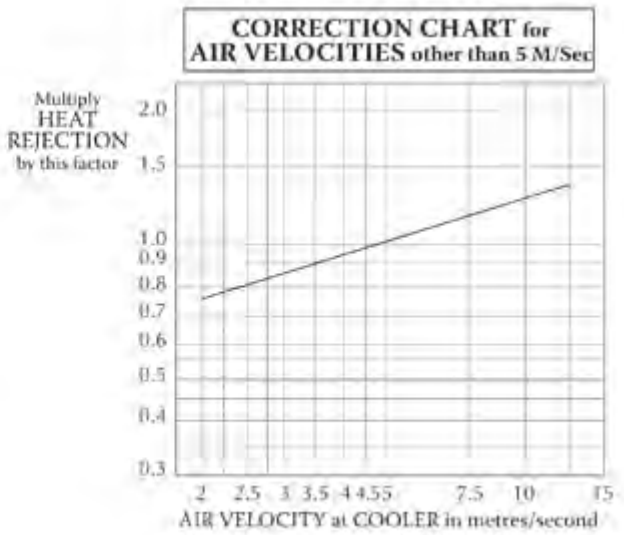
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	15 - 90 L/Min
Heat Rejection Range	6.3 - 9.0 Kw





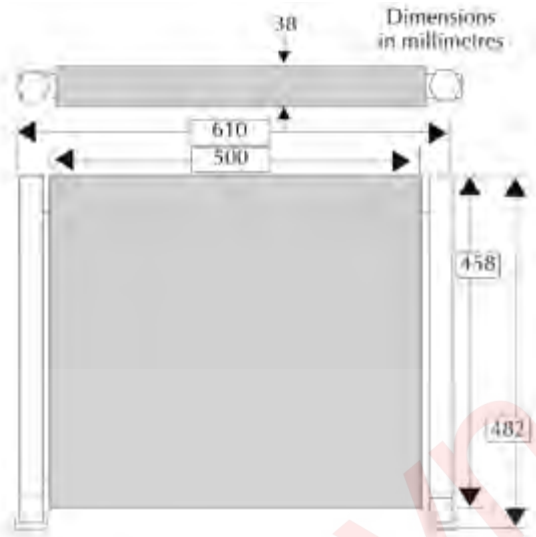


Oil Cooler Panels

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TF OIL COOLER DATA SHEET

PART No: TF 1960



HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

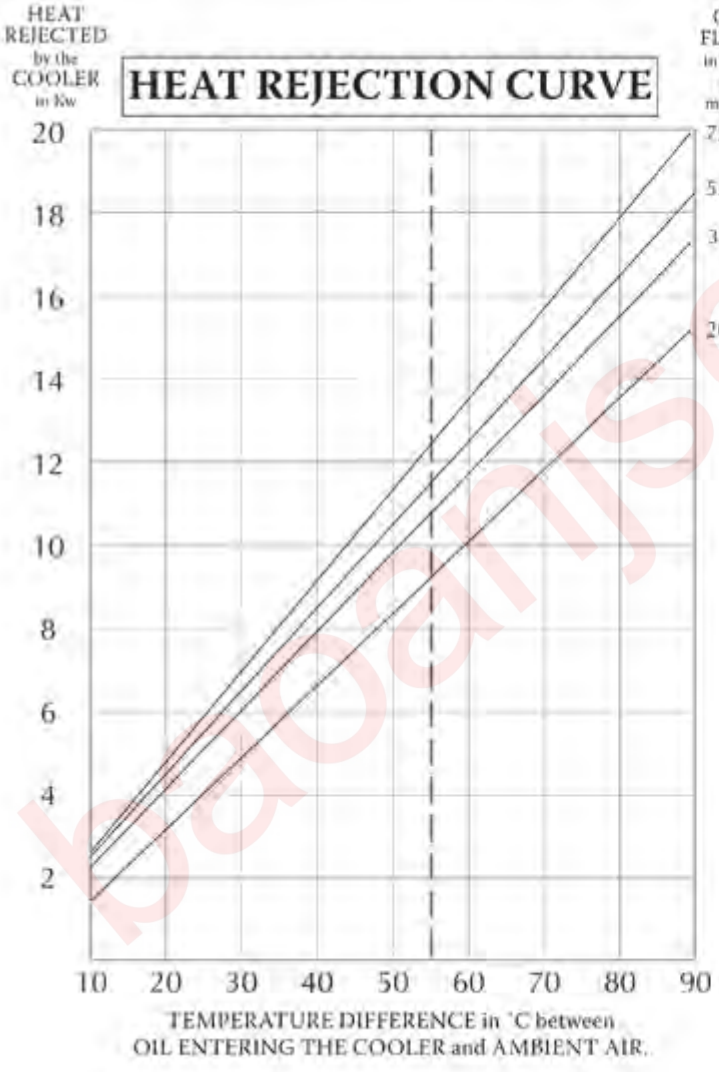
Test Pressure 300psi
12/24V fan available

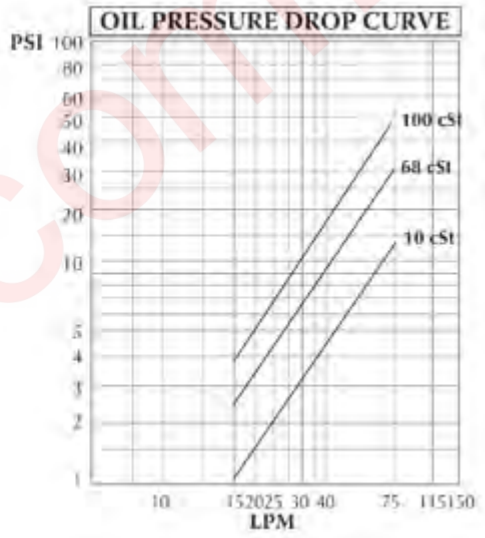
Connection Size	**3/4"** npt
Weight	**5.21** Kg

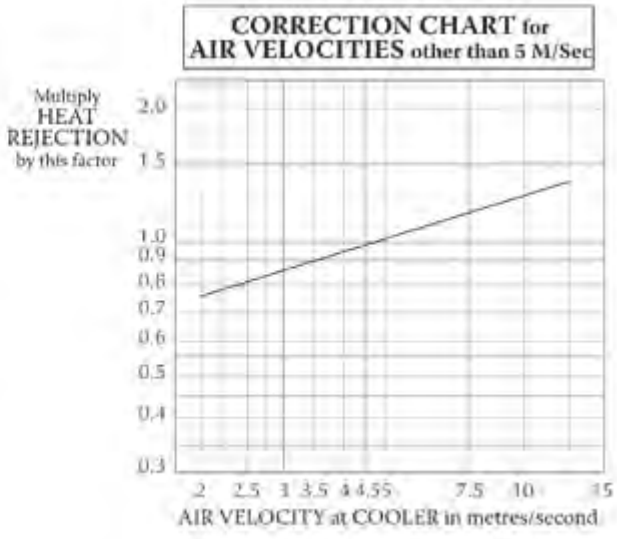
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	**20-75** L/Min
Heat Rejection Range	**9.25 - 12.5** Kw







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ALLIED HEAT TRANSFER

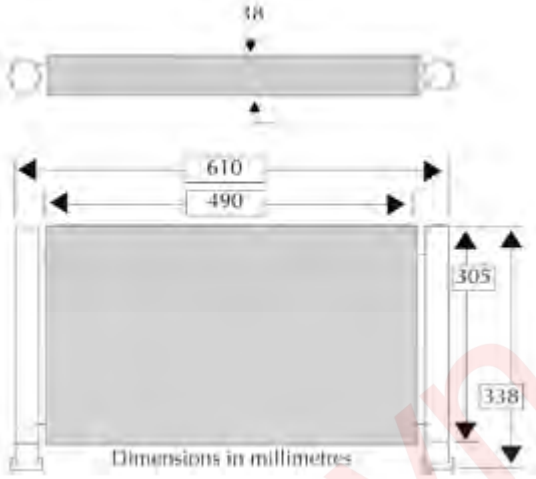
TF OIL COOLER DATA SHEET

PART No: TF 11260

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

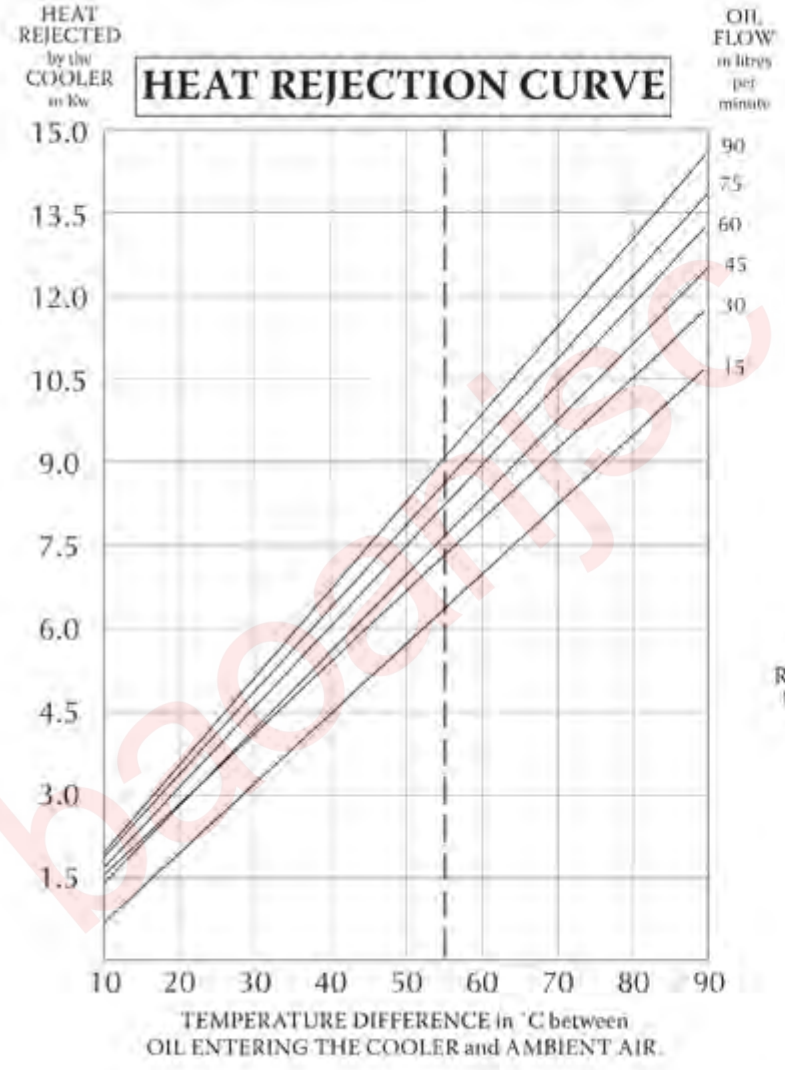
Connection Size	1" npt
Weight	7.0 Kg

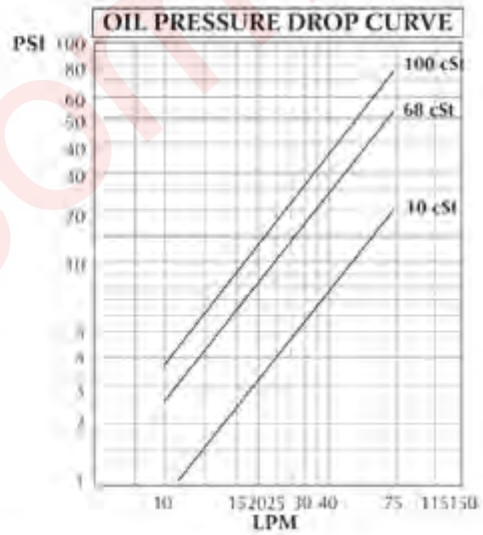


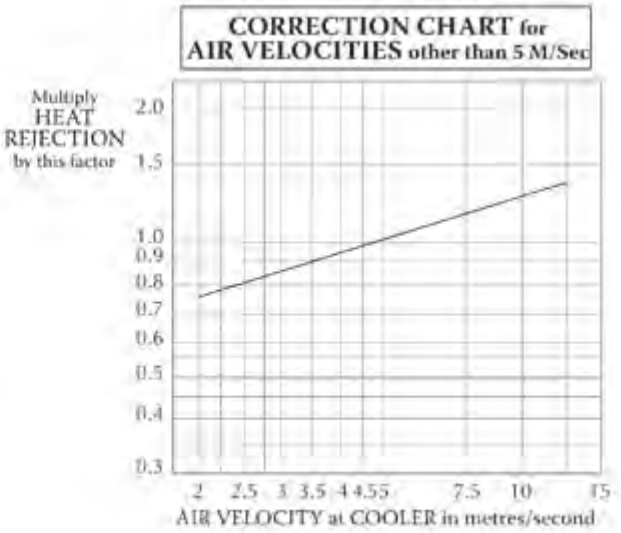
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	20 - 120 L/Min
Heat Rejection Range	11.5 - 16.5 Kw





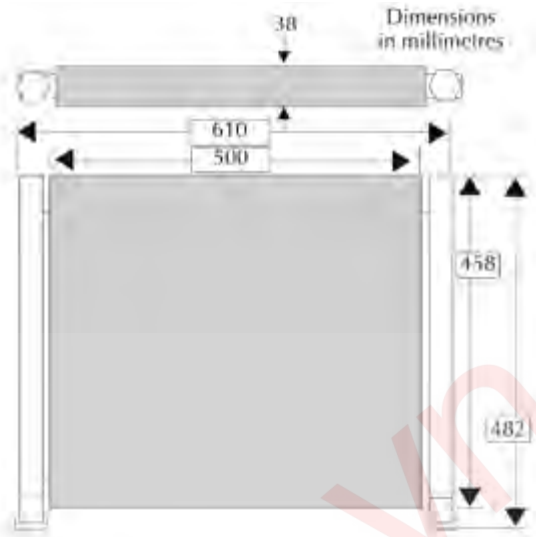


Oil Cooler Panels

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TF OIL COOLER DATA SHEET

PART No: TF 11561



HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

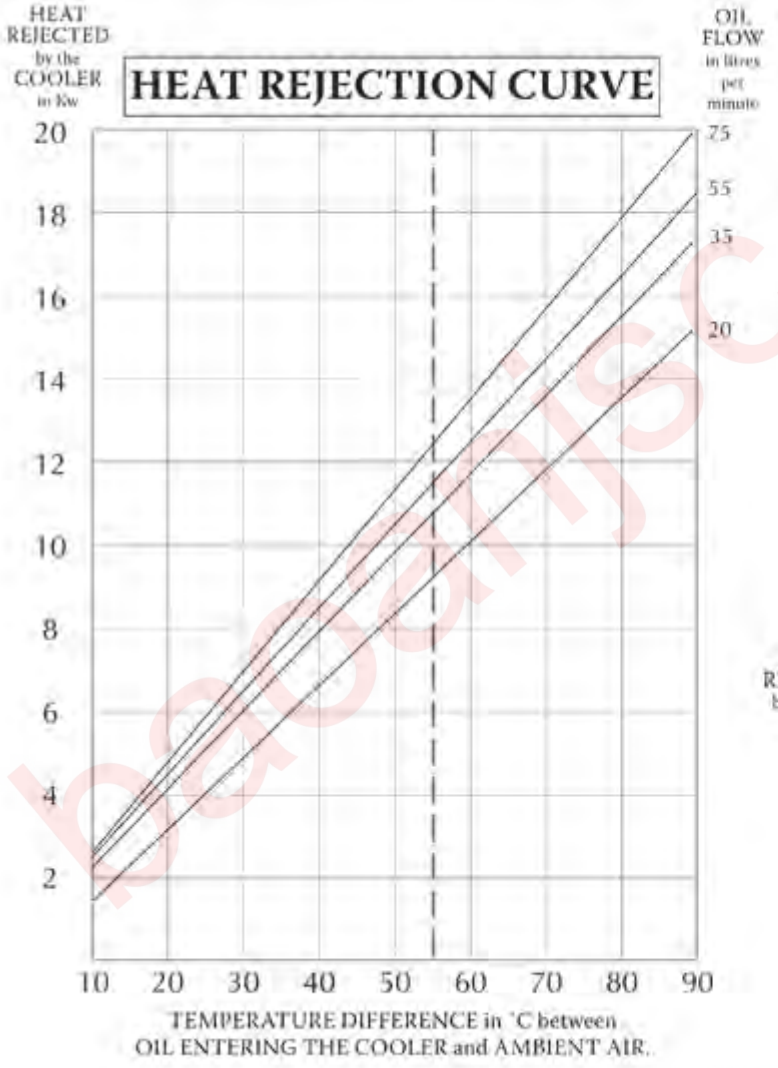
Test Pressure 300psi
12/24V fan available

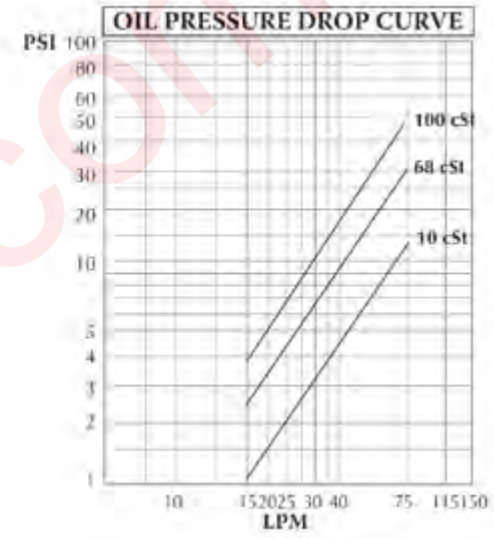
Connection Size	1 1/4" npt
Weight	9.5 Kg

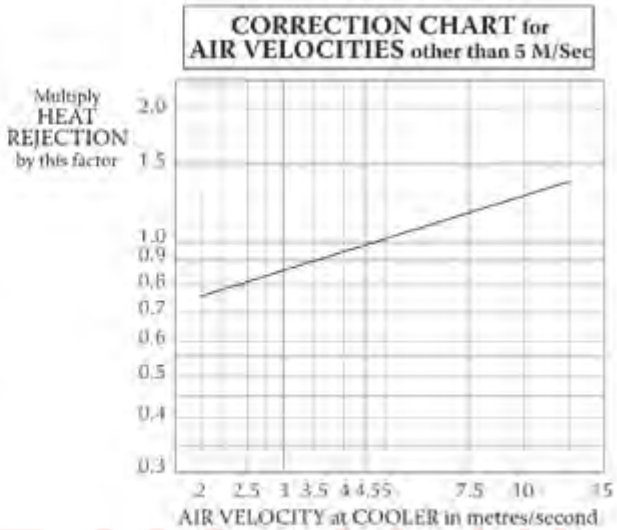
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	25 - 200 L/Min
Heat Rejection Range	15.0 - 22.0 Kw







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ALLIED HEAT TRANSFER

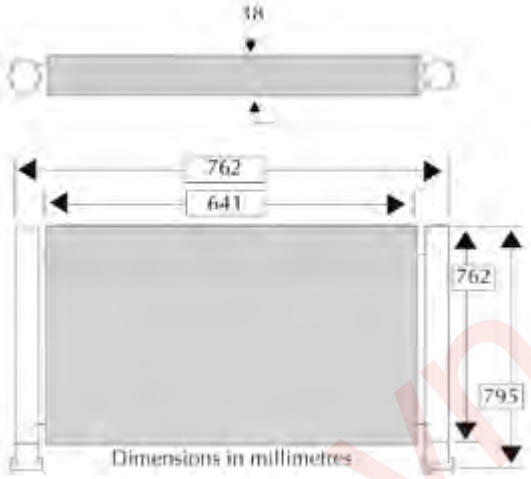
TF OIL COOLER DATA SHEET

PART No: TF 11577

HEAVY DUTY COPPER TUBES
HIGH EFFICIENCY ALUMINIUM FINS
IN-TUBE OIL TURBULATORS

Test Pressure 300psi
12/24V fan available

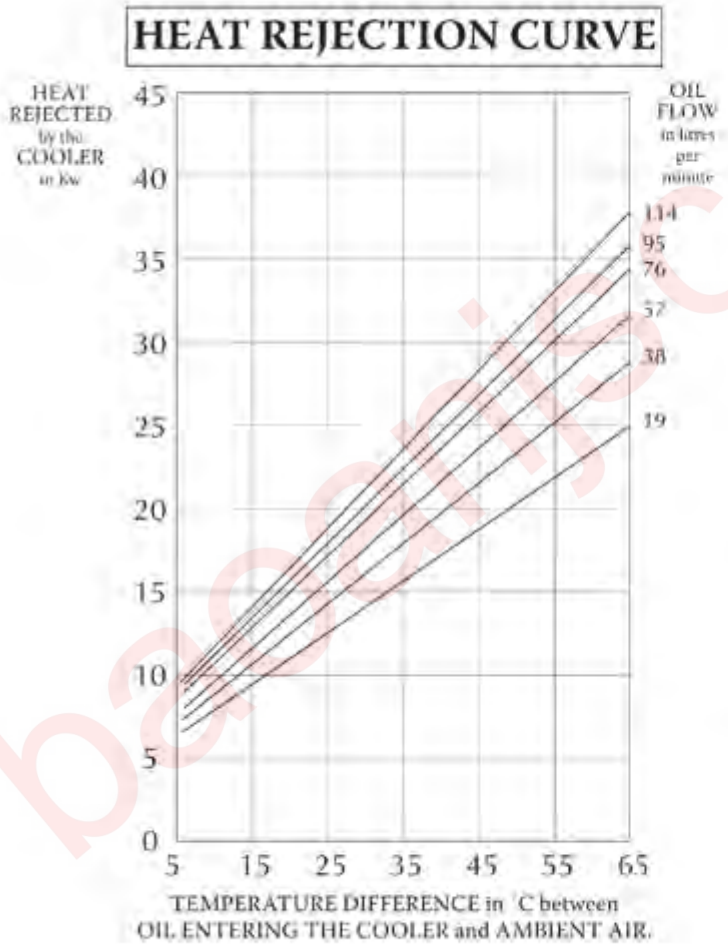
Connection Size	1" npt
Weight	10.9 Kg

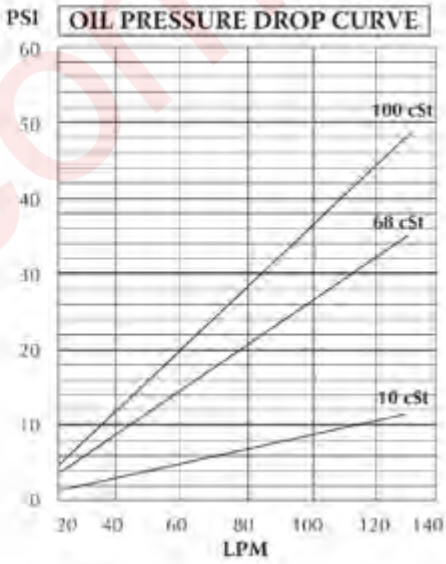


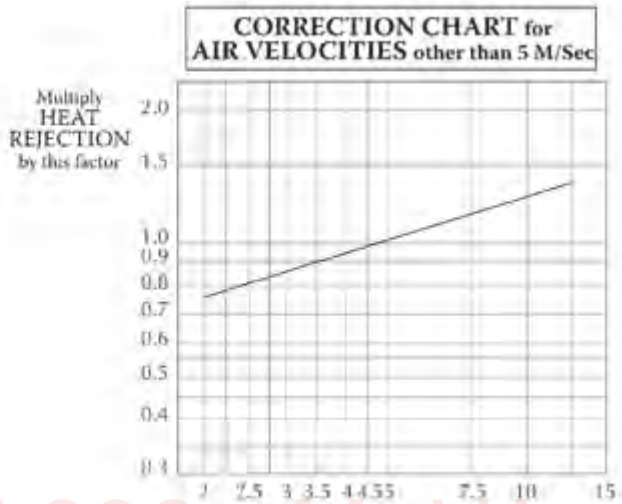
TYPICAL PERFORMANCE

BASED ON ΔT (E.OIL-E.AIR) 55°C AND AIR V. 5 M/S

Oil Flow Rate Range	19 - 114 L/Min
Heat Rejection Range	6.0 - 33.0 Kw







Oil Cooler Panels

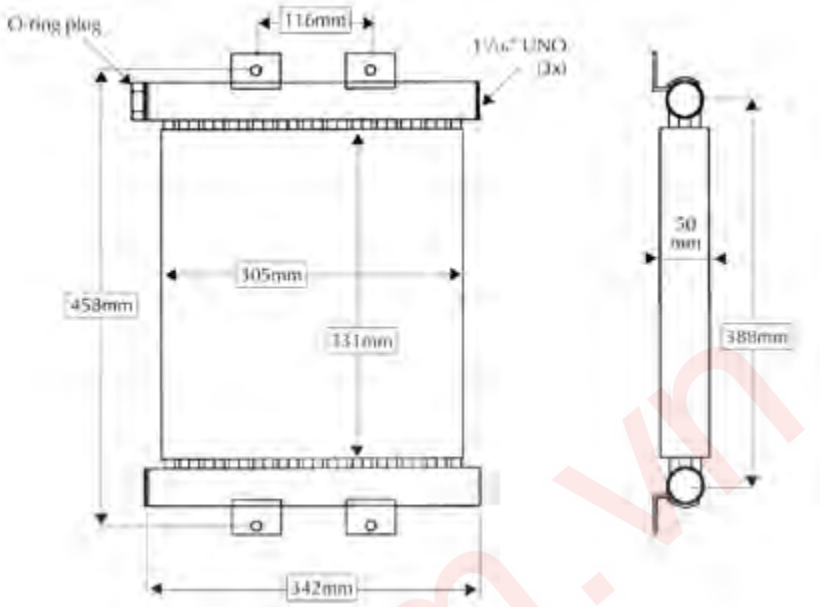
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STEEL OIL COOLERS

PART No ST 10A

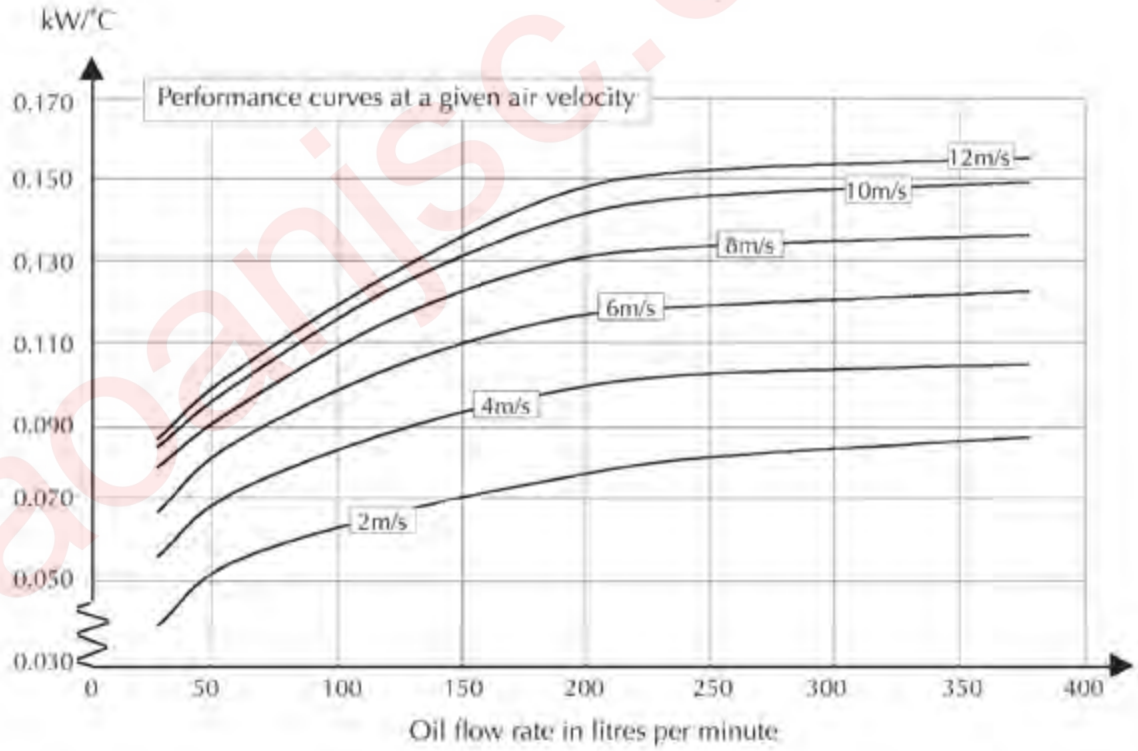
- Heavy Duty • All Steel • Maximum Strength
- High Heat Transfer • Easy to Clean
- Tested to 1500 psi
- Can be packaged with fan and motor

Oil Flow Rate Range	10 - 140 L/Min
Weight	8.5 Kg
Heat Rejection Range	2 - 7 Kw
Connection Size	$1^{1}/_{16}$" UNO
Max. working pressure	500 psi



For this cooler in a complete package with fan and motor assembly, see data sheets on part numbers ST10A-AC, ST10A-HYD, ST10A-AC and ST10A-HYD in this catalogue.

Heat rejection in kW per ˚C temperature difference between oil entering the cooler and ambient air



Example: With an oil flow at 200 l/min, oil temperature in at 80˚C and ambient air at 40˚C, with 6m/s of cooling air, from the graph the cooler will dissipate approximately 0.117kW/˚C which gives a heat dissipation of:

0.57kW/˚C x (80-40) = 4.68kW

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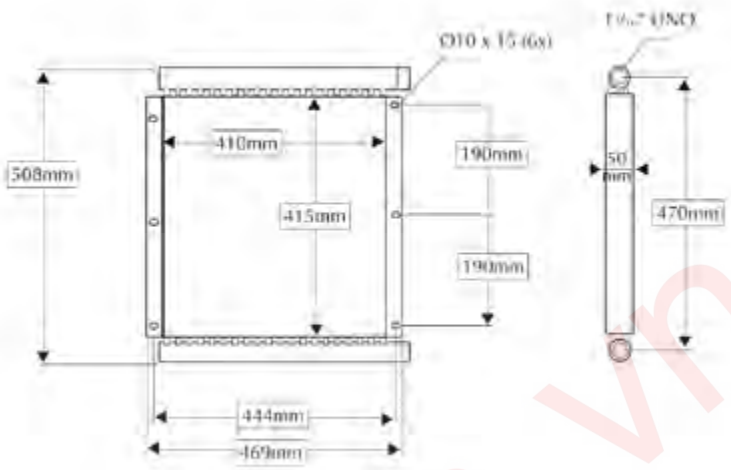
ALLIED HEAT TRANSFER

STEEL OIL COOLERS

PART No ST 30A

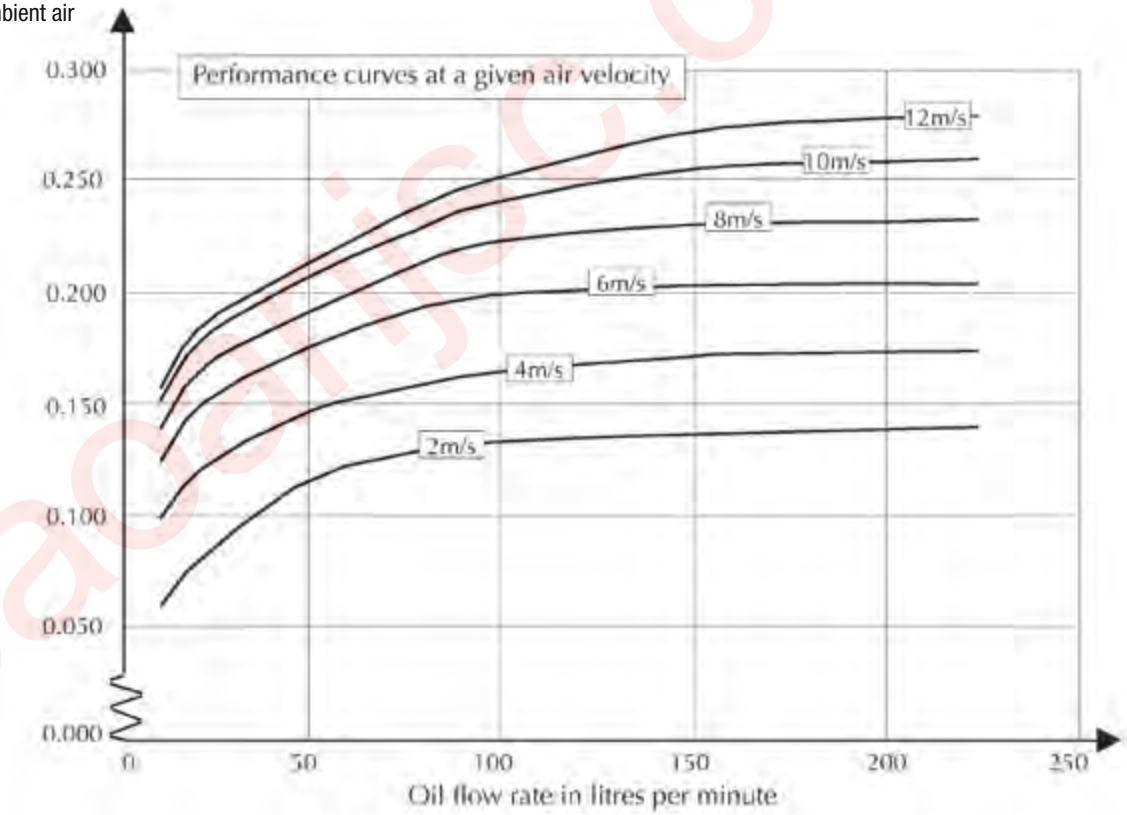
- Heavy Duty • All Steel • Maximum Strength
- High Heat Transfer • Easy to Clean
- Tested to 1500 psi
- Can be packaged with fan and motor

Oil Flow Rate Range	50 - 200 L/Min
Weight	14.5 Kg
Heat Rejection Range	5 - 12 Kw
Connection Size	$1^5/_{16}$" UNO
Max. working pressure	500 psi



For this cooler in a complete package with fan and motor assembly, see data sheets on part numbers ST30A-DC, ST30A-AC and ST30A-HYD in this catalogue.

Heat rejection in kW per ˚C temperature difference between oil entering the cooler and ambient air



Example: With an oil flow at 100 l/min, oil temperature in at 80˚C and ambient air at 40˚C, with 6m/s of cooling air, from the graph the cooler will dissipate approximately 0.2kW/˚C which gives a heat dissipation of:

0.2kW/˚C x (80-40) = 8kW

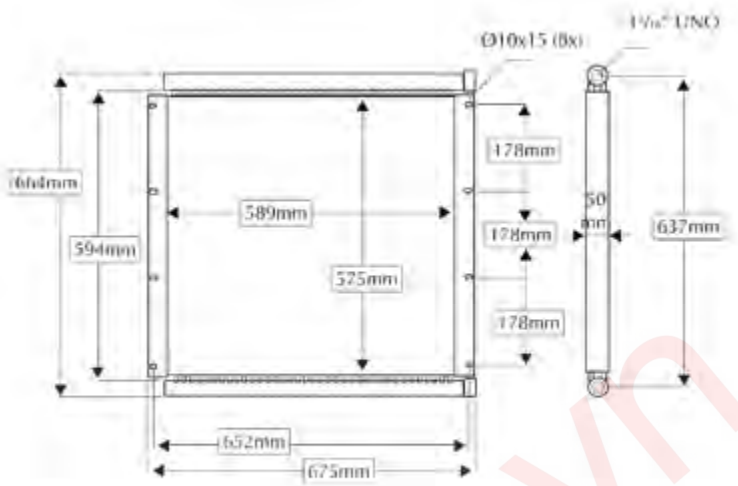
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STEEL OIL COOLERS

PART No ST 50

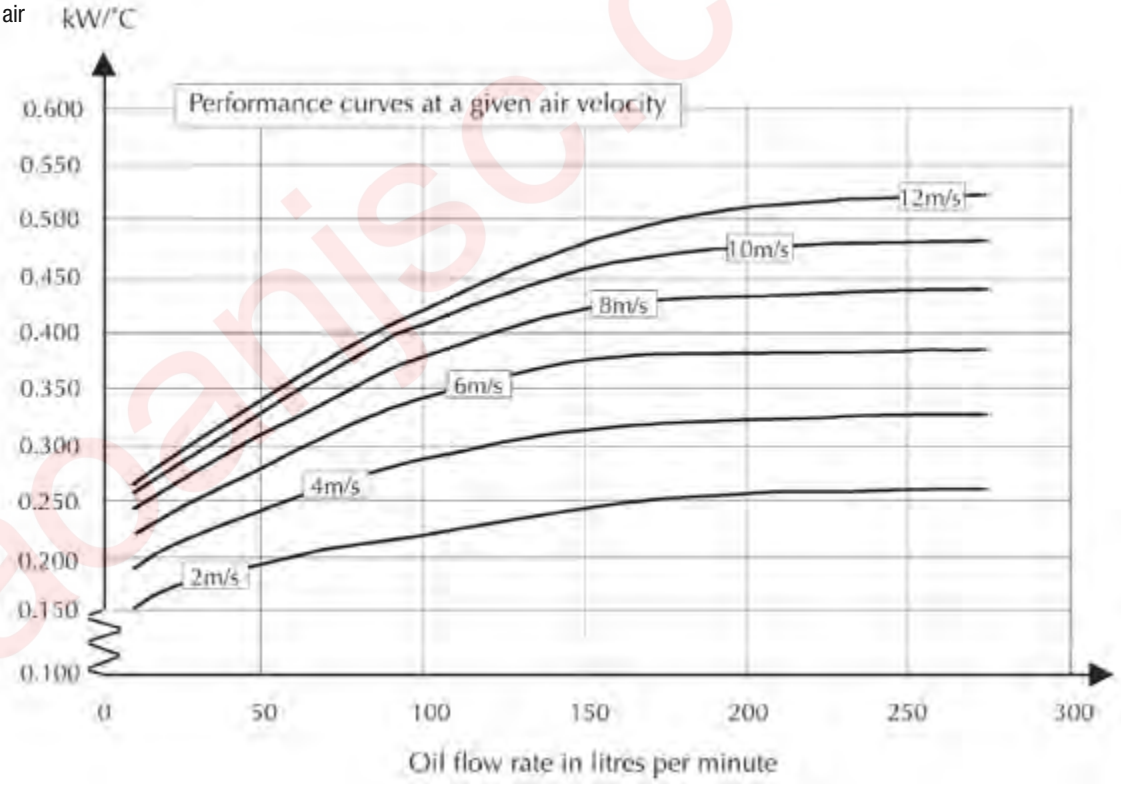
- Heavy Duty • All Steel • Maximum Strength
- High Heat Transfer • Easy to Clean
- Tested to 1500 psi
- Can be packaged with fan and motor

Oil Flow Rate Range	50 - 250 L/Min
Weight	24 Kg
Heat Rejection Range	10 - 25 Kw
Connection Size	$1^{5}/_{16}$" UNO
Max. working pressure	500 psi



For this cooler in a complete package with fan and motor assembly, see data sheets on part numbers ST10A-AC, ST50-DC, ST50-AC and ST50-HYD in this catalogue.

Heat rejection in kW per ˚C temperature difference between oil entering the cooler and ambient air



Example: With an oil flow at 150 l/min, oil temperature in at 80˚C and ambient air at 40˚C, with 6m/s of cooling air, from the graph the cooler will dissipate approximately 0.38kW/˚C which gives a heat dissipation of:

0.38kW/˚C x (80-40) = 15.2kW

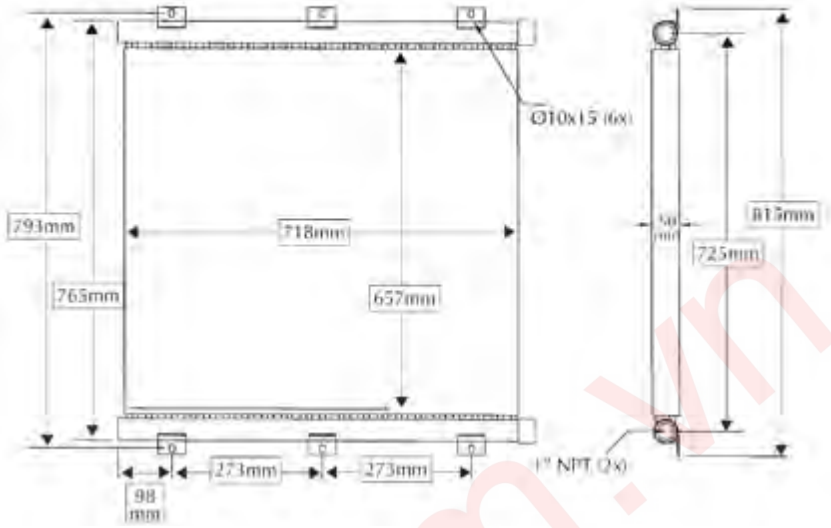
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STEEL OIL COOLERS

PART No ST 80

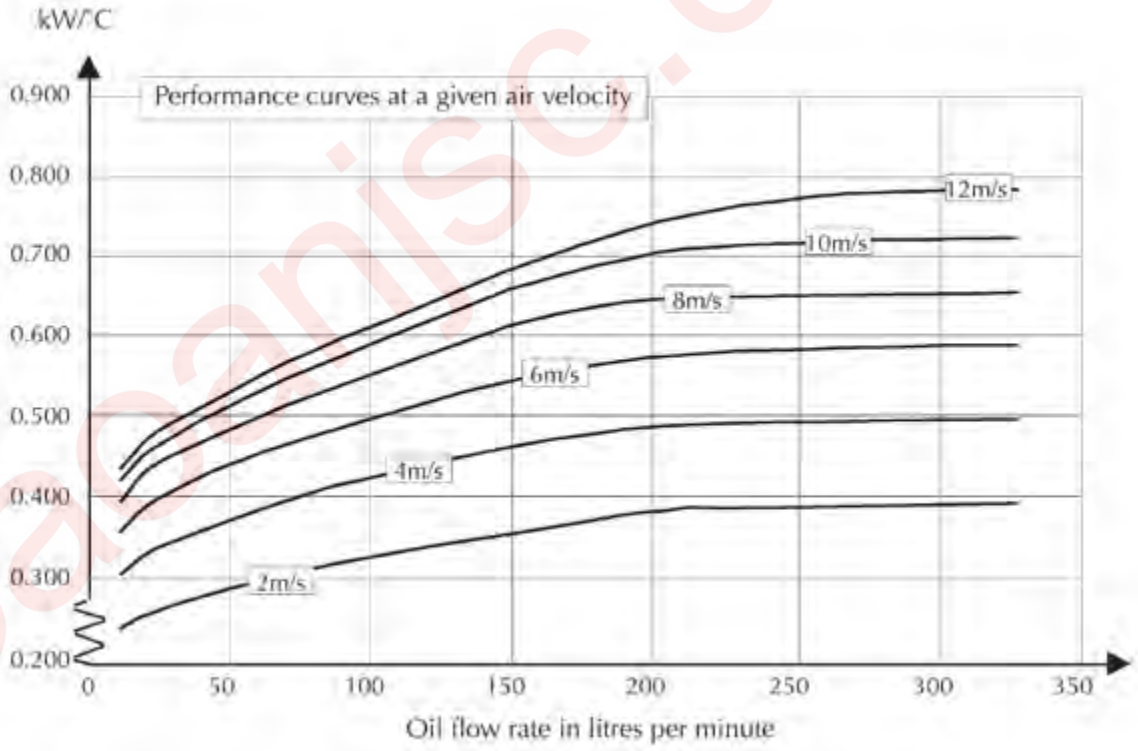
- Heavy Duty • All Steel • Maximum Strength
- High Heat Transfer • Easy to Clean
- Tested to 1500 psi
- Can be packaged with fan and motor

Oil Flow Rate Range	115 - 300 L/Min
Weight	32 Kg
Heat Rejection Range	20 - 35 Kw
Connection Size	1" NPT
Max. working pressure	500 psi



For this cooler in a complete package with fan and motor assembly, see data sheets on part numbers ST70-AC, ST70-HYD, ST80-AC and ST80-HYD in this catalogue.

Heat rejection in kW per ˚C temperature difference between oil entering the cooler and ambient air

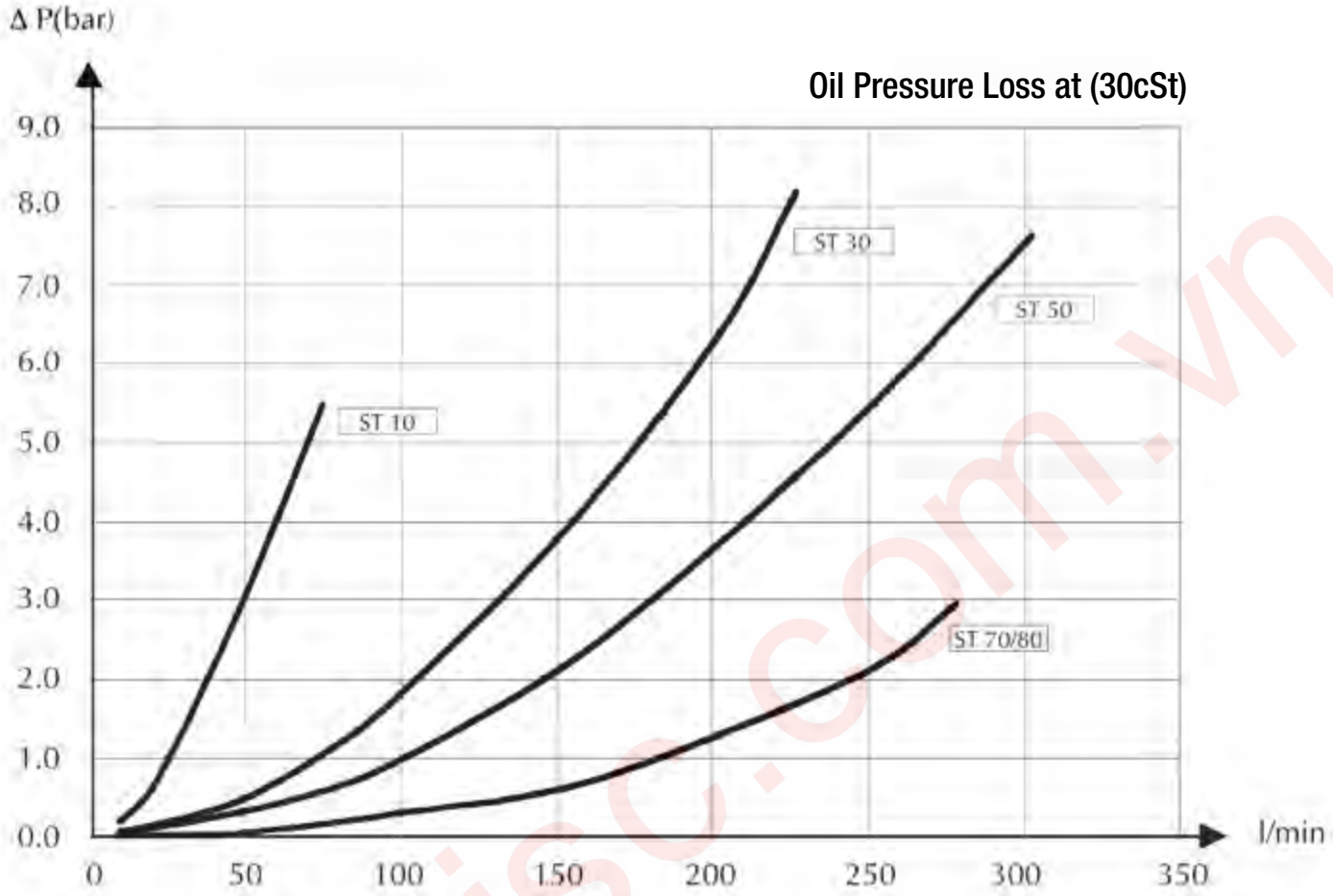


Example: With an oil flow at 200 l/min, oil temperature in at 80˚C and ambient air at 40˚C, with 6m/s of cooling air, from the graph the cooler will dissipate approximately 0.57kW/˚C which gives a heat dissipation of:

0.57kW/˚C x (80-40) = 22.8kW

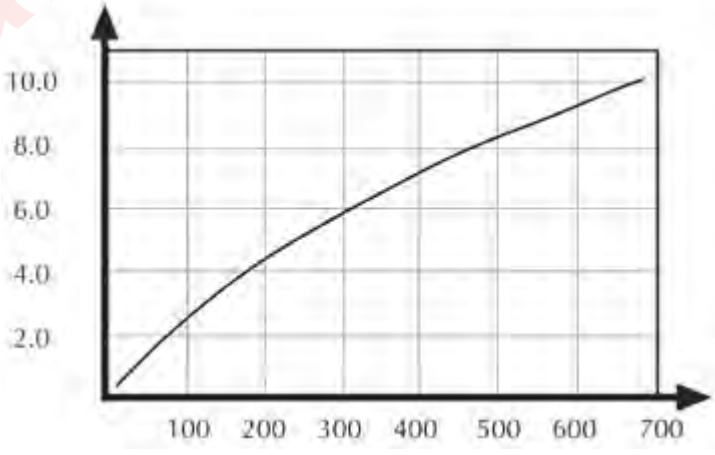
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STEEL COOLERS PRESSURE LOSS CHARTS
Models ST 10 - 80



Viscosity Correction Chart

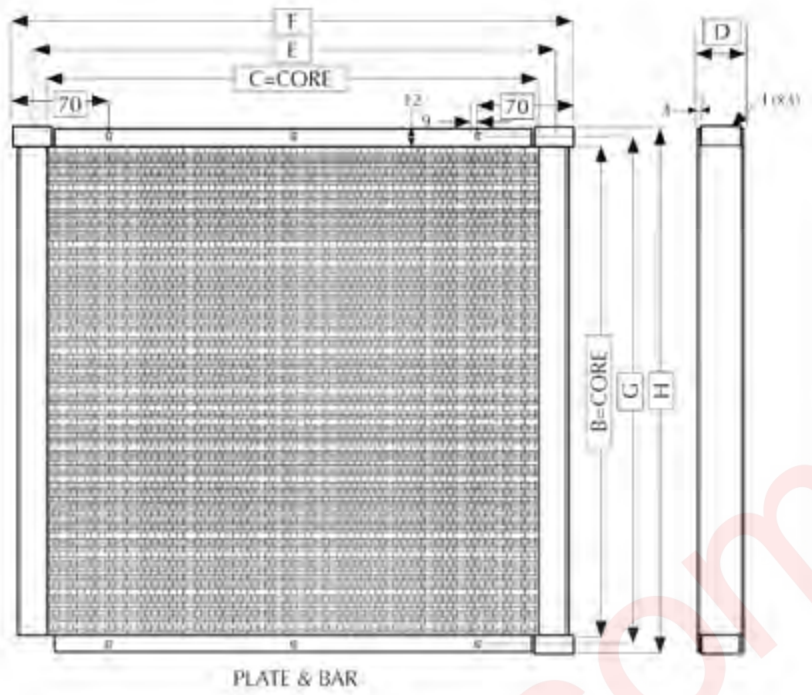
Multiply result from Pressure Loss Chart by this factor



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ALLIED HEAT TRANSFER

HIGH EFFICIENCY ALUMINIUM COOLERS



MODEL No MAX OIL FLOW (lit/min)	No1 120	No2 150	No3 150	No4 150	No5 250	No6 250	No7 230	No8 300	No9 330	No10 400	No11 470

TYPICAL PERFORMANCE

Heat removed	kW	5.5	7.1	9.9	13.7	16.0	20.4	24.5	34.0	42.1	49.8	60.2
Oil flow	l/min	18	23	30	33	38	45	54	64	78	90	108
Oil temperature (inlet)	˚C	90	90	90	90	90	90	90	90	90	90	90
Cooling air flow	kg/h	1100	1550	2600	3800	3300	4180	4870	5600	6750	7900	9650
Max. static pressure drop	Pa	100	100	170	170	170	170	170	220	220	220	220
Ambient temperature	˚C	40	40	40	40	40	40	40	40	40	40	40
Test/max. working pressure	bar	18/13	18/13	18/13	18/13	18/13	18/13	18/13	15/10	15/10	15/10	15/10

DIMENSIONS

B	mm	264	336	293	379	393	450	436	382	454	539	639
C	mm	248	248	348	398	398	448	548	612	612	612	612
D	mm	50	50	50	50	63	63	63	94	94	94	94
E	mm	289	289	389	439	439	489	589	659	659	659	659
F	mm	334	334	434	484	492	542	642	737	737	737	737
G	mm	289	361	318	404	418	475	461	407	479	564	664
H	mm	314	386	343	429	443	500	486	432	504	589	689
I	G"	1/2	1/2	1/2	1/2	3/4	3/4	3/4	1	1	1	1

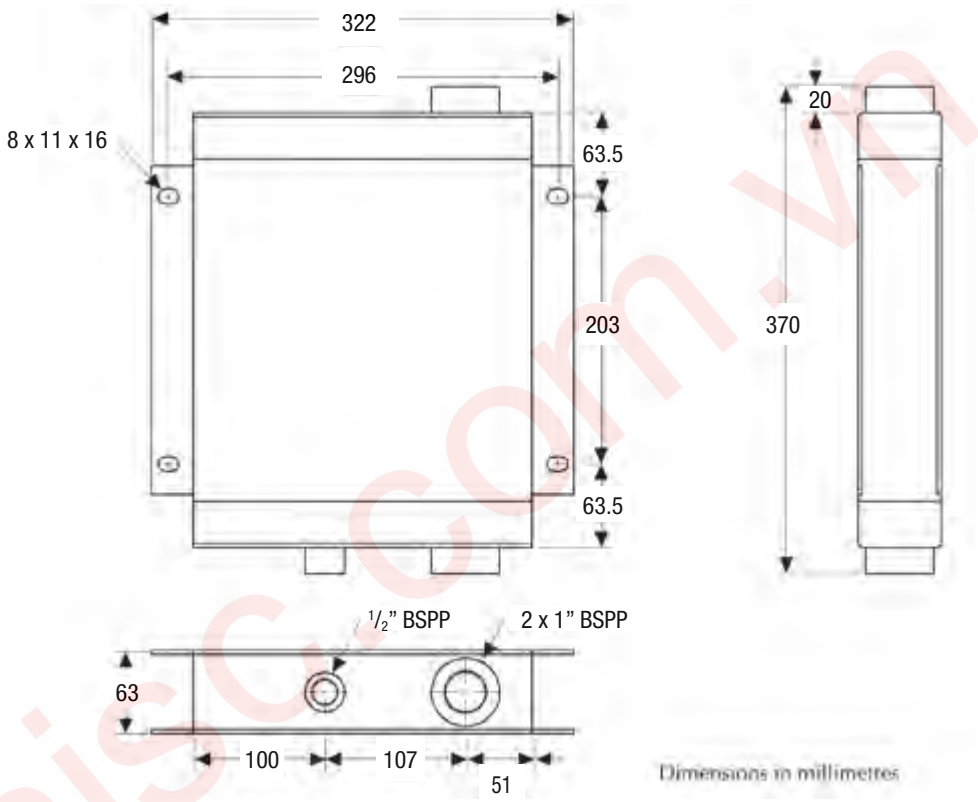
Oil pressure loss through the coolers at maximum flow rates @ oil viscosity of 30 cSt = 3 bar

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REPLACEMENT OIL COOLERS

PART No: AHTI 19

THE HEAVY DUTY VERSION
TESTED OVER 300psi



- A one piece brazed aluminium cooler
- Very high efficiency
- Superior corrosion resistance
- Improved working pressure rating to 250 psi
- Rugged and durable

PORTS BSPP	**AREA** m^2	**Volume** litres
1"	.065	1.17

The cooler brazing process takes place in a temperature controlled nitrogen atmosphere furnace. Coolers brazed using this new fluxless system do not require any flushing or post-brazing treatment and do not suffer from internal flux corrosion.

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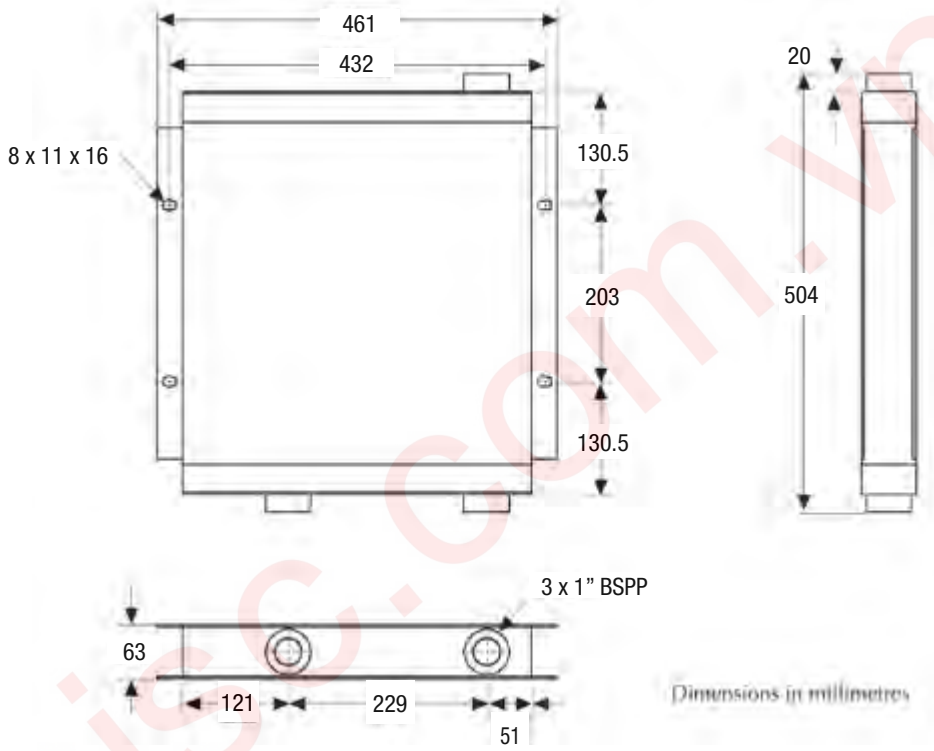
ALLIED HEAT TRANSFER

REPLACEMENT OIL COOLERS

PART No: AHTI 20

THE HEAVY DUTY VERSION
TESTED OVER 300psi

- A one piece brazed aluminium cooler
- Very high efficiency
- Superior corrosion resistance
- Improved working pressure rating to 250 psi
- Rugged and durable



PORTS BSPP	**AREA** m^2	**Volume** litres
1"	.155	2.16

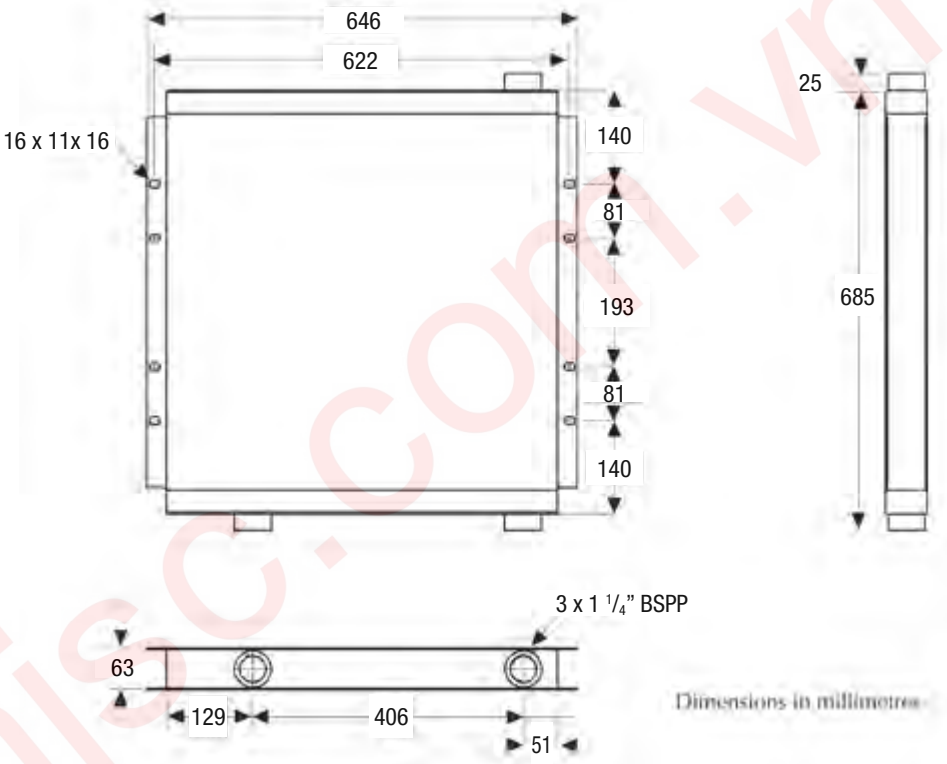
The cooler brazing process takes place in a temperature controlled nitrogen atmosphere furnace. Coolers brazed using this new fluxless system do not require any flushing or post-brazing treatment and do not suffer from internal flux corrosion.

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REPLACEMENT OIL COOLERS

PART No: AHTI 21

THE HEAVY DUTY VERSION
TESTED OVER 300psi



- A one piece brazed aluminium cooler
- Very high efficiency
- Superior corrosion resistance
- Improved working pressure rating to 250 psi
- Rugged and durable

PORTS BSPP	**AREA** m^2	**Volume** litres
$1^1/_4$"	.329	3.82

The cooler brazing process takes place in a temperature controlled nitrogen atmosphere furnace. Coolers brazed using this new fluxless system do not require any flushing or post-brazing treatment and do not suffer from internal flux corrosion.

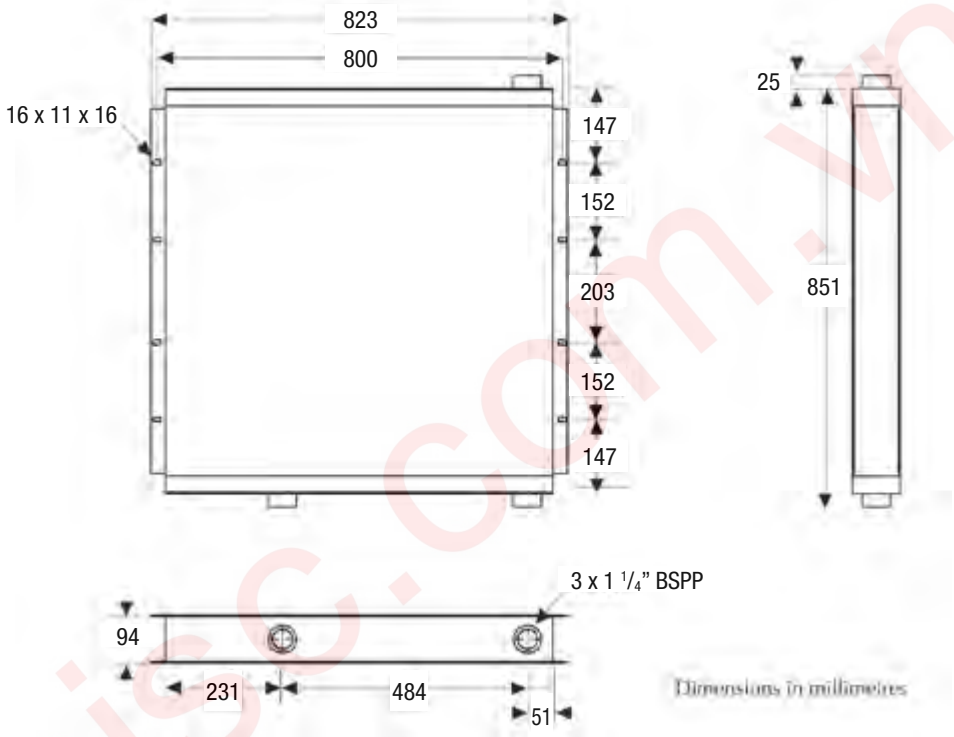
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REPLACEMENT OIL COOLERS

PART No: AHTI 22

THE HEAVY DUTY VERSION
TESTED OVER 300psi

- A one piece brazed aluminium cooler
- Very high efficiency
- Superior corrosion resistance
- Improved working pressure rating to 250 psi
- Rugged and durable



PORTS BSPP	**AREA** m^2	**Volume** litres
$1^1/_4$"	.560	5.80

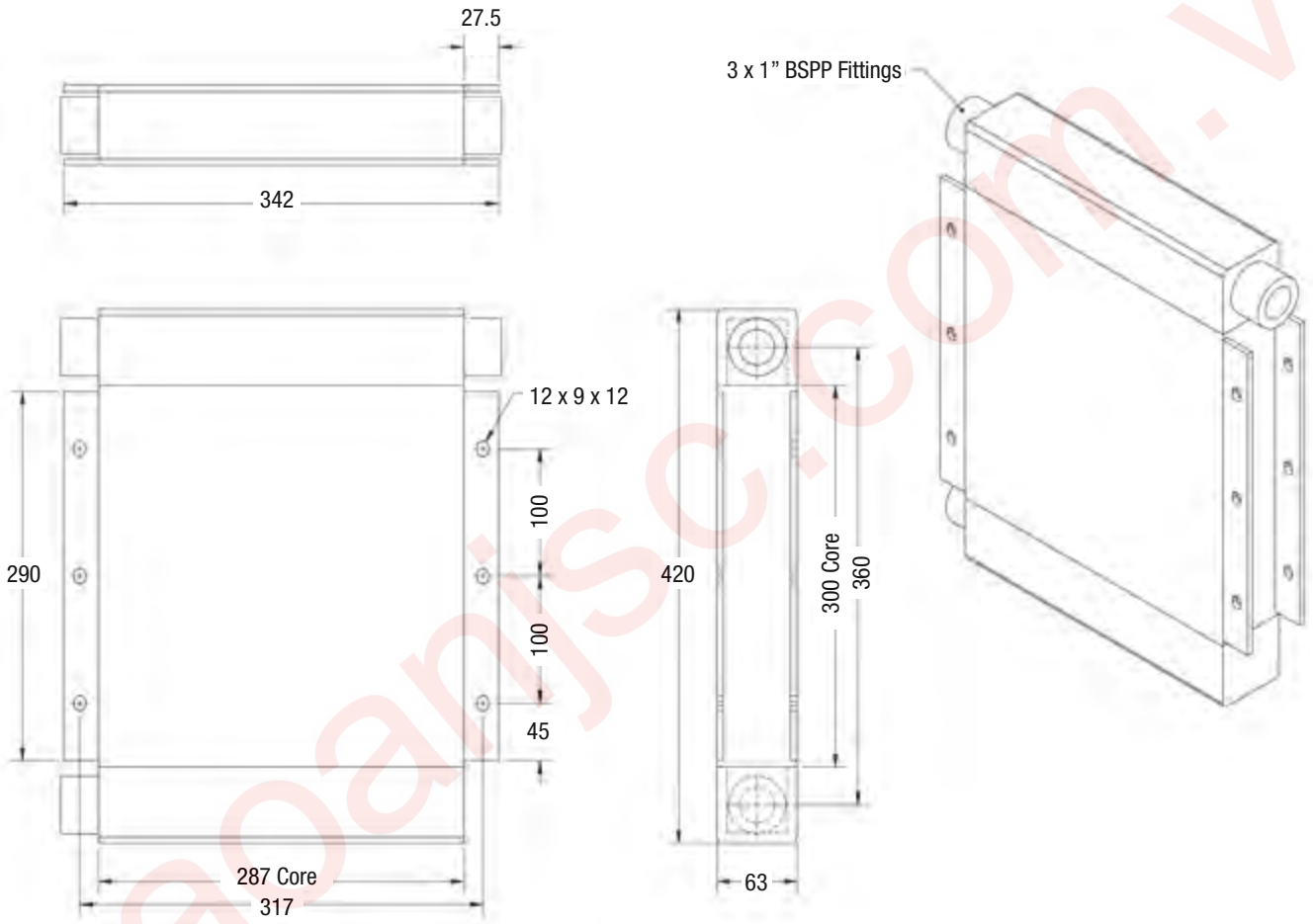
The cooler brazing process takes place in a temperature controlled nitrogen atmosphere furnace. Coolers brazed using this new fluxless system do not require any flushing or post-brazing treatment and do not suffer from internal flux corrosion.

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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 10

- All aluminium construction

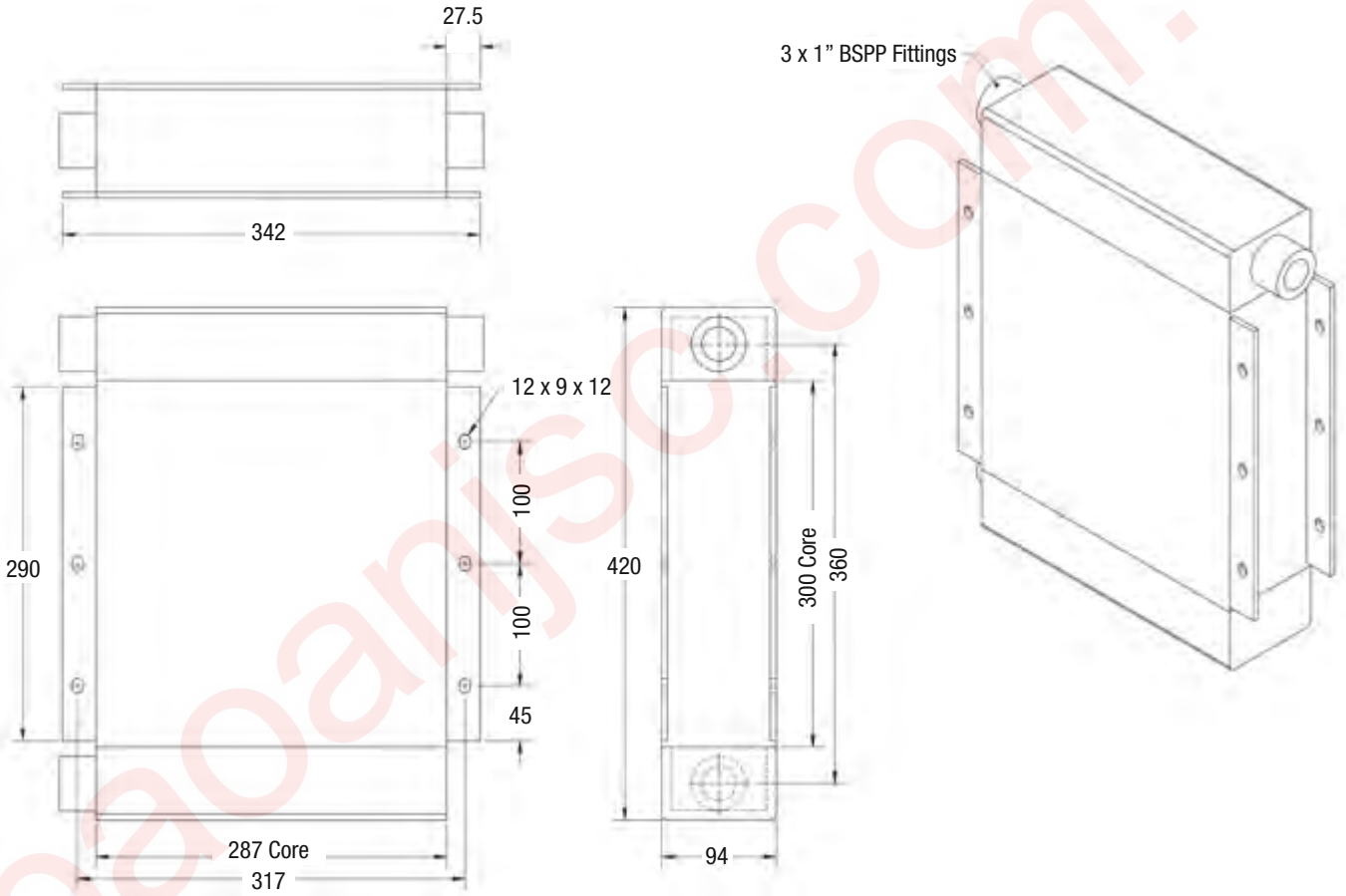


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 20

- All aluminium construction

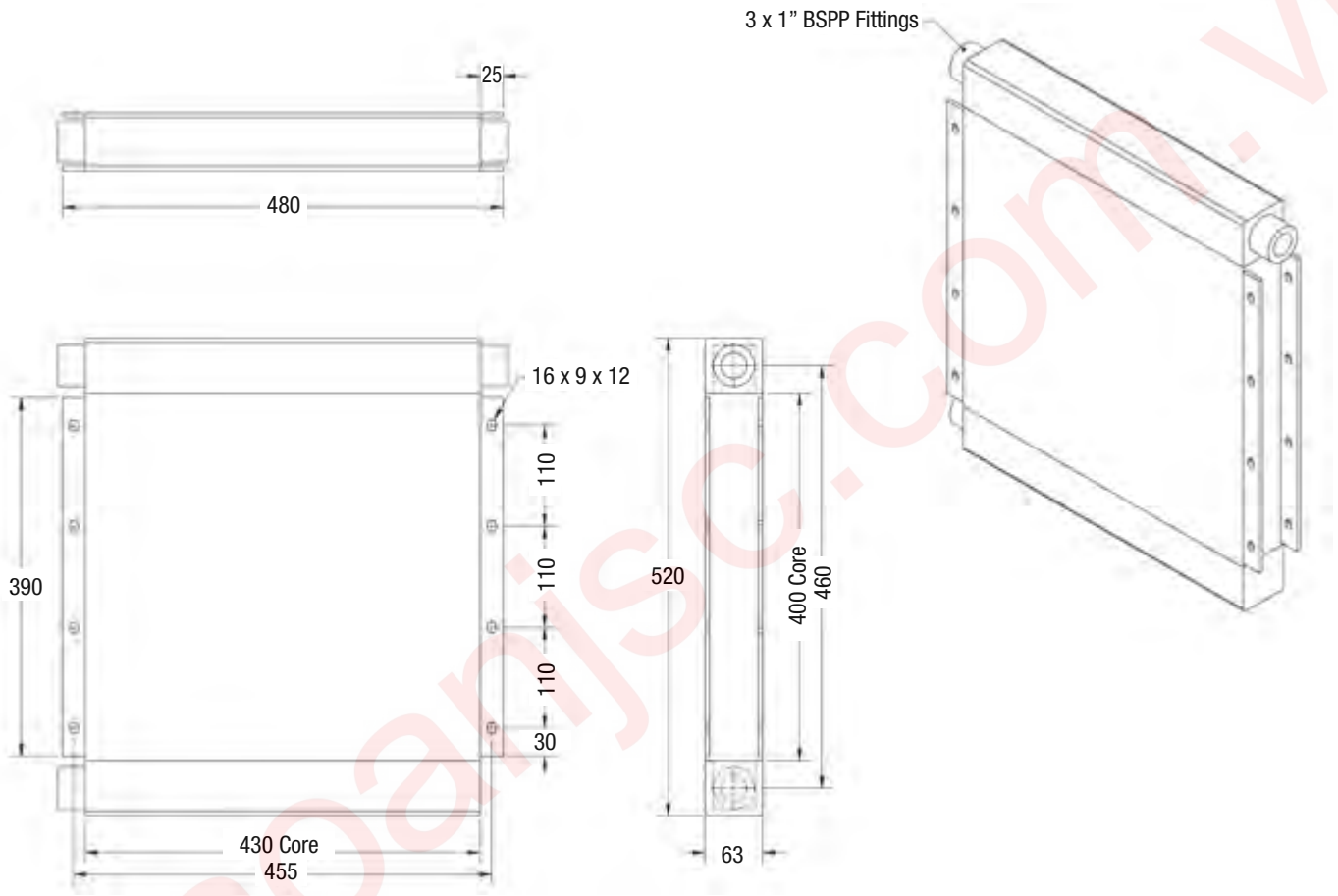


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 30

- All aluminium construction

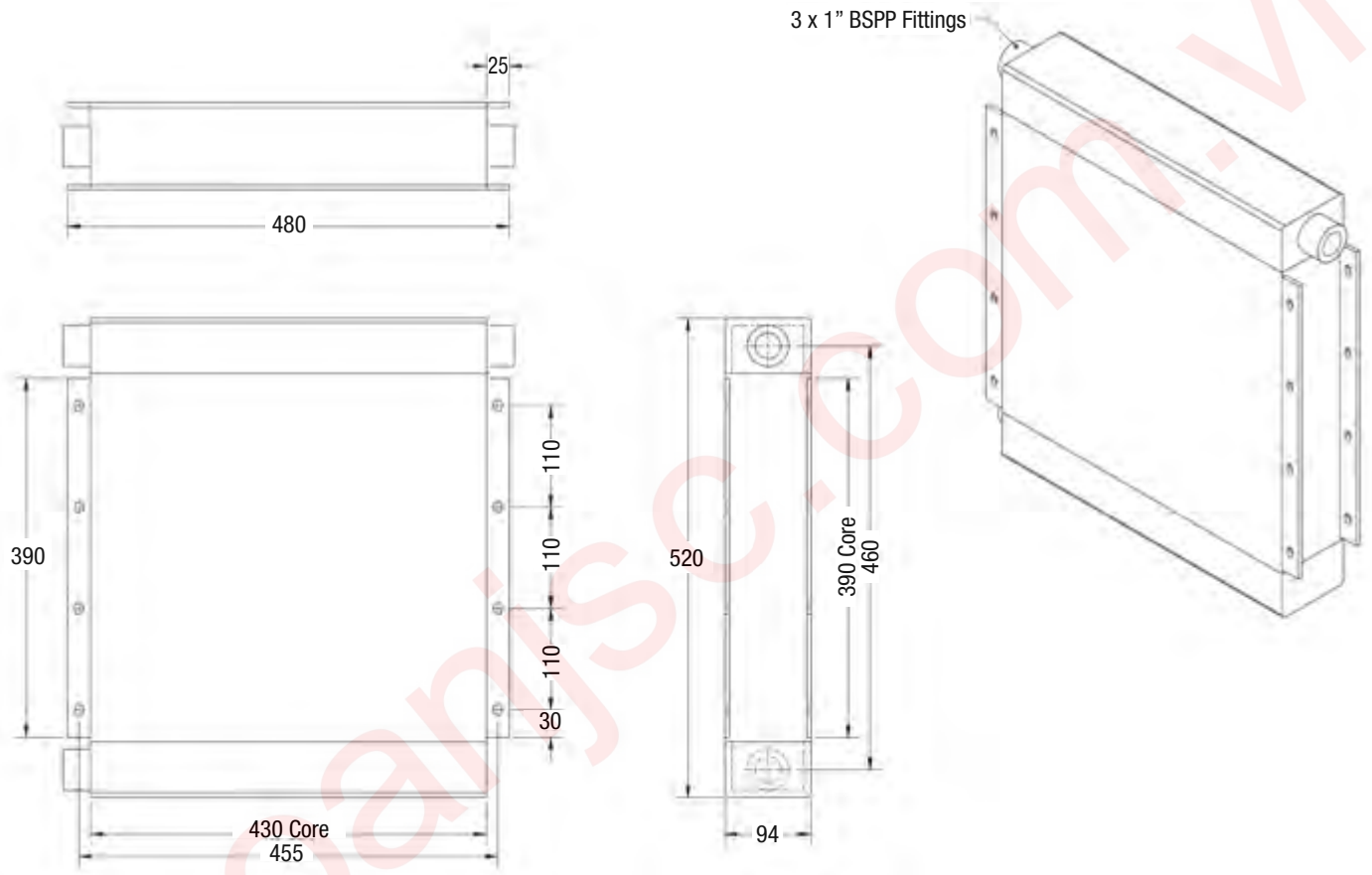


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 40

- All aluminium construction

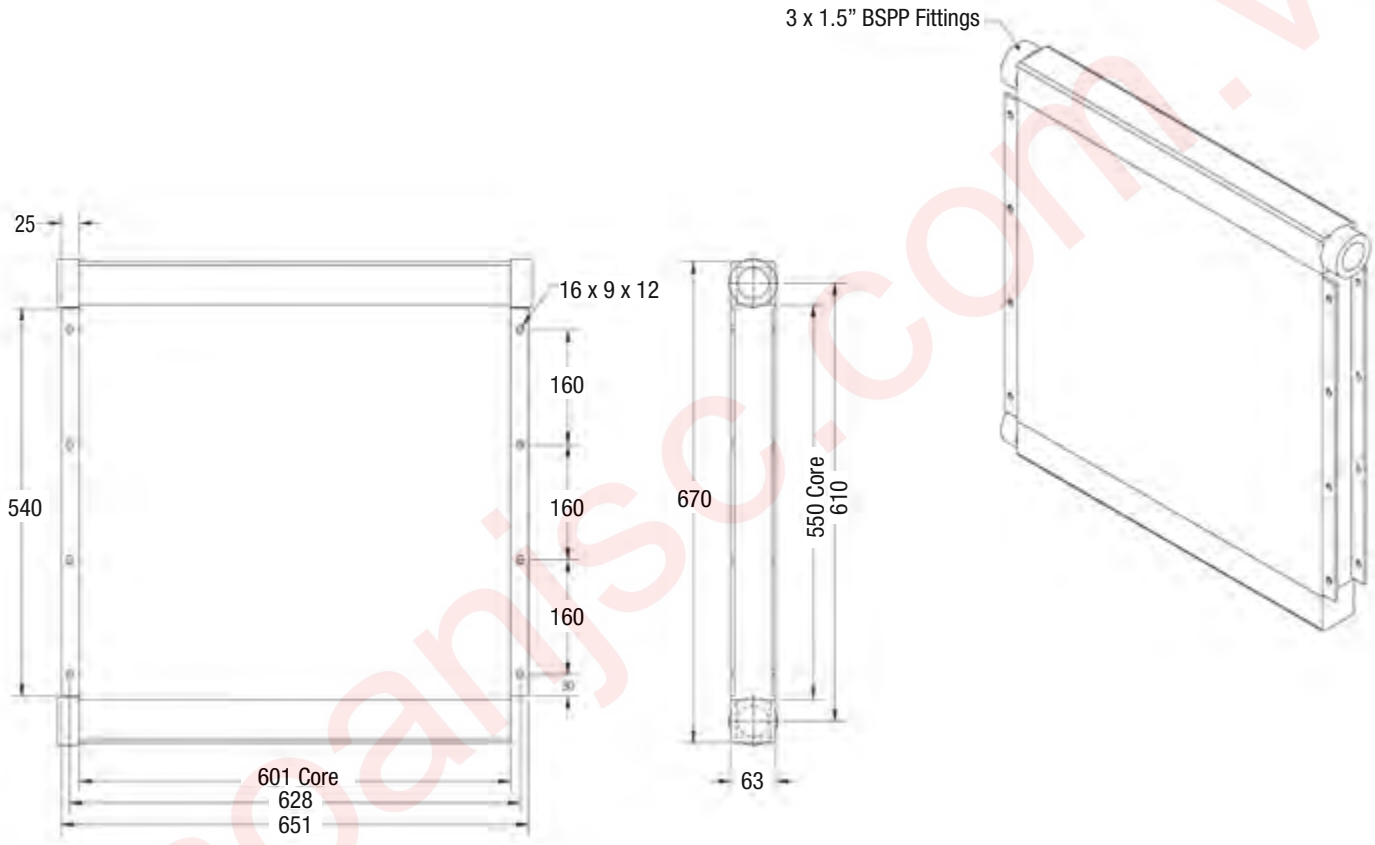


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 50

- All aluminium construction

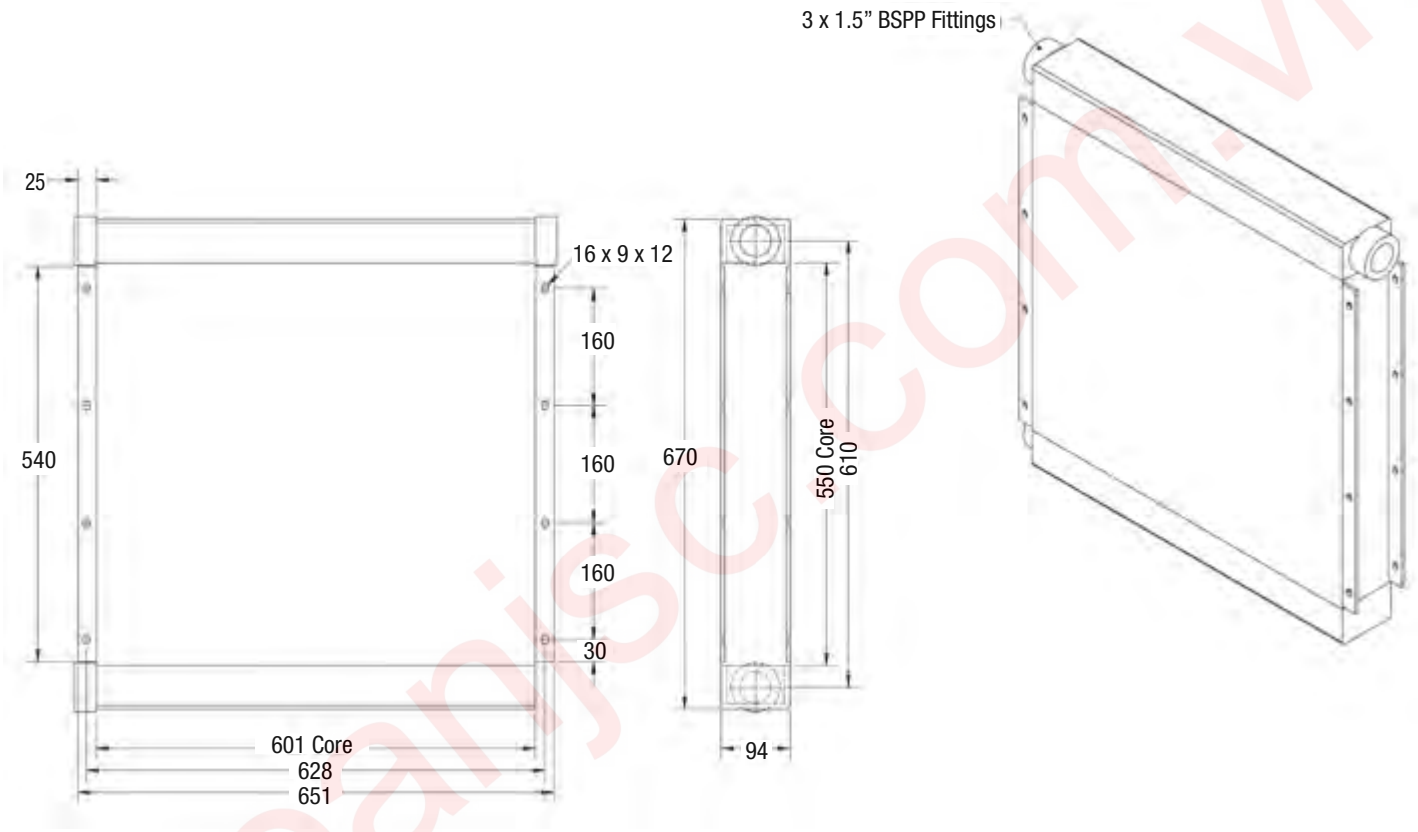


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 60

- All aluminium construction

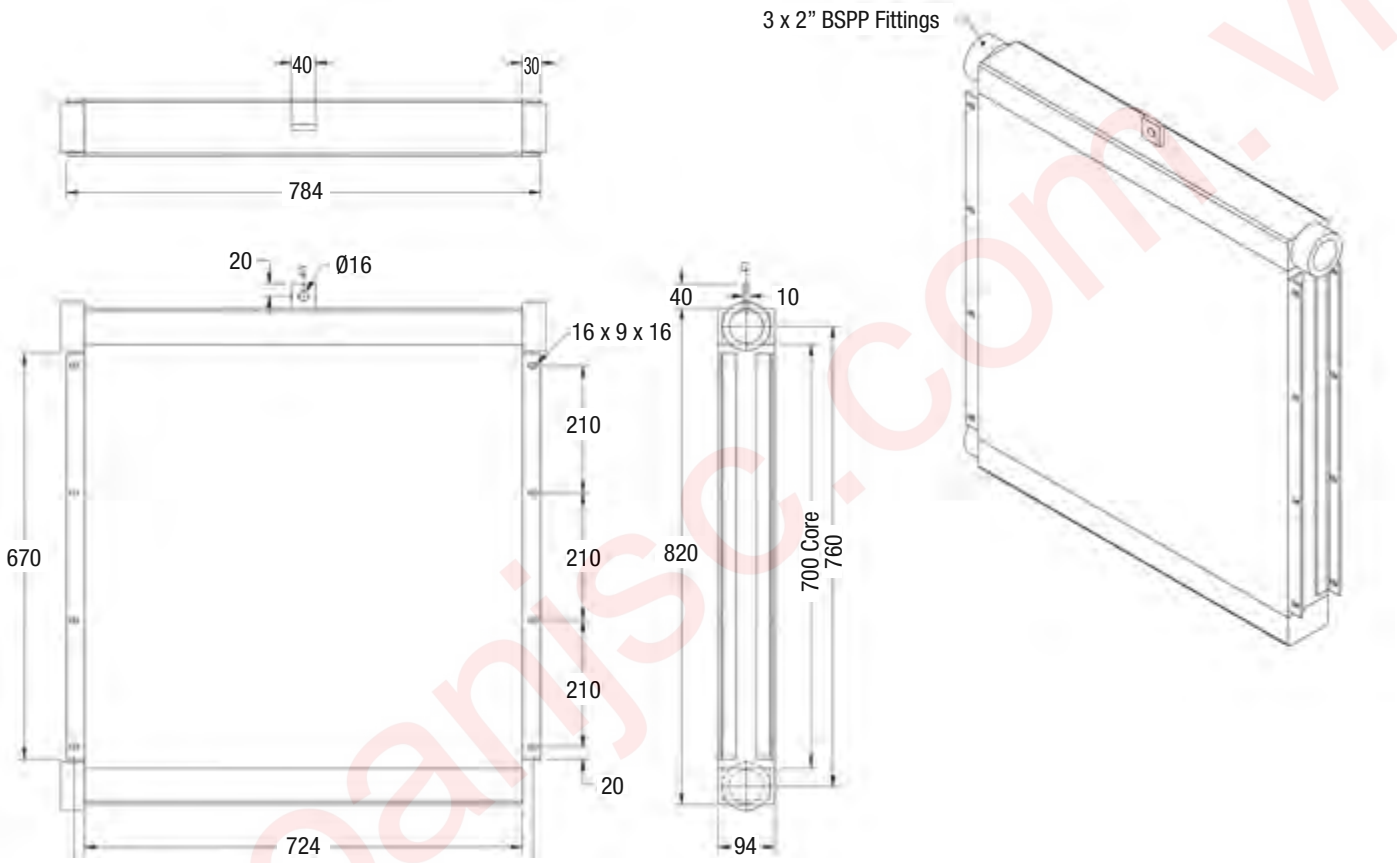


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 70

- All aluminium construction



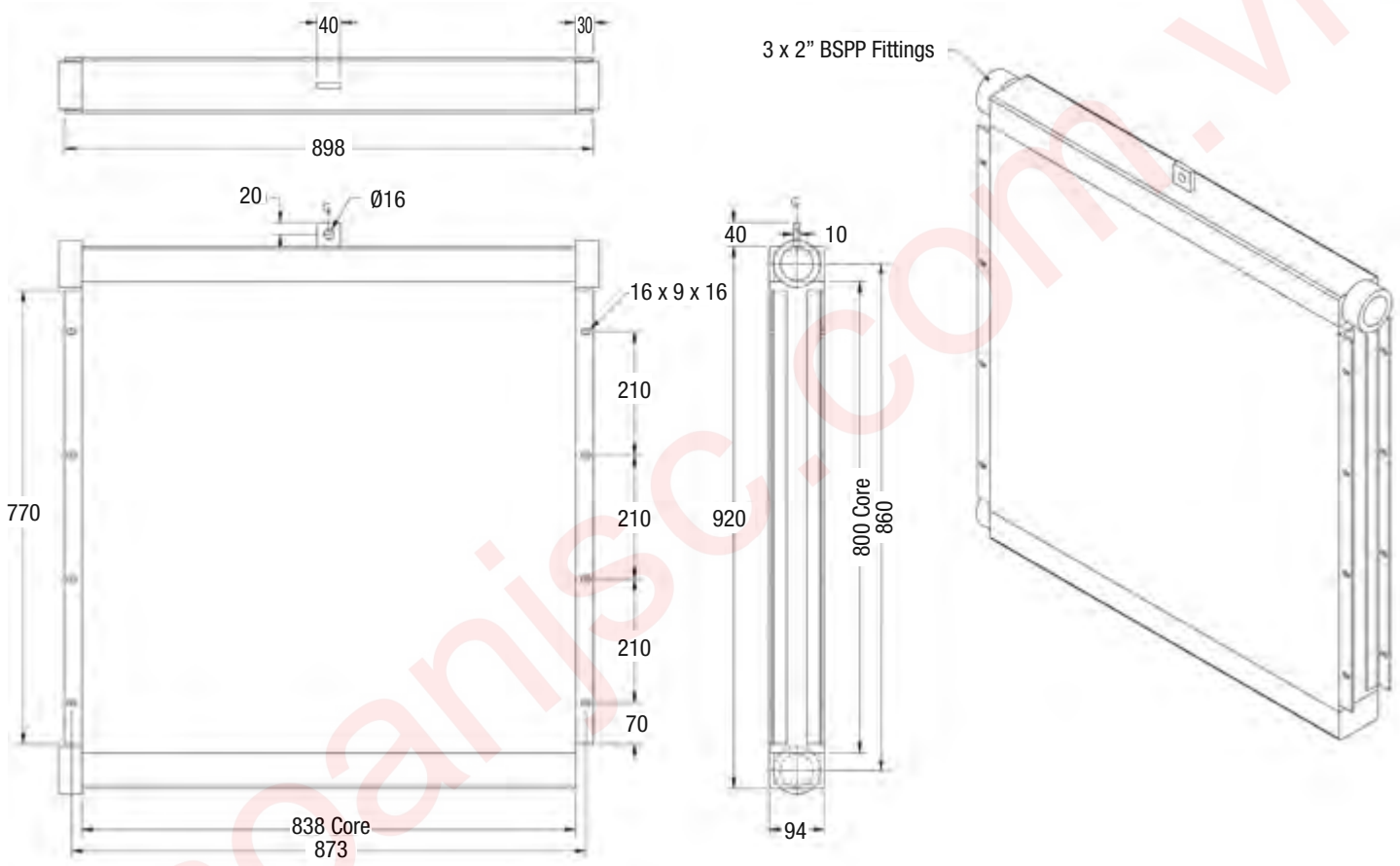
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ALLIED HEAT TRANSFER

HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 80

- All aluminium construction



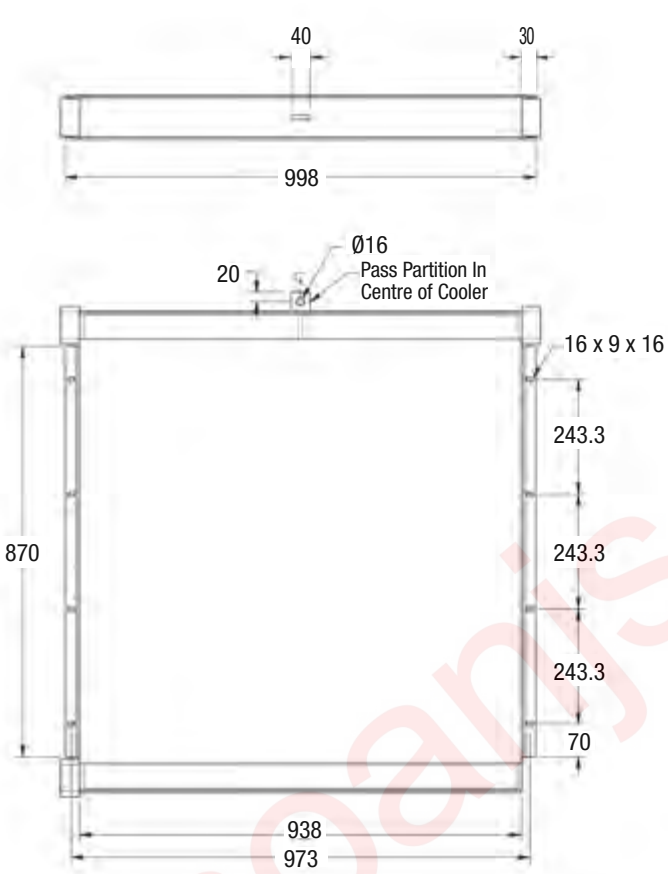
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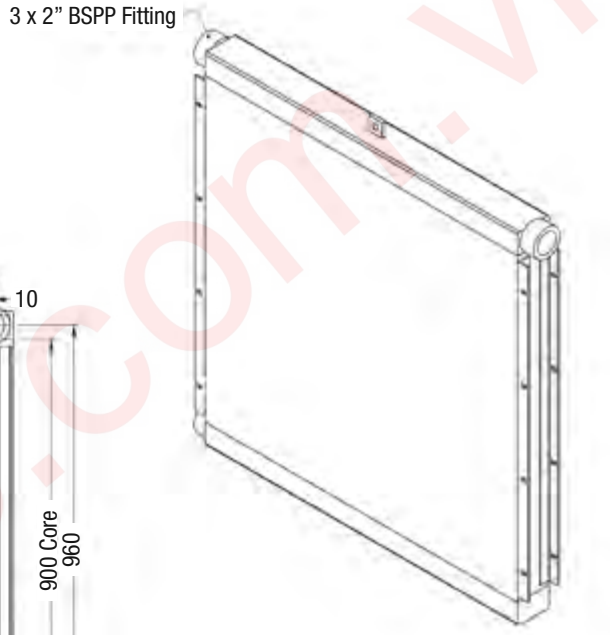
HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 90

- All aluminium construction





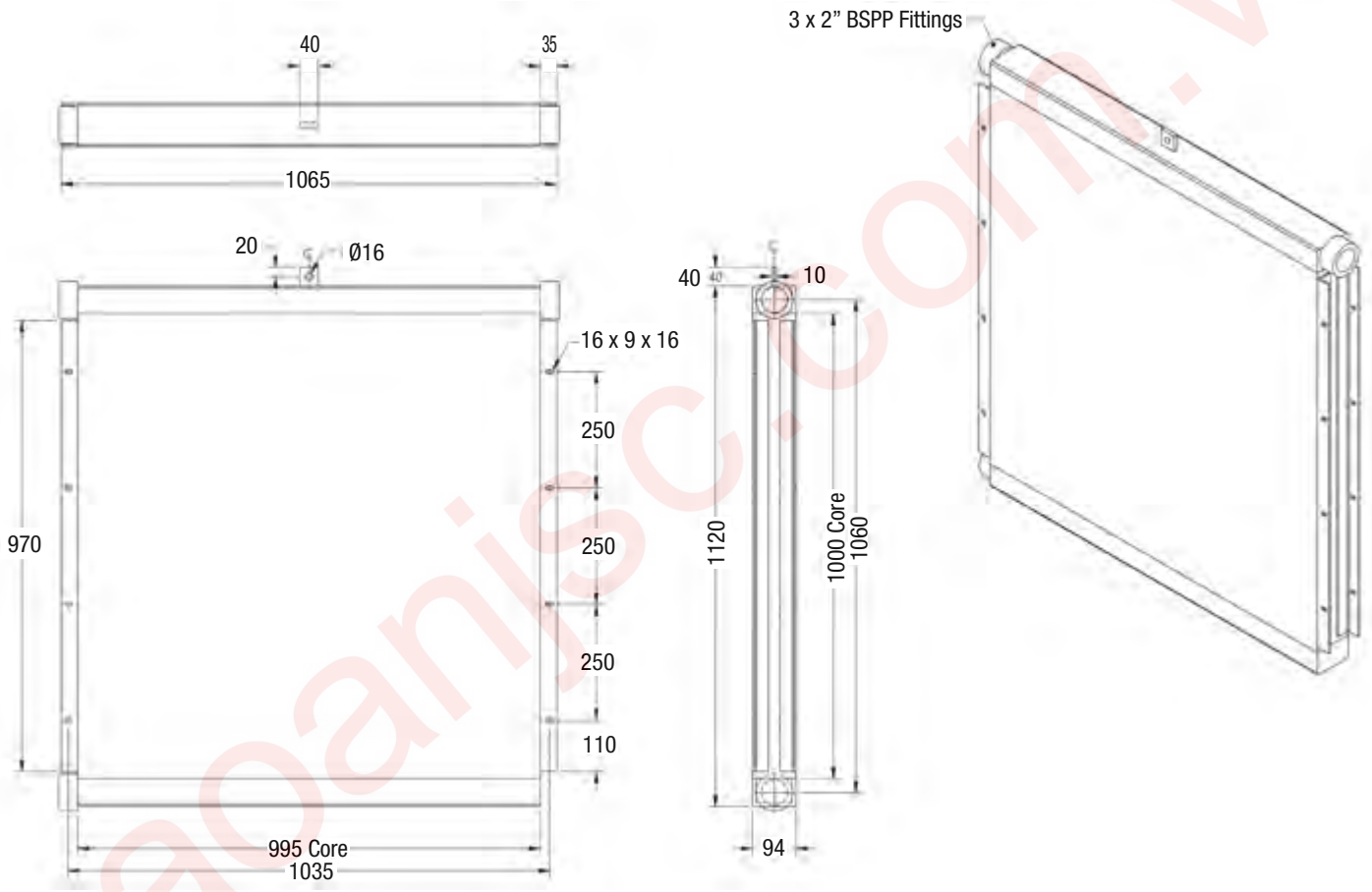


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 100

- All aluminium construction

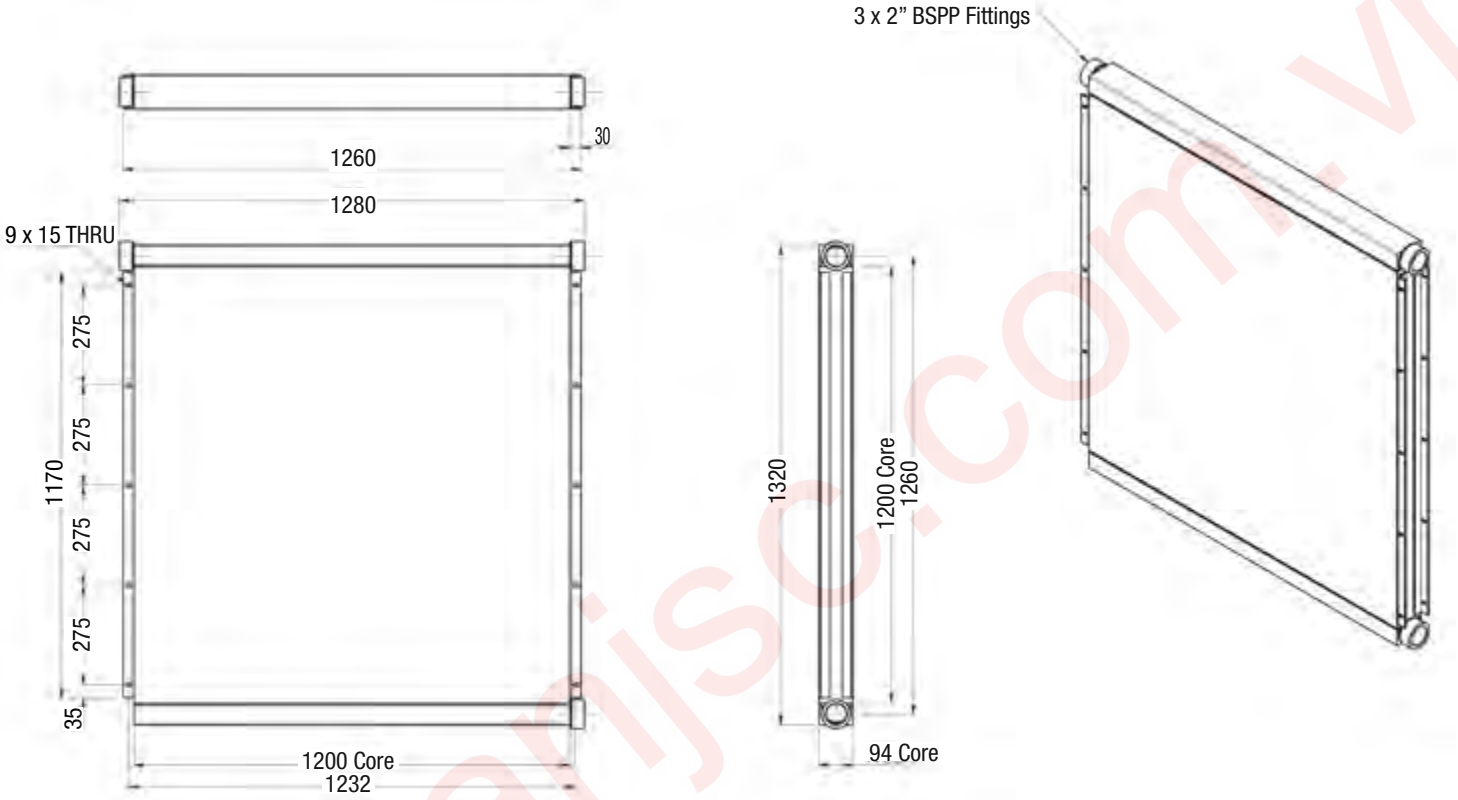


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HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 120

- All aluminium construction



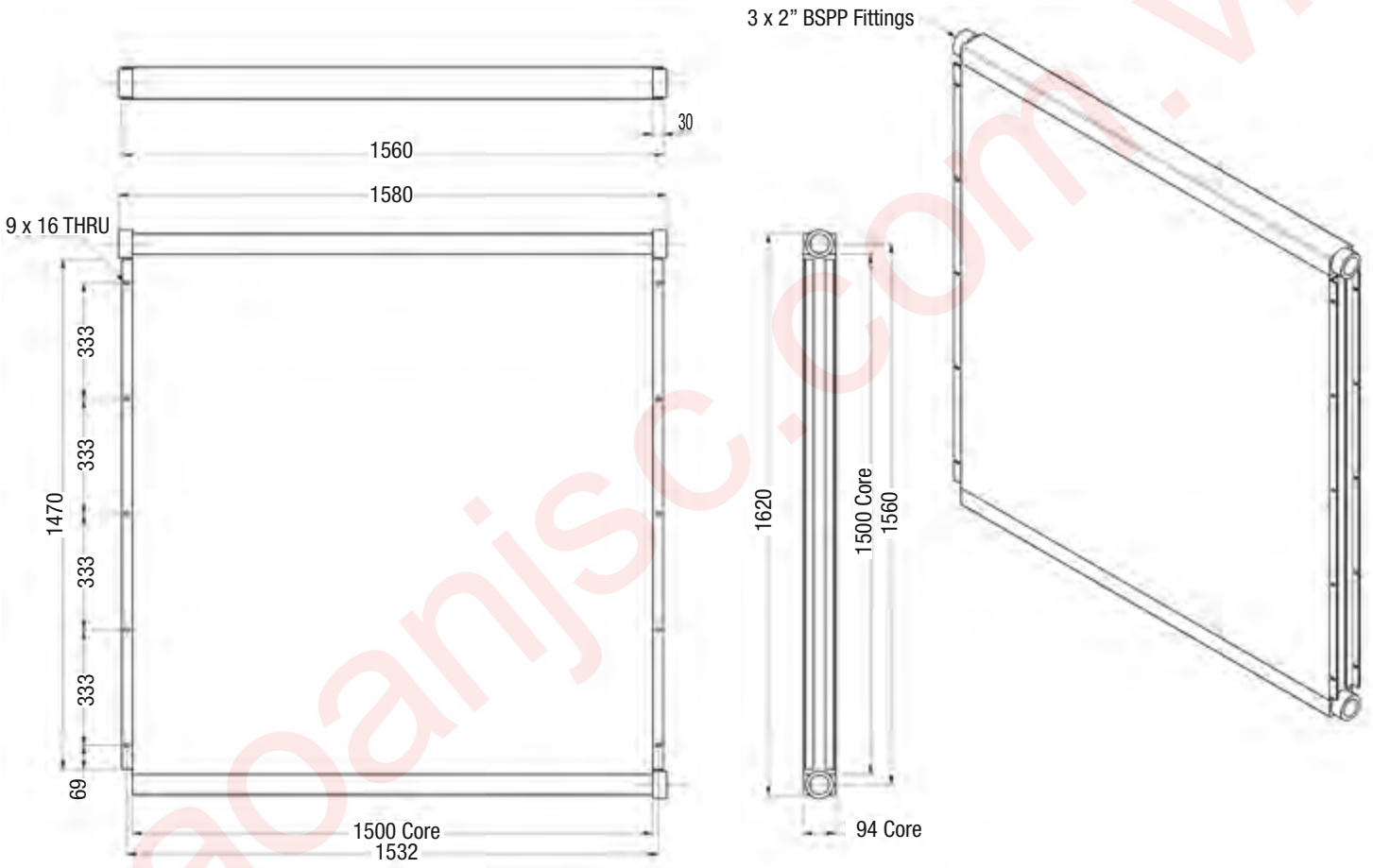
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ALLIED HEAT TRANSFER

HP HEAVY DUTY ALUMINIUM OIL COOLERS

PART No HP 150

- All aluminium construction



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SECTION D - Custom Coolers

How to size your custom air cooled cooler D1

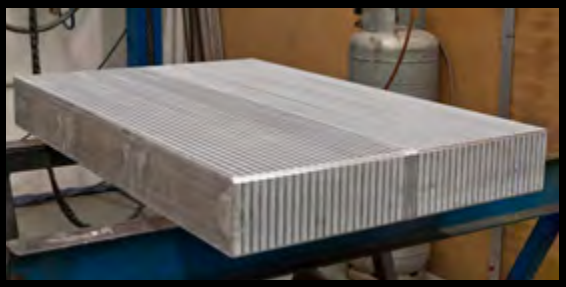
In this catalogue we have included most of the popular coolers which we keep in stock ready to ship however there are more available so if you can't find it in these pages then contact us and we will search our entire range until we come up with a solution for you.

Important to remember that Allied Heat Transfer are not just a supplier of Oil Coolers, we are the designers and manufacturers, we provide coolers and cooling systems from small to very large, for individuals to companies of all sizes.

When you contact us you are **dealing direct with the manufacturer**.

If we do not have your oil cooler already made for you then we will make it for you.

The following is a guide on how to size your custom cooler so that we can offer you a prompt quotation.















ALLIED HEAT TRANSFER

HOW TO SIZE YOUR CUSTOM COOLER

A Information needed to size oil coolers based on cooling requirements

The oil type & viscosity ?	Max pressure loss through the oil cooler that you can accept ?
The oil flow ?	What will the max oil pressure in the cooler be ?
Amount of heat to be removed from the oil ?	The cooling air temp entering the cooler ?
Max oil temp your system can accommodate ?	Fan motor type: Hydraulic, 1 or 3 phase, 12 or 24v

B Dimensions required for Lile for Like replacement

Overall dimensions

H Height

W Width

D Depth

Core Dimensions

HC Height (length of tubes)

WC Width (over tubes)

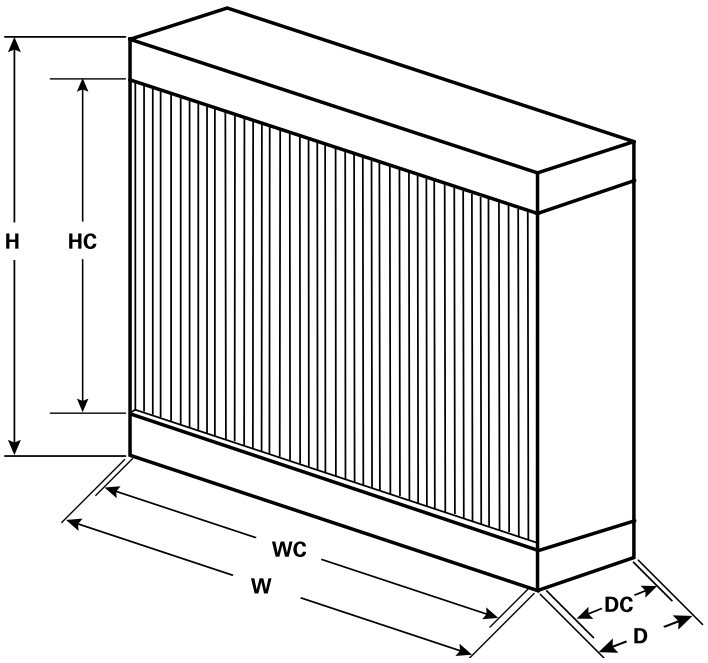
DC Depth (thickness of core)

How many connections on the cooler

Are the connections flanged or threaded

What is the operating pressure

OEM part number



This information will enable us to provide you with a quotation to replace your existing cooler.

Prior to manufacture we will produce fabrication drawings to ensure the replacement fits exactly in place.

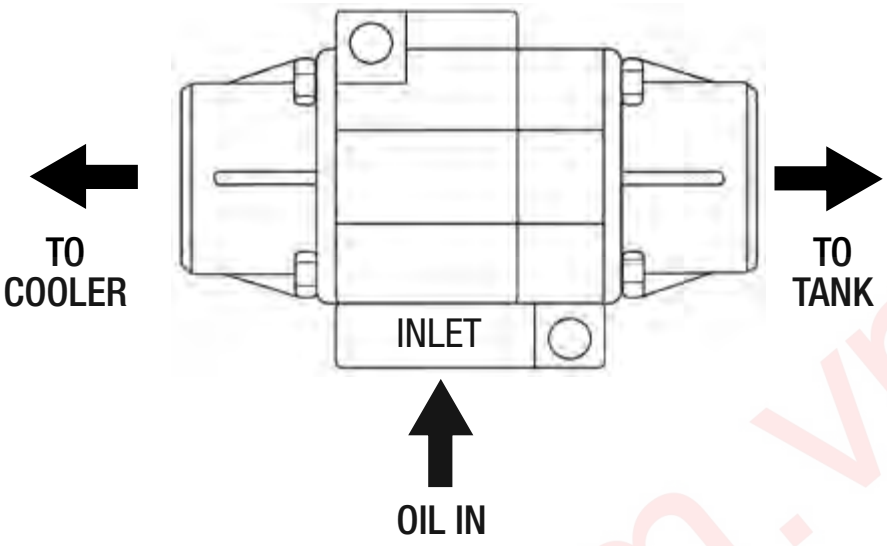
BACK TO INDEX

SECTION E - Accessories

Thermal by-pass Valves..... E1
Cooling Fans..... E2
Thermostatic Fan Controls E3
12/24 Volt Fans ..... E4 - E6

THERMAL BY-PASS VALVE DATA SHEET

- Diverts oil flow from cooler to reservoir.
- Built-in automatic pressure relief.
- Ideal for hydrostatic drive circuits due to fast warm-up, controlled fluid temperatures and low return line back pressure.
- Maximum flow 225 L/m



Dimensions mm	138L x 90H x 67TH
Connection sizes	16 SAE O RING 1 5/16" 12 UN-2B

These thermal by-pass values are temperature responsive to modulate return oil flow between the oil reservoir and the oil cooler. Oil is diverted to the reservoir until the shift temperature is reached, causing flow to begin to the cooler.

At the shift temperature plus 14˚C full oil flow is diverted to the cooler. An automatic built-in pressure value protects against excessive oil pressure.

PART NUMBER	START SHIFT TEMPERATURE *Valve opens diverting flow to cooler*	FULL SHIFT TEMPERATURE *Valve fully open diverting full flow to cooler*	PRESSURE RELEASE SETTING *Automatic diversion of oil to reservoir at*
1100-25	38°C	52°C	25psi
1100-50	38°C	52°C	50psi
1600-25	71°C	85°C	25psi
1600-50	71°C	85°C	50psi

Also available

- Pressure check valves
- Thermostatic Fan Switches
- Thermostatic pump controller
- Modulating Water Flow Valves
- Oil Coolers

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COOLING FANS

Existing Impeller Details

Diameter (mm)

Number of blades

Blade pitch angle

Blade materials

Application Details

Operating temp (°C)

Required airflow (L/s)

Static pressure (Pa)

ElectricMotor Mounting (if applicable)

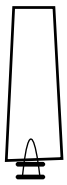
Power rating (kW)

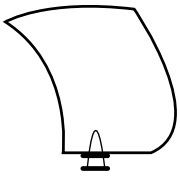
Motor speed (RPM)

Shaft size (mm)

Keyway size (mm)

Blade Profile

Airfoil ☐ 

Sickle ☐ 

Increasing Arc ☐ 

Airflow

☐ A (airflow away from motor)

☐ B (airflow back cover motor)

Blade Handedness

☐ Right handed blades (facing airflow, clockwise)

☐ Left handed blades (facing airflow, anti clockwise)

Flange Mounting (if applicable)

Locator / Spigot size (mm)

Number of bolt holes

Diameter of bolt holes (mm)

Pitch circle diameter (mm)



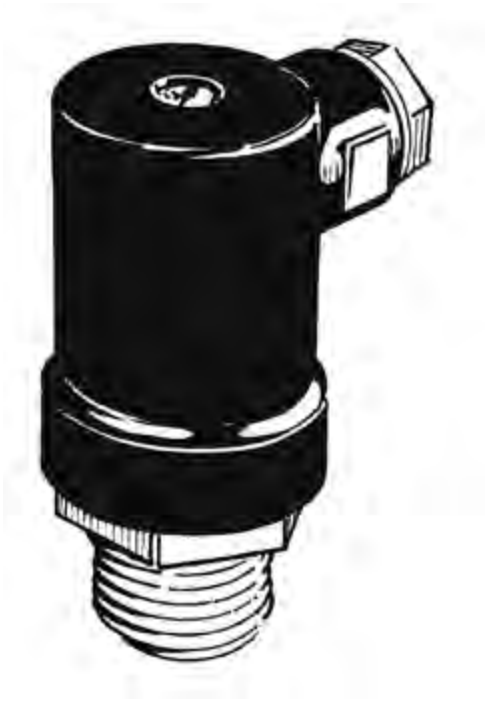




Additional notes

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THERMOSTATIC FAN CONTROL SWITCHES



These thermo-switches are used for the regulation of oil temperature on installations where oil coolers with electric fans are used.

The switch should be fitted to the oil tank. However it can be fitted to the oil cooler depending on the cooler model.

When the oil temperature exceeds the set point temperature of the switch, the fan is activated. When the temperature falls to 11˚c below this set temperature the fan is switched off again.

Thermo Switches available with the following set point temperatures:

38˚C	47˚C	60˚C	70˚C	80˚C

Max. working temerature	120°C
Safety Class	IP65
Thread	$^1/_2$" BSPP

NORMALLY OPEN

A relay must be fitted if the thermo-switch is exposed to current intensities which exceed:

12v DC MAX. 10.0 A

24v DC MAX. 5.0 A

120v AC MAX. 15.0 A

240v AC MAX. 10.0 A

277v AC MAX. 7.2 A

Also available

- Pressure check valves
- Thermal by-pass valves
- Modulating water flow valves
- Thermostatic pump activators
- Oil coolers

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12/24 VOLT FANS

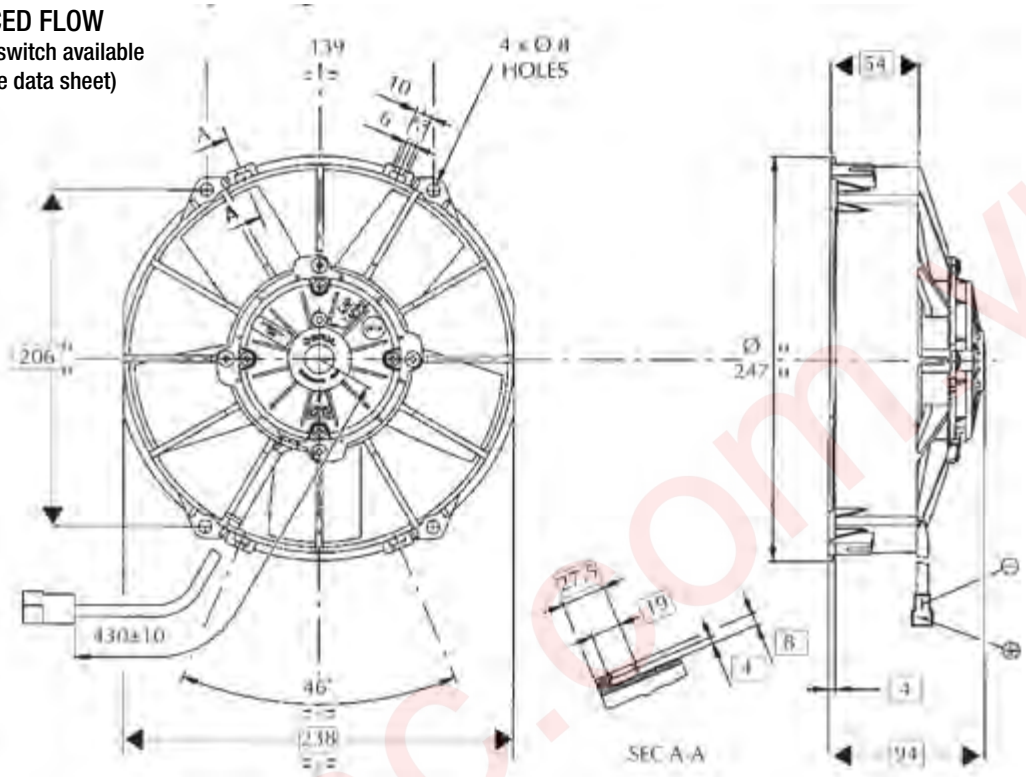
PART No for 12V 1090111
PART No for 24V 1090117

Fan Diameter	225 mm
Weight	2.1 Kg approx.

HEAVY DUTY FAN ASSEMBLY

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• LONG LIFE • INDUCED FLOW

Thermostatic fan control switch available as an option (see separate data sheet)



We have a large range of fans available.Contact us for different sizes.

Static Pressure (mm H_2O)	Air flow (m^3/h) 12V	Current input (A) 12V	Air flow (m^3/h) 24V	Current Input (A) 24V
0	1280	8.6	1300	4.5
5	1150	9	1200	4.8
10	1000	9.7	1060	5
15	700	10.2	790	5.1
20	500	10.3	530	5.2
25	340	10.5	380	5.4
30	200	11	240	5.6
35	–	11.2	150	5.8

Static pressure: 1mm H_2O = 0.04 in. H_2O
Airflow: 1m^3/h = 0.59 cfm

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12/24 VOLT FANS

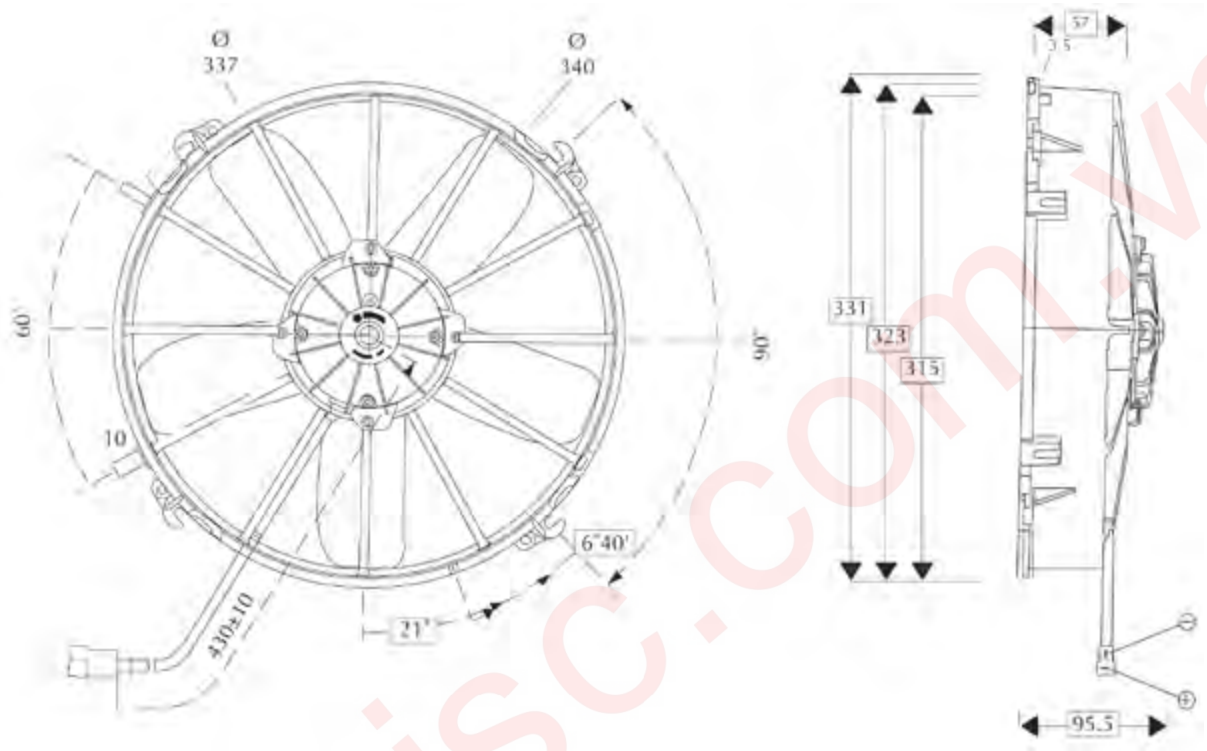
PART No for 12V 1090108
PART No for 24V 1090110

Fan Diameter	**305** mm
Weight	**2.5** Kg approx.

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Thermostatic fan control switch available
as an option (see separate data sheet)



We have a large range of fans available.Contact us for different sizes.

Static Pressure (mm H_2O)	Air flow (m^3/h) 12V	Current input (A) 12V	Air flow (m^3/h) 24V	Current Input (A) 24V
0	2750	16.5	2900	9.4
5	2450	15	2700	9.3
10	2100	16	2400	9
15	1600	17	2000	9.4
20	1000	17.8	1300	9.6
25	700	18.5	950	10
30	450	19	700	10.3
35	450	20	450	10.8

Static pressure: 1mm H_2O = 0.04 in. H_2O
Airflow: 1m^3/h = 0.59 cfm

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12/24 VOLT FANS

PART No for 12V 1090107
PART No for 24V 1090106

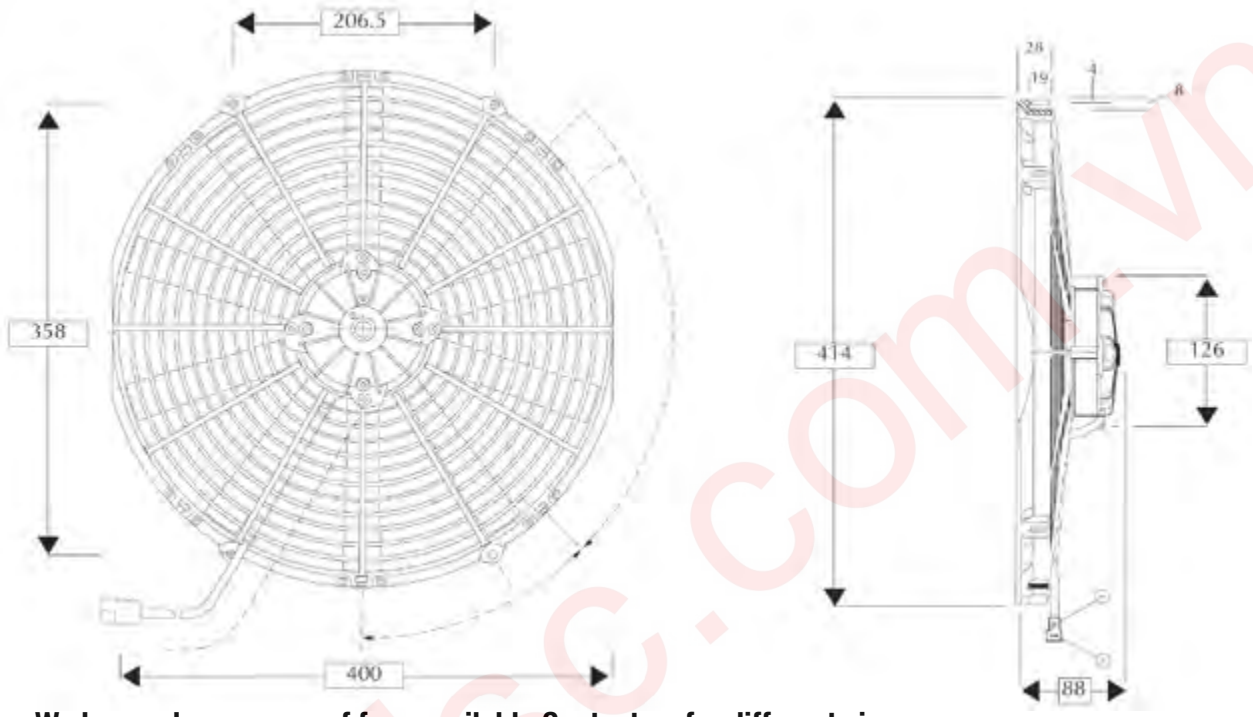
Fan Diameter	**385** mm
Weight	**2.3** Kg approx.

HEAVY DUTY FAN ASSEMBLY

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• LONG LIFE • INDUCED FLOW

Thermostatic fan control switch available as an option (see separate data sheet)



We have a large range of fans available.Contact us for different sizes.

Static Pressure (mm H_2O)	Air flow (m^3/h) 12V	Current input (A) 12V	Current Input (A) 24V
0	4000	18.5	9.3
5	3450	19.7	10.0
10	2900	20.1	10.2
12.5	2650	20.9	10.2
15	2350	20.2	10.2
17.5	2000	20.2	10.1
20	1600	19.5	9.8
25	850	19.5	9.6
30	-	19.2	9.6

Static pressure: 1mm H_2O = 0.04 in. H_2O
Airflow: $1m^3/h$ = 0.59 cfm

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