



positron
engineering corporation

Water - Oil Coolers



INTRODUCTION

POSITRON water-oil and Air-Oil heat exchangers are normally used for the cooling of oil in hydraulic systems and are installed on the return line of the system.

We have a vast choice of applicable models, highly efficient. The range of high quality materials working with precision machinery, all produces an extremely reliable product.

POSITRON heat exchangers have a water system of 1,2 circuits for Shell and tube series.

Positron Range:-

- x Shell and Tube Type
- x Total Aluminium Air-Oil Cooler
- x Gasket Type Plate Heat Exchanger
- x Brazed Plate Heat Exchanger

For Both Air-Oil and Bphe we have a technical collaboration with Italy.

COMPATIBLE FLUIDS

- x MINERAL OIL HL-HLP
- x MIXTURE WATER/OIL
- x WATER/GLICOLIC ACID
- x WATER/INDUSTRIAL WATER
- x FOR OTHER FLUIDS,CONTACT **POSITRON**

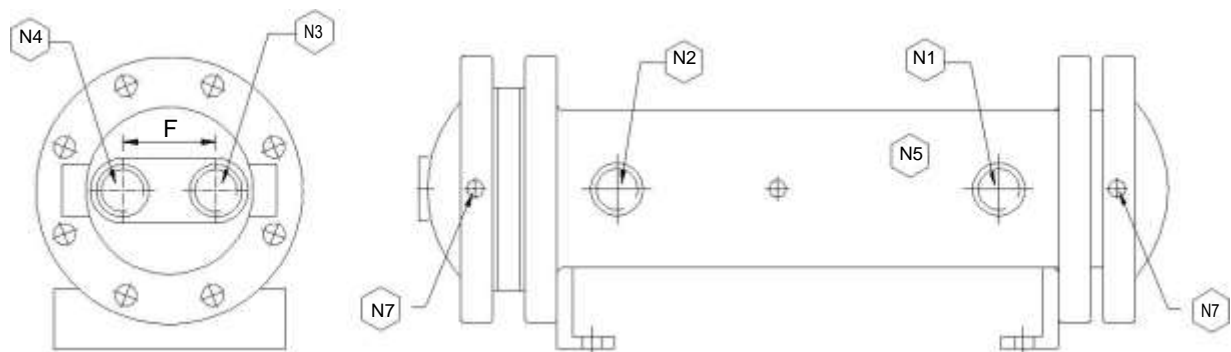
TECHNICAL SPECIFICATIONS

- x VERSION: FRESH WATER-SEA WATER-AISI
- x OPERATING PRESSURE:12 bar
- x TEST PRESSURE :18 bar
- x MAX OPERATING TEMPERATURE : 120 °C

INSTALLATION

The correct position of inlet of the two fluids is indicated in fig.1. They should circulate in opposite direction, in order to obtain the maximum heat exchange.

The positioning of the heat exchanger on the machine should be carried out using appropriate flexible supports and all those in connection with hydraulic or power plant, through flexible tubing. It is advisable, to preserve the heat exchanger, that a by-pass valve is inserted (fig.2). At very low temperatures, it is advisable to keep the water in constant circulation, to prevent harmful fractures otherwise emptying the exchanger by use of the discharge valve.



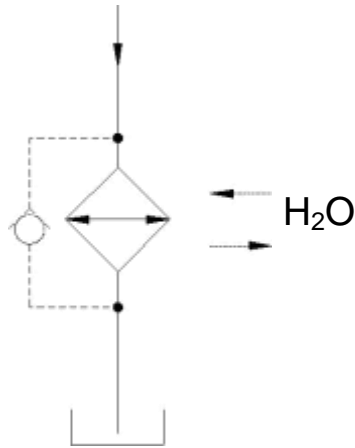
N1 :- Oil Inlet

N2 :- Oil Outlet

N3 :- Water Inlet

N4 :- Water Outlet

(fig 1)



(fig 2)

MAINTENANCE

WATER SIDE CLEANING

To guarantee the maximum effectiveness in exchange, an inspection of the water circuit is advisable, to eliminate all trace of lime or Chloride & any other impurities, which might be deposited inside the tubes.

This operation will be easily accomplished by removing the headers and flushing out the tubes with anti chlorides.

OIL SIDE CLEANING

In this part of the circuit, the cleaning will be carried out through the circulation of perchloride in the opposite direction of the normal flow, for about 30 minutes. This will help to eliminate any residue left by flushing out with hot water.

DATA RELATING TO HEAT EXCHANGER DESIGN

Oil flow
 Specific weight
 Specific heat
 Viscosity
 Oil temperature IN
 Ambient temperature
 Cooling power

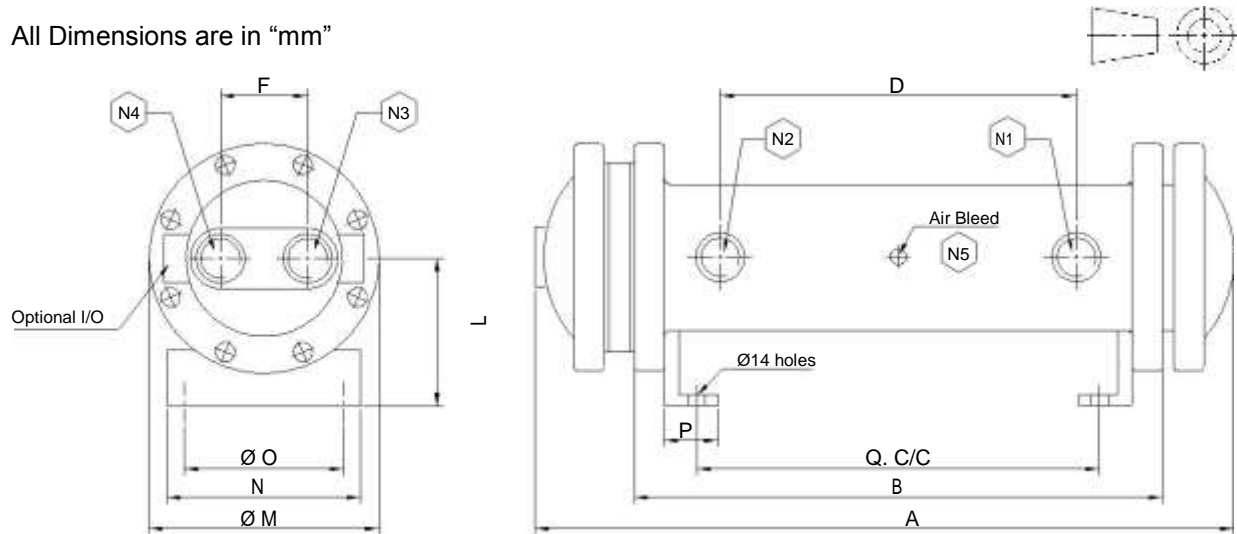
Knowing the fluidity and flow rate of the oil, cooling power and stability of T you can adjust these calculations to the specifications given in our catalogue.



Oil Cooler Series - L

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All Dimensions are in "mm"



N1 :- Oil Inlet , N3 :- Water Inlet,
N2 :- Oil Outlet, N4 :- Water Outlet,

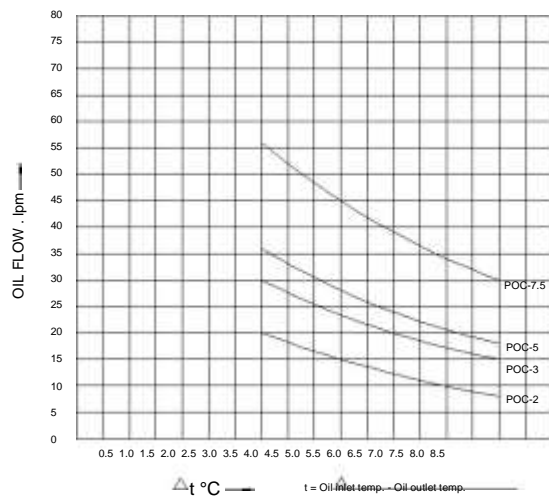
MATERIAL OF CONSTRUCTION:-

Type	Tubes	Tube Sheet	Baffle	Covers	Shell	Seals
Standard	Cu DHP	IS 2062	IS 2062	CI GR.25	IS 1239	NBR
Sea Water	CuNi	CuZn	CuZn	CuZn	SS 316 L	Viton / NBR

DIMENSIONAL DATA:-

Model	Type	Heat Duty Kcal/hr	Oil Flow Rate lpm	A	B		DF	L	M	N	O	P	Q	N1 & N2	N3 & N4
POC-24 - 18	18	1500	8 - 20	556	456	300	58	107	175	125	100	60	350	¾" BSP	1"
POC-3	4 - 20	2400	15 - 30	571	471	310							365	¾" BSP	1"
POC-54 - 24	24	3000	18 - 36	710	606	430							500	1" BSP	1"
POC-7.5	4 - 30	5000	30 - 56	856	756	570							650	1" BSP	1"

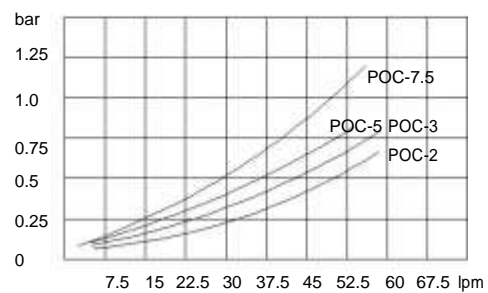
PERFORMANCE DIAGRAM:-



CORRECTION FACTOR (F)-PRESSURE DROP

CST	10	15	20	30	40	50	60	80	100	200	300
F	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

PRESSURE DROP (32 CST)





Oil Cooler Series - L

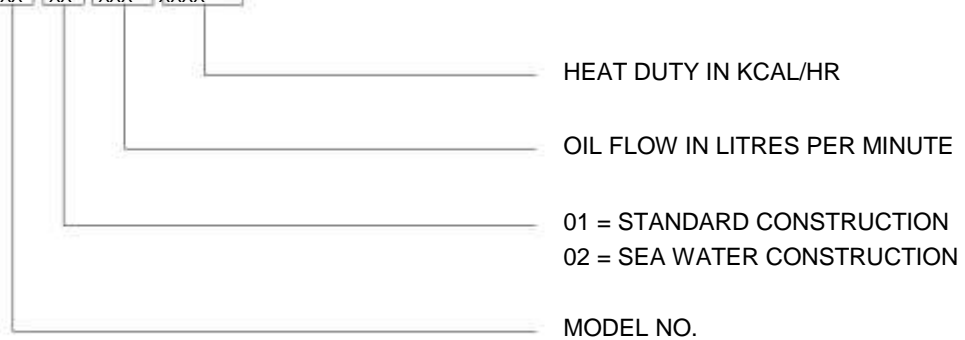
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TECHNICAL SPECIFICATION:-

Max. Operating Pressure (Oil Side)	10 Kg/cm ²
Max. Operating Pressure (Water Side)	5 Kg/cm ²
Max. Operating Temperature	100 °C
Recommended Water Flow	1.2 X Oil Flow
Ambient Temperature	30 °C

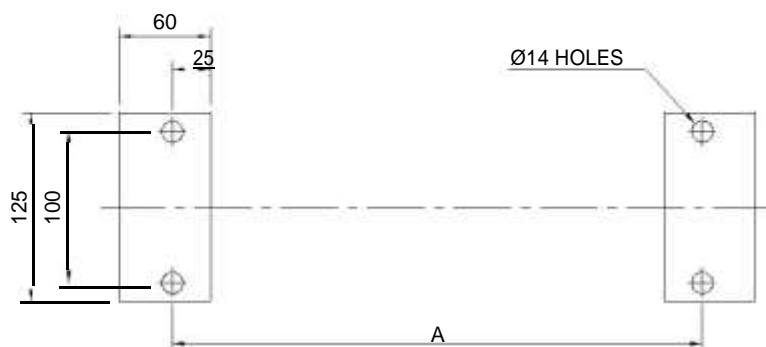
ORDERING CODE:-

POC-xx-xx-xxx-xxxx



Example : POC-10-01-50-6000

MOUNTING DIMENSIONS:-



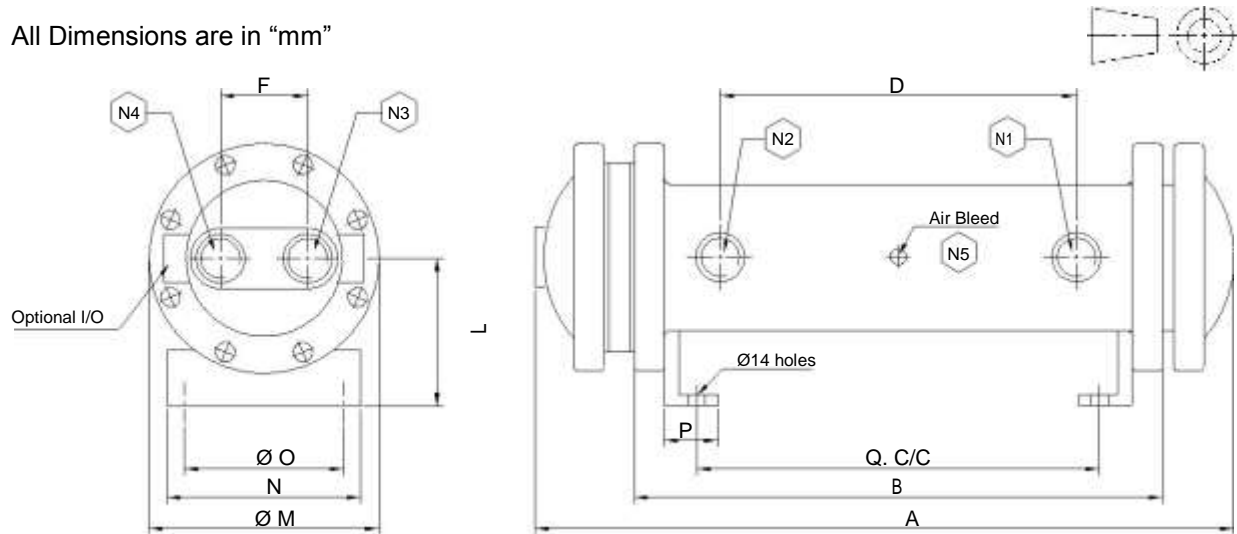
MODEL NO.	A
POC-2	350
POC-3	365
POC-5	500
POC-7.5	650



Oil Cooler Series - M

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All Dimensions are in "mm"



N1 :- Oil Inlet , N3 :- Water Inlet,
N2 :- Oil Outlet, N4 :- Water Outlet,

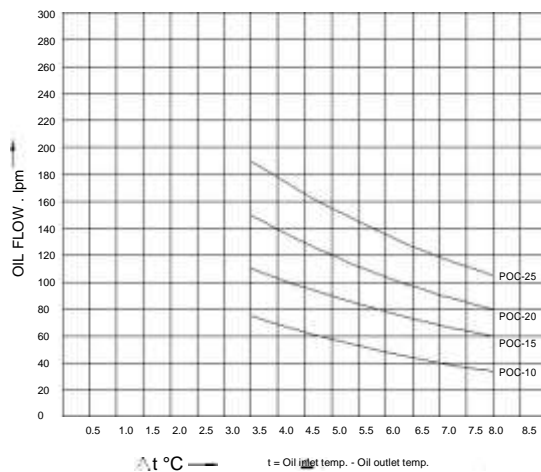
MATERIAL OF CONSTRUCTION:-

Type	Tubes	Tube Sheet	Baffle	Covers	Shell	Seals
Standard	Cu DHP	IS 2062	IS 2062	CI GR.25	IS 1239	NBR
Sea Water	CuNi	CuZn	CuZn	CuZn	SS 316 L	Viton / NBR

DIMENSIONAL DATA:-

Model	Type	Heat Duty Kcal/hr	Oil Flow Rate Lpm	A	B		DF	L	M	N	O	P	Q	N1 & N2	N3 & N4 BSP
POC-10	6 - 18	6000	34 - 75	570	456	300	90	140	225	175	150	60	350	1" BSP	1"
POC-15	6 - 20	10500	60 - 110	580	471	315							365	1" BSP	1½"
POC-20	6 - 24	13500	80 - 150	719	606	410							500	40 NB	1½"
POC-25	6 - 30	18000	105 - 190	870	756	550							650	40 NB	1½"

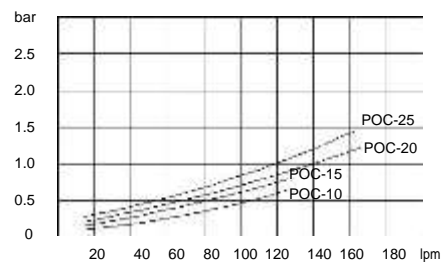
PERFORMANCE DIAGRAM:-



CORRECTION FACTOR (F)-PRESSURE DROP

CST	10	15	20	30	40	50	60	80	100	200	300
F	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

PRESSURE DROP (32 CST)





Oil Cooler Series - M

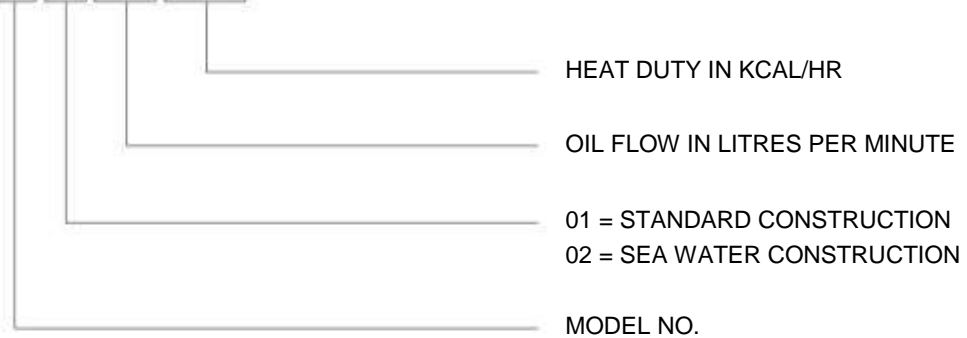
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TECHNICAL SPECIFICATION:-

Max. Operating Pressure (Oil Side)	10 Kg/cm ²
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Max. Operating Temperature	100 °C
Recommended Water Flow	1.2 X Oil Flow
Ambient Temperature	30 °C

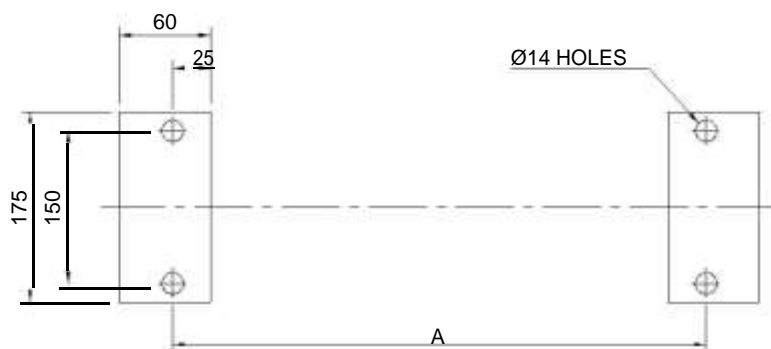
ORDERING CODE:-

POC-xx-xx-xxx-xxxx



Example : POC-10-01-50-6000

MOUNTING DIMENSIONS:-



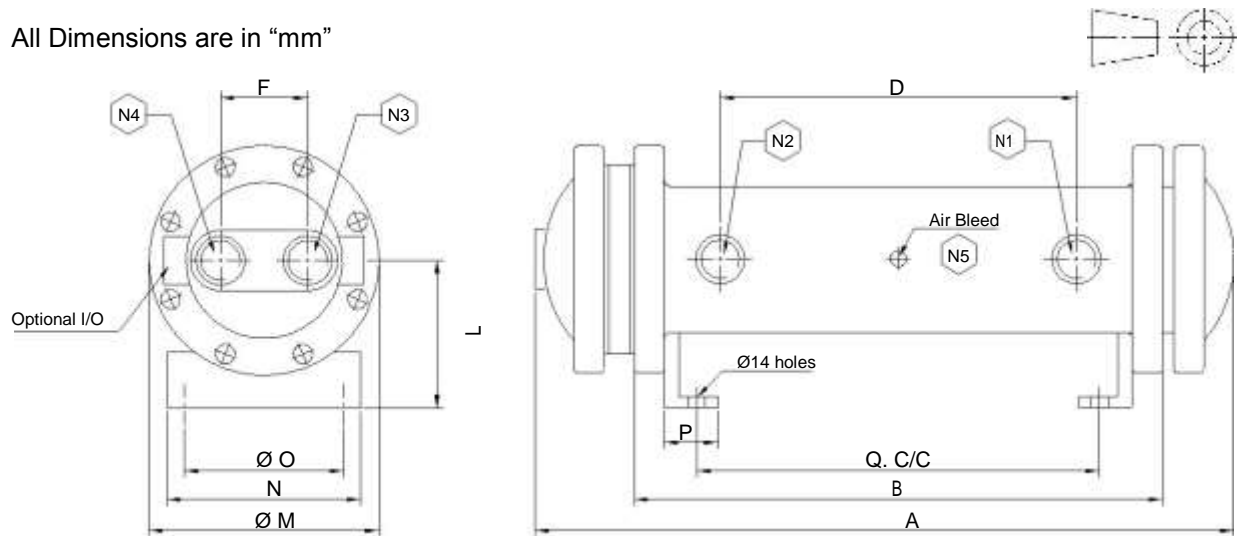
MODEL NO.	A
POC-10	350
POC-15	365
POC-20	500
POC-25	650



Oil Cooler Series - H

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All Dimensions are in "mm"



N1 :- Oil Inlet , N3 :- Water Inlet,
N2 :- Oil Outlet, N4 :- Water Outlet,

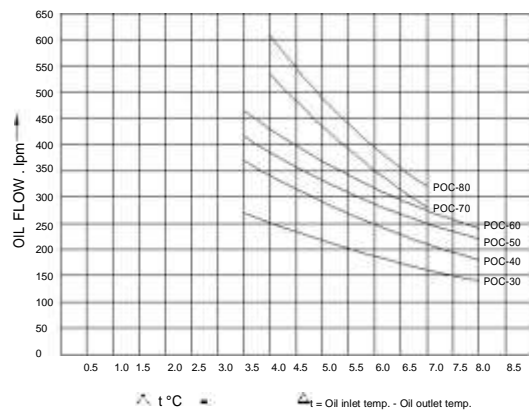
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Standard	Cu DHP	IS 2062	IS 2062	CI GR.25	IS 1239	NBR
Sea Water	CuNi	CuZn	CuZn	CuZn	SS 316 L	Viton / NBR

DIMENSIONAL DATA:-

Model	Type	Heat Duty Kcal/hr	Oil Flow Rate Lpm	A	B	D	F	L	M	N	O	P	Q	N1 & N2	N3 & N4 BSP
POC-30	8 - 24	24000	140 - 270	749	606	410	115	165	279	230	200	60	500	40 NB	1½"
POC-40	8 - 24	32000	180 - 370	749	606	410							500	40 NB	2"
POC-50	8 - 30	34000	220 - 415	899	756	520							650	50 NB	2"
POC-60	8 - 36	38000	240 - 465	1040	906	710							800	50 NB	2"
POC-70	8 - 42	45000	280 - 535	1211	1076	850							970	65 NB	2½"
POC-80	8 - 48	60000	320 - 610	1346	1211	1000							1105	65 NB	2½"

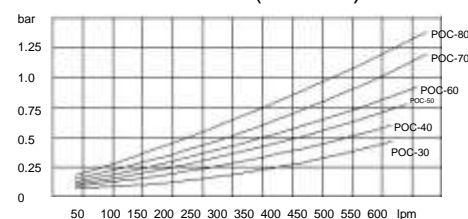
PERFORMANCE DIAGRAM:-



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PRESSURE DROP (32 CST)





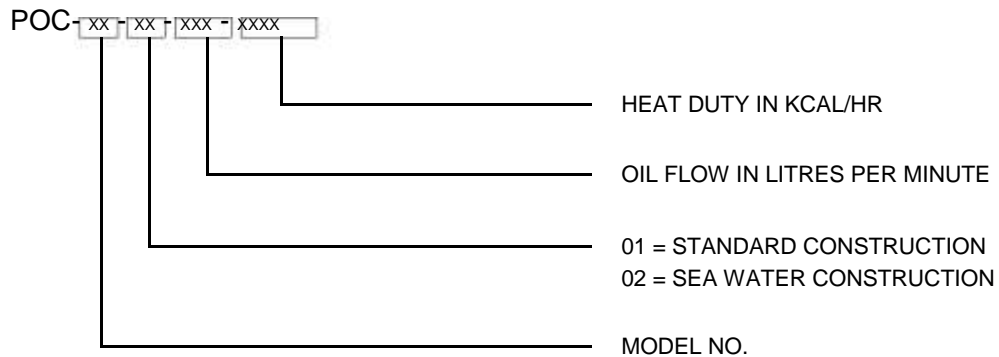
Oil Cooler Series - H

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TECHNICAL SPECIFICATION:-

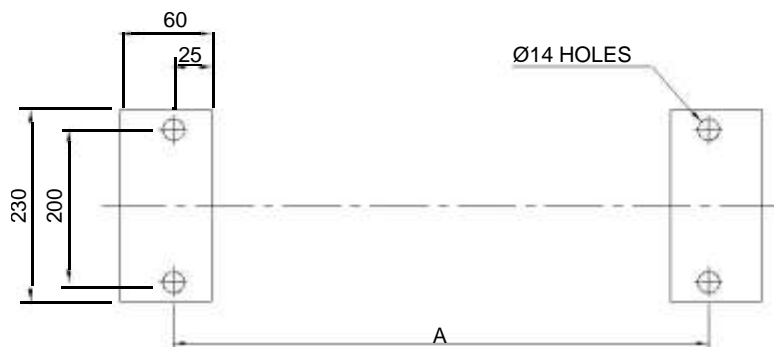
Max. Operating Pressure (Oil Side)	10 Kg/cm ²
Max. Operating Pressure (Water Side)	5 Kg/cm ²
Max. Operating Temperature	100 °C
Recommended Water Flow	1.2 X Oil Flow
Ambient Temperature	30 °C

ORDERING CODE:-



Example : POC-10-01-50-6000

MOUNTING DIMENSIONS:-



MODEL NO.	A
POC-30	500
POC-40	500
POC-50	650
POC-60	800
POC-70	970
POC-80	1105

