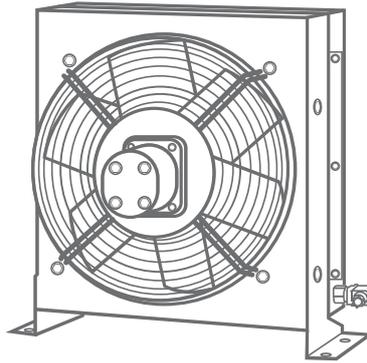


AIR-OIL HEAT EXCHANGERS WITH HYDRAULIC MOTOR

SCAMBIATORI DI CALORI ARIA-OLIO CON VENTOLA AZIONATA DA MOTORE IDRAULICO



These kind of exchangers have been designed for mobile machines when the battery cannot supply enough electric energy to the motor of the DC fan or when the DC exchanger is not able to produce high thermic exchanges.

The particular structure of the cooling element allows great thermic performances and pressure resistance. **Maximum working static pressure: 20 bar; test pressure: 35 bar.**

Our technical Department is available to suggest and find the better solution in case of particular working conditions, pressures, frequencies, vibrations, etc.

It is always recommended to assemble in parallel with the exchanger a by-pass valve to avoid extreme counter-pressures, particularly when the machine is started with cold oil. On the contrary, it is not useful to use a check valve as by-pass to protect the exchanger from pressure's peaks, since the inertia of the valve itself is too high in comparison with the speed of the pressure waves that occur into the oleo hydraulic systems.

The flow rates shown in the tables are the ones recommended for the exchanger proper working.

The efficiency curves show the specific exchange capacity in kcal/h°C or in kW/h°C according to the different oil rates. To calculate the heat quantity the different exchangers are able to dissipate it is enough to multiply such capacity by the difference between the requested oil temperature and the summer room temperature.

We pay particular attention to the choice of our components in order to supply the customer with a reliable product.

The fans are metallic, and metallic are the protection grills used also to fix the hydraulic motor. Upon request, it is possible to receive the motor support, which helps the driving shaft absorbing radial stresses. Upon request, it is also possible to receive a thermo switch with IP 65 protection degree and different temperature ranges, 47°C or 60°C.

For the right calculation of air-oil heat exchangers, we supply our customers with a calculation program on CD-ROM or that can be downloaded from our website.

The air-oil heat exchangers can be used to cool other kind of fluids, which must be compatible with aluminium and its alloys.

However, for each use, with the exception of oil cooling, we recommend to consult our Technical Department.

*Questi tipi di scambiatori sono stati progettati per essere utilizzati su macchine mobili quando la batteria della stessa non può fornire l'energia elettrica necessaria al motore a corrente continua del ventilatore, oppure quando la necessità di ottenere scambi termici elevati non può essere soddisfatta dagli scambiatori a corrente continua. La particolare costruzione del radiatore consente di ottenere notevoli rese termiche e forte resistenza alla pressione. **Pressione massima statica di funzionamento: 20 bar; pressione di collaudo: 35 bar.***

Il nostro Ufficio Tecnico è a disposizione per valutare la soluzione più opportuna in presenza di particolari condizioni di lavoro, pressioni, frequenze, vibrazioni, ecc..

È sempre consigliabile montare in parallelo allo scambiatore una valvola di by-pass per evitare eccessive contropressioni soprattutto al momento dell'avviamento della macchina con olio freddo. Non è invece conveniente utilizzare una valvola di ritegno come by-pass per proteggere lo scambiatore dai picchi di pressione in quanto l'inerzia della valvola stessa è troppo alta rispetto alla velocità delle onde di pressione che si sviluppano all'interno dell'olio degli impianti oleoidraulici.

Le portate olio indicate nelle tabelle sono quelle consigliate per il buon funzionamento dello scambiatore.

Le curve di rendimento forniscono la potenzialità di scambio specifica in kcal/h°C o in kW/h°C in funzione della portata olio; per calcolare la quantità di calore che i vari scambiatori sono in grado di disperdere, è sufficiente moltiplicare tale potenzialità per la differenza tra le temperature dell'olio desiderata e dell'aria ambiente massima estiva. Particolare attenzione è stata posta nella scelta dei componenti per fornire alla clientela un prodotto estremamente affidabile. Le ventole sono in metallo, così come le reti di protezione che fungono anche da fissaggio del motore idraulico. A richiesta può essere fornito il supporto motore, per assorbire sollecitazioni radiali sull'albero del motore; sempre a richiesta possiamo fornire un termostato avente protezione IP65 con tarature a 47 o 60°C a scelta.

Per il calcolo degli scambiatori aria-olio è disponibile un programma su CD-rom o scaricabile dal nostro sito internet.

Gli scambiatori aria-olio possono essere utilizzati per raffreddare altri tipi di fluidi, a condizione che essi siano compatibili con l'alluminio e le sue leghe.

Consigliamo comunque, per qualsiasi impiego che non sia il raffreddamento dell'olio, di contattare il nostro Ufficio Tecnico.

AP 300 I

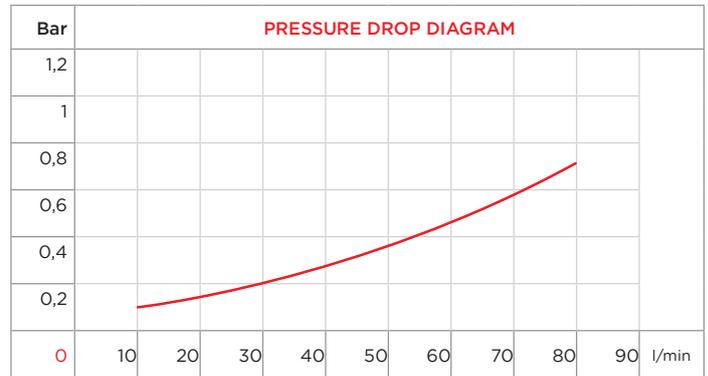
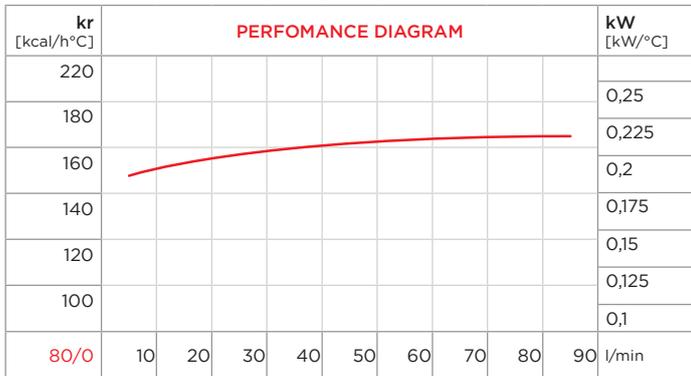


PURCHASE CODES

AP 300 I With hydraulic motor	3RAP300IA
AP 300 I Prepared	3RAP300I4A

SPARE PARTS

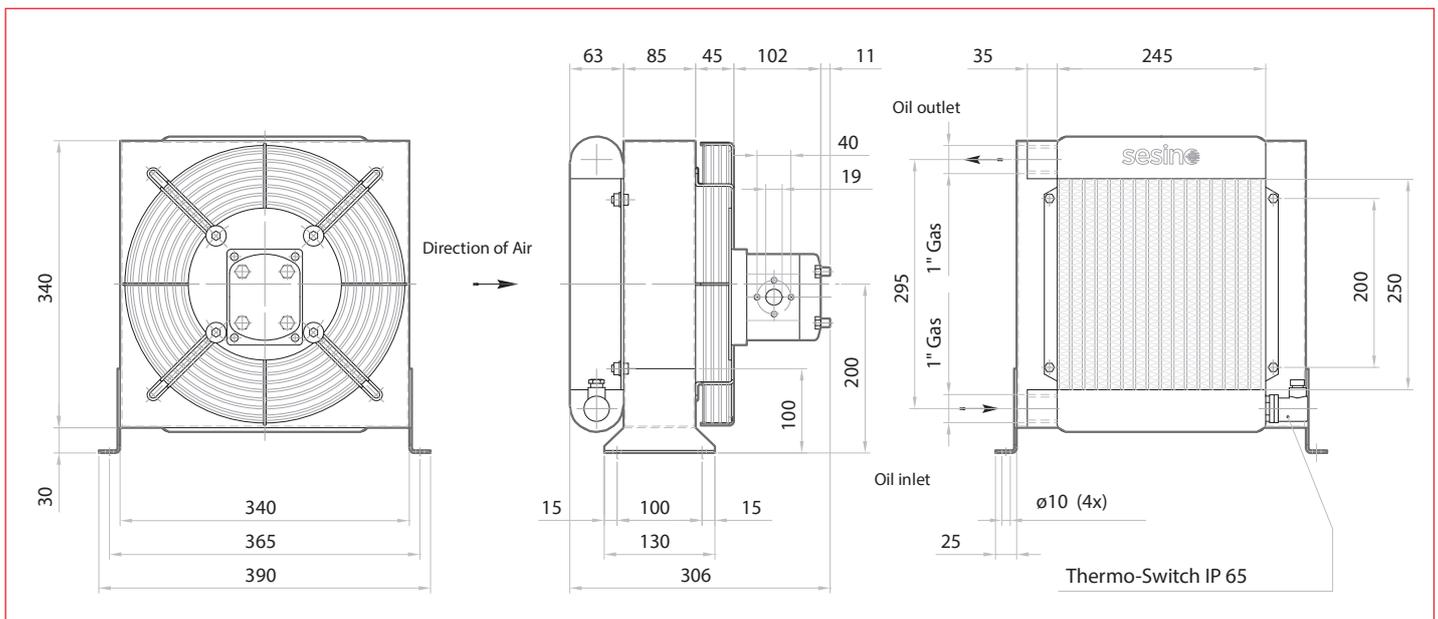
Cooling element	3RNL300
Housing	1300TLV
Frame	3CNAP300I.1
Fan	1G300I
Fan Grill	1RTAP300I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
10-80	2300	200	11,3	26	2.000	68	14	2	255

AP 300/2 I

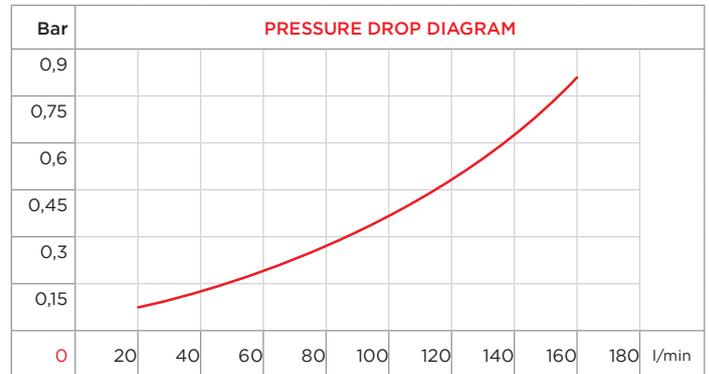
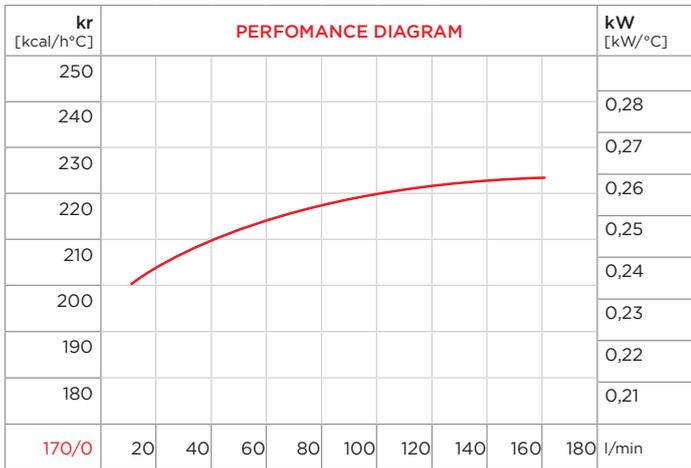


PURCHASE CODES

AP 300/2 I With hydraulic motor	3RAP302IA
AP 300/2 I Prepared	3RAP302I4A

SPARE PARTS

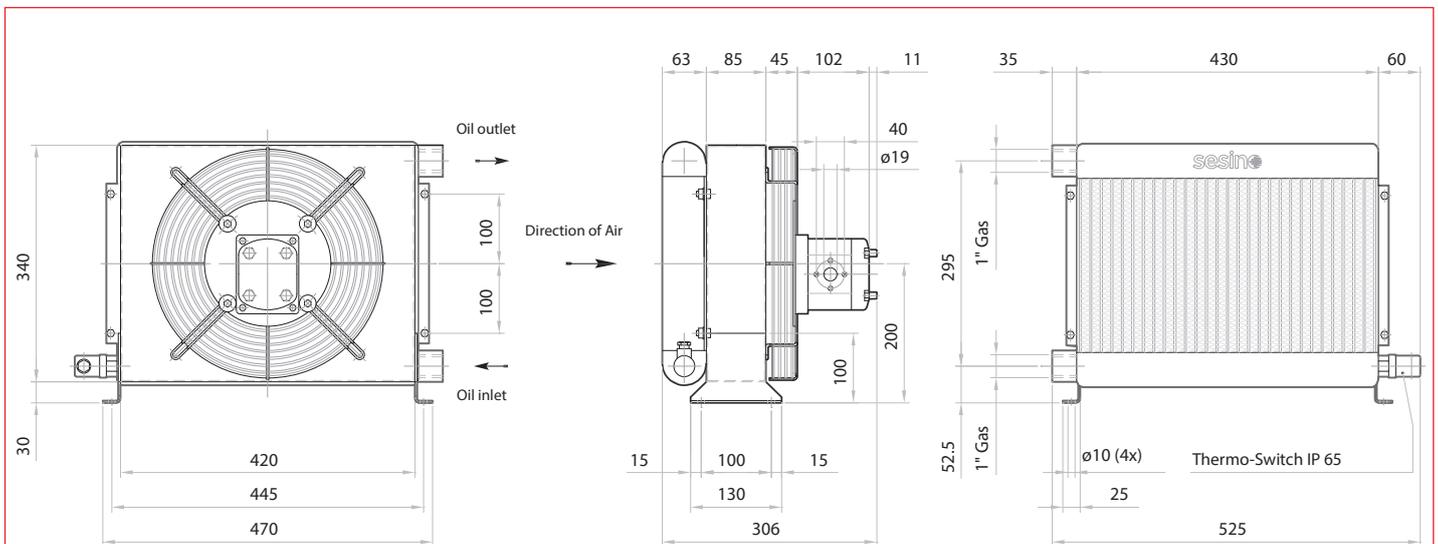
Cooling element	3RNL302
Housing	1302TLV
Frame	3CNAP30211
Fan	1G300I
Fan Grill	1RTAP300I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
20-50	2300	200	11,3	26	2.500	70	19	3,6	255

AP 430 I

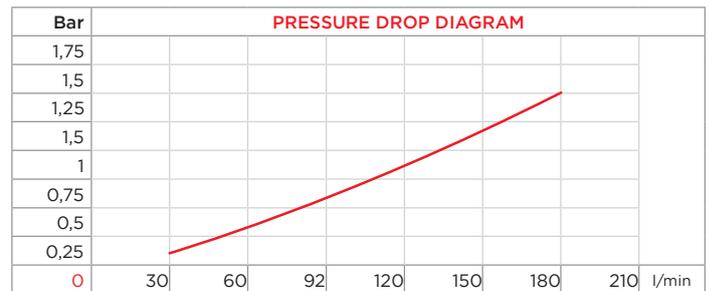
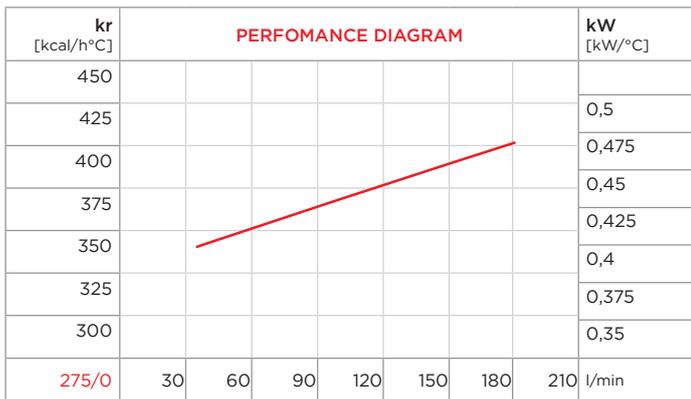


PURCHASE CODES

AP 430 I with hydraulic motor	3RAP430I1A
AP 430 I prepared	3RAP430I4A

SPARE PARTS

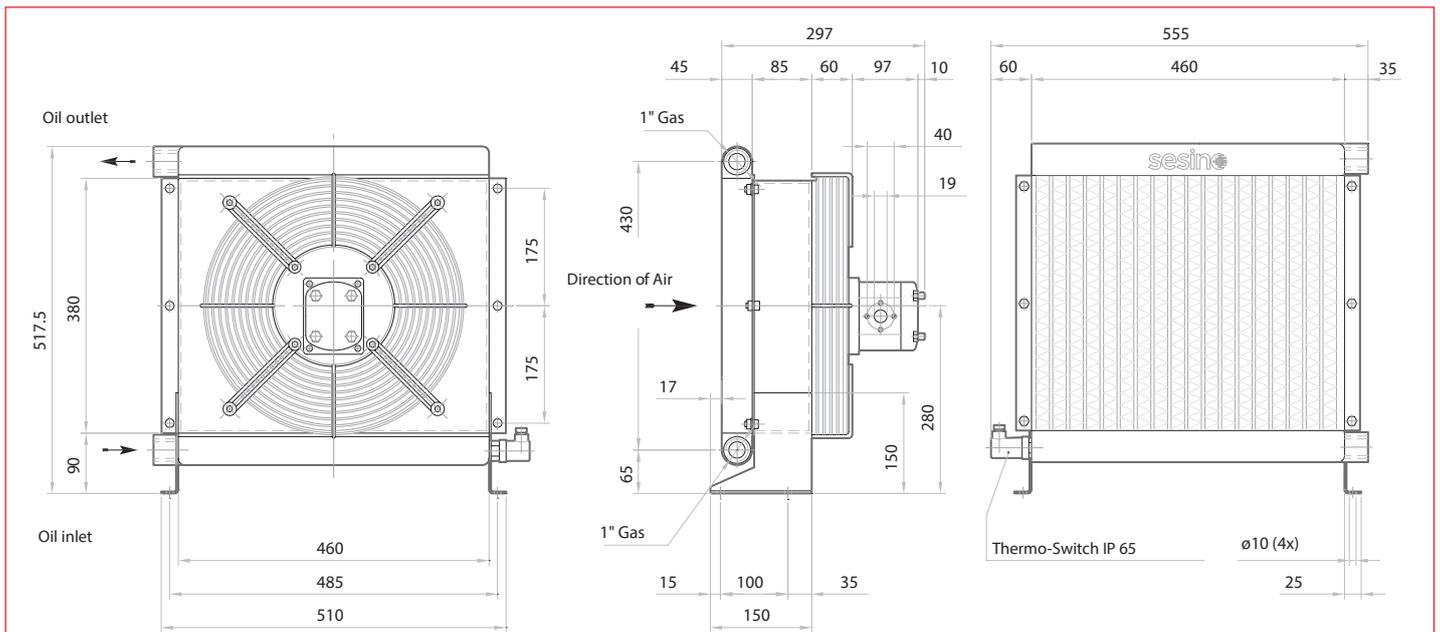
Cooling element	3RNL430
Frame	3CN430I.1
Shock isolating mounting (4 pcs)	3KIT4511
Fan	1G430I
Fan grill	1RTAP430I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
50-150	2.700	770	11,3	31	7.000	73	21	3,6	355

AP 430/2 I

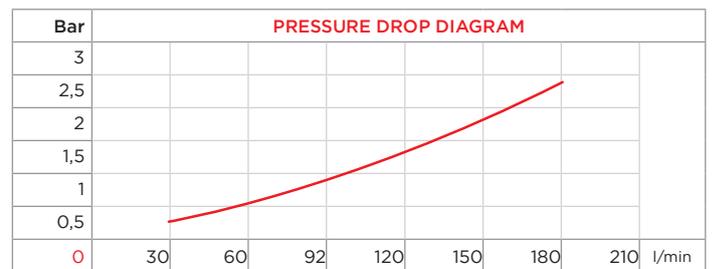
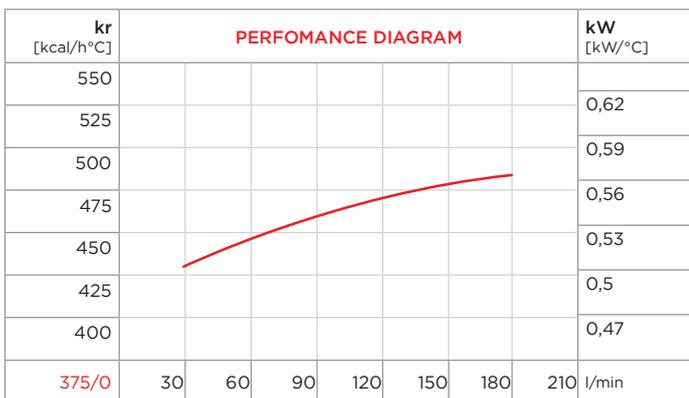


PURCHASE CODES

AP 430/2 I with hydraulic motor	3RAP43211A
AP 430/2 I prepared	3RAP43214A

SPARE PARTS

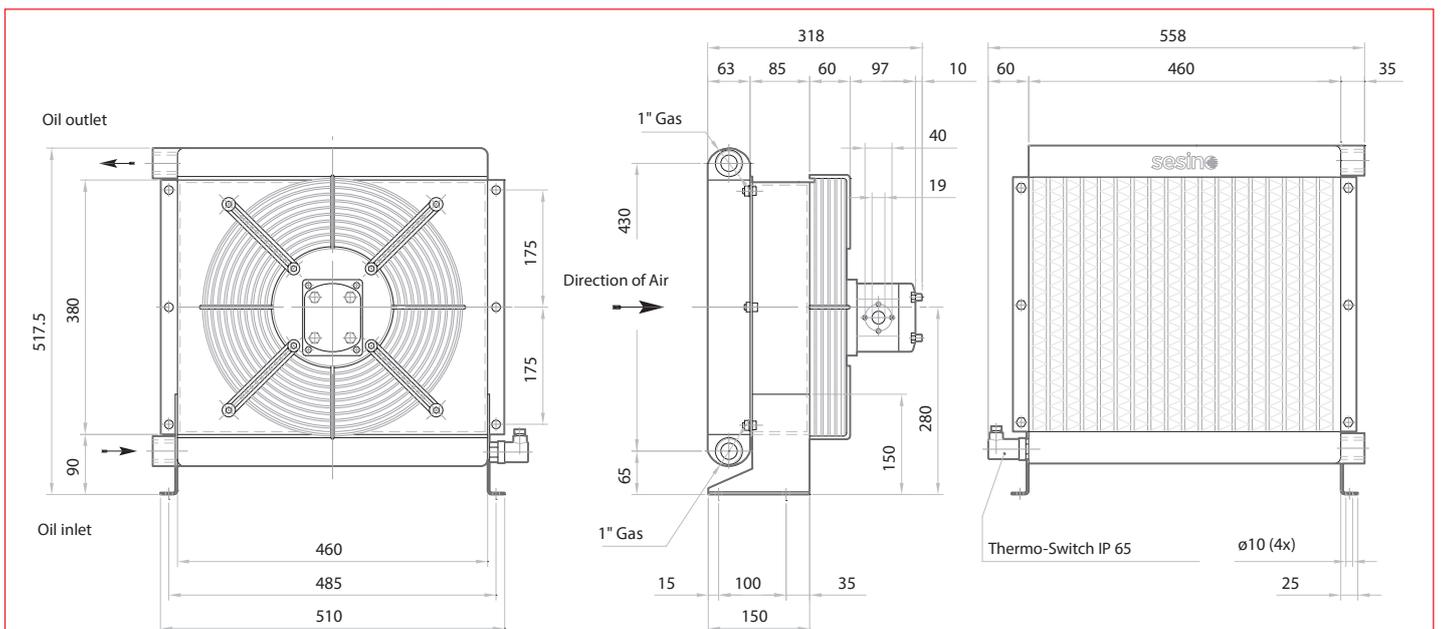
Cooling element	3RNAP432TP
Frame	3CN430I.1
Shock isolating mounting (4 pcs)	3KIT4511
Fan	1G430I
Fan grill	1RTAP430I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
30-180	2.700	830	11,3	31	7.000	74	23	5,5	400

AP 494 I

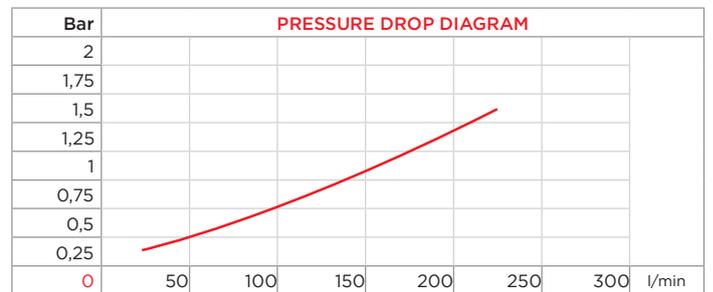
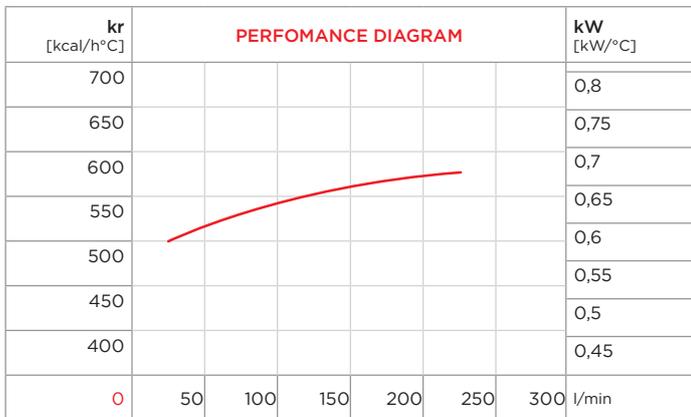


PURCHASE CODES

AP 494 I with hydraulic motor	3RAP49411A
AP 494 I prepared	3RAP49414A

SPARE PARTS

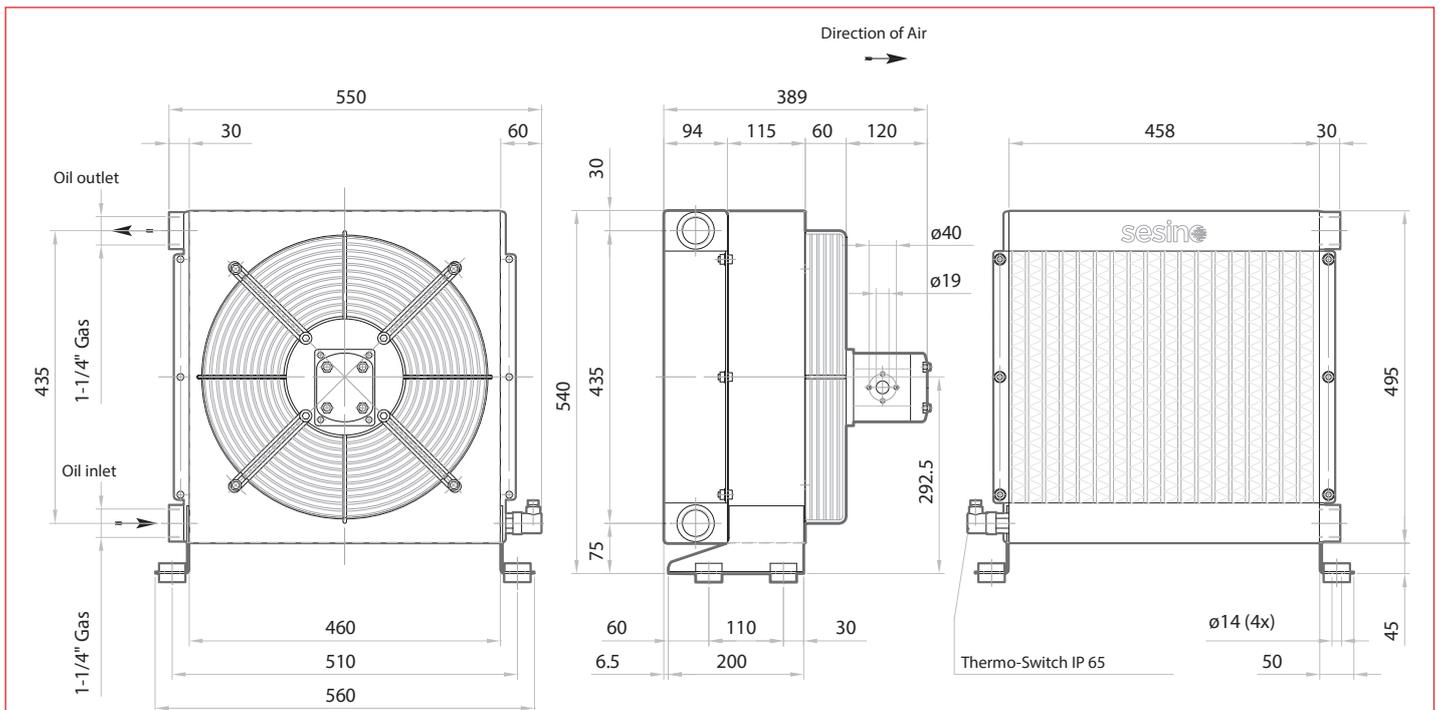
Frame	3CNAP4941.1
Shock isolating mounting (4 pcs)	3KIT4135
Electric junction box for	1CSSDSAREL
Fan	1G580I
Cooling element	1RO99332
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP580I



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
30-240	2.400	1100	11,3	27	8.000	75	26	8	400

AP 680 I

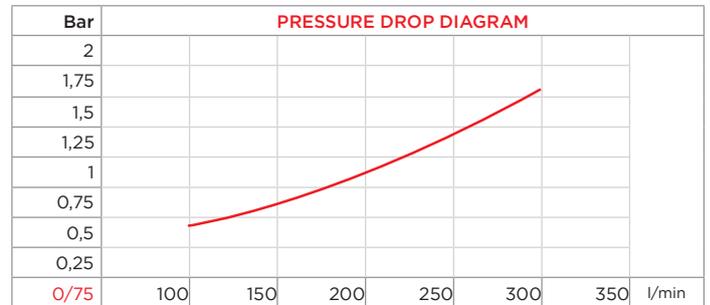
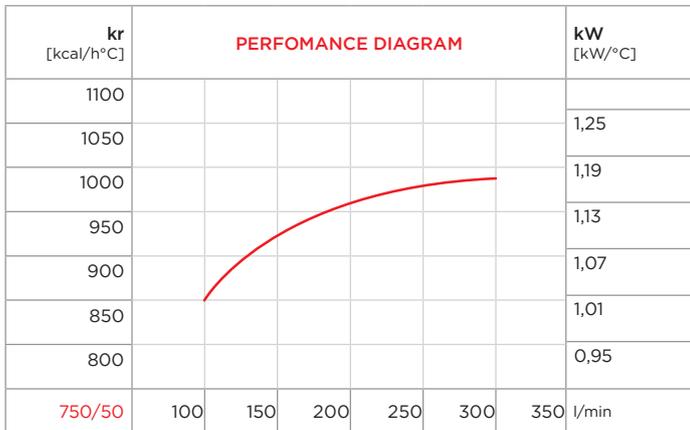


PURCHASE CODES

AP 680 I with hydraulic motor	3RAP6801A
AP 680 I prepared	3RAP68014A

SPARE PARTS

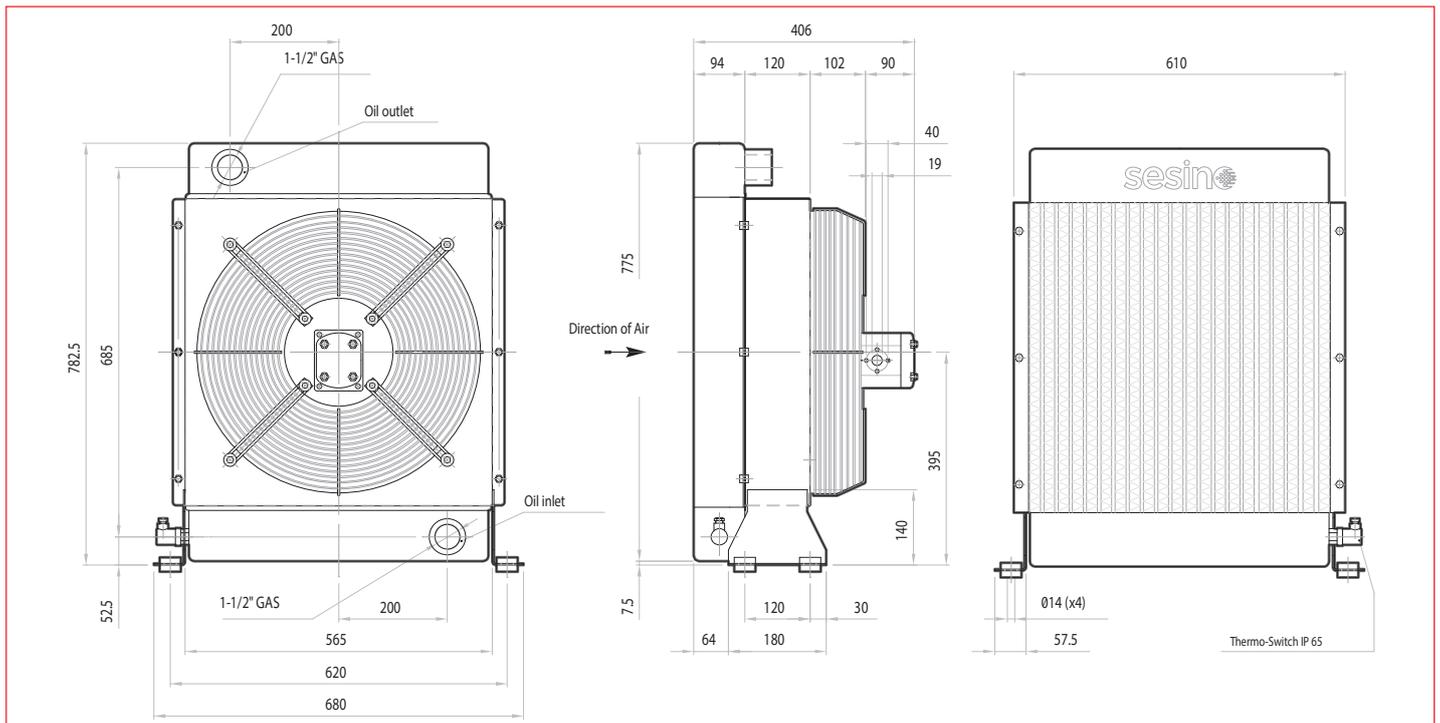
Frame	3CNAP680.1
Shock isolating mounting (4 pcs)	3KIT4135
Electric junction box	1CSSDSAREL
Cooling element	3RNAP680E
Electric fan	1G680I
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP680I



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
100-300	1.450	750	11,3	17	10.000	80	48	15	500

AP 730 I

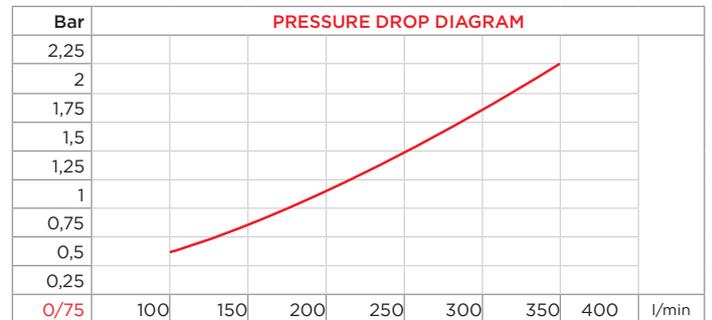
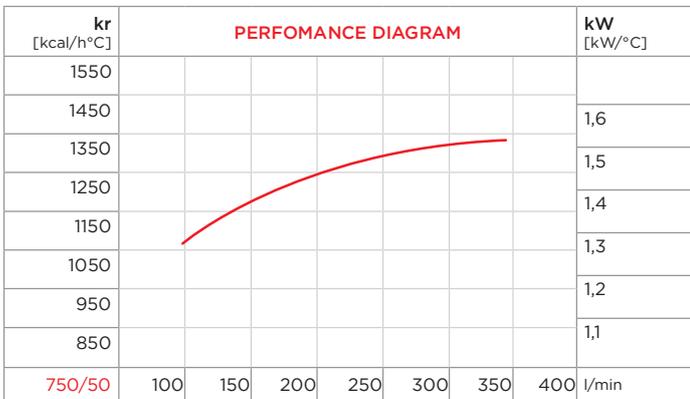


PURCHASE CODES

AP 730 I with hydraulic motor	3RAP730I1A
AP 730 I prepared	3RAP730I4A

SPARE PARTS

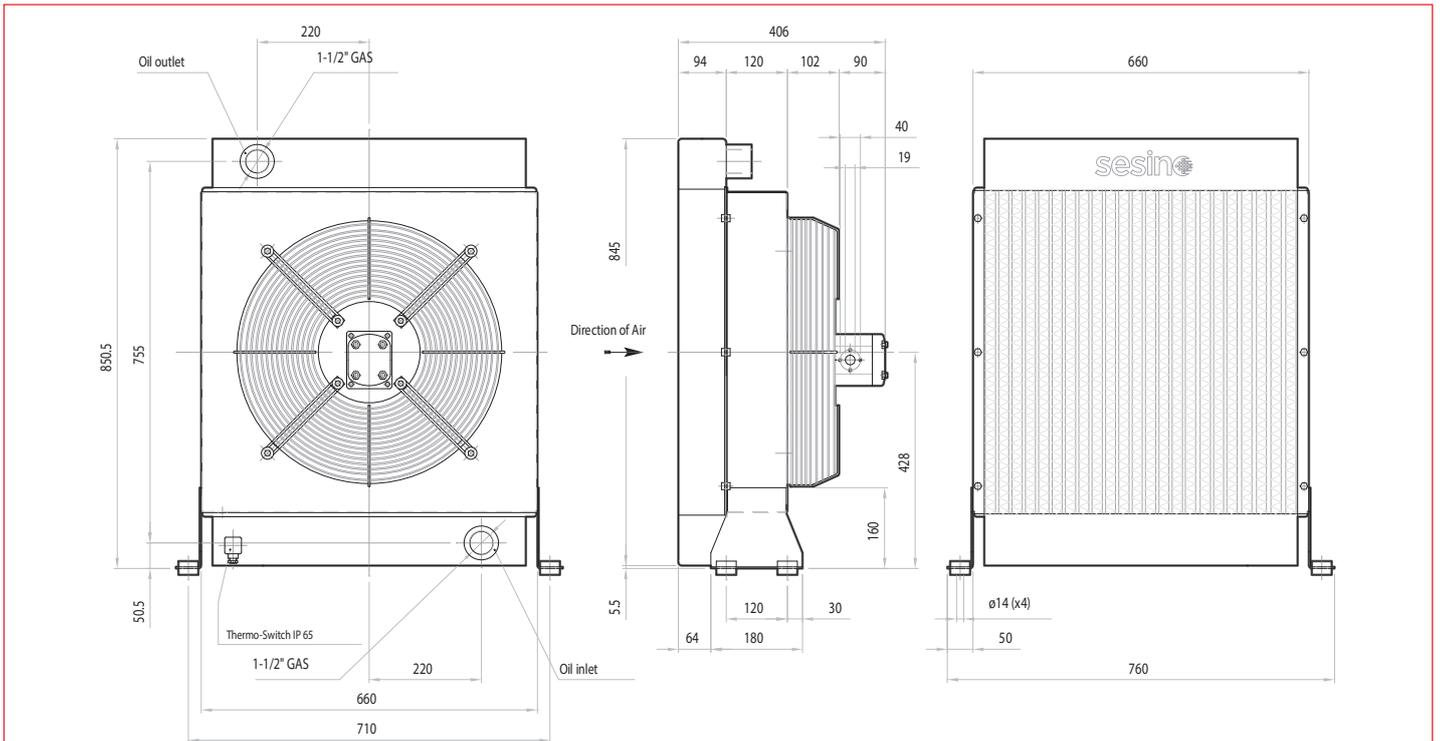
Frame	3CNAP730IA.1
Shock isolating mounting (4 pcs)	3KIT4232
Electric junction box	1CSSDSAREL
Cooling element	3RNAP730E
Electric fan	1G680I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP680I



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m ³ /h	dB(A)	kg	lt.	mm
100-350	1.450	1.000	11,3	17	12.000	80	56	16	600

AP 830 I

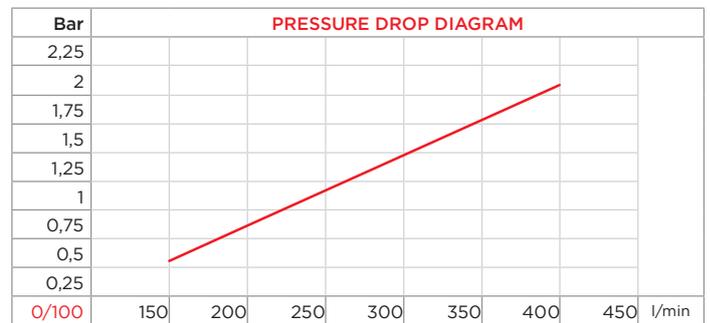
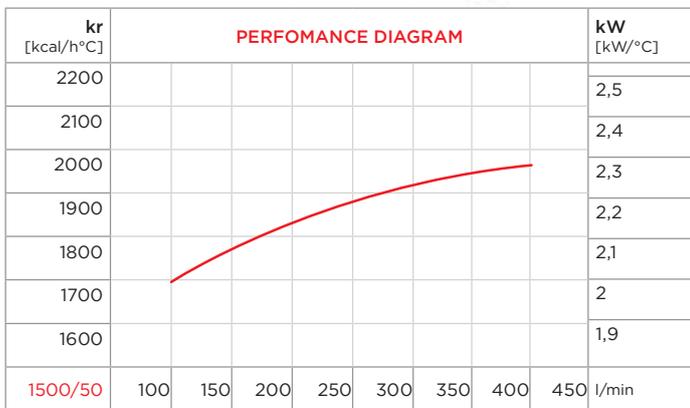


PURCHASE CODES

AP 830 I with hydraulic motor	3RAP830I2A
AP 830 I prepared	3RAP830I4A

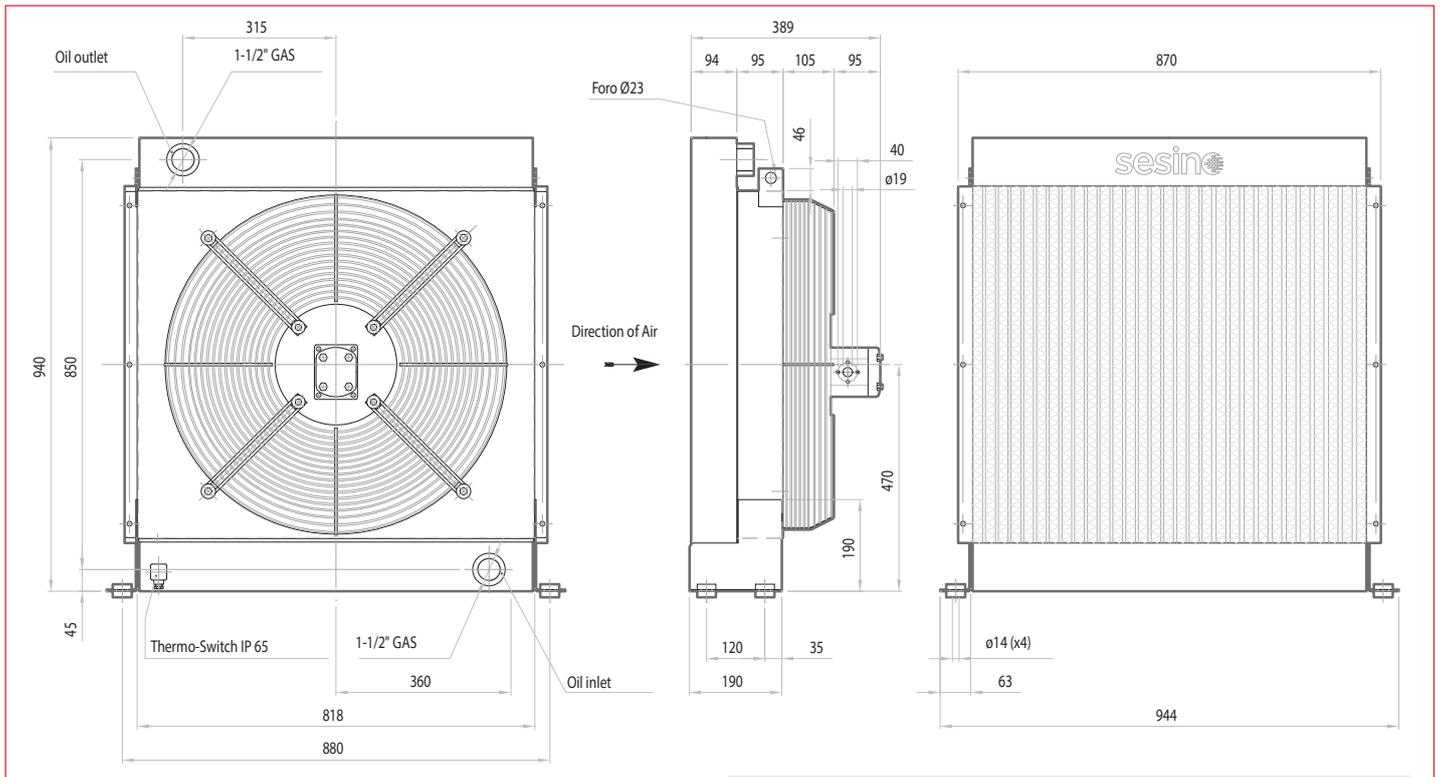
SPARE PARTS

Frame	3CNAP830IA.1
Shock isolating mounting (4 pcs)	3KIT4232
Electric junction box	1CSSDSAREL
Cooling element	3RNAP830E
Electric fan	1G830I
Hydraulic motor	1MO2/M25
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP830I



CORRECTION FACTOR							
cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
150-400	1.300	1.300	17,5	23	15.000	82	74,5	20	680

AP 2/680 I

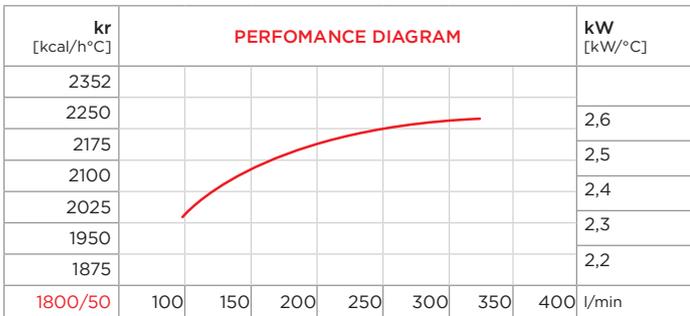


PURCHASE CODES

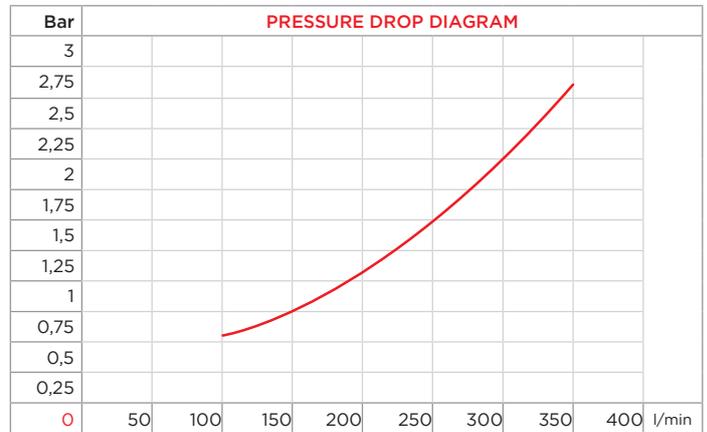
AP 2/680 I with hydraulic motor	3RAP2/68011A
AP 2/680 I prepared	3RAP2/68014A

SPARE PARTS

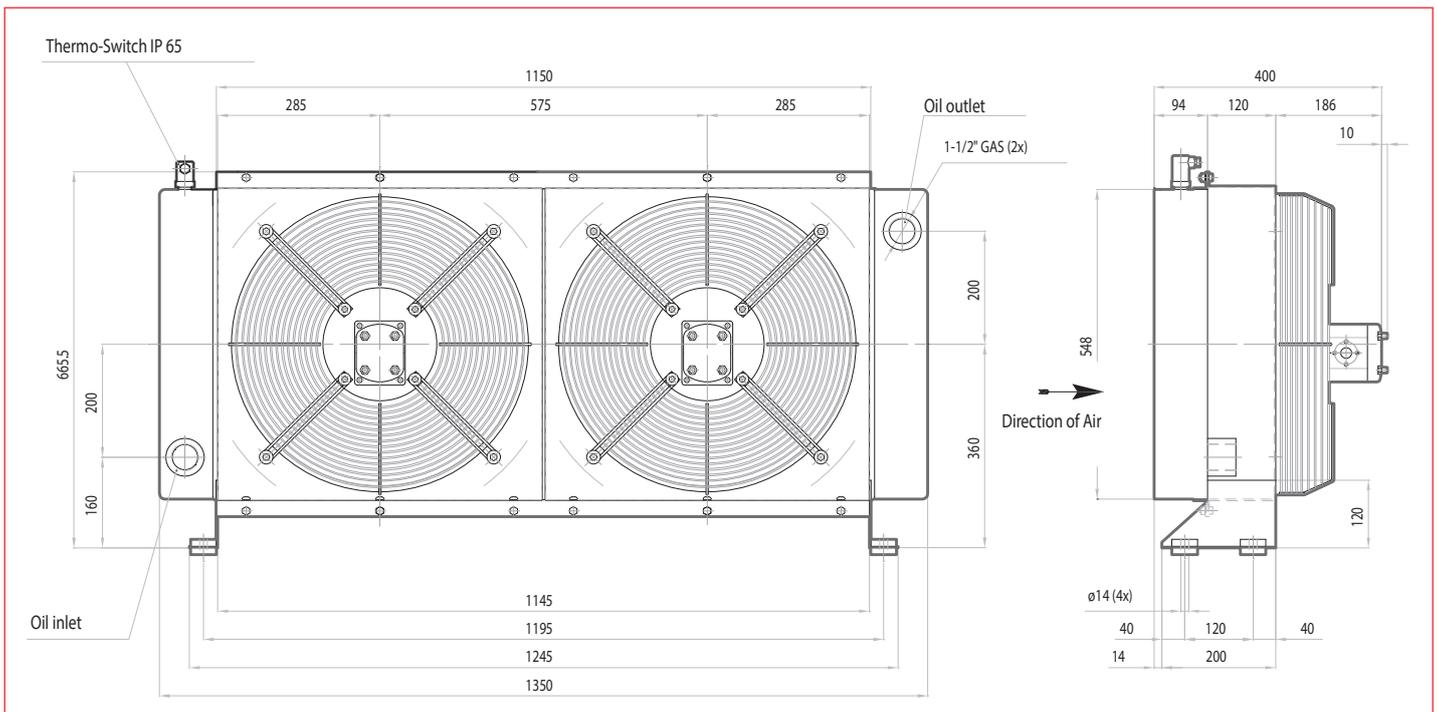
Frame	3CNAP2/6800.1
Shock isolating mounting (4 pcs)	3KIT4232
Electric junction box	1CSSDSAREL
Cooling element	1RO01339
Electric fan	1G680I
Hydraulic motor	1MO2/M16
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP680I



CORRECTION FACTOR								
cSt	22	30	46	68	100	150	220	
f	0,6	1	1,5	2,3	3,5	5	7	



- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
100-300	2x1.450	2x750	2x11,3	2x17	2x10.000	82	100	28	2x500

AP 2/830 I

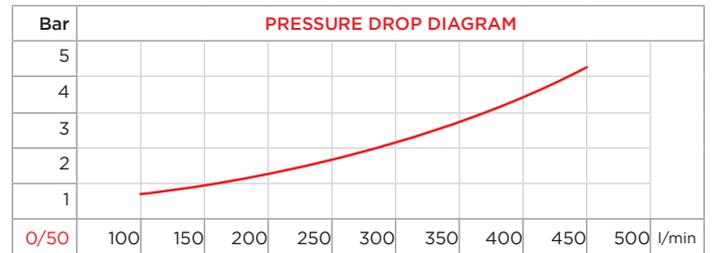
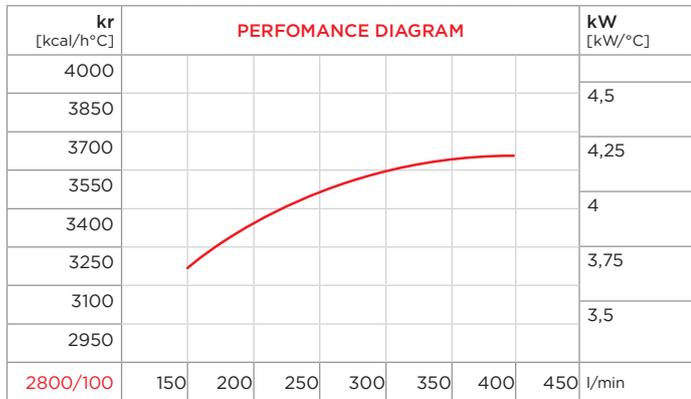


PURCHASE CODES

AP 2/830 I with hydraulic motor	3RAP830I2A
AP 2/830 I prepared	3RAP830I4A

SPARE PARTS

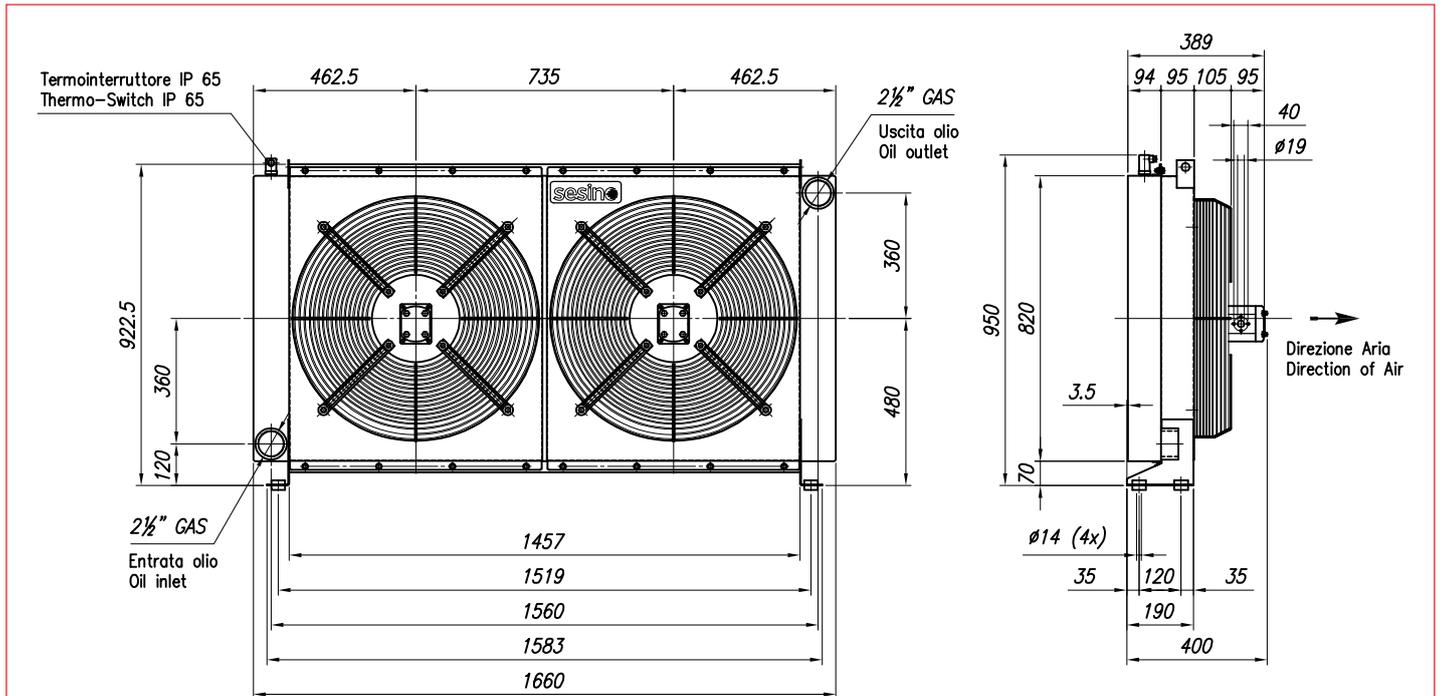
Frame	3CNAP2/830I.1
Shock isolating mounting (4 pcs)	3KIT4232
Electric junction box	1CSSDSAREL
Cooling element	3RNEO91247
Electric fan	1G830I
Hydraulic motor	1MO2/M25
Thermo-switch 60-49 IP 65	1TRM60-49
Thermo-switch 47-36 IP 65	1TRM47-36
Fan Grill	1RTAP830I



CORRECTION FACTOR

cSt	22	30	46	68	100	150	220
f	0,6	1	1,5	2,3	3,5	5	7

- Dimensions and technical characteristics are not binding



OIL FLOW	FAN SPEED	POWER	DISPLACEMENT	MOTOR FLOW	AIR FLOW	NOISE LEVEL	WEIGHT	CAPACITY	Ø FAN
l/min	rpm	W	cc/r	l/min	m³/h	dB(A)	kg	lt.	mm
150-400	2x1.300	2x1.300	2x17,5	2x23	2x15.000	82	148	40	2x680

