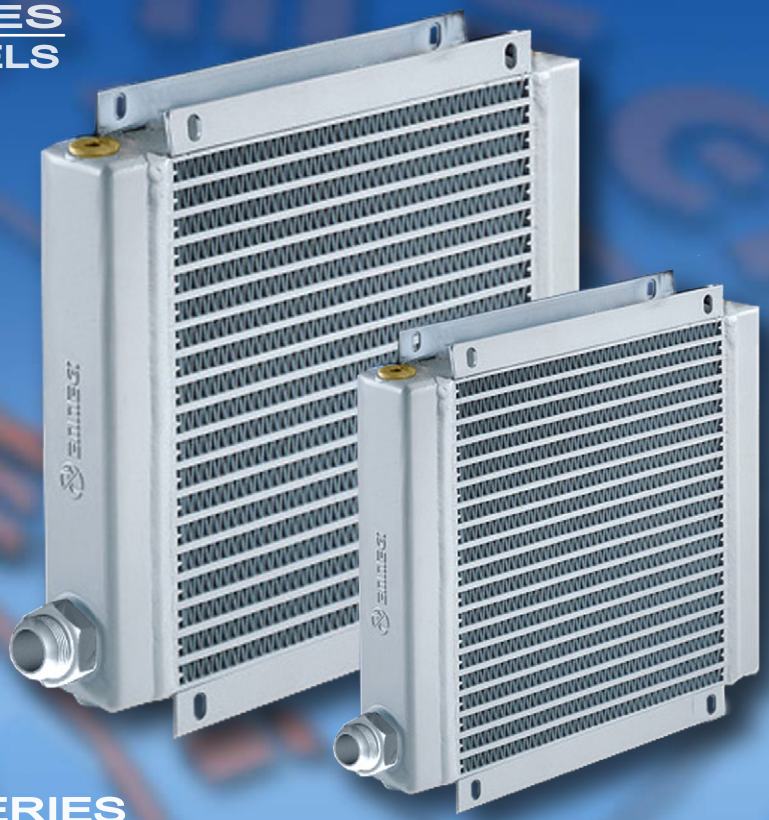
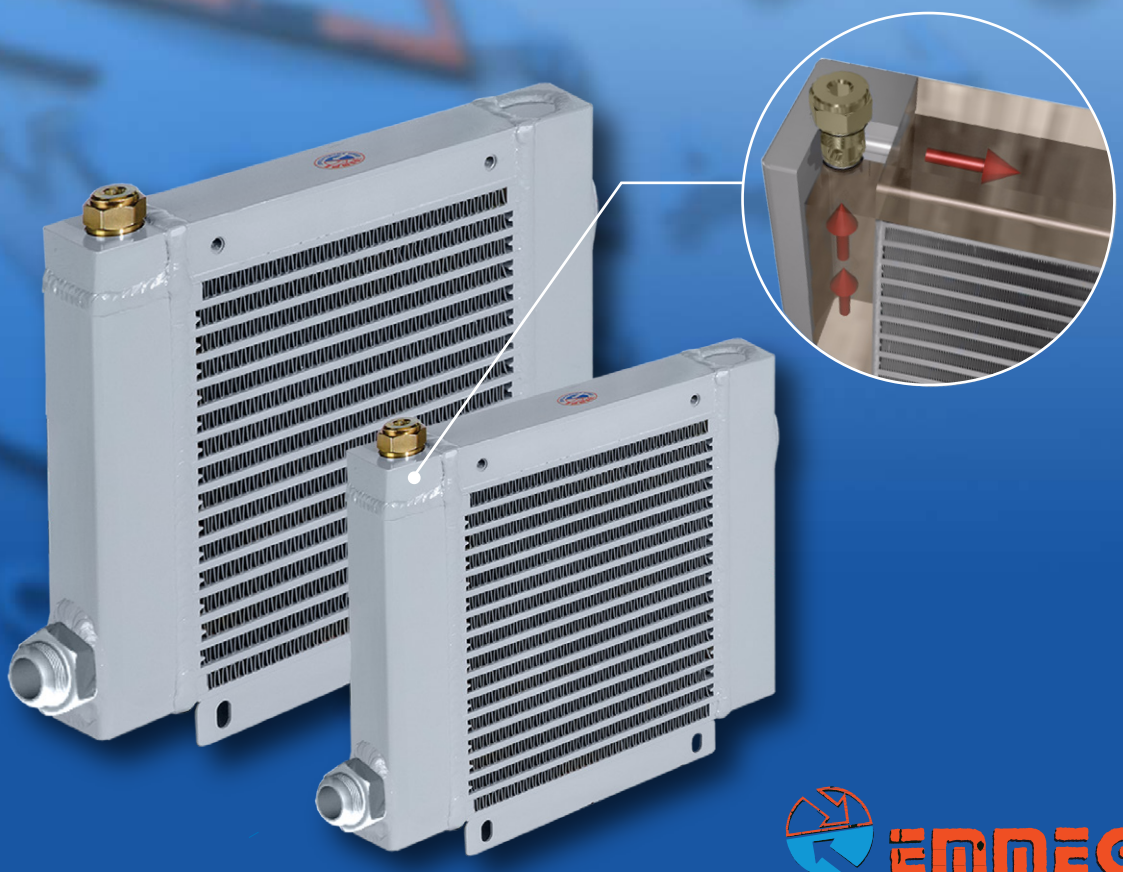
MOBILE OIL COOLERS ELEMENTS

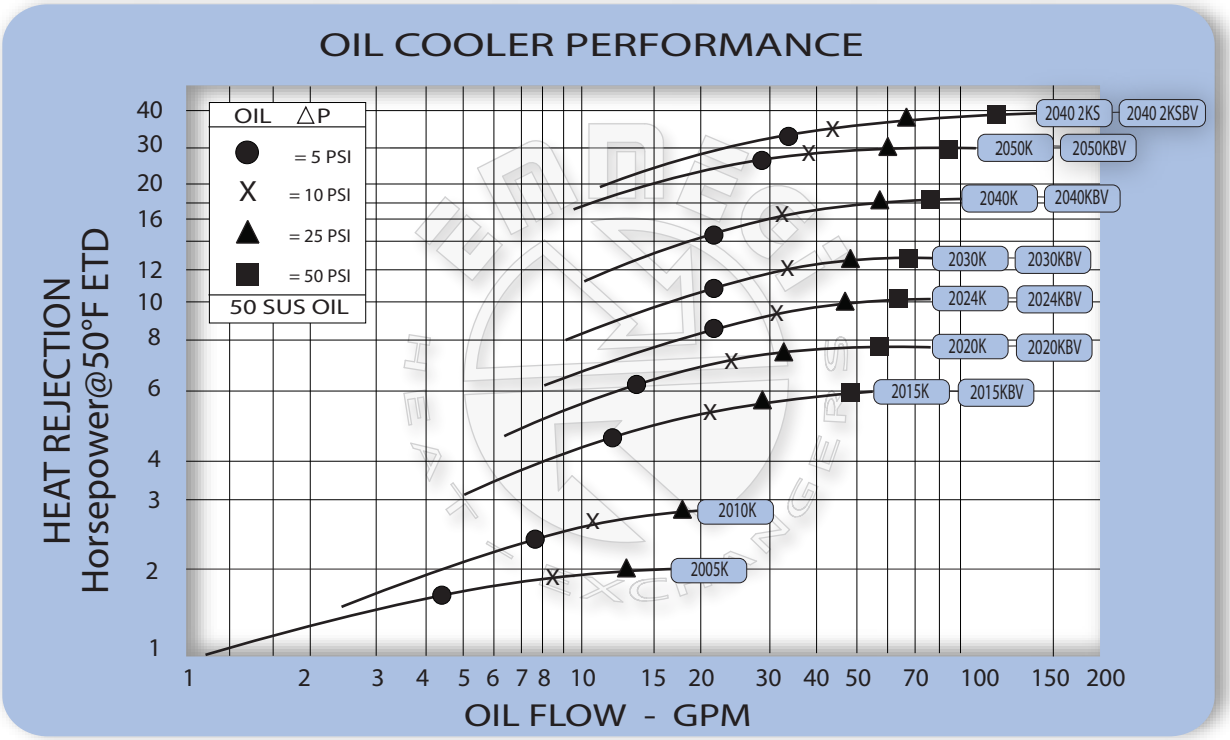
HEAT-EXCHANGERS

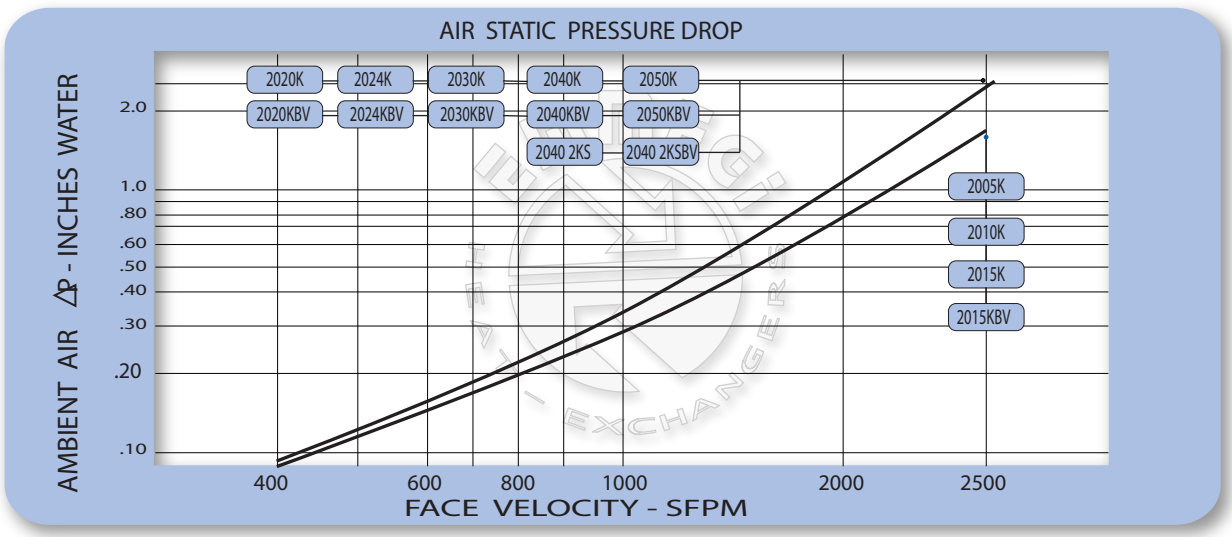
2000K E SERIES
STANDARD MODELS



2000KBV E SERIES
WITH BUILT-IN INTERNAL BYPASS CHECKVALVE







AIR VELOCITY CORRECTION FACTOR (F)

SFPM	400	500	600	800	1000	1500	2000	2500
F	0.6	0.7	0.75	0.85	1	1.25	1.4	1.6

OIL PRESSURE DROP CORRECTION FACTOR (F)

SUS	50	60	80	100	200	300	400	500
F	1	1.25	1.6	1.9	3	4	4.8	5.3

Introduction

EMMEGI air/oil E Series oil coolers are designed to mount in front of the engine radiator or other fan (or air flow) provided by the customer.
The all aluminum Bar and Plate construction is very robust and resistant to external damage.
With reasonable care, the coolers may be pressure washed to remove external debris.
Internal turbulators greatly enhance performance providing the maximum heat transfer in a very compact size.
Components are vacuum brazed leaving the internal passages free of contamination.

Compatible fluids

- Mineral Oils: HL & HLP.
- Water - Oil Emulsion.
- Water - Glycol.
- Consult Factory for other fluids.

Installation

E Series coolers should be installed as close as possible to the radiator to ensure the air flow does not bypass the cooler.
Ensure proper pipe size to reduce restriction. (Back pressure) Do not exceed either the maximum rated flow or pressure.
Serious damage or failure could result, and are not covered by warranty.
Use caution while fitting pipes to avoid putting excessive strain on pipes, connections, or the heat exchanger.
For best heat dissipation it is suggested that the oil inlet be to the lower connection, but is not required.
For low oil flow piping to the lower connection will purge air assuring maximum performance.
Units with a factory installed bypass MUST be piped correctly to function properly.
The inlet for the 2000KBV and HPV models is on the same manifold as the bypass valves.

Maintenance

Oil side cleaning (internal):

All internal surfaces are aluminum.
Any commercial cleaner may be used providing it is suitable for use on aluminum surfaces.
Often this cleaning agent can be used on the external surfaces as well.
Counter flushing the internal passages is the most effective cleaning method.
After cleaning the cooler should be flushed with the fluid used in the application to remove/prevent contamination.

Air side cleaning (external):

This can be done with either compressed air or water.
If a pressure washer is used, keep the jet of water parallel to the fins to avoid any damage.
The use of steam or hot water is helpful if the accumulation of oily dirt is present.

Selection Procedures

The performance curves are based on the following:

- 1000 Standard Feet Per Minute (SFPM) Air Velocity.
- 50°F Entering Temperature Difference (ETD)

ETD= Entering OIL Temperature - Entering AIR Temperature

- 50 SUS Oil

If your application conditions are different, use the following selection procedure:

STEP 1. Determine the Heat Load
Horsepower Heat = HP

STEP 2. Determine the Actual ETD Desired
Entering Oil Temperature - Entering Air Temperature= ETD

STEP 3. Find the Air Velocity Correction Factor

$$\frac{\text{SCFM Air Flow Across Cooler}}{\text{FT}^2 \text{ Cooler Face Area}} = \text{SFPM AIR VELOCITY}$$

Once you have calculated the SFPM Velocity enter the air velocity correction curve to determine the correction factor.

STEP 4. Calculate the Adjusted HP for Selection

$$\text{HP Heat Load} \times \left(\frac{50}{\text{Desired Air ETD} \times \text{Velocity Correction Factor}} \right) = \text{HP For Use With Selection Chart}$$

STEP 5. Select The Model From The Curves
Read up from the GPM to the required heat rejection.
Select and model on, or above this point.

Technical Specifications

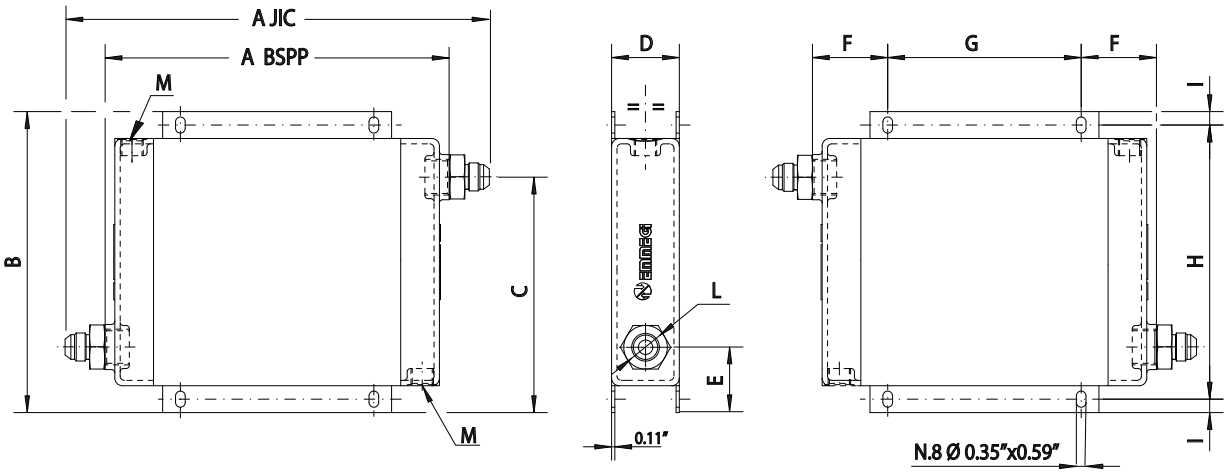
. Material: "long life" aluminium.
. Operating pressure: 280 PSI
. Test pressure: 500 PSI
. Max operating temperature: 248 °F.
. For specially " aggressive" atmospheres contact EMMEGI.

Model Codes

Model Size/Series	Cooler Only Code	Port / Adaptor Type	Bypass Pressure Setting
2005-2050 K = No Bypass KBV = With Internal Bypass	E = Cooler Only	BP= BSPP Internal Thread JE = JIC External Thread JE90 = 90° JIC External	2000K Series Blank = No Bypass 2000KBV Series 22 = 22 psi (1.5 Bar) 44 = 44 psi (3 Bar)

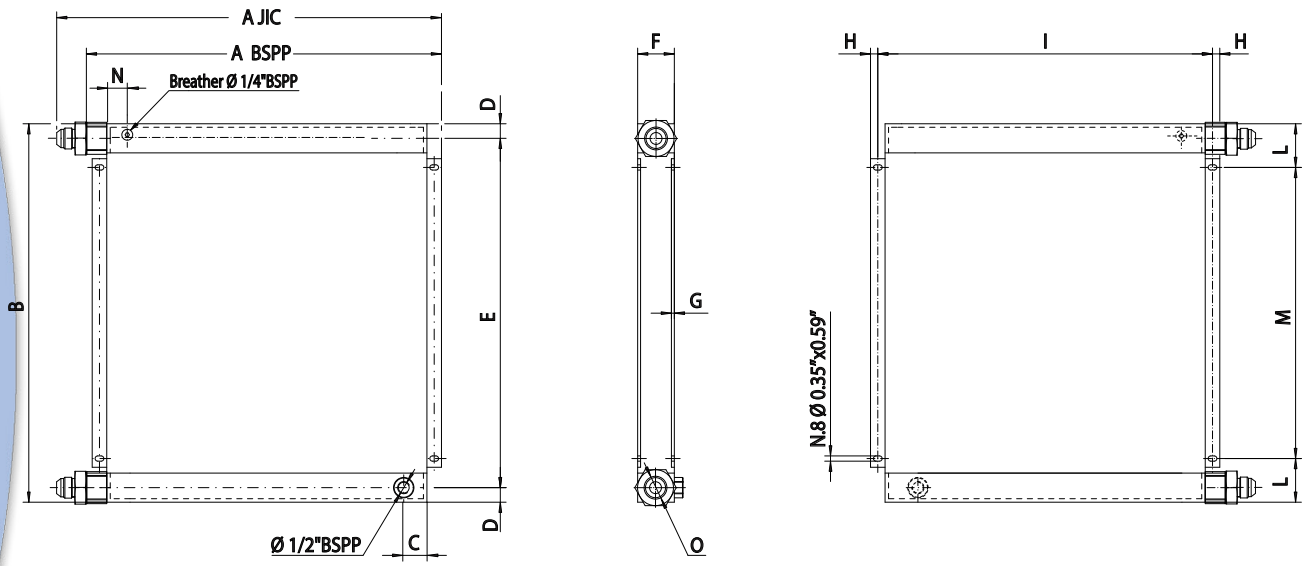
EXAMPLE : 2024KBV-E-JE - 22

Dimensions



Over-all dimensions and technical characteristic are not binding

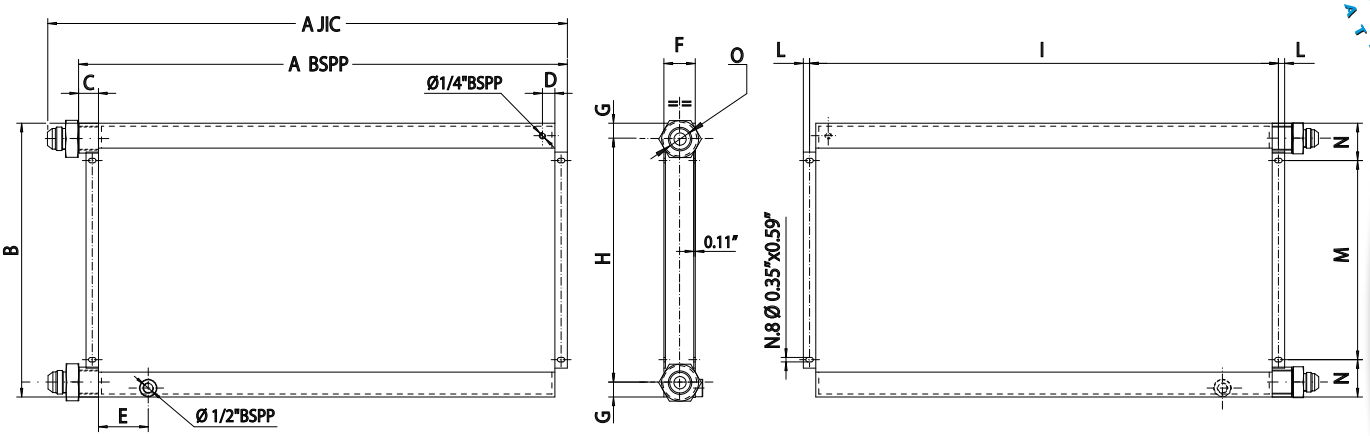
MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L		M	ft²	lbs
		BSPP	JIC	JIC 90°									BSPP	JIC		Face area	Net weight
2015K	(inch)	12.59	15.75	16.93	11.02	8.62	1.77	2.40	2.75	7.08	10.03	0.49	1" Internal	# 16 External	1/2" BSPP	0.50	7.0
	(mm)	320	400	430	280	219	45	61	70	180	255	12,5					
2020K	(inch)	12.59	15.75	16.93	11.02	8.62	2.48	2.40	2.75	7.08	10.03	0.49			1/2" BSPP	0.50	8.8
	(mm)	320	400	430	280	219	63	61	70	180	255	12.5					
2024K	(inch)	14.9	18.11	19.29	13.38	11.06	2.48	2.32	2.75	9.44	12.40	0.49			1/2" BSPP	0.81	12.5
	(mm)	380	460	490	340	281	63	59	70	240	315	12.5					
2030K	(inch)	17.51	20.67	21.85	15.94	13.54	2.48	2.40	2.65	12.20	14.96	0.49			1/2" BSPP	1.26	16.9
	(mm)	445	525	555	405	344	63	61	67.5	310	380	12.5					
2040K	(inch)	21.25	24.41	26.37	20.11	17.71	2.48	2.40	2.75	15.74	19.13	0.49	1.25" Internal	# 20 External	1/2" BSPP	2.10	11.7
	(mm)	540	620	670	511	450	63	61	70	400	486	12.5					



Over-all dimensions and technical characteristic are not binding

MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L	M	N	O		ft²	lbs
		BSPP	JIC	JIC 90°												BSPP	JIC	Face area	Net weight
2050K	(inch)	24.01	25.59	26.57	25.59	1.57	0.98	23.62	2.48	0.19	0.49	22.63	2.95	19.68	1.18	1.25" Internal	# 20 External	3.10	38.4
	(mm)	610	650	675	650	40	25	600	63	5	12.5	575	75	500	30				

Dimensions



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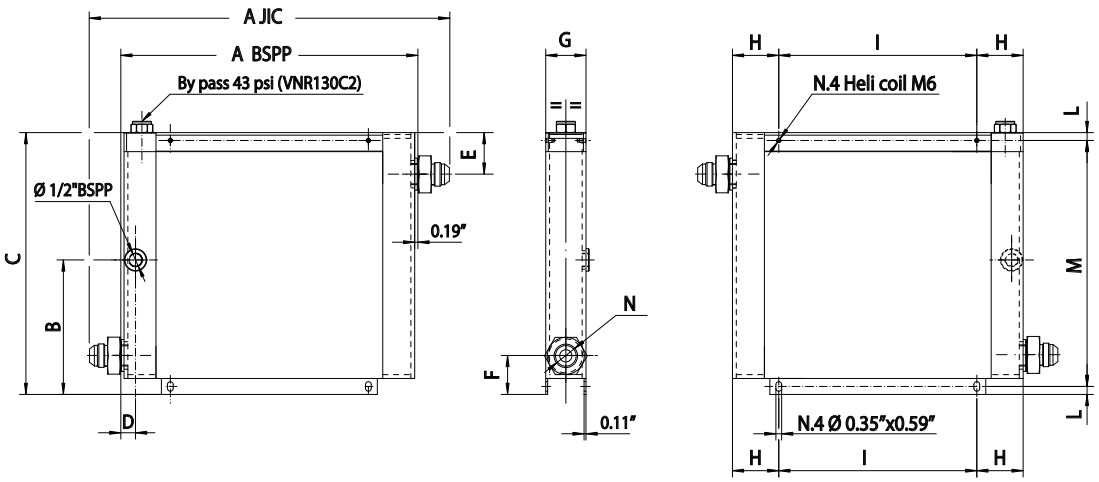
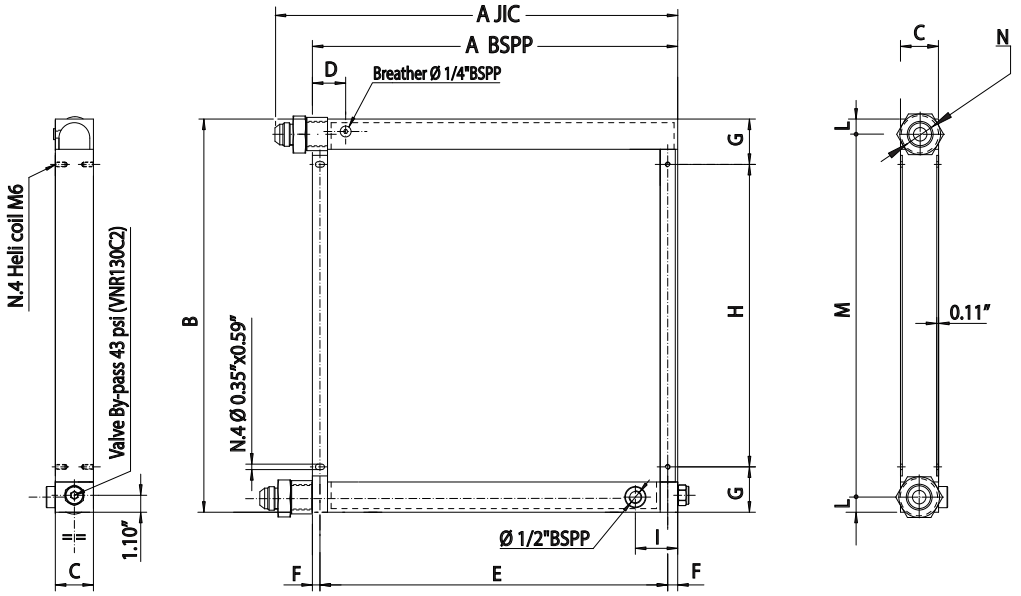
MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L	M	N	O		ft²	lbs
		BSPP	JIC	JIC 90°												BSPP	JIC	Face area	Net weight
2040 2KS	(inch)	38.66	40.55	41.22	21.65	1.57	0.98	3.93	2.48	1.18	19.29	37.08	0.49	15.74	2.95	1.50"	# 24	4.18	58.2
	(mm)	982	1030	1047	550	40	25	100	63	30	490	942	12.5	400	75	Internal	External		



Over-all dimensions and technical characteristic are not binding

MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L	M	N		ft²	lbs
		BSPP	JIC	JIC 90°											BSPP	JIC	Face area	Net weight
2015 KBV	(inch)	13.38	16.54	17.72	5.82	11.22	0.90	2.59	2.40	1.77	2.95	7.08	0.49	10.23				
	(mm)	340	420	450	148	285	23	66	61	45	75	180	12,5	260			0.50	9.7
2020 KBV	(inch)	13.38	16.54	17.72	5.82	11.22	0.90	2.59	2.40	2.48	2.95	7.08	0.49	10.23				
	(mm)	340	420	450	148	285	23	66	61	63	75	180	12.5	260			0.50	13.2
2024 KBV	(inch)	15.74	18.90	20.08	6.69	13.58	0.98	2.59	2.40	2.48	2.95	9.44	0.49	12.59	1"	# 16		
	(mm)	400	480	510	170	345	25	66	61	63	75	240	12.5	320	Internal	External	0.81	17.6
2030 KBV	(inch)	18.30	21.46	22.64	8.28	16.14	0.90	2.59	2.40	2.48	2.85	12.20	0.49	15.15				
	(mm)	465	545	575	210.5	410	23	66	61	63	72.5	310	12.5	385			1.26	23.1
2040 KBV	(inch)	22.04	25.20	26.37	10.01	20.31	0.90	2.59	2.40	2.48	2.95	15.74	0.49	18.97				
	(mm)	560	640	670	254.5	516	23	66	61	63	75	400	12.5	482			2.10	33.9

Dimensions



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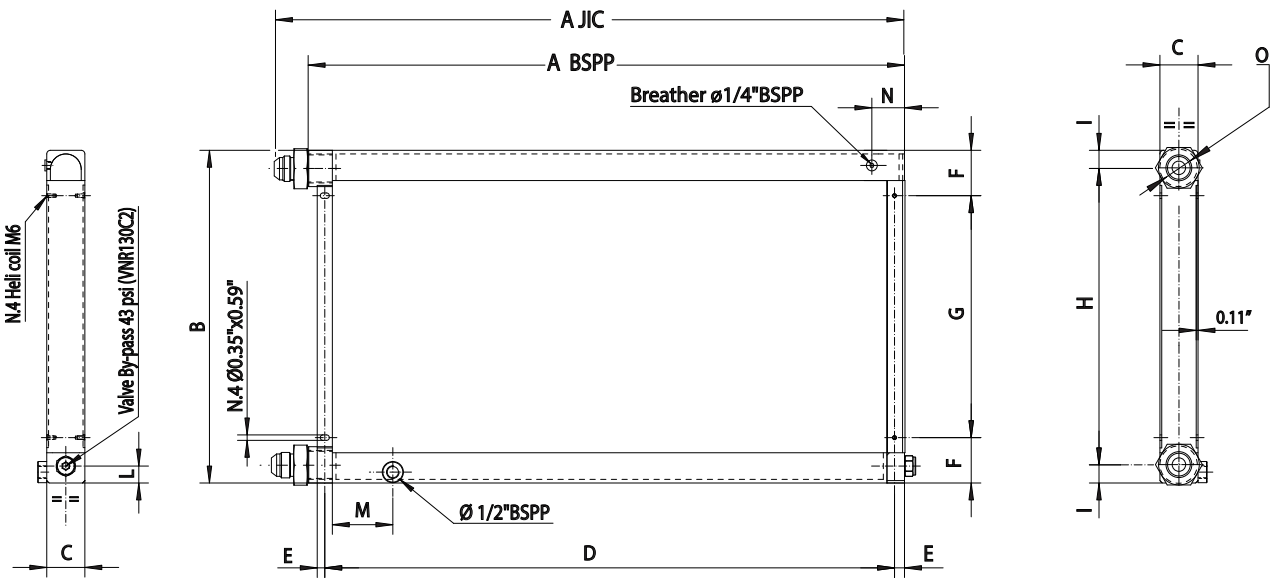
MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L	M	N		ft²	lbs
		BSPP	JIC	JIC 90°											BSPP	JIC	Face area	Net weight
2050 KBV	(inch)	23.62	25.2	26.18	25.59	2.48	1.18	22.63	0.49	2.95	23.62	2.55	0.98	19.68	1.25" Internal	# 20 External	3.25	44.9
	(mm)	600	640	665	650	63	30	575	12.5	75	500	65	25	600				



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MODEL	Unit of Measure	A			B	C	D	E	F	G	H	I	L	M	N	O		ft²	lbs
		BSPP	JIC	JIC 90°												BSPP	JIC	Face area	Net weight
2040 2KSBV	(inch)	38.81	40.71	41.38	21.65	2.48	37.08	0.49	2.95	15.74	19.29	1.18	1.10	3.93	2.12	1.50" Internal	# 24 External	4.18	62.6
	(mm)	986	1034	1051	550	63	942	12.5	75	400	490	30	28	100	54				