OK Series - AC Motor Drive

Air Cooled Oil Coolers

Features

The OK Series cooler design uses an axial fan assembly which draws air through the cooler. This offers excellent cooling capacity.

- Up to 50 HP cooling capacity
- Highly efficient and rugged bar-and plate style heat exchangers
- Externally mounted heat exchangers for easy maintenance and cleaning
- Modular pump and filter options for a plug and play fluid conditioning system
- Available with HYDAC MF, LPF and FLND series filters
- Accessories include: Thermostats *(adjustable and fixed)*, Integrated Thermostatic bypass valves and pressure bypass valves.
- Packaged systems with pump flows ranging from 8.45 gpm to 47.5 gpm

Applications


Gearboxes


Industrial


Elevators


Power Generation


Pulp & Paper

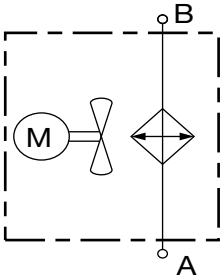

Railways


Shipbuilding

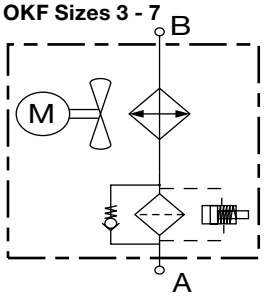

Steel / Heavy Industry

Hydraulic Symbol

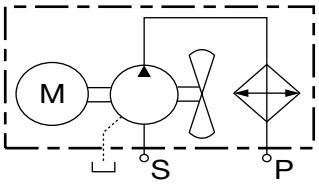
OK Sizes 2 - 7



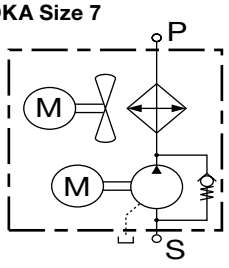
OKF Sizes 3 - 7



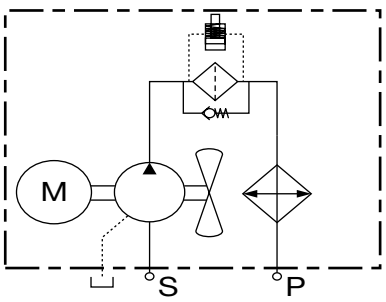
OKA Sizes 4 - 6



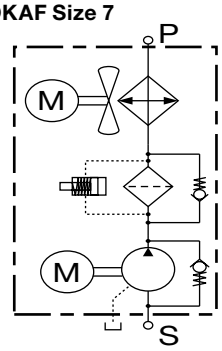
OKA Size 7



OKAF Sizes 4 - 6



OKAF Size 7



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General

Materials	Housing: Welded Steel Heat Exchanger: Aluminum Heavy Duty Bar and Plate Fan: Plastic Motor: TEFC, NEMA or IEC frame *(varies by cooler size)* Pump: Screw
Mounting Orientation	Horizontal, motor shaft
Maximum Pressure	230 psi (16 Bar)
Fluids	Mineral oil to DIN 51524 Part 1 and 2
Ambient Temperature	50° – 104°F (10° – 40°C) *(Contact factory for other fluid usages)*
Maximum Oil Viscosity	w/o pump: 2000 cSt w/ pump: 180 cSt
Maximum Oil Temperature	w/o pump: 266°F (130°C) w/ pump: 176°F (80°C)
Standard Air Flow Direction	Air pulled across heat exchanger
Filtration	ISO/DIS 4406 Code 19/16- Filtration Grade B25>75

*Note: Sizes OKA-4-6 do not include relief valve. Pressures higher than 90 psi *(measured at pump outlet)* will result in motor overload conditions. Size OKA-7 comes with a 145 psi relief valve built into the pump.

Technical Specifications

Model	Set up	Max. Oil Flow Rate (gpm)	Pump Displacement - Flow Rate	Noise (dBa @ 1 m)	Motor Specifications		
					Fan (HP)	Pump (HP)	RPM
OK 2S	Fan	40	N/A	64	0.21 (kW)	N/A	1800
OK 2H	Fan	40		80	0.29 (kW)		3600
OK 3S, OKF 3S	Fan	40		66	0.21 (kW)		1800
OK 3H, OKF 3H	Fan	40		85	0.63 (kW)		3600
OK 4L, OKF 4L	Fan	40		63	0.33		1200
OKA 4L, OKAF 4L	Fan w/pump	N/A	28 cc/rev 8.45 gpm 40 cc/rev 12 gpm	68	N/A	2	1200
OK 4S, OKF 4S	Fan	40	N/A	72	0.5	N/A	1800
OKA 4S, OKAF 4S	Fan w/pump	N/A	28 cc/rev 12.75 gpm 40 cc/rev 18.5 gpm	75	N/A	3	1800
OK 5L, OKF 5L	Fan	60	N/A	72	0.33	N/A	1200
OKA 5L, OKAF 5L	Fan w/pump	N/A	28 cc/rev 8.45 gpm 40 cc/rev 12 gpm	75	N/A	2	1200
OK 5S, OKF 5S	Fan	60	N/A	79	1.5	N/A	1800
OKA 5S, OKAF 5S	Fan w/pump	N/A	28 cc/rev 12.75 gpm 40 cc/rev 18.5 gpm	81	N/A	3	1800
OK 6L, OKF 6L	Fan	60	N/A	72	0.75	N/A	1200
OKA 6L, OKAF 6L	Fan w/pump	N/A	28 cc/rev 8.45 gpm 40 cc/rev 12 gpm	77	N/A	2	1200
OK 6S, OKF 6S	Fan	60	N/A	79	1.5	N/A	1800
OKA 6S, OKAF 6S	Fan w/pump	N/A	28 cc/rev 12.75 gpm 40 cc/rev 18.5 gpm	82	N/A	3	1800
OK 7L, OKF 7L	Fan	74	N/A	80	2	N/A	1200
OKA 7L, OKAF 7L	Fan w/pump	N/A	70 cc/rev 34.3 gpm 100 cc/rev 47.5 gpm	84	2	5 (70cc/rev) 7.5 (100 cc/rev)	1200 / 1800
OK 7S, OKF 7S	Fan	74	N/A	85	5	N/A	1800
OKA 7S, OKAF 7S	Fan w/pump	N/A	70 cc/rev 34.3 gpm 100 cc/rev 47.5 gpm	87	5	5 (70cc/rev) 7.5 (100 cc/rev)	1800 / 1800

Model Code

OKA 4L 3.6 B 28 MF95 3 B IBP 2 TS120

Model
- OK = Basic Cooler
- OKF = Cooler with Filter *(Sizes 3-7 only)*
- OKA = Cooler with Pump *(Sizes 4-7 only)*
- OKAF = Cooler with Pump & Filter *(Sizes 4-7 only)*

Size
2H, 2S, 3H, 3S, 4L, 4S, 5L, 5S, 6L, 6S, 7L, 7S
(Note: H = 3600 RPM, S = 1800 RPM, L = 1200 RPM)

Modification Number *(latest version supplied)*

Motor Voltage
- B = 230/460 Volts, 3ph
- C = 575 Volts, 3ph
- X = No Motor

Pump
- *(omit)* = No Pump
- 28 = 28 ccm/rev, L=8.4 gpm, S=12.75 gpm *(sizes 4L, 4S, 5L, 5S, 6L, 6S only)*
- 40 = 40 ccm/rev, L=12 gpm, S=18.5 gpm *(sizes 4L, 4S, 5L, 5S, 6L, 6S only)*
- 70 = 70 ccm/rev, L/S=34.3 gpm *(sizes 7L & 7S only)*
- 100 = 100 ccm/rev, L/S=47.5 gpm *(sizes 7L & 7S only)*

Filter Type
- *(omit)* = No Filter
- MF95 = Spin-On 25 rated gpm
- MF190 = Spin-On 30 rated gpm
- MF195 = Spin-On 60 rated gpm
- LPF160 = Cartridge Filter 43 rated gpm
- LPF240 = Cartridge Filter 63 rated gpm
- LPF280 = Cartridge Filter 73 rated gpm
- FLND250 = Duplex Filter 66 rated gpm *(sizes 4-7 only)*
- FLND400 = Duplex Filter 105 rated gpm *(size 7 only)*

Micron Rating
- *(omit)* = No Filter
- 3 = 3 micron, Absolute
- 5 = 5 micron, Absolute *(MF, LPF only)*
- 6 = 6 micron, Absolute *(FLND only)*
- 10 = 10 micron, Absolute
- 20 = 20 micron, Absolute *(MF, LPF only)*
- 25 = 25 micron, Absolute *(FLND only)*

Filter Indicator
- *(omit)* = No Filter
- B = Visual
- C = Electrical (AC/DC) *(LPF + FLND filters only)*
- D24 = 24 VDC Lamp/Switch *(LPF + FLND filters only)*
- D115 = 115 VAC Lamp/Switch *(LPF + FLND filters only)*
- D230 = 230 VAC Lamp/Switch *(LPF + FLND filters only)*

Accessories
- *(omit)* = None
- IBT = Internal Temperature Bypass Valve
- IBP = Internal Pressure Bypass Valve

Opening Temperature *(IBT Only)*
- 45 = Opens 113°F (45°C) Closes at 131°F (55°C)
- 50 = Opens 130°F (50°C) Closes at 150°F (65°C)
- 60 = Opens 140°F (60°C) Closes at 158°F (70°C)

Opening Pressure *(IBT & IBP)*
- 2 = 2 bar (29 psi)
- 3 = 3 bar (45 psi)
- 4 = 4 bar (58 psi) *(IBP only)*

Temperature Switch
- TR1 = Reservoir Thermostat, adjustable 32° to 200°F *(must be ordered as a separate line item)*
- AITR = Inline Thermostat, adjustable 32°F to 200°F
- TS-120 = Inline Temperature Switch, Fixed 120°F
- TS-140 = Inline Temperature Switch, Fixed 140°F
- TS-160 = Inline Temperature Switch, Fixed 160°F

(TS switches OK and OKF models only)

Model Codes Containing RED are Options – Contact HYDAC Cooling Division for information and availability

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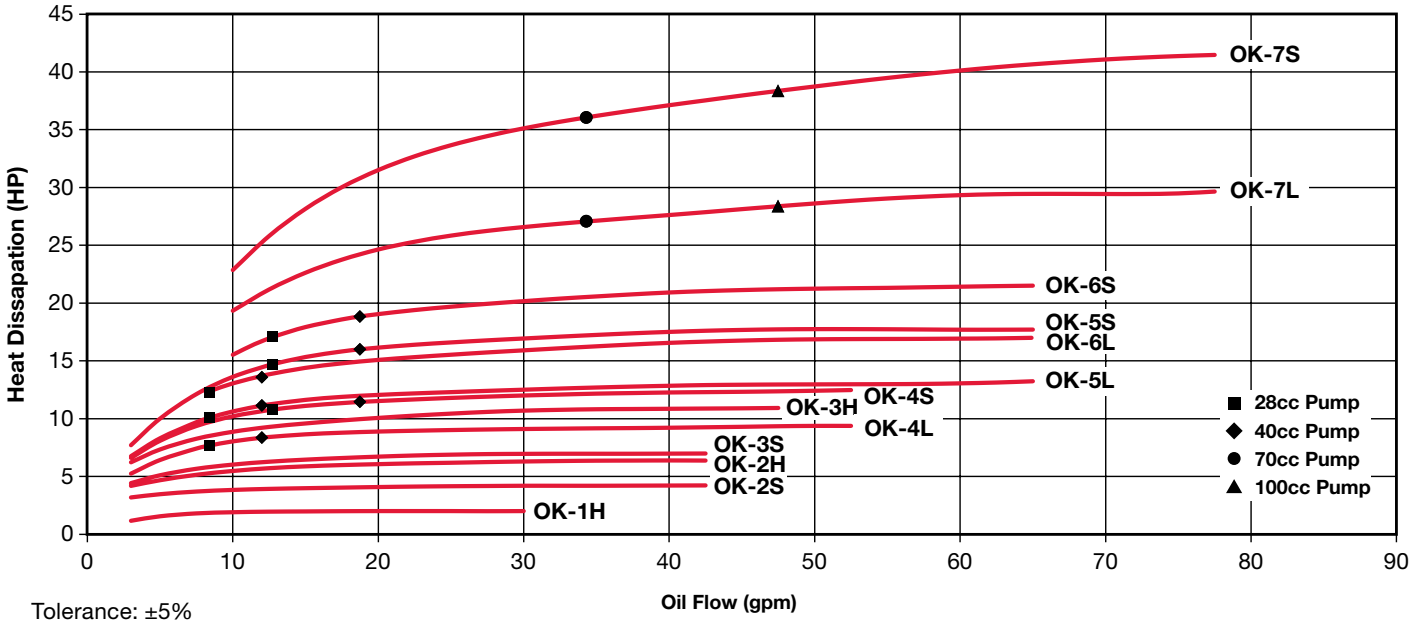
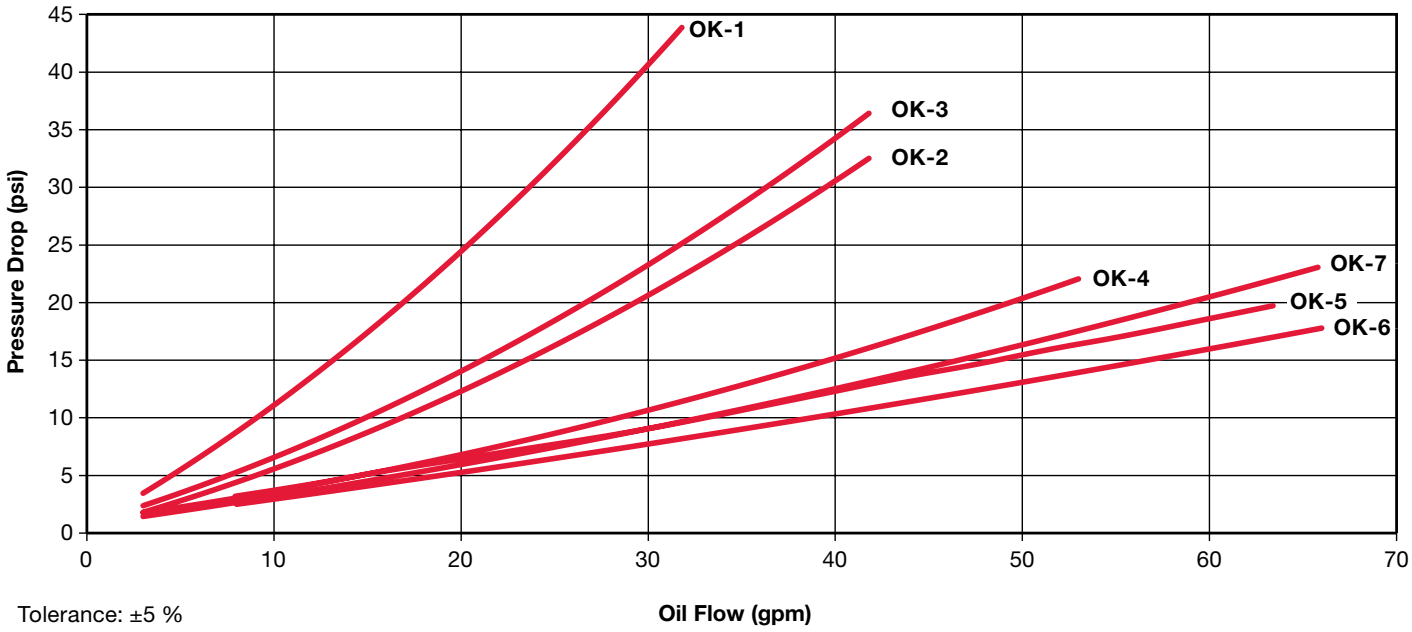
Heat Dissipation @ ΔT = 40°F



Tolerance: ±5%

Cooling capacity depending on oil flow and the temperature differential ΔT between the oil inlet and air inlet.

Pressure Drop @ 30cSt



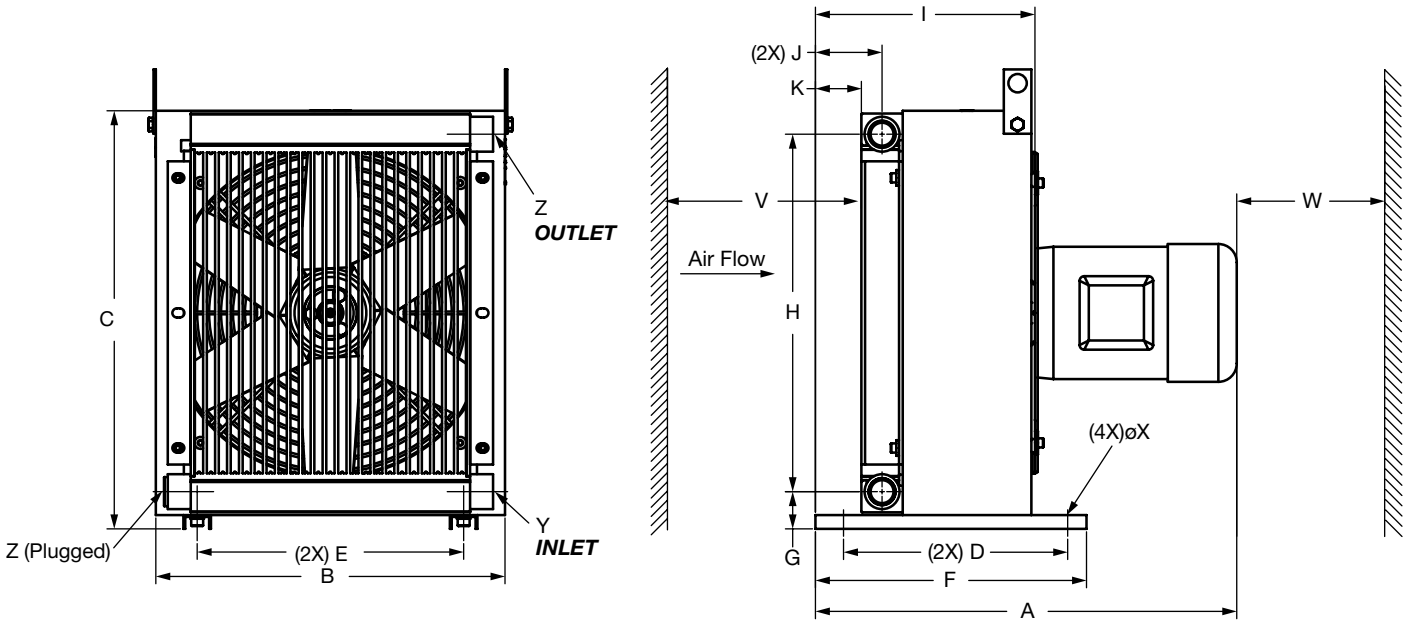
Tolerance: ±5 %

For other viscosities the result must be multiplied by the K factors below

K Factor Chart

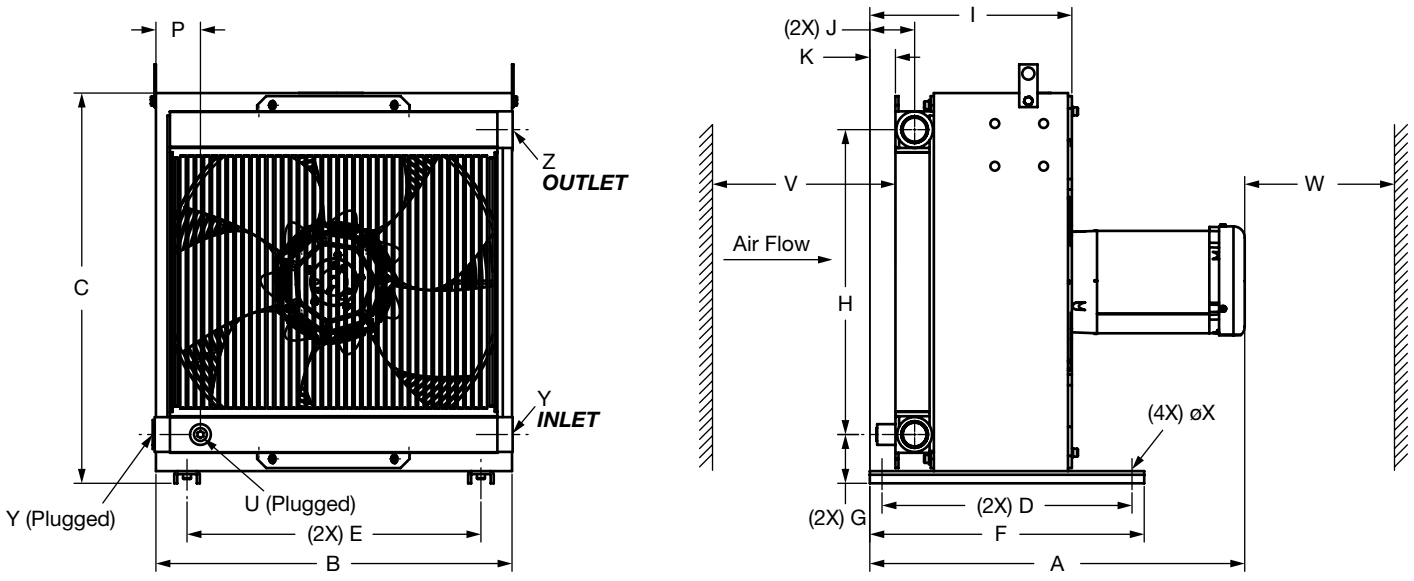
K Factor	0.5	0.65	0.77	1	1.3	1.52	1.9	2.8	5.3
Viscosity (SSU)	46	70	102	150	213	250	315	464	695
Viscosity (cSt)	10	15	22	32	46	54	68	100	150

Dimensions
OK Size 2 - 3



Size	A	B	C	D	E	F	G	H	I	J	K	V	W	X	Y	Z
OK2H,S	17.46	12.99	13.98	10.04	6.3	11.61	1.59	11.38	7.87	2.26	1.38	7.87	19.69	0.35	SAE-12	SAE-12
OK3H,S	17.46	14.96	17.91	10.04	11.42	11.61	1.59	15.31	8.66	2.26	1.38	11.81	31.5	0.35	SAE-12	SAE-12

Dimensions
OK Size 4 - 6



Size	A	B	C	D	E	F	G	H	I	J	K	P	U	V	W	X	Y	Z
OK4L,S	23.15	19.09	20.47	16.14	16.73	17.72	2.13	17.28	11.86	4.07	2.83	-	-	15.75	47.24	ø0.35 x 0.78 slot	SAE-16	SAE-16
OK5L,S	23.55	21.34	22.13	16.14	18.98	17.72	2.81	17.28	12.26	3.68	2.44	-	-	19.69	59.06	ø0.35 x 0.78 slot	SAE-16	SAE-16
OK6L,S	24.34	22.99	25.20	16.14	18.98	17.72	3.15	19.69	13.05	2.89	1.65	2.89	1/2" NPT	23.62	70.87	ø0.35 x 0.78 slot	SAE-20	SAE-20

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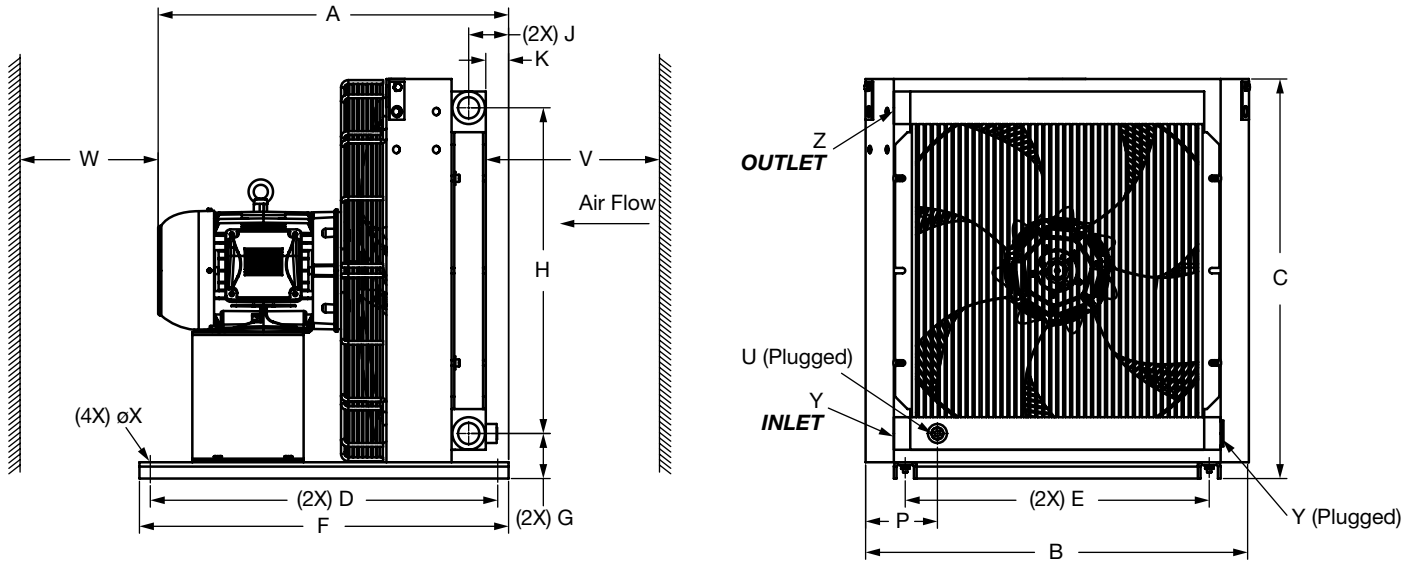
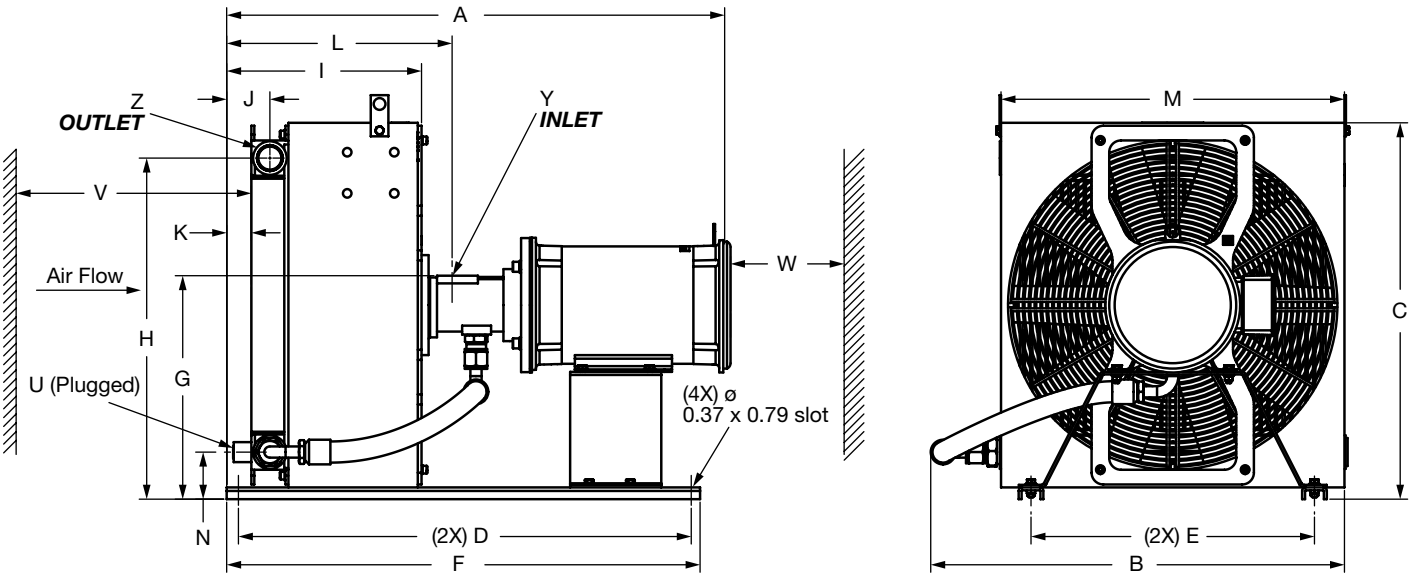
Dimensions
OK Size 7



A	B	C	D	E	F	G	H	J	K	P	U	V	W	X	Y	Z
25.70	27.80	28.98	25.20	22.05	26.77	3.27	23.62	2.89	1.65	5.21	1/2" NPT	23.62	47.24	ø0.35 x 0.78 Slot	SAE-20	SAE-20

Dimensions
OKA Size 4 - 6



Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	U	V	W	Y	Z
OKA4L SB28	32.67	22.50	20.47	30.31	16.73	31.69	12.60	19.27	11.61	4.07	2.83	13.91	19.09	-	-	15.75	47.24	SAE-16	SAE-16
OKA4L SB40	34.41	22.50	20.47	30.31	16.73	31.69	13.39	19.27	11.61	4.07	2.83	14.44	19.09	-	-	15.75	47.24	SAE-24	SAE-16
OKA5L SB28	30.55	25.16	22.13	27.95	18.98	30.32	13.43	20.12	9.82	1.24	2.44	11.86	21.34	-	-	19.69	59.06	SAE-16	SAE-16
OKA5L SB40	32.07	25.16	22.13	27.95	18.98	30.32	14.21	20.12	9.82	1.24	2.44	12.40	21.34	-	-	19.69	59.06	SAE-24	SAE-16
OKA6L SB28	33.73	27.87	25.20	30.32	18.98	31.69	14.96	22.83	13.05	2.89	1.65	15.09	22.99	3.15	1/2" NPT	23.62	70.87	SAE-16	SAE-20
OKA6L SB40	35.23	27.87	25.20	30.32	18.98	31.69	15.75	22.83	13.05	2.89	1.65	15.62	22.99	3.15	1/2" NPT	23.62	70.87	SAE-24	SAE-20

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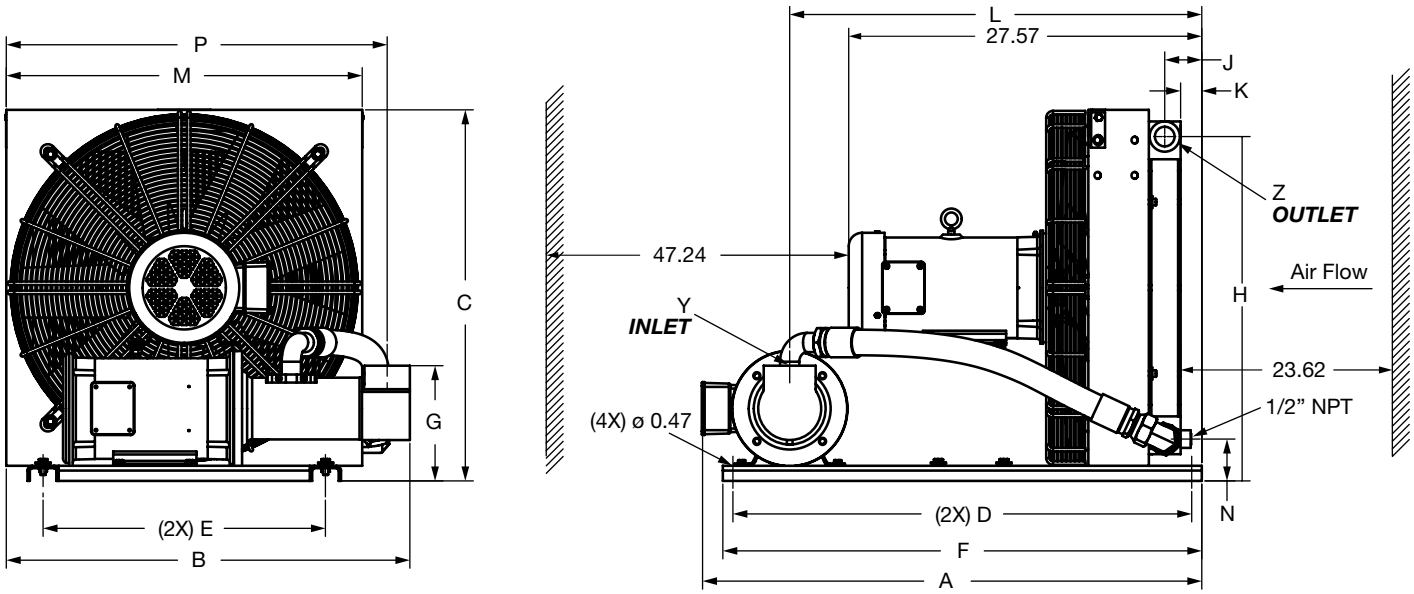
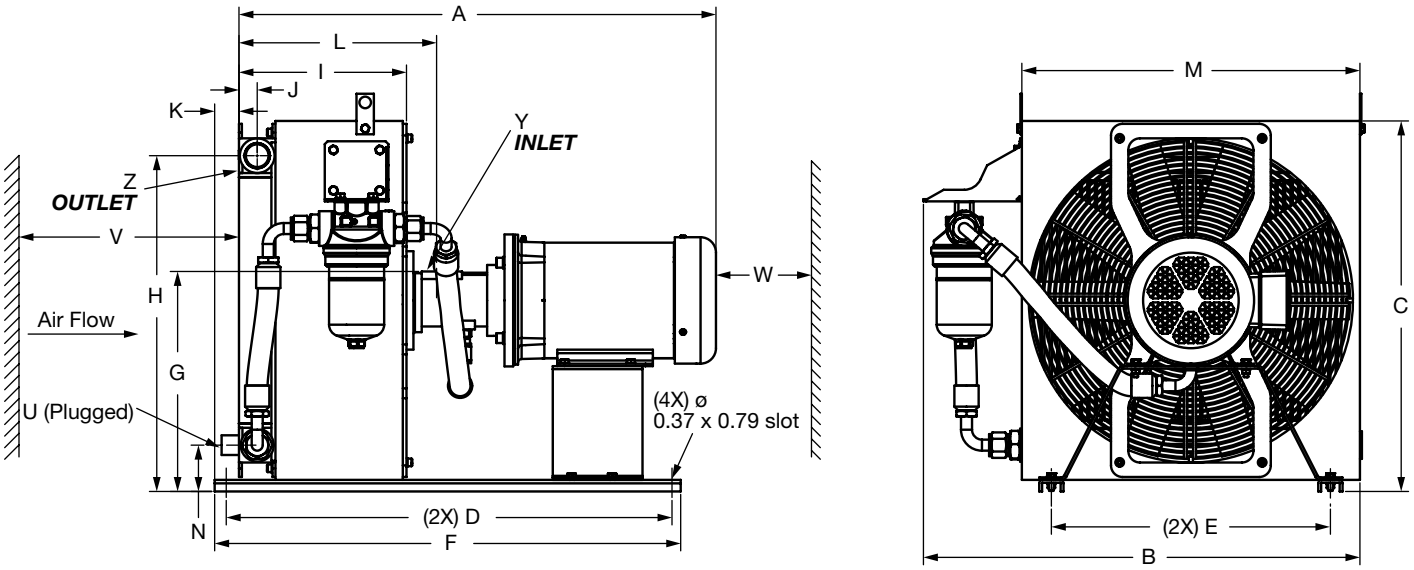
Dimensions
OKA Size 7



Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Y	Z
OKA7L S3.6B70	39.05	31.52	28.98	35.83	22.05	37.4	9	26.89	2.89	1.65	32.18	27.8	3.27	29.74	SAE 2" Code 61 Flange	SAE-20
OKA7L S3.6B100	40.30	33.08	28.98	35.83	22.05	37.4	10.17	26.89	2.89	1.65	31.68	27.8	3.27	31.04	SAE 2 1/2" Code 61 Flange	SAE-20

Dimensions
OKAF Size 4 - 6



Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	U	V	W	Y	Z
OKAF4L SB28	32.67	25.79	20.47	30.31	16.73	31.69	12.60	19.27	11.61	4.07	2.83	13.91	19.09	-	-	15.75	47.24	SAE-16	SAE-16
OKAF4L SB40	34.41	25.79	20.47	30.31	16.73	31.69	13.39	19.27	11.61	4.07	2.83	14.44	19.09	-	-	15.75	47.24	SAE-24	SAE-16
OKAF5L SB28	30.55	29.34	22.13	27.95	18.98	30.32	13.43	20.12	9.82	1.24	2.44	11.86	21.34	-	-	19.69	59.06	SAE-16	SAE-16
OKAF5L SB40	32.07	29.34	22.13	27.95	18.98	30.32	14.21	20.12	9.82	1.24	2.44	12.40	21.34	-	-	19.69	59.06	SAE-24	SAE-16
OKAF6L SB28	33.73	31.00	25.20	30.32	18.98	31.69	14.96	22.83	13.05	2.89	1.65	15.09	22.99	3.15	1/2" NPT	23.62	70.87	SAE-16	SAE-20
OKAF6L SB40	35.23	31.00	25.20	30.32	18.98	31.69	15.75	22.83	13.05	2.89	1.65	15.62	22.99	3.15	1/2" NPT	23.62	70.87	SAE-24	SAE-20

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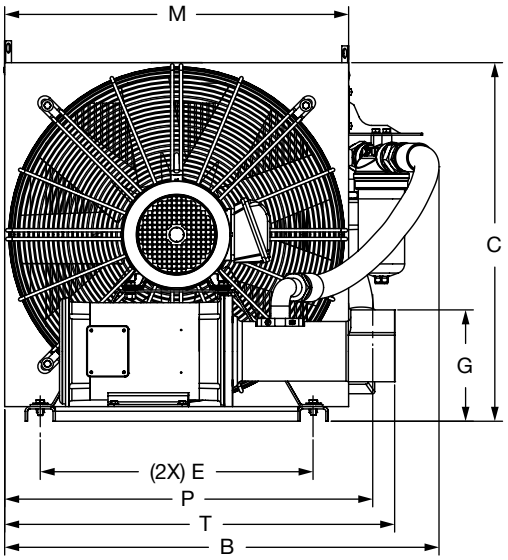
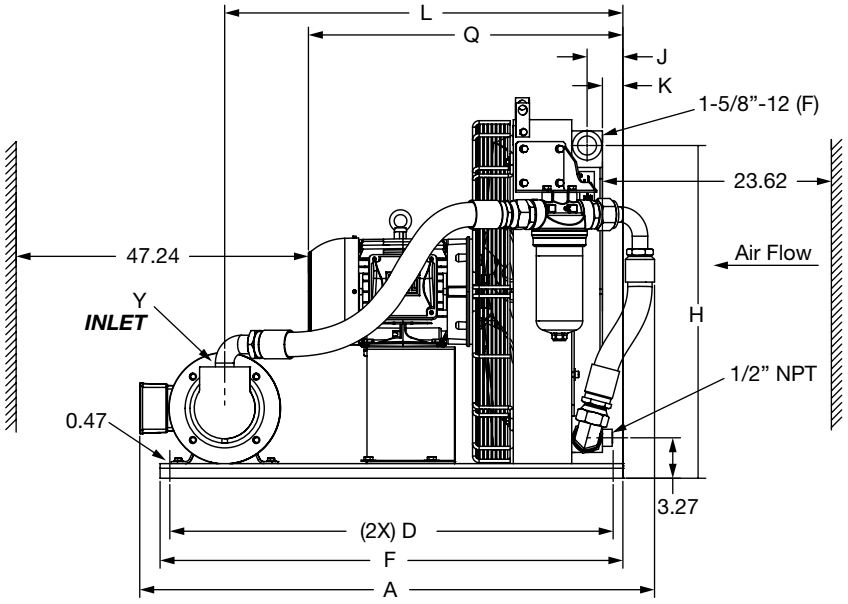
Dimensions
OKAF Size 7





Size	A	B	C	D	E	F	G	H	J	K	L	M	P	Q	T	Y
OKAF7L S3.6B70	41.60	35.08	28.98	35.83	22.05	37.40	9	26.89	2.89	1.65	32.18	27.80	29.74	25.41	31.52	SAE 2” Code 61 Flange
OKAF7L S3.6B100	41.60	35.08	28.98	35.83	22.05	37.40	10.17	26.89	2.89	1.65	31.68	27.80	31.04	25.41	33.08	SAE 2-1/2” Code 61 Flange

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