

FLUID COOLING | P-Bar Series Industrial AOL

AIR COOLED AOL

BRAZED ALUMINUM CONSTRUCTION

HYDRAULIC OR COMPRESSOR OIL COOLING

Features

- Large Oil Flow
- High Performance
- Industrial Duty
- Brazed Aluminum Bar and Plate Core
 - Compact all aluminum core assembly
 - Ideal for converting water cooled equipment to air cooled
 - Eliminates high water and sewer costs
 - Eliminates corrosion problems associated with water cooled units
 - Vertical air flow works well for heat recovery
 - State-of-the-art heat transfer technology
 - Hydraulic motors available
 - Optional SAE Ports
 - Marine corrosion control coatings available
 - High performance air side fin design
- Detachable legs



Ratings

Maximum Operating Pressure

250 psi (17 BAR)

Maximum Operating Temperature

300° F (150° C)

Materials

Legs Steel with baked enamel finish

Shroud Steel

Standard Core Brazed Aluminum Bar and Plate

- Tanks – 5052 Aluminum
- Nose Bar & Little Bar – 3003-H Aluminum
- Air Fin, Plate, Turbulator & End Plate – 3003-O Aluminum

Fan Aluminum Hub, Plastic Blades

Motor TEFC

Fluid Compatibility

Petroleum/mineral oils

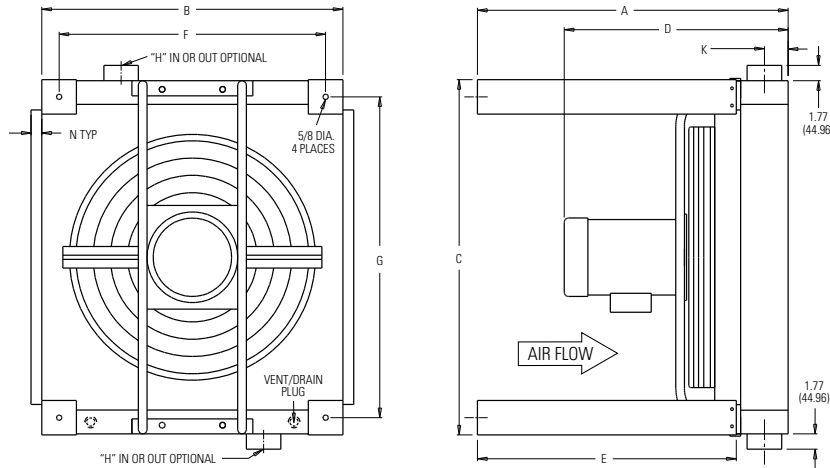
Oil/water emulsion

Water/ethylene glycol

How to Order

| | | | | | | | | |
|---------------------------------------|---|---|---|--|---|---|---|--|
| AOL | - | | - | | - | | - | |
| Model Series AOL - Standard | | Model Size Selected 400 725 950 1200 1600 2000 2500 3000 3500 | | Connection Type Blank - NPT S - SAE | | Specify Motor Required 0 - No Motor 2 - Single Phase 3 - Three Phase 6 - 575 Volt 9 - Hydraulic 18 - IEC Three Phase | | Noise Level Blank - Standard Noise Level LN - Low Noise Level |

Dimensions



| Model | A | B | C | D Approx. | E | F | G | H NPT | H SAE | J | K | L | Net Weight Lbs. | Shipping Weight Lbs. |
|----------|-------------------|--------------------|--------------------|-------------------|-------------------|---------------------|--------------------|----------|------------------------------|------------------|-----------------|-----------------|-----------------------|----------------------------|
| AOL-400 | 34.20 (868.68) | 17.96 (456.18) | 22.69 (576.33) | 20.86 (529.84) | 30.00 (762.00) | 13.96 (354.58) | 18.69 (474.73) | 2.00 | #32 SAE 2-1/2-12 UN-2B | 5.93 (150.62) | 1.85 (46.99) | 1.25 (31.75) | 109 (49.44) | 148 (67.13) |
| AOL-725 | 34.20 (868.68) | 22.37 (568.20) | 30.57 (776.48) | 20.86 (529.84) | 30.00 (762.00) | 18.37 (466.60) | 26.57 (674.88) | 2.00 | | 5.88 (149.35) | 1.85 (46.99) | 1.25 (31.75) | 151 (68.49) | 170 (77.11) |
| AOL-950 | 36.01 (914.65) | 26.78 (680.21) | 37.25 (946.15) | 23.62 (599.95) | 30.00 (762.00) | 22.78 (578.61) | 33.25 (844.55) | 2.00 | | 6.82 (173.23) | 2.76 (70.10) | 1.25 (31.75) | 221 (100.24) | 300 (136.08) |
| AOL-1200 | 36.01 (914.65) | 26.78 (680.21) | 41.20 (1046.48) | 25.51 (647.95) | 30.00 (762.00) | 22.78 (578.61) | 37.20 (944.88) | 2.00 | | 6.00 (152.40) | 2.76 (70.10) | 1.25 (31.75) | 296 (134.26) | 430 (195.04) |
| AOL-1600 | 36.01 (914.65) | 34.89 (886.21) | 41.20 (1046.48) | 27.51 (698.75) | 30.00 (762.00) | 30.89 (784.61) | 37.20 (944.88) | 2.50 | 2-1/2 SAE 4 Bolt FLG | 8.00 (203.20) | 2.76 (70.10) | 1.25 (31.75) | 355 (161.03) | 515 (233.60) |
| AOL-2000 | 36.01 (914.65) | 37.88 (962.15) | 51.05 (1296.67) | 26.25 (666.75) | 30.00 (762.00) | 33.88 (860.55) | 47.05 (1195.07) | 2.50 | | 8.00 (203.20) | 2.76 (70.10) | 1.25 (31.75) | 482 (218.63) | 582 (263.99) |
| AOL-2500 | 36.01 (914.65) | 43.70 (1109.98) | 49.08 (1246.63) | 28.51 (724.15) | 30.00 (762.00) | 39.70 (1008.38) | 45.08 (1145.03) | 3.00 | 3\"/> | | | | | |
| AOL-3000 | 36.01 (914.65) | 52.52 (1334.01) | 51.05 (1296.95) | 30.51 (774.95) | 30.00 (762.00) | 48.52 (1232.41) | 47.05 (1206.50) | 3.00 | | 8.00 (203.20) | 2.76 (70.10) | 1.25 (31.75) | 724 (328.40) | 825 (374.21) |
| AOL-3500 | 36.01 (914.65) | 56.30 (1430.02) | 51.05 (1296.95) | 30.51 (774.95) | 30.00 (762.00) | 52.30 (13328.42) | 47.05 (1206.50) | 3.00 | | 8.00 (203.20) | 2.76 (70.10) | 1.25 (31.75) | 760 (344.73) | 860 (390.09) |

Note: We reserve the right to make reasonable design changes without notice. All dimensions are in inches and (millimeters).

Selection Procedure

Performance Curves based on 100°F (55.56°C) E.T.D. or Entering Temperature Difference (E.T.D. = Entering oil temperature minus ambient air temperature). SAE #10 oil @ 200°F (93.33°C).

Oil pressure drop coding:

- ✕ = 5 PSI (.345 BAR)
- = 10 PSI (.689 BAR)
- ◆ = 15 PSI (1.03 BAR)
- ▲ = 20 PSI (1.38 BAR)
- = 30 PSI (2.10 BAR)

E.T.D. temperature correction formula:

ENGLISH Version

$$HP_{Curve} = HP_{To Be Removed} \times \frac{100}{Desired E.T.D.}$$

METRIC Version

$$\frac{KW}{^{\circ}C} = \frac{Heatload (KW)}{Desired E.T.D. (^{\circ}C)}$$

Conversion

$$Hp = \frac{KW}{^{\circ}C} = X .745 \times E.T.D. (^{\circ}F)$$

Notes

- A three-way thermostatic valve is recommended to bypass the cold oil around the heat exchanger during start up.
- Support piping as needed. Flexible connectors must be properly installed to validate warranty.
- Coolers should not operate in ambient temperatures below 35°F (1°C). Consult factory for recommendations.
- The fan cannot be cycled.
- AOL coolers operated outdoors must be protected from weather. Consult factory for recommendations.
- If duct work or additional static resistance is added to the cooler airstream, an auxiliary air mover may be required.
- Can be mounted for horizontal air flow, with oil in at bottom port.

Maintenance

Periodic cleaning of the fins with compressed air is needed to remove the accumulation of dirt and dust. If the inside of the tubes need to be cleaned of oil and carbon, use a chlorinated solvent. Do not use strong solvents. Do not use acids or caustic cleaners.

Specifications

Electric Motor & Fan Data⁽¹⁾ (60 Hz Nema Frame)

| Model | Fan CMM | Fan CFM | Motor H.P. | Voltage | Phase | Full Load Amps 230V | Frequency (Hz) | RPM | Nema Frame | Thermal Overload | Sound dB(A) at 3 ft. |
|----------|--------------|-----------|------------|----------------------------|-------|---------------------|-------------------|-----------|------------|------------------|----------------------|
| AOL-400 | 62.30 | 2200 | 1.0 | 115/208-230 | 1 | 6.0 | 60 ⁽²⁾ | 3450 | 56C | No | 97 |
| | 51.68/62.30 | 1825/2200 | 1.0 | 208-230/460 ⁽³⁾ | 3 | 3.6/3.2 | 50/60 | 2850/3450 | 56C | No | 97 |
| AOL-725 | 101.94 | 3600 | 1.5 | 115/208-230 | 1 | 8.5 | 60 ⁽²⁾ | 3450 | 56C | No | 100 |
| | 84.95/102.94 | 3000/3600 | 1.5 | 208-230/460 ⁽⁴⁾ | 3 | 4.8/4.2 | 50/60 | 2850/3450 | 56C | No | 100 |
| AOL-950 | 133.09 | 4700 | 1.5 | 115/208-230 | 1 | 8.6 | 60 ⁽²⁾ | 1740 | 145TC | No | 92 |
| | 133.09 | 4700 | 1.5 | 208-230/460 | 3 | 4.6 | 60 ⁽²⁾ | 1740 | 145TC | No | 92 |
| AOL-1200 | 198.22 | 7000 | 5.0 | 230 | 1 | 23.00 | 60 ⁽²⁾ | 1740 | 184TC | No | 94 |
| | 198.22 | 7000 | 3.0 | 208-230/460 | 3 | 8.8 | 60 ⁽²⁾ | 1740 | 182TC | No | 96 |
| AOL-1600 | 223.70 | 7900 | 5.0 | 208-230/460 | 3 | 13.4 | 60 ⁽²⁾ | 1740 | 184TC | No | 98 |
| AOL-2000 | 311.49 | 14000 | 7.5 | 230/460 | 3 | 19.6 | 60 ⁽²⁾ | 1740 | 213TC | No | 98 |
| AOL-2500 | 396.44 | 14000 | 7.5 | 230/460 | 3 | 19.6 | 60 ⁽²⁾ | 1740 | 213TC | No | 98 |
| AOL-3000 | 495.54 | 17500 | 10.0 | 230/460 | 3 | 24.8 | 60 ⁽²⁾ | 1740 | 215TC | No | 102 |
| AOL-3500 | 495.54 | 17500 | 10.0 | 230/460 | 3 | 24.8 | 60 ⁽²⁾ | 1740 | 215TC | No | 102 |

⁽¹⁾ Published electrical ratings are approximate, and may vary because of motor brand. Actual ratings are on motor nameplate.

⁽²⁾ May also be operated at 50 Hz. Consult factory for details.

⁽³⁾ 50 Hz voltage: 190-200-208-220/380-400-415-440

⁽⁴⁾ 50 Hz voltage: 190-208/380-415

All motors shown are TEFC—Other motor options available upon request.

Electric Motor Information (50 Hz IEC Frame)

| Model | CMM | CFM | KW | Voltage | Phase | Frequency | RPM | Frame | Sound dB(A) at 1 meter |
|----------|-------|-------|------|-------------|-------|-----------|------|-------|------------------------|
| AOL-400 | 52.4 | 1850 | .75 | 230/400/415 | 3 | 50 Hz | 3000 | 80 | 81 |
| AOL-725 | 85.0 | 3001 | 1.10 | 230/400/415 | 3 | 50 Hz | 3000 | 80 | 80 |
| AOL-950 | 108.2 | 3821 | 1.50 | 230/400/415 | 3 | 50 Hz | 1500 | 90 | 78 |
| AOL-1200 | 165.1 | 5834 | 2.20 | 230/400/415 | 3 | 50 Hz | 1500 | 100 | 83 |
| AOL-1600 | 186.4 | 6584 | 3.00 | 230/400/415 | 3 | 50 Hz | 1500 | 100 | 85 |
| AOL-2000 | 331.3 | 11700 | 4.00 | 230/400/415 | 3 | 50 Hz | 1500 | 112 | 88 |
| AOL-2500 | 331.3 | 11700 | 4.00 | 230/400/415 | 3 | 50 Hz | 1500 | 112 | 88 |
| AOL-3000 | 410.6 | 14500 | 7.50 | 230/400/415 | 3 | 50 Hz | 1500 | 132 | 90 |
| AOL-3500 | 410.6 | 14500 | 7.50 | 230/400/415 | 3 | 50 Hz | 1500 | 132 | 90 |

All IEC frame motors have CE mark.

IEC motor voltages have +/- 10% tolerance.

Electric Motor Information (AOL-Low Noise)

| Model | HP | Nema Frame | LN RPM | LN CFM | LN CMM | Voltage | Frequency (Hz) | Sound dB(A) at 3 ft. |
|------------------|------|------------|--------|--------|--------|---------|----------------|----------------------|
| AOL-400-1PH-LN | 1 | 56C | 1725 | 1100 | 31.15 | 115/230 | 60 | 72 |
| AOL-400-3PH-LN | 1 | 56C | 1725 | 1100 | 31.15 | 230/460 | 60 | 72 |
| AOL-725-1PH-LN | 1.50 | 56C | 1725 | 1780 | 50.40 | 115/230 | 60 | 82 |
| AOL-725-3PH-LN | 1.50 | 56C | 1725 | 1780 | 50.40 | 230/460 | 60 | 82 |
| AOL-950-3PH-LN | 1.50 | 145TC | 1160 | 3150 | 89.20 | 230/460 | 60 | 76 |
| AOL-1200-3PH-LN | 1.50 | 182TC | 1160 | 4690 | 132.81 | 230/460 | 60 | 75 |
| AOL-1600-3PH-LN | 2 | 184TC | 1160 | 6510 | 184.34 | 230/460 | 60 | 78 |
| AOL-2000-3PH-LN | 5 | 213TC | 1160 | 8700 | 246.36 | 230/460 | 60 | 85 |
| AOL-2500-3PH-LN | 5 | 213TC | 1160 | 11700 | 331.31 | 230/460 | 60 | 85 |
| AOL-3000-3PH-LN | 5 | 215TC | 1160 | 13500 | 382.28 | 230/460 | 60 | 93 |
| AOL-3500-3PH-LN* | 10 | 256TCZ | 1160 | 16200 | 458.73 | 230/460 | 60 | 91 |

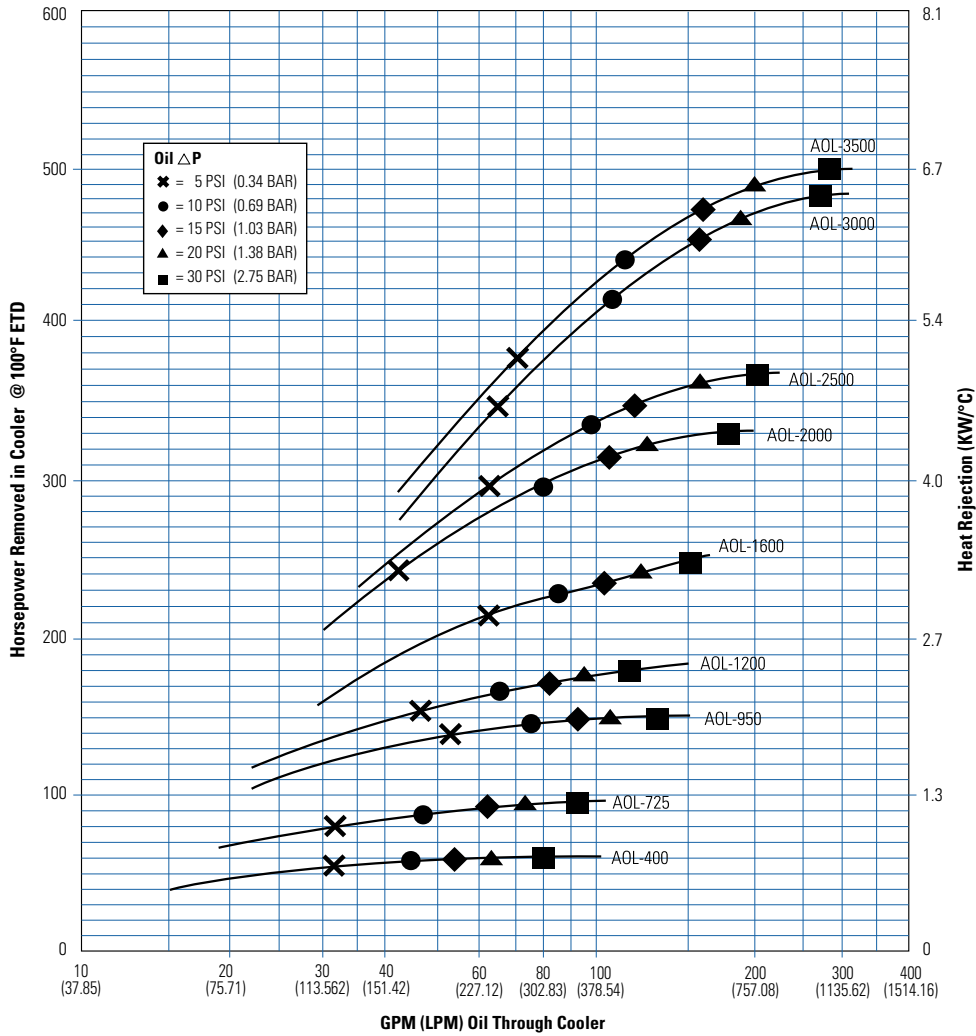
Available in 60 Hz Nema Frame only.

Hydraulic Motor Information

| Model | Oil Flow Required GPM (LPM) | Min. Pressure Required PSI (BAR) | Motor IN ³ /REV (CM ³ /REV) Displacement | Sound dB(A) at 3 ft. |
|----------|-----------------------------|----------------------------------|--|----------------------|
| AOL-400 | 3.3 (12.49) | 425 (29.31) | 0.22 (3.6) | 97 |
| AOL-725 | 3.3 (12.49) | 675 (46.54) | 0.22 (3.6) | 100 |
| AOL-950 | 10.1 (38.23) | 300 (20.68) | 1.4 (22.94) | 92 |
| AOL-1200 | 10.1 (38.23) | 725 (50.00) | 1.4 (22.94) | 94 |
| AOL-1600 | 10.1 (38.23) | 1100 (75.84) | 1.4 (22.94) | 98 |
| AOL-2000 | 10.1 (38.23) | 1650 (113.76) | 1.4 (22.94) | 98 |
| AOL-2500 | 10.1 (38.23) | 1650 (113.76) | 1.4 (22.94) | 98 |
| AOL-3000 | 10.1 (38.23) | 2000 (137.90) | 1.4 (22.94) | 102 |
| AOL-3500 | 10.1 (38.23) | 2000 (137.90) | 1.4 (22.94) | 102 |

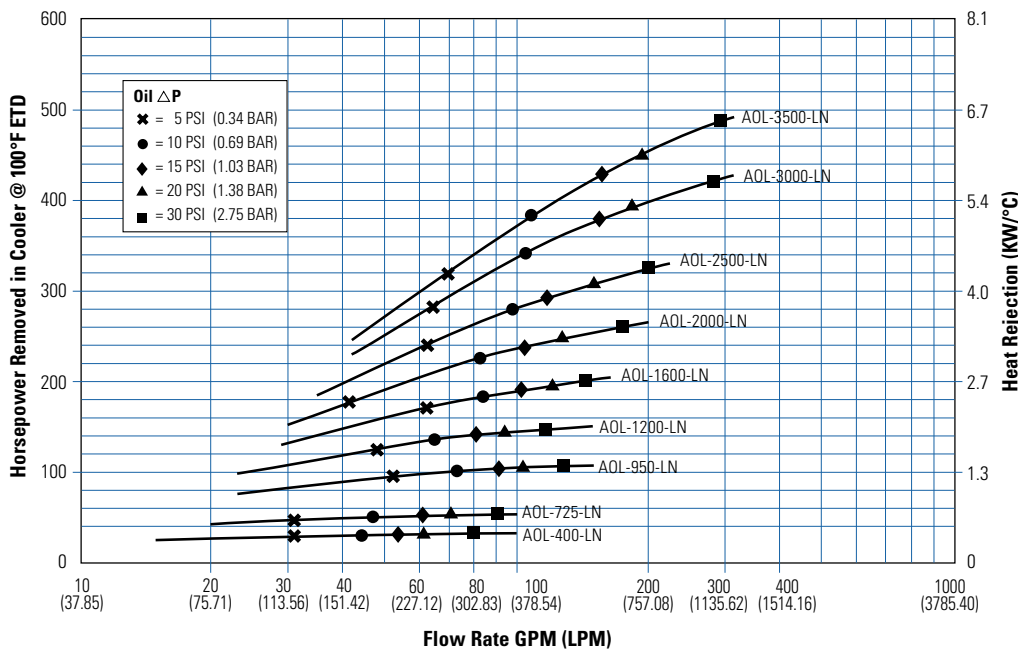
Notes: Maximum Pressure is 2000 psi. Stated Minimum Operating Pressure is at Inlet Port of Motor. 1000 psi Allowable Back Pressure.

Performance Curves



Note: Derate heat rejection values 15% if using 50Hz motors.

Low Noise Option



Available in 60 Hz Nema Frame only.