CooL-Line
AR

AR/ARL SERIES FEATURES

- Bar and Plate aluminum design
- Reduced noise series offered
- High Efficiency & Low Fouling
- Three-Phase, Single Phase, Class 1, Division 2, 575-Volt Three Phase & Three-Phase Explosion Proof motor options
- Competitive pricing and assemblies from stock

RUGGED ENVIRONMENT COOLING SYSTEMS

PRODUCT INFORMATION

Cool-Line is the standard line of products from the market leader in high performance aluminum cooling systems. AKG is best known for its worldwide presence, German engineering, reliable product quality and very competitive prices.

The CooL-Line models embrace an all-purpose complete cooling systems that is suited for rugged environmental operating conditions.

All of AKG's solutions have been developed with state-of the-art technology, produced in compliance with the highest quality standards and are comprehensively tested.

BENEFITS

- Well suited for harsh environments. Fin system prevents clogging and is easy to clean.
- Highly flexible, complete, ready-to-use cooling packages.
- Compact and robust design, field-tested during many years of use in rugged, real-life conditions.
- Cooler can be universally used in hydraulic oil, transmission oil, engine oil, lubricating oil and coolant circuits.
- Highest quality professional engineering and inhouse manufacturing.
- Available from stock or at short notice.
- Can be exposed to operating pressures of up to 26 bar, depending on model.

AR/ARL SERIES FEATURES

- Rugged series coolers with non-louvered fin design.
- Coolers offer increased performance with low pressure drop.
- Low noise series coolers offer slower fan speeds for reduced noise level & lower fan HP requirements.
- Multiple motor options to select from - three phase, single phase, 575-volt & Class 1, Div. 2 and explosion-proof.
- AR/ARL series coolers are available with internal pressure by-pass option.
- Competitive pricing and deliveries from stock.

Specifications	
Maximum Working Pressure (AR5 through AR130)	377 PSI
Maximum Working Pressure (AR160 through AR275)	250 PSI
Maximum Working Temperature	250 °F

Materials	
Cooler	Aluminum
Shroud	AR5 - AR40 Composite / AR55 - AR275 Steel
Fan Guard	Zinc Plated Steel
Fan Blade	Polypropylene Blades, Aluminum Hub
Mounting Brackets	Powder Coated Steel

AR CooL-Line Selection Software, which is available free of charge will guide you through the cooler model selection process in simple steps and will recommend the optimal AKG cooling package for your application: www.akgts.com

STANDARD MODELS PERFORMANCE DATA (AR SERIES)

SELECTION PROCEDURES

The performance curves are based on the following:

- 50 SUS Oil
- 50 °F Entering Temperature Difference (ETD)

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

STEP 1: DETERMINE THE HEAT LOAD

In most cases you can use 1/3 of the input horsepower. Example: 30 HP Power Unit = 10 HP Heat Load

STEP 2: DETERMINE THE ACTUAL ETD DESIRED

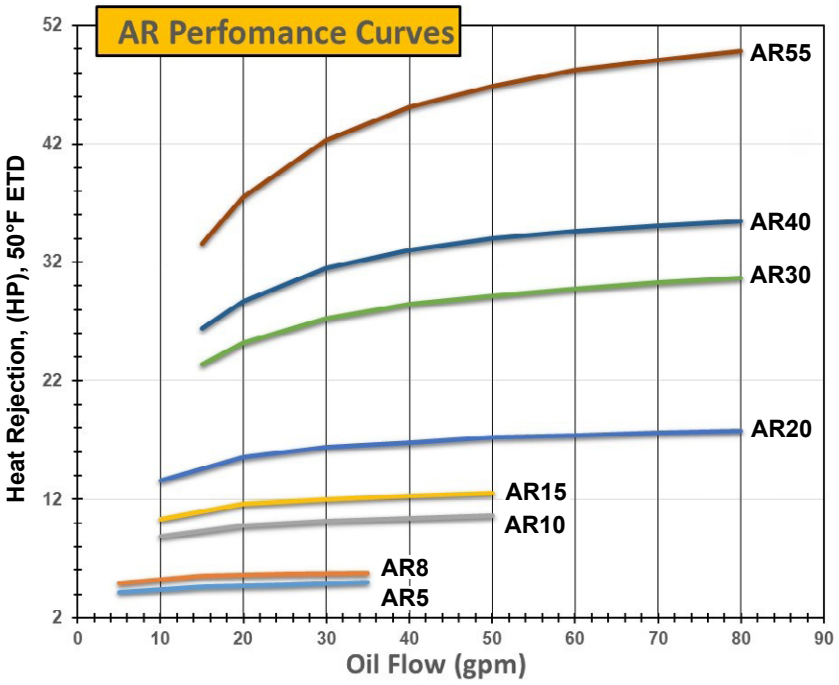
Entering **OIL** Temperature -
Entering **AIR** Temperature = **ETD**
The entering oil temperature is the highest desired oil temperature. The entering air temperature is the highest anticipated ambient air temperature, plus any pre-heating of the air prior to its entering the cooler.

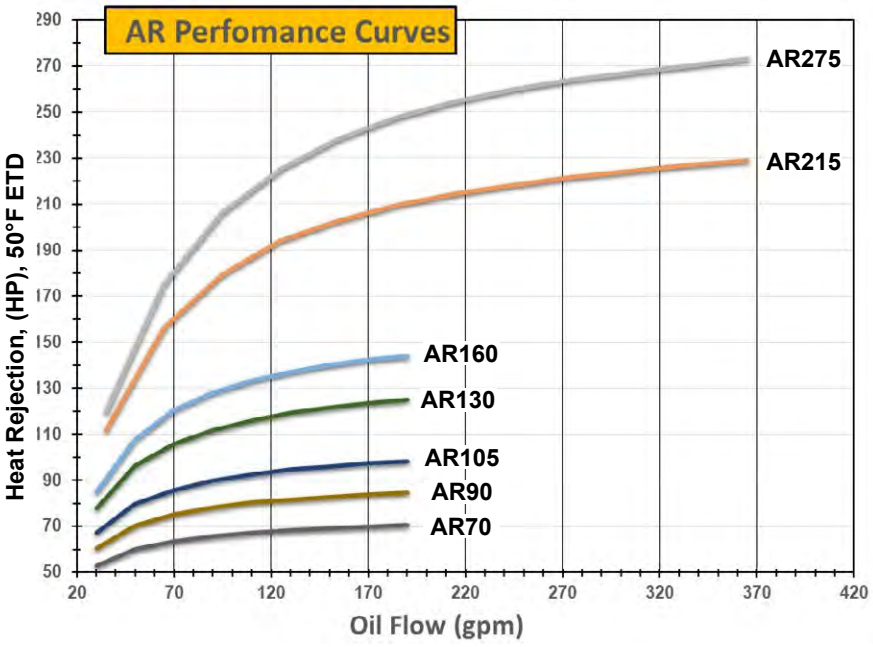
STEP 3: CALCULATE THE ADJUSTED BTU/HR FOR SELECTION

$$\text{Horsepower Heat Load} \times \frac{50}{\text{Desired ETD}} = \text{Horsepower For Use With Selection Chart}$$

STEP 4: SELECT THE MODEL FROM THE CURVES

Read up from the GPM to the required heat rejection. Select any model on, or above this point.





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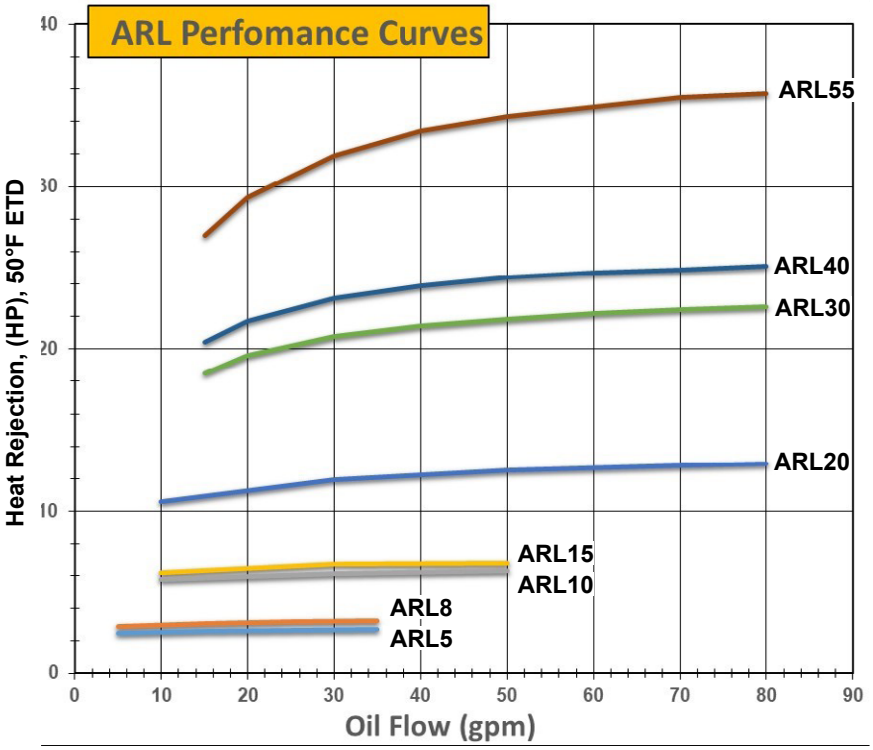
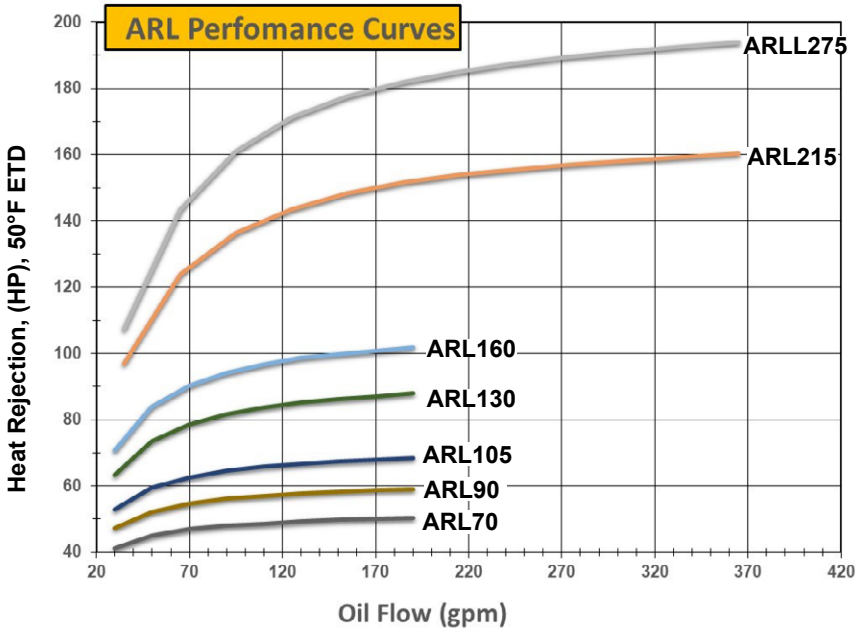
LOW NOISE MODELS PERFORMANCE DATA (ARL SERIES)





SELECTION PROCEDURES

The performance curves are based on the following:
- 50 SUS Oil
- 50 °F Entering Temperature Difference (ETD)

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

STEP 1: DETERMINE THE HEAT LOAD

In most cases you can use 1/3 of the input horsepower. Example: 30 HP Power Unit = 10 HP Heat Load

STEP 2: DETERMINE THE ACTUAL ETD DESIRED

Entering **OIL** Temperature - Entering **AIR** Temperature = **ETD**
The entering oil temperature is the highest desired oil temperature. The entering air temperature is the highest anticipated ambient air temperature, plus any pre-heating of the air prior to its entering the cooler.

STEP 3: CALCULATE THE ADJUSTED BTU/HR FOR SELECTION

$$\text{Horsepower Heat Load} \times \frac{50}{\text{Desired ETD}} = \text{Horsepower For Use With Selection Chart}$$

STEP 4: SELECT THE MODEL FROM THE CURVES

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AR/ARL SERIES TECHNICAL DATA

3 Phase Electric Motor Data

MODEL	Approx. CFM	Approx. Sound dB(A) @ 1-Meter	Hp	Voltage	Full Load Amps 230V	RPM	Frame	Cooler Volume (gal.)	Approx. Shipping Weight (lbs.)
AR5	890	75	1/3	230/460	1.1	3600	56TC	0.2	37
ARL5	470	62	1/4	230/460	1.4	1800	56TC		
AR8	840	76	1/3	230/460	1.1	3600	56TC	0.3	43
ARL8	440	68	1/4	230/460	1.4	1800	56TC		
AR10	1,380	83	1/2	230/460	2.0	3600	56TC	0.4	46
ARL10	725	68	1/3	230/460	1.3	1800	56TC		
AR15	1,300	83	1/2	230/460	2.0	3600	56TC	0.8	57
ARL15	685	68	1/3	230/460	1.3	1800	56TC		
AR20	2,520	75	1/2	230/460	2.0	1800	56TC	0.7	67
ARL20	1,770	66	1/2	230/460	2.4	1200	56TC		
AR30	4,130	79	1.0	230/460	1.6	1800	56TC	1.0	137
ARL30	2,820	70	1/2	230/460	2.4	1200	56TC		
AR40	3,820	79	1.0	230/460	1.6	1800	56TC	1.8	169
ARL40	2,610	70	1/2	230/460	2.4	1200	56TC		
AR55	6,210	84	2.0	230/460	2.9	1800	56TC	2.1	205
ARL55	4,270	75	3/4	230/460	1.5	1200	56TC		
AR70	6,730	82	2.0	230/460	2.9	1800	56TC	2.9	240
ARL70	4,660	74	3/4	230/460	1.5	1200	56TC		
AR90	8,020	90	3.0	230/460	7.8	1800	56TC	3.7	277
ARL90	5,490	81	1.0	230/460	3.6	1200	56TC		
AR105	9,730	95	3.0	230/460	7.8	1800	56TC	4.4	290
ARL105	6,680	87	1.0	230/460	3.6	1200	56TC		
AR130	12,300	98	5.0	230/460	6.3	1800	184TC	5.2	414
ARL130	8,400	89	1-1/2	230/460	5.2	1200	182TC		
AR160	13,200	99	7-1/2	230/460	22.4	1800	213/215TC	6.7	560
ARL160	9,010	90	2.0	230/460	6.4	1200	184TC		
AR215	19,700	103	10.0	230/460	26.8	1800	215TC	9.1	640
ARL215	13,300	94	5.0	230/460	7.0	1200	215TC		
AR275	22,100	103	10.0	230/460	26.8	1740	215TC	12.6	710
ARL275	15,100	95	5.0	230/460	7.0	1200	215TC		

All data based at nominal speed

Electric Motors are are not thermally protected. Actual rating may vary with motor brand. Check motor nameplate for actual rating.
External airflow and sound pressures calculated utilizing ASTM test standards. Motor RPM is reduced by 1/6 for 50 Hz service.
Motors can be rated for 50 Hz service. Contact factory for potential voltage options.

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AR/ARL SERIES TECHNICAL DATA

Single Phase Electric Motor Data

MODEL	Approx. CFM	Approx. Sound dB(A) @ 1-Meter	Hp	Voltage	Full Load Amps 115V	RPM	Frame	Cooler Volume (gal.)	Approx. Shipping Weight (lbs.)
AR5	890	75	1/3	115/208-230	5.2	3600	56TC	0.2	37
ARL5	470	62	1/4	115/208-230	4.6	1800	56TC		
AR8	840	76	1/3	115/208-230	5.2	3600	143/145TC	0.3	43
ARL8	440	68	1/4	115/208-230	4.6	1800	56TC		
AR10	1,380	83	1/2	115/208-230	7.0	3600	56TC	0.4	46
ARL10	725	68	1/3	115/208-230	6.0	1800	56TC		
AR15	1,300	83	1/2	115/208-230	7.0	3600	56TC	0.8	57
ARL15	685	68	1/3	115/208-230	6.0	1800	56TC		
AR20	2,520	75	1/2	115/208-230	8.0	1800	56TC	0.7	67
ARL20	1,770	66	1/2	115/208-230	6.4	1200	56TC		
AR30	4,130	79	1.0	115/208-230	13.6	1800	56TC	1.0	137
ARL30	2,820	70	1/2	115/208-230	6.4	1200	56TC		
AR40	3,820	79	1.0	115/208-230	13.6	1800	56TC	1.8	169
ARL40	2,610	70	1/2	115/208-230	6.4	1200	56TC		
AR55	6,210	84	2.0	115/208-230	20.0	1800	143/145TC	2.1	205
ARL55	4,270	75	3/4	115/208-230	9.4	1200	56TC		
AR70	6,730	82	2.0	115/208-230	20.0	1800	143/145TC	2.9	240
ARL70	4,660	74	3/4	115/208-230	9.4	1200	56TC		
AR90	8,020	90	3.0	115/208-230	33.6	1725	184TC	3.7	277
ARL90	5,490	81	1.0	115/208-230					
AR105	9,730	95	3.0	115/208-230	33.6	1725	184TC	4.4	290
ARL105	6,680	87	1.0	115/208-230					

All data based at nominal speed

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External airflow and sound pressures calculated utilizing ASTM test standards. Motor RPM is reduced by 1/6 for 50 Hz service.
Motors can be rated for 50 Hz service. Contact factory for potential voltage options.

3 Phase Explosion Proof Motors (Class I, Grp. D & Class II)

MODEL	Approx. CFM	Approx. Sound dB(A) @ 1-Meter	Hp	Voltage	Full Load Amps 230V	RPM	Frame	Cooler Volume (gal.)	Approx. Shipping Weight (lbs.)
AR5	650	72	1/2	230/460	1.8	3600	56TC	0.2	37
AR8	840	76	1/2	230/460	1.8	3600	56TC	0.3	43
AR10	1,380	83	1/2	230/460	1.8	3600	56TC	0.4	46
AR15	1,300	83	1/2	230/460	1.8	3600	56TC	0.8	57
AR20	2,520	75	1/2	230/460	1.7	1800	56TC	0.7	67
AR30	4,130	79	1.0	230/460	2.9	1800	143/145TC	1.0	137
AR40	3,820	79	1.0	230/460	2.9	1800	143/145TC	1.8	169
AR55	6,210	84	2.0	230/460	5.6	1800	143/145TC	2.1	205
AR70	6,730	82	2.0	230/460	5.6	1800	143/145TC	2.9	240
AR90	8,020	90	3.0	230/460	7.8	1800	182/184TC	3.7	277
AR105	9,730	95	3.0	230/460	7.8	1800	182/184TC	4.4	290
AR130	12,300	98	5.0	230/460	13.1	1800	182/184TC	5.2	414
AR160	13,200	99	7.5	230/460	18.8	1800	213/215TC	6.7	560
AR215	19,700	103	10.0	230/460	25.4	1800	215TC	9.1	640
AR275	22,100	103	10.0	230/460	25.4	1800	215TC	12.6	710

All data based at nominal speed

Electric Motors are are not thermally protected. Actual rating may vary with motor brand. Check motor nameplate for actual rating.
External airflow and sound pressures calculated utilizing ASTM test standards. Motor RPM is reduced by 1/6 for 50 Hz service.
Motors can be rated for 50 Hz service. Contact factory for potential voltage options.

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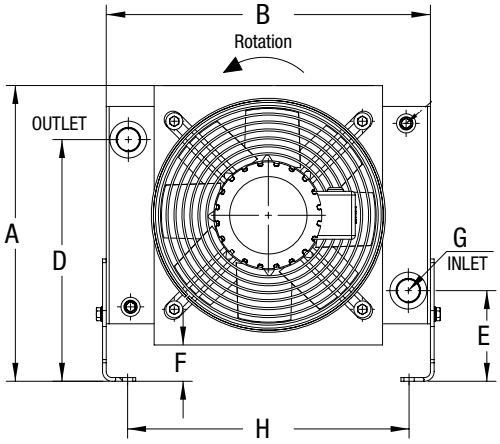
AR/ARL SERIES DIMENSION

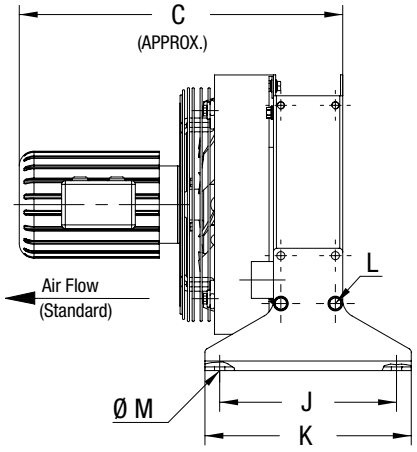
MODEL	A	B	C (Approx. +/- 2.0")	D	E	F	G	H	J	K	L	M
AR/ARL5	13.7	13.78	12.56	11.38	4.21	1.97	#12 SAE 1 1/16-12 UN-2B	11.93	7.09	8.66	M6-1 • X12MM Bolt (4 PL)	Ø 0.55
AR/ARL8	14.15	13.78	13.27	11.83	4.66	2.48	#12 SAE 1 1/16-12 UN-2B	11.93	7.09	8.66	M6-1 • X12MM Bolt (4 PL)	Ø 0.55
AR/ARL10	15.81	15.75	14.50	12.88	5.11	1.50	#16 SAE 1 5/16-12 UN-2B	13.86	7.09	8.66	M8-1.25 • X16MM Bolt (4 PL)	Ø 0.55
AR/ARL15	15.53	16.54	16.00	12.17	5.24	1.50	#16 SAE 1 5/16-12 UN-2B	14.65	7.09	8.66	M8-1.25 • X16MM Bolt (4 PL)	Ø 0.55
AR/ARL20	19.45	21.65	15.50	15.69	5.1	1.50	#20 SAE 1 5/8-12 UN-2B	19.76	7.09	8.66	M8-1.25 • X16MM Bolt (4 PL)	Ø 0.55
AR/ARL30	23.94	25.59	16.75	20.26	5.06	1.50	#20 SAE 1 5/8-12 UN-2B	23.70	7.09	8.66	M8-1.25 • X16MM Bolt (4 PL)	Ø 0.55
AR/ARL40	24.09	26.38	18.00	17.8	7.83	1.50	#20 SAE 1 5/8-12 UN-2B	24.49	10.24	11.81	M10-1.5 • X20MM Bolt (8 PL)	Ø 0.55
AR/ARL55	26.26	30.31	19.50	19.96	8.15	1.50	#20 SAE 1 5/8-12 UN-2B	28.32	10.24	11.81	M10-1.5 • X20MM Bolt (8 PL)	Ø 0.55
AR/ARL70	30.79	36.22	21.80	24.2	8.65	1.50	2" SAE • 4-Bolt FLANGE	34.22	21.10	22.64	M10-1.5 • X20MM Bolt (8 PL)	Ø 0.55
AR/ARL90	30.27	37.01	23.30	24.17	7.67	1.50	2" SAE • 4-Bolt FLANGE	35.01	21.10	22.64	M12-1.75 • X25MM Bolt (8 PL)	Ø 0.55
AR/ARL105	33.12	38.98	23.40	25.04	9.44	1.50	2" SAE • 4-Bolt FLANGE	36.98	21.10	22.64	M12-1.75 • X25MM Bolt (8 PL)	Ø 0.55
AR/ARL130	37.57	40.94	25.10	29.79	9.28	1.50	2" SAE • 4-Bolt FLANGE	39.06	21.10	22.64	M12-1.75 • X25MM Bolt (8 PL)	Ø 0.55
AR/ARL160	38.15	43.62	29.50	31.12	9.59	2.00	2" SAE • 4-Bolt FLANGE	40.17	14.72	17.72	M12-1.75 • X25MM Bolt (8 PL)	Ø 0.75
AR/ARL215	47.03	49.49	30.80	36.24	12.77	2.00	3" SAE • 4-Bolt FLANGE	48.22	15.70	18.70	M12-1.75 • X25MM Bolt (8 PL)	Ø 0.75
AR/ARL275	59.58	53.68	30.70	43.97	17.52	2.00	3" SAE • 4-Bolt FLANGE	50.34	17.67	20.67	3/4-10 x 1.75 Bolt (8 PL)	Ø 0.75

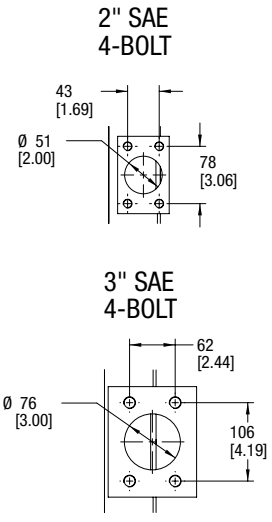
All dimensions in inches

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

COOLER DIMENSIONS A/ARL







ORDERING INFORMATION

SERIES CODE:	MODEL SIZE:		MOTOR CODE:	BYPASS DATA:	CUSTOM FEATURE CODE:
		—			

SERIES:	AR = Standard, ARL = Low Noise
MODEL SIZE:	Selected
MOTOR CODE:	0 = No Motor, C = Core Only, 1 = Single Phase, 3 = Three Phase, 575 = 575 Volt, C1D2 = Class I, Division 2 3-phase, 3EXP = 3 Phase Explosion-Proof
BYPASS DATA:	BP25 = 25PSI Internal Bypass, BP30 = 30PSI Internal Bypass, BP60 = 60PSI Internal Bypass, BP65 = 65PSI Internal Bypass,
CUSTOM FEATURE CODE:	B = Blowing Fan, AD = SAE to NPT Adaptors, H = Heresite Coated Core, ACM = Classic Style Mounting Bracket
ORDER EXAMPLE:	Heat Exchanger, 90 HP; Suction Fan, 3 Phase; 60PSI Internal Bypass AR90-3-BP60

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AKG Thermal Systems, Inc.
809 Mattress Factory Road
P.O. Box 189
Mebane, NC 27302-0189 USA

Tel: +1 919-563-4871
Fax: +1 919-563-4917
E-Mail: sales@akgts.com
Website: www.akgts.com

AKG – A STRONG GLOBAL GROUP

AKG is a leading supplier of high-performance coolers and thermal management systems. We also provide customized system solutions, which comply with the highest quality standards.

On a world-wide scale, our over 3,000 employees work at 11 manufacturing facilities located in the United States, Germany, France, Latvia, Turkey, Mexico, Brazil, China and India. Together with our wide network of sales companies, AKG's team is on duty around the clock.

AKG's longstanding partnership with global OEM's across a wide range of markets supports the demanding needs of mobile and industrial applications. AKG products are found globally in a variety of markets including construction machinery, agricultural and forestry equipment, power generation and specialty on-highway vehicles and many more.

AKG operates one of the world's most extensive research, development, measurement and validation centers for cooling solutions and customized applications.

For over 100 years AKG has been a symbol of innovation, engineering excellence and manufacturing competence. This makes a winning combination that raises the bar for our competition and keeps us pushing forward.