



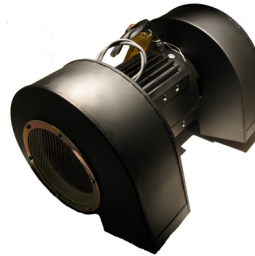
Rotron / Airscrew



Rotron CENTRIFUGAL BLOWERS



Model D



Duplex



Model B



Model A

DESCRIPTION

Rotron Centrifugal Blowers are compact, sturdy, and relatively light in weight. They are designed for a long, maintenance-free life. Most models are available for either clockwise or counterclockwise rotation, and in either simplex or duplex types. Duplex blowers simplify ductwork and allow greater volume performance in tight locations. Models are available for AC or DC power.

APPLICATIONS

Model D

Model D Blowers are specifically suited for use in tightly packed electronic equipment, or, in the case of inverted blowers, in situations where high pressure-to-volume performance is required, as in the cooling of many small forced-air-cooled radio transmitting tubes. These blowers are designed for continuous duty in ground, shipboard, and air born electronics equipment, and are operable under a variety of environmental conditions.

Model B

Model B Blowers are designed with a larger flow capacity than Model D Blowers, and are suitable for delivering large volumes of air at moderate static pressures into equipment where dissipation needs are high and space is limited (such as computer main frames, transmitter tubes, and disc and drum memories).

Model A

Model A Blowers are designed with a higher capacity than Model B and Model D Blowers. Model A Blowers are suitable for applications where utmost reliability is essential, particularly in the wire and radio communication services (including broadcasting, TV, and point-to-point radio and radar stations), as well as for use in unattended locations under extreme climactic conditions.

Model A blowers are also suitable for use in ground and shipboard installations.

All models are built to applicable military specifications.

PERFORMANCE CHARACTERISTICS

Blower Type Charts and Air Performance

See charts that follow for various blower types. Charts also present typical performance data for each type listed. These data are subject to tolerances to allow for slight blower-to-blower differences. Consult Application Engineering for applicable differences.

Brushless DC Operation and Frequency Converters

Centrifugal Blowers are available for single or multiple operations from DC power sources. Rotron also provides Frequency Converters to allow higher or lower motor speeds, where required, than are possible with a 50/60 or 400 Hz sources. Converters are also available to operate single or multiple units. See Power Conversion section for notes.

Performance Sensors

All Models equipped with optional performance sensors send out a tachometer-type signal generated from a hall sensor activated by a small permanent magnet mounted on the rotor of the fan motor. The signal depends on the fan type:

Fan Type	Signal	Output V nominal
AC	10% on 90% off sq. wave pulse	10 V
E.C.D.C.	50% on 50% off sq. wave pulse	10 V

AMETEK
AEROSPACE & DEFENSE
Rotron / Airtechnology Products

North America
T: +1 845-679-1361
F: +1 845-679-1870

www.ametekaerodefense.com

United Kingdom
T: +44 (0) 1932 765822
F: +44 (0) 1932 761098

Specifications subject to change without notice

Europe
T: +49 8145 951767
F: +49 8145 951768

Asia Pacific
T: +65 6484 2388
F: +65 6481 6588

Contact E-mail: mlinqury@ametek.com



Various electronic circuits can be designed to count the pulse train and send out appropriate alarms if pulse rate follows below the acceptable level. Contact Rotron's Application Engineering Department for specific circuit designs.

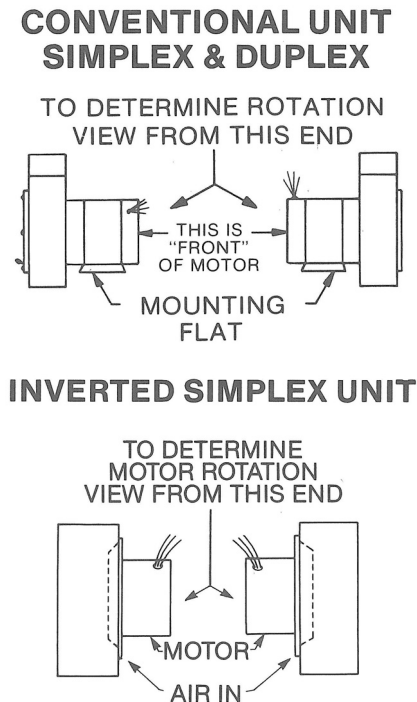
Low Speed Warning Detector (LSWD)

The Low Speed Warning Detector (LSWD) utilizes a programmable frequency switch capable of turning "on" or "off" a load such as an LED, audible alarm, back-up fan, etc, at a pre-determined motor RPM. If fan speed falls below the present value, the back-up or warning device is activated. Once the fan speed exceeds the present value, it is deactivated. The RPM value is preset at the factory between 2,000 and 20,000 RPM (actual value is determined by the specific fan performance and customer requirements).

Materials and Finishes

Standard Blower housings are steel and are primed and black enameled. Impellers are zinc-plated steel.

Figure 1:



Determination of Rotation and Blast

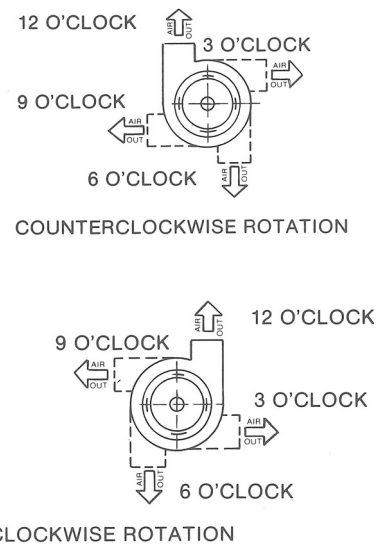
- Step 1: Point the name plate/ lead wires/ terminal block towards you.
- Step 2: Rotate the blower to the left or right.
(See view in Figure 1)
- Step 3: Rotate the blower to the left or right.
(Figure 2 shows the view of the inlet)

Please refer to Figure 2 to determine the direction of rotation.

Motor Rotation for Centrifugal Blowers is determined by viewing the motor from the lead wire or terminal block end. Blower rotation is determined by viewing the blower housing from the side opposite the inlet. Wiring hook-up is dependent upon motor rotation only. Opposite blower housings of duplex units have opposite blower rotation, and correct blower rotation identification is important when specifying blast directions. For simplex units, blower and motor rotation are identical. For inverted blowers, blower and motor rotation are opposite to each other. Blast direction is determined by viewing the inlet of the blower housing with the motor flat adjacent to the lead wires or terminal block at the 12 O'clock position. See Figure 2 below.

Figure 2:

**BLOWERS ARE ORDERED AS
CLOCKWISE OR COUNTERCLOCKWISE.
MOTOR HOOK UP WILL BE THE OPPOSITE.**



Inverted Blowers

Inverted Blowers have their driving motor located inside the squirrel cage wheel. This results in unusual compactness and excellent motor cooling. Such an arrangement is only feasible whenever the wheel diameter is large in proportion to the volume of air moved. This situation may be obtained in slow volume of air moved. This situation may be obtained in slow running blowers as well as in tight scroll squirrel cage blowers that have a high pressure-to-volume ration performance.



Rotron / Airscrew



Rotron Model B Types 4502-3-4-5 Centrifugal Blowers

General Centrifugal Blower Information

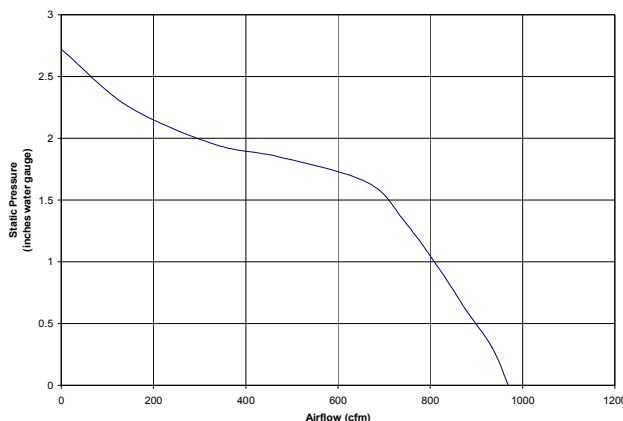
Rotron Centrifugal Blowers are compact, sturdy, and relatively light in weight. They are designed for a long, maintenance-free life. Most models are available in either clockwise or counter-clockwise rotation, and in either simplex or duplex configurations. Duplex blowers simplify ductwork and allow greater volume performance in tight locations.

frequencies and are available with a variety of inlet and outlet configurations. Inlet configurations include: plain ring, round with guard, cone with clamp, cone for mounting and rim with hose clamp. Outlet configurations include: rectangular, round, plain, flange, and duct clamps. Most units are available with an optional internal Fan Performance Sensor (FPS) or external Low Speed Warning Device (LSWD).

These blowers come in a variety of voltages and

Rotron Model B Types 4502-3-4-5

Model B Series Types 4502-3-4-5 : Maximum Performance Curve*



*Max. Centrifugal Blower Performance Curve Shown. Individual Performance Curve Characteristics Available Upon Request

General

- Physical envelope: inlet diameter 5.00"; length ranges from 4.50" to 6.25" ¹.
- Weight: varies— between 18 and 23 lbs.
- Designed for larger flow capacity than Model D blowers, used for moderate static pressure applications where dissipation needs are high.
- Typical applications: computer mainframes, transmitter tubes.
- Nom. speeds range between 2,860 and 3,380 RPM.
- Airflows range from 500 to 970 CFM.
- Maximum Static Pressure: 2.6 IWG.

¹ See specific part-number drawing for complete product dimensions

Materials and Finishes

- All aluminum components finished with a chemical conversion coating per MIL-C-5541, top coat of lusterless black enamel, color #37038, per Federal Standard 595 conforming to TT-E-489 Type B.
- Painted or epoxy powder coat on steel housing.
- Corrosion-resistant stainless steel shaft and hardware.
- Zinc-plated impeller runs on two high-precision, double-shielded, stainless steel ball bearings (ABEC Class 1) for a long, maintenance-free life.
- Motors have stator winding insulation which is rated for continuous duty for Class F.

Options/Accessories

- Inlet Screen Guards
- LSWD (Low Speed Warning Device)
- FPS (Fan Performance Sensor)



10-90

North America
T: +1 845-679-1361
F: +1 845-679-1870

United Kingdom
T: +44 (0) 1932 765822
F: +44 (0) 1932 761098

Specifications subject to change without notice

Europe
T: +49 8145 951767
F: +49 8145 951768

Asia Pacific
T: +65 6484 2388
F: +65 6481 6588

Contact E-mail: mlinqury@ametek.com

www.ametekaerodefense.com



Rotron / Airscrew



AC Line Powered Units ¹

- 3-phase and 1-phase permanent-split capacitor motor designs.
- Fixed speeds (performance) based on input frequency.
- Meets or exceeds the requirements of MIL-B-23071 and other applicable U.S. military and commercial aerospace specifications ².
- Max free delivery airflow of 850 at 50 Hz, and 970 at 60 Hz.
- Ambient temperature range: -54 °C to 100 °C.
- Acoustic levels as low as 67.9 dBA.

¹ Airflow, maximum ambient and acoustic levels will vary depending on design parameters

² Please call for further information concerning applicable U.S. military and commercial aerospace specifications

DC Line Powered Units – E.C.D.C.®

- Not available with this model blower.

Optional DC-AC Inverters and AC-AC Converters for AC Powered Models ¹

BATAC® Inverter Driven Units

- AC square wave fans driven from a DC power source through a BATAC® Inverter.

¹ See Accessories: Power Conversion

DELTAC® Converter Driven Units

- DELTAC® converters allow high frequency (typically 400 Hz) fans to be driven by variable frequency (typically 360-800 Hz) power or low frequency 50/60 Hz power to obtain the higher frequency performance.

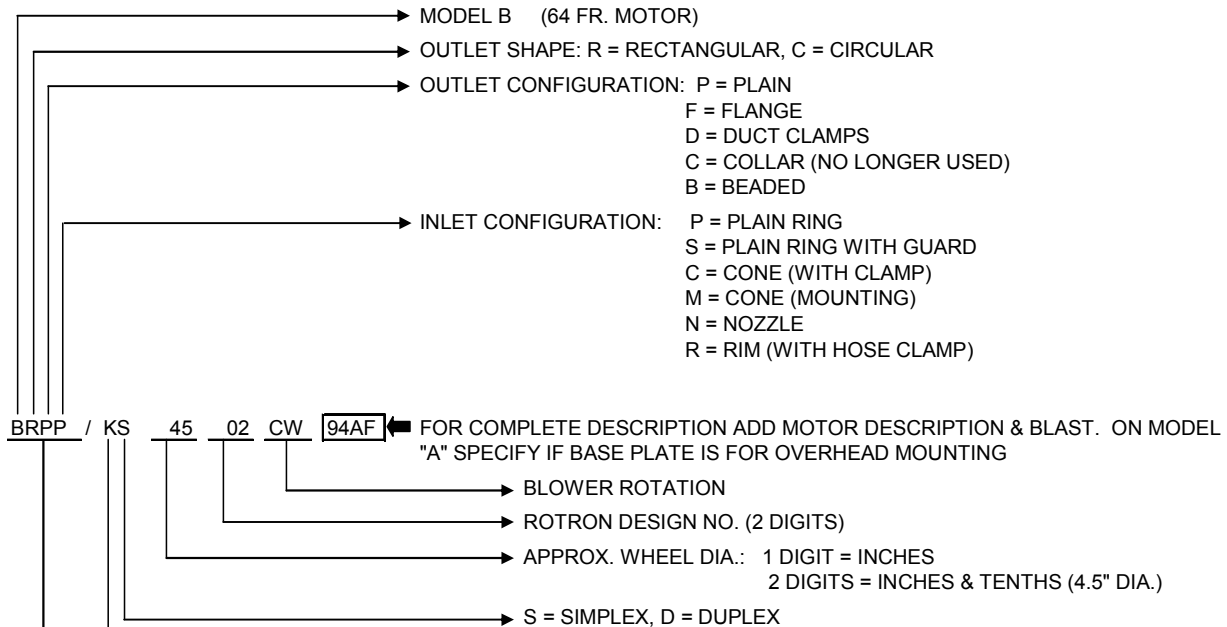


Rotron / Airscrew



Unit Description Key

The unit description key is for reference only and should not be confused with a part number. While most units are custom configurations, not all variations of the key shown below are possible. Please contact the Application Engineering department for more information regarding possible custom configurations.



"X" IN ANY POSITION DENOTES SPECIAL FOR THAT FEATURE

EX: BRPP/KS4502,CW,94AF

DUPLEX VARIATIONS:

*1st CALLOUT IS THE STD SIMPLEX

*2nd CALLOUT IS THE DUPLEX END

EX: BRPP/KD4502

EX: BRPP/DRFS/KD4502

	NO. POLES	NO. PHASES	APPROX. SPEED- NO LOAD (REF.)		
			50 Hz	60 Hz	400 Hz
A	2	3	2900	3400	-
B	4	3	1450	1750	-
E	6	1 OR 3	950	1150	-
F	8	1 OR 3	700	850	-
K	2	1	2900	3500	-
L	4	1	1450	1750	-
M	6	1 OR 3	-	-	7500
N	8	1 OR 3	-	-	5500
P	12	1 OR 3	-	-	3900
Q	4	1 OR 3	-	-	11000
R	2	1 OR 3	-	-	23000
V	ECDC				

NOTE: DUAL FREQUENCY OR DUAL POLE MOTORS DESIGNATED BY USING 2 DIGITS. EX: KM = (2 POLE 1Φ 50/60 Hz, 6 POLE 1Φ 400 Hz)

Ordering Information

When ordering, please specify the specific Rotron part number listed on the model tables below. Further ordering information, based on the configuration and motor series, may be obtained by contacting customer service. Please refer to the Unit Description Key explanation above.



Rotron / Airscrew



NOTES:



A collage of various modes of transport including a helicopter, a jet fighter, a train, a car, and an airplane.

MODEL B TYPES 4502-3-4-5

OUTLET F FLANGE (Optional)

OUTLET PLAIN (Optional)

D OUTLET DUCTCLAMP

INLET R RIM (w/clamp) (Optional)

INLET PLAIN

S INLET SCREEN GUARD (Optional)
On plain inlet only.

Dimensions:

- Top View:
 - Overall Width: 3.125 (79,375)
 - Overall Height: 4.00 (101,60)
 - Inner Width: 3.19 (81,03)
 - Inner Height: 4.00 (101,60)
 - Mounting Holes: 4 Mounting Holes. 390 (9,906) Dia.
 - Flange Thickness: .19 (4,83)
 - Flange Width: .75 (19,05) Typ.
- Side View:
 - Overall Height: 6.25 (158,75) Dia.
 - Mounting Holes: 4 #8-32, UNC-2A Rd. Hd. M.S. on 5.50 (139,70) Dia.
 - Flange Thickness: .19 (4,83)
 - Flange Width: .75 (19,05) Typ.
 - Mounting Holes: 4 #8-32, UNC-2A Rd. Hd. M.S. on 5.50 (139,70) Dia.
 - Flange Thickness: .19 (4,83)
 - Flange Width: .75 (19,05) Typ.
- Front View:
 - Overall Width: 8.72 (221,49)
 - Overall Height: 7.47 (189,74)
 - Mounting Holes: 4 #8-32, UNC-2A Rd. Hd. M.S. on 5.50 (139,70) Dia.
 - Flange Thickness: .19 (4,83)
 - Flange Width: .75 (19,05) Typ.
 - Mounting Holes: 4 #8-32, UNC-2A Rd. Hd. M.S. on 5.50 (139,70) Dia.
 - Flange Thickness: .19 (4,83)
 - Flange Width: .75 (19,05) Typ.

TOLERANCES
 .XX ±.06 (1,5)
 .XXX ±.010 (0,254)
 (Unless otherwise specified)



Rotron / Airscrew



MODEL B TYPES 4502-3-4-5

ELECTRICAL SPECIFICATIONS

See Hookup Section for Motor Wiring

Type	Frame	Series	Volts	Phase	Hz	Cap. † Mfd.	Nom. RPM	Full Load Watts	Line Amps	Lock. Rotor Amps	Air CFM at Free Del.	Motor Motor Series	Motor Line Voltage
KD-4502	HG-2	1217AF	230	1	50	4.0*	2890	262	1.6	15.8	515		
					60		3410	354	1.5	5.3	610		
AD-4502	HG-1	746WF	220	3	50	-	2820	245	1.2	3.8	500		
			200-230		60	-	3200	338	1.1	3.4	575		
KD-4503	HG-3	1215AF	230	1	50	5.0*	2880	320	2.2	8.5	610		
					60		3420	430	1.9	8.0	725		
AD-4503	HG-2	881WF	220	3	50	-	2870	259	1.3	6.2	615		
			200-230		60	-	3200	419	1.5	5.2	688		
KD-4504	HG-3	1215AF	230	1	50	5.0*	2870	350	2.3	8.5	720		
					60		3380	500	2.2	18.0	850		
AD-4504	HG-3	860WF	220	3	50	-	2920	339	1.4	10.6	720		
			200-230		60	-	3420	523	1.7	10.2	850		
KD-4505	HG-3	1215AF	230	1	50	5.0*	2860	395	2.4	8.5	820		
					60		3320	580	2.6	8.0	950		
AD-4505	HG-3	860WF	220	3	50	-	2880	468	2.5	10.6	850		
			200-230		60	-	3340	612	2.1	10.2	970		

MECHANICAL SPECIFICATIONS

Type	Approx. Weight	"L"	"U"	"W"	"X"	"Y"
KD-4502	18	5.00	5.00	3.09	4.13	3.00
	(8,17)	(127,0)	(127,0)	(78,5)	(104,90)	(76,2)
AD-4502	16.5	4.50	5.00	3.09	4.13	3.00
	(7,26)	(114,3)	(127,0)	(78,5)	(104,90)	(76,2)
KD-4503	22	6.25	5.56	3.66	4.69	3.56
	(10)	(158,8)	(141,2)	(93,0)	(119,13)	(90,42)
AD-4503	18	5.00	5.56	3.66	4.69	3.56
	(8,17)	(127,0)	(141,2)	(93,0)	(119,13)	(90,42)
KD-4504	23	6.25	6.06	4.16	5.19	4.06
	(10,4)	(158,8)	(153,9)	(105,7)	(131,83)	(103,1)
AD-4504	23	6.25	6.06	4.16	5.19	4.06
	(10,4)	(158,8)	(153,9)	(105,7)	(131,83)	(103,1)
KD-4505	23	6.25	6.75	4.84	5.88	4.75
	(10,4)	(158,8)	(171,5)	(123,0)	(149,35)	(120,7)
AD-4505	23	6.25	6.75	4.84	5.88	4.75
	(10,4)	(158,8)	(171,5)	(123,0)	(149,35)	(120,7)

† Running capacitors not normally supplied by Rotron

For 3-phase motors all voltages are phase-to-phase

* Capacitor voltage rating 440 VAC

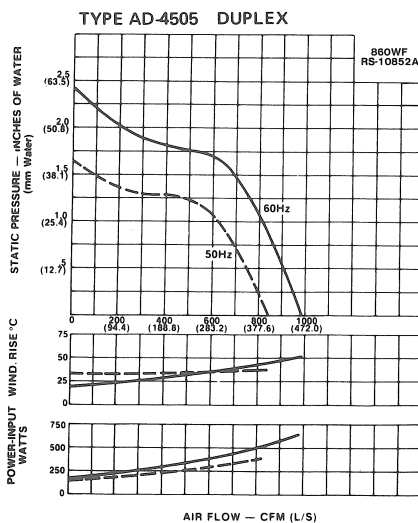
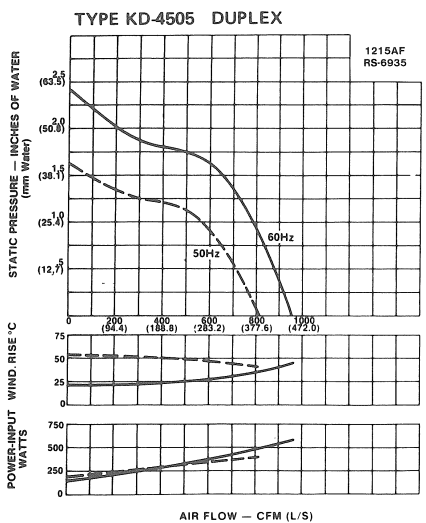
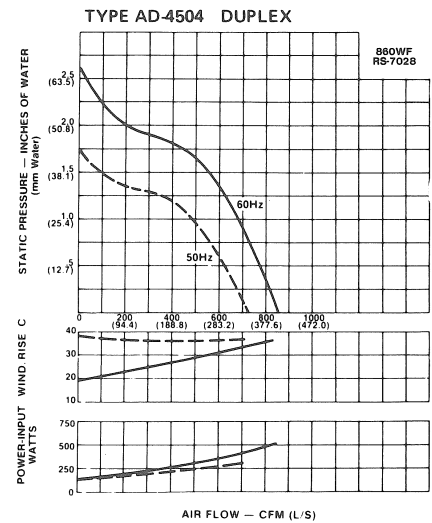
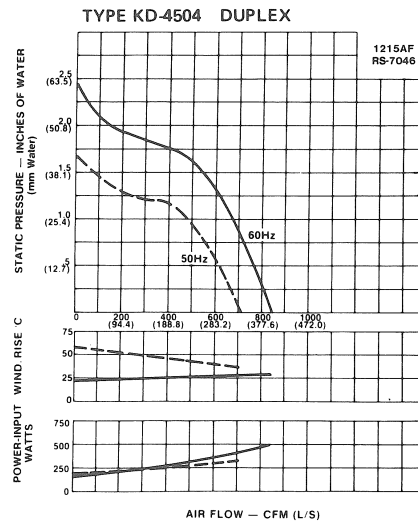
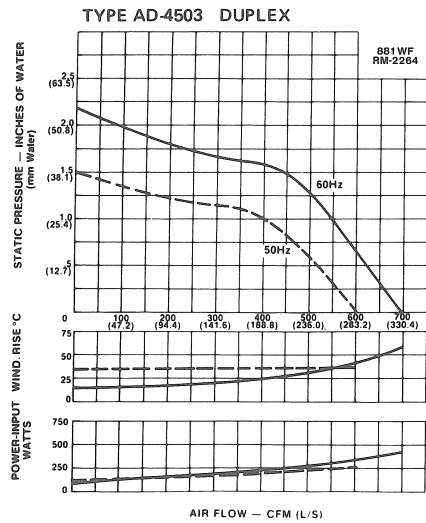
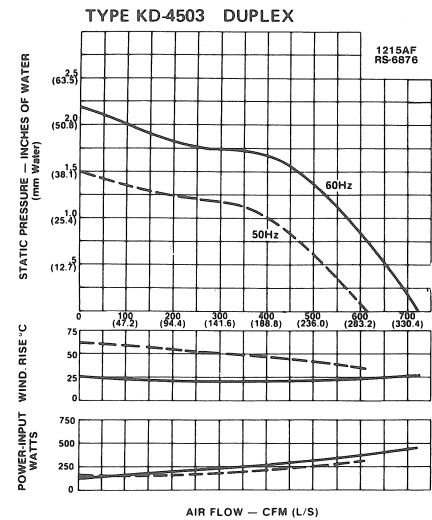
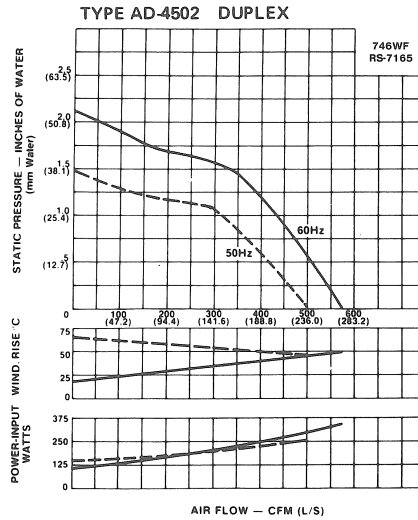
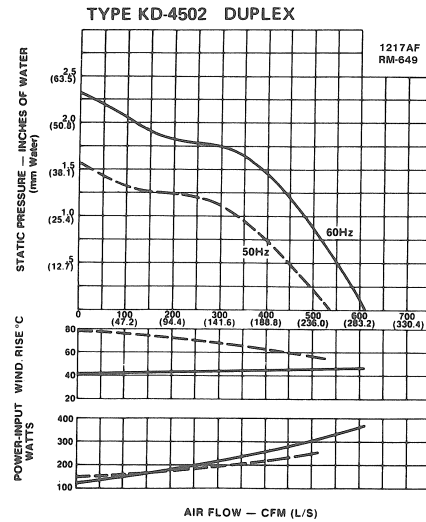


Rotron / Airscrew



CENTRIFUGAL BLOWERS

MODEL B TYPES 4502-3-4-5



AMETEK
AEROSPACE & DEFENSE
Rotron / Airtechnology Products

10-96

North America
T: +1 845-679-1361
F: +1 845-679-1870

United Kingdom
T: +44 (0) 1932 765822
F: +44 (0) 1932 761098

www.ametekaerodefense.com

Specifications subject to change without notice

Europe
T: +49 8145 951767
F: +49 8145 951768

Asia Pacific
T: +65 6484 2388
F: +65 6481 6588

Contact E-mail: mlinquiry@ametek.com



Rotron / Airscrew



NOTES:
