

# 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 |



*Specifications subject to change without notice*

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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.

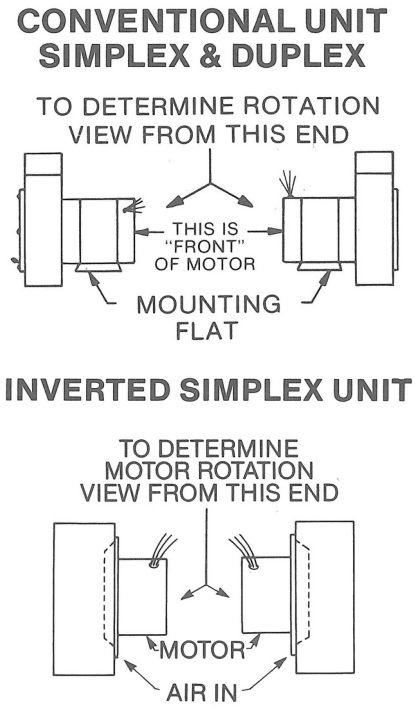
***Low Speed Warning Detector (LSWD)***

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.

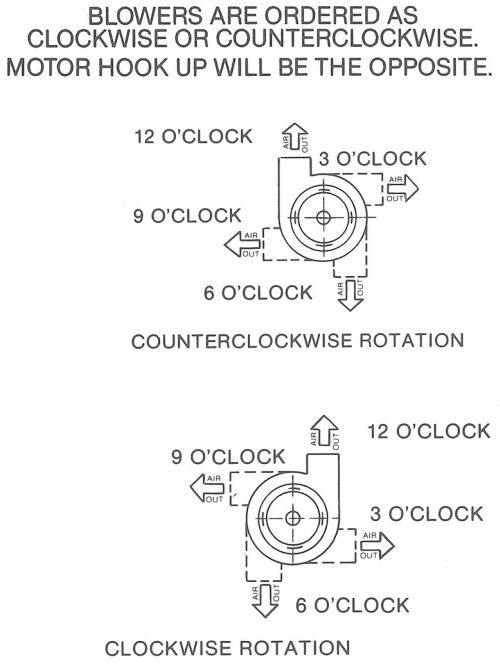
Step 2: Rotate the blower to the left or right. (See view in Figure 1)

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:




***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.



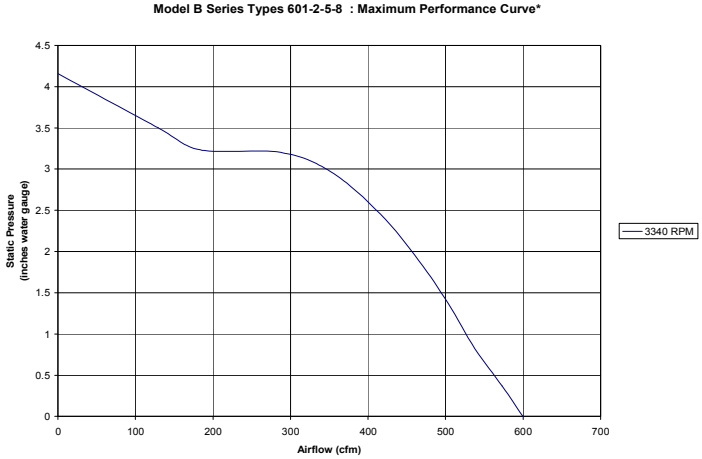
# Rotron Model B Types 601-2-5-8 Centrifugal Blowers

## 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.

These blowers come in a variety of voltages and 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).

## Rotron Model B Types 601-2-5-8






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

### General

- Physical envelope: inlet diameter 2.00"; length ranges from 5" to 6.25" [1].
- Weight: varies— between 16 and 22 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 2,800 and 3,340 RPM.
- Airflows range from 265 to 610 CFM.
- Maximum Static Pressure: 4 IWG.

### 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.

[1] See specific part-number drawing for complete product dimensions

## Options/Accessories

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

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## 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 525 at 50 Hz, and 610 at 60 Hz.
- Ambient temperature range: -54 °C to 100 °C.
- Acoustic levels as low as 67.9 dBA.

## DC Line Powered Units – E.C.D.C.®

- Not available with this model blower.

[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

## 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.

### DELTAC® Converter Driven Units

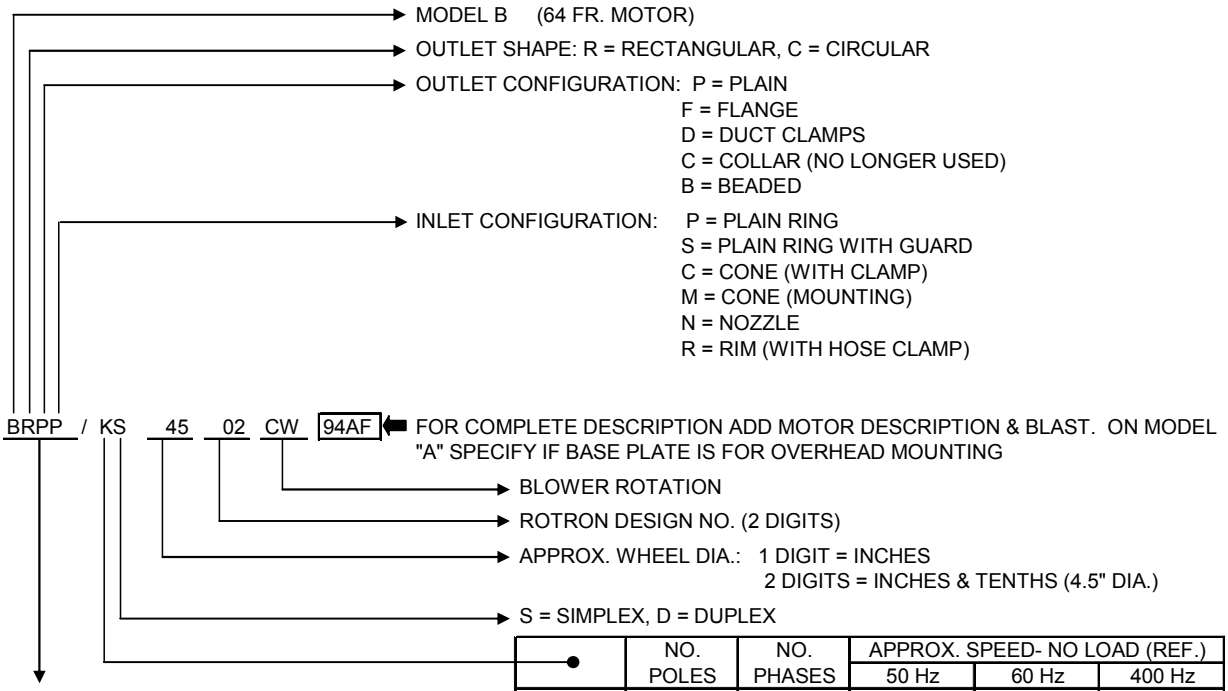
- DELTAC® converters allow high frequency (typically 400 Hz) fans to be driven by variable frequency (typically 360-800 Hz) power or low frequency 50/60 Hz power to obtain the higher frequency performance.

[1] See Accessories: Power Conversion



## 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

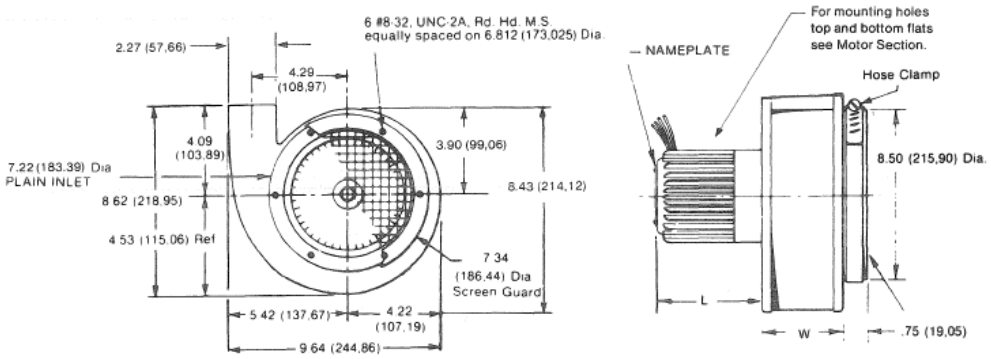
When ordering, please specify the specific Rotron part number listed on the model tables below. Further ordering information, based on the configuration and motor series, may be obtained by contacting customer service. Please refer to the Unit Description Key explanation above.



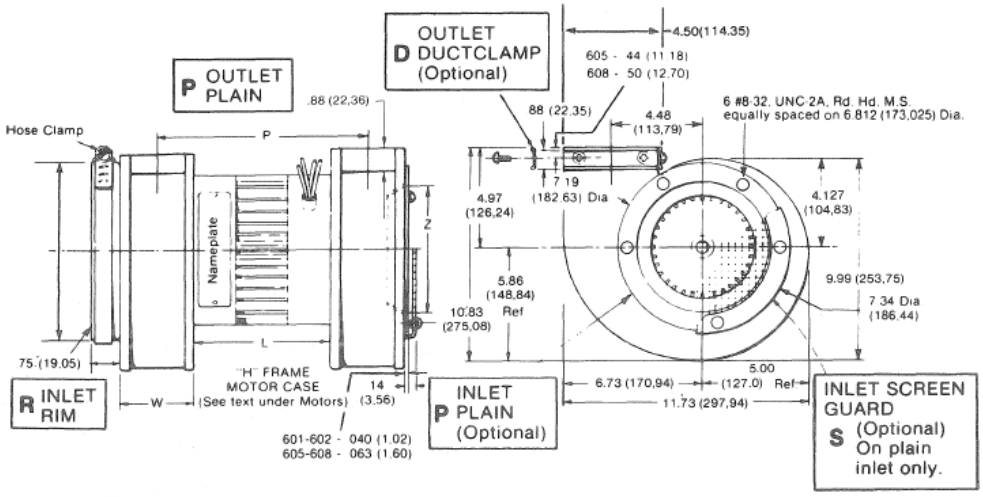
# CENTRIFUGAL BLOWERS

## MODEL B TYPES 601-2-5-6

### TYPES 601-602




### TYPES 605-608




P=L+W

| TOLERANCES | |
|---|---|
| .XX | ±.06 (1,5) |
| .XXX | ±.010 (0,25) |

(Unless otherwise specified)



# MODEL B TYPES 601-2-5-8

## 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 Variants: Motor Series | Motor Variants: Line Voltage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Simplex** | | | | | | | | | | | | | |
| **KS·602** | HB-2 | 1214AF | 115 | 1 | 50 | 8.0* | 2800 | 266 | 3.1 | 9.4 | 265 | 787AF | 230 |
| | | | | | 60 | | 3190 | 356 | 3.2 | 8.6 | 340 | | |
| **AS-602** | HB-2 | 881WF | 200-230 | 3 | 60 | - | 3350 | 338 | 1.1 | 5.2 | 335 | | |
| **KS·605** | HB-3 | 808AF | 115 | 1 | 50 | 20.0* | 2870 | 465 | 5.6 | 20.9 | 525 | | |
| | | | | | 60 | | 3310 | 647 | 5.8 | 19.3 | 605 | | |
| **AS-605** | HB-3 | 860WF | 220 | 3 | 50 | - | 2890 | 405 | 1.6 | 10.6 | 520 | | |
| | | | 200-230 | | 60 | - | 3340 | 627 | 1.9 | 10.2 | 610 | | |
| **Duplex** | | | | | | | | | | | | | |
| **KD-601** | HG-3 | 1215AF | 230 | 1 | 50 | 5.0** | 2870 | 359 | 2.4 | 8.5 | 450 | | |
| | | | | | 60 | | 3370 | 504 | 2.2 | 8.0 | 535 | | |
| **AD-601** | HG-3 | 860WF | 220 | 3 | 50 | - | 2910 | 333 | 1.6 | 10.6 | 457 | | |
| | | | 200-230 | | 60 | - | 3420 | 513 | 1.6 | 10.2 | 538 | | |
| **KD·602** | HG-3 | 1215AF | 230 | 1 | 50 | 5.0** | 2845 | 416 | 2.4 | 8.5 | 555 | | |
| | | | | | 60 | - | 3270 | 620 | 2.7 | 8.0 | 645 | | |
| **AD·602** | HG-3 | 860WF | 220 | 3 | 50 | - | 2880 | 425 | 1.4 | 10.6 | 570 | | |
| | | | 200-230 | | 60 | - | 3330 | 619 | 2.0 | 10.2 | 665 | | |
| **BD-608** | HG-3 | 856JF | 220 | 3 | 50 | - | 1420 | 250 | 1.5 | 870 | | | |
| | | | 200-230 | | 60 | - | 1660 | 310 | 1.3 | 4.5 | 1030 | | |

## MECHANICAL SPECIFICATIONS

| Type | Approx. Weight (Lbs. / Kg.) | "L" (Inches / mm) | "V" (Inches / mm) | "W" (Inches / mm) | "2" (Inches / mm) |
|---|---|---|---|---|---|
| **Simplex** | | | | | |
| **KS-602** | 16<br>(7,26) | 5.00<br>(127,0) | 8.50<br>(215,9) | 3.09<br>(78,5) | 6.06<br>(153,9) |
| **AS-602** | 16<br>(7,26) | 5.00<br>(127,0) | 8.50<br>(215,9) | 3.09<br>(78.5) | 6.06<br>(153,9) |
| **KS-605** | 22<br>(10) | 6.25<br>(158,8) | 8.53<br>(216,7) | 3.34<br>(84,8) | 6.38<br>(162,1) |
| **AS-605** | 22<br>(10) | 6.25<br>(158,8) | 8.53<br>(216,7) | 3.34<br>(84,8) | 6.38<br>(162,1) |
| **Duplex** | | | | | |
| **KD-601** | 23<br>(10,4) | 6.25<br>(158,8) | 8.50<br>(215,9) | 2.59<br>(65,79) | 5.81<br>(147,6) |
| **AD-601** | 23<br>(10,4) | 6.25<br>(158,8) | 8.50<br>(215,9) | 2.59<br>(65,79) | 5.81<br>(147,6) |
| **KD-602** | 23<br>(10,4) | 6.25<br>(158,8) | 8.50<br>(215,9) | 3.09<br>(78,5) | 6.06<br>(153,9) |
| **AD-602** | 23<br>(10,4) | 6.25<br>(158,8) | 8.50<br>(215,9) | 3.09<br>(78,5) | 6.06<br>(153,9) |
| **BD-608** | 30<br>(13,6) | 6.25<br>(158,8) | 8.53<br>(216,7) | 5.06<br>(128,5) | 6.38<br>(162,1) |

† Running capacitors not normally supplied by Rotron
For 3-phase motors all voltages are phase-to-phase
* Capacitor voltage rating 330 VAC
* * Capacitor voltage rating 440 VAC



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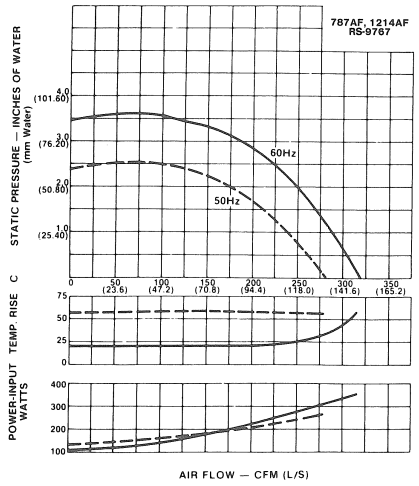
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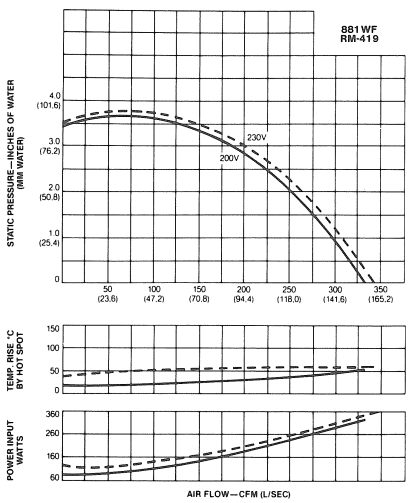
# CENTRIFUGAL BLOWERS

## MODEL B TYPES 601-2-5-8

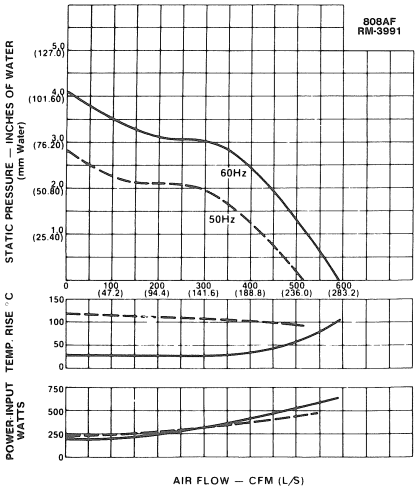
### TYPE KS-602 SIMPLEX



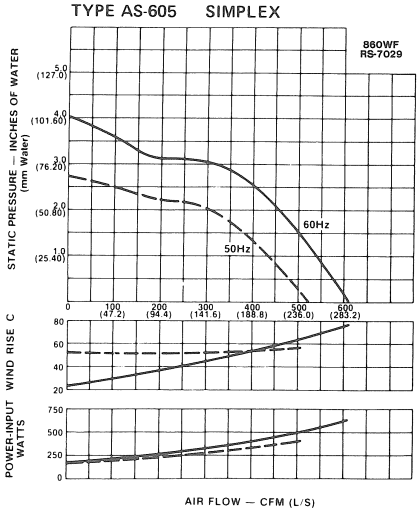

### TYPE AS-602 SIMPLEX



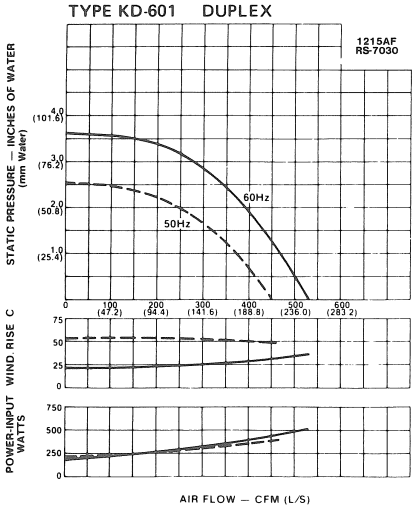

### TYPE KS-605 SIMPLEX



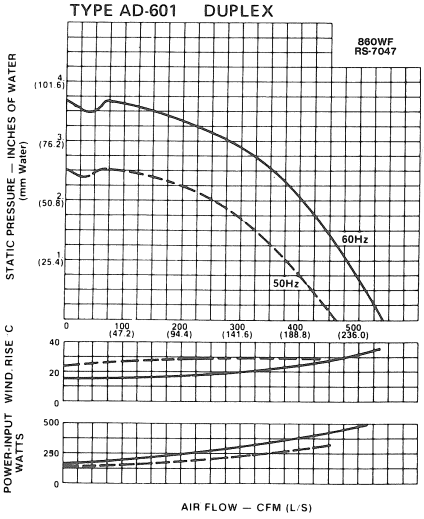

### TYPE AS-605 SIMPLEX



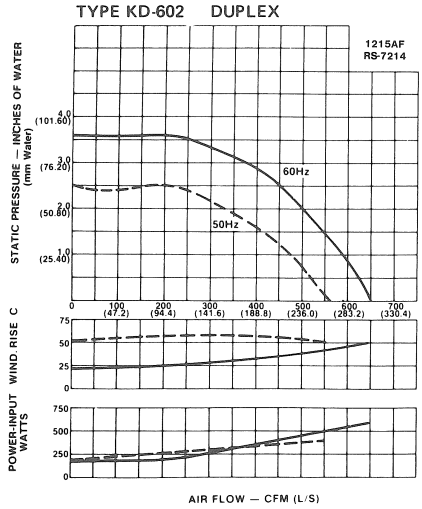

### TYPE KD-601 DUPLEX



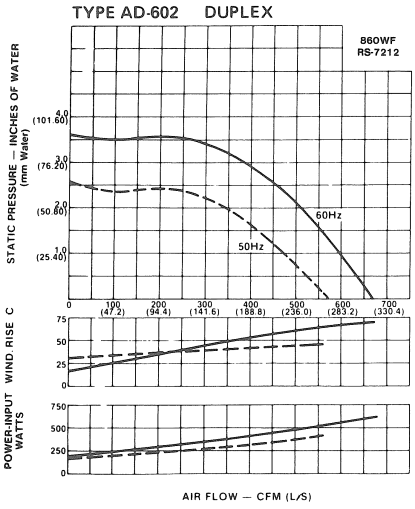

### TYPE AD-601 DUPLEX



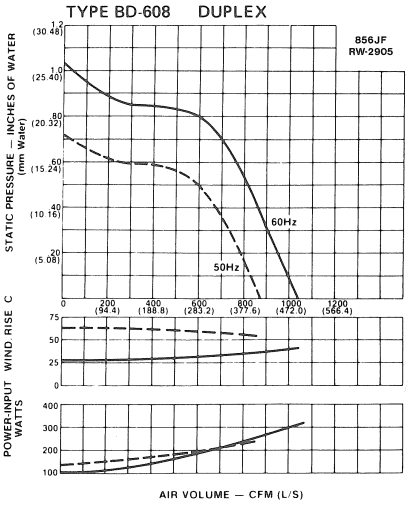

### TYPE KD-602 DUPLEX




### TYPE AD-602 DUPLEX




### TYPE BD-608 DUPLEX




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