

**ROOTS™ RCS-J WHISPAIR™  
 Rotary Positive Blowers**

Frames 715J thru 832J

**BASIC BLOWER DESCRIPTION**

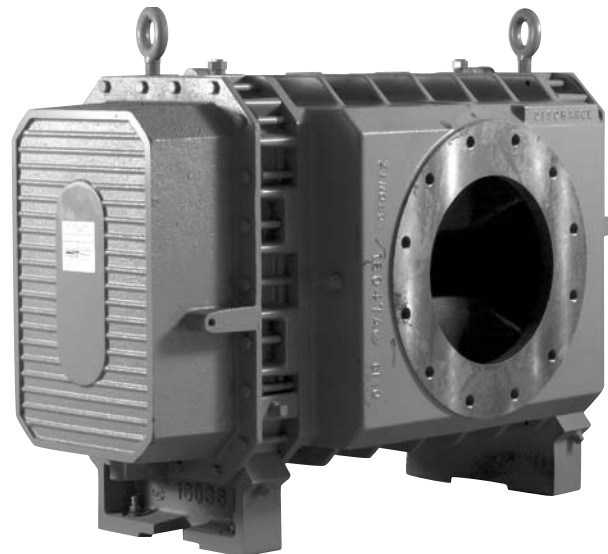
RCS-J WHISPAIR™ rotary blowers are heavy-duty units designed with integral-shaft ductile iron impellers having an involute profile. WHISPAIR blowers reduce noise and power loss by utilizing an exclusive wrap-around plenum and proprietary WHISPAIR jet to control pressure equalization – feeding backflow in the direction of impeller movement, thereby aiding rotation.

The headplates, gear cover, drive end cover and rigid, one-piece casing are grey iron. Carburized and ground alloy steel spur timing gears are taper mounted on the shafts, secured with a locknut. Cylindrical roller bearings are used.

Piston rings reduce air leakage through the shaft openings in the headplates, and lip-type oil seal prevent lubricant from entering the air chamber. The RCS-J incorporates thrust control, with splash oil lubrication at both ends of the blower.

Frame sizes 715J and 721J are designed with detachable rugged steel mounting feet that permit in-field adaptability to either vertical or horizontal installation requirements.

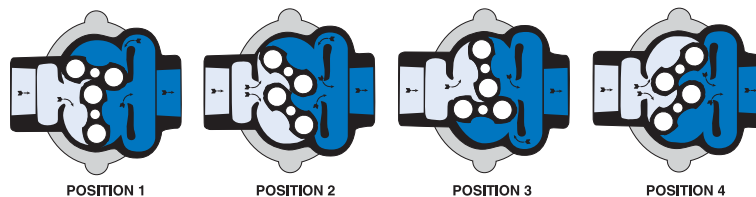
The top shaft is extended for drive on side outlet blowers, and either shaft can be extended for drive on top or bottom outlet blowers.



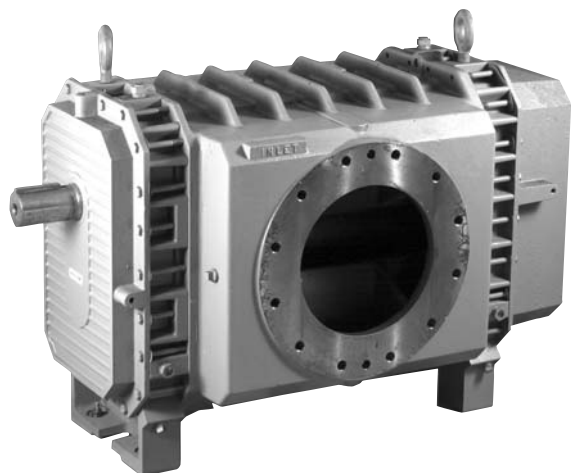
**DESIGN AND CONSTRUCTION FEATURES**

1. Low noise level, less operating power required
2. Alloy steel timing gears
3. Cylindrical roller bearings
4. Piston ring air seals
5. Lip-type oil seals
6. Splash oil lubrication
7. High volumetric efficiency
8. Horizontal and vertical configurations available

**OPERATING PRINCIPLE**



Incoming air is trapped by the impellers. Simultaneously, pressurized air (right) is being discharged. As the lower impeller passes wrap-around flange, Whispair jet equalizes pressure between trapped air and discharge area, aiding impeller movement and reducing power. Impellers move air into the discharge area (right). Backflow is controlled, resulting in reduction of noise relative to conventional blowers.

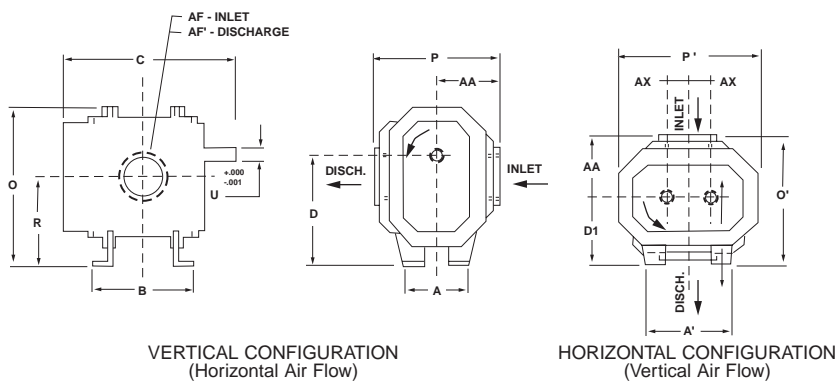


## PERFORMANCE TABLE

FRAME SIZE	SPEED RPM	4 PSI		6 PSI		8 PSI		10 PSI		12 PSI		15 PSI		18 PSI		MAX. VACUUM		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	"Hg	CFM	BHP
<del>715J</del>	<del>1180</del>	<del>935</del>	<del>23.0</del>	<del>870</del>	<del>33.4</del>	<del>815</del>	<del>44.0</del>	<del>766</del>	<del>54.6</del>	<del>722</del>	<del>65.0</del>	<del>663</del>	<del>81.0</del>	<del>14.0</del>	<del>705</del>	<del>37.2</del>		
	1770	1548	37.3	1483	53.0	1428	68.8	1379	84.5	1335	100.3	1276	123.9	15.0	1281	61.4		
	2600	2410	63.4	2345	86.0	2290	108.5	2241	131.0	2198	153.7	2138	187.5	15.0	2144	95.4		
<del>721J</del>	<del>1180</del>	<del>1266</del>	<del>30.5</del>	<del>1178</del>	<del>44.8</del>	<del>1103</del>	<del>59.0</del>	<del>1037</del>	<del>73.5</del>	<del>978</del>	<del>87.8</del>	<del>892</del>	<del>109.2</del>	<del>14.0</del>	<del>955</del>	<del>50.0</del>		
	1770	2096	49.1	2008	70.4	1933	91.7	1867	113.1	1808	134.4	1727	166.4	15.0	1735	81.7		
	2600	3264	81.4	3176	112.0	3101	142.5	3035	173.1	2976	203.7	2895	249.5	15.0	2903	124.8		
817J	880	982	24.9	895	36.8	821	48.7	756	60.6									
	1770	2368	55.0	2280	78.5	2206	102.0	2142	125.4	2083	148.9	2004	184.1	2055	219.4	16.0	1962	95.9
	2250	3116	75.6	3028	105.0	2955	134.0	2890	164.0	2830	193.0	2751	237.0	2680	281.0	16.0	2707	126.0
<del>821J</del>	<del>880</del>	<del>1179</del>	<del>29.6</del>	<del>1074</del>	<del>43.9</del>	<del>985</del>	<del>58.1</del>	<del>907</del>	<del>72.4</del>									
	1770	2842	65.7	2738	93.9	2648	122.1	2571	150.3	2500	178.4	2405	220.7	16.0	2354	114.8		
	2250	3740	92.3	3635	127.0	3546	163.0	3468	198.0	3398	233.0	3302	286.0	16.0	3249	153.0		
<del>826J</del>	<del>880</del>	<del>1473</del>	<del>37.1</del>	<del>1342</del>	<del>55.0</del>	<del>1231</del>	<del>72.8</del>	<del>1134</del>	<del>90.7</del>									
	1770	3554	81.4	3423	116.7	3311	151.9	3214	187.1	3126	222.3			16.0	2944	142.8		
	2250	4676	105.0	4545	156.0	4434	200.0	4336	247.0	4248	288.0			16.0	4062	188.0		
<del>832J</del>	<del>880</del>	<del>1768</del>	<del>44.4</del>	<del>1610</del>	<del>65.8</del>	<del>1477</del>	<del>87.2</del>	<del>1360</del>	<del>108.6</del>									
	1770	4264	97.5	4107	139.8	3972	182.0	3857	224.3					16.0	3531	168.4		
	2250	5610	134.0	5452	186.0	5320	239.0	5202	292.0					16.0	4874	225.0		

- Notes:**
1. Pressure ratings based on inlet air at standard pressure of 14.7 psia, standard temperature of 68° F, and specific gravity of 1.0.
  2. Vacuum ratings based on inlet air at standard temperature of 68°F, discharge pressure of 30" Hg and specific gravity of 1.0.
  3. 800J frame size only – Operation above 15 psi pressure rise, 15" Hg vacuum or 230° F temperature rise requires oil coolers – refer to Factory. Oil cooler not available on 600J and 700J frame sizes.

## OUTLINE DRAWING & DIMENSIONAL TABLE



- NOTES:**
1. All dimensions are in inches.
  2. Do not use for construction.

FRAME SIZE	A	A'	B	C	Drive Shaft Location		O	O'	P	P'	R	U	Keyway	AF Inlet Diameter	AF' Discharge Diameter	AA	AX	Approx. NetWt (lbs)
					D	D1												
<del>715J</del>	<del>19.00</del>	<del>26.00</del>	<del>21.50</del>	<del>33.38</del>	<del>17.00</del>	<del>10.00</del>	<del>25.13</del>	<del>19.00</del>	<del>18.00</del>	<del>23.25</del>	<del>13.50</del>	<del>2.375</del>	<del>.625 x.313</del>	<del>10.0 FLG</del>	<del>8.0 FLG</del>	<del>9.00</del>	<del>3.50</del>	<del>1100</del>
<del>721J</del>	<del>19.00</del>	<del>26.00</del>	<del>27.00</del>	<del>39.38</del>	<del>17.00</del>	<del>10.00</del>	<del>25.13</del>	<del>19.00</del>	<del>18.00</del>	<del>23.25</del>	<del>13.50</del>	<del>2.375</del>	<del>.625 x.313</del>	<del>12.0 FLG</del>	<del>10.0 FLG</del>	<del>9.00</del>	<del>3.50</del>	<del>1200</del>
817J	13.75	22.00	24.25	38.63	21.00	13.00	30.00	25.75	25.50	25.00	17.00	2.750	.625 x.313	10.0 FLG	10.0 FLG	12.75	4.00	1620
<del>821J</del>	<del>13.75</del>	<del>22.00</del>	<del>27.88</del>	<del>42.25</del>	<del>21.00</del>	<del>13.00</del>	<del>30.00</del>	<del>25.75</del>	<del>25.50</del>	<del>25.00</del>	<del>17.00</del>	<del>2.750</del>	<del>.625 x.313</del>	<del>12.0 FLG</del>	<del>10.0 FLG</del>	<del>12.75</del>	<del>4.00</del>	<del>1800</del>
<del>826J</del>	<del>13.75</del>	<del>22.00</del>	<del>33.13</del>	<del>47.50</del>	<del>21.00</del>	<del>13.00</del>	<del>30.00</del>	<del>25.75</del>	<del>25.50</del>	<del>25.00</del>	<del>17.00</del>	<del>2.750</del>	<del>.625 x.313</del>	<del>12.0 FLG</del>	<del>12.0 FLG</del>	<del>12.75</del>	<del>4.00</del>	<del>2075</del>
<del>832J</del>	<del>13.75</del>	<del>22.00</del>	<del>38.50</del>	<del>52.88</del>	<del>21.00</del>	<del>13.00</del>	<del>30.00</del>	<del>25.75</del>	<del>25.50</del>	<del>25.00</del>	<del>17.00</del>	<del>2.750</del>	<del>.625 x.313</del>	<del>14.0 FLG</del>	<del>12.0 FLG</del>	<del>12.75</del>	<del>4.00</del>	<del>2325</del>

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