

SPECIFICATIONS

ROOTS™ DVJ WHISPAIR™
Dry Vacuum Exhauster

Frame 2504 DVJ

BASIC DRY VACUUM PUMP DESCRIPTION

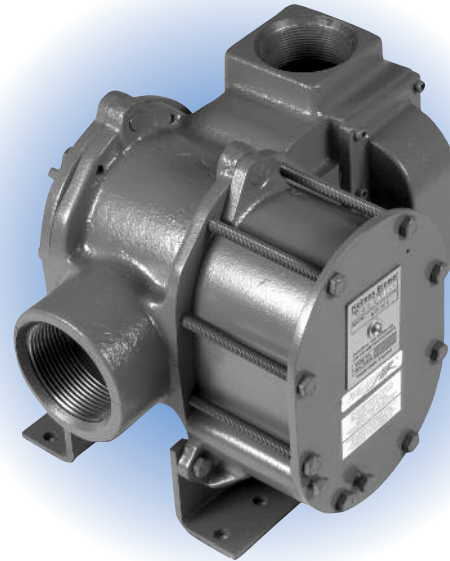
ROOTS™ DVJ WHISPAIR™ dry vacuum exhausters have an exclusive discharge jet plenum design which allows cool, atmospheric air to flow into the cylinder. This unique design permits continuous operation at vacuum levels to 20" HgV with a single stage unit.

Standard dry vacuum exhausters are limited to approx. 16" Hg vacuum because operation at higher vacuum levels can cause extreme discharge temperatures resulting in casing & impeller distortion and possible seizure. The DVJ's cooling design eliminates the problems associated by high discharge temperatures at vacuum levels beyond 16" Hg.

DVJ WHISPAIR™ vacuum pumps are heavy-duty units with integral-shaft ductile iron impellers. The casing, headplates, gear cover are grey iron. Carburized and ground alloy steel spur timing gears are taper mounted on the shafts, secured with a locknut. Ball bearings are splash lubricated at the gear end and grease lubricated at the drive end. Lip-type seals are used to restrict oil leakage into the air stream.

WARRANTY PERIOD

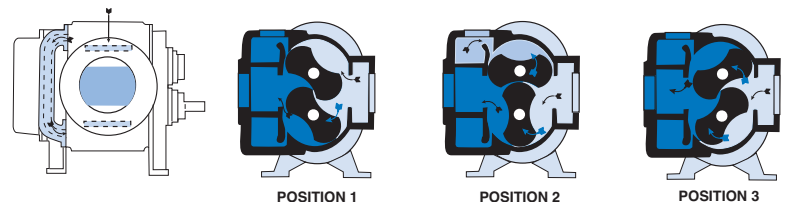
Twelve (12) months from date of original unit start-up or 18 months from date of original shipment, whichever occurs first.



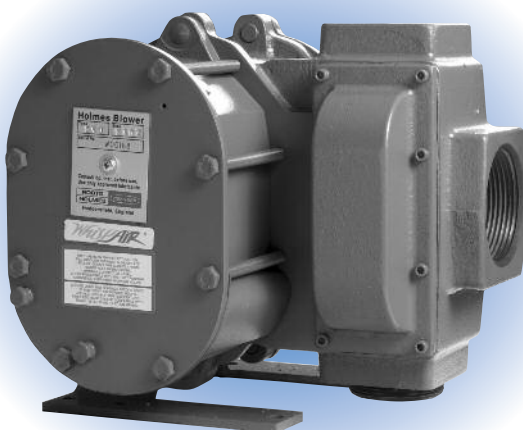
DESIGN AND CONSTRUCTION FEATURES

1. Rigid cast iron cylinder and headplates
2. Anti-friction ball bearings
3. Splash lubricated spur timing gears
4. Inlet and discharge connections in standard pipe sizes
5. Involute profile ductile iron impellers

OPERATING PRINCIPLE

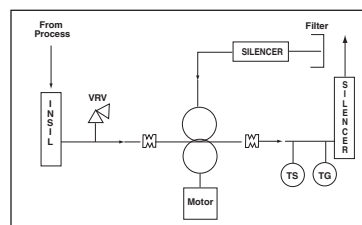


Position 1: Incoming air (right) is trapped between the impellers and the case, producing a vacuum in the application system. Simultaneously, air is discharged (left) from the exhauster. **Position 2:** As the upper impeller passes the jet plenum, atmospheric air flows into the space between the impeller and the case. This cools the trapped air, aids impeller movement, and reduces discharge shock and power loss. **Position 3:** The trapped air is moved into the discharge flange (left). Backflow is reduced resulting in lower discharge noise relative to conventional rotary exhausters.



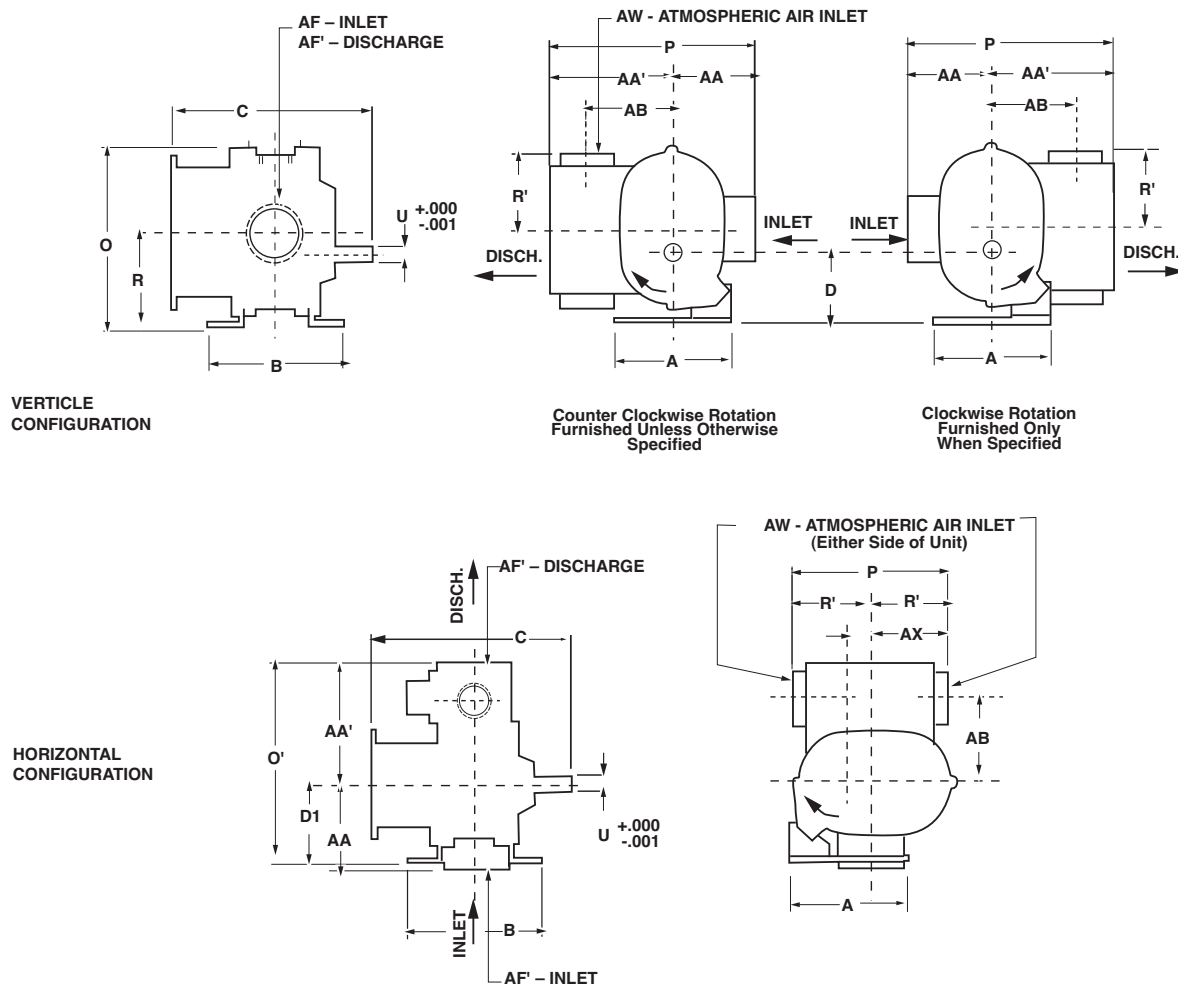
PERFORMANCE TABLE

| FRAME SIZE | SPEED RPM | Maximum Free Air CFM | 12" HgV CFM BHP | 16" HgV CFM BHP | 20" HgV CFM BHP |
|------------|-----------|----------------------|-----------------|-----------------|-----------------|
| 2504J | 2400 | | 47 2.1 | 36 2.8 | 21 3.5 |
| | 2655 | | 56 2.3 | 44 3.1 | 30 3.9 |
| | 2990 | | 67 2.6 | 56 3.5 | 41 4.4 |
| | 3540 | | 86 3.1 | 75 4.2 | 60 5.2 |
| | 3985 | | 101 3.6 | 90 4.7 | 75 5.9 |
| | 4515 | | 119 4.1 | 108 5.4 | 93 6.7 |
| | 4970 | 170 | 135 4.6 | 124 6.0 | 109 7.4 |



NOTE: Ratings based on inlet and jet air at standard temperature of 68°F, discharge and jet pressure of 30"Hg and specific gravity of 1.0.

OUTLINE DRAWING & DIMENSIONAL TABLE



| FRAME SIZE | A | B | C | D | O | O' | P | P' | R | R' | U | Keyway | AA | AA' | AB | AF | AF' | AW | AX | WGT. |
|------------|------|------|-------|------|------|-------|-------|------|------|------|-------|-------------|------|------|------|---------|---------|-------|-------|------|
| 2504J | 6.50 | 7.50 | 11.38 | 4.00 | 9.88 | 11.63 | 12.38 | 8.75 | 5.25 | 4.38 | .7500 | .188 x .094 | 4.75 | 7.63 | 4.75 | 2.5 NPT | 2.5 NPT | 2 NPT | 1.25G | 65 |

NOTES: 1. All dimensions are in inches. 2. Weights are in pounds, and are approximate. 3. Do not use for construction.

Dresser Roots

Houston, Texas Headquarters • U.S. Toll Free Phone: 1-877-363-ROOT(S) (7668) • Direct Phone: +1 832-590-2600
 Connersville, Indiana Operations • U.S. Toll Free Phone: 1-877-442-7910 • Direct Phone: +1 765-827-9285
 United Kingdom Operations • Phone: +44 (0) 1695 52600
 USA/Canada Sales • Phone: +1 773-444-3360
 Houston, Texas Factory Service • Phone: +1 713-896-4810
 Mexico City Sales and Factory Service • Phone: +52 55 5889 5811
 Dubai Sales and Factory Service • Phone: +971 4-8830831
 Malaysia Sales • Phone: +60 3 2163 0480
 China Sales • Phone: +86 10 8486 2440
 Shanghai Factory Service • Phone: +86 21 5858 7638



©2007 Dresser, Inc. all rights reserved. • Printed in the U.S.A. • All information subject to change without notice. • Universal RAI and EasyAir are registered trademarks of Dresser, Inc. • ROOTS, RAM X, and WHISPAIR, are trademarks of Dresser, Inc.

www.dresser.com/rootsblowers