



CENTRALBIDDING
FROM CENTRAL AUCTION HOUSE

**5000144586 Purchase of Bare Shaft Positive Displacement Blower for
Marrero Wastewater Treatment Plant**
Jefferson Parish Government

Project documents obtained from www.CentralBidding.com
08-Mar-2024 11:08:09 AM



Bid Number 50-00144586

**Purchase of Bare Shaft Positive Displacement Blower for Marrero
Wastewater Treatment Plant**

BID DUE: March 13, 2024 AT 11:00 A.M.

ATTENTION VENDORS!!!

**Please review all pages and respond accordingly, complying with all provisions
in the technical specifications and Jefferson Parish Instructions for Bidders and
General Terms and Conditions. All bids must be received on the Purchasing
Department's eProcurement site, www.jeffparishbids.net, by the bid due date
and time. Late bids will not be accepted.**

**Jefferson Parish Purchasing Department
200 Derbigny Street
General Government Building, Suite 4400
Gretna, LA 70053
Buyer Name: Doris Abraham
Buyer Email: DABRAHAM@jeffparish.net
Buyer Phone: 504-364-2690**

**INVITATION TO BID
THIS IS NOT AN ORDER**

Page: 1

DATE: 3/07/2024

BID NO.: 50-00144586

**JEFFERSON PARISH
PURCHASING DEPARTMENT
P.O. BOX 9
GRETN, LA. 70054-0009
504-364-2678**

PURCHASING SPECIALIST:
DABRAHAM@jeffparish.net

VENDOR:

Bids will be received until 11:00 AM, 3/13/2024 via online at www.jeffparishbids.net.

LATE BIDS WILL NOT BE ACCEPTED

NOTE: ONLY BIDS WRITTEN IN INK OR TYPEWRITTEN, AND PROPERLY SIGNED BY A MEMBER OF THE FIRM OR AUTHORIZED REPRESENTATIVE, WILL BE ACCEPTED. PENCIL AND/OR PHOTOSTATIC FIGURES OR SIGNATURES SHALL RESULT IN BID REJECTION. HOWEVER, ELECTRONIC SIGNATURES AS DEFINED IN LSA - R.S. 9:2602(8) ARE ACCEPTABLE. SIGNATURE MUST BE A SECURED DIGITAL SIGNATURE.

All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal reference. By submitting a bid, vendor agrees to comply with all provisions of Louisiana Law, as well be in compliance with the Jefferson Parish Code of Ordinances, Louisiana Code of Ethics, applicable Jefferson Parish ethical standards and Jefferson Parish Resolution No. 136353 and/or Resolution No. 141125 as amended. A copy of these resolutions may be obtained from the Office of the Parish Clerk, Suite 6700, Jefferson Parish General Government Building, 200 Derbigny Street, Gretna, LA 70053. You may also obtain a copy by visiting the Purchasing Department webpage at purchasing.jeffparish.net and clicking on On-line forms.

All vendors submitting bids should register as a Jefferson Parish vendor if not already yet registered. Registration forms may be downloaded from <http://purchasing.jeffparish.net> and by clicking on Vendor Information. Current W-9 forms with respective Tax Identification numbers and vendor applications may be submitted at any time; however, if your company is not registered and/or a current W-9 form is not on file, vendor registration is mandatory. Vendors may experience a delay in payment if your company is not a registered vendor with Jefferson Parish.

Jefferson Parish is exempt from paying sales tax under LSA-R.S. 47:301 (8)(c). All prices for purchases by Jefferson Parish of supplies and materials shall be quoted in the unit of measure specified and unless otherwise specified, shall be exclusive of state and local taxes. The price quoted for work shall be stated in figures. In the event there is a difference in unit prices and totals, the unit price shall prevail. Quotations shall be based on F.O.B. Delivered, anywhere within the Parish as designated by the Purchasing Department. JEFFERSON PARISH WILL ACCEPT ONE BID ONLY FROM EACH VENDOR. Items bid must meet specifications. JEFFERSON PARISH will accept one price for each item unless otherwise indicated. Two or more prices for one item will result in bid rejection. Bidders are required to complete, sign and return the bid form and/or complete and return the associated line item pricing forms as indicated. The price quoted for work shall be stated in figures. In the event there is a difference in unit prices and totals, the unit prices shall prevail

JEFFERSON PARISH reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination, as shall in its judgment be in the best interest of JEFFERSON PARISH. Every contract or order shall be awarded to the LOWEST RESPONSIVE and RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS and the DELIVERY AND/OR COMPLETION DATE

PROTESTS: Only those vendors that submit bids in response to this solicitation may protest any element of the procurement, in writing to the Director of the Purchasing Department. Written protest must be received within 48 hours of the release of the bid tabulation by the Purchasing Department. After consultation, the Parish Attorney's Office will then respond to protests in writing. (For more information, please see Chapter 2, Article VII, Division 2, Sec. 2-914.1 of the Jefferson Parish Code of Ordinances.)

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in the quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH requires all products to be new (current) and all work must be performed according to standard practices for the project. Unless otherwise specified, no aftermarket parts will be accepted. Unless otherwise specified, all workmanship and materials must have at least one (1) year guaranty, in writing, from the date of delivery and/or acceptance of the project. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

If this bid requires a pre-bid conference (see Additional Requirements section), bidders are advised that such conference will be held to allow bidders the opportunity to identify any discrepancies in the bid specifications and seek further clarification regarding instructions. The Purchasing Department will issue a written response to bidders' questions in the form of an Addendum.

All formal Addenda require written acknowledgment on the bid form by the bidder by the bidder placing the Addendum number in the appropriate section. Failure to acknowledge an Addendum on the bid form shall cause the bid to be rejected; JEFFERSON PARISH reserves the right to award bid to next lowest responsive and responsible bidder in this event.

USE OF BRAND NAMES AND STOCK NUMBERS: Where brand names and stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, provided brand names and stock numbers are specified. Complete product data may be required prior to award.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

Bidders are not to exclude from participation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, or sex; nor discriminate on the basis of age under the Age Discrimination Act of 1975, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, or on the basis of religion, except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Act of 1964, or Title VI and VII of the Act of April 11, 1968, shall also apply. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k)(5) of the Regulations. New construction or renovation projects must comply with Section 504 of the 1973 Rehabilitation Act, as amended, in accordance with the American National Standard Institute's specifications (ANSI A117.1-1961).

Jefferson Parish and its partners as the recipients of federal funds are fully committed to awarding a contract(s) to firm(s) that will provide high quality services and that are dedicated to diversity and to containing costs. Thus, Jefferson Parish strongly encourages the involvement of minority and/or woman-owned business enterprises (DBE's, including MBE's, WBE's and SBE's) to stimulate participation in procurement and assistance programs.

IN ACCORDANCE WITH STATE REGULATIONS JEFFERSON PARISH OFFERS ELECTRONIC PROCUREMENT TO ALL VENDORS

This electronic procurement system allows vendors the convenience of reviewing and submitting bids online.

This is a secure site and authorized personnel have limited read access only. Bidders are to submit electronically using this free service; while the website accepts various file types, one single PDF file containing all appropriate and required bid documents is preferred. Bidders submitting uploaded images of bid responses are solely responsible for clarity. If uploaded images/documents are not legible, then bidder's submission will be rejected. Please note all requirements contained in this bid package for electronic bid submission.

Please visit our E-Procurement Page at www.jeffparishbids.net to register and view Jefferson Parish solicitations. For more information, please visit the Purchasing Department page at <http://purchasing.jeffparish.net>.

ADDITIONAL REQUIREMENTS FOR THIS BID

PLEASE MATCH THE NUMBERS PRINTED IN THIS BOX WITH THE
CORRESPONDING INSTRUCTIONS BELOW.

13

1. All bidders must attend the MANDATORY pre-bid conference and will be required to sign in and out as evidence of attendance. In accordance with LSA R.S. 38:2212(I), all prospective bidders shall be present at the beginning of the MANDATORY pre-bid conference and shall remain in attendance for the duration of the conference. Any prospective bidder who fails to attend the conference or remain for the duration shall be prohibited from submitting a bid for the project.
2. Attendance to this pre-bid conference is optional. However, failure to attend the pre-bid conference shall not relieve the bidder of responsibility for information discussed at the conference. Furthermore, failure to attend the pre-bid conference and inspection does not relieve the successful bidder from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the specification with no additional cost to the owner.
3. Contractor must hold current applicable JEFFERSON PARISH licenses with the Department of Inspection and Code Enforcement. Contractor shall obtain any and all permits required by the JEFFERSON PARISH Department of Inspection and Code Enforcement. The contractor shall be responsible for the payment of these permits. All permits must be obtained prior to the start of the project. Contractor must also hold any and all applicable Federal and State licenses. Contractor shall be responsible for the payment of these permits and shall obtain them prior to the start of the project.
4. A LA State Contractor's License will be required in accordance with LSA R.S. 37-2150 et. seq. and such license number will be shown on the outside of the bid electronic envelope. Failure to comply will cause the bid to be rejected. When submitting the bid electronically, the license number must be entered in the appropriate field in the electronic procurement system. Failure to comply will cause the bid to be rejected.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

5. It is the bidder's responsibility to visit the job site and evaluate the job before submitting a bid.
6. Job site must be clean and free of all litter and debris daily and upon completion of the contract. Passageways must be kept clean and free of material, equipment, and debris at all times. Flammable material must be removed from the job site daily because storage will not be permitted on the premises. Precaution must be exercised at all times to safeguard the welfare of JEFFERSON PARISH and the general public.
7. PUBLIC WORKS BIDS: All awards for public works in excess of \$5,000.00 will be reduced to a formal contract which shall be recorded at the contractor's expense with the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. A price list of recordation costs may be obtained from the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. All awards in excess of \$25,000.00 will require both a performance and a payment bond. Unless otherwise stated in the bid specifications, the performance bond requirements shall be 100% of the contract price. Unless otherwise state in the bid specifications, the payment bond requirements shall be 100% of the contract price. Both bonds shall be supplied at the signing of the contract.
8. NON-PUBLIC WORKS BIDS: A performance bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The performance bond shall be supplied at the signing of the contract.
9. NON-PUBLIC WORKS BIDS: A payment bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The payment bond shall be supplied at the signing of the contract.
10. All bidders must comply with the requirements stated in the attached "Standard Insurance Requirements" sheet attached to this bid solicitation. Failure to comply with this instruction will result in bid rejection.
11. A bid bond will be required with bid submission in the amount of 5% of the total bid, unless otherwise stated in the bid specifications. All sureties must be in original format (no copies). When submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in the electronic bid solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.
12. This is an as needed basis contract. JEFFERSON PARISH makes no representations on warranties with regard to minimum guaranteed quantities unless otherwise stated in the bid specifications.
13. Freight charges should be included in total cost when quoting. If not quoted FOB DELIVERED, freight must be quoted as a separate item. Bid may be rejected if not quoted FOB DELIVERED or if freight charges are not indicated on bid form.
14. PUBLIC WORKS BIDS - Completed, Signed and Properly Notarized Affidavits Required; This applies to all solicitations for construction, alteration or demolition of public buildings or projects, in conformity with the provisions contained in LSA-RS 38:2212.9, LSA-RS 38:2212.10, LSA-RS 38:2224, and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Conviction Affidavit, Non-Collusion Affidavit, Campaign Contribution Affidavit, Debt Disclosures Affidavit and E-Verify Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.
15. NON PUBLIC WORK BIDS - Completed, Signed and Properly Notarized Affidavits Required in conformity with the provisions contained in LSA – RS 38:2224 and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Collusion Affidavit, Debt Disclosures Affidavit and Campaign Contribution Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled NON PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

16. The ensuing contract for this bid solicitation may be eligible for FEMA reimbursement and/or Federal funding/reimbursement. As such, the referenced appendix will be applicable accordingly and shall be considered a part of the bid documents. All applicable certifications must be duly completed, signed and submitted as per the appendix instructions. Failure to submit applicable certifications as per the appendix instructions will result in bid rejection.

17. For this project, the Contractor shall not pay any state or local sales or use taxes on materials and equipment which are affixed and made part of the immovable property of the project or which is permanently incorporated in the project (hereinafter referred to as "applicable materials and equipment"). All purchases of applicable materials or equipment shall be made by the contractor on behalf of and as the agent of Jefferson Parish (Owner), a political subdivision of the State of Louisiana. No state and local sales and use taxes are owed on applicable materials and equipment under the provisions of Act 1029 of the 1991 Regular Session - Louisiana Revised Statute 47:301(8)(c). Owner will furnish to contractor a certificate form which certifies that Owner is not required to pay such state or local sales and use taxes, and contractor shall furnish a copy of such certificate to all vendors or suppliers of the applicable materials and equipment, and report to Owner the amount of taxes not incurred.

It shall be the duty of every parish officer, employee, department, agency, special district, board, and commission: and the duty of every contractor, subcontractor, and licensee of the parish, and the duty of every applicant for certification of eligibility for a parish contract or program, to cooperate with the Inspector General in any investigation, audit, inspection, performance review, or hearing pursuant to Jefferson Parish Code of Ordinances Section 2-155.10(19). By submitting a bid, vendor acknowledges this and will abide by all provisions of the referenced Jefferson Parish Code of Ordinances.

DATE: 3/07/2024

INVITATION TO BID
THIS IS NOT AN ORDER

Page: 5

BID NO.: 50-00144586

JEFFERSON PARISH

PURCHASING DEPARTMENT
P.O. BOX 9
GRETNA, LA. 70054-0009
504-364-2678

VENDOR: Lotus USA Inc

PURCHASING SPECIALIST:
DABRAHAM

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Agency warehouse or jobsite, anywhere within the Parish as designated by the Purchasing Department.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH is expecting all products to be new and all work to be done in workman-like manner, according to standard practices. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

1 Week ARO

INDICATE STARTING TIME (IN DAYS) FOR CONSTRUCTION WORK

INDICATE COMPLETION TIME (IN DAYS) FOR CONSTRUCTION WORK

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form by placing the addendum number as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: _____

NUMBER: _____

NUMBER: _____

NUMBER: _____

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) _____

***** ALL BIDDERS MUST COMPLETE SECTION BELOW *****

FIRM NAME: Lotus USA Inc

SIGNATURE:

(Must be signed here)



TITLE:

Vice President

PRINT OR TYPE NAME:

Prasad Yalamanchi

ADDRESS: 445 S. Figueroa Street, 31st Floor STE 3121,

CITY, STATE: Los Angeles, California

ZIP: 90071

TELEPHONE: 213-298-7100

()

FAX:

()

EMAIL ADDRESS: sivaprasad@lotususa.com

TOTAL PRICE OF ALL BID ITEMS: \$ \$ 31,347.00

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00144586

SEALED BID

| ITEM NUMBER | QUANTITY | U/M | DESCRIPTION OF ARTICLES | UNIT PRICE QUOTED | TOTALS |
|----------------|----------|-----|--|----------------------|--------------|
| | | | Purchase of Bare Shaft Positive Displacement Blower for Marrero Wastewater Treatment Plant | | |
| 1 | 1.00 | EA | 0010 - ROOTS BARE SHAFT POSITIVE DISPLACEMENT BLOWER, PART NO. 624RAM-J | \$ 31,206.00 | \$ 31,206.00 |
| 2 | 3.00 | QT | 0020 - QUART ROOTS OIL | \$ 47.00 | \$ 141.00 |
| | | | DELIVER TO: MARRERO WASTEWATER TREATMENT PLANT 6250 LAPALCO BLVD. MARRERO, LA 70072 | | |
| | | | 21328 624 RAM-J TL, Roots, Blower TH Drive BOM# 85146020 or 851460TL | | |
| | | | 50458 Quart, VG220, pdblowers synthetic blower oil | | |
| | | | Lead time:1 Week ARO Quote validity:3/26/2024 Shipping cost included Quote does not include,installtion,sample,service,training. MIL STD packing marking | | |

**BARE SHAFT POSITIVE DISPLACEMENT BLOWER
JEFFERSON PARISH
DEPARTMENT OF SEWERAGE
MARRERO WASTEWATER TREATMENT PLANT**

1.01 GENERAL:

The vendor shall provide one (1) 624RAM-J Bare Shaft Positive Displacement Blower by Roots, or approved equal. The specified blower must fit the existing system. Included in bid shall be five (5) quarts of Roots synthetic oil. The blower under this bid shall be furnished by the area authorized factory representative for Jefferson Parish, Louisiana for the brand being offered. Any bids submitted for alternate blower manufacturers, other than that as specified, must include in their bid all information needed to fully demonstrate complete compliance with requirements of these specifications and dimensional duplicity of the existing blower. It is the bidder's responsibility to provide adequate information necessary for the complete evaluation of their proposed equipment. Jefferson Parish shall be the sole judge as to the equality of any alternate manufacturer's offering.

2.01 OPERATION CONDITIONS:

Blower shall have the following performance conditions:

1. Max Flow: 3244 CFM
2. Max Pressure: 10 psi
3. Max Vacuum: 16 inch Hg
4. Max Speed: 3000 RPM.

3.01 CONSTRUCTION:

Blower shall be heavy-duty unit designed with integral-shaft ductile iron impeller having an involute profile. Headplates and rigid, one-piece casing shall be grey iron, with drive end cover and gear cover being aluminum. Carburized and ground alloy steel spur timing gears shall be taper mounted on the shafts, secured with a locknut. Cylindrical roller bearing shall be used on unit.

Blower shall be equipped with piston rings reducing air leakage through the shaft opening in the headplates, with lip-type oil seals preventing lubricant from entering the air chamber. A hydrodynamic seal on the drive shaft shall prevent shaft seal oil leaks.

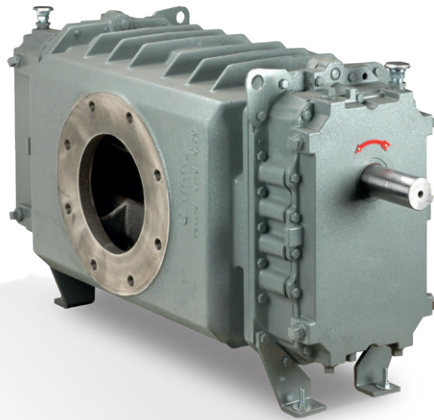
Blower shall incorporate thrust control with splash oil lubrication at both ends of the blower.

4.01 WARRANTY:

The blower supplier shall have a factory authorized service center capable of completely servicing the proposed blower within one (1) hour of the project site. The blower unit, or any parts thereof shall be warranted against defects in material or workmanship twenty-four (24) months from date of original unit start up, or thirty (30) months from date of original shipment, whichever occurs first.

Roots RAM WHISPAIR™ Blowers, 404J thru 624J

Rotary positive gas blowers



Design and construction features

- Designed for gas services.
- Low noise level, less operating power required.
- Improved volumetric efficiency and reduced operating temperatures.
- Alloy steel timing gears.
- Cylindrical roller bearings.
- Long-life mechanical seals – hydrodynamic drive shaft seal.
- Splash oil lubrication.
- Fewer moving parts – no valves or vanes to wear.
- Horizontal and vertical configurations available.

RAM stands for Reliability, Availability and Maintainability. Today, more than ever, Howden Roots is committed to supplying our customers with reliable products manufactured with state-of-the-art CNC machine tools. Production and inventory are being scheduled and controlled to ensure these units will be available when you need them. Design improvements such as repositionable rugged steel mounting feet and die-cast aluminum drive end covers and gear covers help to reduce installation costs and make normal maintenance easier.

Basic blower operations

The RAM WHISPAIR line of standard rotary positive gas pumps is intended for use with non-corrosive gases. The gas pumps have a proprietary design that reduces noise and power loss by utilizing an exclusive wrap-around flange and jet to control pressure equalization – eliminating rapid backflow of gas into the pump from the discharge area.

The standard model is designed using integral-shaft ductile iron impellers with an involute profile. Alloy steel timing gears are taper mounted on the shafts, and cylindrical roller bearings are used. Both ends of the unit are splash oil lubricated. A hydrodynamic seal on the drive shaft prevents shaft seal oil leaks. The casing and headplates are grey iron on standard units, while the drive end cover and gear cover are aluminum. Piston ring seals form labyrinth between the compression chamber and cored vent cavities. The vent cavities are plugged for purge or drain.

Special long-life mechanical seals and viton O-rings are installed at each bearing to control gas and oil leakage, and are suitable for vacuum or pressure service. Each seal incorporates a

unique geometry that promotes the flow of oil, air and vapor across the back of the stainless steel seat to enhance cooling and extend seal life.

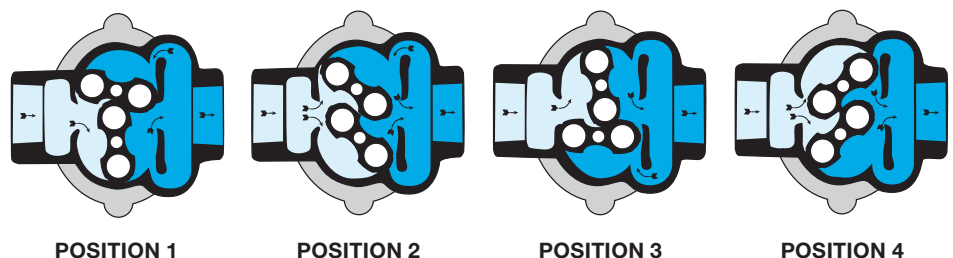
All frame sizes are designed with detachable rugged steel mounting feet which permit in-field adaptability to either vertical or horizontal installation requirements.

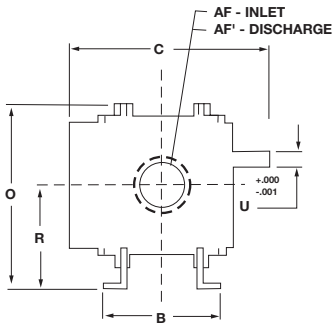
Warranty period

24 months from date of original unit start-up or 30 months from date of original shipment, whichever occurs first.

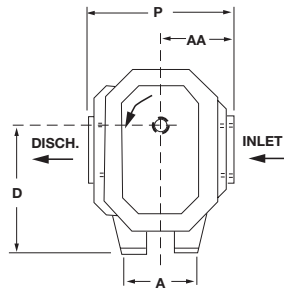
Operating principle

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

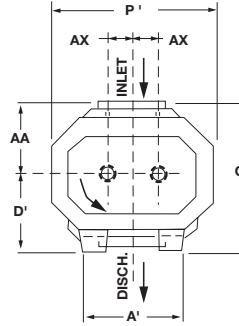




Vertical configuration
(Horizontal air flow)



Horizontal configuration
(Vertical air flow)



For further information contact:

Howden

900 W. Mount Street, Connersville
Indiana, USA, 47331

Tel: +1 765 827 9200

Web: www.howden.com

Outline drawing of Roots RAM WHISPAIR gas blower.

Dimensional table

| 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. net Wt (lbs) |
|------------|------|-------|-------|-------|----------------------|------|-------|-------|-------|-------|-------|-------|-------------|-------------------|------------------------|------|------|----------------------|
| | | | | | D | D' | | | | | | | | | | | | |
| 404J | 8.00 | 11.00 | 8.75 | 18.50 | 11.25 | 7.50 | 16.63 | 14.75 | 14.50 | 15.25 | 9.00 | 1.500 | .375 x .188 | 3.0 NPT | 3.0 NPT | 7.25 | 2.25 | 270 |
| 406J | 8.00 | 11.00 | 10.75 | 20.50 | 11.25 | 7.50 | 16.63 | 14.75 | 14.50 | 15.25 | 9.00 | 1.500 | .375 x .188 | 4.0 NPT | 4.0 NPT | 7.25 | 2.25 | 300 |
| 409J | 8.00 | 11.00 | 13.75 | 23.50 | 11.25 | 7.50 | 16.63 | 14.75 | 14.50 | 15.25 | 9.00 | 1.500 | .375 x .188 | 5.0 NPT | 5.0 NPT | 7.25 | 2.25 | 350 |
| 412J | 8.00 | 11.00 | 16.75 | 26.50 | 11.25 | 7.50 | 16.63 | 13.50 | 13.00 | 15.25 | 9.00 | 1.500 | .375 x .188 | 6.0 FLG | 5.0 FLG | 6.00 | 2.25 | 400 |
| 418J | 8.00 | 11.00 | 22.75 | 32.50 | 11.25 | 7.50 | 16.63 | 14.50 | 14.00 | 15.25 | 9.00 | 1.500 | .375 x .188 | 8.0 FLG | 6.0 FLG | 7.00 | 2.25 | 500 |
| 616J | 9.00 | 15.00 | 20.75 | 32.19 | 15.00 | 9.00 | 22.00 | 16.50 | 16.25 | 20.00 | 12.00 | 2.000 | .500 x .250 | 8.0 FLG | 6.0 FLG | 7.50 | 3.00 | 700 |
| 624J | 9.00 | 15.00 | 28.75 | 40.19 | 15.00 | 9.00 | 22.00 | 17.75 | 17.50 | 20.00 | 12.00 | 2.000 | .500 x .250 | 10.0 FLG | 8.0 FLG | 8.75 | 3.00 | 910 |

Notes: 1. All dimensions are in inches. 2. Do not use for construction.

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 |
| 404J | 1750 | 149 | 3.6 | 139 | 5.3 | 130 | 7.0 | 123 | 8.7 | 116 | 0.4 | — | — | — | — | 14.0 | 115 | 5.9 |
| | 2950 | 281 | 7.0 | 271 | 9.8 | 262 | 12.6 | 255 | 15.4 | 248 | 18.2 | 239 | 22.4 | — | — | 15.0 | 240 | 10.9 |
| | 4000 | 396 | 8.3 | 386 | 14.2 | 378 | 17.9 | 370 | 21.6 | 364 | 25.3 | 355 | 30.9 | 347 | 37.0 | 16.0 | 353 | 15.9 |
| 406J | 1750 | 225 | 5.4 | 210 | 8.0 | 198 | 10.5 | 187 | 13.0 | 177 | 15.6 | — | — | — | — | 14.0 | 173 | 9.0 |
| | 2950 | 426 | 10.5 | 411 | 14.7 | 398 | 18.9 | 387 | 23.1 | 377 | 27.3 | 363 | 33.6 | — | — | 15.0 | 365 | 16.4 |
| | 4000 | 601 | 15.0 | 586 | 20.1 | 574 | 26.0 | 562 | 31.9 | 552 | 37.0 | 539 | 46.5 | 526 | 54.0 | 16.0 | 531 | 23.6 |
| 409J | 1750 | 338 | 8.5 | 315 | 12.0 | 296 | 15.8 | 279 | 20.0 | 264 | 23.5 | — | — | — | — | 14.0 | 259 | 13.5 |
| | 2950 | 638 | 15.2 | 615 | 21.5 | 596 | 27.8 | 579 | 34.1 | 564 | 40.4 | 544 | 49.8 | — | — | 15.0 | 546 | 24.4 |
| | 4000 | 900 | 24.0 | 878 | 30.0 | 859 | 38.1 | 842 | 46.8 | 827 | 55.0 | 806 | 67.9 | 788 | 79.0 | 16.0 | 795 | 35.1 |
| 412J | 1750 | 450 | 11.0 | 420 | 16.0 | 394 | 21.0 | 372 | 26.0 | 352 | 32.0 | — | — | — | — | 14.0 | 343 | 17.7 |
| | 2950 | 849 | 19.9 | 819 | 28.3 | 794 | 36.6 | 772 | 45.0 | 752 | 53.4 | 724 | 66.0 | — | — | 15.0 | 728 | 32.3 |
| | 4000 | 1199 | 28.8 | 1169 | 39.9 | 1144 | 51.0 | 1121 | 62.2 | 1101 | 73.3 | 1074 | 90.0 | — | — | 16.0 | 1059 | 46.5 |
| 418J | 1750 | 675 | 16.5 | 630 | 24.0 | 592 | 31.7 | 559 | 39.0 | — | — | — | — | — | — | 14.0 | 505 | 26.5 |
| | 2950 | 1275 | 29.5 | 1230 | 42.1 | 1192 | 54.7 | 1159 | 67.3 | — | — | — | — | — | — | 15.0 | 1092 | 48.4 |
| | 4000 | 1800 | 42.9 | 1755 | 59.7 | 1717 | 73.4 | 1684 | 93.1 | — | — | — | — | — | — | 16.0 | 1590 | 69.7 |
| 616J | 1170 | 718 | 16.9 | 672 | 24.9 | 633 | 32.9 | 599 | 10.9 | 568 | 49.0 | — | — | — | — | 13.0 | 579 | 25.9 |
| | 1750 | 1176 | 26.2 | 1130 | 38.2 | 1091 | 50.1 | 1056 | 62.0 | 1025 | 73.9 | — | — | — | — | 14.0 | 1013 | 42.0 |
| | 3000 | 2162 | 48.9 | 2116 | 68.7 | 2077 | 88.5 | 2043 | 108.3 | 2012 | 128.0 | 1970 | 157.7 | — | — | 16.0 | 1946 | 81.7 |
| 624J | 1170 | 1077 | 25.4 | 1008 | 37.5 | 950 | 49.5 | 899 | 61.5 | — | — | — | — | — | — | 13.0 | 869 | 39.0 |
| | 1750 | 1764 | 39.9 | 1695 | 57.8 | 1637 | 75.7 | 1585 | 93.6 | — | — | — | — | — | — | 14.0 | 1519 | 63.4 |
| | 3000 | 3244 | 77.6 | 3175 | 107.3 | 3117 | 137.0 | 3065 | 166.7 | — | — | — | — | — | — | 16.0 | 2920 | 124.6 |

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. Estimated ACM for specific gravity of 0.6. multiply tabulate CFM by: 4-10 PSIG = 0.90 12-15 PSIG = 0.85

pdblowers Synthetic Oil

For Positive Displacement Blowers & Vacuum Pumps

Our synthetic blower oil is specially formulated to provide superior lubrication for the gears and bearings in rotary lobe, tri-lobe and helical screw blowers. It can withstand the toughest operating conditions in any environment or blower application.

pdblowers synthetic oil is available in ISO Grade 100, 150, 220 and 320. Food grade oil is also available.

PERFORMANCE ADVANTAGES

LONG OIL LIFE: pdblowers synthetic blower oil has a service life expectancy 3-4 times greater than conventional petroleum-based oils that rely only on their viscosity to protect your blower.

HIGH OXIDATION STABILITY: Exhibits superior resistance to oxidation, shear and thermal degradation for longer oil life and fewer oil changes.

ENHANCED BEARING PROTECTION: By reducing friction and heat generation, our synthetic blower oil provides maximum protection for your blower bearings.

EXCELLENT WATER SEPARATION: Our synthetic blower lubricant exhibits a 40/40/0 in under 10 minutes in the ASTM D-1401 demulsibility test.

CONTROLS RUST & CORROSION: Additives control the formation of rust, corrosion, carbon & varnish.

SUPERIOR TEMPERATURE RESISTANCE: A high viscosity index, high flash and auto ignition points and low volatility protect your blower through a wide range of operating temperatures.

NON-TOXIC / NON-HAZARDOUS



OUTPERFORMS NAME BRANDS

In third party testing our pdblowers synthetic oil has outperformed the equivalent synthetic oil from major OEM blower manufacturers.

We substitute our oil for the following name brands:

ROOTS® SYNTHETIC

SUMMIT SBL

GARDNER DENVER AEON® PD

CHEMLUBE® 630/632

KAESER OMEGA SB

With equivalent lubricants, our synthetic oil is top-off compatible. No change-out or flush necessary.

| Recommended Oil Grades | | |
|------------------------|----------------------------|---------------|
| AMBIENT TEMPERATURE | DISCHARGE TEMPERATURE | ISO VISCOSITY |
| Above 90°F (32°C)* | Above 300°F (149°C) | 320 |
| 32° to 90°F (0°-32°C) | 250° to 300°F (120°-149°C) | 220 |
| 0° to 32°F (-12°-0°C) | 100° to 250°F (38°-120°C) | 150 |
| Below 0°F (-12°C)* | 32° to 100°F (0°-38°C) | 100 |

**With extreme ambient temperatures, oil selection can be more complex. Contact us to discuss your application.*

MAINTENANCE INTERVALS

New blowers typically ship dry from the factory and require an initial oil fill prior to startup. Oil should then be changed after the initial 100 hours of operation.

Normal life expectancy of synthetic oil is approximately 6000 hours with an oil temperature of 180°F (82°C). As the oil temperature increases by increments of 15°F (8°C), the life is reduced by half. For example, an oil temperature of 195°F (90.5°C) will produce a life expectancy reduced by half or 3000 hours oil service life.

The oil temperature may be estimated by multiplying the discharge temperature of the air or gas stream by 0.8. As an example, if the discharge air temperature of the blower is 200°F, it is estimated that the oil temperature is 160°F.

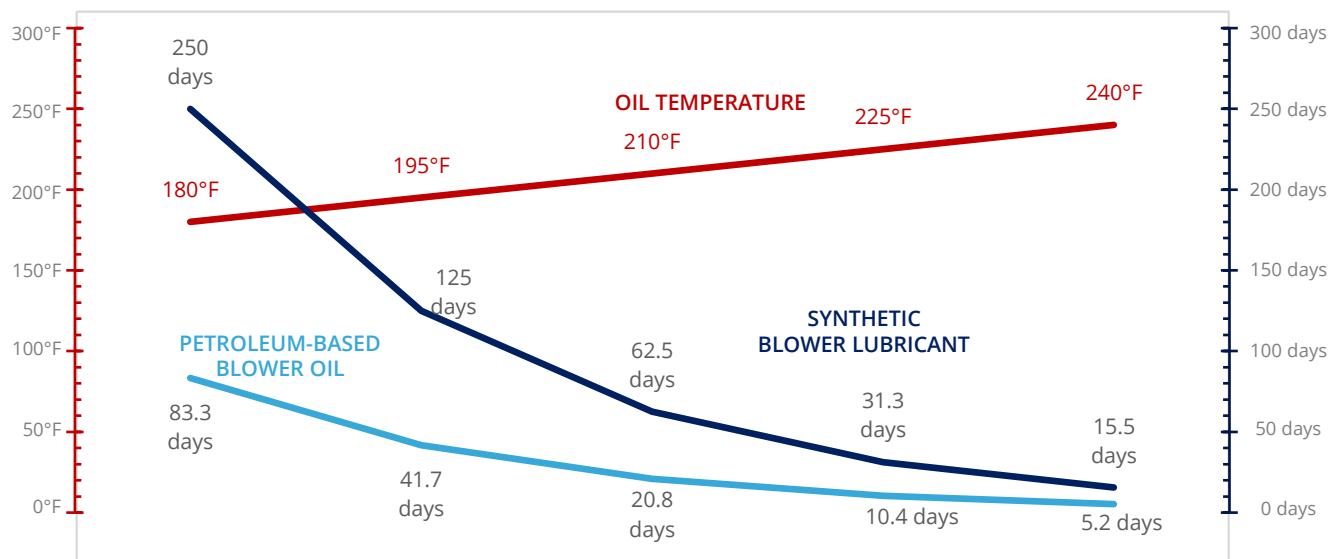
PART NUMBERS

| | 100 | 150 | 220 | 320 |
|----------------|-----------|-------|-------|-------|
| | ISO Grade | | | |
| Quart | 50450 | 50454 | 50458 | 50462 |
| Gallon | 50451 | 50455 | 50459 | 50463 |
| 5-Gallon Pail | 50452 | 50456 | 50460 | 50464 |
| 55-Gallon Drum | 50453 | 50457 | 50461 | 50465 |

TYPICAL PROPERTIES

| | | | | |
|--|-------------|-------------|-------------|-------------|
| Viscosity cSt @ 40° C cSt @ 100° C | 105 12.1 | 158 16.1 | 219 20.4 | 318 26.9 |
| Viscosity Index | 105 | 106 | 109 | 112 |
| Flash Point °F (°C) | 500 (260) | 503 (261) | 507 (263) | 510 (265) |
| Rust Test | PASS | PASS | PASS | PASS |
| Copper Corrosion | 1A | 1A | 1A | 1A |

OIL TEMPERATURE VS OIL LIFE



These guidelines are based on typical performance. Contact pdblowers if you have questions about your specific application.

FOOD GRADE OIL AVAILABLE

Our pdblowers synthetic oil is also available in a food grade formulation that meets H1 requirements (FDA 21 CFR 178.3570) for lubricants with incidental food contact.

PART NUMBERS

| | 100 | 220 | 320 |
|----------------|-----------|----------|----------|
| | ISO Grade | | |
| Quart | 50450.FG | 50458.FG | 50462.FG |
| Gallon | 50451.FG | 50459.FG | 50463.FG |
| 5-Gallon Pail | 50452.FG | 50460.FG | 50464.FG |
| 55-Gallon Drum | 50453.FG | 50461.FG | 50465.FG |

