



City of Ketchum

PROCUREMENT MEMO

Meeting Date: 6/12/2023 Staff Member/Dept: Mick Mummert/Wastewater

Agenda Item: Recommendation to Approve Purchase Order #23103 for two Positive Displacement Blowers for the Wastewater Reclamation Facility

Recommended Motion:

"I move to approve Purchase Order #23103 for a not to exceed amount of \$205,788.00 for two positive displacement blower packages from Aerzen USA Corp.

Summary of Procurement Process:

Table with 2 columns: Bidder, Bid Price. Row 1: Aerzen USA Corp., \$205,788.00. Row 2: (Invitation to bid was advertised April 26 and May 3 - No other bids were received.)

Table with 3 columns: Low Bid Contractor, Bid Price, Budget Account/Number. Row 1: Aerzen USA Corp., \$205,788.00, WW CIP/67-4350-7815

Background (if necessary):

- Aeration basin blower upgrades and additions are part of the current Capital Improvement Plan project.
The bid amount of \$205,788.00 is lower than the budgetary estimated cost of \$225,000.00 for the blowers.

Sustainability Impact:

None OR state impact here: These are high efficiency blowers and are part of a treatment process modification designed to reduce the amount of energy required by the process by approximately 15%.

Attachments:

- Aerzen USA Proposal
Engineer's Recommendation
Purchase Order #23103
Notice of Award for Procurement Contracts



AERZEN

Proposal

City of Ketchum, ID

SVWSD WRF - Blowers

May 17, 2023

Manufacturer/Service/Parts

Aerzen USA Corp.
108 Independence Way
Coatesville, PA 19320
800-444-1692 (tel)
610-380-0278 (fax)

www.aerzen.com/en-us



AERZEN

Compressed air, gas
and vacuum solutions

Aerzen USA
108 Independence Way
Coatesville, PA 19320 USA

Telephone: (610) 380-0244
Fax: (610) 380-0278
www.aerzen.com/en-us

Qualification Letter

Thank you for the opportunity to provide a proposal for Hybrid Blower packages for the SVWSD WRF project.

Aerzen is a family-owned private company that was founded in 1864 in Aerzen, Germany. Aerzen manufactured the first European positive displacement blower in 1868 and has been manufacturing screw compressors since 1943. Aerzen was one of the first ISO 9001 certified companies in the world and has maintained that certification since 1990. To ensure consistent quality throughout the world, all of our positive displacement blowers and screw compressor stages are manufactured in Germany in a 2,000,000 sq. ft. manufacturing facility.

Aerzen USA is one of more than 40 subsidiary companies of Aerzen. Aerzen USA is the Technical Competency Center for all of the Americas with headquarters in a LEED Gold 40,000 sq. ft manufacturing facility in Coatesville, PA which houses a workshop, warehouse, sales, support, and engineering. Aerzen also has a nationwide sales and service network including sales and service offices in Houston, TX, Romeoville, IL, Benecia, CA, and Atlanta, GA; Aerzen also has a rental facility in Atlanta, GA to serve our customers throughout the United States with rental equipment for low pressure applications.

Aerzen support for this project will be directed from the USA headquarters in Coatesville, PA. Project management, engineering and fabrication will be coordinated here. Personnel involved in this project from the headquarters will include an Aerzen Project Manager (to be assigned at time of order), various engineers (including mechanical, electrical, controls, testing, and applications), and production personnel. In addition to headquarters, Aerzen's local office in Benecia, CA, will continue their involvement in the project to ensure timely deliverables and local support as the project approaches the installation phase. At that point, Aerzen's local service manager and service coordinator will be introduced for planning equipment installation, start-up & commissioning, training, and any hand-off coordination between the contractor and owner as needed. Throughout the life of the project, Aerzen's Regional Sales Manager will continue direct involvement in order to support design and document compliance, production schedules, and field service support.



PROCUREMENT BID FORM

Ketchum / SVWSD WRF Equipment Procurement – Blowers
Ketchum / SVWSD

It is the intent of the Buyer to award a contract to the lowest responsive, responsible bidder on the basis of the lump sum total price written below.

The Bidder hereby certifies that the costs for all labor, services, equipment, tools, materials, licenses, permits, fees, and taxes (unless exempt) necessary for furnishing the Goods and Special Services according to the Project Manual are included in the price(s) for the items shown herein.

1. Bid Item Description:

This section, in general, describes the bid items included in the Bid Schedule. The description of Bid Items is provided for clarity purposes only. It is not intended to replace, supersede, or preclude any information in the plans and specifications. Unless specified otherwise, all lump sum Bid Items will be paid as a shown in the Agreement Between Buyer and Seller. Descriptions of the project Bid Items are provided below:

Bid Item No. A: Blowers. This lump sum Bid Item includes furnishing of goods and special services consisting of supply of two (2) packaged twisted tri-lobe positive displacement blowers (commonly referred to as hybrid blowers) with sound-attenuating enclosures for the aeration of an activated sludge wastewater treatment system. Blower shall supply 2,500 SCFM (3,310 ICFM), 7.5 PSIG differential discharge pressure, system discharge pressure 7.0 PSIG, relief valve setting 8.0 PSIG, with blower speed 3,600 RPM, inlet temperature 90°F, maximum free field noise level outside the enclosure shall be 77 dBA (+/- 2 dBA). Each blower shall consist of a 10-inch intake filter flange mounted on a rigid one-piece cast iron blower casing with precision machined twisted tri-lobe impellers, flexible blower discharge connection, 10-inch discharge silencer, weighted relief valve, discharge pressure gauge, discharge check valve, blower and motor mounting frame, 150-horsepower high-efficiency variable frequency drive (VFD) rated motor (motor non-overloading at relief valve pressure setting and 90°F), adjustable motor base, and belt guard all contained within a sound-attenuating enclosure. All system components delivered to the project site fully assembled (freight included in bid price). Special Services shall include: installation certification, operations and maintenance manuals, start-up services and training of Buyer’s personnel.

2. Bid Schedule:

Table with 6 columns: BID ITEM NO., DESCRIPTION, UNIT, EST QTY, UNIT PRICE, BID PRICE. Row 1: A, Blowers, Lump Sum, 1, -, \$ 205,788. Summary row: Total Contract Bid Price for Item A: Two hundred, five thousand, seven hundred and eighty eight dollars (use words).

3. Lowest Responsive BIDDER:

Determination of the lowest responsive BIDDER will be based on the lump sum price meeting the specification requirements.

4. Completion:

BIDDER agrees that the Goods will be furnished and Special Services will be substantially completed and ready for final payment in accordance with Paragraph 10.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement Between Buyer and Seller.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement Between Buyer and Seller.

Dated: _____ May 10, 2023 _____

Name of Business: _____ Aerzen USA Corp _____

Authorized Signature: _____  _____

Name: _____ Kurt Erickson _____

Title: _____ Vice President & General Manager _____



BID PROPOSAL

For

**Ketchum / SVWSD WRF Equipment Procurement – Blowers
Ketchum / SVWSD**

Aerzen USA Corp.

From: 108 Independence Way, Coatesville, PA 19320

**To: Ketchum / SVWSD Water Reclamation Facility,
110 River Ranch Road, Ketchum, Idaho 83340**

The undersigned, as Bidder, declares that we have received and examined the Project Manual for the **Ketchum / SVWSD WRF Equipment Procurement – Blowers** that we are well-qualified to supply the Goods and Special Services, that we are familiar with the Goods and Special Services, applicable federal, state, and local laws, ordinances, rules, and regulations, and conditions affecting cost, progress, or performance of the Goods and Special Services, and have made such independent investigations as Bidder deems necessary.

We acknowledge that the Project Manual provides the contract requirements, the general conditions of the contract, the technical specifications, as well as the referenced federal, state, and local laws, ordinances, rules, and regulations.

We acknowledge that addenda numbers 1 through have been received and have been examined as part of the Project Manual.

We acknowledge that this price includes the following completed documents: Bid Proposal, and Procurement Bid Form.

The undersigned, as Bidder, proposes and agrees that if this bid is accepted we will contract with the City of Ketchum and Sun Valley Water and Sewer District (Ketchum / SVWSD), hereinafter referred to as Buyer, on the form of Agreement Between Buyer and Seller provided herewith to furnish the Goods and Special Services according to the Contract Documents with all terms and conditions contained therein. We agree to sign the Agreement Between Buyer and Seller without qualification and to furnish the performance and payment bonds and the required evidence of insurance within fifteen (15) calendar days after receiving written Notice to Proceed for the contract.

We further propose and agree, if our bid is accepted and a contract for furnishing the Goods and Special Services is entered into with the Buyer, to plan the furnishing and to prosecute it with such diligence that the Goods and Special Services shall be completely furnished within the time stipulated, and to accept as full payment the bid price(s) written in the following Procurement Bid Form.

We agree that this Bid Proposal constitutes an offer, which shall be binding on the undersigned for sixty (60) days from the date of this Bid Proposal.

The party by whom this proposal is submitted and by whom the contract will be entered into in case the award is made to him:

Bidder (State whether business is a Corporation, a Partnership, or an Individual)

AERZEN USA CORP _____, a CORPORATION _____

Bidder's Address:

State of Incorporation:

108 INDEPENDENCE WAY _____

OHIO _____

COATESVILLE, PA 19320 _____

Corporate Address:

SAME AS ABOVE _____

Bidder's Phone Number: 610-380-0244 _____

Bidder's Fax Number: 610-380-0278 _____

Bidder's E-mail Address: tom.mccurdy@aerzen.com _____

Dated: May 10, 2023 _____

(SEAL)

Signature:



Kurt Erickson
Vice President & General Manager
Aerzen USA Corp



Name of Authorizing Official, City of Ketchum:

Name of Authorizing Official, Sun Valley
Water and Sewer District:

Title:

Title:

Attested By:

Attested By:

Title:

Title:

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BIDDER'S CHECKLIST □

This Bidder's Checklist is offered to the prospective bidder as a means of checking the Bidder's Bid Proposal in order to ensure that a complete Bid is submitted, free from omissions and errors that could possibly lead to rejection of the Bid. This checklist is provided only as a convenience for Bidders and is not intended to be a detailed or complete listing of all actions and documents that may be required. Bidders are advised to carefully read all portions of the Project Manual and to comply with all requirements.

BID PROPOSAL

- 1. Have questions arising from the Project Manual been submitted to the proper authority and resolved in the proper manner?
- 2. Are all blank spaces filled out on Bid Proposal, including required signatures?
- 3. Have all Addenda been received, factored into the bid price, and acknowledged on the Bid Proposal?

PROCUREMENT BID FORM

- 4. Is bid price shown correctly including totals? Recheck for errors and omissions. Total lump sum bids must be shown in words and figures.
- 5. Are all required signatures included?

BIDDER QUALIFICATION

- 6. Is the written evidence of Bidder's qualifications to furnish Goods and Special Services included in the bid package?

BID PACKAGE SUBMITTAL

- 7. Are all required Bid Forms ready for delivery in either electronic or hard-copy to the specified authority prior to the time for the Bid Opening?

AERZEN USA CORPORATION

108 Independence Way

Coatesville, PA 19320

Tel. (610) 380-0244 ♦ Fax. (610) 380-0278

**AERZEN****AERZEN** Reference Number: ENV-235602.0

16-May-23

Re: Ketchum, ID

To: Trent Donat Firm - City of Ketchum email - tdonat@ketchumidaho.org phone - (208) 726-3841
AERZEN Representative Info: Name - Scott Forsling of Coombs-Hopkins Company e-mail - scott@coombshopkins.com phone - (435) 659-7199

AERZEN Proposal Prepared By: Name - Dan Coleman email - dan.coleman@aerzen.com phone - (484) 718-3607
AERZEN Regional Manager: Name - Tom McCurdy e-mail - tom.mccurdy@aerzen.com phone - (610) 656-1683

Thank you for the opportunity to bid this project for (2) Positive Displacement Blower Packages.

The Aerzen Blower Package Performance and Scope of Supply meet the intent of the specification.

Aerzen meets or exceeds the requirements for flow range, power, and noise levels.

Instrumentation as specified below, is part of this scope of supply.

Hybrid**Model: D 98 S DN 250****Performance Data:****Design**

Intake volume, handled at intake condition	cfm	3,380	959
Volume handled at normal condition	scfm	2,500	710
Mass flow	lb/h	11,596	3,294
Density at inlet conditions	lb/cf	0.057	0.057
Relative humidity	Φ	95%	95%
Intake pressure (abs.)	psia	11.9	11.9
Outlet pressure (abs.)	psia	19.4	19.4
Discharge pressure	psig	7.5	7.5
Intake temperature	°F	90	90
Discharge temperature	°F	208	216
Power consumption at coupling	bHp	127	37
Motor Rating	HP	150	
Motor Speed	RPM	3,570	1,263
Full load motor efficiency	%	95.0%	
Motor frame		445TS	
Tolerance on flow & power	± 5 %		
Sound pressure level w/o enclosure	dB(A)	103	*Measured in free field at 3ft. distance from the outline of the unit
Sound pressure level w/ enclosure	dB(A)	76	*does not include system piping noise (tol. ± 2 dB(A)).

Weights & Dimensions:

Inlet connection	ANSI Flange	12"
Discharge connection	ANSI Flange	10"
Blower torso weight	lbs.	4,855
Blower motor weight	lbs.	1,709
Blower pkg weight	lbs.	6,564
Envelope dim.*	L x W x H in.	87 x 75 x 93
460 VAC Cooling Fan	kW	0.38
AERtronic	kW	0.2

* non binding dimensions includes, inlet filter silencer, relief valve, check valve, and flex connector

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AERZEN

D 98 S DN 250

Aerzen Delta Hybrid Blower Package consists of the following components, assembled in our factory.

Aerzen Rotary Lobe Compressor D Series

- Narrow V-belt drive
- V-belt drive guard
- First fill of Delta Lube 06 oil
- Service Accessories
- Inlet filter-silencer, G4 per EN 779 (equivalent to MERV 7)
- Discharge Silencer, Reactive type, integrated with base frame
- Spring loaded pressure relief valve(s), sized for full flow
- Set of vibration isolating mounts
- Discharge manifold with externally accessible integrated check valve
- Hinged motor support as automatic belt tensioning device
- Sound enclosure, powder-coated galvanized steel, fire retardant HDP foam construction
- 10" ANSI Flanged discharge connection
- Simplified ISO-1217, Annex B test report(s)
- Factory set relief valve
- Blower Warranty 24/30
- Domestic packaging

Drive motor

- Motor 150 HP, 2-pole, NEMA, TEFC, 460 V / 60 Hz, NEMA Premium Efficiency, 445TS
- Motor thermostats, one per phase @ 155 deg C
- Routine motor test data
- Insulated drive-end motor bearing
- Motor shaft grounding ring
- Motor Warranty 3-Yr Motor

Instrumentation and Controls

- AERtronic Controls local control panel
- Configured for VFD use
- Ethernet IP communication protocol
- 460V Supply Power
- Aertronic vibration monitoring module
- E-stop button
- Aertronic UL508A wiring
- AERtronic vibration monitoring of blower case, X/Y plane with time delay, alarm, & fault function

Spare Parts (per unit)

- Set of 1 spare air filter(s)
- Set of 1 spare belt set(s)
- Set of 2 spare oil filter(s)
- spare sheave set
- 1 quart of touch up paint

Start Up & Services

- 1 trip(s), 2 day(s) total installation, startup, & training

Freight

- Freight to jobsite

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AERZEN

Price does not include any tax or VAT.

Delivery Terms: CIP Aerzen USA Coateville, PA

General Terms: This offer is subject to Aerzen Standard Terms and Conditions (AMUSA.08.22.001)

Payment Terms: Net 30 days, 20% of order value from date of accepted purchase order. 30% of order value upon release for production for material procurement. 50% of order value from date of readiness to ship.

Submittals: 4-6 weeks after receipt of purchase order

Delivery Time: presently approximately 26 weeks after technical release by customer.

Warranty: 24 months after start up, 30 months after delivery, whichever comes first.

*Maintenance must be performed per the Instruction Manual using Aerzen spare parts.

*Equipment not manufactured by Aerzen will carry the manufacturer's standard warranty.

Quote Validity: All prices and lead times quoted are valid for 60 days from the date stated on the quotation.

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AERZEN

Aerzen USA Corp Terms and Conditions of Sale New Equipment Packages

AERZEN USA CORP (hereinafter called "Seller") agrees to sell equipment (hereinafter called the "Goods") to the Purchaser (hereinafter called the "Buyer") on the following terms and conditions of sale. Any alteration of these terms and conditions shall have no force or effect unless agreed to in writing by an officer of Seller or such other authorized signatory of Seller as designated in writing by Seller.

The terms and conditions as set forth herein and our quotation or as modified by written agreement shall constitute the entire agreement (hereinafter called the "Agreement") between Seller and Buyer. A failure by either party to enforce any rights under this Agreement shall not be deemed to constitute a waiver of those or any other rights under this Agreement. These Terms and

Conditions of Sale shall be deemed accepted by Buyer upon Seller's receipt of Purchase Order from Buyer. No condition stated by Buyer shall be binding upon Seller if in conflict with, inconsistent with, or in addition to the Terms and Conditions of Sale, unless expressly accepted in a writing signed by Seller. In the event of conflict or differences in the terms or conditions of Buyer's Purchase Order and the Terms and Conditions of Sale herein, the Terms and Conditions of Sale shall govern.

1. **ORDERS:** All orders are subject to acceptance and approval by Seller's credit department and are not binding until and unless so approved and accepted. Written acknowledgement of an order shall constitute acceptance and will thereby be a binding contract which cannot be modified or cancelled by Buyer without written consent of Seller.

2. **PRICES AND PAYMENTS:** All prices are quoted and payable in U.S. dollars, unless otherwise noted. Quoted prices shall remain valid for thirty days unless written communication is received by Seller prior to such time. Seller reserves the right to restrict or modify the terms of payment or to require payment prior to shipment if, in Seller's opinion, the Buyer's financial condition or other circumstances do not warrant shipment on the terms originally specified in the Agreement.

Unless expressly agreed to in writing on a specific contract or order, pending satisfactory credit review, Seller standard payment terms are: (a) For orders under \$100,000 the payment terms shall be Net 30 days from date of shipment, with no retainage held. (b) For orders over \$100,000 the following terms shall apply, assuming satisfactory credit review: 20% of order value from date of accepted purchase order, 30% of order value upon release for production for material procurement, 50% of order value at readiness to ship. (c) All invoices are to be paid Net 30 days. (d) In those cases where progress payments are required, all work on the order will cease if payment is not received in accordance with the payment schedule. (e) Payment retention will not be allowed. In the instance where an invoice is disputed, all undisputed portions remain payable within Net 30 days terms. (f) Interest at the rate of one and one-half percent (1 ½%) per month or at the highest rate allowed by law, whichever is less, shall be charged to all overdue accounts. Buyer will reimburse Seller for all costs and expenses (including attorney's fees and the costs of bringing any action) incurred in collecting any amounts past due.

3. **TAXES:** The prices quoted do not include any taxes. Any sales tax, use tax, excise tax, goods, and service tax (GST), value added tax (VAT), customs tax, or other tax of any nature whatsoever imposed by any government authority on the transaction between Seller and Buyer (plus interest and penalties thereon, if any) shall be paid by the Buyer in addition to the prices quoted and invoiced. In the event that Seller is required to pay any such taxes, Buyer shall reimburse Seller on demand. At the time of an order, Buyer shall provide Seller with any tax exemption certificates or other documents acceptable to the taxing or customs authorities.

4. **LIABILITY:** Seller's liability with respect to the Goods sold hereunder shall be limited to the warranty provided in Section 10 of these Terms and Conditions and shall be limited to the contract price. In no event shall Seller be liable for special, indirect, incidental, consequential or punitive damages, or expenses incurred by Buyer, Buyer's customers or any third party, whether arising from breach of contract, warranty, negligence, strict liability in tort or other theories of law or equity, including, but not limited to, liquidated damages, loss of profits or revenue, loss of use, cost of capital, cost of substitutes, downtime, service interruption, or any other type of economic loss.

5. **SHIPPING OR SERVICE DATE:** Shipping or service dates are estimates and not a guarantee of a particular day of shipment or service. Seller shall not be liable in any way for any default or delay in shipping or service due to contingencies beyond its control which prevent or interfere with Seller making delivery or providing service on the date specified, including, but not limited to, war, restraints affecting shipping, delivery of materials or credit as a result of war or war restrictions, non-arrival, delay or failure to procure materials as a result of war or war restrictions, rationing of fuel, strikes, lockouts, fires, bombings, terrorism, accidents, floods, droughts, cyber-attacks, and any other contingency affecting Seller, its suppliers, or subcontractors; and Seller shall have the right to cancel a contract of sale or to extend the shipping or service date in the event that one or more of such contingencies prevents or delays shipment or service.

6. DELIVERY:

- a. **Title and Risk of Loss:** All products will be delivered EXW Aerzen, Coatesville, PA unless otherwise agreed by both parties in writing. In no event shall Seller be liable for any delay in delivery or assume any liability in connection with shipment, nor shall the carrier be deemed an agent of Seller.
- b. **Acceptance of Products:** Buyer shall inspect all products promptly upon receipt. All claims by Buyer, except only those provided for under Warranty clauses, which are not asserted in writing by Buyer within five (5) days of receipt are waived.
- c. **Delays by Buyer:** In the event that Goods cannot be shipped to Buyer when ready due to any cause not attributable to Seller, upon notice to Buyer, Seller may ship such Goods to storage. If such Goods are placed in storage, including storage at the facility where manufactured, the following conditions shall apply: (i) all risk of loss or damage shall thereupon pass to Buyer; (ii) title shall transfer to Buyer; (iii) any amounts otherwise payable to Seller upon delivery shall be payable upon presentation of Seller's invoice; (iv) the Goods shall be deemed as shipped and the warranty time period shall commence; (v) all expenses incurred by Seller, such as preparation for and placement into storage, handling, inspection, preservation, insurance, storage and removal charges, and any taxes shall be payable by Buyer; and (vi) when conditions permit and upon payment of all amounts due hereunder, Seller shall resume delivery of Goods to the originally agreed point of delivery.
- d. **Delays in Inspection:** In the event that Goods cannot be shipped to Buyer when ready due to delay of Buyer's in-person inspection, upon notice to Buyer, such delay shall constitute a waiver of Buyer's rights of in-person inspection and rejection and an acceptance by Buyer of an inspection report, as determined and compiled at Seller's sole discretion. Such acceptance shall be in addition to the remedies for Delays by Buyer outlined herein.
- e. **Partial Shipment:** Partial shipment of an order will not be made without Buyer's knowledge or consent. In the event a complete shipment cannot be made by the required date, Buyer will be promptly notified. If partial shipment with Buyer's approval is made, excess freight charges, if any, will be billed to the Buyer.

7. **CANCELLATION, POSTPONEMENT OR CHANGE ORDERS:** Orders are not subject to Buyer's cancellation, postponement, or change in specifications, shipping schedules, or other conditions originally agreed upon without Seller's written consent and then only upon agreement to compensate Seller for any or all losses caused by such cancellation, postponement, or changes. Cancellation charges of between twenty percent (20%) and one hundred percent (100%) of the total price of the contract will be invoiced, as determined at Seller's sole discretion, depending on the status of completion plus Seller's non-recoverable costs attributed to the Buyer's order.

If Seller's manufacturing is delayed or postponed by Buyer, Seller shall be entitled to an equitable price adjustment. If Buyer delay extends for more than ninety (90) days and the parties have not agreed upon a revised basis for continuing the work at the end of the delay, including adjustment of the price, then upon written notice, Seller may terminate the order whereupon Buyer shall promptly pay Seller its cancellation charges as described herein.

Seller may terminate the Agreement without liability to Buyer if (i) Buyer shall materially breach any of the terms and conditions of this Agreement and shall fail to cure such material breach within five (5) days after written notice from Seller; or (ii) Buyer shall become insolvent; or (iii) a petition under the Bankruptcy Act or any other insolvency law shall be filed by or against Buyer; or (iv) Buyer shall make assignment for the benefit of creditors; or (v) Buyer shall fail to make timely payment of any obligation owed by it to Seller; or (vi) in the event Seller reasonably believes that Buyer is unable to make full and prompt payment as required hereunder.

Buyer agrees that it shall, no later than thirty (30) days following the effective date of termination of this Agreement, pay all monies owed to Seller at the time of any such termination regardless of any terms of payment that may have otherwise been granted to Buyer by Seller. Seller shall not by reason of its termination of this Agreement in accordance with the terms hereof, be liable to Buyer for compensation or reimbursement of any damages on account of loss of profits or prospective profits on anticipated sales, or on commitments in connection with the business or goodwill of Buyer or otherwise or for direct, indirect, punitive, special, consequential, or liquidated damages.

8. **LIMITED WARRANTY:** Unless otherwise stated in Seller's quotation, Seller warrants the products and parts that it manufactures will be free from defect in materials and workmanship for twenty-four (24) months from the date of start-up, but not to exceed thirty (30) months from the date of readiness to ship. Performance warranties (if any) are limited to those specifically included in Seller's proposal and identified as such. Goods (including accessories, components, and parts thereof) furnished by Seller but manufactured by others is not warranted by Seller and such Goods shall carry the warranty (if any) which the manufacturer has conveyed to Seller to the extent it can be passed on to the Buyer. Seller shall, upon prompt written notice by the Buyer, correct such non-conformities, at Seller's option, by either repair or replacement. All such defective Goods shall follow the RMA policy set forth in clause 10. and be sent at Buyer's expense directly to Seller's headquarters located at 108 Independence Way, Coatesville, PA, USA, 19320 or an Authorized Service Center. Shipment of repaired or replacement Goods will be at Seller's expense. Seller warrants any Goods repaired or replaced pursuant to the above warranty to be free from defects in materials and workmanship for the longer of: (a) a period of ninety (90) days after the start-up of such repaired or replaced Goods or (b) the period remaining on the warranty.

Goods must be maintained per Seller's Operations and Maintenance manual, including proper maintenance documentation, for the warranty to remain valid.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED, INCLUDING ANY WARRANTY OF PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO REPRESENTATION, CONDITION OR WARRANTY, INCLUDING, BUT NOT LIMITED TO, STATEMENTS OF CAPACITY, SUITABILITY FOR USE, OR PERFORMANCE, WHETHER MADE BY SELLER, EMPLOYEES OR REPRESENTATIVE PERSONNEL, SHALL BE

AERZEN USA CORPORATION

108 Independence Way

Coatesville, PA 19320

Tel. (610) 380-0244 ♦ Fax. (610) 380-0278



AERZEN

CONSIDERED TO BE A WARRANTY BY SELLER FOR ANY PURPOSE OR GIVE RISE TO ANY LIABILITY OF SELLER WHATSOEVER AND ALL SUCH IMPLIED WARRANTIES ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM ANY CONTRACT RESULTING OR ARISING FROM OR OTHERWISE EVIDENCED BY THIS AGREEMENT.

Failure to notify Seller in writing within five (5) days of discovery of any unsatisfactory operation, improper maintenance or installation shall terminate this Warranty. The above warranties do not apply to products which are (a) repaired, modified or altered by any party other than Seller or Seller's Authorized Service Center; (b) subjected to unusual physical, thermal, or electrical stresses, corrosion or erosion, improper installation, improper grounding, improper maintenance, lack of lubrication, misuse, abuse, accident or negligence in use, improper storage, transportation or handling, or (c) considered a consumable item or an item requiring repair or replacement due to normal wear and tear. SELLER SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES WHICH MAY ARISE UNDER THIS CONTRACT WHETHER SUCH LIABILITY IS IN CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, AND IN NO CASE SHALL SELLER'S LIABILITY EXCEED THE PRICE OF THE NONCONFORMING GOODS.

9. NONCONFORMING GOODS: Any rejection of nonconforming Goods must be made by the Buyer within five (5) days of delivery and Buyer must give written notice to Seller within that period. Such notice shall contain a description of the alleged non-conformity. Upon receipt of such notification, Seller will arrange for the return of the Goods, at Seller's expense, and upon confirmation of the nonconformity, Seller, at Seller's expense, will ship conforming Goods to Buyer.

10. RETURNS AND REPAIRS: When Goods are returned for repair, the Buyer must contact Seller's customer support department for shipping instructions and a Return Material Authorization (RMA). Buyer must ship product in original packaging or equivalent, with the RMA clearly marked on the outside of the package, freight prepaid. Seller shall not be responsible for any damage occurring in transit or obligated to accept products returned without RMA. Buyer bears all risk of loss or damage to the returned product until delivery at Seller's designated facility. Any return shipment received by Seller without an RMA or whose contents are not received in their original condition, may be reshipped by Seller freight collect to Buyer. The RMA supersedes any implied return authorization whether oral or in writing that does not include an RMA.

11. RETURNS FOR CREDIT: No returns for credit will be accepted unless Seller's written permission has been obtained in each case in advance, pursuant to clause 10.

12. APPLICABLE LAWS: This Agreement and the respective rights and obligations of the Buyer and Seller with regard hereto shall be governed by and construed according to the laws of the Commonwealth of Pennsylvania, without regard to the principles of conflicts of law thereof.

13. NOTICE: Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be sent to Aerzen USA, 108 Independence Way, Coatesville, PA, 19320

14. ASSIGNMENT: Neither party may assign or transfer this Agreement without the prior written consent of the other party.

15. CONFIDENTIAL INFORMATION: Any design specifications, manufacturing drawings, technical data or other information or materials submitted to Buyer and identified by Seller as confidential are and shall remain the exclusive property of Seller. Buyer agrees to treat such information as confidential and shall not reproduce or disclose such information without the express prior written consent of Seller.

16. WAIVER OF SUBROGATION: Buyer agrees to waive any and all subrogation rights towards Seller.

17. DATA USE: The Goods may include data monitoring services. The data received by Seller may be used by Seller and certain third-party distributors and contractors for the sole purposes of increasing overall customer service and determining claims of warrantability. Seller will use commercially reasonable efforts to ensure that Buyer's data is kept confidential. Buyer may request discontinuance of data monitoring service at any time, subject to waiver of all and any remaining warranties.

AERZEN USA CORPORATION

108 Independence Way
Coatesville, PA 19320
Tel. (610) 380-0244 ♦ Fax. (610) 380-0278



AERZEN

Confidential & Proprietary - this document shall not be distributed to anyone other than the intended recipients.

AERZEN Reference Number:

16-May-23

Re:

Thank you for the opportunity to bid the referenced project. The Aerzen scope of supply meets the intent of the plans and specification as well as complying with the requirements for power and flow within the stated margin.

Section 43 11 33; Aerzen is providing their standard set of sensors. An ammeter is not included.
1.4.A.2.o

Section 43 11 33; Aerzen does not provide project specific dynamic balancing reports.
1.4.B.3.a.3

Section 43 11 33; Aerzen is not providing spare bearings, seals, O-rings or gaskets for the blower and
1.4.D.1.a&d motor. Replacing these components requires the blower to be sent to the factory for an overhaul by an Aerzen technician. Replacement components for the motor are stocked by any local motor supply house.

Section 43 11 33; At the design point, Aerzen's blower will operate at 98% of max which is well within the
2.2.A.6 blower's safe operating limit. At this speed, the blower's theoretical bearing life is 619,000 hrs which far exceeds the bearing life of 100,000 hrs required by part
2.3.C.7.e.

Section 43 11 33; At the design conditions, the blower's discharge temperature is 208 F at the design flow
2.2.B.1.d rate and at the minimum turndown the blower's discharge temperature is 216 F. This discharge temperature will be comparable to other equal blower packages provided a competing manufacturer.

Section 43 11 33; It is Aerzen's interpretation of the spec that the blowers should be sized using a
2.2.B.1.g barometric pressure at 5,730 ft. Aerzen's blower sizing program takes into account all losses throughout the pressure. Therefore, Aerzen has not taken into account the max inlet pressure loss of 0.6 PSIG.

Section 43 11 33; It is not clear what the intent of the control valves is or what exactly is required.
2.3.A.1 Therefore, Aerzen has not included these in the scope/pricing.

Section 43 11 33; Aerzen is guaranteeing a free field sound level of 76 dBA per ISO-2151 empirical data.
2.3.F.1 Installed sound levels cannot be guaranteed as there are factors outside of the blower manufacturer's scope that can adversely affect the installed sound levels (i.e. other machinery running, external piping configuration, facility layout...etc.).

Section 43 11 33; Sound enclosures are not electrical enclosures and cannot be NEMA rated.
2.3.H.3.c

Section 43 11 33; Aerzen is providing their standard blower local control panel with standard set of
2.4.A sensors and touchscreen HMI per part 2.4.C, which will display all monitoring parameters and protect the blower package from adverse conditions. Gauges and switches are not provided.

Section 43 11 33; Aerzen is providing ISO-1217, Annex B testing to verify flow and power consumption of
2.5.A.3 the blower stage. This test does not record vibration or bearing temperature.

Section 43 11 33; The ISO-1217 test is performed at Aerzen Germany and cannot be certified by a U.S.
2.5.A.3.h.2 PE.

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AERZEN Reference Number:

16-May-23

Re:

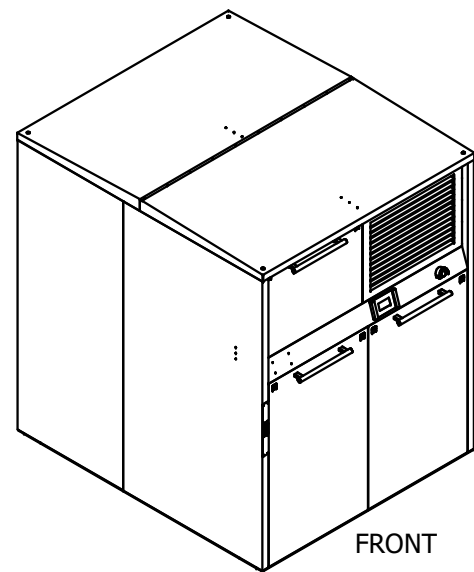
Section 43 11 33; Aerzen will provide their standard field testing to verify that the blower is operating **3.2.A.3** safely within its limits.

Section 43 11 33; Aerzen will provide their standard field vibration testing to verify that the blower is **3.2.A.4** operating within its allowable vibration tolerance of 0.3 IPS RMS. Anything beyond Aerzen's standard field vibration testing shall be by the contractor.

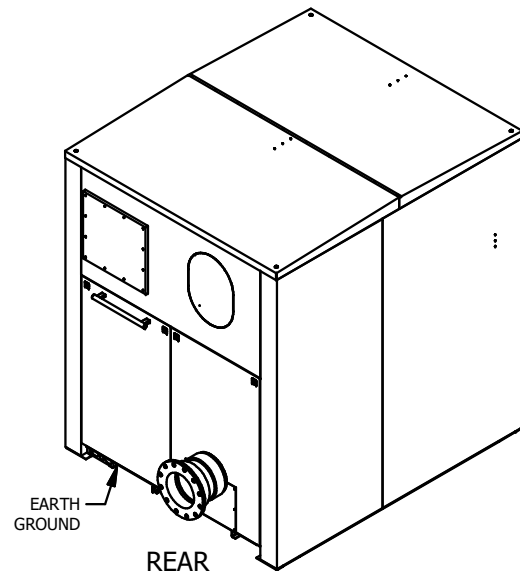
Section 43 11 33; See part 2.3.F.1 comment pertaining to installed sound levels.
3.2.A.5

Section 00 41 13; Aerzen is providing their standard spring relief valve. A weighted relief valve is not included.

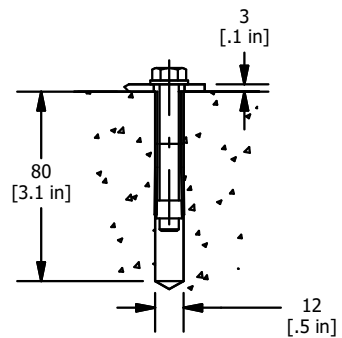
Section 00 41 13; It is Aerzen's interpretation of the spec that the VFD is by others per Section 43 11 33;
1.1.B.



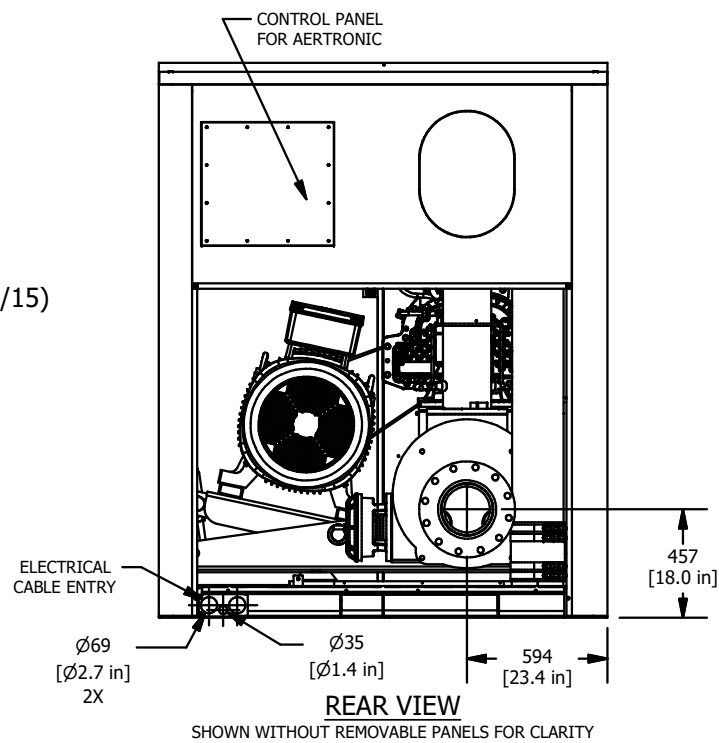
FRONT



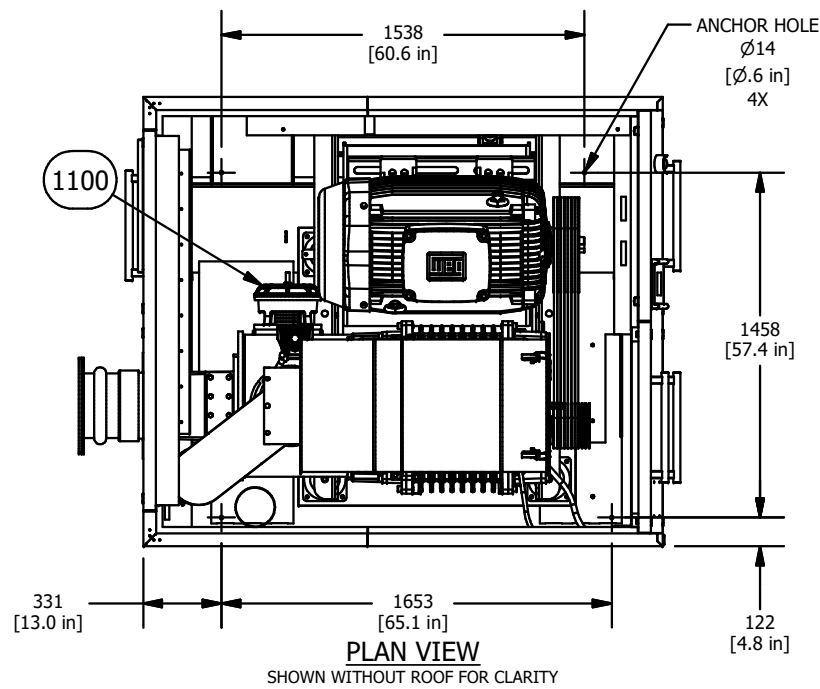
REAR



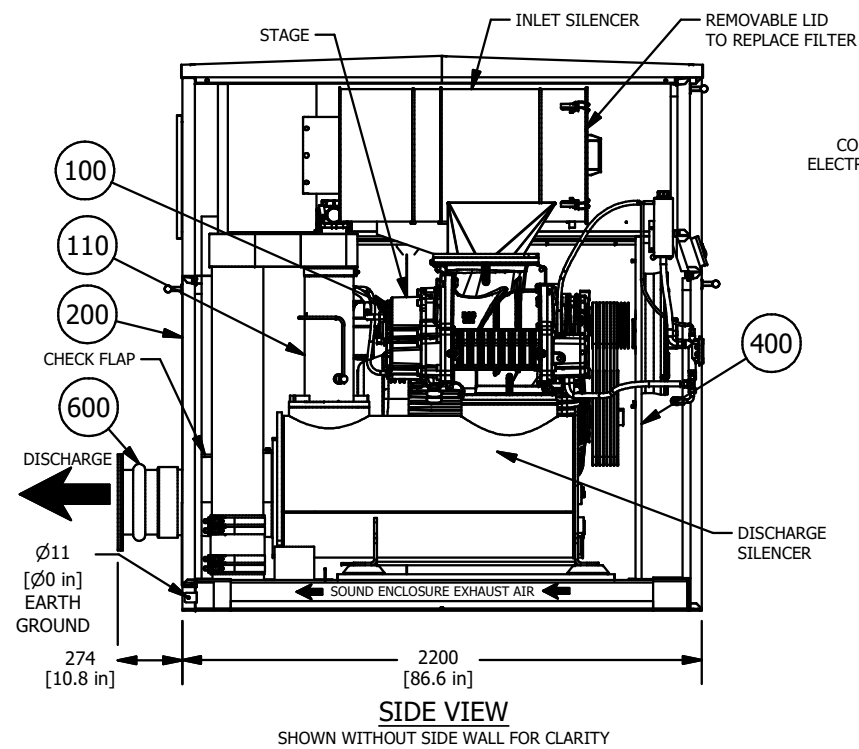
SOUND ENCLOSURE ANCHOR RECOMMENDATION
 SHOWN WITH OPTIONAL ANCHOR
 AERZEN PART NO. 120813000 (LIEBIG AB12/15)



REAR VIEW
 SHOWN WITHOUT REMOVABLE PANELS FOR CLARITY

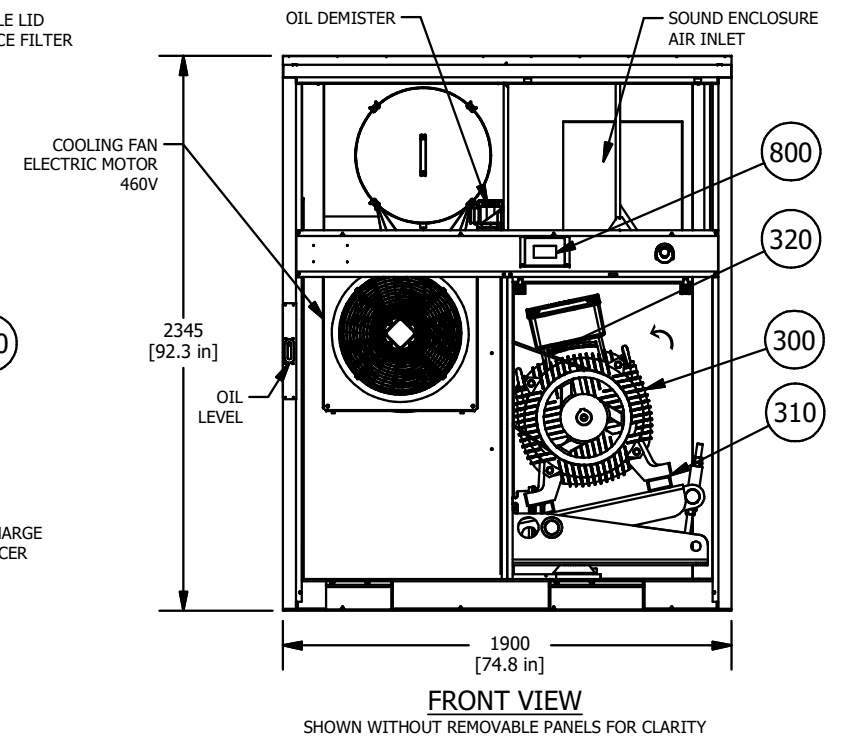


PLAN VIEW
 SHOWN WITHOUT ROOF FOR CLARITY



SIDE VIEW
 SHOWN WITHOUT SIDE WALL FOR CLARITY

ITEM	QTY	DESCRIPTION	DESCRIPTION 2
100	1	HYBRID TORSO	D98S, DN250
110	1	PRESSURE RELIEF VALVE	
200	1	SOUND ENCLOSURE	
300	1	ELECTRIC MOTOR	
310	1	MOTOR MOUNTING	
320	1	BELT DRIVE	
400	1	BELT GUARD	
600	1	DISCHARGE CONNECTION	10", 150#, ANSI FLANGE
800	1	INSTRUMENTATION	AERTRONIC
1100	1	UNLOADING VALVE	OPTIONAL



FRONT VIEW
 SHOWN WITHOUT REMOVABLE PANELS FOR CLARITY

NOTES:

1. TOLERANCE ON ALL DIMENSIONS = ±12mm [0.5"]
2. ITEM 100 (HYBRID TORSO) INCLUDES BLOWER STAGE, INLET SILENCER, BASE FRAME/ DISCHARGE SILENCER, VIBRATION ISOLATORS, COOLING FAN, & CONNECTION HOUSING WITH CHECK FLAP
3. CUSTOMER PIPING TO BE INDEPENDENTLY SUPPORTED
4. LIFT PACKAGE FROM BLOWER SIDE THROUGH FORK LIFT POCKETS IN BASE OR LIFTING HOLES IN CORNER OF BASE USING SPREADER BAR
5. SEE JOB DATA SHEETS FOR PERFORMANCE DATA, PART NUMBERS, TOTAL PACKAGE WEIGHT, INSTRUMENTATION, AND OTHER OPTIONAL EQUIPMENT, & OWNER'S MANUAL
6. REQUIRED SPACE IN FRONT & REAR FOR MAINTENANCE IS 800mm [32"]
7. DISCHARGE FLANGE MUST BE MOUNTED TO A RIGID FLANGE FACE

WEIGHT		
BLOWER PACKAGE (LESS MOTOR)	2099kg	4702lbs
ELECTRIC MOTOR (ITEM 300)		
TOTAL (NET WEIGHT)		

	AERZEN USA CORPORATION 108 INDEPENDENCE WAY, COATESVILLE, PA. PH: (610) 380-0244 FX: (610) 380-0278 WWW.AERZENUSA.COM		CLASS: I
	DRAWN: DFT 4/15/2019 CHECKED: RJP 4/15/2019 APPROVED: _____ DRAWING NO: GB-007162-P2032000 <small>NAVISWORKS</small>	TITLE: GA DRAWING D98S, DN250, G5 F3 SOUND ENCL. PRESSURE	SCALE: 1:24 SHEET: 1 / 1 REV. NAME DATE
<small>NOTICE: THIS DRAWING AND ALL INFORMATION HEREIN IS THE PROPERTY OF AERZEN USA INC. AND ITS SUBSIDIARIES AND SHALL NOT BE REPRODUCED BY ANY MEANS IN WHOLE OR IN PART USED AS THE BASIS FOR MANUFACTURE WITHOUT WRITTEN PERMISSION</small>			

ROTARY LOBE COMPRESSORS

DELTA HYBRID

Volume flows from 65 CFM to 5,300 CFM



AERZEN

DELTA HYBRID.

EFFICIENCY AS A COMPRESSION PRINCIPLE.

- Exceptional energy efficiency
- Reduced life cycle costs
- Significantly extended application and pressure ranges
- High reliability and durability
- Reduced maintenance effort
- 100% oil and absorption material free process air
- Made by AERZEN

The best of both worlds.

The compression of air and gases is energy-intensive. As a result, the call for energy-efficient technologies is greatly increasing. It is understandable that the call for energy-efficient technologies is becoming increasingly clear. The answer is Delta Hybrid. The latest generation of assemblies from AERZEN brings a new principle into compression technology. Delta Hybrid was the first series of rotary lobe

compressors worldwide and it combines the advantages of blower and compressor technology into one system. The result offers new possibilities in the generation of negative and positive pressure. With 7 patents or patent applications, Delta Hybrid is one of the most innovative solutions in compressor technology and by far the most efficient assembly for a wide control range from 25 to 100 percent.



SAVE ENERGY. THE BEST FOR THE CORPORATE AND ECOLOGICAL BALANCE SHEET.

Around 90% of the life cycle costs of a compressor are energy costs. This is a number that becomes a challenge wherever environmental concerns and global competition drive the need for more energy efficient technologies. Aerzen meets this challenge with the Delta Hybrid by offering up to 25% energy savings with a return on investment of as little as two years, depending on flows and pressures.

Two technologies. One assembly.

Delta Hybrid is the perfect synthesis of positive displacement blower and screw compressor technology. Unlike the conventional positive displacement blower with a maximum

pressure differential of 14.5 psig, the innovative rotary lobe compressor of the Delta Hybrid uses a 3+4 compressor rotor profile which is designed for pressure up to 22 psig.



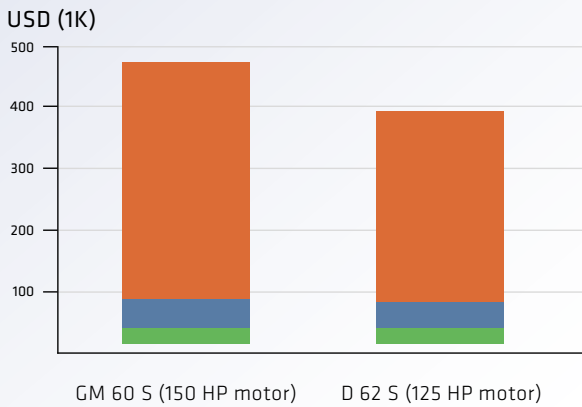
Energy saving arises from many details:

- Very high operating range from 25% to 100%
- Patented suction cone for reduced pressure losses
- Optimized air flow through the acoustic hood leads to cooler intake air into the blower stage, increasing the compression efficiency
- Improved inlet and outlet openings in the blower stage ensures ideal air flow and reduces backflow losses
- Patented discharge silencer reduces pressure losses and contains no absorption material
- Electrically driven acoustic hood fan
- Special silencer insulation for pressures above 15 psig reduce the heat inside the acoustic hood which increases compression efficiency.
- Premium efficiency/NEMA motors
- Similar performance to a turbo compressor even with varying pressures and temperatures (summer/winter operation)
- Belt drive for precise volume flow design

Just clever:

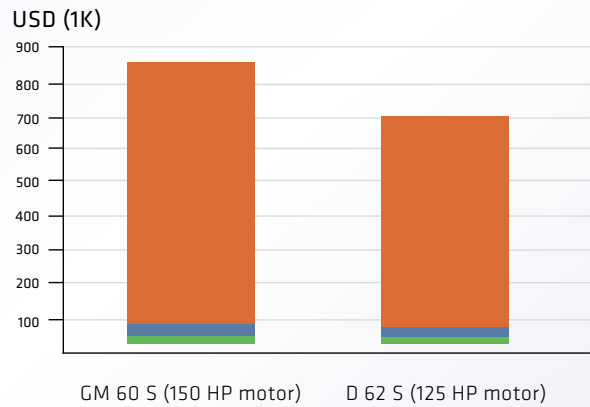
The belt-driven version of the Delta Hybrid has the significant advantage of being designed with pinpoint accuracy, because the greatest savings are made by the energy that does not have to be expended in the first place. For example, a deviation in the volume flow of 5% means an increased energy expenditure of 5%!

LCC comparison GM 60 S and D 62 S for 5-year operation



Operating data: 1,835 cfm, 13 psig, 8000 operating hours/year

LCC comparison GM 60 S and D 62 S for 10-year operation

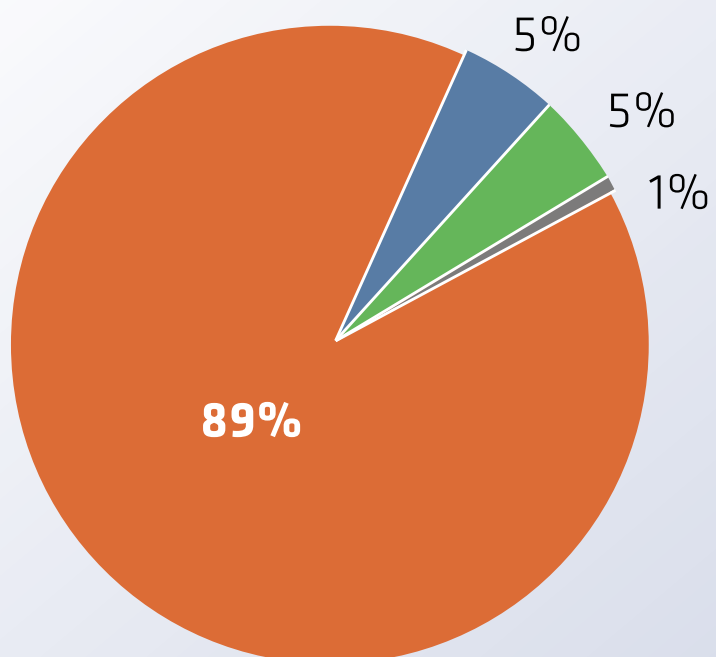


Operating data: 1,835 cfm, 13 psig, 8000 operating hours/year
Savings of around 150K USD; ROI = 2 years

Reduction of Life-Cycle-Costs

Average operating costs of a compressed air generator over 10 years

- Energy
- Investment
- Maintenance
- Installation



EXTEND THE RANGE OF APPLICATION. USE IN A VARIETY OF APPLICATIONS.

Delta Hybrid works in an extremely wide range of key industrial applications. The assemblies are designed for the oil-free conveyance of air and neutral gases. For positive and negative pressure applications with discharge connections ranging from 4" to 12".

Extended pressure ranges. Rising possibilities.

The versatile assemblies extend the range of applications to a pressure range of up to 22 psi (design H). The field of application could also be extended in the negative pressure: From previously -7.25 to -10 psi (design E). Delta Hybrid thus closes the gap in the previous machine mix. Note: Because conventional rotary piston blowers are limited to a maximum pressure difference of 14.5 psi due to their design principle, other types of compressors had to be used for higher pressure ranges in the past. However, some of these were designed for significantly higher pressures and thus also involved higher investment costs.

Hotter Temperatures. More safety.

Delta Hybrid rotary lobe compressors can be used globally even in high elevations and for applications with extreme ambient temperatures.

AERZEN Engineering.

A flexible modular system for Delta Hybrid allows for a variety of compressor stages and motor sizes with belt drives built or adapted within a variety of base frame sizes. Where a standard solution does not meet the customer's needs, AERZEN can develop special designs or machine configurations to meet those needs. AERZEN always has an eye on making the process performance as efficient and effective as possible.



Ideal for pneumatic conveying



Powerful tool in the vacuum generation





Applications

- Wastewater treatment
- Drinking water treatment
- Pneumatic conveying of bulk materials (suction/pressure pneumatics)
- Aeration of rivers and lakes and much more

industries

- Wastewater treatment plants
- Chemistry and process engineering
- Glass and paper
- Food
- Environmental technology and much more

DECADES OF USE COMPRESSED IN ONE SENTENCE: MADE BY AERZEN.

High operational reliability and long service life of the compressors have established the reputation of AERZEN worldwide. Without question, these criteria also apply to our latest series Delta Hybrid. Developed in demanding field tests and proven for years in daily practice, Delta Hybrid is a synonym for quality made by AERZEN.

Absorbent free discharge silencer.

Since the breakdown of absorption material can endanger the safe operation at a facility, the R&D department at AERZEN designed and patented a special discharge silencer containing no absorption material. It reduces the sound exclusively by air deflection ensuring that downstream processes are safe from contamination from absorption material. This prevents the clogging of aeration systems in wastewater technology - eliminating costly maintenance work or operating restrictions. And it achieves food suitability in the pneumatic conveying of bulk materials.



Patented bearing of the Delta Hybrid

Life prolonging measures.

Durability is a question of careful material selection and quality of workmanship. But it is also the result of extensive development work. For the Delta Hybrid this includes special

drive and conveying chamber seals which minimize natural wear as well as the patented AERZEN bearing. At a pressure difference of 14.5 psi it extends the nominal L10 life of the bearing to more than 60,000 hours.

AERZEN bases worldwide



*The heart of the modern compression process:
Delta Hybrid assembly*



Made in Germany



Made in Germany. Made by AERZEN.

Delta Hybrid, from the assembly to the control system, is manufactured by AERZEN following the core concepts of the traditional German family business. For AERZEN this means ensuring its high quality requirements are met without compromise and that only optimally coordinated overall concepts are included in their products. Only in this way can the reliability and high performance of our systems be guaranteed.

Reliably there for you. Worldwide.

Long service life and low maintenance requirements are the hallmarks of our solutions. Should you ever need us, we are there for you. Worldwide with over 2,500 employees in 50 subsidiaries, with representatives in more than 100 countries on all continents. This is how we live reliability.

DRIVE PROCESSES ECONOMICALLY FROM INSTALLATION TO SATISFACTION.

Easy handling, minimum maintenance: these characteristics are also directly reflected in the cost balance. A good reason for AERZEN to keep a special eye on them during the development of the Delta Hybrid Generation. The results convince the coolest calculators. And inspire in years of daily practice.

Extremely compact design

- Space-saving side-by-side installation
- Smaller dimensions for blower room
- Easy access for service and maintenance work

Easy transport

- With pallet jack or forklift truck
- Safe due to innovative lifting system for hinged motor mounting plate

Plug and play

- Completely pre-assembled package
- Immediately ready for connection
- Integrated service package with funnel and first oil filling

Comfortable operating concept

- Operation and maintenance exclusively from the front of the blower package
- Oil level monitoring from the outside of the enclosure while the machine is running without interrupting operation

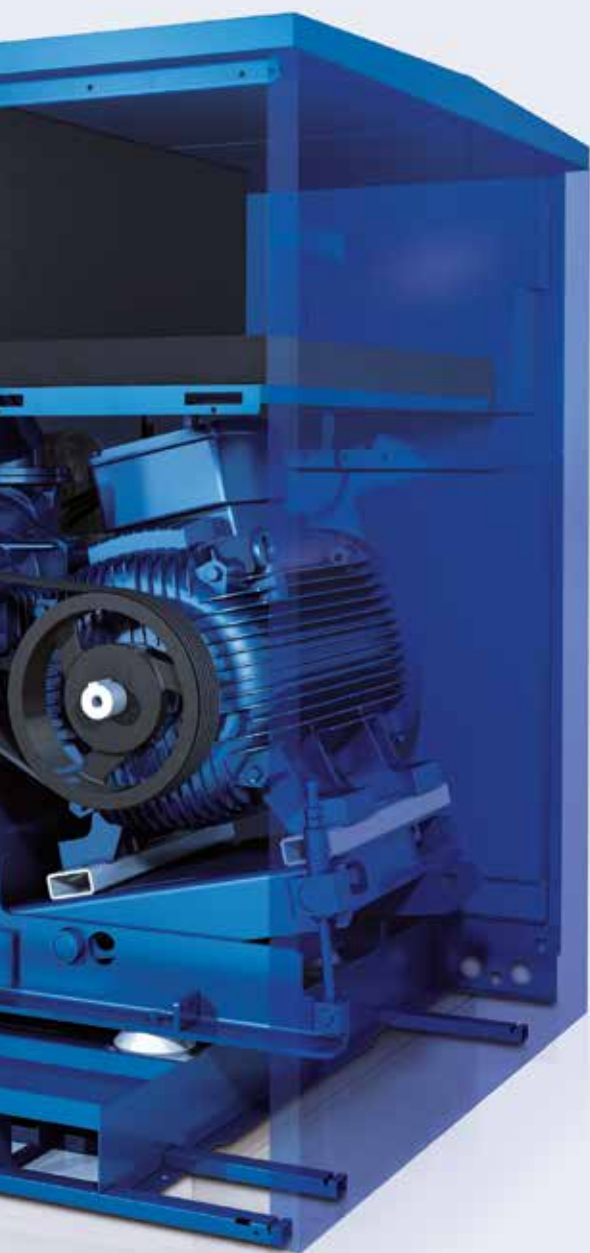
Belt drive and hinged motor mounting plate

- Fully automatic and maintenance-free belt tensioning
- No need to check the V-belt tension
- Easy installation or replacement of the V-belts
- Accurate design for desired flow rate
- Subsequent power adjustment is quick and easy

Multifunctional adjustment for hinged motor mounting plate

- Transport safety lock
- Easy and safe assembly of V-belts
- Mobile installation of assemblies (e.g. ship installation)/earthquake design
- as hinged motor mounting plate support for heavy motors





Smart oil system

- Long oil change intervals (twice as long as competition). Extended to 16,000 operating hours.
- Elimination of the initial oil change (previously 500 operating hours after commissioning)
- Oil level check during operation.
Readable on the outside of the enclosure
- Robust mechanical oil pump. Oil pressure build-up with main motor start
- Oil instead of grease. Oil-lubricated bearings (oil injection) increase the service life
- No separate oil cooler necessary.
Benefits: No contamination of the oil cooler and no additional component to be maintained
- Additional drive is not required: A plus for the Energy efficiency of the entire machine

100% oil-free according to class 0

- Oil-free process air for sensitive applications. For example, for the chemical and food industries
- TÜV-certified according to ISO 8573-1 class 0

Intelligently reduced sound levels

- Patented discharge silencer without Absorption material
- Silencing exclusively by air deflection
- Innovative pulsation reduction in the compressor stage
- Patented intake cone for reduction of the inlet noises
- Optimised acoustic hood

ATEX certified (optional)

- Discharge silencer certified as spark extinguisher for ATEX applications

Approval according to PED directive (pressure valve)

THERE IS NO EASIER WAY TO BUILD UP PRESSURE.

This also saves resources: Delta Hybrid assemblies are ready for immediate use upon delivery. The effort for the engineering, the optimal configuration, the precise design for your process: all this is done beforehand at AERZEN. And from a single source. We call this delivery concept all-in. What we mean by this is: there is no easier way to bring sophisticated compressor technology to your project.

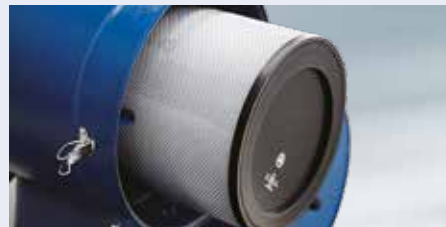
Configured ready for connection: The scope of supply.

- AERZEN rotary lobe compressor stage with integrated oil system:
 - Flanged, mechanical oil pump (exception D 62)
 - Pressurized oil lubrication system for long bearing life
 - No separate oil cooler
 - Wear-free sealing on the drive shaft and the conveying chamber
- Electrical vacuum pressure generator for safe oil chamber ventilation
- Hinged motor mounting plate for optimum, automatic V-belt tension
- Multifunctional lifting system for hinged motor mounting plate
- High-performance narrow V-belt drive
- Three-phase motor with highest NEMA energy efficiency class
- Base support with integrated discharge silencer (without absorption material)
- Vibration damping, flexible machinery mountings
- Connection housing including check valve
- Flexible rubber sleeve with clamps or ANSI flanged connection
- Pressure valve according to PED
- Completely connected and wired pressure sensors and temperature sensors
- Display instruments
- Filter silencer with integrated filter cartridge
- Complete documentation



Intelligent additions. Accessories:

- Acoustic hood for indoor or outdoor installation with electric acoustic hood fan, according to ErP Directive 2005/32/EC
- Start unloading device (necessary for star-delta operation)
- Electronic AERZEN AERtronic controller for efficient and safe operation of the system with display and monitoring of intake, discharge and oil pressure, oil level as well as discharge and oil temperature
- Maintenance packages for 1-year, 2-year or 5-year operation



Easy to maintain: AERZEN Air filter cartridge



Always the right choice: AERZEN Original spare parts



Very easy to operate: AERZEN Multifunctional lifting system for hinged motor mounting plate

Modifications and upgrades:

- Certifications according to ASME, TR, China Licence
- ATEX compliant design
- Acoustic hood for desert installation with special sand collector
- Acoustic hood for earthquake resistance and increased wind loads
- Acoustic hood for low temperatures down to minus -40°C with heating and gravity louvers
- Ship installation
- All-in-one solution with integrated power cabinet (frequency converter, star-delta, direct start, soft start)
- Separate control cabinet (frequency converter, star-delta, direct start, soft start)
- Special varnish
- Further accessories or modifications on request

THE NEW AERTRONIC. THE PATH TO THE DIGITAL FUTURE.

With the new edition of the AERtronic control system AERZEN paves the way to more digitization in compressed air generation. AERtronic offers a user-friendly and clear possibility for the analysis and processing of relevant process parameters and thus provides more transparency, safety and efficiency.



Always at the optimum operating point

In the new control system, all measured values converge and are systematically evaluated. This makes it possible to transfer the data to the production control system via common interfaces and to operate the plant always at the optimum operating point. Operators can achieve full protection and align processes for maximum effectiveness. The integrated maintenance book also makes it easier to plan maintenance and thus increases maintenance efficiency.

Advantages at a glance:

- Process analysis and associated avoidance of quality or output problems
- Direct connection to the master process control system
- Provision of all process parameters as well as maintenance and error information on the display, via interface and WebView
- Simplest possibility of a holistic process view through interfaces
- Full protection of your machine technology
- Avoidance of machine damage
- Best visualisation via 7" touch and user-friendly interface

The smart way to more safety and transparency in the process air system - the new AERtronic



	Basic	Advanced	Premium	
7 inch full touchscreen display	✓	✓	✓	Fully digital display Instrument
Digital display of all measured parameters	✓	✓	✓	
Display of warnings, faults and maintenance	✓	✓	✓	
Version for indoor and outdoor installation up to IP65 and -40°C up to +60°C	✓	✓	✓	
Process control connection via Modbus RTU (RS485)	✓	✓	✓	
Machine control with start release		✓	✓	Active process control
Remote control of the machine incl. emergency shutdown in case of malfunction		✓	✓	
Process control connection via Modbus TCP (RJ45), ProfiNet® or Profibus		Option	Option	
Process control according to target pressure and oxygen content		Option	Option	
Visualisation of process parameters in the web browser by WebView		Option	Option	Intelligent interface with cloud compatibility
Increase in machine and plant efficiency through Energy Management Improvement System			Option	
Full transparency of consumption and recommendations for action to reduce energy costs and CO2 consumption			Option	
Optimizing the Availability by the Availability Management of AERZEN Digital Platform			Option	
Maximization of maintenance intervals through the Usage-based Maintenance			Option	

Three variants for individual requirements

The development of the new AERtronic series focused on the customer requirements of the various industries. Therefore AERZEN offers the communication-capable control system in three different versions: Basic, Advanced and Premium. The variants differ in view of the range of functions and are adapted to the individual needs of the system operator.



Mobile visualization of process data

WITH -13.8 PSI VERY CLOSE TO VACUUM. FOR A DECISIVE PLUS IN ECONOMY.

Delta Hybrid is one of the most innovative and successful series of compressor technologies. The symbiosis of positive displacement blowers and screw compressors not only achieves increased energy efficiency in negative pressure by up to 25%, but also breaks through the previous limits of the usual areas of application. The new D 98 V achieves an positive pressure of 21.8 psi and a negative pressure of -13.8 psi at full capacity. Consequently, you will reach the vacuum range with the innovative AERZEN compressor stage.

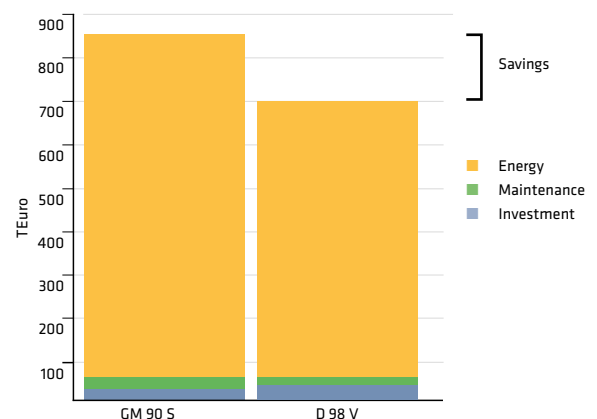


Minus 13.8 psi - the new performance category for negative pressure.

The further development of D 98 V is based on a technical innovation. The newly designed and optimized pre-inlet channels provide a targeted cooling in the range of the compression process which is mostly temperature intense.

The negative pressure of -10 psi, which is already high at standard, can be increased to up to -13.8 psi. This new performance class surpasses the possibilities of conventional positive displacement blowers and screw compressors.

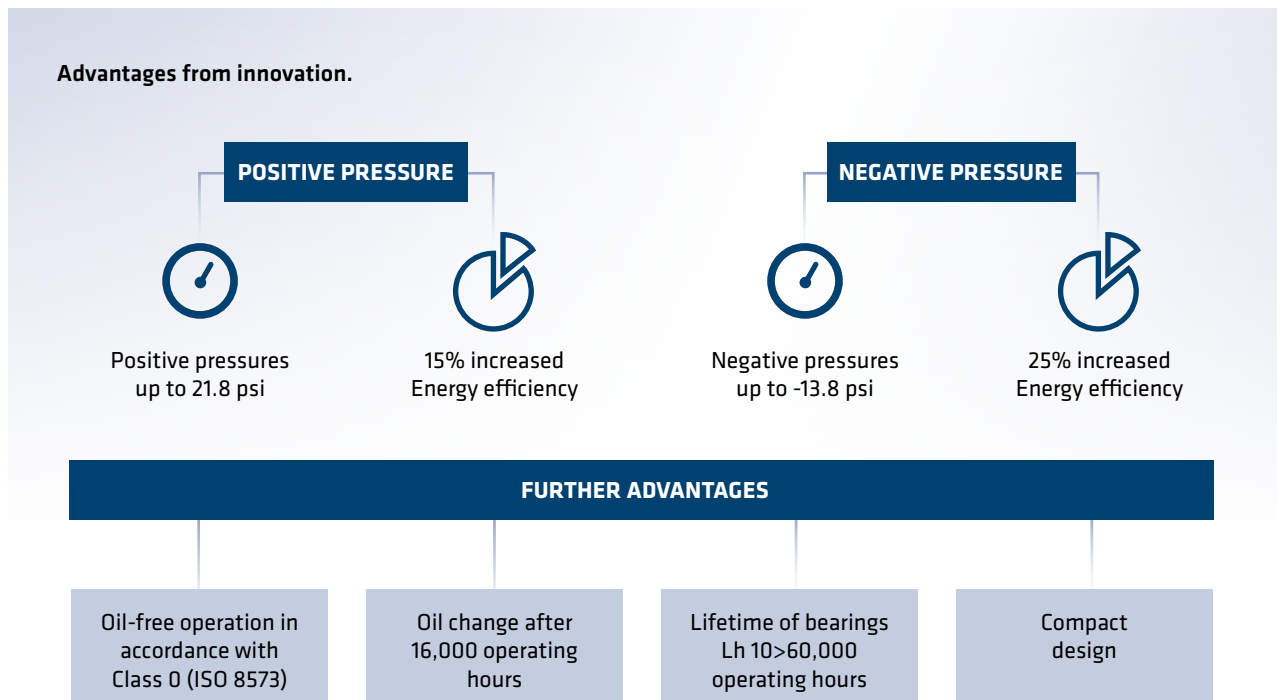
LCC comparison GM 90 S and D 98 S for 10 years of continuous operation



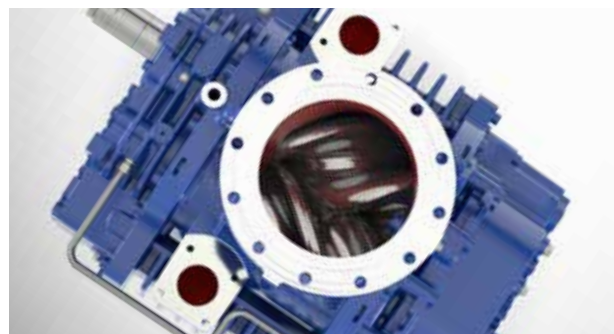
Powerful and flexible.

High performance capability combined with enormous energy efficiency: D 98 V can serve a variety of new applications. With a range from -13.8 to 21.8 psi, the Hybrid option offers an extraordinary range of services from pneumatic conveying to process engineering and can be powered from a diesel engine on a truck to an electric motor for a stationary installation.

Delta Hybrid also provides optimization of loading and unloading times. The newly achieved energy efficiency reduces the energy consumption of systems which has a positive effect on costs. In all cases, the new compressor reliably supplies conveying air for negative and positive pressure ranges without any interruption.



Used when loading a truck



D 98 V - view from top to the rotary lobe compressor stage

DELTA HYBRID IN FIGURES.

PLAN YOUR EFFICIENCY PLUS IN THE COMPRESSION PROCESS.

The innovative rotary lobe compressor series Delta Hybrid is available in H, S and E designs in 10 different sizes. For volume flows from approx. 65 to 5,300 cfm and positive pressures up to 21.8 psi or negative pressures down to -10 psi. A wide range of machines for precise design for a wide variety of processes.

Performance data (subject to technical changes - product is subject to technical change).

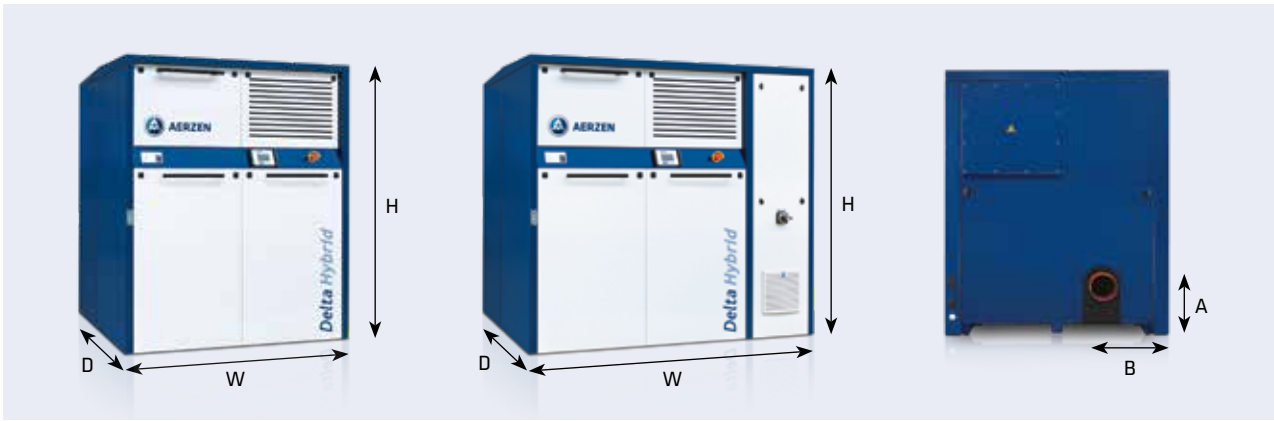
Positive pressure				
Size	Differential pressure max. psi	Volume flow max. cfm*	Motor rating max. HP	Sound pressure level max. dB (A) **
D 12 H	21.8	395	50	73
D 12 S	14.5	405	40	72
D 19 S	14.5	670	60	75
D 24 H	21.8	805	100	76
D 24 S	14.5	815	75	74
D 29 S	14.5	1025	100	73
D 36 H	21.8	1115	150	76
D 36 S	14.5	1265	100	76
D 52 S	14.5	1835	150	77
D 62 H	21.8	2000	200	81
D 62 S	14.5	2060	150	79
D 76 H	21.8	2610	200	79
D 76 S	14.5	2675	200	77
D 98 H	21.8	3295	300	81
D 98 S	14.5	3410	300	79
D 152 H	21.8	5120	500	81
D 152 S	14.5	5235	400	80

Negative pressure				
Size	Differential pressure max. psi	Volume flow max. cfm*	Motor rating max. HP	Sound pressure level max. dB (A) **
D 12 E	-10	385	25	72
D 24 E	-10	775	50	73
D 36 E	-10	1,175	75	76
D 62 E	-10	1,940	125	79
D 76 E	-10	2,675	125	76
D 98 E	-10	3,235	150	78
D 152 E	-10	5,000	200	79
D 98 V	-13.8	3,175	-	-

* Corresponds to the delivery volume flow measured according to ISO 1217 and converted to the reference suction conditions according to the (informative) enclosure F of ISO 1217 [inlet pressure = 1.0 bar / inlet temperature = 20°C, rH = 0%]

** Machine noise with acoustic hood and connected, insulated piping, tolerance ± 2 dB(A)

Dimensions and weights (subject to technical changes - product is subject to technical change).



Delta Hybrid.

Size	W inches	D inches	H inches	nominal size inches	weight with acoustic hood lbs.
D 12 H/S/E	49	53	59	4	1300
D 19 S	49	53	59	4	1400
D 24 H/S/E	49	53	59	5	1400
D 29 S	59	71	78	6	2420
D 36 H/S/E	59	71	78	6	2420
D 52 S	59	71	78	6	2710
D 62 H/S/E	67	81	83	8	3375
D 76 H/S/E	67	81	83	8	4405
D 98 H/S/E	75	87	92	10	4630
D 152 H/S/E*	83	112	92	12	7715

* In preparation

Weight without motor

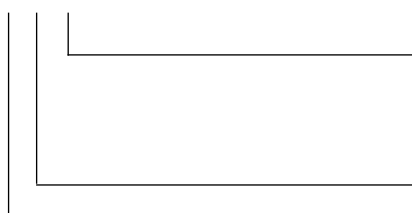
Delta Hybrid with integrated power supply panel.

Size	W inches	D inches	H inches	A inches	B inches	nominal size inches	weight with acoustic hood lbs.
D 12 S-H-E	73	53	59	12	15	4	1630
D 19 S	73	53	59	12	15	4	1730
D 24 S-H-E	73	53	59	12	15	5	1730
D 29 S	83	71	75	15	17	6	3085
D 36 S-H-E	83	71	75	15	17	6	3085
D 52 S	83	71	75	15	17	6	3085
D 62 S-H-E	91	81	83	15	20	8	4145
D 76 S	91	81	83	15	20	8	5180

Weights without motor, power electrics and belt drive

Explanation of the type designation:

Example: D 62 S



Type of construction:

H = Pressure differences up to 21.8 psi

S = Pressure differences up to 14.5 psi

E = Negative pressure version up to -10 psi

V= Pre-inlet up to 13.8 psi

Max. volume flow in m³/min (approx.)

Rotary lobe compressor



AERZEN. Compression - the key to our success.

AERZEN was founded in 1864 as Aerzener Maschinenfabrik. In 1868, we built Europe's first positive displacement blower. The first turbo blowers followed in 1911, the first screw compressors in 1943, and in 2010 the world's first rotary lobe compressor package. Innovations "made by AERZEN" keep driving forward the development of compressor technology. Today, AERZEN is among the world's longest established and most significant manufacturers of positive displacement blowers, rotary lobe compressors, screw compressors and turbo blowers. AERZEN is among the undisputed market leaders in many areas of application.

At our 50 subsidiaries around the world, more than 2,500 experienced employees are working hard to shape the future of compressor technology. Their technological expertise, our international network of experts, and the constant feedback we get from our customers provide the basis for our success. AERZEN products and services set the standard in terms of reliability, stability of value and efficiency. Go ahead - challenge us!

Aerzen USA
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Coatesville, PA 19302
Phone: 610-380-0244
Fax: 610-380-0278
Email: order-usa@aerzen.com
www.aerzen.com/en-us



AERZEN
EXPECT PERFORMANCE



May 30, 2023

Mr. Mick Mummert
Wastewater Supervisor
110 River Ranch Rd
Ketchum, Idaho 83340

Subject: Water Reclamation Facility
Blower Equipment Bids

□ □□□□□ Bid Review □ □

Dear Mr. Mummert:

The purpose of this letter is to report on HDR’s review of Ketchum-SVWSD WRF – Blower equipment procurement bid results. The bid documents were advertised on April 26th and May 3rd for opening on May 10, 2023. An addendum was issued on May 9th changing the bid date to May 17th to encourage bidding. The bid review findings are presented in the following paragraphs.

□ DR □□□□□□

One bid was received for the Blower equipment procurement on May 17, 2023 by 2 pm MST from Aerzen USA Corporation (Aerzen). The Aerzen bid was received electronically by the designated time/date and acknowledged addendum #1.

□□□□□□□□□□□□ R □□□□□ D □

The Aerzen bid was reviewed further to determine if all was in order with the proposed equipment compared to bid specifications.

- Lump sum bid amount is □□□□□□□□
- Blower capacity meets the specified values.
- Clarifications to specifications shown on pages 13 and 14 are acceptable.
- Standard general arrangement drawing D98S, DN250, G5 is acceptable but does not show inlet correctly. Although the inlet is correctly described in the components summary on page 9.
- Payment terms proposed by Aerzen are: 20% down, 30% release for fabrication (submittal approval), 50% from date of readiness to ship will require modification. Proposed terms will be 20% down, 30% release for fabrication, 45% arrival on-site, and 5% upon installation certification / startup.

□

□ dr □□□□□□ □

412 E. Parkcenter Blvd. Suite 100, Boise, Idaho 83706-6659
□ 208-387-7000



RMMDD

The concern with receiving only one bid is lack of competitive bidding. In this case we obtained a budgetary quote from Aerzen during the predesign phase of project development. The quote about four months ago was \$225,000. We expect budgetary quotes to be within about 10 percent of the bid price. We find the vendor's pricing is consistent with this level of accuracy and see no indication of inflated pricing.

The bid process and bid award follow Idaho Code 67-2806 in regard to advertising and bidding for Purchasing by Political Subdivisions. Aerzen is a named manufacturer in the bid specification. The blowers are high-quality, German-made and have a solid reputation within the United States wastewater market. Even though only one bid was received for the blowers, we recommend award of the blower bid to Aerzen.

Please call if you have any questions (208-387-7073).

Sincerely,
HDR ENGINEERING, INC.

Bradley Bjerke, P.E.
Project Manager

Enclosure

cc: Trent Donat/Ketchum City Clerk
Pat McMahon/District General Manager



CITY OF KETCHUM
 PO BOX 2315 * 191 5TH ST. * KETCHUM, ID 83340
 Administration 208-726-3841 (fax) 208-726-8234

PURCHASE ORDER
 BUDGETED ITEM? ___ Yes ___ No

PURCHASE ORDER - NUMBER: 23103

To: 6012 AERZEN USA CORP 108 INDEPENDENCE WAY COATESVILLE PA 19320	Ship to: CITY OF KETCHUM PO BOX 2315 KETCHUM ID 83340
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P. O. Date	Created By	Requested By	Department	Req Number	Terms
06/01/2023	kchoma	kchoma		0	

Quantity	Description	Unit Price	Total
1.00	2 POSITIVE DISPLACEMENT BLOWER PACK 67-4350-7815	205,788.00	205,788.00
	SHIPPING & HANDLING		0.00
	TOTAL PO AMOUNT		205,788.00

 Authorized Signature

END OF SECTION

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