ROTARY LOBE COMPRESSOR PACKAGES

DELTA HYBRID GENERATION 5

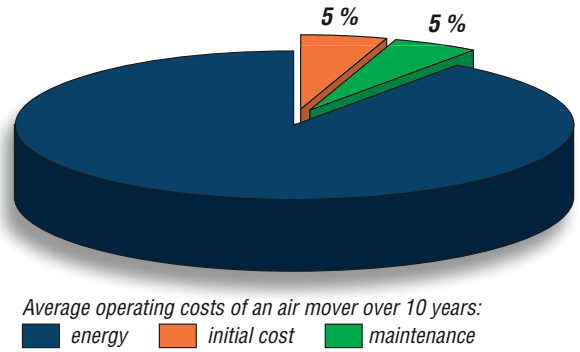
Intake volume flow from 65 cfm to 5,300 cfm
Quiet, Compact, Energy Efficient

Delta Hybrid

AERZEN

aerzen.com/en-us

Rotary Lobe Compressor



The Rotary Lobe Compressor is the result of a synergy between the rotary lobe blower and the screw compressor technologies.

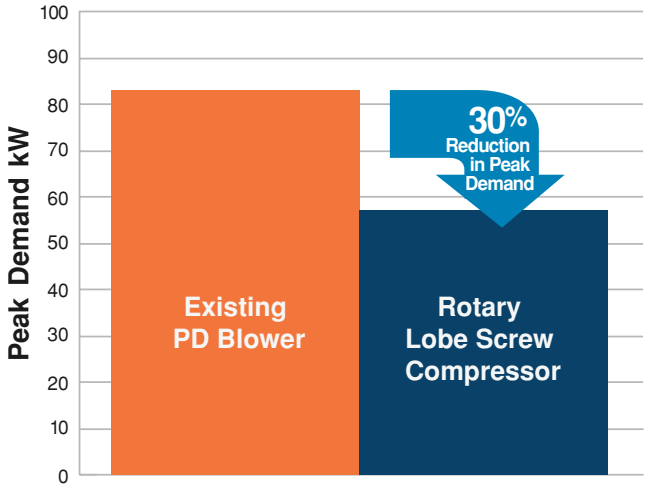
The Delta Hybrid was developed with the focus on increasing energy efficiency and achieving a significant reduction of energy costs and greenhouse gas emissions.

Wire-to-process energy usage reduction can exceed 30% over typical positive displacement blowers depending on operating conditions and turndown range.

Optimized fluidic design of inlet and discharge ports provides ideal flow conditions and reduced slip-page. Additionally, the belt-driven Delta Hybrid offers the significant advantage of matching motor speed and power to the required blower performance eliminating the need to over-speed the blower or oversizing the motor. A 5% excess in volume flow corresponds to a 5% higher energy use.

Further measures that improve energy efficiency:

- Very wide flow control range with use of a VFD up to 4:1 turndown
- Optimized fluidic design of inlet and discharge reduces internal pressure losses
- Belt drive offers the flexibility to match exactly the re-quired air flow even without the use of a VFD
- High performance belt drive system with losses under 3%
- High efficiency means lower discharge temperature. This reduces aging of downstream membranes or diffusers in synthetic materials.
- Optimal air flow within the acoustic enclosure brings cool air directly to the intake side and increases compression efficiency
- Silencer without absorption material and with reduced pressure losses to maintain downstream air free of contamination by absorption material, therefore preventing the loss of efficiency in a diffuser or aeration system.



Aerzen's Generation 5 Delta Hybrid

The 5th generation of Aerzen modular compact packages combines tradition and innovation.

1 **Easy installation with forklift or pallet jack for placement**

2 **Room-saving, compact, side-by-side installation**

3 **Easy access to all components with one oil drain/oil fill point**

4 **Oil level can be observed from the outside**

5 **Automatic belt tension– No adjustment required**

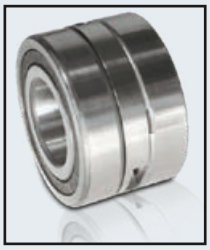
6 **Oil change intervals extended to over 16k operating hours with Aerzen Delta Lube**

7 **Typical machinery noise average SPL 75-80 dB(A) with acoustic hood**

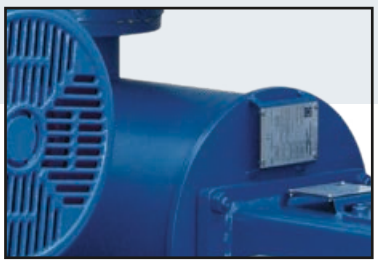
Hybrid Rotary Compressor Stage

3+4 rotor profile with internal compression for low pressure applications.

8 **Aerzen patented bearing system extends the bearing life to over 60,000 operating hours (at a differential pressure of 1000 mbar (15 psi))**



9 **Reactive discharge silencer without internal absorption material**



For more information, visit **www.aerzen.com/en-us**

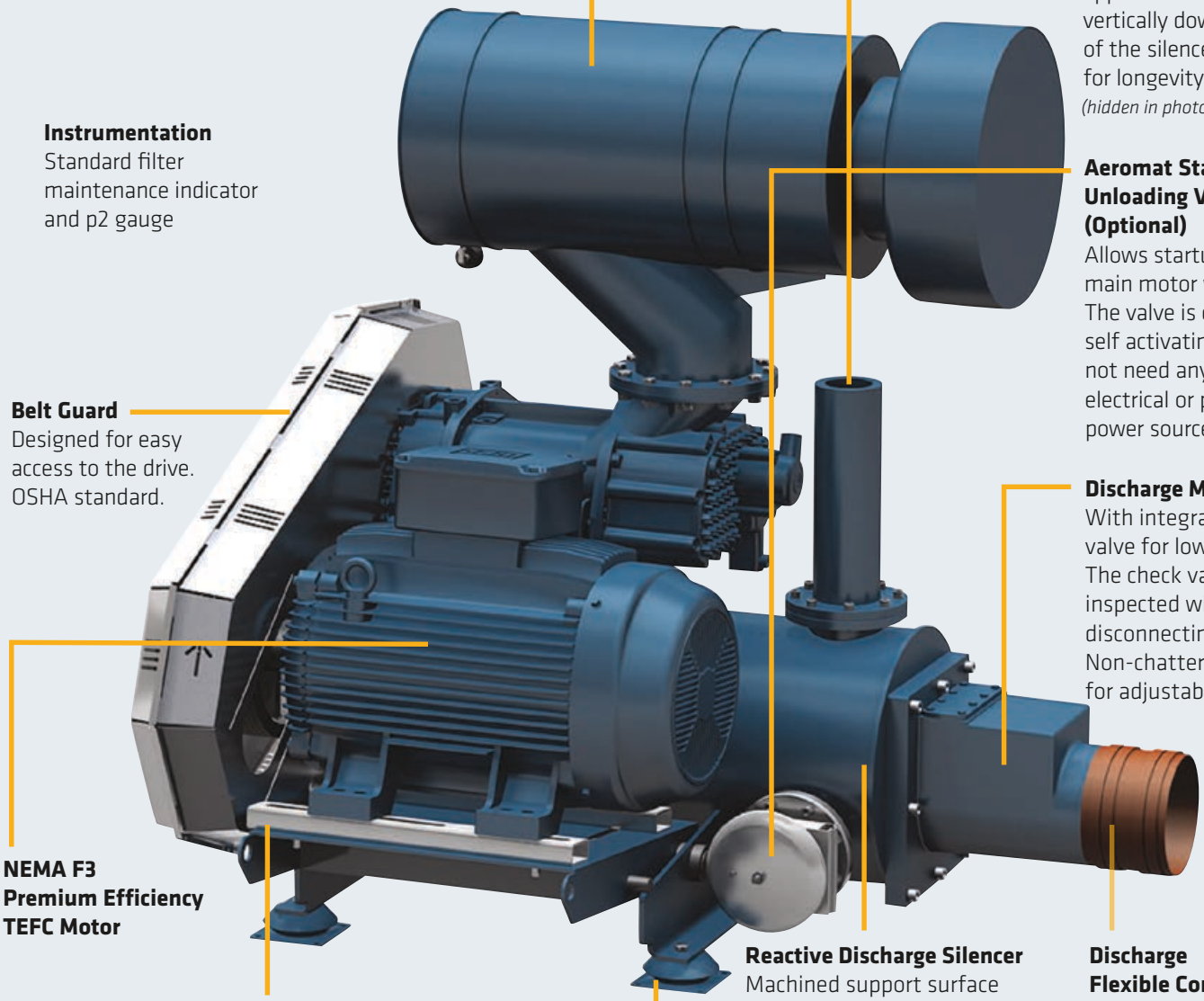
The accessories that make the difference.

Inlet Filter/Silencer
Easily replaceable filter element is downstream of the silencer for cleanliness.

Instrumentation
Standard filter maintenance indicator and p2 gauge

Pressure Safety Valve
Spring-loaded. Specifically designed for low pressure applications. Mounted vertically downstream of the silencer for longevity.*
(hidden in photo)

Aeromat Start Unloading Valve (Optional)
Allows startup of the main motor with no load. The valve is completely self activating and does not need any auxiliary electrical or pneumatic power source.



Belt Guard
Designed for easy access to the drive. OSHA standard.

Discharge Manifold*
With integral full bore check valve for low pressure drop. The check valve can be inspected without disconnecting the piping. Non-chatter check valve suitable for adjustable speed operation.

NEMA F3 Premium Efficiency TEFC Motor

Hinged Motor Plate
Steady alignment and consistent tension provided by the motor weight. No springs needed. Constant high efficiency.

Vibration Isolating Mounts
Rubber-type. Located under the supporting base. No special foundation required.

Reactive Discharge Silencer
Machined support surface for blower. Stiff for installation on vibration isolating mounts. Low pressure drop design. No absorption packing material. ATEX spark arrestor.

Discharge Flexible Connector
Reinforced rubber. Downstream of discharge silencer to reduce transmission of structure-borne noise.

Instrumentation package:
AERtronic Control System includes pressure transmitters for intake, discharge and oil pressure, as well as resistance temperature detectors (RTD) discharge and oil temperature and operator interface.

*PED compliant pressure vessel

Driving Processes Economically.
From Our Installation to Your Satisfaction.

The Delta Hybrid has a differential pressure capability of 1.5 bar (22psi). Vacuum operation can now be extended from -500 mbar (-15″Hg) to -700 mbar (-21″Hg). The Delta Hybrid provides higher reliability under high ambient temperatures, elevated altitudes, and high differential pressures in positive or negative pressure applications; it can now operate safely at discharge temperatures of 160 to 180 degrees C (320 to 356 degrees F).

Low noise, low pulsation levels

- New pulsation reduction in the compressor stage
- Silencer without absorption materials (patented)
- Additional exterior mount insulation for the H machines
- Inlet cone to further reduce inlet noise (patented)
- Optimized acoustic enclosure

Additional advantages of the Delta Hybrid

- Discharge silencer designed as spark arrestor certified for ATEX applications
- PED pressure-vessel guidelines approval (discharge silencer and pressure safety valve), for all machines; ASME VIII U Stamp is a standard option above 15 psig
- Same pipe conections as Delta Blower Generation 5
- The up to 4:1 turndown adaptibility of the Delta Hybrid enables plants to operate efficiently at minimum capacity without blowing off excess air
- Extended process turndown with a minimum number of machines

Aertronic. Intelligent Control for Fast Processes.

Scope of supply

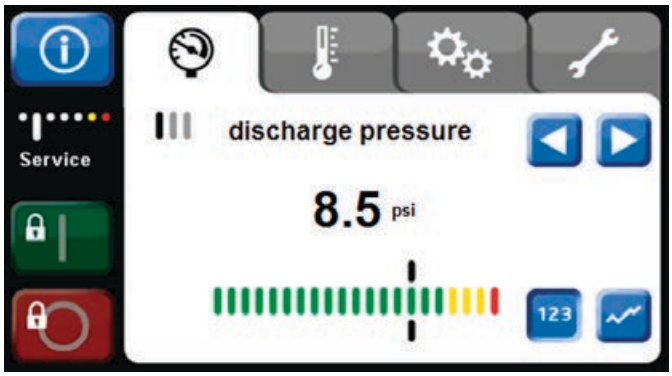
- Newly designed Rotary Lobe Compressor
- Discharge silencer integrated in base frame
- Combined filter and silencer
- Premium efficiency electric motor
- High-performance belt drive
- Hinged motor plate
- Connecting housing with check valve
- Pressure safety valve
- Flexible pipe connector with clamps/or flanged expansion joint

Accessories

- Acoustic enclosure for indoor or for outdoor installation
- Cooling fan: shaft or electric motor driven
- Start unloading valve
- Aerzen controller AERtronic or gauges

Modifications and upgrades

- ATEX certification
- ASME, GOST, China License certification
- All-in-one-solution with integrated starter panel
- Separate control panel
- Frequency inverter (VFD)
- Other accessories on request



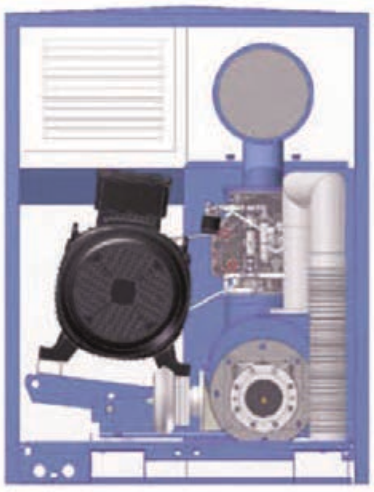
Aerzen AERtronic Controller

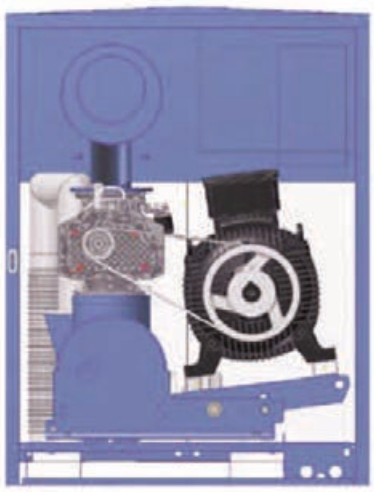
The Aerzen AERtronic controller is based on a modular design approach and offers a solution tailored to each individual application. The controller includes an intuitive touchscreen, base module as well as application-dependent add-on modules. All measured operational data is retrievable and the parameters are adjustable with the user-friendly menu structure.

The base unit used across the Aerzen product range includes the following features: processor unit, inlet and discharge pressure, oil and discharge temperature, motor thermal protection, three free digital inputs, a relay output, and bus communication interface with control panel and expansion modules.

The basic system provides maintenance alerts for air filter element, motor lubrication, v-belt service, blower oil, and basic system inspection. The expansion module offers three digital inputs and three relay outputs as well as inputs for additional analog inputs (for example oil pressure, enclosure temperature, vibration, blower speed).

The unit can also be configured as a local operator for a VFD or motor starter as well as provide data communication for remote observation (Modbus, Ethernet, etc.).





Delta Hybrid Performance Data

Positive Pressure

Aerzen Hybrid Model	Differential Pressure (max mbar)	(max psi)	Volume Flow (max m³/h)	(max cfm)	Motor Power (max kW)	(max HP)	Noise Pressure Level* (max dB (A))
D 12 H	1500	22	670	390	37	50	73
D 12 S	1000	15	690	410	30	40	72
D 17 L	800	12	810	480	30	40	66
D 24 H	1500	22	1370	810	75	100	76
D 24 S	1000	15	1390	820	55	75	74
D 28 L	800	12	1340	790	45	60	70
D 36 H	1500	22	1900	1118	110	150	76
D 36 S	1000	15	2150	1270	75	100	76
D 46 L	800	12	2350	1380	75	100	70
D 52 S	1000	15	3120	1836	110	150	77
D 62 H	1500	22	3400	2000	160	200	81
D 62 S	1000	15	3500	2060	110	150	79
D 75 L	800	12	3870	2280	132	200	77
D 98 H	1500	22	5600	3280	250	350	81
D 98 S	1000	15	5800	3390	200	250	79
D152 H	1500	22	8700	5120	400	536	81
D 152 S	1000	15	8900	5240	315	400	80

** Machine emitted noise with acoustic enclosure and with connected and insulated piping, tolerances ± 2 dB(A)*

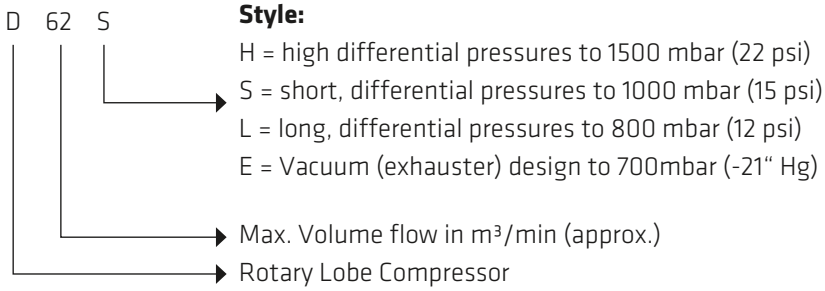
Vacuum

Aerzen Hybrid Model	Differential Pressure (max mbar)	(max psi)	Volume Flow (max m³/h)	(max cfm)	Motor Power (max kW)	(max HP)	Noise Pressure Level* (max dB (A))
D 12 E	-700	-21	650	380	18.5	25	72
D 24 E	-700	-21	1320	780	37	50	73
D 36 E	-700	-21	2000	1180	55	75	76
D 62 E	-700	-21	3300	1940	90	125	79
D 98 E	-700	-21	5500	3237	132	175	78
D 152 E	-700	-21	8500	5000	160	210	79

** Machine emitted noise with acoustic enclosure and with connected and insulated piping, tolerances ± 2 dB(A)*

Nomenclature:

Example:



Dimensions										
Aerzen Hybrid Model	Height H (mm)	(in.)	Depth D (mm)	(in.)	Width W (mm)	(in.)	Nozzle Size DN (mm)	(in.)	Weight (approx kg)	(approx lbs.)
D 12 H/S/E	1500	59.1	1350	53.1	1250	49.2	100	4	590	1300
D 17 L	1500	59.1	1350	53.1	1250	49.2	125	5	600	1320
D 24 H/S/E	1500	59.1	1350	53.1	1250	49.2	125	5	635	1400
D 28 L	1500	59.1	1350	53.1	1250	49.2	125	5	573	1260
D 36 H/S/E	1980	77.9	1800	70.8	1500	59.1	150	6	1098	2420
D 46 L	1980	77.9	1800	70.8	1500	59.1	150	6	1590	3500
D 52 S	1980	77.9	1800	70.8	1500	59.1	150	6	1230	2711
D 62 H/S/E	2111	83.1	2055	80.9	1700	66.9	200	8	1530	3370
D 75 L	2345	92.3	2200	86.6	1900	74.8	250	10	1900	4190
D 98 H/S/E	2345	92.3	2200	86.6	1900	74.8	250	10	2100	4630
D 152 H/S/E*	2345	92.3	2850	112.2	2100	82.6	300	12	3500	7720

Dimension expressed, not binding

** Weight without motor*

Aerzen means trouble-free compression.

Aerzen's modular blower packages have been offered since the 1960s. Aerzen Delta Blower packages have been in successful operation since the 1990s. They are just one of the offerings in our single stage positive displacement program. Whatever your application and installation requirements, be sure to consider Aerzen.

Delta Care Maintenance Agreement

Warranty: 5 years optional with our Delta Care Maintenance Agreement

For Pressure

- Up to 15 psi: G5 Blower packages
- Delta Hybrid up to 22 psi
- 10 to 51 psi: Oil-free and air-cooled VM and VML screw compressors

For Vacuum (Dry)

- Up to 15″ Hg: G5 Blower packages
- Hybrid up to 20″ Hg
- Up to 25″ Hg: G5 Blower packages with pre-inlet cooling
- Up to 25.5″ Hg: Oil-free and air-cooled VM screw compressors at same flow (30% more efficient than PD blowers)
- Vacuum boosters to 10^{-3} mbar absolute

For Extended Pressure/Vacuum

- Up to 40,000 cfm available
- For other gases, higher pressure/vacuum consult factory

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