AERZEN

One step ahead.

Delta HYBRID

Packages

Delta Hybrid Volume flows from 110 m3/h to 5800 m3/h (65 to 3,400 cfm) Pressures to 22 psig (1500 mbar) Vacuum to 21" Hg (-700mbar)

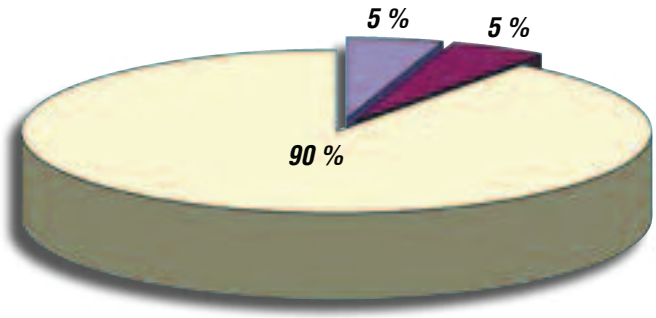
Energy-efficient
Reliable
Compact
Quiet

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.

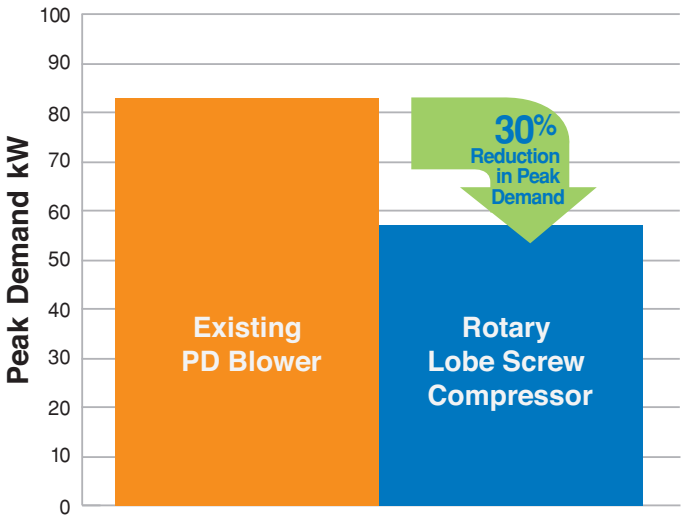


Average operating costs of an air mover over 10 years:
energy *initial cost* *maintenance*

Optimized fluidic design of inlet and discharge ports provides for ideal flow conditions and reduced slippage. Moreover, the belt-driven Delta Hybrid offers the significant advantage of exact sizing: the greatest advantage comes from the energy that does not need to be used. 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 from 25% to 100%
- Optimized fluidic design of inlet and discharge reduces internal pressure losses
- Belt drive offers the flexibility to match exactly the required 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.



Delta Hybrid

Space saving, easy to use and reduced maintenance costs.

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.**

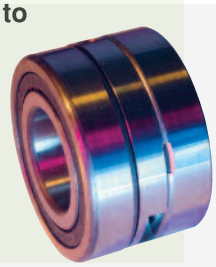
4 **Oil level can be observed from the outside.**

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

6 **Automatic belt tension - No adjustment required.**

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

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

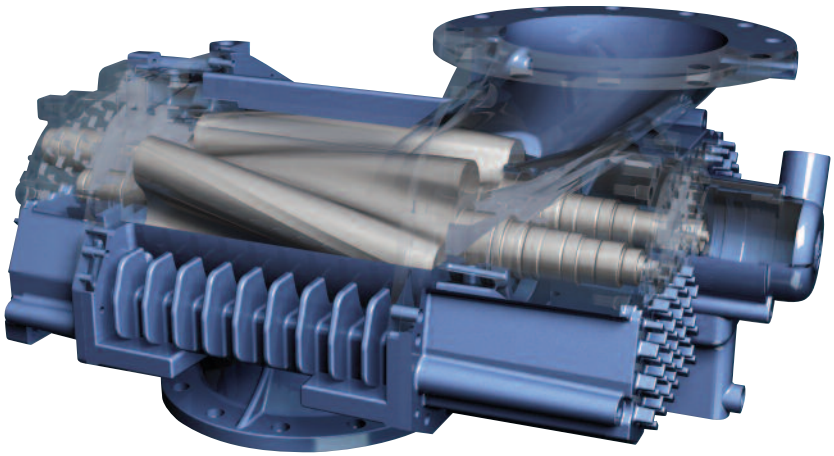


9 **"Aerzen 10 Combi-Mount" Discharge Silencer eliminates the need for absorption material inside the silencer.**

Hybrid Rotary Compressor Stage

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

3+3 rotor profile with twisted rotors and patented pulse charging as well as low squeeze losses.



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 levels, without absorption material

- New pulsation reduction in the compressor stage
- Silencer without absorption materials (patent pending)
- Additional insulation
- Inlet cone to further reduce inlet noise (patent pending)
- 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 4:1 turndown adaptibility of the Delta Hybrid enables plants to operate efficiently at minimum capacity without blowing off excess air
- The broad turndown range keeps the required number of machines to a minimum

The accessories that make the difference.

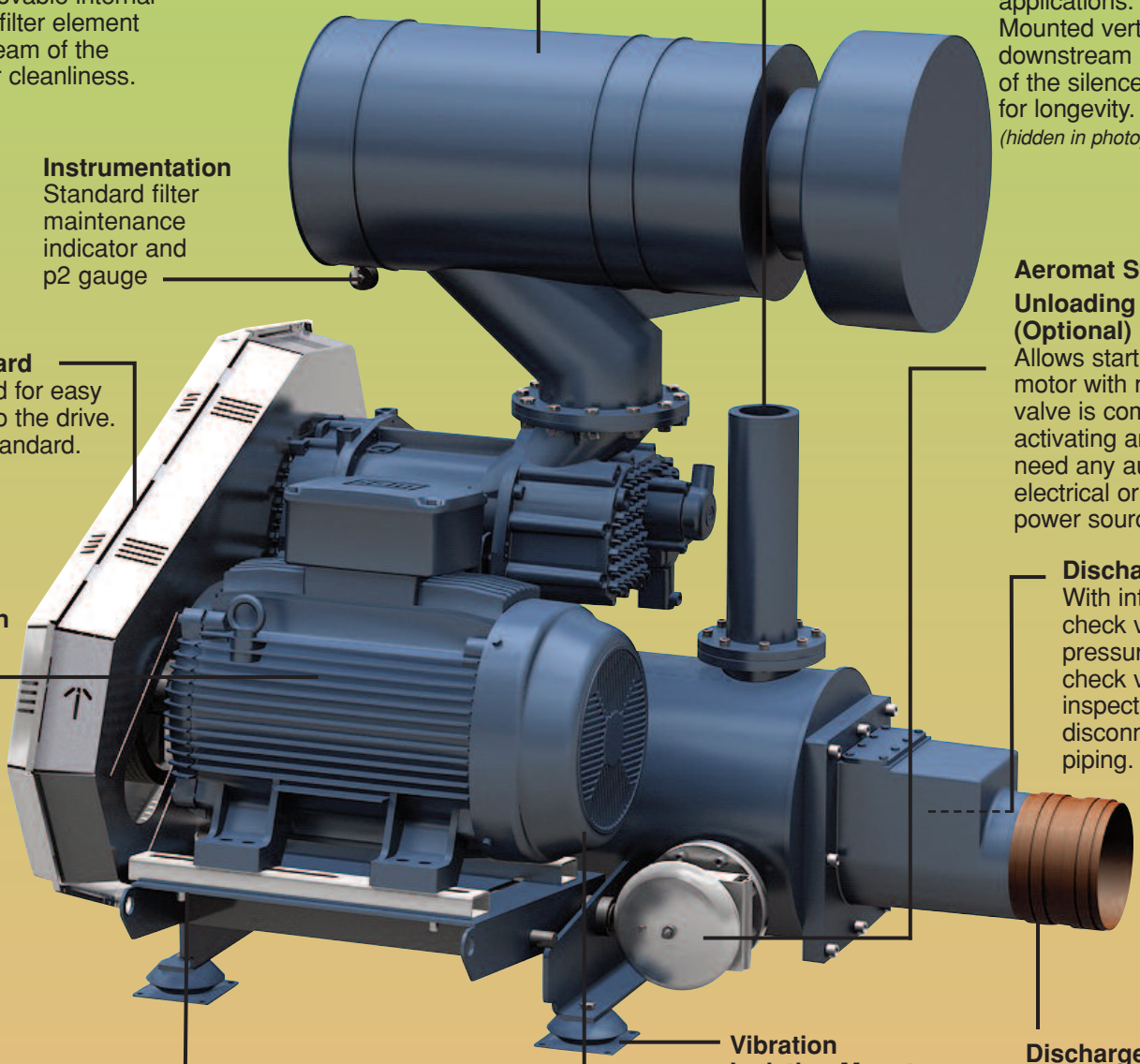
Inlet Filter/Silencer
Washable filter element. Easily removable internal parts. The filter element is downstream of the silencer for cleanliness.

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

Instrumentation
Standard filter maintenance indicator and p2 gauge

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

Aeromat Start-Up 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.



NEMA F3 High Efficiency TEFC Motor

Discharge Manifold
With integral full bore check valve for low pressure drop. The check valve can be inspected without disconnecting the piping.

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

Reactive Discharge "Aerzen 10 Combi-Mount Silencer"
Machined support surface for blower. Stiff for installation on vibration isolating mounts. Low pressure drop design. No absorption packing material. ATEX spark arrestor.

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

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

Scope of supply

- Newly designed Rotary Lobe Compressor
- Discharge silencer integrated in base frame
- Combined filter and silencer with inlet cone
- 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
- Aerzen controller AERtronic or gauges

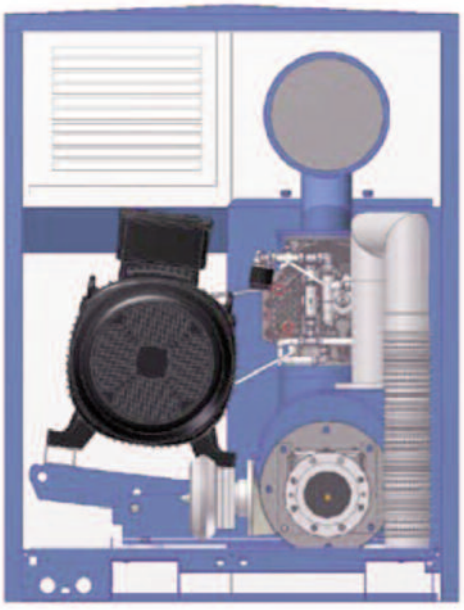
Modifications and upgrades

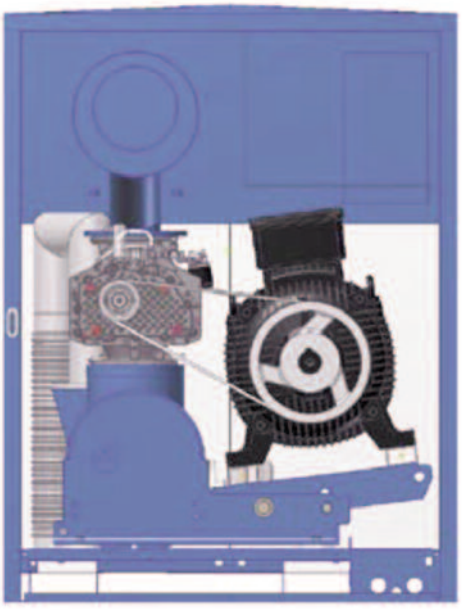
- ATEX certification
- ASME, GOST, China License certification
- All-in-one-solution with integrated starter panel
- Separate control panel
- Frequency inverter
- Other accessories on request

Aerzen controller AERtronic

The new Aerzen AERtronic controller is based on a modular design approach and offers a solution tailored to each individual application. The controller includes an intuitive touch screen, the base module as well as application dependent add-on modules. All measured operating data is retrievable and parameters adjustable in a user-friendly menu structure. The base unit used across the Aerzen product range includes the following features: processor unit, oil level control, inlet and discharge pressure, motor temperature and speed, three free digital inputs, a relay output, and bus communication interface with control panel and expansion modules.

The expansion module offers three digital inputs and three relay outputs as well as inputs for temperature and pressure measurements (for example, oil temperature, compressor outlet temperature, oil pressure). Additional digital inputs, relay outputs, Pt 1000 and analogue inputs and outputs for pressure or temperature control with use of a VFD, as well as bus interface for communication with a master controller or other systems and for data communication can be provided with additional application-related expansion and special modules.

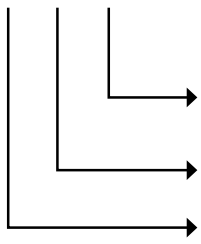




Performance data

Nomenclature:

Example:
D 62 S



Style:
H = high differential pressures to 1500 mbar (22 psi)
S = short, differential pressures to 1000 mbar (15 psi)
L = long, differential pressures to 800 mbar (12 psi)

Max. Volume flow in m³/min (approx.)

Rotary Lobe Compressor

Positive pressure

Size	Differential pressure		Volume flow		Motor power		Noise pressure level *
	max. mbar	max. psi	max. m³/h	max. cfm	max. kW	max. HP	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	2100	1240	110	150	76
D 36 S	1000	15	2150	1270	75	100	76
D 46 L	800	12	2350	1380	75	100	70
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	175	77
D 98 S	1000	22	5760	3390	160	200	81
D 98 H	1500	15	5580	3280	250	350	82

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

Vacuum

Size	Differential pressure		Volume flow		Motor power		Noise pressure level *
	max. mbar	in. Hg	max. m³/h	icfm	max. kW	HP	max. dB(A)
D 12 S	-700	-21	650	380	18,5	25	72
D 17 L	-600	-18	800	470	22	30	65
D 24 S	-700	-21	1320	780	37	50	73
D 28 L	-600	-18	1350	790	30	50	70
D 36 S	-700	-21	2000	1180	55	75	76
D 46 L	-600	-18	2300	1350	55	75	77
D 62 S	-700	-21	3300	1940	90	125	79
D 75 L	-600	-18	3850	2270	90	125	75
D 98 S	-700	-21	5400	3180	132	175	81

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

Dimensions and weights

Size	Width A		Depth B		Height C		Nozzle size DN		Weight *	
	mm	in.	mm	in.	mm	in.	(mm)	(in.)	approx. kg	approx. lbs
D 12 H / S	1250	49.2	1350	53.1	1500	59.1	100	4	590	1301
D 17 L	1250	49.2	1350	53.1	1500	59.1	100	4	600	1323
D 24 H / S	1250	49.2	1350	53.1	1500	59.1	125	5	635	1400
D 28 L	1500	59.1	1800	70.9	1980	78	125	5	1026	2262
D 36 H / S	1500	59.1	1800	70.9	1980	78	150	6	1098	2421
D 46 L	1700	66.9	2055	80.9	2111	83.1	150	6	1305	2878
D 62 H / S	1700	66.9	2055	80.9	2111	83.1	200	8	1400	3087
D 75 L	1900	74.8	2200	86.6	2345	92.3	250	8	2015	4443
D 98 H / S	1900	74.8	2200	86.6	2345	92.3	250	8	3300	7300

Dimensions expressed, not binding

* Weight without motor

Designed for side-by-side installation.

Aerzen means optimal, reliable, 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. In 2011, Aerzen began offering a single-stage high-speed turbo blower up to 400hp / 2500cfm. Whatever your application and installation requirements, be sure to consider Aerzen.

Aerzen USA is a certified LEED Gold, Green facility.

AERZEN
One step ahead.

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