UNITED BLOWER INC.

UNITED BLOWER INC., ESTABLISHED IN 1989, HAS OVER 10,000 BLOWER SYSTEMS INSTALLED TO DATE. WE SERVE THE WATER AND WASTEWATER MUNICIPAL MARKETS AS WELL AS PNUEMATIC AND INDUSTRIAL PLANT APPLICATIONS. OUR PRODUCT LINE INCLUDES A MULTITUDE OF STYLES RANGING FROM MULTISTAGE CENTRIFUGAL, REGENERATIVE, HIGH SPEED TURBO, AND POSITIVE DISPLACEMENT BLOWER PACKAGES. WE OFFER OUR FLAGSHIP PREMIUM PD QUIET PULSE PACKAGE AS WELL AS OUR ECONOMICAL ENVIROPAK, ECONOPAK, & ECONOTOP DESIGNS. UBI ALSO FURNISHES DROP-IN AND RETROFITTED BARE SHAFT BLOWER REPLACEMENTS IN ADDITION TO A VAST INVENTORY OF REPLACEMENT PARTS. LET UNITED BLOWER BECOME YOUR ONE STOP SHOP FOR ALL OF YOUR AERATION NEEDS.

QUIET PULSE PD BLOWER PACKAGES

FEATURES

- PACKAGES MANUFACTURED IN BALL GROUND, GA SINCE 1989
- 230V/ 460V/ 575V UP TO 300 HORSEPOWER
- THREE-LOBE PD BLOWERS WITH PULSE CONTROL CHANNELS
- ALTERNATIVE ULTRA EFFICIENT TWO LOBE BLOWERS
- AUTOMATIC V-BELT TENSION SYSTEM
- 14-20 dB SOUND ATTENUATING ENCLOSURE
- 3-SIDED ACCESSIBLE SOUND ENCLOSURES
- FORKLIFT PICKUP CHANNELS
- 120V HIGH VOLUME ENCLOSURE EXHAUST FAN
- INSTRUMENTATION AS REQUIRED.

EXPERIENCE 30 YEARS EXPERIENCE

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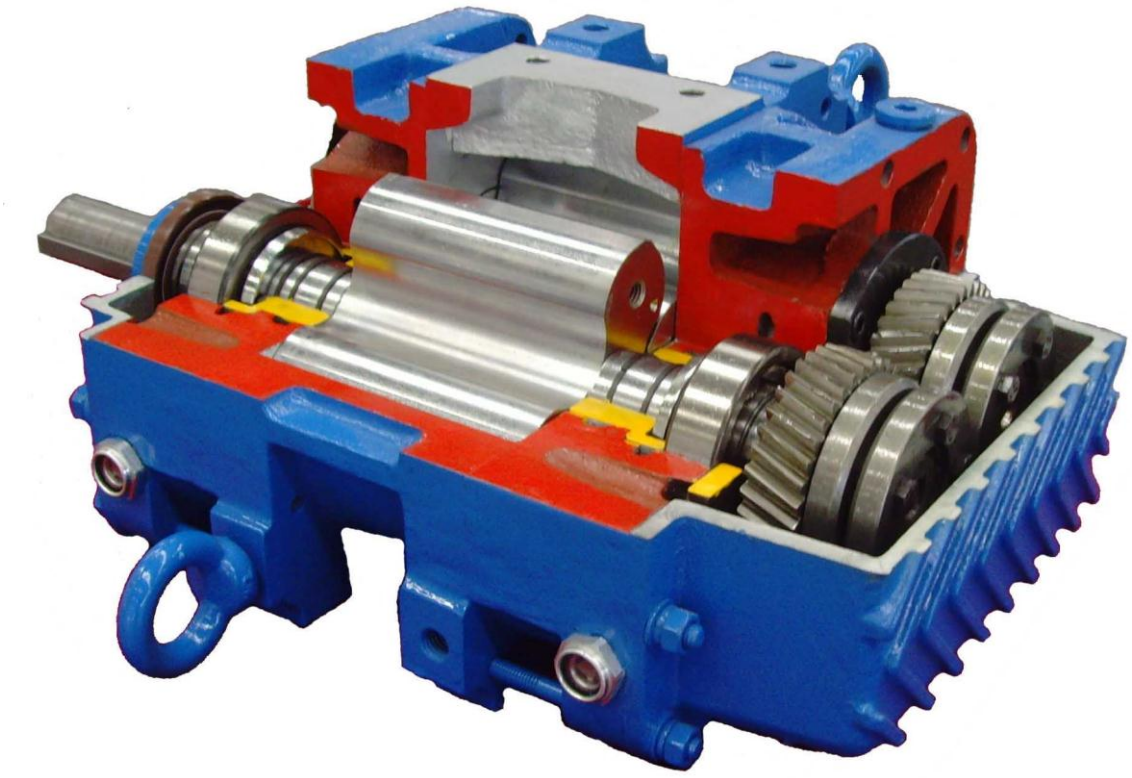


UBI THREE LOBE PD BLOWER CUTAWAY

UBI BLOWER CONSTRUCTION FEATURES

Seals – Non-contacting piston ring type air seals minimize air leakage and maintenance costs. Piston ring oil seals in combination with the deflector ring, ensure that no oil leakage will occur. A viton lip seal on a wearable shaft sleeve with O-rings prevents oil from leaking past the drive shaft – thus extending the life of the shaft.

Oil Site Glasses – Oversized heavy duty site glasses with fused rubber and brass seal washers. Magnetized drain plugs are used to capture any metallic contaminants.

Lubrication – The splash lubrication design of the UBI blowers ensures adequate lubrication of timing gears and bearings. This means long bearing and gear life and minimizes maintenance costs. The blower has two separate oil chambers each with oil sight glasses.

Shafts – Fatigue resistant tool steel ground shafts, using the latest technologies to improve balance and torque ratings.

DESIGN & CONSTRUCTION FEATURES

Impeller Case – The impeller case is made of high strength, close grained grey cast iron (ASTM 48 No.35). Adequate ribbing resists deflection and facilitates cooling. Precision machining minimizes clearances. A specially designed pulsation control channel, in the case, reduces noise levels. The unique housing design permits horizontal or vertical blower installation with no modifications. Precision machined port adapters in threaded and flanged styles allow for versatility in piping design. Casing integrity is tested at 35 PSIG.

Endplates – The endplates are made of high strength, close grained grey cast iron. Both endplates are identical. Bearing bores are precision machined in the endplates to ensure accurate positioning of the impellers in the main case.

Rotor Assemblies – One-piece rotor assemblies are precision machined from high strength, close grained ductile cast iron (ASTMA536 65-45-12). This permits smooth efficient operation at all speeds and pressures. Large diameter input shafts are designed to carry higher loads without fear of shaft breakage. UBI blowers can be driven by direct coupling, V-belt transmission, gearboxes, or variable speed drives for optimum blower performance. The rotor assemblies are dynamically balanced to very precise tolerances to minimize vibration, following ISO 1940/ ANSI S2.19 G2.5.

Bearings – UBI blowers are equipped with large heavy-duty bearings for well over 100,000 hrs B10 bearing life. Bearings are selected to handle high radial loads without sacrificing product integrity and reliability, ensuring a minimum life expectancy of 5 years between overhauls. Gear end bearings are angular contact ball bearing. Drive end bearings are straight roller bearings.

Timing Gears – UBI blowers are equipped with precision ground helical timing gears (20CrMnTi), which are quieter than spur gears. They are case hardened and ground per AGMA 12 with safety factor of 1.7. Timing gears maintain inter-lobe clearance.

Testing – Every UBI blower is given a 2 hour mechanical run test at maximum differential pressure prior to shipping from the factory. This guarantees flawless, trouble free operation right from the start.

Warranty – Each UBI bareshaft blower is covered by an exclusive 30 months warranty against defects in materials and workmanship after delivery of 24 months from equipment startup, whichever comes first. Please refer to the warranty for details.

OPERATIONAL OVERVIEW

To develop pressure and move air, two tri-lobe rotors, synchronized by a pair of timing gears, rotate in opposite directions in two cylindrical bores within the housing.

A defined quantity of air entering the inlet port is trapped between the rotor and the housing and is carried over to the discharge port against the pressure from the application. The pressure developed depends upon the resistance of the system as well as the inlet and discharge pressures.

Each trapped volume occurs three times every revolution for each rotor, commonly referred to as the volume flow per revolution. Multiplying this by the shaft speed will define the flow rate entering the inlet port. Changing the rotational speed directly affects the volume flow.

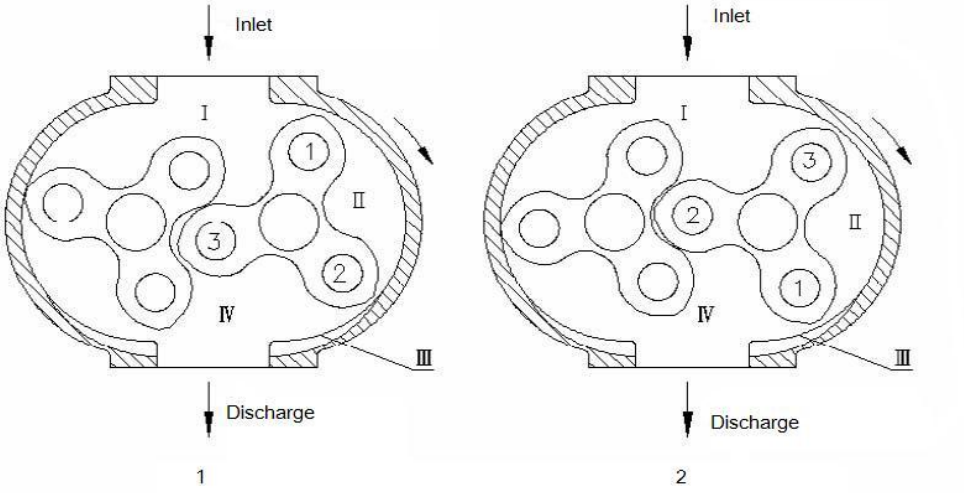
Simultaneously, the synchronized rotors and housing serve to prevent back flow by the close proximity of the rotors to one another and the proximity of the rotors to the housing.

Because there is no contact between the rotors and the case, there is no wear and no lubrication is required. Oil is, however, required to lubricate the bearings and gears. The lack of contact means that some leakage occurs, and the rate is directly related to the pressure differential between ports. As the pressure differential increases, the leakage rate increases.

Furthermore, as the leakage rate increases the adiabatic efficiency decreases, increasing the discharge temperature and power requirement.

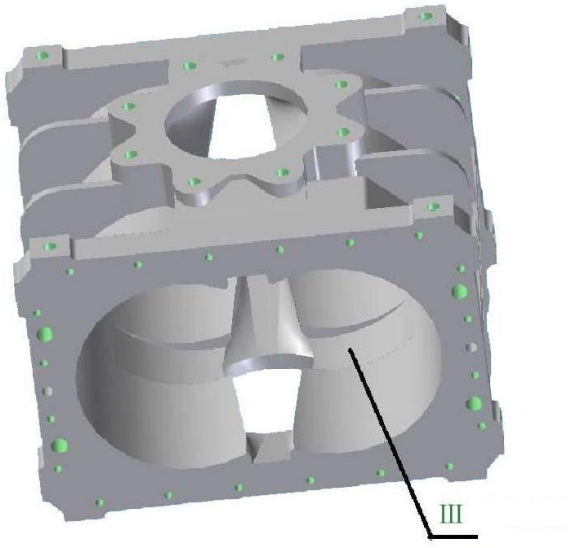
The net flow rate and efficiency is then dependent upon the shaft speed, volume flow per revolution, and leakage rate at the operational pressure point.

EXPLANATION OF THE PULSATION CONTROL FEATURE

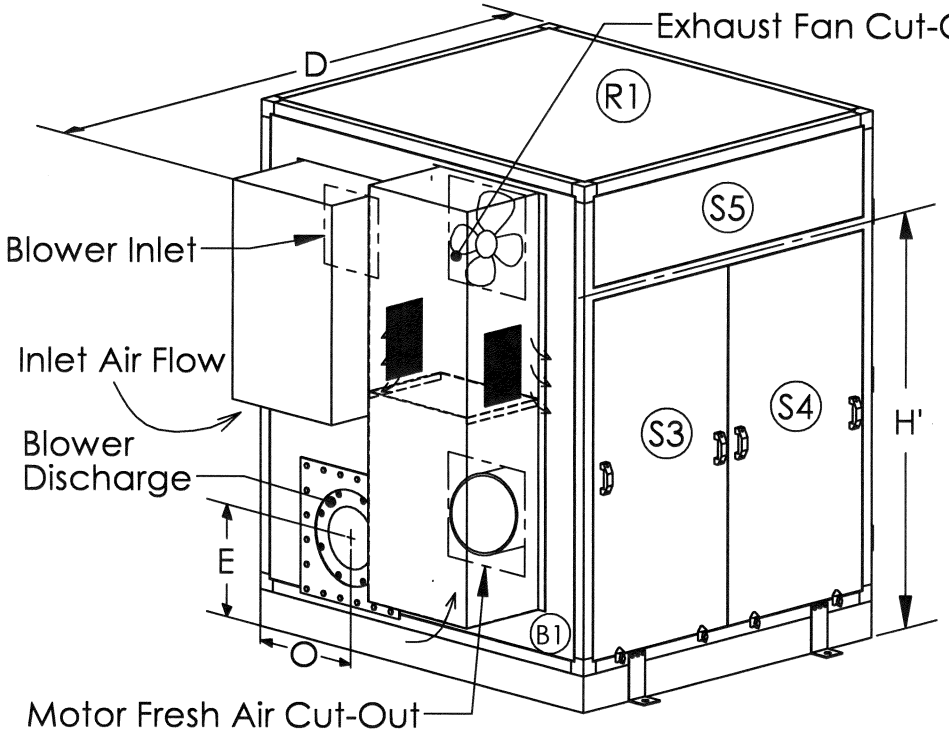


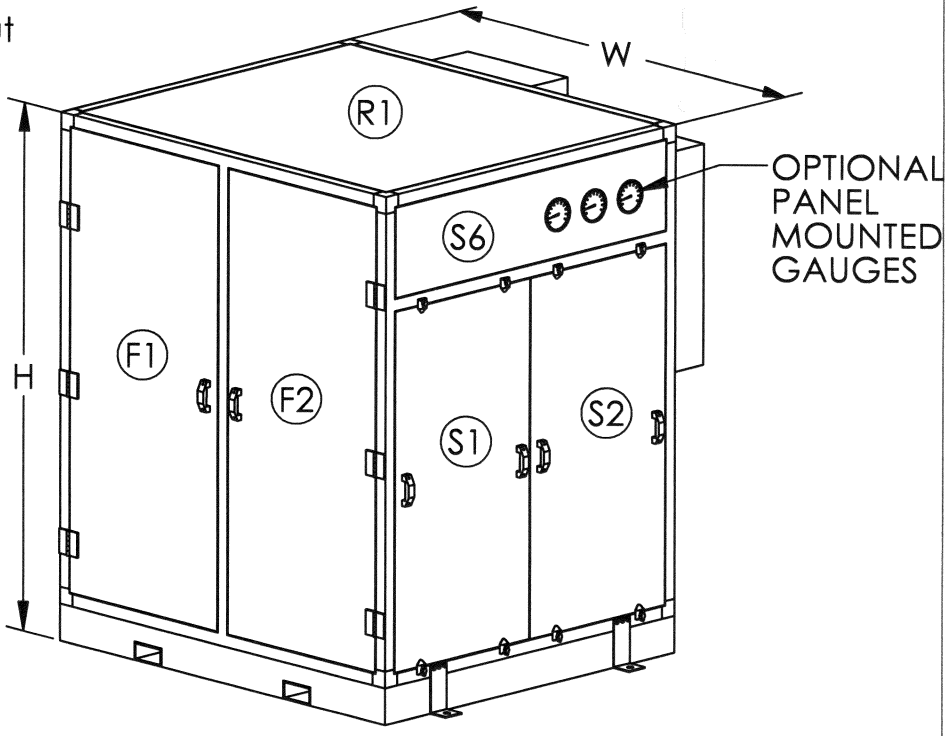
Zone 1 is the inlet low pressure zone; Zone 2 is the transitional zone; Zone 3 is the reverse flow zone; Zone 4 is the outlet high pressure zone.

The three lobes are marked as lobe “1”. “2”. “3.” When rotating, the space between lobe 1 and lobe 3 brings low pressure air from Zone 1 to Zone 2. At this time, an enclosed space is formed between lobe 1, lobe 3 and the case. As the rotor turns, Zone 2 air merges and mixes with Zone 3 air (The growing distance between the case and the lobe permits this mixing to occur). This means the high pressure air in Zone 4 mixes with Zone 2 through Zone 3. Because of the small flow channel section of Zone 3, the air pressure in Zone 2 increases more gradually, than if the space did not exist: the air flow pulsation and vibration is weakened. Subsequently, the noise is lower. If Zone 3 did not exist (the internal reverse flow zone), when Zone 2 air merges with Zone 4 air the large amount of high pressure air in Zone 4 will rush into the lower pressure Zone 2 and make a big pressure wave, causing a pressure pulse.



The internal reverse flow structure feature (Zone 3) in the case of the UBI Series tri-lobe blowers can effectively reduce the pressure pulse, and reduce noise.





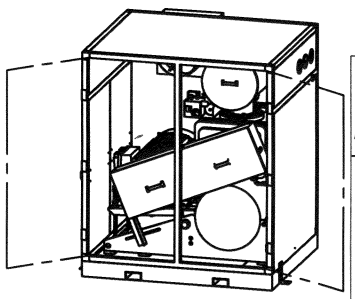
PANEL LAYOUT:

- F1: HINGED SINGLE PANEL; SIZE 1-2
- F1 & F2: HINGED DOUBLE PANEL; SIZE 3-5
- S1: LIFTOFF SINGLE PANEL; SIZE 1-2
- S1 & S2: LIFTOFF DOUBLE PANELS; SIZES 3-5
- S5 & S6: FIXED UPPER PANEL; ALL SIZES
- B 1: FIXED PANEL; ALL SIZES
- R1: REMOVABLE PANEL; ALL SIZES

QUIET PULSE BLOWER PACKAGE FEATURES:

- 18GA GALVANIZED PANELS- POWDERCOATED LIGHT GREY
- 2" ALUMINUM FRAME- POWDERCOATED CAPRI BLUE
- 2" ACOUSTICAL FOAM INSULATION - STANDARD 14-18 dBA
- 2" MINERAL WOOL INSULATION W/ PERF-OPTIONAL UPGRADE 18-20 dBA
- 2" FOAM INSULATED HOODS
- 120V EXHAUST FAN WITH THERMOSTAT
- SUBBASE WITH FRONT FORKLIFT PICKUP & OIL DRIP PAN
- EASY BLOWER PACKAGE ACCESS

DIMENSION (INCHES)	**SIZE 1** BLOWERS: UBI 50 / 65 MAX HP: 20	**SIZE 2** BLOWERS: UBI 80 / 100 MAX HP: 40	**SIZE 3** BLOWERS: UBI 125 / 150 MAX HP: 75	**SIZE 4** BLOWER: UBI 175 MAX HP: 125	**SIZE 5** BLOWERS: UBI 200 / 250 MAX HP: 200	**SIZE 6** BLOWER: UBI 290 / 300 MAX HP: 300
W	40	50	60	72	72	84
H	51	65	72	82	86	102
H'	36	49	57	62	66	80
D	46	59	67	80	80	108
E	12	13	15	18	18	23
O	11	15 -1/8	17 -1/8	20 -5/8	20 -1/8	22-1/8



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QUIET PULSE
SIZE 1-6
NOISE ENCLOSURE
COMPONENT LAYOUT

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