

Frames 22 thru 718



ROOTS® Universal RAI™ Rotary Positive Blowers

Design and Construction Features

- Detachable steel mounting feet
- Rigid one-piece cast iron casing
- Anti-friction bearings
- Splash oil lubricated spur timing gears
- Connections in standard pipe sizes
- Ground steel shafts
- Straight, precision machined two-lobe impellers



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Universal RAI™ blowers are heavy-duty rotary blowers designed with detachable rugged steel mounting feet that permit easy, in-field adaptability to vertical or horizontal installation requirements.

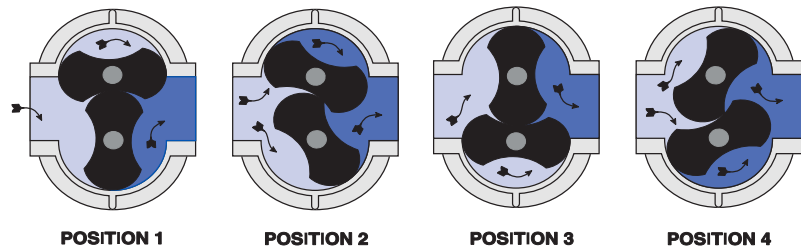
Basic blower description

The detachable mounting feet allow these units to be easily adapted to any of four drive shaft positions: right, left, bottom, or top. The compact, sturdy design is engineered for continuous service when operated in accordance with speed and pressure ratings.

The basic model consists of a cast iron casing, carburized and ground alloy steel spur timing gears secured to steel shafts with a taper mounting and locknut, and cast iron involute impellers. Oversized antifriction bearings are used, with a cylindrical roller bearing at the drive shaft to withstand V-belt pull. The Universal RAI® features splash oil lube on the gear end and grease lube on the drive end. ROOTS® exclusive "figure-eight" gearbox design improves oil distribution to maximize gear and bearing life. After testing, the unit is sprayed with a protective paint, and boxed or skid mounted for delivery.

Available accessories include driver, relief valve, inlet and discharge silencers, inlet filter, check valve, extended base, V-belt or flexible coupling and drive guards.

Operating principle



Two figure-eight lobe impellers mounted on parallel shafts rotate in opposite directions. As each impeller passes the blower inlet, it traps a definite volume of air and carries it around the case to the blower outlet, where the air is discharged. With constant speed operation, the displaced volume is essentially the same regardless of pressure or temperature.

Timing gears control the impellers relative positions and maintain small but definite clearances. This allows operation without lubrication requirements inside the unit casing.

