

M-D PNEUMATICS™

BLOWERS AND VACUUM BOOSTERS



Rotary Positive Displacement Blowers

CP Series

Our M-D Pneumatics™ rotary positive displacement blowers combine rugged performance with flexibility as drop-in replacements to fit a variety of applications. CP Series blowers can be field converted from horizontal to vertical flow, or vice versa, without any special tools or additional components. CP Series rotary blowers are designed to be interchangeable with equivalent sizes of Roots Universal RAI® and many Sutorbilt® Legend® blowers.

Continuous Power: Delivering up to 20% more power, CP Series offers models now rated up to 18 PSIG discharge pressure or 16" Hg dry vacuum.

Constant Protection: Standard on all models, triple lip seals extend the life of the seal and have been shown to provide longer bearing life. Magnetic drain plugs keep particles from moving through bearings and seals.

Stronger Bearings: All CP Series blowers include double-row ball bearings at the gear end, stronger than single-row ball bearings offered by other manufacturers. Drive shaft bearing is cylindrical roller type for additional strength against side loading from V-belt drives. CP Series bearing life is as much as 50% greater than models offered by other manufacturers.

Helical Gearing: CP Series blowers are timed with precision helical gears keyed to the rotor shafts, not taper-fit spur gears as offered by other manufacturers which have greater backlash, can slip and lose timing. Helical gears are also quieter, reducing mechanical noise.

Metric Availability: CP Series blowers are available with metric drive shaft and process connections.

Lubrication: Many CP Series models include dual oil splash lubrication at both the gear end and drive end of the blower. Splash lubrication provides for longer bearing and seal life through improved heat dissipation versus grease lubrication.

Reduced Noise Versions Available: CP Series standard models feature a bi-lobe design with integral shafts. Many models are available with tri-lobe rotors and a specially tuned housing to reduce blower noise.

| | | | |
|-------------------------|----------------|------|-----------------------|
| 16 | AIR | GAS* | 15 |
| Vacuum Level "Hg vac | Process Medium | | Pressure Level PSI |



| | | |
|----|-----|----|
| 16 | AIR | 18 |
|----|-----|----|

Standard Models/6

| Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|-------------|
| 2002 | 8-64 / 17-109 | 1-5 / 1-4 |
| 2004 | 24-137 / 41-233 | 1-6 / 1-4 |
| 3002 | 22-136 / 37-231 | 4-12 / 1-9 |
| 3003 | 30-181 / 51-308 | 1-12 / 1-9 |
| 3006 | 60-310 / 102-527 | 1-12 / 1-9 |
| 4002 | 18-184 / 31-313 | 1-15 / 1-11 |
| 4005 | 40-373 / 68-634 | 1-24 / 1-18 |
| 4007 | 54-492 / 92-836 | 1-18 / 1-19 |
| 5003 | 41-324 / 70-550 | 1-25 / 1-19 |
| 5006 | 68-543 / 116-923 | 1-5 / 1-4 |
| 5009 | 130-824 / 221-1400 | 1-6 / 1-4 |
| 6005 | 91-497 / 155-844 | 4-12 / 1-9 |
| 6008 | 146-798 / 248-1356 | 1-12 / 1-9 |
| 6015 | 273-1494 / 464-2538 | 1-12 / 1-9 |
| 7006 | 171-734 / 291-1247 | 1-15 / 1-11 |
| 7011 | 322-1356 / 547-2304 | 1-24 / 1-18 |
| 7018 | 560-2240 / 951-3806 | 1-18 / 1-19 |

Models with Splash Lubrication/7

| Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|---------------|
| 3002 | 22-136 / 37-231 | 4-12 / 3-9 |
| 3003 | 30-181 / 51-308 | 2-15 / 9-11 |
| 3006 | 60-310 / 102-527 | 5-30 / 4-22 |
| 4002 | 18-184 / 31-313 | 2-15 / 9-11 |
| 4005 | 40-373 / 68-634 | 3-32 / 2-24 |
| 4007 | 54-492 / 92-836 | 4-43 / 3-32 |
| 5003 | 41-324 / 70-550 | 3-29 / 2-22 |
| 5006 | 68-543 / 116-923 | 4-50 / 3-37 |
| 5009 | 130-824 / 221-1400 | 6-49 / 4-37 |
| 6005 | 91-497 / 155-844 | 5-47 / 4-35 |
| 6008 | 146-798 / 248-1356 | 7-47 / 5-35 |
| 6015 | 273-1494 / 464-2538 | 14-54 / 10-40 |

Typical Applications

- Pneumatic Conveying
- Vacuum Excavation
- Dust Collection
- Carpet Cleaning
- Air Sparging
- Dairy Milking
- Wastewater Aeration

Equalizer RM

The Tuthill EQUALIZER RM rotary positive displacement blower offers many distinct advantages when compared to other brands, such as a one-piece housing in a compact design, helical gearing to reduce noise, 4.5" & 6" gear diameters, bi-rotational rotors with integrally cast shafts, and field convertible flow configuration.

Helical Gearing: Blowers are timed with precision helical gears which reduces backlash and mechanical noise as compared to spur gears offered by others. Keyed interference fit reduces the risk of slippage of the gear on the shaft and loss of timing, one of the leading causes of blower failure.

One-Piece Housing: Blower includes a housing constructed of a single piece of precision machined cast iron, rather than a two-piece housing which is subject to misalignment and loss of operating clearances.

Rotors with Integral Shafts: Blowers include precision machined and dynamically balanced ductile iron rotors with large, integrally cast shafts to provide a single unitized rotor to prevent clash of the impeller moving on its shaft.

Metric Availability: Blowers are available with metric drive shaft and process connections.



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| Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|---------------|
| 4606 | 85-645 / 145-1097 | 2-58 / 2-43 |
| 4609 | 129-946 / 219-1608 | 2-82 / 2-61 |
| 4612 | 173-1253 / 294-2130 | 3-90 / 2-67 |
| 6012 | 350-1667 / 595-2834 | 4-119 / 3-89 |
| 6016 | 494-2232 / 840-3794 | 5-157 / 4-117 |
| 6024 | 830-3358 / 1411-5709 | 7-157 / 5-117 |

Typical Applications

- Pneumatic Conveying
- Dairy Milking
- Carpet Cleaning
- Compost Aeration
- Dust Collection
- Air Sparging

Equalizer DF

The Tuthill Equalizer DF blower is designed to be interchangeable with equivalent models from competing manufacturers. This blower offers distinct advantages such as a one-piece housing in a compact design, helical gearing to reduce noise, higher pressure capability (18 PSIG on most models), drop-in replacement, and field convertible flow configuration simply by rearranging oil breathers, drains, and changing the mounting feet.

Higher Pressure Capability: Most models are rated to 18 PSIG discharge pressure. This provides you with an increased level of security due to built-in safety factors.

Designed for True, Drop-in Replacement: Dimensionally interchangeable with competing models, even to the point of matching the port connector bolt patterns.

Helical Gearing: Helical gearing reduces backlash and mechanical noise as compared to spur gears offered by other manufacturers.

Rotors with Integral Shafts: Precision machined and dynamically balanced ductile iron rotors with large, integrally cast shafts to provide single, unitized rotors to prevent clash as a result of the impeller moving on its shaft.

Positive End Clearances: End clearances are positively established (versus floating) at the blower gear end, eliminating the risk of shifting end clearances that reduce unnecessary rotor and end plate wear. This design improves flow performance and extends overall blower life.

Polished Sealing Surfaces: All shaft surfaces in contact with sealing members are polished to reduce seal wear and risk of leakage.



17

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| Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|-------------|
| 4504 | 39-416 / 66-707 | 2-39 / 1-29 |
| 4506 | 82-619 / 139-1052 | 2-56 / 1-42 |
| 4509 | 125-919 / 212-1562 | 2-80 / 2-59 |
| 4512 | 169-1226 / 287-2083 | 3-88 / 2-66 |

Typical Applications

- Pneumatic Conveying
- Dairy Milking
- Carpet Cleaning
- Compost Aeration
- Dust Collection
- Air Sparging



PD Plus

The Tuthill PD Plus is a long-established line of premium, high-pressure industrial blowers with heavy-duty models ranging from 3.25" to 12" gear diameter and 2.5" to 48" rotor length. These blowers are renowned for their quality, dependability, and outstanding performance. They are offered in air and gas configurations rated up to 18 PSI / 17" Hg vac.



Vertical & Horizontal Air Flow: This series has wide applications in pneumatic conveying, wastewater treatment, and the general process industry where high pressure, high volume air is required. Seal areas are vented to atmosphere to relieve process pressure against the internal lip seals, and to provide oil-free air.

Vertical & Horizontal Single-Envelope Gas Service: This series is utilized in such applications as closed loop pneumatic conveying, process gas handling, or elevated pressure applications up to 100 PSIG discharge. Vent openings are tapped and plugged to prevent gas leakage. These fittings can also accept an inert gas purge for positive containment of the process gas.

Vertical & Horizontal Double-Envelope Gas Service: This series is built to laboratory standards where virtually complete sealing is required. In addition to the features shown on the above series, the drive shaft is mechanically sealed and the oil sumps are plugged to provide an even higher degree of leakage protection.

Special Materials: Standard construction materials include cast iron housing, end plates, end covers with port fittings, and ductile iron rotors and shafts, while special materials available include stainless steel, carbon steel, or ductile iron models.

Special Testing: ASME PTC-9 (1 PSIG slip method), hydrostatic testing to 150 PSIG (10.35 bar g), pressure gas testing to 100 PSIG (6.9 bar g), and seal leakage testing. Bi-Protec® is available as a Nickel/Armoloy® special coating.

Optional Cooling Coils: All vertical flow 5500 PD PLUS models are available with cooling coils to provide cooling of lubricating oil with less than 0.5 GPM cooling water for high performance applications.

17 AIR GAS* 18

| Model | CFM / m ³ /h | HP / kW | Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|---------------|-------|-------------------------|-----------------|
| 3202 | 8-90 / 14-153 | 1-9 / 1-6 | 7017 | 601-2807 / 1022-4772 | 7-226 / 5-169 |
| 3204 | 12-146 / 20-248 | 1-13 / 1-10 | 7021 | 783-3478 / 1331-5913 | 8-244 / 6-182 |
| 3206 | 21-220 / 36-374 | 1-18 / 1-3 | 7026 | 1052-4314 / 1788-7334 | 10-242 / 1-180 |
| 3210 | 37-368 / 63-626 | 1-28 / 1-21 | 9016 | 354-3028 / 602-5148 | 6-215 / 4-160 |
| 4009 | 49-497 / 83-845 | 2-45 / 1-34 | 9020 | 465-3986 / 791-6776 | 7-280 / 5-209 |
| 4012 | 87-682 / 148-1159 | 2-51 / 2-38 | 9027 | 620-5315 / 1054-9036 | 8-371 / 6-276 |
| 5507 | 99-794 / 168-1350 | 3-70 / 2-52 | 1215 | 284-3764 / 483-6399 | 6-271 / 5-202 |
| 5511 | 152-1171 / 258-1991 | 3-96 / 2-62 | 1224 | 494-6036 / 840-10261 | 9-427 / 6-318 |
| 5514 | 490-1522 / 833-2587 | 4-95 / 3-71 | 1230 | 618-7546 / 1051-12828 | 10-496 / 8-370 |
| 5518 | 350-1962 / 596-3335 | 4-94 / 3-70 | 1236 | 771-9065 / 1311-15411 | 12-385 / 9-287 |
| 7010 | 349-1690 / 593-2873 | 4-143 / 3-107 | 1248 | 1304-9273 / 2217-15764 | 15-267 / 11-199 |
| 7013 | 445-2148 / 757-3652 | 6-183 / 5-136 | | | |

Typical Applications

- Pneumatic Conveying
- Steam Compression
- Vapor Recovery
- Soil Vapor Extraction
- Process Gas Boosting

Qx

The Tuthill Qx is a high pressure, low noise industrial blower that provides high efficiency at high pressure and vacuum. Its bi-direction, tri-lobe rotor design offers reduced pulsation and lower noise levels while its large integral shaft rotors prevent loosening over time.

Helical Gearing: Qx blowers utilize precision helical gears, keyed to the rotor shafts. Helical gears are quieter reducing mechanical noise.

Stronger Bearings: QX has larger bearings than any other blower in same gear sizes which can lead to longer life, offering L10 bearing life of up to 200,000 hours. They include double-ball bearings on the timing gear end. For additional strength, single roller bearings are used on the drive shaft end of the machine.

Lubrication: Qx blowers have oil lubrication on both ends with easy to view sight glasses allowing quick maintenance.

Seals: Qx blowers are fitted as standard with piston ring labyrinth process/oil seals. Piston ring seals provide high efficiency, long life and reliability. The oil chamber is vented to atmosphere providing oil-free air.

| Model | CFM / m ³ /h | HP / kW |
|-------|-------------------------|-----------------|
| 3203 | 17-164 / 29-279 | 2-18 / 2-14 |
| 3205 | 21-255 / 36-433 | 3-27 / 2-20 |
| 3208 | 36-413 / 54-702 | 3-41 / 2-31 |
| 4606 | 98-540 / 166-918 | 4-42 / 3-31 |
| 4610 | 158-897 / 268-1524 | 7-67 / 5-50 |
| 6009 | 286-1059 / 486-1800 | 10-89 / 8-67 |
| 6015 | 460-1766 / 782-3002 | 16-176 / 12-131 |

Typical Applications

- Pneumatic Conveying
- Bulk Unloading/Loading
- Wastewater Aeration
- Compost Aeration
- Dust Collection



17 AIR 18

Vacuum Boosters

Vacuum boosters are used to “supercharge” vacuum pumps to greatly extend pump performance. This creates faster pumping speeds and deeper vacuum levels. M-D Pneumatics™ vacuum boosters are utilized worldwide in the toughest applications including: the manufacture of chemicals, petrochemicals, plastics, semiconductors and wood composites as well as food processing, vacuum furnace applications and many other general applications in industry.



Low Mechanical Noise: Every M-D Pneumatics™ vacuum booster is designed to operate at 82 dB(A) or less at blank-off (open field; motor and background noise excluded).

Mechanical Seals: This series incorporates mechanical sealing on the rotor shafts and the drive shaft, flanged port fittings, water-cooled drive shaft seal, and cooling coils in the end covers (not included with optional motor mounting flange versions).

Slinger Seals: These series utilize a mechanical drive shaft seal in conjunction with a non-contacting, non-wearing slinger seal on the rotor shafts, water-cooled drive shaft seal, flanged port fittings, and are dependable performers for air and many gas applications.

Special Materials: Standard construction materials include cast iron housing, end plates, end covers with port fittings, and ductile iron rotors and shafts, while special materials available (limited models) include stainless steel, carbon steel, or ductile iron models. Bi-Protec® is available as a Nickel/Armoly® special coating.

Optional Motor Mounting Flanges: All models are available with flange adapters for mounting either a NEMA C-face motor (up to 75 HP) or an IEC D-flange motor (up to 55 kW) directly to the vacuum booster, eliminating the need for a separate base mounted assembly and coupling guard for the vacuum booster.

Metric Availability: All M-D Pneumatics™ vacuum boosters are available with metric drive shaft and process connections.

Special Testing: ASME PTC-9 (1 PSIG slip method), hydrostatic testing to 150 PSIG (10.35 bar g), pressure gas testing to 100 PSIG (6.9 bar g), and seal leakage testing.



| Model | CFM / m ³ /h |
|-------|-------------------------|
| 150 | 50-150 / 85- 255 |
| 240 | 70-230 / 119-391 |
| 400 | 120-400 / 204-680 |
| 540 | 170-540 / 289-918 |
| 720 | 230-720 / 391-1223 |
| 850 | 270-850 / 459-1444 |
| 1200 | 400-1240 / 680-2107 |
| 1600 | 500-1600 / 850-2718 |
| 2000 | 650-2000 / 1104-3398 |
| 2700 | 850-2700 / 1444-4587 |

| Model | CFM / m ³ /h |
|-------|-------------------------|
| 1800 | 680-1800 / 1155-3058 |
| 2200 | 860-2300 / 1461-3908 |
| 2900 | 1130-3000 / 1920-5097 |
| 3600 | 1400-3600 / 2379-6116 |
| 4500 | 1730-4500 / 2939-7646 |
| 3200 | 800-3200 / 1359-5437 |
| 4200 | 1000-4200 / 1699-7136 |
| 5400 | 1400-5700 / 2379-9684 |
| 7300 | 1800-7400 / 3058-12573 |

| Model | CFM / m ³ /h |
|-------|-------------------------|
| 4000 | 890-4000 / 1512-6796 |
| 6500 | 1400-6400 / 2379-10874 |
| 7900 | 1800-8000 / 3058-13592 |
| 8000 | 2100-9500 / 3568-16141 |
| 10000 | 2800-10000 / 4757-16990 |

Typical Applications

- Supercharging Vacuum Systems
- Vacuum Drying
- Dehydration
- Packaging
- Distillation
- Vacuum Furnace

Transport Blowers

For pneumatic conveying of products, the Tuthill dry bulk transport blowers are proudly made in the USA with rugged construction that provides solid, lasting performance. They are able to unload a variety of products from fine powders to food products to pebbles.

Quiet: Transport blowers are engineered with built-in silencing chambers for noise reduction.

Capability: T850 & T1050 models include oil tanks at both ends, broad flow capabilities, large drive shaft and bearings, and up to 20 psi capability. T650s feature a single oil-fill point that is accessible on both driver and passenger sides. Up to 25 psi capability.

Options: Hydraulic Drive and Dual Shaft options are available. Hydraulic adaptor option is available for specialized installations.



T650 Specifications

Air Flow: 260-565 CFM
Pressure: 25 psi continuous
Vacuum: 17" HG continuous and up to 425 CFM
Dimensions: 22.3"L x 18.1"H x 15.3"D

T850 Specifications

Air Flow: 390-1000 CFM
Pressure: 20 psi continuous
Vacuum: 17" HG continuous and
Dimensions: 22.7"L x 12.13"H x 17.97"D

T1050 Specifications

Air Flow: 450-1300 CFM
Pressure: 18 psi continuous
Vacuum: 18" HG continuous and
Dimensions: 25.2"L x 12.13"H x 17.97"D

Blower Packages

The Tuthill MPAK series packages are value-engineered to meet specific applications and designed for simple installation. Our open and enclosed blower package configurations provide CFM from 250 to 2200 with pressure up to 18 PSI, and vacuum down to 17" Hg. MPAK packages are sized with air or gas blowers including the CP Series, PD Plus, and QX models to provide maximum performance, extreme reliability, and cost efficiencies.

Cost Effective: Each standard MPAK is accurately sized to your application specifications with flexible, hassle-free design. Non-standard open designs are still available through Tuthill's **Engineered To Order** solutions.

Maintenance Friendly Design: Both open and enclosed packages allow easy access to components. Enclosed design features clear-view window to keep a close check on blower oil levels. Removable access panel opens to reveal blower, motor and components.

Standard Gauges: Easy to read gauges are mounted in line with access panel to keep a close check on performance and measure pressure, temperature, and filter life.

Ready To Go: MPAK packages are factory assembled and shipped complete with minimal training required at start up.

Easy To Move: Mounting base includes integral fork truck pockets for easy transportation and positioning.

Retrofittable: Field retrofittable enclosure option available.

Operation: TEFC motor standard with 1.15 service factor on a welded steel motor slide base that includes a matched V-belt drive with 1.1 service factor protected by a OSHA belt guard with flow-through ventilation keeps belts running cool.

Inlet and discharge: ANSI flanges, top cooling air / discharge exhaust fan, and cooling air inlets located on both sides.



17 AIR 18

Typical Applications

- Pneumatic Conveying
- Wastewater Aeration
- Steam Compression
- Vapor Recovery
- Soil Vapor Extraction
- Vacuum Extraction
- Process Gas Boosting
- Dust Collection
- Compost Aeration
- Dairy Milking
- Air Sparging
- Bulk Unloading/Loading
- Fluidization/Agitation of Dense Powders
- High Performance Industrial Applications

| BLOWER TYPE: | | PD Plus | | CP Series | | Qx | |
|--------------|----------|--------------|----------------------------|--------------|----------------------------|--------------|----------------------------|
| Pressure | Flow | 367-1837 CFM | 623-3121 m ³ /H | 250-2200 CFM | 424-3737 m ³ /H | 400-1500 CFM | 679-2548 m ³ /H |
| | Pressure | 2-15 PSIG | 0.14-1.03 barg | 2-6 PSIG | 0.14 - 0.41 barg | 2-18 PSIG | 0.14-1.24 barg |
| Vacuum | Flow | 350-1750 CFM | 594-2973 m ³ /H | 250-2000 | 424-3738 m ³ /H | 500-1550 CFM | 849-2633 m ³ /H |
| | Vacuum | 17 inHg | 576 mbarg | 12 inHg | 406 mbarg | 17 inHg | 576 mbarg |

CP Series Blower: CP Series models are rated up to 18 PSIG discharge pressure or 16" Hg dry vacuum. All models have sight glasses, magnetic drain plugs, and triple lip seals as standard features. Rugged design with double-row ball bearings at the gear end, a drive shaft bearing that is cylindrical roller type for additional strength, and all CP Series are timed with precision helical gears keyed to the rotor shafts.

Qx Blower: Qx blowers are high efficiency blowers at high pressure and vacuum and rated up to 18 PSIG discharge pressure or 17" Hg dry vacuum. Featuring the largest bearings available, Qx blowers have L10 bearing life of up to 200,000 hours. Qx blowers have piston ring labyrinth process/oil seals, oil lubrication on both ends with easy-view sight glasses.

PD Plus Blower: PD Plus blowers are offered in air service and single or double envelope gas service. Models are rated up to 18 PSIG pressure boost or 17" Hg dry vacuum (24" Hg water injected). PD Plus models feature extended top rotor profile for increased displacement and operating efficiency and oversized end covers for the largest oil capacity of any blower in its class. Optional cooling coils and lubrication systems available.

Engineered Solutions

For special applications requiring engineered blower packages, we can design and manufacture specifically to your requirements. Blower design, materials of construction, seals, and accessories can be selected to ensure performance to meet all operating conditions of your application. Testing and certification are available.

- Custom blower packages designed to meet your specific requirements
- Flow ranges to 9000 CFM (15300 m³/h)
- Approval drawings provided
- Multi-stage blower packages available for high pressure operation
- Control systems for automatic operation available

Typical Applications

- Process Gas Handling
- Vapor Recovery
- Steam Compression
- Process Gas Boosting
- High Performance Industrial Applications

Customer-specified instrumentation and controls



Tuthill can supply custom packages with two-stage blowers, high vacuum boosters, liquid injection systems, plus much more.

Single-Source Factory Warranty

Because we design, engineer and build our own blower packages, we warranty the entire package, including its components.

VBXpert Vacuum & Blower Sizing Tool

Gain access to the most useful tool available for blower sizing and selection! This easy-to-use interface prompts you to plug in technical specifications for your application and quickly calculates the best Tuthill product for you. Find out more at www.tuthillvacuumblower.com.

Service & Repair

The **Tuthill CARE Center** in Springfield, Missouri, USA is here to help with start-up assistance, repair and warranty work, and remanufactured product sales. Call 1-800-825-6937 to be connected to a Tuthill CARE technician. Tuthill has a network of authorized CARE Centers offering local service to customers. All centers are staffed with factory-trained personnel to ensure that your equipment performs to factory specifications. A listing of authorized Tuthill CARE Centers is available at www.tuthillvacuumblower.com.





Our journey of building a Conscious Company has brought us to heights where we have well-defined direction guided by our COMPASS.



Learn more at tuthill.com

Our Purpose

Wake The World.

Our Vision

A legion of like-hearted people with astounding impact.

Our Mission

Making real things that really make a difference.

Our Way

Living our common values. Creating the uncommon.

Our Brand

It's who we are, what we do, and what we say.

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