

REAL December 2024 Torque

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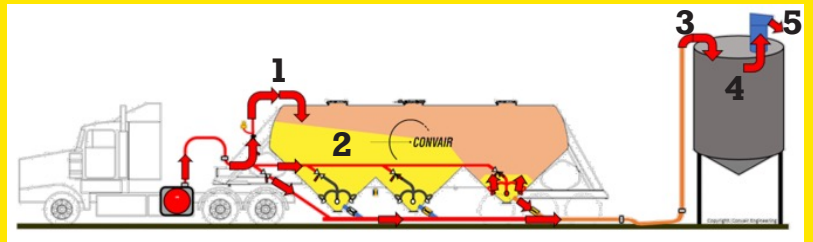


Pneumatic Blowers

Pneumatic Blowers, or what most of just call 'Blowers' are devices mounted onto a truck or trailer that are designed to unload or transfer bulk materials using a combination of air pressure and suction to move product through hoses. Blowers are commonly used to transfer materials rapidly and economically, such as grain, cement, flour, chemicals and plastic pellets.

How do Blowers work?

- 1. Blower Starts:** The blower, powered by the truck, creates a strong flow of air.
- 2. Material Gets Pulled In:** Bulk materials like grains or powders are sucked into the system through a unique intake.
- 3. Air Moves the Material:** The air pushes the material through a long pipe.
- 4. Material Gets Dropped Off:** At the end of the pipe, the material is separated from the air and placed into storage, like a silo or container.
- 5. Air Goes Out:** The air is released, and the process ends.



It's like a giant vacuum and fan system that works together to move bulk materials.

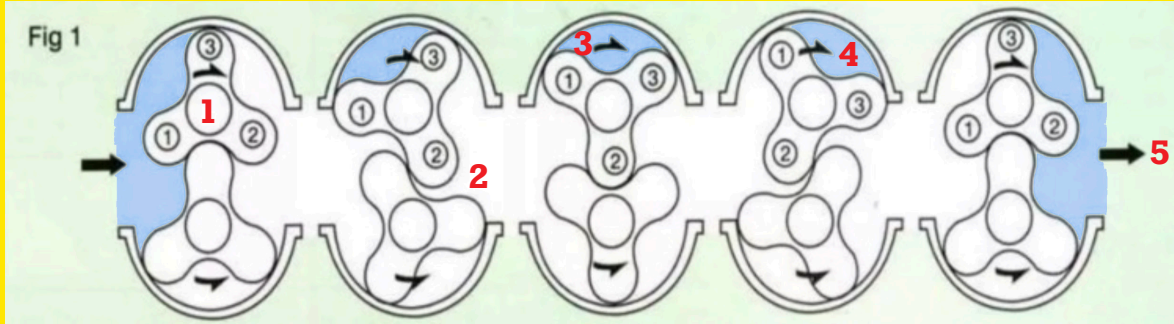
Parts of a Blower Unit



How does the blower create air flow?

The most common type of blower used is called a Roots blower. A Roots blower creates airflow using a straightforward and reliable mechanism. It is a simple design that efficiently moves large volumes of air without compressing it.

1. **Rotors:** It has two rotors (shaped like figure eights or lobes) that spin inside a housing.
2. **No Contact:** The rotors don't touch each other or the housing, leaving a small gap.
3. **Air Trapping:** As the rotors turn, they trap air in pockets between the rotors and the housing.
4. **Air Movement:** The trapped air is carried from the inlet (where air enters) to the outlet (where air exits).
5. **Constant Flow:** The continuous spinning of the rotors creates a steady airflow.



Daily Checks

Although a blower is a simple mechanical device, unlike anything mechanical, it still needs to be looked after. Although any servicing is taken care of by a workshop, there are some daily checks required to be done by the operator.

General Inspection:

- Check for any visible damage, cracks, or leaks in the blower, piping, and connections.
- Ensure all mounting bolts and brackets are secure.
- Visually check drive belt condition and tension if belt driven.

Oil Level:

- Check the blower's oil level using a sight glass to check it is within the recommended range (if oil-lubricated).
- Look for signs of contamination in the oil (discolouration or debris).
- Check the hydraulic oil tank level if blower is PTO driven

Air Filter:

- Inspect the air intake filter for cleanliness and damage; clean or replace if necessary.

Hoses and Connections:

- Ensure all hoses are free of wear, cracks, and kinks.
- Check that clamps and fittings are secure and leak-free.

Safety Devices:

- Test safety devices, such as shutdown switches and alarms, to ensure they work correctly.

Cleanliness:

- Ensure the blower area is free of debris that could interfere with its operation.

Scheduled servicing needs to be done at a workshop by trained technicians. The service interval depends on the amount of blower usage and is set at delivery. What is done at a scheduled service depends on the make and model but will generally involve greasing & inspecting the driveline including UJ's, checking drive belts, adjusting, checking lock screws & bolts, air filter replacement and even oil replacement.

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What is a sight glass?

A sight glass is a transparent tube or window used to visually monitor the level and condition of fluids, such as oil, in machinery. The image shows a sight glass half-full of oil, indicating the correct fluid level, ensuring proper lubrication and optimal equipment performance.



Tips and Tricks

- ▶ Check oil level daily.
- ▶ Clean air filter regularly.
- ▶ Avoid overloading blower capacity.
- ▶ Inspect hoses for leaks.
- ▶ Monitor for unusual sounds.
- ▶ Follow manufacturer's maintenance schedule.



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