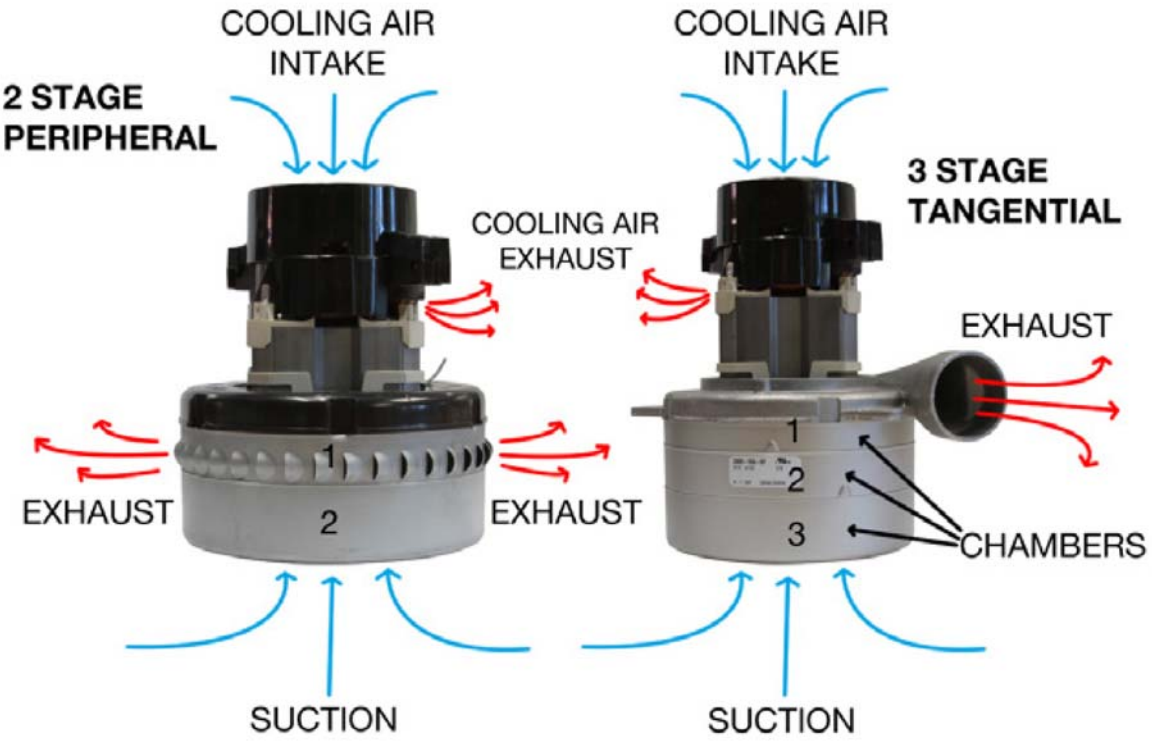
TECHNICAL SUPPORT
VACUUM MOTORS

Basic Operation



A vacuum motor has vacuum **chambers** (or stages). Each stage is a fan in a sealed compartment. You can usually tell how many stages a vacuum has by counting the number of chambers. Chambers make up the bottom portion of the vacuum motor and resemble layers of a cake. The more stages a vacuum has, the more powerful the suction.

The fans in the chambers produce suction on the intake side of the vacuum, and then exhaust on the outlet side. The fan will either exhaust through the side vents (**peripheral**) or through a horn on the side of the motor (**tangential**).

The suction side of the vacuum is used to produce suction for extraction. On janitorial units, the exhaust is usually just routed out of the bottom or the rear of the machine. On automotive units, the exhaust can be used for drying.

IMPORTANT: To avoid damage to the vacuum motor, DO NOT dry vacuum with your extractor. Dry vacuuming may cause debris to be sucked into the vacuum motor chamber and the vacuum motor will need to be replaced.

Troubleshooting

Problem:	Possible Causes:	Solutions:
Vacuum is not turning on.	Vacuum may not be getting power.	Check the electrical connections and the switch. Look for loose or damaged wires. **To check the switch:** Unbolt the switch plate. Take a picture of the layout of the wires or tagging the wires for future reference. Switch the wires from the vacuum switch with the wires from either the pump or heater switch. Turn on the pump or heater switch (whichever one you exchanged wires with). If the vacuum turns on, then you know the vacuum switch is bad.
Vacuum is not producing suction.	Recovery tank is full.	Empty the recovery tank.
	If the vacuum exhausts but there is no suction, then the hose from the recovery tank to the vacuum motor is disconnected.	Open the machine and find the hose running from the recovery tank to the vacuum motor. Check if it is disconnected. If so, reconnect it. If it has a leak, replace the hose (Part # **PH627** if 1.5", **PH628** if 2").
	Vacuum hose blockage (if there is no suction or exhaust).	Check for blockage in the hose, starting from the cleaning tool to the machine.
	Clogged filter in vacuum tank.	Clean out filter regularly.
	Drain valve/cap is loose and is causing air leakage.	Tighten the drain valve/cap.
	Hose cuffs are loose and causing air leakage.	Tighten all hose cuffs regularly as may loosen over time. Use a glue to prevet cuffs from coming loose (optional).
	Lid on tank is loose and is causing air leakage.	Make sure the lid is tight.
Vacuum blows water out the exhaust or is blowing breakers.	Electronic shutoff is malfunctioning, causing the vacuum to continue running even when the recovery tank is full.	Follow the instructions found below to replace the electronic float switch with ball floats: **For Speedsters® and LTDs click HERE.** **For Escape™ Truckmounts click HERE.**
	Foam building up in the recovery tank.	Use Mytee's Auto Defoamer Kit (Part # **A688**).
	Boot behind vacuum port is turned the wrong way.	Make sure this plastic boot is turned toward the right wall of the machine and not toward the ball float.
There is a loud grinding noise coming from the vacuum.	Debris has been sucked into the vacuum motor chamber. Usually results from dry vacuuming.	Replace the vacuum motor. To avoid repeat problem, DO NOT dry vacuum with your extractor.

Frequently Asked Questions

Can you rebuild a vacuum motor?

The carbon brushes in the motor can be replaced. However, they take a long time to wear out so by the time that happens, it's usually best to just replace the entire motor. For this reason, Mytee only carries whole vacuum motors.

Technical Information

C301

2-Stage High Performance: Tangential
98 CFM, 89" water lift
Draws 6–7.6 amps @115V
2 used in series:
98 CFM, 153" water lift
2 used in parallel:
160 CFM, 89" water lift

Used in: 1000-GH, 1000HP-GH, BZ-105

C302A

3-Stage High Performance: Tangential
113 CFM, 145" water lift
Draws 12.6–14.3 amps @115V
2 used in series:
113 CFM, 249" water lift
2 used in parallel:
198 CFM, 145" water lift

Used in: 1005DX, LTD5, SC-9, AIR23, 7303

C302LA

3-Stage Low Amp: Tangential
99 CFM, 131" water lift
Draws 9.2–10.8 amps @ 115V
2 used in series:
99 CFM, 226" water lift
2 used in parallel:
173 CFM, 131" water lift

Used in: HP60, HP100, 20-110, 1000DX-200, 1001DX-200, 1003DX, LTD3, LTD12, 2001CS, 2000CS, AIR23-LA, 7300-SLA, 8070 (pre 2014)

C302P

3-Stage Low Amp: Peripheral
98 CFM, 126" water lift
Draws 9–10.6 amps @ 115V

Used in: 8070 (2014 and later)

C310

Discontinued motor. Replace with C302LA.
More info on next page.

2-Stage High Performance: Tangential
106 CFM, 112" water lift
Draws 10.2–11.8 amps @ 115V
2 used in series:
106 CFM, 193" water lift
2 used in parallel:
173 CFM, 112" water lift

Used in: 7000DX, 8070 (pre 2013)

C316

2-Stage - Peripheral
96 CFM, 84" water lift
Draws 5.8–7.4 amps @ 115V

Used in: S-300

Variation in amps depends on voltage usage.

C304

3-Stage High Performance: Tangential 110 CFM, 155” water lift Draws 5.6-7.2 amps @230V *2 used in series:* 110 CFM, 265” water lift *2 used in parallel:* 193 CFM, 155” water lift Used in: 1005DX-230, 7000S-230, 7303-230, ETM, LTD5-230

C304LA

3-Stage Low Amp: Tangential 90 CFM, 116” water lift Draws 4.6-5.4 amps @ 230V *2 used in series:* 90 CFM, 199” water lift *2 used in parallel:* 158 CFM, 116” water lift Used in: 1000DX-200-230, 1001DX-200-230, 1003DX-230, 20-230, 2001CS-230, 2000CS-230, 2002CS-230, HP100-230, HP120-230, HP60-230, LTD12-230, LTD3-230

C304P

3-Stage Low Amp: Peripheral 101 CFM, 127” water lift Draws 4.5-5.3 amps @ 230V Used in: 8070-230

C310A

2-Stage High Performance: Tangential 114 CFM, 116” water lift Draws 5.1-5.9 amps @ 230V *2 used in series:* 114 CFM, 200” water lift *2 used in parallel:* 185 CFM, 116” water lift Used in: 7000DX-230

C316A

2-Stage - Peripheral 94 CFM, 79” water lift Draws 2.9-3.7 amps @ 115V Used in: S-300-230