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RPI Part #VPB098, VPB099, VPB100, VPB101, VPB102, VPB103, VPB104 & VPB105 DRIVE BELT

Belt Replacement and Tensioning for DentalEZ®/Custom Air/RamVac® Bulldog® & Bison® Dry Vacuum Systems
(Models including: Bulldog 550, Bulldog QT Series, Bulldog QT E Series, Bison & Bison E Series)

- 1) Disconnect power to the vacuum system.
- 2) If needed, move the vacuum system to an open area for easier accessibility.
- 3) Remove the belt guard.
- 4) Loosen all four motor mount bolts approximately ½ turn counterclockwise.
- 5) Now loosen the belt tensioning bolt (and the belt alignment bolt if present) until you can remove the existing belt(s).
- 6) Install the new belt(s) on the pulleys.
- 7) Tighten the belt tensioning bolt to remove most of the belt slack and slightly pre-tension the belt.
- 8) Check the alignment of the pulleys with a straight edge. If a pulley needs to be aligned loosen the pulley set screws (or for taper lock pulley*, loosen the pulley bushing/hub screws) and adjust the pulley position. Snug down the set/hub screws to maintain position for belt tensioning (final torque and loctite to be performed in step 11).
- 9) Once the belt pulleys are aligned, tension the belt (dependant upon which style belt tension gauge you possess). Style #1 is the deflection and force type (or pencil gauge with spring loaded plunger) **Belt Tension Tester (RPI Part #RPT954)**. Style #2 is the Belt Tensionometer type (with integral digital or analog gauge). Values for both styles of belt tension test gauges are listed here:

Models	Style #1 Pencil Gauge	Style #2 Tensionometer
Bulldog 550	Set belt tension to 3/16" deflection at 4 lbs. of force.	75 lbs. (+/- 2 lbs.)
Bulldog QT and Bulldog QT E	Set belt tension to 1/4" deflection at 4 lbs. of force.	60 lbs. (+/- 2 lbs.)
Bison and Bison E	Set belt tension to 3/16" deflection at 4 lbs. of force.	Belt for 1 phase system = 80 lbs. (+/- 2 lbs.) Belt for 3 phase system = 100 lbs. (+/- 2 lbs.)

- 10) Securely tighten all four motor mount bolts. **Note:** Belt tension could change when the motor mount bolts are tightened.
- 11) Check the pulley alignment and belt tension. Re-adjust if needed. Once the motor pulley is aligned, apply Loctite 243 to the motor pulley set screws (or Loctite 290 to the pulley bushing/hub screws*) and torque to 75 in-lbs. Apply Loctite 290 onto the motor shaft on the front of the pulley at the shaft key.
- 12) Securely tighten the belt tension lock nut and if present, the belt alignment locknut.
- 13) Replace the belt guard.
- 14) If moved, return the vacuum unit to original position and reconnect wiring, exhaust and inlet Filtrols coupling components.
- 15) Check machine operation. Run motor long enough to fully seat belt and recheck tension.

* Taper lock pulleys are a two piece construction system, a pulley and a bushing (hub). There are four screws in the face of the bushing/pulley, two screws are coupling screws which lock the bushing (hub) onto the pulley and clamp the pulley system onto the tapered shaft. The other two screws are used as jack screws to disengage the bushing from the pulley allowing the pulley to be repositioned. Once repositioned, back off the jack screws and torque the coupling screws to 75 in-lbs, then tighten the jack screws against the pulley and apply Loctite 290 to all four of the screws.

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