

Importance of Properly Maintaining Handpieces and Quick Connect Couplers

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A common issue that can occur with dental equipment is a loss of pressure or torque from air-driven high-speed handpieces.

High-speed handpieces use miniature turbines that look like small water wheels in the head and spin around from the compressed air. The air goes up one side of the handpiece, spins the turbine, then returns down and out the other side of the handpiece as exhaust. There are various reasons related to the maintenance of the handpiece that can cause low torque or loss of air pressure.

- Aging gasket. Each handpiece or quick connect coupler will have a silicone gasket on the bottom of the connector. This gasket can age, become brittle, and need to be replaced periodically, such as five-year intervals to ensure a proper connection to the tubing to prevent air or water leaks.

- The handpiece connection is not secure. The silicone gasket used on handpieces is a flange type gasket that requires the handpiece to be snugly tightened to the handpiece tubing. Most common handpieces use a quick connect coupler, so it is important to remove the hand-



piece and then verify the coupler is tight. Hint: To ensure a secure connection, tighten the coupler on securely and then loosen again. Clean the threads and then retighten.

The second time will secure more than the first time, and the reason is related to the fine threads used on dental handpieces that can gall when tightening.



-The handpiece itself needs periodic service. The seals inside the handpiece head begin to wear and leak. Therefore requires more air pressure to operate or will run at less than efficient torque. Depending on the brand of the handpiece, you may need to replace or repair it based on the manufacturer's instruction.

-Exhaust air not able to flow freely. If the exhaust air is restricted, the result will be a loss in torque even though the handpiece air gauge is reading normal. If that air is not able to exhaust at all, symptoms will include very low torque and the potential for the bur to stop completely. Verify the oil mist recovery jar on the dental unit is unobstructed and that the air can freely exhaust out it. Secondly, if you are using a quick connect coupler to attach the contra angle handpiece, the drive air or exhaust ports may be clogged with debris causing the handpiece to stall from a lack of airflow or exhaust.

