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**Installation, sterilization and maintenance instructions for:
Vector Velocity Series & F-Series High-speed Dental Handpiece**

FOR PROFESSIONAL USE ONLY

WARNING: This product is intended for use by dental professionals only. Before operating handpiece carefully read and follow these instructions and save them for future reference. Observe all cautions and warnings, including:

WARNING: Handpieces should be heat –sterilized between patients to prevent cross contamination which could result in serious illness or even death from infectious organisms such as HIV (the virus that causes AIDS) or hepatitis B.

WARNING: Do not cut with the handpiece unless you are sure the bur is secure. Do not extend the bur outward from the handpiece head. A loose or extended bur could eject from the head or break and cause personal injury.

WARNING NOT FOR USE IN ORAL SURGERY: Do not use this handpiece within the oral cavity when a soft tissue wound is present. Air pressure may force septic materials into these tissues, leading to acute emphysema with a risk for infection.

WARNING: Vector turbines should not be rebuilt by unauthorized repair facilities. Improper service could only result in unexpected failure and patient injury due to improper testing and service of new vs. old parts.

INTENDED USE

Vector autoclavable high-speed handpieces are medical instruments intended to be used by trained dental personnel only. Vector handpieces are intended for use with FG burs with a shank diameter of 1.59 mm to 1.60 mm.

The cooling water delivered is minimum 50ml per minute at 35 P.S.I.

WARNING: NOT INTENDED FOR SURGICAL PROCEDURES

INSTALLATION

Check the handpiece tubing before installation. Make sure all tubing's are properly connected to the dental unit. Be sure the air and water are delivered properly as per all ISO standard Midwest style 4 hole connections. Be sure that chip air and water lines are connected and functioning properly.

AIR REQUIREMENTS

The Vector High-speed handpiece is designed to provide optimum performance and torque at 40 -45 P.S.I. Air performance should be measured at the handpiece end. Have your dental technician use a

standard air pressure tested (as provide by vector part # 1729). Connect testing device to the tubing then handpiece to the testing device, depress the foot pedal then adjust the pressure.

INITIAL MAINTENANCE

WARNING: Handpiece is not sterile. Follow maintenance procedures, below before using your new Vector high-speed handpiece.

MAINTENANCE

This procedure recommends the steps to follow between patients used to prevent cross contamination and to ensure continued trouble free use of your Vector high-speed handpiece. To ensure hygienic safety of the personnel, always wear protective gloves during cleaning.

IMPORTANT: Only use Vector recommended products for maintenance.

1) **WARNING:** Before disconnecting the handpiece for sterilization. The handpiece air and water lines must be flushed for a minimum of 20-30 seconds. This may be accomplished by depressing the foot pedal and running the handpiece for 20-30 seconds before disconnecting the handpiece for sterilization.

2) **CLEAN:** Remove bur, wipe with a 4x4 or cloth soaked in alcohol to remove blood or dirt present on the exterior of the handpiece.

WARNING: Never use chemical sterilization by chlorine, aldehydes or quaternary amino's. Residue may harm patient, and cause premature chuck or bearing failure.

3) **LUBRICATE AND EXPEL:** Lubricate handpiece by spraying with Vector spray until lubricant bubbles from the handpiece head (1 to 2 seconds). Be sure that a bur is NOT INSTALLED. Note that "Vector" push button autochuck mechanism MUST be lubricated. Either lubricate the chuck (where the bur goes) with the pointed chuck adapter (included) or be sure that a bur is NOT INSTALLED when lubricating the rear drive line. After lubrication run the handpiece up to speed or until the excess lubricant is expelled. Wipe the exterior with a dray 4x4 or tissue to remove any excess lubricant.

4) **BAG AND AUTOCLAVE:** Insert handpiece into sterilization bag and load into autoclave. *Vector recommends using sterilization bags with one side paper and one side plastic.* Sterilize handpiece per the following recommendations. Not to exceed 275°F (135°C). Standard operating conditions for the acceptable form of sterilization is as follows:

Steam autoclave: 20 minutes @ 250°F (121°C) with a pressure of 15 PSI
Chemical Vapor: 20 minutes @ 270°F (132°C) with a pressure of 20 PSI.

WARNING: Dry heat oven is not recommended. Never exceed (275°F)

OPERATION

To operate the handpiece: Simply depress the foot pedal on the dental unit. For water spray and chip air adjustment refer to the dental unit instructions.

NOTE: *The chip air must be adjusted on your dental unit to make the water atomize. Failure to make this adjustment will cause the water to come out the front of the handpiece as a straight stream. See your control unit manufacture instructions or a qualified service technician as to location of the chip air adjustment on your dental unit.*

WARNING: Stop immediately if bur becomes loose in Push Button Autochuck.

WARNING: Stop use immediately if unusual noise or vibrations occur.

Caution: Never operate the handpiece under the following conditions:

- 1) While in the presence of a soft tissue wound.
- 2) While depressing the push button bur release mechanism.
- 3) With a bur extended out from the handpiece head.
- 4) At an air pressure exceeding 45 PSI

Installing and Removing Burs

The push button autochuck

The autochuck bur removal system of your new Vector F series and Velocity series high-speed handpiece accepts all standard Friction Grip (FG) or Friction Grip short shank (FGSS) burs and mandrels. No bur wrench is required, simply depress the back cap to release or insert the bur. Release the back cap to lock the bur into place.

Caution: Make sure the bur is locked into place before operating the handpiece.

To release the bur: Simply depress the auto chuck mechanism and remove the bur.

Note as with all auto chuck or push button handpieces inadvertent depression of the auto chuck or push button mechanism could result in unintended ejection of the bur. Specific care should be taken not to depress the chucking mechanism during use, as patient injury will occur if bur ejects during use.

Warranty

National service and repair center
Vector USA
6824 19th ST # 230
University Place, WA 98466
877-883-7455

Item	Applicable International		Vector
	Specification	Requirements	Requirements
Strength of spindle grip	EN ISO 1797 - 1/8.2	Minimum 25 N	Minimum 35 N
R.P.M.	No Specification	No Specification	350,000 R.P.M.
Sound Level	EN ISO 27785 - 1/3.10 at 2.0 bar	Max 80 dB(A)	Max 75 dB(A)
Max drive air pressure	-	-	30-35 PSI
Water cooling	EN ISO 27785 - 1/3.7.2 at 2.0 bar	Min. 50 ml/minute	Min. 50 ml/minute

NOTE: *The chip air must be adjusted on your dental unit to make the water atomize. Failure to make this adjustment will cause the water to come out the front of the handpiece as a straight stream. See your control unit manufacture instructions or a qualified service technician as to location of the chip air adjustment on your dental unit.*