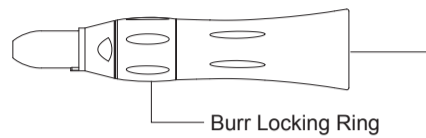


Vigor Series Operation Manual

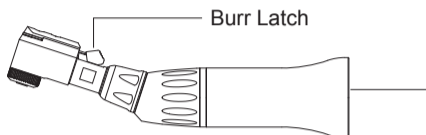
Vigor S15 Straight Handpiece
Vigor C35 Contra-angle Handpiece
Vigor A65 Air Motor

1. Product

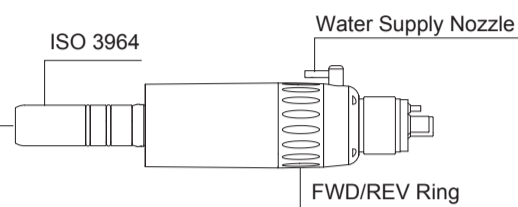
Vigor S15 Straight Handpiece



Vigor C35 Contra-angle Handpiece



Vigor A65 Air Motor



Device description:

The Vigor Series Low speed dental handpieces & Accessories are powered by either low speed air motor or electric micro-motor for teeth cutting, cavity and crown preparation, restorations and polishing teeth.

2. Specifications

Contra-angle	Vigor C35
Transmission ratio	1 : 1
Motor coupling	ISO 3964
Instrument ISO 1797-1 Type 1(ømm)	2.35
Allowable Max. speed (rpm)	25,000

Straight handpiece	Vigor S15
Transmission ratio	1 : 1
Motor coupling	ISO 3964
Instrument ISO 1797-1 Type 2(ømm)	2.35
Allowable Max. speed (rpm)	40,000

Air motor	Vigor A65
Hose connection	ISO 9168
Instrument connection	ISO 3964
Speed range (rpm)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)
Spray volume (ml/min)	>50
Water pressure (Bar)	1.5 - 2.5 *
Spray air pressure (Bar)	2.0 - 3.0 *

* Spray Air Pressure must be greater than Water Pressure and both values need to be set at the same time

3. Safety

- The Vigor series handpieces and air motor are intended only for use within dentistry as part of dental treatment; any form of misuse or modifications to the product are prohibited and may cause danger.
- Once handpiece or air motor is damaged or improperly used (ie sterilized above suggested temperature), be sure not to continue using them.
- Before operation, always make sure the product and its accessories meet the specified requirements.
- It is the duty of the user to use only faultless tools, for the correct purpose, and protect patients and third parties from all dangers.
- Stop using the handpiece if overheated.

4. Assembly and Removal

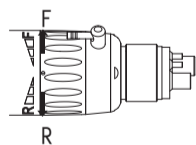
- Assembly**
Push the Contra-angle/Straight handpiece onto the motor and turn it until it engages audibly. Check the connection to the motor is secure.
- Removal**
Remove the Contra-angle / Straight handpiece from the motor by pulling in an axial direction.



Do not assemble / remove during the operation!

5. Forward / Reverse Rotation of Air Motor

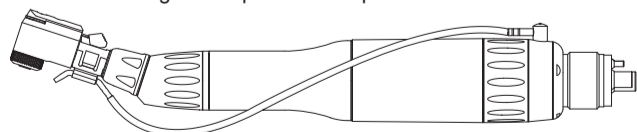
- Forward: Turn the FWD/REV Switch Ring to "F" Mode.
- Reverse: Turn the FWD/REV Switch Ring to "R" Mode.
- When FWD/REV Switch Ring is positioned in the middle between "F" and "R", the air motor stops operating.



6. Water and Chip Air Supply

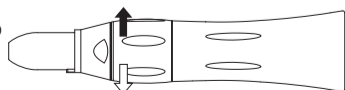
When water is required at the burr, connect the spray tube attachment to the water supply nozzle of the motor and connect the other end to the water supply nozzle of the Straight or Contra-angle Handpiece. Trim the tube to the required length.

* Spray tube attachment for Straight handpiece is an option.

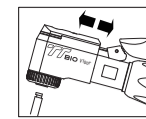


7. Changing Bur

- Straight Handpiece**
 - Turn the Burr Lock Ring anti-clockwise (black arrow) to open the chuck. Insert the burr up to the limit stop.
 - Turn the Burr Lock Ring clockwise (white arrow) until it clicks. Check that the handpiece rotary chuck is closed and the burr has engaged.
 - Check that the burr is held securely by pulling on it in an axial direction.
 - Turn the Burr Lock Ring anti-clockwise (black arrow) to open the chuck. Remove burr from the chuck.



- Contra-Angle Handpiece**
 - Push the latch forward and insert the burr to the center of spindle and turn it until it snaps to place.
 - Push the latch forward and take out the burr.



- Use only rotary instruments which are in perfect condition. Follow the operating instructions of the manufacturer.
- Insert rotary instruments only when the Contra-angle / Straight handpiece is stationary.
- Do not interfere with the running or slowing down of rotary instruments.
- Do not activate the rotary chuck of the handpiece or press latch of the Contra-angle during operation or slowing down.

8. Cleaning

- Contra-angle / Straight handpiece
 - Remove the rotary instrument.
 - Remove the Contra-angle / Straight handpiece from the motor.
 - Air motor
 - Remove the transmission instrument from the air motor and set speed control ring to F or R.
 - Remove the air motor from the supply hose .

- Use clean cloth with mild cleaning solution to clean the handpiece / motor surface carefully, especially groove, and remove the residues.
- Do not immerse handpiece / motor in disinfectant solution or water. Do not clean by ultrasonic process.
- Cleaning solution must be non-erosive and harmless to human. Solution with 80% ethyl alcohol is recommended. Please also follow recommendation of the cleaning solution manufacturer for suggested usage.

9. Lubrication

- Air motor:**
 - Put Shaft Spray Nozzle (*0PL0044) into nozzle of the lubrication oil can.
 - Inject the oil into the drive air pipe for 2~3 seconds, at the back end of the motor.



- Contra-angle / Straight Handpiece:**
 - Put E-type spray nozzle(*0PL0114) into nozzle of the lubrication oil can.
 - Connect handpiece with the nozzle and inject lubrication oil for 2~3 seconds.
 - Clean and lubricate after each treatment right before sterilization.



- Use dental handpiece lubrication oil for maintenance, any unspecified oil not intended for lubricating handpieces could shorten the lifetime and harm human body.
- Be sure to lubricate the handpieces prior to sterilization and run the handpieces for 20~30 seconds to emit residual oil and dirt.
- After unpacking and prior to first use, be sure to lubricate with oil and run the handpiece in low rotation speed for 30 seconds and in full speed for 10~20 seconds to emit residual oil.
- Warnings about lubricant hazards: selected spray can labeling and packaging should comply with other Federal requirements for transport and use.

10. Sterilization

- Place handpiece in single-use sterile bag and proceed steam gravity sterilization. Do not open the sterile bag before using in order to avoid contact infection.
- Use qualified sterilization equipment specified by the authority/government for sterilization procedures.
- Do not use chemical steam nor immerse handpiece or motor in disinfectant solution, otherwise could damage the handpiece and cause severe consequences.
- Sterilization holding time is a minimum of 4 minutes at 134°C, and drying time is 15 minutes (according to EN 13060).

11. Disclaimer

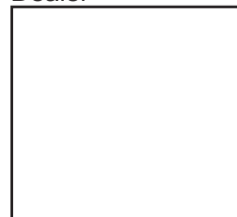
- Once this product is damaged (ie deformed caused by hit) or improperly used (ie sterilized above suggested temperature), be sure not to continue using the handpiece.
- Before operation, always make sure the handpieces and accessories meet operational requirements (ie drive air pressure, water pressure and lubrication, etc)
- Information in this operation manual were carefully reviewed. We cannot assume any liability for any damage arising from improper use of this product or from use of this manual. Please contact our dealer or us with proof of purchase whenever you have problems such as abnormal vibration, exceeding temperature or unusual noise ...etc.
- Products are subject to change without prior notice.
- Products must be operated by qualified practitioners and in dental treatment. Use for other purposes could result in dangers.

CAUTION: U.S. Federal law restricts the use of this device to licensed professionals. (Rx only)

12. Quality and Service

All of our products have passed strict QC procedures before delivery. Please note that improper use or not using the recommended parts and accessories or modifying our products without our approval may decrease the lifetime of the product or cause damage. Please contact our dealers or us with proof of purchase for consultation whenever you have any questions.

Dealer



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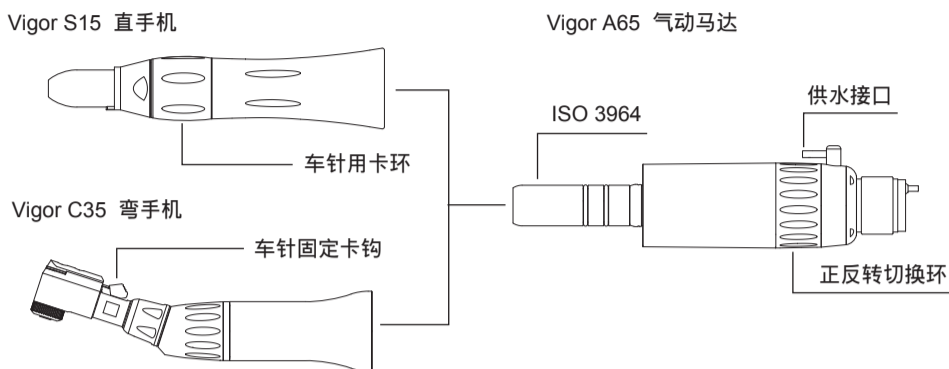
Vigor 系列 使用说明书

Vigor S15 直手机
Vigor C35 弯手机
Vigor A65 气动马达

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www.ttbio.com

1. 气动马达、直手机及弯手机



2. 产品规格

弯手机	Vigor C35	气动马达	Vigor A65
传输比	1 : 1	软管接头	ISO 9168
连接接头	ISO 3964	连接接头	ISO 3964
车针		转速范围(rpm)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)
ISO 1797-1 Type 1(ømm)	2.35	集水量(ml/min)	>50
最高转数(rpm)	25,000	冷却水压(Bar)	1.5 - 2.5 *
		冷却气压(Bar)	2.0 - 3.0 *
直手机	Vigor S15	* 冷却气压须大于冷却水压且两者必须同时设定	
传输比	1 : 1		
连接接头	ISO 3964		
车针			
ISO 1797-1 Type 2(ømm)	2.35		
最高转数(rpm)	40,000		

3. 安全注意

- Vigor系列手机及气动马达只限於牙科诊疗，任何形式的误用或修改该产品是禁止并可能导致危险。
- 当手机或气动马达遭破坏(例如碰撞变形)，或不适当的使用(例如超过建议的消毒温度)，请务必停止使用该产品。
- 在操作使用前请先确定该产品及配件是与规格相符的。
- 使用者务必须确保使用的工具是无瑕的，使用目的是正确的，并保护患者及第三方一切的安全。

4. 手机的装卸方法

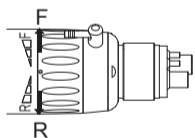
- 手机的安装方法:
将直/弯手机插入气动马达并听到响声，并检查与气动马达连接是安全的。
- 手机的拆卸方法:
用手紧拉马达，将弯手机向前拨开即可。



不可於马达运转中安装/拆卸。

5. 气动马达正反反转的切换

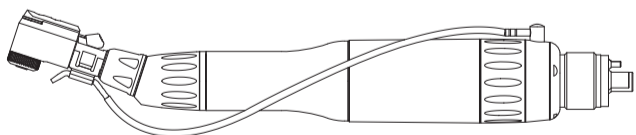
- (1) 正转:将正反反转切换环转到“F”侧。
- (2) 反转:将正反反转切换环转到“R”侧。
- (3) 当正反反转切换环位于F与R中间时，马达便停止运转。



6. 供水

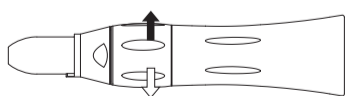
需要供水时，将附件的矽胶管与马达上的供水接口相接，另一端与弯手机或直手机供水接嘴相接即可。因为胶管长度较长，请按照实际需要的长度切断後使用。

* 直手机喷水配件为选项配件。

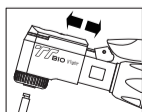


7. 车针的装卸方法

- 直手机
 - (1) 将车针旋钮逆时针的方向旋转(黑色箭头)直到听到咔声，并将车针置入到底端。
 - (2) 将车针旋钮顺时针的方向旋转(白色箭头)直到听到咔声，确保车针被固定住。
 - (3) 试拉车针检查车针已被固定住。
 - (4) 将车针旋钮逆时针的方向旋转(黑色箭头)直到听到咔声，并将车针取出。



- 弯手机
 - (1) 将手机头上之卡钩往前推，将车针半月型端对准轴芯的相应部位插入再将卡钩退至原位即可。
 - (2) 卸车针时，将卡钩往前推，取出车针。



- 请依照制造商建议该产品使用的车针，并确保使用中的车针是完整的。
- 当弯/直手机为静止无旋转时，才可装入车针。
- 不可触碰正在运转或减速中的车针。
- 为使用者安全，不可於操作中旋转直手机的车针旋钮及推弯手机的卡钩。

8. 清洁

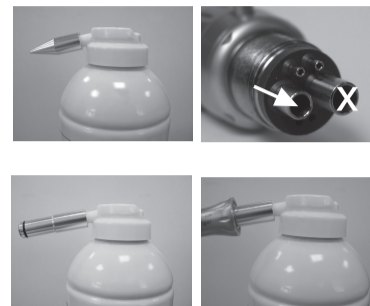


- 弯手机/直手机
 - 将车针拆卸。
 - 与气动马达分离。
- 气动马达
 - 将连接手机移除并将气动马达转速控制环转至F或R处。
 - 将气动马达与快速接头分离。

- (1) 用乾淨的布及清洗液来清洁去除手机/气动马达的表面污垢，特别是沟槽的部份。
- (2) 不可将手机/气动马达浸泡在消毒液或水中，亦不可进行超音波清洗。
- (3) 清洗液必须为不含腐蚀性，对人体无害。建议使用乙醇80% ethyl alcohol. 请遵循制造商建议的使用清洁方式。

9. 润滑

- 气动马达:
 - (1) 将转轴喷油栓(*OPL0044)放置於润滑罐喷嘴。
 - (2) 於气动马达驱动空气管注入润滑油，时间约2~3秒。
- 弯手机/直手机
 - (1) 将E-type喷油栓(*OPL0114)放置於润滑罐喷嘴。
 - (2) 将喷油栓连接手机内并注入润滑油，时间约2~3秒。
 - (3) 至少一天一次清洗及润滑於每次治疗使用後或在高温消毒之前。



- 使用牙科手机润滑油保养可维护手机寿命，任何非指定油可能会造成手机使用寿命缩短并危害人体。
- 请在每一次灭菌前进行润滑保养，启动手机20~30秒将多馀保养油及污秽物排出手机本体。
- 拆封第一次使用前，请於上油後轻踩开关以低速运转30秒，再以全转速运转约10~20秒，将多馀的保养油排出

10. 灭菌方式

- 将手机置放於单次使用的消毒袋中进行高温高压消毒程序，并全程密封消毒袋，直到使用前才能拆封，避免中途不必要的接触感染风险。
- 请使用符合您当地政府法规标准之灭菌设备及程序，进行高温高压消毒作业。
- 灭菌程序请勿使用化学蒸汽或将手机或气动马达浸泡於灭菌消毒液中，否则有发生危险及损坏的可能性。
- 灭菌条件建议为134°C持续4分钟，乾燥时间为15分钟(根据EN13060)。

11. 声明



- (1) 本产品一旦发生结构上的破坏或不正常使用後(如受到撞击产生变形或超过建议温度、压力消毒.....等)切勿继续使用本产品，否则有发生危险的可能性。
- (2) 使用本产品前，必须检查所有主、配件及功能是否符合正常条件规范(如进气压力、冷却水雾、润滑.....等)，确认正常後才可使用。
- (3) 此说明书的内容系经过严谨的核对，然而我们无法保证错误绝对不会产生：因此对任何直接或间接因本说明书引起的损失与伤害，我们无法承担任何责任。例如震动过大、温度过高、异常声音等，应该立即停止使用，并与本公司或本公司经销商或维修中心联络。
- (4) 制造商保有尺寸、规格更改权利，不另做说明。
- (5) 本产品必须由合格的牙医师来操作使用，并且只有适用在牙科口腔治疗用，不可转用其他用途，否则有发生危险的可能性。
- (6) 适用范围：本产品供口腔科夹持慢速牙科车针进行钻、磨牙等手术用。

12. 品质政策与售後服务

雷虎公司的产品在出厂前皆经过严谨的品质确认程序，但请留意：不正确的使用方法或未使用本公司建议的零配件或未经过认可的改装本产品，皆可能造成产品的寿命缩短与危险，因此我们建议您：对我们的产品有疑问时，请携带产品及您的购买证明文件，向本公司授权的经销商洽询。

Dealer



* 内容若有更新将不另行通知