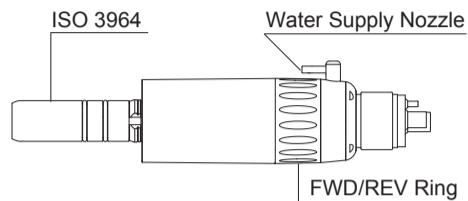


Vigor Air Motor

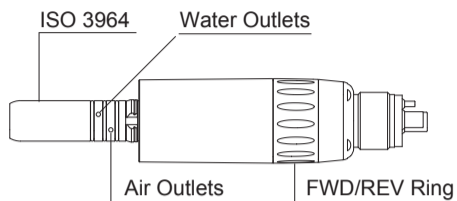
Operation Manual

1. Product Description

Vigor A65 Air Motor



Vigor A68 Air Motor



2. Specifications

Air motor	Vigor A65	Vigor A68
Hose connection	ISO 9168	ISO 9168
Instrument connection	ISO 3964	ISO 3964
Speed range (rpm)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)
Spray volume (ml/min)	>50	>50
Water pressure (Bar)	1.5 - 2.5 *	1.5 - 2.5 *
Spray air pressure (Bar)	2.0 - 3.0 *	2.0 - 3.0 *

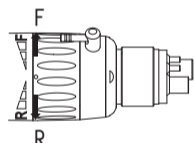
* Spray Air Pressure must be greater than Water Pressure and both values need to be set at the same time

3. Safety Notes

- (1) The Vigor 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.
- (2) Once air motor is damaged (ie deformed cause by hit) or improperly used (ie sterilized above suggested temperature), be sure not to continue using them.
- (3) Before operation, always make sure the product and its accessories meet the specified requirements.
- (4) 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.
- (5) Higher temperature might cause the sense of oral surface tissue unadaptable. Stop using the handpiece if overheated.

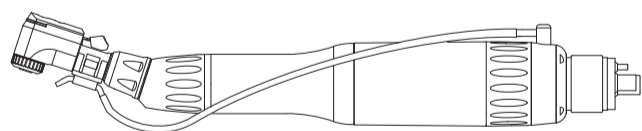
4. Forward / Reverse Rotation of Air Motor

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



5. Water and Chip Air Supply

- (1) Vigor A65 :
 - (A) 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.
 - (B) Trim the tube to the required length.
 - (C) The spray tube attachment for Straight handpiece is an option(*0PL0227).



- (2) Vigor A68 :
 - (A) When water is required, connect relevant Straight or Contra-angle Handpiece.
 - (B) When water leak after long use, replace the Oring(*0PL0300).

6. Cleaning

- (1) Use clean cloth with mild cleaning solution to clean the air motor surface carefully, especially groove, and remove the residues.
- (2) Do not immerse air motor in disinfectant solution or water. Do not clean by ultrasonic process.
- (3) 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.

- (1) Remove the transmission instrument from the air motor and set speed control ring to F or R.
- (2) Remove the air motor from the supply hose.

7. Lubrication

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



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

8. Sterilization

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

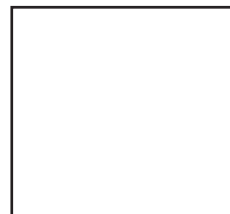
9. Disclaimer

- (1) Once this product is damaged (ie deformed caused by hit) or improperly used (ie sterilized above suggested temperature), be sure not to continue using it.
- (2) Before operation, always make sure the air motor and accessories meet operational requirements (ie drive air pressure, water pressure and lubrication, etc)
- (3) 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.
- (4) Products are subject to change without prior notice.
- (5) Products must be operated by qualified practitioners and in dental treatment. Use for other purposes could result in dangers.
- (6) U.S. Federal law restricts the use of this device to licensed professionals. (Rx only)

10. 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



Manufactured by

TTBIO CORP.
2F.,NO.7, 6TH ROAD INDUSTRY PARK
TAICHUNG, TAIWAN 40755
TEL:886-4-23595958
FAX:886-4-23596893
E-mail:medical@ttbio.com
Website:www.ttbio.com



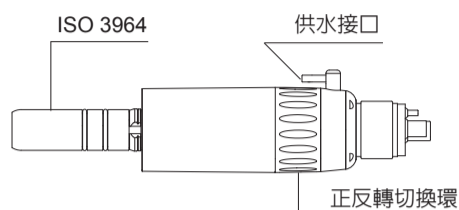
Thunder Tiger Europe GmbH
Rudolf-Diesel-Str. 1,
D-86453 Dasing
Germany

Vigor 氣動馬達

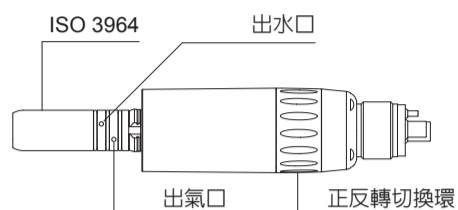
使用說明書

1. 產品描述

Vigor A65 氣動馬達



Vigor A68 氣動馬達



2. 規格

氣動馬達	Vigor A65	Vigor A68
軟管接頭	ISO 9168	ISO 9168
連接接頭	ISO 3964	ISO 3964
轉速範圍(rpm)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)	5,000-20,000 (2.5 Bar) 5,000-22,000 (3.0 Bar)
集水量(ml/min)	>50	>50
冷卻水壓(Bar)	1.5 - 2.5 *	1.5 - 2.5 *
冷卻氣壓(Bar)	2.0 - 3.0 *	2.0 - 3.0 *

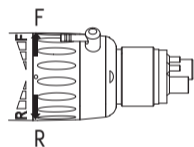
* 冷卻氣壓須大於冷卻水壓且兩者必須同時設定

3. 安全事項

- (1) 氣動馬達只限於牙科診療，任何形式的誤用或修改該產品是禁止並可能導致危險。
- (2) 當氣動馬達遭破壞(例如碰撞變形)，或不適當的使用(例如超過建議的消毒溫度)，請務必停止使用該產品。
- (3) 在操作使用前請先確定該產品及配件是與規格相符的。
- (4) 使用者務必確保使用的工具是無瑕的，使用目的是正確的，並保護患者及第三方一切的安全。

4. 正反轉氣動馬達

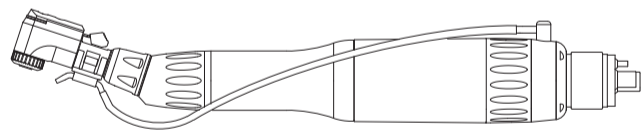
- (1) 正轉：將正反轉切換環轉到 "F" 側。
- (2) 反轉：將正反轉切換環轉到 "R" 側。
- (3) 當正反轉切換環位於F與R中間時，馬達便停止運轉。



5. 供水

(1) Vigor A65 :

- (A) 需要供水時，將配件的矽膠管與馬達上的供水接口相接，另一端與彎手機或直手機供水接嘴相接即可。
- (B) 因為膠管長度較長，請按照實際需要的長度切斷後使用。
- (C) 直手機噴水配件(※0PL0227)為選項配件。



(2) Vigor A68 :

- (A) 需要供水時，直接與相對應之彎手機或直手機相接即可。
- (B) 長期使用後若相接處發生漏水現象，請購買Oring(※0PL0300)做更換。

6. 清潔

- (1) 用乾淨的布及清洗液來清潔，去除氣動馬達的表面污垢，特別是溝槽的部分。
- (2) 不可將氣動馬達浸泡在消毒液或水中，亦不可進行超音波清洗。
- (3) 清洗液必須為不含腐蝕性，對人體無害。建議使用乙醇80% ethyl alcohol。請遵循製造商建議的使用清潔方式。

- (1) 將連接的手機移除並將氣動馬達轉速控制環轉至F或R處。
- (2) 將氣動馬達與快速接頭分離。

7. 潤滑

- (1) 將轉軸噴油栓(※0PL0044)放置於潤滑罐噴嘴上。
- (2) 於氣動馬達驅動空氣管注入潤滑油，時間約2~3秒。



- (1) 使用潤滑油保養氣動馬達可以維護其壽命，任何非指定油可能會造成氣動馬達使用壽命縮短並危害人體。
- (2) 請在每一次滅菌前進行潤滑保養，啟動氣動馬達20~30秒，將多餘保養油及污穢物排出氣動馬達本體。
- (3) 拆封第一次使用前，請於上油後輕踩開關以低轉速運轉30秒，再以全轉速運轉約10~20秒，將多餘的保養油排出。

8. 滅菌方式

- (1) 將氣動馬達置於單次使用的消毒袋中進行高溫高壓消毒程序，並全程密封消毒袋，直到使用前才能拆封，避免中途不必要的接觸感染風險。
- (2) 請使用符合您當地政府法規標準之滅菌設備及程序，進行高溫高壓消毒作業。
- (3) 滅菌程序請勿使用化學蒸氣或將氣動馬達浸泡於滅菌消毒液中，否則有發生危險及損壞的可能性。
- (4) 滅菌條件建議為134°C持續4分鐘，乾燥時間為15分鐘(根據EN13060)。

9. 聲明

- (1) 本產品一旦發生結構上的破壞或不正常使用過後(如受到撞擊產生變形或超過建議溫度、壓力消毒...等)切勿繼續使用本產品，否則有發生危險的可能性。
- (2) 使用本產品前，必須檢查所有主、配件及功能是否符合正常條件規範(如進氣壓力、潤滑...等)，確認正常後才可使用。
- (3) 此說明書的內容係經過嚴謹的核對，然而我們無法保證錯誤絕對不會產生；因此對任何直接或間接因本說明書引起的損失與傷害，我們無法承擔任何責任。例如震動過大、溫度過高、異常聲音等，應該立即停止使用，與本公司或本公司經銷商或維修中心連絡。氣動馬達不適合現場進行維修。
- (4) 製造商保有尺寸、規格更改權利，不另做說明。
- (5) 本產品必須由合格的牙醫師來操作使用，並且只有適用在牙科口腔治療用，不可轉用其他用途，否則有發生危險的可能性。
- (6) 適用範圍：本產品供口腔科夾持慢速牙科鑽針進行鑽、磨牙等手術用。

10. 品質政策與售後服務

雷虎公司的產品在出廠前皆經過嚴謹的品質確認程序，但請留意：不正確的使用方法或未使用本公司建議的零配件或未經過認可的改裝本產品，皆可能造成產品的壽命縮短與危險，因此我們建議您：對我們的產品有疑問時，請攜帶產品及您的購買證明文件，向本公司授權的經銷商洽詢。

經銷商

Manufactured by
 雷虎生技股份有限公司
 40755台中市西屯區工業區六路7號2樓
 TEL : 886-4-23595958
 FAX : 886-4-23596893
 E-mail : medical@ttbio.com
 Website : www.ttbio.com
 許可證字號:衛署醫器製壹字第004431號