

V-DED交流电动扳手 说明书



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1 Important Safety Constructions

重要安全说明

WARNING!

警告

Do not use this tool before you have read and understood this manual. If the tool is damaged, do not try to repair it by yourself. Please contact us.

在你读懂操作手册前，请不要使用这个工具。如果这个工具有损坏，请不要自己维修。请联系我们。

CAUTION!

小心注意

Operate the tool only with single-phase alternating current. It is insulated by class II VDE 0740 and CEE 20. It is possible to plug in the tool to a power socket without protective conductor. Sparking disruption is conform to guideline EG 82/499.

请在单相交流电源下操作这个工具。需要符合class II VDE 0740 and CEE 20。

CAUTION!

小心注意

Before operating the tool, please check if supply voltage is conform to specified operating voltage.

在操作这个工具前，请检查电压是不是列明的操作电压。

Only special trained personnel are allowed to operate, calibrate or repair the tool. Because of rotating objects, untrained personnel may be injured.

只有接受过训练的特殊人员才被允许操作，校验，和修理这个工具。否则容易引起受伤。

After 20,000 bolting actions, the tool shall be maintained and the planetary gear lubricated. This will be indicated at every restart of the tool.

操作20000颗螺栓后，这个工具应该需要做保养和齿轮润滑。这个在工具每次重新开始时被指出。

2 General Information

概要信息

2.1 Technical Data

技术数据

Manufacturer : Dawson Hydraulic Technology (Zhejiang) Co., Ltd

生产厂家

Sale & Service : DAWSON

销售和服务

Series : V-DED

V-DED 系列

Equipment : O 100 setting options (1-stage)

设备 100设置选项（1级）

O 200 setting options (2-stage)

200设置选项（2级）

O Stageless torque setting over the entire torque range

无极扭矩设置

O Angle-controlled bolting function

角度控制

O Testing program

测试程序

3 Operating Instructions操作说明

1. The torque wrenches series V-DED can be operated forward and reverse with automatic torque shut-off.

V-DED 扭矩扳手系列能够执行反向，前进操作，并到达扭矩后会自动停止。

2. Torque values in the torque table are based on medium hard joint. At a hard starting against the bolt, the torque increases by approx. 35%. The maximum torque of the tool may be reached.

扭矩表中的扭矩值是建立在中间硬连接处，在靠近螺栓的起始连接处，扭矩会增加大约35%。工具的最大扭矩是能够被达到的。

3. Because of automatic shut-off, the tool reacts differently to soft and hard bolts. This may also occur in different bolting cases. For every bolting case the torque level has to be set to an appropriate value depending on the desired torque. Therefore it is necessary to check the torque setting from time to time.

由于有了自动关闭功能，工具对于两种软硬螺栓会有不同反应。这也可能发生在不同螺栓连接的情况。对于每次螺栓紧固，扭矩标准不得不被设定到一个期望的合理的数值。因此必须时刻检查扭矩设定情况。

4. From the beginning to the end of bolting process the rotation angle has to be 90° at least.
After the torque is reached, the tool shuts-off automatically. Do not refasten a tight bolt!

螺栓紧固过程从开始到结束，旋转角度至少要达到90度。扭矩达到后，工具自动关闭。不再再次紧固上紧的螺栓。

5. The planetary gear is loaded to the maximum, if the tool is used for refastening.

如果工具被用于再次拧紧，齿轮受到的负载将达到最大化。

6. With that tool tight bolts can be checked by the testing program. For this the program has to be set on the tool. The active program and the torque settings will be shown alternate on the display. To set the program, please press and hold both the Up and Down buttons for more than 3 sec. Ensuing one can choose between normal mode, to fasten normal bolts, and the testing program, to check tight bolts. The chosen mode can be confirmed with the button "M".

有了这个工具，螺栓紧固过程可以通过测试程序来核对。测试程序需要被安置在工具上。这个程序和扭矩设定将在显示器上轮流显示出来。关于设定程序，请同事按住Up 和Down 按钮超过3秒。接下来能够在正常模式（紧固正常螺栓）和测试程序（检查紧固螺栓）中做选择。被选择的模式可以被M 键确认。

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7. With the checking program the torque wrench detects the angle value, which is required to turn the bolt to the desired torque. After bolting this angle will be shown on the display. In case the angle is greater than 10 degrees, the torque wrench gets locked. To unlock the tool one shall press and hold both the Up and Down buttons.

随着检查程序的开展，扭矩扳手将会检测到角度值（要求转动螺栓到期望的扭矩）。螺栓拧紧后，这个角度将会被显示在显示器上。在这种情况下，角度大于10度，扭矩扳手被锁定。如果要解锁，需要同事按住UP 和DOWN 按钮。

4. Movement of the reaction arm

反力臂的摆放

Ensure the reaction arm and retaining ring are installed securely to hold the reaction arm in place. Make sure the reaction arm is in contact with a solid reaction point before you operate the tool. When the tool is in operation the reaction arm rotates in the opposite direction to the output square drive and must be allowed to rest squarely against a solid object or surface adjacent to the bolt to be tightened.

- **Reaction arm height**

反力臂高度

Ensure the height of the socket is even with the height of the reaction arm as seen below in Figure 1.1. The height of the socket cannot be shorter or higher than the height of the reaction arm as seen below in Figure 1.2.

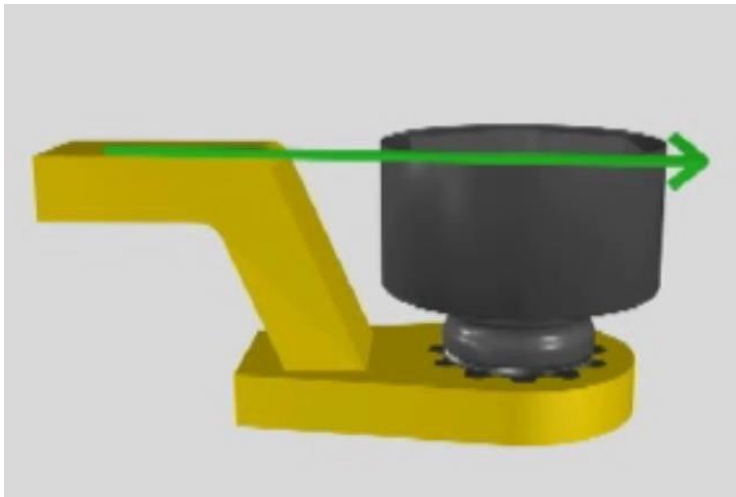


Figure 1.1 Correct height of the reaction arm 正确高度

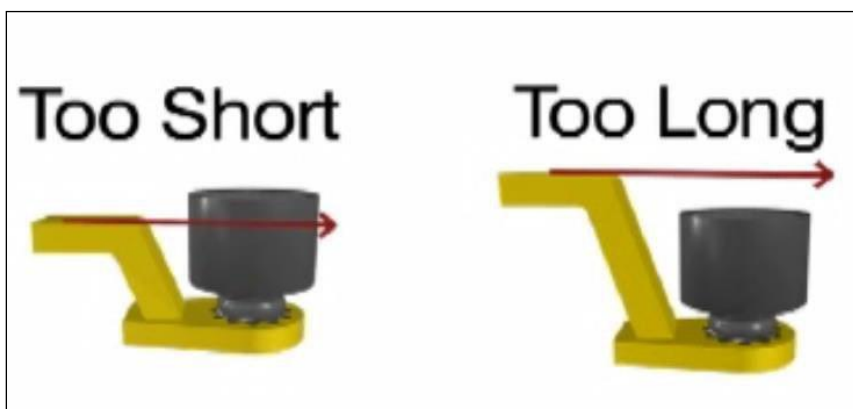


Figure 1.2 Incorrect height of the reaction 不正确

Arm Improper reaction will void warranty and can cause premature tool failure.

- **Reaction arm foot 反力臂**

Ensure the foot of the reaction arm aligns with the length of the nut as seen in Figure 1.3. The length of the foot cannot be shorter or longer than the nut as seen in Figure 1.4.

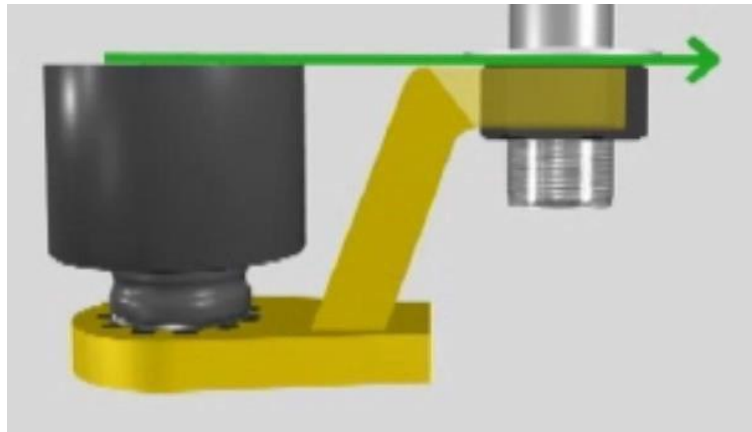


Figure 1.3 Correct length of the reaction arm 正确

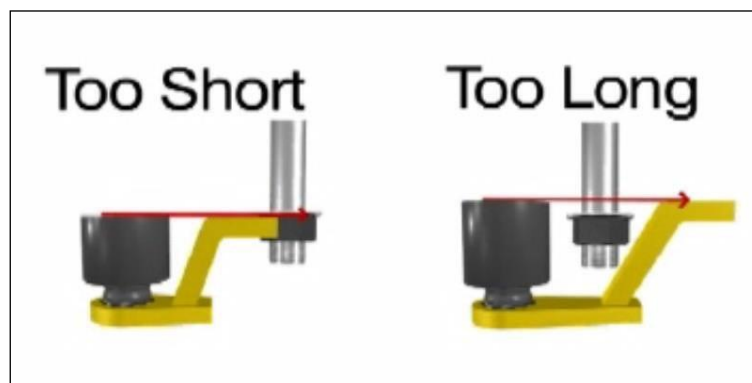


Figure 1.4 Incorrect length of the reaction arm
不正确

- **Reaction point**反力点

Ensure the reaction arm reacts off the middle of the foot as seen in Figure 1.5. Do not react off the heel of the reaction foot as seen in Figure 1.6. This can cause premature tool failure.



Figure 1.5 Correct reaction point 正确的反力点

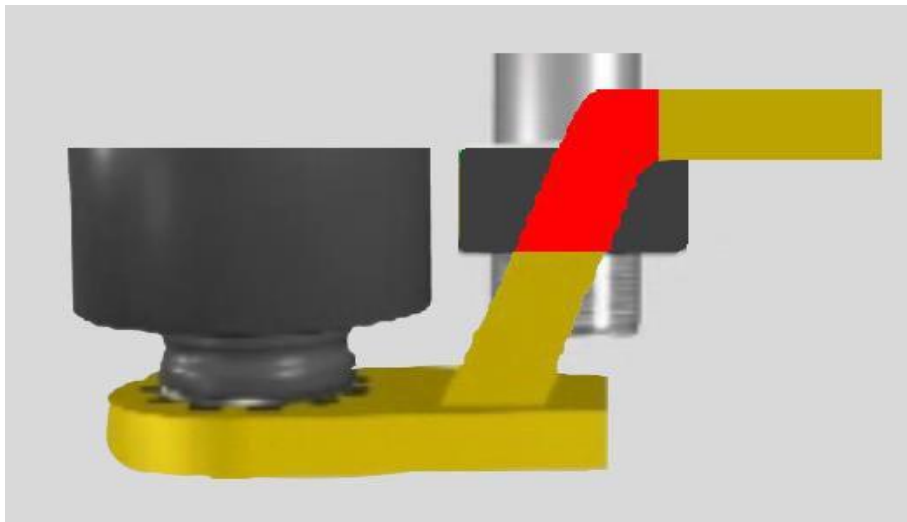


Figure 1.6 Incorrect reaction point 不正确的反力点

Always keep your hand and body parts clear of the reaction arm and barrel when the tool is in operation (see Figure 1.7)

档工具在被操作时，始终保持你的手和身体离开反力臂和反力支撑物体

.



Figure 1.7 Incorrect handling 不正确的处理

For customized reaction arms contact us, please.

定制反力臂，请联系我们

5. Torque Setting 扭矩设定

1. The torque can be set with the membrane key control (see Figure 1.8).

扭矩能够通过隔膜面板上的键设定

2. To select the torque push the middle button "M".

选择扭矩，请中间的M键

3. With the arrow buttons one can change the torque value.

4. 按照尖头指示能够更改扭矩值

5. Push the button "M" to confirm the set torque value. Torque setting is completed now.

Hereupon the angle of rotation can be set, in case this option is available.

按M键确认设定的扭矩值。扭矩设定就这样被完成。假设这个选项有用的，在这里旋转角度能够被设定，

6. The angle value is selected. Please follow steps 3 and 4 to change the angle value.

角度值，请跟随步骤3和4来更改。



Figure 1.8 Main menu

6. Initial Operation初始操作

• Reverse倒转

1. Connect the torque wrench to power supply.
Consider specifications on type plate.
连接扭矩扳手到正确的动力源，
2. Attach and retain reaction arm to teethed carrier of the tool.
装上反力臂，保持反力臂在工具的传动齿上。
3. Attach and retain socket to square drive. Only use suitable sockets.
装上套筒，保持套筒在驱动轴上。只能使用合适的套筒。
4. Set the tool to bolt nut or bolt head.
放置工具到螺母或者螺栓上。
5. Set the switch lever leftwards.
调节开关扳机到左侧位置上。
6. Turn the reaction arm toward a fixed object.
朝着固定的物体转动反力臂
7. Press the operating button till the bolted connection is loosen.
按下操作按钮直到螺栓被拧松

• Forward 向前

1. Connect the torque wrench to power supply.
Consider specifications on type plate.
连接扭矩扳手到正确的动力源，
2. Attach and retain reaction arm to teethed carrier of the tool.
装上反力臂，保持反力臂在工具的传动齿上。
3. Attach and retain socket to square drive. Only use suitable sockets.
装上套筒，保持套筒在驱动轴上。只能使用合适的套筒。
4. Set the tool to bolt nut or bolt head.
放置工具到螺母或者螺栓上。
5. Set the switch lever rightwards.
调节开关扳机到右侧位置上。

6. Set the desired torque and bolting mode.
设定期望的扭矩和螺栓工作模式
7. Turn the reaction arm toward a fixed object.
朝着固定的物体转动反力臂
8. Press the operating button till the tool shuts-off automatically.
按下操作按钮直到工具自动关闭

7. Error Indication

错误指示

In case of a device error or a note for the operator, various messages will be shown on the display. These messages can be deleted with the button “M”. If there are many device errors, please contact us.

万一发生装置错误或者提醒操作者注意，各种信息将呈现在显示器上。中国信息能够被M键删除。如果遇到更多的错误显示，请联系我们。

Error错误	Note 注意	Solution解决
Upcoming maintenance 将要到来的保养	20,000 bolting actions are carried out. The tool is due for next maintenance. 完成20000颗螺栓操作后，工具需要按预定做保养	After noticing, the error can be confirmed by pressing the button “M”. The tool is ready for operating. The bolt counter will be reset during the maintenance at M-PT and the error indication will appear after the next 20,000 bolting actions. 通知过后，错误信息能够被按M键来确认。工具准备操作。在保养期间，螺栓计数器将被重新编排，错误指示在接下来的20000个螺栓操作后出现。
Speed error 速度错误	The speed sensor is damaged. 速度传感器损坏	Please contact us 联系我们
Voltage error 电压错误	The voltage does not correspond with the tool requirements. 电压与工具要求的不符合	Please check the line voltage, where the tool is connected. 检查工具连接电线

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<p>Setting values are red colored after a bolting process.</p> <p>一次操作过后，设定值显示为红色</p>	<p>The last bolting process was not completed correctly.</p> <p>最后螺栓操作没有被正确的完成</p>	<p>Loosen the bolt and repeat the bolting process. Push the trigger till the torque wrench shuts-off automatically.</p> <p>拧松螺栓后，重复操作过程直到扭矩扳手自动停止</p>
<p>Writing „reverse“ is red colored.</p> <p>倒转显示红色</p>	<p>Loosening procedure does not work.</p> <p>旋松程序没有工作</p>	<p>The bolted connection is too tight. To avoid a damaged gear, the tool shuts-off automatically.</p> <p>螺栓连接太紧，为了避免齿轮损坏，工具自动停止</p>

8. Operating Menu 操作菜单

Press and hold the button “M” for 3 sec. to open the operating menu. There you can choose with the arrow buttons and select with the button “M”.

按下M按钮3秒，操作菜单被打开，那里你可以按照箭头按钮来选择和靠M按钮挑选。

4 Pre-setting

In this menu four torque values and/or angle values can be selected or saved. By pushing the button “M” the submenu opens. With the arrow buttons one can select pre-saved settings or save the current setting. The selection can be confirmed with the button “M”.

设定准备

这个菜单中的4个扭矩值或者角度值能够被挑选或者保存。按M按钮，子菜单打开。箭头按钮能够挑选保存准备设定或者当前的设定。按M按钮来确认挑选。

5 Maintenance counter 保养计数器

There one can see the amount of boltings after the last maintenance and determine the next maintenance.

它可以显示经过上次保养后的使用螺栓数量来确定限次的保养时间

6 Total bolting counter 总的螺栓计数器

Indicates the total amount of boltings after the tool delivery.

它可以显示使用后的总的螺栓数量

7 Information 信息

Indicates the tool information. a fault diagnostics with us, this information is very important.

显示工具信息。对于我们 将来的诊断很重要。

8 Password 密码

With a password one can get to the submenu. There are following functions:

输入密码方可进入子菜单。这里有以下功能：

8.1 Reset the maintenance counter

重设保养计数器

Change the language (German or English)
更改语言文本（德语或者英语）

8.2 Change the unit for torque setting (Nm or ft.lbs)

更改扭矩单位设定

Login details and further information you get on request from M-PT.

注册详情和更进一步的信息能够从我们公司获得。

9 Backwards

With this function one gets back to the main menu or rather one step back in menu navigation.

返回

返回主菜单或者或者一步返回菜单导航。

9. Advices For Tools Handling 工具操作建议

1. Bolting case:

螺栓情况

Lubricated and non-lubricated bolts can be used.

If lubricated bolts are used, the starting torque has to be determined to reach desired pre-tension. Please follow directions of your designer. The torque table of the electric torque wrench is related to non-lubricated bolts. Torque deviance are not covered.

润滑处理过的和没有润滑处理的螺栓都能被操作。

如果操作被润滑过的螺栓，那么起始扭矩不得被执行到达期望的预紧力。请跟随设计者的指导。

电动扭矩扳手的扭矩表是通过未润滑过的螺栓来测定的。扭矩不正常情况未被包含。

2. Fine thread: 细牙螺纹

Torque tables are generated for bolts with standard metric thread. If you have bolts with fine thread, please contact us.

扭矩表是通过标准公制螺纹的螺栓来测定的。如果你要操作的螺栓是细牙螺纹，请联系我们

3. Pre-fastened bolts: 预紧螺栓

Please pre-fasten bolts only up to 20% of desired torque. For automatic shut-off the rotation angle of electric torque wrenches has to be 90 degree. Pre-fastening with impact wrenches is carried-out undefined. Usage of electric torque wrench afterwards could cause failures.

After the tool shuts-off automatically, please do not refasten. An excessive starting torque could cause a broken bolt.

请预紧螺栓到期望值的20%。为了自动关闭，电动扭矩扳手的旋转角度必须是90度。

4. Reaction arm: 反力臂

The reaction arm has to rest at a pitch level with the bolt. With a short socket you need a short reaction arm. With a long socket you need a long reaction arm. Variation could cause inaccuracy of pretension, higher deterioration of sockets, overload of square drive and deformation of the reaction arm. To avoid load peaks, please rest reaction arm with the side surface against to a resistant item. Do not rest the reaction arm with its edges against an item. Always keep you hand away from the reaction arm. Be aware of the danger of accident!

5. Determine the torque:

The electronics works differently at a soft or hard joint. The reached torque shall be checked and adjusted if necessary. Standard adjustment ex works is based on middle hard bolting case.

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6. Determine the tool:

The optimal tool is only used up to 80% of maximum torque. Some reserves are necessary to loosen a tight connection.

7. Tool examination:

We advise a periodical maintenance of your tool at American Torque Wrench Inc. This way we can ensure a constant accuracy of your tool. Regular inspection interval is once a year.

Please ask American Torque Wrench Inc

The customer should regularly check housing, cables and safety rotary handle.

8. Power supply:

230V AC single phase, class II VDE 0740 and CEE20. Because of the electronics designed with high reserves, the electric torque wrench operates without problems at construction site generators. The power output of the generator should be at least four times the power match of the wrench. Voltage drops to 215V usually have no noticeable effect on the torque. Only appropriate and authorized extensions of sufficient diameter (at least 1.5 mm²). This is especially true for working outdoors. Apparatus not by the cord or cable to secure the crash. Note: When switching from nuts and/or supporting the electric torque wrench, disconnect from the mains!

9. External influences:

At high ambient temperatures (e.g. at work in engine rooms) and in continuous operation with high starting torque, the torque wrench should be between screwing it idling. Thus the forced cooling is not interrupted by the blower and avoid a heat accumulation in the device. When working outdoors during wet weather, we recommend using a rain cap.

10. Design of workplace:

Ensure sufficient lighting during operating the torque wrench. For work with crash risk necessarily life-line for the assembly and the screwing-use independently. Never run underneath the mounting location.

11. Further recommendation:

After work please set the torque level to "00". This way you can avoid an over tightening of bolts after forgotten torque setting. This is very essential, if more than one employee work with the same tool. Do not remove the manual from the storage case.

10. **Warranty Conditions** 质保条款

- 1 All parts are free repair after reasonable discretion of the seller or to provide new, which is within 12 months (multi-shift within 3 months) from purchase or delivery date arising before the transfer of risk circumstance in particular because of faulty design, poor materials or lack of execution as useless or impair the usefulness of prominence to irrelevant. Such defects must be reported to the seller in writing immediately. Replaced parts become property of the seller. Delayed delivery, installation or commissioning through no fault of the seller, shall cease no later than 12 months after the transfer of risk. For essential outside the seller's liability is limited to the transfer of the liability, which he may invoke against the supplier of the third party.
- 2 The right of the buyer to make claims for defects shall lapse in all cases from the date of a timely claim within 6 months, but not before the expiration of the warranty period.
- 3 We assume no responsibility for damage caused by the following reasons: Unsuitable or improper use and application, if ignored, the supplied operating instructions, improper installation or operation by buyer or third parties, natural wear, faulty or negligent treatment, improper equipment, replacement materials, chemical, electrical or other influences, provided these are not the fault of the seller. No responsibility is taken for transfer of equipment to third parties (loan or rent).
- 4 To perform all the seller in its reasonable discretion deem necessary repairs and replacement deliveries, the buyer has to be in agreement with the seller that the necessary time and opportunity, otherwise the seller is exempt from liability. Only in urgent cases of danger to operational safety and to prevent excessive damage, and the seller must be informed immediately, or if the seller is with the elimination of the defect in default, the buyer has the right to the defect itself or through third parties have it removed and to require the seller any necessary costs.
- 5 Of the costs incurred by the repair or replacement costs directly borne by the seller as far as the complaint is found within the warranty period to be justified, the cost of replacement (or replacement), including shipping (most cost effective shipping method), and the reasonable costs of education and building, this can also be expected in the case, the costs of providing his technicians and support staff. Moreover the buyer bears the costs.
- 6 For the replacement and repairs, the warranty period is three months, but at least until the expiry of the original warranty for the product. The deadline for the warranty of fitness of the goods will be extended by the duration of the improvement work interruption.

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- 7 By improperly by the buyer or third parties without prior authorization of the seller alteration or repair work, the liability for the consequences is repealed.
- 8 Further claims of the buyer, especially a claim for damages not object to the delivery itself were, are, as far as legally permissible.
- 9 Specialties i.e., not with the catalog piece work, in particular those due to customer requirements (including use conditions), accessories manufactured or modified standard parts are excluded from any liability.



所有道盛产品都确保无工艺和材料上的缺陷，在此担保下，我们将在产品售出的一年质保时间内为您提供免费维修或更换服务。

www.dawson-ics.com