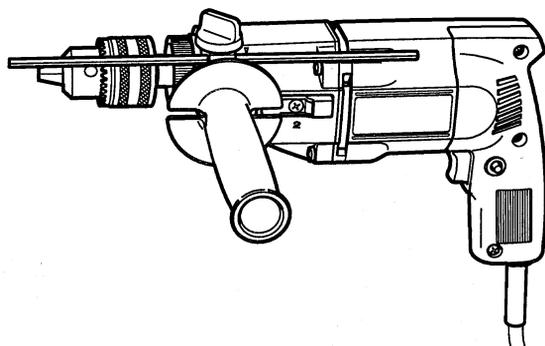


# HITACHI

## 日立牌冲击电钻 IMPACT DRILL

VTP-18 • VTV-18

使用说明书  
Handling instructions

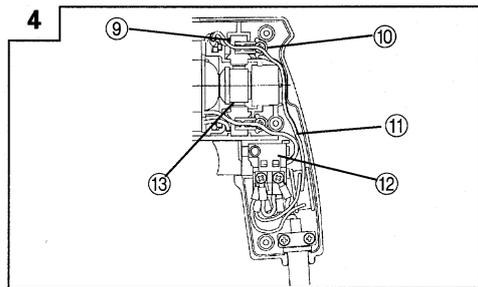
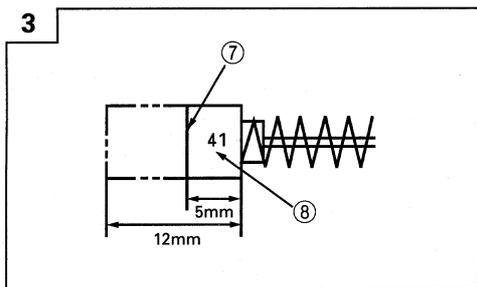
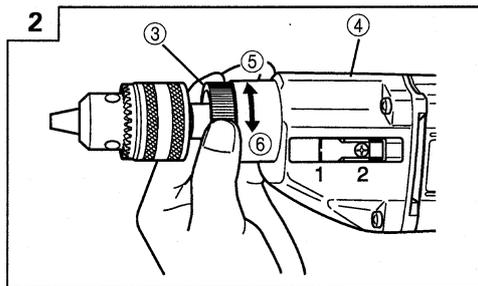
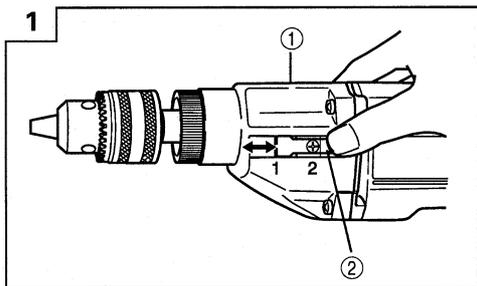


VTP-18



使用前务请详加阅读

Read through carefully and understand these instructions before use.



①	齿轮罩	Gear cover
②	变速锁扣 (按压·滑动)	Shift lock (Push and Slide)
③	变速环	Change ring
④	齿轮罩	Gear cover
⑤	旋钻	Rotation
⑥	旋钻+冲击	Rotation + Impact
⑦	磨损极限	Wear limit
⑧	碳刷号	No. of carbon brush
⑨	刷握	Brush holder
⑩	握板	Holder plate
⑪	内部导线	Internal wiring
⑫	开关	Switch
⑬	碳刷	Carbon brush

# 作业上的一般注意事项

**警告!** 当使用电动工具时, 为了减少造成火灾、电击和人身伤害, 必须时刻遵守基本注意事项, 以及下述操作注意事项。

在操作本机之前, 请通读本说明书, 并予以妥善保管。

## 安全操作注意事项:

1. 工作场所应打扫干净, 清理妥当, 杂乱无章将导致事故。
2. 确保适适的作业环境。电动工具不可任其风吹雨打。不得在潮湿的地方作业。工作场所需保持充分的亮度。请勿在有可能造成火灾或爆炸的地方使用电动工具。
3. 谨防触电事故。应避免身体同大地或接地表面不可让访客触摸电动工具或延伸线缆接触(例如: 管道、散热器、炉灶、冰箱等)
4. 不可让孩童靠近工作场所。与作业无关的访客也必须保持安全距离。
5. 不使用的电动工具应存放于干燥而孩童伸手不可及的高处, 并加锁保管。
6. 不得使劲用力推压。电动工具需按设计条件才能有效而安全地工作, 绝不可勉强。
7. 妥选使用工具。不可用小型工具或附件去干重活。不可用于规定外的作业。举例说, 用圆锯进行伐木打枝或原木锯切作业。
8. 工作时衣服穿戴要合适。不要让松散的衣角和宝石类卷入转动部份。屋外作业时, 最好手戴橡胶手套, 脚穿防滑胶鞋。同时要戴上能够罩笼长发的工作帽。
9. 绝大多数的电动工具作业时, 均需戴安全眼镜。进行粉尘飞扬的切削作业时, 需戴防尘面罩。
10. 连接除尘设备  
如果提供连击除尘和集尘的设备, 请确认是否已经连接好并且使用正常。
11. 不要拿电线提起电动工具, 也不得拉扯电线从电源插座拆除插头。电线需从热源和油液隔开, 并避免与锐利的边缘接触。
12. 作业以安全第一为原则。工件要用夹具或台钳卡紧。这样做, 比用手按压更为可靠, 也能够让双手专心操作。
13. 作业时脚步要站稳, 身体姿势要保持平衡。

14. 工具应维护妥善, 经常保持锋利、清洁才能充分发挥性能, 落实作业安全的要求。应按规定加注润滑脂、更换附件。线缆应定期检查, 如发现损伤应立即委托专业性的服务单位加以修复。延伸电缆如有损伤应予更换。手柄要保持干燥, 并防止沾附油脂类。
15. 不使用时, 维修前以及更换附件(如: 刀具、钻头、锯具等)之前, 都必须拆卸电源插头才行。
16. 开动前务必把调整用键和扳手类拆除下来。这一点与安全有关。应养成习惯, 严格遵守。
17. 谨防误启动。插头一插上电源插座, 指头就不可随便接触电源开关。插接电源之前, 应先确认: 开关是否切断。
18. 屋外延伸线缆的使用。屋外作业时, 必须使用专用的延伸线缆。
19. 保持高度警觉, 充分掌握情况, 以正常的判断力从事作业。疲惫时切不可开动电动工具。
20. 检查损坏部件。在继续使用电动工具之前, 应详细检查各部零件以及防护装置有无损坏, 以便判断具能否正常工作, 能否发挥正常效能。检查转动部份的对准、空转、各零件有无异常, 安装是否妥善以及其它足以给工作带来不良影响的情况。  
如防护以及其它零件损伤了。除非本说明书中已有记载否则应立即委托服务中心进行妥善修理或更换。开关一旦发现缺陷, 应立即委托服务中心加以更换。如开关不能正常地接通或切断, 绝不可使用该电动工具。
21. 警告  
使用非本说明书中的推荐的附件可能有发生人身损害的危险。
22. 本工具必须委托有资格的维修人员进行维修。  
本电动工具满足相关的安全要求。维修必须由专业人员使用纯正配件来进行。否则有可能会给用户造成人身损害。

## 使用冲击电钻时应注意事项

1. 在墙壁、天花板、地板等进行钻孔时，应先确认里面有没有布设动力电缆。
2. 使用锤钻时，应牢牢握住工具的操作柄和侧柄。否则，所产生的反作用力会将孔钻歪。甚至会造成危险。

## 规格

型 式	VTP-18		VTV-18	
电 压 (按地区)*	(110 V, 115 V, 120 V, 127 V, 220 V, 230 V, 240 V) ~			
输入功率*	640 W			
速 档	1	2	1	2
空载转速	1050 转/分	1800 转/分	0-1050 转/分	0-1800 转/分
能力：钢	13mm	8mm	13mm	8mm
混凝土	18mm	10mm	18mm	10mm
重量 (不含线缆)	2.3kg			

\* 当须改变地区时应检查产品上的铭牌。

## 标准附件

- (1) 卡盘扳手 ..... 1
- (2) 测柄总成 ..... 1
- (3) 限深器 ..... 1

标准附件可能不预先通告而径予更改。

## 选购附件 (分开销售)

○ 混凝土用钻头

外 径	长 度	代 号
6.5mm	100mm	931851
8.0	100	931852
9.5	120	931853
10.0	120	931854
12.0	160	971704
13.0	160	931855
14.3	160	931776
16.0	160	971670
18.0	300	950496

选购附件可能不预先通告而径予更改。

## 用 途

- 旋钻加冲击：混凝土、大理石、花岗岩、瓷砖以及其它类似材料的钻孔。
- 旋钻：金属、木材、塑料的钻孔。

## 作 业 之 前

1. 电源：  
确认所使用的电源与工具铭牌上标示的规格是否相符。
2. 电源开关：  
确认电源开关是否切断。若电源开关接通，则插头插入电源插座时电动工具将出其不意地立刻转动，从而招致严重事故。
3. 延伸线缆：  
若作业场所移到离开电源的地点，应使用容量足够、铠装合适的延伸线缆，并且要尽可能地短些。
4. 装配钻头：  
把钻头套入夹盘，用夹盘键加以固定。具体上可将夹盘键插入夹盘上三个孔口，逐一紧固。

## 5. 选择合适的钻头：

- 混凝土或石材：使用选购附件的钻头。
- 金属或塑料：使用通常的金属用钻头。
- 木材的钻孔：使用通常的木工用钻头。  
但钻开 6.5mm 或更小的孔口时，宜使用金属用钻头。

## 6. 高低速换档：

换档前，应先确认电源开关是否置入“切断”位，且电钻是否完全停止转动。换档时，先将变速锁扣压下，再按图 1 上箭头指向推动。

刻在电钻壳体上的“1”为低速，“2”为高速。

## 7. 从冲击 (IMPACT) 变换为旋钻 (ROTATION)： (图 2)

冲击电钻可以转动变换环，从“冲击（冲击加旋钻）”变换为“旋钻（只进行旋钻）”。对混凝土、石材、瓷砖或其它类似材料进行钻孔时，可顺时针方向把变换环转到尽头。这样，电钻就会一面旋钻，一面对材料冲击。

对金属、木材或塑料钻孔时，可反时针方向把变换环转到尽头。这样，就能够和通常的电钻一样，只进行旋钻作业。

**注意：**若加工材料可通过单纯的旋钻进行作业，则不可变换为“冲击”。因为这样做，不仅功率低，而且容易使钻头尖端受到损伤。操作“变换环”时，应确认是否已转到规定位置。

## 8. 紧固侧柄：

扭松侧柄上的旋钮，把侧柄贴附于齿轮罩便于工作的位置。继而侧柄突出部套入于齿轮罩的槽内，用旋钮固定起来。

拆卸侧柄时，可扭松旋钮，然后转动侧柄加以取下。

深度止动器是装到侧柄上的。安装时，可将深度止动器插入侧柄的 U 形槽，按预定钻开的孔深调整其位置，然后扭紧旋钮加以固定。

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# 操作过程

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## 1. 压力：

钻孔作业时，绝不可使劲推压钻头，以加快作业速度。这样做，只会使钻头受损，共降低效率，从而缩短钻头的使用寿命。

## 2. 使用大口径钻头：

钻头的口径越大，手上受到的反力也越大，因而必须注意会不会因反力过大而失去对钻头的控制。为了得到良好的控制，脚步要站稳，并用双手牢靠地握住电钻。同时，钻头与钻面要保持垂直。

## 3. 进行穿孔作业时：

穿孔作业时，常因操作不慎，使电钻突然移动而损坏钻头或电钻主体。因此，必需提高警觉，准备随时放松推力。

## 4. 开关的操作：

### (1) VTP-18：

拉动触发开关，按压锁扣，开关就继续保持接通状态而可以连续地进行作业。切断时，可再度拉动触发开关，释放锁扣。

### (2) VTV-18：

钻头转速可通过触发开关的拉程进行控制。拉程短，转速低；反之，拉程长，转速高。连续作业时，可拉动触发开关，并按下锁扣。切断开关时，可再度拉动触发开关，释放锁扣，使触发开关返回原位。

## 5. 钻孔时应注意事项：

作业时，钻头将处理过热状态。但这样也无妨，切不可用水或油液进行冷却。

## 6. 使用直后应注意事项：

使用直后，钻头仍将继续转动一定时间。这时候，若将电钻放在积满了切屑和灰尘的地方，这些东西很可能被吸入电钻里面，从而造成障碍原因，不可不十分注意。

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# 维护和检查

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## 1. 检查钻头：

继续使用已磨损或受伤的钻头，不仅使工作效率大为降低，同时还会导致电动机过载。因此，钻头必需时常检查，并根据情况需要加以更换。

## 2. 检查安装螺钉：

要经常检查安装螺钉是否紧固妥善。若发现螺钉松了，应立即重新扭紧，否则会导致严重事故。

## 3. 检查碳刷：（图3）

电动机上的碳刷是一种消耗品，其磨耗度一旦超出了“磨耗极限”，电动机将发生故障。因此，磨耗了的碳刷应立即更换新件。此外，碳刷必需常保干净状态，这样才能在刷握里自由滑动。

## 4. 更换碳刷

### ○拆卸：

- (1) 扭松柄罩上的三只螺钉，拆下柄罩。继而拆卸握板的止动螺钉，把固定刷握的握板拆除。
- (2) 将刷握连同碳刷一起提起。这时候，必需十分小心，不可用力拉刷握内的导线。
- (3) 抽出碳刷端子，从刷握拆下碳刷。

### ○重装：

- (1) 把新碳刷放入刷握里，并将碳刷端子连接于新碳刷。
- (2) 按图4所示，把刷握和其它有关零件装回原位。继而压下握板，并以止动螺钉固定起来。
- (3) 把导线放回规定位置。这时候，必需十分注意：不可让导线同电枢或电动机的转动件碰触。
- (4) 放回柄罩。这时候应小心，避免夹住导线。最后，重新扭紧三只螺钉加以固定。

**注意：**若导线被柄罩夹住，或与电枢，电动机转动件接触，则可能遭遇严重的触电事故。因此，电动机的拆卸和重装，必需按照上述步骤，慎重而正确地进行。更换碳刷时，与碳刷更换无关的部分切不可拆解。

## 5. 电动机的维护：

电动机绕线是电动工具的“心脏部”。应仔细检查有无损伤，是否被油液或水沾湿。

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注：为求改进，本手册所载规格可能不预先通告而径予更改。

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## GENERAL OPERATIONAL PRECAUTIONS

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**WARNING!** When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following.

Read all these instructions before operating this product and save these instructions.

For safe operations:

1. Keep work area clean. Cluttered areas and benches invite injuries.
2. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use power tools where there is risk to cause fire or explosion.
3. Guard against electric shock. Avoid body contact with earthed or grounded surfaces. (e.g. pipes, radiators, ranges, refrigerators).
4. Keep children away. Do not let visitors touch the tool or extension cord. All visitors should be kept away from work area.
5. Store idle tools. When not in use, tools should be stored in a dry, high or locked up place, out of reach of children.
6. Do not force the tool. It will do the job better and safer at the rate for which it was intended.
7. Use the right tool. Do not force small tools or attachments to do the job of a heavy duty tool. Do not use tools for purposes not intended; for example, do not use circular saw to cut tree limbs or logs.
8. Dress properly. Do not wear loose clothing or jewellery, they can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protecting hair covering to contain long hair.
9. Use eye protection. Also use face or dust mask if the cutting operation is dusty.
10. Connect dust extraction equipment. If devices are provided for the connection of dust extraction and collection facilities ensure these are connected and properly used.
11. Do not abuse the cord. Never carry the tool by the cord or yank it to disconnect it from the receptacle. Keep the cord away from heat, oil and sharp edges.
12. Secure work. Use clamps or a vise to hold the work. It is safer than using your hand and it frees both hands to operate tool.
13. Do not overreach. Keep proper footing and balance at all times.
14. Maintain tools with care. Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubrication and changing accessories. Inspect tool cords periodically and if damaged, have it repaired by authorized service center. Inspect extension cords periodically and replace, if damaged. Keep handles dry, clean, and free from oil and grease.
15. Disconnect tools. When not in use, before servicing, and when changing accessories such as blades, bits and cutters.
16. Remove adjusting keys and wrenches. Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
17. Avoid unintentional starting. Do not carry a plugged-in tool with a finger on the switch. Ensure switch is off when plugging in.
18. Use outdoor extension leads. When tool is used outdoors, use only extension cords intended for outdoor use.
19. Stay alert. Watch what you are doing. Use common sense. Do not operate tool when you are tired.
20. Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, free running of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated in this handling instructions. Have defective switches replaced by an authorized service center. Do not use the tool if the switch does not turn it on and off.
21. Warning  
The use of any accessory or attachment, other than those recommended in this handling instructions, may present a risk of personal injury.
22. Have your tool repaired by a qualified person. This electric tool is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts. Otherwise this may result in considerable danger to the user.

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## PRECAUTIONS ON USING IMPACT DRILL

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1. Before drilling into a wall, floor or ceiling, thoroughly confirm that no items such as electric cables or conduits are buried inside.
2. Always hold the body handle and side handle of the power tool firmly. Otherwise the counterforce produced may result in inaccurate and even dangerous operation.

## SPECIFICATIONS

Model	VTP-18		VTV-18	
Voltage (by areas)*	(110V, 115V, 120V, 127V, 220V, 230V, 240V) ~			
Power input	640W*			
Speed change	1	2	1	2
No-load speed	1050/min	1800/min	0-1050/min	0-1800/min
Capacity: Steel	13mm	8mm	13mm	8mm
Concrete	18mm	10mm	18mm	10mm
Weight (w/o cord)	2.3 kg			

\*Be sure to check the nameplate on product as it is subject to change by areas.

## STANDARD ACCESSORIES

- (1) Chuck Wrench ..... 1
  - (2) Side Handle ..... 1
  - (3) Depth Stopper ..... 1
- Standard accessories are subject to change without notice.

## OPTIONAL ACCESSORIES (sold separately)

- Drill Bit for concrete

O.D.	Length	Code No.
6.5mm	100mm	931851
8.0	100	931852
9.5	120	931853
10.0	120	931854
12.0	160	971704
13.0	160	931855
14.3	160	931776
16.0	160	971670
18.0	300	950496

Optional accessories are subject to change without notice.

## APPLICATIONS

- By combined action of ROTATION and IMPACT:  
Boring, holes in concrete, marble, granite, tile and similar materials.
- By ROTATION only:  
Boring holes in metals, wood and plastics.

## PRIOR TO OPERATION

1. **Power source**  
Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
2. **Power switch**

Ensure that the power switch is in the OFF position. If the plug is connected to a receptacle while the power switch is in the ON position, the power tool will start operating immediately, which could cause serious injury.

### 3. Extension cord

When the work area is not near a power source. Use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as possible.

### 4. Fitting the Drill Bit:

Fit the drill bit into the chuck and use the chuck wrench to secure it, tightening the chuck by each of the three holes in turn.

### 5. Selecting the appropriate drill bit:

- When boring concrete or stone:  
Use the drill bits specified in the Optional Accessories.
- When boring metal or plastic:  
Use an ordinary metalworking drill bit.
- When boring wood:  
Use an ordinary woodworking drill bit. However, when drilling .6.5mm or smaller holes, use a metalworking drill bit.

### 6. High-speed/Low-speed changeover:

Prior to changing speed, ensure that the switch is in the OFF position, and the drill has come to a complete stop. To change speed, depress the shift lock and slide it in the appropriate direction, as indicated by the arrow in Fig. 1. The numeral "1" engraved in the drill body denotes low speed, the numeral "2" denotes high speed.

### 7. IMPACT to ROTATION changeover: (Fig. 2)

The Impact Drill can be switched from IMPACT (impact plus rotation) to ROTATION (rotation only) by simply turning the change ring. When boring concrete, stone, tile or similar hard materials, turn the change ring fully clockwise when viewed from the drill chuck side. The drill head impacts against the material while continuing to rotate.

When boring metal, wood or plastic, turn the change ring fully counterclockwise. The drill simply rotates as an ordinary electric drill.

### CAUTION

Do not use the Impact Drill in the IMPACT function if the material can be bored by rotation only. Such

action will not only reduce drilling efficiency, but may also damage the drill tip.

When changing over, ensure that the change ring is turned as far as it will go.

#### 8. Fixing the side handle:

Loosen the knob bolt on the side handle, and attach the side handle to the gear cover in a position convenient for drilling.

Match the projecting part of the handle to the groove on the gear cover, and firmly tighten the knob bolt.

To remove the side handle, loosen the knob bolt and rotate the handle.

To attach a depth stopper on the side handle, insert the depth stopper into the U-shaped groove on the side handle, adjust the position of the depth stopper in accordance with the desired depth of the hole, and firmly tighten the knob bolt.

ground chips and dust have accumulated, dust may occasionally be absorbed into the Drill mechanism. Always pay attention to this possibility.

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## MAINTENANCE AND INSPECTION

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### 1. Inspecting the Drill Bit:

Continued use of a worn and/or damaged drill bit will result in reduced drilling efficiency and may seriously overload the drill motor. Inspect the drill bit often and replace it with a new bit as necessary.

### 2. Inspecting the mounting screws:

Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

### 3. Inspecting the carbon brushes (Fig. 3)

The motor employs carbon brushes which are consumable parts. Since excessively worn carbon brushes can result in motor trouble, replace the carbon brushes with new ones having the same carbon brush No. shown in the figure when they become worn to or near the "wear limit". In addition, always keep carbon brushes clean and ensure that they slide freely within the brush holders.

### 4. Replacing carbon brushes:

#### ○ Disassembling:

(1) Loosen the three screws on the handle cover, and remove the handle cover. Remove the holder plates, which keeps the brush holders in place, by removing the stopper screws.

(2) Lift out the brush holders together with the carbon brushes, while being very careful not to forcibly pull the lead wires within the brush holders.

(3) Withdraw the brush terminals, and remove the carbon brushes from the brush holders.

#### ○ Reassembling:

(1) Place new carbon brushes into the brush holders, and connect the brush terminals to the carbon brushes.

(2) Return the brush holders and other parts to their original positions, as illustrated in Fig. 4, press the holder plates into position, and fasten it with the stopper screws.

(3) Place the lead wire in the specified position.

Be very careful not to allow the lead wire to contact the armature or rotating parts of the motor.

(4) Replace the handle cover, while being careful to ensure it does not pinch the lead wire, and secure it firmly with the three screws.

### CAUTION

Should the lead wire be pinched by the handle cover or come in contact with the armature or rotating parts of the motor, a serious danger of electric shock to the operator will be created. Exercise extreme caution in disassembling and reassembling the motor, follow the above procedure exactly.

DO NOT attempt to disassemble any parts other than those necessary to effect replacement of the carbon brushes.

### 5. Maintenance of the motor

The motor unit winding is the very "heart" of the power tool.

Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

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## PRACTICAL HANDLING PROCEDURES

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### 1. Pressure:

Drilling will NOT be accelerated by placing heavy pressure on the drill. Such action will only result in a damaged drill bit, decreased drilling efficiency, and/or shortened service life of the drill.

### 2. Using a large diameter drill bit:

When using the larger diameter drill bit, the larger reactive force is applied on your arm. Be careful not to lose control of the drill because of this reactive force. To maintain firm control, establish a good foothold, hold the drill tightly with both hands, and ensure that the drill is vertical to the material being drilled.

### 3. When drilling completely through the material:

When the drill bit bores completely through the material, careless handling often results in a broken drill bit or damage to the drill body itself due to the sudden movement of the drill.

Always be alert and ready to release the pushing force when penetrating the material.

### 4. Switch operation:

#### (1) VTP-18 :

By pulling the trigger switch and depressing the stopper, the switch is held in the ON position for continuous operation. To turn the drill OFF, pull the trigger switch again and release.

#### (2) VTV-18 :

The rotational speed of the drill bit can be controlled by varying the amount that the trigger switch is pulled. Speed is low when the trigger switch is pulled slightly and increases as the switch is pulled more. Continuous operation may be attained by pulling the trigger switch and depressing the stopper. To turn the switch OFF, pull the trigger switch again to disengage the stopper, and release the trigger switch to its original position.

### 5. Precautions on Boring

The drill bit may become overheated during operation; however, it is sufficiently operable. Do not cool the drill bit in water or oil.

### 6. Caution concerning immediately after use

Immediately after use, while it is still revolving, if the Drill is placed on a location where considerable

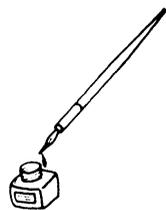
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**NOTE**

Due to HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.

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