

POWER SPIN+™ R3



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*Original Instructions - English

Safety Symbols

In this operator’s manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE indicates information that relates to the protection of property.



This symbol means read the operator’s manual carefully before using the equipment. The operator’s manual contains important information on the safe and proper operation of the equipment.



This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.



This symbol indicates the risk of hands, fingers or other body parts being caught, wrapped or crushed in the drain cleaning cable.



This symbol means always wear leather work gloves when handling or using this equipment to reduce the risk of infections, burns or other serious personal injury.

Specific Safety Information

⚠ WARNING

This section contains important safety information that is specific to this tool.

Read these precautions carefully before using the POWER SPIN+™ R3 Drain Cleaner to reduce the risk of electrical shock or other serious personal injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE!

Keep this manual with machine for use by the operator.

Drain Cleaner Safety

- **Always use safety glasses and leather work gloves in good condition while handling or using.** Use latex or rubber gloves, face shields, protective clothing, respirators or other appropriate protective equipment when chemicals, bacteria or other toxic or infectious substances are suspected to be present to reduce the risk of infections, burns or other serious personal injury. Wear latex gloves or rubber gloves under leather gloves.
 - **Practice good hygiene.** Use hot, soapy water to wash hands and other body parts exposed to drain contents after handling or using drain cleaning equipment. Do not eat or smoke while operating or handling drain cleaning equipment. This will help prevent contamination with toxic or infectious material.
 - **Do not use with a corded drill.** Operating with a corded drill increases the risk of electrical shock.
 - **Do not allow the end of cable to stop turning while the machine is running.** This can overstress the cable and may cause twisting, kinking or breaking of the cable and may result in serious personal injury.
 - **Position machine within 4" (10 cm) of the drain inlet or properly support exposed cable when the distance exceeds 4" (10 cm).** Greater distances can cause control problems leading to twisting, kinking or breaking of the cable. Twisting, kinking or breaking cable may cause striking or crushing injuries.
- **Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts.** Loose clothing, jewelry or hair can be caught in moving parts.
 - **Do not operate this machine if operator or machine is standing in water.** Operating machine while in water increases the risk of electrical shock.
 - **Only use drain cleaner to clean drains of recommended sizes according to these instructions.** Other uses or modifying the drain cleaning machine for other applications may increase the risk of injury.
 - **Read and understand these instructions, the battery drill instructions and the instructions for any other equipment used with this tool before operating.** Failure to follow all instructions may result in property damage and/or serious injury.

The EC Declaration of conformity (890-011-320.10) will accompany this manual as a separate booklet when required.

RIDGID Contact Information

If you have any question concerning this RIDGID® product:

- Please contact Emerson Professional Tools (Shanghai) Co., Ltd.
- Customer Service: 400-820-5695
- Website: www.RIDGID.cn

Description

The RIDGID® POWER SPIN+™ R3 Drain Cleaner is used to clean drain lines such as bathroom and kitchen sinks, bathtub and shower drains. It features RIDGID MAX-CORE® Cable that is positively retained in the drum to prevent cable pullout. It is equipped with the AUTOFEED® mechanism that advances and retrieves the cable with just the pull of a trigger while the drum is rotating. The POWER SPIN+ R3 Drain Cleaner can be operated either manually or driven with a battery powered drill.

The POWER SPIN+ R3 is not recommended for use with toilets.

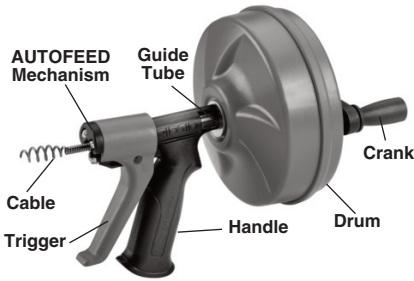


Figure 1 – POWER SPIN+ R3 Drain Cleaner

Specifications

- Pipe Capacity.....¾" to 1½" (20 to 40 mm)
- Drum Capacity25' (7.6 m) of ¼" (6 mm) Diameter MAXCORE® Cable
- Cable.....¼" x 25' (6 mm x 7.6 m) MAXCORE® Cable
- Drum SpeedMaximum 500 RPM
- Weight.....4 lbs. (1,8 kg)
- Dimension.....14" x 9" x 7.3" (356 x 229 x 185 mm)

NOTICE This machine is made to clean drains. If properly used it will not damage a drain that is in good condition and properly designed, constructed and maintained. If the drain is in poor condition, or has not been properly designed, constructed and maintained, the drain cleaning process may not be effective or could cause damage to the drain. The best way to determine the condition of a drain before cleaning is through visual inspection with a camera. Improper use of this drain cleaner can damage the drain cleaner and the drain. This machine may not clear all blockages.

Pre-Operation Inspection

⚠ WARNING



Before each use, inspect your drain cleaner and correct any problems to reduce the risk of serious injury from electric shock, twisted or broken cables, chemical burns, infections and other

causes and prevent drain cleaner damage.

1. Clean any oil, grease or dirt from all equipment, including handles and controls. This aids inspection and helps prevent the machine or control from slipping from your grip. Clean any debris from the cable and drum.
2. Inspect the drain cleaner for the following items:
 - Proper assembly and completeness.
 - Broken, worn, missing, misaligned or binding parts.
 - Smooth and free movement of the trigger and drum.
 - Presence and readability of the warning label (see Figure 2.)
 - Any condition which may prevent safe and normal operation.

If any problems are found, do not use the drain cleaner until the problems have been repaired.
3. Clean any debris from the cable. Inspect cable for wear and damage – Look for:
 - Obvious flats worn into the outside of the cable (cable is made from round wire and profile should be round).
 - Multiple or excessively large kinks (slight kinks up to 15 degrees can be straightened).
 - Space between the cables indicating the cable has been deformed by stretching, kinking or run in REVERSE.
 - Excessive corrosion from storing wet or exposure to drain chemicals.

All of these forms of wear and damage weaken the cable and make cable twisting, kinking or breaking more likely during use. Replace worn and damaged cable before using drain cleaner.
4. If using the POWER SPIN+ R3 Drain Cleaner with a Battery Powered Drill, inspect the drill per its instructions. Make sure that the drill is in good operating condition and the switch controls the drill operation. Confirm that the drill turns at less than 500 rpm.

Machine and Work Area Set-Up

⚠ WARNING



Set up the drain cleaning machine and work area according to these procedures to reduce the risk of injury from electric shock, twisted or broken cables, chemical burns, infections and other causes, and prevent drain cleaner damage.

1. Check for an appropriate work area. Operate in a clear level, stable, dry location free. Do not use the machine while standing in water.
2. Inspect the drain to be cleaned. If possible, determine the access point(s) to the drain, the size(s) and length(s) of the drain, distance to mainlines, the nature of the blockage, presence of drain cleaning chemicals or other chemicals, etc. If chemicals are present in the drain, it is important to understand the specific safety measures required to work around those chemicals. Contact the chemical manufacturer for required information.
3. Confirm POWER SPIN+ R3 Drain Cleaner is appropriate for the job (See *Specifications*). Using incorrect equipment for an application can cause injury or damage the tool.
4. Make sure machine has been properly inspected.
5. If needed, place protective covers in the work area. The drain cleaning process can be messy.
6. If using the POWER SPIN+ R3 by hand, make sure that the crank is present and firmly attached.
7. If using the POWER SPIN+ R3 with a battery powered drill, remove the crank from the back of the drum by pressing the tabs on the either side (See *Figure 2*). Securely attach the chuck of the drill to the drum shaft.

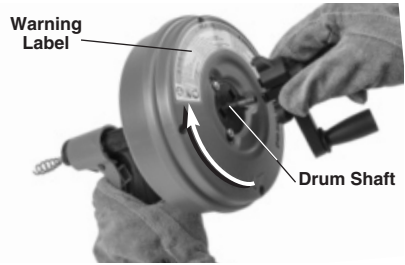


Figure 2 – Removing Crank Handle From POWER SPIN+ R3

8. If needed, take appropriate steps to access the drain to be cleaned.
 - For many drains, the cable can be threaded through the cross hairs in the drain (See *Figure 3*).
 - For a sink with a pop up drain plug: Remove lift rod and drain plug (See *Figure 4*). Be sure to place a container under the clean out or trap to catch any water that may come out.
 - For other sinks a clean out plug or trap may need to be removed (See *Figure 5*.) Be sure to place a container under the clean out or trap to catch any water that may come out.
 - For bathtubs, never try to go through the drain, this will damage the cable. Remove the overflow plate and any mechanism to access the drain (See *Figure 6*).

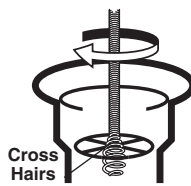


Figure 3

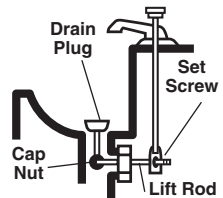


Figure 4

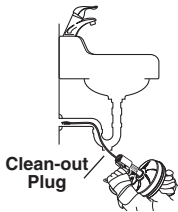


Figure 5

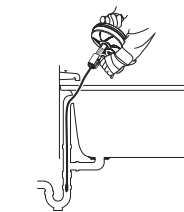


Figure 6

9. Determine if the drain cleaner can be held within 4" of the drain opening. Great-

er distance from the drain access increases the risk of the cable twisting or kinking. If not, the drain opening will need to be extended using similar size pipe and fittings so that the drain cleaner can be placed within 4" of the drain opening (see *Figure 7*). Improper cable support can allow the cable to kink and twist and damage the cable/fixture or injure the operator.



Figure 7 – Example of Extending Drain to Within 4" (100 mm) of Drain Opening

Operating Instructions

⚠ WARNING



Always use safety glasses and leather work gloves in good condition while handling or using. Use latex or rubber gloves, face shields, protective clothing, respirators or other appropriate protective equipment when chemicals, bacteria or other toxic or infectious substances are suspected to be present to reduce the risk of infections, burns or other serious personal injury. Wear latex gloves or rubber gloves under leather gloves.

Follow operating instructions to reduce the risk of injury from twisted or broken cables, cable ends whipping around, machine tipping, chemical burns, infections and other causes.

1. Make sure that machine and work area is properly set-up and that the work area is free of bystanders and other distractions.
2. Assume a proper operating position that will allow
 - Good balance and not require any

overreaching.

- Control of the drain cleaner (and battery powered drill if used).
- Ability to maintain the unit 4" (100 mm) or less from the drain opening.

This will help maintain control of the cable and machine.

3. Pull cable out of the drum and push into drain as far as it will go. At least one foot of cable must be in the drain so that the cable will not come out and whip around when the cable starts turning.
4. If using a battery powered drill, confirm set to low speed (less than 500 rpm) and with dry hands insert the battery, but do not place you finger on the drill switch yet.
5. Make sure that the drain cleaner is within 4" (100 mm) of the drain opening, and maintain that distance throughout the cleaning process. This helps to prevent twisting and kinking of the cable.
6. Place one hand on the drain cleaner handle/trigger and other hand on the drill grip or the crank handle.
7. Turn the drum clockwise (as marked with an arrow on the back of the drum, see *Figure 2*) and squeeze the drain cleaner trigger. Squeezing the trigger advances the cable into the drain.



Cable can also be rapidly advanced/retracted by feeding in and out of the drum by hand.

Figure 8 – In Operating Position

8. Continue to advance the cable until the resistance is encountered. Carefully work the cable through the blockage. Do not force the cable – if the cable stops turning, it is not cleaning the drain. It may be necessary to spin the cable without advancing

it, or advancing the cable very slowly. This will help to break up the blockage.

9. If the cable becomes stuck in the blockage, do not continue turning the drum. Continuing to turn the drum may cause the cable to twist and kink. It may be necessary to back the cable out of the blockage by turning the drum in reverse. In some cases, it may be possible to pull the cable and the blockage out of the drain by hand. If this is done, be careful to not damage the cable. Remove the blockage from the cable, feed cable back into the drum, and continue cleaning the drain as detailed above.
10. Once the blockage is broken up and drain is flowing, if possible, turn the water on to flush any debris down the drain.
11. Continue to clean the rest of the drain. Pay attention to how far the cable has gone. Do not overrun the cable into a larger drain. This can cause the cable to knot up or cause other damage. The cable includes an increase in diameter



that will not feed through the AUTOFEED mechanism – this can be identified by openings in the cable wind just outside the drain cleaner (see Figure 9).

Figure 9 – Openings in Cable Wind at the End of Cable

12. Once the drain has been cleaned, turn the drum counterclockwise while squeezing the drain cleaner trigger to retract the cable. Pay close attention, as the cable may lodge in a blockage while being retracted.
13. Release the trigger and stop turning the drum when end of the cable nears drain opening. Do not pull the cable end from drain while it is rotating. The cable can whip around and could cause serious in-

jury.

14. Several passes through a line are recommended for complete cleaning. If needed, repeat the above procedure.

15. Pull any remaining cable from the line **▲ WARNING** by hand and push the cable into the drum.

Storage

The drain cleaner must be kept dry and indoors or well covered if kept outdoors. Store the machine in a locked area that is out of reach of children and people unfamiliar with drain cleaners. This machine can cause serious injury in the hands of untrained users.

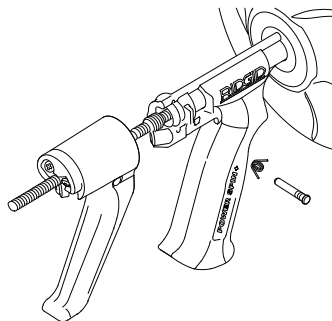
Maintenance Instructions

▲ WARNING

Drill should be removed from drain cleaner before any maintenance is performed.

Cleaning

Cable, drum and AUTOFEED mechanism should be thoroughly flushed with water after every use to prevent the damaging effects of chemicals and sediment. Clean exterior as needed with hot soapy water and/or disinfectants. Drain drum by tipping forward after every use and cleaning



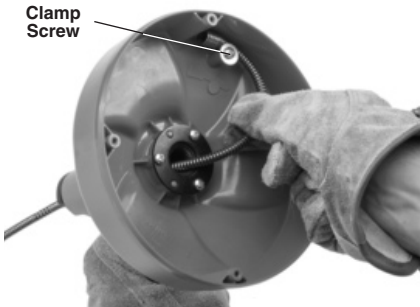
Installing Replacement Cable

1. Press non-headed end of pivot pin through the trigger and remove trigger from handle

(Figure 10). Do not lose the spring.

Figure 10 – Trigger Assembly

2. Pull cable out of drain cleaner until increase



in cable diameter is visible (Figure 9).

3. Remove 4 screws from drum back and remove drum back.
4. Remove cable clamp screw. Remove existing cable (Figure 11).

Figure 11 – Securing Cable End

5. Replacement cable catalog #42163. To make cable installation easier, completely uncoil new cable. Use caution when removing cable from the package. The cable is under tension and could strike the user.
6. Insert about 12 inches of cable through the guide tube into the drum.
7. Place cable end as shown inside drum (see Figure 11), and secure with cable clamp screw.
8. Securely install drum back.
9. Feed cable into drum.
10. Install spring and trigger, securing with the pivot pin (Figure 10).

Troubleshooting

PROBLEM	POSSIBLE REASONS	SOLUTION
Cable kinking or breaking.	Cable is being forced. ----- Cable used in incorrect pipe diameter. ----- Drill motor switched to reverse. ----- Cable exposed to acid. ----- Cable worn out or damaged. ----- Cable not properly supported.	Do Not Force Cable! Let the drain cleaner do the work. ----- Do not use in lines over 1½" (40 mm). ----- Use reverse only if cable gets caught in pipe or to retract cable. ----- Clean cables routinely. ----- If cable is worn or damaged, replace it. ----- Support cable properly, see instructions. ----- Clean AUTOFEED mechanism.
Cable not advancing/retracting.	AUTOFEED mechanism/trigger clogged or jammed.	

POWER SPIN+™ R3 管道疏通机



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安全符号

本操作手册中的和产品上的安全符号与信号词用于传达重要的安全信息。本节内容的目的是提升对这些信号词与符号的理解。



这是安全警示标志。用于警示潜在的人身伤害危险。必须遵守该符号后面的所有安全信息，以避免可能的人身伤亡。

⚠ 危险 “危险”符号表示如果不避免，将会造成死亡或严重伤害的危险情况。

⚠ 警告 “警告”符号表示如果不避免，可能会造成死亡或严重伤害的危险情况。

⚠ 小心 “小心”符号表示如果不避免，可能会造成轻度或中度伤害的危险情况。

📖 注意 “注意”表示有关财产保护的信息。



此符号表示在使用设备之前应仔细阅读操作手册。操作手册中包含关于设备的安全和正确操作的重要信息。



此符号表示存在手、手指或身体的其它部位在管道疏通钢索中被卡住、裹住或压碎的风险。



“注意”表示有关财产保护的信息。



此符号表示在搬运或使用此设备时，应始终戴好皮革工作手套，以降低感染、烧伤或其他严重人身伤害的风险。

特定安全信息

警告

本节内容含有针对此工具的重要安全信息。

在使用 RIDGID 里奇 POWER SPIN+™ R3 管道疏通机之前，请仔细阅读这些预防措施，以减少触电事故或其它严重人身伤害的风险。

**请保存好所有警告和说明信息，
以备将来参考！**

请将本手册随机器一起保存，以便操作人员使用。

管道疏通机的安全

- 在搬运或使用前，请始终使用安全眼镜和皮革工作手套。当怀疑存在化学品、细菌或其他有毒或感染性物质时，请使用乳胶或橡胶手套、面罩、防护服、呼吸器或其他适当的防护设备，以降低感染、烧伤或其他严重人身伤害的风险。在皮革手套里面戴乳胶手套或橡胶手套。
- 保持良好的卫生习惯。搬运或使用管道疏通设备后，请用热肥皂水清洗手和其它接触过疏通排出物的身体部位。操作或搬运管道疏通设备时，请勿进食或吸烟。这有助于防止受到有毒或传染性物质的污染。
- 不要与有绳电钻一起使用。与有绳电钻一起操作会增加触电风险。
- 在机器运行过程中不要让钢索末端停止旋转。否则会过度拉紧钢索，并且可能会造成钢索扭曲、扭结或断裂，从而导致严重人身伤害。
- 应将机器放在距离排水管道入口 4"(10 cm) 的范围以内，或者当距离超过 4"(10 cm) 时，为露出的钢索提供恰当的支承。距离过大会引发控制问题，从而导致钢索扭曲、扭结或断裂。钢索扭曲、扭结或断裂可能会导致人员受到穿透伤或破碎伤。
- 请勿穿着宽松的衣物或佩戴首饰。请勿使您的头发和衣服靠近运动部件。宽松的衣物、首饰或头发易被卷入运动部件中。
- 当操作员或机器立在水中时，请勿操作本机器。在水中时操作本机器会增加触电风险。
- 根据这些说明，仅将管道疏通机用于清洁具有推荐尺寸的排水管道。其他用途或修改管道疏通机用于其他应用可能会增加受伤风险。
- 操作之前，请阅读并理解这些说明、电钻的说明以及与此工具配套使用的任何其他设备的说明。不遵循这些说明可导致财产损失和/或严重的人身伤害。

需要时 EC 符合性声明 (890-011-320.10) 将作为单独的小册子随本手册一起提供。

RIDGID 里奇联系方式

如果您对本 RIDGID® 里奇产品有任何疑问：

– 请联系艾默生精密工具技术 (上海) 有限公司

– 客户服务热线：400-820-5695

– 网址：www.RIDGID.cn

描述

RIDGID® 里奇 POWER SPIN+™ R3 管道疏通机用于疏通浴室和厨房水槽、浴缸和淋浴排水管道等排水管线。它采用 RIDGID MAXCORE® 钢索，可牢固地固定在鼓轮中，以防止钢索被拉出。它配备了 AUTOFEED® 自动进给机构，只需在鼓轮旋转时拉动扳机即可推进和收回钢索。POWER SPIN+ R3 管道疏通机既可以手动操作，也可以使用电钻驱动。



图 1 – POWER SPIN+ R3 管道疏通机

规格

管径	3/4" 至 1 1/2" (20 至 40 mm)
鼓轮容量	25'(7.6 m), MAXCORE® 钢索直径 1/4" (6 mm)
钢索	1/4" × 25' (6 mm × 7.6 m) MAXCORE® 钢索
鼓轮转速	最大 500 RPM
重量	4 lbs. (1.8 kg)
尺寸	14" × 9" × 7.3" (356 × 229 × 185 mm)

注意 本机器设计用于疏通排水管道。若恰当使用，不会对状况良好、合理设计、建造和维护的排水管道造成损坏。如果排水管道状况不佳或者设计、建造和维护不当，则管道疏通过程可能无效或者可能会造成排水管道损坏。疏通前确定排水管道状况的最佳方法是用摄像头进行目视检验。本管道疏通机若使用不当，会损坏疏通机本身和排水管道。本机器可能无法疏通所有的堵塞情况。

所有这些形式的磨损和损坏会削弱钢索并使钢索在使用过程中更容易发生扭曲、扭结或断裂。使用管道疏通机之前，应先更换磨损和损坏的钢索。

- 如果将 POWER SPIN+ R3 管道疏通机与电钻一起使用，请按照说明检验电钻。确保电钻处于良好的操作状态，并且开关控制电钻操作。确认电钻的转速低于 500 rpm。

操作前检查

警告



每次使用之前，应对管道疏通机进行检验，并纠正任何问题，以便降低因触电、钢索扭曲或断裂、化学品灼伤、感染和其它原因造成严重伤害的风险，并防止管道疏通机损坏。

- 清除所有设备（包括手柄和控制装置）上的油脂或脏物。该措施可帮助检验，并且有助于防止机器或控制装置从您的手中滑落。清除钢索和鼓轮上的任何碎屑。
- 检验管道疏通机是否存在以下问题：
 - 组装是否正确以及是否完整。
 - 是否存在零件破损、磨损、遗失、不对中或缠绕的情况。
 - 扳机和鼓轮可顺畅、自由地动作。
 - 有清晰易读的警告标签（参见图 2）。
 - 是否存在任何其它有碍正常和安全运行的情况。
 如发现有任何问题，在问题解决之前请勿使用管道疏通机。
- 清除钢索上的任何碎屑。检验钢索是否有磨损和损坏的情况 – 查找：
 - 钢索外部明显磨扁（钢索由圆形钢丝制成，因此外形应该是圆形的）。
 - 多处扭结或者扭结过大（不超过 15 度的扭结可以矫正）。
 - 钢索之间的间隔表明钢索因拉伸、扭结或反向运行而发生了变形。
 - 因存放在潮湿的环境中或者暴露于排水管道中的化学品而发生了严重腐蚀。

机器和工作区设置

警告



根据这些程序来设置管道疏通机和工作区，从而降低因触电、钢索扭曲或断裂、化学品灼伤、感染和其它原因导致受伤的风险，并防止管道疏通机损坏。

- 检查工作区是否合适。运行于完全水平、稳定、干燥的位置。立在水中时请勿使用机器。
- 检验待疏通的排水管道。如有可能，确定排水管道的入口点、排水管道的管径和长度、与主管线的距离、堵塞的性质、是否存在管道疏通化学品或其它化学品等等。如果排水管道内有化学品，了解在这些化学品周围作业需要采取的具体的安全措施至关重要。联系化学品制造商，获取必要信息。
- 确认 POWER SPIN+ R3 管道疏通机适合要执行的作业（参见规格）。在应用中使用不正确的设备可能会导致人身伤害或损坏工具。
- 确保机器已经过适当检验。
- 如有必要，应在工作区内设置防护罩。管道疏通过程较为脏乱。
- 如果手动使用 POWER SPIN+ R3，请确保有曲柄且牢固连接。
- 如果将 POWER SPIN+ R3 与电钻一起使用，通过按下两侧的卡舌，从鼓轮背面取下曲柄（参见图 2）。将电钻的卡盘连接到鼓轮轴上。

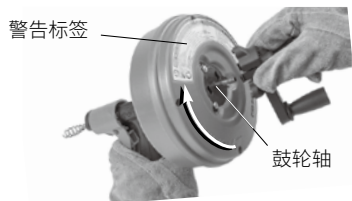
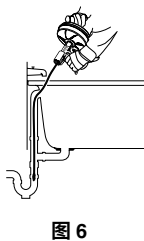
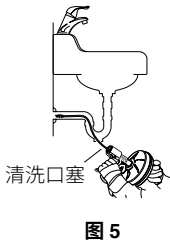
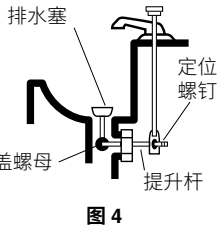
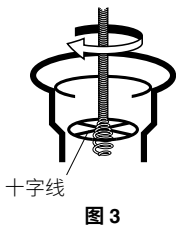


图 2 – 从 POWER SPIN+ R3 上取下曲柄手柄

8. 如果需要, 执行适当的步骤进入要疏通的排水管道。

- 对于许多排水管道, 钢索可以穿过排水管道中的十字线 (参见图 3)。
- 对于带有弹出式排水塞的水槽: 拆下提升杆和排水塞 (参见图 4)。务必在清洗口或疏水阀下方放置一个容器, 以收集可能出来的水。
- 对于其他水槽, 可能需要拆下清洗口塞或疏水阀 (参见图 5)。务必在清洗口或疏水阀下方放置一个容器, 以收集可能出来的水。
- 对于浴缸, 切勿尝试穿过排水管道, 否则会损坏钢索。拆下溢流板和任何机构, 以便进入排水管道 (参见图 6)。



9. 确定管道疏通机是否放在距离排水口 4' 的范围内。与排水管道入口的距离过大会增加钢索扭曲或扭结的风险。如果不是, 将需要使用类似尺寸的管道和接头延长排水口, 以便管道疏通机可以放在距离排水口 4' 的范围内 (参见图 7)。钢索支承不当会使钢索发生扭结和扭曲, 并且会损坏钢索 / 夹具或导致操作员受伤。



图 7 – 将排水管道延长至距离排水口 4' (100 mm) 范围内的示例

操作说明

警告



在搬运或使用, 请始终使用安全眼镜和皮革工作手套。当怀疑存在化学品、细菌或其他有毒或感染性物质时, 请使用乳胶或橡胶手套、面罩、防护服、呼吸器或其他适当的防护设备, 以降低感染、烧伤或其他严重人身伤害的风险。在皮革手套里面戴乳胶手套或橡胶手套。

请遵循操作说明, 从而降低因钢索扭曲或断裂、钢索末端四处甩动、机器倾翻、化学品灼伤、感染和其它原因造成人身伤害的风险。

1. 确保机器和工作区设置合理, 工作区内没有旁观者和其它分散注意力的事物。
2. 假设适当的操作位置满足以下条件
 - 良好的平衡, 不需要任何延伸。
 - 控制管道疏通机 (和电钻, 如果使用)。
 - 能够将装置保持在距离排水口 4' (100 mm) 或更少的位置。
 此位置将有助于维持对钢索和机器的控制。
3. 将钢索从鼓轮中拉出并尽可能地推入排水管道。必须至少有一英尺钢索在排水管道中, 以便在钢索开始转动时钢索不会脱出并甩动。
4. 如果使用电钻, 请确认设置为低速 (低于 500 rpm) 并用干手插入电池, 但不要将手指放在电钻开关上。
5. 确保管道疏通机位于距离排水口 4' (100 mm) 的范围内, 并在整个疏通过程中保持该距离。这有助于防止钢索扭曲和扭结。

- 将一只手放在管道疏通机扳机上，另一只手放在电钻柄或曲柄手柄上。
- 顺时针转动鼓轮（如鼓轮背面的箭头所示，参见图 2）并扣动管道疏通机扳机。扣动扳机将钢索推入排水管道。

用手也可以通过送进和退出鼓轮来快速推进 / 缩回钢索。



图 8 - 在操作位置

- 继续推进钢索，直到遇到阻力。小心地使钢索穿过堵塞物，不要强行推进钢索，如果钢索停止转动，则无法疏通管道，可能需要松开扳机，原地旋转钢索而不使其前进，或者非常缓慢地推进钢索。这有助于使堵塞物破碎。
- 如果钢索卡在堵塞物中，请勿继续转动鼓轮。继续转动鼓轮可能会导致钢索扭曲和扭结。可能需要通过反向转动鼓轮使钢索从堵塞物中退出。在某些情况下，可以用手将钢索和堵塞物从排水管道中拉出。如果这样做，请小心不要损坏钢索。如上所述，从钢索上取下堵塞物，将钢索退回鼓轮，然后继续疏通排水管道。
- 堵塞物被破碎而且排水管道畅通之后，如果可能的话，打开水以冲洗排水管道中的碎屑。
- 继续疏通剩余的排水管道。注意钢索已经伸出多长。不要过度伸出钢索进入更大的排水管道。这可能会导致钢索打结或造成其他损坏。钢索包括一个无法通过 AUTOFEED 自动进给机构进给的直径增加部分 - 这可以通过管道疏通机外部的钢索绕线中的开口识别（参见图 9）。



图 9 - 钢索末端钢索绕线中的开口

- 排水管道疏通后，逆时针转动鼓轮，同时扣动管道疏通机的扳机以缩回钢索。请密切注意，因为钢索可能会在缩回时卡在堵塞物中。
- 当钢索末端接近排水口时，松开扳机并停止转动鼓轮。旋转时，请勿将钢索末端从排水口中拉出。钢索可能会四处甩动并导致严重伤害。
- 建议对一根管线进行多次操作以便彻底疏通。如果需要，请重复上述步骤。
- 用手将所有剩余的钢索从管线中拉出，然后将钢索推入鼓轮。

存放

警告 本机器设计用于疏通排水管道。若恰当地使用，不会对状况良好、合理设计、建造和维护的排水管道造成损坏。如果排水管道状况不佳或者设计、建造和维护不当，则管道疏通过程可能无效或者可能会造成排水管道损坏。疏通前确定排水管道状况的最佳方法是用摄像头进行目视检验。本管道疏通机若使用不当，会损坏疏通机本身和排水管道。本机器可能无法疏通所有的堵塞情况。

维护说明

警告

在进行任何维护之前，应从管道疏通机上拆下电钻。

清洁

钢索、鼓轮和 AUTOFEED 自动进给机构应在每次使用后用水彻底冲洗，以防止化学品和沉淀物的破坏作用。根据需要，外部应使用热肥皂水和 / 或消毒剂清洁。每次使用和清洁后都要向前倾倒排出鼓轮中的水。

安装替换钢索

- 按下枢轴销的无头端使其穿过扳机，从手柄上拆下扳机（图 10）。不要弄丢弹簧！

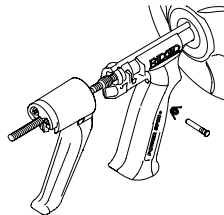


图 10 - 扳机组件

- 将钢索从管道疏通机中拉出，直到看到钢索直径增加(图9)。
- 从鼓轮后盖上取下4个螺钉，然后拆下鼓轮后盖。
- 拆下钢索夹紧螺钉。拆下现有的钢索(图11)。
- 替换钢索产品订货号 42163。为了使钢索安装更容易，完全展开新钢索。从包装中取出钢索时要小心。钢索处于张紧状态，可能会撞击用户。
- 将约 12 英寸的钢索穿导管插入鼓轮。
- 如图所示，将钢索末端放在鼓轮内(参见图11)，并用钢索夹紧螺钉固定。
- 牢固安装鼓轮后盖。
- 将钢索送入鼓轮。
- 安装弹簧和扳机，用枢轴销固定(图10)。



图 11 - 固定钢索末端

扫描下方二维码，观看钢索更换视频、产品操作视频，获取电子版说明书



故障排除

问题	可能的原因	可能的原因
钢索扭结或断裂	钢索被强制使用	请勿强制使用钢索！让管道疏通机执行作业
	将钢索用在了不合适的管径中	请勿用于超过 1½"(40 mm) 的管线
	电钻电机切换到反向	仅当钢索卡在管道中或缩回钢索时使用反向模式
	钢索暴露于酸	定期清洁钢索
	钢索磨损或损坏	如果钢索已磨损或损坏，则更换钢索
	钢索未受到正确支承	正确支承钢索，参见说明
钢索不前进 / 缩回	AUTOFEED 自动进给机构 / 扳机堵塞或卡住	清洁 AUTOFEED 自动进给机构

RIDGID® 工具终身保证

保证内容

艾默生精密工具技术（上海）有限公司对其产品的生产工艺及物料质量提供保证，但因非生产工艺或物料引起的任何问题除外。

保证时效及范围

艾默生精密工具技术（上海）有限公司仅对在中国大陆购买并使用的非特殊工具产品提供终身保证。

艾默生精密工具技术（上海）有限公司对在中国大陆购买并使用的特殊工具产品提供有限保证，具体为：

- 电动 / 机动工具：其电机或发动机保证期限为半年；
- 电子类工具（例如内窥镜系列、管线定位仪及信号发生器、测量 / 检查仪器仪表等工具），其保证期限为一年；
- 全自动智能电动工具（例如电动压接工具等），其保证期限为一年；
- 上述产品保证期限均自购买之日起开始计算（以经销商开具的原始有效销售发票为准）。

非保证范围

由于不遵守操作说明、不正确使用、异常的环境条件、不适当的操作条件、使用非原装附件、部件或零件所造成的损坏，以及易损件（诸如板牙、刀片、模头、钢索、疏通头、液压密封圈、液压油和充电电池等）等情况不在本保证之内。艾默生精密工具技术（上海）有限公司不承担任何非产品缺陷所致损失。

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经艾默生精密工具技术（上海）有限公司专业鉴定，用户就保证范围内产品享有维修服务：

- 在保证期内，对属于物料瑕疵或生产工艺缺陷的产品予以免费维修；如果产品在保证期内经过三次维修后仍无法正常使用，则予以更换相同或同类产品（同类产品如有价差，多退少补）。
- 对因非物料瑕疵或生产工艺缺陷的产品予以收费维修。
- 所有超出保证期的产品均为收费维修。

获得维修服务的方法

需自费将完整的产品送至艾默生精密工具技术（上海）有限公司当地代理商或者艾默生精密工具技术（上海）有限公司所核定的服务中心（管钳及其它手工具应送至购买的地点），并出示原始发票以供核对（收费维修的产品除外）。

法律保障

用户有权得到中国大陆相应的明确的法律保护。

无其它的保证

除本保证外，任何员工、代理商、经销商或其他任何人员均无权代表艾默生精密工具技术（上海）有限公司改变本保证或提供其它保证。

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ISO 9001:2000 Orange, Virginia



质量管理体系

Ridge Tool 公司如下所列的生产制造工厂均通过了官方注册机构 BS EN ISO9001-2015 质量管理体系标准的审查。

生产制造厂

Elyria, Ohio
Erie, Pennsylvania
Orange, Virginia
Shanghai, China

官方注册机构

BSI
BSI
BVQI
BSI