

**REX**

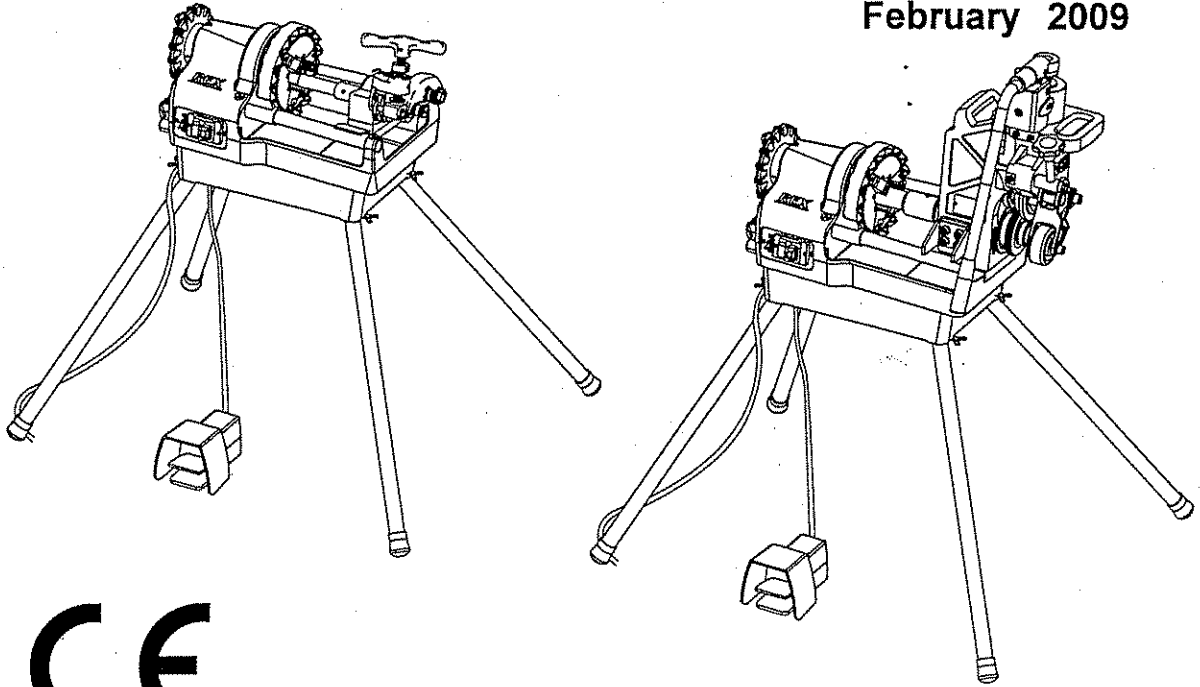
GROOVING MACHINE

50/60Hz

# NPG150M/NPG150H

## OPERATION MANUAL

February 2009



CE



Be sure to read this  
Operation Manual before  
using the machine.

- Note -

- Be sure to hand this operation manual to the user.
- To ensure safe and efficient use, read the manual thoroughly before using the machine.
- Be sure to keep the manual where the operator can refer to it whenever necessary.

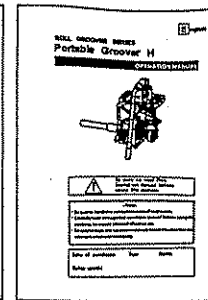
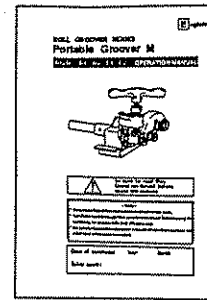
Date of purchase:

Year

Month

Distributor:

- To prevent fire and electric shock or other injury, be sure to observe the Safety Considerations on pages 1 - 2.
- Before use, read the entire Operation Manual carefully and follow the instructions given.
- Do not use the machine for purposes other than those noted in this Operation Manual.
- Refer to the respective manuals for 'Portable Groover M' or 'Portable Groover H' regarding the operation and specific precautions you need to be aware of when using these machines.



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Definitions of **⚠ WARNING** and **⚠ CAUTION**

In this operation manual, warnings are divided into **⚠ WARNING** and **⚠ CAUTION**.  
**⚠ WARNING** : indicates actions which could possibly result in death or severe injury to the user if the machine is used incorrectly.

**⚠ CAUTION** : indicates actions which could possibly result in injury to the user, or physical damage, if the machine is used incorrectly.

Even items described as **⚠ CAUTION** could have serious results under certain conditions. Be sure to observe these warnings carefully as they greatly affect safety.

- If this operation manual is lost or damaged, promptly order a replacement from your distributor or our sales department.
- Parts and specifications are subject to change without prior notice, due to improvements in quality, performance or safety standards. In such cases, the contents, photographs, illustrations, etc. in this manual may be different to the product you have purchased.

## Safety Considerations

### ▲ WARNING

- 1) Ensure you use the correct voltage.
  - Be sure to use the voltage indicated on the name plate of the main unit or in the operation manual. If the voltage is different from the voltage indicated, overheating, smoke or fire may occur.
- 2) Check the switch is OFF before inserting the plug into the power supply socket.
  - If the plug is inserted into the power supply when the switch is ON, the machine may start operating abruptly and is liable to cause accidents. Be sure to check the switch is OFF.
- 3) Be sure to avoid electric shock.
  - Do not touch the plug with wet hands.
  - Do not use the machine in rain or in places where moisture can easily get into the machine.
  - Be sure to ground the machine to avoid electric shock.
- 4) Take notice of conditions at the work site.
  - Do not use the machine in rain, humid or damp places, or places where moisture can easily get into the machine. Humidity will lower insulation of the motor and cause electric shock.
  - Do not use close to flammable fluids or gases, such as gasoline and thinner. Fire or explosion might occur.
- 5) Use designated accessories and attachments.
  - Do not use accessories and attachments other than those designated in the operation manual or our catalogues. Accidents or injuries might result.
- 6) In the following cases, turn the main unit OFF and pull the plug out of the power supply socket.
  - When the machine is not in use or parts are changed, repaired, cleaned or inspected.
  - When accessories are changed.
  - When hazards are expected (including electric power failure).  
When the plug is inserted, the main unit may start operation unexpectedly, causing accidents.
- 7) If any abnormality is noticed, stop operation immediately.
  - If the machine does not operate smoothly, or abnormalities such as unusual odors, vibration or noise are detected, stop operating the machine immediately.
  - Check symptoms against the items in the section entitled, "Troubleshooting" at the end of this manual and observe the corresponding instructions. If the machine is used continuously, overheating, smoke or fire might occur, causing accident or injury.
  - If overheating or smoke from the unit occurs, do not attempt an overhaul yourself but ask for an inspection and repair.
- 8) Keep the work site clean.
  - Ensure you keep the work table and the work site in good order and well lit.
  - A cluttered site and work table are liable to cause accidents.
- 9) Do not let unauthorised personnel near the machine.
  - Do not let anyone other than authorised personnel touch the main unit or the power cord, or operate the machine.
  - Do not let anyone other than authorised personnel enter the work site, especially children. Injuries might occur.
- 10) Do not use the machine with excessive force.
  - To ensure safe and efficient operation, use within the capacity of the main unit. Applying force may not only cause damage to the product but could also result in accident or injury.
  - Do not use the machine in any way that could cause the motor to lock, or cause smoke or fire.
- 11) Use the machine only for its designated purpose.
  - This machine is designed specifically to be used for REX' Portable Groover M(RG-R0) and the Portable Groover H(RG-RH).
  - Do not use the machine on pipes not specified in this manual.
    - \* Use the machine only with the pipes described in the manuals for Grooving Machine NPG150M / NPG150H.  
Be sure to follow the operating instructions in these manuals carefully.
  - Using the machine for any purpose other than grooving pipes, such as fastening the pipe to a joint etc. will not only damage the machine and/or motor but could also lead to accident or injury.

# Safety Considerations

## ▲ WARNING

- 12) Wear neat clothing.
  - Do not wear neck ties, clothes with open sleeves, loose clothing, accessories such as necklaces, etc. Do up buttons and zippers which could get caught in the rotating parts and result in serious accident or injury.
  - When working outdoors, it is recommended that you wear rubber gloves and non-slip shoes. Slippery gloves and shoes are liable to cause injuries.
  - Do not wear scarves and cover long hair with caps or hair nets to prevent them getting caught in rotating parts.
  - Wear safety caps, safety shoes, etc. according to the working environment.
- 13) Do not work in an unnatural posture.
  - Keep a firm footing and balance to avoid falling over and injuring yourself.
- 14) Remove tools such as wrenches.
  - Before turning the switch ON, check that tools used for inspection and adjustment have been removed. If you use the machine when tools are left inside it, accidents and injuries may occur.
- 15) Operate the unit with great care.
  - Always work with great attention to how you handle and operate the machine and the surrounding conditions. Carelessness may result in accident or injury.
  - Do not operate the machine when concentration is lowered such as when tired, after drinking alcohol, when sick, affected by medicines, etc.
- 16) Do not handle the power cord carelessly.
  - Do not carry the product by the cord, or pull the plug out of the socket with the cord.
  - Do not place the cord near heated objects, fats & oils, cutters and objects with sharp edges.
  - Take care not to tread on the cord, pull the cord or apply unnecessary force resulting in damage to the cord. Electric shock or short-circuit may occur, causing fire.
- 17) Perform careful maintenance daily.
  - When changing accessories and parts, follow the instruction manual. Periodically inspect the power supply cord and plug. If damaged, ask your distributor or our sales department for repairs.
  - If an extension cord is used, inspect the cord periodically and, if damaged, replace it.
  - If extension cords are used outdoors, use extension cords designed for outdoor use to prevent electric shock, short-circuit or fire.
  - Keep parts used for gripping dry and clean, and free of oil and grease. If your hands slip, you may be injured.
- 18) Check for damaged parts.
  - Before using the machine, carefully check for damage to the protective cover and other parts, and check both normal operation and specified functions.
  - Check for any abnormalities such as in adjustment of movable parts, tightening, damage to and installation of parts and all parts affecting operation.
  - Do not use machines with a damaged power cord or plug. Doing so may cause electric shock or a short, circuit leading to fire.
  - Do not use machines if the stop and start switches do not work properly.
  - In replacing or repairing a broken protective cover and other parts, follow the operation manual. If no instructions are specified in the operation manual, ask your distributor or our sales department for repairs.
- 19) Store carefully when the machine is not in use.
  - Store in a dry place away from children and locked with a key.
- 20) For overhaul and repair of the machine, ask an appointed REX agent.
  - Our products comply with corresponding safety standards. Do not remodel.
  - Be sure to ask your distributor or our sales department for any repairs. If repairs are carried out by unskilled or unqualified personnel, the performance of the unit will be adversely affected and may result in accident or injury.

## Main parts, Specifications, Standard Accessories, Optional Accessories

### Main parts

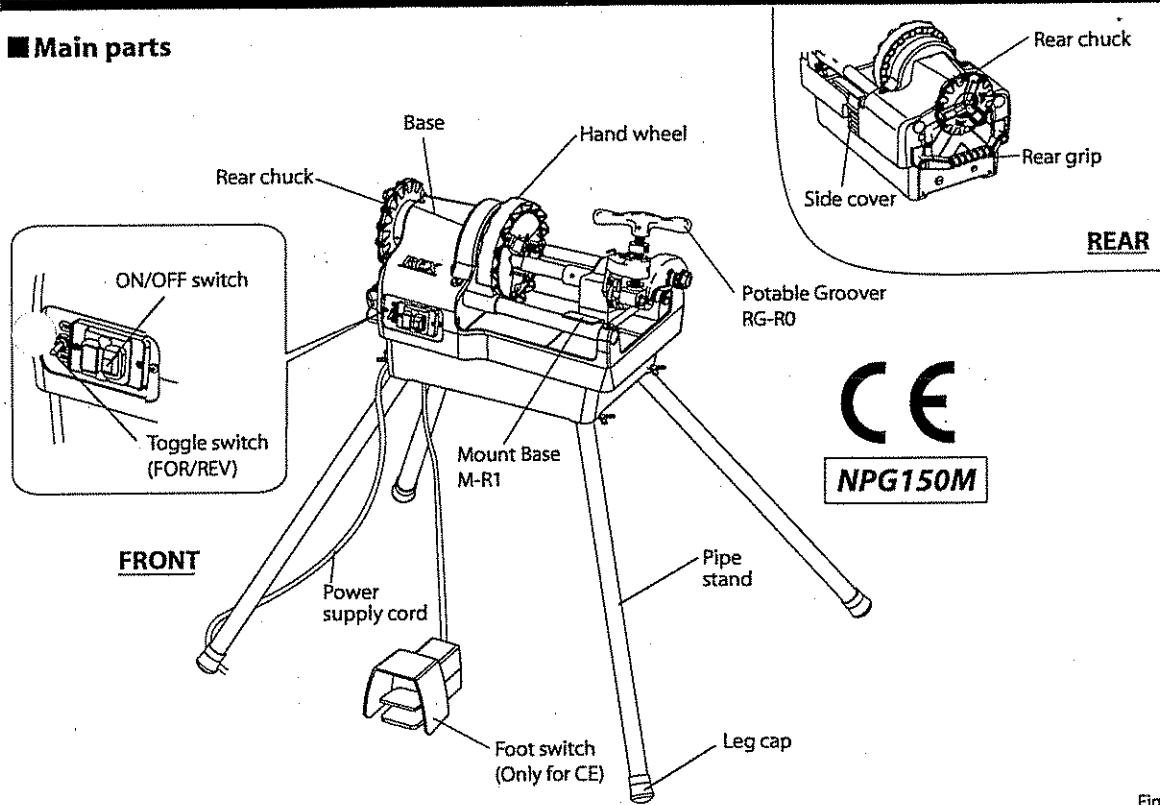


Fig. 1

### Specifications, Standard Accessories, Optional Accessories

Model	NPG150M	
Working Capacity	Schedule10 Steel pipe	1" - 6" (25A - 150A)
	Schedule40 Steel pipe	1" - 3" (25A - 80A)
Standard	Schedule10 Steel pipe	2" - 6" (50A - 150A)
	Schedule40 Steel pipe	2" - 3" (50A - 80A)
Power supply	110 - 120V, 220 - 230V	
Motor	Single phase 700W series motor	
Rotation speed	39 r.p.m. (unloaded)	
Net weight (kg)	38kg *Without RG-R0 and M-R1	
Dimensions	610mm (L) X 344mm (W) X 372mm (H) *Without RG-R0 and M-R1	
Chuck type	K-type chuck • S-type chuck jaw insert	
Standard accessories	<ul style="list-style-type: none"> <li>• Portable Groover RG-R0</li> <li>• Connecting shaft</li> <li>• Hexagonal socket head cap screw (M8×25)</li> <li>• Spring washer (8)</li> <li>• Hexagonal keys (3, 4, 5, 6mm)</li> <li>• Grease</li> <li>• Tool box</li> <li>• Mount base M-R1 (for N/P/R/NP/NR50A)</li> <li>• Carbon brushes (spare)</li> <li>• Pipe stand and Leg cap</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>1</li> <li>4</li> <li>4</li> <li>4</li> <li>1</li> <li>1</li> <li>1</li> <li>1set</li> <li>4</li> </ul>
Optional accessories	<ul style="list-style-type: none"> <li>Pipe support (25A - 150A)</li> <li>25A Roller set (SGP/Schedule40)</li> <li>Gauge (25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A)</li> </ul>	

Table 1

# Main parts, Specifications, Standard Accessories, Optional Accessories

## ■ Main parts

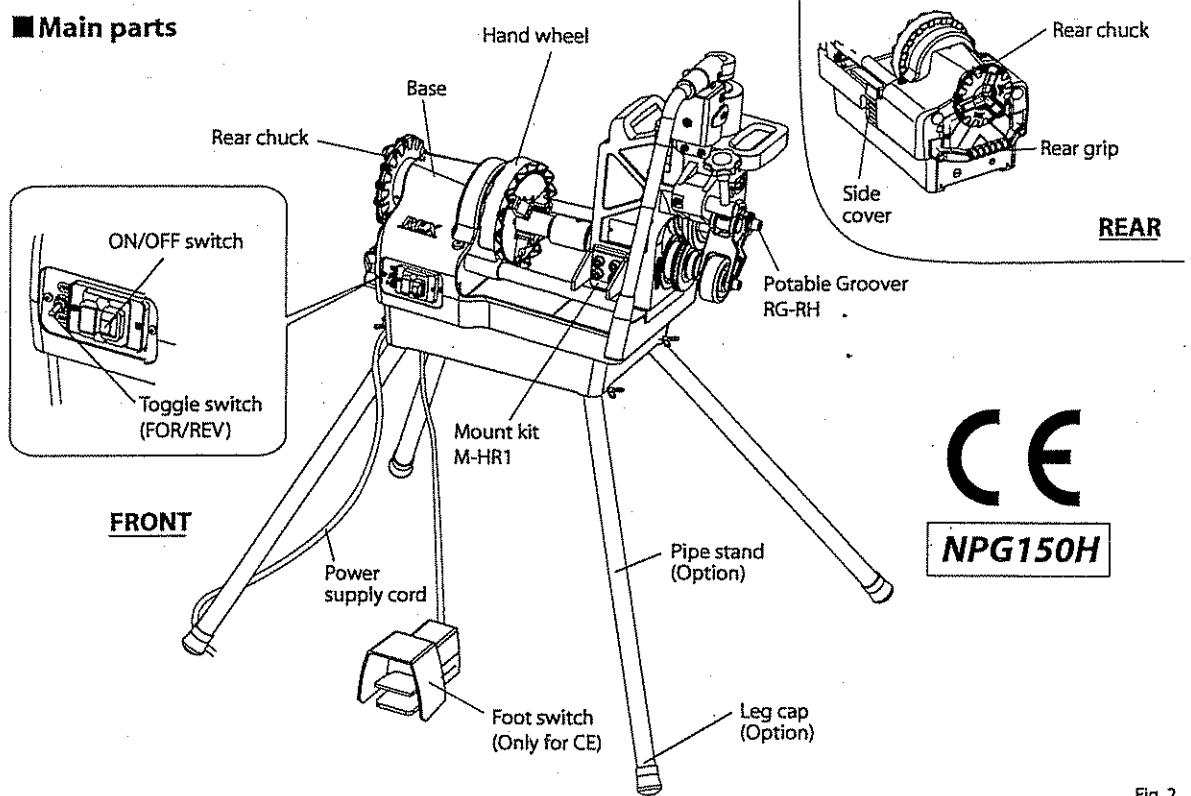


Fig. 2

## ■ Specifications, Standard Accessories, Optional Accessories

Model	NPG150M	
Working Capacity	Schedule10 Steel pipe	1" - 16" (25A - 400A)
	Schedule40 Steel pipe	1" - 12" (25A - 300A)
Standard	Schedule10 Steel pipe	2" - 6" (50A - 150A)
	Schedule40 Steel pipe	2" - 6" (50A - 150A)
Power supply	110 - 120V, 220 - 230V	
Motor	Single phase 700W series motor	
Rotation speed	39 r.p.m. (unloaded)	
Net weight (kg)	38kg *Without the RG-RH and M-HR1	
Dimensions	610mm (L) X 344mm (W) X 372mm (H) *Without the RG-RH	
Chuck type	K-type chuck · S-type chuck jaw insert	
Standard accessories	<ul style="list-style-type: none"> <li>• Portable Groover RG-RH</li> <li>• Connecting shaft</li> <li>• T wrench (5mm)</li> <li>• Hexagonal socket head cap screw (M10×25)</li> <li>• Spring washer (8)</li> <li>• Spanner (30mm)</li> <li>• Hexagonal keys (8mm)</li> <li>• Mount kit M-HR1 (for N/P/R/NP/NR50A)</li> <li>• Hexagonal keys (3, 4, 5, 6mm)</li> <li>• Carbon brushes (spare)</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>1</li> <li>1</li> <li>8</li> <li>8</li> <li>1</li> <li>1</li> <li>1set</li> <li>4</li> <li>1set</li> </ul>
Optional accessories	Pipe stand and Leg cap Pipe support 1" - 6" (25A - 150A), 8" - 12" (200A - 300A) Roller set (SGP/Schedule10 - 40: 1" - 1 1/2", 2" - 6", 8" - 12", 10" - 12", 14" - 16") (Thin wall stainless steel: 1" - 1 1/2", 2" - 3", 4" - 6") Main shaft (for 1" - 1 1/2" Roller set) Gauge (25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A) Spacer 1" - 6" (25A - 150A), 8" - 12" (200A - 300A)	

Table 2

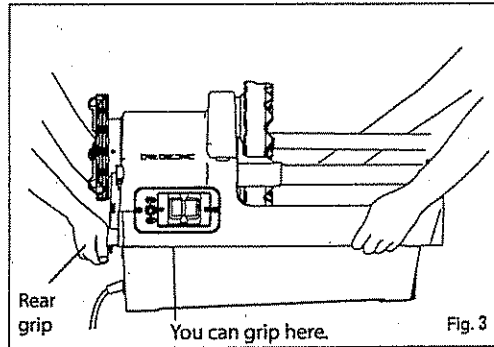
## (Transportation / Setting up / Power supply) Getting Ready

### 1. Transportation (Fig. 3)

When transporting or moving the machine, be sure to hold it firmly using the hand positions shown in Fig. 3.

#### ⚠ WARNING

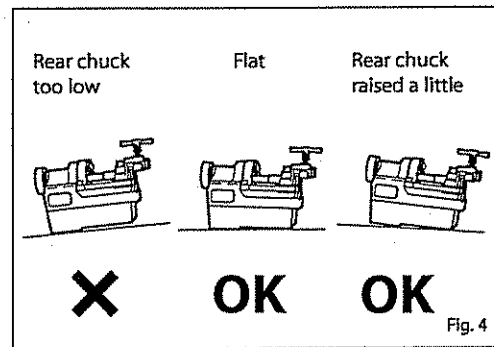
Only transport or move the machine after you have removed the RG-R0 or RG-RH, etc.  
Failure to do so may result in accident or injury.



### 2. Setting up (Fig. 4)

When setting up the machine, the legs should be adjusted with the rear chuck higher than the hammer chuck.

(Even when using on a flat surface be sure to set up the machine with the rear chuck raised a little)

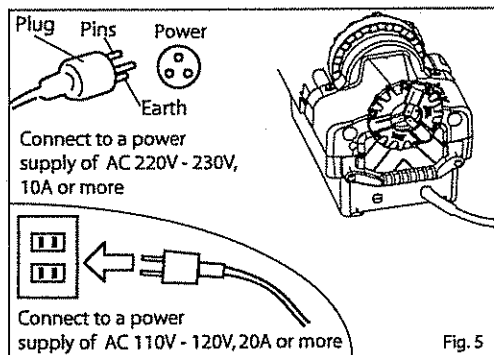


### 3. Power supply (Fig. 5)

- Before using the unit, check the voltage on the nameplate. Use only an AC power supply. If an extension cord is used, it must be as short as possible and of sufficient capacity for the power supplied (at least 2mm<sup>2</sup> cable, 20A for 110 - 120V and 10A for 220 - 230V).

#### ⚠ WARNING

- Before connecting the plug to the socket, check that the machine switch is turned OFF to prevent abrupt movements that could lead to accident or injury.
- When you use a 110 - 120V power supply, ensure it is earthed or you may get an electric shock. If the power socket is already earthed, first remove the supplied adapter with the earth.



## Optional Accessories

Refer to the Portable Groover M or Portable Groover H operation manual for how to attach and operate the groover.

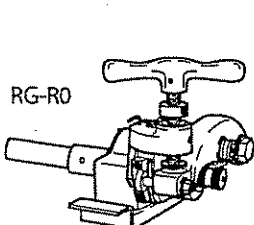


Fig. 6

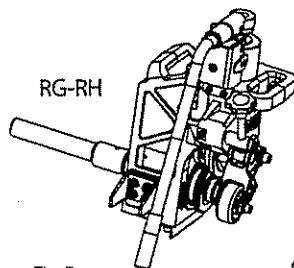


Fig. 7

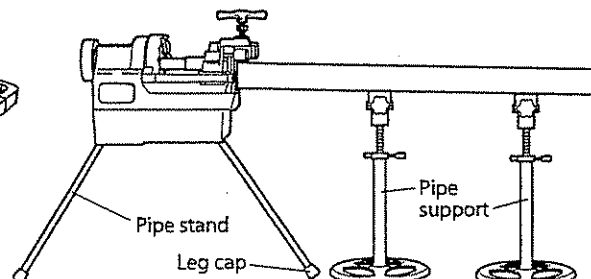


Fig. 8

# Getting Ready (Checks before starting / CE Compliant Switch)

## 4. Checks before starting (Fig. 9)

### ⚠ WARNING

Carry out the following checks before starting to groove pipes. Should any problems arise, refer to "Troubleshooting" at the end of this manual and follow the appropriate instructions. Continuing to use the machine when a problem has arisen can lead to accident or injury.

1. Turn on the machine to set the main shaft in motion.
  - Check there are no abnormal sounds or odours coming from the motor.
  - Attach the RG-R0 and RG-RH according to the instructions in their respective operation manuals.
  - Check the pipe you installed does not vibrate abnormally. If it does, install it again.
2. Allow the machine to rotate without any load for several minutes.
  - Check the motor does not become abnormally hot, etc.
3. Turn the machine off and allow it to stop rotating.

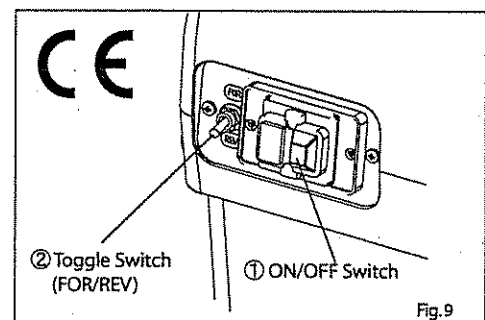
### ● CE Compliant Switch

#### Using the ON/OFF switch (Fig. 9-①)

Pressing the ON/OFF buttons turns the machine On and Off. The Off button will stop the machine.

#### Warning

- 1) The ON/OFF switch is electromagnetic. Therefore, if the switch is turned on and the voltage drops significantly below the voltage shown on the nameplate, the switch coil (relay) cannot adequately maintain the current, meaning that the main shaft will neither rotate nor perform properly.
- 2) The machine will not start rotating unless both the On button and the foot switch have been engaged. However, once turned on, it is not necessary to keep pressing the On button each time.
- 3) The Off button is normally used only to turn the machine off at the end of a work session. However, it should be used in the case of an EMERGENCY, where the machine must be stopped immediately. In this case, it is necessary to press the On button again to restart the machine once circumstances allow.



#### Using the Toggle (FOR/REV) switch (Fig. 9-②)

If the toggle switch is in the FOR position, the machine it will rotate in the normal direction. In the REV position, it rotates in the opposite direction. Keep in the FOR position for grooving.

#### Warning

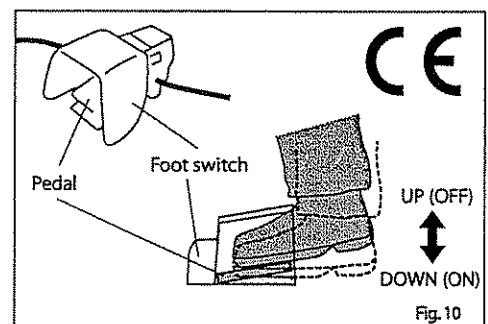
Before changing the toggle switch, ensure that the machine has come to a complete standstill. Failure to do so could result in damage to the motor etc., or accident or injury.

#### Using the Foot switch (Fig. 10)

To comply with EU regulations the unit incorporates a foot switch. The foot switch has a mechanism by which pressing down on the pedal turns the current on and releasing the pedal turns it off and stops the machine.

#### Warning

- 1) Place the foot switch in a position where it is easy to use, close to where you are working.
- 2) Be sure to switch Off if there is a sudden power cut. If you leave the machine on, then once the power comes back on the machine will suddenly start up, which could lead to accident or injury.
- 3) The machine will not start rotating unless both the On button and the foot switch have been engaged. However, once turned on, it is not necessary to keep pressing the On button each time.





## Maintenance & Care

### ⚠ WARNING

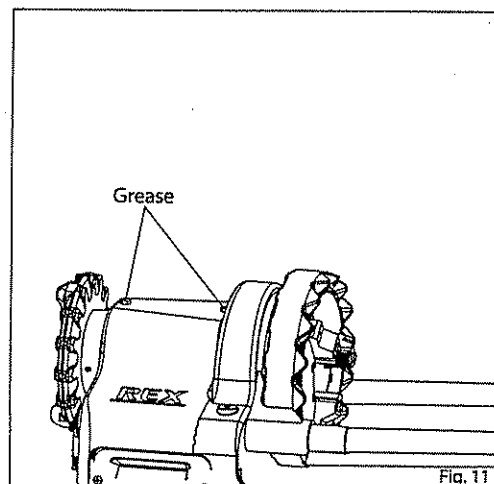
- Before inspecting or performing maintenance on the unit, always set the switch to the OFF position and remove the plug from the power outlet.  
If the unit is left plugged in, it may begin operating unexpectedly, resulting in injury.
- If you discover any problems during inspection or maintenance, look up the symptoms in the "Troubleshooting" table and take the appropriate action as noted in the table.  
Continued use of the unit without correcting the problem may result in heat, smoke or fire and lead to accident or injury.

### 1. Grease (Fig. 11)

- Greasing the main shaft bearing.  
Be sure to apply grease to the main shafts and bearings about once a the 3 months. (Fig. 11)



- Do not put oil in the tank.



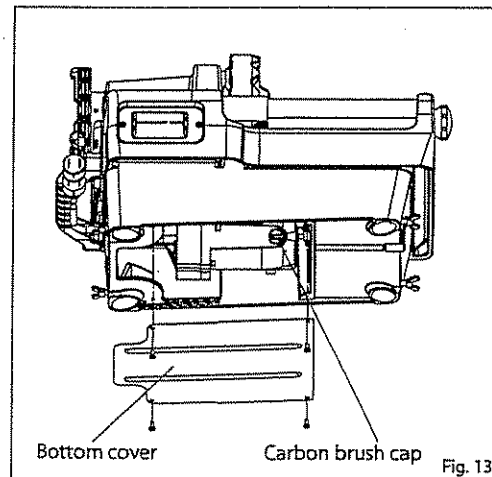
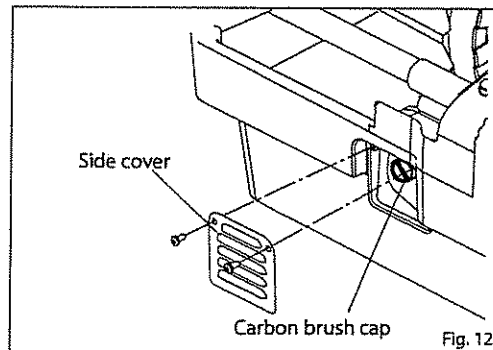
### 2. Replacing the Carbon Brushes (Figs. 12, 13)

- To protect the motor, the unit is equipped with two auto-stop carbon brushes.  
When these brushes get too worn, the motor will not operate even when the unit is turned on.
- Be sure to use REX carbon brushes.  
Using other brushes may damage the motor.

#### Replacing the Carbon Brushes

Ensure the plug has been removed from the power outlet.

- Replacing Carbon Brush A (Fig. 12)  
Remove the side cover from the side of the base, remove the carbon brush cap with a flathead screwdriver and replace the brush.
- Replacing Carbon Brush B (Fig. 13)  
Remove the bottom cover, remove the carbon brush cap with a flathead screwdriver and replace the brush.



### ⚠ WARNING

- When replacing the carbon brushes, always make sure the unit is stable.  
Trying to replace the brushes with the unit tilted is extremely dangerous, as the unit may fall over.
- Be sure to use REX carbon brushes.
- Using other brushes may damage the motor or the machine, or cause accidents.

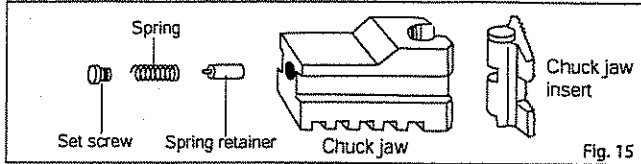
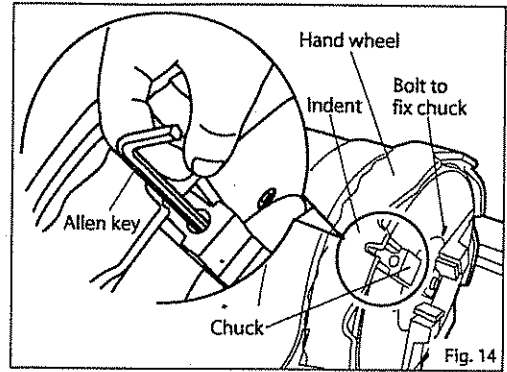
# Maintenance & Care

## 3. Structure and care of the chuck jaw set (Figs. 14, 15)

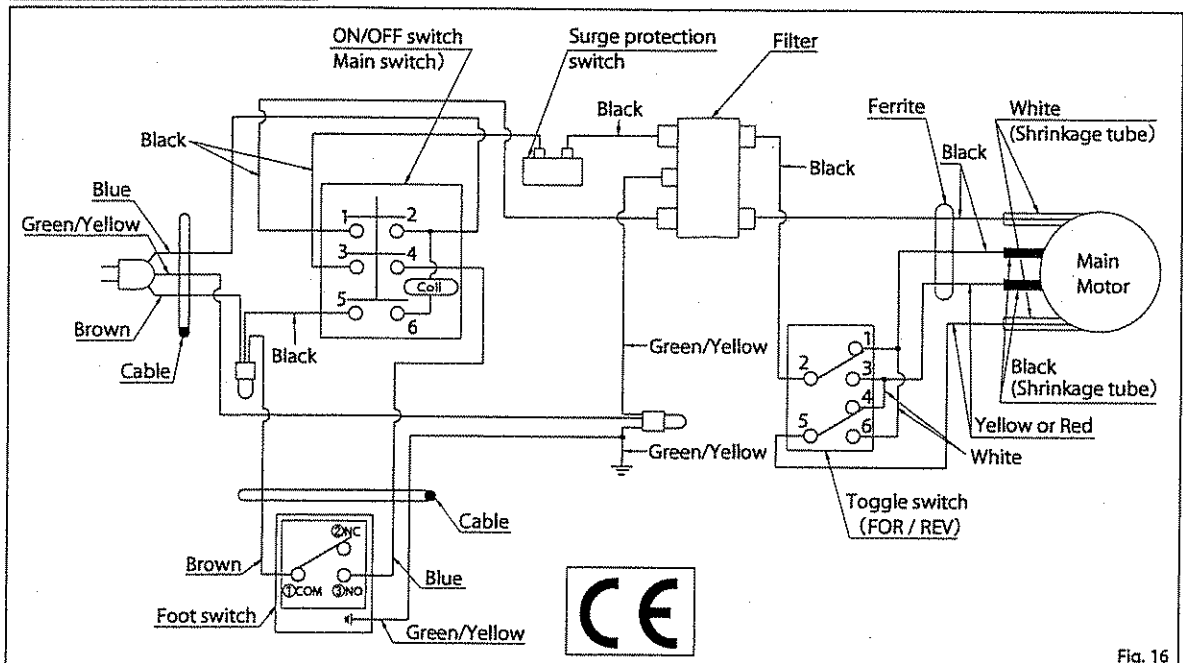
As shown in Fig. 15, the insert set consists of 4 parts: the chuck jaw insert at one end of the chuck jaw, and the spring retainer, spring, and set screw at the other.

When changing the chuck jaw insert, turn the hand wheel so that the indent is directly over the chuck jaw and remove the set screw inside it.

Also, if the 6 bolts that fix the chuck in position come loose, it will affect operation, so check regularly and tighten as needed.



## 5. Wiring diagram (Figs. 16)



# Servicing and Repairs

This machine is produced with great precision; therefore, should the machine fail to operate normally, do not repair it by yourself; contact your distributor or our sales department.

If parts are required or if you have any questions, please contact us at your earliest convenience.

<p><b>Availability of Replacement Parts</b></p>	<p>Replacement parts are maintained for a period of 7 years after production of this model has been terminated. Electrical parts, however, will remain available for a period of 5 years.</p>
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## Servicing and Repairs

### ⚠ WARNING

- If the problem you have and the appropriate remedy are not shown in the table below, do not attempt to disassemble or repair the unit yourself.
- If the problem and remedy are not shown in the table, or if the table indicates that you should have the unit repaired or serviced, consult your distributor or our sales department.
- If this product is repaired by someone who does not have the proper knowledge or technical skill to do so, the product may not operate properly, or an accident or injury may occur. In the event of a problem with the product, always check the table before contacting your dealer or our sales department.

### ■ Troubleshooting

- Refer to the respective manuals for 'Portable Groover M' or 'Portable Groover H' regarding the potential problems you need to be aware of when using these machines.

Problem		Cause	Remedy
Machine does not operate properly when turned on.	The motor is not running.	The plug is disconnected.	Insert the plug into the power socket.
		The carbon brushes are worn.	Replace with new ones according to the procedures on Pg. 7
		Voltage is low.	Check the voltage. (Pg.5)
		The motor is burned out.	Repairs are needed.
		The switch is damaged.	Repairs are needed.
	The motor is running.	The gear is broken.	Repairs are needed.
Rotation of the main shaft is defective.		Voltage is too low.	Check the voltage. (Pg.5)
		The motor is burned out.	Repairs are needed.

Table. 3