50/60Hz

REX

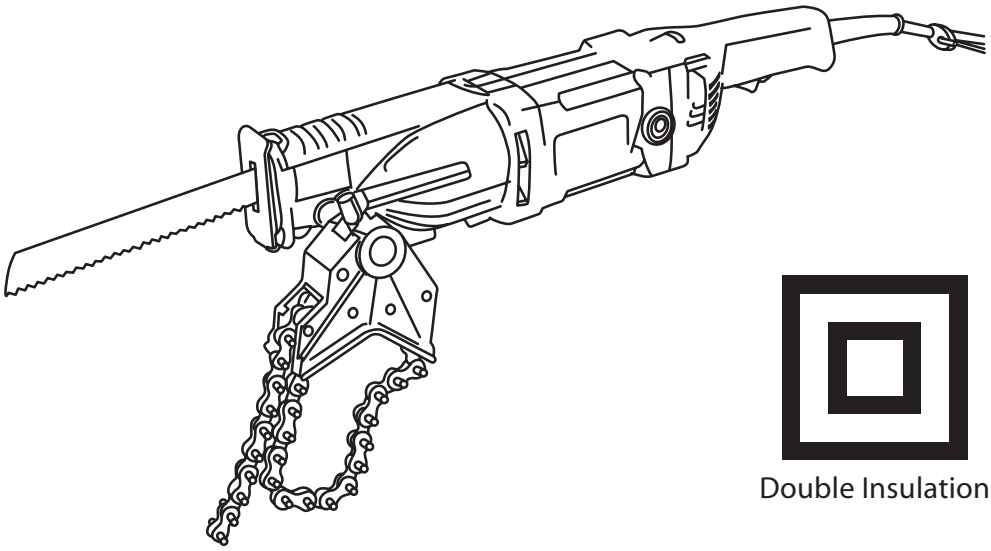
RECIPROCATING SAW

HYPER SAW XS150S

XS150S **OPERATION MANUAL**

With Chain Vice

March 2010



Double Insulation

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 2 - 4.
・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.

CONTENTS

Definitions of ⚠ WARNING and ⚠ CAUTION

In this Operation Manual, warnings are divided into ⚠ WARNING and ⚠ CAUTION .

⚠ WARNING : indicates actions that could possibly result in death or severe injury to the user if the machine is used incorrectly.

⚠ CAUTION : indicates actions that could possibly result in injury to the user, or physical damage to property or to the machine 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 our sales office or distributor.
・Due to improvements in quality, performance or safety regulations, parts and specifications are subject to change without prior notice. In such cases, the contents, photographs, illustrations etc. in this manual may differ from 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 effecient 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.
- Do not use the machine on pipes not specified in this manual. Using the machine for any purpose other than threading 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.

Safety Considerations

⧈ Double Insulation

This power tool displays the ⧈ mark to indicate that the part between the conductor through which electricity travels and the outer frame held by the user is double-insulated.
Double insulated power tools decrease the risk of shock.
Replacing the wiring system with the wrong parts or assembling it incorrectly can result in a decrease in the degree of safety provided by double insulation.
Dismantling, reassembling, replacing or repairing parts should always be performed by the distributor where you purchased the product or by our sales department.

Overload Protection Circuit

To protect the motor, the tool has an inbuilt overload protection circuit. If a predetermined temperature is exceeded, the power will automatically cut off to prevent damage to the motor.
Should this happen, turn the unit off immediately and allow to cool before using again.
When you turn on again, the unit will operate as usual but the motor will still be hot, so cut slowly and with a light touch.

Main parts

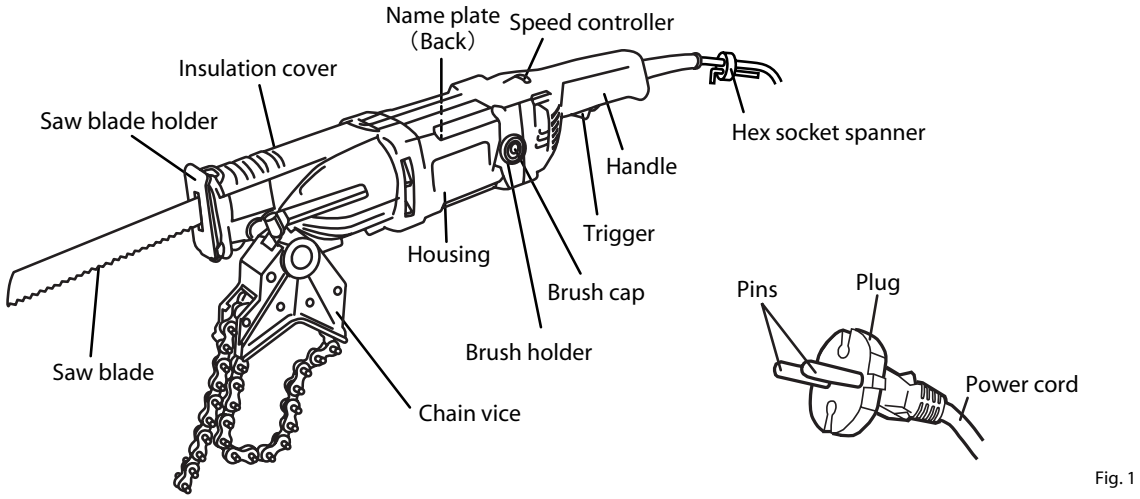


Fig. 1

Specifications

Model	XS150S
Power	Single phase 50／60Hz ― 220V
Cutting Capacity	Steel pipe ····· Up to outer Diameter 216mm(200A) *1
	Stainless steel pipe·····Up to outer Diameter 140mm (125A) less than 3mm*2
Standard Capacity	Steel pipe ····· Up to outer Diameter 165mm (150A)
Motor type	Single phase series motor
Power	1200W
Stroke Length (min^{-1})	26mm
Stroke (No Load Speed)	950～2050 S. P. M.
Wt of main unit	4.0kg

Table 1

*1 Saw blade No.24 / 381004 (sold separately) required for cutting 200A pipe.
*2 Thin saw blade saw-holder & thin saw blade (option) required for cutting stainless steel pipe.

Use

- For cutting various kinds of steel pipes, stainless steel pipes, steel angle bars etc.
- For cutting synthetic resin pipes
- For cutting mild steel and aluminium plates

Standard Accesories

① Saw blade No. 22, 23 ·····1

② Hex socket spanner 4mm ·····1

③ Chain vice ·····1

④ Case·····1

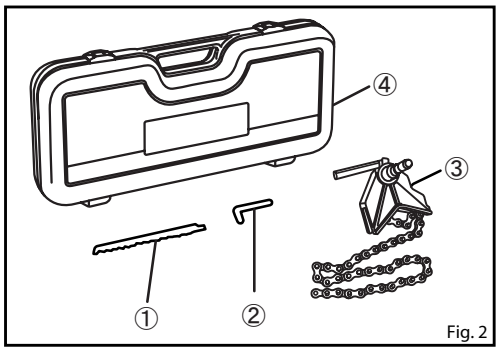


Fig. 2

Optional Accessories

(1) Hyper saw blade

To achieve the highest level of efficiency and a perfect finish, it is important to use the most appropriate saw blade for the type and thickness of the workpiece.

Select the most appropriate blade from the table below.

	Code	Type (Product name)		Appropriate Pipe Diam. mm (inch)	Length mm	Teeth (per inch)	Thickness mm	Width mm	Use	No. per pack
Thin saw blade	380041	Cobra blade	No. 41	up to 50 (2")	150	14	0.9	18	Steel pipe Stainless steel pipe Mild steel material	5 (1package)
	380042		No. 42	～100 (4)	200					
	380045		No. 45	～125 (5)	250					
	380043		No. 43	～50 (2)	150	18				
	380044		No. 44	～100 (4)	200					
	380033	Bi-matal blade	No. 33	～50 (2)	150	14			Steel pipe Stainless steel pipe Mild steel material Plastic pipe	
	380034		No. 34	～125 (5)	225					
	380035		No. 35	～50 (2)	150	18				
	380036		No. 36	～125 (5)	225					
Thick saw blade	380061	Cobra blade	No. 61	～80 (3)	200	8	1.6	25	Steel / cast iron pipe Stainless steel pipe Mild steel materials	5 (1package)
	380062		No. 62	～125 (5)	250					
	380063		No. 63	～150 (6)	300					
	381001	HSS saw blade	No. 21	～40 ($1^1/_2$)	140				Steel / cast iron pipe Mild steel materials Plastic pipe	
	381002		No. 22	～100 (4)	200					
	381003		No. 23	～150 (6)	290					
	381004		No. 24	～200 (8)	320	10				
Saw blade holder	381007	Thick saw blade holder (XS150S only)								
	381009	Thin saw blade holder								

Table 2

*Use limited to cast-iron pipes without cement-mortar lining.

(2) Blade holder for thin saw blades

When you use thin saw blades, replace the blade-holder with the one designed for thin blades.

See Page 8 'Using thin saw blades'

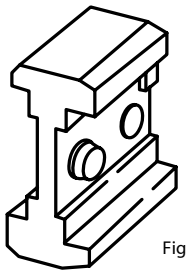


Fig .3

Getting Ready

1. Leakage breaker

Although the machine is double insulated, we recommend that it should be connected to a power outlet with a built-in short-circuit breaker to further prevent the possibility of shock.

2. When using an extension cord

⚠ WARNING

Be sure to use an extension cord that is not damaged.

3. When you need to use an extension cord at some distance from the power supply, use one that is sufficiently thick for the current and that is as short as possible in length.

Changing and Replacing the blade

⚠ WARNING

To prevent accidents, check to make sure that the switch is turned OFF and unplug the unit before changing the blade.

Attaching a saw blade

Thin saw blades:

(1) Use a hex-key wrench to loosen the fixing-screw on the blade, rotating it 3 or 4 times. (Fig. 4)

(2) Place the saw blade between the plunger and the blade holder, and insert the projection on the blade holder into the hole on the blade. (Pull the blade towards you to make sure its in place and won't fall out.) (Fig. 5)

(3) Tighten the fixing screw with a hex-key spanner and ensure it is fastened securely.

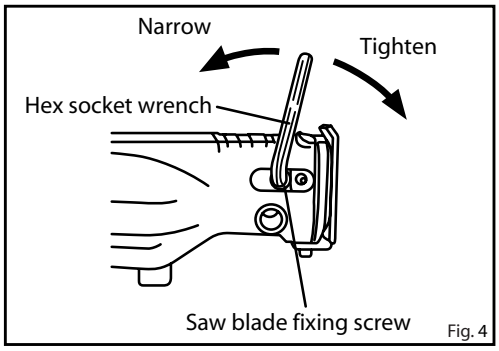


Fig. 4

⚠ CAUTION

If the fixing screw on the saw blade becomes loose, it may come off and get damaged. As a loose screw might also result in accidents, ensure it is always tightened and always check before use.

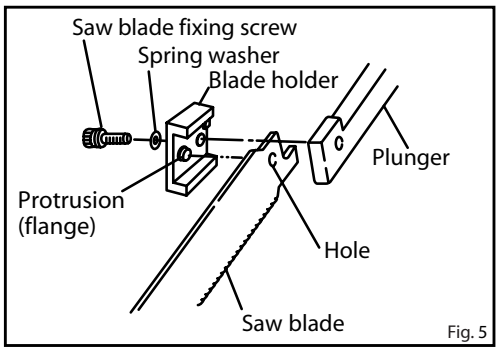


Fig. 5

Using thin saw blades :

Thin saw blades and their blade holders are sold separately. Please ask your distributor.

(1) Loosen the fixing screw and remove the base. Remove the thick saw blade holder. (Fig. 6)

(2) Attach the thin saw blade holder to the plunger.

(3) Return the base to its original position by tightening the base fixing screw securely.

(4) Place the hole on the thin saw blade over the projection on the blade holder and fit the thin saw blade into the groove.

(5) Use a hex spanner to tighten the saw blade fixing screw. Ensure the blade is secure.

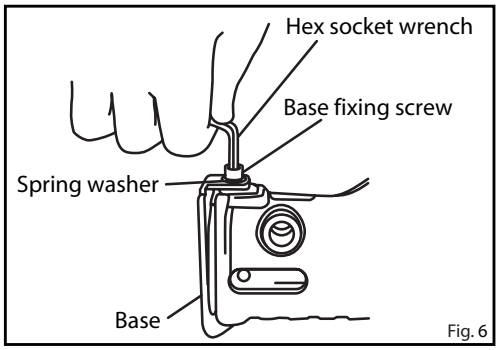


Fig. 6

⚠ CAUTION

If the saw blade fixing screw is loose, the blade will come off and result in damage. It may even cause an injury, so always ensure it is fastened securely. Also, confirm the screw is tight before you start cutting with the machine.

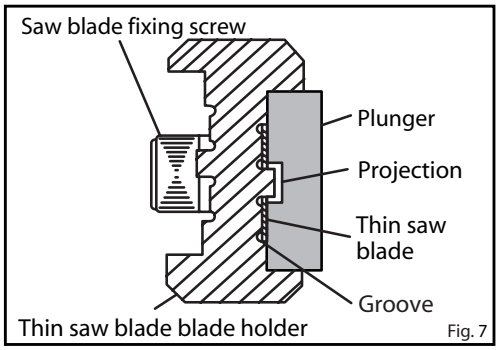


Fig. 7

Cutting

⚠ CAUTION

1) Do not remove the insulation cover. (Fig.1)
2) Do not mount the chain vice on the side of the workpiece that will fall off when cut, or both the machine and the workpiece will fall off together.
3) Under no circumstances should you allow the saw blade to rotate freely (idle). Start the blade only after lightly engaging it with the workpiece.
   If the blade is idling before you start cutting the workpiece, there is the possibility that the blade could start shaking violently and be deflected off the workpiece, which could lead to accident or injury.
4) Do not attempt to cut a large pipe beyond the blade's range. There is the danger of breaking the saw blade when it reaches the inner wall of the pipe.
5) Do not apply excessive force when cutting. Cut lightly. Excessive force will damage the blade and shorten its working life.
6) If the workpiece is not fixed securely, there will be a loss of power and both the workpiece and saw will become unstable.
7) When operating the machine be careful not to allow metal chips, soil or water etc. to get inside the machine from the plunger. If chips and the like collect in the plunger, always clean up first before operating the machine.
8) Use the chain vice to improve stability and performance when cutting steel pipes etc. with a thick saw blade.
9) Avoid placing your hands or face close to the blade or waste material exhaust when the machine is in use.
10) The workpiece and blade will be extremely hot right after cutting, so avoid touching them or you may burn yourself

⚠ WARNING

It is extremely dangerous to allow the saw blade to rotate freely without engaging the workpiece, as the saw blade will start shaking and be deflected when it comes into contact with the pipe. Only switch on after you have placed the blade lightly against the workpiece.

1. Using a chain vice when cutting

(1)For working on anything other than existing pipes or fixed pieces etc., we recommend using a REX CVX6 Chain Vice Stand to support the workpiece securely.

(2) Make sure the chain is hooked onto the chain vice securely, turn the handle and fix the chain vice securely to the workpiece. (Fig. 8)

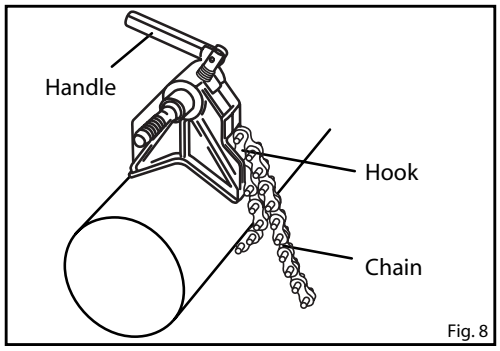


Fig. 8

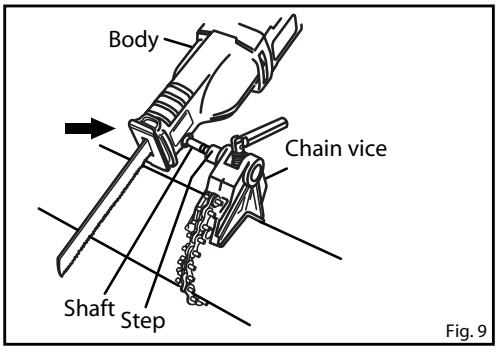


Fig. 9

(3) Align the docking hole on the main unit with the shaft on the chain vice, and insert the shaft into the hole until it comes into contact with the step.（Fig. 9-10）

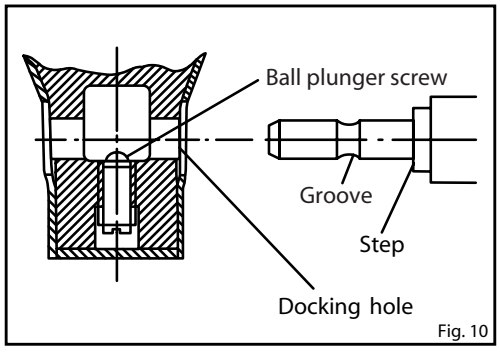


Fig. 10

Cutting

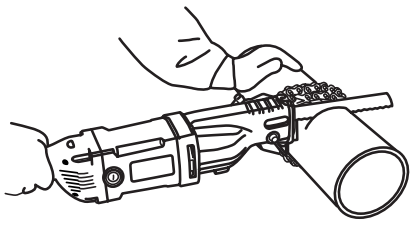
(4) Pull the unit and check that the ball at the end of the ball plunger is in the groove on the spindle.

(5) With the saw blade touching the workpiece, turn the switch on and the blade will start cutting through the pipe.
Always apply only light pressure to the workpiece or the blade will quickly wear out and/or the motor may even overheat. (Fig. 11)

Guideline pressure on the handle:

・Thick blades : 5kgf ・Thin blades : 3kgf

If the blade is deflected too much, slow it down a little with the speed adjustment dial.



Grasp the handle firmly and lightly cut through the pipe .

Fig. 11

2. Cutting without the chain vice

(1) Fix the workpiece securely to the recommended CVX6 Chain Vice Stand.
(2) Place the base of the saw firmly against the pipe, then turn on the machine and gradually cut through the workpiece. (Fig. 12)

⚠ CAUTION

・If you don't place the saw blade holder of the saw firmly against the pipe, the blade may vibrate excessively, which could damage the blade or cause injury.

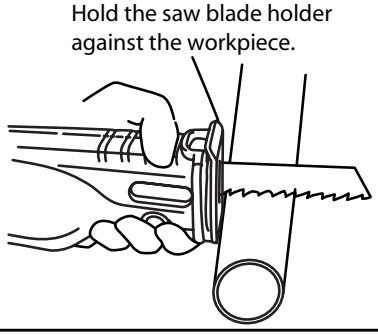


Fig. 12

Speed Of The Blade

The speed of the blade can be adjusted by a built-in non-step electronic control circuit.
Mark 1 on the dial is the lowest speed, while 6 is the highest.
A high speed is suitable for mild steel materials and a low speed for stainless steel, but always use at a speed best suited to the materials and the working conditions. (Fig. 13)

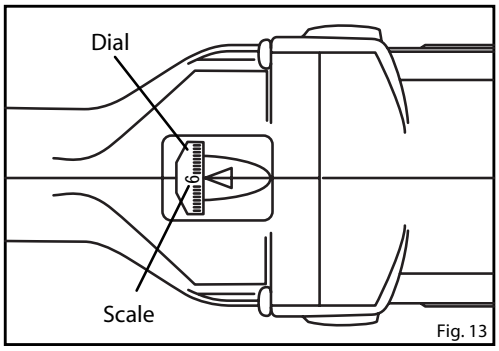


Fig. 13

⚠ CAUTION

・Do not attempt to cut steel plate more than 2mm in thickness at low speed (up to mark 2 on the scale). Doing so will overload the motor and may result in fire.
・The machine uses a powerful motor but avoid using it at low speed for long periods of time or the motor may burn out or cause a fire. In particular, if the blade suddenly stops while cutting the material, do not force it, but adjust the speed so that it cuts smoothly.
・When the speed is too high, the blade may vibrate so set the dial at a lower speed.

Maintenance and Care

⚠ WARNING

- Before inspection or maintenance, be sure to turn OFF the switch and also remove the battery from the unit. If the battery is not removed, the tool may activate unexpectedly, causing serious injury.
- When an abnormality is found during inspection or maintenance, identify the problem referring to the descriptions in "Troubleshooting" and then follow the relevant instructions. Using the product as is (without correcting the abnormality) may generate heat, fumes or fire, causing serious accidents or injury.

1. Inspecting and replacing the blade.

- If the blade becomes worn, replace it as soon as possible.

2. Checking and replacing the carbon brushes.

- The two carbon brushes housed in the motor are consumables and need to be replaced when worn or else the motor will be damaged. Replace them when less than 6mm in length.
- Always keep the brushes clean and remove any dirt, so that they can slide freely inside the brush holder.

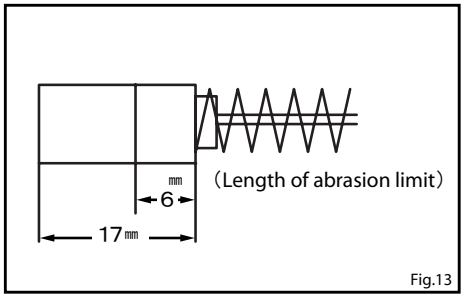


Fig.13

Replacing the Carbon Brushes

- Ensure the plug has been removed from the power outlet.
- Remove the brush cap with a flathead screwdriver and replace the brush.
- Always change both carbon brushes at the same time.
- Be sure to use REX carbon brushes.
  Using other carbon brushes may damage the motor.

3. Check all bolts.

At regular intervals, check that all screws and bolts are tight. If they are loose, fasten them or there could be an accident.

Maintenance and Care

4. Motor

- Dust or foreign bodies in the motor could lead to malfunction.
- Allow the motor to rotate freely each time you use it and allow dry air in through the air vent in the housing. This will help clear such dust or dirt.
- Be very careful not to damage the coil or get cleaning oil or water on it.

5. Cleaning the surface and the brushes

- After use, make sure you clean the plunger (see Fig. 4) and remove any scrap, sand, soil, water etc before storing it away or the plunger will get rusty and lead to malfunction.
- The outside of the saw is made of synthetic resin. To avoid damage to the surface, wipe off any gasoline, thinner, oil, kerosene etc. with a dry cloth or with a rag soaked in soapy water.

6. Storing the saw and its accessories

When not in use, store the machine and its accessories in a secure dry place. Make sure:

- you store it safely out of the reach of children
- you do not keep it under the eaves of a house or anywhere it may be rained on, and avoid damp or humid places
- you do not leave it in direct sunlight
- you store it away from volatile materials that could easily catch fire or explode.

Servicing & 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 REX INDUSTRIES CO., LTD.
If parts are required or if you have any questions, please contact us at your earliest convenience.

Availability of Replacement Parts	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.

Troubleshooting

⚠ 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 REX.
- 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, always check the table before contacting REX Industries or your dealer.

Problem	Probable Cause	Remedy
Motor doesn't rotate.	The carbon brushes are worn.	Replace with new brushes.
	Overload protection device has been activated.	Allow the machine to cool before using again.
	The power cable is damaged. The switch, controller or motor is malfunctioning.	Ask for repairs or servicing.
Motor stops while cutting.	Overload protection device has been activated.	Allow the machine to cool before using again.
Insufficient power.	The voltage is too low.	Use the correct power supply.
Cutting takes too long.	Blade is worn.	Replace with a new blade.
Slanted cuts.	Blade is worn.	Replace with a new blade.
	To much force is applied when cutting.	Cut with appropriate force.
Too much vibration when cutting.	Blade is damaged (chipped or cracked)	Replace with a new blade.
	The blade fixing-screw is loose.	Tighten the screw.
	The workpiece is not fixed securely.	Tighten the workpiece securely with the chain vice.

Table 3

MEMO

⚠ Guarantee and Exemption from Liability

1. Should the machine happen to break down for no apparent reason despite normal and correct use, repairs and service parts shall be provided free of charge as outlined below.

   Guarantee period, repairing dates, procedures and methods for providing repairs and service parts shall be decided in consultation with the customer and distributor.
   Repairs and service parts may be charged.
   Repairs may be charged even under the following circumstances:
   - if the machine has not been used according to the instructions in the Operation Manual.
   - if it has been used for anything other than its intended purpose.
   - if it has not been repaired according to the Operation Manual or if it has been remodeled.
   - if blades or consumables need replacing.
   - if the machine has been handled in an inappropriate way.

2. REX will accept no responsibility under the following circumstances:
   - fire, damage from flood, earthquakes, lightning or other natural disasters.
   - malfunction or accident resulting from pollution or abnormal voltage.
   - when the machine has not been operated according to the Operation Manual.
   - when the machine has been used incorrectly, repaired or remodelled inappropriately.

3. Any costs incurred by the manufacturer shall not exceed the purchase price of the machine.

REX

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