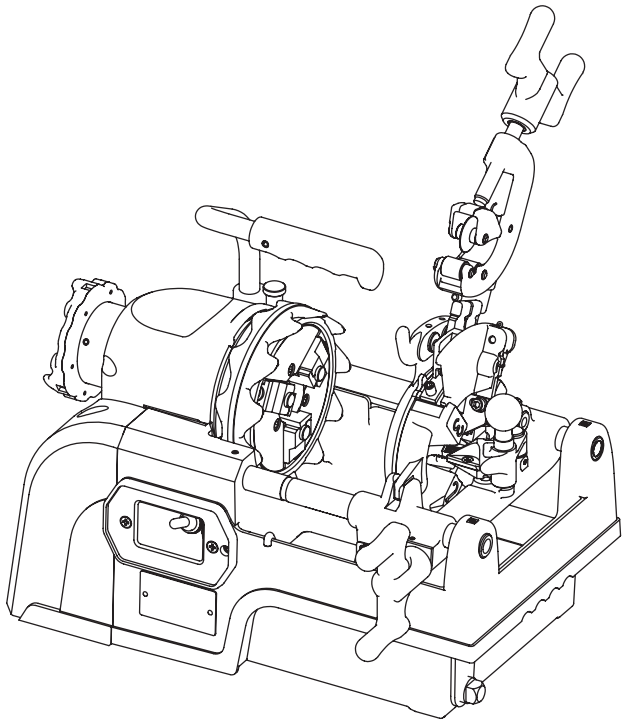
50/60 Hz

PIPE THREADING MACHINE

WHEELER REX

8991

OPERATION MANUAL



Be sure to read this operation manual before using the machine.

Note

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

Date of Purchase: Year Month

Distributor:

GETTING READY / OPERATION GUIDE

1. Transportation (Fig. 2)

When moving or transporting the machine, remove the oil pan. There is no need to drain off the cutting oil in the tank.

(1) Secure the cut end of a pipe firmly with the chuck, fix the pipe in position with the cutter, and move the machine.

(2) By raising the handle, the lock pin falls into the position, and the handle is secured.

* When lowering the handle, lift the lock pin at the same time.

⚠ CAUTION

- When transporting the machine, please check and confirm that the handle is secured properly.
- Always position the handle as shown in Fig. 2 when cutting threads or performing other similar work.

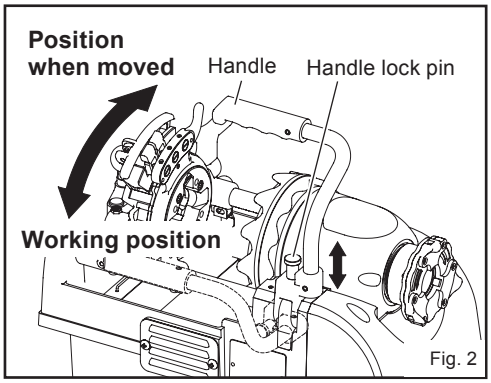


Fig. 2

2. Setting up (Fig. 3)

Place the machine on a flat surface.
(Even when placed on a flat surface, the rear chuck of the machine is designed to be in a slightly raised position).

⚠ CAUTION

If the rear chuck is too low, oil will flow out of the pipe, making the floor dirty and wasting oil.

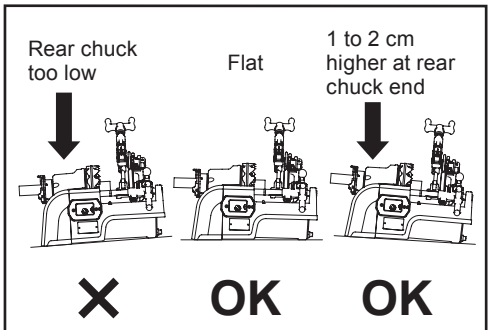


Fig. 3

3. Cutting oil (Fig. 4)

Fill the tank with the cutting oil that is supplied with the machine. Use only genuine WHEELER-REX cutting oil. (Fig. 4)

Using this oil for threading pipes made of other materials may result in irregular threads.

Genuine WHEELER-REX thread cutting oil

For Steel pipe

60603 2 Quart ThreadMaster Oil

60601 1 Gallon ThreadMaster Oil

60602 5 Gallon ThreadMaster Oil

For Stainless Steel pipe

60607 1 Gallon ThreadMaster Oil for SS

60608 5 Gallon ThreadMaster Oil for SS

Fig. 4

4. Attaching and removing the die head (Fig. 5)

Removing the die head

(1) Loosen the lock screw on the carriage.

(2) Raise the die head slightly in the direction of arrow A and then pull it in the direction of arrow B.Raise the cutter if it gets in the way.

Attaching the Die head

(1) Attach the die head that matches the size of pipe to be threaded. (Fig. 5)

(2) Align the die head post with the carriage fitting hole, and push it until it contacts the carriage while moving the die head up and down a little.

(3) Lower the die head and check it is positioned correctly.

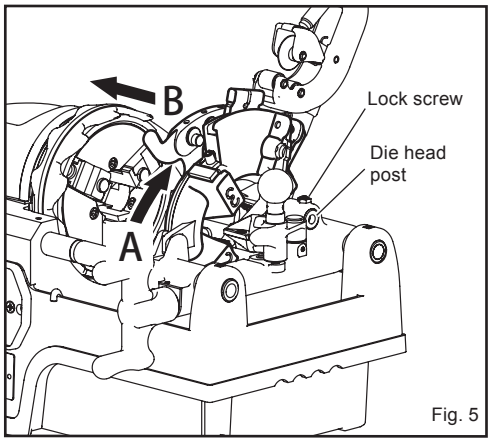


Fig. 5

WHEELER REX

GETTING READY / OPERATION GUIDE

5. Self-opening Die Head

Note

15A: ½"
20A: ¾"
25A: 1"

Main Parts

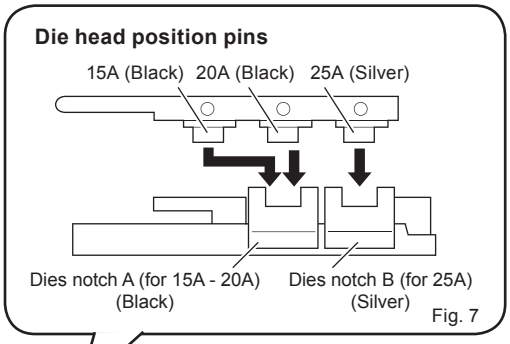
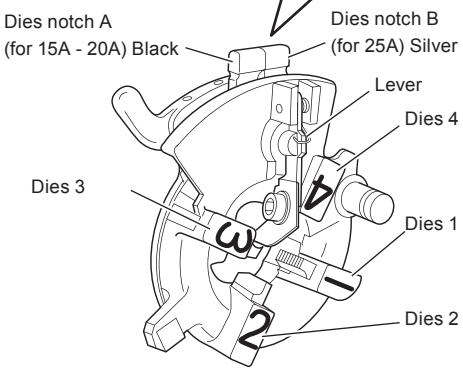


Fig. 7



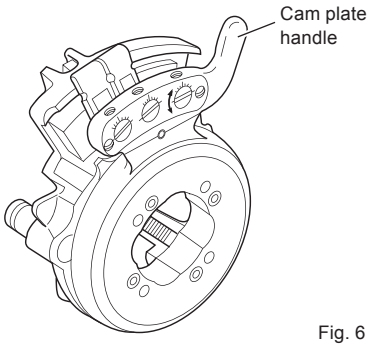


Fig. 6

How to adjust the thread cutting size

The standard die head is suitable for three pipe sizes: 15A, 20A, 25A.
For 15A and 20A pipes, put dies notch A (black) on the respective die head over the eccentric position pin (black).
For 25A, put dies notch B (silver) on the 25A die head over the eccentric position pin (silver). (You will need to change dies.)

Replacing the dies

Since 15A, 20A and 25A each have different thread pitches, the dies need to be changed accordingly.
When replacing the dies, please follow the instructions below.

(1) After opening the die head (i.e. with the open lever removed from the groove on the block and the dies in the open position) remove the size setting lever from the size setting pin.
(2) Turn the cam plate handle in the direction of the arrow: dies No.3 and No.4 can then be removed.
(3) Raise the die head and remove dies No.1 and No.2.

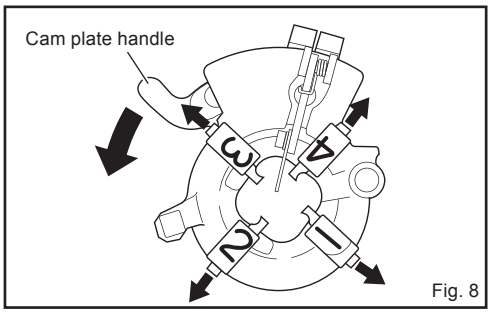


Fig. 8

GETTING READY / OPERATION GUIDE

Attaching the Dies

(1) Use the removal procedure in reverse to insert the dies in the die head.
(2) Insert the dies in their corresponding die slot on the die head and push them in until they click into place.
(3) Raise the die head and insert replacement dies No.1 and No.2 until the notch is engaged.
* Ensure that the number on the dies corresponds to the number on the die head; if dies are inserted incorrectly, cuttingwill be impaired.
(4) Turn the guide set knob in the direction of arrow 2, as shown in Fig.9; the dies will move towards the centre of die head. If the dies do not slip into position smoothly, try to move them up and down a little, repeating this procedure as necessary.
* Dies are made as a matched set of four, so be sure to use them as such and replace them all at the same time. Do not attempt to replace just one or two dies in the set, as cutting will be adversely affected.

Adjusting the length of the thread

(1) Press auto open lever A, put the dies in the open position, and loosen the socket head cap screw a little.
(2) Adjust the auto open lever according to the length of the thread to be cut, i.e. towards the reamer for long threads and towards the cutter for short threads.
(3) Tighten the socket head cap screw securely again.

Microfine Adjustment of Thread Thickness

Microfine adjustment of thread thickness allows pipes to be cut exactly to your requirements.

(1) Slightly loosen the lock bolt on the eccentric pin.
(2) Simply turn the microfine adjustment knob to the left to decrease, and to the right to increase thread thickness.
(3) The knob is locked by a locking bolt which should be loosened with the hexagonal key provided and the knob turned three settings to the right before adjustments are made.
* Size should always be checked with a thread gauge after adjustment.

Adjustment of Thread Depth

If, even with full adjustment, thread size is not satisfactory, remove the retaining pin and reinsert the size adjustment plates. Hold in place with the retaining pin.

(1) Raise the auto open lever (Fig.10-1), and, with the die head open, loosen the retaining pin with a flathead (minus) screwdriver.
(2) Hold on to the size setting plate and remove the retaining pin.
(3) Be careful not to let the notch pin and the spring come out of the size setting lever.
* If the notch pin and spring in the size setting lever come out, place them back again in the hole in the opening block.
(4) Select and insert the size adjustment plate as shown in Figs. 12-1 and 12-2.
(5) Lock in position by pressing down on the notch pin and spring with the size setting lever.
(6) Pass the axis of the notch through the rounding block and set the size setting lever, size adjustment plate.
(7) Finally, tighten the retaining pin securely with a flathead (minus) screwdriver.

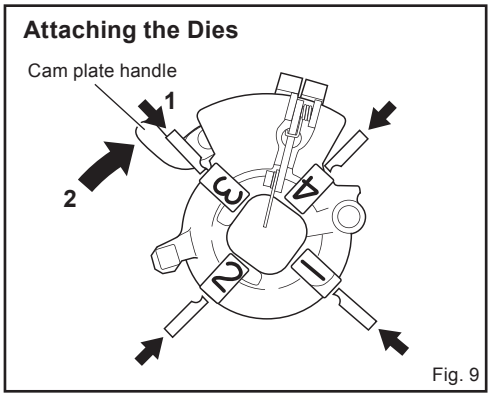


Fig. 9

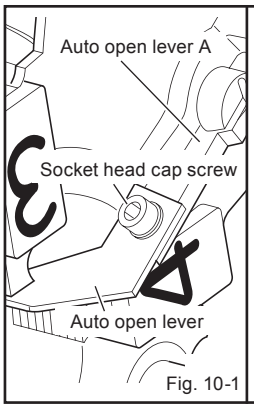


Fig. 10-1

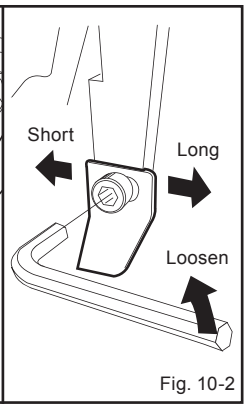


Fig. 10-2

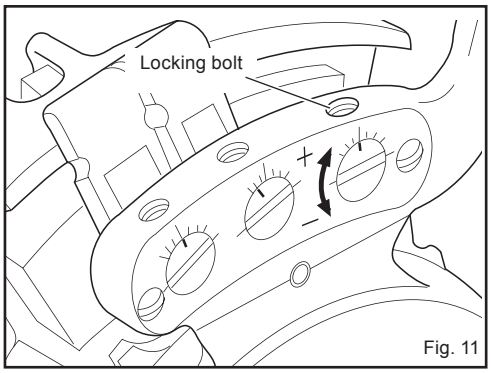
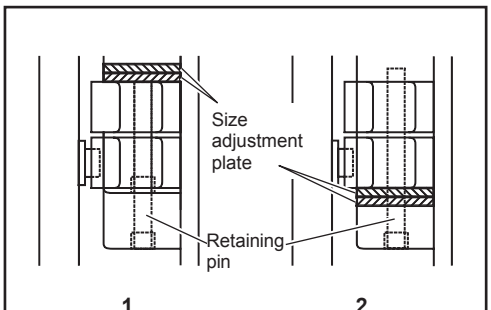


Fig. 11



1.
For thicker threads

2.
For thinner threads

Fig. 12

GETTING READY / OPERATION GUIDE

6. Manual-open die head (There is no need to remove the die head from the machine).

Removing the dies

(1) Knock the eccentric handle to the right, loosen the lever nut and push the eccentric handle over to the far left. (Fig. 13) In this position, dies No. 3 and No. 4 can then be removed.

(2) Raise the die head and you can remove dies No. 1 and No. 2.

Replacing the dies

(1) Remove the die head.

(2) Lower the die head and replace dies No.3 and No.4 in the same way. Insert each die until the notch is engaged. (Fig.14)

(3) Raise the die head and insert replacement dies No.1 and No.2 until the notch is engaged.

* Ensure that the number on the dies corresponds to the number on the die head; if dies are inserted incorrectly, cutting will be impaired.

* Dies are made as a matched set of four, so be sure to use them as such and replace them all at the same time. Do not attempt to replace just one or two of the set as cutting will be adversely affected.

(4) Pull the eccentric handle back in the opposite direction, left of the arrow. The dies will move towards the centre of die head.

* If the eccentric handle does not move into position properly, move the dies up and down a little while pushing and pulling the eccentric handle gently and try again.

(5) Adjust according to your desired thread cutting size (see 'Threading').

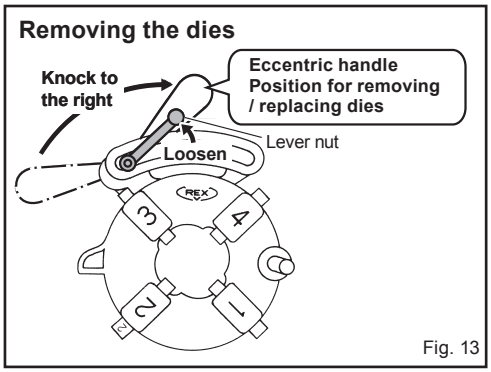


Fig. 13

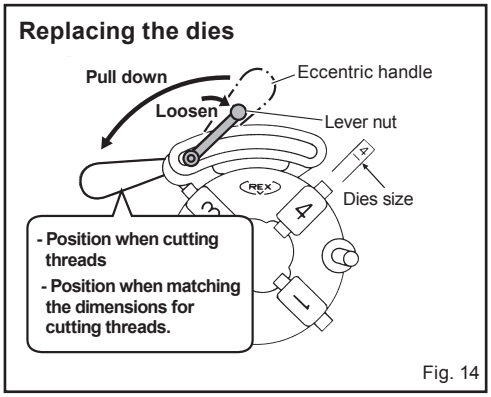


Fig. 14

Ensure the handle is lowered when the machine is in use. (Pg. 6, Fig. 2)

7. Setting up the pipe / Removing the pipe

⚠ WARNING

- Do not install or remove a pipe when the machine is still switched on, when operating the machine, or just after you switch it off. If you do, you may get entangled in moving parts, leading to accident or injury. Restart work after you make sure the machine has come to a complete standstill.
- When installing or removing the pipe, remove the plug from the power outlet or the machine could suddenly start up leading to injury or accident.

(1) Open the hammer chuck and rear chuck wider than the size of the pipe to be threaded, inserting the pipe from the rear chuck side where possible. (Fig. 16) (Note: In the case of short pipes, insert from the chuck side).

(2) Close the rear chuck and, holding the pipe in your right hand, close the hammer chuck with your left hand to place a grip lightly on the pipe and make sure the chuck jaw inserts engage the pipe properly. Pull the hand-wheel sharply towards you to lock.

(3) A sharp jerk in the opposite direction will release the pipe once you have finished threading. Next, remove the pipe after releasing the rear chuck.

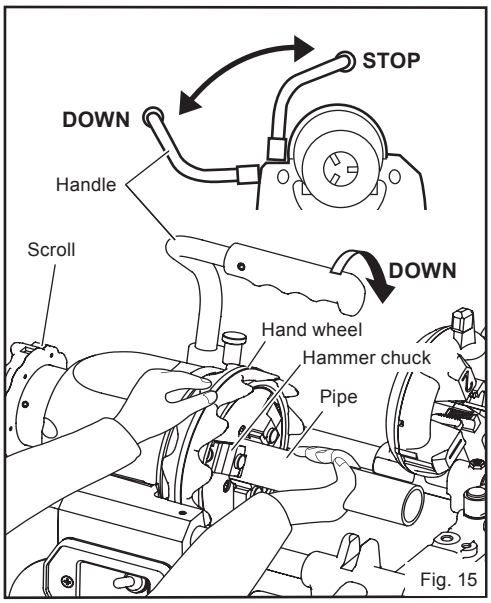


Fig. 15

WHEELER REX

Suggestions for short pipes

- Lightly grip the pipe with the chuck, gently engage the dies with the end of the pipe to be threaded, and then tighten the hammer chuck again. (Fig. 16)

  Note: Chuck the pipe with the pipe protruding at least 60mm from the edge of the chuck jaw insert. (Fig. 16)

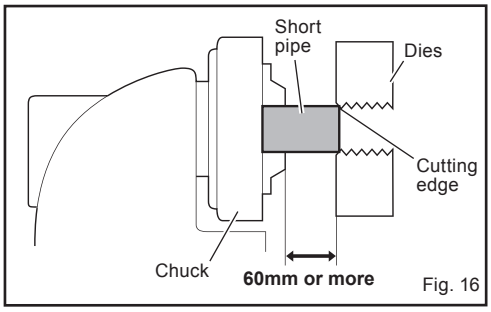


Fig. 16

Suggestions for long pipes (Fig. 18)

- When threading long pipes, use a pipe support to avoid excessive vibration etc. while the pipe is rotating, and to prevent the machine from becoming unstable under the weight of the workpiece. (Fig. 18)

Use WHEELER-REX pipe support

Keeps long pipes stable

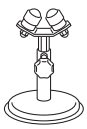


Fig. 17

⚠ WARNING

Not using a pipe support may result in irregular threads, damage to the machine and/or accident or injury.

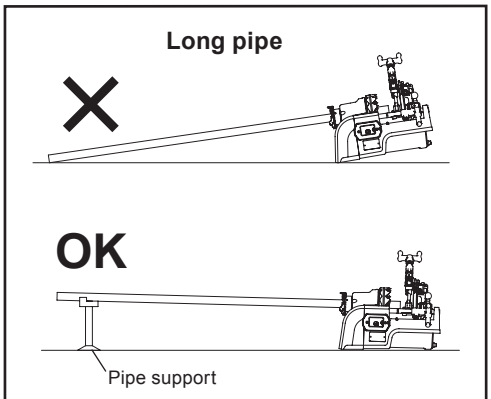


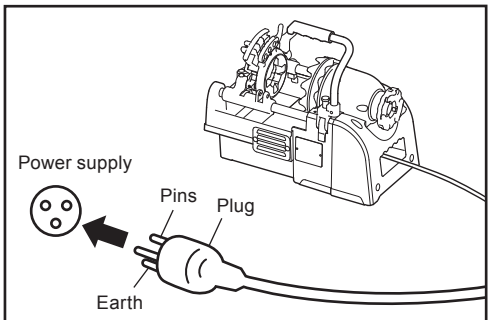
Fig. 18

8. Power supply (Fig. 19)

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 (use at least a 2 mm^2 flexible cable, 20A for 110-120 V. (Fig. 19)

⚠ WARNING

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



Connect to a power supply of AC110 – 120V, 20A or more.

Fig. 19

GETTING READY / OPERATION GUIDE

⚠ WARNING

Carry out the following checks before starting to cut or thread 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.

9. Checks before starting

(1) Turn on the machine to set the main shaft in motion. (Fig. 20)
- Check there are no abnormal sounds or odours coming from the motor.
- Check the pipe you installed does not vibrate abnormally. If it does, install it again.

(2) Check that cutting oil flows as it should from the die head. (Fig. 21-1)
Confirm that there is at least 1 liter of cutting oil in the tank. (tank capacity:1.5 L)
When the volume of oil emitted from the die head is reduced, check that the amount of cutting oil in the tank is at least sufficient to cover and hide the strainer. (Fig. 21-2) Replenish the oil as required.
* If the volume of oil flowing from the die head remains low even after the oil has been added, please contact your distributor or WHEELER-REX.

(3) Allow the machine to rotate without any load for several minutes.
- Check the motor does not become abnormally hot, etc.

(4) Turn the machine off and allow it to stop rotating.
- Check there are no abnormal sounds or odours coming from the motor. The unit uses a motor equipped with a built-in braking system for improved safety. Make sure you read and understand the points below relating to the use and performance of the system.

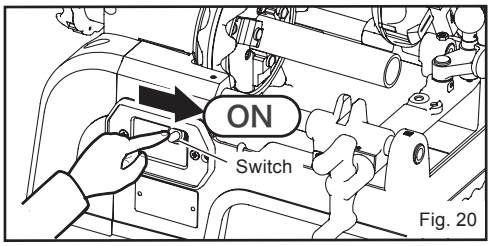
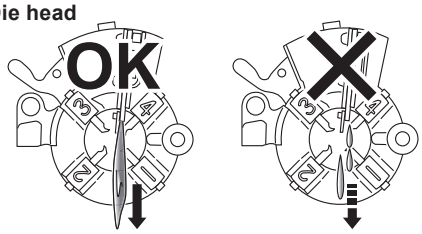


Fig. 20

Confirming the amount of thread cutting oil / Die head



Appropriate amount of oil flows smoothly without interruption

Small volumes of oil containing air bubbles produced intermittently come out

Fig. 21-1

Checking the amount of thread cutting oil /Oil tank

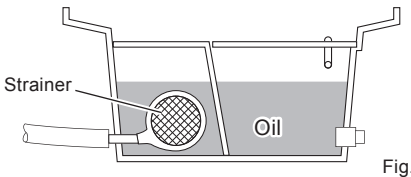


Fig. 21-2

10. Motor with braking system (Fig. 22)

The braking system in the motor is designed to minimise idling after turning the machine off, and to prevent unexpected accidents and injuries. The motor can stop within fewer rotations than conventional ones. However, under certain conditions the braking system may not engage correctly or it may become ineffective.
Read the following cautions carefully to ensure correct use.

Please note that the effectiveness of the brake will be diminished in the following cases.

Problem	Remedy
The carbon brushes are worn out.	Replace with new ones according to the procedures on Pg. 17, Fig. 40.
When the motor becomes overheated from continuous use	Wait for the motor to cool down and start again.
When an oxide film is generated in the motor	Allow the motor to rotate for about 10 minutes with no load.

If the brake does not work even under such circumstances, contact your distributor or WHEELER-REX. Table 3

⚠ WARNING

1. Make sure the braking system is working before using the machine.
- Although this machine is equipped with both a braking system and a safety switch, the brake may not work or it may become ineffective depending on conditions. Check the effectiveness of the brake before use, and wait till the motor comes to a complete stop before moving on to the next operation.
2. Be sure to use REX carbon brushes.
- Using other brushes may damage the motor or the machine itself, or the brake may not be applied.
3. Do not use the machine in rain, humid or damp places, or places where moisture can easily get into the machine.
- If stored for long periods in a humid place, an oxide film may form on the motor, and the brake may not be engaged. Store in a place with low humidity.

Motor with built-in braking system

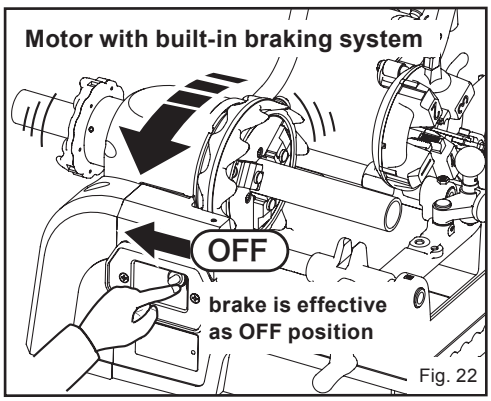


Fig. 22

WHEELER REX

11. Cutting pipes

(1) Raise the die head and reamer.
(2) Position the pipe so that it is ready for cutting, and fasten the pipe securely with the hammer chuck.
(3) Open the pipe cutter wider than the diameter of the pipe, lower it into position and turn the cutter handle, bringing the cutter close to the position where the blade and roller lightly press against the pipe.
(4) Switch the machine on and turn the cutter handle up to ½ a turn for each rotation of the pipe. (Fig. 23)
* Note: When starting to cut a pipe, apply gradual pressure while tightening the wheel lightly against the pipe. If too much force is applied, the shape of the pipe may easily be distorted, resulting in imperfect threads.
* Note: If the cutter handle is turned too quickly, it will affect the shape and finish of the thread.

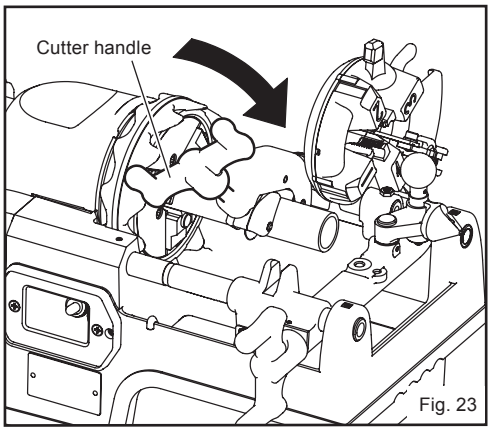


Fig. 23

When cutting a stainless steel pipe, use a **stainless steel pipe cutter wheel (product code: 135071)**.

⚠ CAUTION

Be sure to position the cutter correctly before the pipe starts rotating.
If it is not in the correct position it could damage the pipe or the machine.

⚠ WARNING

1. Use a pipe support when threading long pipes.
- If the pipe to be cut is very long, ensure you create a stable situation before starting. Use a proper pipe support so that the cutter will not be overloaded by the heavy weight of the long pipe just before or during the cutting process while the pipe is rotating. This will prevent the machine from becoming unstable under the weight of the workpiece. If a pipe support is not used, threading cannot be performed correctly, causing problems with the machine, and may even result in accident or injury.
2. Pipe cutter may break.
- Be sure to wear safety glasses, and keep your hands and face away from the pipe cutter. Fragments may scatter, causing accidents and injuries.
3. Always use genuine REX parts for the cutter.
- If you use anything other than genuine parts, the machine will malfunction, resulting in accident or injury etc.

Special precautions when you cut a pipe using another pipe cutter (Fig. 24)

We strongly recommend that only the pipe cutter attached to the machine be used to cut pipes. If another cutter is used, ensure that the pipe end is at right angles to the axis of the pipe. (Fig. 24-A)
If the pipe is not square on, as in Fig. 24-B and C, threads may be defective. Illustrations B and C may be the result of the following:

Fig. 24-B
- The bearing or chucking of the cutter is unstable.
- When a grinder is used with excessive force (especially in the case of large diameter pipes.)
- When the pipe is engaged at an angle when cutting.

Fig. 24-C
- When you have cut a large diameter pipe 2 or 3 times with a small grinder.

⚠ CAUTION

If the end of the pipe is slanted (Fig. 24-B) or has steps in it (Fig. 24-C), it is not only impossible to make a perfect thread, but may even result in damage to the machine, accident or injury, etc..

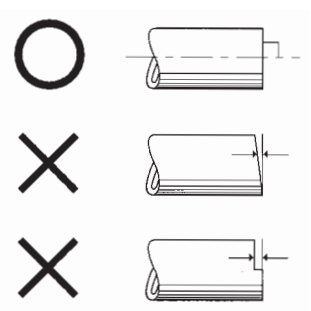


Fig. 24

12. Reaming

After cutting the pipe with the pipe cutter, be sure to use the reamer to chamfer the inside of the pipe before making a thread.

(1) Lift the die head and pipe cutter out of the way.

(2) Lift up the set knob on the reamer and put the reamer in the chamfering position. (Fig. 25)

(3) Turn the machine on to start the pipe rotating. Then turn the carriage handle to the right to move the reamer forward to engage the pipe. Allow the pipe to rotate at least ½ a turn, and then remove the reamer from the pipe. That completes the reaming process. (Fig. 26)

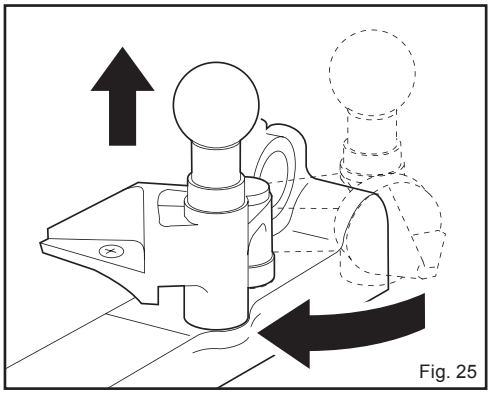


Fig. 25

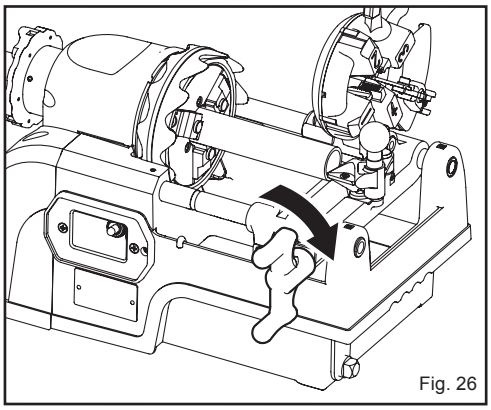


Fig. 26

⚠ CAUTION

- Do not use excessive force when pressing the reamer against the pipe as this may scratch the pipe or even damage the machine.
- The reamer blades are extremely sharp. NEVER touch them with your bare hands, as you could be seriously injured.

Before threading a pipe

13. Carriage collision prevention mechanism (Fig. 27)

When threading a very short pipe, the carriage may hit the chuck and cause serious deformation or damage to the machine. The "collision prevention mechanism" is designed to stop the motor automatically when it is on the verge of colliding and prevent damage to the machine.

(1) When the carriage approaches the chuck, the rod also approaches the switch and is pushed forward.

(2) As the carriage moves forwards, the rod pushes onto the main switch just before a collision occurs and the machine stops.

(3) Since the pipe is far too short, make sure you extend its length in order for the process to be carried out properly.
(Refer to Pg. 10 "Suggestions for short pipes".)

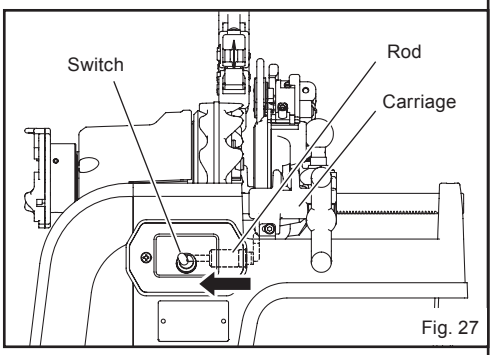


Fig. 27

⚠ CAUTION

Start the thread cutting process with the carriage to the right of the red line on the front support bar. (Fig. 28)

14. Improper use of a pipe wrench (Fig. 28)

As shown in Fig. 28, a pipe is positioned in the machine and a wrench is being used to tighten the fitting: never do this as there is high risk of damaging the machine.

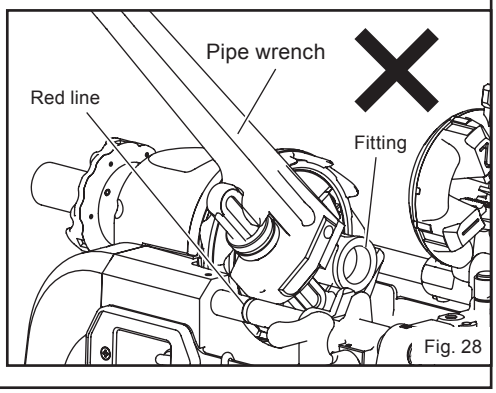


Fig. 28

15. Cutting threads (Self-opening Die Head)

Raise the cutter and reamer, and align the die head with the proper position. Look around the work site to make sure it is safe to begin operating the machine.

* Make sure the handle is in the lowered position (as shown on Pg. 6, Fig. 2) before you start cutting threads.

Match the correct die head and dies to the diameter of the pipe. Similarly, make sure you use the right dies and oil for stainless steel pipe.

(1) Push the guide set knob forward and align the die head with its proper position. Check to make sure that the unit is set to the desired size (Fig. 29).

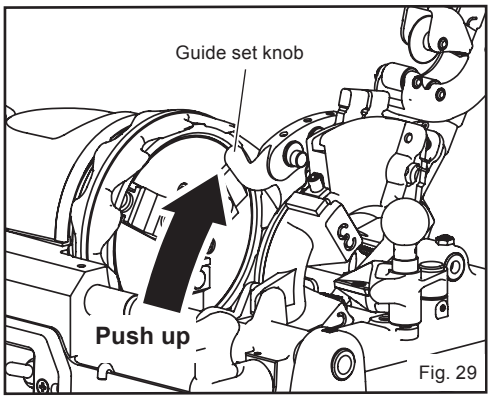


Fig. 29

To change size: (Fig.30)

1. Push the positioning notch in the direction of arrow 1 in Fig. 30.
2. Align the positioning notch with the desired pipe size as displayed on the size indicator plate.(arrow 2)
3. Finally, push the positioning notch in the direction of arrow 3 and, at the same time, insert the positioning pin in the notch groove.

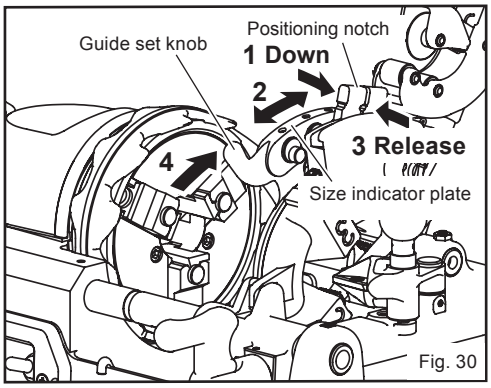


Fig. 30

(2) Push the guide set knob in the direction of arrow 4 until it stops. The die head is now set in position. Switch on the machine and the thread cutting oil will automatically flow out of the die head.

(3) Turn the carriage handle to the right to advance the die head against the pipe and allow the dies to begin cutting (Fig. 31)

(4) Once three or four threads have been cut, the remainder will be cut automatically. When the prescribed thread length is reached, the dies will be released by the auto-open lever.

(5) Turn the carriage handle to the left to release the die head from the pipe.

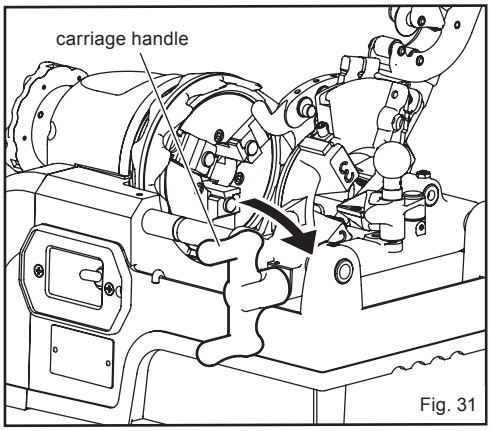


Fig. 31

⚠ WARNING

When threading is completed, the self-opening die heads suddenly open. There is a possibility of oil splashing out or metal flakes flying out, which might result in accident or injury. Avoid placing your hands or face too close to the machine.

Precautions when threading

- Care when the dies come into contact with the pipe (Fig. 32)

Engage the cutting edge of the dies very lightly with the end of the pipe. Bringing the dies too forcefully into contact with the pipe will result in damage to the dies and shorten their working life. Once the dies come into contact with the pipe, initially apply light pressure to the carriage handle in a clockwise direction and then gradually increase the amount of force to cut firmly. As the dies cut into the pipe, it is no longer necessary to apply pressure to the carriage handle as the carriage will move on its own.

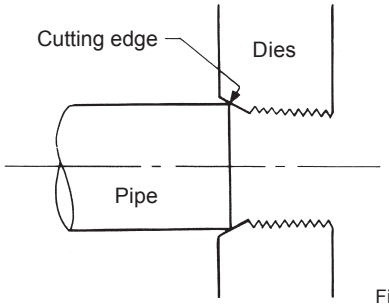


Fig. 32