MODEL: SQ100A

Pipe Threading Machine

WARNING!

Read this Operator's Manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

Electric Threader User's Manual

I. Introduction

This machine is for threading of various water, electric or gas pipes ranging form $^1/_2$″– 4″. It is efficient and can be widely used in equipment installation and construction industries and is an ideal device for increasing efficiency, shortening construction time, securing construction quality, and decreasing working intensity. Read this manual carefully before using the machine.

Caution: The electric threader is for threading. Follow directions and instructions of the Electric Threader User's Manual to avoid danger to operate it.

II. Technical Specifications:

Item	Parameter
Range of work	$^1/_2$″–4″ inches BSPT / NPT threads
Threading Dies	$^1/_2$″–$^3/_4$″ one set 14threads/inch 1″–2″ one set 11threads/inch 2$^1/_2$″–4″ one set 11threads/inch Rockwell Hardness: HRC58-62
Electric Motor	1300W induction type 220V/50-60Hz 110V/50-60Hz
Maximal Output rotational Speed	28 / 12turns/minute
Maximal Chuck Capacity	ф125mm
Carriage Travel	180mm
1000Oil Feeder	Geared pump, automatical circulation
Noise	＜85dB
Weight	140Kg

III. Special Safety Requirements

1. Keep the working site clean and bright (illumination condition 600lux) for disorder and darkness may cause accidents.
2. Do not expose the machine to the rain or operate it in moist workshops to avoid electric shock.
3. Operators are only allowed to wear tight clothing. Operators should take off the gloves, jewelry, watch or likewise and should not loosen his or her long hair without permission.
4. When the threading machine (including its accessories) is installed in the working site, use only the 30mA leakage resistance switch.
5. The following is forbidden when the machine is running:
   ---- Touching or grabbing the workpieces.

---- Replacing or removing components (pipe accessories, livers, or pipes etc)
---- Cutting or sawing pipes using hand tools.

6. If the dangerous areas in the machine or its workpieces can not be examined closely, the spinning workpieces or the dangerous areas should be protected. The protective devices must be reliably and stably placed. The supporting devices must be stable if they are used. Install three support legs and adjust three screws to ensure height and stability.
7. Keep children away when the machine is running. They are forbidden to operate the machine or drag the cables and wires.
8. Avoid overload operation. The unsuitable accessories, overload operation and blunt or damaged threading die must not used for fear that the machine would be damaged.
9. Extending too long pipes to operate the machine is forbidden. Keep this machine balanced and stable all the time. Calculate the danger caused by suddenly-broken workpieces (based on the length of the workpieces, the section, the material and the rotational speed) and use enough supports to avoid danger.
10. Maintain this machine with care. Lubricate the machine and replace the accessories according to the instructions of this manual to make it more safely operated. Check the cables of this machine regularly. If there is any danger, it must be repaired by the technician. Keep various handles clean and tidy all the time. Keep them out of oil pollution.
11. Turn the power off. Pull the attaching plug out when the machine is not in use.
12. Starting the motor carelessly is forbidden. Make sure the switch is at the position of "off " before the plug is connected with the machine.
13. Do not operate the machine when the operator is tired, or if he has touched any drugs.
14. Check the damaged spares: Check any cutting tools and spares carefully before using them, and see if they are in normal working condition and able to function. Any damaged spares must be repaired and replaced by the specially trained technicians.
15. Operation is forbidden when any switch can not be properly turned on or off.
16. Replacing spares and accessories: Use the spares of Tiger King Electric threader for safety and proper operation.

IV. Directions

Unpacking:

When Unpacking the case, check if the accessories below are attached:

1. Two sets of threading dies in a tool box (4 pieces each set);
2. One inner hexagon spanner and one screwdriver;
3. One set of die head ranging from $2^1/_2$ – 4 inches;
4. One set of support legs.

Assembling:

1. Put the accessories aside and install the support leg into the hole at the bottom of the machine;

2. Fasten it with the screw safely and reliably;
3. Suspend the threader and make it stable with supporting legs and ready for use.

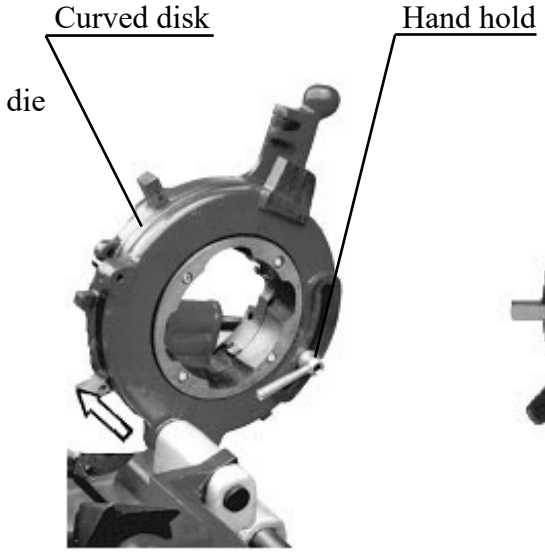
Preparations to threading:

Replacinging threading dies

There are three sets of threading dies, each of which threads different pipes. They are shown below:

Pipe	Threading dies
$^1/_2$″–$^3/_4$″	$^1/_2$″–$^3/_4$″ 14 threads/inch
1″-2 ″	1″-2 ″ 11 threads/inch
2$^1/_2$″-4″	2$^1/_2$″-4″ 11 threads/inch

1. Select a set of threading die that matches the diameter of the pipe. There are two groups of figures on each threading die, one of which represents its specification; another representing the assembly sequential numbers (such as 1, 2, 3, 4).
2. Remove the die head from the carriage (Fig.1), loosen the nut of the handle, turn the curve disk around to the maximal position of the scale.



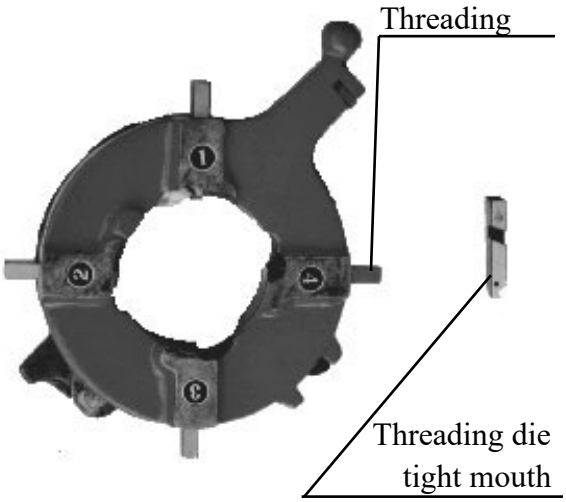


Fig. 1 Fig. 2

3. Put the selected threading dies into die grooves according to their sequential numbers, and its lock notch will fit curved disk. Then pull the curved disk until the scale indicatrix of the curved disk points at the scale on the ruler of the job. Then the threading die is fixed.

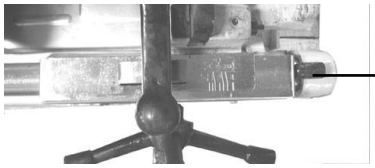


Fig 3

Note: $^1/_2$″-- $^3/_4$ ″, 1″--2 ″threading dies are installed in small die heads, while 2$^1/_2$″--4″ ones in big die heads.

4. Place the assembled die head onto the carriage.

5. Turn the adjustable screw to the position as required (see Fig. 3)

Check cutting oil:

1. Check whether there is enough cutting oil in the oil tank;
2. Add oil when needed through the oil disk;
3. Cutting oil will recycle through the die head after the machine starts;
   Note: Use thread cutting oil only to ensure to produce high-quality threads.

Threading operation:

1. Any operation requiring non-rotating condition should be done only when the machine stop running;
2. Rotate the fore and rear chucks clockwise. Then loosen three claws, install the pipe from beside the rear chuck, make it pass through the fore chuck and extend by 100 mm.
3. Hold the pipe in right hand, and fix it by wheeling tight the fore and rear chucks, and then moderately tighten the hammer disk by hammering it counterclockwise (see Fig. 4);

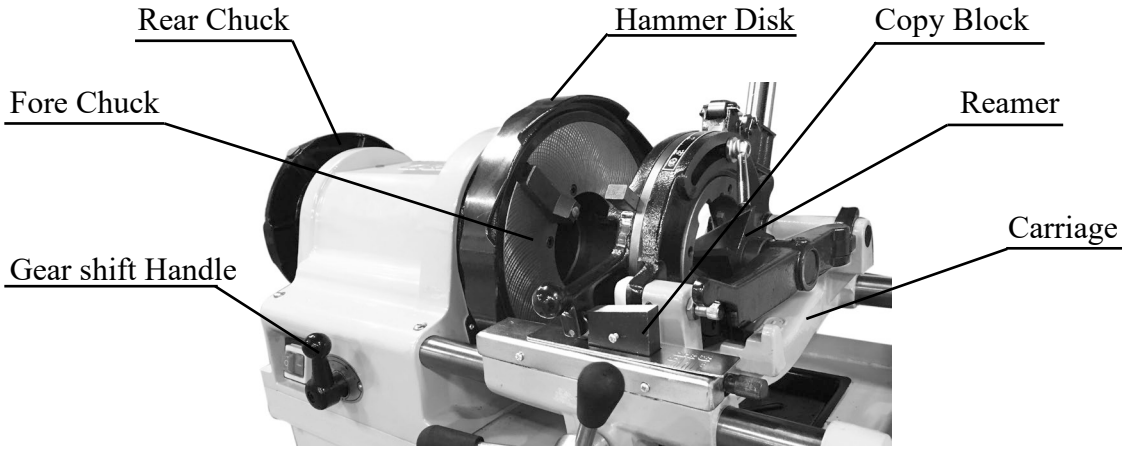


Fig. 4

4.Pull up the cutting knife rack and beveling rack to make room. Then push down the threading die head, make it touch the copy block (see Fig. 5), and lock it tight with locking pin. Push the button to start the machine after the die head is fixed in its proper position.

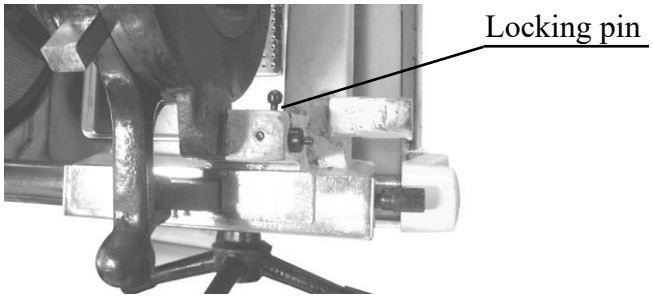


Fig. 5

Caution: To keep the machine in order, gear shift hand should be placed at the position of the bottom gear when threading the pipes with a diameter bigger than two inches, otherwise, place the gear shift hand on the position of the top gear (see Fig. 6).

Indication board of top gear or bottom gear

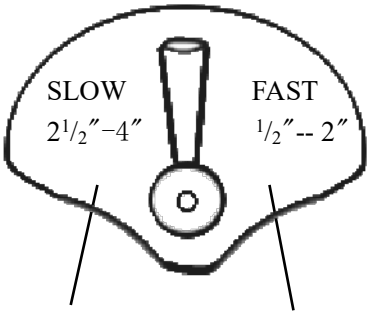


Fig. 6

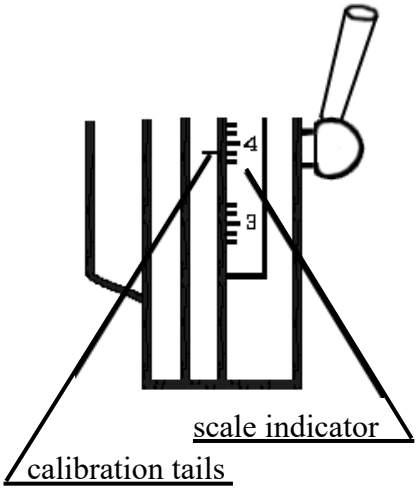


Fig. 7

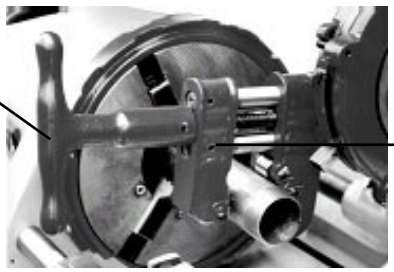
5. The pipe must rotate counterclockwise. Then rotate the carriage handle to move the die head to the pipe.
6. Apply force on the carriage hand wheel until 3 ~ 4 threads are made on the pipe.
7. Stop applying force. The machine begins to thread automatically until the roller of the die head passes the copying block and falls down.

   Caution: Two steps should be followed when threading the pipes with a diameter bigger than 2 inches. Firstly, place the scale indicatrix one scale lower than the scale required; secondly, make the scale indicatrix point to the scale required.
8. Stop the machine, quit the die head to the right unused position.
9. Loosen the fore and rear chucks clockwise, and remove the pipe from the rear chuck.

Cutting the pipe:

1. Pull up the threading die head and the beveling device so that the fore and rear chucks fasten the pipe.
2. Push down the cutting knife rack and rotate the handle. Open the rack to let the cutting knife roller straddle on the pipe.
3. Rotate the carriage handle to move the cutting knife to the cutting position (see Fig. 8)

Cutting knife handle



Cutting knife rack

Fig. 8

4.Rotate the cutting knife handle to move the cutting knife to the pipe.

5. Start the machine. Switch the gear shift hand to the top gear and make the knife cut into the pipe. Cut about 0.15 – 0.25 mm for one turn of the pipe, i.e. for each turn of the basic shaft the cutting knife handle forwards about $^{1}/_{10}$ turn. Quit the cutting knife and pull up the rack to its position after cutting.
   Caution: Cut with moderate speed and force to avoid the distortion of the pipe and the damage of the cutting knife.

Inner diameter beveling:

1.Pull up the threading die head and cutting knife rack and push down the beveling rack to make the fore and rear chucks fasten the pipe.

2.Start the machine. Move the gearshift hand to the top gear. Rotate the carriage hand wheel and drive the beveling device to the inside of the pipe.

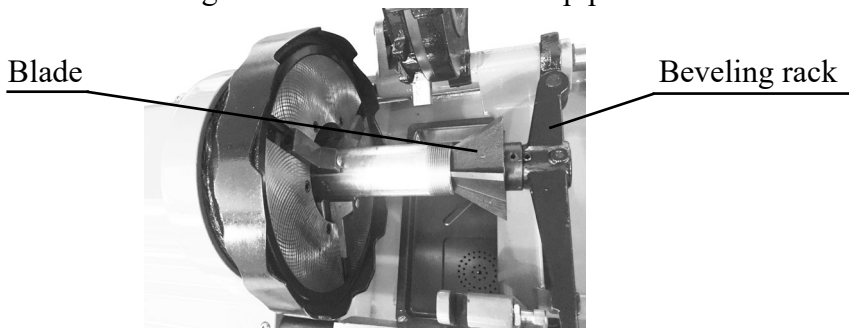


Fig.9

3. Stop the machine after the beveling. Move the beveling rack to its position.

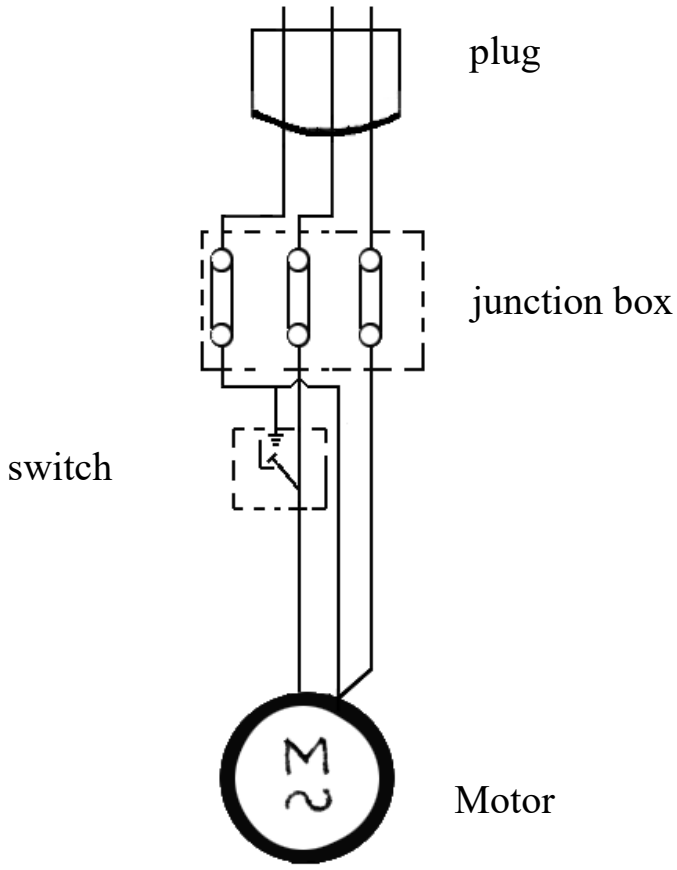
V. Maintenance:

1. Turn the master switch to the position of “off” or unplug the power when the machine is checked or maintained.
2. The shell of this machine is cast with a whole piece of aluminum alloy. Its reduction gearbox keeps lubricating permanently. Do not impact the shell violently.
3. Cooling oil system: Clean the oil filter disk and oil suction filter disk after running for 8 – 12 hours. Clean the oil tank and refill if the oil is dirty or turns black.
4. Small iron filings may fell into the oil tank when threading. It is therefore essential to clean the filter disk once a week to keep the machine in order.
5. Check the cutting blade each week. Replace it when it is blunt.
6. Check the attrition of the claw points in the claw one a month. If the claw points are worn, replace them (three each set) to ensure to produce the threads of high quality.
7. Clean threading dies and die heads every shift. Check if the teeth of the threading die are broken. If they are, remove the cuttings between the teeth. If the die is already broken, replace a set of dies instead of the broken one only.
8. There are two oil cups on the shell of main shaft. Oil at least twice each shift to lubricate the fore and rear bearings.
9.Unplug the power when the machine is not in use. Coat corrosion resistant oil on both fore and rear guideposts and other working surfaces. Store it in a dry and airing place.

VI. Problem and Remedy

Problem	Cause	Remedy
The motor does not run or makes breaking sounds when running.	The fuse is blown.	Replace the fuse.
	A poor power contact	Replace the plug wire.
	The insider of the cable is broken.	Locate the point broken with multimeter.
	Electric capacity is broken down.	Replace the electric capacity.
The pipe can not be fastened or it slips when threading.	Less forceful stroke.	Hammer with force.
	The claw point is upside-down.	Adjust the claw point.
	One of claw points is broken or notch-edged.	Replace the claw point.
The cutting knife can not cut.	The point of the cutting knife is worn-out and not sharp.	Replace the blade.
	The pin roll of the cutting knife is worn down.	Replace the pin roll.
	Apply less force when starting to cut.	Cut with force.
The cutting knife does not work when threading.	The knife does not open widely when starting to thread.	Use the knife properly.
	A few teeth of the cutter head are broken.	Replace the knife.
	The type and size of the knife is not suitable.	Reinstall the knife.
	There are iron filings in the grooves.	Clean the threading die head.
The fore chuck body is loose.	M6 bolts are loose for long-term use.	Check at all times.
Th main shaft heats up.	Lack of oil	Oil regularly.
		Remove the beam barrel and scratch the shaft.
The cooling oil can not be sufficiently provided.	The oil circuit is blocked.	Clean the oil circuit.
	The oil hole is not installed properly after the fulcrum shaft of the threading die head is removed.	Reinstall it.
	The oil in the oil pump has leaked out.	Fill some cooling oil in the oil pump.
The cooling oil leaks into the motor.	The oil seal of the oil pump PD8 x 22 x 8 has been damaged.	Replace the oil seal.

Type SQ100A Elementary Diagram



Storage: Store the threader in a dry place to avoid humidity and electric shock.