INSTRUCTIONS OF EYEGLASSDRILLER

CONTENTS

● UNPACKING

1. Open the carton and take out the foam packing block placed onto the unit.

2. Carefully pull out the unit from the carton and place it onto a sufficiently stable bench.

● ACCESSORIES

Also check the following accessories packed in the carton:

Accessories	Quantity	Parts #
Lens holder arm	1 pc.	TD-142
Suction cup	1 pc.	TD-141
Cutting oil	1 bottle	TD-145
Allen key (3, 2.5 and 2mm)	1 pc. ea.	TD-144-
Drill bit holder	1 pc.	TD-143

● SAFETY PRECAUTIONS

WARNING

Never attempt to operate this machine before you thoroughly read and completely understand all the instructions, rules, etc. Contained in the manual. Failure to comply can result in accidents involving fire, electric shock or serious personal injury.

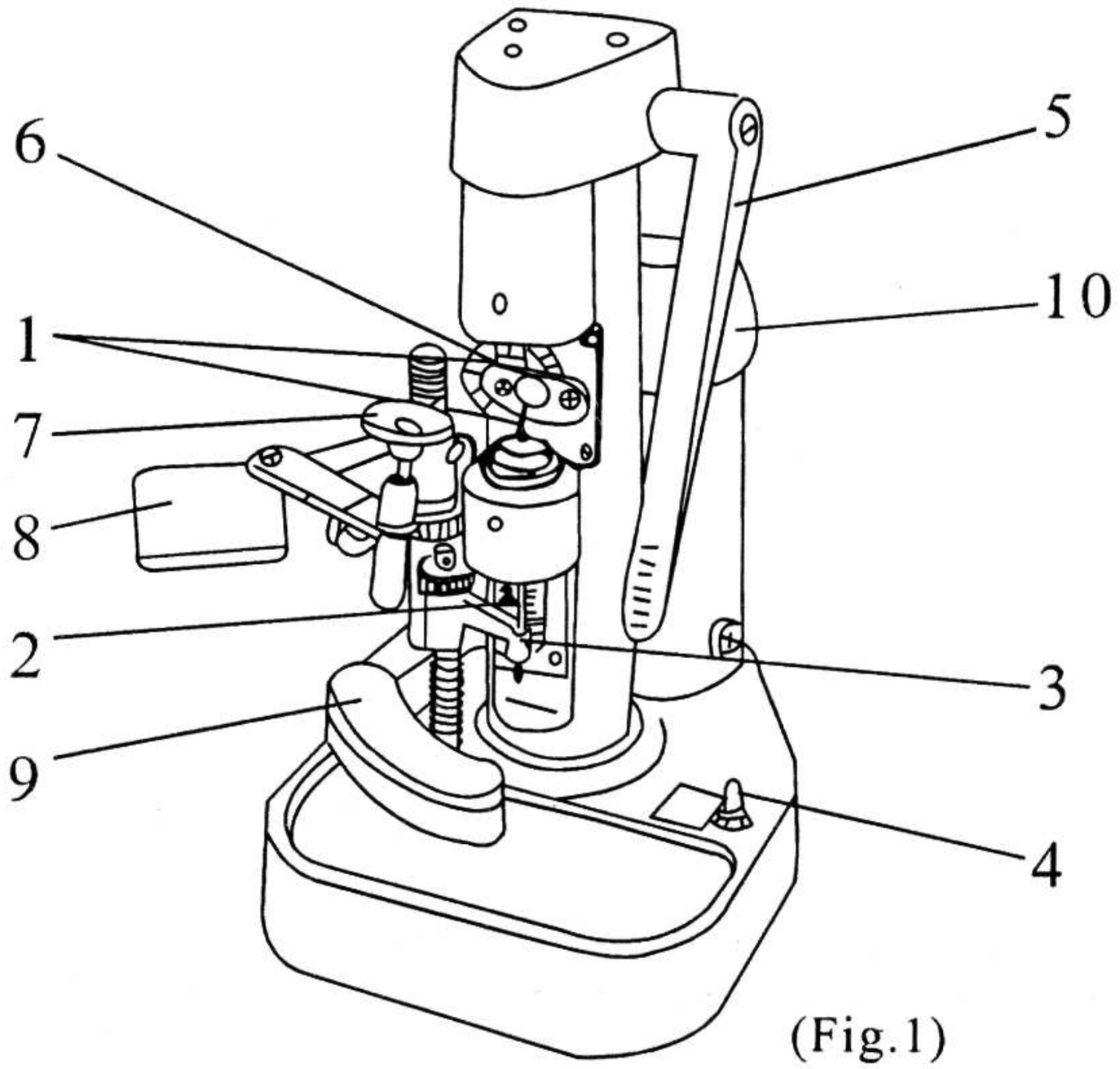
Keep this users manual on hand and review frequently for continuing safe operation and instructing possible third-party users.

Note that manufacturer assumes no responsibility and no liability for any damages caused by negligence or ignoring the precautions enlisted in this manual.

[PRECAUTIONS]

- Do not use this machine for other purpose than drilling spectacles lenses.
- This machine is equipped with sharp-pointed drill bits and reamer. Handle those drill bits and reamer with sufficient care to avoid any injury.
- Never operate this machine with an unconformable power source(voltage and frequency). Make sure your power source corresponds to the specifications of the unit.
- Do not place the unit where it may get a high temperature of direct sunlight.
- If any type of liquid or material gets into the inner part of the unit, immediately switch the power of the unit off and unplug its power cord from the wall outlet. Do not switch the power on again until the unit is checked by our qualified service representative.
- Do not try to disassemble any component of the unit except the parts accepted in this manual.
- Do not give an excessive load or a impact onto any part of the unit.
- If you are not going to use the unit for a long period of time, unplug its power cord from the wall outlet.

● NAMES AND FUNCTIONS OF COMPONENTS



(Fig.1)

1. Drill Bits — Two drill bits of the same style, drill a lens simultaneously from the upper and lower sides.

2. Reamer
3. Bore Adjuster — Reams the drilled hole with high accuracy in the range of 0.8mm ϕ to 2.8mm ϕ in increments of 0.2mm.

4. Switch — To keep the drill bits and reamer running, push the switch knob backward. To run them momentarily, pull the switch knob toward you.

5. Handle — By pushing this handle, the lens is drilled.

6. Lens Positioning Dial — Sets the lens position relatively to the drill bits. The distance from an edge of the lens to the point to be drilled can be adjusted in the range of 2.0mm to 8.0mm in increments of 0.5mm.

7.	Suction Lens Holder	This attachment secures the lens in a fixed inclination.
8.	Hand Rest	Stabilizes the hand holding a lens for drilling properly.
9.	Oil Bath	Contains the cutting oil to be used for drilling glass (mineral) lenses.
10.	Motor Cap	

2. MACHINE OPERATION

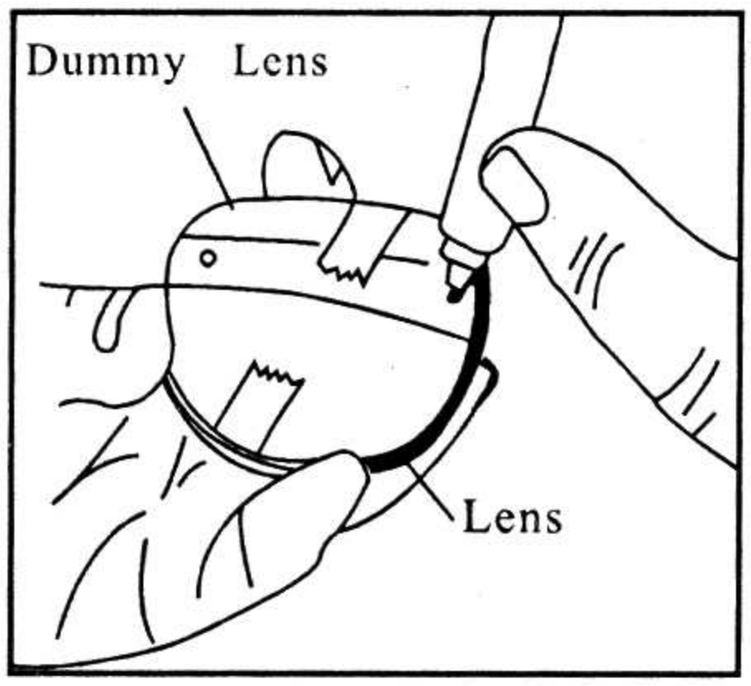
● MARKING DRILLING POINTS ON LENS

1. First wrap up both surface of the lens with an adhesive tape to protect it from any accidental scratch.

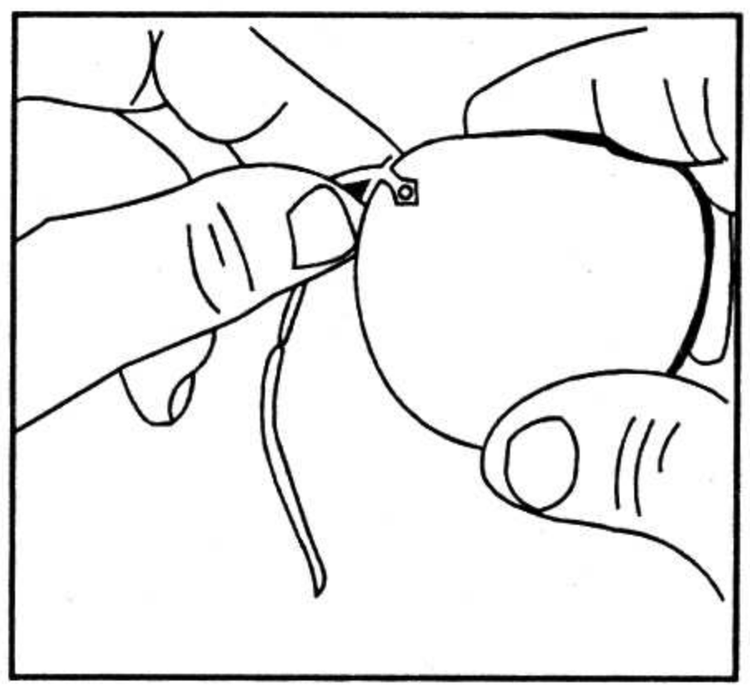
2. Put in place the dummy lens removed from the frame over the lens to be drilled, and firmly fix both lenses each other with an adhesive tape. (Fig.2)

3. Mark points onto the lens through the holes on the dummy lens with a marking pen. (Fig.2)

4. Remove the dummy lens from the lens and check to make sure the points marked on the lens are placed correctly by applying each part of the frame to the lens as shown in Fig.3.



(Fig. 2)



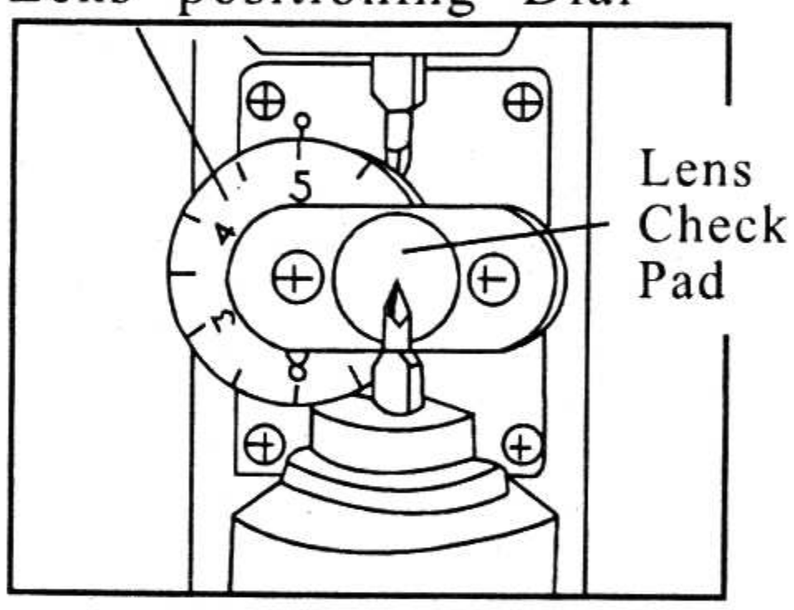
(Fig. 3)

● DRILLING LENS

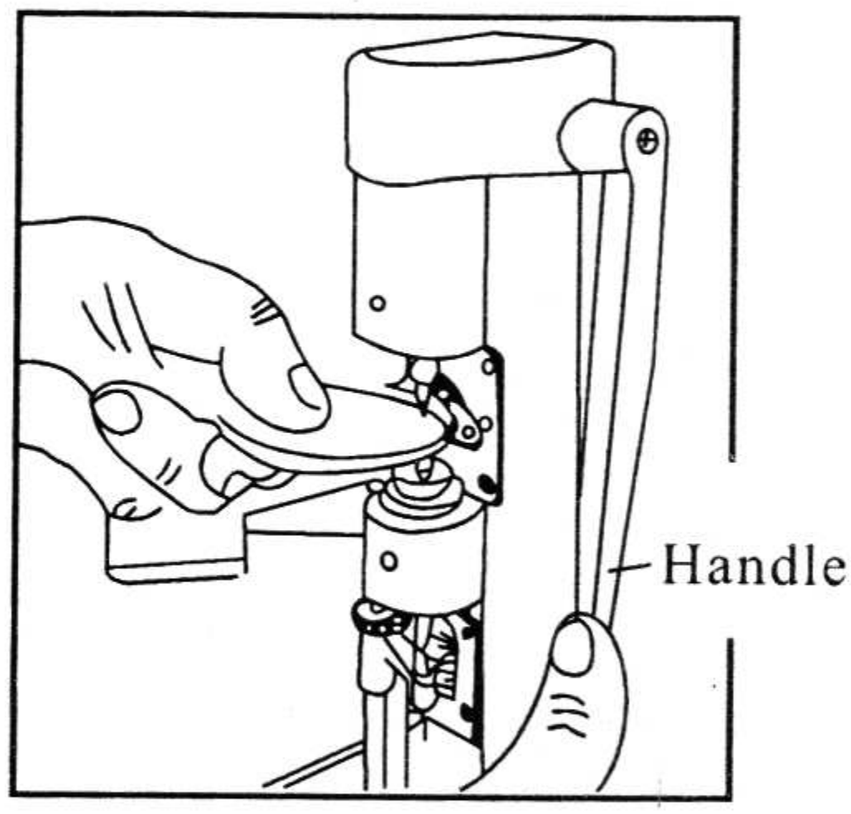
1. Put an edge of the lens to the lens check pad and adjust the lens position by turning the lens positioning dial so thet the points of the drill bits exactly come onto the drilling point marked on the lens. (Fig.4)

2. Hold the lens by hand and keep the lens surface to be drilled, horizontally. Adjust the height of the hand rest properly by turning a knob located under the hand rest, so that your hand holding the lens can be stabilized.(Fig.5)

3. Switch the power on and on trial, make a slight hole onto the point marked on the lens, by pushing the handle carefully. (Fig.5) Then check to make sure the trial hole is made in place.



(Fig. 4)



(Fig. 5)

4. Practically drill the lens. According to the material of the lens, the following procedures should be followed:

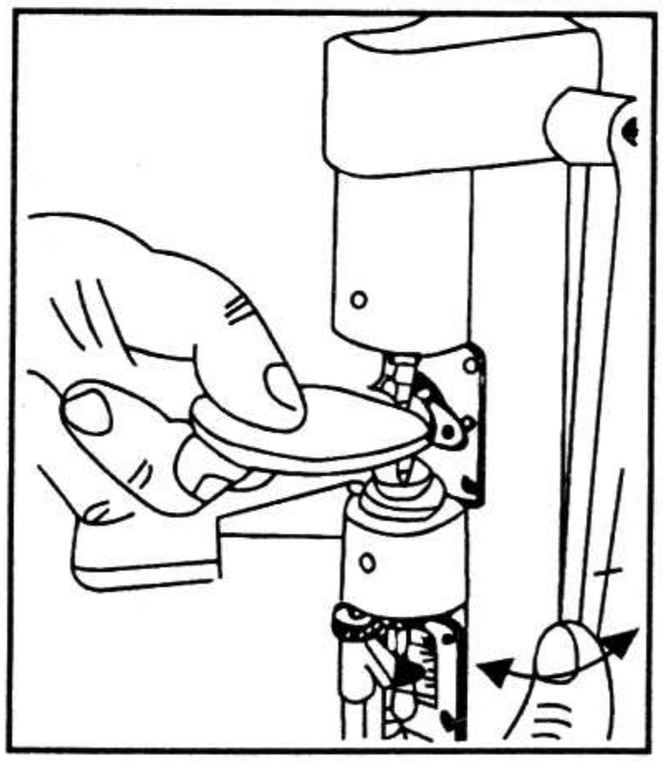
<u>for Plastic (CR-39) Lens</u>

- The lens can be placed either side of face up.
- No cutting oil is necessary.

<u>for Glass (mineral) Lens</u>

- Place the lens back-face side up.
- Put the accessory cutting oil in the oil bath (Fig.1), and soak the part of the lens to be processed in the cutting oil whenever drilling scraps become white and dry.

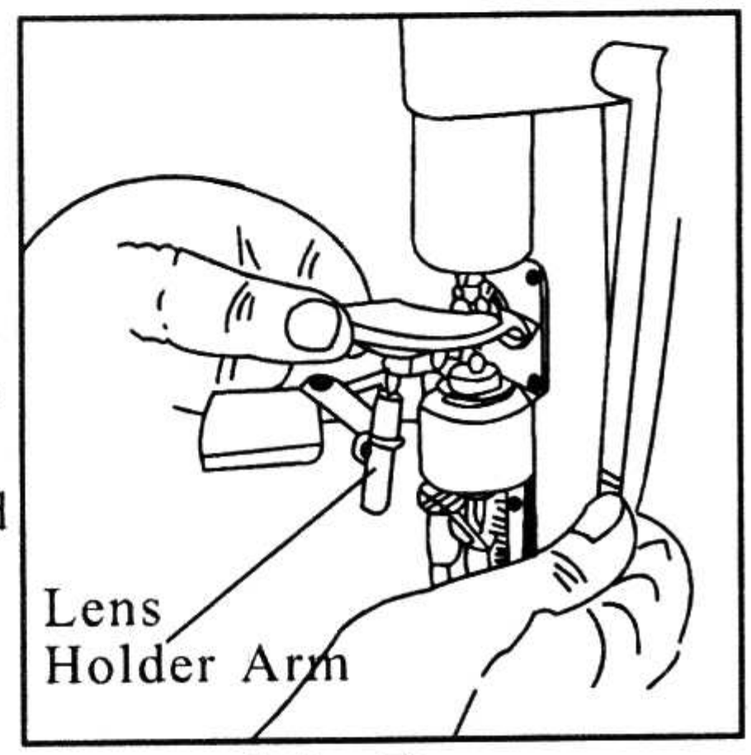
<u>for Polycarbonate Lens</u>



- Do not attempt to drill at a sitting but carefully and slowly drill by pushing and releasing the handle alternately several times over. (Fig. 6)
- No cutting oil is necessary.

(Fig. 6)

● DRILLING WITH SUCTION LENS HOLDER



(Fig.7)

1. Set the lens holder arm onto the hand rest. (Fig.7)

2. Fix the lens with the suction cup and set it onto the holder arm. (Fig.7)

3. Adjust the inclination of the lens so that the lens surface to be drilled is placed horizontally. (Fig.7)

4. Adjust the height of the lens properly by turning a knob located under the hand rest. (Fig.7)

● REAMING DRILLED HOLE

[WARNING] The reamer las a very sharp point. Carry out this process with sufficient care to avold any injury.

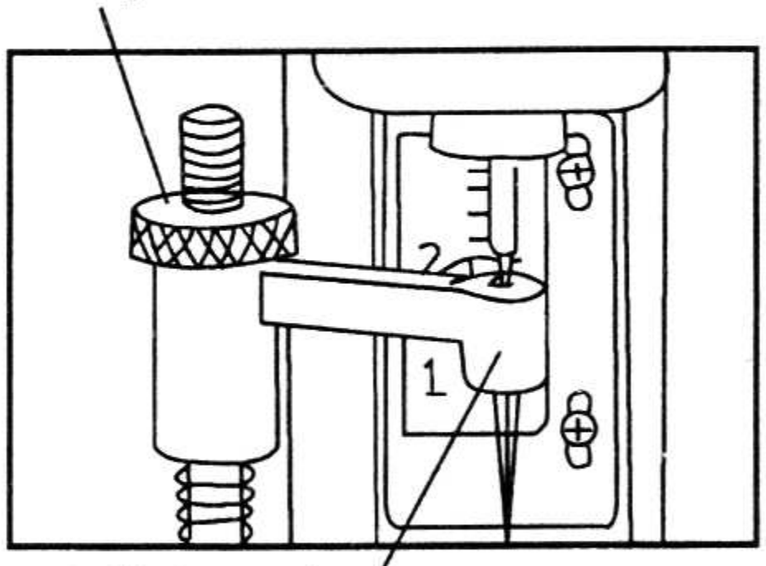
1. Set the diameter of the hole to be finished by turning the bore adjuster knob. (Fig.8) The bore can be adjusted in the range of 0.8mm Φ to 2.8mm Φ in increments of 0.2mm.

2. Insert the point of the reamer into the drilled hole on the lens, then lift up the lens slowly until it touches the bore adjuster arm slightly. (Fig.9 & 8)

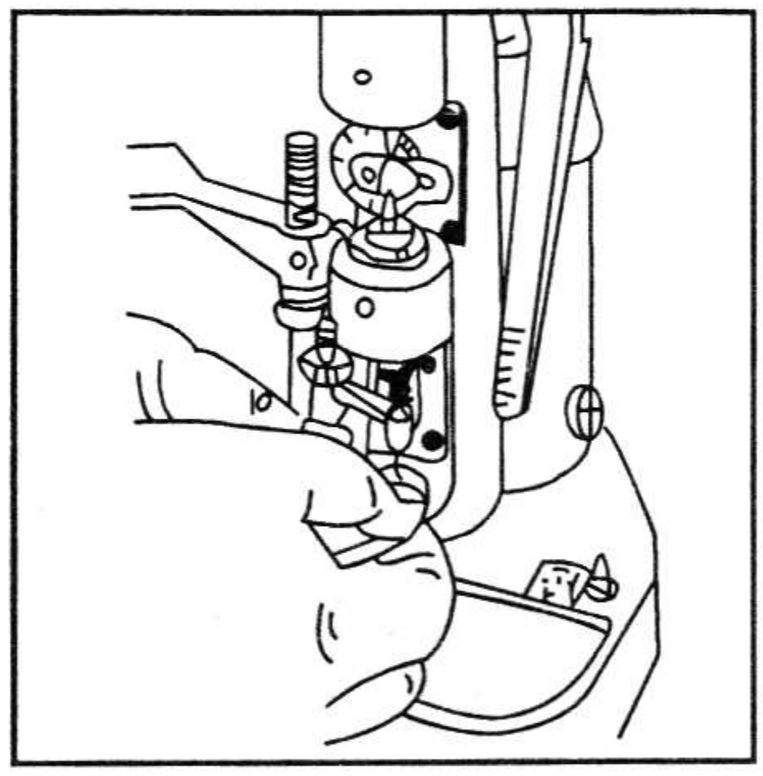
3. Turn the lens over and ream the same hole again in the same manner as the above (2).

[CAUTION] Use the cutting oil when reaming a glass (mineral) lens.

In case the reaming process takes too long, the clearance between both drill bits should be adjusted in accordance with the procedures for "ADJUSTMENT OF DRILL BITS' CLEARANCE" in next chapter.

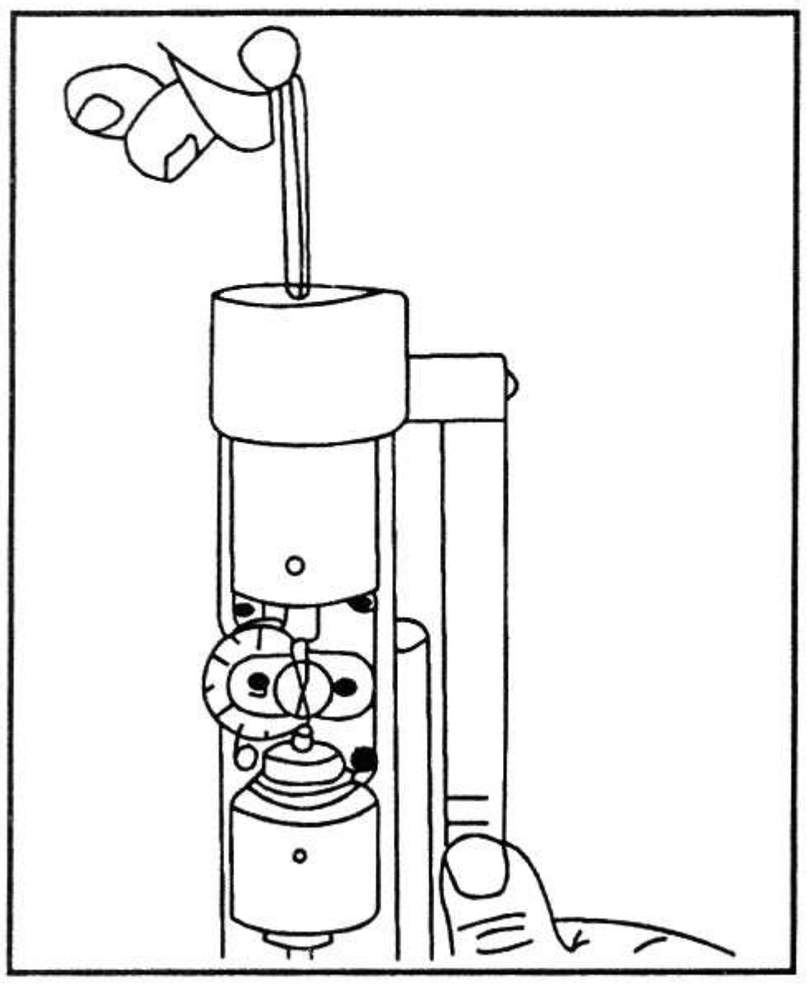


(Fig.8)



(Fig.9)

● ADJUSTMENT OF DRILL BITS' CLEARANCE



(Fig.10)

The clearance between the upper drill bit and lower drill bit should be as small as plssible, but they must not touch each other. The optimum clearance is 0.1mm. To check this clearance, push the handle completely, and to adjust it, proceed as follows:

1. Insert the accessory 3mm allen key into the hole on the top of the machine while pushing the handle completely. (Fig.10)

2. To make the clearance smaller, turn the allen key clockwise.
   To make the clearance larger, turn the allen key anti-clockwise. (Fig.10)

● REPLACEMENT OF DRILL BIT

1. Remove the motor cap from the motor. (Fig.1)

2. Grip the neck of the drill bit with a pliers and turn the motor knob, and the drill bit will come off. (Fig.11)

3. To reset the drill bit, follow the above procedures oppositely.

[NOTE] Both the upper and lower drill bits should be set so that those edges align strictly.
As both drill bits are the same in size and shape, they can be set to either position.

● REPLACEMENT OF REAMER

[WARNING] Tie reamer bas a very sharp point. Carry out this work with sufficient care to avoid any injury.

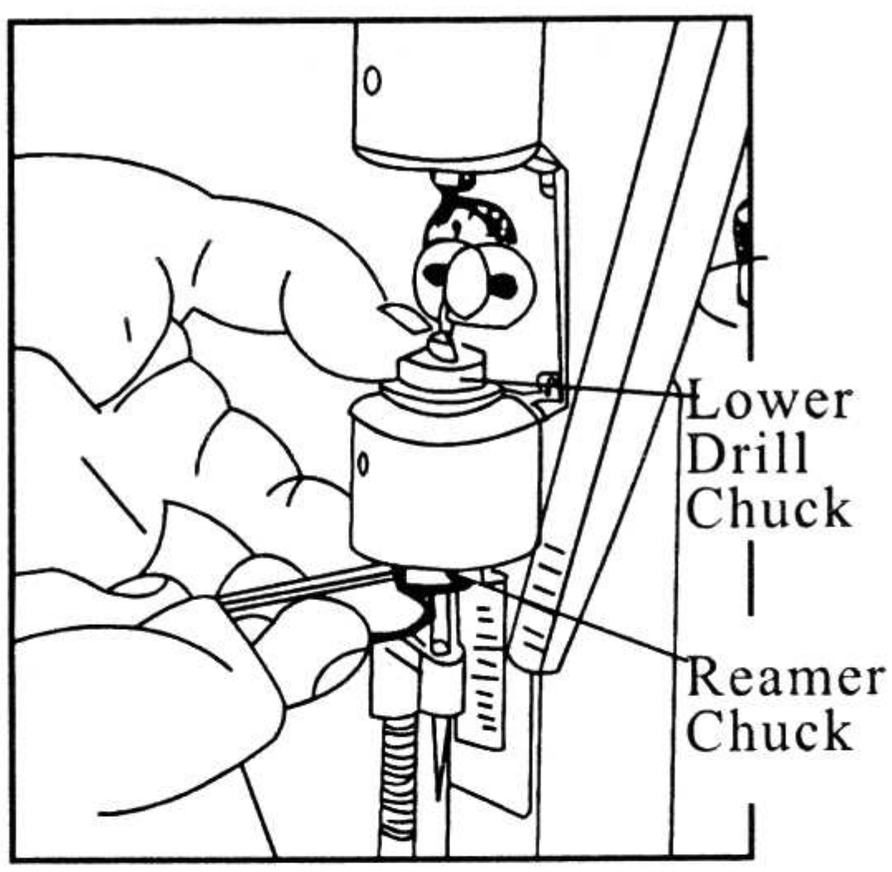
1. Remove the reamer by loosening its setscrew located on the reamer chuck. (Fig. 13)

2. Insert the new reamer into the reamer chuck completely. Then tighten the setscrew while gripping the lower drill chuck and reamer chuck by fingers so that both chucks don't play.(Fig.13)

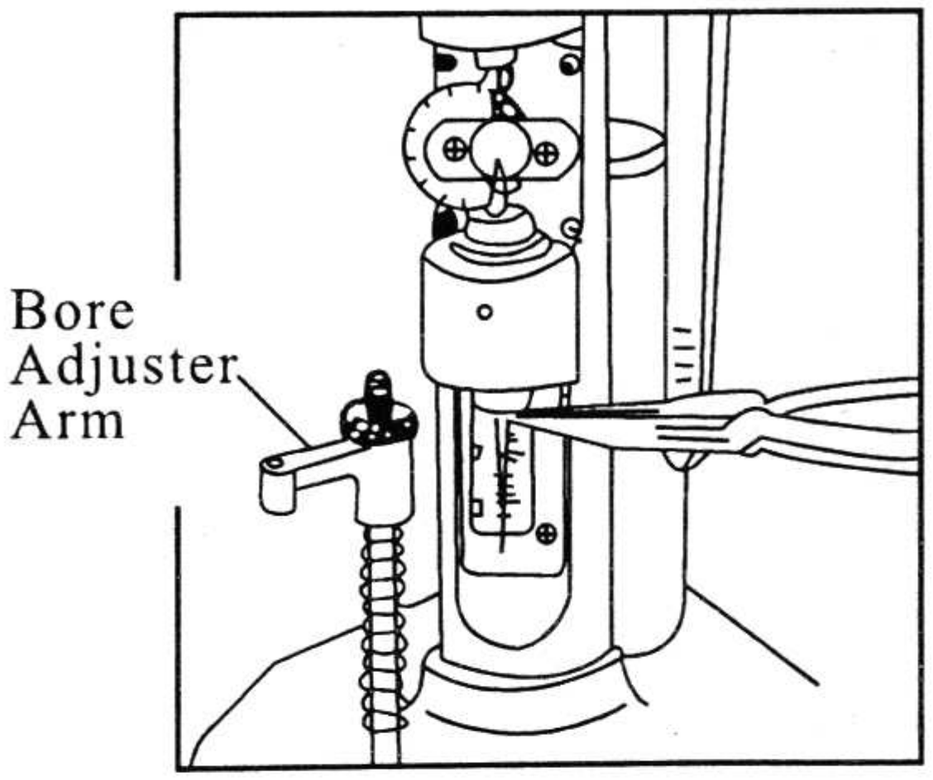
3. Check to make sure the reamer fotates without deflection.

4. If there is any deflection on the reamer……
Depress the bore adjuster arm completely and release it from the reamer. Then correct the deflection by gripping the haft of the reamer with a pliers.(Fig. 14)

[WARNING] Do not attempt to bend the reamer with a pliers gripping the edge part of the reamer. Doing so can break off the reamer.



(Fig. 13)



(Fig. 14)

● ONE-SIDED DRILLING WITH TWIST DRILL BIT

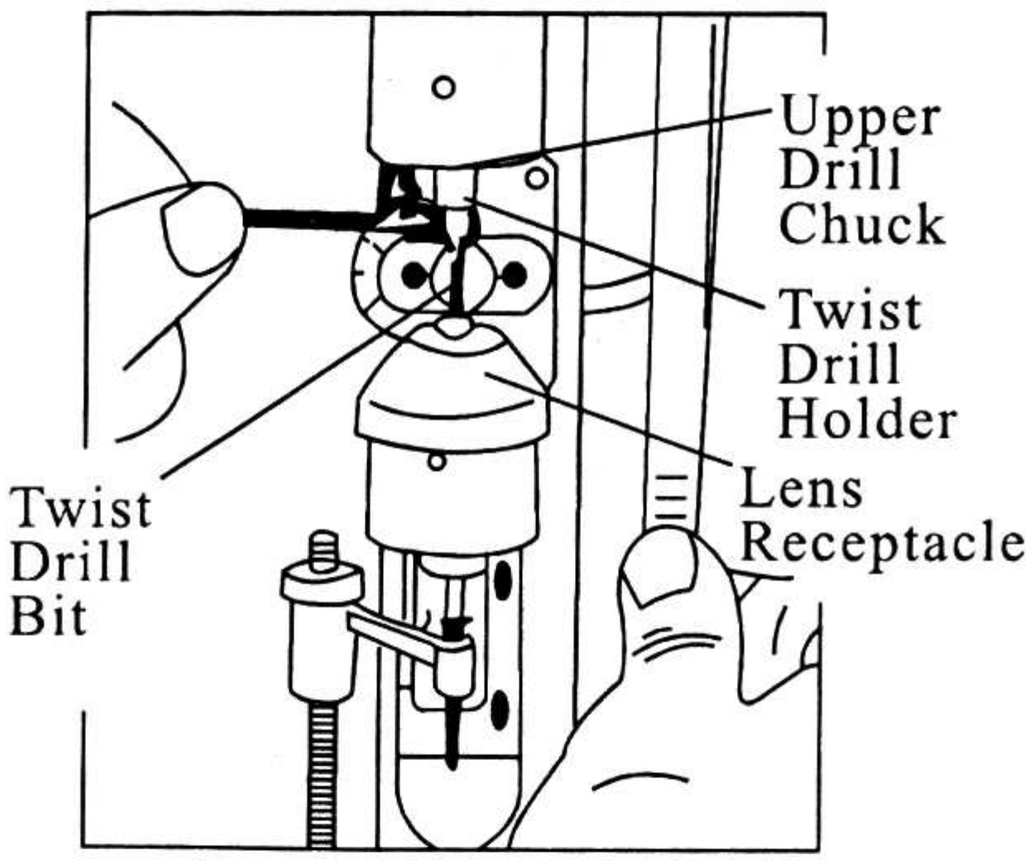
By using an optional accessory " one - sided drilling attachment ", plastic (CR-39) and polycarbonate lenses can be drilled with a twist drill bit of 0.8mmϕ to 2.2mm ϕ.

1. Take off both the upper and lower drill bits in accordance with the procedures for " REPLACEMENT OF DRILL BIT " on Page 3-1.

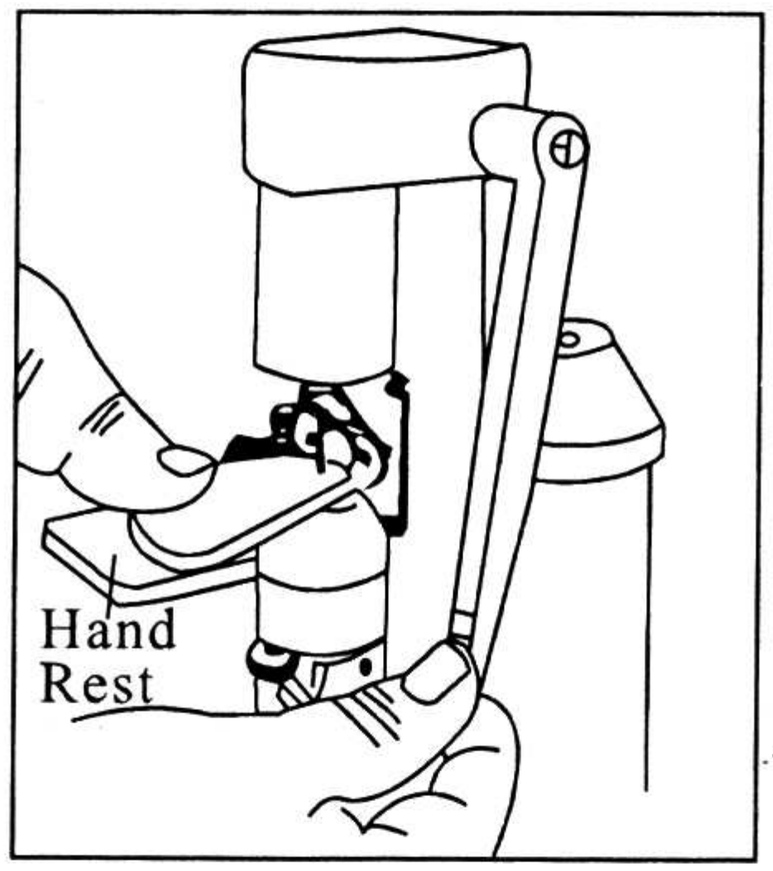
2. Insert the twist drill holder (1tem#TD-160) into the upper drill chunk firmly and set the lens receptacle (1tem# TD-161) over the lower drill chuck.(Fig-15)

3. Insert a twist drill bit (Item # TD-161-) into the twist drill holder. Adjust the position of the twist drill bit so that its point comes into the hole on the top of the lens receptacle by approx. 1.0mm when the handle is pushed completely, then tighten the setscrew on the twist drill holder.(Fig. 15)

4. To drill a lens adjust the hand rest in a proper position so that the lens can be placed correctly and stably as shown in fig.16. Then push the handle lightly and slowly. Do not drill at a sitting.



(Fig. 15)



(Fig. 16)

5. SPECIFICATIONS

Materials of Lens Acceptable	Glass(mineral) / Plastic(CR-39) Polycarbonate / etc.
Plssible Diameter of Drilling	0.8mm ϕ to 2.8mm ϕ
Dimensions	140(W)x 185(D) x 275(H)mm
Weight	4.0Kg
Power Requirements	100 to 120V / 60Hz AC, 25 200 to 240V / 50Hz AC, 50