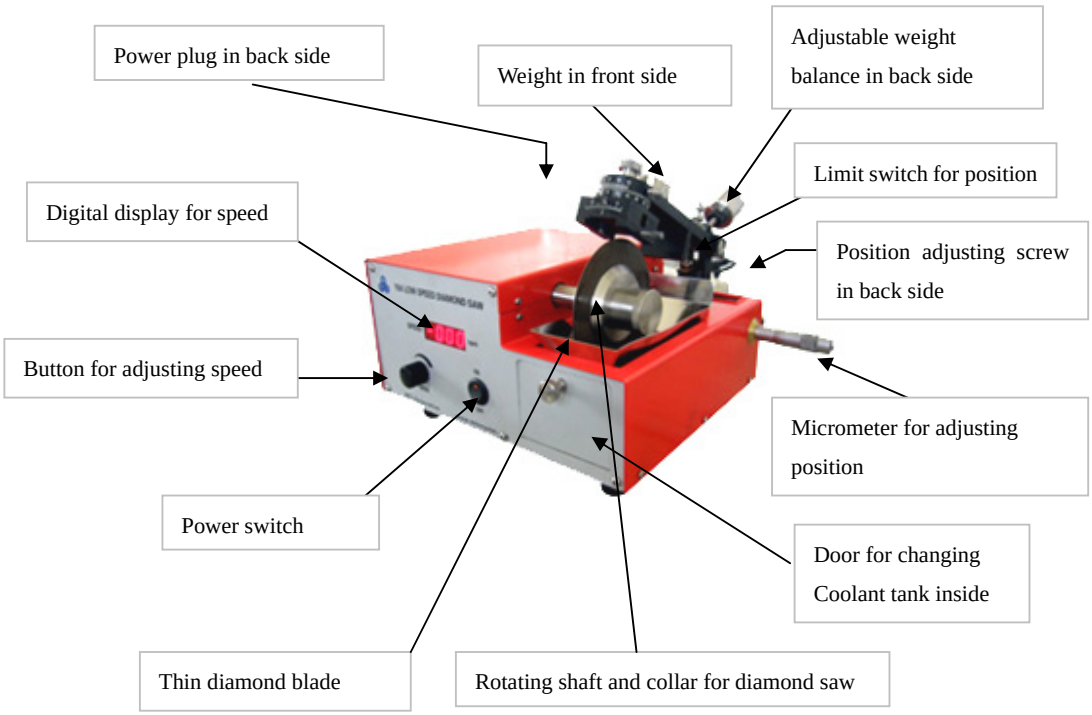
Operation Instructions

For SYJ-150 Precision Low Speed Diamond Saw

1. SYJ-150 Saw Structure



2. Precautions Before Cutting

(1) Just plug power cable into the power inlet at the back of the saw. The voltage ranges from 110V to 230V. Always unplug powder cable before open saw case for any repair.

(2) Please choose suitable position for gravity swing arm, and tighten the screw before cutting, otherwise micrometer can not work (as Fig. 1)

(3) Please check position switch of swing arm to be sure if it is at suitable position. If position screw is too long it may cause machine to stop running. (as Fig. 2)

(4) Please tighten the screws on sample holder for two angle adjustment and sample holding plate (as Fig. 3), otherwise sample may drop down during cutting

(5) Before cutting, please choose a comfortable speed. Always adjust speed from lower to higher.

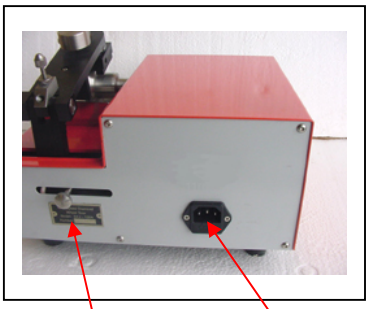


Fig. 1

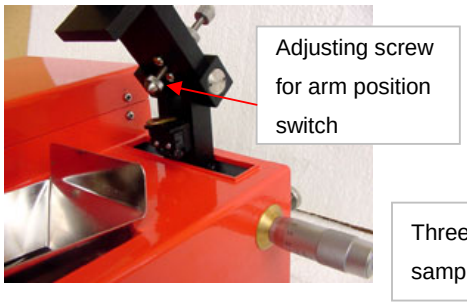


Fig. 2

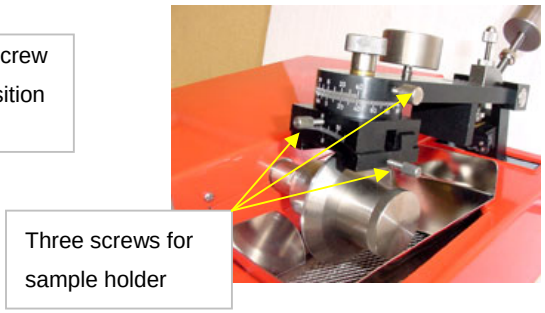


Fig. 3

3. Operation Procedure

- Place an aluminum mounting block onto a heating plate (available at www.mtixtl.com) and heat it to approximately 120^{o}C.
- Mount the graphite plate onto the aluminum mounting block using low melting point wax provided.
- Melt another piece of wax on top of the graphite plate where the specimen is to be mounted.
- Place the specimen onto the wax and graphite plate and remove the entire assembly from the hot plate. Let it cool down for about 2~3 minutes.
- Place the aluminum block with the mounted specimen into the goniometer specimen holder by loosening the thumbscrew on the side of the goniometer. (Fig.4)

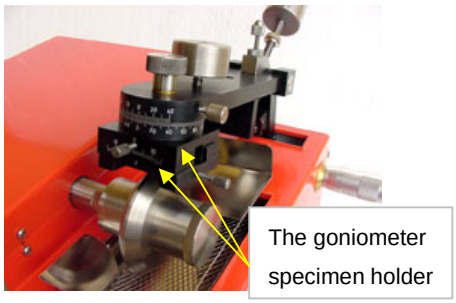


Figure 4

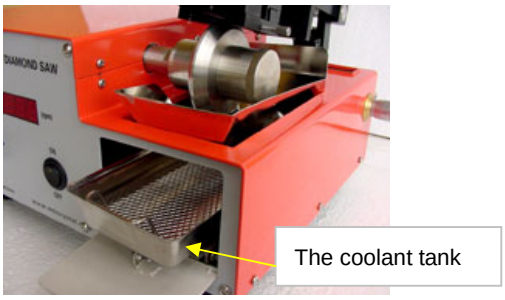


Figure 5

- Loosen the thumbscrew and finely adjust the specimen position using the micrometer.
- Tighten the thumbscrew to secure the mounted specimen into the place.
- Place lubricant (diluted to 30 part water with 1 part lubricant by volume) into coolant tank (Fig.5) until the lubricant covers approximately 10~15 mm (1/2”) of the diamond wheel.
- Adjust the automatic shutoff control by adjusting the height of the screw at the rear of the arm assembly. When the screw comes into contact with the metal pads at the base of the arm, an electrical switch shuts off the cutting wheel. After properly adjusting the screw, tighten the bolt on the shutoff screw to ensure the position of the screw. This will ensure that cutting will stop when the endpoint is reached (Fig 6).

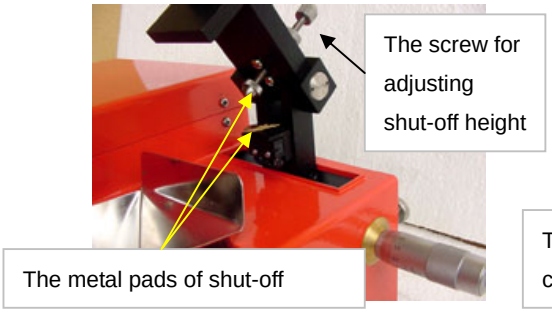


Figure 6

Figure 7

- Turn the main power switch ON by depressing the switch (Fig. 7).
- Make sure that the crystal is away from the cutting blade while following adjustments are being made.
- Adjust the speed using the speed control knob on the front panel. (Fig. 7, The higher speed is better for low hardness material)
- Gently lower the arm with the specimen onto the diamond wheel very gently to begin cutting of the specimen (Fig. 8).

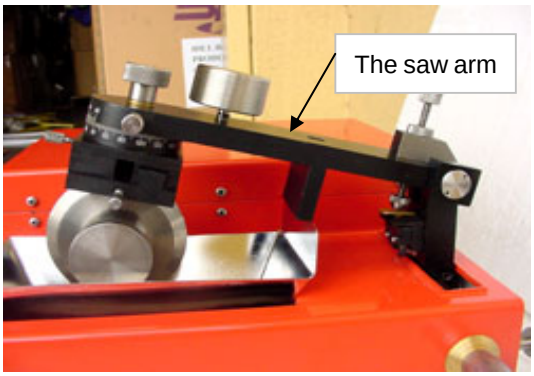


Figure 8

- Caution: DO NOT allow the arm to slam down onto the cutting wheel, otherwise severe damage to the wheel will result in.
- When cutting is complete, raise the arm into the up position and turn main power switch OFF.
- Raise the arm and remove the entire assembly specimen from the saw. Then put it back onto a hot plate to melt the wax, take off the specimen and make it clean.

4. Smart Tips for Using SYJ-150 Saw

Cutting multi-sample in one time:

You can use multi blades to cut more slices in one time, as shown in Fig. 9. The spacers from 2 mm to 20 mm are available from MTI upon request. For 10 mm space, 150 saw can install 4 blades.

Fig.9

Accurate 90 Degree Cutting:

In order to cut perfect 90^{o} sample, better use our cross sample holder, as shown in Fig 10. Using the crossing holder, you can turn sample 90^{o} angle quickly without mistake after first cutting. This precision Crossing Holder costs you $120/ea.

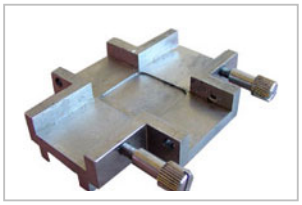


Fig.10

Digital Display Micrometer for Easy reading

Digital display micrometer head can be installed in 150 saw, As shown in Fig.11. This will make reading easy and more accurate. But the digital micrometer cost you $450 more.

Fig.11

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