



Laboratory Equipment Manufacturer
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INSTRUCTION MANUAL FOR **Abrasion Tester**



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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QC-619T Abrasion Tester

A. Specification:

- ◎ Machine Dimension: 55 x38 x47 cm
- ◎ Machine Weight: 30 kg
- ◎ Power Supply: 220 V 50 Hz
- ◎ Rotary Speed: 73RPM
- ◎ Counter: 6Digit (Optional Setting)
- ◎ Load (Weights) : 250g/500g/1000g (Free assorting by user)
- ◎ The cleft between Grinding Wheel and Specimen Plate-Holder: 38mm
- ◎ Grinding Wheel: Diameter 2", thickness 1/2"
- ◎ Pitch of Left and Right Grinding Wheel: 63.5mm
- ◎ Specimen thickness: 0.5~5 mm (Adjustable)
- ◎ Accessories: Vacuum cleaner 1Set, Specimen cutter 1Pc (A), Wrench 1Pc (B), Sand Paper 10Pcs (C). (Please refer to Diagram 6: Accessories look for item number A. C. K.)
- ◎ Attachment: Instruction Manual each one piece.

B. Install and operation:

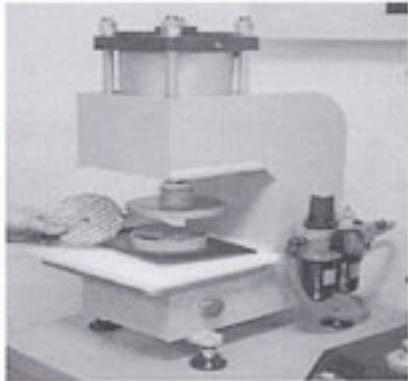
For make sure this tester performs full pre-set function, please read the following description; the parts name mentioned on below please refer to enclosed diagram 1.

1. Please put this tester on a stable desk, adjust direction according to the convenience of operations.
2. Mount the power supply: Connect Power source with the pre-set voltage of this instrument. Turn on the main power switch of this tester, which is on the rear side.)
3. Prepare Specimen:
 - a. Soft Material: Use the enclosed cutter to cut the specimen into outer diameter $\varnothing 108\text{mm}$ Inner diameter $\varnothing 7\text{mm}$ in a round-shape. It is also able to use scissors to shear into the required shapes.
 - b. Hard Material: If the material is too hard to be cut by the enclosed cutter, cut off with saw or sheared by scissor into a similar size as mentioned on "a." is acceptable.
 - c. Coating Material: To test the abrasion endurance of coating material, prepare a flat board of outer diameter $\varnothing 108\text{mm}$ Inner diameter $\varnothing 7\text{mm}$, coat the material (that to be test) on the board, preserve to test. (Please refer to diagram 6: Accessory, Item D)
4. Weighing: use a weighing scale (error range not over 0.001g) to measure the weight of specimen.
5. Pull up the Vacuum Cleaner rack (c): Lift the grinding wheel rack (a. b) and lead it backward, keeps it in this open status.

6. Grip the specimen (g):
 - a. Soft material: Use "Ring-Shape Cushion" (E) and "Washer" (I) and "Press-Ring" (J) together to grip the specimen. The method are as following:
*Put the specimen on "Rotary Plate", let specimen center hole fit on the central shaft of "Rotary Plate", smooth the specimen on the plate, put "Ring-Shape Cushion" (E) first, then put on "Press-Ring" (J), and then put on "Washer" (I), use "Press Nut" (G) to screw tight all (with central shaft of "Rotary Plate", press "Washer" and screw tightly the "Press-Ring" (J).)
 - b. Hard material: Put the specimen on "Rotary Plate", let the center hole fit on the central shaft of "Rotary Plate", put on "Washer" (I), use "Press-Nut" (G) tightly screw the "Press-Ring" (J)
 - c. Coating material: Use the preserved specimen as mentioned above, Use the same method of "Hard material" to grip the specimen.
7. Install Grinding Wheel:
 - a. Please select suitable Grinding Wheel, note the side of Grinding wheel, the one marked with "right hand" use it in the right side (b), the one marked with "left hand" use it in the left side (a).
 - b. After confirmed Grinding Wheel direction, install them in direction of printed-side outward (The surface of label posted towards outside), use "Fixing screw" to tight the "Grinding Wheel" on the "Fixing Shaft"
8. Attach with "Load-Weights" (d):
 - a. The machine weight itself 250g (before attached with "Load-Weights"); "Load-Weight" one set weights 250g, another set is 750g.
 - b. Choose one pair of suitable "Load-Weight", fix them on the "Fixing Shaft for Load-Weight", The method is to fit the hole of the "Load-Weight" onto the "Fixing Shaft of Load-Weight", Press tightly to make the "Fixing Shaft of Load-Weight" pierce through the hole of "Load-Weight"
9. Set the Counter (e): Press "POWER" key thus the counter will be light up, set up the number of times for the counter, thus, when the rotation achieved the setting, this tester will be automatically stopped. Press "SET" then key in the number you need. Press "SET" to end the setting.
10. Install Vacuum Cleaner: Connect Vacuum Cleaner to tester in the right voltage and turn on the vacuum.
11. Adjust the opening of vacuum cleaner's pipe: Adjust the opening of vacuum cleaner higher above the specimen 2 ~ 3 mm, adjust by the screw behinds the machine body, use wrench to loosen the screw and then adjust position by hand, re-tighten screw after adjustment.
12. Put down "Grinding Wheel Rack" (a. b): After finished the above procedures, put down the "Grinding Wheel Rack" that load with "Grinding Wheel", make the "Grinding Wheel" touch the surface of specimen.
13. Start Testing: Turn on the power switch of Vacuum Cleaner to start its inhale function, turn on the power switch of this tester and press "START" key to drive the machine to begin this Abrasion endurance test.
14. Ending Test: When the revolving match the value of pre-set number of times at counter of this tester, the tester will be automatically stopped, to complete one run of test.
15. Test Result: When this test is complete, take out the specimen, evaluate the

abrasion endurance degree according to the condition of surface, the loss of the weight, the loss of the physical volume, the thickness that been worn out, etc.

16. Abrasion index formula: $\text{Abrasion weight loss} / \text{testing revolving number of times} \times 1000$



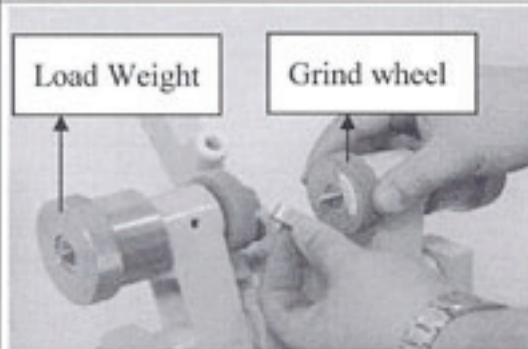
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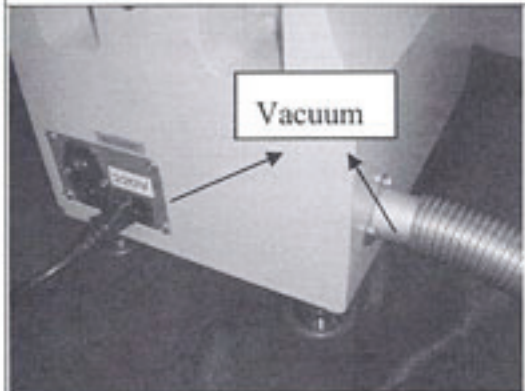
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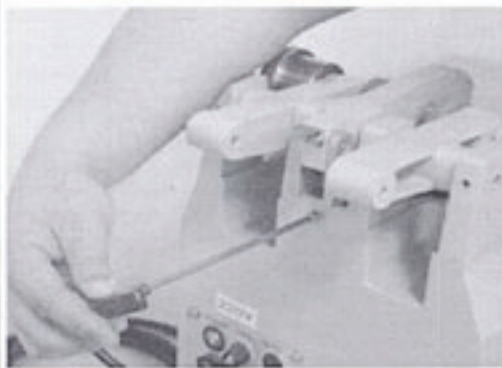
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7.8



10



11

Adjust the height of Vacuum cleaner's pipe



C. Attention:

1. Do not begin test before specimen been loaded, to prevent damage the Grinding Wheel and other parts.
2. When put down the "Grinding Wheel Rack", do it in a easy and soft way, do not bump testing surface, to enhance the using life of Grinding Wheel.
3. When to install the "Load-Weights", keep the balance weight of both Right and Left Grinding Wheel, to obtain an accurate figure for test result.
4. Mending the surface of Grinding Wheel with #150 sand paper after each test (that is: to grip this sand paper, and set up 5 ~ 10turn to trim the grinding wheel). This is for avoid the rubbed-dusts that remain from the last test adhered on the Grinding Wheel, effect the abrasion power then affected test result.
5. Unload Grinding Wheel to put in the preserved box after test, to avoid high pressure or humidity may destroy the inner of Grinding Wheel, ensure its accuracy for future's test and enhance its using life.

D. Maintain and Maintenance:

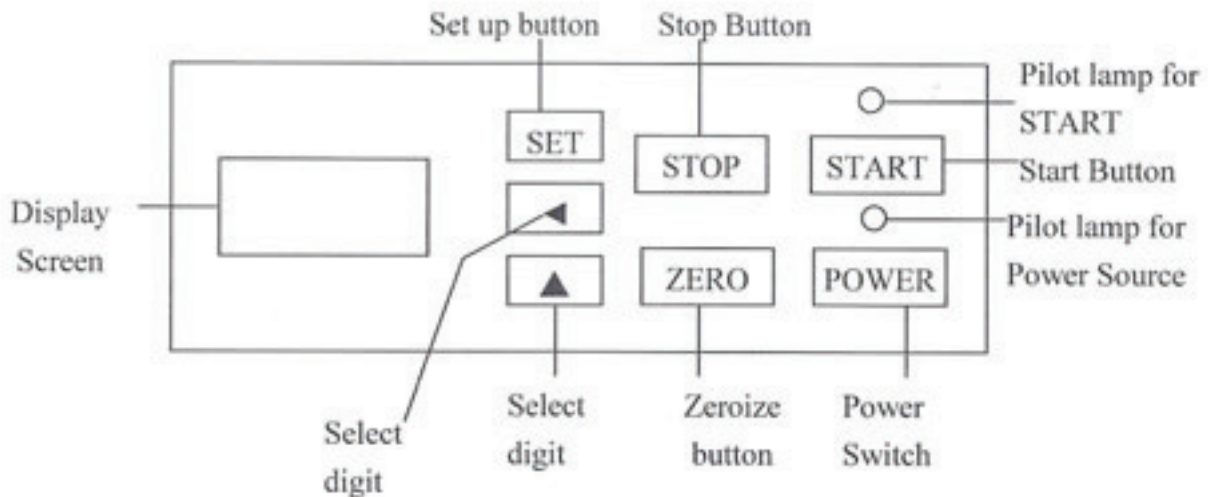
1. Use dry cloth to wipe the appearance of this tester, avoid dust and oil pile up.
2. Avoid bump and damp to the control panel of this tester.
3. If do not use this tester for a long period of time, disconnect and take apart the power cord, take apart the Grinding Wheel, coat a thin oil on the electroplate parts of this tester. This will keep machine on better condition.
4. Replace a new sand wheel is required when the sand wheel rubbed up to the label area, to avoid error test result owing to "quality" or "weight" of Grinding Wheel.

How to calculate the "Load Weights"

Before install with "Load Weight"-- 250g
Attach with 250g "Load Weight"-- 500g
Attach with 750g "Load Weight"-- 1000g



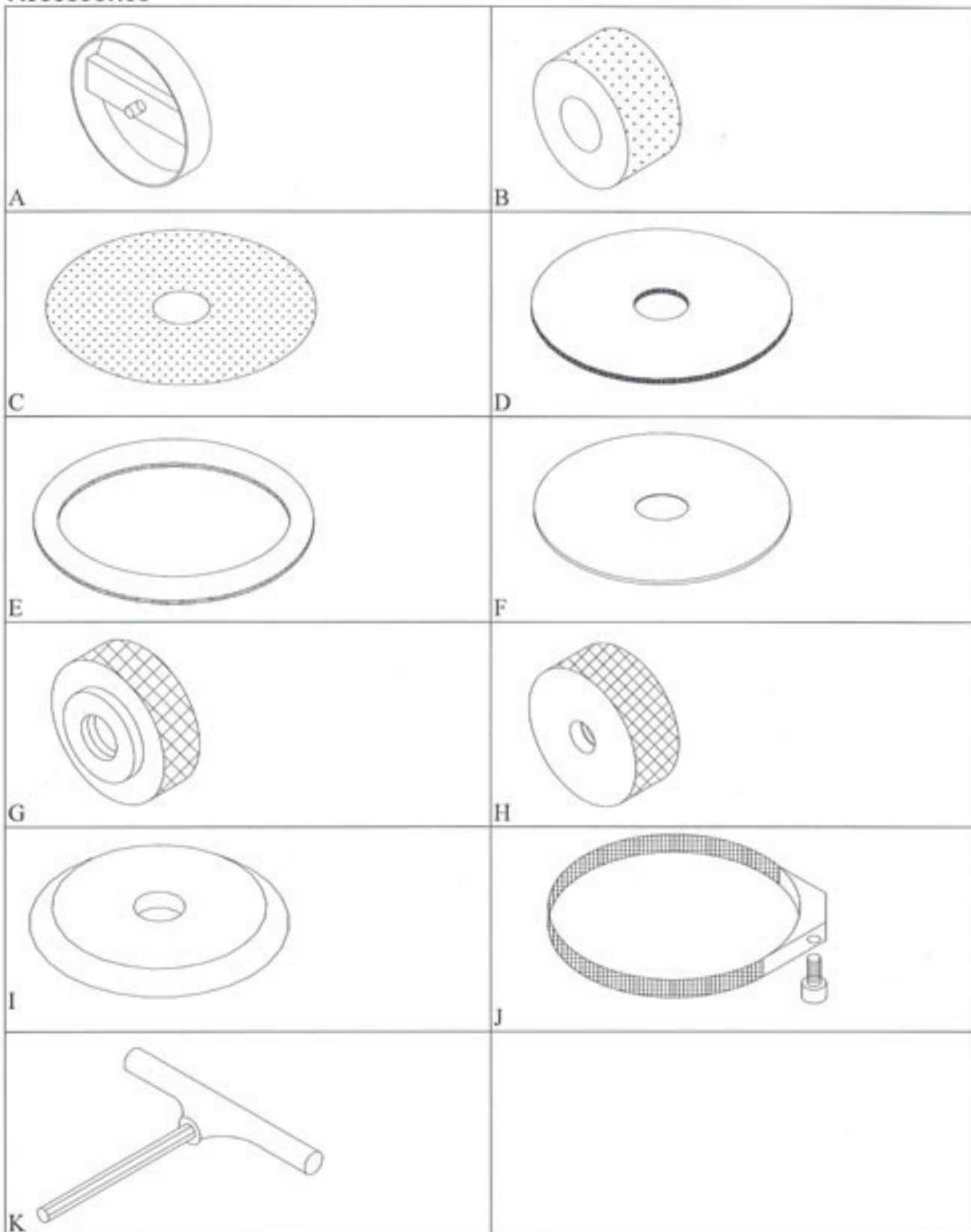
- a. Grinding Wheel rack (left): for fixing the "left side grind wheel" and "Load Weight"
- b. Grinding Wheel rack (right): for fixing the "right side grinding wheel" and "load Weight"
- c. Vacuum cleaner's pipe: With suction opening to absorb rubbing waster.
- d. Load Weight
- e. Electric Control part
- f. Port of Vacuum cleaner's pipe
- g. Specimen grip



Function of each part:

1. Power switch: When this key was pushed, the power of timer was been turn on at this time, LCD screen lights up.
2. Pilot Lamp of power switch: when the power switch has been pushed, pilot lamp for power source will light up at the same time, it represent the power source is connected. When the power switch has been pushed again, the pilot lamp of power source goes out, it represent the power source was off.
3. Start key: When the "START" key has been pushed, the counter starts to count, and the motor that under control of counter starts to turn.
4. Pilot lamp for "START": When the "START" key has been pushed, the pilot lamp for "(COUNTER) START" will light up. When the "STOP" key has been pushed, the pilot lamp of "(COUNTER) START" will goes out.
5. Stop key: When the "STOP" key has been pushed, the counter stop to count at the same time, and the motor that under control of counter stopped.
6. Zeroize key: When the zeroize key has been pushed, the digit on the counter displayer will return to zero at this time.
7. SET: When this set up key has been pushed, the counter enter a status that able for setting.
8. Select Digit key: When the digit key was been pushed, the digit position will change according to the number of times that being press.
9. Select Digit key: When this key was pushed, that digit unit will increase 1 up.

Accessories



A · Cutting knife for specimen: Suitable for soft material, such as rubber, cloth, foam, etc.

- B · Grinding wheel: the type of grinding wheel could be special designed according to material difference. (Optional)
- C · Sand paper: #150 "water sand paper", for trim the grinding wheel after testing,
- D · Rubber plate: as cushion base when griping specimen.
- E · Press-Disc: This outer circle press disc is for grip soft material such as cloth, which cannot be grip tight by Press Ring (J); to use, put it above the specimen (cloth), and fix with grip ring (J). If still cannot tightly grip the specimen, use "Double face adhesive tape" to directly stick specimen onto the stainless steel (F).

If still cannot clip tightly, use double-face adhesive tape to stick on Stainless Steel plate (F) then use. (Optional accessory)
- F · Stainless Steel plate: for produce a standard specimen when doing material coating test.
- G · Tighten screw nut for griping specimen
- H · Tighten screw nut for griping grinding wheel
- I · Gasket: In the central part, for press and grip the cushion pads.
- J · Press Ring for soft material.
- K · Wrench: for tighten press-ring (J), 1pc.