

BGD 527

Wet Abrasion Scrub Tester

INSTRUCTION MANUAL



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ABOUT US

Biuged Laboratory Instruments (Guangzhou) Co. Ltd. is one of leading professional manufacturers of instruments used in the paint, ink and coatings industry in China.

Originally formed in 1963, we have grown to an internationally recognized business with a worldwide customer base which includes the worlds leading paint and coatings manufactures and users. Till now, we have established more than 50 agents or offices in all over the world. We have a team of dedication, high level education, cooperation and strong creativity. Our instruments are of both high quality and high ratio of performance to price so that products are salable to world- wide market.

Our RR&D department continually investigates new product design ideas, in conjunction with the major standards committees, in order to supply up to date instrumentation for the Quality Control of coatings. We always apply the advanced contemporary techniques and experience to our new products.

Our manufacturing department ensures that all our products are built to the highest quality, every instrument undergoing rigorous calibration and testing before it leaves our factory. We also can supply the third side calibration certificate when customer need.

Our service department, which has expanded to meet the increasing demand for maintenance and calibration both in-house and in the field, offers a full range of services

'Quality first and user uppermost' are one of our claims. Our Instruments strive for best in quality and after-sale service. Satisfying your needs are our wishes.

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1.0 Application:

Paint often become soiled especially near doorways, windows, and in work and play areas. Coated surfaces need to be tested for resistance to abrasion caused by a brush, sponge, or other means. The Wet Abrasion Scrub Tester can produce a repeatable, controlled condition to simulate everyday use or wear patterns.

BGD 526 Wet Abrasion Scrub Tester is the newest machine which is developed by Biuged . It can examine washability and related properties that affect the stain resistance of coatings. Detergent performance testing can also be determined in a reproducible manner.

It accords with standards such as ASTM D2486、ASTM D 3450、DIN EN 11330、ISO 11998 etc.

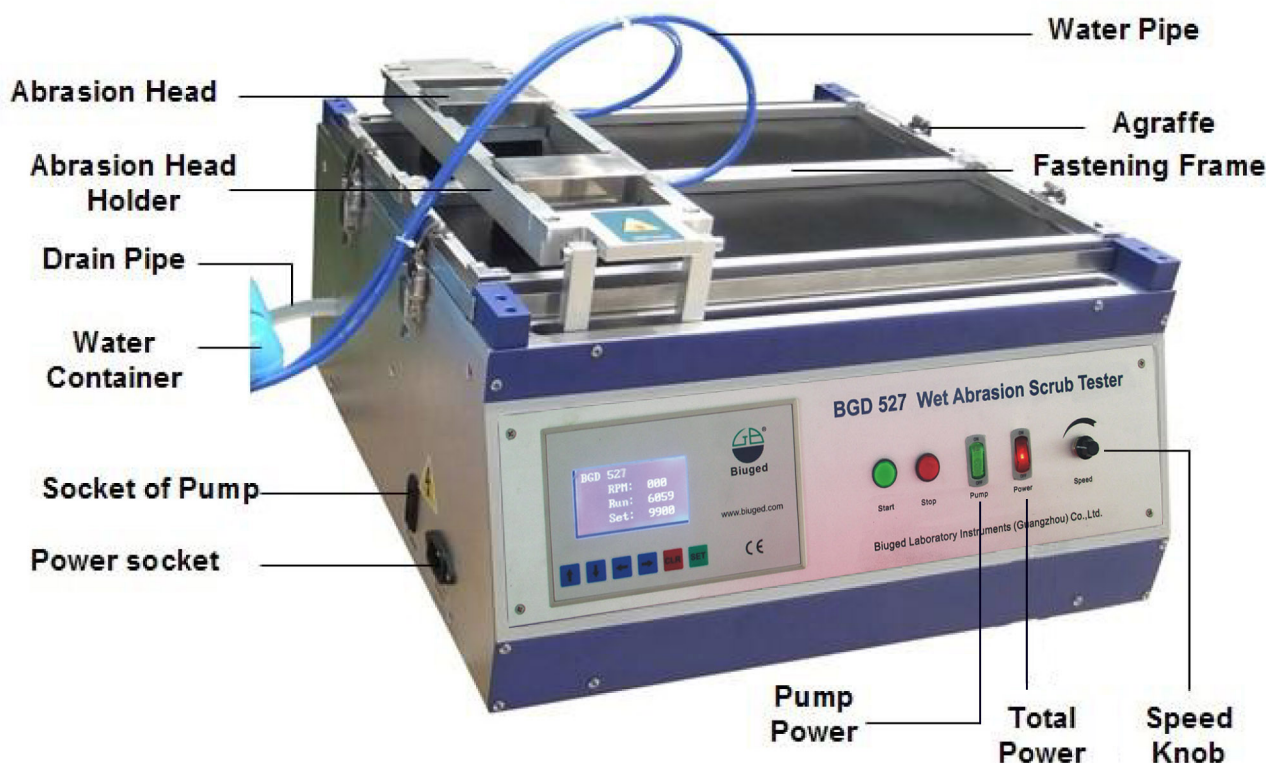
Feature:

- ◆ Running speed can be set to meet requirements of different standards.
- ◆ With four-digit counter, start the machine and it will automatically be stopped when reaching set times.
- ◆ Compatible with a variety of abrasion pads to comply with different standards requirements, such as ISO, ASTM, DIN etc..
- ◆ Quickly and easily to load and unload testing samples and replacing abrasion head.
- ◆ Can work normally under different voltage and frequency
- ◆ With stable and uniform running speed because of Push-rod design
- ◆ Features two brush holders for side by side testing
- ◆ Long service life with hard and durable design
- ◆ The whole machine body is made of anodized aluminum, having stable working status, repeatable test results, no exception even in the fastest speed of the stroke.
- ◆ Liquid solutions are pumped to the brush heads from the detachable container mounted to the side of the tester. The pump may be switched on or off during the course of testing, and the flow can be adjusted for precise dosing.

2.0 Main Technical Parameter

- 2.1 Specification of brush: evenly distributed 60-diameter 3 holes on the 38×90mm base board, with pig bristle inserted, length of feather 19mm.
- 2.2 Weight of brush (including device holding brush): 454±10 g (ASTM D 2486); 135±1g (ISO 11998)
- 2.3 Stroke Length: 300mm
- 2.4 Frequency of travel : 5~95 times/min (adjustable)
- 2.5 Range of count: 9999 times
- 2.6 Size of test plate: 430×150×0.03mm
- 2.7 Power of motor: 25W
- 2.8 Power: 110V~220V; 50/60 Hz
- 2.9 Overall size: 500×460×280mm
- 2.10 Capacity of Water Container: 5L

3.0 Machine Structure



4.0 Preparation before testing

4.1 Washing liquid

Use a 2,5 g/l solution of sodium *n*-dodecyl benzenesulfonate in water conforming to the requirements of grade 3 of ISO 3696. Allow the solution to stand before use until all air-bubbles and foam have dissipated.

4.2 Brass Shims

If need brass shims, it should be 12.7mm width and 0.25mm thickness. The length can be fitted to the width of the drawdown plate.

4.3 Test panel

Made of PVC film free of migration-susceptible chemical plasticizers, of sufficient rigidity to ensure a flat surface, impervious to and unaffected by water or aliphatic organic solvents and of nominal thickness 0,25 mm, approximately 430 mm long and not less than 80 mm wide.

Other types of plastics film may be used where the coating contains solvent which might adversely affect the PVC film. If the coating delaminates before or during the test, another, more suitable, substrate shall be used

4.4 Brushes

Replace the brush when the bristles have become worn to a point that the bristles extend less than 15mm from the block. Mark the ends of the brush to ensure it is oriented in the same direction for each use.

4.4.1 Brushes (that are in regular use)

Brushes that are in frequent use shall be stored in water. Each time before starting the first test of the day, remove the brush and rinse in water, then precondition the brush, by running it for 400 cycles on a scrub panel, after which it is ready for test work.

4.4.2 Brushes (that are not in regular use)

Brushes that will not be used on a regular basis shall be washed out thoroughly in water after their last use and stored with the bristling side up under ambient conditions. Before being used again, the brush should be soaked in water for at least 24 hours. Precondition the brush as directed in 4.4 before starting the test work.

5.0 Testing

5.1 Testing environment

Test should be done under the $(23 \pm 2) ^\circ\text{C}$ unless there is other requirement or agreement.

5.2 Testing

5.2.1 Put up the abrasion head holder, take out two fastening frames and put down the prepared test panel on the glass plate. Fix the test panel horizontally using fasten frames with painted side up.



Note:

If use brass shim, wipe the prepared test panel carefully and place it on top of the shimmed plate with the paint side up. Be sure that there are no defects in the film above the shim and what the test is level. Then fix it.

5.2.2 Put the brush which has been pretreated into the abrasion head holder and keep it droop naturally. Drop approx. 2ml washing liquid on the test area of the panel

5.2.3 Plug the Pump power source into the socket on the side of machine.

Liquid solutions are pumped to the brush heads from the detachable container mounted to the side of the tester. The pump may be switched on or off during the course of testing, and the flow can be adjusted for precise dosing.

Note: *The surface of liquid should be higher than pump (namely the liquid should submerge the pump), otherwise the pump would be damaged! !*

5.2.4 Press the “POWER” button of the control panel, the machine will be power on, and the screen of machine is lighted as below:



After five seconds, the system will enter into another window as below:

BGD 527

RPM: 037

RUN: 0481

SET: 5000

5.2.5 Set the testing times:

Press “**SET**” button, the cursor will twinkle behind of “Set Count”. Now the operation can begin set the testing times: Press “**↑**” “**↓**” button to add or reduce the times. There are two parts concerning of setting times, one is thousands place and hundreds place, the other is ones place and tens place, the operator can switch it through “**←**” and “**→**”. The range of setting times is: 0-9999 times; Please press “**SET**” button again after finishing setting, now the cursor would be disappear and the set is finished;

Note:

① *If press the “**CLR**” button of control panel, the cursor will remove behind of the “Run count” place and twinkle, if press “**CLR**” button again, the run count would be clear as zero;*

② *Ensure the data of “Set Count” is done before running the machine. The machine wouldn’t work if the value of “Set Count” was zero or the value of “Run Count” was more than or equal than the value of “Set Count”. If the run count has gotten the set count, the operator should reset it in order to run the machine again...*

5.2.6 Rotate the speed button, select suitable working speed (37 times/min is recommendable)

5.2.7 Power on the “Pump” and adjust the valve for flow, control the flowing speed of washing liquid is approx. 0.04 ml every second.



Valve for adjusting water flow

5.2.8 Running

Press the green “**START**” button after finishing all the above steps, now the machine begin to work and count automatically; If need to stop machine casually, press “**STOP**” button directly. The machine would run again if press “**START**” button till it is stopped automatically when arriving the set times.

6.0 Report

Record the number of cycles to remove one continuous thin line of paint film across the 12.7mm width of the shim. Stop the machine and wipe off the shim area to determine, if necessary, if the end point is achieved.

Test two of the drawdowns. If the two results differ by more than 30% of the average, test the third drawdown. If one of the three results is obviously discrepant, discard it, then average the results from the remaining drawdowns.

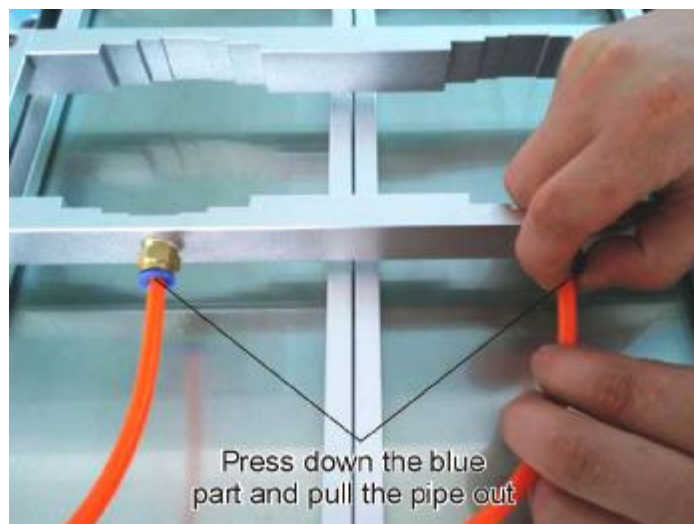
7.0 Water Container

7.1 Washing Liquid can't be used cyclically in case the water pipe is blocked. The operator should prepare another container to receive the waste washing liquid which is discharged from drain pipe.

7.2 Insert the feed-water pipe into the quick fittings of water container and ensure it's tight

7.3 Connect the plug of water pump to socket of pump which is located the side of machine. Connection for water container is finished.

7.4 Please clean the water container after every test, the step is as below: press the blue part of quick fittings and pull out the soft water pipe at the same time. See the below picture.



7.5 Open the cover of water container then clean it

8.0 Maintenance

8.1 Clean and machine with clean and soft cloth after using, keep it in the dry and clean environment.

8.2 Replace the brush when the bristles have become worn to a point that the bristles extend less than 15mm from the block. Mark the ends of the brush to ensure it is oriented in the same direction for each use.

8.3 Don't cut off the supply of washing liquid when pump is working.

9.0 Warranty

9.1 The machine is warranted in respect of materials and workmanship for 12 months from the date of purchase. Any defective parts within the machine arising during the warranty period, shall be replaced free of charge subject to our inspection.

9.2 Any defective parts within the machine arising out of the warranty period: shall be replaced at client's expense.

9.3 Under the following conditions, we will not be responsible for the replacement during the warranty period:

- I Without invoice or receipt.
- I Damaged by wrong assembling or disassembling.
- I Damaged by wrong or careless operation.
- I Damaged by wrong operating under improper condition.
- I Damaged by broken packing during transportation.

10.0 Packing List

BGD 527 Wet Abrasion Scratch Tester	1 unit
Special Brush	1 pair
Water container with pump	1 unit
Brass Shim	2 pcs (Optional)
Operation Manual	1 pc

11.0 Others

11.1 Selectical Optional Accessories

BGD 2208----Stand scrub plastic panels (100pcs/box)

BGD 2214----Stand scrub concrete panels (100pcs/box)

BGD 1365----Stand Brush (1 pair)

BGD 2355----Brass Shim (2 pcs)

11.2 Others

For further information, please contact Biuged, your local supplier, or visit our website at www.biuged.com