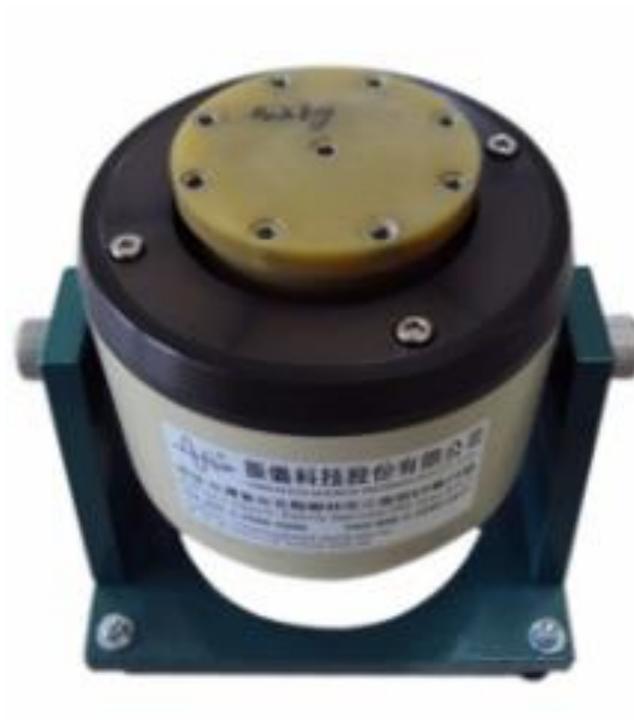


Lab Manual

SHAKER VS-5V-M



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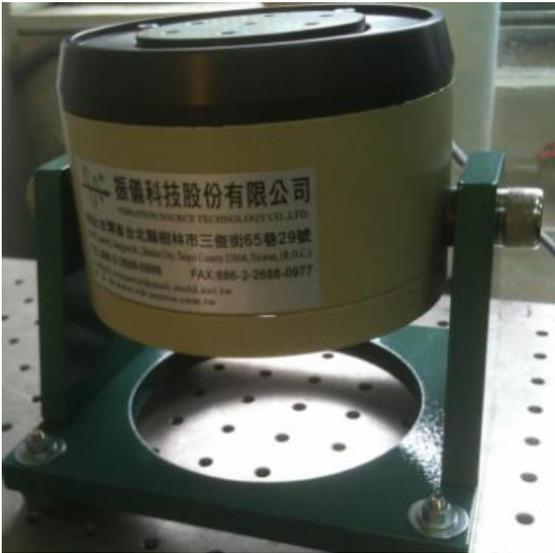
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1. Equipments

1.1 Shaker VS-5V-M



1.2 Amplifier

Front panel



Power switch

Gain knot

Temperature light

Back panel



Fuse

Input signal

Output signal

1.3 Function generator



1.4 Accessory

BNC cable



Metal connector



AC 110V cable



M12 hex wrench



2. Setup system

1. Connect Amplifier and shaker with metal connector.

Step 1: Connect metal connector to Amplifier, plug in another head of the metal connector to signal input of shaker.

Step 2: Secure metal connector clockwise at the head plug in to shaker.



2. Use BMC cable to connect Amplifier and Function generator, BCM cable connect the output signal of Function generator and the input signal of Amplifier.

3. Use AC110V cable connect Amplifier and the 110VAC electrical source.

3. Assembly/Disassembly fixtures

For assembly/ disassembly, two people are required.

3.1 Assembly

1. Use two long screws tighten to the fixture follow figure 3.1, **do not overtighten** the screw

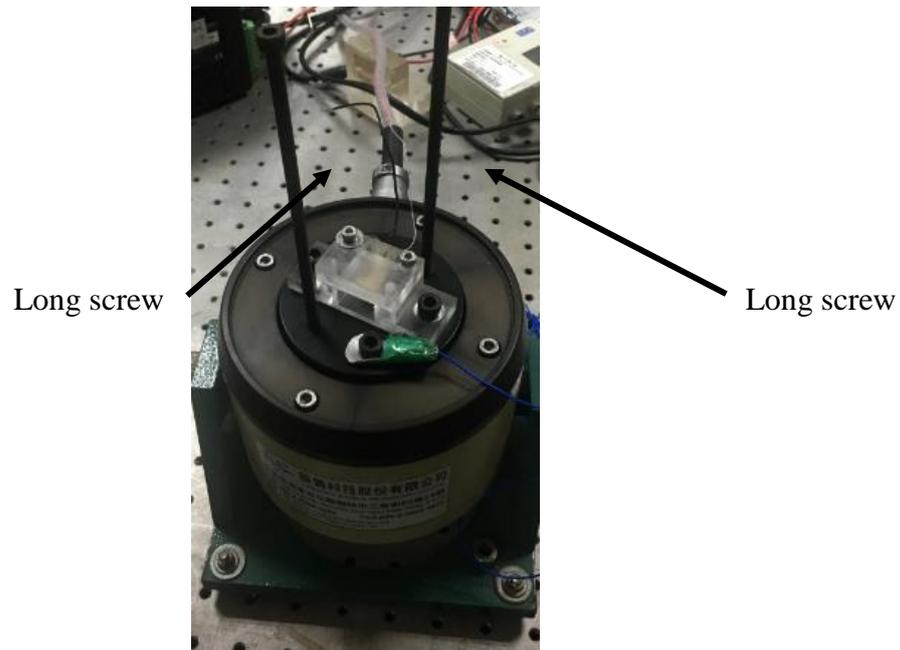


Figure 3.1 Long screws on shaker

2. Put the fixture on the surface of the shaker
3. Use short screws to assemble the fixture and the shaker
4. **Before tightening the short screws**, a person use a long screws or the long beam connect two long screws follow figure 3.2 and **keep two long screws stable to avoid the tightening screw torque damage the shaker.**

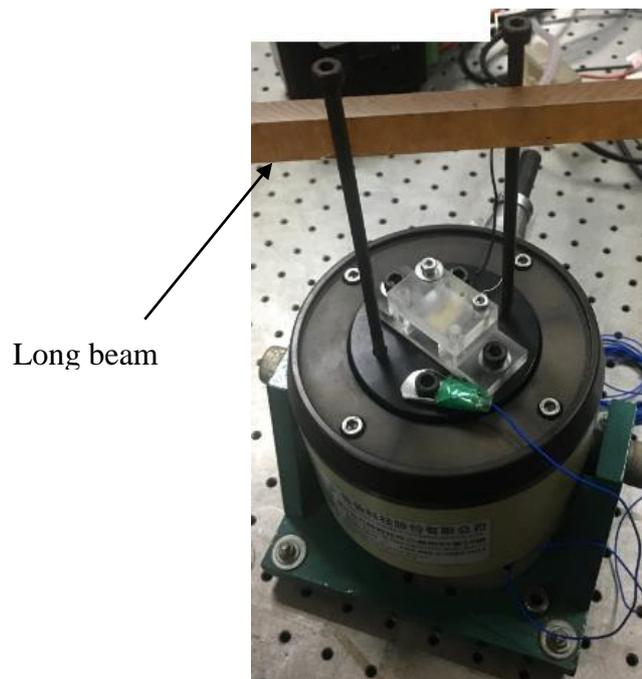


Figure 3.2 Long beam keep long screws stable

5. Another person use wrench to tighten short screws.
6. After fixture assembled to the shaker, remove two long screws.

Note: If you don't follow the step, you can break the spring of the shaker or damage some components of the shaker.

3.2 Disassembly fixture

1. Use two long tighten to the fixture as figure 3.1. Do not overtighten the screws
2. a person use a long screws or the long beam connect two long screws follow figure 3.2 and keep two long screws
3. Another person untighten the short screws which connect the fixture and the shaker.
4. After disassembling the fixture, remove two long screws.

4. Operation procedure

4.1 Turn on shaker

1. Before operating the equipments, make sure on the cables are connected in right position.
2. Before turning on Amplifier, **check the gain knot at the minium**. If the gain knot is not at the minimum position, switch the knot anticlockwise till the click sound to avoid damage of shaker.
3. Turn on power of Amplifier, light on and fan on
4. Check if light doesn't operate, turn off Amplifier. If fan doesn't run, turn off Amplifier.
5. Turn on power of Function generator. Set frequency and **gradually increase amplitude (begin with amplitude <1Vpp)**
6. Switch the gain knot slowly **before** press output signal of Function generator on.
7. Check the shaker operate.
8. Do experiments.
9. When shaker run, if **shaker has loud noise**, check the fixture. If shaker still has noise, stop shaker.
10. If **temperature light** of Amplifier turn on, it is too hot for Amplifier, turn power off and wait till temperature light turn off.

4.2 Turn off shaker

1. After experiments finish, **press output of Function generator turn off**.
2. **Slowly switch** the gain knot anticlockwise till hear the **click sound**.
3. Turn off power of Amplifier.
4. Turn off power of Function generator.
5. Disassemble fixture and the shaker.

6. Clean after finishing experiments.

5. Others

In order to rotate the surface the shaker, use M12 wrench to adjust angle of shaker

In order to disassemble the shaker, use M5 wrench to open the cast of shaker.