

# OPERATING AND SERVICE MANUAL



## **VS 75**

### **VIBRO SHAKER**

Keep this manual within reach of the machine

## **Operating Manual**

Multi Paint Bucket Shaker

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**WARNING: DO NOT OPERATE THIS EQUIPMENT WITHOUT READING AND UNDERSTANDING ALL SAFETY AND OPERATING INSTRUCTIONS.**

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## 1. SAFETY INSTRUCTIONS

- **Read safety instruction carefully and follow them for your own protection.**

This Product is use on a nominal 110 or 220 Volt circuit, as shown on the Name plate.

Connect the Product to an outlet having the same configuration as the Plug.

Wear safety Shoes when installing or relocating the machine.

Make sure the machine stands securely.

Keep your place clean & tidy. There is risk of accidents at untidy work place.

- **Close the Machine when it is not being used.**

Machine shall be connected to dedicated electrical circuit- No other device shall be connected to this circuit.

This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

This product shall be connected to a dedicated electrical circuit – no other devices shall be connected to this circuit.

Removal of the plug from the outlet is the means for isolating the mixer from the power supply. Ensure that the mixer is installed with the plug easily accessible to the operator.

This product is designed to operate only when the door is closed. **DO NOT ATTEMPT TO ALTER ELECTRICAL INTERLOCK MECHANISM**

In case of emergency, press the Red Emergency Stop button.

- **Do not overload the machine. Check that the weight and dimension of the mixing bucket are suitable**

Use only undamaged and sturdy Mixing Bucket, If you don't, the container may burst.

Never lift large and heavy bucket into the machine.

The mixing Bucket has to be closed completely.

- **Make sure that the mixing Bucket sits in central position on mixing table. Secure the container handle with rubber bands or adhesive tape.**

Take good care of the machine. Make sure that the moving parts move smoothly and without restriction. Follow the maintenance instruction.

- **Do not use high pressure equipment to clean the machine.**

Make sure that the safety devices work properly and are clean.

- **Do not use the machine if the door is damaged. if the door acrylic is broken, do not reach into the interior. There is risk of injury from rotating components.**

- **Do not start the machine with Door open. Pull out power plug! There is high risk of accidents!**

Before switching on the machine after maintenance work, check that no spanners or setting tools are left inside the machine.

Examine the machine for signs of damage. Check regularly that all parts are in good working condition. Have repairs carried out only by the manufacturer or an approved specialist.




**Trained and authorized personnel shall use this product.**







## 1.1 Pictograms & Symbols

### ➤ Warning



The following symbols and signal words are used in this documentation.

Symbol	Meaning
<b>DANGER</b> 	This signal word is used, if death or severe physical injuries is the result of not paying attention to the corresponding precautionary measures.
<b>WARNING</b> 	This signal word is used, if death or severe physical injuries is the result of not paying attention to the corresponding precautionary measures.
<b>ATTENTION</b> 	This signal word is used, if slight physical injuries occur from not paying attention to the corresponding precautionary measures.
<b>CAUTION</b>	This signal word is used, if malfunction of functions or property damages may occur from not paying attention to the corresponding precautionary measures.
<b>IMPORTANT</b>	This signal word is used for easing operation or for pointing to references.

### ➤ Mandatory signs

Symbol	Explanation	Symbol	Explanation
	Please read the information		Disconnect from power
	Use Protective gloves		Wear Apron

### ➤ Warning signs

Symbol	Explanation	Symbol	Explanation
	Warning from a danger zone		Danger of electric shock

## 2. LAYOUT DRAWING

## 2.1 Machine Components








### Machine components

1. Power Supply	6. Mixing Table
2. Emergency Stop	7. Clamping Plate
3. Control Panel	8. Door
4. Main Switch and DC fuse	9. Loading Shelf
5. Door Lock	10. Transport Roller

## 2.2 Operating and display components



	Button STOP	Stop mixing cycle	
	Button UP	Open the mixing unit	
	Button I	Mixing cycle I	(Factory setting 1 mins.)
	Button II	Mixing cycle II	(Factory setting 2 mins.)
	Button III	Mixing cycle III	(Factory setting 3 mins.)

\* The specified mixing times are factory setting and may vary by customer.

### 3. PRECAUTIONS & GENERAL INFORMATION



- This machine is **NOT EXPLOSION PROOF**.
- Shaking or cleaning with a **FLAMMABLE SUBSTANCE** can cause an **EXPLOSION**.
- **BE SURE TO REMOVE SHIPPING BOLTS/BRACKETS BEFORE OPERATING THE SHAKER.**
- **ALWAYS** make sure the lids of any Bucket or Pail being mixed is tight before placing them into the Shaker.
- When mixing multiple buckets at the same time, verify that all buckets are of the same height. Small variances in height may cause damage to Buckets and/or the shaker due to incomplete clamping action.
- **ALWAYS** be sure to use the bail hold down strap provided.
- The Shaker is designed to operate only when the door is closed. **DO NOT ATTEMPT TO ALTER ELECTRICAL INTERLOCK MECHANISM.**
- Repair **IMMEDIATELY** a faulty door interlock systems to avoid injury from improper operation. Contact the Manufacturer or Certified Service Personnel.
- Connect main power cord protected by a **15A circuit breaker**.
- **THIS EQUIPMENT MUST BE GROUNDED.** DO NOT USE AN EXTENSION CORD TO RUN THE SHAKER. POSSIBLE FAILURE AND/OR DAMAGE COULD RESULT.
- When not in use for extended period of time, ensure that the machine, including the power cord, is properly stored in a way that is protected from damage.
- It is ideal for mixing small, medium, large Buckets up to 35 kg.
- **DO NOT USE THIS MACHINE IF THE BACK PANEL IS NOT IN PLACE.**

## 4. SHAKER OVERVIEW

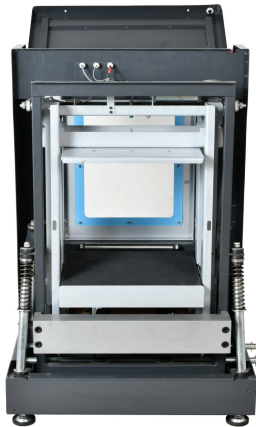
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**Front View**

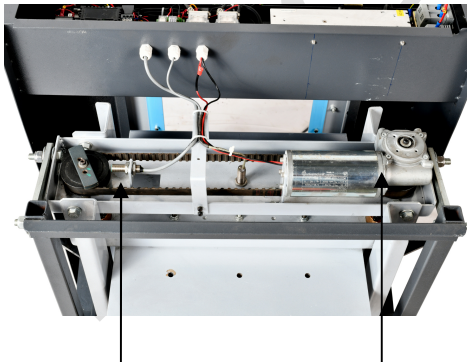
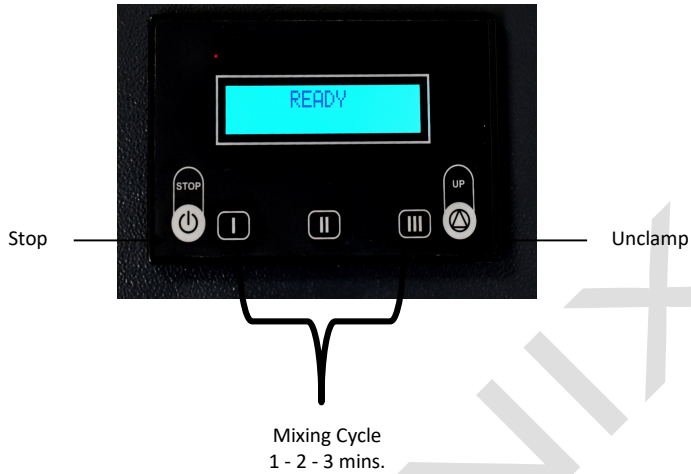


**Rear View**



**Oscillating Unit**

## Control Panel



## 5. TECHNICAL SPECIFICATIONS

PERTICULAR	SPECIFICATION
MAXIMUM WEIGHT	35 KG
BUCKET HEIGHT	70 - 400 MM
BUCKET DIAMETER	300 MM
OVAL AND MULTIPLA BUCKETS	YES
BUCKET LOADING	MANUAL
BUCKET MIXING (MIN-MAX) 1 LIT.	1 - 9 NOS (Adaptor Disc)
BUCKET MIXING (MIN-MAX) 4 LIT.	4 NO
BUCKET MIXING (MIN-MAX) 10 LIT.	1 NO
BUCKET MIXING (MIN-MIX) 20 LIT.	1 NO
NO LOAD SPEED MIXING UNIT	660 1/MIN
CLAMPING	AUTOMATIC
RATED POWER	1 HP, 1PH,220 Vac,50 Hz,1440 RPM
MAXIMUM NOISE LEVEL	< 70 dB
POWER SUPPLY	220 V - 50 Hz
POWER SUPPLY (OPTIONAL)	220 - 110 V / 60Hz
ELECTRONICS	PLC
LOCKING DOOR DEVICE(Safety Door S/W)	YES
DEVICE FUSE	10 AMP
EMERGENCY SWITCH	YES
TRANSPORT ROLLER (Custer Wheel)	YES
MACHINE DIMENSION (W x D x H)	695 x 655 x 1050 MM
NET WEIGHT	186 KG
PACKING DIMENSION (W x D x H)	750 x 710 x 1200 MM
GROSS WEIGHT	207 KG

## 6. SET – UP INSTRUCTIONS

Some basic attention must be applied when the machine is firstly installed and during the following normal operation:

- Keep the machine in a dry and cool environment.
- Place the machine in solid and levelled ground
- Provide the machine with stable, well grounded and suitable power supply



**Fig.1**




**Fig.2**



**Fig.3**

Step 1. Carefully remove the machine shipping package and unscrew the nuts fixing the machine to the supporting palate. (Fig.1). Unload carefully the machine to the pallet.

Step 2. Pull out the 2 shipping protection poles inserted in the bottom part of the machine body. (Fig.2)

	<p><b><i>Operating the machine before removing the shipping protection poles may lead to permanent damage of the internal mechanism</i></b></p>
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------

Step 3. Use a wrench to loose the nuts on the adjustable feet (Fig.3); rotate all the nut up enabling the 3 wheels to touch the floor . After the 3 wheels are on the floor, roll the machine to the installation position and adjust the 4 adjustable feet again until they are all leveled.

Step 4. Preserve all packing material and the shipping protection poles for future relocations.



## 6.1 Electrical Connection

➤ Plug the power cord into properly grounded receptacle. Ensure cord is routed in a way that it is protected from damage.

➤ **Grounding Instructions:**

**This machine should be grounded.**

In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current & also it provides safeguard to the logic board against malfunctioning. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**WARNING** – Improper installation of the grounding plug can result in a risk of electric shock. When repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded.



**WE RECOMMEND A 15 AMP DEDICATED CIRCUIT FOR THE SHAKER.**

## 7. OPERATION

Prior to working with the machine, check all parts for their proper condition and function. Do not start the machine with defective or missing parts.

Check all safety – relevant structure components of the machine for proper function before starting it. Any defective or damage parts must be replaced by qualified personnel prior to starting to work with it.

### 7.1 Switching “ON” the Shaker



**Fig.1**



**Fig.2**



**Fig.3**

- Switch ON the MCB(Fig.1).
- Ensure the Emergency switch is not pressed
- The Shaker will not operate in open door condition(Fig.3).
- Door will be opened once you have “Ready” screen on the Control Panel(Fig.2).

### General danger situations

There are no specially identified hazard related to the operation and maintenance of this shaker. (E.g. fire risk, issue or dispersion of dangerous products). However, it is recommended that a powder type fire extinguisher, suitable for electrical fires, be readily accessible.

### Safety devices:

- The Shaker is equipped with the following safety devices:
  - i) Emergency Stop Button.
  - ii) Door Lock / Door limit switch

## i) Emergency Stop Button



- You can press the Emergency Stop button to switch off the machine if the paint Bucket develops a leak or becomes loose or some dangerous situation arises while the mixing cycle is in progress.
- The **RED** Emergency Stop push button is located on the right hand side of control panel on the top front of the Shaker. Pushing the button will immediately cut power to the motor control relay, thus stopping the motor. To reset the button and restore the Shaker to normal operation mode, rotate the button clockwise and press E on control panel.

The **EMERGENCY STOP** button does not disconnect the machine from the mains power supply. Therefore, before performing any maintenance work OR repairs always be sure to disconnect the machine from the mains by pulling out the power plug.



## ii) Door Lock Solenoid / Door limit Switch

This Shaker is equipped with double safety device which prevents start up of the mixing cycle when the door is in the open position. It also locks the door in the closed position during the mixing cycle.

Door Lock



Door limit Switch

## 7.2 Loading the Bucket for Shaking

Only use sufficiently stable and tight-closing bucket for mixing. In case of doubt, consult the manufacturer of the mixing bucket.

To place the container, proceed as follows:



Fig.1



Fig.2



Fig.3



Fig.4

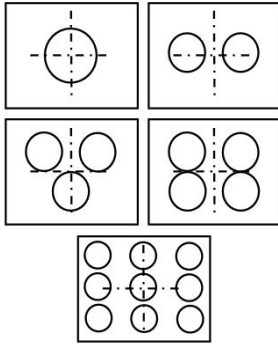


Fig.5

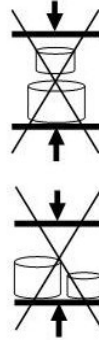


Fig.6

- Open the shaker door to its fully open position (Fig.1)
- Load the paint bucket in the centre of the loading platform (Fig.2)
- Place the filler disc in the centre of bucket Lid (Fig.3), and slide in the bucket on to the Bottom mixing table (Fig.4).
- Hook up the bucket's handle with the spring latch hook. If the handle of the bucket is not properly secured it will generate a loud noise during the shaking cycle (Fig.5)
- Close the door firmly (Fig.6)



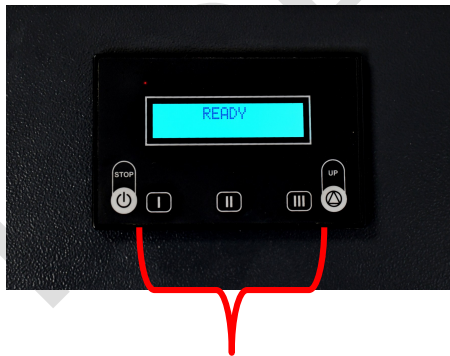
**Place bucket always in center**



**Do not stack bucket!**

### 7.3 Starting the mixing cycle

- The Mixing cycle can only be started after the door is closed.
- Push button I, II, or III to start the mixing process. The corresponding mixing times are shown on the display on PLC during mixing.



- I – Factory setting 1 minuet mixing.
  - II – Factory setting 2 minuet mixing.
  - III – Factory setting 3 minuet mixing.
- The mixing container is clamped in to the mixing unit and the mixing process is started. The actual mixing time is raised on displayed during the mixing process.

#### 7.4 Ending the Mixing cycle

##### After the selected time is over

Once the cycle is complete, the mixing process is stop automatically & door is unclamp


Open the door & remove the bucket from bottom mixing table


##### Before the selected time is over

You can end the mixing cycle prematurely **before the mixing time is over** by pressing "STOP" button. The mixing cycle will immediately stop.

## 8. MAINTENANCE & TROUBLESHOOTING

### 8.1 General Maintenance

	Always cut off the power supply when servicing the machine. Detach the plug to be sure no internal parts are not insulated
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	Use Protective gloves
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#### ➤ DAILY:

1. Check bucket shelf and rubber pad on top and bottom plate for paint residue. Clean, if necessary, with a damp cloth.
2. Wipe down the outside of the machine with a damp cloth. This will clean most paint marks and drips.

#### ➤ WEEKLY:


1. Make a visual inspection of the Shaker. Check & clean if any foreign objects stuck in the screw shaft, on the Bucket and inside the machine.
2. Check door assembly and clean. Remove door for detailed cleaning, if necessary, by pressing down side locks at both sides.
3. Ensure the power cord is routed in a way that it is protected from damage.

#### ➤ Half yearly:

#### TO BE PERFORMED BY AN AUTHORIZED SERVICE REPRESENTATIVE





- Make a general inspection, including checking for loose screws, nuts, and bolts.
- Clean the threaded spindles and lubricate with general purpose grease
- Remove panel and check drive belt for wear and tear and adjust the belt tension if needed.
- Grease the two pedestal flange bearings. Care should be taken not to overfill the grease because it will overload the bearing & increase the load.
- Check the clamping rubber pad for wear and tear. Replace if needed.

**Note:** When cleaning, only use non-flammable solvents, soap & water or any non-flammable cleaner.

	Do Not Rinse
------------------------------------------------------------------------------------	--------------

## 8.2 Errors & Troubleshooting

### ➤ Error Messages appearing on the PLC

Message	Possible Cause	Solution
<p>E1 : C proxy G motor</p> 	<ul style="list-style-type: none"> <li>Counter Proxy wire got disconnected or Proximity fail</li> <li>Counter proxy not sensing to the target encoder.</li> <li>Clamping Motor wire got disconnected or Clamping motor fail.</li> <li>Line 10 Amp fuse got burnt.</li> </ul>	<ul style="list-style-type: none"> <li>Check wire for proximity on connectors or replace proximity</li> <li>Adjust the sensing range of proximity to target encoder.</li> <li>Check wire for clamping motor on connectors or replace gear motor.</li> <li>Replace 10 Amp power fuse with same characteristics.</li> </ul>
<p>E2 : Home Proxy</p> 	<ul style="list-style-type: none"> <li>Home Proxy wire got disconnected or Proximity fail</li> <li>Home proxy not sensing to the target Bolt head</li> </ul>	<ul style="list-style-type: none"> <li>Check wire for proximity on connectors or replace proximity</li> <li>Adjust the sensing range of proximity to target bolt on upper Clamp Plate</li> </ul>
<p>E3 : CT Error</p> 	<ul style="list-style-type: none"> <li>CT connector got disconnected or CT fail</li> <li>Wire on power supply got disconnected</li> <li>Selected CT range in PLC got disturbed</li> </ul>	<ul style="list-style-type: none"> <li>Check wire for proximity on connectors or replace proximity</li> <li>Adjust the sensing range of proximity to target bolt on upper Clamp Plate</li> </ul>
<p>Door Open (After closing the door )</p> 	<ul style="list-style-type: none"> <li>Connectors on door limit switch got disconnect</li> <li>Wire connectors on PLC got disconnect</li> <li>Door Limit switch failure</li> </ul>	<ul style="list-style-type: none"> <li>Check fitting of connectors with door limit switch</li> <li>Check wiring connection on PLC</li> <li>Replace door limit switch</li> </ul>



## ➤ Troubleshooting

The troubleshooting tables in this Chapter will help you to determine whether you can troubleshoot yourself or whether you need to call customer service

Failure	Possible Cause	Solution
Machine not turning ON	<ul style="list-style-type: none"> <li>• Main supply Power cord not properly fixed or Damage</li> <li>• MCB is Off or wire connectors on MCB got disconnected</li> <li>• Burnt fuse</li> </ul>	<ul style="list-style-type: none"> <li>• Check for main supply and power cord</li> <li>• Check MCB position or wire fitment of connectors</li> <li>• Replace 10 Amp power fuse with same characteristics</li> </ul>
Machine vibrates without clamped paint bucket	<ul style="list-style-type: none"> <li>• Lead spindle screw is dried and no lubrication in it</li> <li>• Clamping pressure is too low</li> <li>• PLC Factory setting value disturbed</li> <li>• CT coil is faulty</li> </ul>	<ul style="list-style-type: none"> <li>• Check for lubrication in spindle lead screw</li> <li>• Adjust the clamping pressure in factory setting</li> <li>• Reset to Factory Setting Value</li> <li>• Replace CT coil</li> </ul>
No vibration after Clamping	<ul style="list-style-type: none"> <li>• AC motor failure or Damage</li> <li>• AC motor lead wire plug loosen or detached</li> <li>• Starting capacitor is damaged</li> <li>• Wire connectors loosen or detached on relay</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the Motor</li> <li>• Replace or re-attach</li> <li>• Replace the capacitor on motor</li> <li>• Re-attach wire connectors on relay</li> </ul>
Machine wobbles during operation	<ul style="list-style-type: none"> <li>• Machine not properly levelled</li> <li>• Machine components or joints parts of mechanism are loose.</li> </ul>	<ul style="list-style-type: none"> <li>• Level the machine using adjustable foot</li> <li>• Tight Parts and body</li> </ul>
Machine makes louder noise after every shakes	<ul style="list-style-type: none"> <li>• Paint bucket is inconsistent with requirement</li> <li>• Bucket clamping pressure is too low for paint bucket</li> <li>• Timing belt on motor is loose or motor pulley loose</li> <li>• Counterweight assembly parts are loose</li> <li>• Mixing unit joint parts are loose</li> </ul>	<ul style="list-style-type: none"> <li>• Use standard package bucket</li> <li>• Adjust the clamping pressure</li> <li>• Set the timing belt or check for loose</li> <li>• Tight counterweight assembly parts</li> <li>• Tight parts of mixing unit</li> </ul>

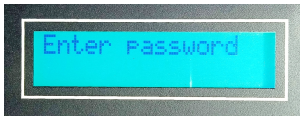
## 8.3 Factory Setting

### ➤ Pressure – Time Menu

- I. Press & Hold **"STOP"** key and **"I "** key simultaneously for 5 sec.



Appear the **"Password"** menu on PLC screen.



- II. Enter Password **"I, II & III"**

Appear the pressure menu on PLC screen.



- **"UP"** key to Enter
- **"I "** key to Increase
- **"III "** key to Decrease
- **"II "** key to move Curser / Minus
- **"STOP"** key to flip screen

## 9. SPARE PARTS AND TOOLS

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With each machine a set of standard spare parts and mechanical tools is supplied:

Item	Quantity
Sponge cushion 12mm for the bucket	1
Fuse 16 Amp	2
12-13mm Open-end wrench	1
4mm Allen (Hexagonal) Key	1
This user's manual	1



## 10.2 Warranty Terms

PHOENIX warrants each unit manufactured to be free of defects in material and workmanship for a period of twelve months. The part unit shall be returned with transportation charges prepaid. If the fault has been caused by misuse or abnormal conditions of operation, repairs will be billed at a normal cost. In this case, an estimate will be submitted before works is started, if requested. Always include serial number in any correspondence concerning the part unit.

- In case of improper use.
- In case of non original spare parts are used.
- In case of repair / adaptation of mixer without written approval and/or by unauthorized personnel.
- In case of non fulfilment of the maintenance, operation, or other instruction, like e.g. reflected in this manual.

This mixer is specifically designed for point-of-sale colour mixing applications as well as for semi-industrial applications. The unique design results in reduced maintenance and in colour mixing at the lowest cost per litre produced.

THANK YOU

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