

PULSE

Automatic Shaker Machine

User's Manual



Plot No. 89, Udayan Industrial Estate, 3, Pagladanga Road, Kolkata 700015
Phone +91 33 23234538 / 32918078 Fax +91 33 2353 6547
email info@parenterprise.com Website www.parenterprise.com

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1. INTRODUCTION



Purpose and use of this manual

Automatic Shaker Machine, Model **PULSE**

This manual provide guideline on the operation, routine maintenance & trouble shooting necessary to uphold the machine performance over time.

It is aimed at the machine user, who must have the necessary training and professional skill to use similar automatic machines.

It also contains all the information available at the time of publication regarding the automatic Shaker machine , Model - **PULSE**.



Read this manual carefully before using the machine

This manual is organised into separate chapters, each of which refers to a specific topic.

The manual is to be considered is an integral part of the machine, and must be stored with care.

We recommend that you store it close to the machine so that it is easily accessible.

Use the manual in such a way as to avoid damage of its contents; do not remove, tear, or rewrite any portion of its contents.

If it is lost or partially or fully ruined, we recommend that you request for a new manual from the manufacturer.

Give copy of this manual to any other user / owner of the same model machine for help.

Some of the illustrations in this manual were taken from prototype; some details may differ on machine in standard production.

2. GENERAL INFORMATION



General safety warnings

This PLUSE Shaker Machine has been designed and manufactured in observance of essential safety requirements.

All measures and precautions were taken during its design, manufacture, testing and installation to ensure the highest possible level of safety considering rational use of the machine.



READ THE SAFETY WARNINGS CAREFULLY BEFORE USING THE MACHINE



WARNINGS

- Do not operate the machine before reading and understanding the guidelines in this manual.
- It is strictly forbidden to bypass or disable the protections or safety devices fitted in the machine.

THE MACHINE IS NOT EXPLOSION PROOF AND MUST NOT BE USED IN AREAS AT RISK FOR EXPLOSION.

- The packing must be handled only by skilled personnel using appropriate handling equipment and according to the instructions given in the corresponding chapter.
- The panels must be kept closed at all times.

Only qualified or trained personnel are authorized to access the electrical and mechanical parts of the machine for maintenance and repairs.

Access of electrical and mechanical parts of the machine by unauthorised person is not desirable .

- The panels are not equipped with safety limit switches; must kept closed all time
- Always unplug the power supply cable from the socket outlet before carrying out any maintenance operations.
- During installation, maintenance and repairs to the machine, any operation that involves direct contact with internal parts must be carried out with the machine off and with the power supply cable unplugged from the socket outlet.

Any intervention inside the machine when panels are open and when the machine is connected to power, must be carried out by qualified or appropriately trained personnel .

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3. Definitions



Personnel qualifications

Indicate the minimum qualifications level according to the below:

OPERATOR : –

A person familiar with the use of colorants to produce paints or similar products, assigned to operate and use the machine by its controls and to load and unload production materials with all safety devices enabled.

He or she must work only in safety conditions.

MAINTENANCE TECHNICIAN :-

Specialist prepared and trained in a technical field (mechanical and electrical) and assigned to work on the machine to perform adjustments, repair breakdowns or carry out maintenance.

4. **FEATURES**



General description

The vibrator type automatic shaker machine is designed and manufactured based on internationally accepted technology.

The vibration generated by the machine ensures fast and complete mixing of the containerized paint.

The machine is fully automatic with LCD panel, safe, compact, attractive outlook and user friendly.

➔ Specific Advantage:

- Durable Structure
- Long Life Span
- High Performance
- User Programmable Timer

➔ Efficiency:

- High Speed Mixing Arrangement
- High Performance on Heavy Load & Continuous Operation

➔ Operator Friendly:

- Operator Easy Guided By Display Panel

➔ Customizing:

- Programmable Shaking Time Set Up By Individual Choice

➔ Safety:

- Automatic Clamping & Unclamping of the Container.

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5. TECHNICAL SPECIFICATIONS

<u>ELECTRICAL SPECIFICATIONS</u>	POWER SUPPLY	220V AC
	FREQUENCY	50 / 60 Hz
	AC Motor Rating	1 HP, 1425 RPM
	Phase	Single
	DC Motor Rating	24 V
	Time Settings	0.1/0.2/0.1...../9.9min..
	Clamping	Automatic
	De-clamping	Automatic
<u>MECHANICAL SPECIFICATIONS</u>	Min. / Max. Container Height	75mm / 420mm
	Max. Container diameter	300mm
	Maximum Container Size	20Ltr.
	Max. Safe Operational Weight	32Kgs.

<u>OVERALL DIMENSIONS</u>	WIDTH	730 mm
	DEPTH	760 mm
	HEIGHT	1170 mm
	TOTAL MACHINE WEIGHT	240 Kgs.
	TOTAL PACKED MACHINE WEIGHT	270 Kgs.

6. INSTALLATION (by Qualified personnel)

Only qualified or appropriately trained personnel are authorised to install the machine.



Before installing the machine, read the instructions in this manual carefully to ensure the safety of the personnel involved and avoid damaging the machine.

Once the machine has been unpacked and placed in its operating site, it must be installed.

Conditions for proper installation

- You must also prepare an electrical power line in accordance with the voltage and frequency required by the machine.
- The line must be protected from overloads, short- circuits and direct contacts according to current regulations.
- *Check the grounding of the power supply system as required by local regulations before powering the machine.*



Installing accessories

Standard and optional accessories are normally pre-installed on the machine. Only in certain situations do they need to be installed.

Main plug top

Main power supply to the machine.

Machine main switch (MCB)

The double pole MCB protect the line and neutral in the electrical equipments. MCB In ON position (1-ON), the machine is powered. In OFF position (O-OFF), the power is cut off to the machine.

- Un-pack the machine carefully.
- Read the instruction manual.
- Place the machine on leveled floor.
- Please follow the steps below as per figure shown for unlocking the machine.

STEP : 1



STEP : 2



STEP : 3

Step 1: Lock handle is visible from outside



- Plug the main cable into the 220V AC 50Hz supply line.
- Turn *ON* the *MCB* switch.
- Look at the display which shows the instructions through software & check the whole System operation.

Power Supply :

- Separate 220VAC, 50Hz power supply is required to run the machine.
- Earthing of the machine is must.
- Check the power supply before switching *ON* the machine.
- If the power supply is ok then plug in the machine cable into the mains socket and put the main switch *ON*.
- The glowing of the display panel board (LCD) confirms that power is coming up to the control circuit of the machine.

7. Operation through software

MAIN MENU

At The beginning switch ON the machine LCD shows the message

‘ WELCOME TO COLOURFUL WORLD’

And beep sound will be heard



TEXT 1.1

After that top table will start to move in the upward direction, the display will show ‘INITIALIZING’. When top table will reaches to top most level display will show ‘INSERT CONTAINER & CLOSE THE DOOR’. Please refer sub menu 1.1



TEXT 1.2

After Placing desired container Set time & close the door, If you want to go with previously set mixing time Press 'RUN' otherwise press T+/T- to change mixing time. Please refer sub menu 1.2



TEXT 1.3

After you press run top table will start move in the downward direction for clamping the container. When the machine will find a container it will stop its downward movement & it will hold the container tightly. During this period display will show 'WAIT.....CLAMPING'. If the machine dose not finds any container refer sub menu 1.3



TEXT 1.4

After clamping is over ensure container is clamped properly, display will show 'ENSURE TIGHTNESS & PRESS RUN'



TEXT 1.5

After you press RUN machine will start shaking for specified time. During this period the display will show 'MIXING' & countdown the time. During mixing if anybody tries to open the door please refer sub menu 1.5.



TEXT 1.6

After completion of shaking display will show 'MIXING COMPLETE' then top table will go to upward direction slightly from the container so that the container can be released during this period display will show 'DECLAMPING'



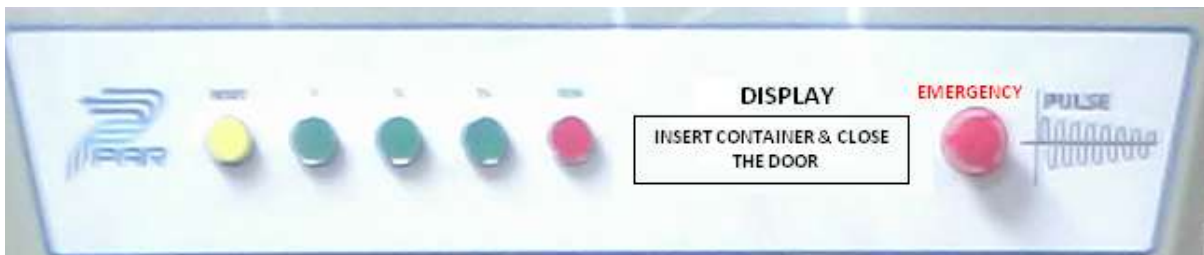
TEXT1.7

The message ‘PLEASE OPEN THE DOOR & REMOVE THE CONTAINER’ indicates the completion of whole operation. Buzzer sound will be heard



TEXT 1.8

When you take out the container display will show ‘INSERT THE CONTAINER & CLOSE THE DOOR’. Now the machine is ready for next operation



TEXT 1.9

If abnormal sound came from machine or you want to stop the machine during mixing then press Emergency button to stop mixing (between “TEXT 1.5 TO 1.6”).



TEXT 1.10

After that display will show “RELEASE EMERGENCY”.



TEXT 1.11

After that display will show “PRESS RESET”. When you press reset Top Table will release the container.



SUB MENU 1.1

TEXT 1.1.1

For setting the mixing time between 0.1 minute (6 seconds) to 9.9 minutes (594 seconds) press T+ or T- button. T+ button increments 6 seconds



TEXT 1.1.2

And T- button decrements 0.1 minute. Otherwise press declamp button to change the container size



TEXT 1.1.3

After setting the mixing time press the RUN button to store the set time



SUB MENU 1.2

TEXT 1.2.1

If press and hold the declamp button the top table will move in the upward direction During this period display will show 'DECLAMPING'



TEXT 1.2.2

After setting the container size press the RUN button



SUB MENU 1.3

TEXT 1.3.1

If the system dose not find any container before touching the bottom table it will show 'NO CAN' & buzzer sound will be heard



TEXT 1.3.2

The top table will start to move in the upward direction & stops after little declamping



SUB MENU 1.4

TEXT 1.4.1

During shaking if somebody tries to open the door the system will stop its operation & display will show 'PRESS RESET' & buzzer sound will be heard

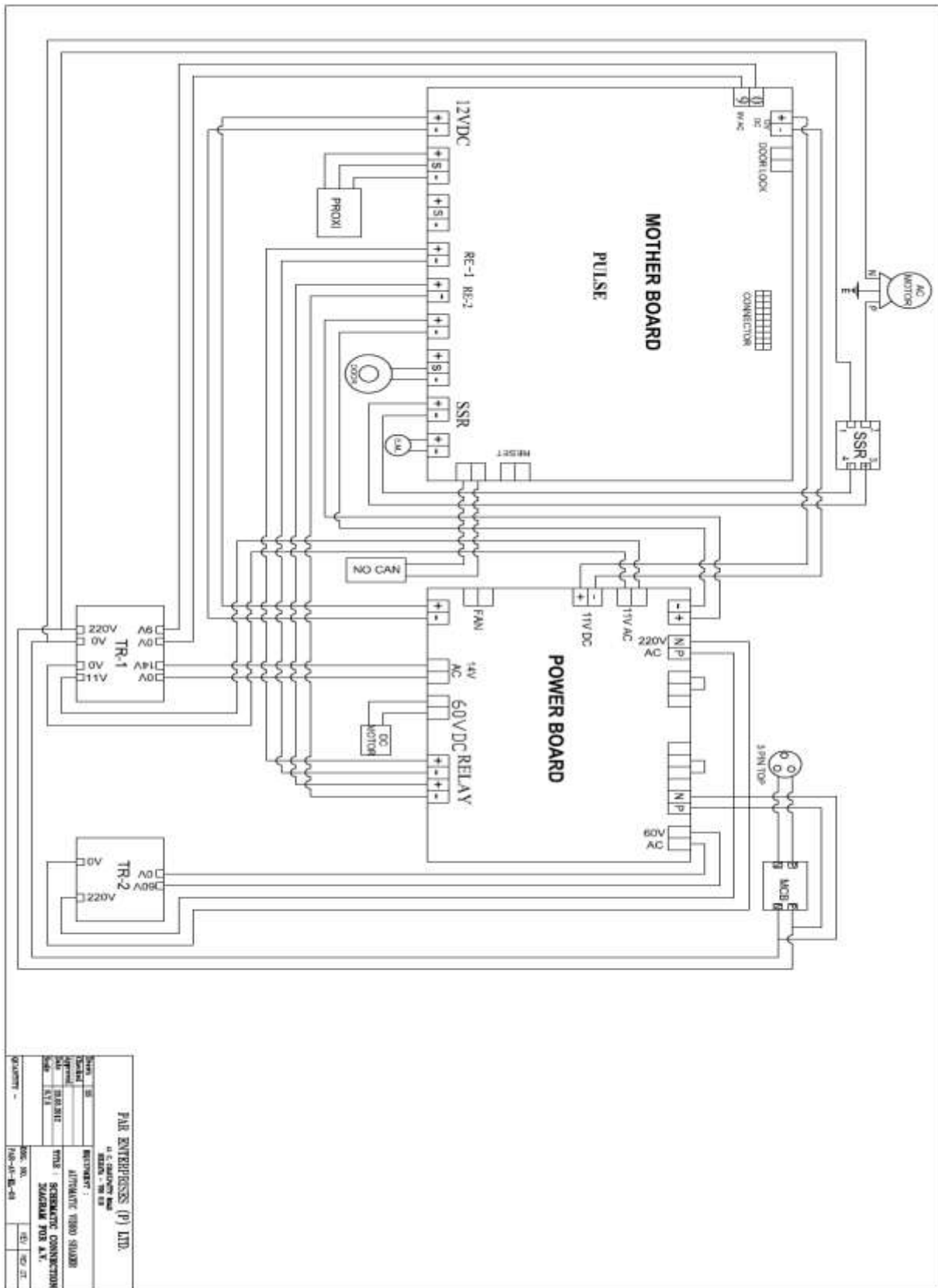


TEXT 1.4.2


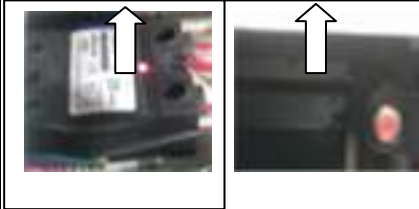

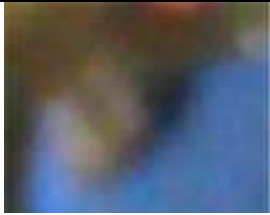
When you press reset machine will declamp the container, display will show 'DECLAMPING'






8. SCHEMATIC CONNECTION DIAGRAM FOR a.v.



9. Trouble shooting

PROBLEM	PROBABLE CAUSE	ACTION	PICTURE
M/C is getting hang or panel switches are the not working, does not move the display (Fig.- 10.1)	1. An unwanted surge passed through the mother board or processor did not reset well.	1.Reset the M/C by RESET switch or switch OFF main power supply of M/C. Wait for 30 second and then switch ON main power.	 MCB OFF MCB ON
Machine is not working (Fig.- 10.2)	1. Faulty main power supply Or SSR 2. Door is not closed properly	1. If found faulty, repair it or Change SSR 2. Close the door Properly.	 SSC DOOR SWITCH
Abnormal Sound	1. Check the levelling. 2. Slack Belt.	1. If found fault, rectify it. 2. Tighten the motor pulley.	
Clamping of Table not Working (Fig.- 10.3)	1. Problem in electric cable line for sensor and clamping motor.	Open the top cover of cabinet. If any problem in cable repair it.	
Can slipping or crushing	Clamp pressure need to check	Open top cover & increase pressure by rotating knob clockwise & anticlockwise to decrease pressure	

10. Daily maintenance

Maintenance Content	Operation. 1	Operation. 2	Operation. 3	Period	Picture
Check security devices (Fig.- 12.1)	Switch on the power supply.	Check the condition Of door switch and Emergency switch.		10 days	
Outside cleansing (Fig.- 12.2)	Switch OFF the power supply	Clean with soft cloth Dipping neutral lotion		One month	 MCB OFF MCB ON
Inside cleansing		Clean with soft cloth Dipping neutral lotion (launder with water if the paint overflows), Wipe with dry cloth.		One month	
Lubricate transmission TIE ROD (Fig.-12.3)	Switch on the power first, adjust work position and then switch off the power	Wipe off the old lubricating oil and leftover.	Apply new lubricating oil	One month	TIE ROD

11. Operational view

<p>Step 1</p> 	<p>Step 2</p> 	<p>Step 3</p> 
<p>Step 4</p> 	<p>Step 5</p> 	<p>Step 6</p> 
<p>Step 7</p> 	<p>Step 8</p> 	<p>Step 9</p> 

Step 1: Switch ON the power supply

Step 2: Open the door.

Step 3: Load the paint container on the bottom table for shaking.

Step 4: Close & lock the door as per display message.

Step 5: Operate through software for shaking.

Step 6: Machine is Shaking & Display shows the time countdown.

Step 7: After shaking open the door as per display message.

Step 8: Release the container

Step 9: ***THE MACHINE IS READY FOR ANOTHER OPERATION.***