

# OPERATING AND SERVICE MANUAL



## **HSD315**

### **HIGH SPEED DISPERSER**

Keep this manual within reach of the machine

© 2008 Phoenix Mixer India Pvt. Ltd.

User's Manual

Disperser machine

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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 415 Volt circuit, as shown on the Name plate.  
Connect the Product to an outlet having the same configuration.  
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.  
Removal of the plug from the outlet is the means for isolating the Disperser machine from the power supply. Ensure that the Disperser machine is installed with the plug easily accessible to the operator.  
In case of emergency, press the Red Emergency Stop button.
- **Make sure that the mixing Bucket sits in central position**  
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.  
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 person shall use this product.**

## 2. INTRODUCTION

Disperser machine is a revolutionary Disperser, which is ideal for all your wet grinding requirements.

The grinding effect produced is quite good with a stable performance and high efficiency.

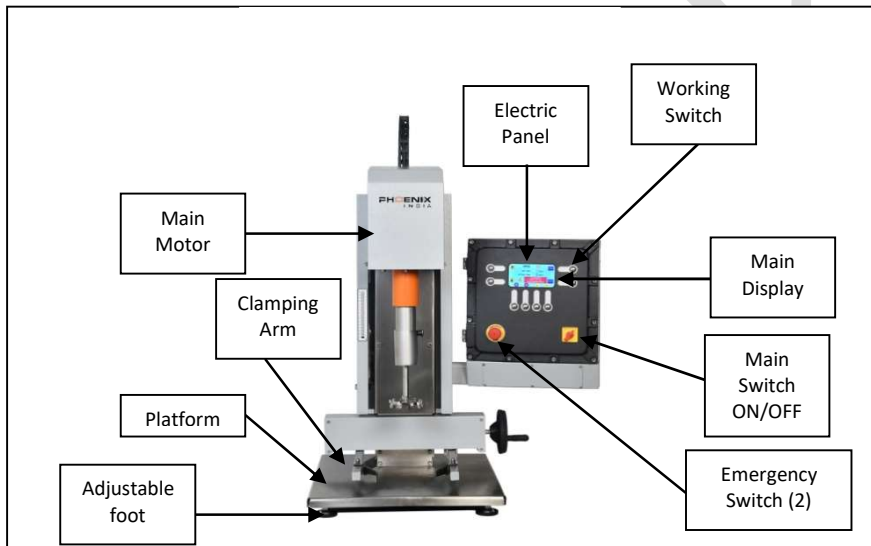
It is suitable for dispersing and grinding small number of materials in laboratory.

Provided with high-quality frequency converter, step less speed regulation.

Easy to clean and quick change of materials

Optional explosion-proof body

Stainless steel used for all materials



**Phoenix shall not be liable for any damage or injury incurred by non-compliance with these regulations, or by not taking the usual and accepted precautions in handling, operation or repair, even if not expressly stated in this manual.**

### **3. APPLICATION**

The Disperser is widely used in factories, research institute, colleges and universities.

Used in wet grinding experiments, pigment, dyestuff, printing ink, ink, paint, pharmaceutical and cosmetic industries.

Also used for other requirements for fineness high industries in small batch trial production.

Different types of blades are used as per the operation type such as cawl and propeller type of blades



#### 4. TECHNICAL SPECIFICATIONS

FEATURES	Disperser
Body type	Flame proof body
Coating	Powder coated
Emergency switch	Available
On /Off switch	Available
Maximum rpm	4500/min
Minimum rpm	60/min
Bucket mixing	1 to 4 liters
Main motor	1.5 hp/3 phase, Flame proof
SMPS	20 – 270 VAC, 24 VDC/10 Amp
VFD Drive	3Phase, 2HP, with step less variable speed control
Digital Timer	0 – 99.59 min, adjustable
HMI	EP 3070TN – E
Blade Type	Cawl and propeller blade
Push Button	Metal non-flammable
Overall dimension (WxDxH)	1050 x 650 x 1200

EN 292 Part 1 and 2: 1991	Safety of Machinery – Basic concepts, general Principles for design
EN 418: 1992	Safety of Machinery – Emergency stop Equipment, Functional aspects
EN 60204 Part 1: 1997	Safety of machinery – Electrical equipment of Machines -Specifications for general requirements.
EN 954-1: 1996	Safety of Machinery – Safety related parts of control Systems- Part 1: General principles for design
EN 1088: 1995	Safety of machinery-Interlocking devices associated with guards.
EN 294: 1992	Safety of machinery – Safety distances to prevent danger zones being reached by the upper limbs.
EN 953: 1997	Safety of machines – Guards-General requirements for the design and construction of fixed and movable for coating materials.
PrEN 12757-1	Mixing machinery for coating materials
<ul style="list-style-type: none"><li>- Materials used by Phoenix to manufacture the Dispenser doesn't undergo corrosions or deteriorations (They are compatible) with the paints which have to be checked.</li></ul>	



## 5. WARRANTY

**LIMITED WARRANTY:** Phoenix warrants are manufactured to be free of defects in material and workmanship for a period of twelve months. This warranty applies to single-shift operation and is counted from the date of initial start-up. It covers all defects arising from faulty material or workmanship.

Please Note that all warranty claims must be accompanied by the original delivery note or initial start – up report.

All essential warranty repair work must only be carried out by trained service engineers or by third parties authorization from Phoenix. Unauthorized repair may render the warranty null and void.

Please return any defective parts or machines carriage-paid to our factory. Phoenix reserves the rights to decide on whether cost-free parts replacement is applicable. Parts and labor covered by the warranty will be supplied free of charge. The warranty does not cover travel cost, expenses or possible overnight accommodation resulting from warranty repairs carried out off our premises.

Any other responsibility, with particular reference to damage claims, including foregone profit or other material losses on the part of the customer, is expressly excluded.

Warranty and liability claim for personal or material damage are excluded if attributable to one or more of the following causes:

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 work starts, if requested.

Always include serial numbers in any correspondence concerning the part unit.

The warranty expires: Twelve months after date of invoicing

- Operation of the machine with defective safety or protection device.
- Incorrect operation of the machine, as defined in the operation instructions.
- Failure to observe the instruction in the operating manual with respect to set up, initial startup, operation and maintenance of the machine.
- Fault and damage caused by dirt or incorrect cleaning schedules, with particular reference to leaks and damaged Buckets.
- Unauthorized structural modification to the machine.
- Incorrect monitoring of parts subject to wear and consumables.
- Unauthorized repairs or fitting of non-original parts.
- Damage caused by the impact of foreign bodies.

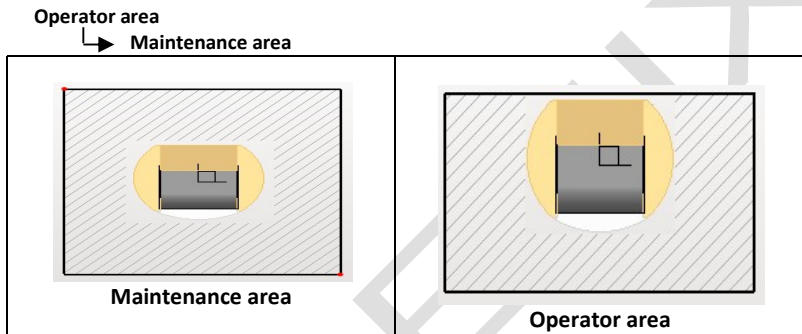
We reserve the right to make amendments as a result of ongoing advance in the technical field.


## 6. SAFETY SPECIFICATIONS


### Compliance with safety requirements:

This mixer must be used and serviced by authorized and trained person only. Improper use or servicing may result in dangerous situations or accidents.

Risk to person is possible in two areas:



	<p><b>Attention!!!</b></p> <p>Only trained person shall be permitted access to the electrical wiring within the cabinet.</p>
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	<p><b>THIS EQUIPMENT MUST BE GROUNDED.</b></p> <p><b>Attention!!!</b></p> <p>Connect this product to a dedicated electrical circuit – no other devices shall be connected to this circuit. Do not use extension cords to connect this product.</p>
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The machine is equipped with a power supply cable having the following specifications:

Length : As per configuration  
Size : 14 AWG

The machine shall be connected to a dedicated, grounded circuit, protected by a 10 a circuit breaker. All wiring shall be in accordance with local codes

**Service safety rules:**

- Prior to performing any maintenance or inspection of the Disperser disconnect the power plug from the electrical outlet in order to ensure that the Disperser cannot start unexpectedly.
- To prevent injuries to person, ensure that all removable panels are in place and properly secured except for any necessary inspections or maintenance.
- The Disperser should be installed in an environment conforming to the appropriate local regulations. A permit issued by the local authority may be required.

**RESIDUAL RISK**

**Residual risks list for the user:**

The Disperser and its operating and service instructions have been developed giving careful consideration to the safety of the user and service technician. However, there are situations where risks can be reduced but not eliminated completely.

RISK	PRECAUTION
Injury or crushing during operations.	Use protective gloves and safety shoes during loading and unloading operations.
Abrasions and injuries caused by sharp edges on the blade being used	Use protective gloves during loading and unloading operations.
Liquid leakage from the stirring buckets being used	Thoroughly clean the operator and maintenance areas. Keep these areas clean.

### **Personal protection for User:**

The Disperser, when properly operated and maintained, presents minimal risk to the user. However, it is recommended that the user wear suitable protective equipment (safety glasses, safety shoes with non-slip soles and gloves), in particular operating the Disperser.

### **General danger situations:**

There are no specifically identified hazards related to the operation and maintenance of the Disperser (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 Disperser is equipped with the following safety devices:

- Emergency Stop Button
- Main power ON/OFF Switch

### **Emergency Stop Button**

For safety reasons, all users should know the location of the Emergency Stop button, and how to use it.

The RED Emergency Stop push button is located on the Left Hand control panel. Pushing the button will immediately stop the main motor as well as gear motor. To release the emergency turn to clockwise direction.

## 7. INSTALLATION

### INSTALLATION CONDITIONS:

Before unpacking and installing the Disperser, please make sure of the following:

- The carat/package in which the Disperser was shipped has not been damaged in any way.
- The floor on which the Disperser is to be located is firm and level
- An electrical receptacle on a properly grounded, dedicated, 10 A 3 phase circuit is available in the immediate vicinity. The circuit shall be installed in accordance with local codes. The receptacle shall be of a configuration appropriate for the voltage and current rating of the circuit.

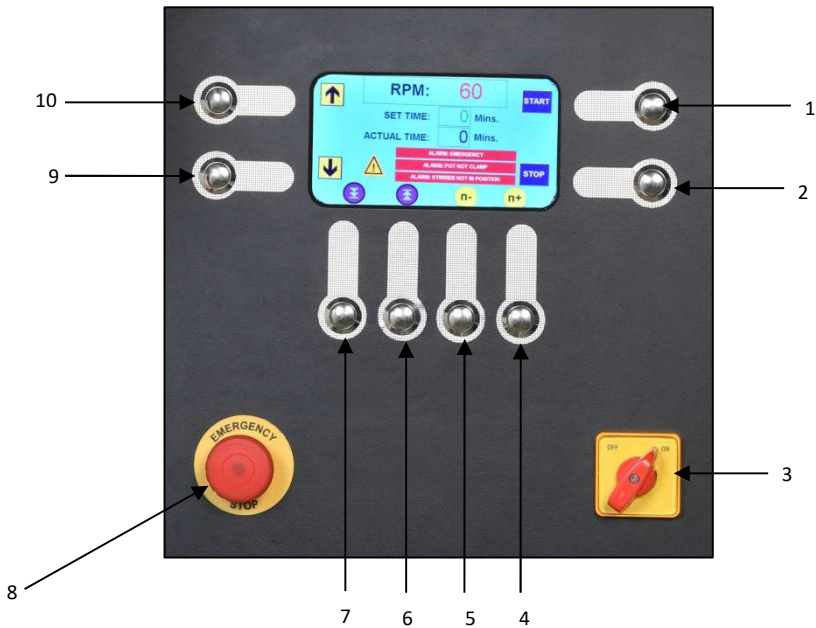
### INSTALLATION:

It is recommended that, during the installation of the Disperser, protective gloves be worn in order to prevent hand injuries.

- Unpack the Disperser.
- Ensure the Disperser has not been damaged in any way
- Position the Disperser in the desired location.
- Using the four leveling feet, level the machine, ensuring that all four feet are properly supporting the Disperser.

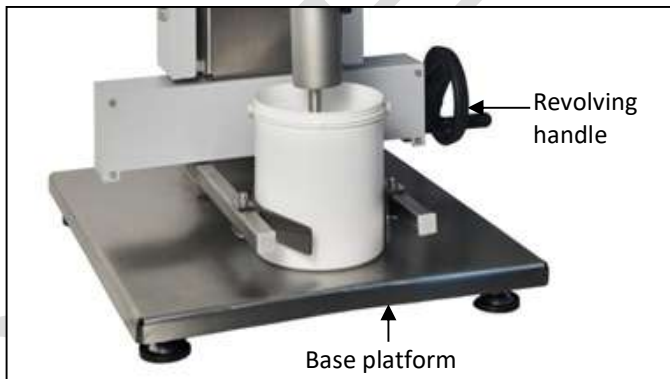
## 8. CONTROLS

CONTROL PANEL



## **SOP OF DISPERSER**

1. Power on the main Switch. (3)
2. Panel display shows three alarms. ( if it is condition)
  - 2.1 Emergency is pressed.
  - 2.2 Pot not Clamp.
  - 2.3 Disperser Not in position.
3. If emergency is pressed, remove the emergency alarm and release the emergency switch (3) on panel. The alarm of “Emergency is pressed” will disappear from the panel screen.
4. To remove the alarm of “Pot Not Clamped” from the panel screen follow the below steps. (manually)
  - 4.1 Place the pot on the bed below the Stirring rod on base
  - 4.2 Clamped the pot with the help of revolving handle manuallyOnce the pot is clamped, pot not clamped alarm will disappear from the panel screen



5. To remove the alarm of “Disperser not in position” follow the below steps
  - 5.1 Press the button (9) & (10) on the screen to move stirrer upward and downward
  - 5.2 Once the stirrer will come in position to operate, “Disperser not in position” error will disappear
6. **NOTE:** once all the alarms disappear from the panel screen then motor will start otherwise it will not start.
7. Set required time of stirring by increasing (6) /decreasing (7) button on the panel.
8. Set RPM of stirring machine by increasing (4)/decreasing (5) button on panel.

**MIXING:**

- Set the desired mix time by pressing the button on panel
- Blade will spin for the set time to mix the Paint at desired RPM.

Once the set time has match to actual time display shows the window “**stirring completed**”.

To STOP the Disperser during an emergency situation, push the Emergency push button to stop the stirring.

**USE THE EMERGENCY PUSH BUTTON IN AN EMERGENCY SITUATION ONLY**



## **9. CARE AND MAINTAINANCE**

### **9.1 Use of Platform**

Disperser machine has working platform, which is useful for handling or resting bucket for stirring operation.



### **9.2 Tools Required**

- Allen key set-mm
- Fix spanner set containing spanners set.
- Screw drivers set.
- Monkey Pliers, Circlip Pliers (Internal & External).
- Nose pliers and Combination pliers.

## 10. MAINTENANCE AND TROUBLESHOOTING

### Disperser machine

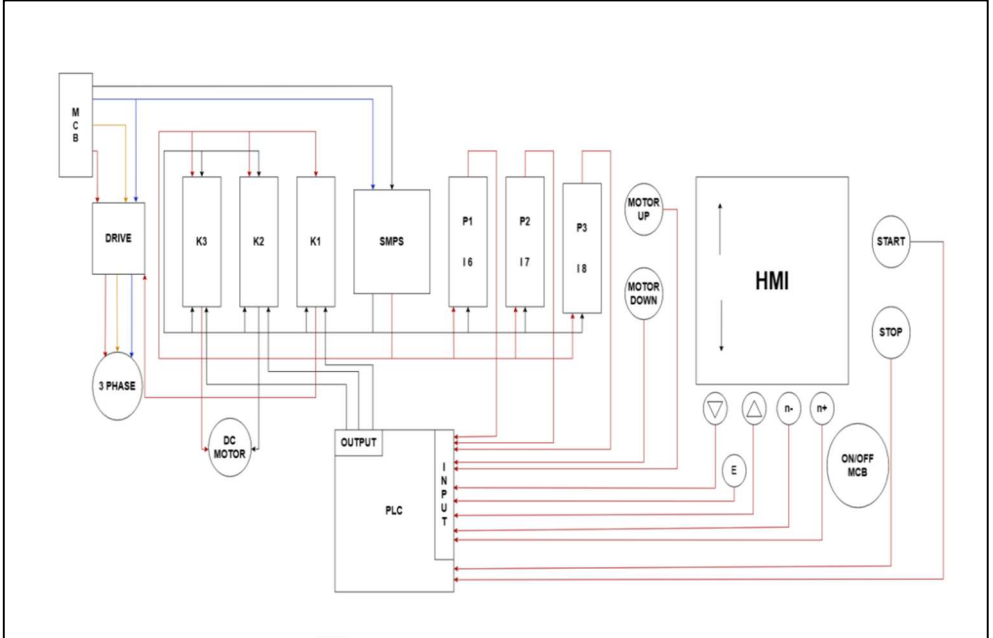
#### Monthly Maintenance or Ordinary Maintenance:

- Always keep the Machine clean.
- Accidental spillage of the paint must be cleaned then and there to avoid difficulties after it gets dried-up.
- Gently press the button on panel.
- Clean the impeller and propeller after stirring

#### Troubleshooting:

PROBLEM	TROUBLE SHOOTING
<b>Machine is not turning on or Not rotate</b>	<ol style="list-style-type: none"> <li>1) Check the Mains supply.</li> <li>2) Check MCB Position, it should be ON.</li> <li>3) Check the Power supply</li> <li>4) Check plug or loose wire.</li> <li>5) Check any alarm on the screen</li> </ol>
<b>Machine vibrates during operation or Not remains stable.</b>	<ol style="list-style-type: none"> <li>1) Check the floor on which machine has been installed.</li> <li>2) Otherwise put packing below the legs.</li> </ol>
<b>Main Motor not running / working</b>	<ol style="list-style-type: none"> <li>1) Check Emergency push button</li> <li>2) Check Motor mechanism and Motor capacitor.</li> <li>3) Check input supply.</li> </ol>
<b>Clamping mechanism</b>	<ol style="list-style-type: none"> <li>1) Check the clamping is in centre &amp; properly clamped</li> <li>2) After clamped check the alarm on screen</li> </ol>
<b>Scale assembly</b>	<ol style="list-style-type: none"> <li>1) Check the bottom level of assembly by scrolling the scale assembly.</li> </ol>

## 11. SCHEMATIC DIAGRAM



THANK YOU

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