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| **STANDARD OPERATING PROCEDURE**  CALIBRATION |

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## Purpose

The main purpose of calibration is to keep the equipments or instruments in a better condition for reliable and more accurate results.

## Scope

## This procedure is applicable to the weighing scales present in the factory premises and this is to intimate to all the staff of maintenance department that they are bound to follow the procedures of calibration. They have to follow instructions and working process of equipments and its related handling.

## Responsibilities

* Deputy Manager Electrical or Assistant Manager Electrical are responsible for all the in-house calibrations.
* Designated staff is responsible for its accurate working.
* All the individuals connected to this process are bound to follow.

## Procedure

1. **Weighing Scales Calibration:-**

Before calibrating the scales, please check the following things:

* Clean the weighing platforms properly.
* Inspect all the electrical connections and if there is a loose connection, make it a secure connection.
* Check the indicator panel and load cell are working properly.

After these checks, Turn ON the scale by pressing the Power ON button.

After turning on the scale, perform the procedure described below:

* Press the accumulative clear key and zero key at the same time. It enters the calibration mode and it displays [d 001].
* Select the division‘d’ by pressing the tare key again and again to choose the division among 1,2,5,10,20,50. If confirmed, press the zero key to enter the next step and it displays [dP 2].
* To choose the decimal point, press tare key again and again to choose the bit of decimal point among 0, 1,2,3,4. If confirmed, press the zero key to enter the next step and it displays [F 030.00].
* Set the full capacity by using accumulative add key, Kg/Lb switch key and tear key. After setting the full capacity, press the zero key to enter the next step and it displays [noLoAd].
* This step is the setup of zero point. Make sure there is no load on the scale. When the stable light is on, press zero key to confirm the zero point. The indicator displays “---" about two seconds, then entering load calibration and it displays [AdLoAd].
* After two to three seconds, the display [AdLoAd] changes to [A030.00]. Now, input the real weight of the load by using accumulative add key, Kg/Lb switch key and tear key. When the stable light is on, press the zero key to confirm, the indicator displays “---" for few seconds and displays the real weight on the screen.
* This ends the calibration and it returns to the weighing mode.

**Note:** In the calibration, press clear key can interrupt it and returns it back from the calibration mode to the weighing mode.

To shut down the scale:

Press the power button for 2-3 seconds to OFF the scale.

1. **Temperature Controller:-**

Temperature Controllers are of different types which have different specific program for calibration. But generic method is described as below.

* Temperature Controller is attached with its specific temperature sensor and that sensor is compared with our standard thermometer via temperature controller. If there is any variance of up-to 3°C, then we can adjust this by opening the calibration program of that specific temperature controller. By doing this, both the controller and sensor got calibrated.

1. **Solenoid Coils & Valves:-**

Solenoid coils & valves are checked and verified by its operation during its calibration

All other instruments have different programs to calibrate which we have trained staff for this.

1. **Gauges:-**

Gauges are calibrated by using a gauge calibration assembly. This assembly works by the series connection of master gauge and the gauge under calibration. After this, we will give pressure by using a pressure regulator and check pressure on both the gauges. If there is some difference in the analogue reading of gauge under calibration, then we adjust it and this way, the gauge gets calibrated.

**In case we found a faulty instrument or equipment during calibration or during maintenance, we have the usual practice to check that instrument and repair it. If it is not repairable then we replace it with spare one or put the tag “out of service” if that specific instrument is not available in-house.**

## Calibration Frequency

1. Calibration Frequency of weighing scale is defined as of 60 Days.
2. Calibration Frequency of other instruments is defined as of 1 Year.

## Associated Documents and Records

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| **Sr. #** | **Name of Equipment** | **Equipment Code** | **Duration/ Frequency** | **Calibration Date** | **Next Calibration Due Date** | **Remarks** |
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**AMENDMENT HISTORY**

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| --- | --- | --- |
| **REV. #** | **SECTION** | **AMENDED TEXT** |
| 1 | 4 | All other instruments have different programs to calibrate which we have trained staff for this. |
| 5 | Calibration Frequency of other instruments is defined as of 1 Year. |
| 2 | 4 | ~~All other instruments have different programs to calibrate which we have trained staff for this.~~ |
| 4 | Calibration of Temperature Controllers, Gauges and solenoid coils and valves is added. |

\* All changes made in the document are notified in the Amendment History Table.