

Web Tech Vibratory Feeder- *EasyFlow* 2000

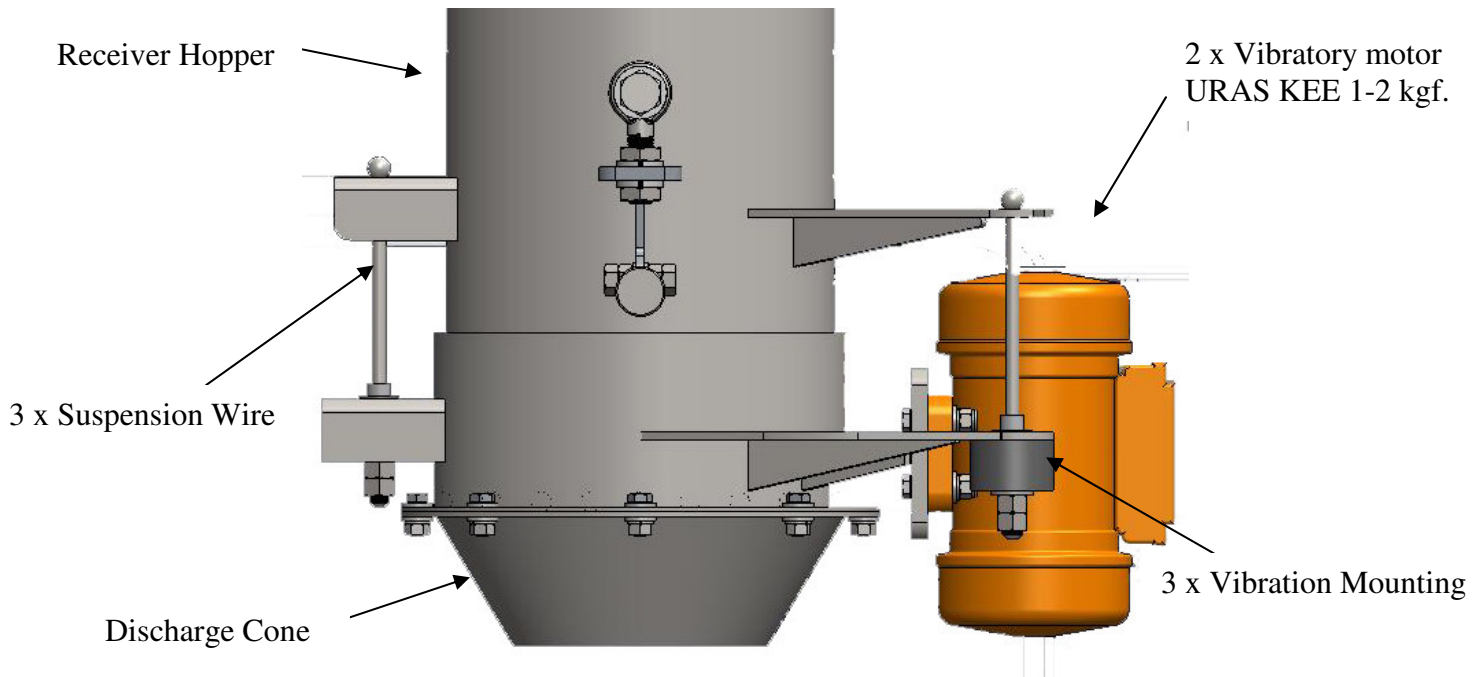
# WEB-TECH

## VIBRATORY FEEDER-*EASY*FLOW 2000



## System Description

The Vibratory Feeder EasyFlo 2000 has been designed to provide mass rate control for products that are difficult to feed. The system consists of a pre-feed hopper of various capacities and designs, and a vibratory feeder (EasyFlo 2000).

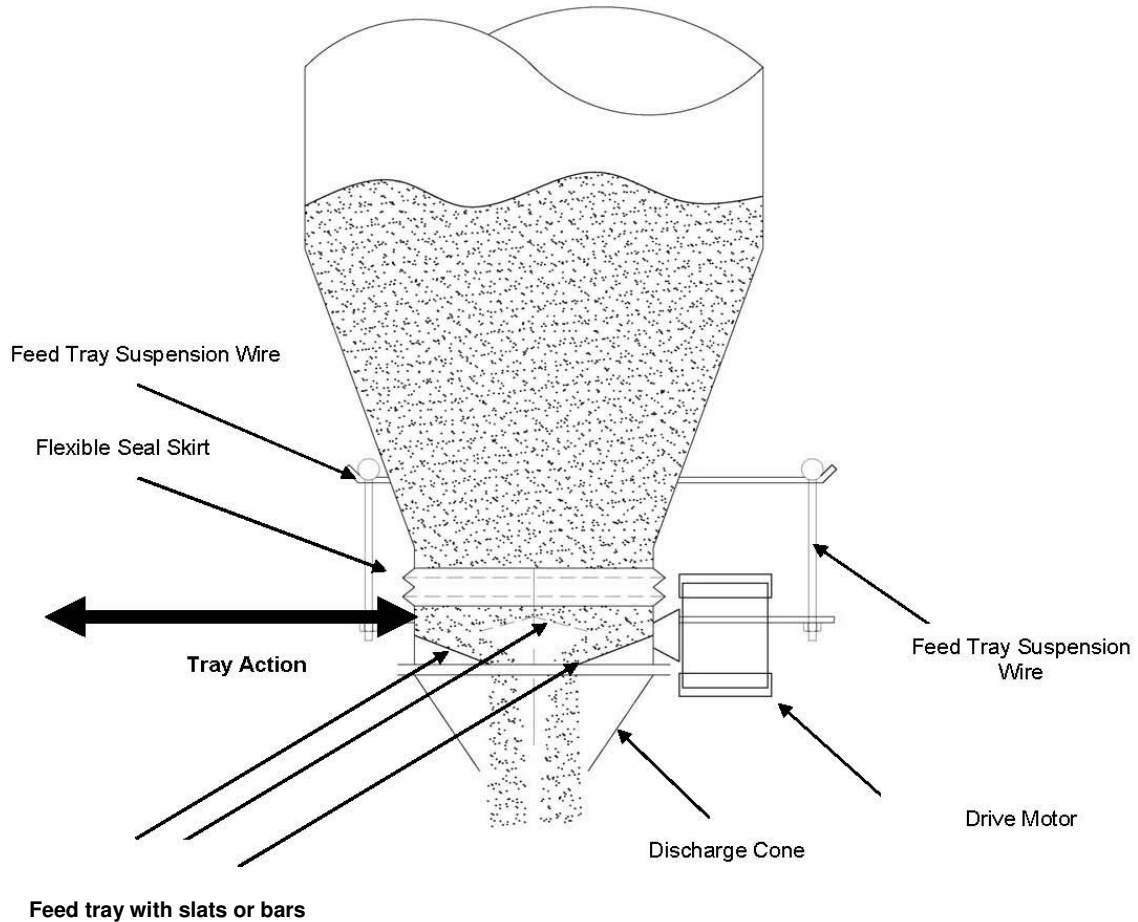


The EasyFlo 2000 controls material flow using a vibratory motor attached to a one piece feed tray. The EasyFlo 2000 is used to induce product flow from a storage hopper or bin, and is particularly useful when feeding non free flowing materials. The horizontal action of the vibrations acts in a manner that shears the product at the feeder inlet and promotes flow. It is also effective in throttling and stopping the flow of free flowing materials.

The feed tray is attached to the supply hopper by means of three suspension wires, which isolate the tray and allow it to vibrate in unison with the vibratory motor. The feed tray is designed for each application, and can comprise of a number of bars and baffles. The number and position of these bars is a function of the materials flow ability. A well designed feed tray allows for control of the mass rate by adjusting the frequency, and inertia of the vibratory motor. The bars also act as a gate, and stop material flow when the vibrator motor is stopped; this

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negates the requirement for a slide gate or valve.

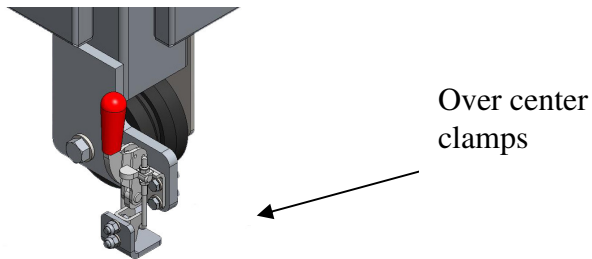


Optimus plus controls the mass rate by adjusting the frequency, and can maintain a rate set by a set point. The Optimus plus does this by monitoring the weight of the material in the hopper, It calculates the mass rate from the change in weight of the material (LIW). The frequency is controlled by sending a control signal (PID) via a 4-20mA current loop to a VSD. See the Optimus plus manual for further details on the operation and setup of the Optimus plus controller.

## Installation

The feeder is designed to be rolled in and out of the normal operating position for easy cleaning. The angle iron rails that it runs on should be welded or bolted down to the floor. As most floors are not flat; the rails should be **shimmed** if necessary to level the frame.

**The feeder assembly must be free standing. No other devices or structures can be bolted or welded to the feeder assembly. No welding should be performed on the feeder assembly, without disconnecting the electronics, as this can damage the load cell and or electronics.**



The feeder should be locked down in the operating position using the over center clamps when running. The feeder is totally enclosed for safety and dust control. The feeder is fitted with doors for easy access, that should be kept closed during operation, to prevent any errors from wind,

## Electrical connections

***All wiring must be in accordance with local electrical statutes.***

***All motors that are supplied from a VSD must use shielded cable that is grounded at the instrument end.***

***All signal wiring must use shielded cable and be physically isolated from the motor power supply.***

The feeder should be connected as per the supplied wiring diagram.

## Commissioning

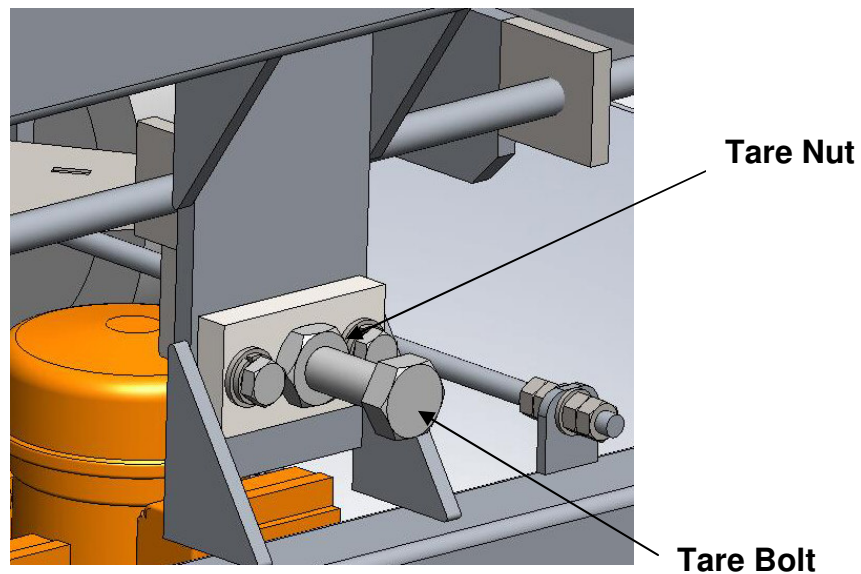
Although the EasyFlo 2000 Vibratory Feeder and the Optimus Plus controller are calibrated at the factory, they should be recalibrated as part of the commissioning procedure.

Please take note of our terms & conditions of sale regarding commissioning. It is recommended that the feeder is commissioned by Web-Tech, if it is to perform as required, as it is likely that some modifications may have to be done if the product does not flow as predicted.

## Mechanical Tare

The feeder is fitted with a torque tube tare system. The advantages of being able to tare the “dead load”, is that it allows the whole positive range of the load cell to be used to measure the “live load”.

The mechanical Tare will have been set during the factory calibration procedure, and should only need to reset if the load cell is replaced.



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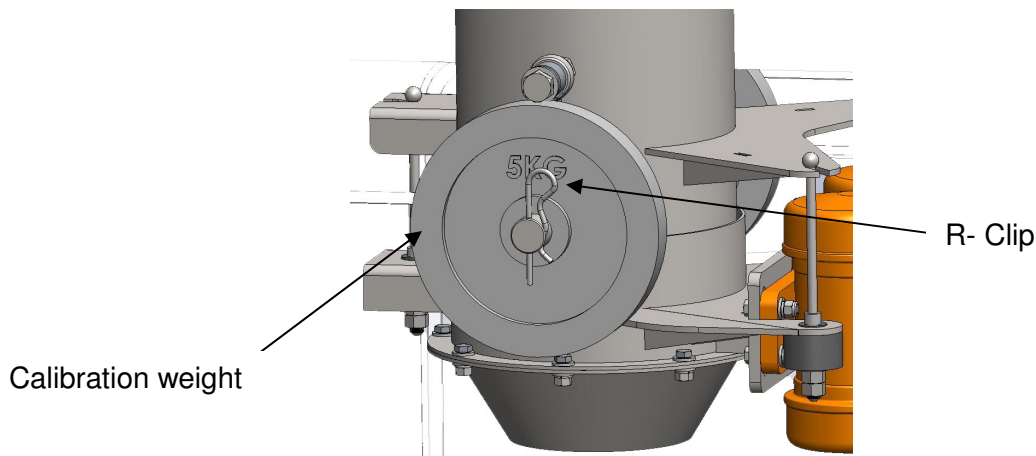
The tare is set by adjusting the tare bolt at the back of the feeder, until the load cell output is approximately 1.5 mV. Screwing the tare bolt in will decrease the load cell output, screwing the bolt out will increase the load cell output.

To set the tare on the Feeder, proceed as follows:-

- a) Undo the Tare lock-nut
- b) To check the load cell mV reading, either use a multimeter to read the load cell output, or go to sub menu 9 in the Optimus plus Setup menu.
- c) The load cell reading should be approximately 1.5mV. If not adjust the tare screw until approximately **1.5mV** +/- 0.5mV is achieved.
- d) Tighten the Tare lock-nut. Check when tightening the Tare lock nut, that the tare value doesn't change.

## Calibration

To ensure reliability and accuracy, the feeder needs to be regularly calibrated, as part of an ongoing maintenance program.



To make the calibration process simple, Web-tech have provided calibration weight carriers on either side of the hopper as shown above. The calibration weights are placed on the carriers, during the span procedure. Please note the R-clip must be in place when the weights are on the machine to prevent injury.

## Calibration Procedure

To calibrate the feeder follow the procedure below:

- a) Turn the feeder off.
- b) Make sure the hopper is completely empty.
- c) From the Optimus plus main menu press the CAL (F1) button to enter the calibration menu.
- d) Press the zero buttons to perform a zero calibration.
- e) Enter the total weight of the calibration weights (stamped on the weights), in the calibration data field.
- f) Place the calibration weights on the weight carriers on either side of the feeder.
- g) Press the span button.
- h) Remove the calibration weights.
- i) Press the home key to save the calibration data and return to the main screen
- j) The calibration is complete.

Refer to Optimus *Plus* manual for further information on the calibration procedure.