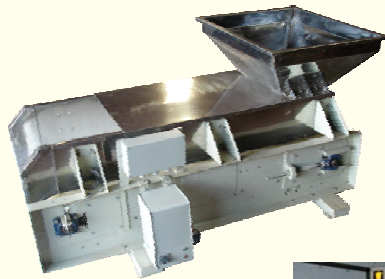


PLC BASED ONLINE AUTOMATIC ROTORVANE FEEDER With Dual Load Cells, Compact Conveyor System & User-friendly Control Station

Gravitea has been designed to deliver a uniform discharge rate of withered leaf (within +/- 2% of set rate) into the Rotorvane, irrespective of feed irregularity by the operator at the feed end of the machine.

This PLC-based model is a major improvement over our earlier design, which was based on micro-controllers. PLCs are much more accepted in the industry for Electronic Automation because of their low-maintenance needs, robustness, low costs and reliability.



DIMENSIONS

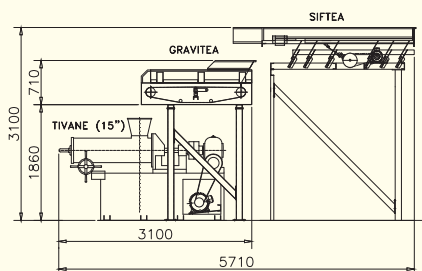
L - 1,845 mm (6 ft)
W - 965 mm (3.10 ft)
H - 700 mm (2.30 ft)



THE PRINCIPLE

The system consists of a controller and a PVC conveyor belt passing over a Weighing Zone. Withered leaf is fed at the Feed Zone and travels to the Discharge Zone at the other end of the conveyor belt. The controller senses the weight of the leaf passing over the Weighing Zone and adjusts the speed of the belt accordingly (slower / faster), in order to achieve the preset discharge rate of leaf into the Rotorvane. The end result is high productivity with lower costs and improved quality, by maintaining a consistent and uniform feed of withered leaf into the Rotorvane.

It has been observed that during manual feeding of withered leaf into the Rotorvane, there is a wide variation in feed from the desired feed rate. In such a case, it is never possible to maintain uniform pressure in the barrel of the Rotorvane to get the desired level of preconditioning.



Quality of made tea is dependent on various factors like correct wither, precise preconditioning of leaf in the Rotorvane, desired level of sizing, maceration and shaping in CTC, correct chemical reactions during fermentation and uniformity of heat transfer during drying. All these can be achieved only if the preconditioning of withered leaf in the Rotorvane takes place at a uniform rate, maintaining correct pressure. This would automatically balance the productivity of all subsequent machines up to the Sorting section.

It has been observed that during manual feeding of withered leaf into the Rotorvane, there is a wide variation in feed from the desired feed rate. In such a case, it is never possible to maintain uniform pressure in the barrel of the Rotorvane to get the desired level of preconditioning.

SALIENT FEATURES

- Maintains a continuous and uniform discharge rate of withered leaf into the Rotorvane, within +/- 2% variation from preset rate.
- Enables setting of all subsequent machines to their optimum levels and facilitates their automation, resulting in higher productivity with improved quality at lower costs.
- High performance Programmable Logic Controller (PLC) based design for better accuracy.
- Two load cells provided, ensuring high accuracy.
- Totals the mass delivered on real time basis with an accuracy of within +/-2%.
- Online display of key parameters like total mass delivered (kgs.), total time of operation, present and cumulative feed rate.
- Stores data.
- Audio annunciation panel to alert the operator on overfeed and under-feed.
- High efficiency Geared Motor instead of the conventional drive arrangement.
- Rugged design to withstand harsh factory conditions.
- Elaborate self-diagnostics and well-defined calibration procedure for consistent operation.
- Specially designed power supply to withstand power fluctuations from 150 VAC - 280 VAC (Normal 220 VAC).
- Built-in restoration of data in case of power failure.
- Capacity may vary from 500 kgs. to 3,000 kgs. of withered leaf per hr.

CONCISE LIST OF USERS

(including PLC & Micro-controller based systems sold by us in the past)

Goodricke Group	Maud T.E.	Sankar T.E.	Haticherra T.F.
Hattikhira T.F.	Sitapur T.E.	Horujan T.F.	Joonktoollee T.F.
Prabhuni T.E.	Bokahola T.F.	Padumani T.E.	Pengreegarh T.F.
APPL (Tata Tea)	Worthy T.F.	Arin T.F.	Mazbat T.E.
Regina T.F.	Matiapahar T.F.	Kolony T.E.	Sarat T.E.
Classic T.F.	Everassam T.F.	JCNTR T.F.	Jaybirpara T.E.
Julekhanagar T.E. (Bangladesh)		M. R. Khan (Bangladesh)	

Weightea™

PLC BASED ONLINE DRYER MOUTH CONTINUOUS TEA WEIGHER
With 4 Load Cells, Compact Conveyor System & User-friendly Control Station

Recording the weight of dryer mouth teas is of prime importance for all tea factories. Data log of teas manufactured at the end of the drying process has to be maintained for various reasons.

Weightea is a special purpose Programmable Logic Controller (PLC) based belt conveyor system with four load cells, for accurate weighment and recording (within +/- 2% accuracy) of dryer mouth teas.

WORKING PRINCIPLE

The system consists of a display module and a PVC belt conveyor passing over a load cell zone. Made tea from the dryer is fed into the conveyor through a small storage hopper at the feed end of the system. The controller senses the mass of the teas as the conveyor belt passes over the load cell zone and registers the data. The data is also displayed on a real time basis on the display screen. In addition, the total accumulated mass and total belt operational time are continuously displayed online.

SALIENT FEATURES

- Totalizes the mass delivered on real time basis with an accuracy of +/- 2%.
- Controller module with LCD display of key parameters like total mass delivered (kgs.), total time of operation, present and cumulative weight.
- Stores data.
- High performance PLC based design for better accuracy.
- Four load cells provided, ensuring high accuracy.
- High efficiency Geared Motor instead of the conventional drive arrangement.
- Rugged design to withstand harsh factory conditions.
- Elaborate self-diagnostics and well-defined calibration procedure for consistent operation.
- Specially designed power supply to withstand power fluctuations from 150 VAC-280 VAC (Normal 220 VAC).
- Built-in restoration of data in case of power failure.
- Capacity of equipment may vary from 200 kgs. to 3,000 kgs. made tea / hr.
- Computer interface for centralized monitoring for the weigher operation (optional).



DIMENSIONS

L	-	1,845 mm (6 ft)
W	-	965 mm (3.10 ft)
H	-	700 mm (2.30 ft)

Approved by the Weights & Measures Department of India.

In view of our continuous process of product development, the design of the machine is subject to change without prior notice.



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