



AEROGRA

TM

EAGLE ENGINEERING
ALPENA, MICHIGAN

AEROGRAN™

PROGRAMMABLE DISPENSER

The **AEROGRAN™** dispensing system is a state of the art system designed to handle a wide variety of granular products. After three years exploring the market and listening to the needs of the concrete masonry industry, our research has brought a machine to market that is based on existing granular technology but with the precision to meet a wide variety of product requirements. The **AEROGRAN™** is the leading dispenser on the market today.

Just a few years ago many new color products came to market and created a need for new and different equipment to accurately dispense these products. Some of the products were very fragile and others very robust. A machine that was diverse enough to handle both was the solution. The **AEROGRAN™** can accurately and efficiently dispense both “C” grade and “G” grade granular pigments. It meets all of the requirements of today’s automated manufacturing and sets a precedent for the future of color dispensers.

Now being built world wide, the **AEROGRAN™** dispenses on the basis of weight. Microprocessor based controls and high quality components ensure that its accuracy and repeatability will continue setting the standard in today’s market. Using a touch screen user interface that can handle the harsh environment often found in manufacturing plants, the operating parameters of the **AEROGRAN™** can be adjusted to provide flexibility and adaptability to a wide range of manufacturing operations.

TOUCH VIEW SCREEN CONTROL



Most functions are accessed and performed by simply touching the face of the Touch View Screen. The Touch View Screen, like the rest of the dispenser, is built to rugged industrial standards (NEMA4).

AUTOMATIC / SEMIAUTOMATIC MANUAL OPERATION



Normally all of the dispensing operations are handled by the host machine (batching system) when the dispenser is in automatic mode. However, the dispenser can also be operated in the semiautomatic mode, or the operator can have complete manual control of all the dispenser functions.

FORMULA STORAGE (PRODUCT)



The **AEROGRAN™** will store 120 different product formulas. The formulas can be programmed by the operator by touching the screen. Each product may consist of up to four blends and each blend can consist of up to four base components.

INVENTORY CONTROL

SILO MATERIAL USAGE			
SILO	DESCRIPTION	WEIGHT DISPENSED	SILO RESET
Silo 1	UNLOADED	0.000	Reset
Silo 2	UNLOADED	0.000	Reset
Silo 3	UNLOADED	0.000	Reset
Silo 4	UNLOADED	0.000	Reset
Silo 5	UNLOADED	0.000	Reset
Batch Number		000	Print

PRINT RESET PRINT

The **AEROGRAN™** accumulates totals of all weights dispensed in the automatic mode. A count of the batches produced are accumulated as well as remaining quantities in the bulk storage containers. These totals can be viewed, or reset to zero when appropriate. A printout of the total usage of each component and the number of batches can also be printed with the touch of a button.

MULTI-BLEND OPERATION

Multi-Blend operation is used for making multicolored and marbled units. The multi-blend finished product can have up to four different components, which can be dispensed in rotating sequence. This feature is especially useful when producing alternating products.

STATUS

Throughout the entire process the operator is continuously updated on the status of the current cycle. Status information along with other diagnostic data is regularly updated and displayed.

BATCH RECORD

An optional printer can be connected to the **AEROGRAN™** control to print the data from each batch produced in the automatic mode. The batch is identified by a batch number, product number, time and date. If this feature is enabled, a printed copy will be generated automatically after each batch.

THEORY OF OPERATION

The **AEROGRAN™** is a stand alone system that can be controlled and adjusted through built-in parameters automatically by a host system or through the easy to use touch screen operator interface. The operator can take partial or full control of the dispenser at any time during the cycle. Many of the parameters controlling these functions are variable and can be changed through the CHANGE SETUP screen.

CHANGE SET-UP TABLE			
0000	VESSEL EMPTY TOLERANCE	0000	CONE VALVE OPEN TIME
0000	MAXIMUM VESSEL WEIGHT	0000	HOPPER VIBRATION DELAY TIME
0000	SILO 1 SETTLE TIME	0000	VESSEL PRESSURE BUILD TIME
0000	SILO 2 SETTLE TIME	0000	VESSEL PRESSURE RELEASE TIME
0000	SILO 3 SETTLE TIME	0	NUMBER OF CLEANSING CYCLES
0000	SILO 4 SETTLE TIME	0000	CLEAN DISCHARGE LINE TIME
0000	SILO 5 SETTLE TIME	0000	FEEDER GATE HOLD TIME
0000	SILO 1 SLOW FILL OPEN TIME	0000	DUST COLLECTOR FAN RUN TIME
0000	SILO 2 SLOW FILL OPEN TIME	0000	DISCHARGE START TIME DELAY
0000	SILO 3 SLOW FILL OPEN TIME	SILO 1	UNLOADED
0000	SILO 4 SLOW FILL OPEN TIME	SILO 2	UNLOADED
0000	SILO 5 SLOW FILL OPEN TIME	SILO 3	UNLOADED
		SILO 4	UNLOADED
		SILO 5	UNLOADED

PRINT OPTION PRINT SCALE PRINT

CHANGE

SETUP

The granules are gravity fed into a surge hopper and then conveyed into the weigh hopper according to the parameters that the operator has defined. The weighed granules are then transferred to the conveying vessel and pneumatically discharged into the receiving device (mixer) and the cycle is complete.

APPLICATION SUPPORT & TRAINING

Eagle Engineering provides factory applications and guarantees lifetime technical assistance through a toll free number . Personnel quickly respond to customer needs, troubleshooting problems, analyzing system operations, and coordinating component repair or replacement. Eagle Engineering provides on-site startup and training, worldwide, for our complete line of dispensing equipment.

DETAILS OF PROCESS CYCLE

FILL CYCLE

The unique patent-pending design of the **AEROGRAN** has an upper assembly that is made specifically for easy loading and unloading of components with fork lift or crane. The components then flow to a weigh hopper where loads can be weighed within a tolerance of ± 0.01 lb. This translates to 0.1% accuracy on a 30 lb. batch. To insure maximum production rates, it is necessary to fill the weigh hopper as rapidly as possible yet maintain the required accuracy of the final weight. The **AEROGRAN** is equipped with a fast/slow dispensing feature. This feature dispenses the majority of the product using a FAST FILL speed, and then at a preset cutoff weight, the unit dispenses at a SLOW FILL speed until reaching the shut off point.

SLOW PRACT

User adjustable SLOW PRACT sets the weight amount at which the flow rate switches from FAST FILL to SLOW FILL. This means that the FAST FILL rate will be switched to SLOW FILL at a weight less than the final desired weight.

ACCURACY

User adjustable ACCURACY operates in similar manner as SLOW PRACT except that ACCURACY switches the flow rate from SLOW FILL to SHUT OFF. The ACCURACY setting compensates for the amount of material in the air between the conveying pipe and the scale. After each SLOW FILL, the dispenser hesitates for a short time to allow the scale to stabilize. If the weight is within tolerance, the material is sent to the conveying vessel.

DISCHARGE CYCLE

When a discharge signal is received the conveying vessel is pressurized and then, when up to pressure, the contents are discharged to the mixer. To insure that all the contents have been discharged, the **AEROGRAN** cleans itself with blasts of air. The contents can be conveyed up to 90 feet away, including 30 feet vertical. If the optional printer is connected a batch report will be printed with the weights of each color used along with the batch number, time and date.

AEROGRAN CHARACTERISTICS

Accuracy †	.01 lb.
Repeatability	.02 lb.
Number of stored formulas	120
	200 w/optional processor
	150 on multi-mixer units
Multiple blends	Four per formula
Formula names	User defined
Color names	User defined
Control System	PLC (A/B SLC 5/03)
Number base colors	3, 4 or 5
Inventory control	User defined
Batch printer	Optional
Multiple mixer operation	Optional
Operator interface	Color touch screen
Control	Automatic/Manual
Batch capacity	0.10 lbs to 66 lbs
Typical cycle time 40 lb. batch	60 seconds, 4 colors
Alarms	Local, remote
Electrical protection	Circuit breakers,
Operating voltage	120 volt, 50/60 Hz.
Air requirements	35 CFM @ 100 psi
	Instrument Quality Air
	(ANSI/ISA S7.0.01-1996)
Air Dryer	Required (see above)
Dust Collector	Required
Maximum Dispensing Distances *	100' of hose (30' rise)
Space requirements	17'H x 17'W x 4'D

† User configurable for Metric units

* Based on 30 lb. iron oxide.

For information on how you can get the **AEROGRAN™ installed in your manufacturing facility, call:**

1-800-824-1085



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