

Replenishment Paint Feeder System

PRODUCT DATA SHEET

E-coat paint is being continuously removed from the bath because it is deposited on the ware. The amount of paint deposited is closely related to the number of amp-hours delivered by the DC rectifier(s). By measuring amp-hours, a Replenishment Paint Feeder System allows for replacement paint to be added only as required. (Your E-coat paint supplier can assist you with calculating how many gallons of replenishment paint are required for each amp-hour delivered.)

Continuous paint additions result in less variation in E-coat film thickness, therefore variable costs will be considerably less. Reduced manpower allows for additional savings since the addition of replenishment paint is automated throughout the day, as needed.



Typical view of Amp-hour controller

Benefits

- Keeps %NV at a very steady level throughout the day's production cycle
- E-coat film thickness levels are more consistent due to the steady %NV
- Less man-power required for operation
- Easy to manually add paint to bath as required



Typical view of PVC Static Mixer



Typical view of piston pump for use with 55 gallon drum with agitator

Product Selection Consideratons

There are several ways that a Replenishment Paint Feeder System can be configured. Design considerations include selecting the appropriate Amp Hour Controller model, determining if a static mixer is required, calculating the price differential between a piston pump or a diaphragm pump system, and determining whether the paint resin and paste are delivered in drums or in totes. These configurations are discussed in more detail on the following page.

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Amp Hour Controller

The Amp Hour Controller can control 1 or 2 pumps (with 110 VAC outputs) using stroke count or time. It accepts input from the DC shunt inside the DC rectifier. The controller model selection is determined by the number of rectifiers in the E-Coat system.

1 Rectifier

2 Rectifier



Amp Hour Controller

Static Mixer

A 2" flange-style 3.5 psi, 25 gpm static mixer is used to properly mix the replenishment paint into the bath (optional). The paint injection system is provided by others and consists of piping, valves, fittings and pressure gauges.

Yes

No



PVC Static Mixers

Paint Storage

Please indicate if your paint is delivered in drums or totes. If drums, the Replenishment Paint Feeder System will sit on top. A lift and lid for easy change-over of drums is included. If totes, the System will come with a wall mount and includes a 10 foot pump suction line kit.

Drum

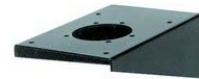
Tote



Lift



Lid



Wall Mount Bracket

Pump Quantity

One component paint requires just one pump. Two component paint requires two pumps: one for paste and one for resin. If two component paint is used (tote or drum), an agitator is included to keep the paste stirred.

One component paint (one pump)

Two component paint (two pumps)



Piston Pump



Diaphragm Pump



Agitator

Pump Style

Our preferred pump is an accurate air-operated wall-mounted piston pump. The specifications include an Ingersoll Rand ARO brand pump, 4:1 Ratio, 3" air motor, and 2-ball lower end with stainless steel wetted parts, and Teflon seals.

Customers with budgetary considerations can select a diaphragm pump. The specifications are Ingersoll Rand ARO brand pump with 1" AOD polypropylene body and wetted parts, and a sanoprene diaphragm.

Piston pump

Diaphragm pump

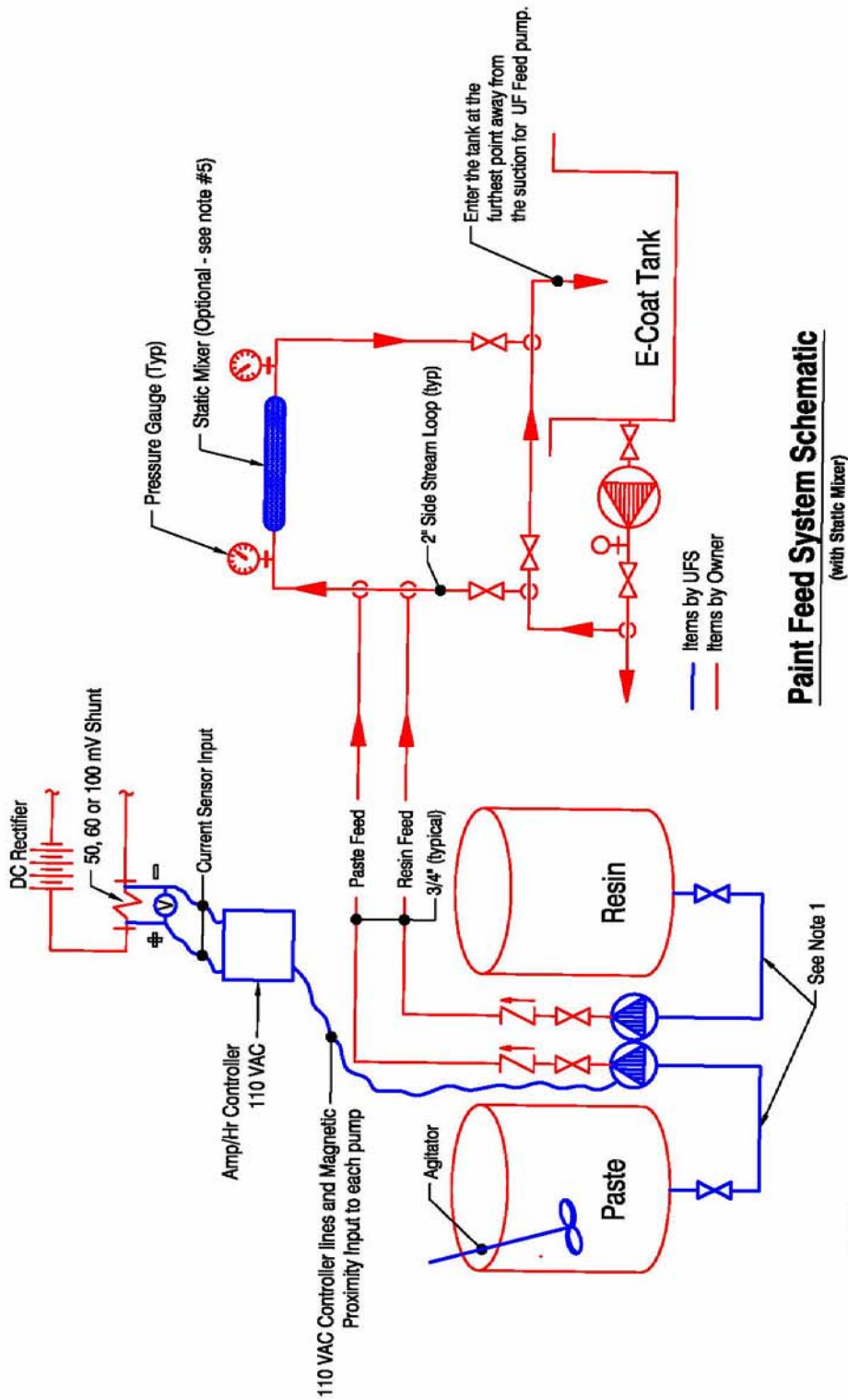
Regardless of the pump selection, the Replenishment Paint Feeder System will include: an airline filter/regulator, 110 VAC solenoid for pump operation, air motor repair kit, wet end repair kit and magnetic proximity switch.



Airline Filter/Regulator



Solenoid Valve



Paint Feed System Schematic

(with Static Mixer)

Notes:

1. If pulling from the bottom of a tote / paint container, limit pump suction piping to be no more than 36". A 2" or larger suction line is recommended. Only reduce down the pipe at pump inlet if necessary.
2. Limit flow through static mixer so pressure drop is ~3.5-4.0 PSI.
3. If **NOT** using a static mixer the flow rate is 1.0 GPM into the middle leg of the tee for every 100 gpm flowing straight through the tee in order to achieve proper mixing.
3. Do not exceed 8-12 ft/sec for paint velocity in any pipe line.
4. Total replenishment paint feed flow rate is 1-3 gpm max.
5. Actual flow rate will depend on static mixer model.
6. The magnetic proximity switch should be wired up with 20 AWG twisted pair. The air solenoid valve (that controls delivery of air to the piston pump) needs AWG #12.