Pump-in-a-Drum™

The Comprehensive Color System

As a means for coloring plastics, Liquid Color has many advantages over conventional pelletized color concentrate, the most prominent of which is **cost savings**. Unfortunately, liquid's numerous advantages have been offset by significant housekeeping problems. These problems have limited the wider acceptance of Liquid Color.

Riverdale Color®, Mfg. Inc., now offers a system for delivering Liquid Color to your process that virtually eliminates housekeeping issues. This system uses the new "patent pending" PUMP-IN-A-DRUM metering system coupled with proven Maguire® Weigh Scale Blenders or Riverdale® CAM-DRIVE Volumetric Controllers.

SYSTEM BENEFITS

Never open the color container!

The pumping system is contained inside the drum and all drums are sealed. Users never have to open a color drum and risk spillage or contamination.

Never spill liquid color again!

Delivery tubes are provided with sealed shutoffs. When disconnected, the drum and the tube assembly are automatically shut-off and sealed. The connection at the processing machine also has an automatic shut-off that opens when the nozzle is inserted and shuts off when removed.

Never clean a delivery tube!

Each delivery tube is dedicated to only one color. You never need to clean them. A delivery tube is provided for each color.

Never replace pump tubing.

With conventional peristaltic liquid color pumps it is recommended that tubing be replaced every thirty days. The peristaltic action of the pump will eventually wear through the tubing and if not replaced the tubing will split.

Never run out of color!

TWO color containers are placed at each machine. When one container runs out, change over to the second container is fully automatic eliminating the risk of producing parts without color. An alarm sounds to remind the operator to replace the empty drum with a new one.

Never dispose of empty containers.

All empties are returned to Riverdale Color to be refilled. Unused color residing on the sides and bottom of the drum are recovered and a credit is issued for unused color at the time of refill. Costs associated with disposal of packaging materials are also eliminated.

Never deal with pump problems again!

The pump is contained inside the sealed drum. Pump problems and pump service will never be your responsibility. If a pump is ever a problem, you simply return the partially used drum for full credit of the unused color, and we service the pump in our factory.

WHY LIQUID COLOR COSTS LESS

Liquid color offers maximum flexibility and the highest quality coloring for all plastic applications. High pigment loadings plus superior dispersion mean lower let-down ratios and much lower coloring costs. Liquid color maximizes concentration by loading 75 – 80% pigment into liquid carriers. Liquid's superior dispersion reaches full color with less pigment. With substantially higher pigment loading plus superior dispersion over pelletized color, liquid color is more economical. Unlike color concentrates that must use polymer as the carrier, liquid color has no heat history and is not subjected to the constant price fluctuations of the resin market. The higher pigment loading also means less required inventory space. Typically, liquid color requires less warehouse space than that required for concentrate. Liquid color also requires short lead times reducing inventory and carrying costs.

HOW IT WORKS

The Pump-In-A-Drum system is a new concept introduced by Riverdale Color exclusively for the Plastics Industry and only available from Riverdale Color. The goal of this system is to reduce the potential for mess from improper handling of liquid color. Each container of color holds its own pump. The customer is NEVER required to open the drum for any reason.

The pump, located inside the drum, is four inches in diameter, about 1.5 inches thick, with a one-inch diameter stainless tube extending upward from the pump and passing through the lid. Liquid cannot enter this stainless tube. This tube shields a stainless rod, which presses on a flexible pumping diaphragm inside the pump. A plastic tube, connected to the side of the pump, carries liquid color up and through the lid. On the top side of the lid is a "hydraulic" type quick-connect fitting with an internal shut-off. This allows flow only when the mating fitting is connected. Internal ball checks cause liquid to move in one direction only as the pump diaphragm is operated.

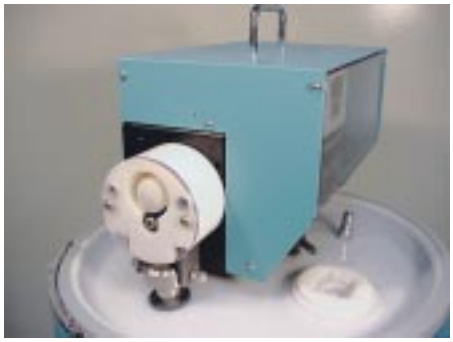
The delivery tube from the drum to the process machine is fitted with automatic shutoffs at each end. When either end is disconnected these shutoffs prevent dripping. Generally, these tubes remain dedicated to one color and therefore never require cleaning. These tubes stay with the process machine and are used repeatedly for each successive drum of the same color.

WEIGH SCALE BLENDER OPERATION

When Pump-In-A-Drum is used in conjunction with a Riverdale, Conair, or Maguire Weigh Scale Blender liquid color is dispensed by weight. An air cylinder is connected to the top of the drum, above the plunger, and is operated by blender control circuits for exact gravimetric dispensing. Two drums of liquid can be set up for continuous operation. The blender detects when a drum is empty and switches drums automatically.

VOLUMETRIC OPERATION

When a Weigh Scale Blender is not available, a standard Riverdale® CAM-DRIVE Volumetric Controller is positioned on top of the drum. This is the same as a peristaltic (tubing) pump controller but with the peristaltic pump head removed and refitted with a new Riverdale® CAM-DRIVE head designed to operate Riverdale's Pump-In-A-Drum style pumps. The resulting dispense is volumetric, which is to say it produces an output of known volume, the same as standard liquid color peristaltic pumps.



CAM-DRIVE pumps operate by driving the diaphragm down slowly to deliver a known volume of liquid very accurately at the required rate, and then allowing the diaphragm to retract quickly to recharge for the next dispense. Volume is controlled by setting thumbwheel switches to control exact motor rotation. This is the same control as standard peristaltic pumps with settings calculated using a similar formula.

ABOUT RIVERDALE COLOR® MANUFACTURING, INC.

Riverdale Color® is a leading international supplier of liquid colorants, and liquid additivies to the plastics industry. The Riverdale legacy dates back to the early 1900's as a supplier of dyes and industrial chemicals. Riverdale Color supplies colorants and additives to consumer and commercial markets such as toys, personal care, packaging and outdoor furniture.

Riverdale Color's world headquarters is located in a new 60,000 sq. ft. state-of-the art manufacturing facility in Perth Amboy, NJ. Supporting the liquid color operation is an expert staff trained in color development, color matching and quality control. Insuring high quality product from inception to end-use is the top priority of all Riverdale Color personnel.

Riverdale Color

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