

Automatic dispensing systems for dye house automation from Color Service

One of the essential steps in the dyeing process is that of dye and chemical preparation. Dyes and chemicals prepared as per the prescribed recipe are likely to yield well coloured fabric. However, when dyes and chemicals are performed manually, several errors can creep into the process. A few examples are:

- **Incorrect dosage of chemicals:** Operators typically tend to use either more or less than the specified quantity of chemicals during the dyeing process. When less chemicals are used, dyeing is negatively impacted.
- **Usage of wrong chemicals:** At times due to operator error, even the wrong chemicals may be added!
- **Wastage of chemicals:** During manual transfer of chemicals, wastage may occur due to spillage.

Color Service automatic dosing systems guarantee fast and accurate weighing of dyes thus ensuring consistently dyed, high-quality end products. These systems are designed to eliminate problems that arise from manual dosing:

- Eliminate over- or under-use of chemicals by accurately weighing the chemicals
- Eliminate the error of picking the wrong chemicals
- Eliminate the wastage of chemicals in manual transfer with automatic transfer of chemicals
- No safety margins required for recipes; average recipe amount can be reduced

Color Service's range of products includes automatic dosing and dissolving systems for powder dyestuff, liquid chemicals, and powder dyes (in production and laboratory) for dyeing and printing houses. It includes:

- Automation for powder dyes TRS
- Automatic for powder dyes: dye dissolver and weighing SCC
- Automation for liquids - DLV series
- Automation of powder chemicals DAP

Automation for powder dyes TRS



Highest precision: With the ability to weigh as little as 0.01 gram of dyestuff, TRS is the most accurate weighing system available in the market today. A patented scraper ensures that dyestuff is dispensed as very fine particles which ensures perfect control.

Aluminium silos: Long lasting aluminium silos prevent sticking of dye powder due to static electricity.

Modular silos: Block of silos can be chosen with volumes from 90 litres to 450 litres depending on the dye consumption. Possible to add or replace with different capacities depending on future requirements.

Color Service also provides semi-automatic storage and weighing systems for powder dyes:



PESMAN is a PC-controlled scale guides the operator to weigh the correct quantity of dye. It is integrated with a label printer and barcode reader to avoid mistakes in picking the dyestuff.

PESMAN



PATERNOSTOR is an automatic dosing system for dyeing production that is designed to save space in the dye kitchen. All dye boxes are stored vertically, enabling space savings.

PATERNOSTOR



MAGROB is an advanced version of PATERNOSTOR. A robot assists the operator in handling the boxes of dyes.

MAGROB

Automatic for powder dyes: Dye dissolver and weighing SCC



Fastest in the market: SCC can deliver a bucket of dissolved dyes every 6 minutes!

Circulation instead of stirring: SCC does not use a stirrer or mixer to dissolve dyes. Three-dimensional circulation dissolves dyes much faster. An added advantage is the ease of cleaning after dissolution.

Automatic chemical addition: For disperse or acid-based dyes, SCC can ensure the automatic addition of dispersant agents or acetic acid.

Automatic adjusting of water temperature: According to dye stuff to be dissolved, SCC can adjust the mix of hot and cold water, thereby ensuring that dissolution occurs at the right temperature.

Bucket washing station: Two buckets are used - one for washing and one for dissolving, thus reducing idle time.

Automation for liquids -DLV series



The DLV series is suitable for use with liquid chemicals in dyeing production.

- **Modular structure:** Makes it possible to add more inlets for liquids or more outlets to the dispenser. DLV series gives flexibility to start with fewer liquids and then add more easily.
- **More accurate than flowmeter:** The system uses a load-cell instead of a flow meter. Load cells (with a margin of error of less than ± 0.1 g) ensure better accuracy than flow meters for dispensed amounts of less than 500 g.
- **Double outlets:** DLV series can deliver materials to two destinations simultaneously (optional). This feature increases speed of dispensing by up to 70%. This reduces the cost and saves space in the factory.
- **Monoline or multiline:** Can work with both mono- and multiline technologies.
- **Air blow technology:** Color Service uses air blow technology to deliver liquids to usage points thereby reducing water consumption significantly and allowing the pipe to remain empty with no pressure and no water. In the monoline system, this increases the life of the distribution valves.
- **Mass flow meter:** DLV series is equipped with a mass flow meter, which is more reliable and accurate (± 0.1 g accuracy).
- **Available for OBA (optical brightening agents) or liquid dyes:** OBAs (optical brightening agents) or liquid dyes are best suited for use with the DLV series as the built-in load cell technology ensures accurate and separate (from other liquids) dispensing of OBAs or liquid dyes.

Automatic for powder chemical DAP



DAP is designed to dissolve powder chemicals up to 1:1 concentration

Suitable for use with a wide range of silo capacities: DAP can be combined with a range of silo capacities – from 450 - 3100 L. Silos are made of fibre glass and are equipped with level sensors and vibration units.

Vacuum loading: Loading of powder is done using vacuum. Operator only need to drop the bag of powder into the hopper from where the material is transferred into silos using vacuum.

Mono-line/multi-line: Suitable for use with mono- and multi-line dispensing technologies.

Benefits of Color Service's automatic dispensing systems:

24/7 operation: Color Service automatic dosing systems are fast and reliable and guarantee uninterrupted production 24/7.

Traceability: All report data is captured and recorded on a management system software making traceability or quality certification issues easy to handle.

Uniformity: Any chance of mistakes or human error is totally removed; all operations are automatized ensuring superior quality, lower variability, and constant uniformity on the batch.

Operator safety: Many manual activities can be automated, thus significantly reducing the chances of inhalation of hazardous powders, toxic dust, and carcinogenic chemicals, ensuring operator safety.

Workforce efficiency: Worker time is free to focus on more crucial duties, thus saving time and money.

Zero waste: Wastage of chemicals due to intolerances and incorrect weights is reduced by 10%.

Reduces carbon emissions: Color Service automation helps to decrease carbon footprint, saves energy, materials and reduces waste.

Competitiveness: Customers' quality and competitiveness are dramatically increased due to the accurate dosing of raw materials complying with high-quality standards.

With the above benefits, medium scale companies can also start with automation for liquids and upgrade themselves in a phased manner.

References in India

We have more than 80 installations of Color Service in India which includes top companies like Arvind Mills, Himatsingka, D'Decor Exports, D'Decor Home, G M Syntex, Raymonds, Shahi Exports, Siyaram Silk Mills. Trident, Vardhman, Welspun India and others.

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About Color Service

Established in 1987 in Italy, Color Service is a world leader in the development and production of automatic dispensing systems with more than 30 years of experience.

Color Service' engineering and production are entirely in Italy. With domain expertise in the field of textiles and thanks to years of experience and know how, Color Service has introduced its unique technology into other market segments as well – such as rubber, tyre, cosmetics, and food.

About A.T.E.

A.T.E. offers an entire range of world-class textile solutions from leading global manufacturers and solution providers, including machinery for all textile processes and effluent treatment plants and other utilities . With more than 80 years of experience in the Indian textile industry, A.T.E. is renowned for its deep domain knowledge and impeccable customer service.