

In the recent past, the flexo and gravure printing markets have become very competitive. Converters are continually faced with the challenge of becoming more efficient, reducing downtime and waste, while improving quality and consistency.

Our close interaction with users for more than 10 years has helped us understand and suitably develop ink handling and conditioning solutions. Our application expertise and R&D capabilities help us in customising solutions for specific needs.

Valflow® centrifugal ink pumps and filters are made in India under license from Graymills® Corporation, USA. Peristaltic and diaphragm pumps are available directly from Graymills, who has been in this field for more than 60 years. Ink temperature controls are a result of our working closely on flexo and gravure applications.

World-class quality is now available at affordable prices. This is backed by strong pre-sales application and post-sales support. When you are considering a project on ink or coating or adhesives handling, condition or control, consider AxisValence as a ready resource. We will be happy to discuss your requirements and offer you the right solution by optimising your systems and components.

- Ink tanks
- Ink circulating pumps
- Ink filters
- Ink cooling system
- Viscosity controls
- Hoses and fittings



### Ink tanks

Round tanks are preferred because they help promote circulation and blending of the ink or coating. Sloped bottoms in Valflow® tanks allow low-pump down, thus minimising ink waste.

### Centrifugal pumps

This industry workhorse is low-maintenance and delivers ink with constant flow. Valflow® pumps additionally provide in-tank circulation to keep the material in the tank well-blended. These are available with quick de-mountable (QD) flame-proof motors.

### Double diaphragm pumps

Compressed air-driven Graymills® pumps operate by movement of two flexible PTFE diaphragms moving back and forth, alternatively filling and emptying two chambers. They produce a pulsating flow, and hence surge suppressor filters are strongly recommended.

### Peristaltic pumps

In Graymills® peristaltic pumps, a flexible tube/hose passes through the head and is squeezed by two rollers that push the ink to the print station or deck.

### Ink filters

Proper filtration is the key to protecting anilox rolls, cylinders, and doctor blades from damage while maintaining print quality.

### Ink cooling system

Maintaining ink temperature helps maintain print quality and saves on precious solvents and ink. The Valflow® ITS (Ink Temperature Stabiliser) is specifically designed for cooling inks in flexo and gravure presses.

### Viscosity controls

Automatic viscosity controls not only improve quality, but also free operators from the time consuming task of manual cup checks

### Hoses

Better flow is usually obtained by using the next larger practical diameter hose. Excessive hose lengths can reduce flow and increase cleaning. AxisValence stocks regular sizes of solvent resistant hoses.

### Fittings

Many fittings can cause restrictions; 90 elbows are among the worst. Are all your valves and fittings of the same internal diameter as the connection size? Smaller diameters reduce flow during operation. AxisValence stocks most such common and quick connect fittings and couplings.

### Ink tanks and lids

Standard Valflow® ink tanks are round to promote circulation and eliminate “dead spots” in corners where heavier materials can drop out of solution, stagnate, and cause viscosity and colour issues. Round tanks of 25, 50, and 80 litre capacities, fabricated out of stainless steel feature a low pump-down to reduce ink waste. A rolled rim at the top of each tank provides reinforcement and eliminates sharp edges. Removable spark-less castor wheels are offered as an option.

The lids of the tanks have overlapping rims to reduce evaporation and add strength. A hinged portion makes it easy to refill or take manual viscosity readings. Holes are provided for the return hose or bypass. Large handles make lifting easy. Customised and OEM tanks with lids are available on request.

Tank capacity is selected based on the amount of ink consumed by the press, length of run, chamber of ink tray capacity and the amount of ink which will drain back into the tank from the print deck, hoses and filters when the pump is stopped.



### Ink filters

Valflow® ink filters are manufactured under license from Graymills® Corporate, USA. Circulating along with the ink are contaminants from three major sources: air (dust, fibres), doctor blades (metallic particles), ink (dried ink and pigments). Valflow® filters eliminate these contaminants through mechanical and magnetic means and thus ensure good print quality.

Eliminating these contaminants helps to ensure good anilox roll or gravure cylinder filling and metering, which improves print quality. Further, filters protect the system from damage. Metallic particles and dry ink are known to be highly abrasive to anilox rolls and gravure cylinders. When caught under a doctor blade, contaminants score these expensive cylinders, requiring repair or replacement. Streak marks are another problem easily eliminated by a filter.

Valflow® filters are easy to clean. Simply remove the cartridge and let the filter body get flushed out with the rest of the inking system. Place a clean cartridge in the filter and you can start afresh. No tools are required.

Valflow® ink filters allow easy draining of the filter and hoses. In case of centrifugal pumps, when the pump is switched off, the ink in the filter and hoses will drain back into the ink tank. With diaphragm pumps, a bypass path has to be created in the hose line.



# Valflow®

## Ink handling and conditioning systems

### Valflow® centrifugal pumps

Valflow® centrifugal pumps are manufactured under license from Graymills® Corporation, USA. These are designed keeping in mind the needs of rotogravure and flexographic presses. They are highly reliable and easy to maintain and are available in different flow rates to suit specific application requirements. The impeller is tailored not only to provide impeccable flow but also to ensure sufficient circulation in the tank.

Valflow® centrifugal pumps have a quick demount (QD) feature to enable quick changeover. Neither are tools required nor are there any loose parts to separate the motor from the pump. For a quick turn-around, buy one pump with a motor and one without. Keep the motor near the press (electric connections can remain intact) and swap the dirty pump for the clean one. This reduces the chance of motor damage during changeover.

For solvent-based liquids, use a certified flame-proof or ex-proof flange mounted induction motor. For use with water-based liquids, a standard flange mounted induction motor is adequate.



### Graymills® double diaphragm pumps

These air-driven pumps are operated by the movement of two flexible diaphragms that move back and forth, alternately filling and emptying two chambers. As each chamber is emptied, the ink is pushed toward the print deck. A variety of applications are possible because the inlets and outlets can be configured in different ways. The pump produces a pulsating flow. Valflow® suppressor filters are strongly recommended to smoothen the flow out.

### Graymills® peristaltic pumps

Also known as a 'tube' pump, a peristaltic pump utilises a flexible tube which passes through a head and is squeezed by two rollers that push the ink to the print deck. These pumps are excellent for low to high viscosities, UV and EB. A variable speed motor controls the flow (no valves or bypasses required). Graymills® peristaltic pumps are reversible so that ink can be drawn back from the print deck at the end of a run, reducing turn around time. Additionally, they are easy to clean. Alternately, the 'quick change' removable head option can be used to change over the entire system in seconds.



### Valflow® Ink Temperature Stabiliser

Recent studies have shown that warm ink is a major dampener to economics on rotogravure and flexographic printing presses. High temperature can also cause increased ink and solvent consumption and lower ink quality by destroying the dot structure.

On each print station, an ink circulating pump delivers ink from the tank to the print station. As the print run progresses, the temperature of the ink rises and then stabilises at a high temperature over time. This high ink results in increased solvent evaporation, which in turn means higher top-up solvent consumption.

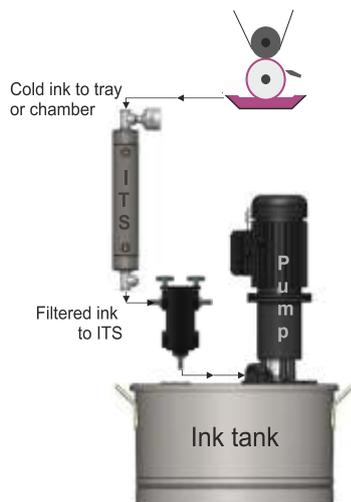
The Valflow® Ink Temperature Stabiliser (ITS) cools down the warm ink circulating in the press to a level that suits the process and ambient conditions. This ensures consistency of printing and reduces top-up solvent consumption and in some cases, even the ink consumed.



**Valflow Ink Temperature Stabiliser (ITS) provides bit savings in solvent consumption through ink cooling on flexo and gravure presses.**

### Benefits:

- Reduced odour due to lesser fugitive (evaporative) losses. Lesser solvent vapour also ensure better safety and health
- Better dot quality, reduces ring formation, enhancing print quality
- Reduced solvent consumption; very attractive payback period



The advantages of working with AxisValence begin with our detailed process knowledge. We understand your application by ascertaining the amount of cooling you need, which depends on your printing process, the types of inks and solvents used, their consumption and temperature pattern, the weather conditions in your region, and other factors.

We then apply our knowledge and experience to offer you a suitable solution. This can either be from our standard product portfolio or a tailor-made system solution that includes appropriately sized heat exchangers, process chiller, explosion-proof temperature sensors, solenoid valves, temperature controllers, pumps, pipes/tubes, fittings, filters, and related accessories.