

DOT Pigmented Ink System

GH30 Series back Pressure Regulator

Ink manufacturers have sold various pigmented inks through the years. The pigments were primarily for light fastness marking. The size, concentration, and denseness of the particles in the inks are relatively low, thus it is fairly easy to keep these particles in suspension. Traditionally they have used an agitator to keep these inks mixed. The idea here is for the customer to press a valve on the agitator which vents air out of the ink container. The replenishment air is then forced to bubble through the ink creating a slight mixing action. This method has been suitable for these non-masking, pigmented formulas.

Recently developed yellow pigmented inks, both slow dry and fast dry are masking inks. These inks have to be dense enough to actually cover up the substrate. This is accomplished through the use of a higher concentration of larger, denser, particles. These new masking inks require much more agitation to keep the pigment in suspension.



Re-Circulation Module

The re-circulation module will use an ink pump to circulate ink from the pail through the print heads, and back to the pail. The ink path to the print heads is shown in the drawing below. This design will provide continuous ink circulation through all tubing, fittings, and print head blocks to keep pigments in suspension. The return line can contain ITT Conoflow's GH30 Series Back Pressure Regulator. This regulator is used to maintain a constant 3-4 PSIG back pressure. The GH30 Regulator will relieve excess ink into the ink pail. Air is then loaded to the ink pail as needed to replenish the system and start the process over.

