Ink System Components

The GIS Ink System Components (ISC) range comprises electronics, software and a portfolio of customisable header tanks and peripherals, and all parts of the system that require significant development time, such as the overall system layout, along with pressure control, system control and fault detection.

Working closely with machine builders, we design and configure systems tailored to their specific needs, whilst allowing them the flexibility to source complementary components to suit their ink and final system architecture.

System Specification

- Up to 6 colours per control card
- Multiple control cards for more than 6 colours
- Typically up to 20 heads per colour
- Overnight and weekend switch off (automatic when power off) - offers limited head drip
- Long-term switch off (manual)
- Non-circulating and recirculating capability
- Independent purge per colour
  - High pressure purge
  - Low pressure purge
- Easy printhead change (system does not require draining)
- Fault detection
- In-line and header tank heater options
- Ink degasser

System Configuration

A system can be as simple as:

- Single colour / fluid
- Non-circulating

Or as sophisticated as:

- Multi-colour
- Independently controlled ink circulation
- Heated and degassed ink

Control Electronics

- Control cards can be daisy-chained for more colours / fluids
- Header tanks can be daisy chained together via a single CAN Bus cable link
- Runs from 24V supply
- Ethernet cable to connect to PC using Telnet and CoAP protocols

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Header Tanks
GIS offers a range of standard and custom designed tanks:
- Integral overflow protection and pressure sensors
- Integrated control valves for switching between flow modes, as well as providing automatic switch off
- Manual valve per head (for easy head replacement) and long-term switch off
- Swagelok stainless steel ink tube connectors to printhead
- Careful design to minimise pigment traps and to encourage air bubble release
- Sized to feed any number of printheads per colour

Flow Modes
- No recirculating flow
- Low recirculating flow
- Controlled recirculating flow

Heater
- Gentle and efficient controlled heating of ink with no hot spots
- Thermostat to protect from over-temperature
- For use with controlled flow or high flow modes

System Design
- GIS will work with customers to help design an optimal ink supply system for their application

Fault Detection
- Unexpected system pressure loss
- Header tank overflow (contained within tank)
- Unexpected behaviour
- Fail safe automatic system switch off on critical error

Purge Control
- Low pressure purge
  - Used for most printhead types
  - For end shooter and recirculating systems
- High pressure purge
  - Pressure built up to c.1 bar before releasing to header tanks
  - Optional support for external high-pressure source

Atlas® GUI for Ink Systems
- Powerful and easy-to-use Graphical User Interface (GUI) for control of ink system configuration and operation
  - Real-time monitoring of system pressures

Header Tank - Design Options

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