



HP Bulk Ink Delivery Systems

Build your custom solutions on proven technology



HP bulk ink delivery systems combine design flexibility with proven inks and components, allowing OEMs to develop products with a competitive advantage.

HP Specialty Printing and Technology Solutions (SPTS)

At HP SPTS, we provide industry-leading technology designed to boost your customers' satisfaction and profitability. Our technology is uniquely adaptable, helping you easily address new and diverse market needs. Our expansive portfolio includes products, supplies, services, and support to help you deliver high-performance, reliable, and cost-effective solutions. By building on the foundation of HP, you can grow your business today and well into the future.

Featuring design flexibility

HP engineered our robust, flexible bulk ink delivery systems with advanced features to meet the needs of high-volume print applications where superior print quality, low cost per copy, and minimal user intervention are required. This system offers designers the opportunity to configure almost any combination of HP printheads and HP bulk ink cartridges to achieve the desired print capability. System components allow for:

- Easy mounting of ink cartridges
- Reliable ink delivery
- Electronic interfacing to the bulk ink cartridge
- Manifold design
- Ink level sensing

Achieve high-quality output on a wide range of substrates. HP's proven ink portfolio delivers high-quality text, graphics, and barcodes for applications that span multiple industries.

Delivering high productivity

HP bulk ink delivery systems combine all the great features of HP's proven inks with robust and flexible bulk ink delivery systems designed to meet the needs of high-volume printing applications:

- Large ink cartridges minimize operator interventions
- Advanced electronic functions enable designers to build in ink level monitors and signals to provide virtually uninterrupted printing during longer print runs
- Printheads and ink cartridges can be changed independently, minimizing running costs
- Ink cartridges that can be hot swapped, easy-to-replace printheads, and highly reliable connectors make for a robust system that can maximize uptime
- Modular design enables multiple configurations of printheads and ink cartridges to achieve a variety of print swaths



1:1 configuration



2:4 configuration



4:4 configuration

Gain flexibility with a modular design

HP bulk ink delivery systems give you the flexibility to design the best solution for your customers—from systems with one ink cartridge feeding a single printhead to an entire bank of ink cartridges feeding an array of printheads. With each part available independently, you can easily tailor products to fit a wide set of printing applications, and you can benefit from quick time-to-market and a high return on investment. Modular design reduces development costs since large systems can be built up from multiples of a smaller product.

Reduce operating costs with bulk ink supplies and independent printheads

Using large volume ink supplies with ink fill level up to 400 ml, you can design economical systems with longer print runs. Large ink cartridges not only reduce the cost of ink per cubic centimeter, but also require fewer operator interventions to keep a job running. In addition, printheads are separate from ink cartridges, so part changes have less impact on a running system.

See shorter development time with a full suite of HP components

HP has taken much of the work out of designing a bulk inkjet printing system. This full suite of components—from specialized pressure regulators and electronic interface boards to printhead stalls and connectors—enables you to get a print engine up and running quickly. By offering proven HP reliability, these components can reduce product development time, as well as investment and tooling costs.

Gain versatility with a portfolio of inks compatible with a variety of media

HP's innovative water-based inks have a proven track record of compatibility with a wide range of substrates. These water-based inks produce sharp, crisp output without the need for specialized solvents or chemical handling equipment. Fast drying time provides high-quality output without transfer or smearing, and without sacrificing print speed.



Bulk ink cartridge

Printhead

Technical specifications

	Print cartridge	Bulk ink cartridges
Resolution	600 dpi	N/A
Nozzle count	300	N/A
Maximum firing frequency	12 kHz	N/A
Approximate drop volume	29 pl	N/A
Ink fill level	38 to 42 ml*	400 ml
Operating conditions	10 to 40° C, 10 to 80% RH	10 to 40° C, 10 to 80% RH
Shipping/storage conditions	10 to 30° C, 5 to 80% RH Altitude: 0 to 5000 meters (0 to 16,404 ft) Orientation: nozzles down or horizontal; up orientation requires pressurized system	10 to 30° C, 5 to 80% RH Altitude: 0 to 5000 meters (0 to 16,404 ft)

* Ink fill level varies by sku

Choose the components and configuration that meet your design objectives

Printhead stall



Printhead stall. This printhead stall is specially designed to hold and orient the printhead in high-performance printing systems. Its flexible design is suitable for a variety of printhead array configurations, and is appropriate for both stationary and moving printhead applications.

The stall's datum and alignment structure provide accurate positioning of the printhead. This modular component supports a 0.5-inch swath width and 600 dpi thermal inkjet printing. Printheads can be snapped in and out of the stall for easy replacement.

Pen driver board



Pen driver board. This printed circuit assembly (PCA) provides both the electrical and logical interface between the host printing system and the printhead. This component is designed to provide proper operation, proper firing, and protection of the printhead. An application-specific integrated circuit (ASIC) on the PCA communicates with the host via a serial data interface and converts configuration and print data into printhead-specific firing signals. Onboard firing voltage regulation provides consistent firing energy, independent of print density. Firing energy is programmable to provide optimal printhead performance and life.

Enclosed regulator assembly



Enclosed regulator assembly. This regulator assembly maintains the pressure and ink flow to the printhead. Because of its small size and enclosed design, it can be mounted and incorporated easily into any design. With this regulator in place, the bulk ink cartridge can be mounted some distance from the printhead, and management of backpressure and ink flow is handled automatically.

Ink connectors



Ink connectors. These ink connectors are specially designed to quickly disconnect for easy system operation. The no-drip design helps maintain a clean operating environment, and air-tight seals prevent air from entering the system when they are connected or disconnected.

Modular ink supply stall assembly



Modular ink supply stall assembly. This component provides easy mounting of the bulk ink cartridge, as well as proper electrical and mechanical connection every time the cartridge is changed. When multiple ink cartridges are required, simply snap together as many modular ink supply stall assemblies as needed.

This convenient module includes everything you need to make all electrical and mechanical connections to the cartridge.

The modular ink supply stall assembly includes these parts:

- ISS connector assembly, which enables electrical connection with the smart chip on the cartridge
- Ink seal assembly
- Ink stall

HP bulk ink portfolio

Product offering	Description	Ink type	Product numbers	
			Printhead	Bulk ink cartridge
HP 4500 Black Ink	Sharp, crisp print quality with minimal intervention, on primarily uncoated substrates <ul style="list-style-type: none"> • High-quality, sharp, crisp output • Excellent barcode readability • Fade and water resistance on a variety of substrates¹ 	Pigment	Q7456A	Q7457A
HP Versatile Black Ink	High-speed printing with high optical density and fast dry time on a wide variety of substrates <ul style="list-style-type: none"> • Sharp, dark black text with high optical density in a single pass • Fast dry time and high durability, designed for minimum smearing or transfer • Print on both coated and uncoated substrates without changing ink 	Pigment	Q2320A	Q2321A
HP Non-fluorescent Red Ink	High-quality, water-resistant ¹ red on a variety of porous substrates <ul style="list-style-type: none"> • Bright red impact on a variety of materials and surfaces, even recycled fibers • Formulated to meet Universal Postal Union guidelines for color and durability³ 	Pigment	Q2357A	Q2358A
HP 2242 Blue Ink	Ideal for mail printing applications that must meet postal authority requirements ³ <ul style="list-style-type: none"> • Bright blue impact for a variety of direct mail applications • Formulated to meet Universal Postal Union guidelines for color and durability³ • High-quality printing on a variety of mail sizes and thicknesses 	Pigment	Q2382A	Q2356A

Ordering information

Product number	Product description	Product number	Product description
Components			
CQ803A	HP Smart Card Print Cartridge Stall	Q2308-60015	HP Modular Ink Supply Assembly
C8855M	HP Print Cartridge Driver Board	5042-7013	HP Insert Fluid Connector - Male
Q2308-60001	HP Enclosed Regulator Assembly	5042-7014	HP Insert Fluid Connector - Female
Printheads			
Q7456A	HP 4500 Black Printhead and Connector Assembly		
Q2320A	HP Versatile Black Printhead and Connector Assembly		
Q2357A	HP Non-fluorescent Red Printhead and Connector Assembly		
Q2382A	HP 2242 Blue Bulk Printhead and Connector Assembly		
Bulk ink cartridges			
Q7457A	HP 4500 Black Bulk Ink Cartridge		
Q2321A	HP Versatile Black Bulk Ink Cartridge		
Q2358A	HP Non-fluorescent Red Bulk Ink Cartridge		
Q2356A	HP 2242 Blue Bulk Ink Cartridge		

¹Fade and water-resistance testing by HP Image Permanence Lab. Ink performance may vary based on substrate, printing system, and environmental conditions. Test the ink in your application to understand true performance.

²Dry and oil rub resistant based on internal HP testing.

³For countries in which specific color inks are permitted, is formulated to meet country-specific guidelines as well as Universal Postal Union guidelines for color and durability.

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