December 2023

HP Smart Tank Series 7602, 6001, & 5101:
The Easiest-to-Use Tank Printers[1]

Objective

Keypoint Intelligence was contracted by HP Inc. to determine if the HP Smart Tank 7602, 6001, & 5101 could be considered the "easiest-to-use tank printers" compared to similar competitive tank printers from Canon, Brother, and Epson.

Background

Printer convenience and ease of use have become more essential than ever before for customers. They now actively seek out devices that offer seamless control through mobile apps, real-time monitoring of device status and settings online, as well as proactive alerts in case of issues. HP Smart Tank printers are designed to meet these needs by delivering an enhanced spectrum of functionality with a primary focus on convenience and elevated ease of use. This further redefines and addresses the user experience in the at-home printing domain.

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Methodology and Findings

Through a combination of desk research and product testing[2], Keypoint Intelligence compared three HP printers (HP Smart Tank Series 7602, 6001, & 5101) to eight competitive models (Canon PIXMA G7020, Canon PIXMA G3270, Brother MFC-T920DW, Brother DCP-T520, Brother DCP-T420, Epson EcoTank ET-4850, Epson EcoTank ET-2850, Epson EcoTank ET-2800) across seven areas of smart printing technology:

- Dual-band Wi-Fi with self-healing
- Device setup
- Mobile print support (Best and Easiest-to-Use Print App: HP app)
- Interface and smart-guided lighting
- Low-on-ink sensors
- Low-on-paper sensors
- Ink refill experience

Keypoint Intelligence's research and testing revealed that the tested HP Smart models meet the criteria set forth to be considered the "easiest-to-use tank printers."

Overall Performance Ratings

	HP Smart Tank 7602	HP Smart Tank 6001	HP Smart Tank 5101*	Brother MFC-T920DW**	Brother DCP-T520	Brother DCP-T420	Canon PIXMA G7020**	Canon PIXMA G3270**	Epson EcoTank ET-4850**	Epson EcoTank ET-2850**	Epson EcoTank ET-2800
Dual-Band Wi-Fi with Self-Healing	√	√	√	√			√	√	√	√	
Device Setup	√	√	√	√	√	√	√	√	√	√	√
Mobile App Support	√	√	√	√	√	√	√	√	√	√	√
Interface and Smart-Guided Lighting	√	√	√								
Low-on-Ink Sensors	√	√	√	√	√	√	√	√	√	√	√
Low-on-Paper Sensors	√	√	√								
Ink Refill Experience	√	√	√	√	√	√	√	√	√	√	√

*Self-healing supported, but dual-band Wi-Fi not supported.
**Dual-band Wi-Fi supported, but no details on self-healing support found.

Check marks indicate the device supports a given feature, while orange-colored checkmarks represent an advantage of that feature over the competitive machines tested. A blank field indicates a device's limitations in that criterion.

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Dual-Band Wi-Fi with Self-Healing

Of the devices in this study, the HP Smart Tank 7602 and HP Smart Tank 6001 are the only devices here that have dual-band Wi-Fi with self-healing listed as a product feature. By utilizing both 2.4 GHz and 5.0 GHz frequency bands, HP's devices have access to 12 non-overlapping channels as opposed to the 3 channels that users could find on devices with only 2.4 GHz. This means that HP's Smart Tank printers can automatically overcome local print network failures that would otherwise hinder users print activities, ensuring a reliable and uninterrupted printing experience. As for the HP Smart Tank 5101, the device supports self-healing but does not support dual-band W-Fi and, as such, wireless operations are only compatible on the 2.4 Ghz band.

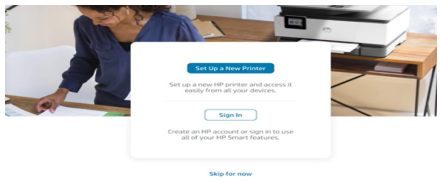
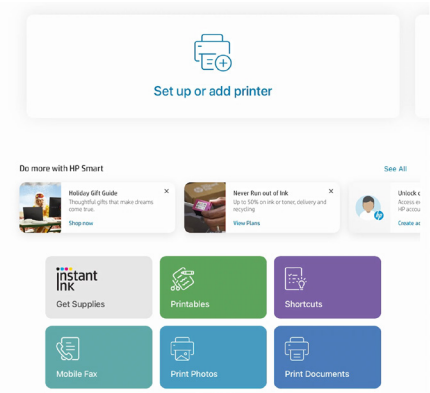
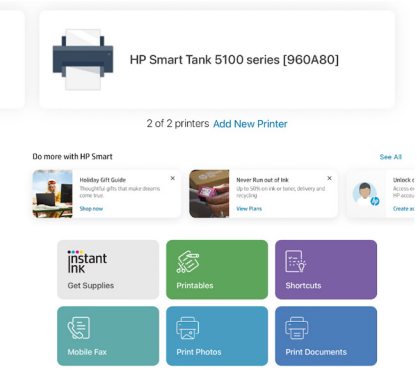
Some of the tested devices from HP's competing vendors have dual-band Wi-Fi support, indicating that they can connect to both 2.4 GHz and 5GHz Wi-Fi networks. These devices include Epson EcoTank ET-4850, Epson EcoTank ET-2850, Canon PIXMA G7020, Canon PIXMA G3270, and Brother MFC-T920DW. However, based on reviews of manufacturer brochures and webpages for the products in this study, there are no indications that any of the competing products with or without dual-band Wi-Fi can overcome local network failures (for example, mentions of "self-healing," "failover," and/or "fail safe"), which suggests that self-healing Wi-Fi technology is not built into these devices.

Device Setup

The HP devices were the easiest to set up among all the printers evaluated in this study. While the experiences of unboxing the various devices, powering them on, and having them initialize were very similar across all tested models, the process of adding these devices to the Wi-Fi network was significantly easier for the HPs. Indeed, this was driven by the HP app, which is available for Android and Apple mobile devices as well as Windows and macOS computers. Once the printer is automatically detected through Bluetooth and then selected, Wi-Fi and Wi-Fi Direct are installed seamlessly for immediate printing.

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Key Steps of HP app Setup Process

Add a Printer	Select a Printer	Completing Mobile Setup
 		

The HP app also guides users step by step in loading paper, installing ink, and performing other tasks through the use of detailed animations and translated instructions—an improvement over printed instructions that are static in nature.

The Canon and Epson models feature apps that require more steps for setup with the Canon setup process requiring the rather old-fashioned step of pressing a dedicated Wi-Fi button. The Brother setup process was straightforward and no longer requires pressing a dedicated Wi-Fi button, but it still required more steps than the HP setup process. When it comes to setting up Wi-Fi from a computer, the HP app experience for Windows and macOS users is notably more automated and seamless compared to the experience of installing a CD or downloading drivers required by the competitors.

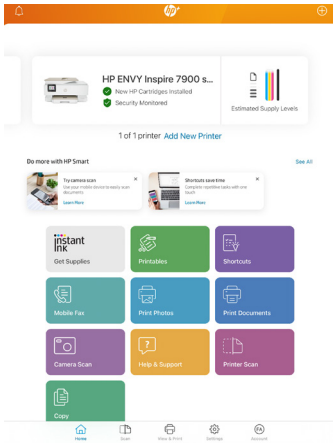
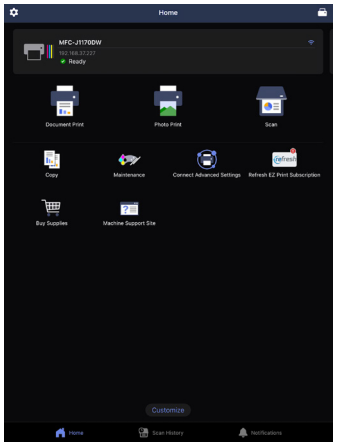
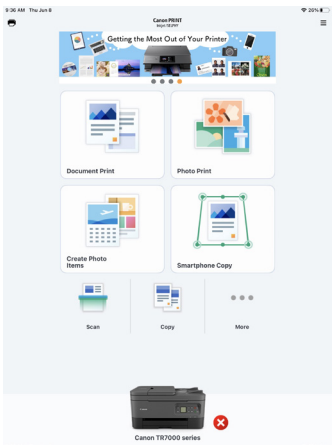
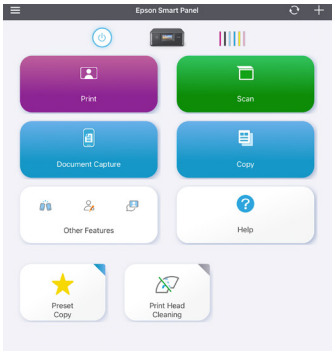
The HP app can also be used to register the printer, which provides access to other printer features, through creating an HP account or signing into an already existing one. In addition, instructions are provided for how to use the printer from other mobile devices or computers. This involves installing the HP app on other mobile devices and HP Smart software from www.hpsmart.com for computers (and links to these locations can be sent from the app).

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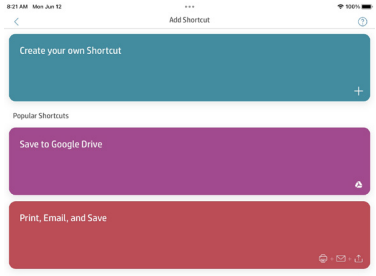
HP app: Best and Easiest-to-Use Print App

HP app[3], which was evaluated extensively by Keypoint Intelligence earlier this year, provides the greatest flexibility and ease of use over the print and scan apps offered by the competitors[4]. For example, users can customize the app by selecting and rearranging the many functions available on screen—giving them quick access to those they use most. In contrast, some of the other apps have static menus, which means users must navigate to these locations to change settings and view device/consumables status.

HP app's Customizable Menu vs. Competitors' Static App Menus

HP app	Brother Mobile Connect	Canon PRINT Inkjet/SELPHY	Epson Smart Panel
			

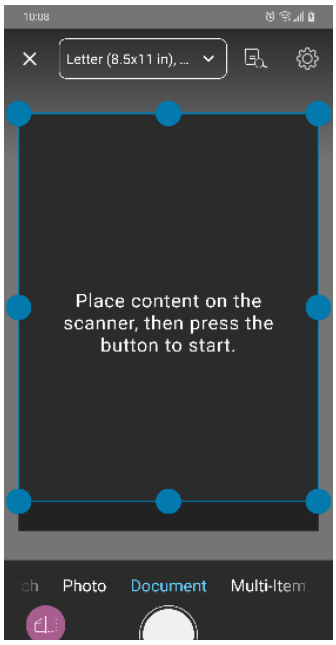
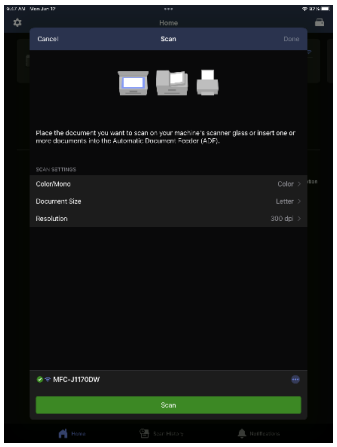
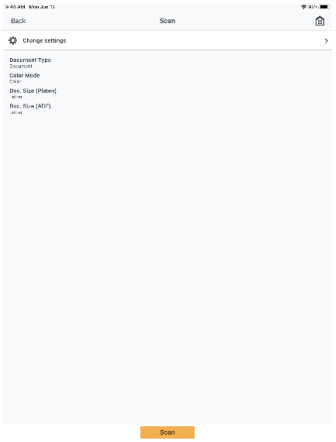
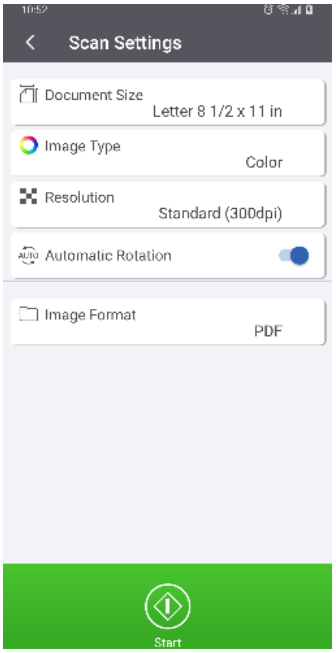
Part of what makes HP's the best and easiest-to-use print app is the addition of HP Shortcuts, which can be part of the customizable menu. This function lets users save unique workflows as one-touch buttons, so they can automate tasks like scanning an expense report, printing a copy for their records, and emailing a copy to finance. None of the competing mobile apps evaluated offered this capability, though the desktop version of Brother Mobile Connect also enables the creation of shortcuts.



HP app also has scan features that are more robust than the competitors, providing selections before and after the scan takes place (for example, the ability to add text to scanned documents) as well as intuitive routing options.

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Scan Portion of Mobile Apps

HP app	Brother Mobile Connect	Canon PRINT Inkjet/SELPHY	Epson Smart Panel
			

The HP app goes beyond the functionalities of similar apps offered by competitors regarding remote feedback provided to users, as users can look at consumables levels right from their home screen, stay informed about the latest firmware updates to ensure their devices are operating at peak performance, track paper levels to help avoid unexpected printing interruptions, receive offline status alerts if a printers experiences network connectivity issues, and alerts for when the printer door is left open.

Other advantages of the HP app include:

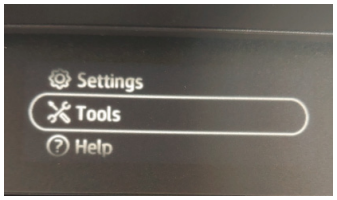
- A simple automated process for setup that involves fewer steps compared to competing apps (for example, the Canon PRINT Inkjet/Selphy app required the printer to be connect to Wi-Fi before it could establish a connection with the app)
- Ability to submit jobs to the HP+ cloud before releasing them at the printer (using Bluetooth), without the need for additional software
- A wide range of photo editing features, including filters, crop, and brightness adjustment
- A virtual agent to guide users through solving common problems and issues
- A consistent performance and interface with its PC, iOS, and Android editions

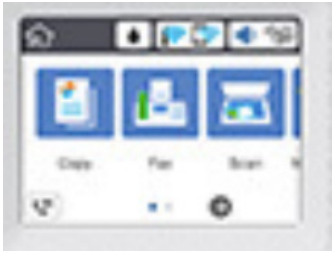
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User Interface including Smart-Guided Lighting and Buttons

Of all the printers evaluated, the HP Smart Tank 7602 provides the most enjoyable walk-up experience thanks to features like the touchscreen, called the Magic Touch Panel, smart-guided lighting, and smart-guided buttons. The 3" x 1" LED touchscreen is a good size for legibility and for a variety of hand sizes, and the white text against the black background makes text easier to read. While neither the Smart Tank 6001 and 5101 boast the 7602's Magic Touch Panel, both models still incorporate the same smart-guided lighting and buttons as the 7602, features which contribute greatly to the overall ease of the user experience.

Interface Comparisons

HP Smart Tank 7602	HP Smart Tank 5101	Brother MFC-T920DW	Canon PIXMAG7020
			
3" x 1" LED "Magic Touch" touchscreen	1.2" iCON LCD Display	1.8" x 1.25" full-color LCD	Full dot matrix display

Epson EcoTank ET-2800	Epson EcoTank ET-2850	Epson EcoTank ET-4850
		
2.4" color display	1.5" color display	2.4" color touchscreen

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Navigation of the HP Smart Tank 7602 touchscreen is also simple, with users able to interact and access various settings and information—including consumables levels—and perform printer functions through the standard or shortcut selections. This contrasts with the Brother MFC-T920DW, for example, which is not as easy unless one is familiar with Brother products. In addition, this is the only device tested with a screen angled upward, making it easier for people (those with limited abilities inclusive) to interact with a device that is lower than them.

Another advantage of the HP Smart Tank 7602's walk-up experience is the smart lighting that complements onscreen alerts. With this feature, depending on the printer's status, lighting may appear in a particular color above the paper output tray. For example, amber signals the printer needs attention/an error might have occurred while green indicates the printer is busy, doing an update, or turning on or off.

Different Colored Smart Lighting Above HP Smart Tank 7602 Paper Output Tray

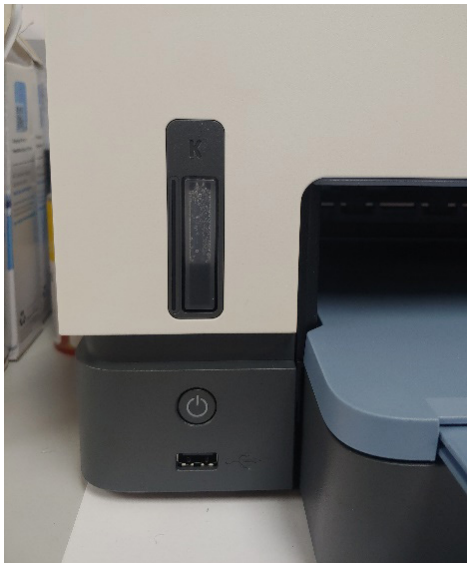
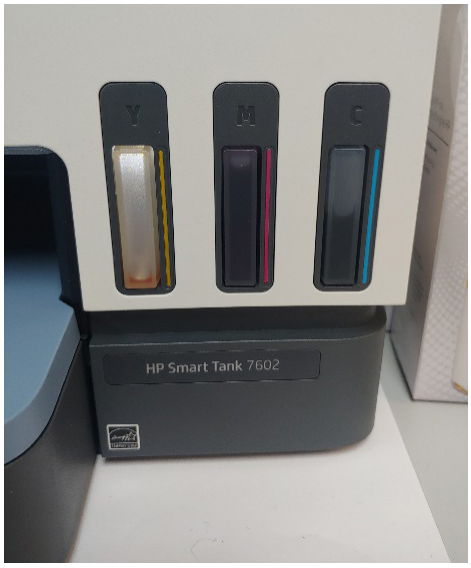
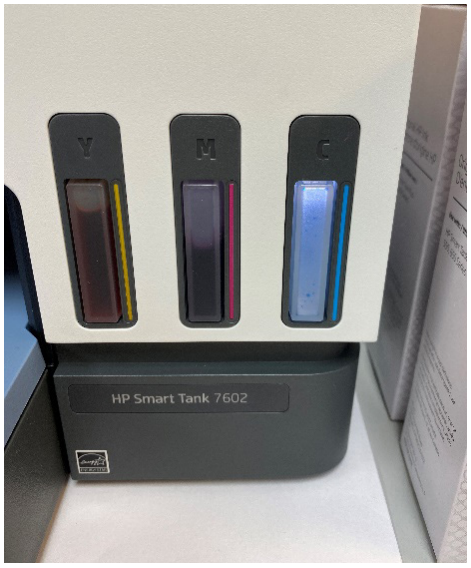
Color of Light	Color Name	Alert Description
	Amber	The printer needs attention, an error might have occurred.
	Blue	Shows the Wi-Fi network connection status.
	Light Blue	The printer is idle or in sleep mode while connected to a Wi-Fi network.
	Green	The printer is busy, doing an update, or turning on or off.
	Purple	The printer is in Wi-Fi setup mode.
	White	The printer is idle, sleeping, or processing a job.

In addition, certain colors can be shown in different ways and in different combinations to provide more information. For example, if an amber light is quickly blinking, that means a critical error has occurred and the printer must be turned off and back on. If a flashing amber light is preceded by a pulsing solid blue light, that means the printer is unable to connect to a Wi-Fi network. If a flashing amber light is preceded by a rapidly blinking solid purple light, this indicates a Wi-Fi Protected Setup (WPS) error.

Another form of lighting only found on the HP Smart Tank 7602 is ink tanks that illuminate when ink levels are low or empty. While there are multiple ways users can be alerted to low ink levels, this is perhaps the most straightforward way this can be communicated to users.

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HP Smart Tank 7602 Ink Tank Illuminations

Black cartridge level is fine.	Yellow cartridge lit up due to low ink level.	Blue cartridge lit up due to no ink remaining.
		

Despite not having this kind of lighting, the other devices do have windows enabling users to view ink levels. That said, Brother's ink windows are behind a cover and somewhat hard to see.

Brother MFC-T920DW Ink Levels





Another strength of the HP Smart Tank 7602 are printer status messages on the touchscreen as well as the ability to cancel a job by pushing a red X.

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HP Smart Tank 7602 Status Messages



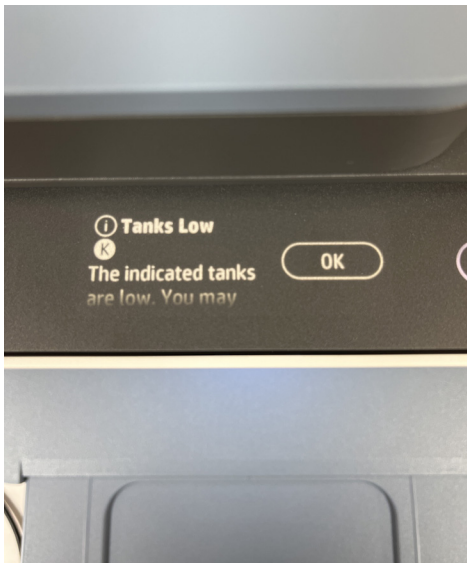
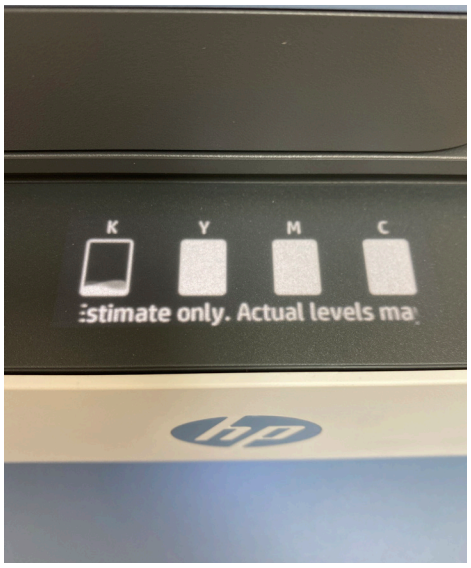
Low-on-Ink and Paper Sensors

HP Smart Tank 7602 features the most comprehensive system for detecting and alerting users to low ink and paper against the competitive models tested. For ink, the 7602's touchscreen will populate several different alert messages depending on how much of the tanks have been depleted of ink. Alerts will read from, "Fill tanks: the indicated tanks do not have enough ink" upon realizing low ink levels to "Tanks very low: The indicated tanks are very low" if the tanks are significantly depleted. Plus, as mentioned above, users can not only see the tanks and their contents easily, but the tanks light up when ink is running low—signaling they should add ink (which is required for continued operation). Once the tray of the 7602 is out of paper, an orange indicator light beneath the HP logo will illuminate to alert the user to load the tray.

Low ink and paper alerts are displayed right on the touchscreen thanks to the sensors for both of these consumable types. While low ink alerts are also shown on the other products evaluated for this study, that is not the case for low on paper alerts. At most, they indicate that there is no paper in the tray.

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Ink and Paper Alerts on HP Smart Tank 7602's "Smart Guided" Menu Screen

Tank low on ink message.	Tray low on paper message.	Ink tank levels accessible via touchscreen menu.
		

HP app and PC software also notify users that ink or paper are low for the HP Smart Tank 7602, which is an advantage over the mobile and desktop notifications for the other products evaluated, as these only highlight low ink. Furthermore, the Brother MFC-T920DW will continue printing when ink levels are low, potentially causing damage to the print head in the process.

Ink Refill Experience

The process of refilling each of the tested HP Smart Tank models' ink tanks was both clean and spill-free, with less potential for mess to occur compared to the experience of refilling a few of the competing products' ink tanks. No spills or mess occurred when opening the HP ink bottles and filling up the tanks, thanks in large part to a seal at the top of the bottles that prevents leakage.

For the competitors, though, this process wasn't so foolproof. The ink bottles for the Brother MFC-T920DW must be positioned at a 45° angle during the refill process, otherwise ink could easily spill. Similarly, if the bottles for the Canon PIXMA G7020 weren't turned upside down quickly enough, droplets of ink could start to spill. And while the Epson bottles offer the benefit of a specific key notch system that prevents users from pouring a given ink color into the wrong tank, the tanks do not appear to be large enough to hold their contents. The Epson ink bottles are not a one-for-one refill, meaning a single bottle of ink is not depleted fully when refilling the tank; a healthy amount of ink is left in each bottle after a tank is fully refilled, which could prove problematic if a user is unaware that the bottle is not empty and disposes of the bottles prematurely. Moreover, about 10% of the bottle remained at the tip of the Epson bottles and could easily drip out.

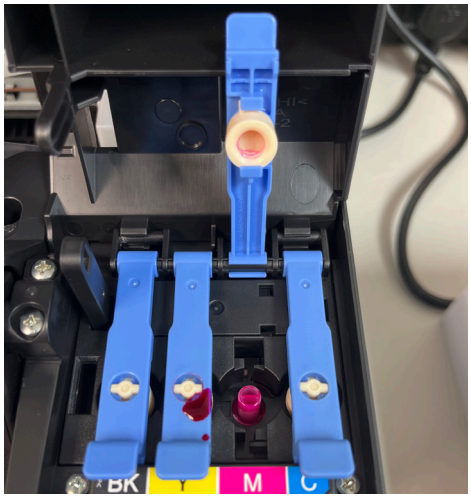
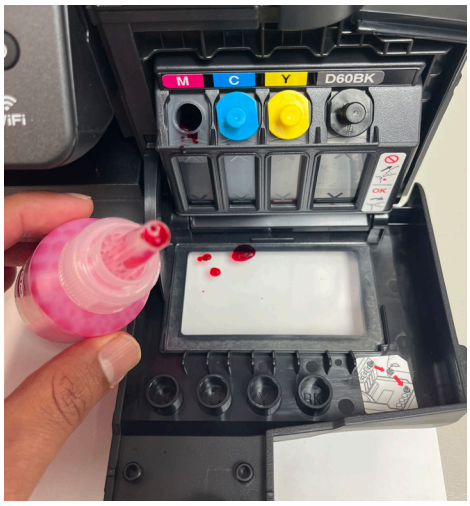
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Images of Refilling HP Ink Tanks vs. Those of Other Models

HP Smart Tank 7602	Brother MFC-T920DW	Canon PIXMA G7020	Epson EcoTank ET-2800/ET-2850/ET-4850
			
			
			

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Ink Spills Resulting from Filling Brother and Epson Tanks

Brother MFC-T920DW	Epson EcoTank ET-2850
	
	

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List of End Notes

[1]Compared to the majority of in-class 3:1 and 4:1 duplex, wireless A4 ink tank printers under $552 USD. Printers selected by market share as reported by IDC Quarterly Hardcopy Peripherals Tracker-Final Historical CYQ3 2023. Claim based on publicly available information as of September 2023 and Keypoint Intelligence hands-on testing and study commissioned by HP in September 2023. Details: www.keypointintelligence.com/HPEasiesttoUseTank

[2]Testing was conducted in Keypoint Intelligence's US lab under ambient conditions of 72°F (+/-5°F) and 45% RH (+/-10%), monitored daily by an Extech digital temperature/humidity recorder. Test materials/equipment included US-sourced supplies and Keypoint Intelligence's dedicated test network consisting of Windows 2012, 2016, and 2019 servers and Windows 10 Professional workstations, 10/100/1000BaseTx network switches, and CAT5e/6 cabling.

[3]Requires the HP app download. For details on local printing requirements, see http://www.hp.com/go/mobileprinting. Certain features/software are available in English language only and differ between desktop and mobile applications. Subscription may be required for some additional features. See details at HPSmart.com. Internet access required and must be purchased separately. HP account required for full functionality. List of supported operating systems available in app stores.

[4]Compared to OEM printing apps for the majority of top-selling, network-capable inkjet/laser printers and all-in-ones for the home and office, priced ≤$450 USD. Printers selected by market share as reported by IDC Quarterly Hardcopy Peripherals Tracker – Final Historical CYQ1 2023. Claim based on research of printer manufacturer's print apps and Keypoint Intelligence hands-on testing and study commissioned by HP, July 2023. For details, please see: keypointintelligence.com/HPSmartapp. keypointintelligence.com/HPSmartApp

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For 60 years, clients in the digital imaging industry have relied on Keypoint Intelligence for independent hands-on testing, lab data, and extensive market research to drive their product and sales success. Keypoint Intelligence has been recognized as the industry's most trusted resource for unbiased information, analysis, and awards due to decades of analyst experience. Customers have harnessed this mission-critical knowledge for strategic decision-making, daily sales enablement, and operational excellence to improve business goals and increase bottom lines. With a central focus on clients, Keypoint Intelligence continues to evolve as the industry changes by expanding offerings and updating methods, while intimately understanding and serving manufacturers', channels', and their customers' transformation in the digital printing and imaging sector.

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