
TellerScan™ 4120

Branch Office Check Scanner



User's Guide

May 2007
Version 1.1

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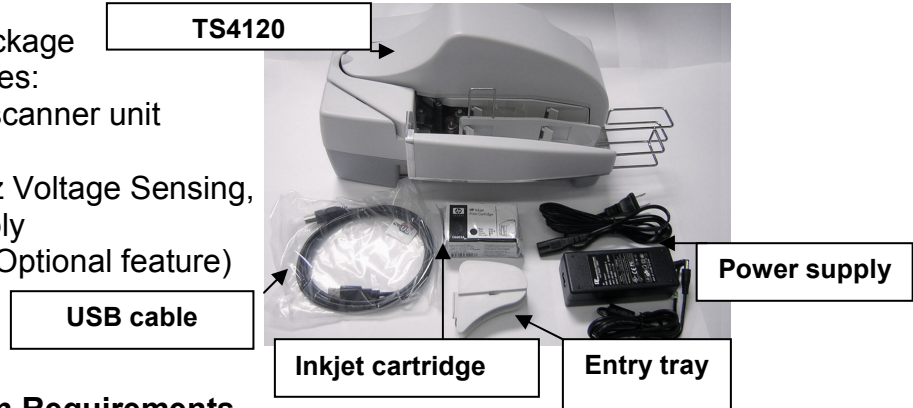
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TellerScan™ 4120 Equipment

TellerScan™ 4120 Equipment Checklist

The TellerScan™ 4120 package includes the following pieces:

- TellerScan™ 4120 scanner unit
- USB 2.0 cable
- 100v-240v -50/60 hz Voltage Sensing, external power supply
- HP inkjet cartridge (Optional feature)



TellerScan™ 4120 System Requirements

The following PC specifications are required to operate the TellerScan™ 4120 with your scanning application software:

Recommended	Minimum
<ul style="list-style-type: none"> ▪ 2.4 GHz Pentium IV processor or faster. ▪ 1 GB RAM 	<ul style="list-style-type: none"> ▪ 1.4 GHz Pentium III processor ▪ 512MB RAM
<ul style="list-style-type: none"> ▪ 1.5 GB free disk space 	<ul style="list-style-type: none"> ▪ 1.5 GB free disk space
<ul style="list-style-type: none"> ▪ Windows 2000, XP Professional & Vista, 32 bit 	<ul style="list-style-type: none"> ▪ Windows 2000, XP Professional & Vista, 32 bit
<ul style="list-style-type: none"> ▪ USB 2.0 port 	<ul style="list-style-type: none"> ▪ USB 2.0 port

Radio Frequency Interference

The TellerScan™ 4120 generates, uses, and can radiate radio frequency energy. If the unit is not installed and used properly that is, in strict accordance with the instructions in this manual it may cause harmful interference to radio communications. It has been tested and found to comply with the limits for Class digital devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against harmful interference when operated in a commercial environment.

Operation of this equipment in a residential area is not likely to cause interference due to its Class B rating.

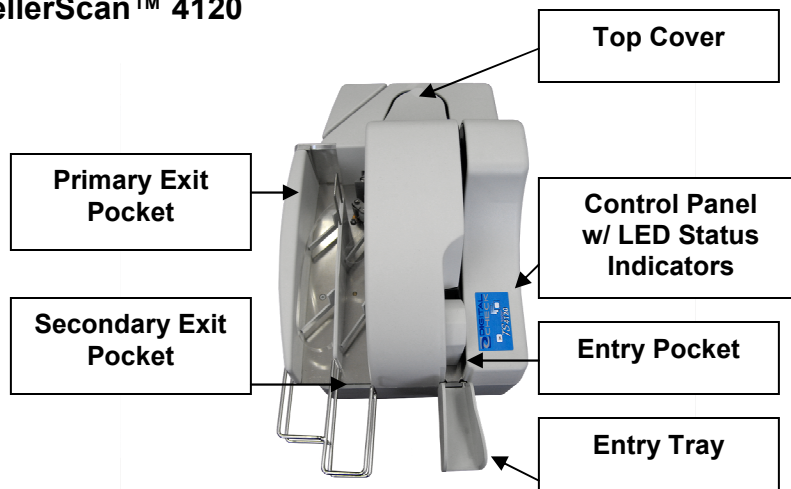
About the TellerScan™ 4120

The TellerScan™ 4120 Back Counter Check Scanners are an easy-to-use, compact, scanner that connects to a personal computer (PC). The TellerScan™4120 automatically scans the front and/or back of checks and also reads the MICR (Magnetic Ink Character Recognition) code line. The images and data are then transmitted through a Universal Serial Bus (USB) interface to the PC. The TS4120 model has an auto feeder that handles up to 100 items and two exits pockets that hold up to 100 / 80 items in the outer and inner pockets.

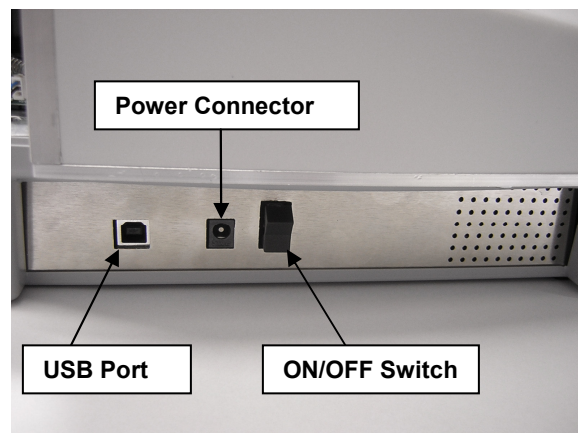
The TS4120 model is rated at 120 documents per minute (DPM) scanning speed. Speeds will vary based on the applications used and the PC processing speeds.

Features of the TellerScan™ 4120

Outside the TellerScan™ 4120
Fig. 1.



Rear Deck of TellerScan™ 4120
Fig. 2



TellerScan™ 4120 Installation

Un-Boxing the TellerScan™ 4120

Step 1: Remove the scanner from the box by lifting up on the bag. (Fig. 3)

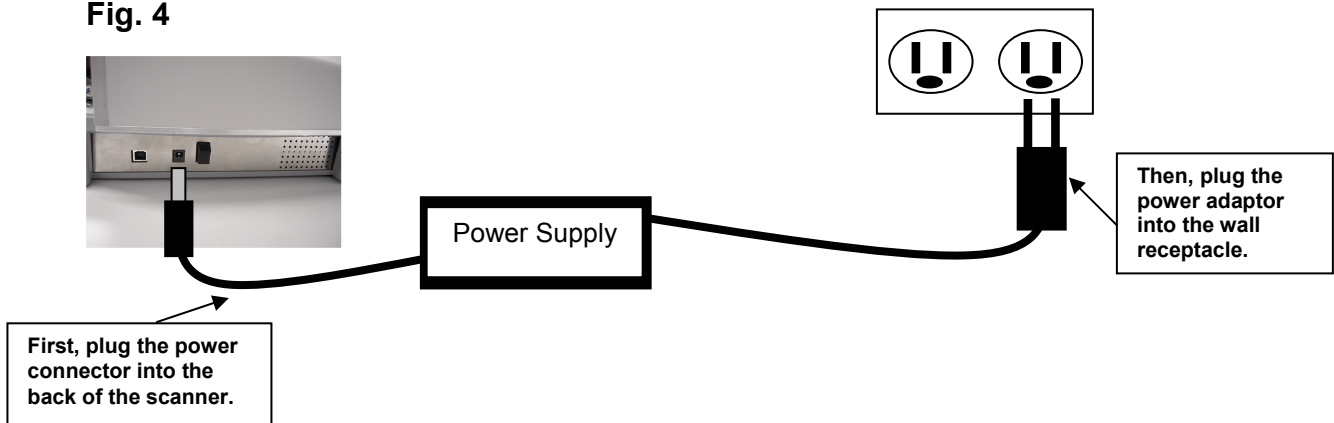


WARNING: Before powering on the scanner, you will want to install the USB driver. See 'Installing the Driver Files' section on page 7 for instructions.

Setting Up The Scanner

1. Place the unit on a flat surface near the PC and away from direct light.
2. Attach Entry Tray by sliding it into open slots by entry pocket.
3. Connect the power cord from the external power supply to the power connector on the scanner rear deck. (See fig. 4)
4. Place the external power supply in a ventilated area several feet away from the scanner and connect to an appropriate source of power.
5. Make sure the TellerScan™ 4120 is turned off. Verify that the red power indicator on the Control Panel is **not** lit. The power switch is on the rear deck. (See Fig. 2)
6. Connect the USB cable by plugging it into the port on the rear deck. Do not turn on the scanner until the driver has been loaded.

Fig. 4



Installing the Rear Endorser Inkjet Cartridge

Follow these instructions when installing the inkjet cartridge for the first time, or when replacing an empty cartridge:

1. Remove the center cover and locate the inkjet printer. (Fig. 5)
2. If replacing an existing cartridge, remove the inkjet cartridge by grasping the small tab at the rear end and gently pulling upward. Discard the used cartridge.
3. Obtain a new inkjet cartridge (HP part number c6602A). For new installations, one new cartridge is included with each inkjet model scanner. Be certain to read the instructions included with the cartridge

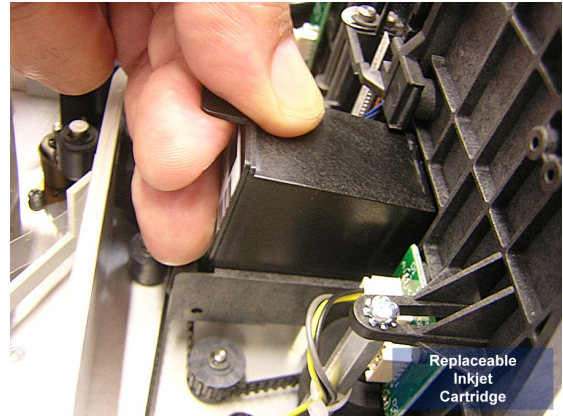


Fig. 5

4. Remove the protective tape covering the ink nozzles. Be careful not to touch the ink nozzle with your fingers or allow it to come in contact with any clothing.
5. Insert the nozzle end of the cartridge into the cradle (Fig. 5) in the scanner and slide forward while keeping the reservoir end of the cartridge tilted slightly upward.
6. Push the cartridge downward until it snaps into position and then replace the top-center scanner cover.

Note: If the scanner has to be transported by common carrier from one place to another or extended periods of inactivity, it's advisable to remove the inkjet cartridge from the scanner and seal in an airtight bag. If the cartridge has not been used for an extended period of time, it may be necessary to clean the inkjet nozzles with a wet towel, and then blot dry.

Installing the USB driver

(Use this process if instructions are not included as part of the application installation)

Windows 2000, XP & Vista - Drivers

- 1) Download the **TellerScan_USB_vXX Driver.zip** driver file from the web site.
http://www.digitalcheck.com/integration_support/drivers_and_demo_programs
- 2) Unzip the file and run the driver utility program to automatically install the firmware and create a folder for the driver files (C:\Program Files\Tellerscan\Drivers).
- 3) Turn ON the unit. The left LED on the scanner control panel should now be showing 'red'.
- 4) Windows detects a new hardware device. For first time installations, you should not have to do anything. If the wizard will not finish, go to Device Manager and select to Update Driver for the USB device and point to (C:\Program Files\Tellerscan\Drivers) and the TSUSB2.inf file. If run a second time, select the 'Repair' option.
- 5) The USB controller will install as a TSDevice. The TS4120 device will install as a Tellerscan, once acquired by the application.
- 6) The 'On' LED will turn green when the application launches.

Install the Demo Software Program (*Download from the Digital Check web site if you did not have an Install CD. If you did, check the Desktop for the ScanLite icon. Use the ScanLite program for testing the scanner and during the cleaning process*)

Look for the ScanLite or ScanDemo programs on the web site.

Select: http://www.digitalcheck.com/integration_support/drivers_and_demo_programs

The demo software is a basic scan program that allows you to operate the scanner, change different scanner settings, view images, and store them on your PC's hard disk. The demo program is not the software to run the system. Additional application software is required. ScanLite is an easier demo program to use and is recommended that it be used when cleaning the scanner.

NOTE: In most cases, your scanner will operate under the application provided by the solution provider that installed it. If you need to manually copy down the demo code:

1. Create a sub directory, i.e. "ScanLite" on the PC.
 2. Copy and unzip the ScanLite files into the directory.
 3. Launch the ScanLite.exe to open the demo application.
-

Getting Started with TellerScan™ 4120

LED status indicators



Fig. 6: The left LED comes on 'Red' to indicate power to the unit. When the scanner is acquired by the application, the left LED turns 'Green'.



Fig. 7: The right LED is the document in pocket indicator after acquisition.

The standard sequence for the two top cover LEDs is:

1. When the scanner is powered on, the power LED will light up 'red'. This indicates initial power to the scanner.
2. If the firmware and drivers have been properly loaded, once the application launches and acquires the scanner, the right LED will now turn 'green'.
3. Once the TellerScan™ 4120 is synchronized with the application, the document LED is now used to detect the presence of documents in the entry pocket.
4. Note: Both ends of the USB cable must be plugged in for the red LED light to turn green. If the LED does not turn green, check and reseat the end of the USB cable going into the PC and into the scanner.

How to Load Checks

TS4120 – The automatic-feeder can hold up to 100 items. Use the following directions:

1. Remove all rubber bands, staples, paper clips, pins, etc.
2. Load the items into the automatic-feeder with the front of the items facing away from the scanner (Fig 8).

NOTE: Checks must be jogged properly in order to feed correctly. The bottom and right leading edges of the check stack must align with one another (See Fig. 8).

3. Slide the items into the automatic-feeder until the left LED light illuminates (Fig. 7).
4. This indicates the scanner is ready to begin feeding the items. DO NOT force the items into the automatic-feeder after the light illuminates, as this may increase jam rates.

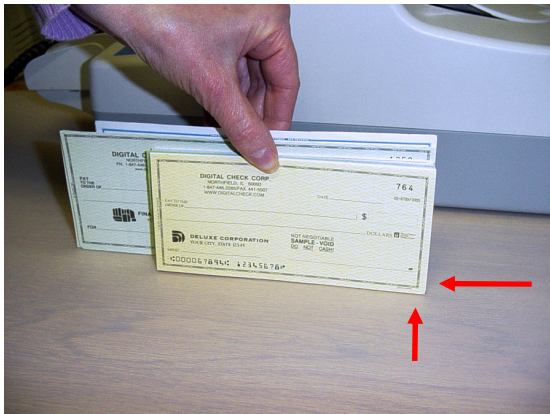


Fig. 8: bottom & right edges aligned

TellerScan™ 4120 Troubleshooting

Clearing Jams

If a jam occurs, the paper path must be cleared. To do this, try to advance the jammed document by selecting the “EJECT” button within your application (if applicable). In case the document does not exit the document track, you can grab the document with both hands and carefully wiggle the document back and forth while lifting up. Otherwise, follow these steps:

1. Remove the top-center cover, if needed, to remove the document.
2. Clear the path of any jammed document and make sure that the rollers are free of paper and debris.
3. Replace the cover.

Document Feeding Problems

The TellerScan™ 4120 was designed with a self adjusting auto-feeder and should not require user adjustments. If you notice feeding problems, check the documents for bent or folded edges and for debris in the scanner document track. If feeding problems are still experienced, try cleaning the scanner using a TellerScan™ cleaning card and the procedures described within this users guide.

Check Images are streaking or fading

If you notice either streaking or fading on the images, the scanheads may require cleaning. Refer to the section below on cleaning the Scan-Heads.

TellerScan™ 4120 Operator Maintenance

Cleaning the TellerScan™ 4120

Over time, ink, dirt and dust particles will collect on the scanner rollers and document track. Therefore, it is necessary to clean these areas on a regular basis to assure reliable performance. Tips for performing preventative maintenance by the user on the TellerScan™ 4120 include:

- A Periodic inspection of the entire document track area. The use of flashlight will enhance the visual inspection between the scanheads and throughout the document track. You can open the inner scanhead door to look at each scanhead.
- Remove any staples, paper clips, and rubber bands that may have accumulated during use.

- Have a can of compressed air available to blow out the document track on a regular basis.
- Purchase the TellerScan™ cleaning cards to have on hand for regular cleaning maintenance. Run several scan cycles, flipping the card between cycles, while holding the card to 'scrub' the first drive or entry rollers. Once the entry rollers no longer deposit dirt onto the card, allow the card to scan through the entire path. Run this through several times while flipping the card end to end and top to bottom.
- Use the special cleaning swabs, which come with the TellerScan™ cleaning kit, to 'scrub' the four drive rollers under the center cover.
- Inspect the quality of the captured images on a regular basis. If the image quality drops off, inspect and clean the scanheads following the procedure described on pages 12-13. If the quality does not appear to be related to dirt or debris, contact your service provider to determine if the scanheads can be recalibrated.

Cleaning the Scanner

Cleaning your scanner's Rollers, Magnetic Head and Camera Faceplates

In severe environments where ink and dirt build up rapidly, it may be necessary to clean the scanner rollers, magnetic read head, scanhead faceplates, and document track every 15,000 to 20,000 documents. This simple maintenance will dramatically improve the reliability of your scanner over its useful life.

Scanner Cleaning Supplies (to order call 847.446.2285)

1. Compressed Air – (acquired from a local office supply provider)
2. Cleaning Kit – Consisting of one box of 25 cleaning cards & 6 Cleaning Swabs – (#130007-03)

Cleaning The TellerScan™ 4120 using ScanLite Software

The ScanLite program, which is available from the Digital Check web site, is an excellent utility to run while performing the cleaning procedures recommended below. ScanLite provides an easy way to initiate the scan cycles in order to feed the cleaning cards properly through the scanner. ScanLite also includes an 'Eject' button which operates the scanner at half its normal speed, making it easy to scrub off the four main drive rollers when using the cleaning swabs.

Visit the following site to download ScanLite:

http://www.digitalcheck.com/integration_support/drivers_and_demo_programs

Helpful Hints

1. Do not use stickers to cover up previously sprayed numbers on documents. The backing from the stickers can rub off onto the rollers and cause documents to jam.
2. Do not use White Out on scanned documents, the White Out can rub off the documents onto the scanner camera faceplate and distort the images.
3. Watch for loose debris falling into the scanner such as staples and rubber bands.

Cleaning Steps

1 Use compressed air to clean the document track.

2 You may need to remove the center cover to check for other debris that may have entered the scanner. Lift up on tab on the top-center cover.

3 Insert a new TellerScan™ cleaning card in the entry pocket.



4 Open the imaging application or ScanLite and initiate feeding while holding the card firmly to prevent the card from actually feeding through the scanner.

Important:

Run a scan cycle and hold onto the card, but allow it to move into the path *slightly* so that the second set of rollers is scrubbing on the cleaning card.

Flip the card over and run the same procedure again, 2-3 times as needed. This ensures that the main entry drive roller and the double feed rollers are being properly cleaned.

Tip:

Getting the rollers to scrub on the cleaning cards is the most important part of the cleaning procedure. Rollers with a severe build up of ink and dirt will require use of the swabs to be used to manually scrub all of the main drive rollers.

5 Flip the card top to bottom and scan the card again, this time letting it move through the scanner into the exit pocket.

6 Turn the card around and repeat the same process of scanning the card several times on the reverse side.

Result: The TellerScan cleaning card should have been run through the scanner three to four times, periodically flipping the card or swapping it end for end.

7 After completing the cleaning process, cancel the transaction and discard the used TellerScan card.

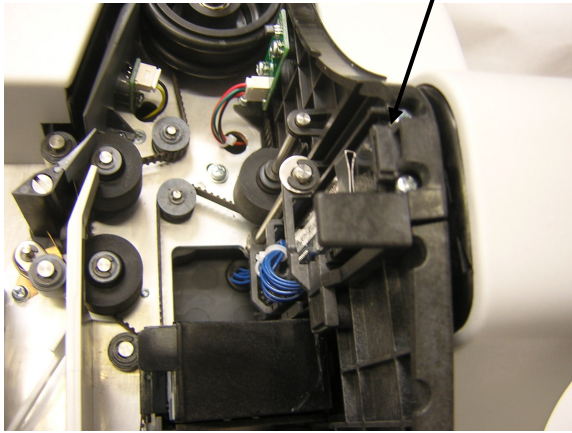
Note: To maintain optimum performance, determine a scheduled cleaning interval that works best for your environment. (Once a week, every 2 weeks, once a month, etc.)

Opening & Cleaning Scan-Head Steps

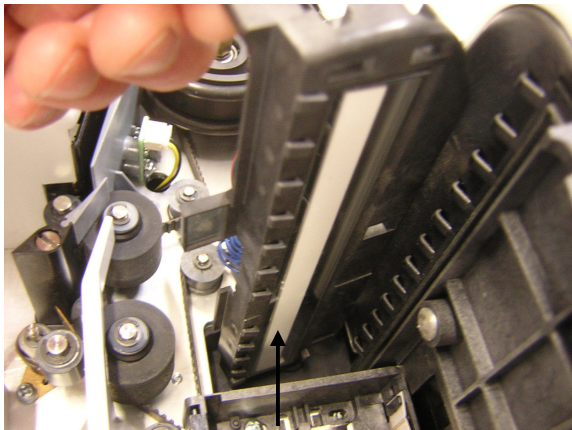
Note: This is only performed when document images are unclear, distorted or have a dark line laterally through every image.

Step	Action
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1	Remove the top-center cover and grab the tab
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2	Swing the camera door open as shown.
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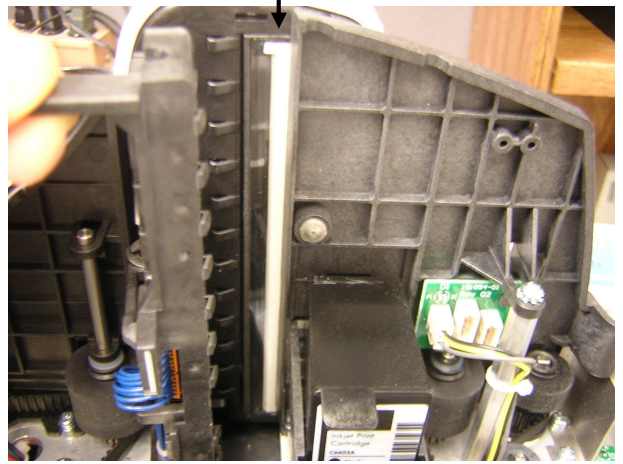


Inspect and clean the rear camera.

Note: Documents and debris can also be removed from the path by opening the camera door.

Step	Action
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3	Inspect and clean the front camera.
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4	Close camera door and reinstall top-center cover.
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Note: The swabs are typically used to clean off the main drive rollers, but can also be used on the Scan-Heads if you have a tough buildup on the glass.

Common Error Codes From The Scanner

There are three common error codes that can typically show up depending upon the type of documents being scanned. There are no user available adjustments in the TS4120.

Periodic and scheduled cleanings should be performed before determining if any further problem determination is needed. See the scanner cleaning document.

Helpful Hints

1. Always hand-jog the documents to align the leading and bottom edges for the auto feed models. Visually check the leading edges for bent or curled or curled corners and straighten them as needed.
2. Place the stack of documents half way into the entry slot, then slide the stack forward until the Document In Pocket LED light comes on.
3. Be sure that the entry tray is fully seated and that the exit wire stop is extended enough to allow for approximately 1/2" more than the longest document..

216	<p><u>Mis-Feed</u> (The documents failed to leave the entry pocket on time).</p> <ul style="list-style-type: none"> • Remove the documents and re-align the leading edges. • Check for bent or excessively curled leading edges and straighten as needed. • Verify that documents are not stuck together • Insert and rescan the documents. If they continue to get -216 errors, this might indicate that; <ul style="list-style-type: none"> ○ The entry drive rollers may be dirty ○ Something may be lodged in the path
217	<p><u>Double Document Feed</u> (More than one document is detected & passed into the exit pocket) Check the exit pocket for a double document feed.</p> <ul style="list-style-type: none"> • Run 'Eject' or power the scanner off and back on to clear the error condition. If the document is still in the path, grab the upper edges with both hands and wiggle the document back and forth, vertically to remove it. • Insert and rescan the documents. If they continue to get -217 errors, this might indicate: <ul style="list-style-type: none"> ○ The entry drive rollers may need to be cleaned ○ Check the condition of the documents for bent edges
219	<p><u>Top Cover Interlock Open</u> - (The top cover is off or not properly seated).</p> <ul style="list-style-type: none"> • Reinstall or remove and reinstall the top-center cover. • If the error code continues, the scanner may have to be sent in for repair of the interlock sensor and magnet.
215/220	<p><u>Document Stopped in the path or did not exit on time</u></p> <ul style="list-style-type: none"> • Eject the documents. To clear the error condition. • If the document will not eject, grab the upper edges with both hands and wiggle the document back and forth, vertically to remove it from the path. • Check the leading edges and corners of the document and straighten as needed. • A -220 error code where the document is stopping in the path repeatedly could indicate debris, paper or a staple in the path. Check if the document's leading edge looks OK or is catching on something. • All of the main rollers may need to be cleaned. • A -215 error may indicate a dirty exit sensor. Blow out exit path and clean rollers.

Additional Error Codes

Additional Scanner Information

Error	Action
212	<p><u>No Checks</u> (There are no checks indicated in the entry pocket)</p> <ul style="list-style-type: none"> • A scan cycle has been initiated, but the Document In Pocket LED (the right LED) is not on indicating that no documents are present. • Restack the batch of documents and insert them back into the entry pocket. Slide them forward until the LED comes on. • This typically can happen when a scan cycle is initiated and the LED is not on.
553	<p><u>No Print Head</u> (The ink jet cartridge is not being sensed by the scanner)</p> <ul style="list-style-type: none"> • When endorsing characters using the ink jet option, the print string is the first function sent down to the scanner at the start of a scan cycle. This error will come up immediately if no cartridge is present. • Open the top-center cover by lifting vertically. Remove and reseal the ink jet cartridge, being sure it snaps into place. • If that fails, try using a new cartridge.
125	<p><u>No Scanner</u> (The scanner was not found while attempting to initialize the scanner)</p> <ul style="list-style-type: none"> • The left LED must be on and 'Red' for the application to acquire the unit. • Check the USB cable connections or try a different cable. • Try a different USB port. • Verify that the PC has the proper drivers and the scanner firmware file is installed.

There are other helpful documents available in PDF format on the Digital Check web site. Go to <http://www.digitalcheck.com>

The ink jet cartridge used in the TS4120 is the standard HP C6602A cartridge which is available at most office supply stores. Typical yield is from 5 to 7 million characters.

The TS4120 scanner performance will depend on how the application has been written and the general speed of the PC processor, memory and hard drive.

For support, contact your dealer or Digital Check Corporation at 847-446-2285. The Service request form to send scanners into the plant for repair can be filled out on-line by going to the web site at: [HTTPs:www.digitalcheck.com/clientarea](http://www.digitalcheck.com/clientarea) and following instructions on the screen.

Periodic and scheduled cleanings should be performed before determining if any further problem determination is needed. See the scanner cleaning section.

Frequently Asked Questions

How many checks per minute should my TS4120 scan?

The TS4120 has a rated speed of up to 120 documents per minute (DPM). Actual throughput will vary depending on the PC configuration, physical size of the items scanned, simple or complex endorsement and the speed of the application. Under a USB 2.0 interface, the expected speed range is 90 to 120 DPM. If significantly slower speeds are experienced, please check to be sure the scanner is not connected to a slower USB 1.1 port. Use the ScanLite demo program to test the scanner.

What is the proper sequence of the LED lights when the scanner is powered on?

The proper LED sequence is for the 'On' LED to come on 'red', followed by the 'On' LED turning 'green' once the application has been launched. If the 'On' LED does not come on 'red', check the USB cable connections. If the LED is 'red', but will not turn 'green', contact customer support for assistance with checking firmware and reloading the drivers.

What is a safe distance to keep the power supply from the TS4120 check scanner to prevent electromagnetic interference with the MICR read head in the scanner?

Keep power supplies and other electromagnetic devices 12-18 inches away from the scanner to keep them from interfering with the Magnetic read head.

How often should the TS4120 check scanner be cleaned?

The recommended cleaning cycle is every 15,000 to 20,000 items in severe environments where ink and dirt may build up quickly. Please reference the cleaning instructions section for specific instructions on how to properly clean the TS4120.

How many characters does the HP C6602A inkjet cartridge yield?

Once opened, the practical life of the inkjet cartridge is six months. However, the rated character yield on the inkjet cartridge is between 5-7 million characters. Do not shake or drop to cartridge which can cause the printing to fail. Keep a spare cartridge on hand in case the current cartridge cannot be used.

What are the minimum and maximum document dimensions for the TS4120?

	Minimum	Maximum
Document Height:	2.16"(54 mm)	4.13" (106mm)
Document Length:	3.25" (80mm)	9.0" (228mm)
Document Weight:	16 lb (60gr/sqm)	32 lb (120gr/sqm)

TellerScan™ 4120 Specifications

Paper Size	H. min. 2.16" – max. 4.13" (55-105 mm.) L. min. 3.25" – max 9.0" (75-230 mm.)
Scanning Method	Concurrent two-sided Duplex Image Creation: 2 x 850 cell, 108mm CIS Light Source: Tricolor LED
Transport Speed	50 cm/sec
Image resolution	Up to 200 dpi
Image Format	B/W, 16 or 256 gray levels, 24 bit color
MICR Recognition	MICR recognition firmware for E13B or CMC7 standards
Diagnostics	On-Board Diagnostics: Tests the functionality of the scanner
Power-On Self Test	Automatic self-testing when switching on the unit
Software Tools	API Toolkit 32 bit
Options	Ink jet printer (Rear endorse), Uses HP C6602A cartridge
Part #130007-03	TellerScan™ Cleaning Kit (25 cards + 6 Swabs)
Electrical	Consumption: 1.5A Voltage: 100 to 240 VAC, 50/60 Hz, auto sensing power supply
Product life	Designed for useful life of 10,000,000 items (TS4120)
MTTR:	30 minutes
Temperature Ratings:	Operating: 60° - 90° F Storage: 0° - 40° C
Humidity:	Operating: 35-85% (non condensing)
Dimensions	H 17.5 cm – L 32.5 cm – D 20.6 cm (7" x 12.75" x 8.25")
Weight	9.75 lbs. (4.4 kg)
Certifications	UL – FCC – CE

Specifications subject to change

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Notes:



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