RS4000

Ring Scanner

Quick Start Guide

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Warranty

For the complete Zebra hardware product warranty statement, go to:
http://www.zebra.com/warranty.
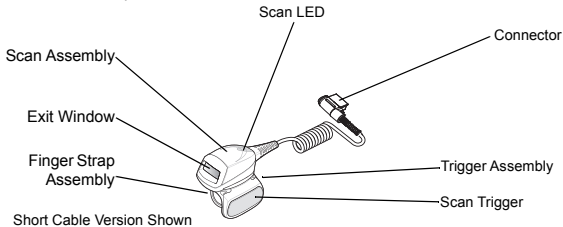
Service Information

If you have a problem using the equipment, contact your facility's Technical or Systems Support. If there is a problem with the equipment, they will contact the Zebra Global Customer Support Center at: http:www.zebra.com/support.

For the latest version of this guide go to: http://www.zebra.com/support.

Introduction

The RS4000 ring scanner is a modular, wearable laser scanner that allows the operator hands-free bar code scanning capability. The scanner is used with the WT6000 wearable terminal.

The RS4000 is worn on the operator's index finger, and utilizes a thumb-operated trigger. The RS4000 connects via an interface cable to the wearable terminal, which provides power and performs the data collection functions. The RS4000 is available in two configurations; a short cable version for connection to a wrist mounted wearable terminal, and a long cable version for connection to a hip mounted wearable terminal.

Scan LED

Connector

Scan Assembly

Exit Window

Finger Strap Assembly

Trigger Assembly

Scan Trigger

Short Cable Version Shown

Changing Trigger Position

The trigger assembly of the RS4000 rotates to provide left-hand or right-hand use.
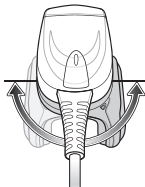
1. Determine whether the RS4000 is used on the right or left hand.

⚠️ **CAUTION** The trigger assembly only rotates 180° around the back of the scan assembly. Do not rotate the trigger assembly past the designed stops.

2. Rotate the trigger assembly so that the scan trigger is positioned next to the thumb when the RS4000 is placed on the index finger.

Installation

The RS4000 connects to the wearable terminal and mounts on the index finger.

1. On the wearable terminal, remove the connector cap.

2. Connect the RS4000 interface cable to the wearable terminal interface connector. If connecting to a wrist mounted wearable terminal, connect to the interface connector closest to the wrist.

Interface Connector

Scanner Cable Connector
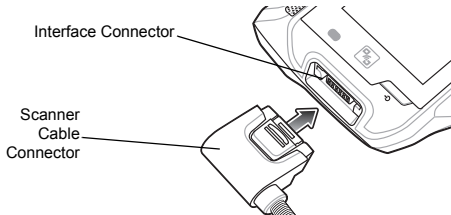
3. Slide the RS4000 onto the index finger with the scan trigger next to the thumb.
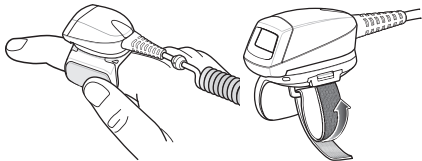
4. Tighten the finger strap.

5. If required, cut excess finger strap material.
6. Warm boot the wearable terminal.

Using the Scanner

Not to be used in condensing environments.

To scan bar codes:

1. Turn on the wearable terminal.
2. Launch a scanning application.
3. Press the scan trigger and aim the RS4000 at a bar code.

   The scan LED lights red to indicate the laser is on.
4. Position the red laser beam so that it covers the entire length of the bar code.

5. If the decode is successful the LED turns green. The terminal beeps if programed accordingly.

Scanning Tips

- For larger bar codes, hold the RS4000 farther away from the bar code.
- For bar codes with bars that are closer together, hold the RS4000 closer to the bar code.
- The optimal scanning distance varies with bar code density, but 10 to 25 cm (4 to 10 inches) generally works. Practice to determine what distances to work within.
- Do not position the RS4000 exactly perpendicular to the bar code being scanned. In this position, reflected light can bounce back into the exit window, and possibly prevent a successful decode.

Finger Strap Assembly Replacement

The finger strap assembly can be changed for each user or for replacement. To replace the finger strap assembly:

1. Press down on the finger strap assembly release tab.
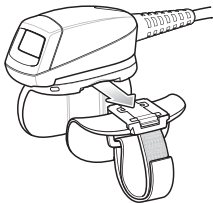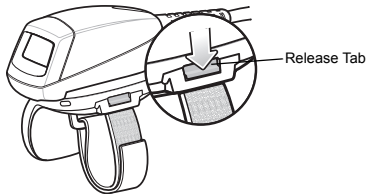
Release Tab

2. Slide the finger strap assembly out of the trigger assembly.

3. Align a new finger strap assembly with the slot in the trigger assembly.

4. Push the finger strap assembly into the trigger assembly until the release tab clicks into place.

5. Insert your index finger through the finger strap. Tighten the strap and press the hook and pile together.

6. If required, cut excess finger strap material.

Replacing the Trigger Assembly

To replace the trigger assembly:

1. Remove the finger strap assembly.

2. Turn the RS4000 upside-down.

3. Remove the set screw with screwdriver.

4. Turn the trigger assembly counter-clockwise until the exit window and scan trigger align.

5. Lift the trigger assembly off the scan assembly.

6. Align replacement trigger assembly with scan assembly.

7. Rotate trigger assembly 1/4 turn clockwise.

8. Tighten the set screw with screwdriver.

9. Replace finger strap assembly.
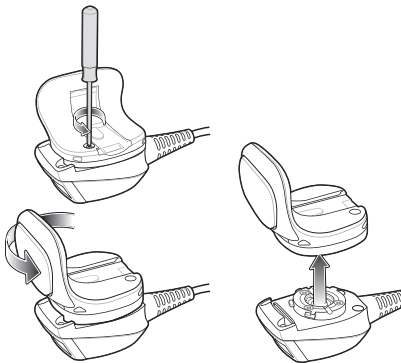
Cleaning

CAUTION Always wear eye protection.
Read warning label on compressed air and alcohol product before using.
If you have to use any other solution for medical reasons please contact Zebra for more information.

WARNING! AVOID EXPOSING THIS PRODUCT TO CONTACT WITH HOT OIL OR OTHER FLAMMABLE LIQUIDS. IF SUCH EXPOSURE OCCURS, UNPLUG THE DEVICE AND CLEAN THE PRODUCT IMMEDIATELY IN ACCORDANCE WITH THESE GUIDELINES.

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: isopropyl alcohol, bleach/sodium hypochlorite, hydrogen peroxide or mild dish soap.

Harmful Ingredients

The following chemicals are known to damage the plastics on the RS4000 and should not come in contact with the device: ammonia solutions, compounds of amines or ammonia; acetone; ketones; ethers; aromatic and chlorinated hydrocarbons; acqueous or alcoholic alkaline solutions; ethanolamine; toluene; trichloroethylene; benzene; carbolic acid and TB-lysoform.

Cleaning Instructions

Do not apply liquid directly to the RS4000. Dampen a soft cloth or use pre-moistened wipes. Do not wrap the device in the cloth or wipe, but gently wipe the unit. Be careful not to let liquid pool around the display window or other places. Allow the unit to air dry before use.

Special Cleaning Notes

Many vinyl gloves contain phthalate additives, which are often not recommended for medical use and are known to be harmful to the housing of the RS4000. The RS4000 should not be handled while wearing vinyl gloves containing phthalates, or before hands are washed to remove contaminant residue after gloves are removed. If products containing any of the harmful ingredients listed above are used prior to handling the RS4000, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the RS4000 to prevent damage to the plastics.

Materials Required

- Alcohol wipes
- Lens tissue
- Cotton tipped applicators
- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning the RS4000

Housing

Using the alcohol wipes, wipe the housing.

Exit Window

Wipe the scanner exit window periodically with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.

Connector

1. Disconnect the RS4000 from the WT6000.
2. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton tipped applicator back-and-forth across the connector. Do not leave any cotton residue on the connector.
4. Repeat at least three times.
5. Use the cotton tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
6. Use a dry cotton tipped applicator and repeat steps 4 through 6.

|⚠| **CAUTION** | Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.

7. Spray compressed air on the connector area by pointing the tube/nozzle about ½ inch away from the surface.

8. Inspect the area for any grease or dirt, repeat if required.

Cleaning Frequency

The cleaning frequency is up to the customer's discretion due to the varied environments in which the mobile devices are used. They may be cleaned as frequently as required. However when used in dirty environments it may be advisable to periodically clean the scanner exit window to ensure optimum scanning performance.

Troubleshooting

Symptom	Probable Cause	Action
Laser beam does not display when pressing the trigger.	Interface cable is not secure.	Verify that the interface cable connection is connected properly.
	Power is not applied to RS4000.	Power for the RS4000 is provided by the wearable terminal. Verify that the wearable terminal has a charged battery installed.
	Scan enabled application on the wearable terminal is not running.	Launch scanning application on the wearable terminal.
RS4000 does not decode a bar code.	Bar code is unreadable.	Verify that the bar code is not defective, i.e., smudged or broken.
	Exit window is dirty.	Clean exit window with a lens tissue. Tissues for eyeglasses work well. Do not use tissues coated with lotion.
	Symbology is not enabled.	See your system administrator.

Symptom	Probable Cause	Action
Condensation appears on the inside or the outside of the exit window.	Using the ring scanner in a hot and humid environment after being in a freezer environment.	Wipe condensation from exit window with a soft cloth. For condensation on the inside, dedicate ring scanner to freezer or hot and humid environment. Do not pass between environments with the same ring scanner.

Ergonomic Recommendations

⚠️ *CAUTION*   In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

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