scanX duo

Transport Belt Drive Assembly Kit

Part Number D1932

REPLACEMENT INSTRUCTIONS

Introduction

This document provides the instructions necessary to replace the complete Transport Belt Drive assembly of a ScanX Duo Digital Imaging System using Transport Belt Drive Assembly Replacement Kit, PN D1932.

Kit PN D1932 Components Supplied

Qty	Description	Part Number
2	Transport Belt Drive Assembly	B7755
4	Socket Cap Head Screw	31304
4	Washer	30342

Important Information

All personnel servicing the ScanX Duo **must** read and understand the Operator's Manual before operating or performing any service of the device. Only a trained technician from a qualified Air Techniques dealer should perform any service.

Power Removal

Prior to performing the replacement procedures contained in this document, turn off the Main Power switch and disconnect both the line cord from the 120VAC wall outlet and the USB communication cable from the unit.

Replacement Instruction Summary

These instructions include the removal of the Transport Covers, Arch and each Transport Belt Drive assembly, for the replacement of the complete drive assembly or assemblies. This process should only be done by an authorized dealer service technician. The tasks included are summarized below:

1. Disassembly. Disassembly procedures consist of the necessary steps to remove a Transport Belt Drive assembly from the associated ScanX.
2. Replacement. Replacement procedures consist of the necessary steps to replace a complete Transport Belt Drive assembly or assemblies.
3. Re-assembly. Re-assembly procedures provide instructions to install the complete arch onto the ScanX.
4. Operational Check. This procedure provides instructions to make sure the ScanX operates properly after completing the Transport Belt Drive assembly replacement and before installing the Transport Covers.

Task Guidelines

Personnel performing the Transport Belt Drive assembly replacement tasks should use standard industry guidelines for working on electronic equipment as necessary. These include the following:

- ❑ Always use a clean well-lit work area with ample space required for the size of the job.
- ❑ Observe all warnings and precautions for safety as shown by the labels placed on the equipment.
- ❑ Keep all attaching hardware and fastening screws together with the associated removed assembly. If necessary use separate storage containers or envelopes for each hardware group.
- ❑ Prior to removing any part or assembly, note location and orientation of assemblies being removed.
- ❑ Tag wires and associated mating connectors before disconnecting.
- ❑ Use care when disconnecting mating connectors so as not to damage the connector keys and connection to the associated printed circuit board, wire or cable.
- ❑ Be aware of the damage impact of electrostatic discharge (ESD) on electronic devices and use ESD precautions when handling printed circuit boards and wiring comprising the ScanX.

Removing the Transport Covers

Refer to Figure 1 and remove the transport covers by performing the following steps.

1. As shown by View A, use a 9/64-inch ball-end Hex Head wrench (long enough to extend past the bottom of the unit as shown by Detail A), remove the 2 screws securing the Lower Transport Cover to the Upper Transport Cover.
2. Remove the Lower Transport Cover from the ScanX unit as shown by View B.
3. Using a 9/64-inch ball-end Hex Head wrench, remove the two upper cover securing screws on each side of the Upper Transport Cover (View C).

   Important: A ribbon cable is connected to the interior of the Upper Transport Cover.
4. Slide cover away from the ScanX unit being sure not to damage the ribbon cable.
5. As shown by View D, hold and tilt the Upper Transport Cover to gain access to the connected ribbon cable.
6. Note connector orientation (as shown by Detail B and mark if necessary) and disconnect the ribbon cable from the PCB Connector. Remove the top cover from the ScanX unit.

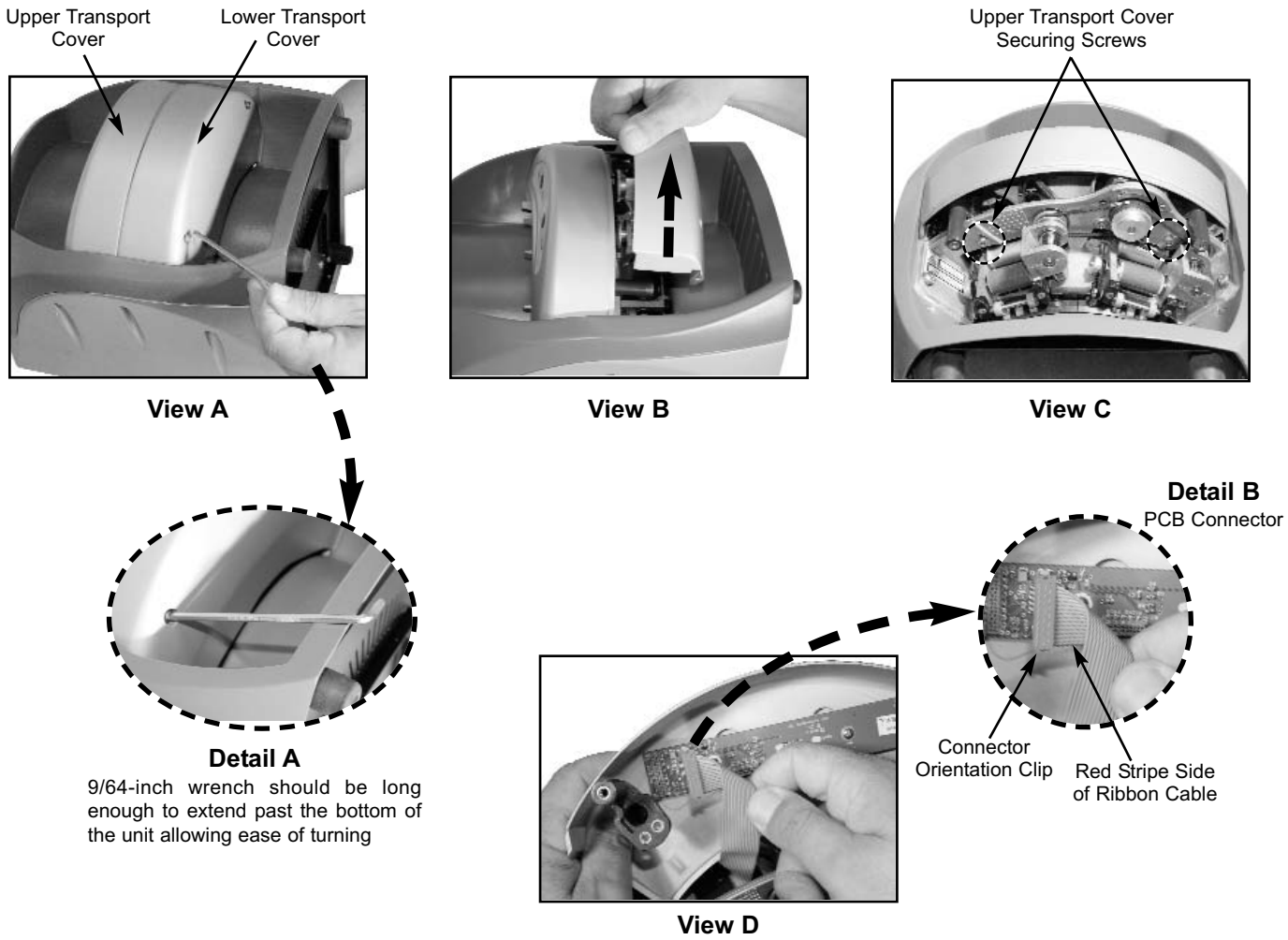


Figure 1. ScanX Transport Covers Removal

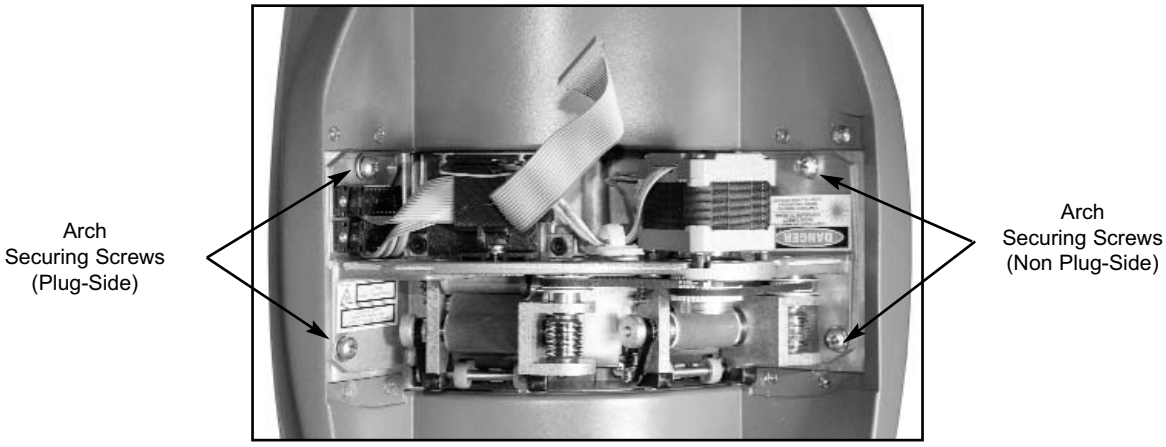
Removing the Transport Arch Assembly

Refer to Figure 2 and remove the Transport Arch assembly by performing the following steps.

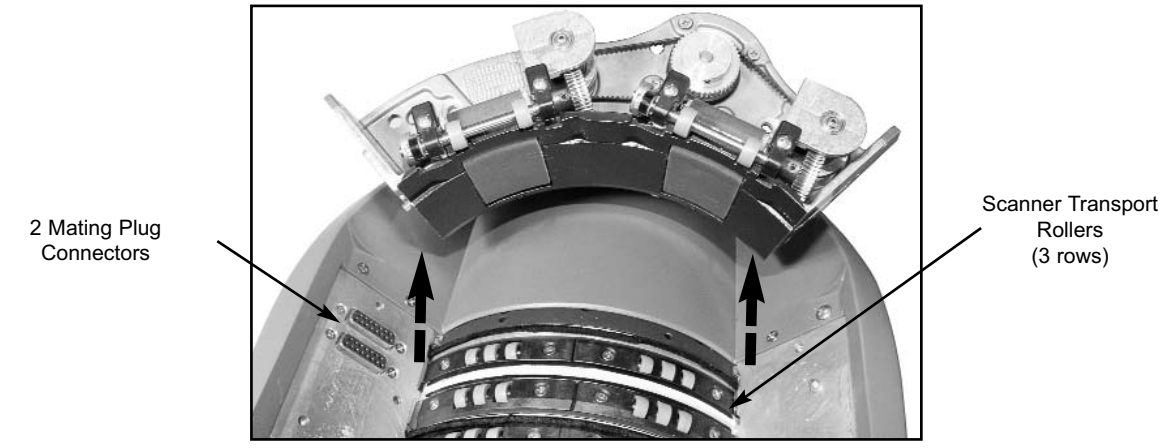
1. Use a #2 Phillips screwdriver to remove the 4 screws (2 on each side) securing the Transport Arch assembly to the Scanner, as shown by View A.

   Important: The Transport Arch assembly is plugged into the Scanner via a guide pin and two D-Type mating connectors. Use care when disconnecting and removing the arch to prevent damage to the connectors.

2. As shown by View B, grab the Transport Arch assembly and carefully pry it from the associated mating connectors on the left side of the Scanner. Pull the Transport Arch assembly away from the Scanner exposing the Transport Rollers.
3. Set the removed Transport Arch assembly aside on a clean level surface and perform the Transport Belt Drive Assembly Removal procedures provided on page 4.



View A



View B

Figure 2. ScanX Duo Transport Arch Removal

Removing the Transport Belt Drive Assemblies

Figure 3 shows the removed transport arch flipped over showing the location of the two Transport Belt Drive assemblies on the bottom side of the arch. Remove the pair of transport belt drive assemblies from the transport arch by performing the procedures provided below.

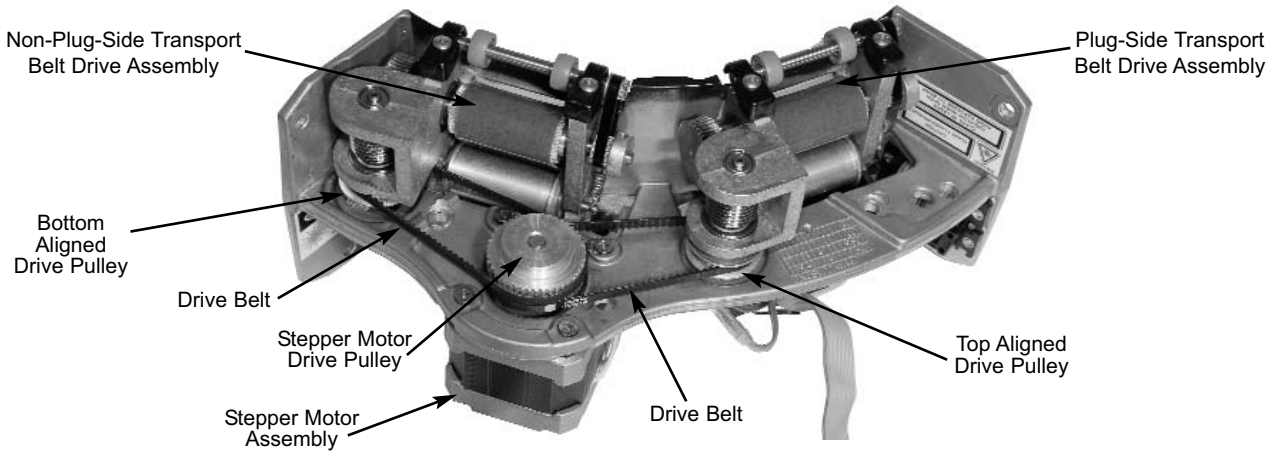


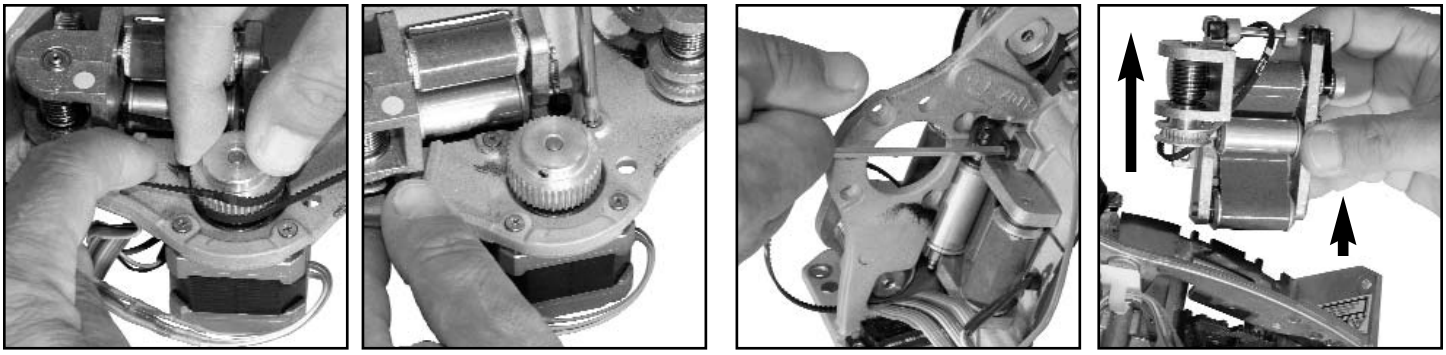
Figure 3. Removed ScanX Duo Transport Arch Assembly (Bottom View)

Non-Plug-Side Transport Belt Drive Assembly Removal. Refer to Figure 4 and remove the transport belt drive assembly from the non-plug-side of the transport arch by performing the following steps:

1. As shown by Figure 4, View A, remove the two drive belts from the stepper motor by sliding each belt from the motor drive pulley.

   Important: Do not let the motor hang by cable. Place motor on work table and make sure not to break the connecting wires.

2. Using a #1 Phillips Head screwdriver, remove the 4 screws and washers securing the stepper motor to the transport arch as shown by View B. Remove the stepper motor from the transport arch. Set motor aside making sure not to break or disconnect the wires.
3. Using a 3 mm Hex Head wrench, remove the 2 hex socket screws that secure the transport belt drive assembly to the transport arch as shown by View C.
4. Remove the transport belt drive assembly with the associated drive belt by sliding it from the arch. See View D.



View A
Remove Drive Belts

View B
Remove Stepper Motor

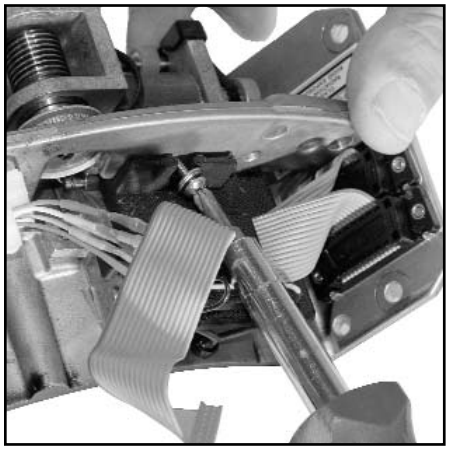
View C
Remove Hex Socket Screws

View D
Remove belt drive assembly

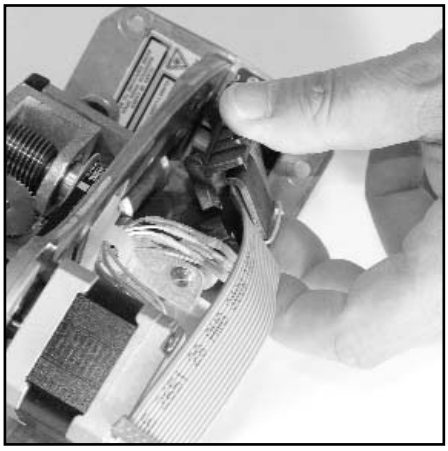
Figure 4. Non-Plug-Side Transport Belt Drive Assembly Removal

Plug-Side Transport Belt Drive Assembly Removal. Refer to Figure 5 and remove the transport belt drive assembly from the plug-side of the transport arch by performing the following steps:

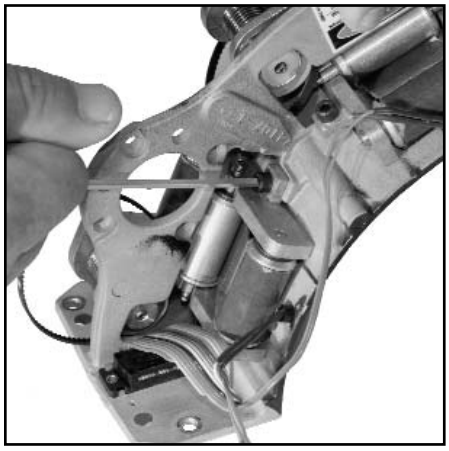
1. Using a #2 Phillips Head screwdriver, remove the screw securing the cable clamp to the transport arch as shown by View A.
2. Move the cable clamp out of the way as shown by View B.
3. Using a 3 mm Hex Head wrench, remove the 2 hex socket screws that secure the transport belt drive assembly to the transport arch as shown by View C.
4. Remove the transport belt drive assembly with the associated drive belt by sliding it from the arch. See View D.



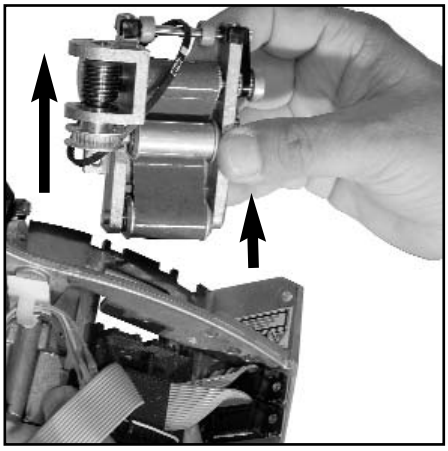
View A
Remove Cable Clamp Screw



View B
Move Cable Clamp



View C
Remove Hex Socket Screws



View D
Remove Belt Drive Assembly

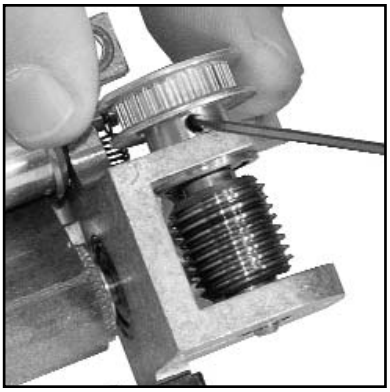
Figure 5. Plug-Side Transport Belt Drive Assembly Removal

Drive Pulley Transfer

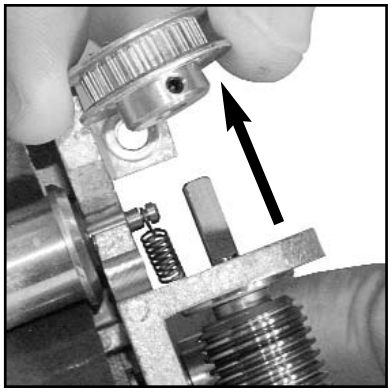
Replacement drive belt assemblies are not shipped with a drive pulley. Before installing the replacement drive belt assembly, transfer the drive pulley from the drive assembly to be replaced to the replacement drive assembly. Refer to Figure 6 and transfer the drive pulley by performing the following steps.

1. Using a 1.5 mm Hex Head wrench, loosen the set screw securing the drive pulley as shown by View A .
2. Refer to View B . Note pulley orientation (Top Aligned or Bottom Aligned as shown by View C) and then remove the drive pulley from the drive assembly to be replaced.

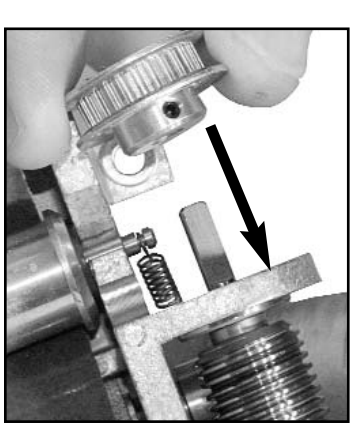
   Important: Keep the **exact** same orientation when transferring the drive pulley to the replacement drive belt assembly.
3. Keep the same orientation of the pulley and transfer the drive pulley to the replacement drive belt assembly by aligning the set screw with the flat side of the shaft and carefully sliding the pulley down as shown by View C .
4. Secure the drive pulley by tightening the set screw with a 1.5 mm Hex Head wrench.
5. Once installed, make sure the drive pulley turns freely and does not rub against the drive assembly surface.



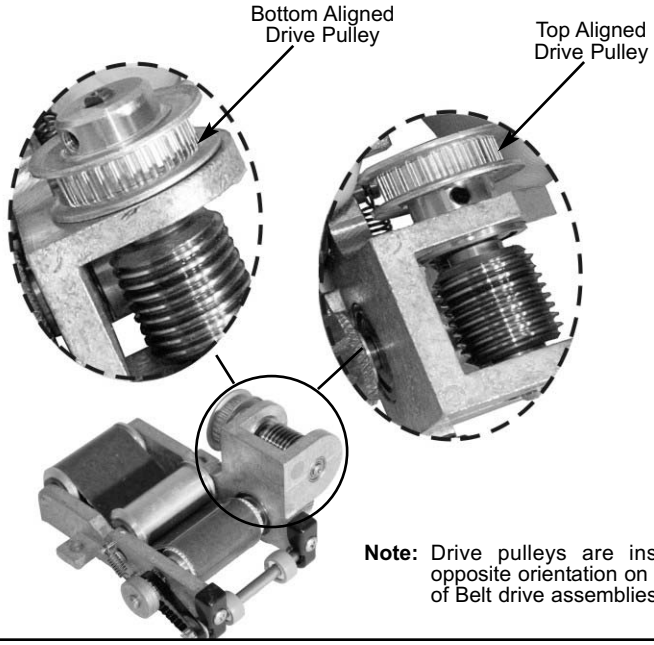
View A



View B



Important:
Once installed, make sure the drive pulley turns freely and does not rub against the drive assembly surface.



Note: Drive pulleys are installed in opposite orientation on each pair of Belt drive assemblies.

View C

Figure 6. Drive Pulley Transfer/Installation

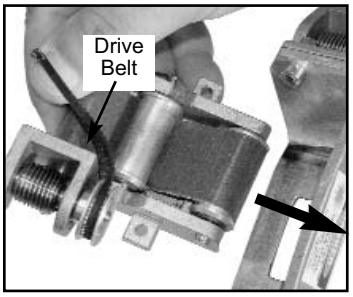
Transport Belt Drive Assembly Installation

Refer to Figure 7 and install each belt drive assembly into the transport arch by performing the following steps:

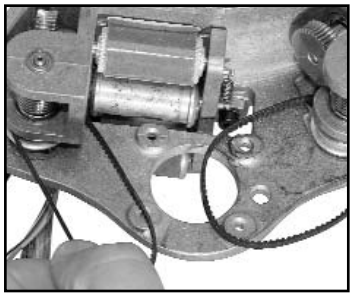
1. Place the drive belt onto the associated pulley of the transport belt drive assembly to be installed.
2. Install each transport belt drive assembly and the drive belt by sliding them into the transport arch as shown by View A. Make sure each drive belt moves unrestricted around the pulley of the associated transport belt drive assembly as shown by View B.
3. Secure the transport belt drive assemblies with 2 hex socket screws and washers using a 3 mm Hex Head wrench as shown by View C.

   Note: Only the belt drive assembly on the arch plug-side uses a cable clamp.
4. Install the Cable Clamp to the arch over the drive assembly installed on the plug-side. Tighten using a #2 Phillips Head screwdriver as shown by View D.
5. Refer to View E and install the stepper motor onto the transport arch. Make sure not to disconnect or break the associated connecting wires. Press the stepper motor firmly into the screw holes of the arch and install the 4 screws and washers. Tighten using a #1 Phillips Head screwdriver.

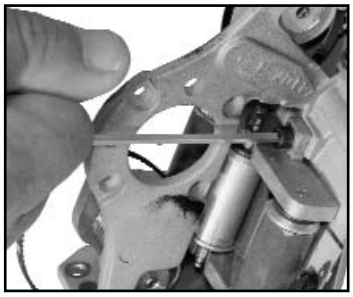
   Important: Make sure that the drive belts do not cross when installed on the stepper motor drive pulley. Install the drive belt from the bottom aligned drive pulley first.
6. Install the two drive belts onto the stepper motor drive pulley by carefully sliding each belt onto the drive pulley and slowly rotating the stepper motor drive pulley as shown by View F.
7. With both drive belts installed, adjust so the space between belts on the stepper motor pulley is approximately 1/16 of an inch. Make sure each belt forms a straight line between associated pulleys. Adjust if necessary.
8. When both transport belt drive assemblies and associated drive belts are installed, perform the Transport Arch Installation procedure provided on page 8.



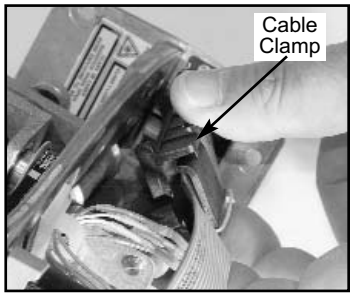
View A
Transport Belt Drive Assembly Placement



View B
Drive Belt Placement



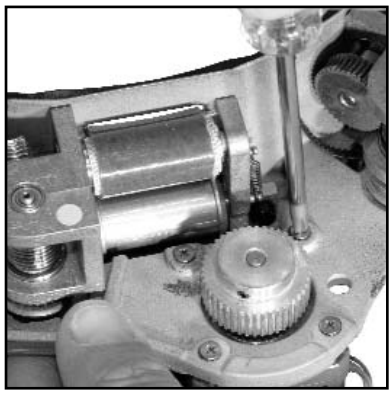
View C
Securing Belt Drive Assembly



View D
Cable Clamp Installation

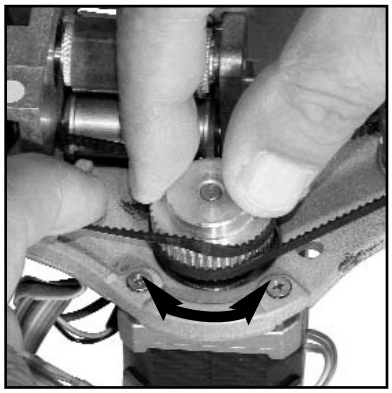
Note: Cable clamp used only on the plug-side belt drive.

Important:
Make sure not to disconnect or break the associated connecting wires of the stepper motor.

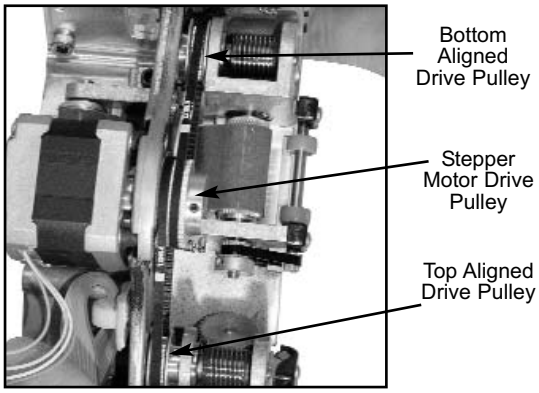


View E
Securing Stepper Motor

Important:
Do not cross drive belts on the stepper motor drive pulley. Belts should be separated by approximately 1/16 of an inch and in line with associated drive pulleys.



View F
Drive Belt Installation



View G
Alignment of Drive Belts

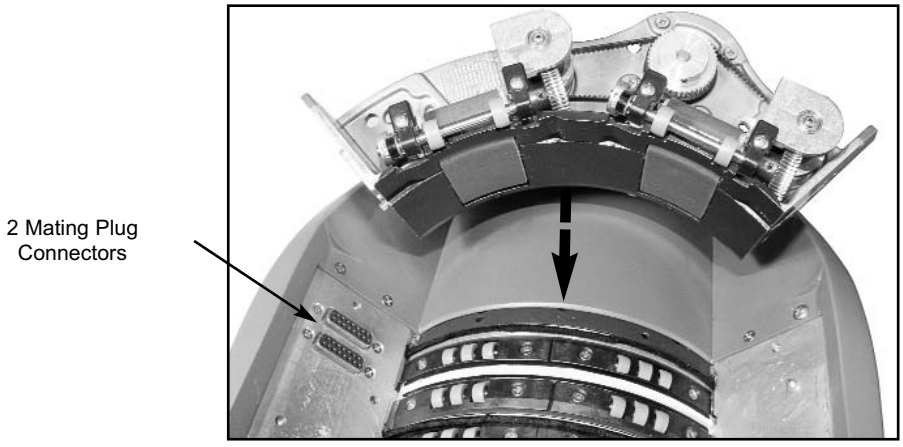
Figure 7. Transport Belt Drive Assembly Installation

Important: The Transport Arch assembly installs only one way onto the ScanX Duo mating via two D-Type connectors. Use care when installing the arch to prevent damage to the connectors.

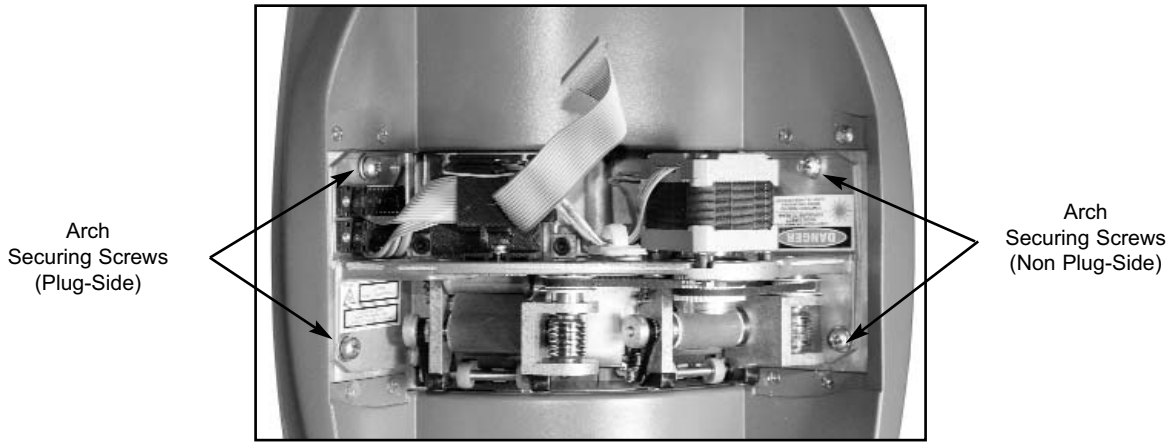
Transport Arch Installation

Refer to Figure 8 and install the Transport Arch assembly onto the associated ScanX as follows:

1. Align the locating pin and the two (2) male D-Type connectors of the Transport Arch assembly with the 2 mating D-Type female connectors as shown by View A.
2. Carefully push the arch straight into the associated mating connectors of the ScanX until the arch is seated flush against the mounting block surfaces of either the unit.
3. Align the 4 screw holes (2 on each side) of the arch with the threaded holes of the ScanX.
4. Refer to View B, and install the 4 screws hand tight.
5. Using a #2 Phillips screwdriver, tighten the 4 screws securing the Transport Arch assembly to the ScanX.
6 . When the Transport Arch assembly is secured on the associated ScanX, perform the Operational Check procedures provided on page 9.



View A



View B

Figure 8. ScanX Duo Transport Arch Installation

Check Scanner Operation Procedure

This procedure makes sure that the ScanX operates properly after completing the Transport Belt Drive assembly replacement procedures and before installing both transport covers. It consists of partially installing the Upper Transport Cover and operating the unit via the ScanX Diagnostics Software. This allows the user to observe the actual operation of the Transport Belt Drive assemblies.

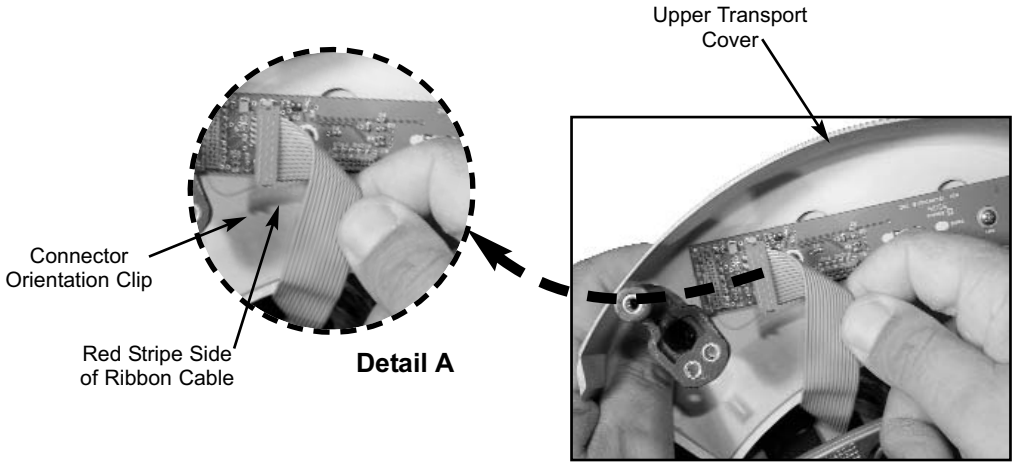
Upper Transport Cover Installation. Refer to Figure 9 and install the Upper Transport Cover by performing the following steps:

1. Refer to View A and connect the PCB Cable to the status board PCB Connector located inside the Upper Transport Cover. Detail A shows the proper connector orientation.
2. Refer to View A and mount the Upper Transport Cover to the ScanX by aligning the two threaded holes of the cover mount post (see Detail B) with the corresponding holes of the Transport Arch assembly.
3. Install two securing screws and tighten using a 9/64-inch ball-end Hex Head wrench.

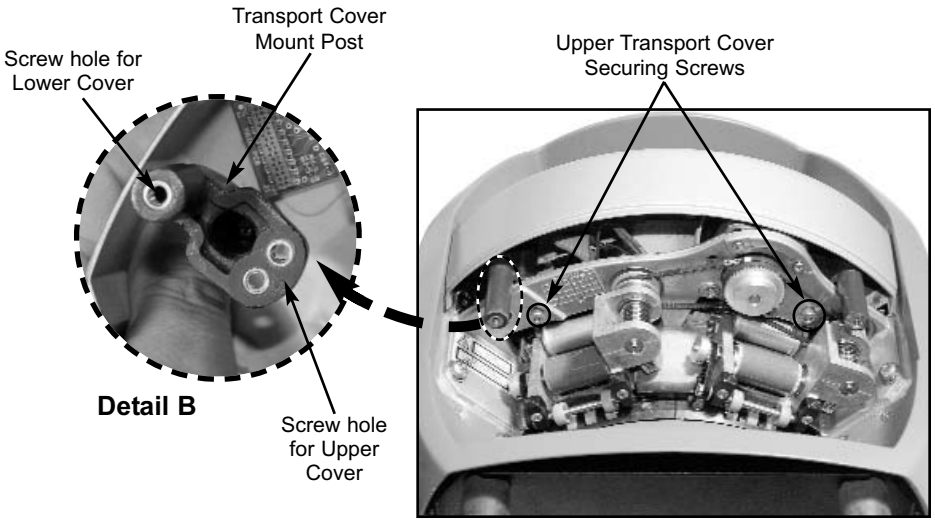
Important: Make sure that the orientation clip on the cable connector and the red stripe on the ribbon cable are on the same side as the board connector pin position 1 as shown by Detail A of Figure 9.

If this cable is connected backwards the unit will not power on.

Tuck the cable out of the way of cover to avoid ripping or piercing ribbon cable.



View A - Ribbon Cable Connection



View B - Upper Transport Cover Installation

Figure 9. Transport Cover PCB Cable Connector

ScanX Diagnostics Software Operation. Refer to Figure 10 and perform ScanX Diagnostics as follows:

Note: Refer as necessary to the ScanX Operator's Manual for proper connections and operation.

1. Reconnect the USB communication cable and electrical connections of the ScanX.
2. Apply power to the ScanX by placing the Main Power switch in the ON position.
3. Open the ScanX Diagnostics Software by selecting ***C:\Programs Files\Scanx Utilities\diagnostics.exe*** or using the **Start** button as follows.
   a. Go to the **Start** button and select ***Programs***.
   b. Select the ***ScanX Utilities*** program option and click on **Diagnostics** option.
   c. Observe that the **VistaScan configuration** window opens as shown by View A.
4. Select the ***System check*** Tab to open the **System check** window (View B).
5. Select the ***Manipulate*** Tab to open the **System check** window (View C) to allow manipulation of control and status for the ScanX.
   Important: Make sure that the **Stepmotors** control is set to ***Forward*** as shown by View C. Never operate when set to Backward setting.
6. From the **Stepmotors** control of the **System check** window (View C), select button 2 to operate the stepper motor.
7. Observe that the window indicator (View C) for the associated button 2 illuminates green when selected and the two Transport Belt Drive assemblies simultaneously operate on the ScanX.
8. Stop the operation of the stepper motor by clicking button 2 again and check the alignment of the driver belts.
9. Refer to Figure 7, Details F and G, and adjust the belt alignment as necessary.
10. If the button indicator illuminates green in the window (View C) and all Transport Belt Drives operate with proper belt alignment, then the Transport Belt Drive assembly replacement was successful. Exit the ScanX Diagnostics Software and turn the ScanX OFF.
11. Perform the Installing and Securing the Transport Covers procedures provided on page 11.

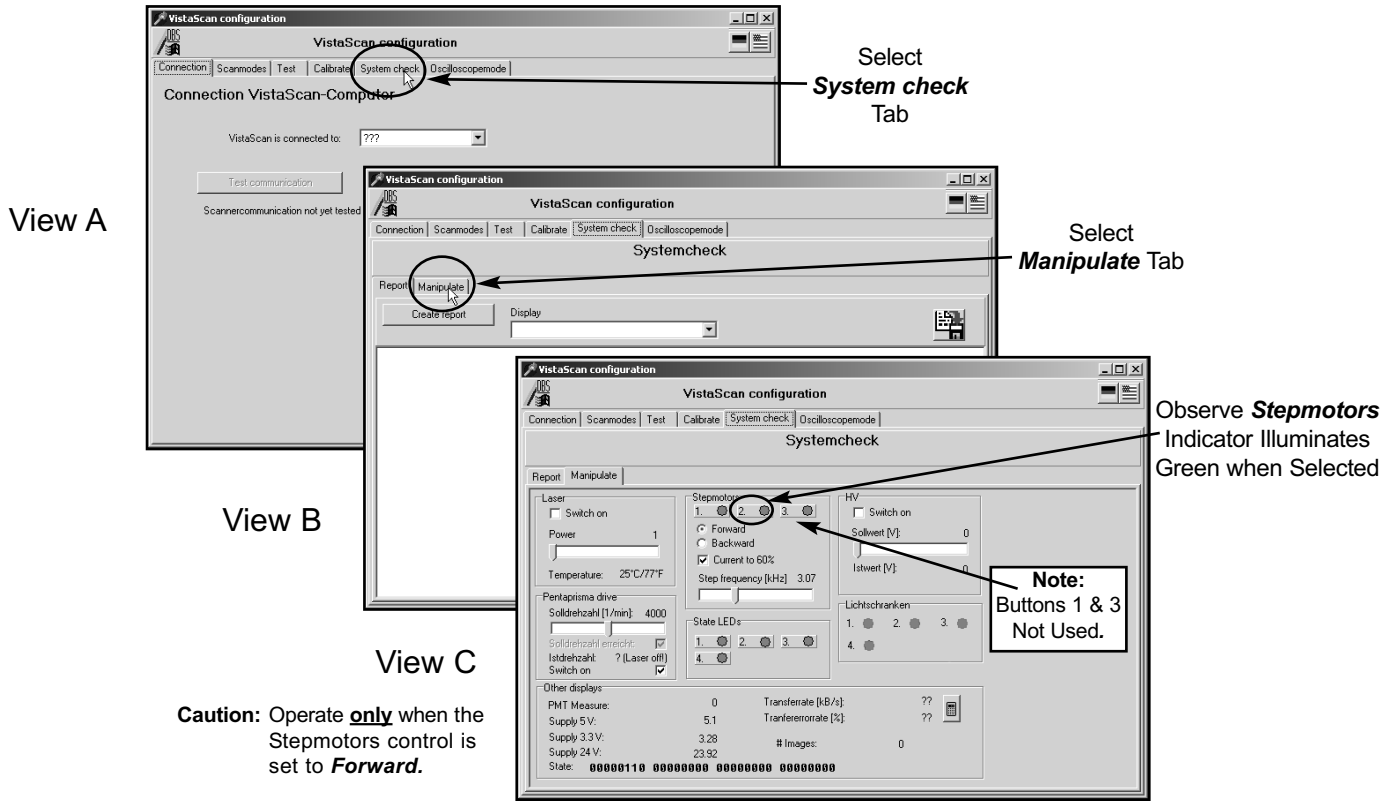


Figure 10. ScanX Diagnostics Software User Windows

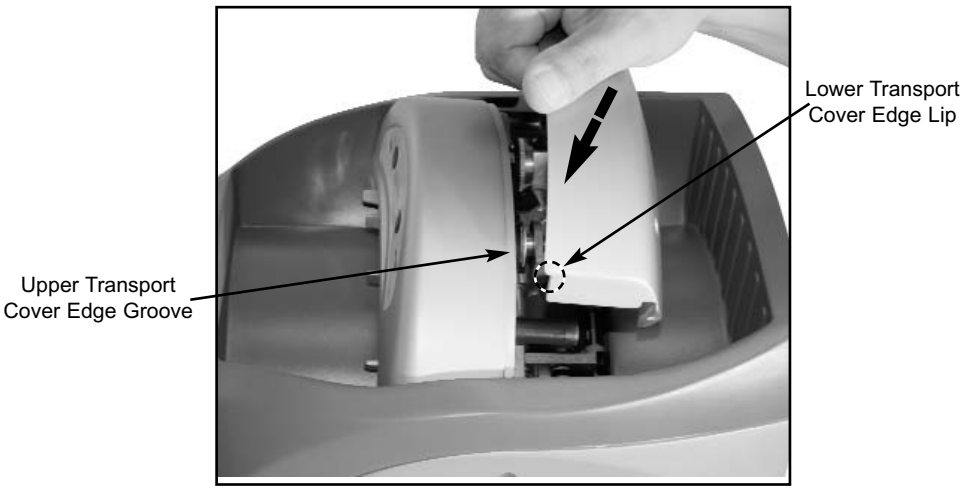
Installing and Securing the Transport Covers

Refer to Figure 11 and install the covers onto the ScanX Duo by performing the following steps:

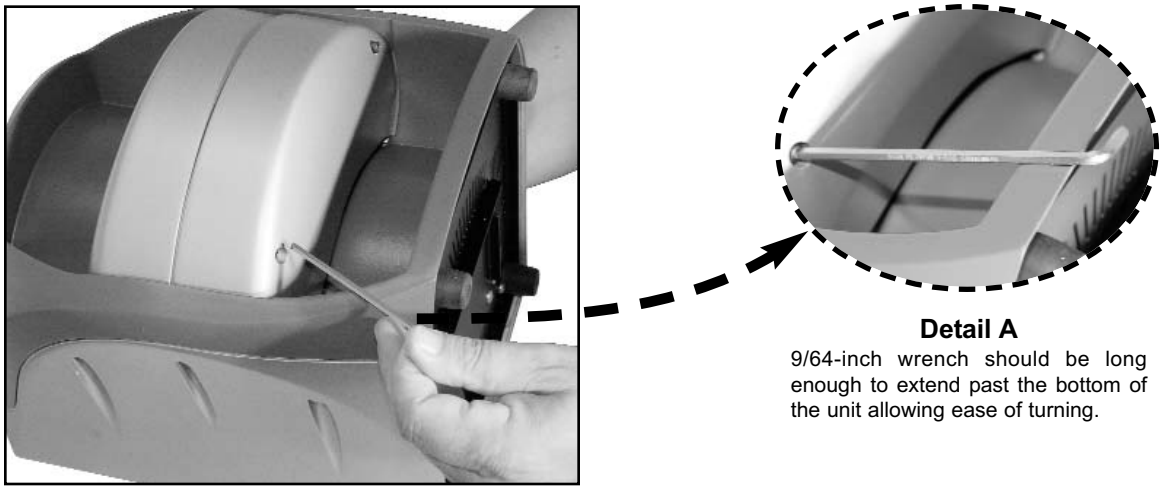
1. Place the Lower Cover over the installed Upper Cover and install into mating edge as shown by View A.

   Important: Make sure to keep the alignment of each screw straight when inserting into the Lower Cover screw hole. This allows the screw to catch the thread of the Mount Post easier.

2. Holding the two covers together at the center, install the two hex head screws as follows:
   a. Insert each screw straight into the hole in the Lower Cover.
   b. Turn the screw when a click is heard making sure that the screw catches the thread of the Mount Post.
   c. Turn each screw by hand until it becomes too tight to turn.
3. Still holding the two covers together at the center, tighten each screw using a 9/64-inch ball-end Hex Head wrench long enough to extend past the bottom of the unit as shown by Detail A.



View A - Cover Placement



Detail A
9/64-inch wrench should be long enough to extend past the bottom of the unit allowing ease of turning.

View B- Screw Installation

Figure 11. ScanX Duo Arch Covers Installation

Air Techniques and ALLPRO Imaging are leading manufacturers of fine dental, medical and veterinary equipment from air and vacuum systems and X-ray film processors, to an impressive line of new products incorporating the most recent technological advances. These new products, vital components of the innovative professional practice, include intraoral cameras, digital imaging systems, which utilizes phosphor plate technology and, most recently, an intraoral digital X-ray system using sensor technology.

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