

Delicate Media Upgrade

Installation Procedure

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Revision History

Revision	Date	Author	Comments
A	12 Jan 2004	Cedric Galere	Initial release
B	30 Aug 2007	Frank van Eerdt	Added safety information regarding re-energizing the device compressed air (must be done with the plate bay door closed)

CONTENTS

Revision History i

1. Introduction.....1

2. Overview.....1

3. Parts required.....1

4. Time required.....1

5. Preliminary steps – 15 minutes.....1

6. Installing the new picker bar – 1 hour 1

7. Connecting new pneumatic hoses – 10 minutes.....5

8. Installing the new separator arms and air valves – 2 hours 8
   8.1 Installing the new separator arms.....8
   8.2 Connecting the two new pilot-operated valves.....12

9. Final adjustments – 15 minutes 15

10. Final acceptance test – 15 minutes 16

1. INTRODUCTION

The delicate media upgrade has been designed to reduce possible scratches caused by plates rubbing against each other during the picking/loading sequence on Trendsetter Autoloader and Trendsetter Spectrum Autoloader.

The scratches are usually visible at 17.5 to 25.5 cm from the leading edge of the plate and are 1 to 5 mm long in the main scan direction. These scratches occur mainly on Creo PTP and Lastra LT-2 media.

2. OVERVIEW

The delicate media upgrade includes:

- replacing the picker 3 bar
- installing new separator arms that include air jets
- modifying the autoloader solenoid tubing
- modifying a firmware parameter available since CR4.0.

3. PARTS REQUIRED

- **518-00987A** KIT, UPGRADE, DELICATE MEDIA, TS-A

4. TIME REQUIRED

Four hours total.

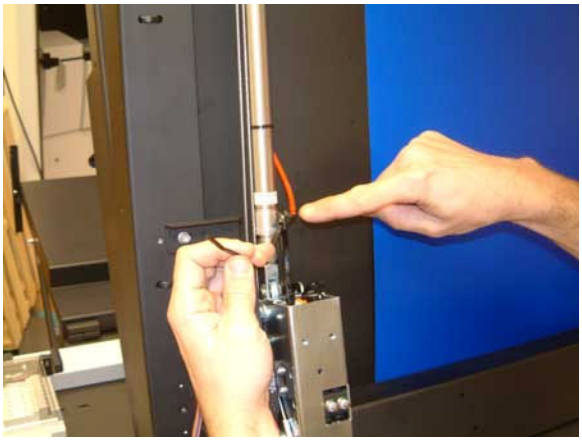
5. PRELIMINARY STEPS – 15 MINUTES

1. Examine plates for scratches as follows:
    - Carefully place two plates in the bay to avoid scratches from handling.
    - Load and unload the first plate and discard it.
    - Load and unload the second plate and process it.
    - After the plate has been processed, examine it under the light on a light table and check for any scratches located 175 to 255 mm from the leading edge.
      Keep this plate for comparison after the upgrade has been installed
2. Remove the autoloader side panels.

6. INSTALLING THE NEW PICKER BAR – 1 HOUR

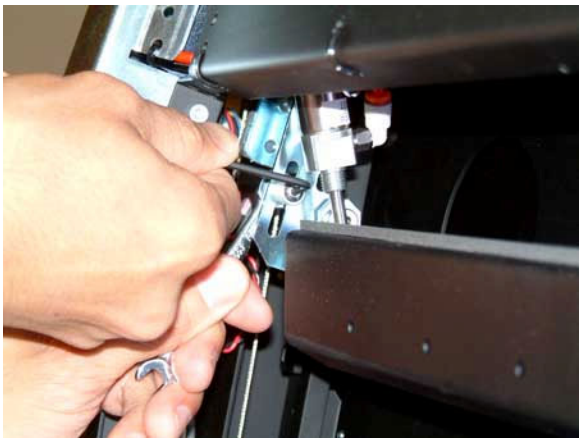
1. Raise the picker using **`picker up`**.

2. Secure the picker in the up position using four cable ties, two per side.



3. Shut off the air pressure.

4. Remove the wrist stop screws and bushings on both sides of the picker.



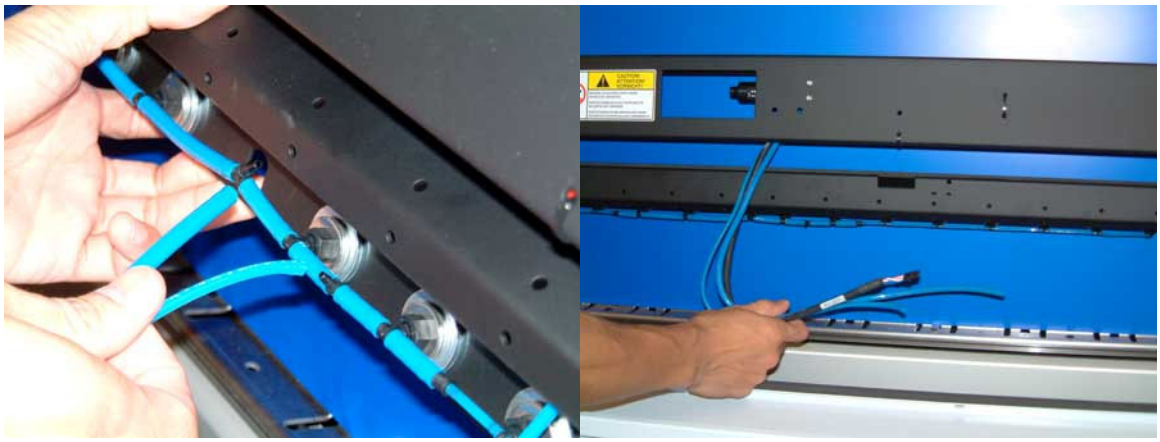
5. Remove the cable ties that hold the blue tubing on the picker head.



6. Disconnect the wrist sensor cable on the right side of the picker.



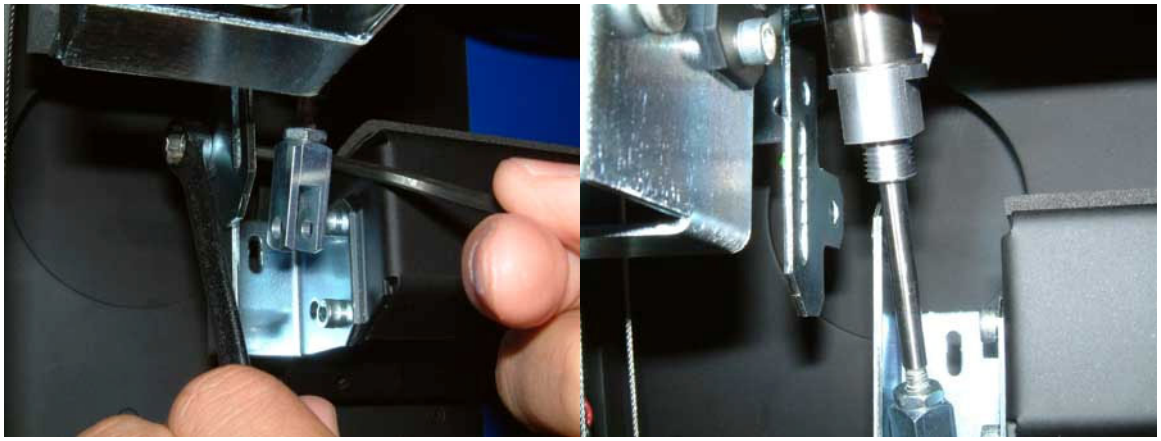
7. Unplug the two blue tubes and remove them from the picker bar, along with the cable, as shown below.



8. Place one hand underneath to catch the nylon washers while you remove the circlips and the pins holding the picker bar to the wrist cylinder. Save the washers, circlips, and pins for re-use.
   Repeat on both ends of the picker.

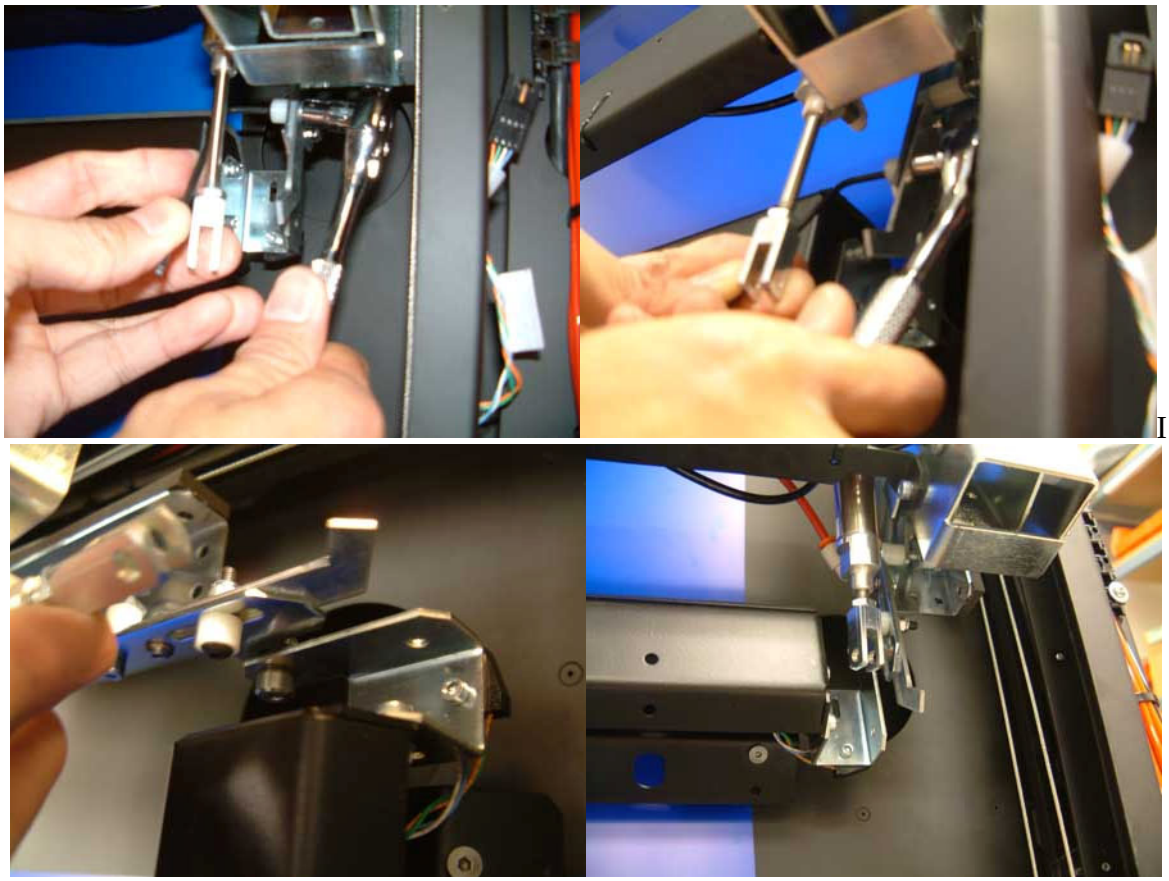


9. Remove and save the pivot screws that hold the picker bar at both ends.

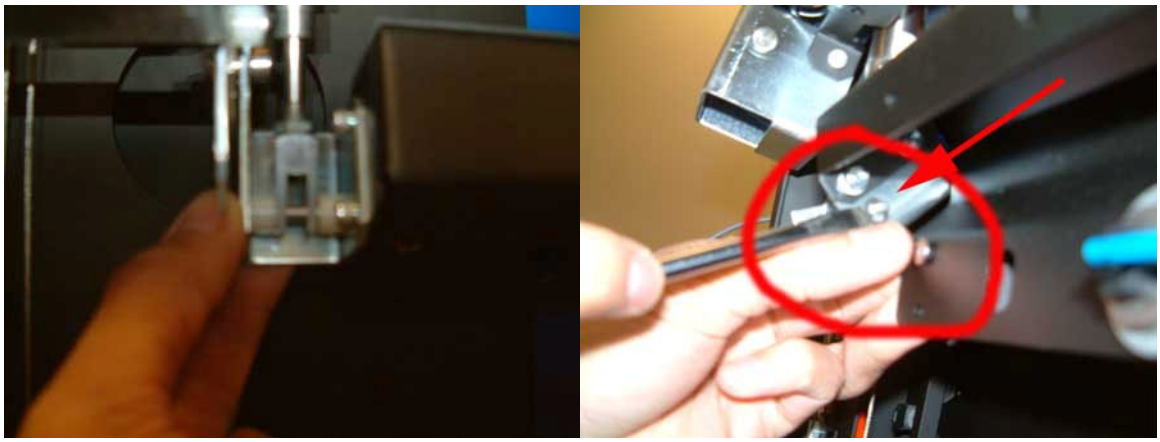


10. Remove the picker bar and discard.

11. Install the new picker bar (500-02471A) by installing the new wrist limit tabs (252-06147A) on both sides as shown in the photos below.



12. Connect the wrist cylinder to the picker bar by reinstalling the two pins. Keep the pins in place by using the circlips.



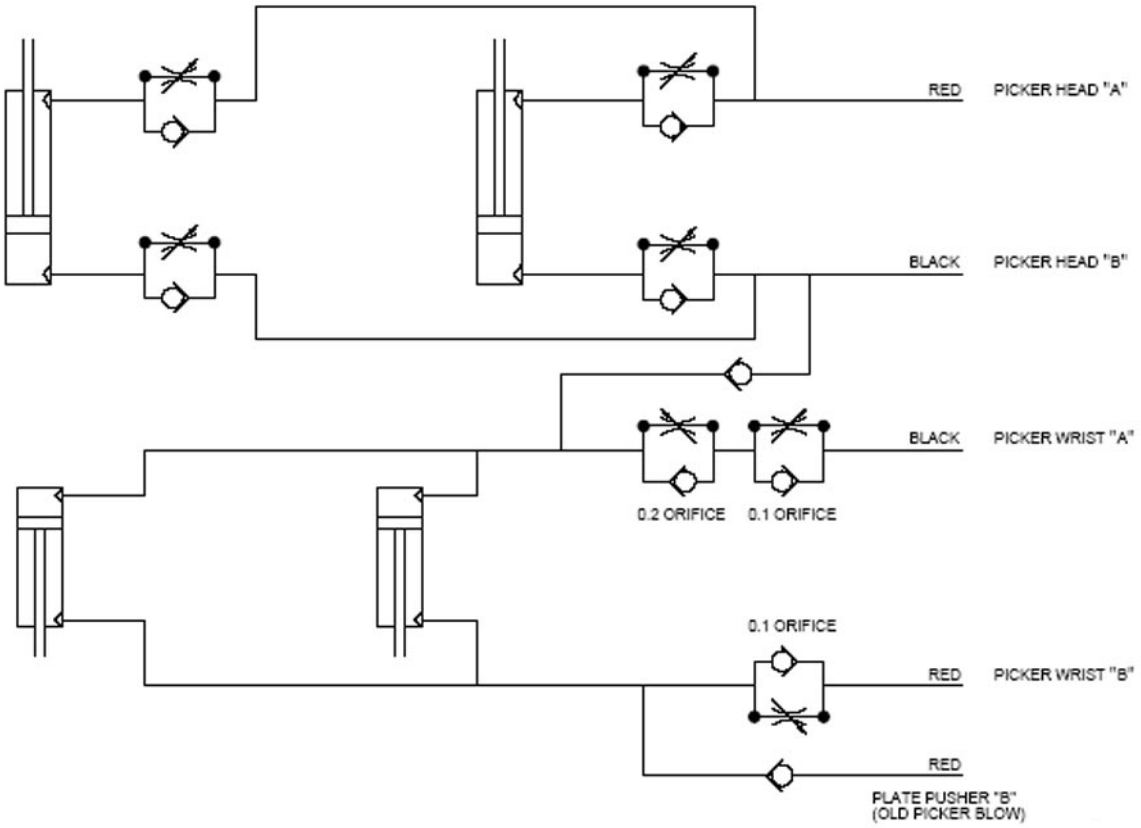
13. Reconnect the two blue tubes and connector to the picker head as shown in steps 6 and 7.

14. Use cable ties to secure the tubes in the same way as they were originally attached. (See step 5).

7. CONNECTING NEW PNEUMATIC HOSES – 10 MINUTES

The pneumatic connections from the autoloader solenoids must be modified so that the plate pusher tube does not interfere with the wrist in/out tube.

Old pneumatic diagram

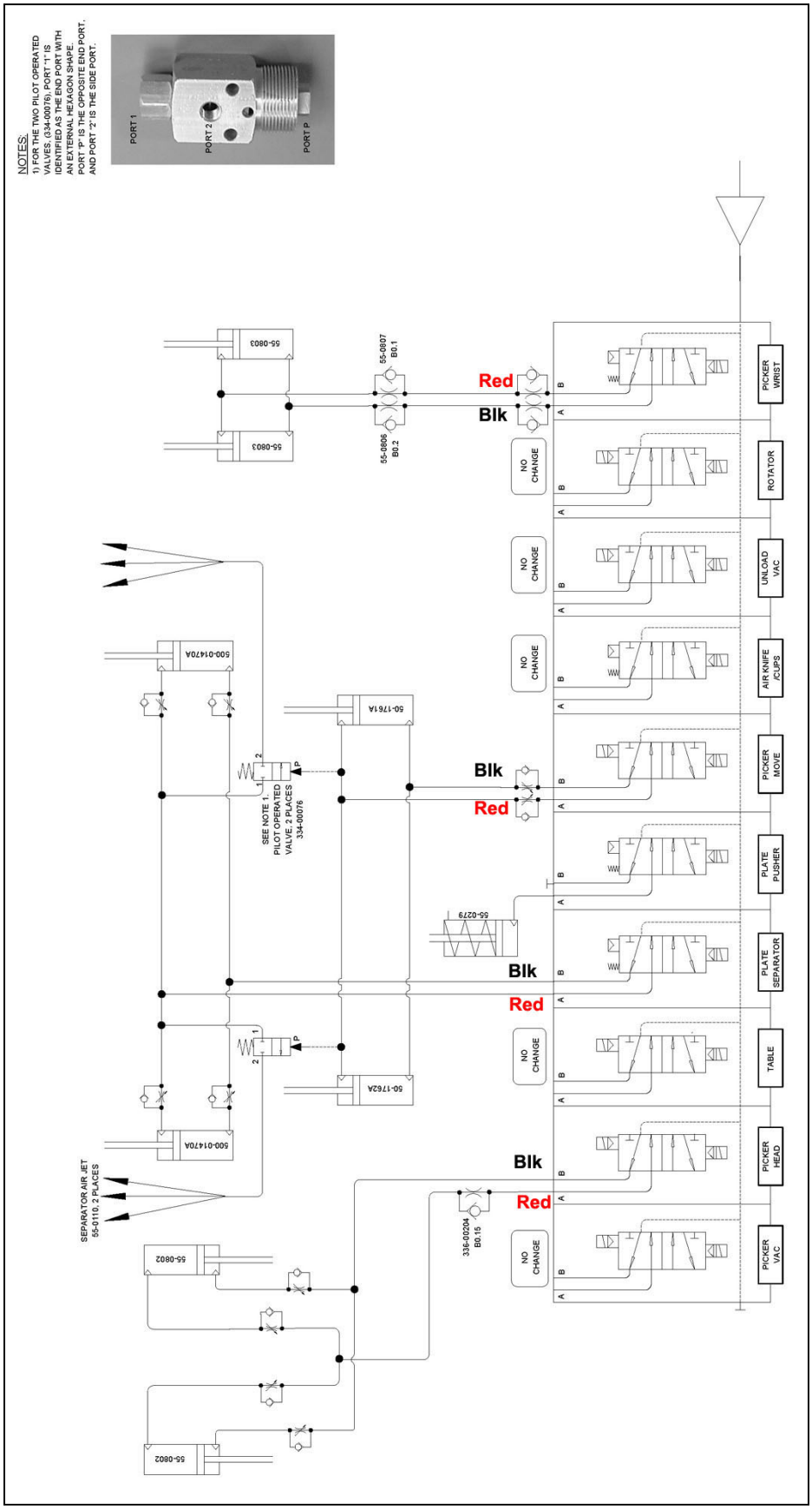


Refer to the *New pneumatic diagram* below to make the modifications to the pneumatic connections.

1. Disconnect the tube coming from the plate pusher **B** to the picker wrist **B**.
2. Put a plug (55-0162) on the plate pusher **B** tube.
3. Add the **B0.1** valve (55-0807) on the picker wrist **B** tube following the orientation on the schematic.
4. Remove the interconnection between picker wrist **A** tube and picker head **B** tube.
5. Add the speed control valve (336-00204) on the picker head **A** tube.

The procedure for installing the two pilot valves (334-00076) is in section 8.2 *Connecting the two new pilot-operated valves*.

New pneumatic diagram



8. INSTALLING THE NEW SEPARATOR ARMS AND AIR VALVES – 2 HOURS

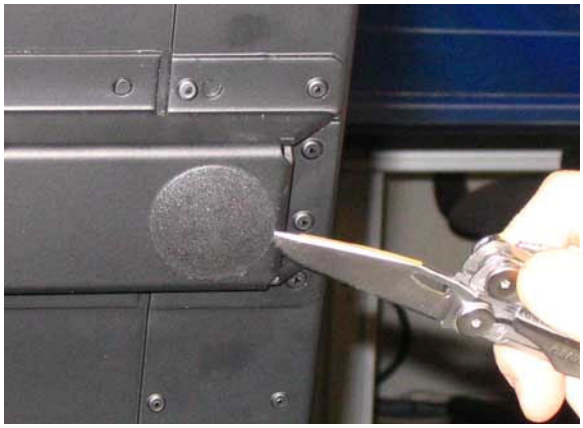
The new separator arms (500-03328A) include an air jet that is turned on whenever the arms are out and the picker goes down. A blanket of air between the plate being loaded and the next plate in the stack prevents any possible contact with the emulsion side of the next plate in the stack.

8.1 Installing the new separator arms

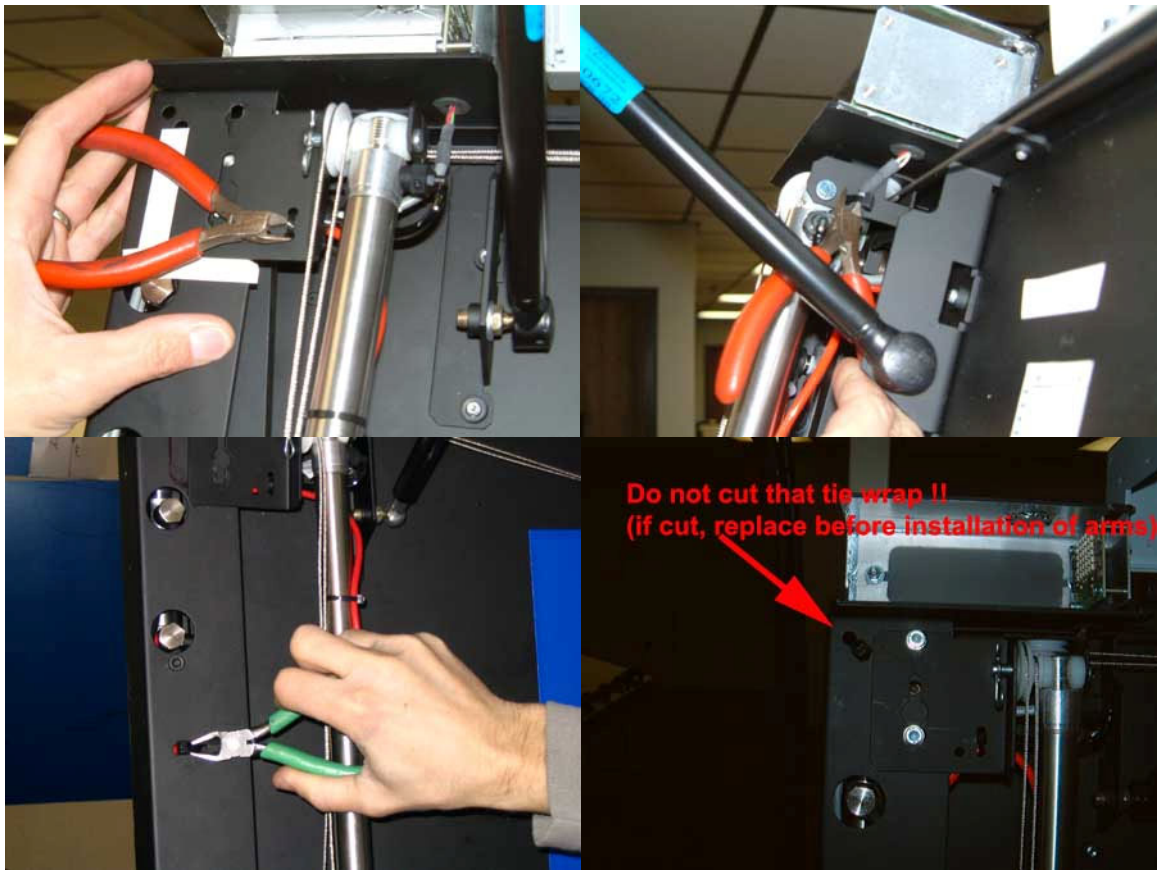
1. Use a marker to outline the position of the picker up/down cylinder mounting bracket. This will be used to help to keep the same tension on the cable after you have replaced the separator arms.



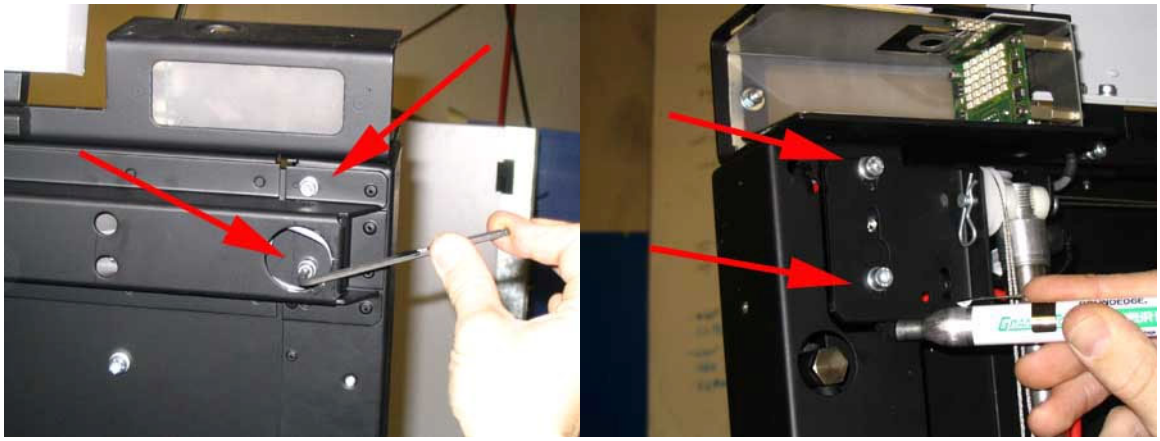
2. Remove the plug to access the screw that holds the back arm pivot mount.



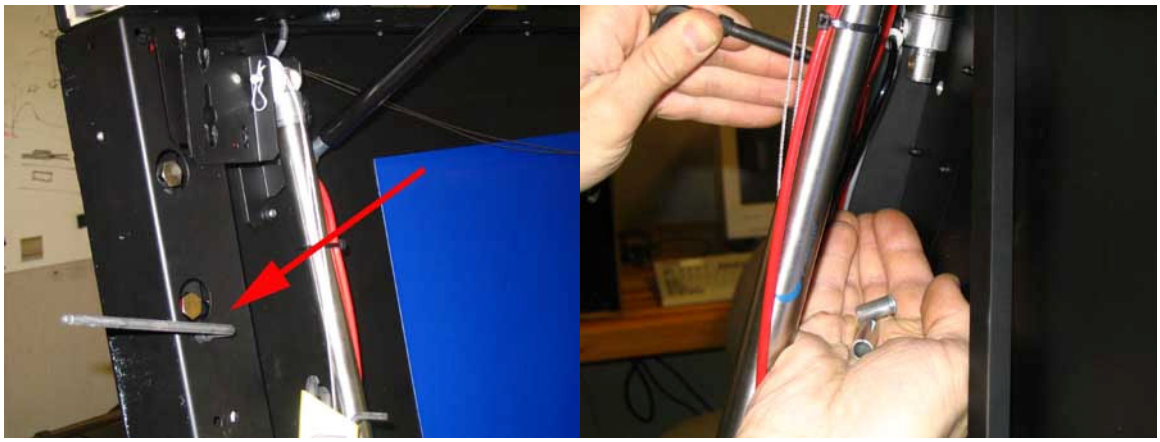
3. Cut the cable ties, but do not cut the cable tie marked with a red arrow in the following photo group.



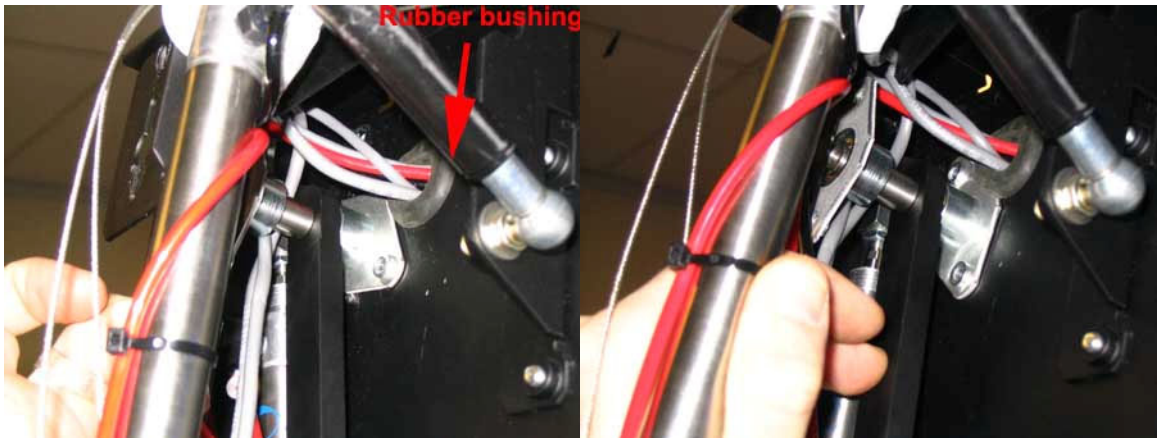
4. Remove the four screws (two in the front, two at the back of the table, one behind the plastic plug) that hold the two arm pivot mounts.



5. As you remove the long screw that holds the bottom of the separator arm cylinder, carefully catch the spacers.



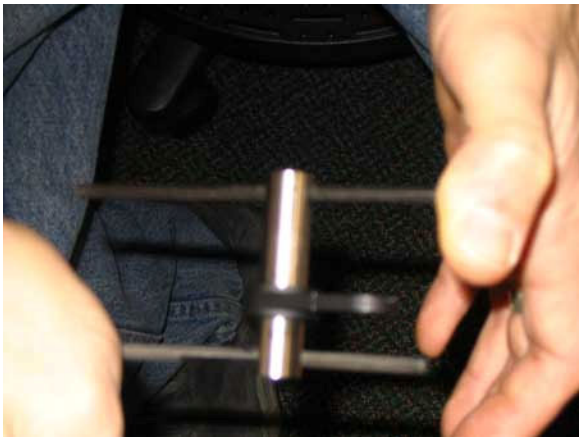
6. Remove the separator arm by sliding it out around the rubber bushing.



7. Disconnect the separator arm from the cylinder.



8. Use two hex keys to loosen the pivot pin from the separator arm.



9. Install the pivot pins on the new separator arm (500-03328A):

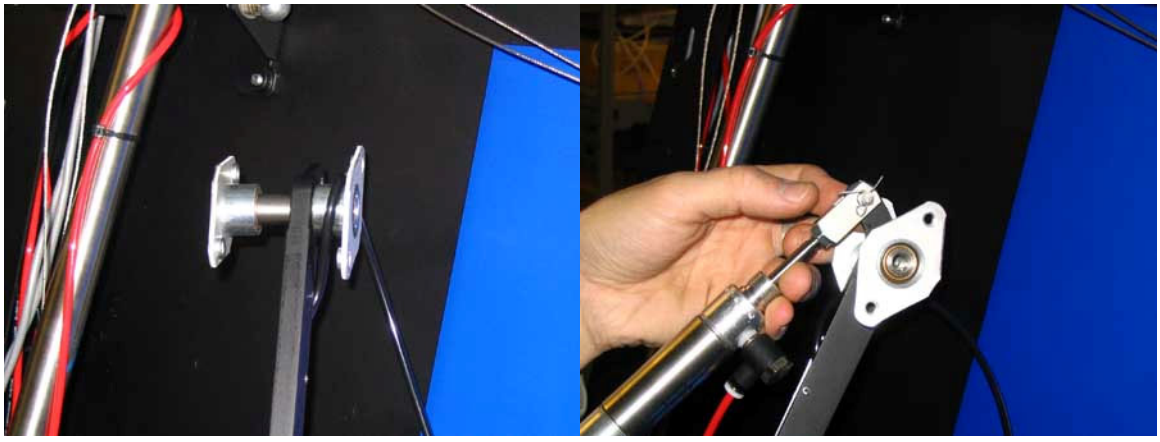
    - Place the shortest pins against the back of the table.
    - Tighten the pins with more than normal force – that is, enough to "eat" through the paint and bite into the metal

    If the pins are not tight enough the arms will flop around and scratch the plates in the bay.

10. Reinstall the pivot mounts over the pivot pins.

11. Install the new separator arms (see step 6).

    Make sure that the black separator arm tube is routed up and over the pivot mount and down behind the separator arm cylinder.



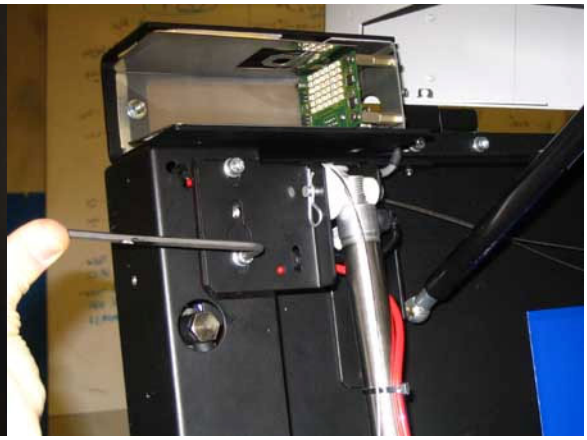
12. Reinstall the long screw with the two cylindrical bushings that hold the bottom of the cylinder in place:

    - The smaller bushing should be against the table.
    - Make sure that the black separator arm tube is routed around the separator arm pivot and to the back as shown in the picture above.

- *Tighten the screw so that the cylindrical bushings can still rotate freely around the screw.* See photo on left above.

13. Reinstall the two frontal screws that hold the picker up/down mounting bracket to lock the front pivot mount in place.

14. Align the picker up/down cylinder bracket along the marks that were drawn in step 1. *Make sure the picker guide cables are sitting properly in the appropriate pulleys.*

15. Tighten the two screws on the back of the table that locks the back pivot mount.

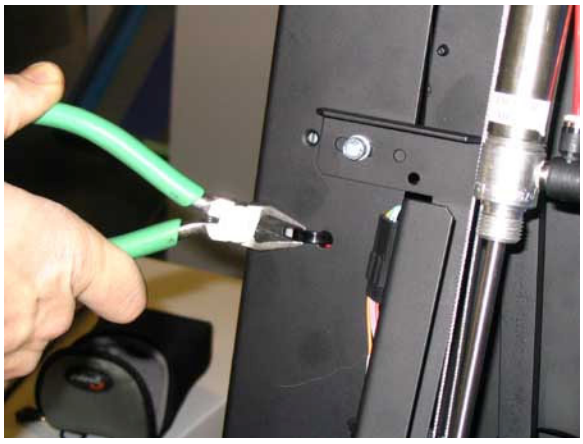
    Do not replace the plastic plug yet.

16. Repeat steps 1 to 15 for the second separator arm.

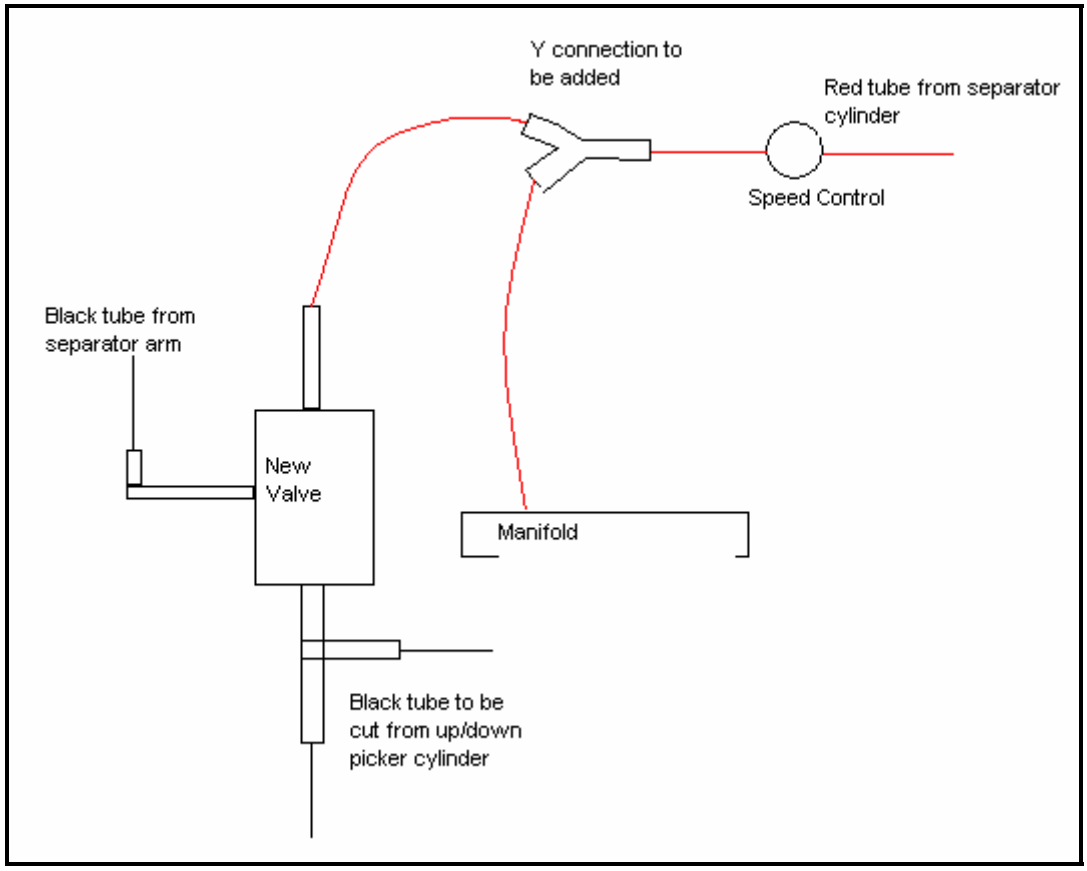
8.2 Connecting the two new pilot-operated valves

This should be done for both separator arms.

1. Cut the cable tie that holds the black and red tubes (that connect to the up/down cylinder and separator arm cylinder) together.



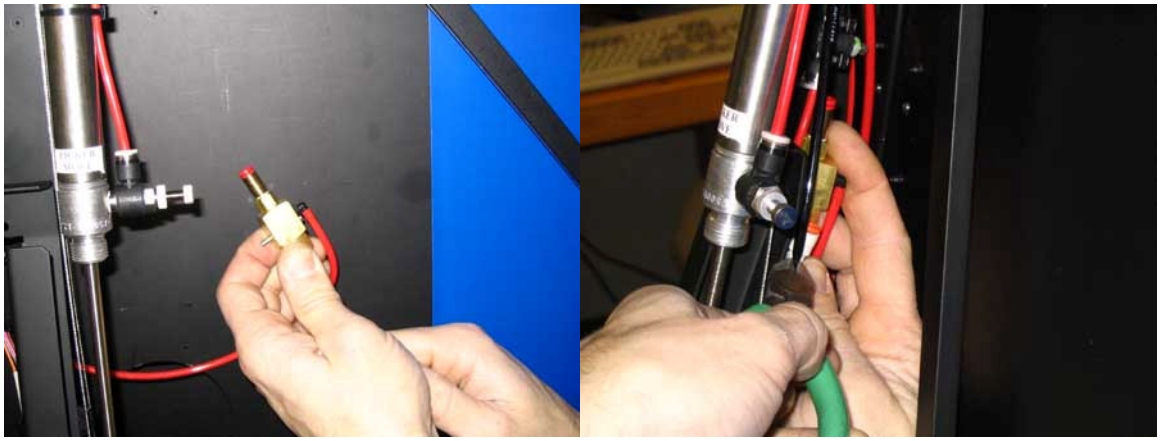
2. Refer to the following schematic and the *New Pneumatic diagram* in section 7 to connect the new pilot valve.



- Install a Y-connector (55-0168) between the speed control needle and the manifold on the red hose line from the separator cylinder.
- Cut the black tube from the up/down picker cylinder and connect it to the valve as shown on the schematic.

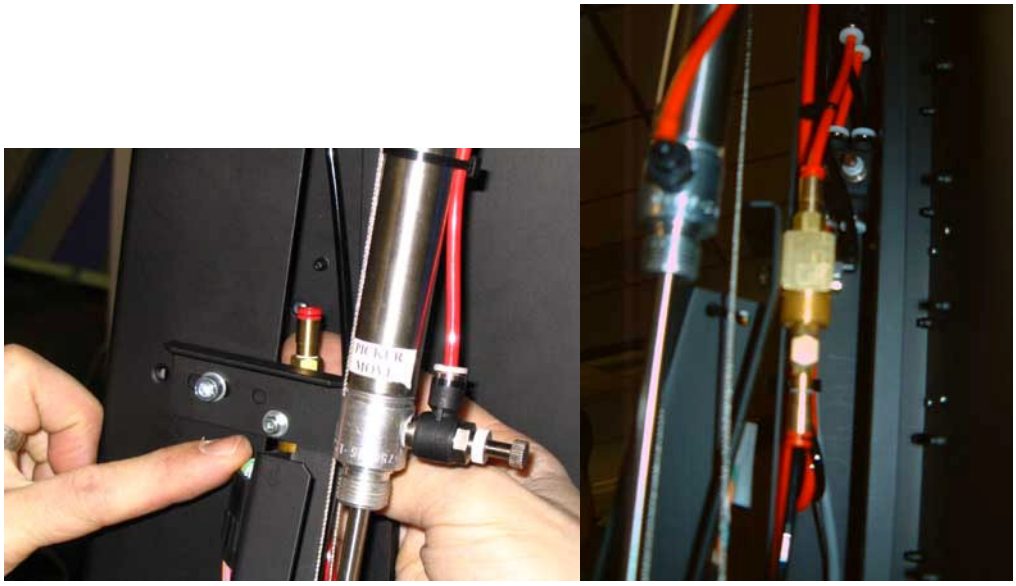
The air from the retract motion of the separator cylinder that extends the separator arms will pass through the separator arm air jet if the air from the extend motion of the picker cylinder passes through the valve.

3. Fix the valve to the frame using the small screw provided.



4. Rotate the valve so that no tubing gets in the way of the separator arm motion.





5. Use cable ties to keep all tubing together and against the frame.

9. FINAL ADJUSTMENTS – 15 MINUTES

1. Cut the cable ties holding the picker in the up position.
2. Move the picker by hand to the down position.
3. Close the plate bay door.
4. Turn the compressed the air back on.



WARNING: The plate bay door must be closed before you turn the compressed air supply back on. Re-energization of the compressed air supply results in sudden, forceful movement of the picker assembly, which can seriously injure any body part in its path.

5. Turn the SIO key to the **Interlock Override** position and open the bay door.
6. Test the separator arm function as follows:
   - Use **`picker sep in`** to extend the arms.
   - Use **`picker sep out`** to retract the arms.
7. The separator arms should hit right in the middle of the separator arm sensor frame.

   If the distance needs to be adjusted:
   - Retract the arms using **picker sep out.**
   - Loosen the bottom screw that holds the picker up/down cylinder bracket mount.
   - Hold one end of the arm properly in the middle of the sensor frame and tighten the bottom screw.
8. If more adjustment is needed:
   - Loosen the two screws that hold the back separator pivot mounts.
   - Position the arm properly and re-tighten the mount.
9. Repeat steps 6 to 8 for the other separator arm.
10. Make sure that when the arms are fully extended there is enough clearance to allow a full stack of plates to be loaded.
11. Put the plugs back into the load table.
12. Set the new `PickerOutPause` value to a safe value (for MCE only):

```
set mhauto PickerOutPause 6
```

WARNING: Failure to use this setting will cause the picker to crash at first pick.

13. Load the largest sized plate in the bay and then load it on the drum.

The new picker parameter gives an additional delay for the wrist cylinder to fully retract before the picker goes down to put the plate on the drum. Ideally the plate should be drawn off the stack parallel to the stack while getting good separation on the ledge teeth.

If the delay is too short, the plate edge will not clear the plate ledge, which will cause the plate/picker to jam.

If the delay is too long it will slow down the loading sequence unnecessarily.

14. Usually the parameter ranges from a value of 5 to 12 seconds.

    Try several values until the loading matches the description in step 13.

    *Add **one second** to the delay parameter* to allow for any mechanical wear.

See the *Upgrades* section on http://techplanet.creo.com/output/computer_to_plate/trendsetter_al/nav/proced.htm to view videos showing bad and good plate loading.

10. FINAL ACCEPTANCE TEST – 15 MINUTES

A fresh plate should be run through and examined for scratches.

1. Carefully place two plates in the bay to avoid scratches.
2. Load and unload the first plate and discard it.
3. Load and unload the second plate, mark the leading edge side of the plate, and process it.
4. After the plate has been processed, examine it under the light on a light table and check for any scratches 175 to 255mm from the leading edge.
5. Compare this plate with the plate that you tested before starting the upgrade (section 5). Most scratches should be eliminated or reduced to approximately .5 mm dots.
6. Reinstall the autoloader side panel.
7. Turn the SIO switch back to the default position and remove the key.