Kodak

Trendsetter NEWS
FCO CA08748: Dual-Bay Option Upgrade

1. PRODUCTS AFFECTED

Trendsetter® NEWS platesetters with Dual-Bay Option, MCE version (serial numbers NM*xxx*)

2. BACKGROUND

This upgrade is required to improve the functionality of the Trendsetter NEWS Dual-Bay option in the following areas:

- Add sensor to detect the position of the NELA® stop cylinder (part number 500-02988A)
- Add extension tabs to NELA stop switch
- Upgrade dual-bay pneumatic system:
  - Manifold
  - Pneumatic contact switches
  - Pneumatic plumbing
- Upgrade MCE firmware

Important: Starting with the rollout of the GMCE Trendsetter NEWS platesetters (serial numbers starting with NG*xxx*) and Print Console 4.0, the term "bay 1" refers to the main Trendsetter plate bay, and the term "bay 2" refers to the preloader plate bay. This is the reverse of the naming convention used with dual-bay MCE Trendsetter NEWS devices and Print Console 3.*x*.

Because this document describes upgrades for Trendsetter NEWS MCE machines, it uses the *MCE* naming convention for bay 1 and bay 2. If you are servicing a GMCE Trendsetter NEWS device with the dual-bay option, refer to the *Trendsetter NEWS Dual-Bay Option Service Guide*, which uses the GMCE naming conventions, and refers to renamed firmware commands.

3. PARTS REQUIRED

The parts required for this FCO upgrade are found in the following kit:

Part Number	Part Name
512-00322A	KIT, UPGRADE, ECO CA08748, DB, NWP

4. UPGRADE PROCEDURE OVERVIEW

The dual-bay option upgrade consists of the following procedures:

- Cylinder stop sensor upgrade (page 3)
- NELA stop switch upgrade (page 4)
- Pneumatic upgrade:
  - Manifold upgrade (page 5)
  - Pneumatic contact switches upgrade (page 7)
  - Pneumatic plumbing upgrade (page 9)
- Firmware upgrade (page 11)
- Mechanical adjustment (page 12)
- System testing (page 15)

The following paragraphs describe the scope of each of these procedures.

Cylinder Stop Sensor Upgrade

This upgrade adds a reed sensor to the NELA switch stop cylinder assembly to improve the overall performance and reliability of the switch stop block. With the switch stop block position monitored, prolonged time delay is no longer needed, and the speed of the system is increased.

NELA Stop Switch Upgrade

This upgrade adds a sheet-metal tab to the switch stop block to provide the NELA preloader's plate drop sensor a reliable contact surface.

Pneumatic Upgrade:

Manifold Upgrade

This upgrade adds a check valve to the manifold's dual-bay clamp cylinder solenoid port A to allow for proper air relief for the pneumatic contact switches (see "Pneumatic Contact Switches Upgrade," below). This upgrade also removes the B0.1 fixed orifice for the dual-bay clamp cylinder solenoid port B , as it is no longer needed with the use of pneumatic contact switches, which to provide accurate control of the clamp cylinders and the switch stop cylinder in/out actuation.

Pneumatic Contact Switches Upgrade

This upgrade adds pneumatic contact switches to the dual-bay home and away side clamp cylinders (part numbers 500-02969B and 500-02970B) to provide accurate control of the clamp cylinders and the switch stop cylinder in/out actuation. With the pneumatic contact switches installed, the clamp cylinders and the switch stop cylinder will only be actuated when the switches are compressed by the dual-bay arms.

Pneumatic Plumbing Upgrade

This upgrade modifies the pneumatic plumbing to facilitate the proper changes required for the pneumatic contact switches.

Firmware Upgrade

Upgrading the firmware to version **3244FMWp13058.bin** enables the following functional changes to the operation of the dual-bay system:

- After each plate is picked from bay 2, the plate ledge stackers are activated to push the remaining plate stack all the way to the back of the bay 2. This means that the bay 2 plate stack is always be in controlled-stack condition for an upcoming pick.
- The bay switchover algorithm is modified to improve speed of the `switchover bay 2` operation by 5 seconds.
- Support is added for the `DB_StopBlockOUT` sensor to read the NELA switch stop cylinder's reed sensor. This new feature assures that the NELA switch stop is at the "out" position before any plate request is issued for the NELA preloader.

Mechanical Adjustment

The procedure readjusts the position of the dual-bay support arms and ensures that the upgraded hardware is functioning properly.

System Testing

This procedure checks to confirm that the upgraded firmware is functioning properly.

5. PROCEDURES

5.1 Cylinder Stop Sensor Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
220-01436A	CABL,ASSY,SENS,REED SW,NWP	1
220-00844C	CAB,ASSY,LIONEL(J7)-DSEN,NWP	1
18-3017	CAB,TIE,10CM,BLACK	5

1. Check the existing version of the 220-00844 cable assembly. This cable is installed on the home side of the load table and is connected to the home side picker arm up optical sensor and to the home side plate stacker interrupt sensor.

   If the part number of the existing cable is 220-00844**A**, then there is no need to replace this cable. Simply plug the reed sensor (220-01436A) into the "Stacker out home" connector.

   If the part number of the existing cable is 220-00844**B**, then you need to replace this cable with 220-00844**C**, and then plug the reed sensor (220-01436A) into the "stop block out" connector.

2. Route the reed sensor and cable through the machine along with the 5/32-inch pneumatic tubing connecting to the NELA stop cylinder assembly.

3. Slide the reed sensor into the home slot of the NELA stop cylinder with the cable end facing the back of the machine. Ensure the reed sensor is pushed all the way against the load table, and then lock the reed switch in place using the reed switch's locking screw.

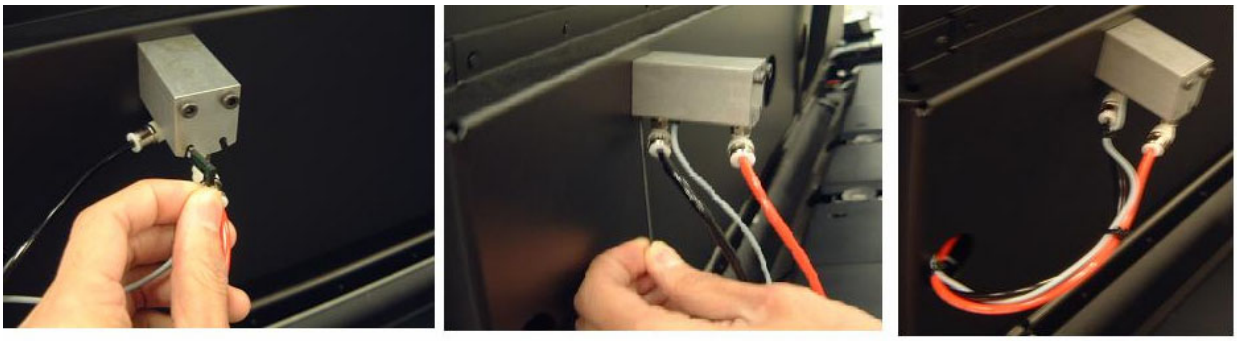


Figure 1: Install reed sensor, lock in place, and secure with cable tie

5.2 NELA Stop Switch Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
252-09904A	FAB, SWITCH STOP EXTENSION, DB, TSM	1
252-06215B	BLOCK,SWITCH STOP,CYL DRIVE,DB,NWP	1
52-4318	SCRW,M4*12,SOCK-BUT,S-BLK	2

1. Turn the air supply off.

2. Remove the existing plastic switch stop using an M3 hex key and a 7-mm wrench.

3. Install the new plastic switch assembly (plastic stop switch, 252-06215B; switch stop extension, 252-09904A; and M4 button head screws, 52-4318).

4. Turn air supply on.

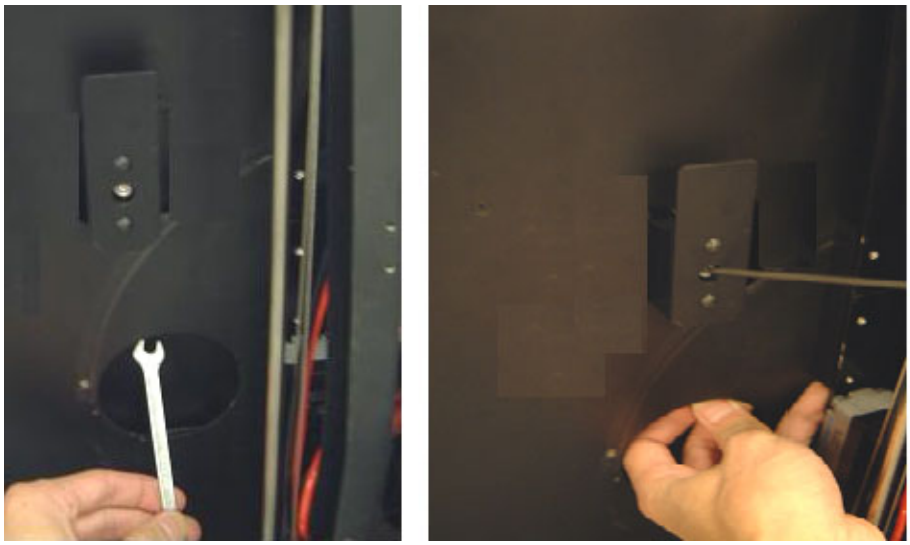


Figure 2: Install stop switch assembly

5.3 Dual-Bay Pneumatic System Upgrade

5.3.1 Manifold Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
55-0208	FTG,AIR,STREET TEE,1/8"NPT	1
334-00115	VLV,CHECK,5/32 TUBE*1/8NPT,TYPE B	1
55-0102	FTG,AIR,TEE,4MM(5/32")TUBE,PBT	1
56-1038	TUBE,AIR,4 OD(5/32"),RED,POLYUTRETHANE	0.1 m
336-00045	FTG,AIR,MALE,1/8NPT,5/32"TUBE,EXT HEX	1

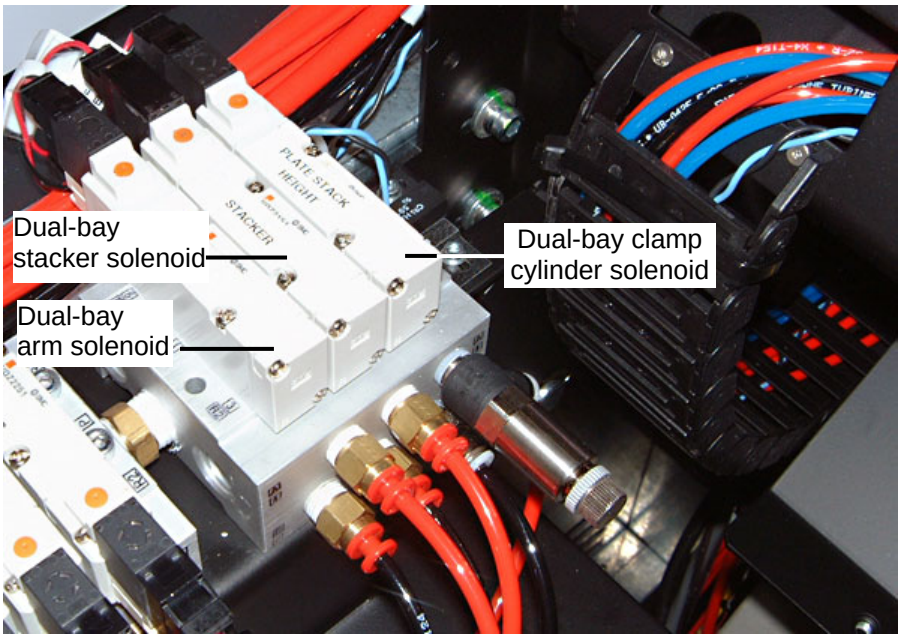


Figure 3: Manifold before upgrade

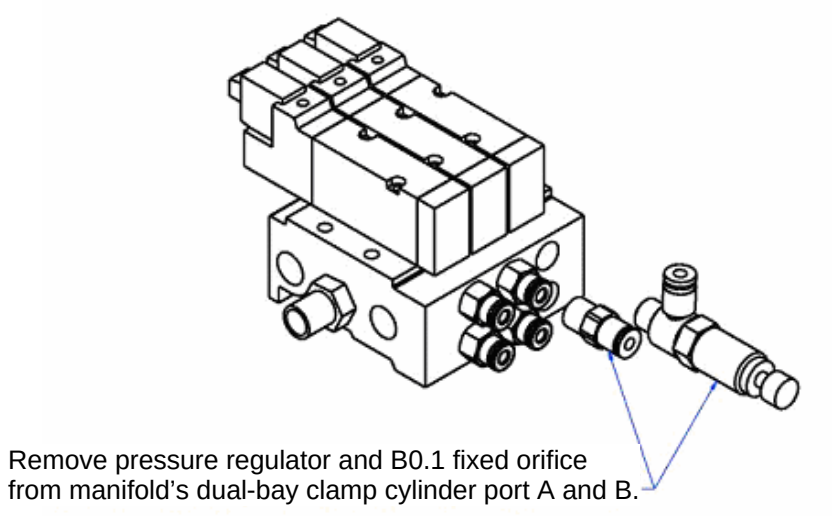


Figure 4: Remove pressure regulator and fixed orifice

1. Turn the air supply off.
2. Remove the pressure regulator (55-0608) and B0.1 fixed orifice (55-1209), from the manifold's dual-bay clamp cylinder solenoid port A and B.
3. Install the 1/8-in. tee fitting (55-0205), applying Teflon® tape to the male thread. Install the check valve (334-00115), quick-connect tee (55-0102), and 5/32-in. red tube (56-1038) into the manifold's dual-bay clamp cylinder solenoid port A.
4. Reinstall the pressure regulator (55-0608) into to open port of the 1/8-in. tee fitting (55-0208). Connect the regulator to the quick-connect tee (55-0102), using the red tubing

(56-1038). Reconnect the red “clamp cyl” tube to the open port of the quick-connect tee (55-0102).

5. Install the 5/32-in. tube male fitting (336-00045) into the manifold’s dual-bay clamp cylinder solenoid port B. Reconnect the black “NELA stop cyl” tube to the 5/32-in. tube male fitting.

6. Turn the air supply on.

7. Set the pressure of the regulator (55-0608) to 50 psi ±10 psi.

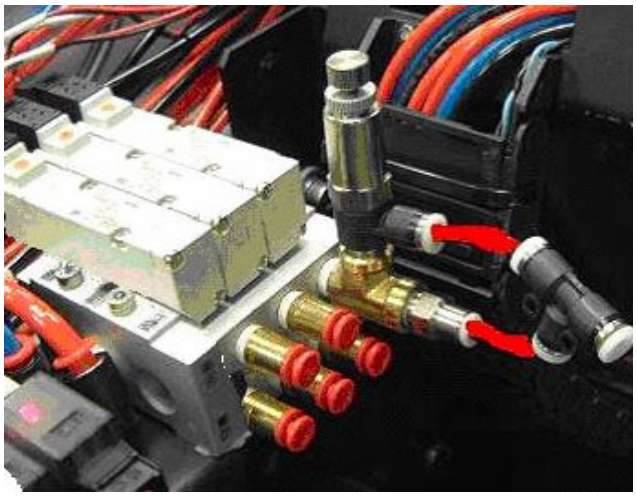


Figure 5: Modified manifold

5.3.2 Pneumatic Contact Switches Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
252-07049B	STOPPER,LWR SUPPORT ARM BLOCK,DB,NWP	2
300-00480	SCRW,1/2"-13NC*1.25",SOCK-SET,NYL	2
500-03359A	ASSY, PNEU, CONTACT SWITCH, DB, NWP	2
55-0168	FTG,YJOINT,AIR,5/32"-5/32"TUBE,QUICK	1
56-1038	TUBE,AIR,4 OD(5/32"),RED,POLYUTRETHANE	1.0 m

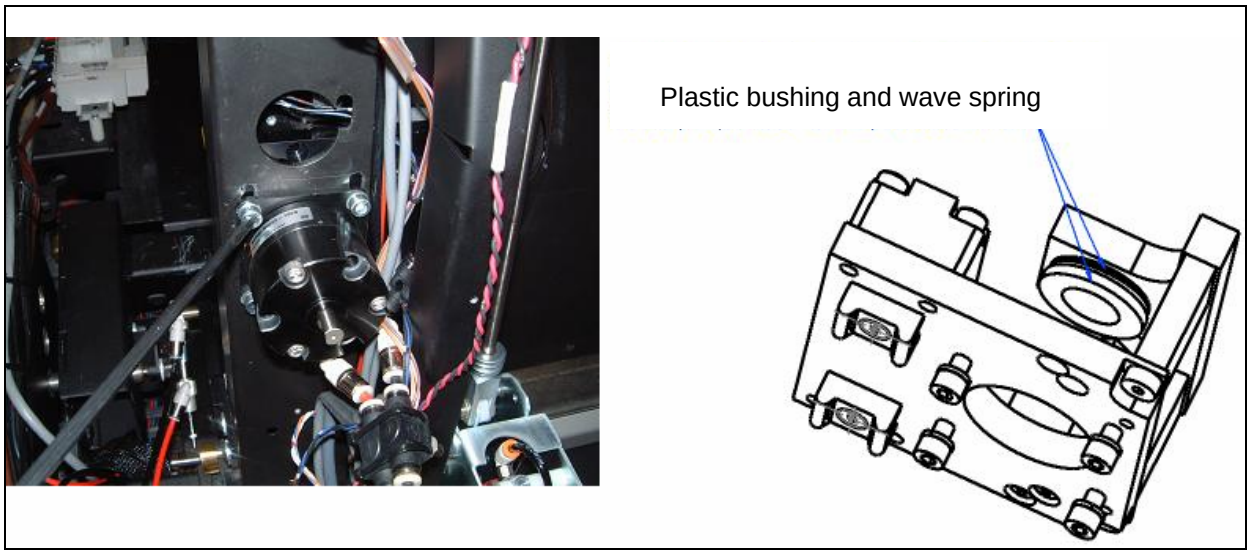


Figure 6: Carefully retrieve bushing and wave spring when removing the rotary cylinder and dual-bay arm

1. Turn the air supply off.
2. Remove the rotary cylinders by removing the M5 screws. Use one hand to support the dual-bay support arm when removing the rotary cylinder. When the rotary cylinder is removed, carefully remove the dual-bay arm and catch the free-floating wave spring and support bushing.
3. Modify the clamp cylinder assemblies (500-02969A and 500-02970A) with the new stopper support arm blocks (252-07049B) and pneumatic contact switch assemblies (500-03359A).

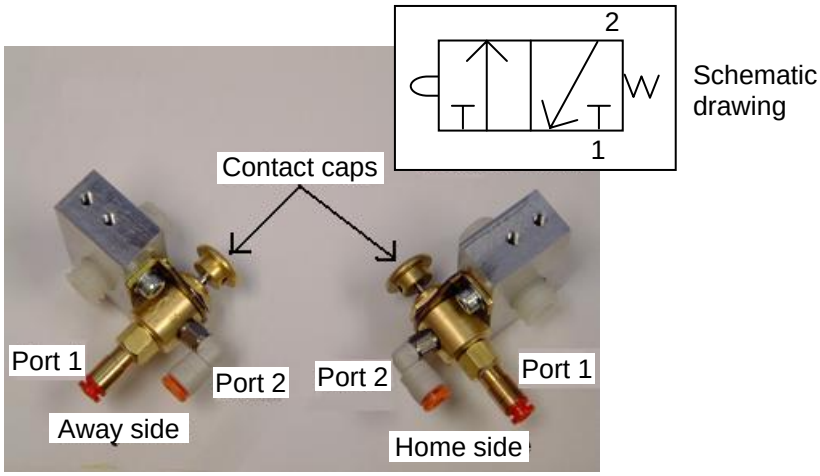


Figure 7: New stopper support arm blocks and pneumatic contact switch assemblies

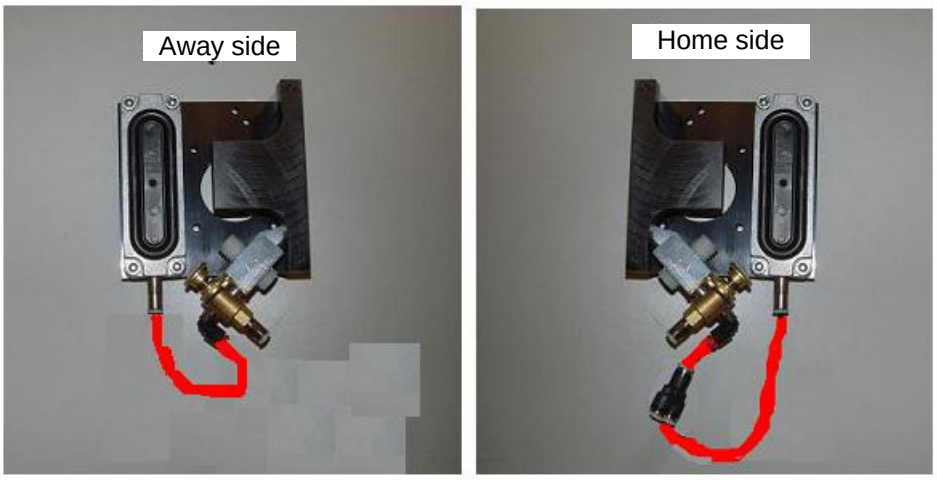


Figure 8: Home and Away clamp cylinder assemblies with new stopper support arm blocks and contact switch assembly

4. Reinstall the home and away clamp cylinder assemblies into load table by inserting them into the load table posts, and then sandwiching the dual-bay support arms between the wave springs/plastic bushings and the rotary cylinders.

5.3.3 Pneumatic Plumbing Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
55-0168	FTG,YJOINT,AIR,5/32"-5/32"TUBE,QUICK	1
56-1038	TUBE,AIR,4 OD(5/32"),RED,POLYUTRETHANE	1.0 m
55-0423	UNION,STRAIGHT,AIR,5/32"-5/32"TUBE	3

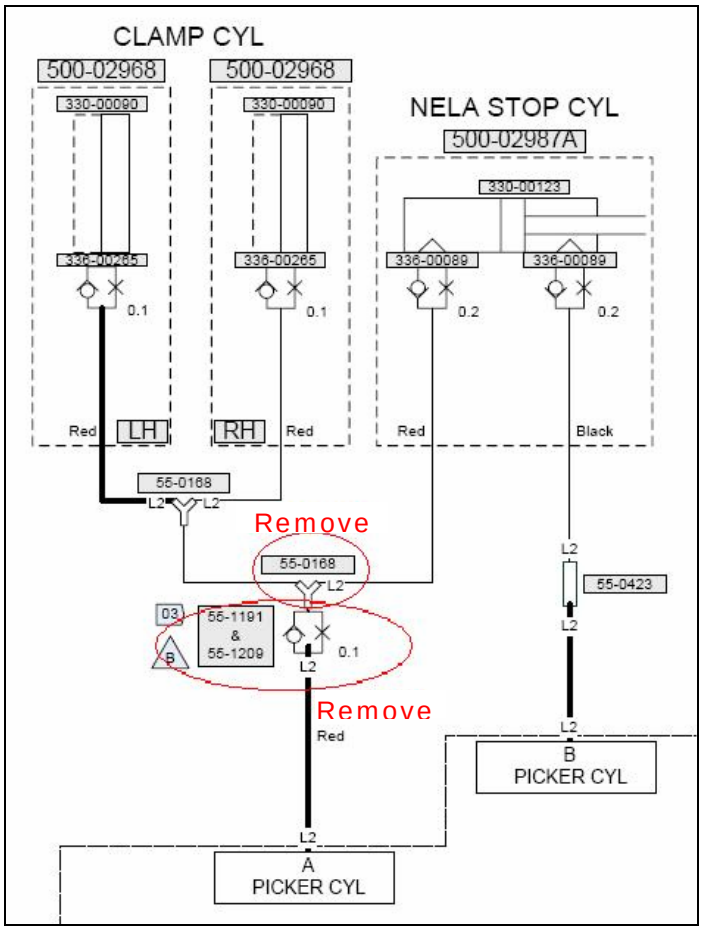


Figure 9: Schematic for existing pneumatic plumbing

To modify the pneumatic plumbing from the manifold's dual-bay clamp cylinder solenoid ports to the clamp cylinder and the NELA stop cylinder connections:

1. Trace the red 5/32-in. tube from the manifold's dual-bay clamp cylinder solenoid port A and remove the 0.1mm fixed orifice assembly (55-1191 and 55-1209), along with the quick-connect Y-fitting (55-0168). See Figure 9.

2. Modify the plumbing according to schematic drawing shown in Figure 10.

   - The red 5/32-in. tube from the manifold's dual-bay clamp cylinder solenoid port A is connected to the y-joint quick connect (55-0168.)
   - The two red 5/32-in. tubes connect the quick-connect Y-fitting to port 1 of both the home and the away pneumatic contact switches.
   - The away clamp cylinder is connected directly to port 2 of the Away pneumatic contact switch (see Figure 8 and Figure 10.)
   - A 0.04 m long red 5/32-in. tube connects the home pneumatic contact switch's port 2 to another quick-connect Y-fitting. The away side clamp cylinder is connected to this quick-connect Y-fitting by a red 180 mm, 5/32-in. tube (see Figures 8 and 10.) Connect the red 5/32-in. tube from the NELA switch stop cylinder to the open port of the y-joint quick connect (see Figure 1 and Figure 10.)

Note: Use the straight union (55-0423) to reconnect tubes if needed.

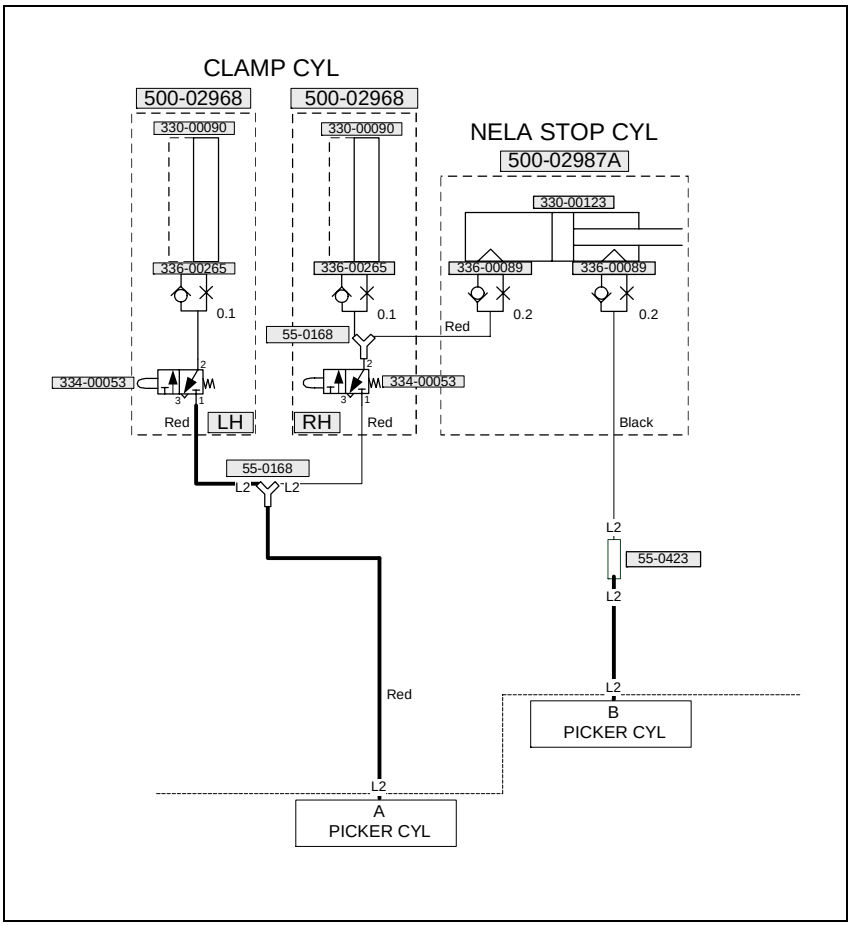


Figure 10: Schematic for required pneumatic plumbing modification

3. Turn the air supply on.

5.4 Firmware Upgrade

Parts required for this upgrade:

Part Number	Part Name	Quantity
3244FMWp13058.bin or	CD, Patch for NELA 1.30.58	1
OR		
651-00592A	Trendsetter NEWS MCE Controlled Release 5.0	1

1. Upgrade device firmware with NEWS patch **3244FMWp13058**.bin main firmware or Controlled Release 5.0.

   If you are installing the controlled release, follow the installation instructions in the Readme/release notes document included on the CR 5.0 CD.

   If you are installing the executable file **3244FMWp13058.bin**, proceed to step 2.

2. Copy the executable file **3244FMWp13058.bin** to a local directory (for example, **D:\Firmware**). This is the executable for the master MCE main firmware and should replace existing version **3244FMWp13056.bin** or **3244FMWp13057.bin** for Trendsetter NEWS CR 4.0 or CR 4.1.

3. In Service Shell, issue the following command to the MCE board:

   `download d:\Firmware\3244FMWp13058.bin`

4. If the platesetter is a Trendsetter NEWS 200, make sure the executable for the slave MCE main firmware is version **MSFWFMWp11609.bin**. If not, then copy **MSFWFMWp11609.bin** to the same local directory (for example, **D:\Firmware**).

   In Service Shell, issue the following command to the MCE2 board:

   `download d:\Firmware\MSFWFMWp11609.bin`

5. Make sure both the Preloader and Dual-Bay options are enabled as shown below, using the **`option`** command in Service Shell:

```
NEWS>> option
Available Options
-----------------
Autoloader option is enabled
Dual-plate option is enabled
Rotator option is disabled
Film-guide option is disabled
Unload-offset option is disabled
Separator-arms option is disabled
ProcessorInterface option is disabled
Preloader option is enabled
No-buzzer option is disabled
Debris UDRCB option is disabled
Debris UDRCL option is disabled
Dual-bay option is enabled
Large-Dual-plate option is disabled
*** Command Complete
```

5.5 Mechanical Adjustment

The home and away dual-bay support arms should be positioned parallel to the plate picker's vacuum cup bar. The bottom of the picker's vacuum cups should be lined up with the bottom of the picker support arms within 3 mm.

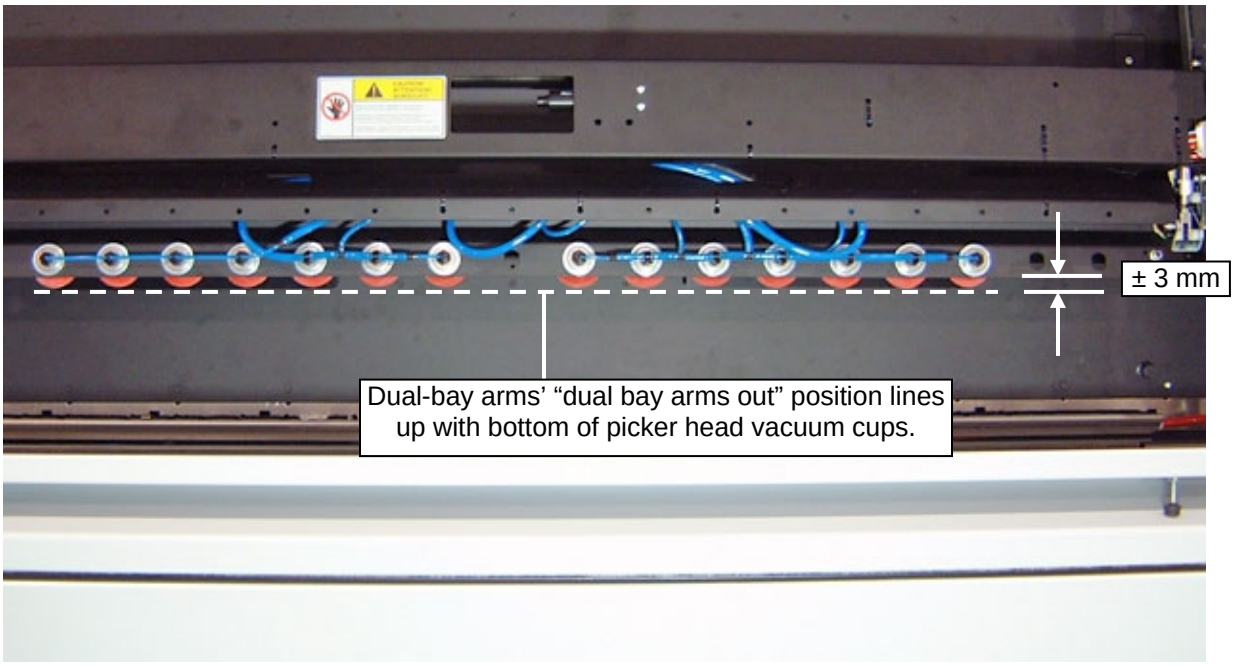


Figure 11: Proper alignment of picker cup bar and dual-bay arms

1. To adjust the vertical position of the home and away dual-bay support arms, loosen the four screws on the rotary cylinder and move the dual-bay support arm/rotary cylinder assembly up and down (see Figure 12).
2. To adjust the angular position of the home and away dual-bay support arms, use a ¼-in. hex key to turn the nylon screw stopper (see Figure 12).

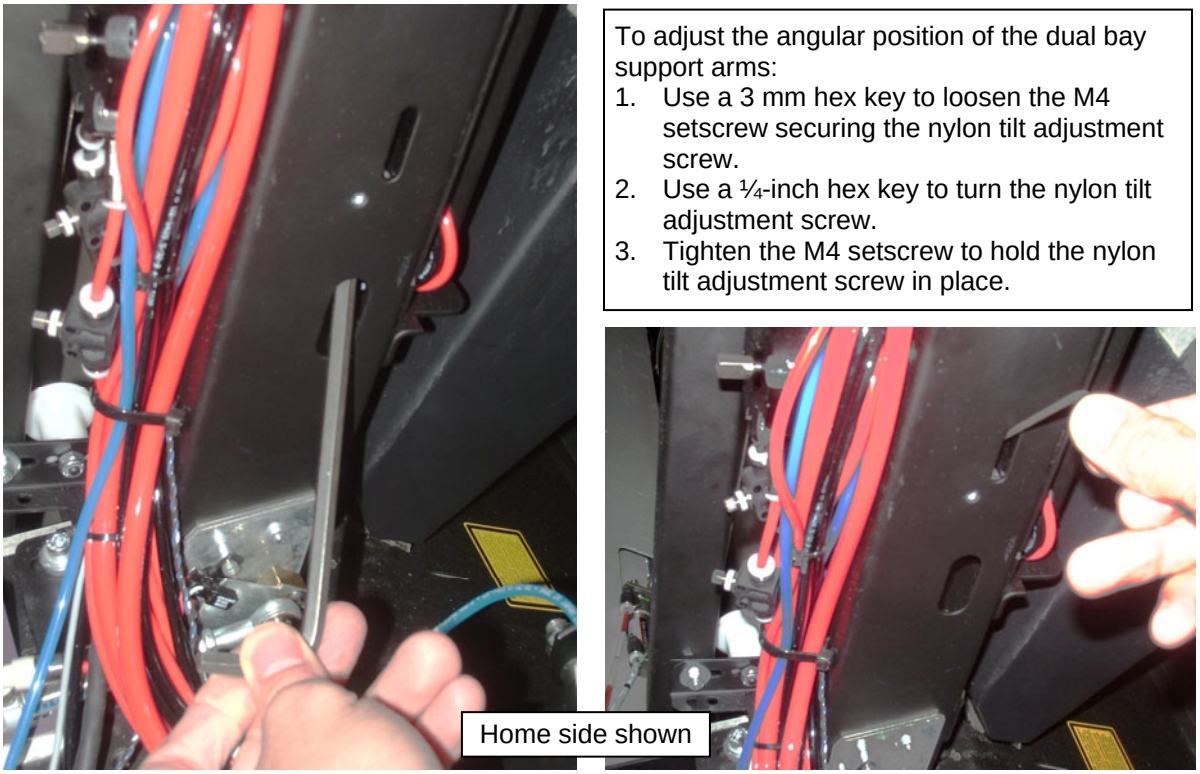


Figure 12: Vertical and angular adjustment of dual-bay support arms

3. Visually inspect the contact switch to ensure that the dual-bay support arms are compressing the contact caps of the pneumatic contact switches (see Figure 7) to a minimum of half way when the dual-bay support arms are in the "out" position.

4. Check the mechanical functionality of the pneumatic contact switches using the following commands in Service Shell:

   a. **`reset`**

   b. **`picker switchoverbay1`**
   (**Note:** In GMCE firmware, this command has been renamed to `dualbay deploy`.)
   The clamp cylinders and the NELA switch stop cylinder should only be actuated to the "out" position when the dual-bay support arms are in the "out" position, compressing the pneumatic contact switches.

   c. **`door unlock`**
   When the safety key is disengaged, the load table should toggle to its default bay 2 position. Since the clamp cylinders and the NELA switch stop cylinder should only be actuated to the "out" position when the dual-bay support arms are in the "out" position, the dual-bay support arms should never be jammed by the switch stop block or the clamp cylinders while safety key has been disengaged or re-engaged. Visually inspect the load table and ensure no mechanical jamming occurs.

   d. **`picker switchoverbay2`**
   (**Note:** In GMCE firmware, this command has been renamed to `dualbay retract`.)
   The clamp cylinders and the NELA switch stop cylinder should be completely retracted (that is, moved to "in" position) before the dual-bay support arms move to the "in" position.

5. The "in/out" speed of the home and away dual-bay support arms should be within 2 to 3 seconds and synchronized. You can adjust the extend speed (`picker arm out`[1]) by turning the red line needle valve. You can adjust the retract speed (`picker arm in`[2]) by turning the black line needle valve.

[1] In GMCE firmware, this command has been renamed to `dualbay arms out`.

[2] In GMCE firmware, this command has been renamed to `dualbay arms in`.

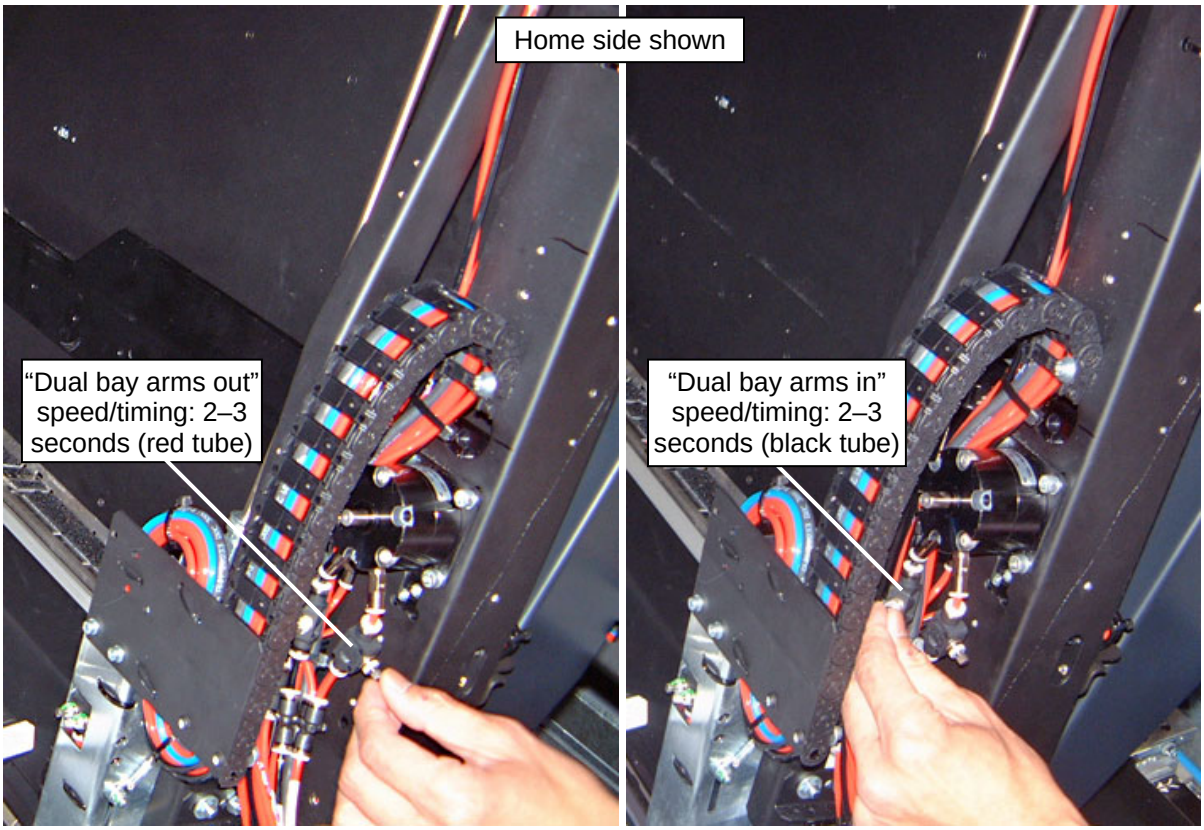


Figure 13: Adjust extend/retract speed of dual-bay support arms

5.6 System Testing

1. In Service Shell, use the **`scan db`** command to examine the state of the `DB_StopBlockOUT` sensor.

   `DB_StopBlockOUT 1` indicates that the NELA switch block out.

   `DB_StopBlockOUT 0` indicates that the NELA switch block is in.

```
NEWS>> scan db
Bit Name                State  Group                Bit Mask
DB_StopBlockOUT          1   DI_DualBay_0100       00000010h
DB_ArmHomeIN            ~0   DI_DualBay_0100       00000020h
DB_PlateStackHeight     ~1 b DI_DualBay_0100       00000080h
DB_ArmAwayIN            ~0   DI_DualBay_0100       00000800h
DB_&PlateStackHeight     1 b DI_DualBay_0100       00800000h
DB_ClampCylinderDrive    1 b DO_DualBay_0000       00000001h
DB_StackerDrive          0 b DO_DualBay_0000       00000002h
DB_ArmDrive              1 b DO_DualBay_0000       00000004h
*** Command Complete
```

2. Use the **`picker switchoverBay1`** command to verify that the NELA switch stop is in the "out" position upon completion of the command. Also check to verify that the `DB_StopBlockOUT` sensor state is `1`.

3. Use the **`picker switchoverBay2`** command to verify that the NELA switch stop is in the "in" position before the dual-bay support arms have moved to the "in" position. Also check to confirm that the `DB_StopBlockOUT` sensor state reads `0`.

4. Submit a job for bay 2 and verify that the plate stackers push the remaining stack of plates to the back of the bay after a plate is picked from bay 2.

6. MARKING THE ECO 100 LABEL

Mark #34 on the Trendsetter NEWS output device's ECO 100 label.