Kodak

Trendsetter NEWS

Dual-bay Option Field Service

Document Number
719-00867A-A-PR01

01 May 2007

Copyright 2007 Kodak. All rights reserved.

Revision History

Revision	Date	Author	Comments
DRAFT 1.0	31 Oct 2005	Henry Ho, Ken Johnston, Elina Pasheva	Initial draft
1.1	17 Nov 2005	Ken Johnston	Added link to Dual-Bay Option spares list (518-01339A)
1.2	06 Dec 2006	Ken Johnston	Revised to include changes for GMCE model Trendsetter NEWS
719-00867A-A	01 May 2007	Ken Johnston	First release with Agile document number. No content changes since Draft 1.2.

CONTENTS

Revision History i

1. Scope 1

2. Background 1

3. Dependencies 1

4. Related documents 1

5. Component overview 2
   - 5.1 Manifold 2
   - 5.2 Dual bay support arms/separator arms 5
   - 5.3 Clamp cylinders 11
     - 5.3.1 Pneumatic Contact Switches 12
   - 5.4 NELA switch block 13
   - 5.5 Home-side and away-side plate stacker 14
   - 5.6 Spares kit 17

6. Firmware 18
   - 6.1 Dual-bay option configuration 18
   - 6.2 Dual-bay option sensor bit names 18
   - 6.3 Dual-bay Option GMCE firmware commands 19

1. SCOPE

This document provides hardware and firmware information related to servicing the Kodak® Trendsetter® NEWS dual-bay option in the field.

2. BACKGROUND

The dual-bay option is available for Trendsetter NEWS output devices that are attached to a third-party preloader. This option enhances automatic operation by allowing operators to:

- Use the preloader (bay 2) to automatically load the main Trendsetter plate bay (bay 1) rather than loading it manually.

  Important: Starting with the rollout of the GMCE Trendsetter NEWS 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*.

  This document uses the GMCE naming convention for bay 1 and bay 2. If you are servicing an MCE Trendsetter NEWS device with the dual-bay option, remember that MCE bay 1 is GMCE bay 2 and MCE bay 2 is GMCE bay 1.

- Have two sizes of plates available for automatic loading rather than having to use the manual bypass procedure.
- Use the Trendsetter NEWS output device in standard automatic mode when it is decoupled from the preloader.

3. DEPENDENCIES

The dual-bay option requires Trendsetter NEWS MCE Controlled Release 5.1 at a minimum. See the Trendsetter NEWS Control/settings page > Controlled Releases on TechPlanet for more information:

http://techplanet.creo.com/output/computer_to_plate/trendsetter_2637/nav/control-set.htm#cont_releases

The dual-bay option is not available as a field upgrade. It is a factory-installed configuration only.

In addition to the specialized parts described in this document, dual-bay NEWS devices also have a LIONEL board mounted in the power box to handle the additional I/O requirements.

4. RELATED DOCUMENTS

For more information on the dual-bay option, see:

- Trendsetter NEWS User Guide, 731-00061B (DRAFT)
  http://techplanet.creo.com/output/computer_to_plate/trendsetter_2637/content/docs/731-00061B-EN-A_DRAFT.pdf

- Trendsetter NEWS Dual-bay Option Specifications, 707-00309A (http://techplanet.creo.com/output/computer_to_plate/trendsetter_2637/nav/overview.htm#specs)
- Replacing the LIONEL board on Trendsetter NEWS Devices with dual-bay option http://techplanet.creo.com/output/computer_to_plate/trendsetter_2637/content/docs/dual_bay_lionel_replace.htm

5. COMPONENT OVERVIEW

This section describes the major components of the Trendsetter NEWS dual-bay option.

5.1 Manifold

Part Number	Part Name
500-03046B	ASSY,MANIFOLD,DB OPTION,NWP

An extra three-port manifold, shown in Figure 1, is added to the home-side autoloader manifold to control the functions of the dual-bay option.

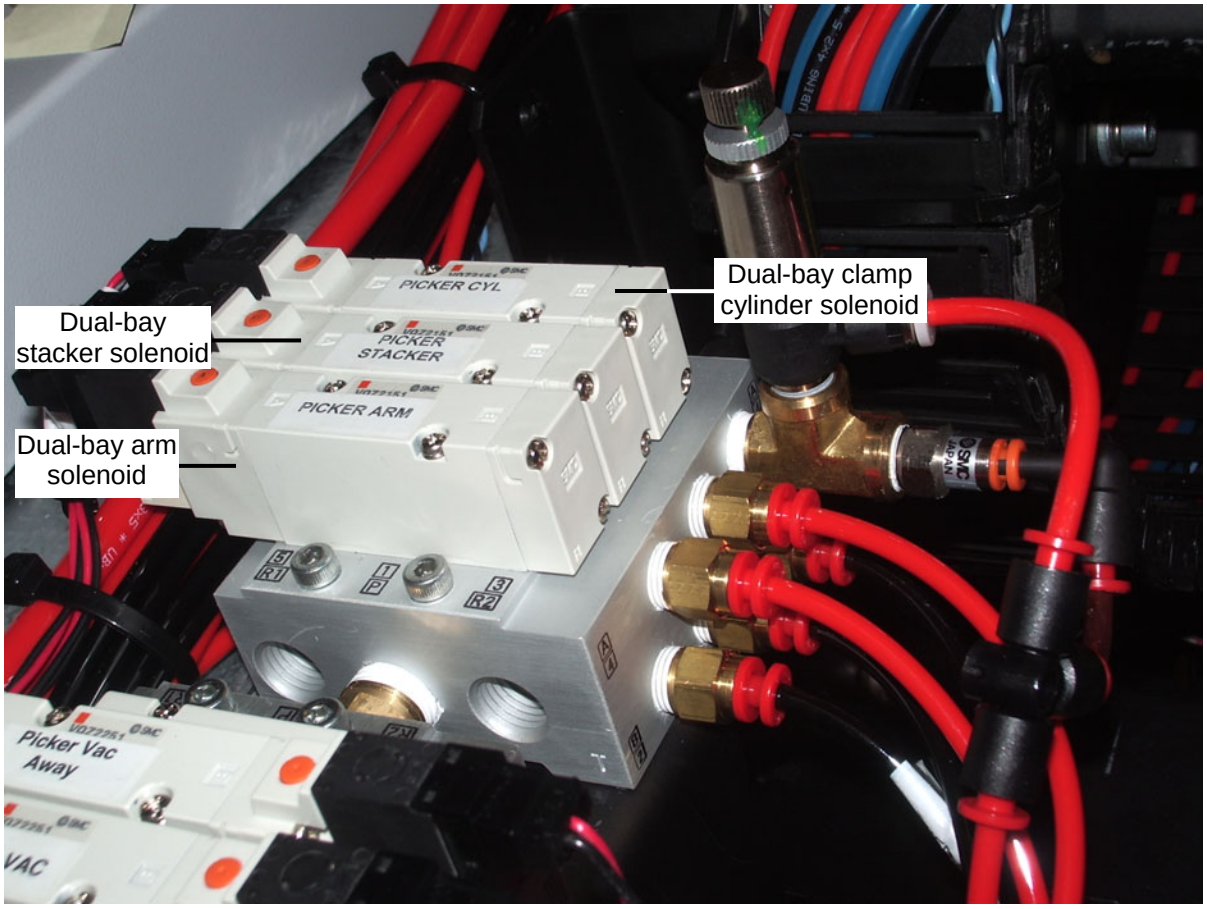


Figure 1: Three-port manifold for dual-bay option

The three single-acting solenoids control the following functions:

- **Dual-bay arm solenoid**
  Activates the home and away dual-bay support arms and separator arms in and out of the load table frame posts. The home and away dual-bay support arms and separator arms create a load bay (bay 2) for supporting broadsheet plates loaded by the preloader.
- **Dual-bay stacker solenoid**
  Activates the home and away dual-bay stackers in and out of the plate support ledge. The dual-bay stacker drive has three functions:
  - The home and away stackers push plates to the back of bay 1 that the preloader has automatically added to this bay.
  - The home-side stacker is connected to a sensor that triggers when bay 1 is full (in other words, it contains 30 ± 1 0.012 in. thick plates).
  - The home and away stackers hold the bay 1 plate stack (or stacks) in place when bay 2 is in use.
- **Dual bay clamp cylinder solenoid**
  Activates the home and away clamp cylinders and the preloader switch block. The dual-bay clamp cylinder drive has two functions:
  - Drives the home and away clamp cylinders, which are secure the dual-bay arms when bay 2 is active.
  - Drives the switch block that contacts the preloader's contact switch, signaling the preloader to drop the plate into bay 2. See Figure 11 on page 11.

  The pressure regulator on port A of the dual bay clamp cylinder solenoid is used for controlling the clamping force of the clamp cylinders. It should be set to default 45 ± 5 psi.

  Figure 2 shows the pneumatic schematic for the dual-bay manifold.

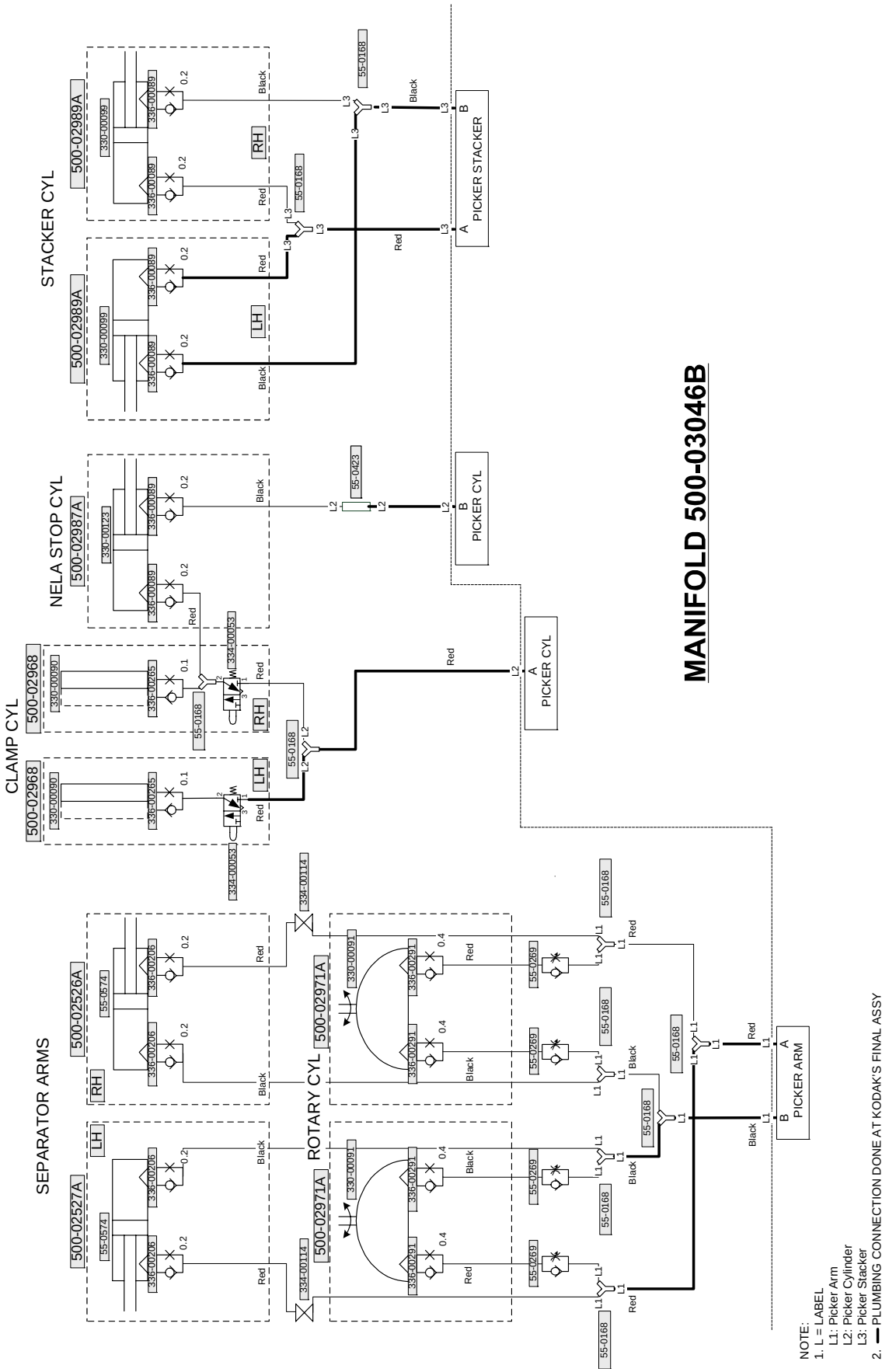


Figure 2: Pneumatic schematic of dual-bay option manifold (500-03046B)

5.2 Dual bay support arms/separator arms

Part Number	Part Name
500-02526B	ASSY,SEPARATOR ARM,RH,DB,NWP
500-02527B	ASSY,SEPARATOR ARM,LH,DB,NWP
500-02973A	ASSY,LWR SUPPORT ARM,LH,DB,NWP
500-02974A	ASSY,LWR SUPPORT ARM,RH,DB,NWP
500-02972A	ASSY,ROTARY CYL W/CPLG,DB,NWP

The home and away dual bay support arms and separator arms are activated by the dual bay arm solenoid drive, and are used to create a load bay (bay 2) for supporting broadsheet plates that are loaded by the preloader. The firmware commands for activating the home/away dual bay support arms and dual bay separator arms from Service Shell are:

```
dual bay arms in

dual bay arms out
```

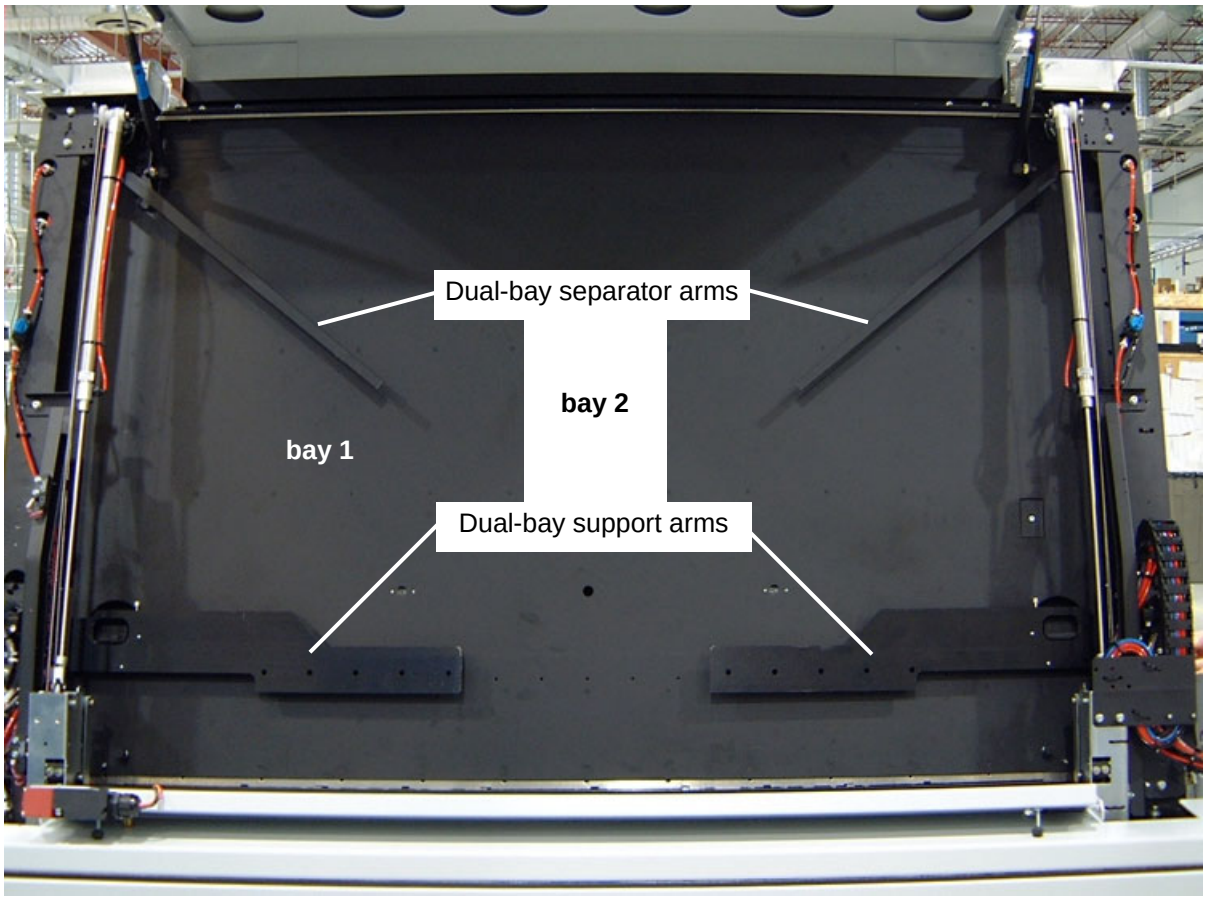


Figure 3: Dual-bay separator and support arms

The home and away dual bay support arms should be positioned parallel to the picker head's cup bar. The bottom of the picker cups should be lined up with the bottom of the dual bay support arms within 3 mm. See Figure 4.

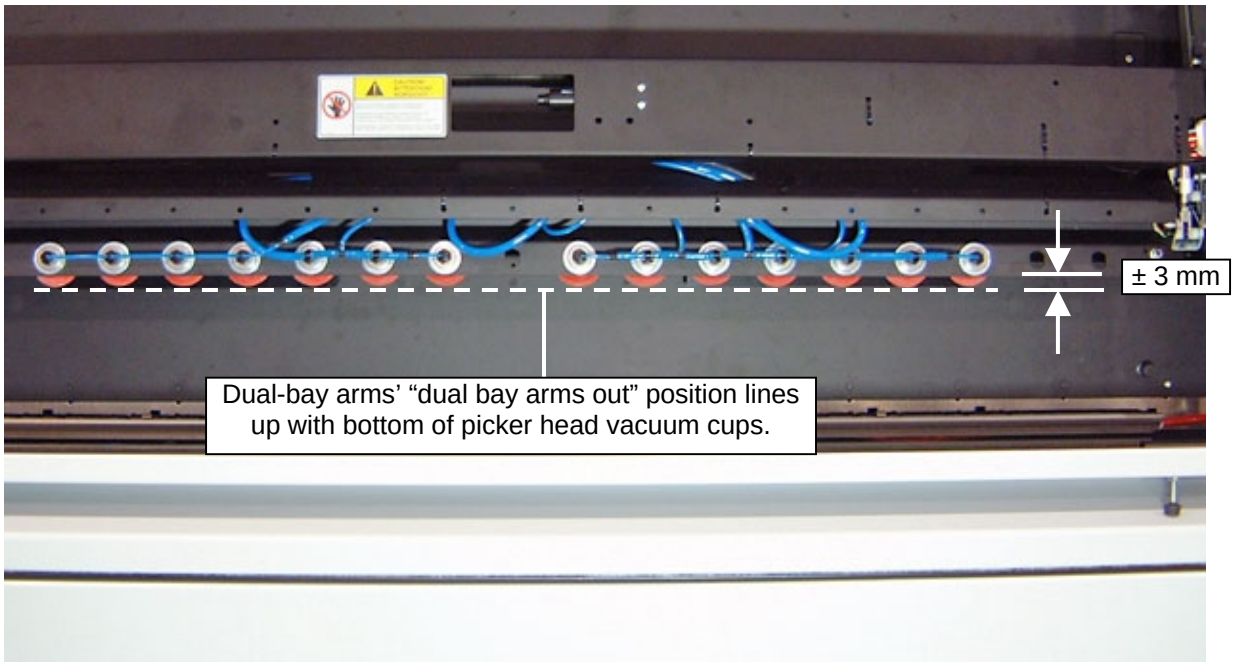


Figure 4: Dual bay arms' "dual bay arms out" position lines up with suction cups

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 5.

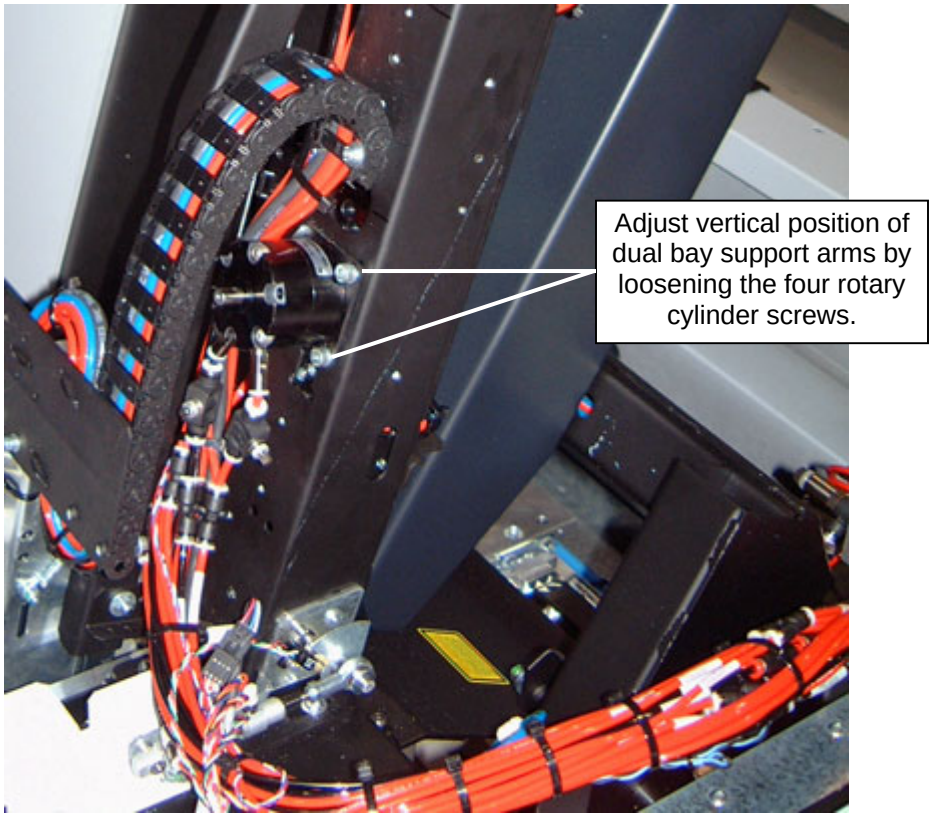


Figure 5: Adjusting the vertical position of the home and away dual bay support arms

To adjust the angular position of the home/away dual bay support arms, first loosen the locking set screw of the nylon screw stopper, and then use a ¼-inch hex key to turn the nylon screw stopper. See Figure 6.

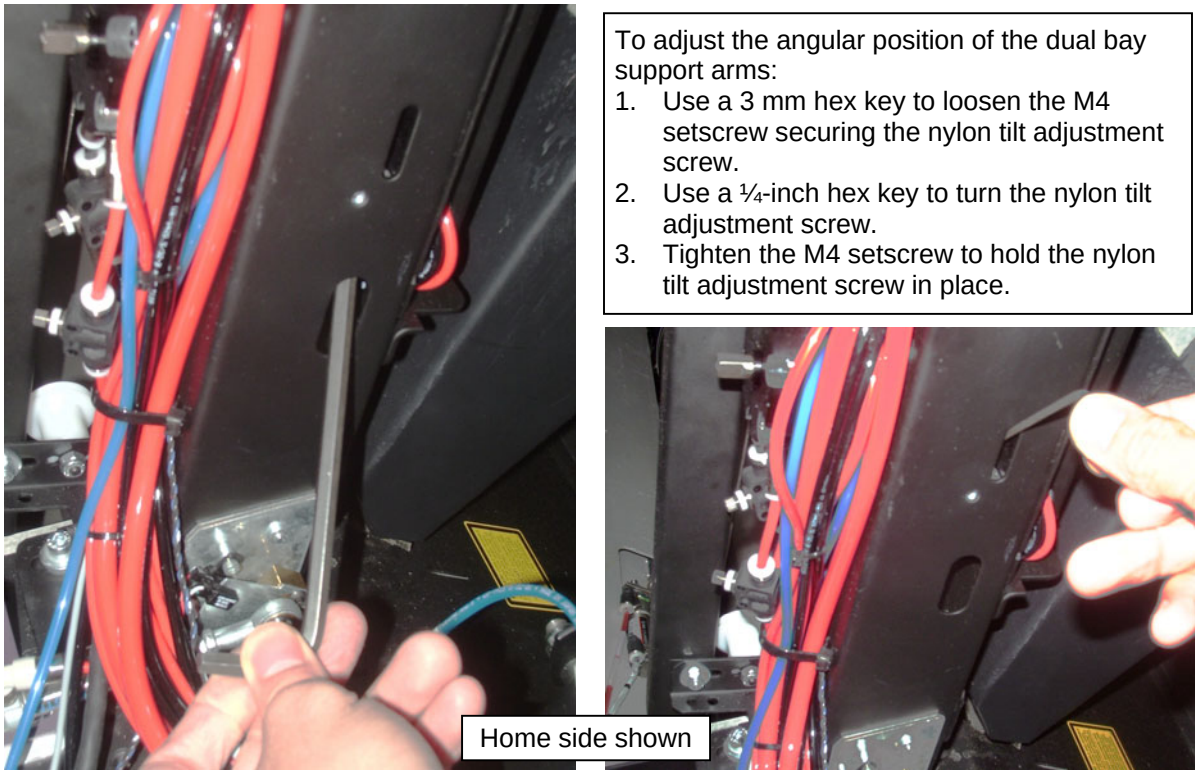


Figure 6: Adjusting the angular position of the home and away dual bay support arms

Ensure that the dual bay support arms do not make contact with and damage the dual bay arms sensors. The dual bay support arms' "in" position can be adjusted by turning and extending the length of the shock damper. See Figure 7.

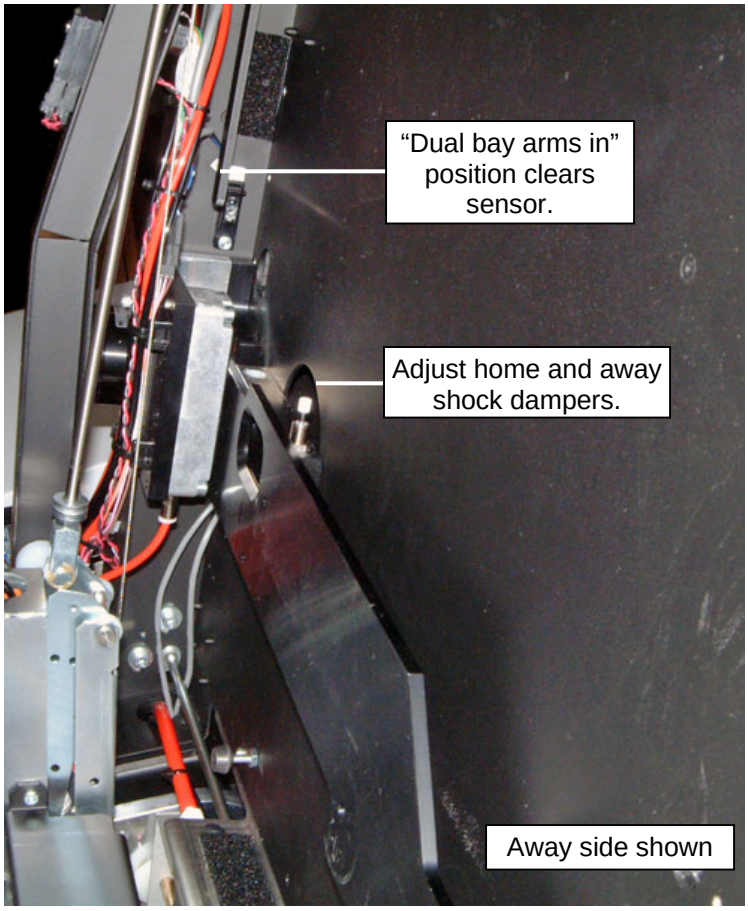


Figure 7: Adjusting the dual bay support arms' "dual bay arms in" position

The extend and retract speed of the home and away dual bay support arms should be synchronized, and should take between 2 to 3 seconds. To adjust the extend speed (command: `dual bay arms out`), turn the needle valve on the red air tube. To adjust the retract speed (command: `dual bay arms in`), turn the needle valve on the black air tube. See Figure 8.

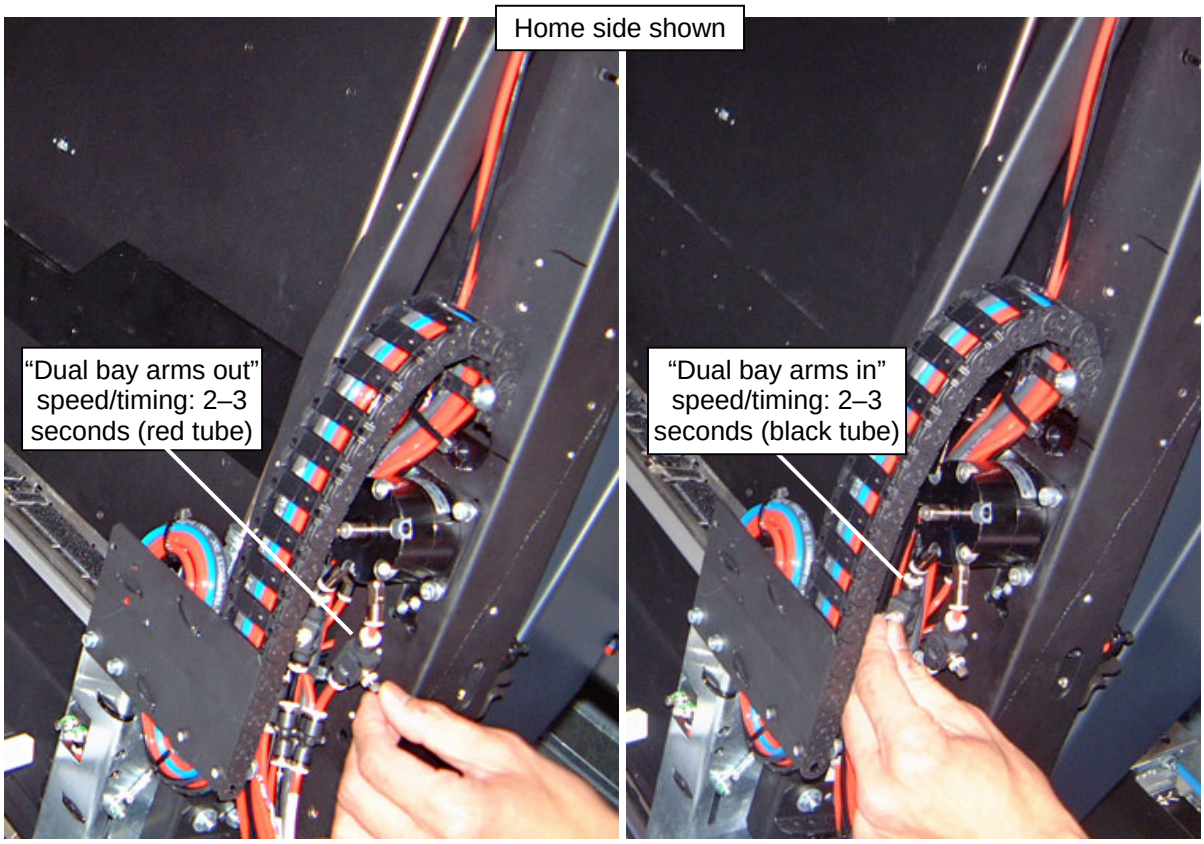


Figure 8: Adjusting the extend and retract speed of the home/away support arms

The home and away dual bay separator arms are used to give additional support to broadsheet plates that are loaded. If there is interference between the dual bay separator arms and the preloader, the dual bay separator arms can be disabled by turning the shut off valves. Interference between NELA® plate preloader and separator arms can cause plate pinching and the plates to "jump" when NELA preloader drops plates onto bay 2.

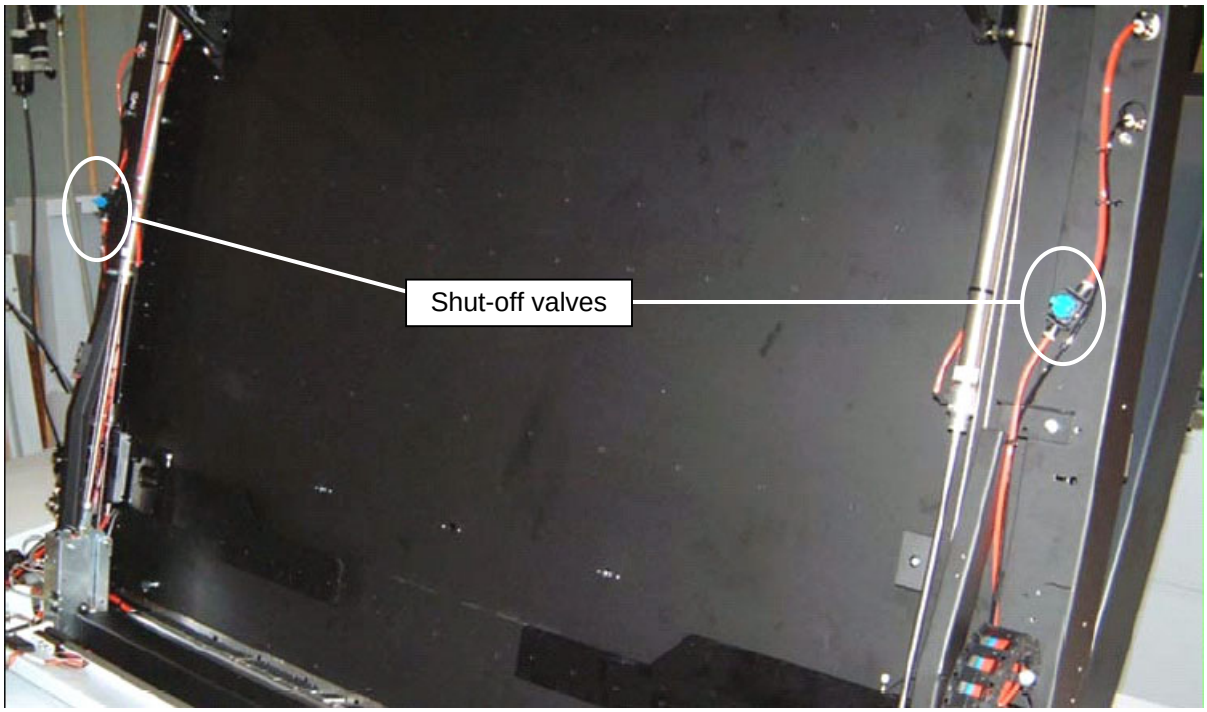


Figure 9: Home/away dual bay separator arms shut-off valves

Ensure that there is no interference between the dual bay separator arms and the dual bay support arms when they are in the retracted position. See Figure 10.

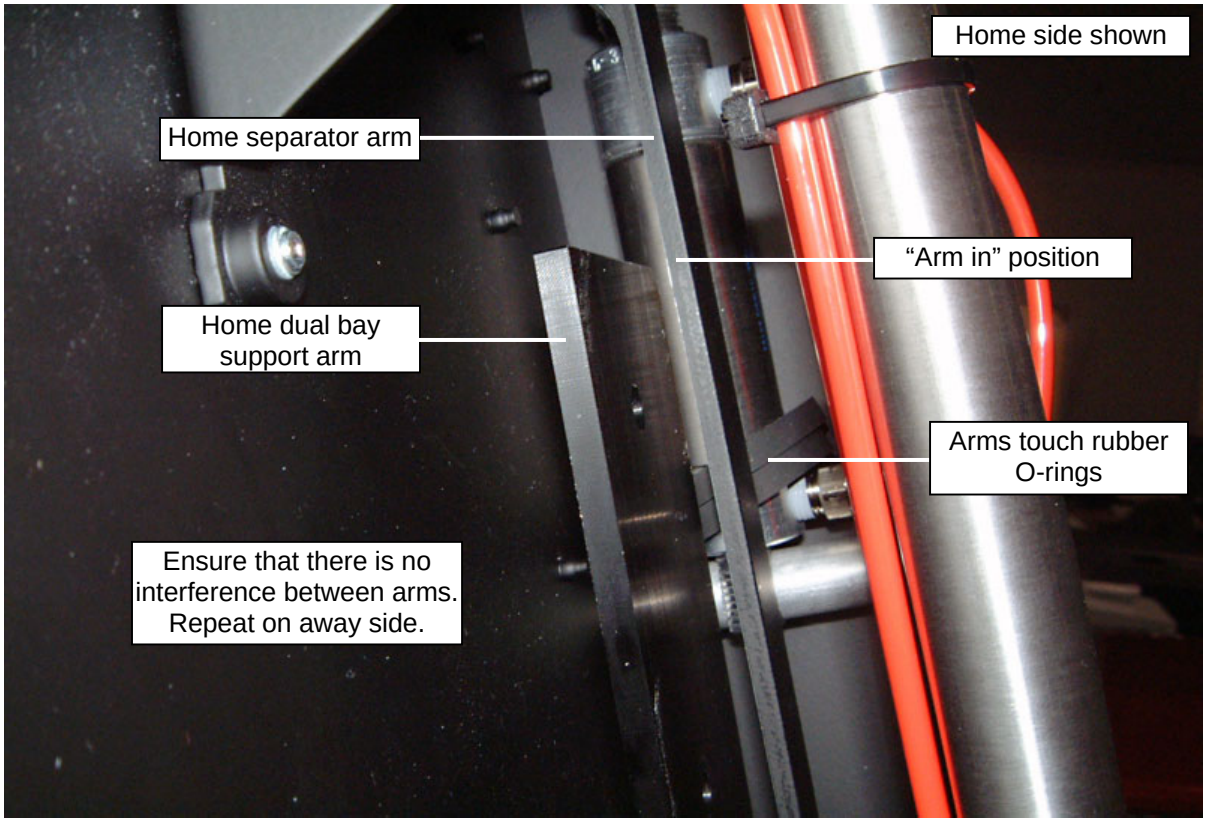


Figure 10: Dual bay separator arms and dual bay support arms in retracted position

5.3 Clamp cylinders

Part Number	Part Name
500-02969B	ASSY,CLAMP CYL,LH,DB,NWP
500-02970B	ASSY,CLAMP CYL,RH,DB,NWP

The home and away clamp cylinders are driven by the dual bay cylinder solenoid. The home and away clamp cylinders are used for securing the dual bay arms when bay 2 is active.

The clamping force of the clamp cylinders are controlled by the pressure regulator on port A of the clamp cylinder solenoid. It should be set to default 45 psi ± 5.

The clamp cylinder should *only* be activated (command: `dual bay cylinder out`) when dual bay support arms are in extended bay 2 position.

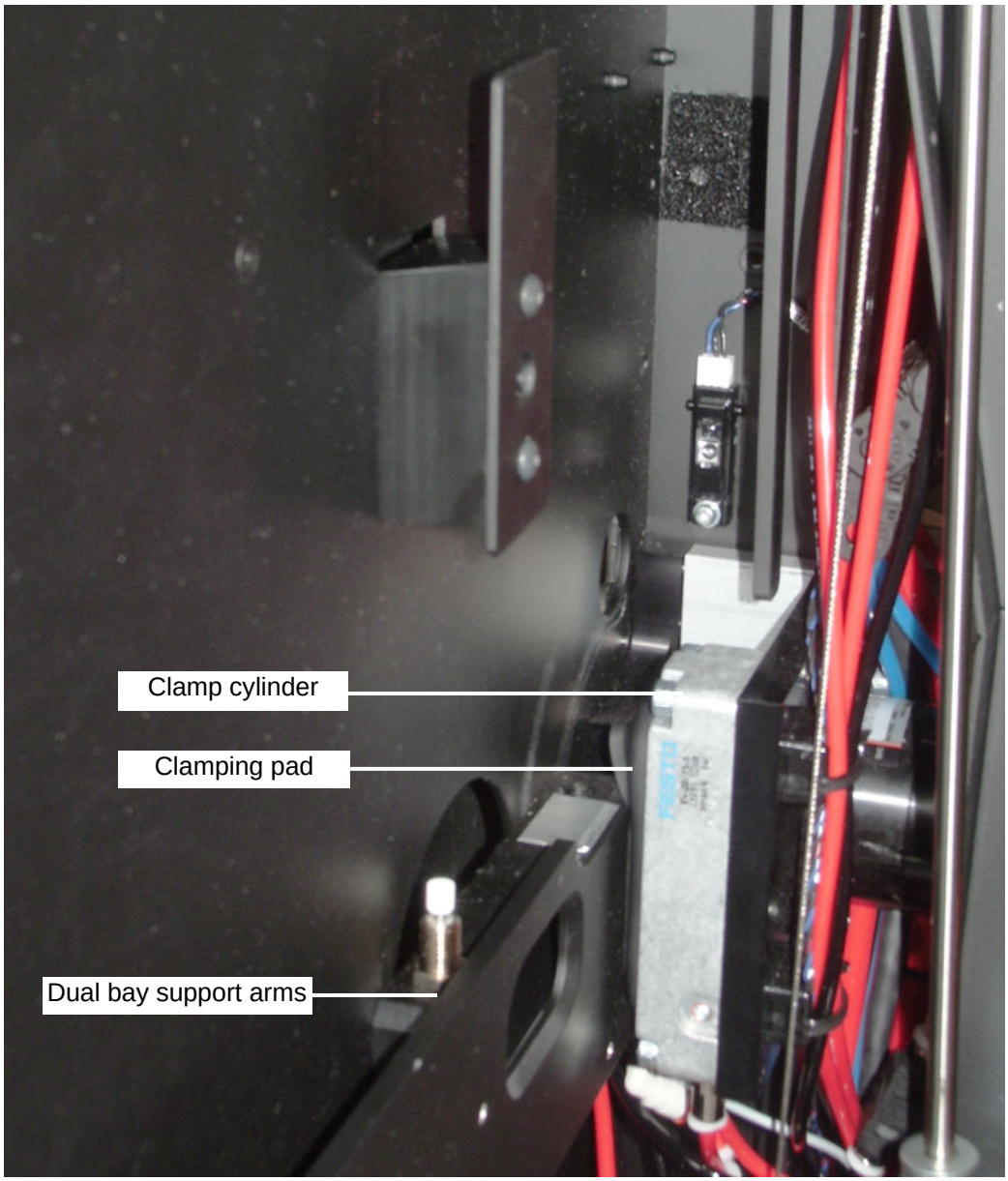


Figure 11: Clamp cylinder, clamping pad, and dual bay support arms

5.3.1 Pneumatic Contact Switches

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

Pneumatic contact switches are added to the clamp cylinder assemblies (500-02969B and 500-02970B) in order to provide accurate control of the clamp cylinders and the NELA switch block cylinder in/out actuation. With the pneumatic contact switches installed, the clamp cylinders and the NELA switch block cylinder will only be actuated when the switches are compressed by the dual bay arms.

See Figure 12 and Figure 13.

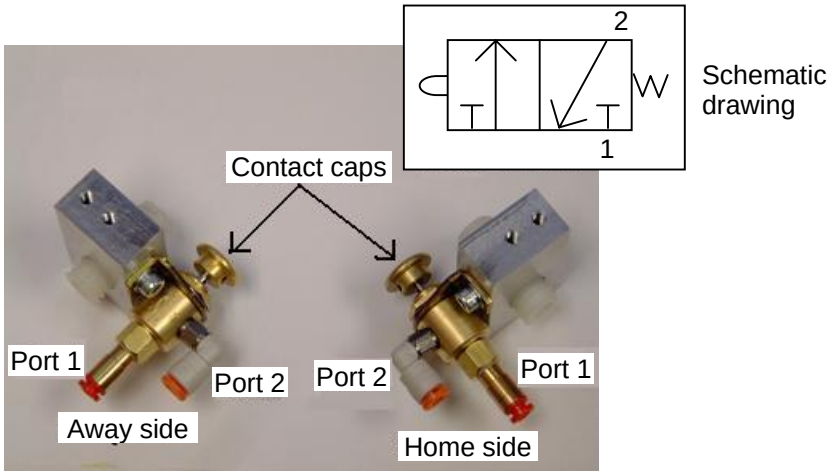


Figure 12: Stopper support arm blocks and pneumatic contact switch assemblies

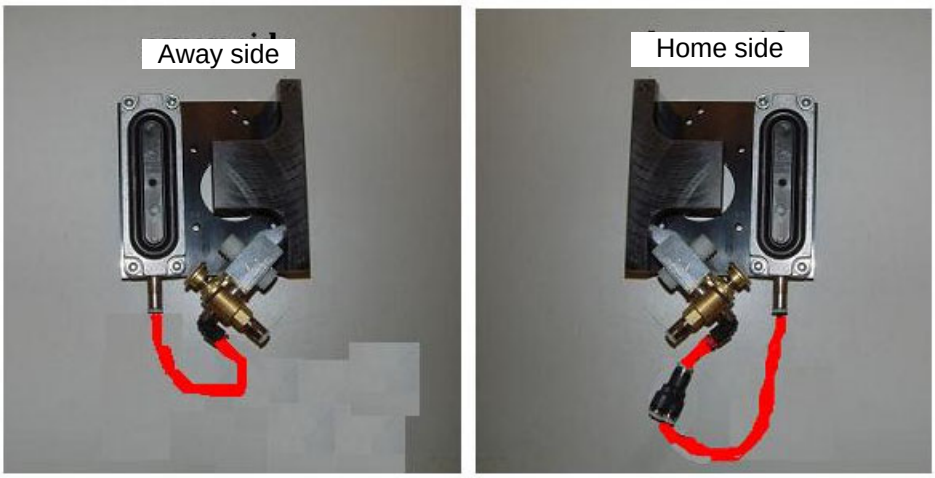


Figure 13: Home and Away clamp cylinder assemblies with new stopper support arm blocks and contact switch assembly

5.4 NELA switch block

Part Number	Part Name
500-02988A	ASSY,NELA STOP CYL,DB,NWP

The NELA switch block is driven by the dual bay cylinder solenoid. The commands for activating the NELA switch block are:

```
dual bay cylinder in
dual bay cylinder out
```

Note: The `dual bay cylinder out` command should *only* be used when the dual bay support arms are in bay 2 deployed position.

When the NELA switch block is in the extended position (command: `dual bay cylinder out`), it should be extended to the same height as the dual bay support arms.

The NELA switch block is used for contacting the NELA preloader's contact switch, signaling the preloader to drop the plate onto bay 2.

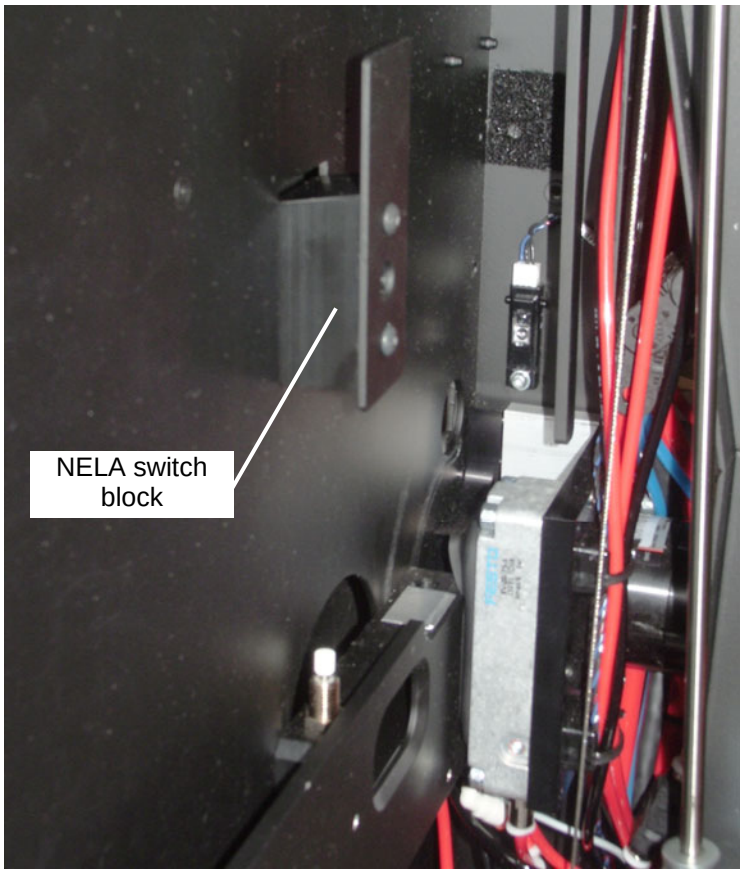


Figure 14: NELA switch block

5.5 Home-side and away-side plate stacker

Part Number	Part Name
500-02371B	ASSY,PLATE STACKER,RH,DB,NWP
500-02994B	ASSY,PLATE STACKER,LH,DB,NWP

The home/away plate stackers are driven by the dual bay stacker solenoid. The plate stackers have three functions:

- The home/away plate stackers are used for pushing plates that are automatically filled to bay 1 by the preloader to the back of the bay.
- The home side plate stacker is connected to a sensor that triggers when bay 1 is full (in other words, it contains 30 ± 1 plates 0.012 in. thick).
- The home and away stackers hold the bay 1 plate stack (or stacks) in place when bay 2 is being used.

The commands for activating the plate stackers are:

```
dual bay stacker in
dual bay stacker out
```

The plate stacker horizontal location relative to the plate support ledge should be adjusted as shown in Figure 15.

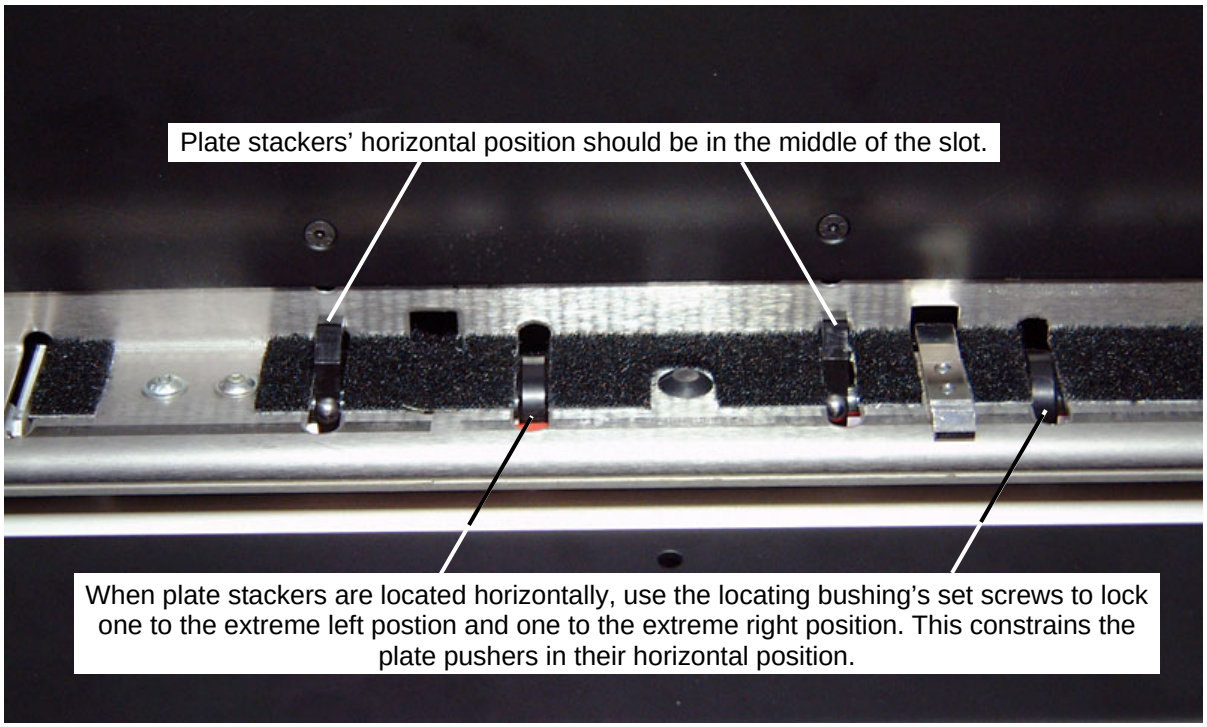


Figure 15: Adjusting the plate stackers' horizontal location relative to the plate support ledge

The plate stacker in/out location relative to the plate support ledge should be adjusted as shown in Figure 16.

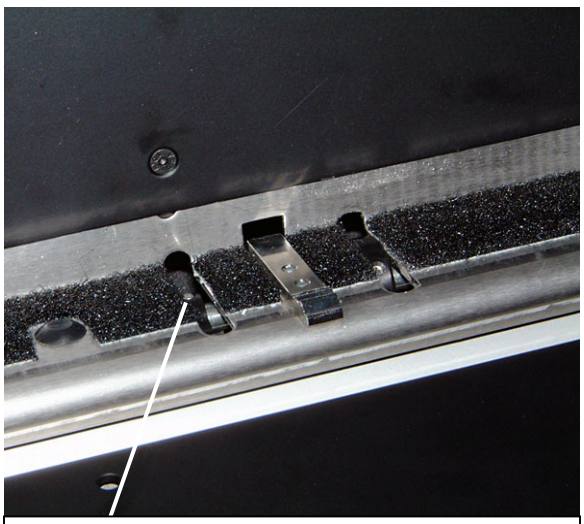


Plate stacker “out” position: Adjust cylnder’s rod end position so that the “out” position is below the plate ledge teeth.

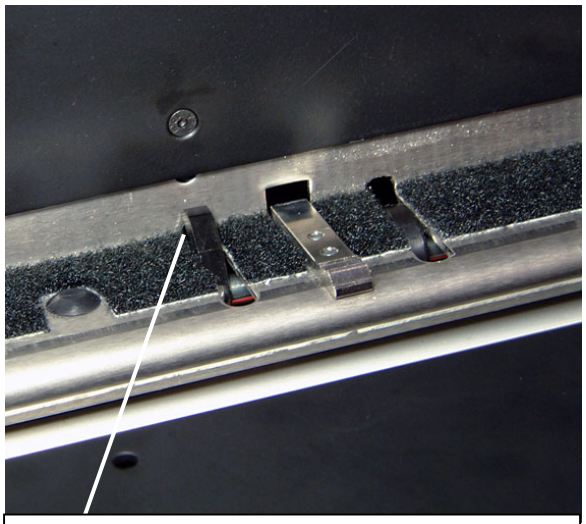


Plate stacker “in” position: Adjust cylinder’s rod end position so that the “in” position touches the vertical side of the plate ledge.

Figure 16: Adjusting the plate stacker in/out location relative to the plate support ledge

The home side plate stacker’s sensor flag is set to trigger the interrupt sensor when bay 1 is full (30 ± 1 plates, 0.012 in. thick). To fine-tune the maximum plate stacker count:

1. Load 30 new 0.012-in. plates on the home side of bay 1.
2. Activate the plate stacker
   `dual bay stacker in`
3. Check the dual bay stacker sensor reading when the dual bay stacker is extended and makes contact with the stack of plates. The interrupt sensor should be unblocked by the plate stacker’s sensor flag when there are only 30 plates in the stack.
4. Add a 31st plate to the stack and activate plate stacker again
   `dual bay stacker in`
   The interrupt sensor should now be blocked by the plate stacker’s sensor flag.
5. Fine-tune the trigger point by loosening the two screws that hold the interrupt sensor and adjusting the position of the interrupt sensor up or down.

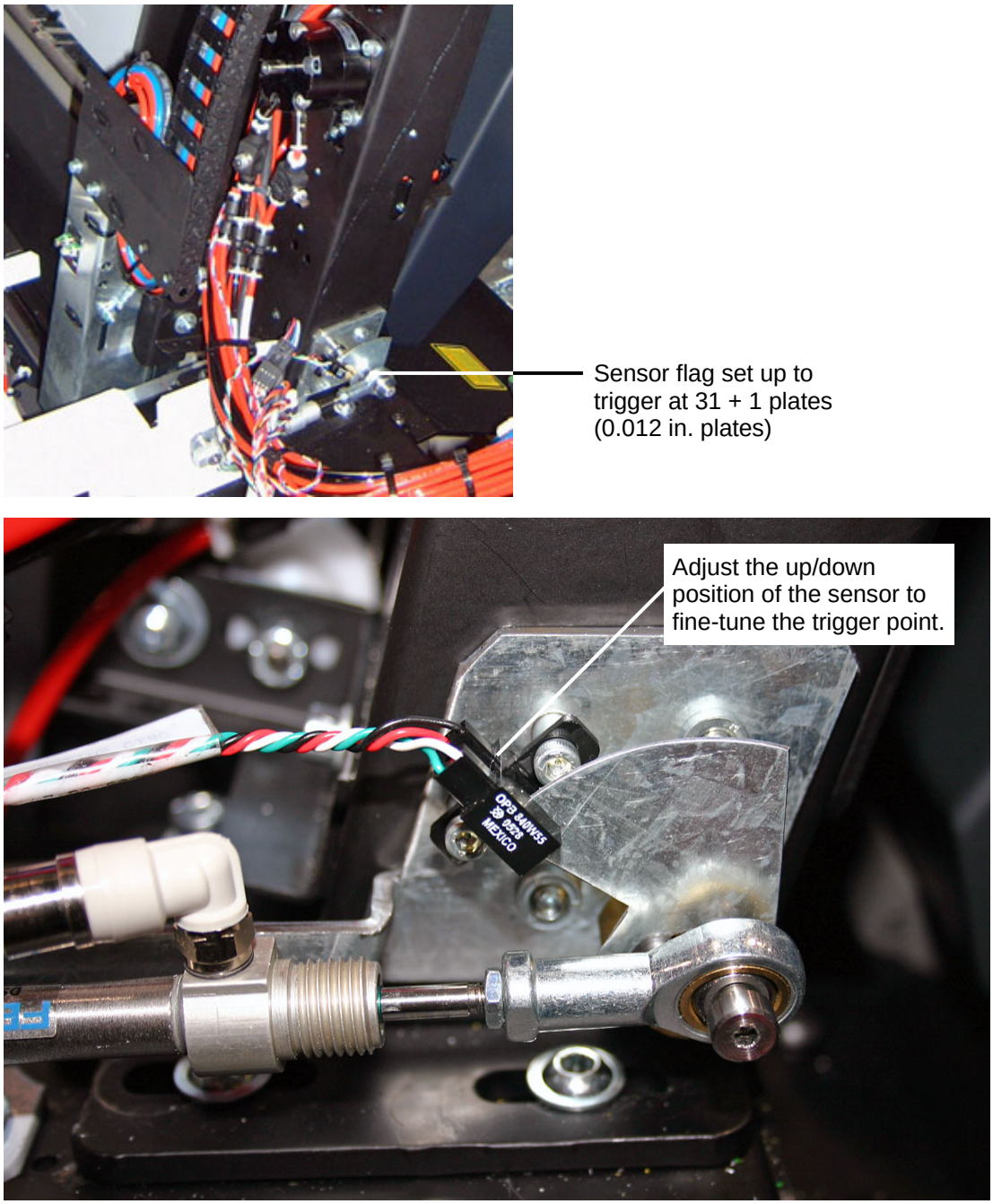


Figure 17: Adjusting the home side plate stacker sensor flag

5.6 Spares kit

A spare parts kit has been created for the Trendsetter NEWS dual-bay option:

- 518-01339A, KIT,SPARES,DB OPTION,NWP

It has been posted on TechPlanet at:
http://techplanetpre.creo.com/output/computer_to_plate/trendsetter_2637/content/docs/518-01339abom.pdf

6. FIRMWARE

6.1 Dual-bay option configuration

For a Trendsetter NEWS device with the dual-bay option, the `autloloader`, `separator-arms`, `preloader`, and `dual-bay` options must be configured as shown in bold text below.

Note:

```
NEWSENG>> option
Available Options
-----------------
Autoloader option is enabled
Dual-head 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
*** Command Complete
```

Note: The preloader option must be enabled before the dual-bay option is enabled.

```
option preloader enable
option dual-bay enable
```

6.2 Dual-bay option sensor bit names

All sensor bit names associated with dual-bay option are prefixed by `DB_`.

```
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           1 b DO_DualBay_0000          00000002h
DB_ArmDrive               1 b DO_DualBay_0000          00000004h
*** Command Complete
```

For more information on sensors and interpreting sensor bit states, see:

- Interpreting MCE Sensor I/O Bit States
  http://techplanet.creo.com/output/computer_to_plate/trendsetter_3244/content/docs/interpreting_i-o_bit_states.htm

- Trendsetter NEWS MCE Commands, Parameters, and Sensor States http://techplanet.creo.com/output/computer_to_plate/trendsetter_2637/content/docs/ts_news_mce_firmware.pdf

6.3 Dual-bay Option GMCE firmware commands

GMCE command	Description	MCE command
`bay time`	Actuates the dual-bay hardware and reports timing of dual-bay operations. (On MCE devices, the plate picker hardware is also timed.)	`picker time`
`bay transfer <count>`	Causes the firmware to transfer plates from the preloader bay (bay 2) to the inner Trendsetter loading bay (bay 1).This command requires both the preloader and dual-bay options to be enabled. The optional `count` specifies how many transfers to perform before stopping. The transfer operation will automatically stop when bay 1 is full. It can be canceled at any time using the `scheduler` command.	N/A
`dualbay`	Displays the status of the dual-bay hardware	`picker`
`dualbay arms [in | out]`	Moves the dual-bay arms in or out. See “Dual bay support arms/separator arms” on page 5.	`picker arm [in | out]`
`dualbay stacker [in | out]`	Moves the dual-bay stacker in or out. See “Home-side and away-side plate stacker” on page 14. Replaces the MCE firmware’s command.	`picker stacker [in | out]`
`dualbay cylinder [in | out]`	Moves the dual-bay clamp cylinders in or out. See “Clamp cylinders” on page 11.	`picker cylinder [in | out]`
`dualbay retract`	Initiates switchover to inner Trendsetter plate bay (bay 1 on GMCE devices, bay 2 on MCE devices).	`picker switchoverbay2`
`dualbay deploy`	Initiates switchover to preloader plate bay (bay 2 on GMCE devices, bay 1 on MCE devices).	`picker switchoverbay1`