Kodak

Replacing Spring Spoilers on Magnus 400

Platesetters

Parts Replacement Procedure

English

731-00806E-EN Rev A

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Internal 731-00806E-EN Rev A

Revised September 2007

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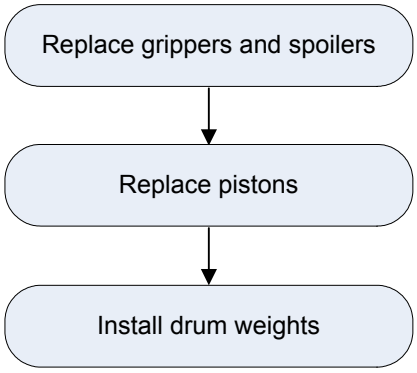
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Products

- Kodak® Magnus™ 400 platesetter
- Kodak Magnus 400 Quantum platesetter

Background

This procedure describes how to remove the spoilers and replace them with spring spoilers on all Magnus 400 platesetters. It takes approximately six hours and includes the following steps:



Requirements

- Hex jig or long hex key
- Needle-nose pliers
- Loctite® 242 adhesive (to be applied on all screws)
- Spoiler spring jig

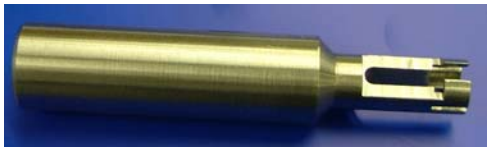


Figure 1: Spoiler spring jig

Procedure

Note: In this procedure, the right and left sides of the platesetter are relative to the unloading side of the platesetter.

Before you begin:

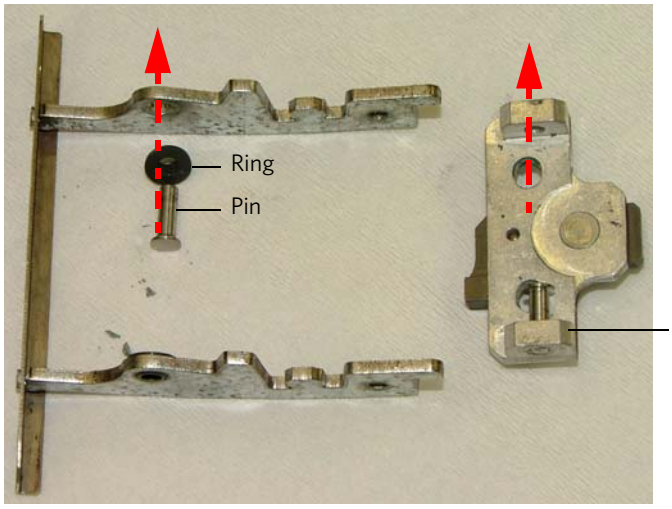
1. Check the contents of the kit and verify that all required components for the customer's configuration are included. See *Parts List* on page 31.
2. In the Kodak Magnus 400 Controller software, send the carriage to end position (EP).
3. Open the back door of the platesetter, and then quit the Magnus 400 Controller software.
4. Turn off the platesetter and disconnect the main power.
5. Remove the back panel.
6. Open the left and right side doors.
7. Disconnect the conveyor connector.
8. Remove the unloading tray.

   Note: Place a large sheet of paper or nylon under the drum area to prevent small parts from getting lost if they fall.

Assembling Spring Spoilers

Assemble the three types of spoilers shown in Figure 2, Figure 3, and Figure 4. Use the *Parts List* on page 32 and Figure 31 on page 34 to help you identify the parts of the spoilers.

When assembling the spring spoilers, first insert the small rubber ring, followed by the spoiler bracket, and then the pins. Push the pins in so that they point toward the grippers.



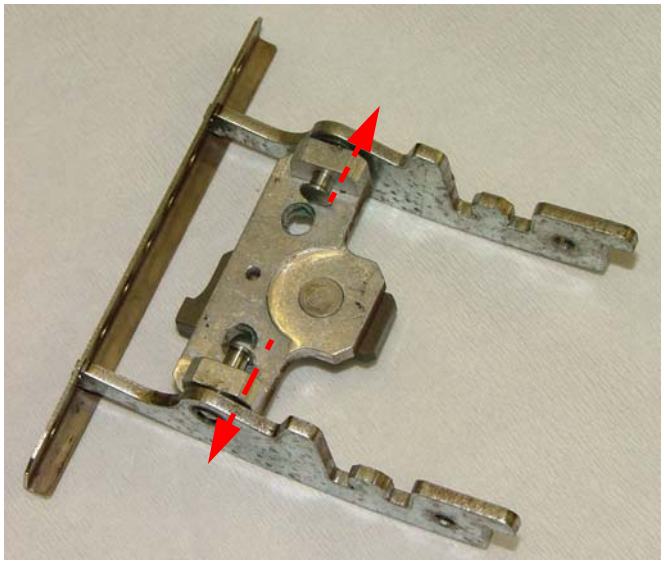


Figure 2: Inner spoiler before and after assembly

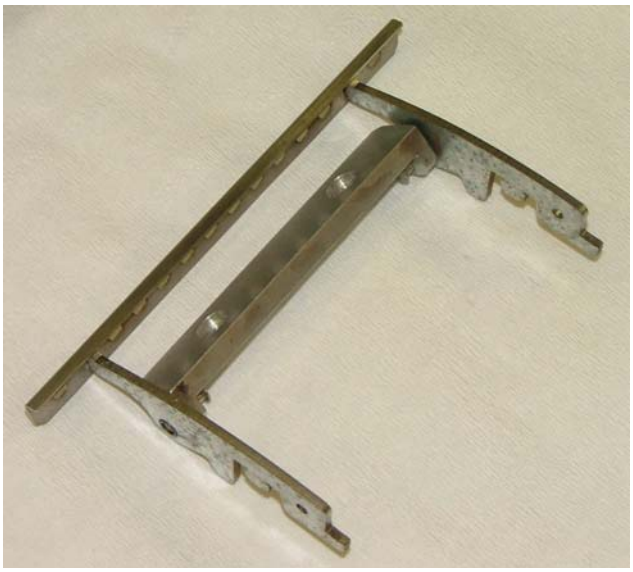
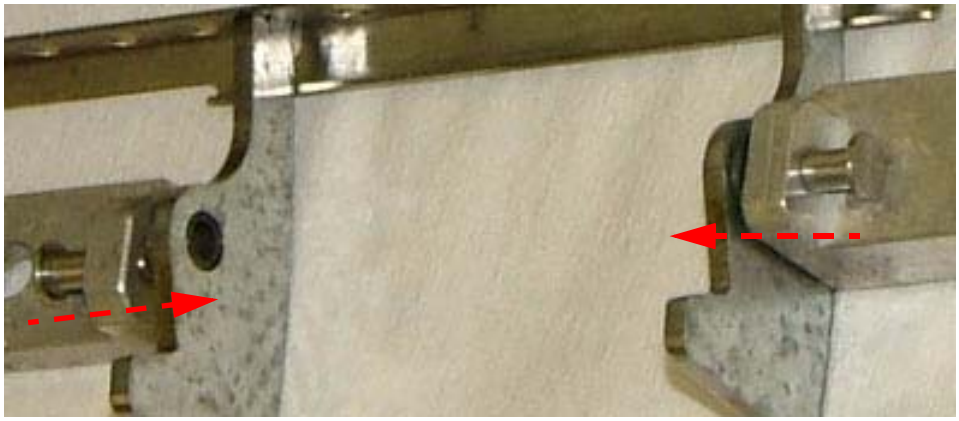


Figure 3: Middle spoiler





Push the pins in the direction of the arrows

Figure 4: Outer spoiler

Replacing Grippers and Spoilers

This section describes how to replace the grippers and the spoilers, and to install the spoiler springs.

Note: Before you insert and tighten any screws, spread a bit of Loctite® 242 adhesive (part number 480C10192) on the tip of the screw.



Figure 5: New gripper assembly

To replace the grippers:

1. On each of the six gripper assemblies, loosen the two hex screws and remove the grippers with the screws, but leave the spoilers in place.

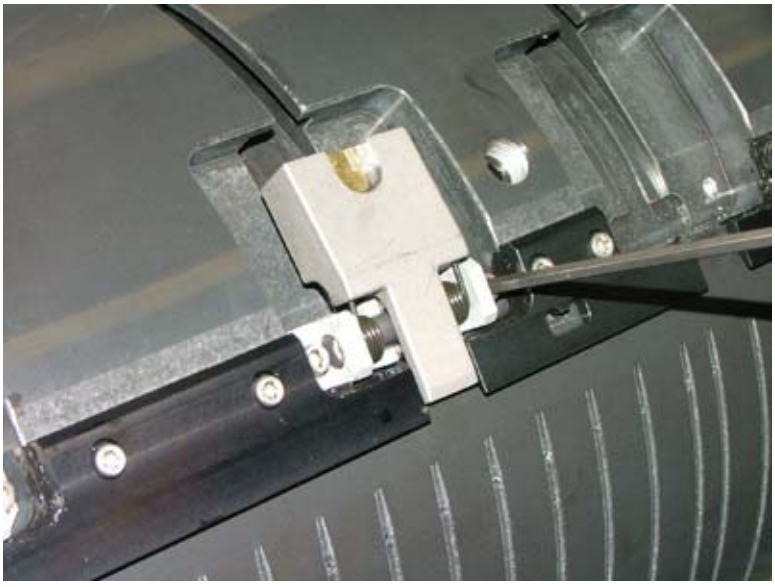


Figure 6: Loosening the gripper screws

2. Insert the new gripper assemblies and tighten the new, shorter hex screws (without spring washers).



Figure 7: New gripper installed

3. Verify that the gripper base is tightly secured against the drum surface with no gaps.

To replace the spoilers:

1. Manually load a large plate (minimum size 9 in.) into the head grippers and verify that the plate touches both outer registration pins.

   Note: You can operate the air pressure from the manifold.



Figure 8: Checking that the plate touches the outer registration pin

2. On both sides of the platesetter, remove the two hex screws from each of the two outer spoilers and remove the spoilers.
   Make sure to scrape off any remnants of the room temperature vulcanizer (RTV) sealant.

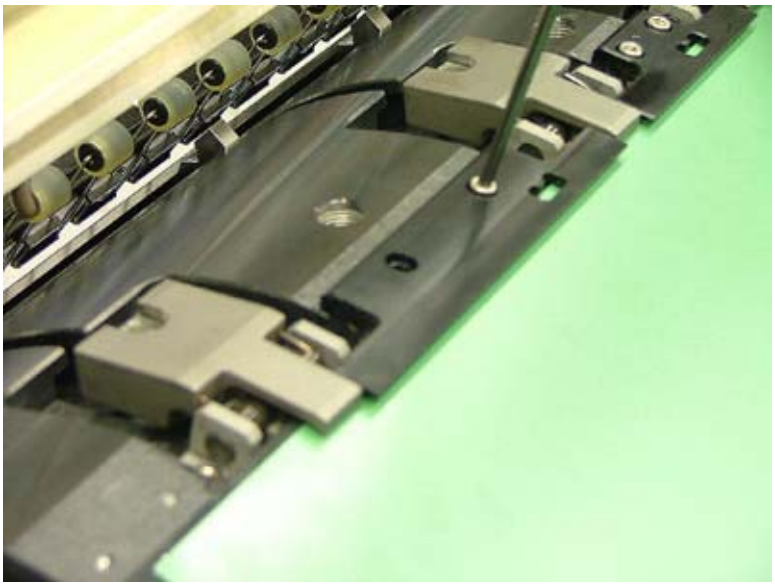


Figure 9: Removing the spoilers

3. Before you install the new spoilers, on the two outer spoilers, slightly loosen the nuts on the registration pins and pull the pins out a bit. This prevents the pins from hitting the plate and causing it to move.

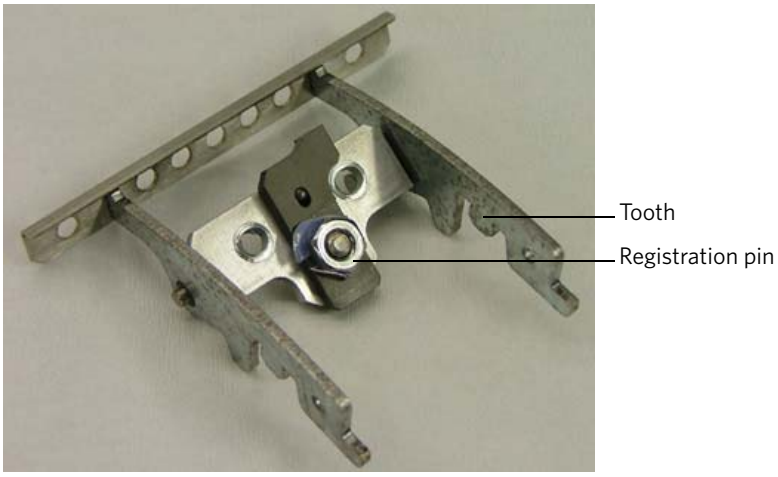


Figure 10: Inner spoiler with registration pin

4. Insert the two new outer spoilers and secure them with the new, shorter hex screws (without spring washers).



Figure 11: Installing the outer spoiler

Note: Verify that the spoilers are slightly loose and can move freely, without touching the grippers.

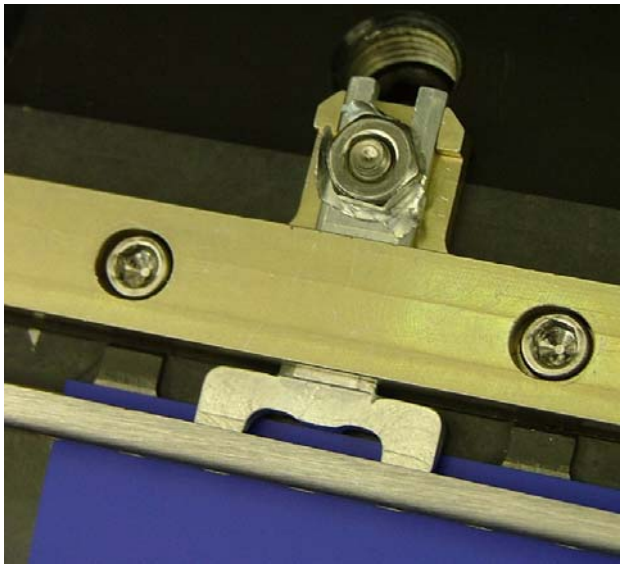


Figure 12: Outer spoiler

5. Slide the registration pin until it touches the plate edge, and then tighten the registration pin nut. Do this for both registration pins.

   Note: Verify that the registration pins are as far as possible from the punch holes.

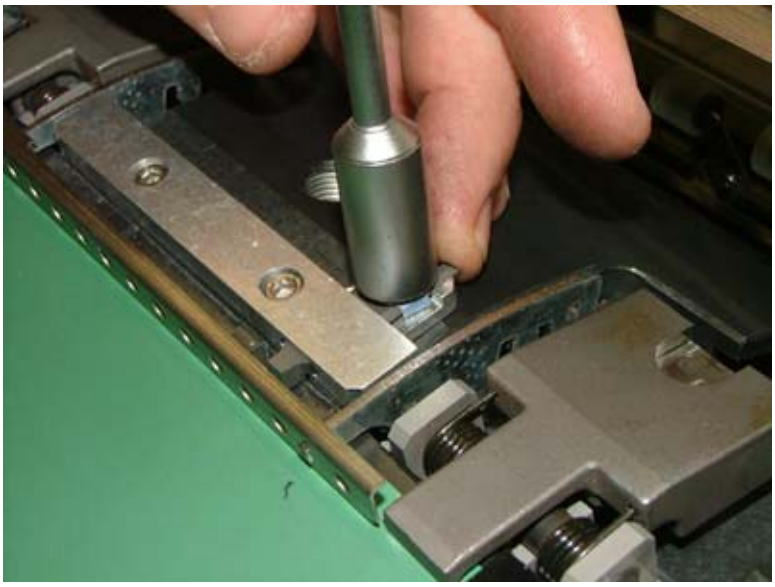


Figure 13: Using the jig to tighten the registration pin nut

6. Push down one side of the registration-pin locking disk to prevent the nut from coming loose. Then push the other side up, as shown.

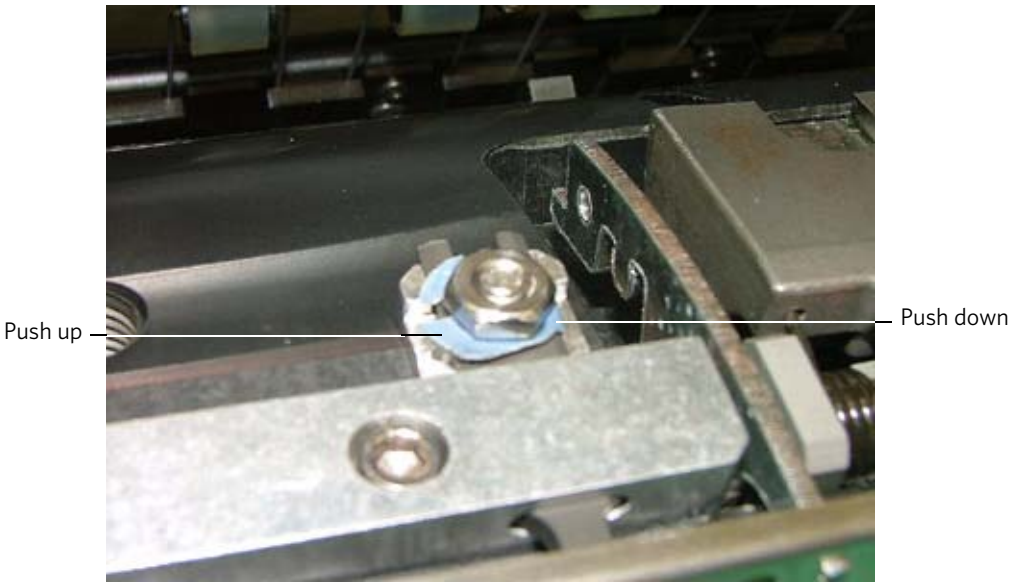


Figure 14: Registration-pin locking disk

7. Release the plate from the grippers.

8. Manually load a small plate (maximum size 9 in.) into the head grippers and verify that the plate touches the two inner registration pins.

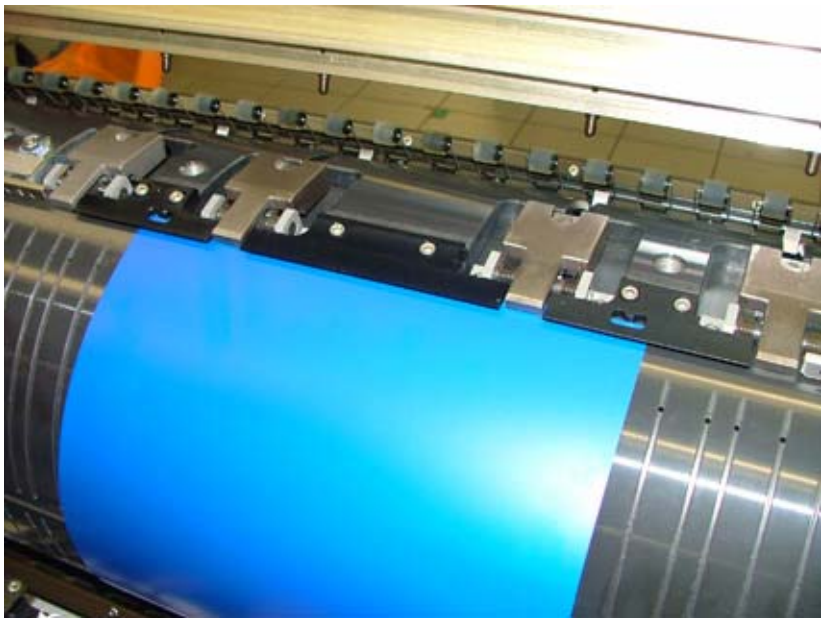
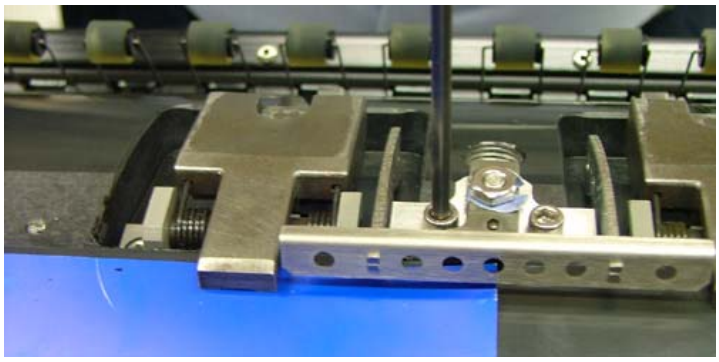


Figure 15: Small plate loaded

9. Repeat steps 4–7 for the three inner spoilers.



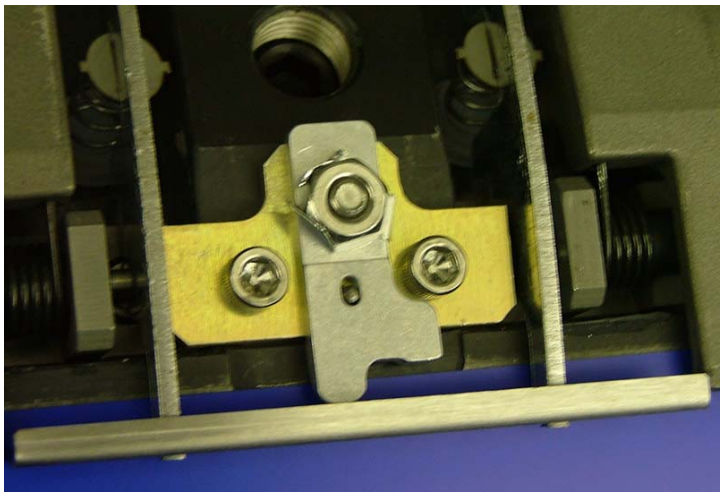


Figure 16: Inner spoiler

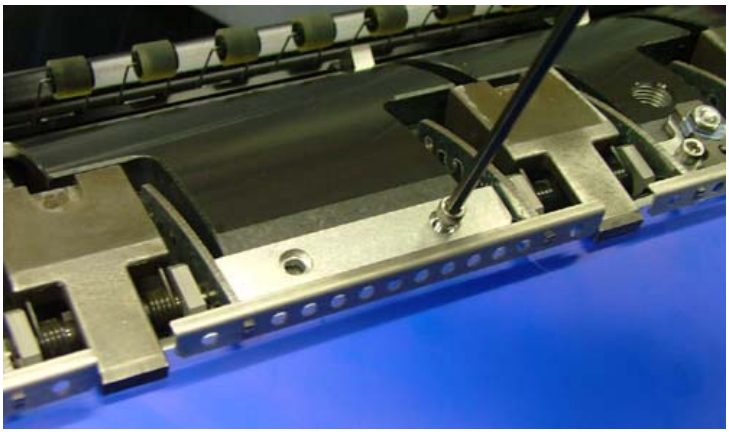


Figure 17: Center spoiler



Figure 18: Outer and inner spoilers

Installing the Spoiler Springs

Perform the steps in the following procedure to install each of the 12 springs into the spoilers.

1. Carefully insert *only* the spoiler spring disk into the jig. After the disk is positioned in the jig, insert the spoiler spring.

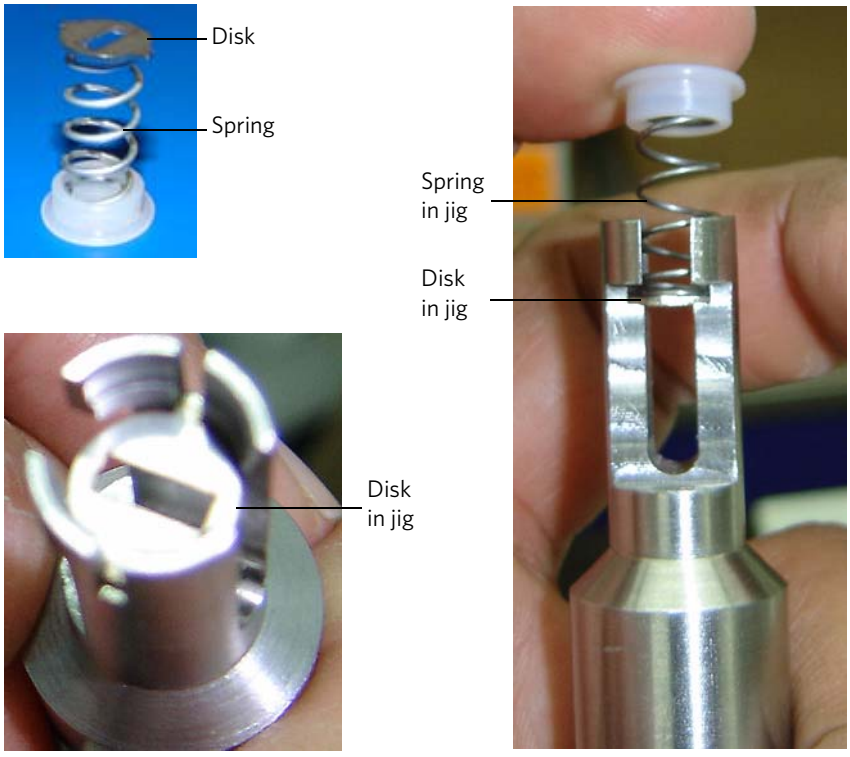


Figure 19: Inserting the disk and spring in the jig

2. With one hand, push the spoiler up, and slide the spring into the groove next to the gripper.

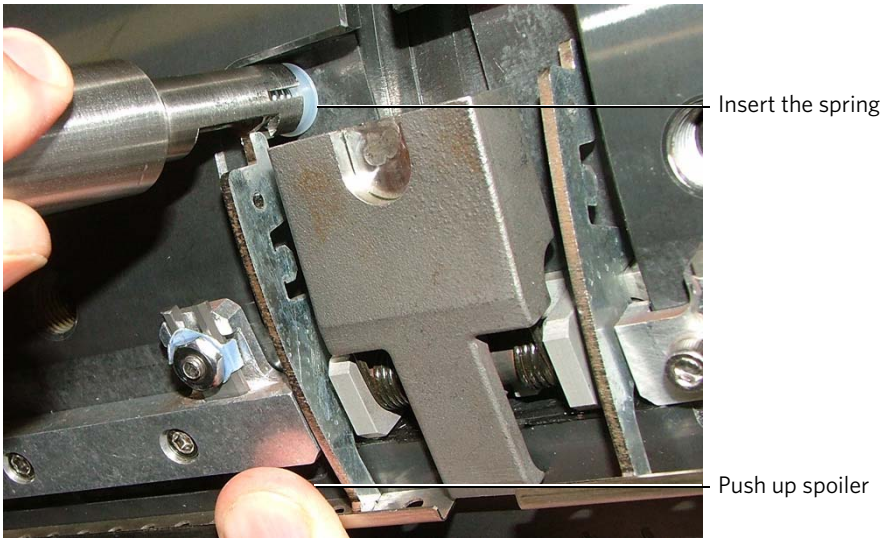


Figure 20: Pushing the spoiler up

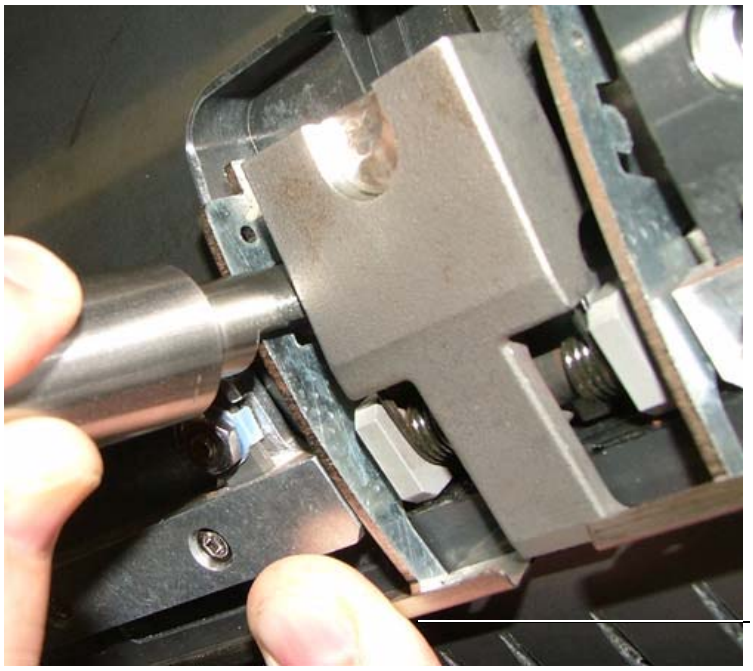


Figure 21: Sliding the spring into the groove

3. Keeping pressure on the jig, slide the spring under the spoiler with the tooth passing through the jig hole, as shown, and then pull the jig out, so that the spring is held firmly by the tooth.

   Note: The jig and spring should be at a 90° angle in relation to the gripper indentation on the drum.

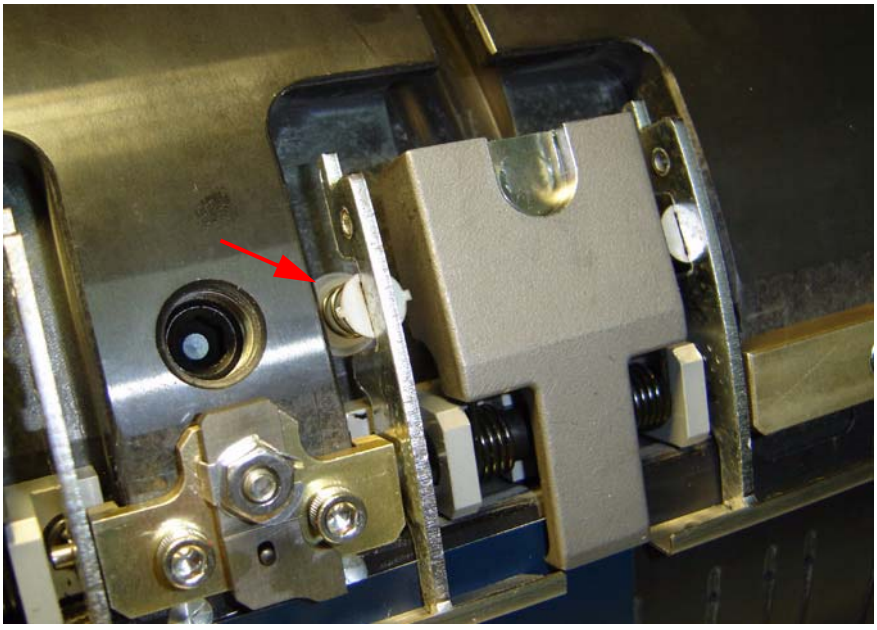


Figure 22: Spring in place

The spoilers are now securely in place and cannot move.

4. Repeat steps 1–3 for the remaining springs.

5. Install the gripper-lift bracket with two hex screws (and spring washers) each.



Figure 23: Installing the gripper-lift bracket

Replacing Pistons

New, stronger pistons are required to support the improved grippers and spring spoilers.

This section describes how to replace the pistons, and the section following describes how to add the balance weights.

Complete all tasks on the right side of the platesetter first, and then complete all tasks on the left side.

Before you begin:

1. Disconnect the air pressure.
2. On the right side of the platesetter only, remove the Local3 board.
3. Disconnect any cables connected to the side panel, and remove the side panel.
4. To provide sufficient access to the piston assemblies, remove the right and left upper side panels.

To replace the upper pistons:

1. Disconnect the blue unload gripper outlet and inlet tubes.
2. Pull down the clamp and pull out the clamp with the pin. See Figure 25 on page 16.
3. Remove the two hex screws, and then remove the piston from the piston base. See Figure 25 on page 16.
4. Remove the piston base and insert the new piston base.

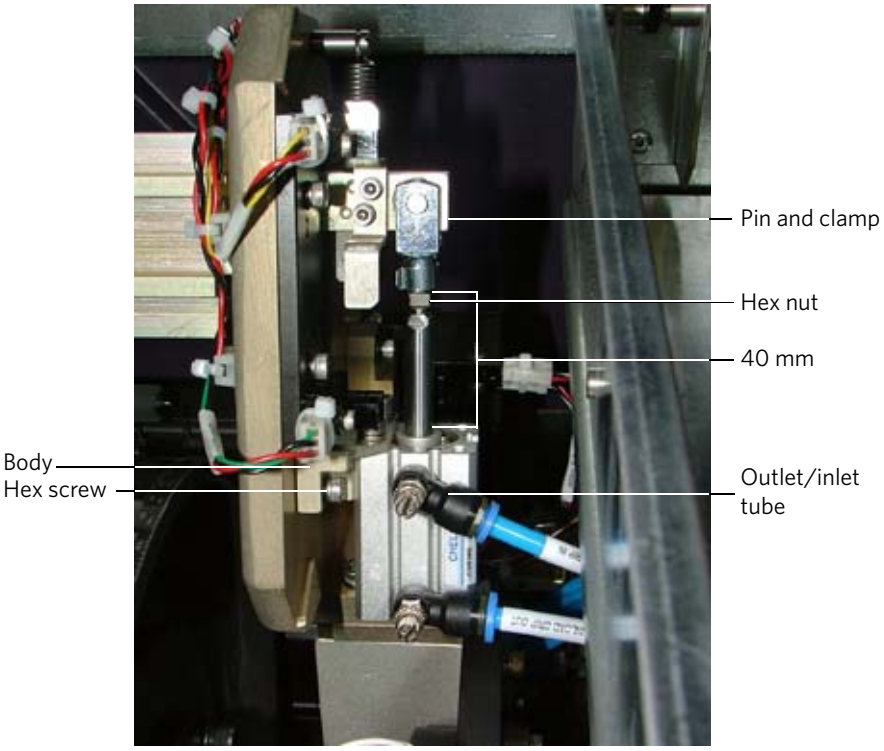


Figure 24: Upper piston

5. Pull the new piston arm out and check if the length is 40 mm (1.6 in.). If it is not 40 mm (1.6 in.), secure the arm as tightly as possible.
6. Insert the new piston and reassemble the parts in the reverse order.
7. Repeat steps 1–4 for the lower piston.

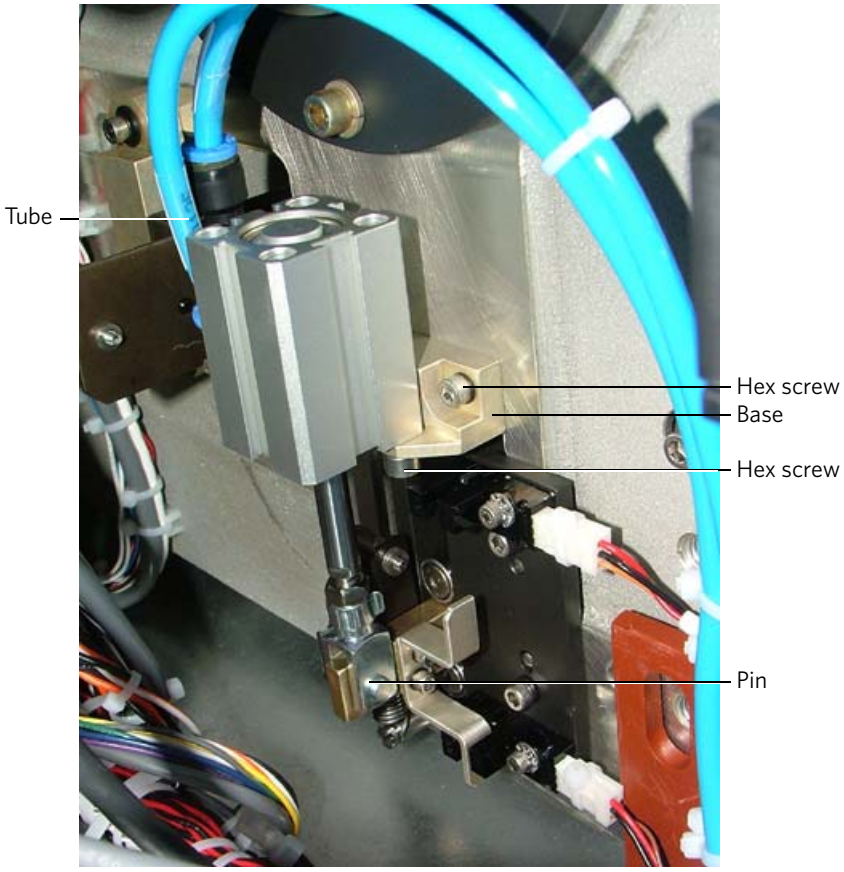


Figure 25: Lower piston

8. Verify that both the upper and lower pistons are moving at the same speed and parallel to one another. If not, adjust the outlet and inlet regulators, making sure to the regulators are securely closed when done. See Figure 24 on page 15.

Installing Static Balance Weights

This section describes how to install two balance weights on each side of the drum. The weights are added to offset the change in drum weight caused by the new grippers and spoilers.

On Magnus 400 platesetters, the weights must be installed at the 170° and 185° positions on the ruler. For Lotem platesetters, install the weights between 115° and 136°, and 154° and 175°. Because there is no ruler on the left side of the drum (edge detection), you must attach a temporary ruler, included in the kit, to determine the position for the weights.



Magnus balance weight Lotem balance weight

Figure 26: Magnus and Lotem balance weights

Earlier versions of the drum have grooves in the side into which you slide the balance weights. You can adjust the location of the weights in the grooves.

Recent versions of the drum have threads into which you insert the screws of the balance weight to secure the weight in its permanent position.

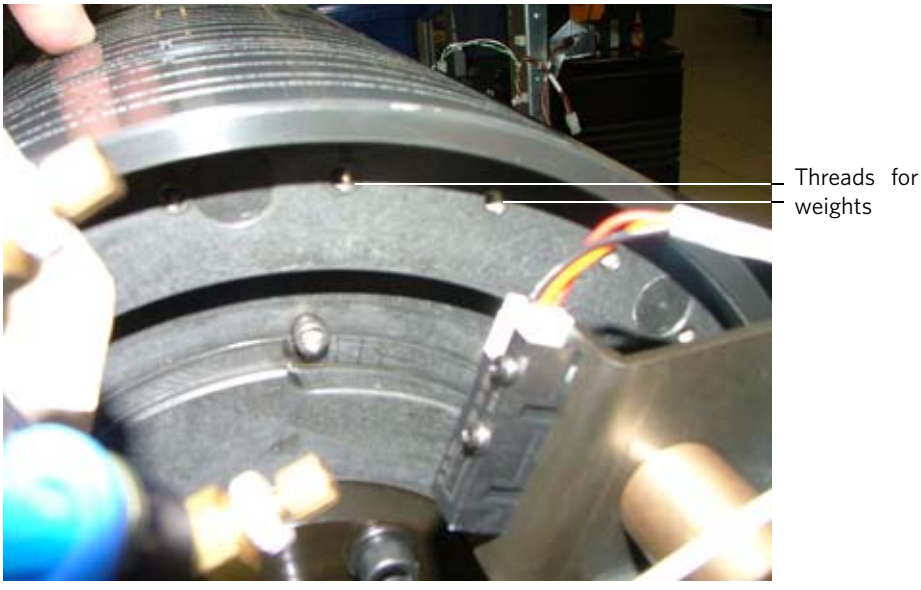


Figure 27: Threads for weights along the side of the Magnus drum

Installing Balance Weights

Attaching a Temporary Ruler

1. On the left side of the platesetter, align the “0” mark on the ruler with the scrub line.

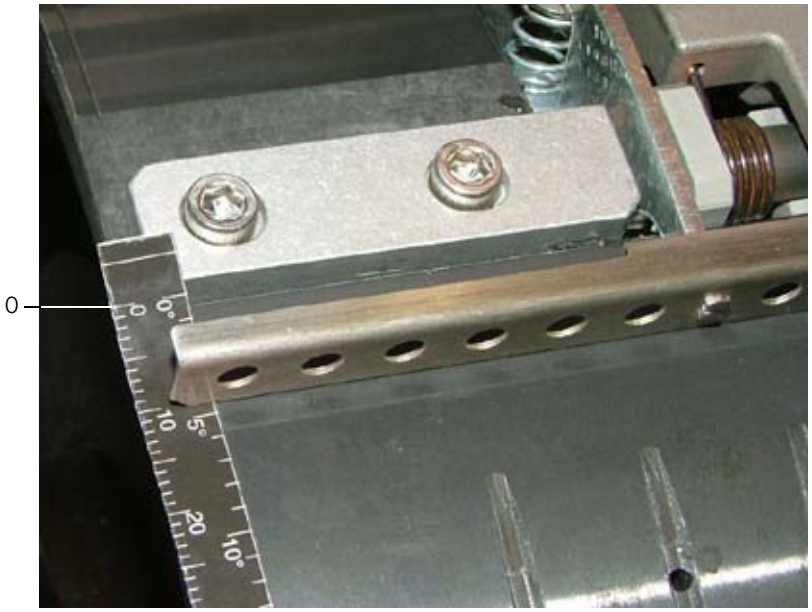


Figure 28: Ruler aligned

2. Tape the ruler in place.

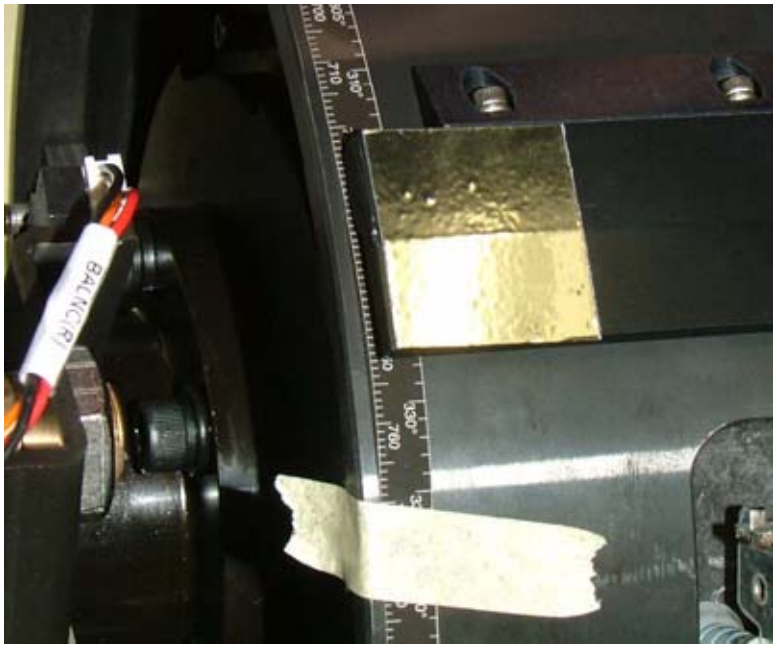
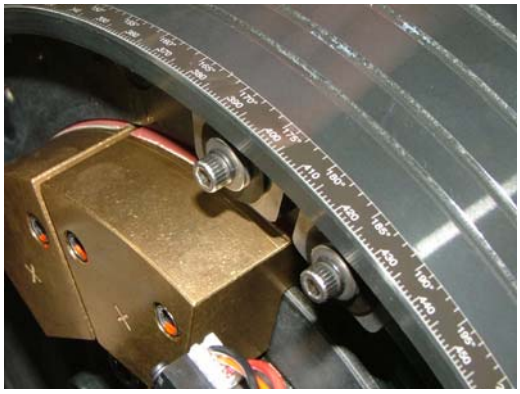


Figure 29: Ruler attached temporarily

To install the balance weights:

1. Put a drop of Loctite 242 (480C10192) adhesive on the nut that goes on the internal side of the drum, and tighten the nut a bit so that it jiggles.
2. For Magnus platesetters: On the right side of the drum, at the 170° position on the ruler and with the wide side of the balance weight facing the drum surface, insert the weight with the nut into the groove, and adjust it a bit until it fits into the groove.

   For Lotem platestters: On the right side of the drum, between the 115° and 135° position on the ruler and with the wide side of the balance weight facing the drum surface, insert the weight with the nut into the groove, and adjust it a bit until it fits into the groove.



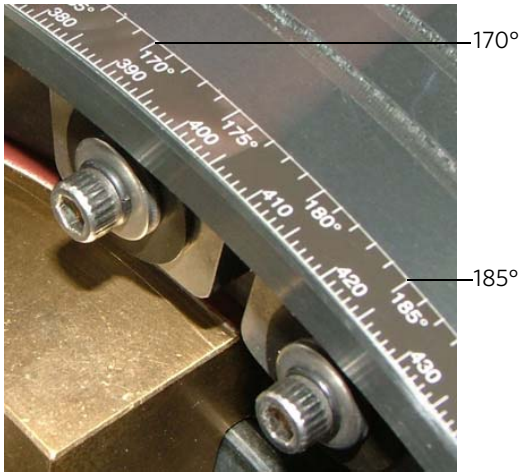


Figure 30: Balance weights installed

3. Make sure that the balance weight is firmly in place, and then tighten the hex screw.
4. For Magnus platesetters: Repeat steps 1-3 at the 185° position.

   For Lotem platesetters: Repeat steps 1-3 between the 154° and 176° position.
5. Attach the two balance weights, following the procedure described in step .
6. Remove the temporary ruler.

Updating Software

1. To prevent the small, 228×311 mm (9×12.25 in.) plates from colliding with the unload rollers during the unloading process, you must change the **Unload Gripper Actuator To Unload Tray (mm)** parameter.
   - In the registry, select **IO OBJECTS\Loading System\Drum** and change the **Unload Gripper Actuator To Unload Tray (mm)** parameter from 285 to **260**.
2. In the registry, select **IO OBJECTS\Loading System\Load Plate\Drum To Plate After Extra** and change the value of the relevant plate thickness to **0**.

3. For manual devices only. If you are working with a multi-cassette unit (MCU) configuration, go to step 4. The following parameters include four plate sizes: 0.15 mm, 0.2 mm, 0.3 mm, and small_plates.You must change the value for each of the four plate sizes.
   - In the registry, select **IO OBJECTS\Loading System\Load Plate\Load Plate Extra To Drum For <plate size> Plates (mm)** and change the value of this parameter to **5.**
   - In the registry, select **IO OBJECTS\Loading System\Load Plate\From Drum Entry to Drum Stage\Drum To Plate After Extra For <plate size> (mm)** and reduce the value to **0**.
4. If you are working with an MCU configuration, in the registry, select **\Loading System\Load Plate\X In Drum Final** and reduce the value of this parameter to **0**.

Testing the Procedure

1. On the right side of the mainframe, reinstall the Local3 board.
2. Open the air pressure valve.
3. Move the tail grippers adjacent to the load actuator and activate the air pressure. Verify that the drum can rotate freely. If not, adjust the piston arm length.
4. Install the side panels.
5. Install the loading tray.
6. Connect the conveyor connector.
7. Close all panels and doors.
8. Connect the main power and start the platesetter and the Magnus 400 Controller software.
9. Load plates of different sizes and verify that both the load and unload gripper activators operate smoothly and evenly.

Technical Contact(s)

Content owner: Mario Amir

Submitted by: Mario Amir

See the Escalation page for escalation contacts.

Date Submitted

10 Sep 2006

Last Updated

18 Sep 2007

Appendix A: Parts List

Parts List 24

Parts List

In the Parts list, each number in the Item column corresponds to a part or to an assembly. To locate a specific part, see Figure 31 on page 26—*not all the parts in the parts list appear.*

Item	Description	Part number	Quantity
1.	Air pistons (cylinder 25 dia. w/M6 thread)	330-00130	4
1.1	Air piston screws (M6 1×16)	380A57110	10
2.	Air piston base	252-09930A	4
3-4.	New gripper assembly	500-03326A	6
5.	Spoiler spring	363A08145	20
6.	Spoiler spring cups	252-09511A	20
7.	Spoiler spring washers	252-09510A	20
8.	Small plastic bearings	366-00099	20
9.	Spoiler shafts (hinge for arm)	252-09518A	20
10.	Gripper back plates	252-09517A	8
11.	Spoilers assy includes:		
11.1	Spoiler #1 - right riveting	500-03151A	1
11.2	Spoiler #2 - riveting	500-03202A	2
11.3	Spoiler #3 - riveting	500-03203A	1
11.4	Spoiler #1 - left riveting	500-03204A	1
12.	Spoiler base includes:		
12.1	Bracket for spoiler arms #1 - right	252-09497A	1
12.2	Bracket for spoiler arms #3	252-09499A	2
12.3	Bracket for spoiler arms #4	252-09500A	1
12.3.1	Bracket for spoiler arms #4 - center (punch)	252-11236A	1
12.4	Bracket for spoiler arms #1 - left	252-09501A	1
12.5	Bracket for spoiler arms 9" - center	252-09994A	2
12.5.1	(optional) Bracket for spoiler arms 9" - left	252-09502A	1
12.5.2	(optional) Bracket for spoiler arms 9" - right	252-09498A	1

Item	Description	Part number	Quantity
13.	Registration pins include:		
13.1	Registration pin - Left	252-10775A	1
13.2	Registration pin - Right	252-10776A	1
13.3	Registration pin - Outer	252-10774A	2
14.	Hex nuts	381A05002	10
15.	Securing washers for the nuts	252-09523A	10
16.	Spoiler spring jig	252-09522A	1
17.	Ruler	382-00335A	1
18.	Screws 8-32×½"	380A05061	20
19.	Screws 8-32×3/8"	380A05041	20
20.	Gripper spring (spare)	291B3L795	2
21.	Balance weight set includes:		
21.1	Static balance weight	252-02628A	12
21.2	Balance weight spring st #8	382D10000	20
21.3	Balance weight flat washer st #8	382A11000	4
22.	SOC HD CAP STST 8-32×5/8"	380A05081	28
23.	Cont. valve elbow micro switch to 6 mm out-con	347M20025	8
24.	ADH.RET.10CC LOCTITE 242	480C10192	1

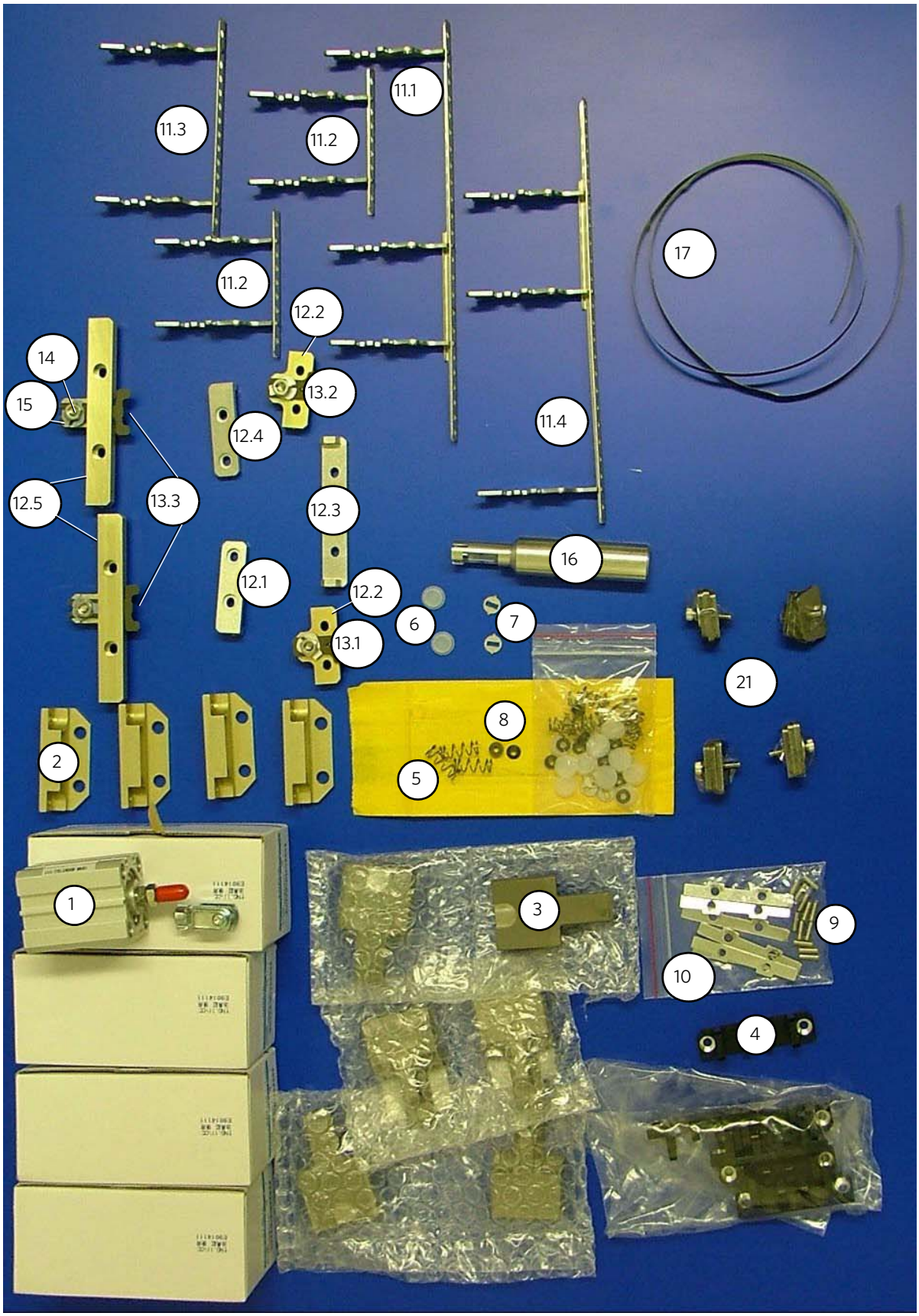


Figure 31: Magnus 400 platesetter parts