

# Installation Instructions

## 1812 Folder Disk Clutch Retrofit Kit

### Martin Yale #WRA1812510

**Background:** Early production Martin Yale Model 1812 Folders were originally equipped with a spring-clutch type feed wheel clutch. These units are identifiable by the presence of a keyed feed wheel.

Current production 1812 folders (After S.N. 1812: 39568.01122.M38, 1812230: 39566.01001.MXX, 1812UK: 39566.01001.MXX) are equipped with a friction disk type feed wheel clutch in lieu of the previous spring-clutch. Folders with the friction disk type clutch can be identified by the presence of bearings in the bore of the feed wheel. They can also be identified by the fact that the feed wheel on these folders will spin freely of the feed wheel shaft in the direction that paper feeds.

This retro-kit allows a technician to convert an older unit originally equipped with the spring-type clutch to the current disk clutch.

**Parts Included:** The following parts are included with the WRA1812510 Clutch Retrofit Kit.

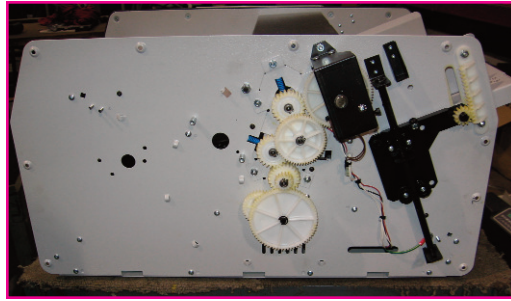
- (1) M-S027951 Clutch Retro-Kit Instructions (this document)
- (1) M-S001540 8-32 X 7/8 Truss Head Screw
- (1) W-O2051368 Black Oxide Feed Wheel Shaft for Disk Clutch
- (1) W-O2051369 Clutch Feed Wheel
- (1) W-A2051085 Disk Type Feed Clutch Assembly
- (1) M-S008126 #8 X .75" OD Fender Washer
- (1) M-S010039 5133-18 E-Ring
- (1) M-S045339 1812 Processor
- (1) M-S019032 1/4 X 3/8 X .17ID Standoff
- (1) M-S007006 8-32 Kep Nut
- (2) M-S043021 .10 X 4 Blk Wire Tie

#### **Tool List:**

- #2 Phillips Screwdriver-Medium Length
- #2 Phillips Screwdriver-Short Length
- Wire Cutters-Small to Medium Sized
- 11/32" Nut Driver, Socket/Ratchet/Extension, or Wrench
- Flat Bladed Screwdriver-For Removal and Installation of E-Rings
- Flat Bladed Screwdriver or Pen-Knife Blade-For Electronic Chip Removal on Logic Board
- 9/64" Hex Wrench

**WARNING:** Before any work is attempted on folder, assure that folder is disconnected from power source by either removing the power cord or locking out the power source.

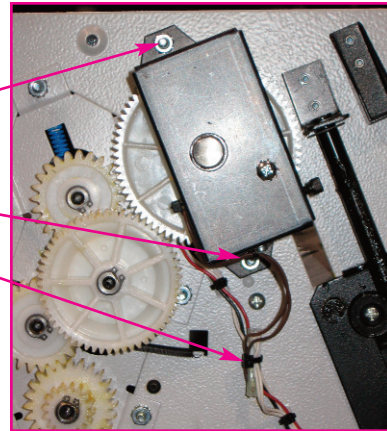
1) Remove (9) screws from the rear folder side cover (cover WITHOUT the operator panel in it) and remove cover. This will expose the clutch mechanism See picture below for reference.



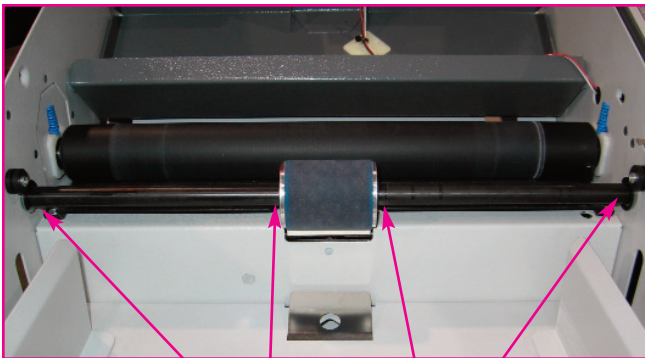
Rear View of 1812 with Cover Removed

2) Locate existing spring-clutch using the picture below as a guide. Disconnect its electrical connector and (2) mounting Kep Nuts using a 11/32" nut driver or socket. If the machine to clutch connector is wire-tied together, it may be necessary to cut that wire tie with a pair of wire cutters. Remove the spring clutch assembly and discard.

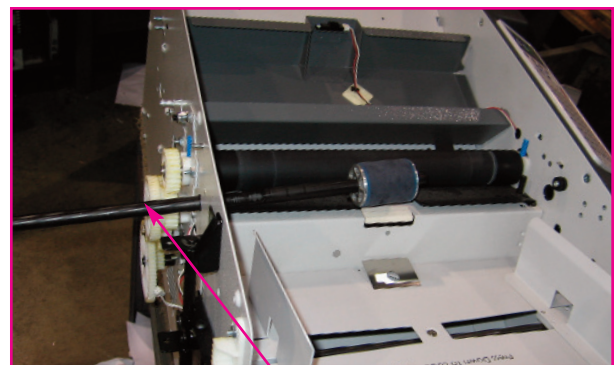
Remove (2) 8-32 Kep Nuts and Disconnect Wire to Remove Spring Clutch From Sideframe



3) Remove (4) E-Rings from Feed Shaft being careful not to lose them as they will be re-used. (2) hold the Feed Wheel in position & (2) are located near the sideframes. Slide feed shaft out of folder through sideframe with removed side cover. Be careful not to lose plastic washers as they will be re-used. Remove old feed wheel and key and discard along with the Feed Shaft.



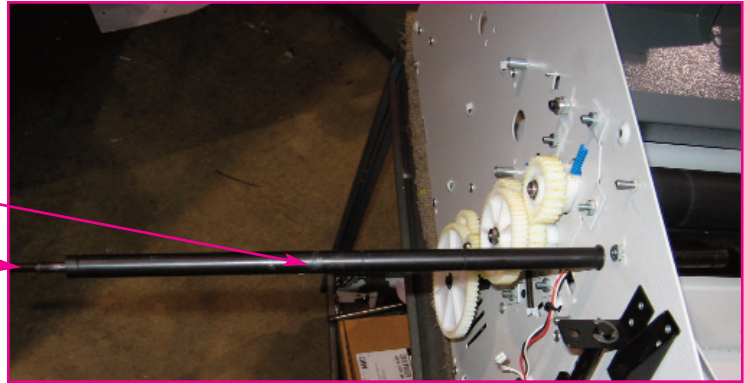
Locations of (4) E-Rings to be Removed



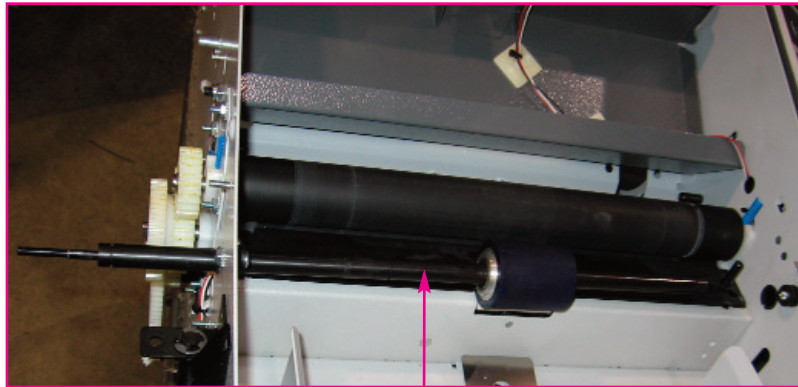
Sliding Feed Shaft Out of Folder

4) Locate new Feed Shaft in Retro-Kit. Push shaft end opposite of small journal into rear sideframe in the opposite manner of the removed one. Flat end of Feed Shaft is inserted first.

Installing New Feed Shaft into Folder---Note Orientation of Small Journal on End of Shaft. It Goes Towards the Side of Folder with Removed Sidecover!!!!

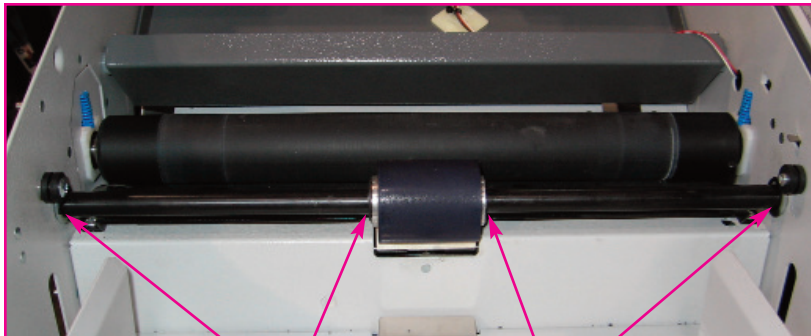


5) As Feed Shaft is inserted through sideframe, place a single plastic spacer (washer) on shaft. While holding the new Feed Wheel over retarder with the brass center bearing located towards the OPERATOR side of folder, push feed shaft through the Feed Wheel. Once the Feed Shaft clears the Feed Wheel, place other plastic spacer on shaft and continue to push shaft into the operator side-frame. Installation may be easier if the tension on the paper retarder is relieved during this process by turning the retarder adjustment fully clockwise.



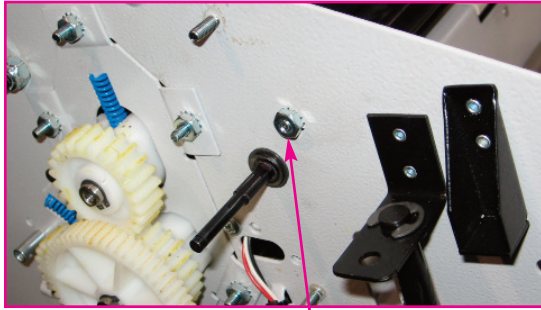
New Feed Shaft Being Slid Into Folder

6) Push both plastic spacers to their corresponding side frames. Once both plastic spacers are in their proper locations, the 4 E-Rings removed in step #3 above may be re-installed.

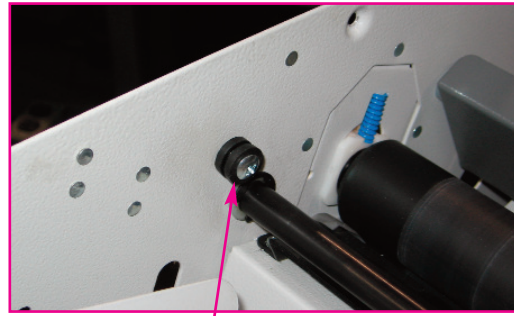


(4) E-Rings To Be Installed in These Locations

7) Remove the top cover grommet-stop screw on back side frame and replace with the longer one included with retro-kit. Older machines may have a pressed stud in this location. If this is the case, drill out that stud and replace with screw, standoff, and nut as shown in pictures below.

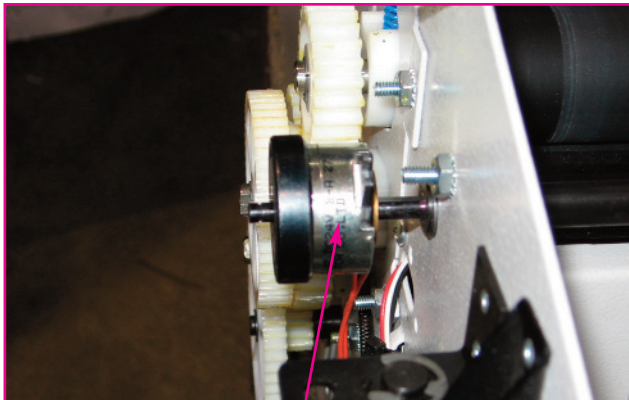


Grommet Stop Screw & Kep Nut

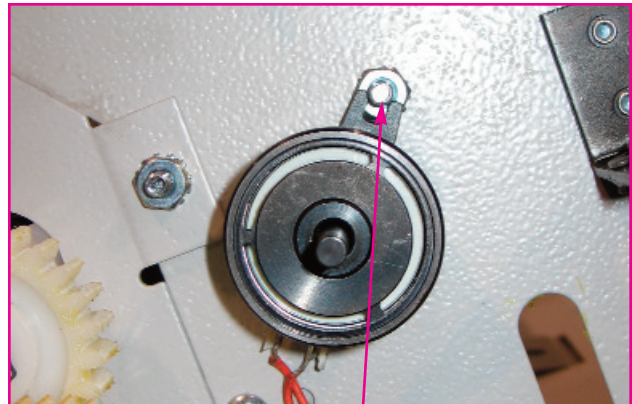


Grommet Stop, Screw, and Standoff

8) Install electrical body of new clutch on feed shaft. It may be necessary to turn clutch upon installation on the small end of the Feed Shaft to get their corresponding flats to align. There is a certain amount of 'feel' involved with installing the electrical portion of the clutch on the feed shaft end. Do not attempt to force the clutch onto the Feed Shaft. When the flats of the (2) components are aligned, the clutch will slip easily on the shaft. During this installation, orient the clutch so that its anti-rotation lugs align with the top cover grommet screw installed in step #7 above and push clutch onto shaft as far as it will go.

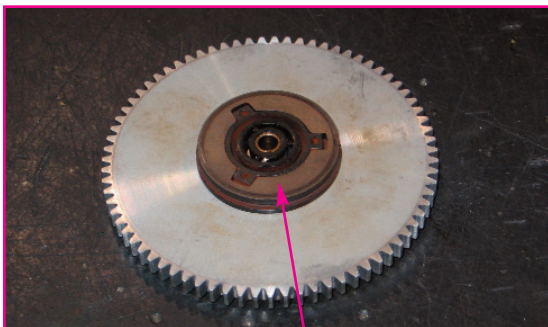


Installing Electric Clutch on Feed Shaft

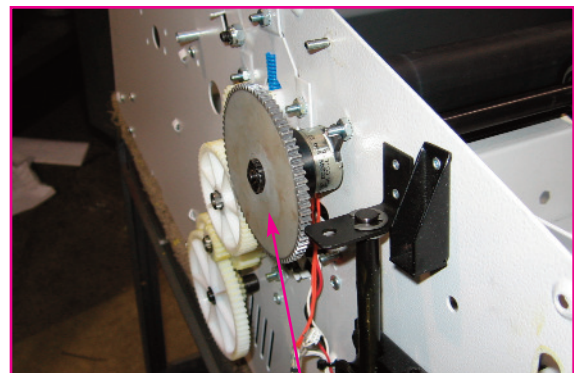


Clutch Anti-Rotation Lugs Aligned with Top Cover Grommet Screw

9) Install new clutch gear assembly on clutch making sure that the clutch friction disk is in assembly (held to clutch gear assembly via permanent magnet). Mesh the outer part of the gear with the existing folder gear & push on as far as it will go.



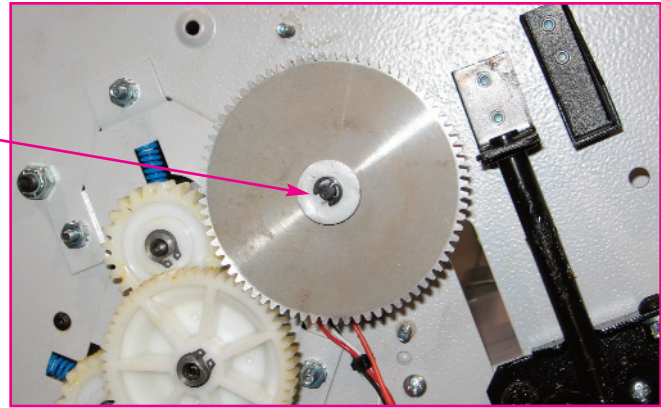
Make Sure that Friction Disk is attached (magnetically) to Clutch Gear with Smooth Side Towards Gear



Clutch Gear Installed on Magnetic Clutch

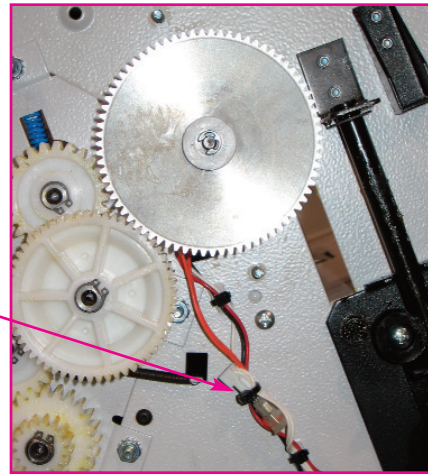
10) Install .75" OD Fender Washer received with Retro-Kit on end of feed shaft. Then install small E-Ring to retain clutch in position.

Fender Washer and Small E-Ring  
Holding Clutch Gear in Position

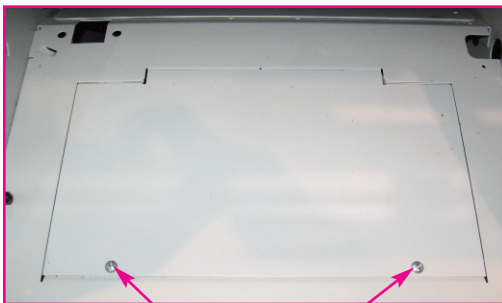


11) Attach clutch electrical connector to machine harness. Orientation of the connectors to one another is not critical. A user-supplied plastic tie may be wrapped around connectors to assure they hold in position if desired.

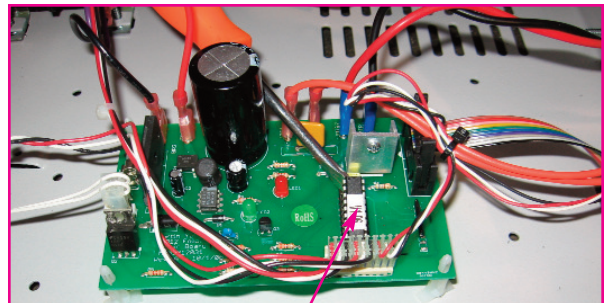
Clutch Electric Connector---  
Hook Up to Folder Harness  
and Wire Tie Up



12) Remove circuit board cover located directly beneath feed table exposing the circuit board. Locate program chip on board as shown in picture below. Remove this chip by prying on it with a small flat bladed screwdriver.



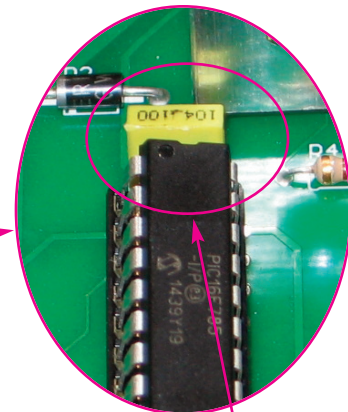
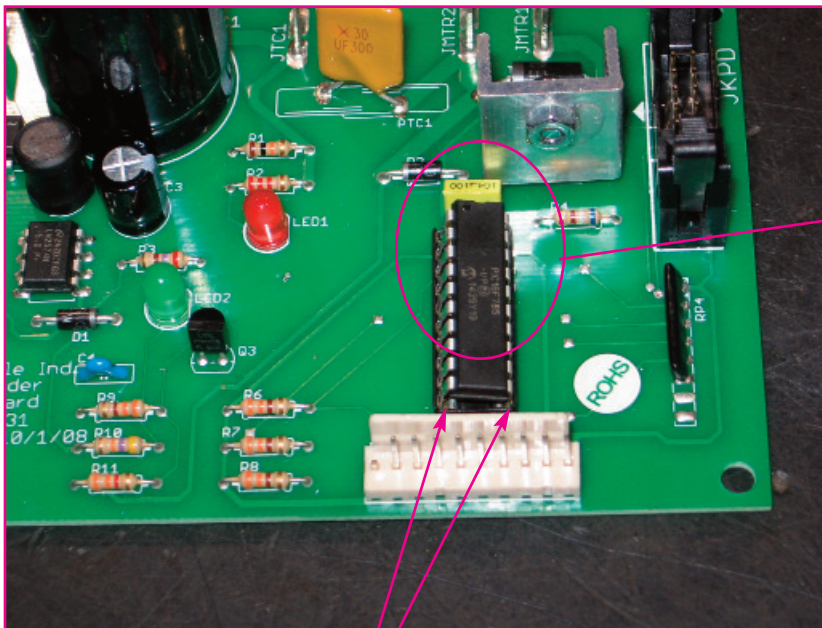
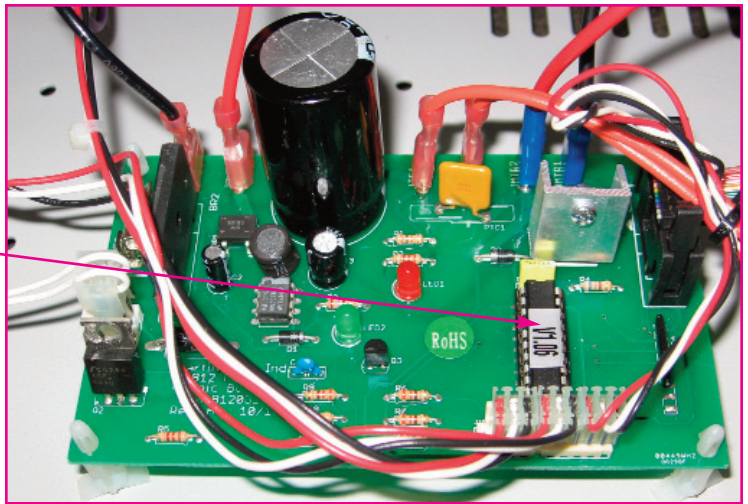
Circuit Board Cover----Remove (2)  
Screws to Access Circuitboard



Carefully Remove Chip by Prying up  
on Chip with a Small Screwdriver

13) Locate new chip included with Retro-Kit. Carefully install in folder board opposite of old chip removal. Text on chip label should be oriented as shown in picture below. Assure all chip pins are inserted in the mounting socket while pushing chip into position. Basic static control precautions should be taken while this operation is being performed (at the very least, ground yourself before touching chip to eliminate static electricity).

New Chip Installed in Socket---  
Confirm That All Chip Pins are  
Straight and Installed in Socket



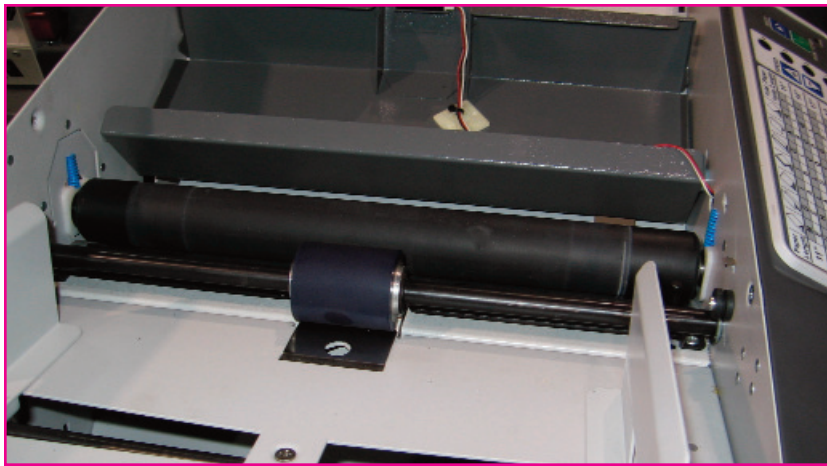
Make Sure To Install Chip with  
the Cutout and Dot (Indicating  
Pin #1) Towards the Rectangular  
Capacitor. If the Chip Is Installed  
Backwards, the Board Will Not  
Function

When Installing New Chip in Board, Carefully Align Pins on Both Sides  
of Chip with Socket and Seat Chip Firmly. Do Not Force Chip and  
Bend the Pins. Bent Pins May Be Straightened, but Will Require Even  
More Care in Installation to Assure that They Do Not Bend Again

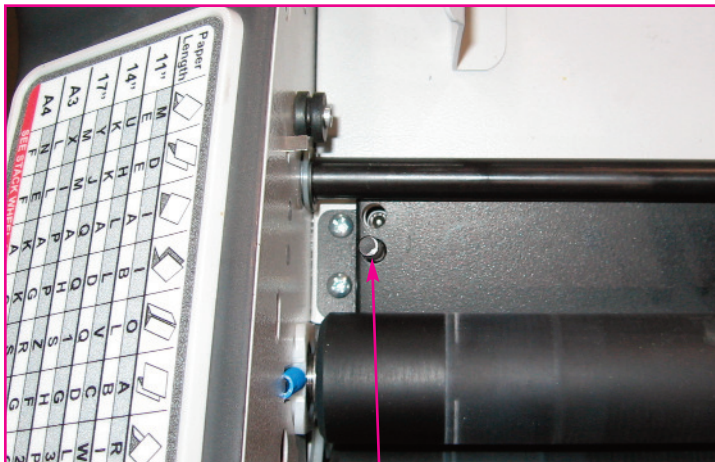
14) Re-install circuit board cover, folder side cover, and power cord. Re-energize power source if locked out.

15) Turn on folder and confirm that the unit powers up. Default setting on chip included with retro-kit is Disk-Type clutch with 'Test' button on operator panel. If unit is older & has an operator panel with 'bypass' on it and a bypass slot in the top cover, the board setting must be changed to 'bypass'. Contact M-Y tech support at 800-225-5644 for instructions on how to change 1812 board settings.

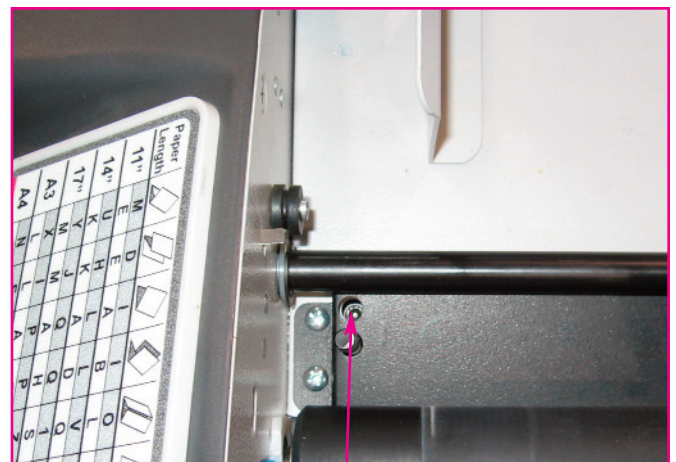
16) Reset the paper retarder which is also called a sheet separator. It is directly below the feed wheel. Push the feed tray down and lock in the paper loading position & lift the top cover.



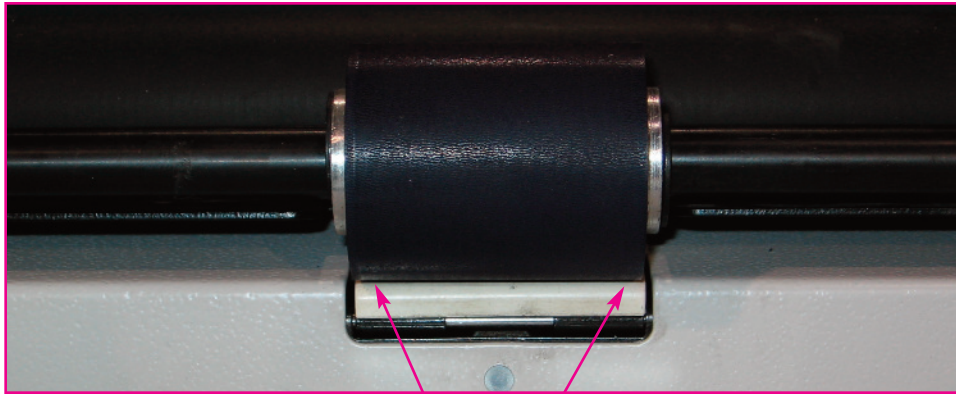
Press the retarder (sheet separator) release button. This will release the pressure against the Feed Wheel and allow the technician to turn the Feed Wheel in the direction of paper feed. While the button is depressed, the Feed Wheel should turn freely.



Retarder pressure release button. When you press this button and turn the Feed Wheel, it should turn freely. When you release this button, you should feel the rubbing of the retarder against the Feed Wheel. This should be a slight drag.

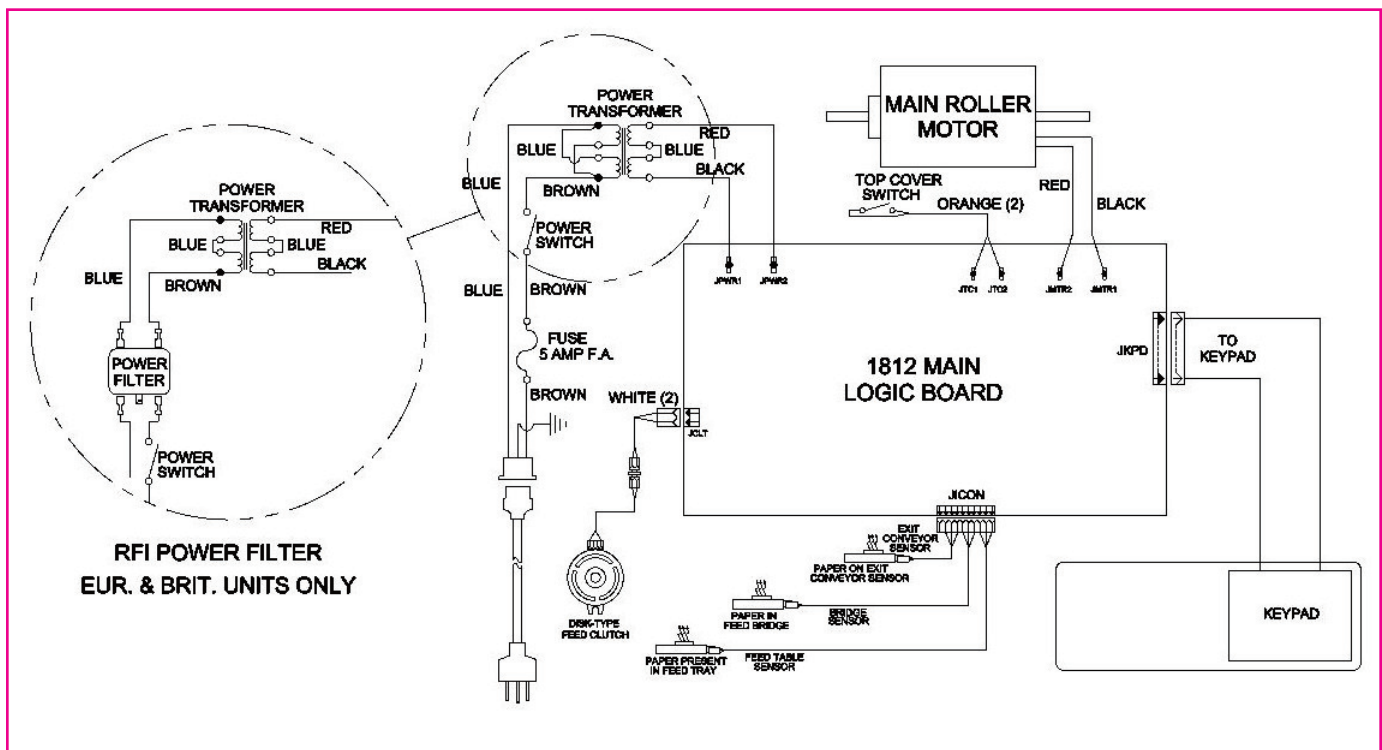


If the retarder adjustment is incorrect, insert the provided 9/64" hex wrench into the adjustment hole. Turn the wrench clockwise to loosen, counterclockwise to tighten.



If you put one finger on each side of the retarder, you should adjust the retarder pressure so the retarder just stops rocking. If the retarder is loose, it will rock slightly. You want an even pressure against the Feed Wheel.

17) Once satisfied with retarder setting, return unit to service. Please note on any paperwork associated with folder that the replacement feed wheel after the clutch is updated is M-Y part #W-O2051369. See the parts list at the beginning of document for the M-Y numbers associated with the other parts replaced.



1812 with Disk Clutch Wiring Diagram



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