DATAMAX

M CLASS™

Maintenance Manual

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Firmware (Software) Agreement:

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CAUTION

Lithium Battery: There is a danger of explosion or fire if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Part Number 88-2311-01 Rev. F

Contents

1 Overview

1.0 Introduction

This manual is intended for use by qualified service personnel in the maintenance and repair of M-Class model printers. It primarily includes technical information relating to the printer's electrical and mechanical components. If necessary, refer to the following documents for additional printer information (available for download at http://www.datamaxcorp.com/):

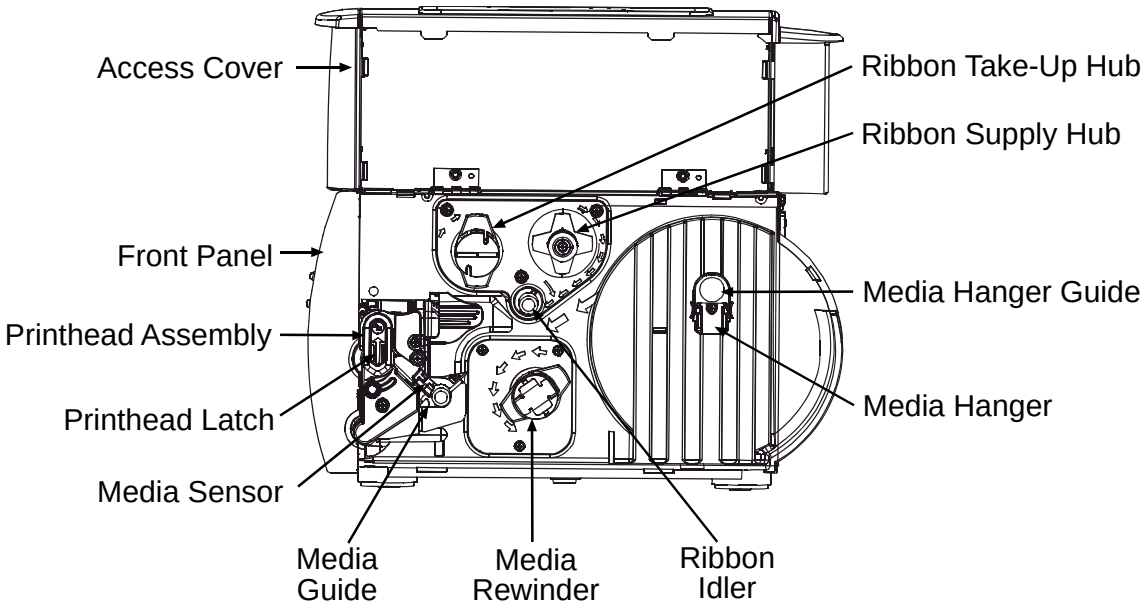
- For operating information, reference the *Operator's Manual*, part number 88-2313-01.
- For software documentation (Datamax Programming Language), reference the *Class Series Programmer's Manual*, part number 88-2316-01.

Important Information:

The exclamation point inside an equilateral triangle is intended to alert the technician to the presence of important operating, maintenance or servicing information. Always, as with all electrical equipment, follow basic safety precautions to avoid personal injury or printer damage.

1.1 About this Printer

The following drawing illustrates the printer's exterior components and controls. Some items are optional and may not be present on all models. The printer's model number can be found on the Serial Tag affixed to the rear of the unit. Use this model number when referencing specific information within this manual.



2 Adjustments and Maintenance

2.0 Introduction

This section covers the necessary maintenance and alignment procedures for the printer.

2.1 Maintenance

This section details the recommended items, techniques, and schedules to help you safely and effectively maintain the printer. Keep the following items on hand to clean the printer:

- Isopropyl alcohol
- Cotton swabs
- Soft-bristle brush
- Soapy water/mild detergent
- Compressed air
- Printhead Cleaning Cards or Printhead Cleaning Film

CAUTION

For your safety and to avoid damaging the printer, turn 'Off' and unplug the printer before cleaning. Always take proper precautions when using isopropyl alcohol, a flammable liquid.

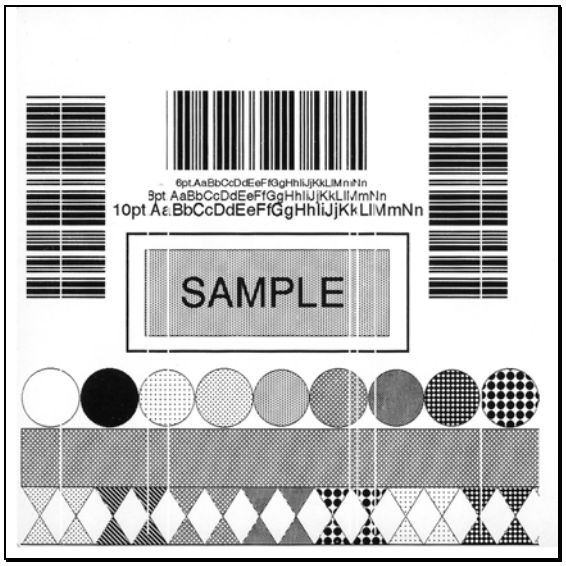
Recommended Maintenance Schedule		
Component / Area	**Cleaning Interval ***	**Method / Supplies**
Printhead	Thermal transfer media – after each roll of ribbon. Direct thermal media – after each roll of media, or as needed.	Using a cotton swab with isopropyl alcohol, clean the printhead and, if necessary, use Printhead Cleaning Cards or Cleaning Film. See Section 2.1.1.
Rollers	After each roll of labels, after each roll of ribbon, or as needed.	A cotton swab or cloth dampened with isopropyl alcohol wiped across the roller. Rotate the roller by hand until the entire surface is clean.
Peel Assembly	After each roll of labels, after each roll of ribbon, or as needed.	Cotton swab dampened with isopropyl alcohol.
Media Path / Media Sensor / Peel Bar	As needed, based on a weekly visual inspection.	Compressed air or a soft brush. Isopropyl alcohol, as needed.
Exterior Surfaces	As needed, based on a weekly visual inspection.	Mild detergent applied with a dampened cloth.

*Whichever interval comes first.

2.1.1 Cleaning the Printhead

CAUTION *NEVER use a sharp object on the Printhead; damage can result.*

If print quality declines (symptoms can include non-compliant bar codes, print dropouts, streaks on the labels), the typical cause is debris build-up on the printhead. Furthermore, if the build-up is not removed it may lead to element failure, greatly reducing the life of the printhead.



Faulty Label:

Instead of consistent patterns, streaks in the direction of print indicate a dirty or faulty printhead.

According to the media, ribbon, and printing parameters used, different methods are recommended for cleaning the printhead. In all cases, perform the following preliminary operations before cleaning the printhead:

Preliminary Cleaning Steps:

1) Stop printing. Raise the cover, unlock the Printhead Latch and raise the Printhead Assembly.

Allow the printhead to cool.

2) Remove media and ribbon from the printer.

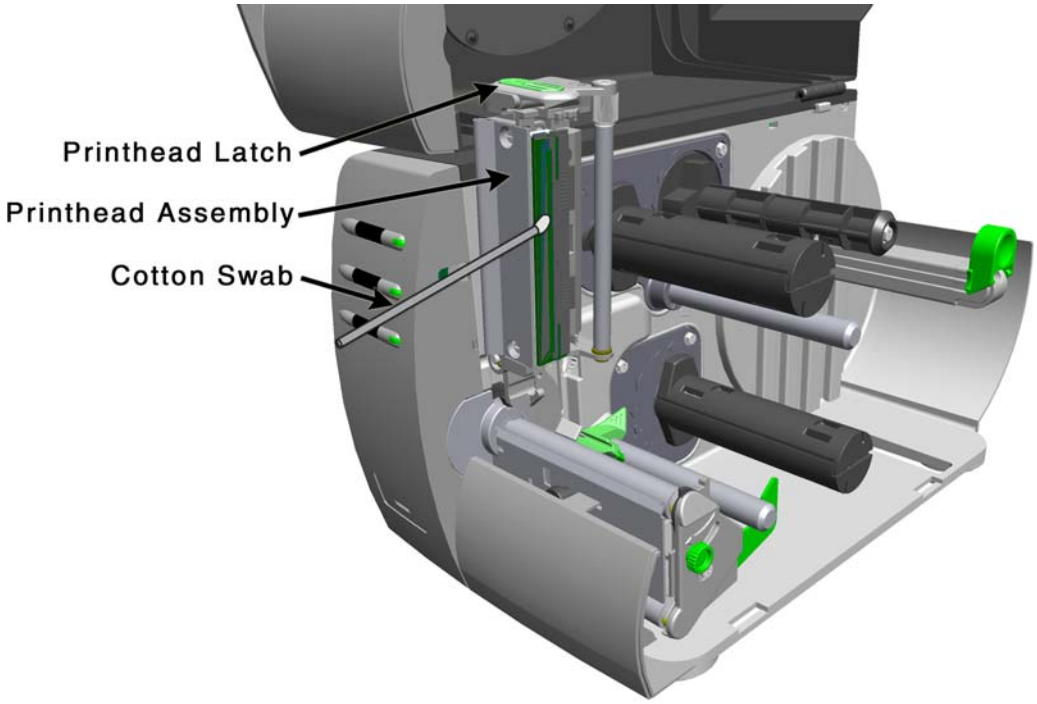
Proceed according to your cleaning requirements.

2.1.1.1 Cotton Swab Procedure

This procedure is recommended for printers using direct thermal media, or thermal transfer media with a wax ribbon.

1) Perform the Preliminary Cleaning Steps, as described in Section 2.1.1.

2) Turn 'Off' and unplug the printer. Using a Cotton Swab moistened (not soaked) with isopropyl alcohol, gently clean the entire Printhead surface, paying special attention to the Burn Line, until all build-up is removed.



Allow the printhead to dry.

3) Reinstall media (and ribbon, if needed). Lower the Printhead Assembly until the Printhead Latch locks. (If necessary, perform a Media Width Adjustment; see Section 2.3.) Close the cover. Plug in and turn 'On' the printer. Run several sample labels and examine the print quality. If streaks are still present, go to Section 2.1.1.2; otherwise, this completes the procedure.

2.1.1.2 Cleaning Card Procedure

This procedure is recommended for printers using direct thermal media, or thermal transfer media and a wax-based ribbon. Also use this procedure if symptoms continue after the Cotton Swab Procedure (Section 2.1.1.1) has been tried.

1) Perform the Preliminary Cleaning Steps, as described in Section 2.1.1.

2) Place a Cleaning Card (part number 70-2013-01) under the printhead.

3) Lower the Printhead Assembly and lock the Printhead Latch. Disengage the Media Width Adjustment; see Section 2.3.

4) Close the cover. Proceed according to printer model:

   Display-equipped Models –

   Press and hold the **TEST** Key for approximately four seconds. (As an alternate, '`CLEAN HEAD NOW`' can be selected in the menu system, see the *Operator's Manual* for details.)

   Non-Display Models –

   Repeatedly press the FEED Key until the Cleaning Card exits the printer.

5) Reinstall media (and ribbon, if necessary). Lock the Printhead Latch. If necessary, perform a Media Width Adjustment, see Section 2.3. Close the cover. Run a few sample labels and examine them. If streaking is still present, go to Section 2.1.1.3; otherwise, this completes the procedure.

2.1.1.3 Cleaning Film Procedure

This procedure is recommended for printers using a resin ribbon with thermal transfer media, or for printers that typically use a Heat Value of 22 or higher. Also use this procedure if symptoms continue after the previous cleaning methods have been tried.

1) Perform the Preliminary Cleaning Steps, as described in Section 2.1.1.

2) Place a sheet of Cleaning Film (part number 70-2087-01) under the printhead.

3) Lower the Printhead Assembly and lock the Printhead Latch. Disengage the Media Width Adjustment; see Section 2.3.

4) Close the cover. Proceed according to printer model:

   Display-equipped Models –

   Press and hold the **TEST** Key for approximately four seconds. (As an alternate, 'CLEAN HEAD NOW' can be selected in the menu system, see the *Operator's Manual* for details.)

   Non-Display Models –

   Repeatedly press the FEED Key until the Cleaning Card exits the printer.

5) Turn 'Off' and unplug the printer. Open the cover, unlock the Printhead Latch, and raise the Printhead Assembly. Using a cotton swab moistened (not soaked) with isopropyl alcohol, gently clean the entire Printhead surface.

Allow the printhead to dry.

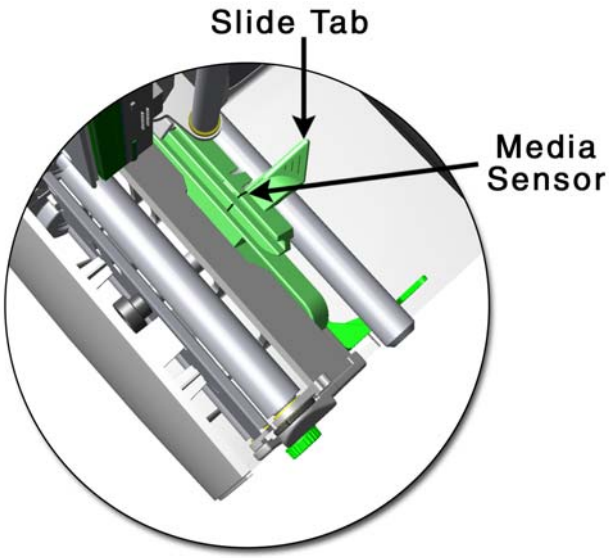
6) Reinstall media and ribbon. Lower the Printhead Assembly until the Printhead Latch locks. If necessary, perform a Media Width Adjustment; see Section 2.3. Close the cover. Plug in and turn 'On' the printer. Run a few sample labels and examine them; if streaking is still present, see Section 3.1.

2.1.2 Cleaning the Media Sensor

If paper dust or debris accumulates in the Media Sensor, it can affect the printer's ability to detect labels. To prevent problems, clean as follows:

❶ Turn 'Off' and unplug the printer. Raise the cover.

❷ Unlock the Printhead Latch and raise the Printhead Assembly. Remove any media.



❸ Clean the Media Sensor using compressed air or a soft brush. Use a cotton swab dampened with isopropyl alcohol as needed to remove adhesive accumulations.

❹ Reinstall media. If necessary, adjust the Media Sensor. Plug in and turn on the printer.

2.2 Media Sensor Calibration

This printer can use many different media compositions, configurations and colors. In addition to adjusting the Media Sensor and selecting the 'SENSOR TYPE,' to ensure that each label is detected correctly and reliably, calibration is required. Depending upon the model of your printer, there are different calibration methods.

2.2.1 Calibrating Non-Display Models

In 'Calibration' Mode, button functions adjust the media sensor to the media being used. Calibration can be performed either automatically or manually, as detailed below.

> ☑ **Notes:** *Printer and cutter faults are disabled during this procedure, but can still occur while printing "test" labels. Also, factory defaults can be restored; see the Operator's Manual for details.*

2.2.1.1 Automatic Calibration

Automatic Calibration lets the printer establish the optimum media sensing values.

> ☑ **Note:** *Before calibrating, be sure the media sensor is set for the media type you are calibrating and that it is properly positioned (see the Operator's Manual for details); also, ensure that the Printhead Assembly is latched down and that the cover is closed.*

Proceed as follows to automatically calibrate the media sensor:

1. Turn 'Off' the printer.

2. With media loaded, depress and hold the ⊠ CANCEL button while turning 'On' the printer. Continue to hold the button until the ⊜ STOP light turns off, and then release the button.

3. Press the ⊜ PAUSE button.

The printer will feed approximately ten inches of media during this calculation process.

4. Upon completion, one of the following lights will flash five times to denote the result of the calibration:

   ⊜ STOP Light = Successful calibration. Proceed to Step 5, below.

   ⊘ ERROR Light = Unsuccessful calibration. Retry the procedure. If unsuccessful again, proceed to Section 2.2.1.2.

> ☑ **Note:** *To discard these changes and revert to the previous calibration, turn off the printer before Step 5.*

5. Press the ⊜ PAUSE and ⊠ CANCEL buttons simultaneously and briefly. Wait until the ⊜ STOP light goes off. *The printer is now calibrated, ready for operation.*

2.2.1.2 Manual Calibration

Manual Calibration should be used after attempting the Automatic Calibration (Section 2.2.1.1), or in cases where media sensing problems continue to occur. Proceed as follows to manually calibrate the media sensor:

> ☑ **Note:** *Before calibrating, be sure the media sensor is set for the media type you are calibrating and that it is properly positioned (see the Operator's Manual for details); also, ensure that the Printhead Assembly is latched down and that the cover is closed.*

1. Turn 'Off' the printer and remove the media.

2. Depress and hold the ⊠ CANCEL button while turning 'On' the printer. Hold the ⊠ CANCEL button and power-up the printer. Continue to hold the button until the ⊛ STOP light turns off, and then release the button.

3. Press and hold the FEED button until the ⊛ STOP light turns 'On,' and then release the button.

4. Press the ⊠ CANCEL button.

   The ⊘ ERROR light will flash while the printer analyzes the 'no media' condition.

5. Position only the backing material (or, if using reflective media, the black mark) in the media sensor. Close the Printhead Assembly and press the FEED button.

   The ⊘ ERROR light will flash while the printer analyzes the top of form mark.

6. Place the media with the backing attached (or, if using reflective media, an area other than the black mark) in the media sensor. Close the Printhead Assembly and press the ⊛ PAUSE button.

   The ⊘ ERROR light will flash while the printer analyzes the label.

7. Simultaneously and briefly press the ⊛ PAUSE + ⊠ CANCEL buttons. One of the following lights will flash five times to denote the result of the calibration:

   ⊛ STOP Light = Successful calibration. Proceed to Step 8, below.

   ⊘ ERROR Light = Unsuccessful calibration. Retry the procedure.

8. Install media. Test the current calibration by pressing the FEED button. (A label should feed from the printer.) Press the ⊠ CANCEL button. (A test label should be produced.)

> ☑ **Note:** *To discard these changes and revert to the previous calibration, turn off the printer before Step 9.*

9. Press the ⊛ PAUSE and ⊠ CANCEL buttons simultaneously and briefly. Wait until the ⊛ STOP light goes off. *The printer is now calibrated, ready for operation.*

2.2.2 Calibrating Display-Equipped Models

There are three different calibration methods available.

2.2.2.1 Quick Calibration

This is the easiest calibration method and should work for most die-cut and reflective media types.

> ☞ *This procedure is not required for continuous media. If 'Uncalibrated' is displayed, follow the Standard Calibration procedure in Section 2.2.2.2.*

Perform a Quick Calibration as follows:

1. Ensure that media is loaded, that the Media Sensor is adjusted and that the printer is idle.

2. Press and hold the **FEED** Key.

The printer will begin advancing media; allow at least one label gap or mark to pass through the sensor.

Upon successful completion, '`CALIBRATION COMPLETE`' will be displayed, the printer will feed to the next label TOF and '`READY`' will be displayed. (A '`WARNING LOW BACKING`' message may appear if using notched media or media on a transparent liner; however, the calibration was successful).

> ☑ ***Note:*** *Die-cut media containing large gaps may require a change in the 'PAPER OUT DISTANCE' setting; see the Operator's Manual for details.*

Calibration Hints: In certain cases, the printer may have trouble differentiating between the label and liner.

If '`CANNOT CALIBRATE`' is displayed, or if the printer stops feeding mid-label then try the following:

- Press and hold the **FEED** Key to allow two gaps (or marks) to pass through under the sensor.

If '`CANNOT CALIBRATE`' is displayed again, or if the printer stops feeding mid-label then try the following:

- Press and hold the **FEED** Key to allow three or more gaps (or marks) to pass through the sensor. If this method fails, use the Standard Calibration (see Section 2.2.2.2).

2.2.2.2 Standard Calibration

During the Standard Calibration process, the printhead assembly can be raised for visual access to the media and media sensor. In addition, displayed sensor readings can be used to indicate the best position over the media. These features are helpful when using small, position-critical TOF notches or marks. Three readings are required:

- Empty: No media in the sensor.
- Gap (or Mark): Only the backing, notch, or reflective mark in the sensor.
- Paper: The label (with the liner attached) in the sensor.

Make sure media is loaded and that the appropriate Sensor Type has been selected, then perform the Standard Calibration as follows:

Step	Action	Displayed Message	Comment
1	Turn 'On' the printer.	UNCALIBRATED	Wait for the printer to initialize (about six seconds) before proceeding.
2	Press the MENU Key. Raise the printhead assembly.	MENU MODE MEDIA SETTINGS	You are entering Menu Mode.
3	Press the ENT Key to enter the Media Settings menu.	MEDIA SETTINGS MEDIA TYPE	See the *Operator's Manual* for the menu layout.
4	Press the FWD Key and scroll to 'SENSOR CALIBRATION'.	MEDIA SETTINGS SENSOR CALIBRATION	Press the ESC Key to abort this procedure.
5	Press the ENT Key.	SENSOR CALIBRATION PERFORM CALIBRATION	You are beginning the standard calibration procedure.
6	Press the ENT Key. Remove the media from the Media Sensor then press any key.	REMOVE LABEL STOCK PRESS ANY KEY <yyy>	This sets the parameter for the 'empty' value. Where 'yyy' is a numerical value representing the current sensor reading.

Standard Calibration (continued)

Step	Action	Displayed Message	Comment
7	Proceed according to media type: **Die-cut media:** Peel media from the backing and then reinsert the backing into the sensor; adjust the Sensor Eye Mark near the center of the backing material. Press any key to continue. **Notched media:** Adjust the Sensor Eye Mark over the center of the notch. Press any key to continue. **Reflective media:** Adjust the Sensor Eye Mark over the center of the facedown black mark. Press any key to continue. **Continuous media:** Go to Step 8.	SCAN BACKING PRESS ANY KEY <yyy> *Or, for reflective media:* SCAN MARK PRESS ANY KEY <yyy>	This sets the parameter for the 'gap' or 'mark' value. Where 'yyy' is a numerical value representing the current sensor reading: useful in locating the best sensor position. ☑ ***Note:*** *Never position the sensor over a perforation when recording a sensor reading.*
☑ ***Note:*** *Do not move the position of the Media Sensor after it has been adjusted.*			
8	Position a label (and backing, if any) under the Sensor Eye Mark. Press any key to continue. ☑ ***Note:*** *If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics or borders.*	SCAN PAPER PRESS ANY KEY <yyy>	This sets the parameter for the 'paper' value. Where 'yyy' is a numerical value representing the current sensor reading.

Standard Calibration (continued)

Step	Action	Displayed Message	Comment
9	Observe the message on the display.	GAP MODE CALIBRATION COMPLETE *Or, for reflective media:* REFLECTIVE MODE CALIBRATION COMPLETE *Or, for continuous media:* CONTINUOUS MODE CALIBRATION COMPLETE	The calibration was successful. If another message was displayed, see the note below.
10	Exit the menu tree by repeatedly pressing the ESC Key. If using gap or reflective media, press and hold the **FEED** Key and allow at least one label gap (or mark) to advance under the sensor.	READY	The printer is now ready to begin printing. If this calibration was not successful, go to Section 2.2.2.3.

☑ ***Note:*** *When calibrating notched media, or media on a transparent liner, a 'WARNING LOW BACKING' message is normal. For a list of all possible messages, see Section 3.3.*

2.2.2.3 Advanced Entry Calibration

Advanced Entry Calibration is an alternate calibration method for special-case media types only. This procedure has two parts: (1) recording sensor readings using differing algorithms and, (2) selecting, re-sampling, and manually entering calibration values.

> *Advanced Entry Calibration will override all previous calibration settings; use this method only when Standard Calibration has failed.*

Make sure media is loaded and that the appropriate Sensor Type has been selected, then perform the Advanced Entry Calibration as follows:

Step	Action	Displayed Message	Comment
1	Turn 'On' the printer.	UNCALIBRATED	Wait until the printer initializes (about six seconds).
2	Press the MENU Key. Raise the printhead assembly.	MENU MODE MEDIA SETTINGS	You are entering Menu Mode.
3	Press the ENT Key to enter the Media Settings menu.	MEDIA SETTINGS MEDIA TYPE	See the *Operator's Manual* for the menu layout.
4	Press the FWD Key and scroll to 'SENSOR CALIBRATION'.	MEDIA SETTINGS SENSOR CALIBRATION	Press the ESC Key to abort this procedure.
5	Press the ENT Key.	SENSOR CALIBRATION PERFORM CALIBRATION	You are entering the calibration submenu.
6	Press the FWD Key to scroll to 'ADVANCED ENTRY'.	SENSOR CALIBRATION ADVANCED ENTRY	You are entering Advanced Entry Calibration.
7	Press the ENT Key.	ADVANCED ENTRY SENSOR LEVELS	Press the ESC Key to abort this procedure.

Advanced Entry Calibration (continued)

Step	Action	Displayed Message	Comment
8	Press the ENT Key.	ADVANCED ENTRY SENSOR GAIN	You are beginning the Advanced Entry Calibration.
9	Press the ENT Key. Place the label under the Sensor Eye Mark and lower the printhead assembly.	GAIN TRAN <yyy> *00 <0 – 31> *-Or-* GAIN REFL <yyy> *00 (0 – 31)	If using preprinted media, ensure the label area under the sensor is free of preprinted text, graphics, borders or perforations.
☑ ***Note:*** *Do NOT move the position of the Media Sensor after it has been adjusted.*			
10	Press the ENT Key to select the setting (denoted by an '*'). Record this sensor reading (the 'yyy' value) as a **Label Value** in a table similar to the one shown below. Next, press the FWD Key to increment the Gain Number. Repeat this step for each of the Gain Numbers (00-32).	GAIN TRAN <yyy> *00 <0 – 31> *-OR-* GAIN REFL <yyy> *00 (0 – 31)	Where 'yyy' is a numerical value representing the current sensor reading: useful in locating the best sensor position. ☑ ***Note:*** *Never position the sensor over a perforation when recording a sensor reading.*

Sample table: *Use a list similar to the one shown right, with enough rows to record the data for each of the 33 Gain Numbers.*	Gain Number	Label Value	TOF Value	Difference Value
	00	255		
	01			
	02			
	…			
	32			

Advanced Entry Calibration (continued)

Step	Action	Displayed Message	Comment
11	Proceed according to your media type: **Die-cut stock:** strip the media from the backing and then reinsert it into the sensor; adjust the Sensor Eye Mark over the center of the backing. **Notched stock:** adjust the Sensor Eye Mark over the center of the notch. **Reflective stock:** Adjust the Sensor Eye Mark over the center of the facedown black mark. Press the ENT Key to select the setting and then record the sensor reading in your table as a **TOF Value.** Next, press the FWD Key to increment the Gain Number. Repeat for each of the Gain Numbers (00-32).	GAIN TRAN <yyy> *00 (0 – 31) *Or, for reflective media:* GAIN REFL <yyy> *00 (0 – 31)	Where 'yyy' is a numerical value representing the current sensor reading.
12	From the data collected in Steps 10 and 11, where both the sensor readings are above 20, subtract each Label Value from the corresponding TOF Value. Record these as **Difference Values**. From the resulting list, find the largest Difference Value (see example below). Its associated Gain Number is the best algorithm for your media.	GAIN TRAN <yyy> *00 (0 – 31) *Or, for reflective media:* GAIN REFL <yyy> *00 (0 – 31)	**Both sensor readings must be <u>above 20</u>.**

Advanced Entry Calibration (continued)

For example, if your compiled data had the values shown in this table, Gain Number 8 would be chosen because it has the highest Difference Value (146), where both the Label Value and the TOF Value are above 20.

Gain Number	Label Value	TOF Value	Difference Value
00	255	254	1
01	251	240	11
02	241	213	28
03	231	182	49
04	219	150	69
05	212	119	93
06	200	88	112
07	189	58	131
08	178	32	146
09	167	19	N/A
10	156	17	N/A
…	…	…	…
31	116	14	N/A
32	112	14	N/A

Step	Action	Displayed Message	Comment
13	Using the FWD Key, select the Gain Number determined in Step 12. Press the ENT Key to select the setting.	GAIN TRAN <yyy> *08 (0 – 31) *Or, for reflective media:* GAIN REFL <yyy> *08 (0 – 31)	This example uses Gain Number 8. Selection is denoted with an '*'.
14	Place the media in the Media Sensor. Record the sensor reading and label it 'P' (paper). Place the backing, mark, or notch in the sensor. Record the reading and label it 'G' or 'M' (Gap or Mark). Remove all media. Record the reading and label it 'E' (Empty).	GAIN TRAN <yyy> *08 (0 – 31) *Or, for reflective media:* GAIN REFL <yyy> *08 (0 – 31)	Where 'yyy' is a numerical value representing the current sensor reading.
15	Press the ESC Key. Then press the FWD Key.	ADVANCED ENTRY SENSOR LEVELS	The sensor readings must be manually entered into the printer now.

Advanced Entry Calibration (continued)

	Paper	Gap (or Mark)	Empty
For example, at Gain Number 8, these were the sensor readings for each of the media conditions. (Actual readings will vary.)	198	084	014

Step	Action	Displayed Message	Comment
16	Press the ENT Key. Using the FWD or the REV Key, set the 'Paper' level to the value determined in the previous step. Press the ENT Key to set the entry (indicated by the '*') and advance the menu. Repeat for the 'Gap' (or 'Mark') and 'Empty' levels.	PAPER SENSOR LEVEL P*198 G*084 E*014 ↓ GAP SENSOR LEVEL P*198 G*084 E*014 ↓ EMPTY SENSOR LEVEL P*198 G*084 E*014 *Or, for reflective media:* PAPER SENSOR LEVEL P*015 M*181 E*213 ↓ MARK SENSOR LEVEL P*015 M*181 E*213 ↓ EMPTY SENSOR LEVEL P*015 M*181 E*213	The selection will flash and the display heading will change to indicate the item for entry.
17	After all entries have been made, press the ESC Key to back out of the menu and then press the ENT Key to save the settings and return to the Ready Mode.	SAVE CHANGES? ENTER KEY = YES	From 'READY', press the **FEED** Key to advance to the next label TOF.

☑ ***Note:*** *If the Advanced Entry Calibration fails, try the following procedure:*

Re-enter the menu system. Go to `Media Settings` → `Calibration` → `Advanced Entry` → `Sensor Gain` *and lower the selected Gain Setting number by one (to make the sensor less sensitive). Select the new Gain Setting, save the changes, exit the menu, and then test your media. Repeat the procedure until a usable media setting is obtained.*

2.3 Media Width Adjustment

To maintain even pressure distribution across media that is less than the width of the platen roller, the printer requires a Media Width Adjustment. Whenever using media that is less than four inches wide, proceed as follows:

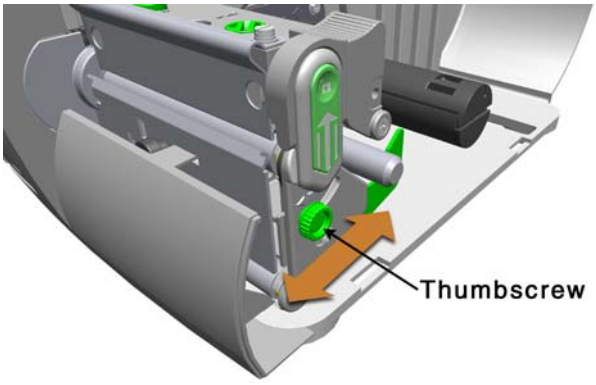
1. Load media, then generate a batch of labels –

   Non-Display models: Simultaneously press the PAUSE + FEED buttons.

   Display-equipped models: Select a quantity of Print Quality Labels (see the *Operator's Manual* for details).

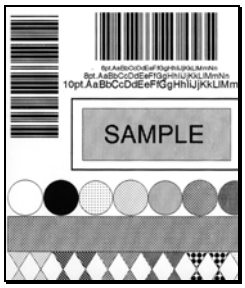
2. While printing, loosen the Thumbscrew then move it to the left-most position. (The printing on the labels should fade, as shown in Example 1, below.)

3. Move the Thumbscrew to the right until the labels contain a complete, even image (see Example 2) and then tighten the Thumbscrew.



Example 1 – Over adjustment:

Too much adjustment produces an image that fades across the label. To correct this, decrease the Media Width Adjustment.



Example 2 – Correct adjustment:

Proper adjustment produces a complete image, with even print contrast across the label (see note below).

☑ ***Note:*** *Under-adjustment can cause ribbon wrinkling, lateral label movement, and excessive wear on the printhead and platen roller.*

2.4 Printhead Burn Line Adjustment

The Burn Line has been adjusted at the factory for strict compliance using 6.5-mil (.0065 inch) media, ensuring print quality across a majority of media types. In extreme cases, however, if media of a different thickness or rigidity is used (for example, heavy tag stock), print quality can change. Typically, thicker media requires a slight forward adjustment, while thinner media requires a slight backward adjustment.

☞ *If you have questions, contact a qualified technician or Datamax Technical Support before proceeding.*

To adjust the Burn Line:

1. Load the printer with your media (and ribbon, if required).

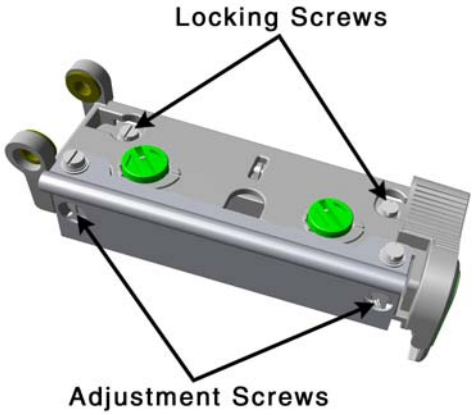
2. Loosen the two Locking Screws approximately ¼ turn counter-clockwise.

3. Turn the Adjustment Screws counter-clockwise until the burn line is past the platen roller vertex, then print a test label, as follows:

   Non-Display models: Simultaneously press the PAUSE + FEED buttons.

   Display-equipped models: Select a Print Quality Label (see the *Operator's Manual* for details).

4. The label should look light and uneven. Now, tighten the Locking Screws just until they are 'snug' (tight enough to remove any play in the printhead assembly, yet loose enough to allow the Adjustment Screws to move the printhead).



5. Turn <u>each</u> Adjustment Screw clockwise about a ¼ turn (or an 1/8 turn for finer adjustments, see note below). Print another test label and examine the print quality. Repeat this step until labels are produced with an even print contrast and an acceptable print quality.

☑ ***Note:*** *When the Locking Screws are 'snug', turning the Adjustment Screws counter-clockwise will NOT move the printhead <u>outward</u>; if you have adjusted the printhead too far inward, restart the entire procedure.*

6. Tighten the Locking Screws. Print a final Test label to verify the adjustment.

2.5 Printhead Pressure Adjustment

To accommodate a variety of media types, the pressure applied by the printhead assembly is adjustable. This pressure is factory set to work with most media types, so this adjustment should only be performed after attempting to improve print quality through the use of the (1) heat and/or (2) print speed. When adjusting, use only the minimum pressure necessary for better imaging. To adjust:

1. Load at least 4-inch (102 mm) wide media and ribbon.

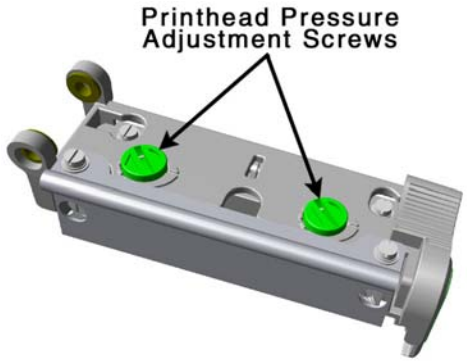
2. Ensure the Media Width Adjustment is disengaged (its left-most position); see Section 2.3.

3. Print a test label.

   Non-Display models: Simultaneously press the PAUSE + FEED buttons.

   Display-equipped models: Select a Print Quality Label (see the *Operator's Manual* for details).

4. Turn the Printhead Pressure Adjustment Screws counterclockwise to increase the applied pressure or clockwise to decrease the pressure. Make equal adjustments to each screw to achieve even print contrast across the media.



☑ **Notes:**	*1) When using narrow media it is sometimes necessary to increase the pressure on the inner (closest to centerplate) Printhead Pressure Adjustment Screw to prevent ribbon smudging.*
	2) Excessive pressure can reduce the service life of the printhead and platen roller.
	3) Unequal pressure may cause ribbon and label tracking problems.

2.6 Ribbon Alignment

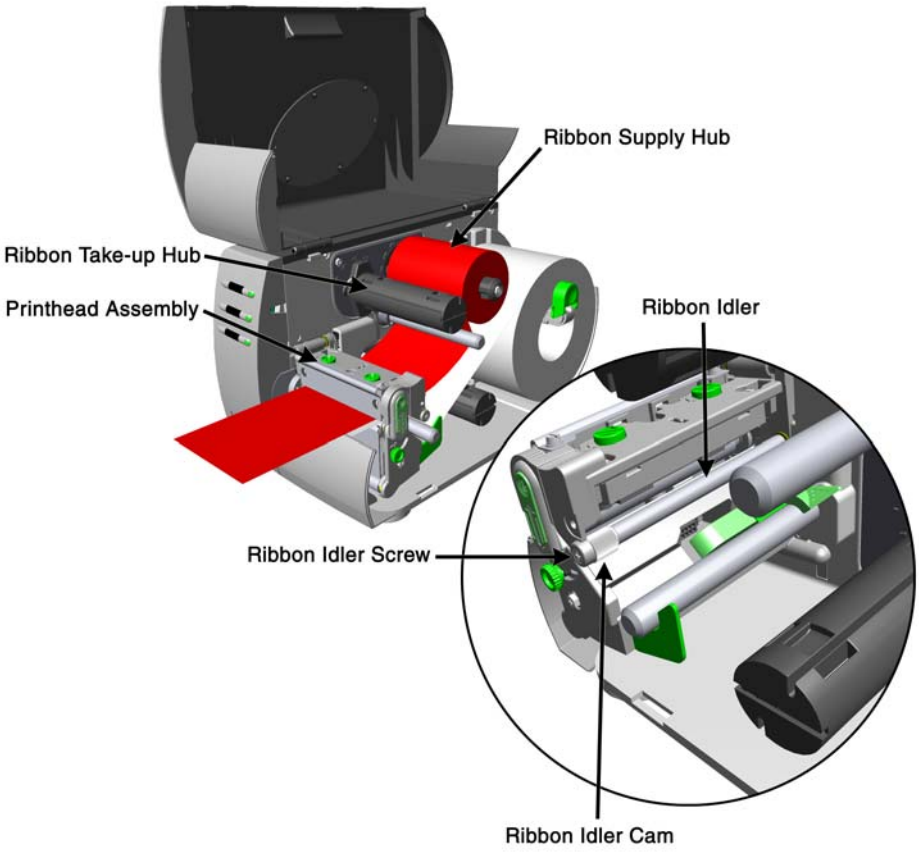
Correct ribbon alignment ensures smooth, taut ribbon flow during the print process. When irregular voids extend diagonally through the printed images on thermal transfer-equipped models, the cause may be due to ribbon overlapping (wrinkling). Begin troubleshooting by checking the Media Width Adjustment (Section 2.3), Printhead Pressure Adjustment (Section 2.5), and the Printhead Burn Line Adjustment (Section 2.4). Also examine the Platen Roller for signs of wear, debris build-up and excessive side-to-side play. If all of these adjustments and components are in good order, then proceed with the Ribbon Alignment as follows:

1. Load 4-inch (102 mm) or wider media. Load a matching ribbon, but do not secure the leader to the Ribbon Take-up Hub. Instead, allow the media and ribbon to feed together from the printer.

2. Ensure the Media Width Adjustment is disengaged (its left-most position); see Section 2.3.

3. Press the FEED Button several times to normalize the tracking of the ribbon and media. (Continued excessive side-to-side [lateral] movement of the labels must be corrected before proceeding - typical causes include uneven printhead pressure, a worn platen roller, or worn platen bearings.)

4. Observe the ribbon for rippling and bagging as it travels down from the Ribbon Supply Hub and under the Printhead Assembly. If the travel is smooth, proceed to Step 5; otherwise, loosen the Ribbon Idler Screw then, while repeatedly pressing the FEED Key, slowly turn the Ribbon Idler Cam until the ribbon is dispensed smoothly from the Ribbon Supply Hub to the Printhead Assembly. Carefully tighten the Ribbon Idler Screw and feed several more labels to verify adjustment, repeat if necessary.

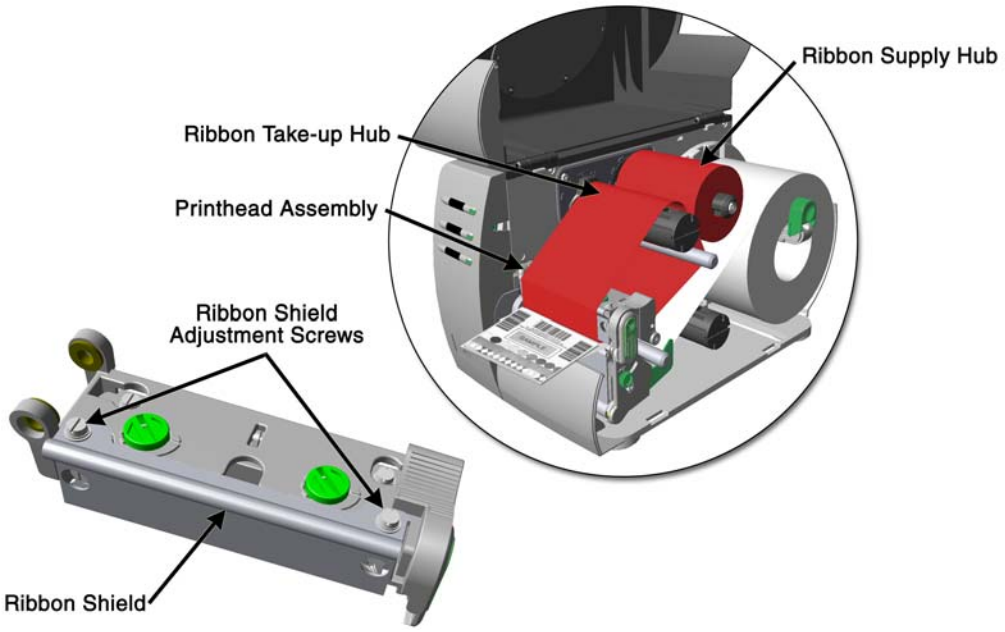


5. Attach the ribbon to the Ribbon Take-Up Hub then proceed according to printer type –

   Non-Display models: Simultaneously press the PAUSE + FEED buttons.

   Display-equipped models: Select a quantity of Quick Ribbon Test labels (see the *Operator's Manual* for details).

6. Begin printing. Observe the ribbon for rippling and bagging as it travels up from the Printhead Assembly to the Ribbon Take-Up Hub. If the travel is smooth and the printed labels show no evidence of ribbon wrinkling, proceed to Step 7; otherwise, slightly loosen the Ribbon Shield Adjustment Screws. Move either side of the Ribbon Shield 'in' or 'out' to smooth the ribbon and remove any wrinkle-related voids from the printed labels. Carefully tighten the Ribbon Shield Adjustment Screws. Print several labels. Verify the adjustment and repeat if necessary.



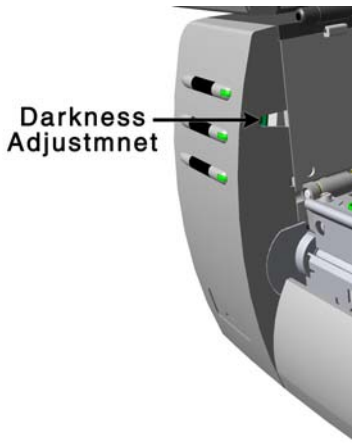
7. Install operating media and ribbon. Set the Media Width Adjustment, as needed (see Section 2.3). Send your label format to the printer from the host. Examine the printed labels; readjust the Ribbon Shield slightly, if needed.

2.7 Darkness Adjustment

The Darkness Adjustment allows compensation for changes that may occur in print contrast following a printhead replacement. Depending upon the printer model, this adjustment is accomplished as follows:

Non-Display models:

Turning the Darkness Adjustment in a clockwise direction will darken the print, while a counterclockwise adjustment will lighten the print. Following a printhead replacement, compare a label printed with the old printhead to one printed with the new printhead. If the darkest portions of the label are different, turn the Darkness Adjustment until the labels match.



Display-equipped models:

Using the Menu System, go to Print Control / Custom Adjustments / Darkness (see the *Operator's Manual* for details).

☑ **Note:** *Large increases in the 'Darkness Adjustment' can shorten printhead life. If you need to increase the darkness of the printed labels, try increasing the Heat value and/or slow the Print Speed using your software program or via DPL commands; see the Operator's Manual for details.*

2.8 Downloading Firmware and Fonts

The operating programs and fonts for the printer are stored in Flash memory on the Main PCB. When program updates and/or new features are added, they can be downloaded to the printer as follows:

1. Identify the new version of firmware for your model of printer from the Datamax website at www.datamaxcorp.com

2. Download the firmware onto your computer's hard drive or a floppy disk. Ensure that the printer is connected to the host via the parallel port, and that the printer is powered 'On.' Then, depending upon your printer model, use the DOS copy command:

   `copy filename.dlf lpt1/b` *(Non-Display model firmware is .dlf extension)*

   `copy filename.zs lpt1/b` *(Display-Equipped model firmware is .zs extension)*

   Note: *Other programs (e.g., hyper-terminal and certain Windows® Driver programs) may also be used to download this file.*

   The READY *light will flash during the download.*

3. Following a successful download, the STOP Light will illuminate then the printer will perform a 'cold reset.' The previous printer setup will not be affected unless substantial firmware data structure changes have occurred. Print a Database Configuration Label to verify your new firmware version (see the Operator's Manual for details).

Note: If the ERROR Light illuminates then the download was unsuccessful. In this case, the printer will perform a 'warm reset' (both the READY and STOP lights will be on during power-up initialization) and the original firmware will remain operational. Should the printer fail to reset, toggle the power 'Off' and 'On.'

Try re-sending the file to the printer. If the failure continues, however, check the following as possible causes:

- An invalid or corrupted file is being downloaded: Ensure that the file being downloaded is correct and applicable for your printer model.
- There may be a communications error: Check the cable connection between the host and printer and ensure that a quality, shielded cable is used.
- There may be Flash memory problem: Replace the Main PCB (see Section 4.4).

2.9 Resetting the Printer

To reset the printer proceed according to the model.

2.9.1 Non-Display Models

Turn 'Off' the printer. Press and hold all three buttons and turn 'On' the printer. Continue to depress the buttons down until the ⊘ STOP light turns off (about 17 seconds). The printer's settings are now at 'Factory Defaults.' See the *Operator's Manual* for a listing of these values.

2.9.2 Display-Equipped Models

Depending upon the method used, there are three reset levels possible. Each is described below:

Soft Reset

To reset the printer and clear any temporary host settings:

With the printer 'On', press and hold the CANCEL Key for approximately four seconds.

Level One Reset

To return the printer to the factory default settings or, if saved, to restore the Factory Setting File:

☑ ***Note:*** *This has the same effect as the 'Set Factory Defaults' menu item. (See the Operator's Manual for details.)*

❶ Turn 'Off' the printer.

❷ Press and hold the PAUSE and CANCEL Keys while turning 'On' the printer; continue to depress the keys until the 'READY' message appears.

Level Two Reset

To return the printer to the factory default settings, and clear all the calibration and adjustment parameters:

❶ Turn 'Off' the printer.

❷ Press and hold the PAUSE, FEED, and CANCEL Keys while turning 'On' the printer; continue to depress the keys until the 'READY' message appears.

☑ ***Note:*** *After executing a Level 2 Reset, calibration must be performed; see Section 2.2. For a listing of the factory default values, see the Operator's Manual.*

2.10 Printhead Voltage Adjustment

CAUTION

This procedure requires voltage measurement: Use extreme caution.

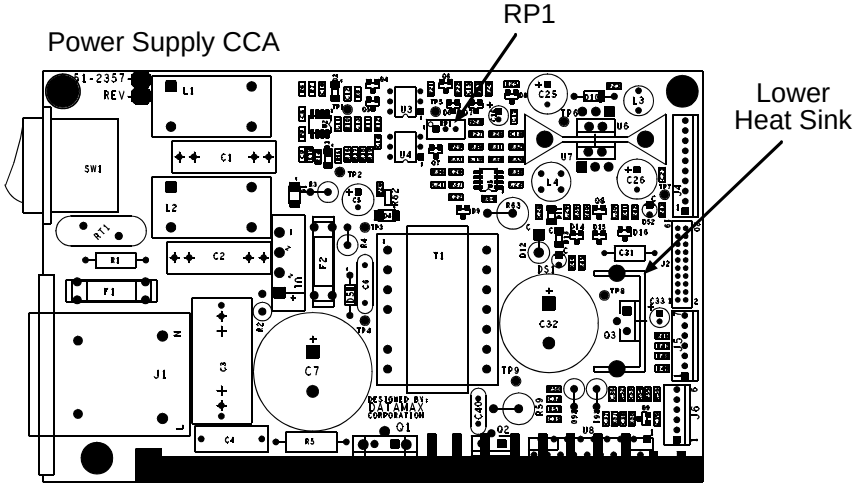
The printhead voltage adjustment is required (1) when replacing the power supply, or (2) if the factory voltage setting of the power supply has been changed. No voltage adjustment is required during routine printhead replacements.

Adjust the Printhead Voltage as follows:

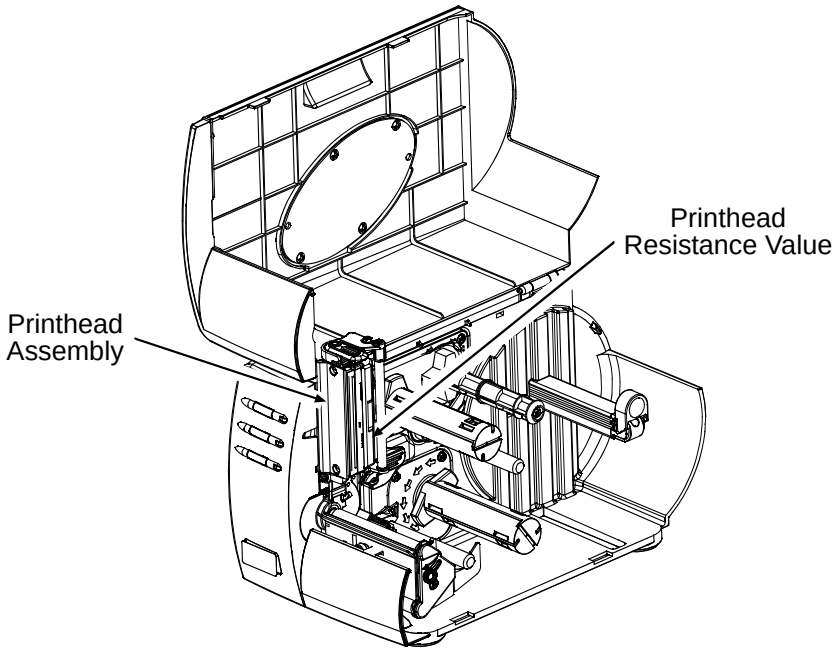
❶ Turn 'Off' and unplug the printer.

❷ Remove the Side Covers; see Section 4.1.

❸ Using a digital multimeter (DMM) set to measure a DC voltage, connect the positive lead to the Lower Heat Sink and connect the negative lead to chassis ground.



❹ Raise the Printhead Assembly. Locate and note the Printhead Resistance Value on the label on the Printhead.



❺ Ensure that media is loaded. Close the Printhead Assembly then plug in and turn ‘On’ the printer.

❻ Wait for the printer to initialize. After ‘Ready’ is displayed, press the FEED button (this will enable the printhead voltage for approximately 30 seconds). While monitoring the DMM, adjust the voltage using RP1 on the Power Supply CCA according to the resistance range listed in the appropriate table below.

WARNING

An over-voltage condition can permanently damage or shorten the life of the printhead.

Printhead Voltage Adjustment Table		
Model Number	**Resistance Range (in Ohms)**	**Power Supply Voltage Tolerance (in VDC)**
M-4206 & M-4208	561 – 586	22.3 – 22.5
	587 – 611	22.8 – 23.0
	612 – 635	23.2 – 23.4
	636 – 660	23.7 – 23.9
	661 – 685	24.1 – 24.3
	686 – 710	24.6 – 24.8
	711 – 734	25.0 – 25.2
M-4306	947 – 989	22.3 – 22.5
	990 – 1030	22.8 – 23.0
	1031 – 1072	23.3 – 23.5
	1073 – 1114	23.7 – 23.9
	1115 – 1156	24.1 – 24.3
	1157 – 1197	24.6 – 24.8
	1198 – 1239	25.0 – 25.2
	1240 – 1281	25.4 – 25.6

❼ Turn ‘Off’ and unplug the printer. Remove the DMM leads and reinstall the Side Covers.

3 Troubleshooting

3.0 Overview

This chapter discusses a number of topics related to troubleshooting the printer, covering techniques necessary for isolating and correcting printer faults. When faults are isolated to a PCB board, it is recommended that the entire board be replaced, as it is not generally feasible to perform component level service in the field.

3.1 Troubleshooting

The printer is designed to provide easy access to most components. Should the printer malfunction and require service, the following procedures should be used to isolate and correct that malfunction.

3.1.1 Initial Steps

CAUTION

Always unplug the unit before attempting service and be sure that the printer has been placed on a level, stable surface.

Perform the following preliminary troubleshooting steps to confirm that a printer problem exists:

- Confirm that AC outlet being used to power the unit has the correct AC output voltage, and that the voltage is within the specification for the printer (see the *Operator's Manual* for specifications).

- Confirm that the unit has been installed in an area that is within acceptable environmental conditions (see the *Operator's Manual* for specifications).

- Perform a visual inspection of the unit and remove any accumulations of dirt or dust from the printer and the printer components (see Section 2).

- Confirm that the printer has been correctly loaded with media of an acceptable type (see the *Operator's Manual* for specifications).

3.2 General Problem Resolution

Use the table below to troubleshoot general printer problems. First identify the problem, and then go down the list of possible causes, which are listed in order of probability. If you have a display-equipped printer, warning and error messages can be found in Section 3.3.

General Problem Resolution	
Problem	**Possible Causes**
The Power LED is not 'ON'	• The power switch is not in the 'ON' position (see the *Operator's Manual*). • The power cord is not properly connected to printer and/or AC outlet (see the *Operator's Manual*), or the cord is damaged. • The cable to the Front Panel PCB is loose. • The fuse(s) in the Power Supply is (are) blown (see Section 4.5.1). • The Power Supply PCB is faulty (see Section 4.5). • The Front Panel PCB is faulty (see Section 4.2). • The Main PCB is faulty (see Section 4.4).
The printer is not communicating with host.	• The printer's interface port is not properly connected to the host (see the *Operator's Manual*). • Incorrect interface cable (see the *Operator's Manual*). • Communication parameters mismatched between the printer and host (see the *Operator's Manual*). • The Main PCB is faulty (see Section 4.4).
The media does not feed out of the printer.	• The printer is jammed due to incorrect loading (see the *Operator's Manual*). • The printer set for thermal transfer operation, but no ribbon is installed (see the *Operator's Manual*). • The printhead is not latched down (see the *Operator's Manual*). • The platen roller is worn (See Section 4.8). • The drive motor is faulty or the cable is loose (See Section 4.7). • The Power Supply PCB is faulty (See Section 4.5). • The Main PCB is faulty (See Section 4.4).
The printer feeds media, but it does not stop at each label.	• The printer is not calibrated (see the *Operator's Manual*). • The position of the media sensor is not properly adjusted (see the *Operator's Manual*). • The media sensor setting does not match the media type being used (see the *Operator's Manual*). • The media sensor is dirty or obstructed (see Section 2.2). • The media sensor is faulty or media sensor cable is loose (see Section 4.6). • The Main PCB is faulty (see Section 4.4).

General Problem Resolution (continued)	
Problem	**Possible Causes**
The printer does not print, or the print quality is poor.	• Incorrect media/ribbon combination (see the *Operator's Manual*). • The printer is set to 'direct thermal,' but thermal transfer media is installed (see the *Operator's Manual*). • The Media Width Adjustment is not correctly set (see Section 2.4). • The printhead is dirty (see Section 2.1). • The printhead is not correctly adjusted (see Section 2.5). • The platen is worn (see Section 4.8). • The printhead is faulty or the cabling is loose (see Section 4.3). • The Power Supply PCB is faulty (See Section 4.5). • The Main PCB is faulty (See Section 4.4).

3.3 Warning & Fault Message Resolution *(Display-equipped models only)*

All printer functions are monitored. During operation, when a potential problem (Warning) or problem (Fault) is detected the printer will display a corresponding message. Message types, along with the possible solutions, are described below.

☑ **Note:** *Warning and Fault Messages are not displayed when the printer is in Menu or Test Mode.*

3.3.1 Warning Messages

Warning Messages have a medium display priority and are shown for a period of five seconds. If multiple Warning conditions are detected, the display will reflect the highest priority message.

Warning Messages		
Displayed Message	**Description**	**Possible Solution(s)**
DOT FAILURE	The printer has detected burned-out printhead elements.	Replace the printhead when the print quality becomes unacceptable; see Section 4.3.
GAP MODE WARNING LOW BACKING	The printer measured too small a difference between the 'empty' and 'gap' sensor readings.	Transparent backing or notched media typically gives this indication. In this case, there may be a slight delay in the 'Out of Stock' indication, after the media supply is emptied; no action is required.

Warning Messages		
Displayed Message	**Description**	**Possible Solution(s)**
GOODBYE	Power has been removed and shutdown is in progress.	The printer power switch was turned 'Off', the line fuse has blown, or the AC line voltage has been lost.
HEAD NEEDS CLEANING	The scheduled printhead cleaning distance has been reached.	Clean the printhead. See Section 2.1.2 or 2.1.3 for details.
HOST CHANGES PENDING	The host has pending configuration changes that will not take effect until a 'host reset command' is issued.	To save the changes, send a host reset command (in DPL). To discard the changes perform a soft reset; see Section 2.10 for details.
LOW VOLTAGE	The 24 VDC line has dipped below the threshold value.	Possible low or fluctuating line voltage level. If this condition persists, try moving the printer to another outlet circuit. Other possible causes include a faulty power supply, main logic board, or printhead.
RTC RAM FAILURE	The printer was unable to save settings in permanent memory.	If the condition persists, possible faulty main logic board; see Section 4.4.
TEMPERATURE PAUSE	A high printhead temperature has been detected.	Allow the printhead time to cool before continuing to print.

3.3.2 Fault Messages

Fault Messages receive the highest display priority. If more than one fault is detected, the display will cycle between messages.

> ☑ **Note:** *To return to normal operation after the printer enters a fault condition, the fault must be corrected and then the FEED key pressed to clear the condition.*

Fault Messages		
Displayed Message	**Description**	**Possible Solution(s)**
24V OUT OF TOLERANCE	A drop in the 24 volt power supply has been detected.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Possible defective power supply board. Verify the 24 VDC supply voltage. For replacement, see Section 4.5. ⚠ **WARNING!** Use extreme caution when measuring printer voltages.
ADC FAULT	An analog to digital converter failure has been detected.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Replace the main logic board; see Section 4.4.
CUTTER FAULT	A blade-positioning fault has been detected.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Ensure the thickness of the media being cut is within specification for the cutter; see the *Operator's Manual* for details. ⚠ **WARNING!** Turn 'Off' the printer and unplug the power cord before examining the cutter. 3) Ensure the cutter and cable are properly installed, and that the cutter cable is free of damage. 4) Examine and clear any obstructions from the cutter. 5) The cutter may be defective. Replace it. 6) The main logic board may be defective. Replace the board; see Section 4.4.

Fault Messages *(continued)*		
Displayed Message	**Description**	**Possible Solution(s)**
DMA FAULT	The printer has detected a Direct Memory Access failure.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Replace the main logic board; see Section 4.4.
GAP MODE CANNOT CALIBRATE	Consistently low sensor readings were detected.	Press any key to continue. 1) Ensure that media was inserted in the media sensor during the appropriate calibration step. 2) Ensure that the sensor is free of debris. Retry the calibration. If the problem persists, try 'Advanced Entry Calibration'; see Section 2.3.2.3.
GAP MODE FAULTY SENSOR	Consistently high sensor readings were detected.	Press any key to continue. 1) Ensure that the media was removed from the media sensor during the appropriate calibration steps. 2) Ensure that no labels are stuck in the media sensor. Retry the calibration. If the problem persists: 1) The media sensor may be defective. Replace the sensor; see Section 4.6. 2) The main logic board may be defective. Replace the board; see Section 4.4.
HEAD CLEANING FAULT	The scheduled printhead cleaning has been exceeded by an amount equal to three times the pre-programmed distance.	Press and hold the TEST Key, or select 'CLEAN HEAD NOW'. See Section 2.1.2 or 2.1.3 for details.

Fault Messages *(continued)*		
Displayed Message	**Description**	**Possible Solution(s)**
OUT OF STOCK	Media cannot be detected.	1) Ensure that the media is properly loaded; and, if using media with a clear liner or large notches between labels, ensure that the 'Paper Out Distance' has been set (see *Operator's Manual* for details). 2) Adjust the position of the media sensor. 3) Perform a calibration; see Section 2.3.2. 4) Examine the media sensor and clear any obstructions (e.g., paper dust, adhesive, etc). 5) Possible faulty media sensor cabling connection. 6) The media sensor may be defective. Replace the sensor; see Section 4.6. 7) The main logic board may be defective. Replace the board; see Section 4.4.
POSITION FAULT	Three possible causes: (2) An update was made to the Application Version of the firmware; (2) the printer was powered-off or reset during a ribbon, out of stock or TOF fault; or (3) the printer was unable to complete the Media Calibration.	Depending upon the cause: (1) Press the FEED key in an attempt to identify and then clear the related fault condition; or (2) If necessary, calibrate the printer; see Section 2.3.2.
PRINT ENGINE FAULT	A problem has been detected in the print logic.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Replace the main logic board; see Section 4.4.
RAM FAULT	A RAM error has been detected.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Replace the main logic board; see Section 4.4.

Fault Messages *(continued)*		
Displayed Message	**Description**	**Possible Solution(s)**
REFLECTIVE MODE CANNOT CALIBRATE	Consistently low sensor readings were detected.	Press any key to continue. 1) Ensure that the reflective mark was inserted facedown in the media sensor during the appropriate calibration step. 2) Ensure that the reflective mark is made of carbon-based ink. 3) Ensure that the sensor is free of debris. 4) Retry calibration. If the problem persists, try 'Advanced Entry Calibration'; see Section 2.3.2.3.
REFLECTIVE MODE FAULTY SENSOR	Consistently high sensor readings were detected.	Press any key to continue. 1) Ensure that the reflective mark was inserted facedown in the media sensor during the appropriate calibration step. 2) Ensure that the reflective mark is made of carbon-based ink. 3) Ensure that the sensor is free of debris. 4) Retry calibration. If the problem persists, replace the media sensor; see Section 4.6.
RIBBON FAULT	Thermal transfer printing is enabled, but no or only sporadic movement of the ribbon supply hub has been detected.	1) Ensure that ribbon is correctly loaded and that the printhead is locked down. 2) Check the ribbon supply and take-up hubs for obstructions that could inhibit movement. 3) Ensure that the core of the ribbon supply fits snugly onto the ribbon supply hub. 4) Ensure the media/paper combination is correct. 5) Possible defective timing disk (on back of the Ribbon Supply Hub); see Section 4.9. 6) Possible defective sensor or main logic board; see Section 4.4.

Fault Messages *(continued)*		
Displayed Message	**Description**	**Possible Solution(s)**
STROBE TIMING FAULT	A printhead strobe problem has been detected.	1) Try cycling the printer power 'Off' and 'On' to clear the fault. 2) Replace the main logic board; see Section 4.4.
TEMPERATURE FAULT	The temperature range of the printhead has been exceeded, resulting in a print shutdown.	Allow the printhead to cool. Ensure that the printer has been installed under acceptable environmental conditions; see the *Operator's Manual* for details.

Fault Messages *(continued)*		
Displayed Message	**Description**	**Possible Solution(s)**
TOP OF FORM FAULT	The TOF mark could not be found within the maximum label length setting; or, the TOF was found in an unexpected place.	Proceed according to the symptom: **If the media is moving –** 1) Adjust the media guide and the media sensor. 3) Calibrate the printer; see Section 2.3.2. 4) The leveling cam may be improperly adjusted; see Section 2.4. 5) The maximum label length setting may need to be increased. 6) The media sensor may be occluded or defective. Try cleaning and then recalibrate; otherwise replace it. See Section 4.6. 7) The printhead pressure may need to be increased; see Section 2.6. 8) The printhead may be out of alignment; see Section 2.5. 9) The platen roller or another drive component may be worn. 10) The media / ribbon combination may be incorrect, allowing slippage. **If the media is not moving –** 1) Ensure that the printhead is latched. 2) Possible cabling problem from card cage, power supply or stepper motor. 3) Possible defective drive component. 4) Possible defective power supply board. 5) Possible defective main logic board. 6) Possible defective stepper motor.

4 Removal and Replacement

4.0 Introduction

This section details removal and replacement procedures for the various printer parts.

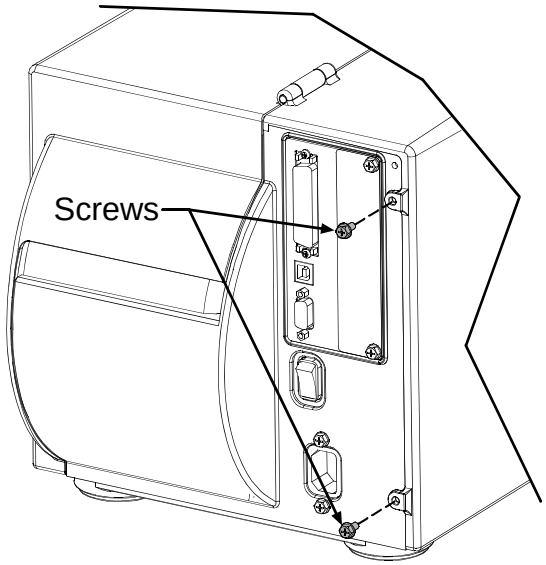
CAUTION	Wear a wrist strap and follow standard ESD prevention measures. Use extreme care when near the printhead; never use a sharp object on the surface. Never use a sharp object on the platen roller.

4.1 Side Covers

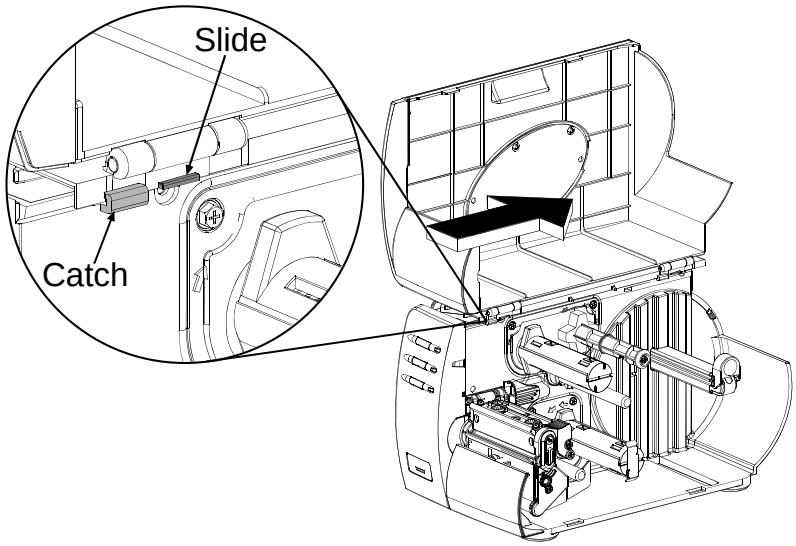
4.1.1 Plastic Covers

Removal:

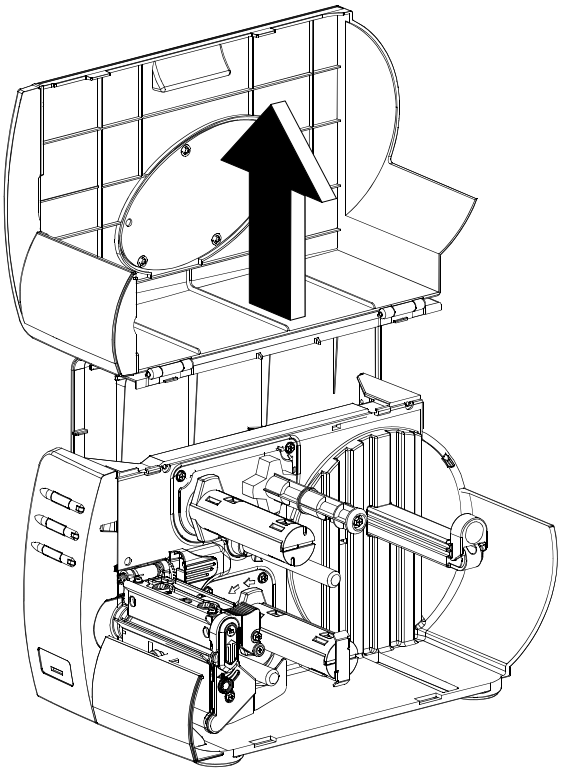
1. Turn ‘Off’ and unplug the printer.
2. On the rear of the printer, remove the two Screws securing the cover.



3. Open the cover; move the cover to the rear of the printer, as shown. Be sure the Slide on the cover is clear of the Catch on the frame of the printer.



4. Lift the cover up and off the printer.



Installation:

1. Position the Cover onto the printer and move the cover forward until the Slide on the cover engages the Catch on the printer frame (see Step 2, above).

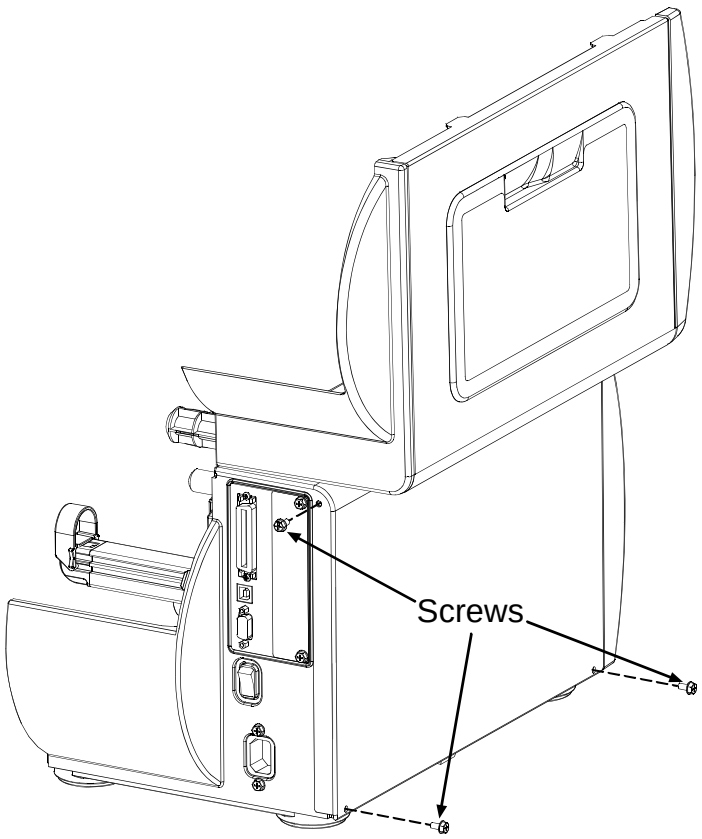
2. Re-install the two previously removed screws on the rear of the printer.

4.1.2 Metal Covers

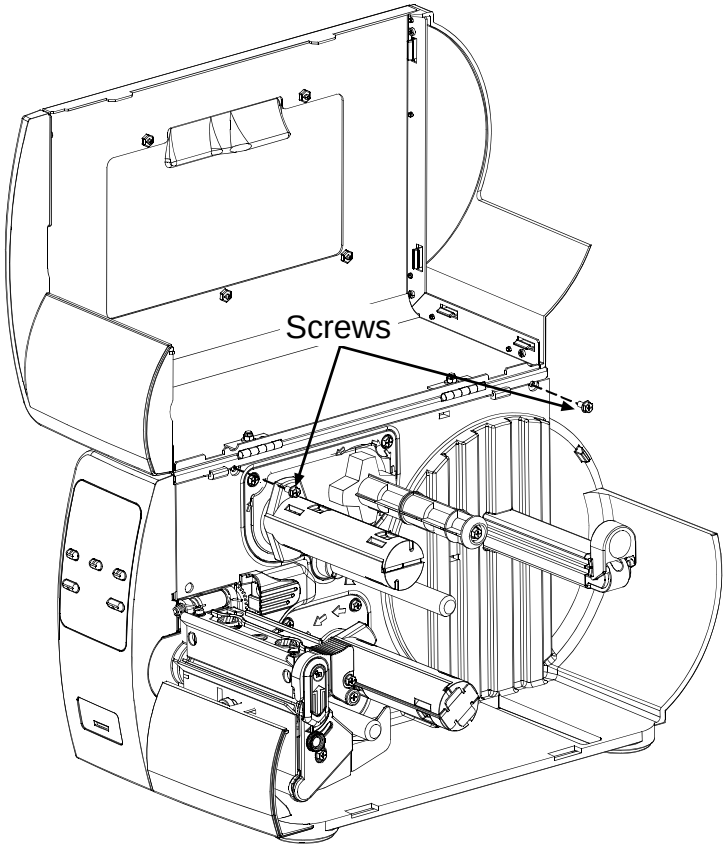
Removal:

1. Turn ‘Off’ and unplug the printer.

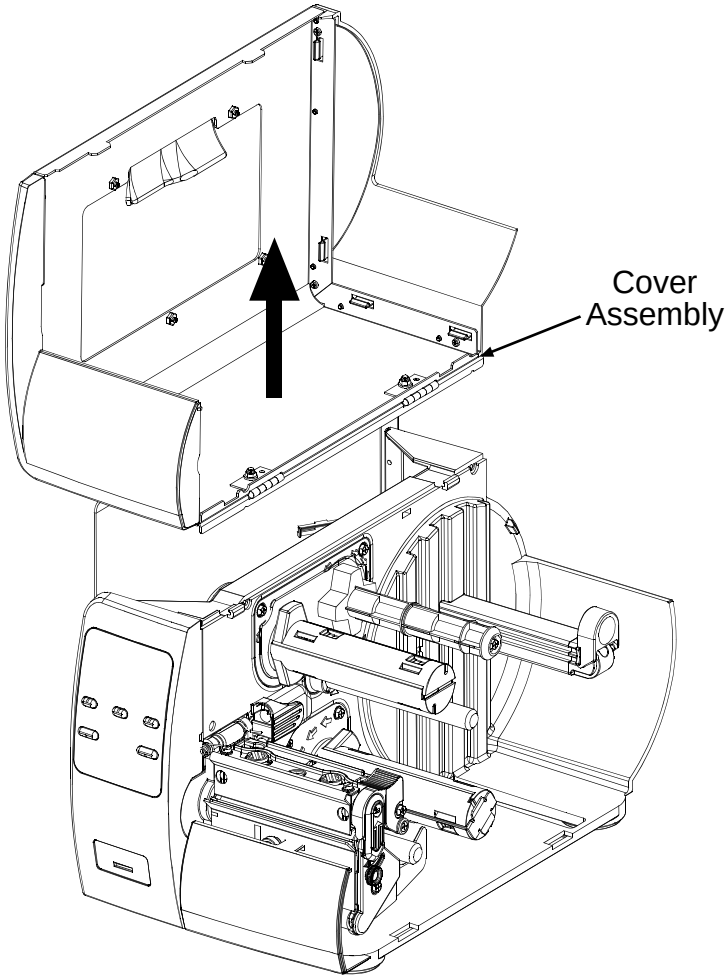
2. Remove the single Screw on the rear of the printer and two Screws securing the side cover.



3. Open the cover and remove the two Screws from the inside of the printer, as shown.



4. Lift the cover up and off the printer.



Installation:

1. Position the Cover onto the printer. Re-install the five previously removed Screws.

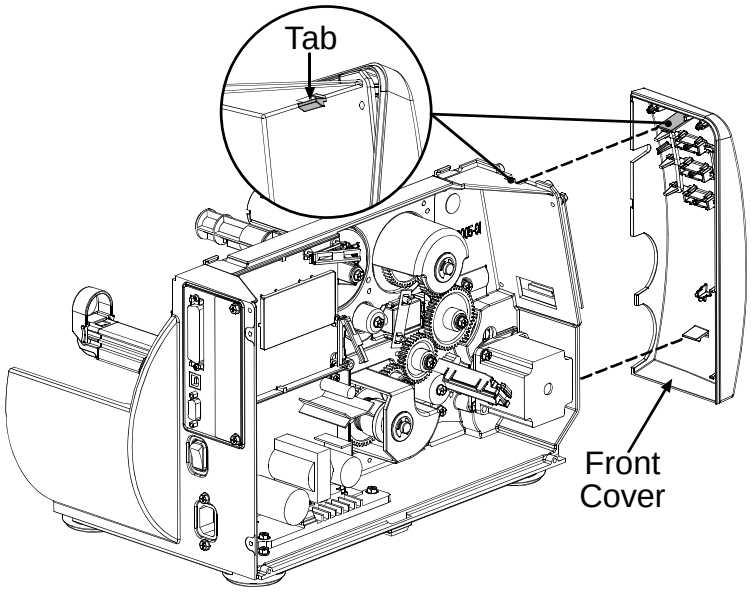
4.2 Front Cover & Front Panel PCB

Removal:

1. Turn ‘Off’ and unplug the printer.

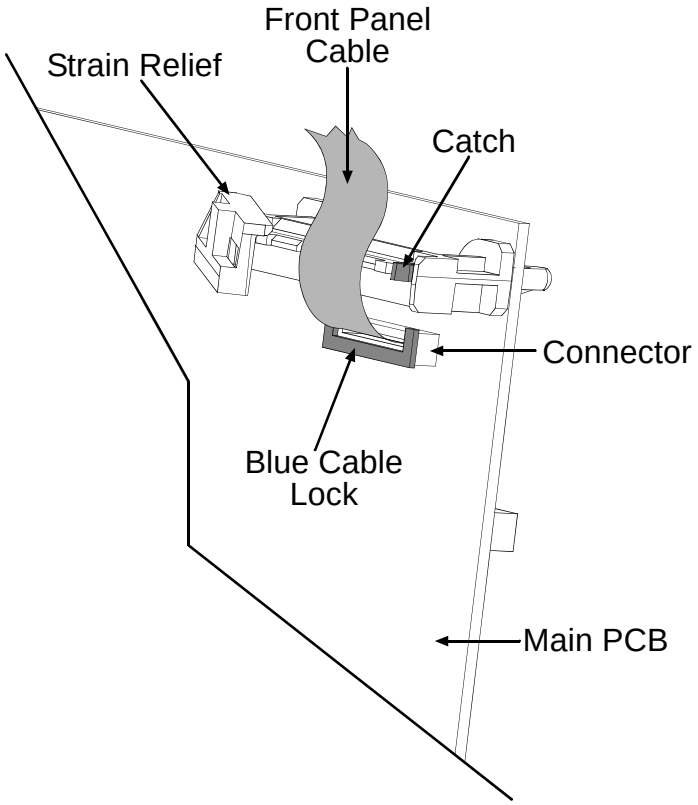
2. Remove the side covers (see Section 4.0).

3. Push up on the Tab (shown) and gently pull the Front Cover from the printer.



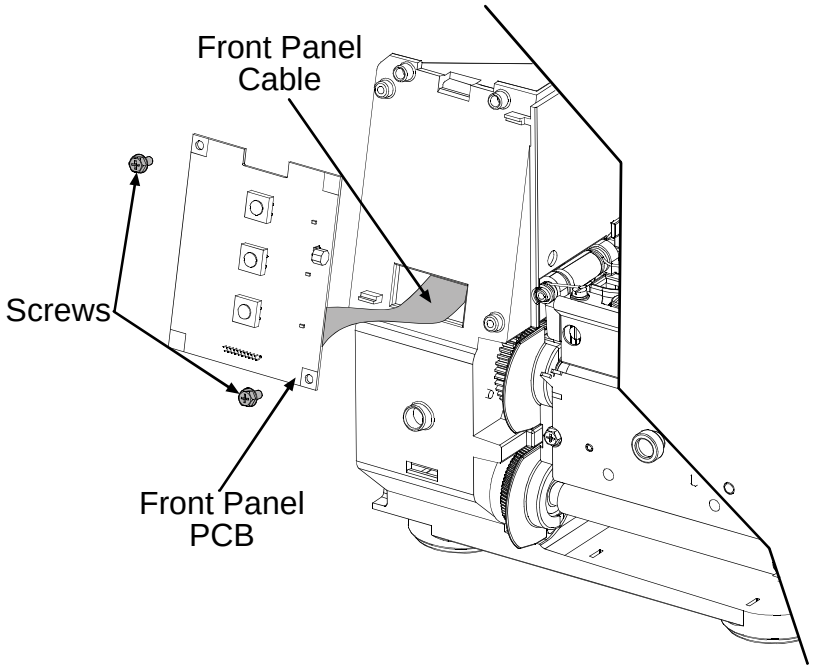
4. On the upper right corner of the Main PCB, open the Strain Relief on the Front Panel Cable by pushing inward on the Catch.

5. Raise the Blue Cable Lock and remove the Front Panel Cable from its Connector.

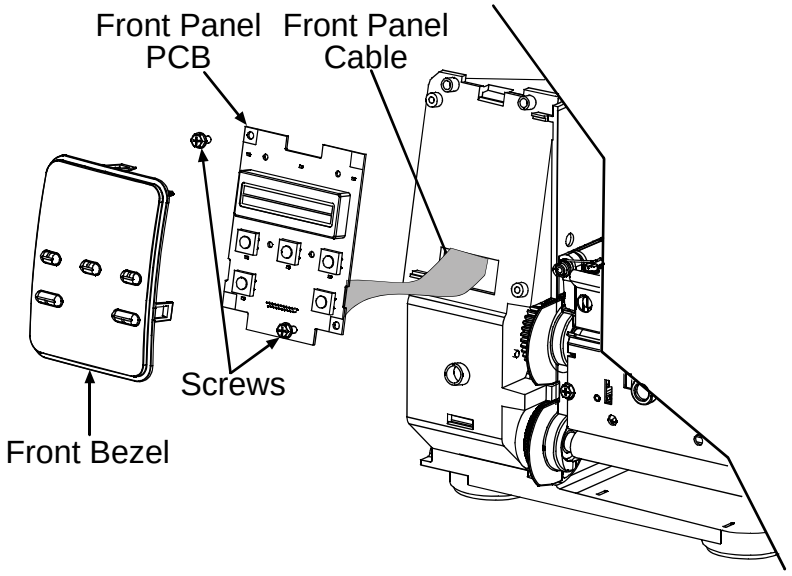


6. Remove the two Screws securing the Front Panel PCB to the printer (if you have a Display-Equipped Model, first remove the Bezel, as shown below). Move the Front Panel PCB away from the printer slightly, disconnect the Front Panel Cable, and then remove the Front Panel PCB.

Non-Display Models:



Display-Equipped Models:



Installation:

1. Position the Front Panel PCB in the printer. Secure using the two previously removed screws
2. Re-connect the Front Panel Cable to its respective connector on the Main PCB.
3. Re-install the side covers (see Section 4.0).

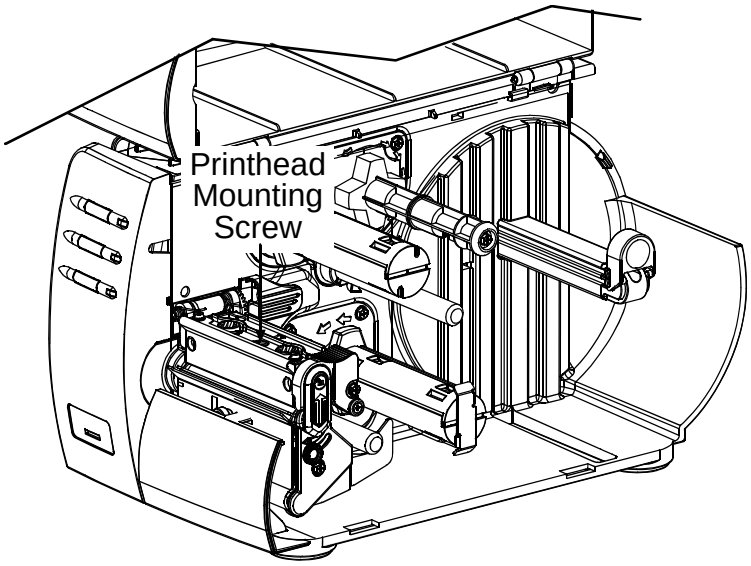
4.3 Printhead

Removal:

> ☑ **Note:** *Printheads are fragile; use extreme care when handling and never use a sharp object on the surface. If you have questions, contact a qualified technician or Datamax Technical Support before proceeding.*

1. Turn 'Off' and unplug the printer. Open the cover; if ribbon is installed, remove it. Touch a bare metal part of the printer's frame to discharge any static electricity that may be present on your body.

2. With the printhead locked in the down position, loosen the Printhead Mounting Screw (it will remain in the assembly).



3. Unlatch the Printhead Assembly. While holding the Printhead, raise the assembly. Disconnect the two cables and then remove the old Printhead.

Installation:

1. While carefully holding the new Printhead, connect both cables.

2. Position the Printhead onto the Locating Pins in the Printhead Assembly and secure in place with the Printhead Mounting Screw (do not over-tighten this screw).

3. Clean the Printhead (see Section 2.1.1).

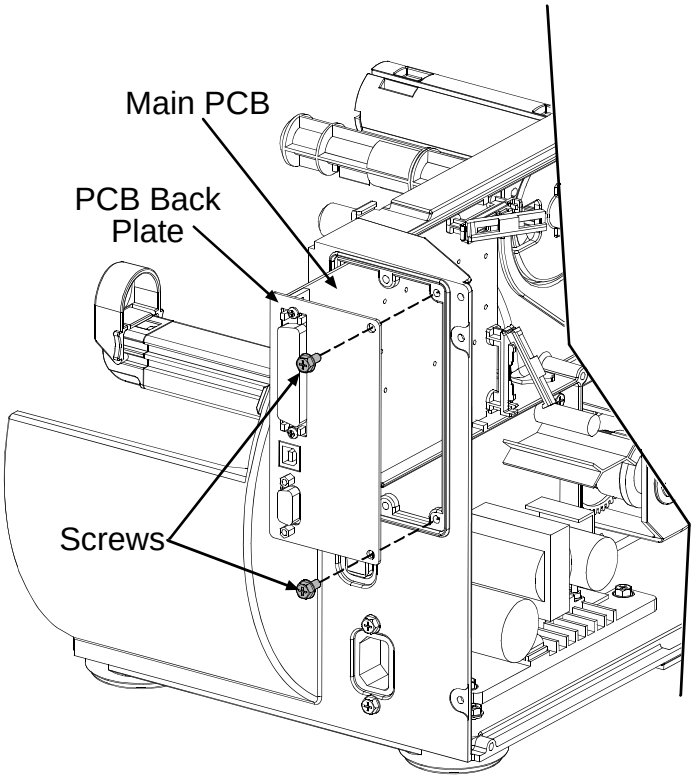
4. Reload ribbon (if removed), lower the printhead assembly, and rotate the printhead latch back, into the locked position.

5. Use the Darkness Adjustment to set the print contrast produced by the new printhead to match that of the old printhead (see Section 2.7).

4.4 Main PCB

Removal:

1. Turn ‘Off’ and unplug the printer.
2. Remove the side covers (see Section 4.0).
3. Remove all Cables from their respective connectors on the Main PCB.
4. Remove the two Screws on the PCB Back Plate of the Main PCB and gently slide the Main PCB out of the printer.



Installation:

1. Position the Main PCB in the printer. Secure using the two Screws on the PCB Back Plate.
2. Re-connect all cables to their respective connectors on the Main PCB.
3. Re-install the side covers (see Section 4.0).

4.5 Power Supply PCB

For fuse replacement only, see Section 4.5.1.

Removal:

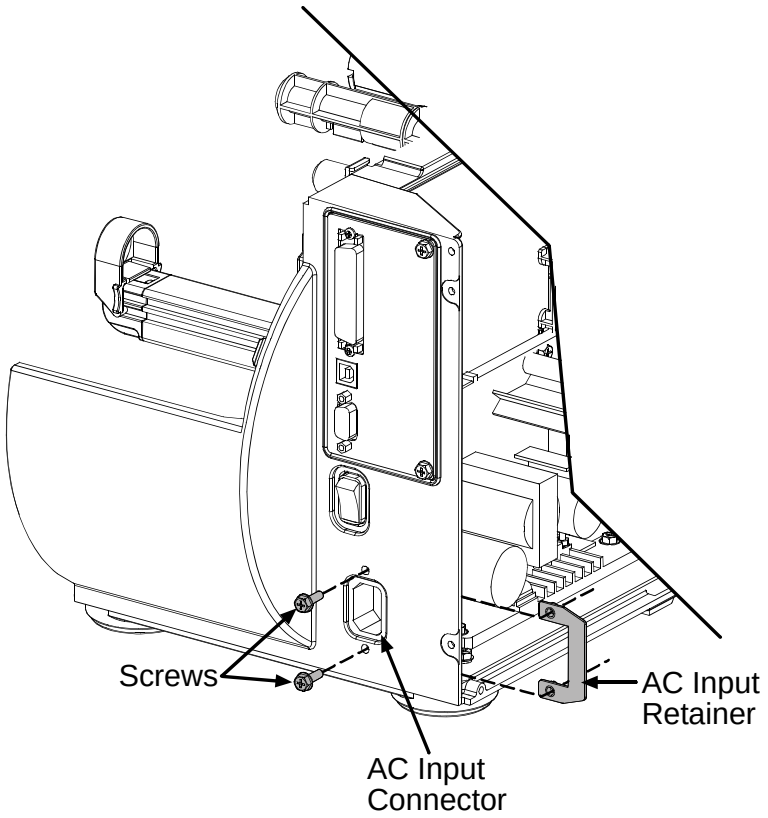
1. Turn ‘Off’ and unplug the printer.

2. Remove the side covers (see Section 4.0).

3. Remove all Cables from their respective connectors on the Power Supply PCB.

4. Remove the two Screws from the rear of the printer that secure the AC Input Connector.

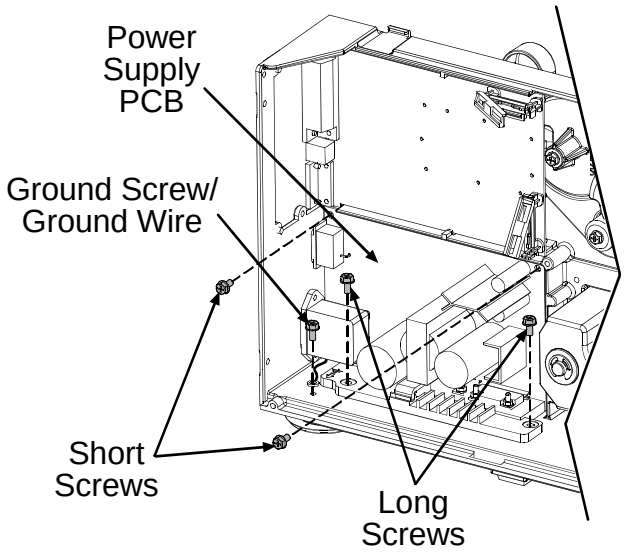
5. With the two Screws removed, remove the AC Input Retainer.



6. Remove the Screw and Lock Washer that secures the Ground Wire.

7. Remove the two Short Screws securing the Power Supply PCB and the two Long Screws securing the Power Supply Heatsink.

8. Remove the Power Supply PCB from the printer.



Installation:

1. Position the Power Supply PCB in the printer. Secure using the two Short Screws on the PCB and the two Long Screws on the Heatsink.

2. Secure the Ground Wire to the base of the printer with the previously removed screw and lock washer.

3. Position the AC Input Retainer and reinstall the two Screws that secure the Retainer.

4. Re-connect all cables to their respective connectors on the Power Supply PCB.

5. Re-install the side covers (see Section 4.0).

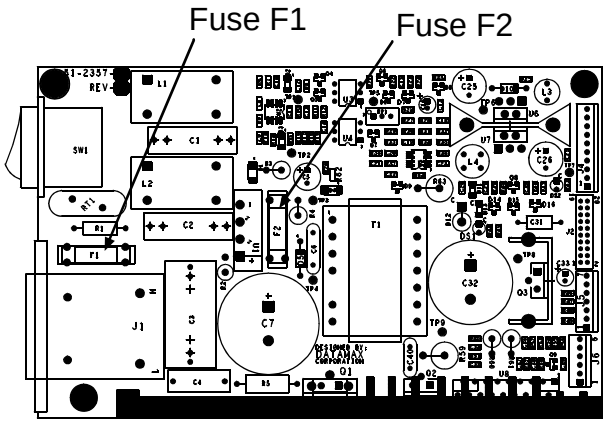
4.5.1 Fuse Replacement

CAUTION

Only use a replacement fuse with the rating and type as the original fuse; failure to comply could cause serious damage, including fire.

Removal:

1. Turn 'Off' and unplug the printer.
2. Remove the cover; see Section 4.1.
3. Locate and test Fuses F1 and F2.



Replacement:

CAUTION

Use caution when replacing Fuse 'F1'; this fuse may blow during a failure in the primary switching circuit and may indicate a more serious electrical problem.

1. Replace the blown fuse(s).
   - Fuse F1: Medium Acting, 3 Amps @ 250 Volts, 5 x 20 mm (part number 42-2280-01).
   - Fuse F2: Fast Acting, 3 Amps @ 250 Volts, 5 x 20 mm (part number 42-2179-01).
2. Replace the cover; see Section 4.1.
3. Plug in and turn 'On' the printer.

4.6 Media Sensor

Removal:

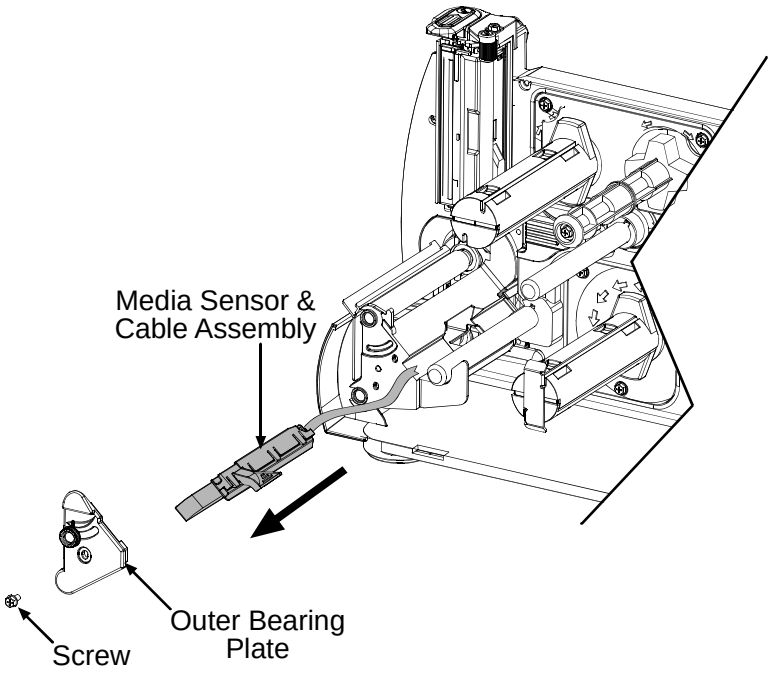
1. Turn ‘Off’ and unplug the printer.

2. Remove the side covers (see Section 4.0).

3. On the bottom right corner of the Main PCB, open the Strain Relief and remove the Media Sensor Cable from its connector.

4. Remove the Screw and Outer Bearing Plate from the printer.

5. Slide the Media Sensor & Cable Assembly out of the printer.



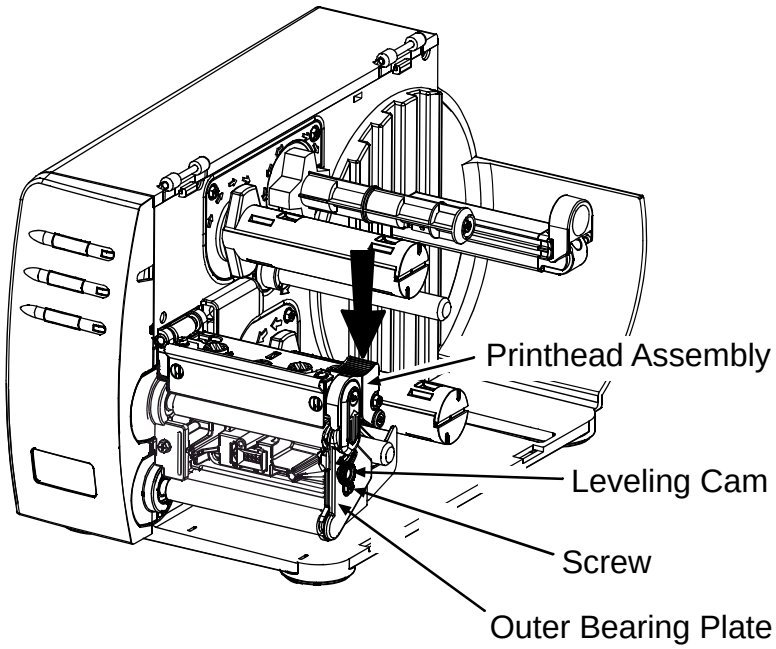
Installation:

1. Slide the Media Sensor & Cable Assembly into the Printer.

2. Replace the Outer Bearing Plate and start, but do not tighten the Screw.

3. Ensure that the Leveling Cam is loose, and then close and latch the Printhead Assembly.

4. While pushing down on the Printhead Assembly, as shown, pull down on the Outer Bearing Plate and tighten the Screw.



5. Connect the Media Sensor Cable to its appropriate connector on the Main PCB.

6. Re-install the side covers (see Section 4.0).

4.7 Drive Motor

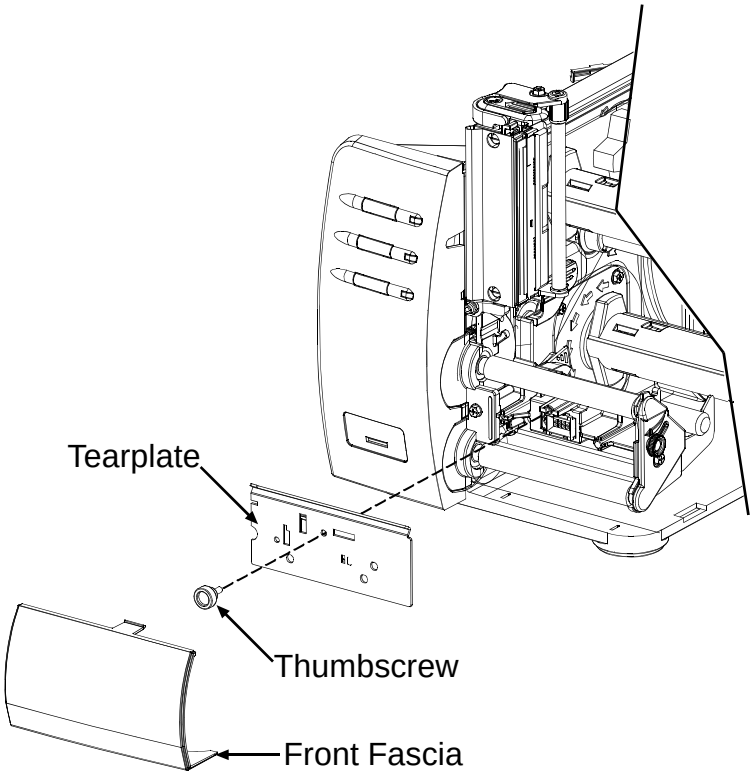
Removal:

1. Turn ‘Off’ and unplug the printer.

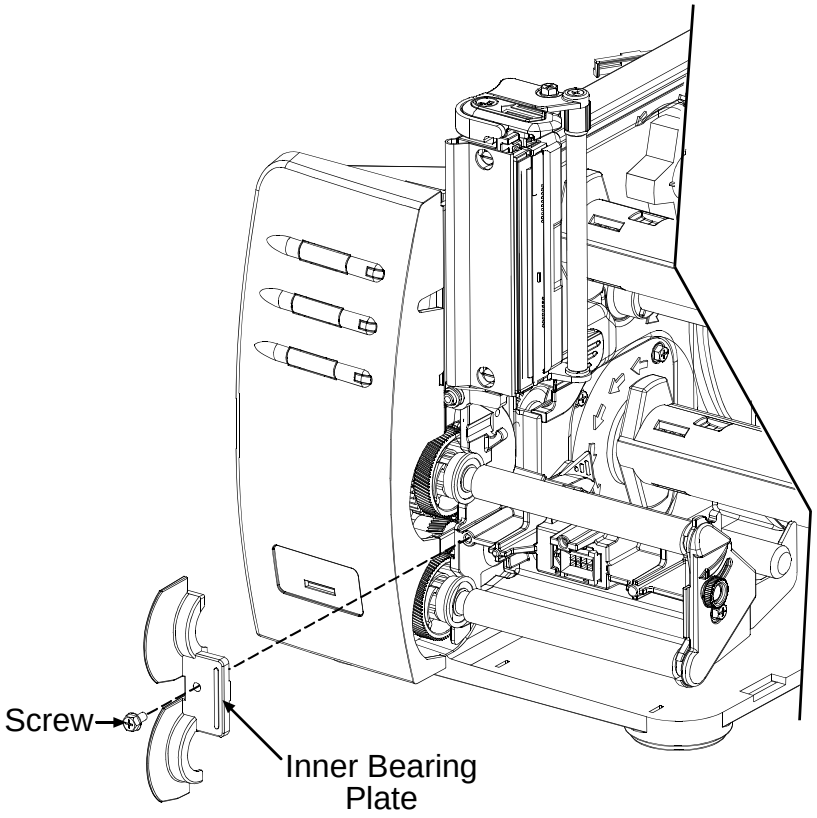
2. Remove the side covers (see Section 4.0).

3. Remove the front cover (see Section 4.1).

4. Remove the Front Fascia, Thumbscrew, and Tearplate.

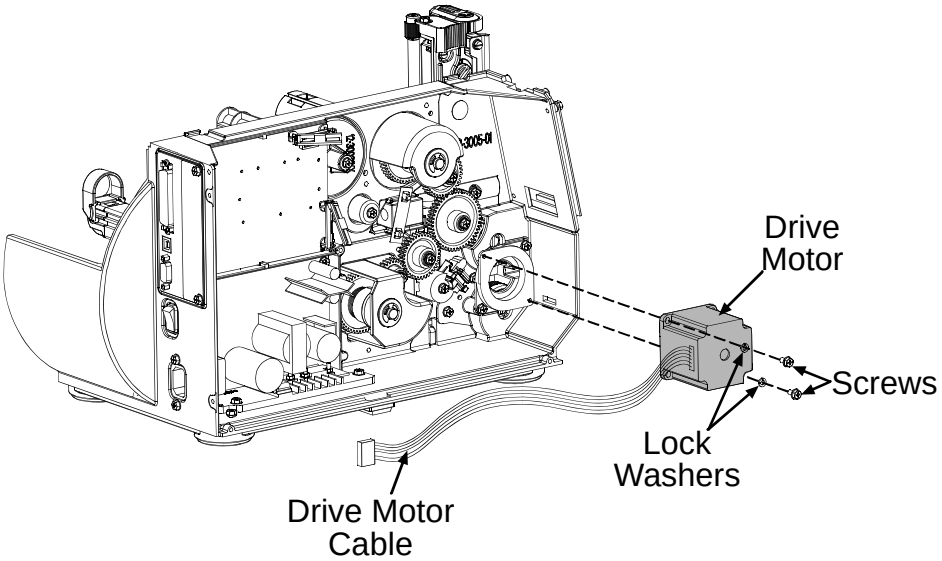


5. Remove the Screw and Inner Bearing Plate.



6. Remove the Drive Motor Cable from the Power Supply PCB connector.

7. Remove the two Screws and Lock Washers securing the Drive Motor and remove the Drive Motor and cable from the printer.



Installation:

1. Position the Drive Motor in the printer and secure using the two previously removed Screws and Lock Washers.

2. Connect the Drive Motor Cable to its appropriate connector on the Power Supply PCB.

3. Re-install the Screw and Inner Bearing Plate.

4. Re-install the Tearplate, Thumbscrew, and Front Fascia.

5. Re-install the front cover (see Section 4.1).

6. Re-install the side covers (see Section 4.0).

4.8 Platen Rollers

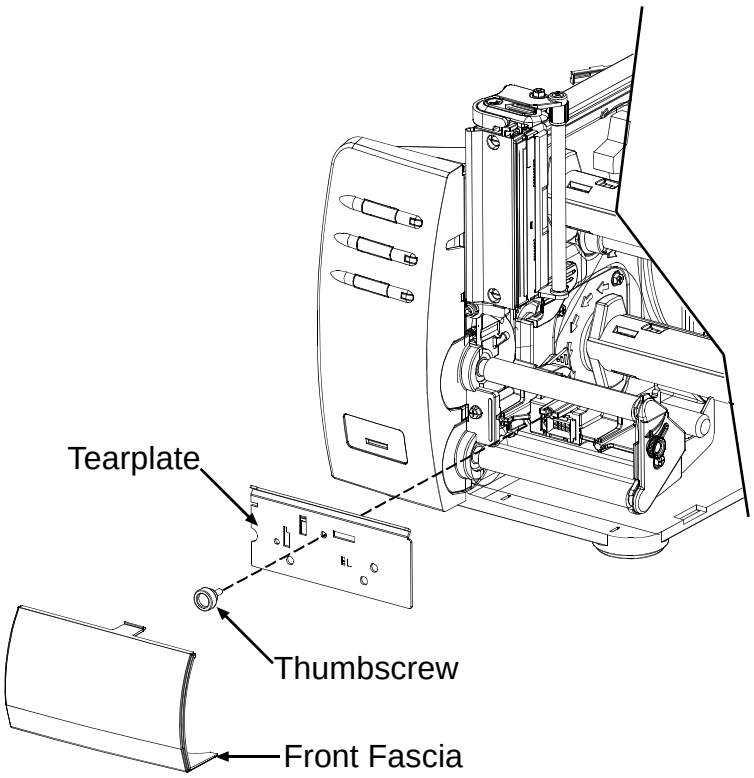
Removal:

1 Turn ‘Off’ and unplug the printer.

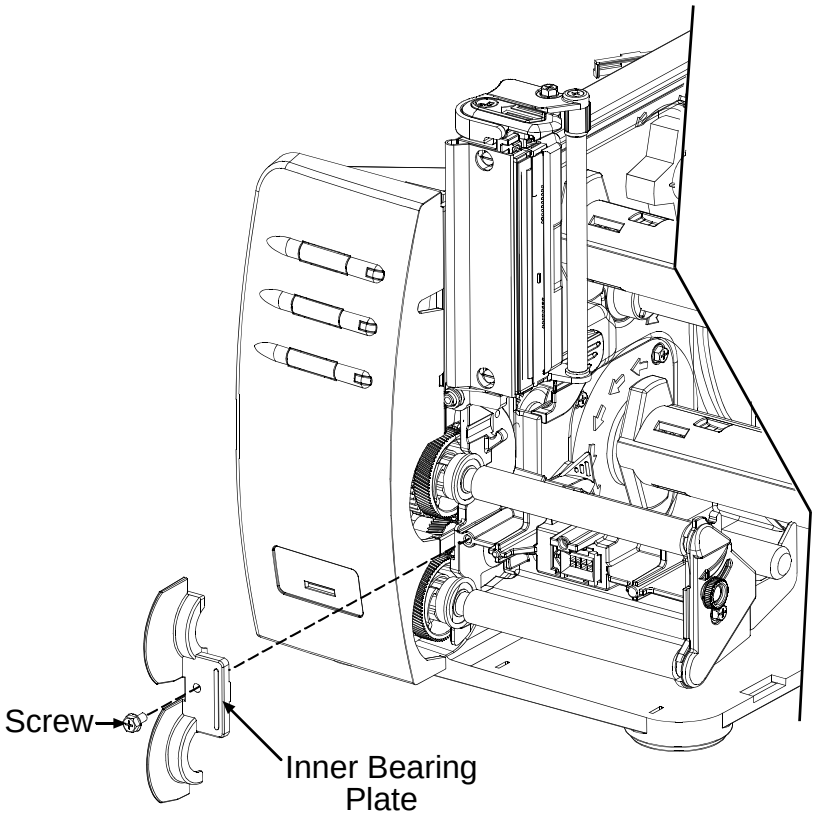
2. Remove the side covers (see Section 8.0).

3. Remove the front cover (see Section 8.1).

4. Remove the Front Fascia, Thumbscrew, and Tearplate.

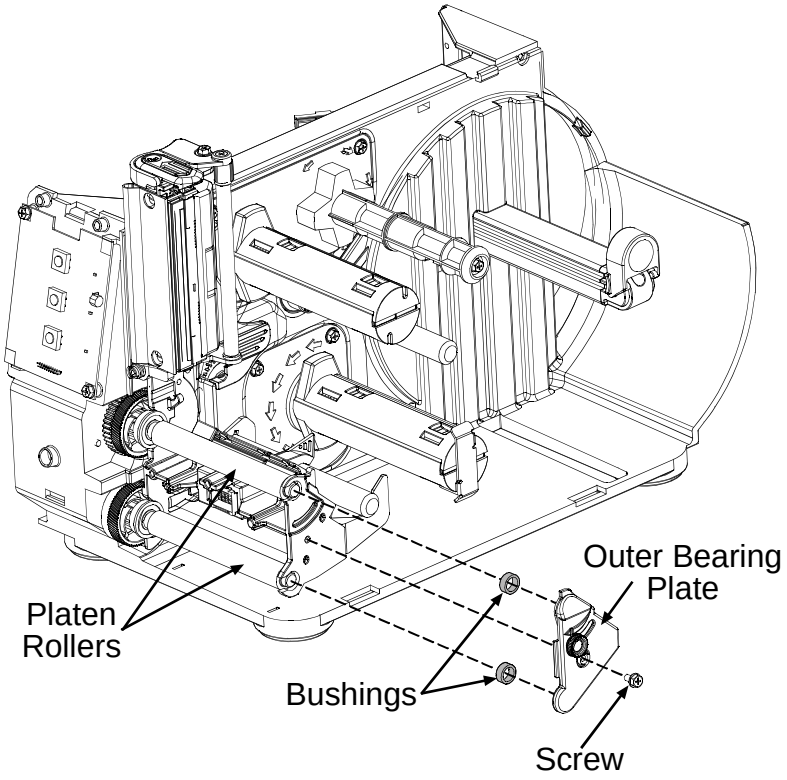


5. Remove the Screw and Inner Bearing Plate.



6. Remove the Screw, Outer Bearing Plate, and Bushings from the printer.

7. Remove the Platen Roller(s) from the Printer.



Installation:

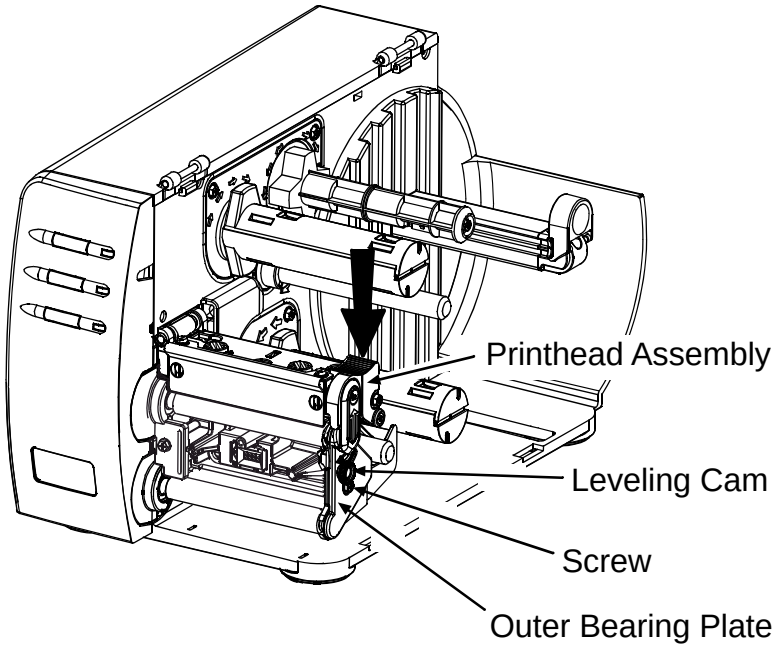
1. Position the Platen Roller(s) in the printer.

2. Re-install the Inner Bearing Plate and Screw.

3. Re-install the Bushings, replace the Outer Bearing Plate and start, but do not tighten the Screw.

4. Ensure that the Leveling Cam is loose, and then close and latch the Printhead Assembly.

5. While pushing down on the Printhead Assembly, as shown, pull down on the Outer Bearing Plate and tighten the Screw.



6. Re-install the Tearplate, Thumbscrew, and Front Fascia.

7. Re-install the front cover (see Section 4.1).

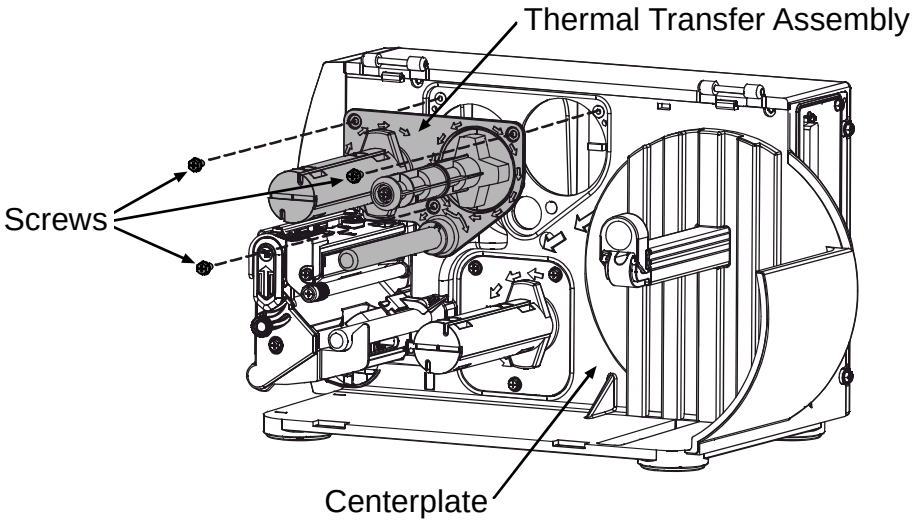
8. Re-install the side covers (see Section 4.0).

4.9 Ribbon Hubs

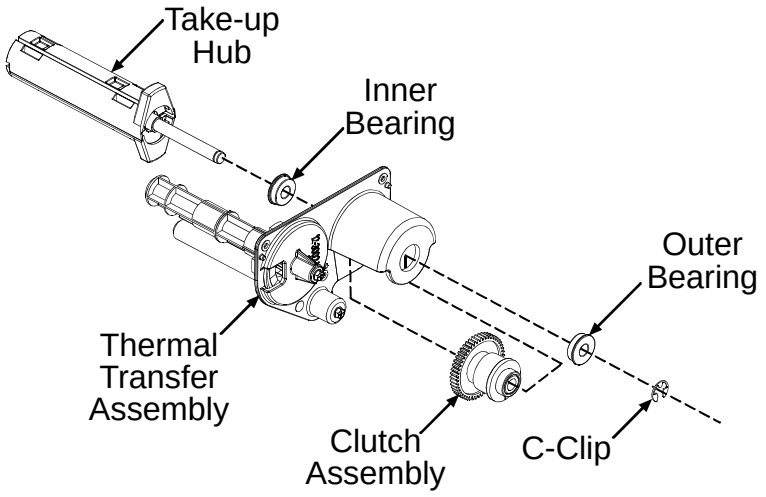
4.9.1 Take-up Hub

Removal:

1. Turn 'Off' and unplug the printer.
2. Remove the three Screws securing the Thermal Transfer Assembly to the printer.
3. Remove the Thermal Transfer Assembly.



4. Remove the C-clip and Outer Bearing from the Thermal Transfer Assembly.
5. Slide the Take-up Hub and Inner Bearing out, and remove the Clutch Assembly from Thermal Transfer Assembly.



Installation:

1. Position the Clutch Assembly in the Thermal Transfer Assembly.

2. Re-install the Inner and Outer Bearings.

3. Slide the shaft on the Take-up Hub through and secure with the previously removed C-Clip.

4. Re-install Thermal Transfer Assembly and the three Screws.

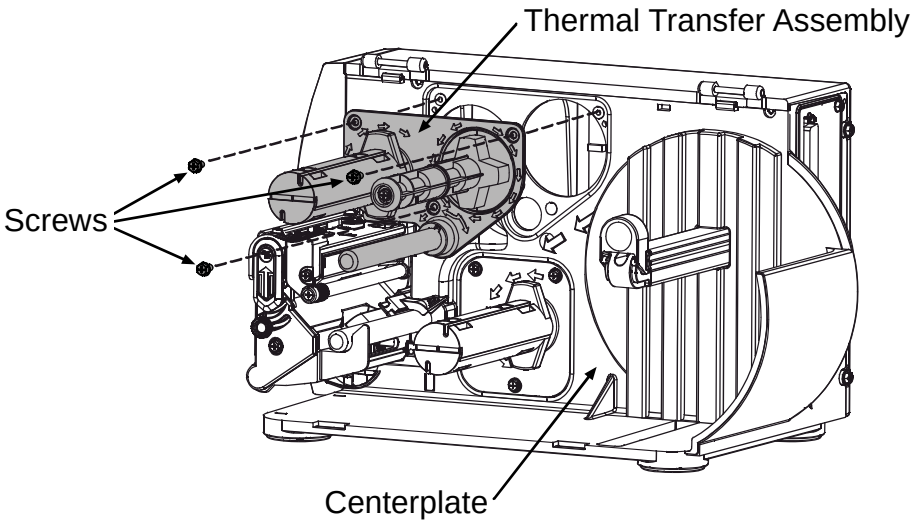
4.9.2 Supply Hub

Removal:

1. Turn ‘Off’ and unplug the printer.

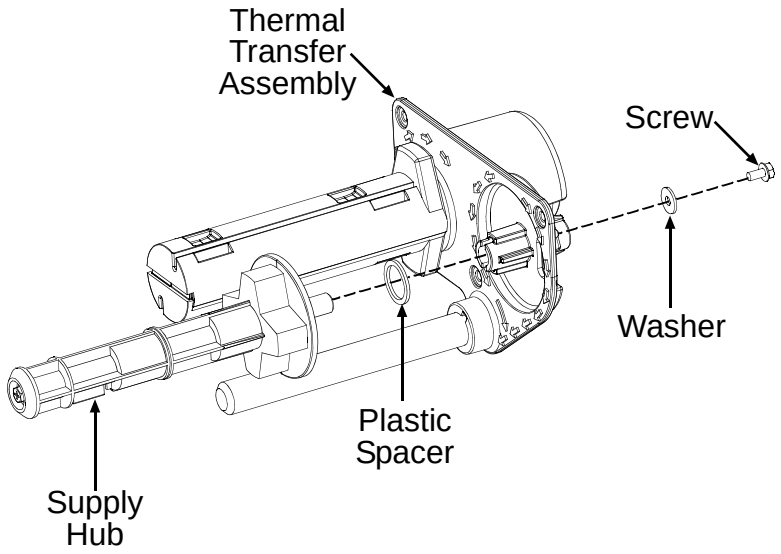
2. Remove the three Screws securing the Thermal Transfer Assembly to the printer.

3. Remove the Thermal Transfer Assembly



4. Remove the Screw and Washer securing the Supply Hub to the Thermal Transfer Assembly.

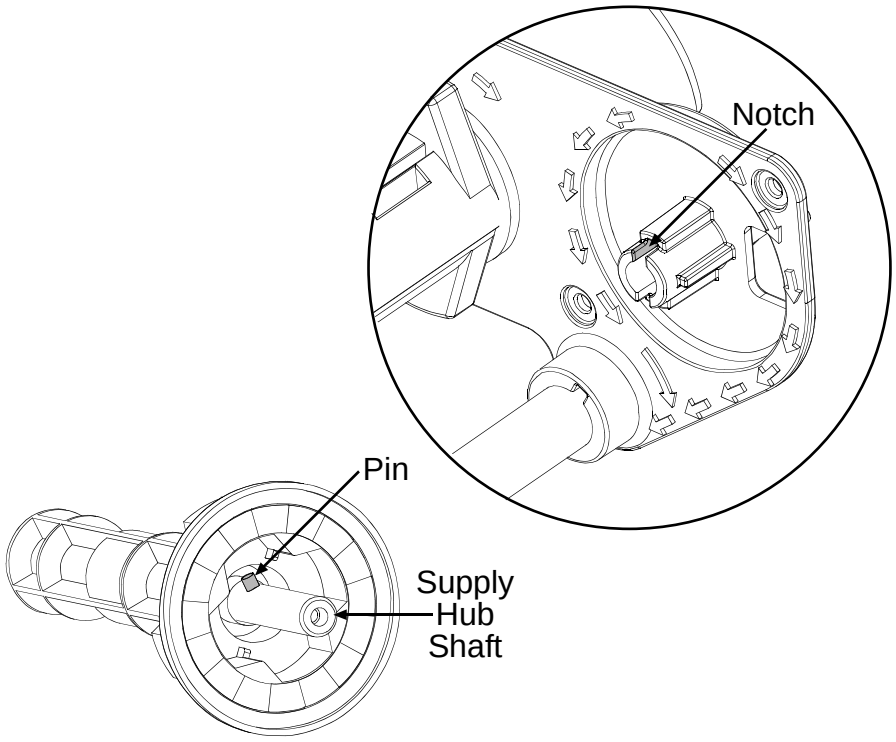
5. Slide the Supply Hub and Plastic Spacer off the Thermal Transfer Assembly.



Installation:

1. Re-install the Plastic Spacer and Supply Hub.

2. Be sure the Pin on the Supply Hub Shaft engages the Notch on the Thermal Transfer Assembly.



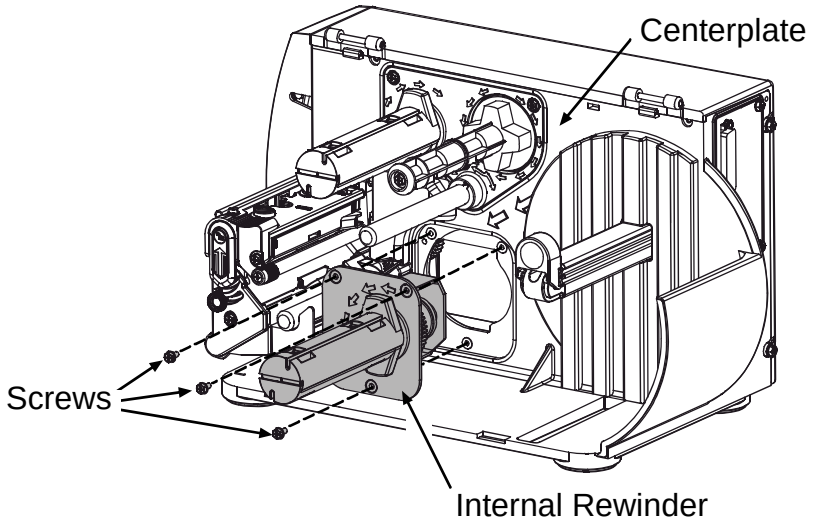
3. Re-install the previously removed Screw and Washer.

4. Re-install Thermal Transfer Assembly and the three Screws.

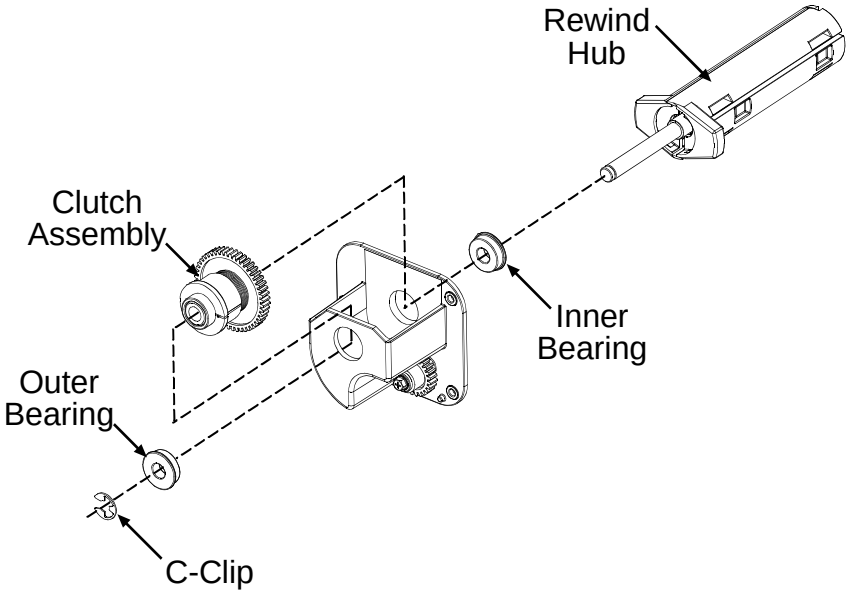
4.10 Internal Rewinder

Removal:

1. Turn ‘Off’ and unplug the printer.
2. Remove the three Screws securing the Internal Rewinder to the printer.
3. Remove the Internal Rewinder.



4. Remove the C-clip and Outer Bearing from the Internal Rewinder.
5. Slide the Rewind Hub and Inner Bearing out, and then remove the Clutch Assembly from Internal Rewinder.



Installation:

1. Position the Clutch Assembly in the Internal Rewinder.

2. Re-install the Inner and Outer Bearings.

3. Slide the shaft on the Rewind Hub through and secure with the previously removed C-Clip.

4. Re-install Internal Rewinder and the three Screws.

5 Printer Assemblies

M-4206

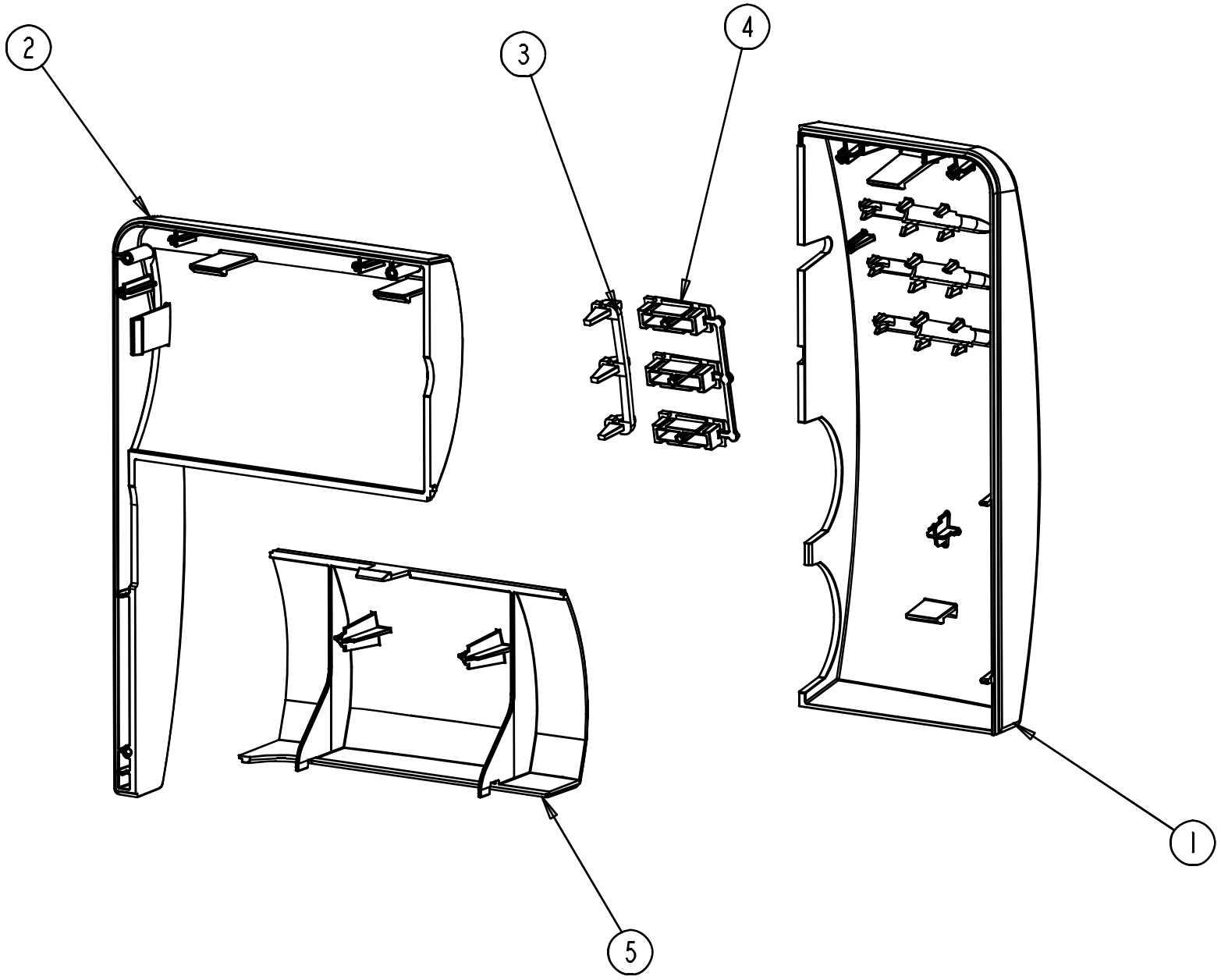
M-4208

M-4306

Options

M-4206

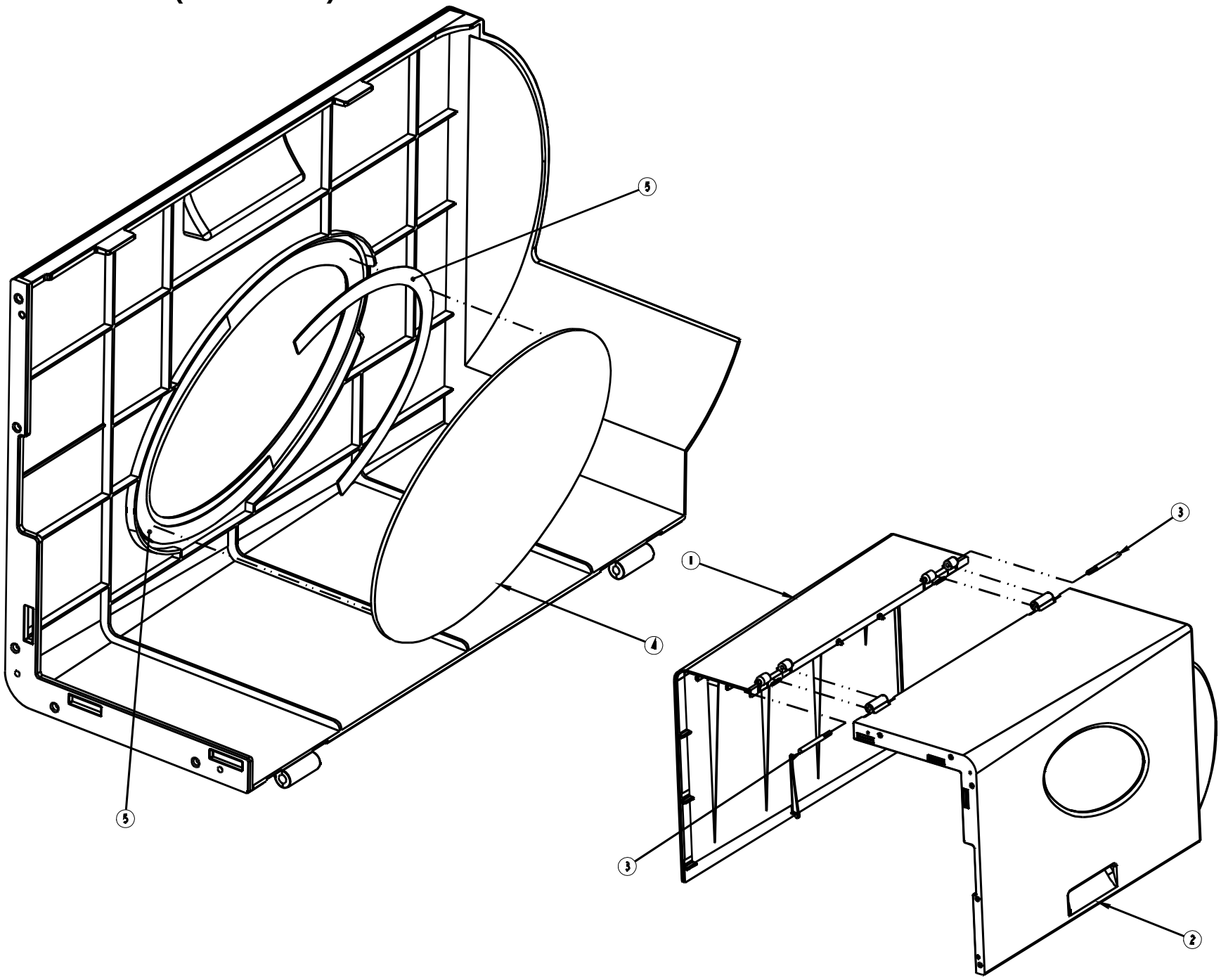
A. Front Covers



A. Front Covers

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	16-2895-01	COVER-LEFT FRONT
2	16-2897-01	COVER RIGHT FRONT
3	16-2926-01	LIGHT PIPE
4	16-2927-01	BUTTONS FRONT PANEL
5	16-2707-01	BLOCK FILLER

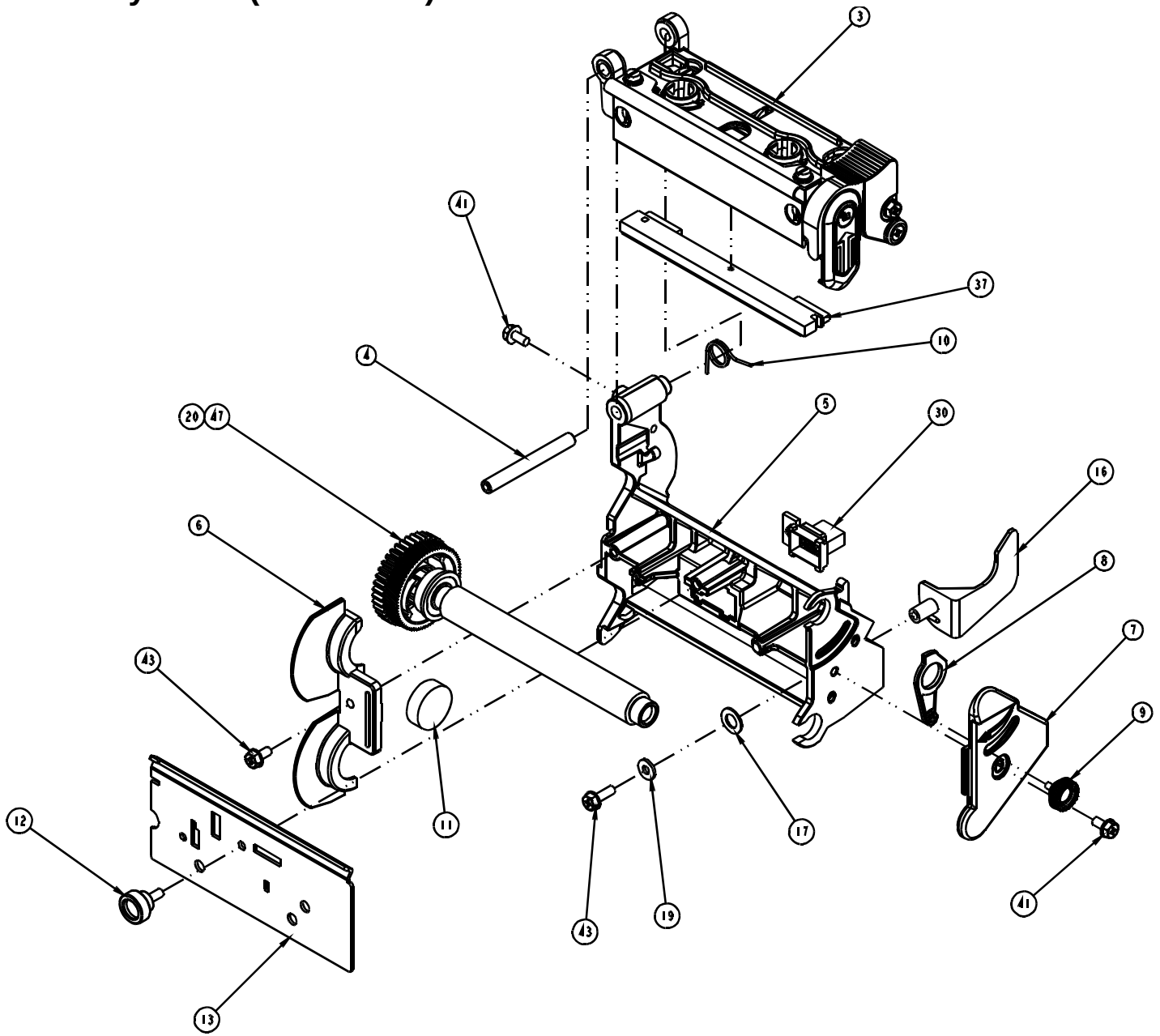
B. Side Covers (15-3013-01)



B. Side Covers (15-3013-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	16-2896-01	COVER-LEFT REAR
2	16-2705-01	COVER RIGHT REAR
3	16-2925-01	PIN HINGE
4	16-2726-01	WINDOW MEDIA
5	10-3098-01	TAPE, 1/32 DOUBLE COATED

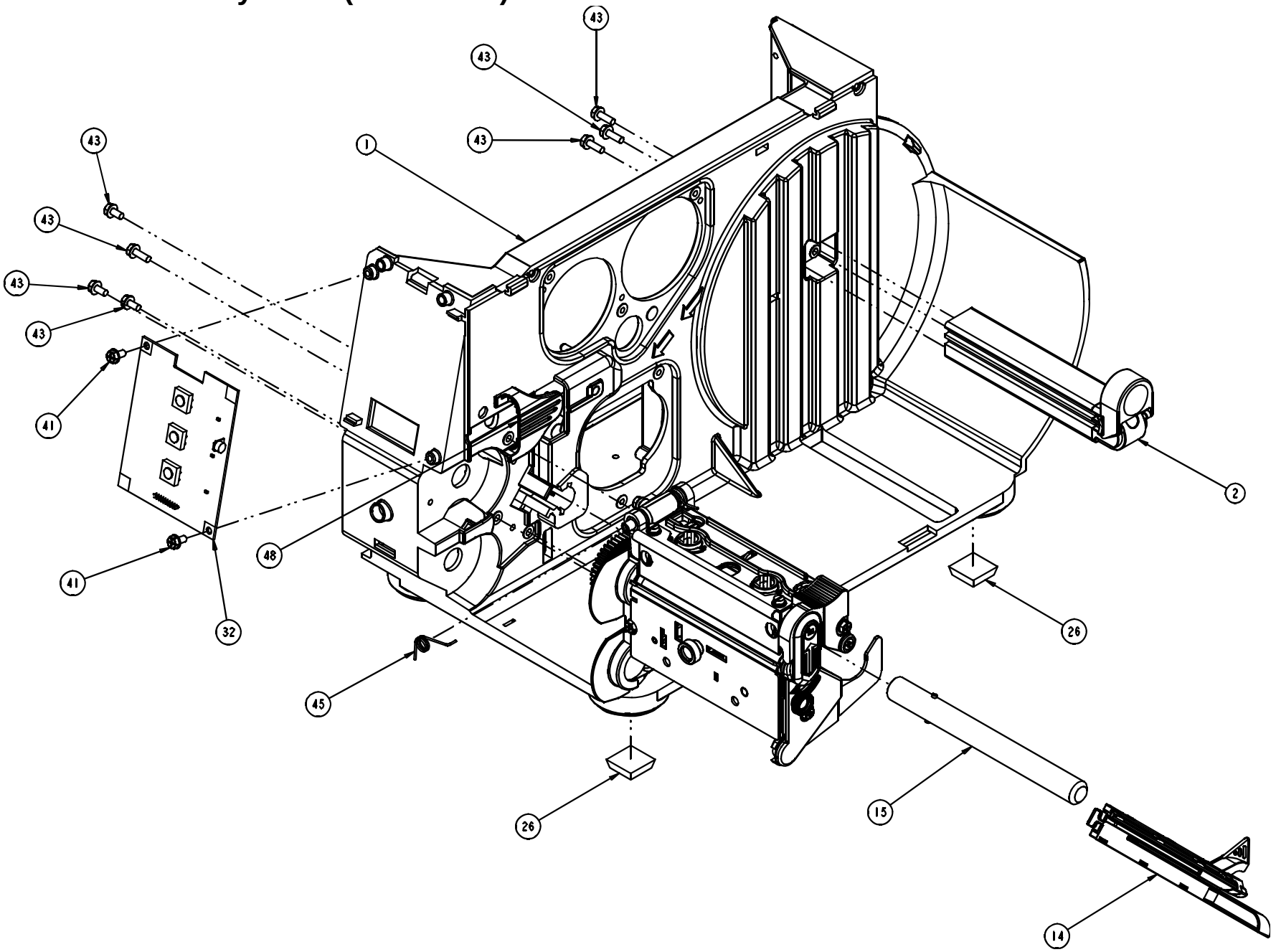
C. Printer Assembly 1 of 3 (53-2153-01)



C. Printer Assembly 1 of 3 (53-2153-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
3	15-2850-01	ASSY-PRINTHEAD MOUNT
4	12-3165-01	PIN PRINTHEAD PIVOT
5	12-3157-01	BLOCK PLATTEN/PRINTHEAD PIVOT
6	12-3160-01	RETAINER LEFT
7	12-3161-01	RETAINER BEARING
8	12-3279-01	LEVER PRINT HEAD CAM LIFT
9	15-3000-01	ASSY M3 X 8 THUMB SCREW
10	17-3039-01	SPRING HEAD LIFT REAR
11	16-2965-01	SPACER .875 DIA
12	17-2858-01	SCREW HOLLOW KNURLED M4 X10
13	11-5344-01	TEAR BAR
16	16-2860-01	GUIDE-MEDIA
17	10-2904-01	WASHER FLAT NYLON .50 OD X .281 ID
19	10-2113-13	WASHER FLT ROUND STEEL METRIC
20	15-2847-01	ASSY-PLATEN UPPER 203 DPI
30	32-2521-01	CABLE ASSEMBLY OPTIONS CONTROL
37	20-2220-01	PRINTHEAD 203DPI 4.25
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
47	19-2030-01	GREASE SILCONE

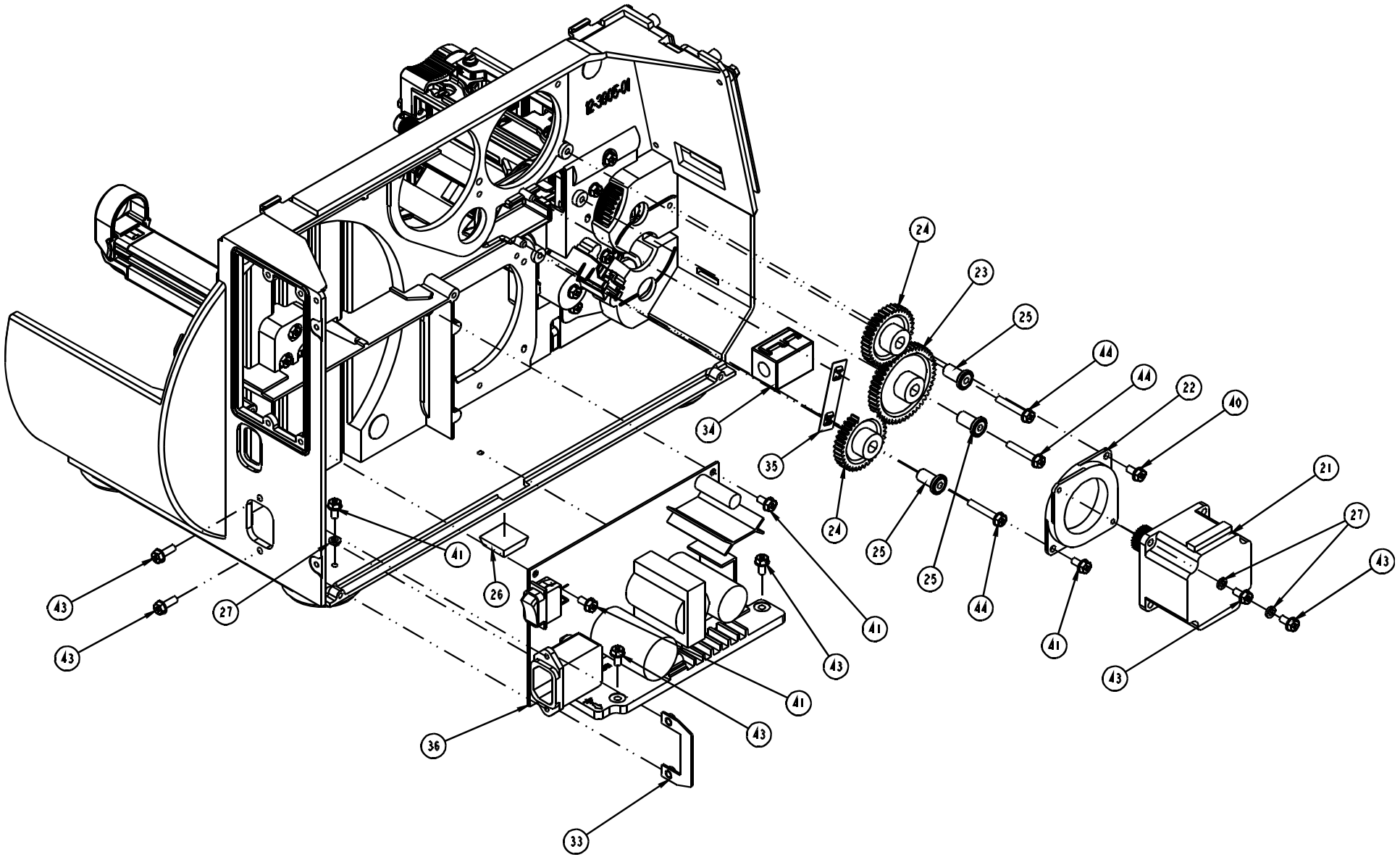
D. Printer Assembly 2 of 3 (53-2153-01)



D. Printer Assembly 2 of 3 (53-2153-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3005-01	CENTERPLATE
2	15-2763-01	MEDIA SUPPLY ASSY
14	24-2613-01	ASSY-SENSOR
15	12-3006-01	SHAFT GUIDE
26	10-2913-01	FOOT STICK-ON
32	51-2358-00	CCA FRONT PANEL M-CLASS
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
45	17-3040-01	SPRING HEAD LIFT FRONT
48	16-2946-01	GROMMET, PRINT HEAD HARNESS

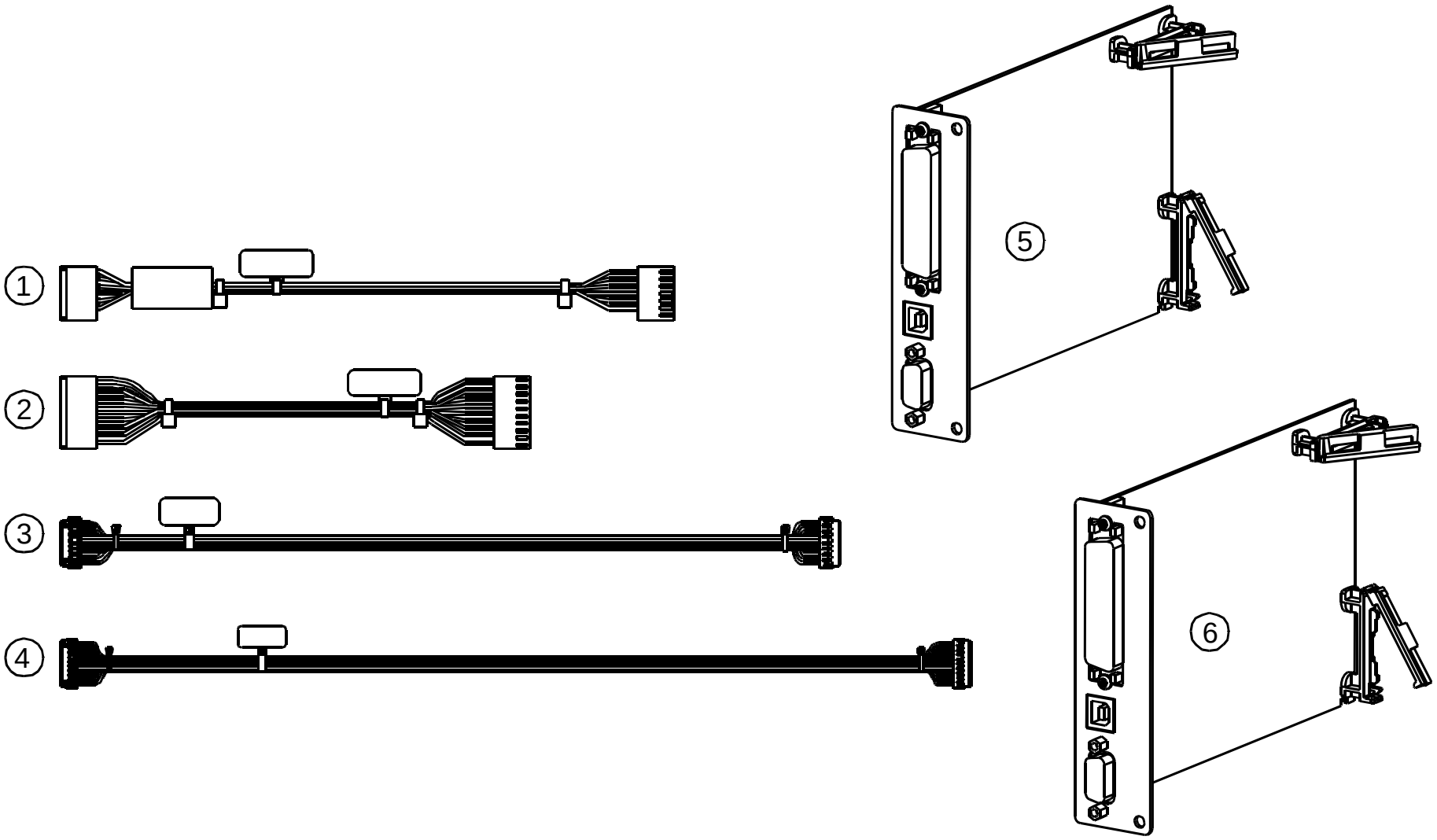
E. Printer Assembly 3 of 3 (53-2153-01)



E. Printer Assembly 3 of 3 (53-2153-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
21	24-2612-01	ASSEMBLY STEPPER MOTOR
22	17-3009-01	ISOLATOR VIBRATION
23	17-2810-01	GEAR SPUR DELRIN 24 PITCH 48 TEETH
24	17-3002-01	GEAR-IDLER 24 PITCH 36 TOOTH
25	12-2905-01	POST IDLER
26	10-2913-01	FOOT STICK-ON
27	10-0526-01	WASHER #8 SPLIT LOCK
33	11-5277-01	PLATE NUT
34	44-2060-01	ASSY FERRITE
35	17-3015-01	FASTENER TINNERMAN TWIN PUSH-ON
36	51-2357-00	CCA PWR. SUP. M-CLASS
40	10-2903-01	SCREW TRILOBULAR M4 PHILIPS HEAD 6
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
44	10-2903-06	SCREW TRILOBULAR M4 PHILIPS HEAD 25

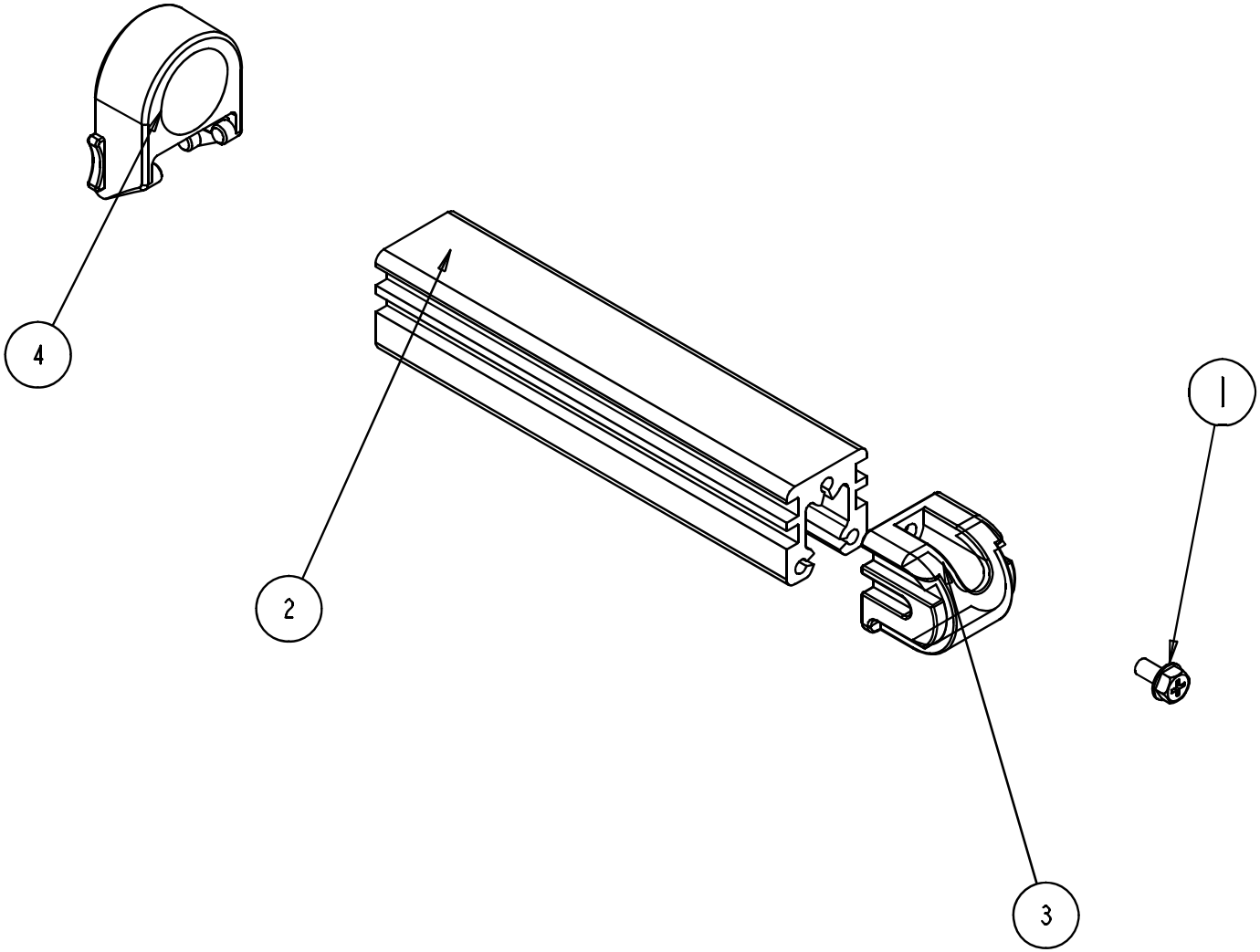
F. Main Board and Internal Cables



F. Main Board and Internal Cables

ITEM NUMBER	PART NUMBER	DESCRIPTION	CABLE ROUTING (FROM / TO)
1	32-2519-01	CABLE ASSEMBLY, MOTOR CONTROL	POWER SUPPLY J5 TO MAIN BOARD J4
2	32-2520-01	CABLE ASSEMBLY, MAIN CCA POWER	POWER SUPPLY J4 TO MAIN BOARD J5
3	32-2526-01	CABLE ASSEMBLY, PRINTHEAD DATA	MAIN BOARD J8 TO PRINTHEAD
4	32-2527-01	CABLE ASSEMBLY, PRINTHEAD POWER	POWER SUPPLY J2 TO PRINTHEAD
5	78-2491-01	MAIN BOARD, 2 MEG FLASH	
6	78-2491-02	MAIN BOARD, 6 MEG FLASH	

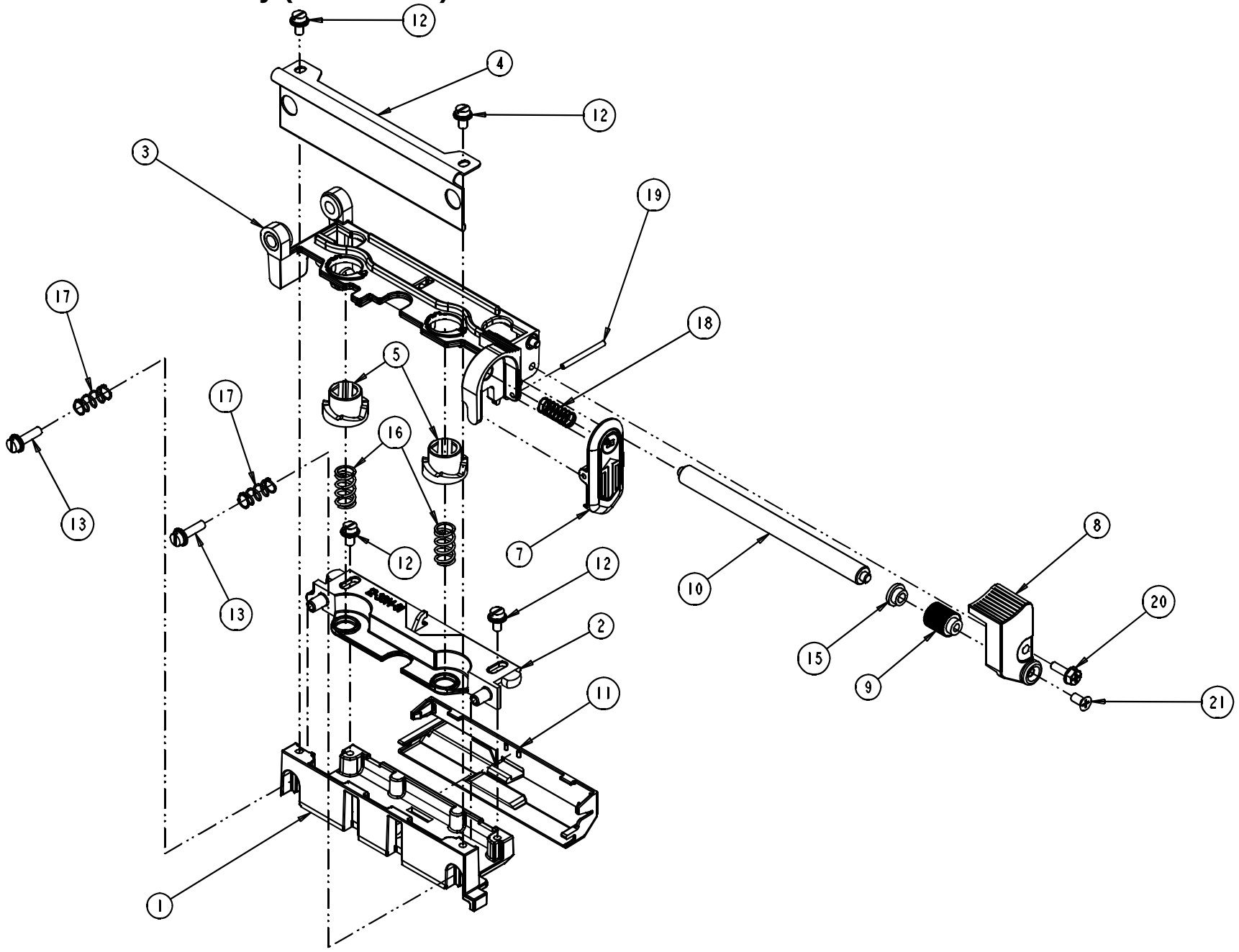
G. Media Supply Hub (15-2763-01)



G. Media Supply Hub (15-2763-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
2	12-2904-01	EXTRUSION MEDIA SUPPORT
3	16-2951-01	CAP MEDIA SUPPLY
4	16-2527-01	RETAINER MEDIA SUPPLY

H. Printhead Assembly (15-2850-01)

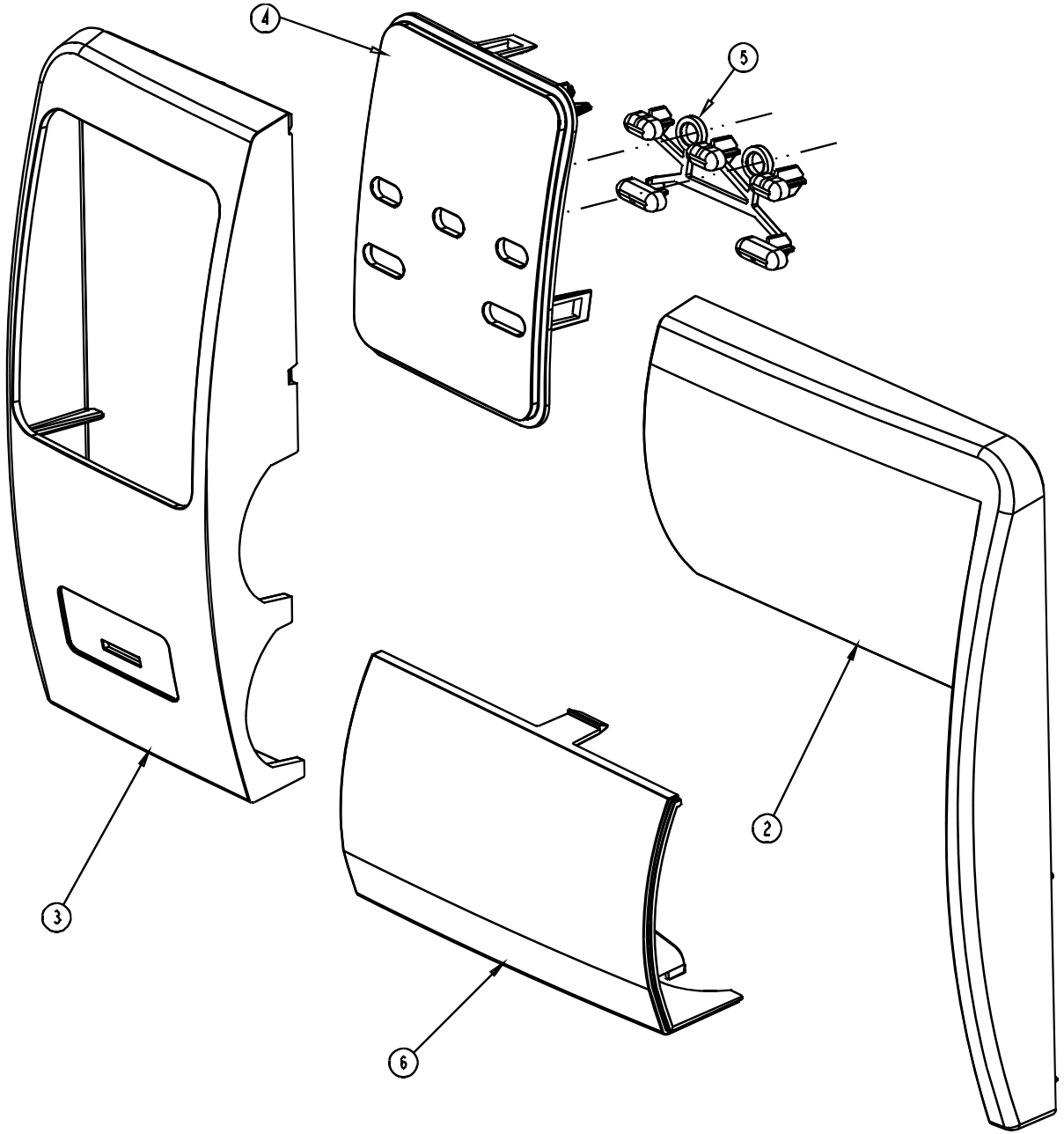


H. Printhead Assembly (15-2850-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	15-3010-01	ASSY-PRINTHEAD MOUNT
2	12-3014-01	BRACKET PRINTHEAD ADJUST
3	15-3012-01	ASSY PRINTHEAD PIVOT
4	11-5352-01	GUIDE RIBBON
5	16-2529-01	CAM-HEAD PRESSURE
7	15-3011-01	ASSY-LATCH
8	12-3163-01	BRACKET RIBBON ROLLER
9	12-3051-01	CAM IDLER RIBBON
10	12-3052-04	SHAFT RIBBON IDLER
11	16-2934-01	COVER PRINTHEAD CABLE
12	10-3030-01	SCREW M4 X 8
13	10-3030-02	SCREW M4 X 16
15	17-2639-01	BEARING FLANG .1895 X.314 X 3 1/16
16	17-2897-01	SPRING COMPRESSION
17	17-3020-01	SPRING- COMPRESSION .30 OD X 1.00 L
18	17-3021-01	SPRING- COMPRESSION .30 OD X .68 LG
19	10-3077-01	PIN DOWEL 3/32 OD X 1.12 LG
20	10-2903-05	SCREW TRILOBULAR M4 PHILIPS HEAD 16
21	10-2984-01	SCREW FLAT HEAD M4 X 8

M-4208

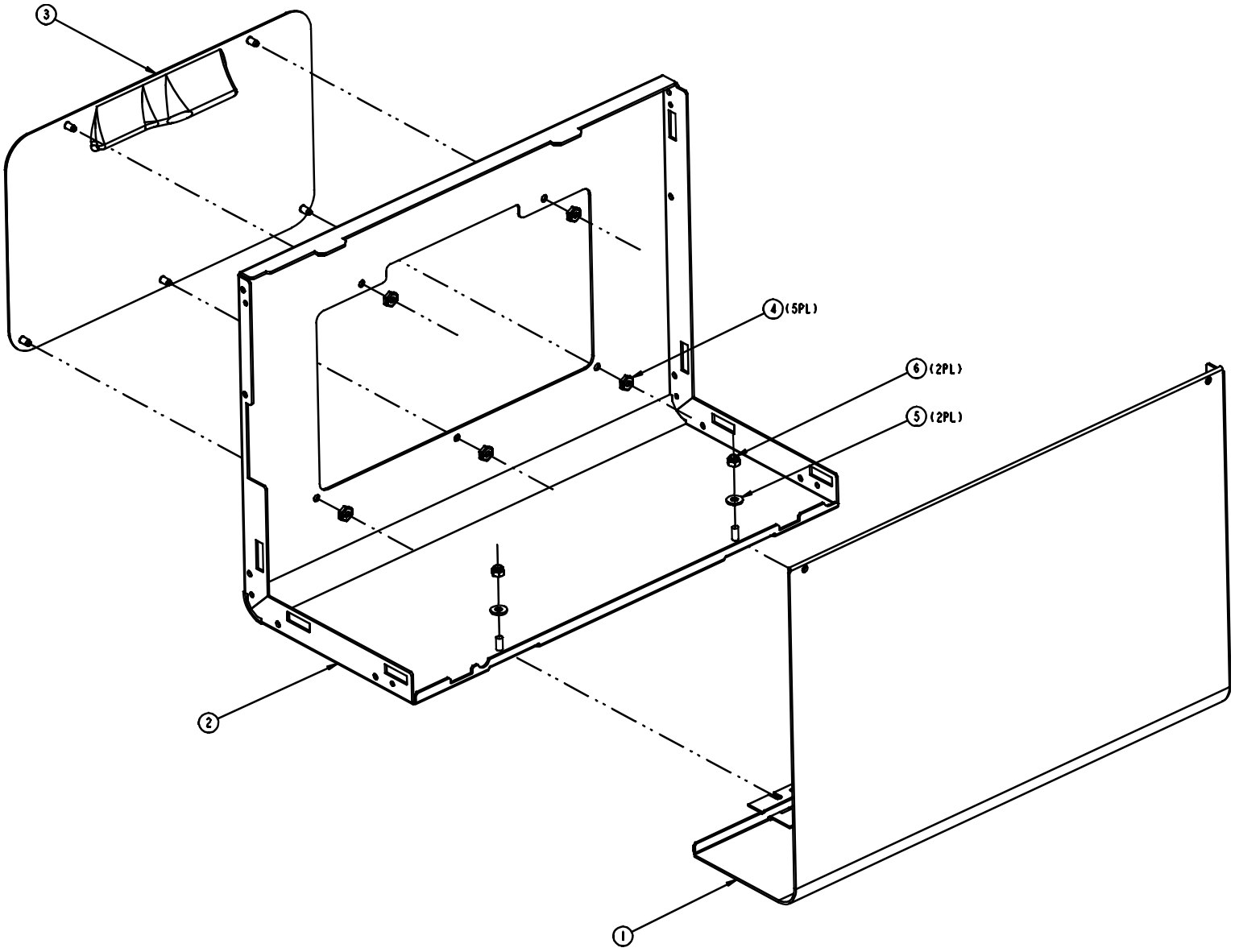
A. Front Covers



A. Front Covers

ITEM NUMBER	PART NUMBER	DESCRIPTION
2	16-2897-01	COVER RIGHT FRONT
3	16-2929-01	COVER LEFT FRONT
4	16-2730-01	COVER LEFT FRONT BEZEL
5	16-2731-01	BUTTONS, CONTROL PANEL
6	16-2707-01	BLOCK FILLER

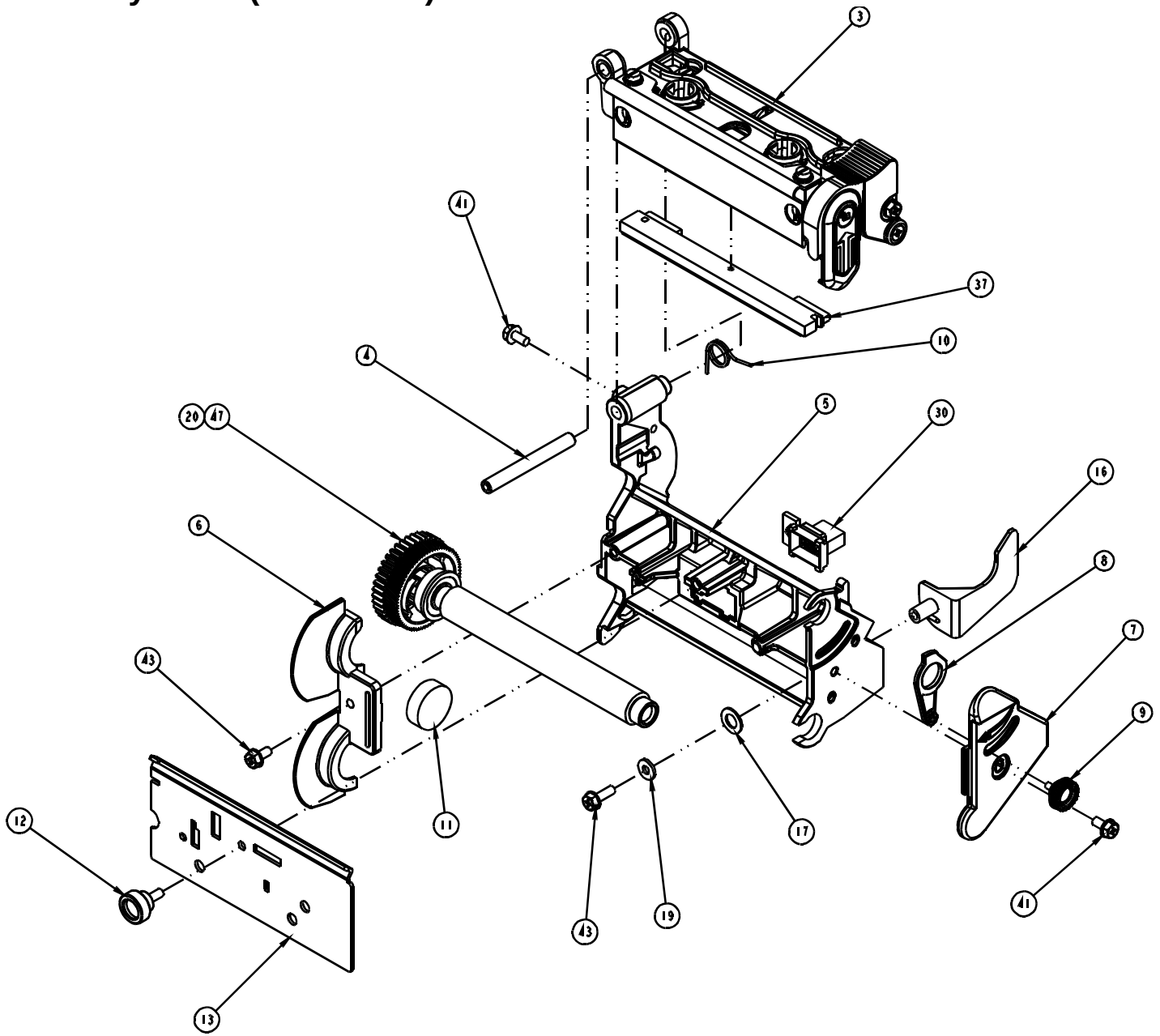
B. Side Covers, Metal (15-3035-01)



B. Side Covers (15-3035-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	15-3006-01	ASSY, ELECTRONICS COVER
2	11-5562-01	COVER, MEDIA SIDE
3	16-2928-01	WINDOW MEDIA
4	10-3064-01	NUT, SELF THREADING
5	10-2104-01	WASHER #8 FLAT
6	10-2905-01	HEX NUT, SELF-LOCKING

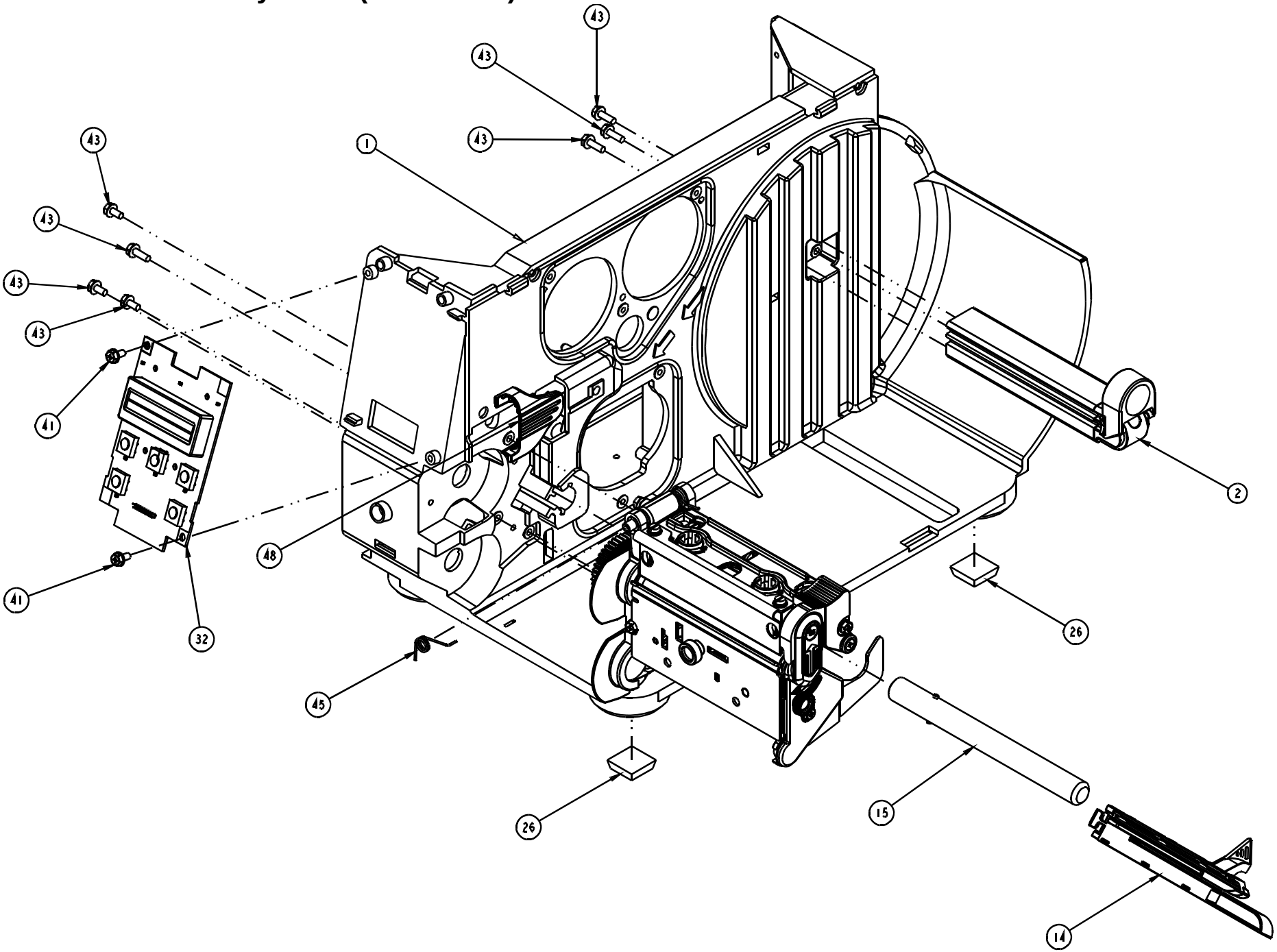
C. Printer Assembly 1 of 3 (53-2153-02)



C. Printer Assembly 1 of 3 (53-2153-02)

ITEM NUMBER	PART NUMBER	DESCRIPTION
3	15-2850-01	ASSY-PRINTHEAD MOUNT
4	12-3165-01	PIN PRINTHEAD PIVOT
5	12-3157-01	BLOCK PLATTEN/PRINTHEAD PIVOT
6	12-3160-01	RETAINER LEFT
7	12-3161-01	RETAINER BEARING
8	12-3279-01	LEVER PRINT HEAD CAM LIFT
9	15-3000-01	ASSY M3 X 8 THUMB SCREW
10	17-3039-01	SPRING HEAD LIFT REAR
11	16-2965-01	SPACER .875 DIA
12	17-2858-01	SCREW HOLLOW KNURLED M4 X10
13	11-5344-01	TEAR BAR
16	16-2860-01	GUIDE-MEDIA
17	10-2904-01	WASHER FLAT NYLON .50 OD X .281 ID
19	10-2113-13	WASHER FLT ROUND STEEL METRIC
20	15-2847-01	ASSY-PLATEN UPPER 203 DPI
30	32-2521-01	CABLE ASSEMBLY OPTIONS CONTROL
37	20-2220-01	PRINTHEAD 203DPI 4.25
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
47	19-2030-01	GREASE SILCONE

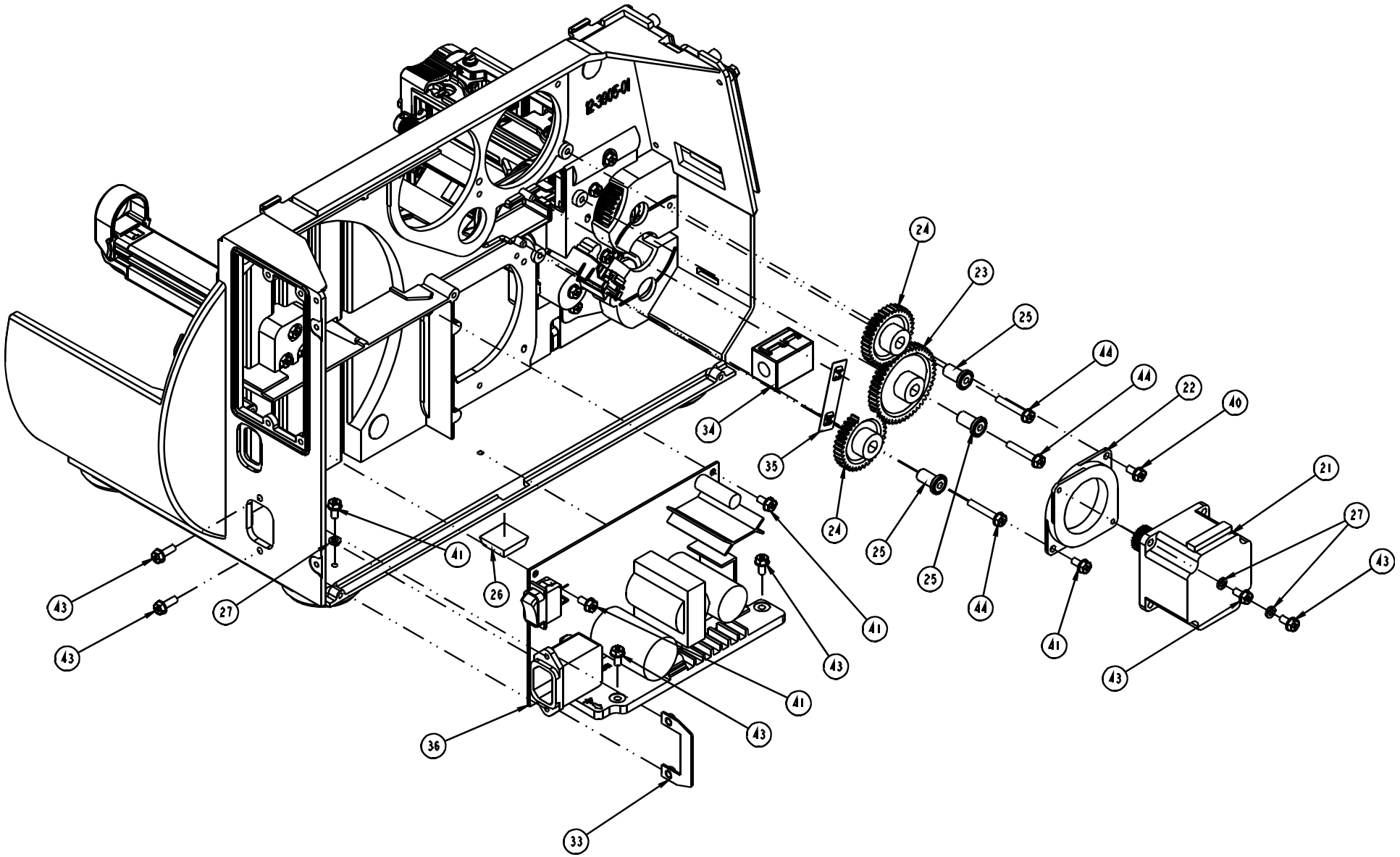
D. Printer Assembly 2 of 3 (53-2153-02)



D. Printer Assembly 2 of 3 (53-2153-02)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3005-01	CENTERPLATE
2	15-2763-01	MEDIA SUPPLY ASSY
14	24-2613-01	ASSY-SENSOR
15	12-3006-01	SHAFT GUIDE
26	10-2913-01	FOOT STICK-ON
32	45-2016-01	LCD MODULE, M-CLASS
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
45	17-3040-01	SPRING HEAD LIFT FRONT
48	16-2946-01	GROMMET PRINT HEAD HARNESS

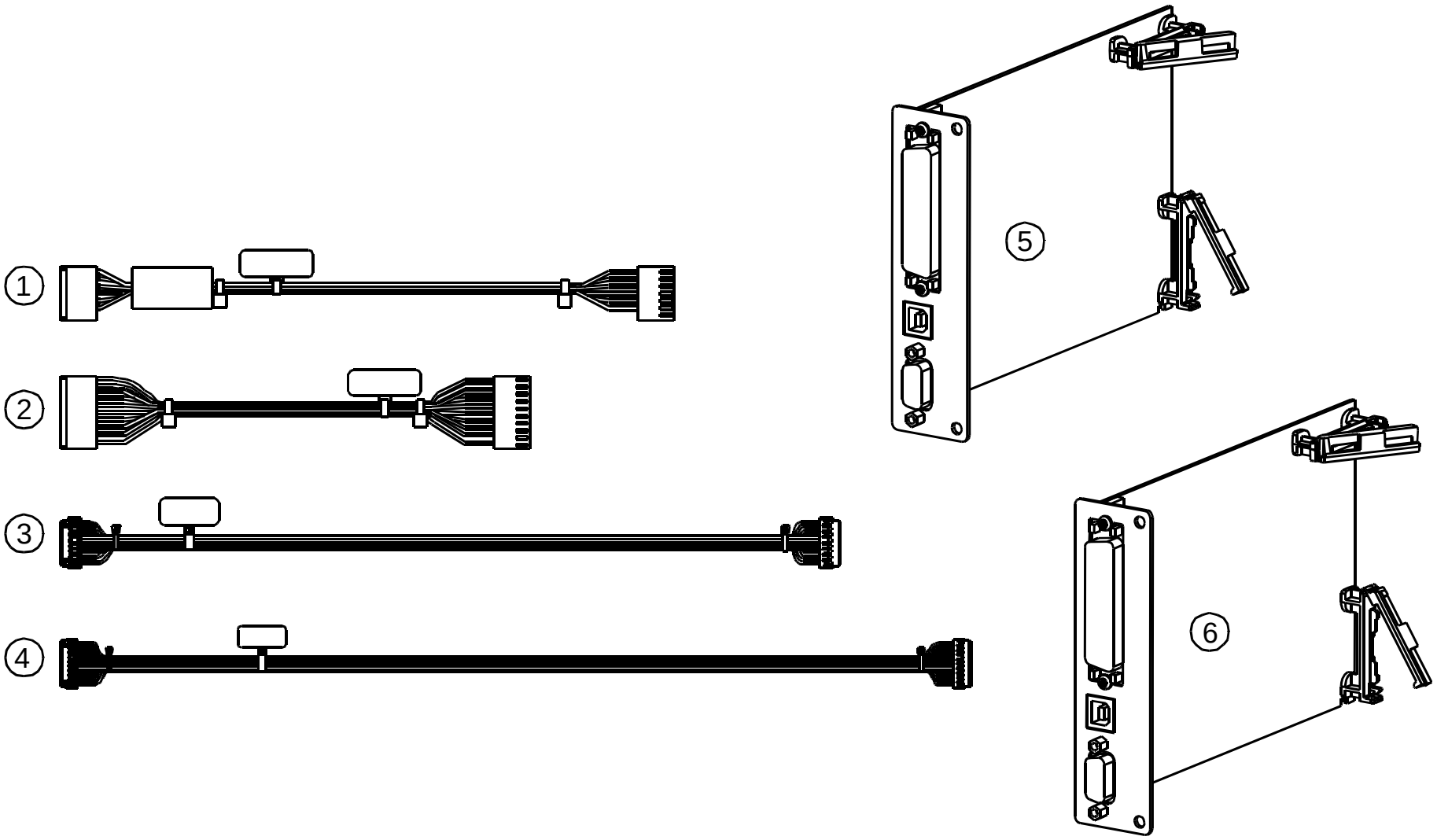
E. Printer Assembly 3 of 3 (53-2153-02)



E. Printer Assembly 3 of 3 (53-2153-02)

ITEM NUMBER	PART NUMBER	DESCRIPTION
21	24-2612-01	ASSEMBLY STEPPER MOTOR
22	17-3009-01	ISOLATOR VIBRATION
23	17-2810-01	GEAR SPUR DELRIN 24 PITCH 48 TEETH
24	17-3002-01	GEAR-IDLER 24 PITCH 36 TOOTH
25	12-2905-01	POST IDLER
26	10-2913-01	FOOT STICK-ON
27	10-0526-01	WASHER #8 SPLIT LOCK
33	11-5277-01	PLATE NUT
34	44-2060-01	ASSY FERRITE
35	17-3015-01	FASTENER TINNERMAN TWIN PUSH-ON
36	51-2357-00	CCA PWR. SUP. M-CLASS
40	10-2903-01	SCREW TRILOBULAR M4 PHILIPS HEAD 6
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
44	10-2903-06	SCREW TRILOBULAR M4 PHILIPS HEAD 25

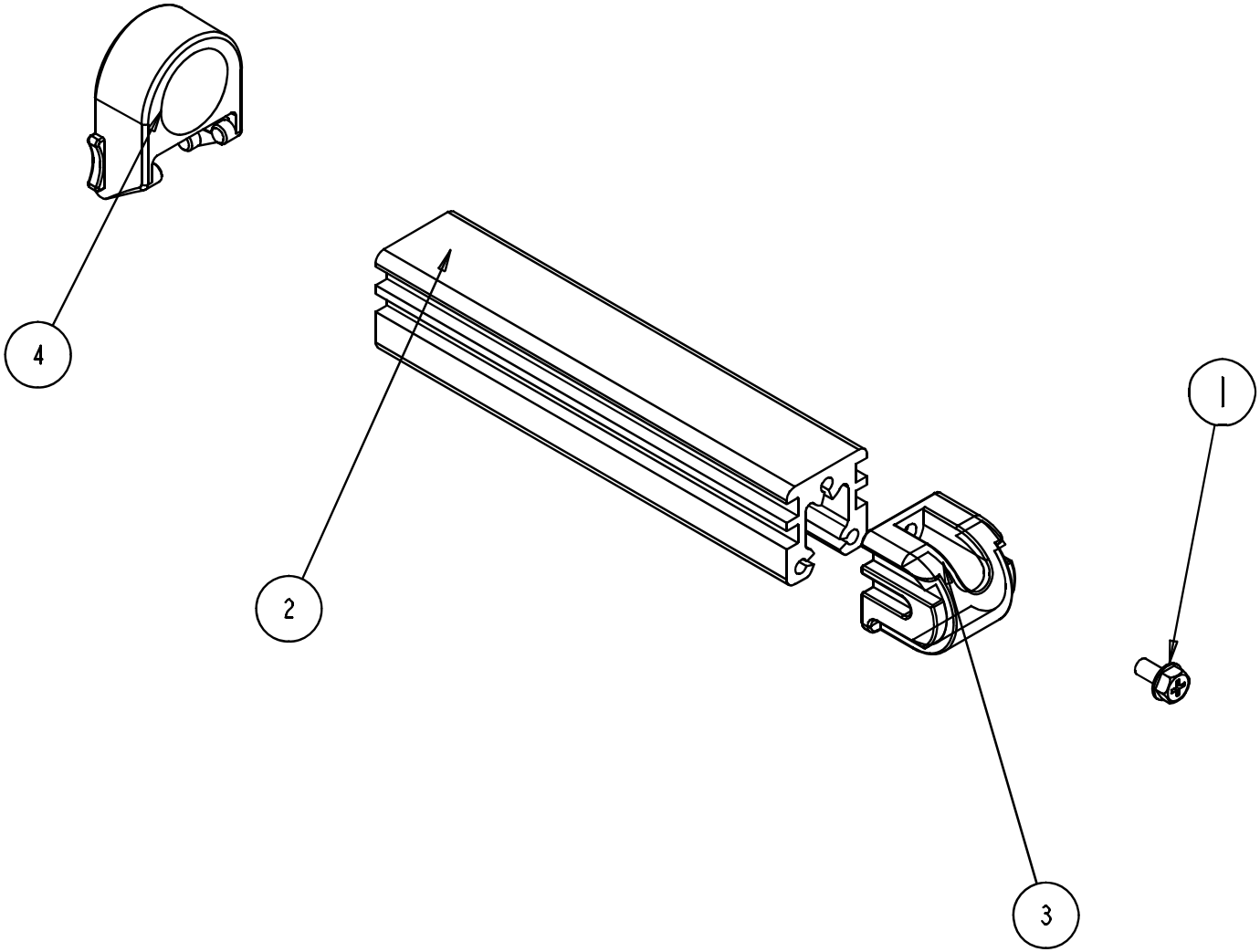
F. Main Board and Internal Cables



F. Main Board and Internal Cables

ITEM NUMBER	PART NUMBER	DESCRIPTION	CABLE ROUTING (FROM / TO)
1	32-2519-01	CABLE ASSEMBLY, MOTOR CONTROL	POWER SUPPLY J5 TO MAIN BOARD J4
2	32-2520-01	CABLE ASSEMBLY, MAIN CCA POWER	POWER SUPPLY J4 TO MAIN BOARD J5
3	32-2526-01	CABLE ASSEMBLY, PRINTHEAD DATA	MAIN BOARD J8 TO PRINTHEAD
4	32-2527-01	CABLE ASSEMBLY, PRINTHEAD POWER	POWER SUPPLY J2 TO PRINTHEAD
5	78-2585-01	MAIN BOARD, 2MB FLASH, 8MB RAM	
6	78-2585-02	MAIN BOARD, 8MB FLASH, 8MB RAM	

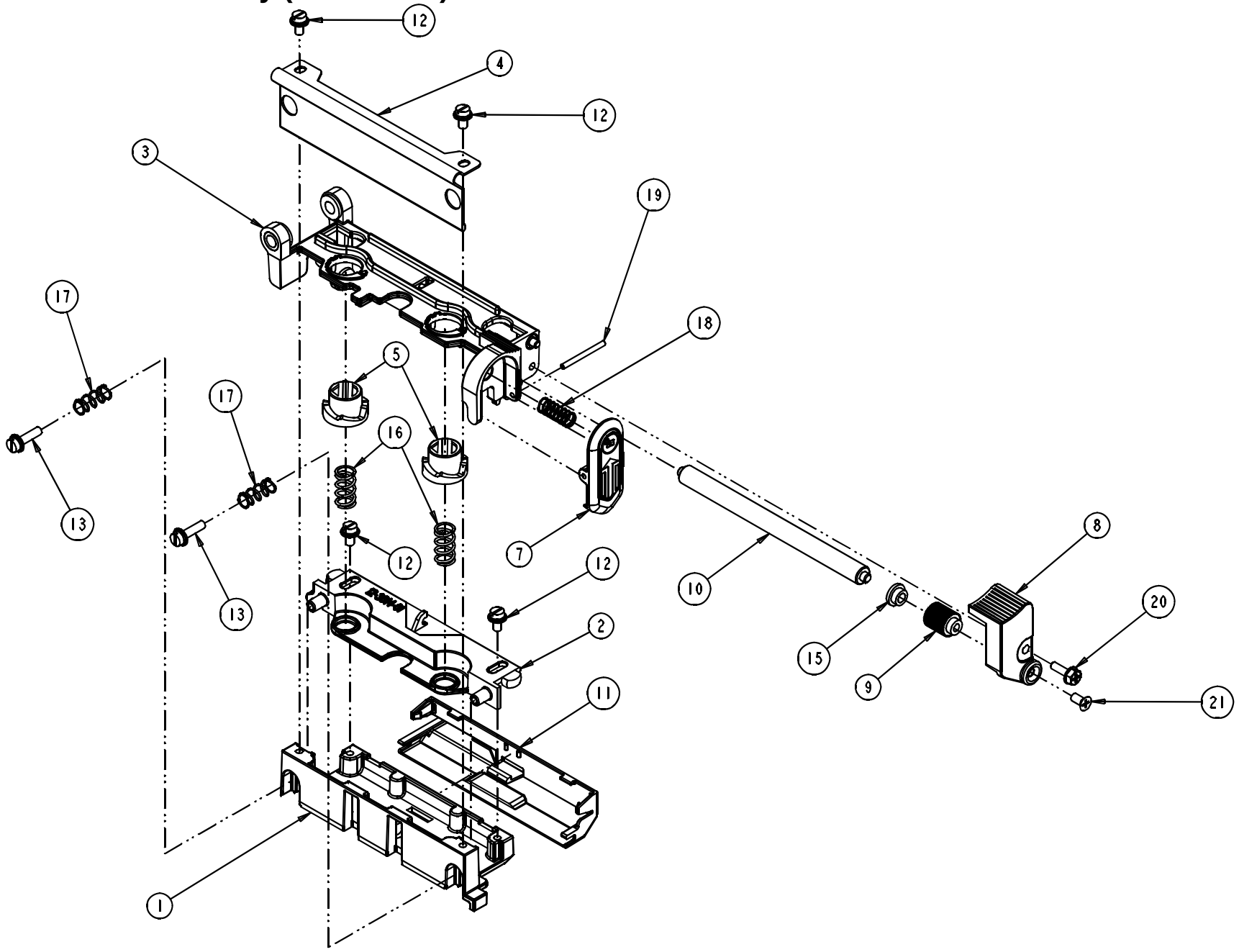
G. Media Supply Hub (15-2763-01)



G. Media Supply Hub (15-2763-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
2	12-2904-01	EXTRUSION MEDIA SUPPORT
3	16-2951-01	CAP MEDIA SUPPLY
4	16-2527-01	RETAINER MEDIA SUPPLY

H. Printhead Assembly (15-2850-01)

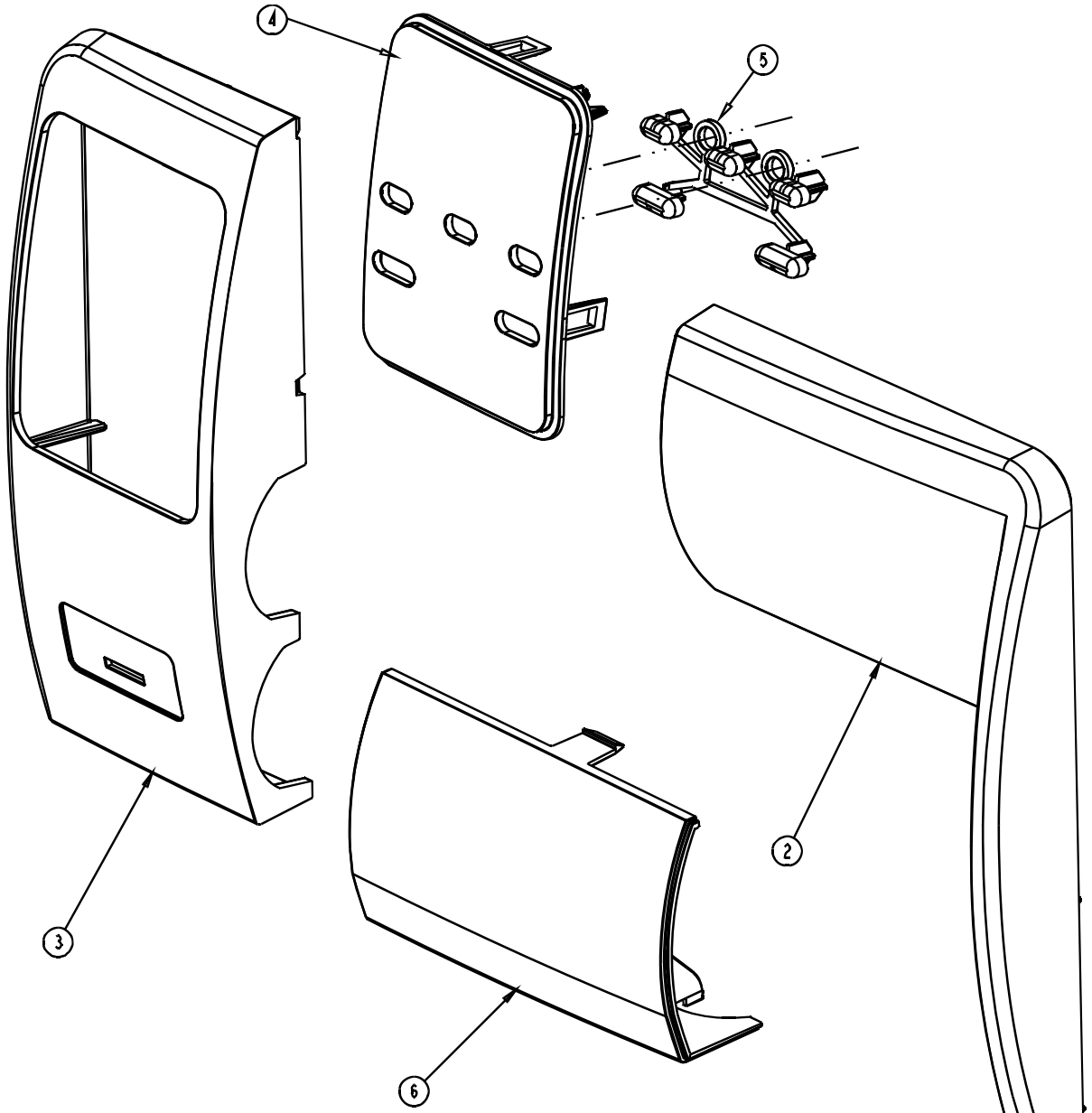


H. Printhead Assembly (15-2850-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	15-3010-01	ASSY-PRINTHEAD MOUNT
2	12-3014-01	BRACKET PRINTHEAD ADJUST
3	15-3012-01	ASSY PRINTHEAD PIVOT
4	11-5352-01	GUIDE RIBBON
5	16-2529-01	CAM-HEAD PRESSURE
7	15-3011-01	ASSY-LATCH
8	12-3163-01	BRACKET RIBBON ROLLER
9	12-3051-01	CAM IDLER RIBBON
10	12-3052-04	SHAFT RIBBON IDLER
11	16-2934-01	COVER PRINTHEAD CABLE
12	10-3030-01	SCREW M4 X 8
13	10-3030-02	SCREW M4 X 16
15	17-2639-01	BEARING FLANG .1895 X.314 X 3 1/16
16	17-2897-01	SPRING COMPRESSION
17	17-3020-01	SPRING- COMPRESSION .30 OD X 1.00 L
18	17-3021-01	SPRING- COMPRESSION .30 OD X .68 LG
19	10-3077-01	PIN DOWEL 3/32 OD X 1.12 LG
20	10-2903-05	SCREW TRILOBULAR M4 PHILIPS HEAD 16
21	10-2984-01	SCREW FLAT HEAD M4 X 8

M-4306

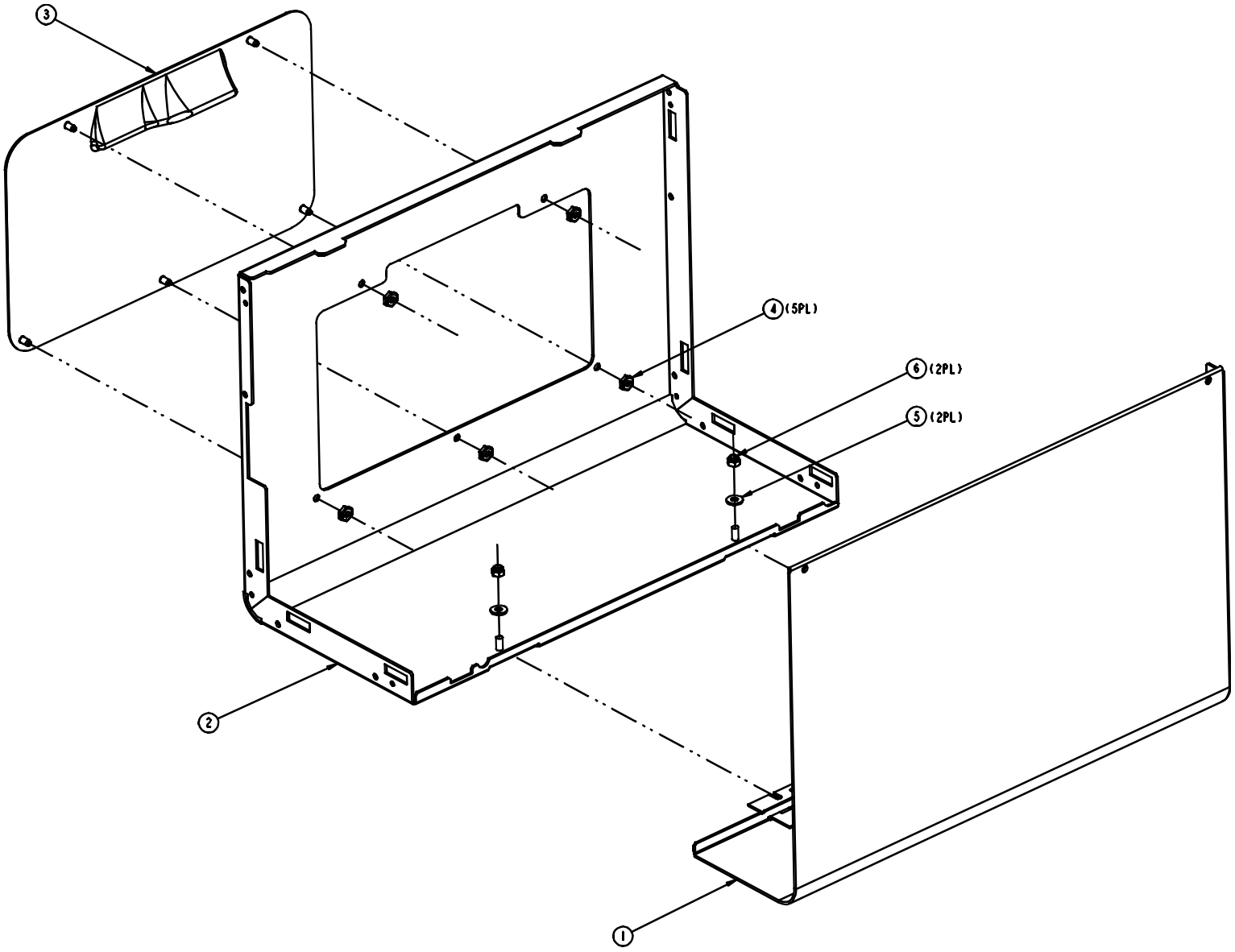
A. Front Covers



A. Front Covers

ITEM NUMBER	PART NUMBER	DESCRIPTION
2	16-2897-01	COVER RIGHT FRONT
3	16-2929-01	COVER LEFT FRONT
4	16-2730-01	COVER LEFT FRONT BEZEL
5	16-2731-01	BUTTONS, CONTROL PANEL
6	16-2707-01	BLOCK FILLER

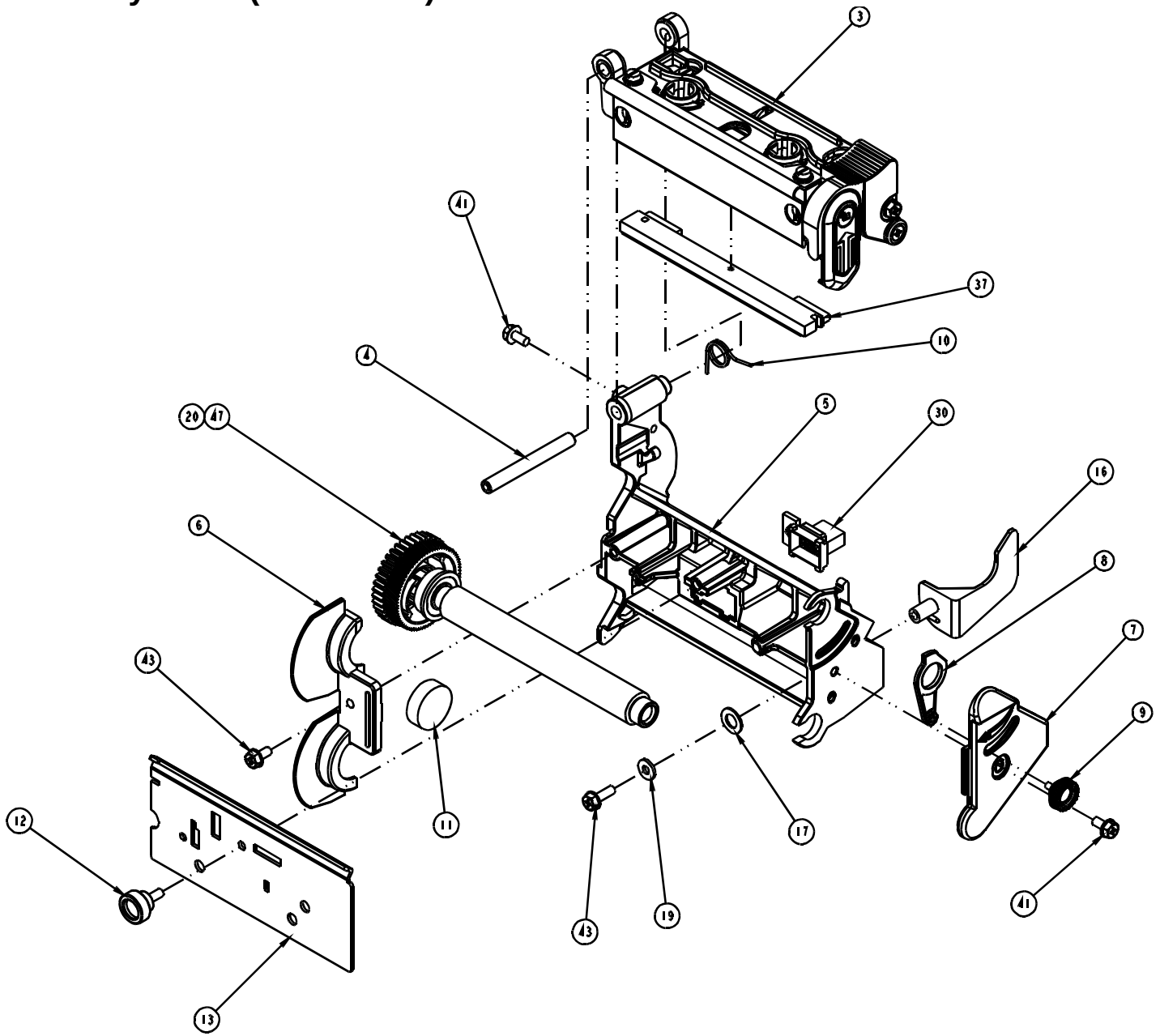
B. Side Covers, Metal (15-3035-01)



B. Side Covers, Metal (15-3035-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	15-3006-01	ASSY, ELECTRONICS COVER
2	11-5562-01	COVER, MEDIA SIDE
3	16-2928-01	WINDOW MEDIA
4	10-3064-01	NUT, SELF THREADING
5	10-2104-01	WASHER #8 FLAT
6	10-2905-01	HEX NUT, SELF-LOCKING

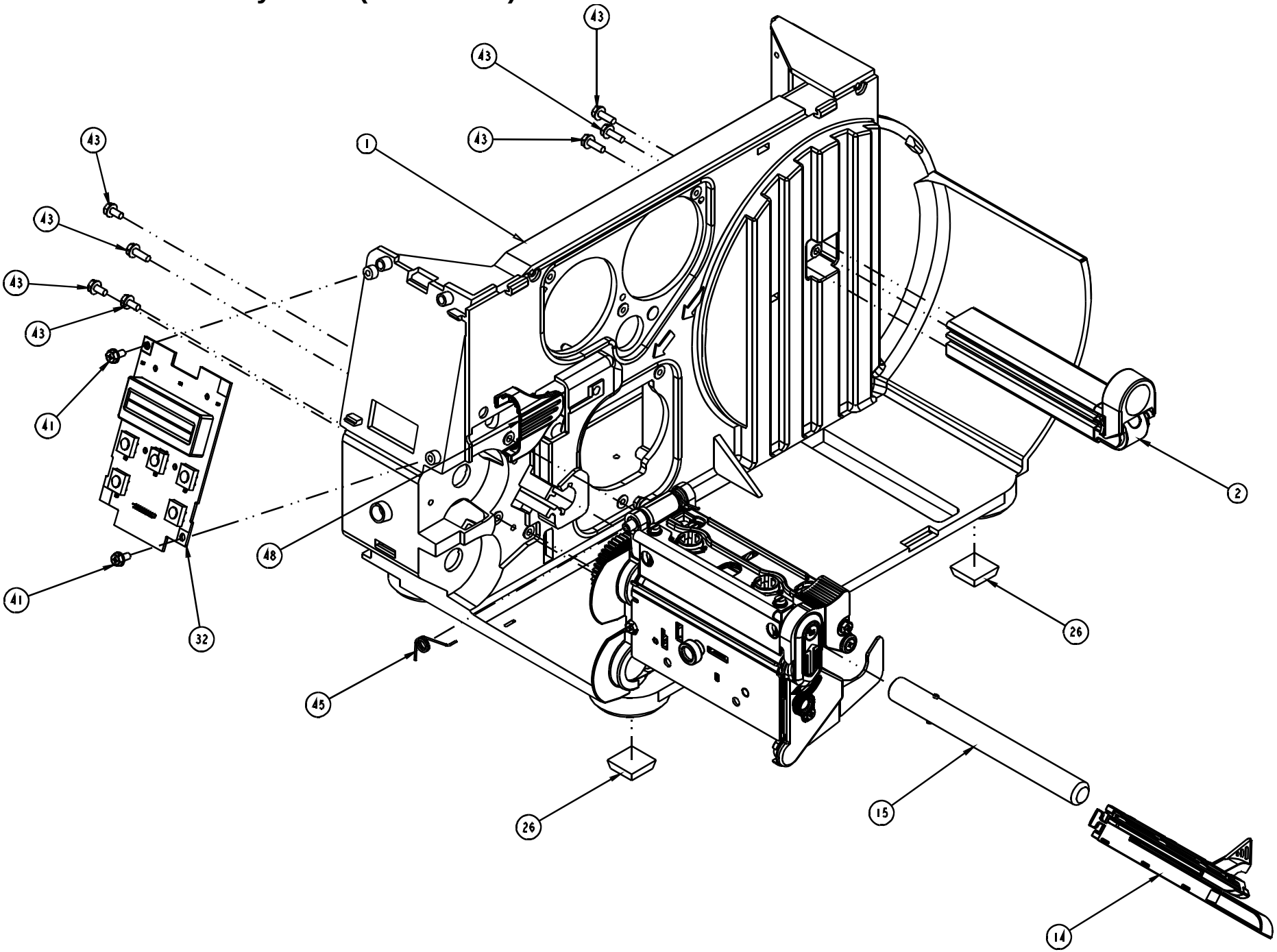
C. Printer Assembly 1 of 3 (53-2153-03)



C. Printer Assembly 1 of 3 (53-2153-03)

ITEM NUMBER	PART NUMBER	DESCRIPTION
3	15-2850-01	ASSY-PRINTHEAD MOUNT
4	12-3165-01	PIN PRINTHEAD PIVOT
5	12-3157-01	BLOCK PLATTEN/PRINTHEAD PIVOT
6	12-3160-01	RETAINER LEFT
7	12-3161-01	RETAINER BEARING
8	12-3279-01	LEVER PRINT HEAD CAM LIFT
9	15-3000-01	ASSY M3 X 8 THUMB SCREW
10	17-3039-01	SPRING HEAD LIFT REAR
11	16-2965-01	SPACER .875 DIA
12	17-2858-01	SCREW HOLLOW KNURLED M4 X10
13	11-5344-01	TEAR BAR
16	16-2860-01	GUIDE-MEDIA
17	10-2904-01	WASHER FLAT NYLON .50 OD X .281 ID
19	10-2113-13	WASHER FLT ROUND STEEL METRIC
20	15-2847-03	ASSY-PLATEN UPPER 300 DPI
30	32-2521-01	CABLE ASSEMBLY OPTIONS CONTROL
37	20-2225-01	PRINTHEAD 300DPI 4.5”
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
47	19-2030-01	GREASE SILCONE

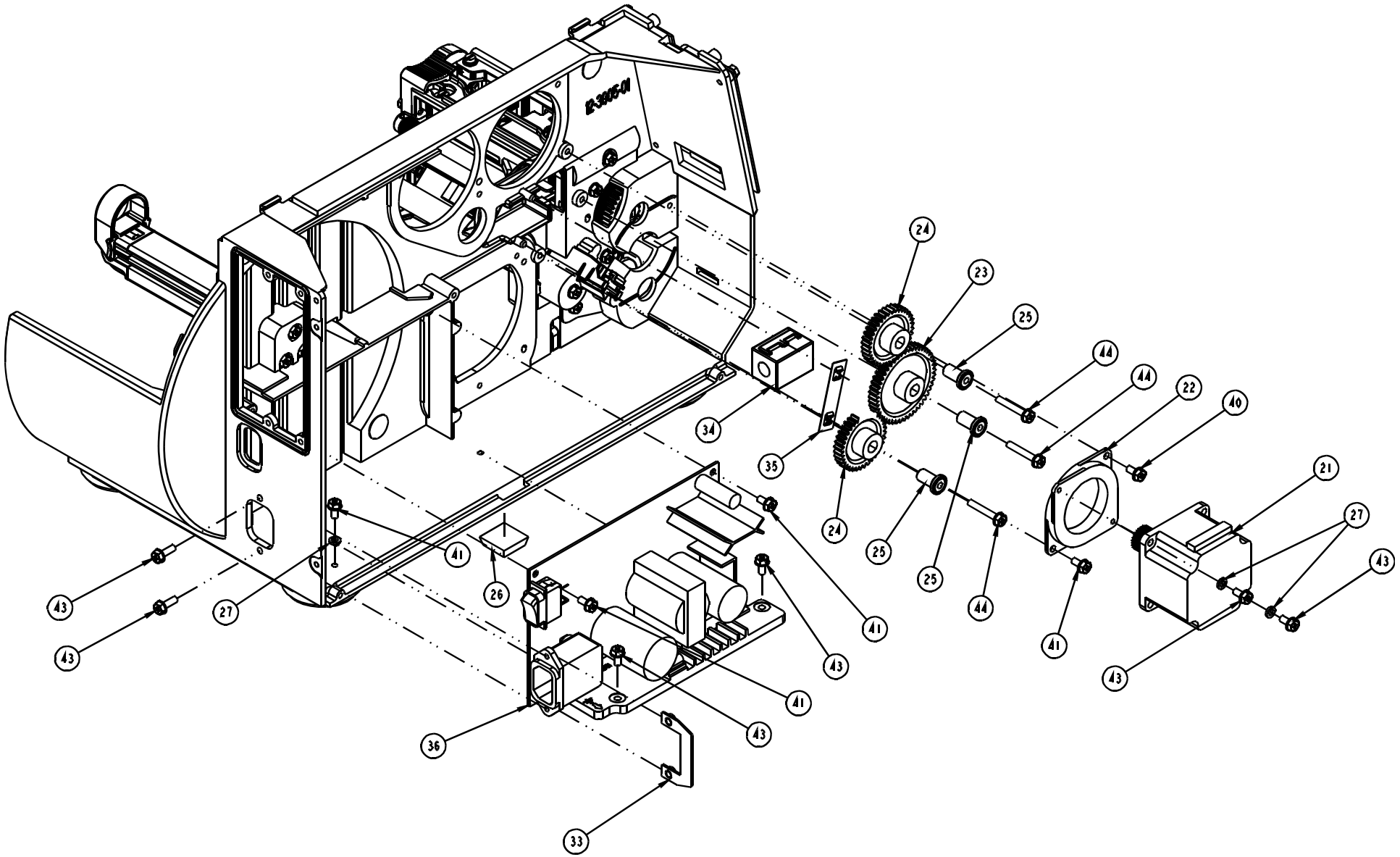
D. Printer Assembly 2 of 3 (53-2153-03)



D. Printer Assembly 2 of 3 (53-2153-03)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3005-01	CENTERPLATE
2	15-2763-01	MEDIA SUPPLY ASSY
14	24-2613-01	ASSY-SENSOR
15	12-3006-01	SHAFT GUIDE
26	10-2913-01	FOOT, STICK-ON
32	45-2016-01	LCD MODULE, M-CLASS
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
45	17-3040-01	SPRING HEAD LIFT FRONT
48	16-2946-01	GROMMET PRINT HEAD HARNESS

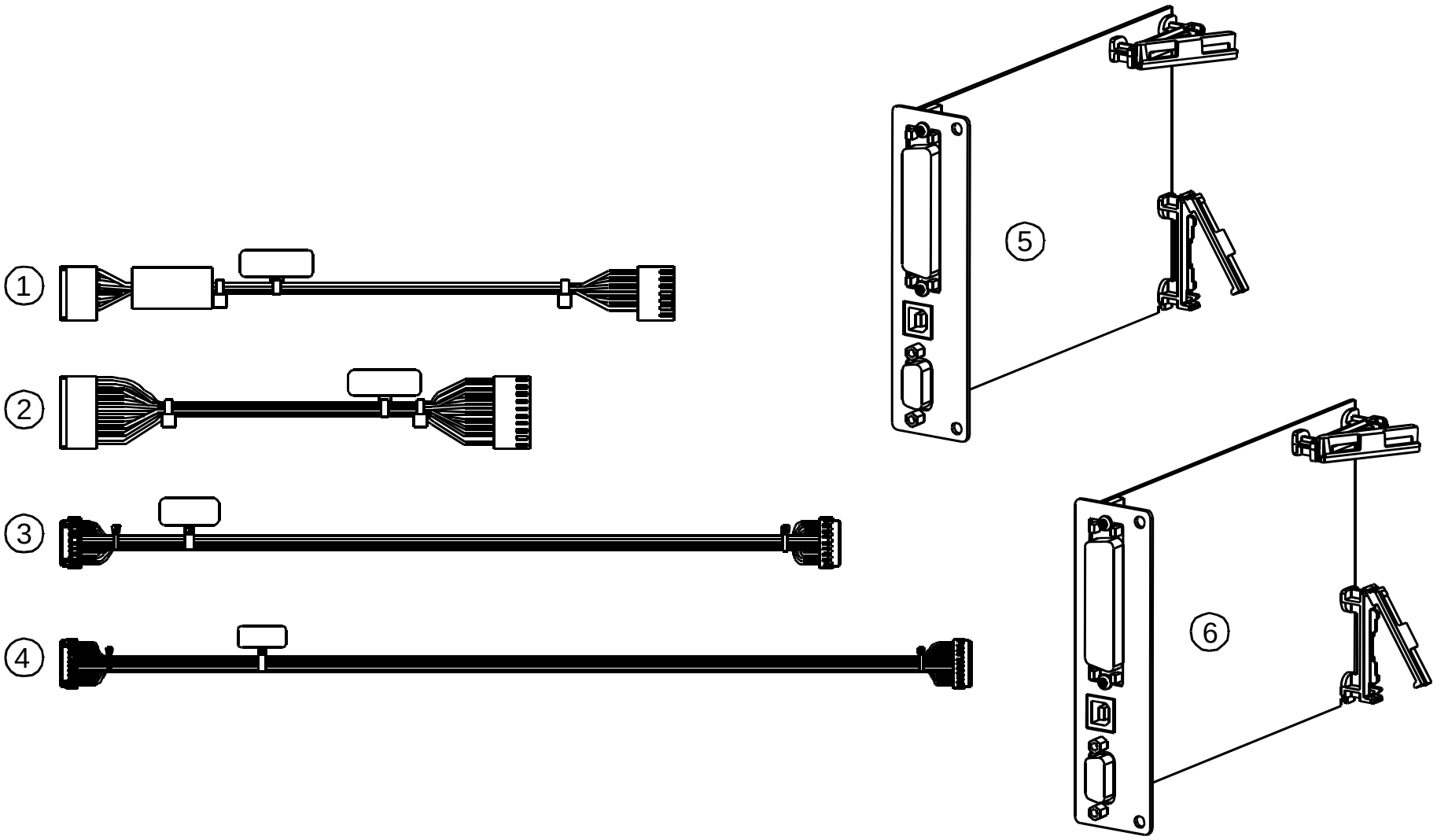
E. Printer Assembly 3 of 3 (53-2153-03)



E. Printer Assembly 3 of 3 (53-2153-03)

ITEM NUMBER	PART NUMBER	DESCRIPTION
21	24-2612-02	ASSEMBLY STEPPER MOTOR
22	17-3009-01	ISOLATOR VIBRATION
23	17-2810-01	GEAR SPUR DELRIN 24 PITCH 48 TEETH
24	17-3002-01	GEAR-IDLER 24 PITCH 36 TOOTH
25	12-2905-01	POST IDLER
26	10-2913-01	FOOT STICK-ON
27	10-0526-01	WASHER #8 SPLIT LOCK
33	11-5277-01	PLATE NUT
34	44-2060-01	ASSY FERRITE
35	17-3015-01	FASTENER TINNERMAN TWIN PUSH-ON
36	51-2357-00	CCA PWR. SUP. M-CLASS
40	10-2903-01	SCREW TRILOBULAR M4 PHILIPS HEAD 6
41	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD 8
43	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
44	10-2903-06	SCREW TRILOBULAR M4 PHILIPS HEAD 25

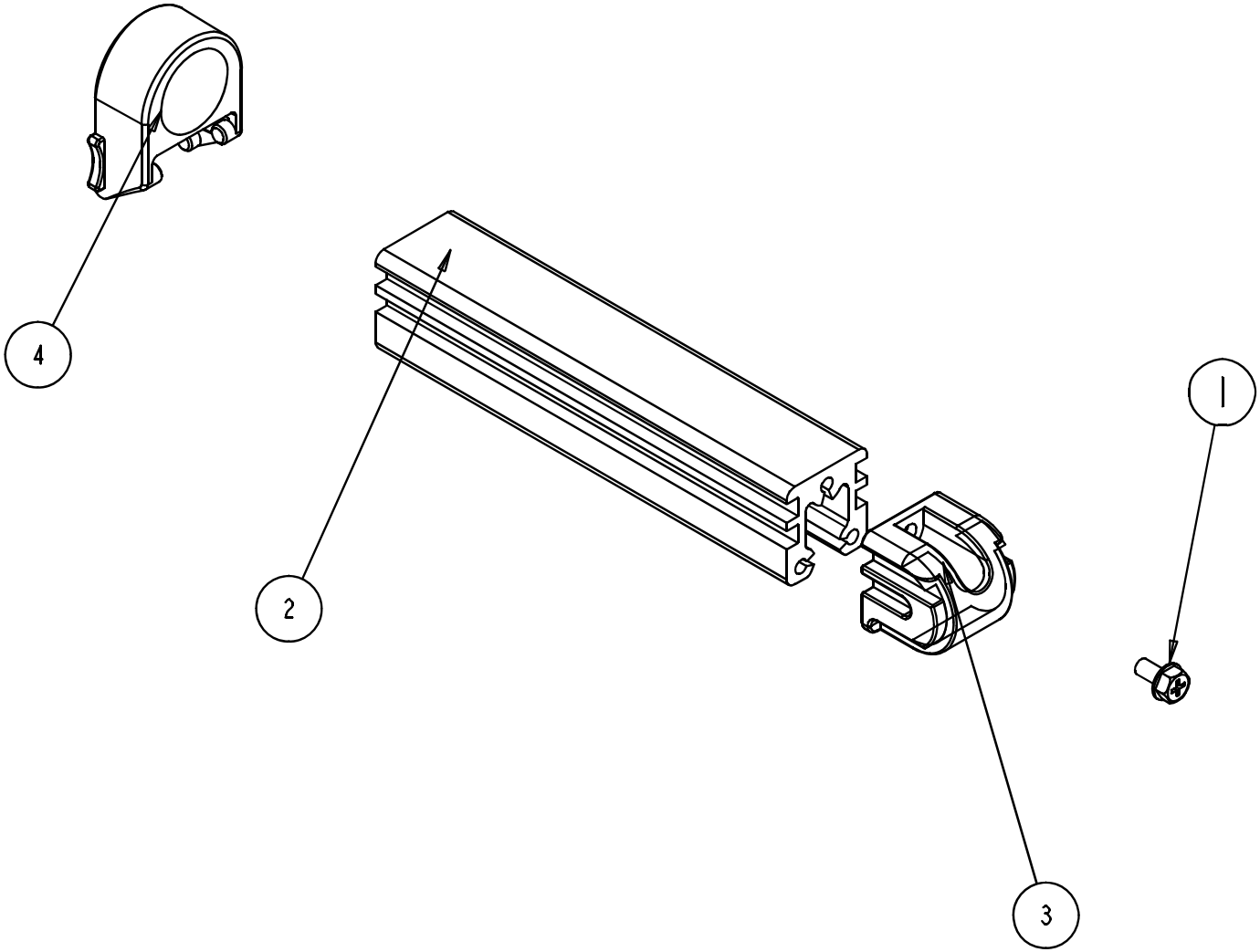
F. Main Board and Internal Cables



F. Main Board and Internal Cables

ITEM NUMBER	PART NUMBER	DESCRIPTION	CABLE ROUTING (FROM / TO)
1	32-2519-01	CABLE ASSEMBLY, MOTOR CONTROL	POWER SUPPLY J5 TO MAIN BOARD J4
2	32-2520-01	CABLE ASSEMBLY, MAIN CCA POWER	POWER SUPPLY J4 TO MAIN BOARD J5
3	32-2526-01	CABLE ASSEMBLY, PRINTHEAD DATA	MAIN BOARD J8 TO PRINTHEAD
4	32-2527-01	CABLE ASSEMBLY, PRINTHEAD POWER	POWER SUPPLY J2 TO PRINTHEAD
5	78-2585-03	MAIN BOARD, 2MB FLASH, 8MB RAM	
6	78-2585-04	MAIN BOARD, 8MB FLASH, 8MB RAM	

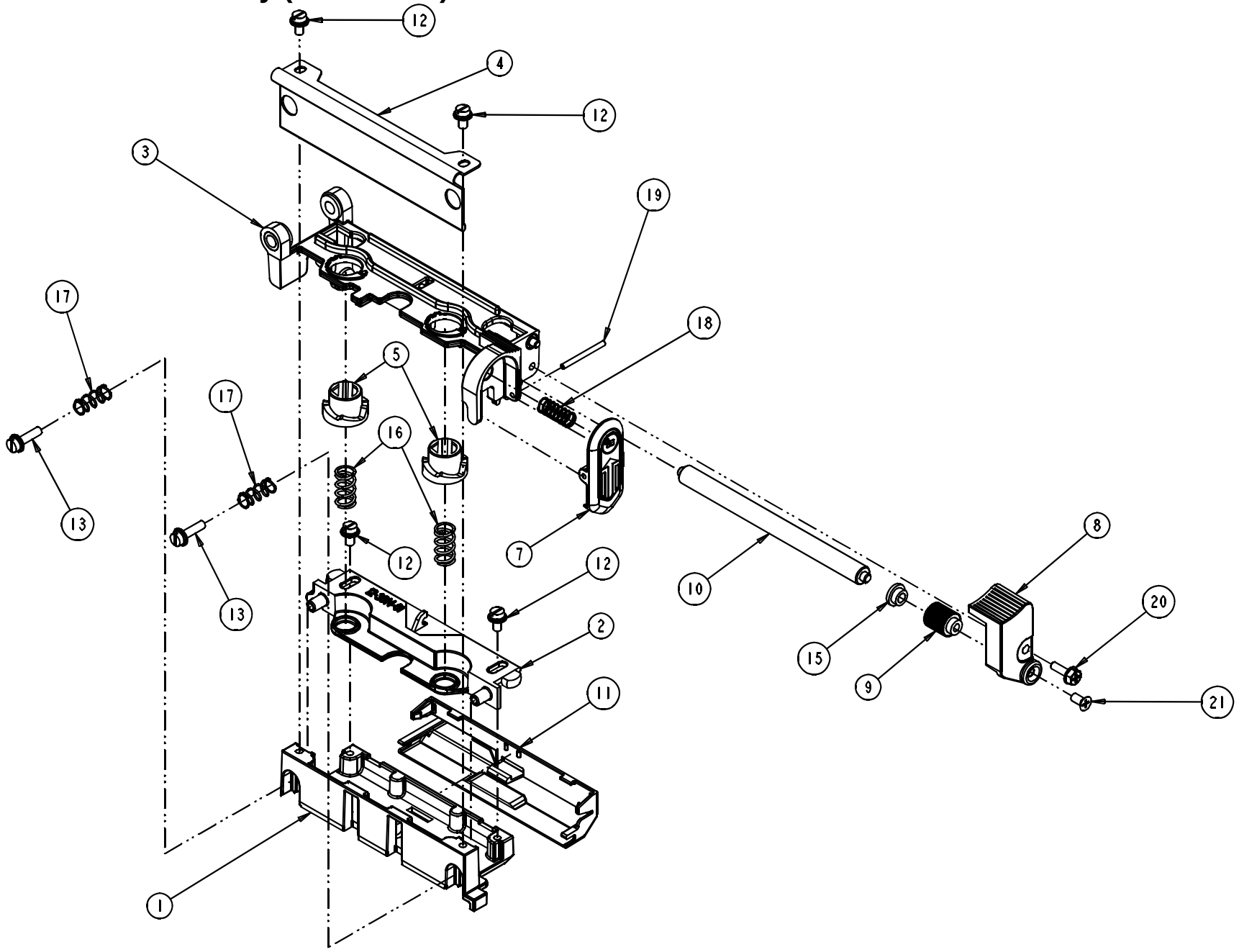
G. Media Supply Hub (15-2763-01)



G. Media Supply Hub (15-2763-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
2	12-2904-01	EXTRUSION MEDIA SUPPORT
3	16-2951-01	CAP MEDIA SUPPLY
4	16-2527-01	RETAINER MEDIA SUPPLY

H. Printhead Assembly (15-2850-01)

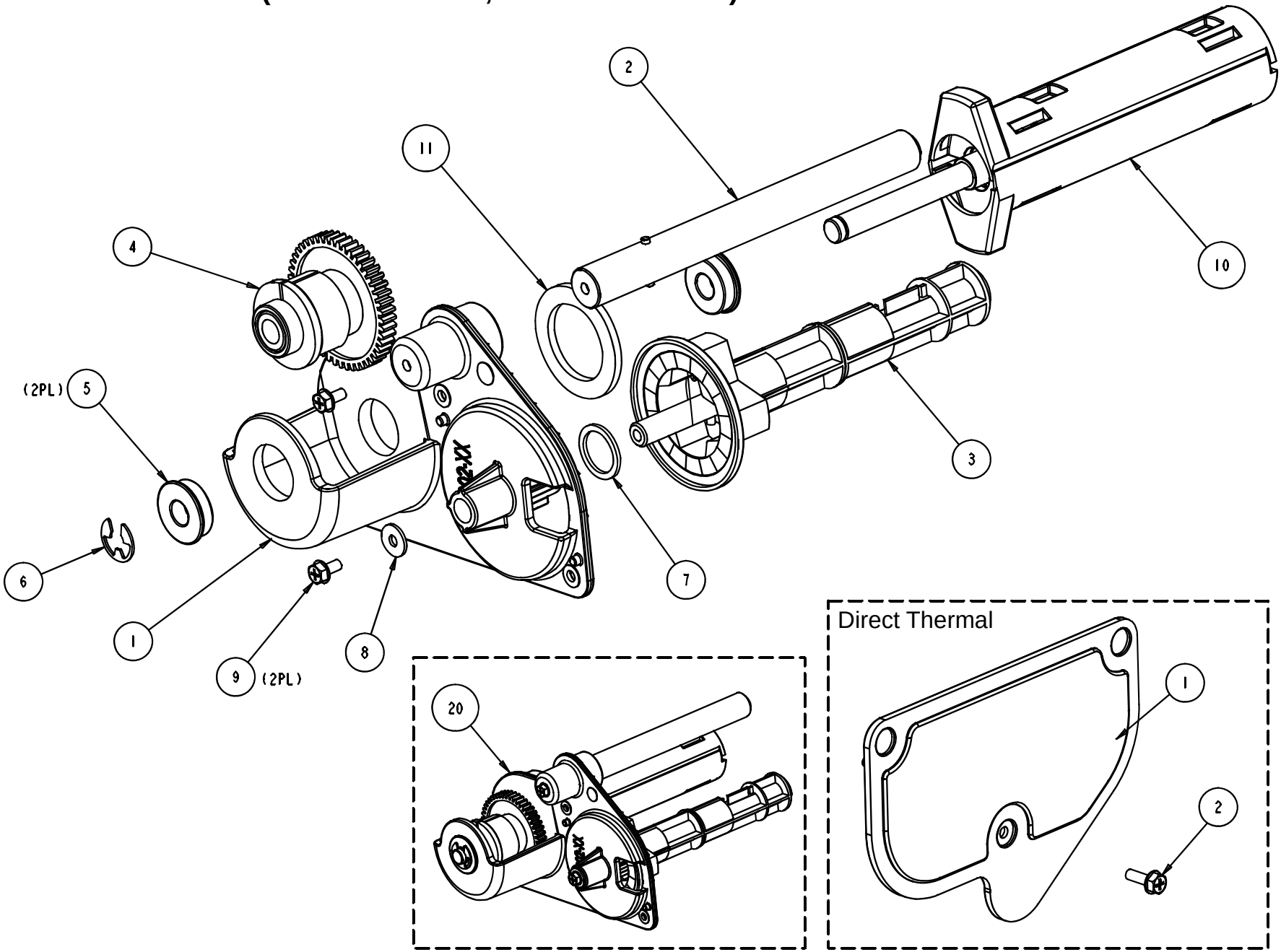


H. Printhead Assembly (15-2850-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	15-3010-01	ASSY-PRINTHEAD MOUNT
2	12-3014-01	BRACKET PRINTHEAD ADJUST
3	15-3012-01	ASSY PRINTHEAD PIVOT
4	11-5352-01	GUIDE RIBBON
5	16-2529-01	CAM-HEAD PRESSURE
7	15-3011-01	ASSY-LATCH
8	12-3163-01	BRACKET RIBBON ROLLER
9	12-3051-01	CAM IDLER RIBBON
10	12-3052-04	SHAFT RIBBON IDLER
11	16-2934-01	COVER PRINTHEAD CABLE
12	10-3030-01	SCREW M4 X 8
13	10-3030-02	SCREW M4 X 16
15	17-2639-01	BEARING FLANG .1895 X.314 X 3 1/16
16	17-2897-01	SPRING COMPRESSION
17	17-3020-01	SPRING- COMPRESSION .30 OD X 1.00 L
18	17-3021-01	SPRING- COMPRESSION .30 OD X .68 LG
19	10-3077-01	PIN DOWEL 3/32 OD X 1.12 LG
20	10-2903-05	SCREW TRILOBULAR M4 PHILIPS HEAD 16
21	10-2984-01	SCREW FLAT HEAD M4 X 8

Options

A. Thermal Transfer (CSI: 78-2483-01; CSO: 78-2483-02)



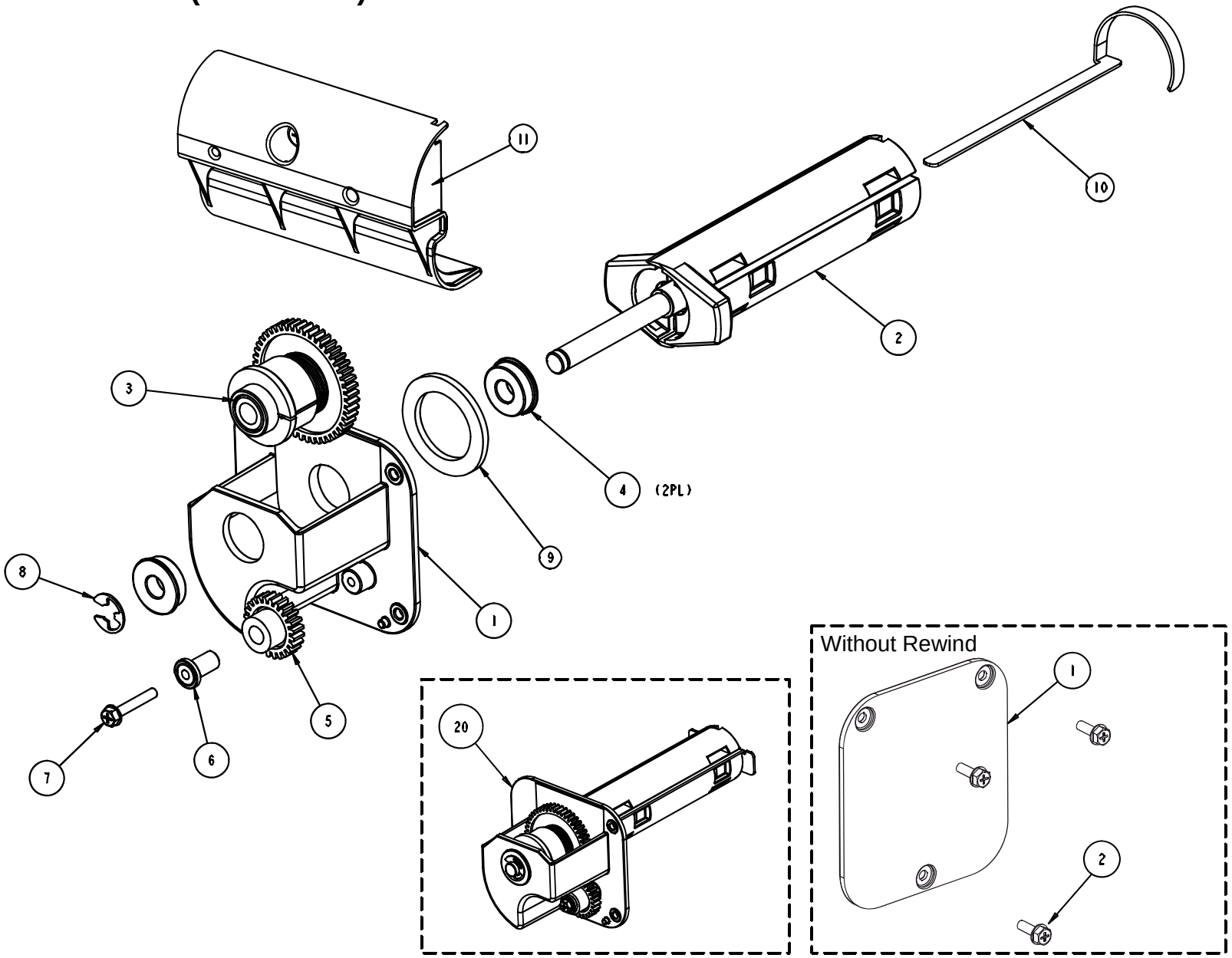
A. Thermal Transfer (CSI: 78-2483-01; CSO: 78-2483-02)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3002-01	HOUSING SUPPLY/TAKE-UP CSI
	12-3002-02	HOUSING SUPPLY/TAKE-UP CSO
2	12-3006-01	SHAFT GUIDE
3	15-2768-11	SUPPLY ASSY RIBBON CSI
	15-2768-12	SUPPLY ASSY RIBBON CSO
4	15-2776-21	CLUTCH ASSY RIBBON
5	17-3028-01	BEARING FLANGED 440C 3/8 X 7/8
6	10-0563-01	E-RING 3/8 TRUARC 5133-37
7	17-2869-01	WASHER FLAT NYLON
8	10-2113-13	WASHER FLT ROUND STEEL METRIC
9	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12
10	15-2840-01	ASSY HUB RIBBON REWIND
11	13-2409-01	DISK FRICTION .125 THICK
20	15-2841-01	ASSY THERMAL TRANSFER CSI
	15-2841-02	ASSY THERMAL TRANSFER CSO

Direct Thermal (78-2492-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3264-01	COVER-RIBBON ASSY
2	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12

B. Internal Rewind (78-2484-01)



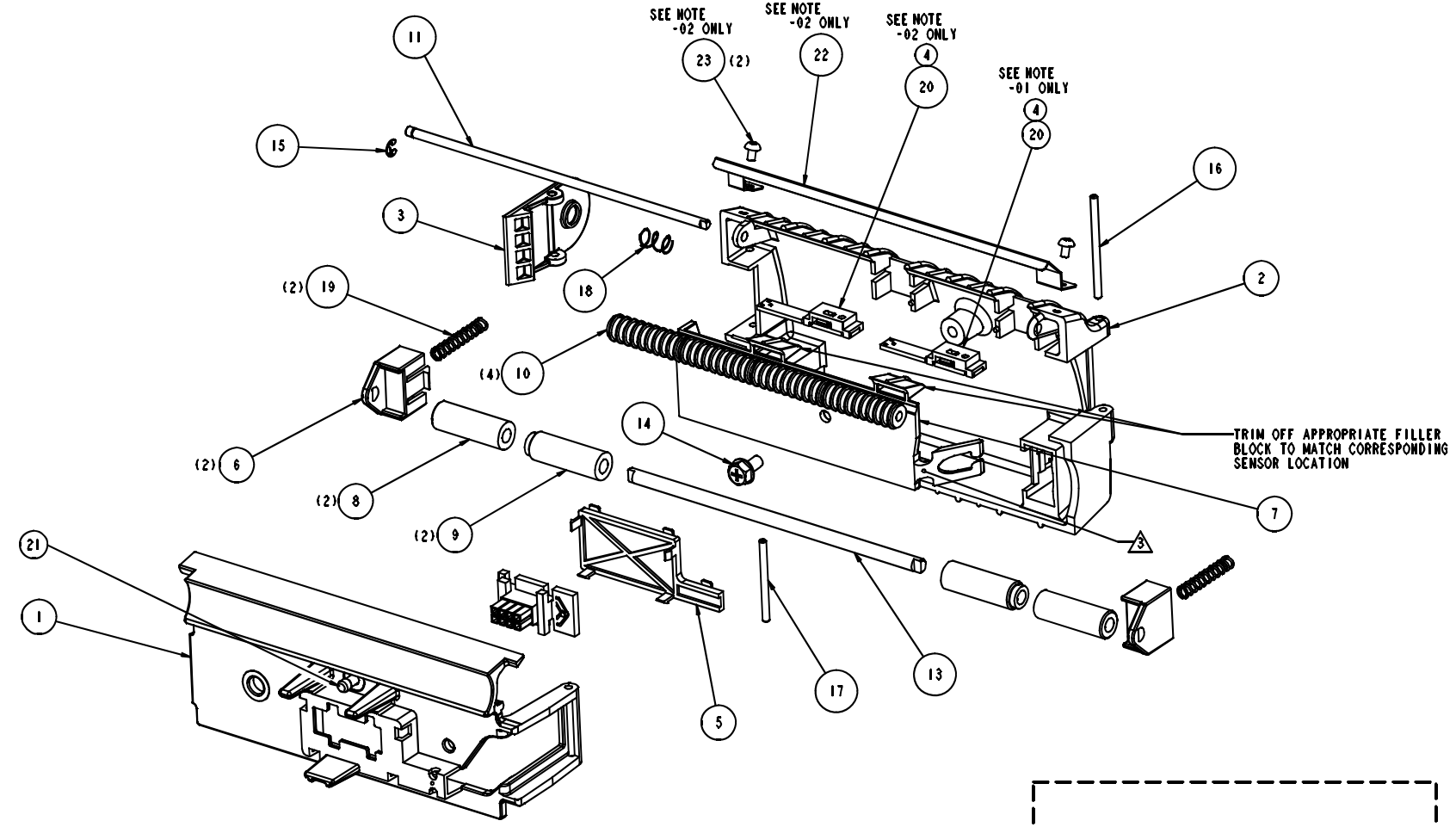
B. Internal Rewind (78-2484-01)

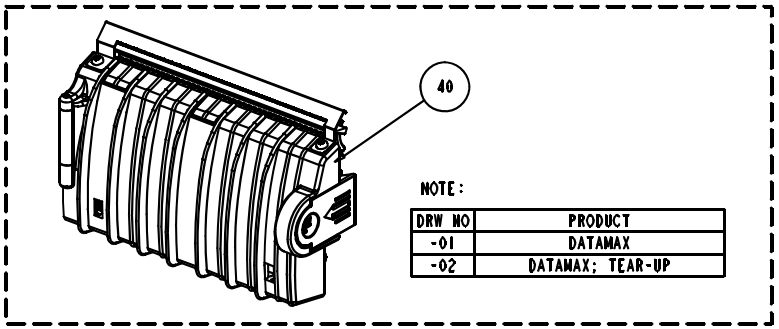
ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-2925-01	HOUSING MEDIA TAKEUP
2	15-2840-01	ASSY HUB RIBBON REWIND
3	15-2802-41	CLUTCH ASSEMBLY MEDIA
4	17-3028-01	BEARING FLANGED 440C 3/8 X 7/8
5	17-2860-01	GEAR SPUR DELRIN 24TEETH
6	12-2905-01	POST IDLER
7	10-2903-06	SCREW TRILOBULAR M4 PHILIPS HEAD 25
8	10-0563-01	E-RING 3/8 TRUARC 5133-37
9	13-2409-01	DISK FRICTION .125 THICK
10	11-5613-01	RETAINER MEDIA
11	16-2931-01	BRACKET REWIND NONMETALLIC
20	15-2842-01	ASSY LABEL REWIND

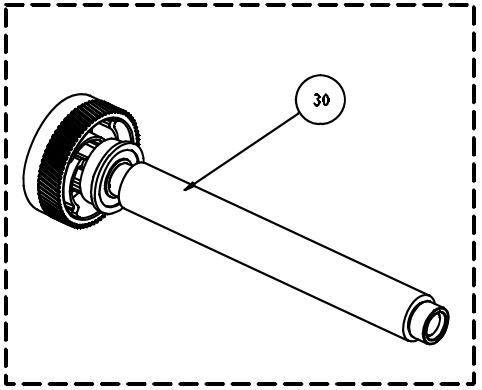
No Internal Rewind (78-2303-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-2941-01	COVER-TAKE-UP ASSY
2	10-2903-04	SCREW TRILOBULAR M4 PHILIPS HEAD 12

C. Peel and Present (78-2482-01 & 78-2482-02)



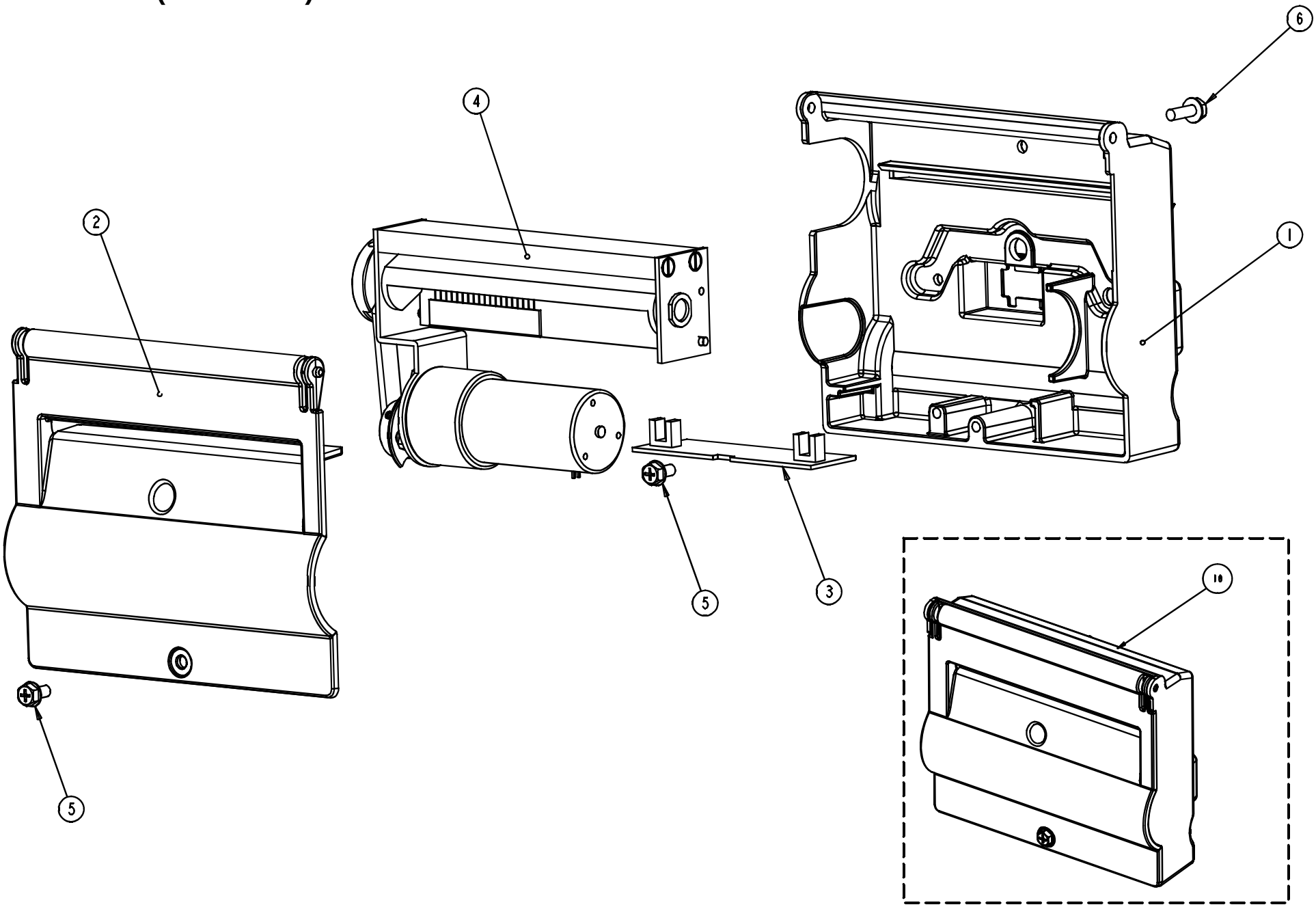




C. Peel and Present (78-2482-01 & 78-2482-02)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3168-01	MOUNT-PEEL MECH
2	12-3275-01	COVER-PEEL MECH
3	16-2923-01	LATCH-PEEL MECHANISM
4	16-2877-01	COVER PRESENT SENSOR
5	16-2938-01	COVER WIRE PEEL MECHANISM
6	16-2869-01	MOUNT-PINCH ROLLER
7	16-2930-01	COVER-PEEL MECH BACK
8	16-2349-01	ROLLER - CLAMP
9	16-2349-02	ROLLER- CLAMP
10	16-2838-01	ROLLER-PEEL UPPER
11	12-3173-01	SHAFT-PEEL UPPER
12	13-0002-01	TYWRAP 4"
13	12-3202-01	SHAFT-PINCH ROLLER
14	10-2903-02	SCREW TRILOBULAR M4 PHILIPS HEAD "8
15	10-3021-02	E-RING. 1/8 CRES
16	10-3072-01	PIN DOWEL 3/32OD X 1.5LG
17	10-3058-01	PIN DOWEL .094 DIA X 1.188 LONG SST
18	17-2997-01	SPRING COMPRESSION .016 WIRE .240 O
19	17-2314-06	SPRING COMPRESSION LC-026B-9MW
20	51-2366-01	CCA PEEL&PRESENT SENSOR M-CLASS
21	10-3081-01	SCREW CAPTIVE FLUSH MOUNT M4
30	15-2847-02 15-2847-04	ASSY- PLATEN LOWER 203 DPI ASSY- PLATEN LOWER 300 DPI
40	15-2945-01 15-2945-02	ASSY-PEEL MECH ASSY-PEEL MECH, TEAR-UP

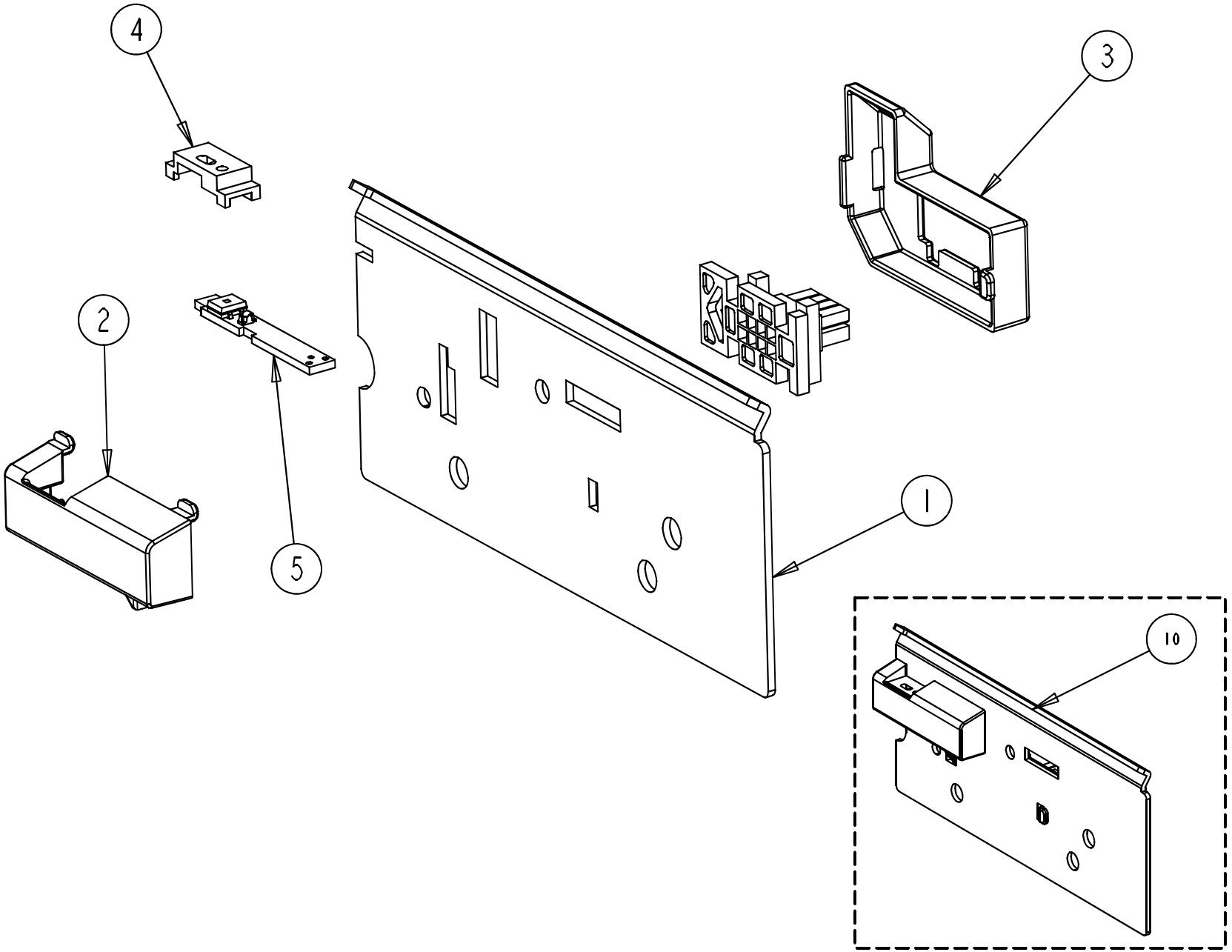
D. Cutter (78-2480-01)



D. Cutter (78-2480-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	12-3097-02	BASE ENCLOSURE CUTTER
2	16-2791-01	COVER ENCLOSURE CUTTER
3	51-2360-00	CCA CUTTER M-CLASS
4	24-2616-01	ASSEMBLY, CUTTER, DRIVE MECHANISM
5	10-2903-01	SCREW TRILOBULAR M4 PHILIPS HEAD 6
6	10-2903-01	SCREW TRILOBULAR M4 PHILIPS HEAD 8
10	15-2918-01	ASSY CUTTER 4"

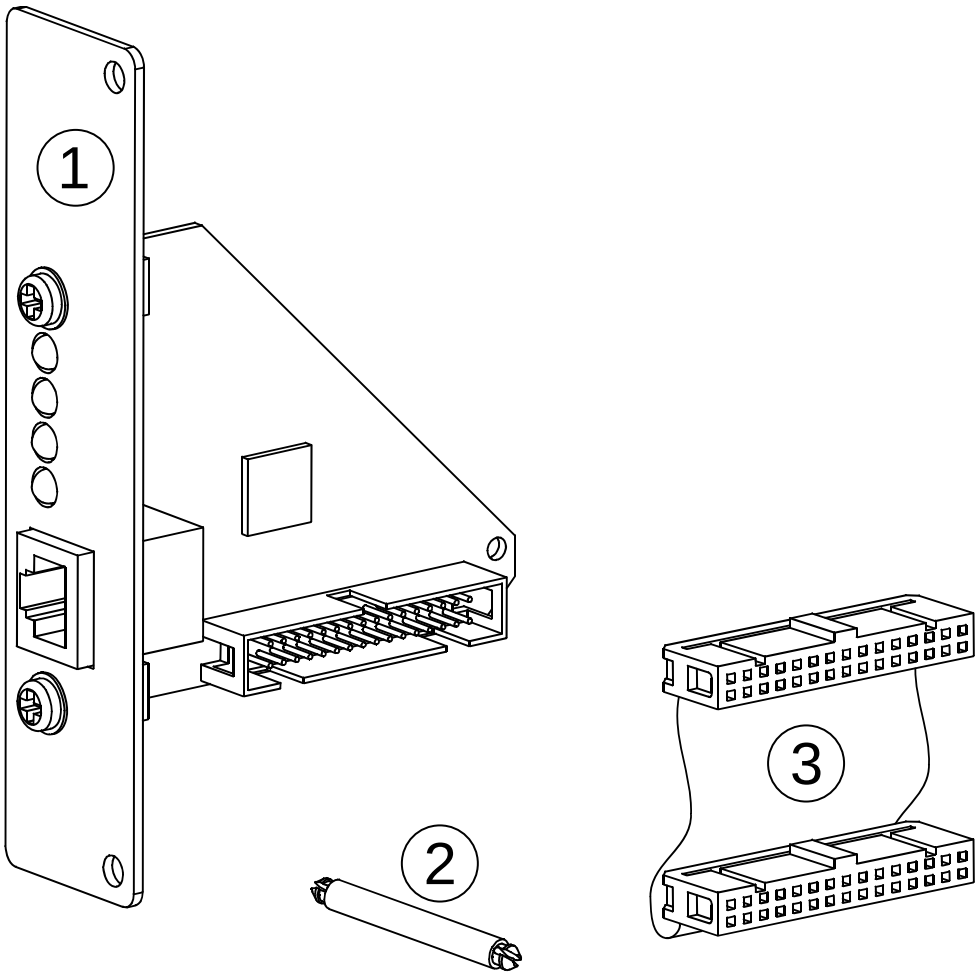
E. Present Sensor (78-2481-01)



E. Present Sensor (78-2481-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	11-5344-01	TEAR BAR
2	16-2826-01	COVER PRESENT SENSOR
3	16-2919-01	BASE PRESENT SENSOR
4	16-2877-01	COVER PRESENT SENSOR
5	51-2367-01	CCA PRESENT SENSOR MCLASS
10	15-2939-01	ASSY PRESENT SENSOR

F. LAN (78-2584-01)



F. LAN (78-2584-01)

ITEM NUMBER	PART NUMBER	DESCRIPTION
1	51-2398-00	CCA, INTERNAL ETHERNET PRINT SERVER
2	17-3047-01	STANDOFF
3	32-2554-01	RIBBON CABLE