

Strain Gauge Retrofit Procedure

for Kit PN PBT-0111 & PBT-0112

for the PBFT

Use these instructions and a Strain Gauge Retrofit Kit (PN PBT-0111 or PBT-0112) to replace the following older models with the new 2 LBF Black Digital Strain Gauge (PN PBT-0599):

Gauges requiring PBT-0111

- X-3234 strain gauge (P/N 10/0287)
- 2 LBF White Strain Gauge (P/N 10/4052)

Gauge requiring PBT-0112

- 2 LBF Black Strain Gauge (P/N 2900-0005)

NOTE: These instructions do not apply to the replacement of any other version of strain gauge

Older Models



New Model



Scope of Supply

A kit will typically include the following items:

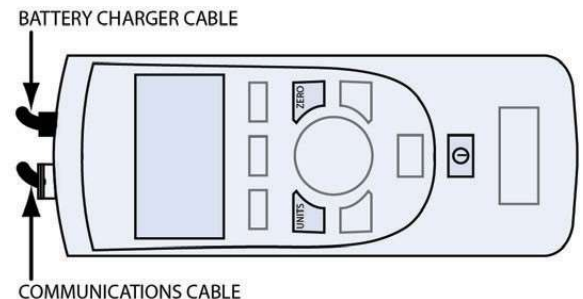
- 2 LBF Black Digital Strain Gauge (PBT-0599)
- USB Hub and Power Adapter (2025-0149)
- Strain Gauge Mount (PBT-0530) (*Only in PBT-0111 kit*)
- Tape Clamp Assembly
- Instruction Sheet
- USB Cable (USB-C-Male RA to USB-A-Male)
- Extended Guide mounts

Retrofit Procedure

1. Remove Old Strain Gauge

To remove the older models of the strain gauge from the PBFT:

1. Disconnect both the battery charger and communications cables from the old strain gauge.
2. Remove the strain gauge from the PBFT by removing the two mounting screws from the underside of the mounting plate to which the strain gauge is secured. Set screws aside for use during installation of the new strain gauge.

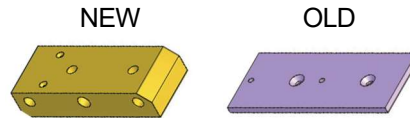


2. Remove Mount Plate

If an old-style mount plate is in use, it will need to be replaced to maintain proper peel angle.

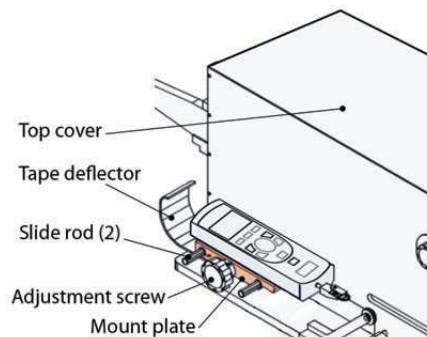
1. Inspect the PBFT to discover which mount plate is currently in use:
 - a. If the new, thicker (1") mount plate is already in use, skip to [5. Align Tape Clip](#) (pg 3).
 - b. If the old model (0.18" thick) is in use, it will need to be replaced with the new (1" thick) model included in the kit. Go to step 2.

Only the NEW style mount plate should be used with the new strain gauge model.

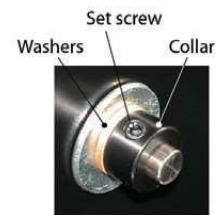


2. Remove the old-style mount plate:

- a. Remove all power from the PBFT.
- b. To expose the Collar securing the strain gauge Adjustment Screw, remove the screws in the Top Cover using a 3/32" Allen wrench, and then, being **careful not to put tension on the ground wire attached to the cover**, slide the Top Cover back away from the front cover.



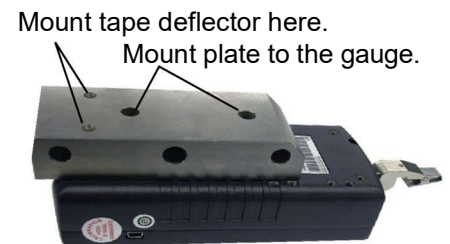
Collar on inside of front cover.



- c. Loosen the Set Screw in the Collar using a 5/64" Allen wrench, slide the Collar and Washers from the Adjustment Screw, and set them aside.
- d. Pull the Adjustment Screw and Mount Plate away from the front of the PBFT and off the Slide Rods.
- e. Unscrew the Adjustment Screw and Tape Deflector from the old mount plate and set both items aside.

3. Install the New Strain Gauge

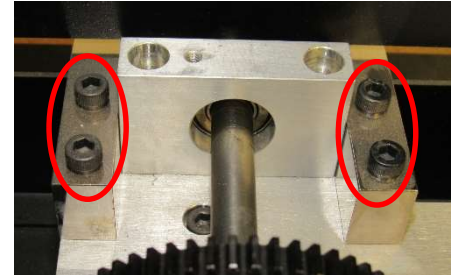
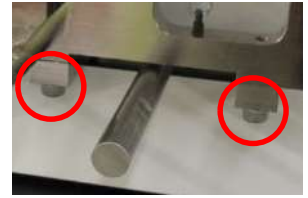
1. Mount the tape deflector and strain gauge to the new mount plate:
 - a. Mount the Tape Deflector to the new mount plate from the kit with (2) 8-32x3/8" flathead screws.
 - b. Mount the new style mount plate to the back of the new strain gauge with two (2) 10- 32x5/8" socket head screws.
2. Install the new strain gauge assembly on the PBFT:
 - a. Screw the Adjustment Screw into the center hole in the mounting plate.
 - b. Slide the mount plate and Adjustment Screw assembly onto the PBFT Slide Rods so the mount plate is seated flush against the front cover of the PBFT.
 - c. Slide the Washers and Collar onto the end of the Adjustment Screw now protruding into the interior of the PBFT.
 - d. With the Set Screw seated on the flat surface of the Adjustment Screw rod, tighten the Set Screw in the Collar.



4. Installation of Extended Guide Mounts

The new strain gauge **requires** the installation of new Guide Mounts due to the form factor change of the gauge.

1. To install the new Guide mounts we need to remove the Tape Carrier
 - a. Loosen setscrews of the draw wheels and place to one side.
 - b. Using a 5/32" Allen wrench remove the (2) 10-32 x 5/8" bolts holding the Tape Carrier and set aside with the Tape Carrier.
2. On the inside of the PBFT
 - a. Using a 5/32" Allen wrench remove the (4) 10-24 x 1" bolts holding the old Guide Mounts and set aside.
 - b. Using (2) 10-24 x 1" of the bolts previously removed, secure each of the new Guide mounts in place of the old ones. Leave slightly loose.
 - c. Using the (2) 10-32 x 5/8" bolts removed earlier, attach the Tape carrier to the new Guide Mounts.
 - d. Tighten the Guide Mount bolts left loose earlier.



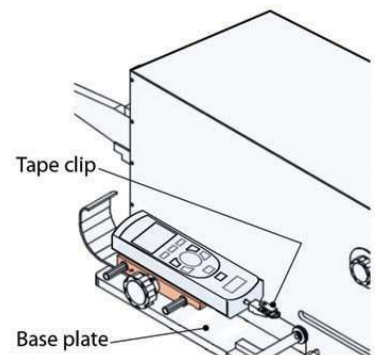
Note: If you'd like to remove the cables that went to the old gauge, you may remove them by unplugging the cable from the PCB at J6 and J5 and cutting the zip ties. You can then pull the cables out of the machine through the hole in the side of the machine and properly dispose of them per your area's laws.

- e. Slide the Top Cover back into place on the PBFT and secure it in place.
3. Draw Wheel
 - a. The draw wheel can now be placed back on the machine.

WARNING! Due to the new Guide Mounts the location of the draw wheels on the rod has changed. Re-alignment using tape is required before operation.

5. Align Tape Clip

Verify that the strain gauge Tape Clip is square to the PBFT Base Plate. As needed, loosen the set screw in the tape clip with a 0.050" Allen wrench, adjust the tape clip orientation, then retighten the set screw so the tape clip is locked in place.



6. Connecting the New Strain Gauge

The new strain gauge uses a USB-C connection to transfer data directly to the computer using the RS-232 serial communication standard.

1. Connect the supplied USB cable to the new strain gauge.
2. Connect the USB cable of the gauge and the USB cable of the PBFT or PBT-118 into the provided USB Hub.
3. Plug the power adapter of the USB Hub, into the hub. Using the correct plug adapter for your region, plug the adapter into an electrical outlet.
4. Plug the USB Hub into your Laptop or Desktop computer and proceed to install the FORCEWare software per the software install instructions in the manual.

NOTE: The original battery charger cable should remain disconnected as it will no longer be used.

The strain gauge replacement is now complete.