FCO CA11245: Balancer Upgrade II

Document number: 719-00800A- Rev B

Product	FCO priority
ThermoFlex® Wide II	Next failure

Machines affected WT001-WT029

Background

Balancers are failing due to loss of friction. This is causing balance weight error messages at many sites. This FCO is a fix for the problem.

Solution

Replace the old balance weights with new weights that incorporate a nonslip mechanism. Installation of the new weights will eliminate the balancer slipping problems.

Time required 2 hours

Parts required

Part Number	Part Name	Quantity
518-01844A	Balance weight upgrade kit	1

Tools required

- Hex key set
- 10-mm socket with ratchet handle
- Acetone
- Lint-free wipe or cloth

Procedure

The procedure consists of the following steps that are described in detail:

- Determining the version of the drum and balancer assembly
- Replacing the balance weights on the tailstock side
- Replacing the balance weights on the headstock side
- Replacing the balance actuator assembly on the headstock side
- Replacing the balance actuator pin on the tailstock side
- Testing the new balancer

Determining the version of the drum and balancer assembly on the device:

1. See the following photos to help identify the two different versions of the balancer in the field. Use this procedure *only* for devices that have the *version 2* balancer.

   To replace a failed *version 1* balancer:

   - Order balancer core assembly 500-02142B in addition to 518-01844A.
   - Follow the *Balancer Replacement Procedure* for replacing the balancer core.
   - Follow this procedure for replacing the balance weights, but disregard the steps involving the removal of the balance weights.



Version 1



Version 2

2. Two different versions of the drum on devices in the field require two different thicknesses of rubber pads on the new balance weight.

   To verify the drum version:

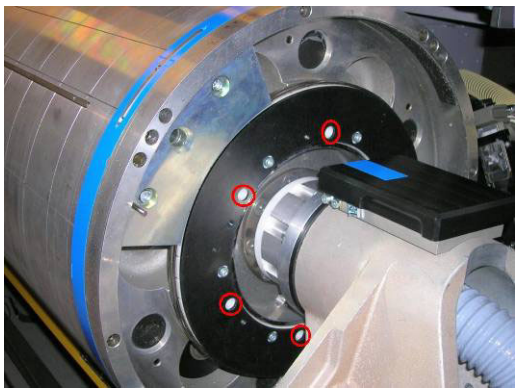
   - Look at the end of the drum on the headstock side. The serial number of the drum is imprinted there.
   - Serial numbers beginning with WS indicate newer drums that require the thick pads.
   - Serial numbers beginning with WD or WA indicate older drums that require the thin pads.

3. Use the default, thick pads generally for devices that have a serial number of WT024 and higher. These pads are installed on the new balance weights.
4. Use the thinner pads in the kit for the older style drum used generally on serial numbers WT023 and lower.
   Remove the thick pads from the new balance weight set and replace them with the thinner pads included in the kit.

Replacing the balance weights on the tailstock side:

1. On the new parts, remove any tape that is wrapped around the rubber pads to keep them in place during shipping.
2. Open the table and front panel to gain access to the drum.
3. Turn the drum brake switch to the **Brake Override** position.

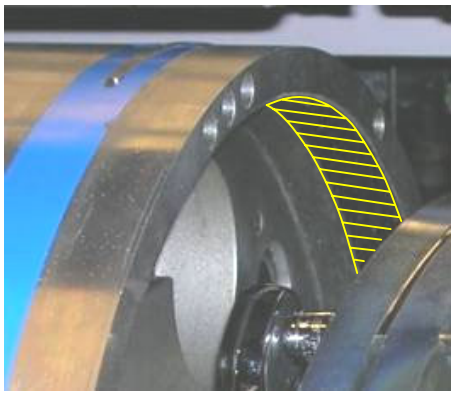
4. Detach the tailstock side drum balancer by removing the six M5 screws that hold it in place.
   These are the deeply recessed screws shown circled in red in the following photo.



5. Using a 10-mm socket, appropriate handle, and a M5 hex key, loosen the four M6 screws that hold the balance weights to the balancer assembly.

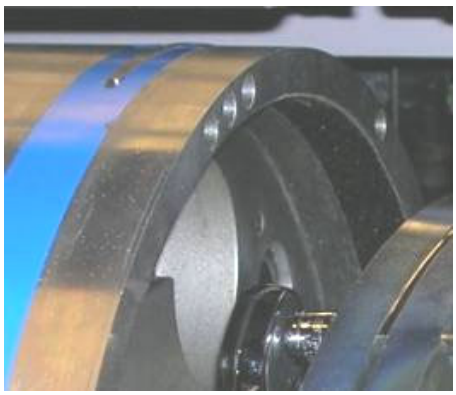


6. Clean the inside of the drum end bell in preparation for applying the grip tape.
   Use acetone and a rag or lint-free wipe to clean a band at least 30-mm (1.18-in.) wide at the outer edge of the end bell (yellow hatched area shown in photo).

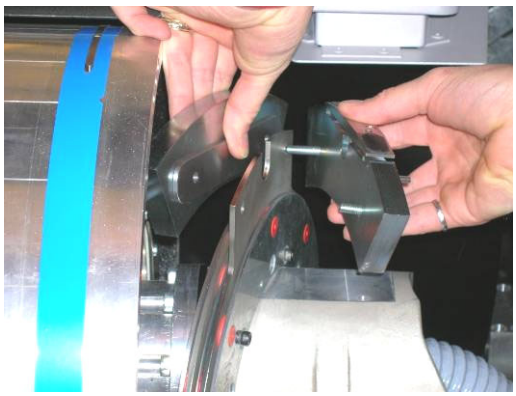


7. After the cleaned area is completely dry, apply the grip tape to the inside of the end bell.
   The tape should be flush with, or, inset up to 2 mm (.08 in.) from the outer edge of the drum.

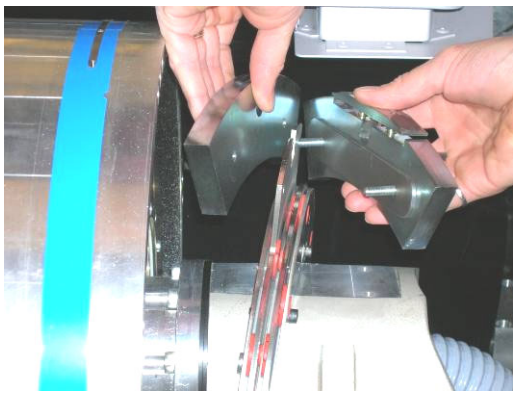
8. Cut the grip tape to final length leaving no more than a 2-mm (.08-in.) gap between the ends. *Be very careful* not to touch the sticky part of the grip tape or to get the tape dirty.



9. Select one new balance weight set labeled **NEAR TAB** and one set labeled **FAR TAB** from the upgrade kit.
10. Remove the two M6 screws holding each set together.
11. Attach the assembly labeled **NEAR TAB** to the outermost tab of the balancer.
    The spacer between the balance weights should be behind the tab.
    Torque the screws to about 10 N m (7.5 ft. lb.).



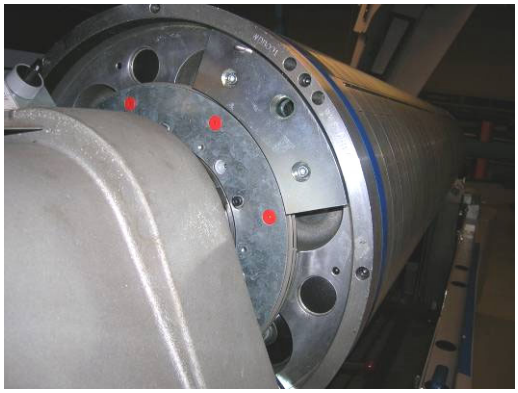
12. Attach the assembly labeled **FAR TAB** to the inner tab of the balancer. The spacer between the balance weights should be in front of the tab.
    Torque the screws to about 10 N m (7.5 ft. lb.).



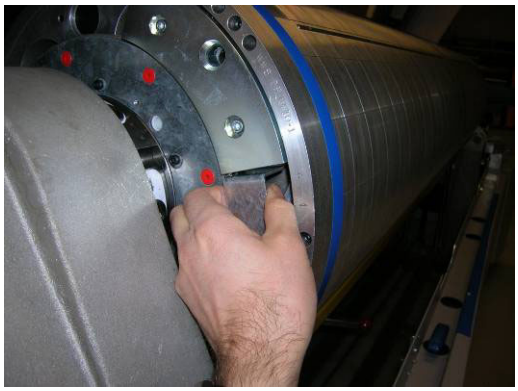
13. Use the balancer actuator pin from the kit and another object, such as a pen, to hold the mechanism in the new balance weights in the retracted position.
14. Reattach the balancer assembly to the drum.
15. Put a small amount of Loctite® 242 in each of the holes for the six screws, but *be careful* to not get any on the balancer assembly.

Replacing the balance weights on the headstock side:

1. Position one balance weight so that one edge is approximately in line with a pocket in the drum.



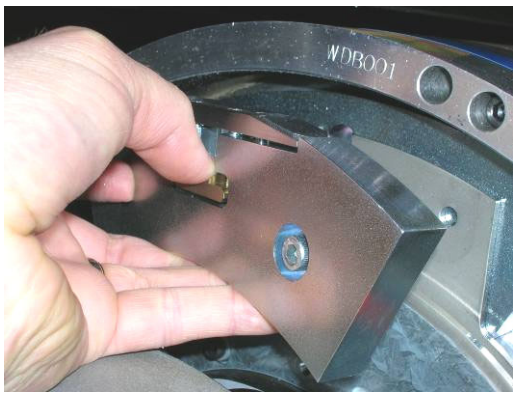
2. Insert the balance weight removal tool into the pocket and position it so that the tab fits into the counterbore at the back of the balance weight, and prevents the nut from turning.
   Note: If the tool does not insert fully right away, turn the corresponding screw while holding the tool in place until it is fully inserted.

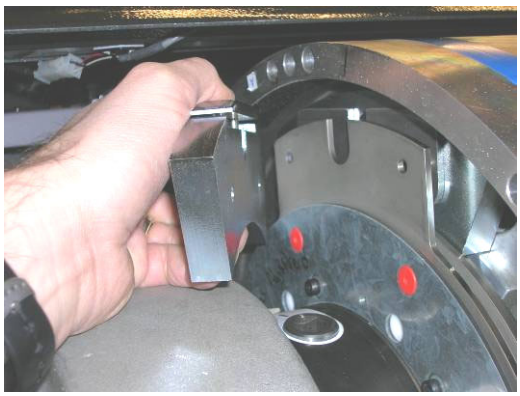


3. Once the tool is seated properly (check the photos to see how the tool should look when it is fully inserted), loosen and remove the screw using a hex key.
   Two tools have been provided in the kit in case one gets damaged in the process.



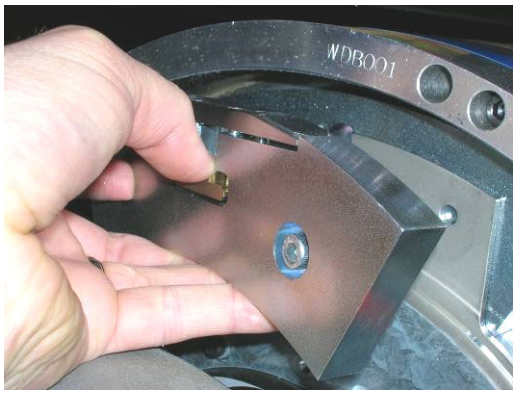

4. Repeat steps 1-3 for the other screw on the same balance mass, but be careful that the balance weights do not fall once the screws have been removed.
5. Repeat steps 1-4 for the other balance weight set on the headstock side.
6. Clean the inside of the drum end bell in preparation for applying the grip tape.
   Use acetone and a rag or lint-free wipe to clean a band at least 30-mm (1.18-in.) wide at the outer edge of the end bell.
7. After the cleaned area is completely dry, apply the grip tape to the inside of the end bell.
   The tape should be flush with or inset up to 2 mm (.08 in.) from the outer edge of the drum.
8. Cut the grip tape to final length leaving no more than a 2-mm (.08-in.) gap between the ends. *Be very careful* not to touch the sticky part of the grip tape or to get it dirty.
9. Remove the screws holding the assembly labeled **NEAR TAB** together.
10. Hold the mechanism in the retracted position and attach it to the outer most tab of the balancer.
    The spacer between the balance weights should be behind the tab.
    Torque the screws to about 10 N m (7.5 ft. lb.).

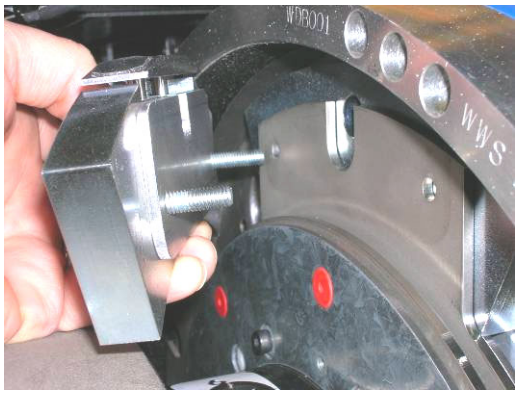




11. Remove the screws holding the assembly labeled **FAR TAB** together.

12. Hold the mechanism in the retracted position and attach it to the inner tab of the balancer.
    The spacer between the balance weights should be in front of the tab.
    Torque the screws to about 10 N m (7.5 ft. lb.).



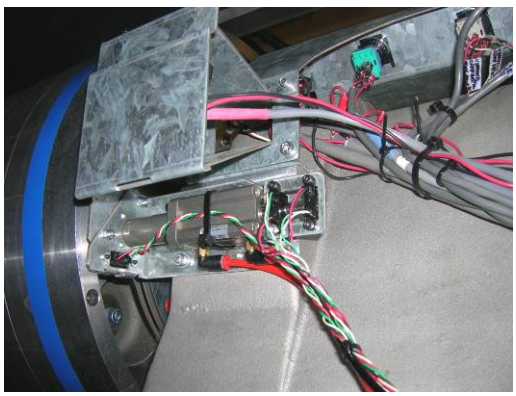


Replacing the balancer actuator assembly on the headstock side:

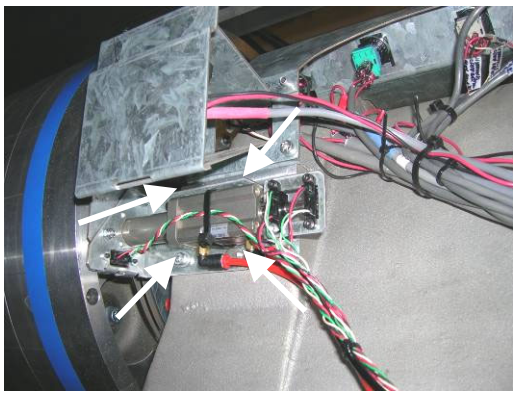
1. Turn off the air supply valve at the back of the device.



2. Disconnect the cable and tubes heading to the balancer actuator assembly on the headstock side.



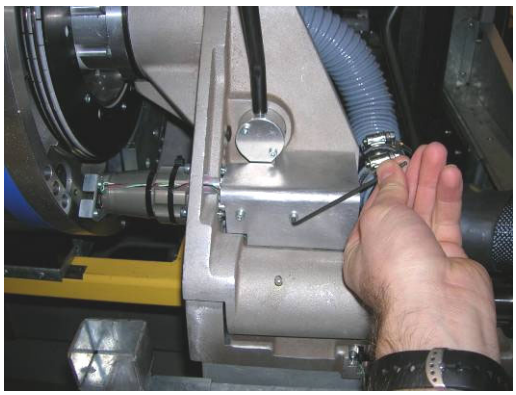
3. Remove the screws holding the balancer actuator assembly in place and remove the assembly. It may be necessary to remove one or more screws from the bracket above the actuator assembly.



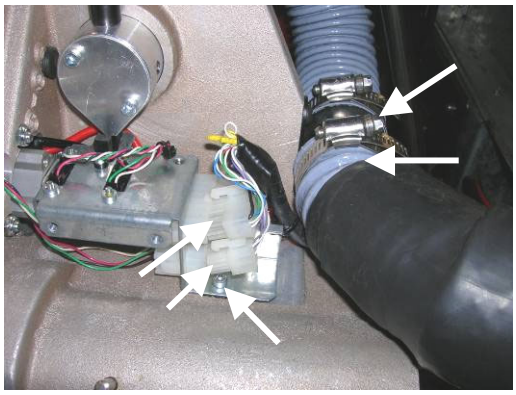
4. Replace the old actuator assembly with the new one provided in the kit and replace all screws.

Replacing the balancer actuator pin on the tailstock side:

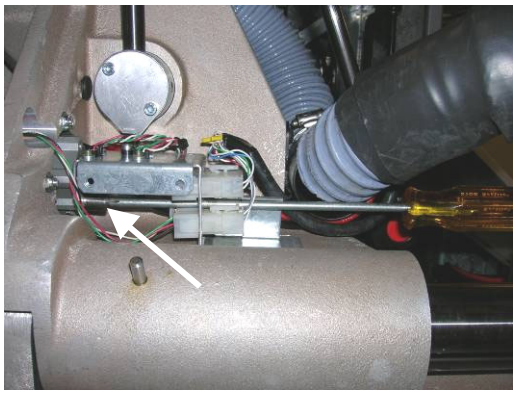
1. Remove the sheet metal cover on the tailstock.



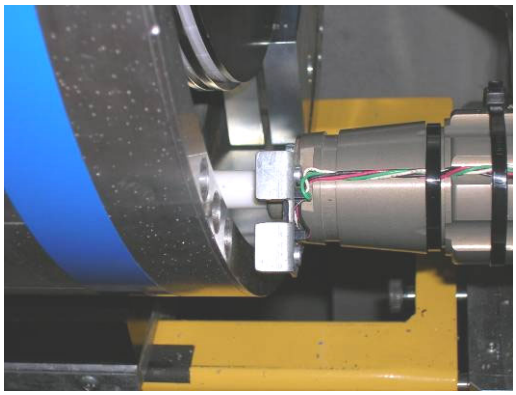
2. Disconnect the two electrical connectors, vacuum hose clamp, vacuum hose, and the screw holding down the bracket.



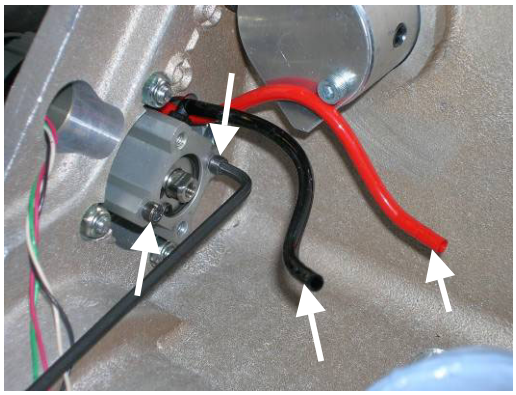
3. Use a long Phillips screwdriver to unscrew the captive fastener underneath the bracket. Access for the screwdriver is through a hole in the bracket located under the top connector and to the right of the bottom connector. See photo.



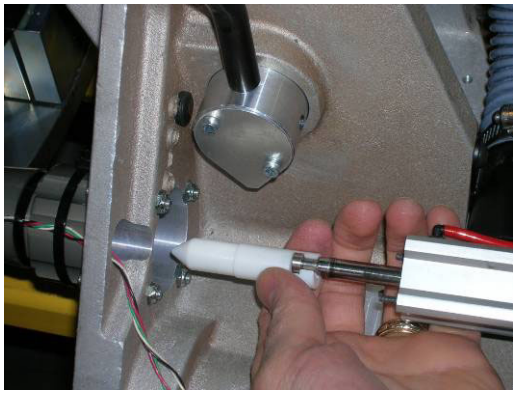
4. Reach your finger under the bracket and push the cylinder rod in all the way so that the actuator pin protrudes as shown in the following photo.



5. Disconnect the two air tubes from the connectors on the bracket and remove the two long screws holding the cylinder into the bore.



6. Pull the air cylinder out of the bore, remove the old actuator pin, and replace it with the new pin.



7. Assembly is the reverse of disassembly.

Testing the new balancer:

Test multiple balancer movements for various sheet sizes using the Service Shell command >>`balancer balance`. For command syntax help, type >>`help balancer balance`.

FCO 100 Label #	12
See also	518-01844A drawing at http://techplanetpre.creo.com/output/computer_to_plate/thermoflex_ii/nav/fcos.htm#ca11245
Technical contact	John Funk
Date submitted	07 Dec 2006
Last updated	04 Jun 2007