Torsion Bar Replacement

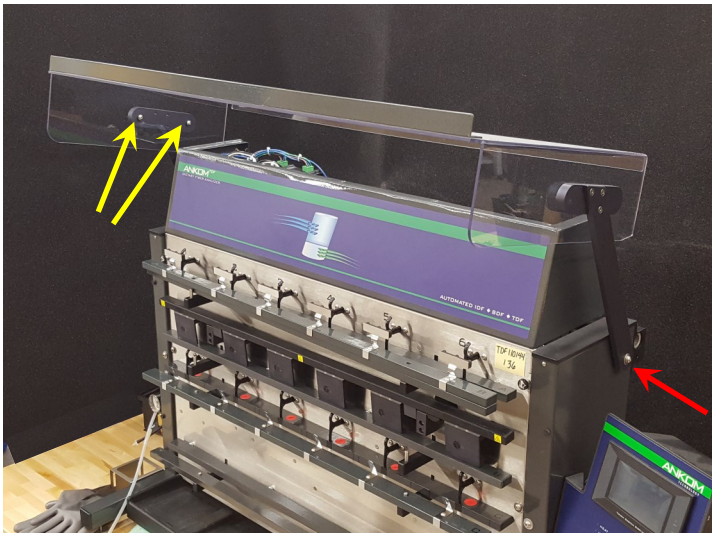
ANKOM^{TDF} Dietary Fiber Analyzer

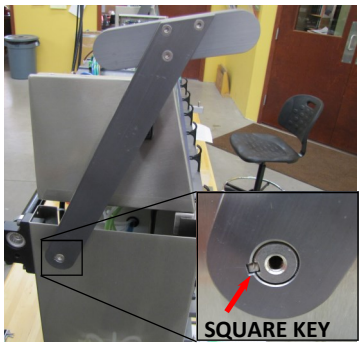
Service procedure **TS048**

Rev: 3/09/23 KJO

8181 Torsion Bar, TDF

1. For a broken Torsion Bar (8181), the front cover may be loose from the torsion bar mechanism and move freely up and down, or may be locked in the down position. You will need to remove the front cover and right and left side support arms. It will be necessary to unscrew the two screws on the right and left side support arms (red arrow) that secure the support arms to the torsion bar mechanism. It will also be necessary to remove the four screws (yellow arrows) on both the right and left sides that hold the plastic safety cover to the support arms. Save the screws, washers and square keys.



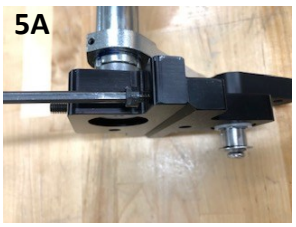


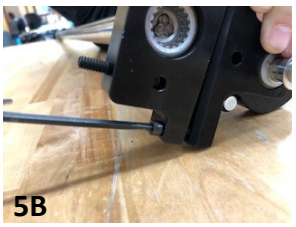
2. With the new Torsion Bar, cut off the zip tie and disassemble the pieces by following the subsequent steps. *NOTE: Throughout the Torsion Bar assembly process, keep the pieces from each side together, do not mix the pieces as they are specifically made for the Right and Left sides*.

3. Remove screw and washer from the cam.

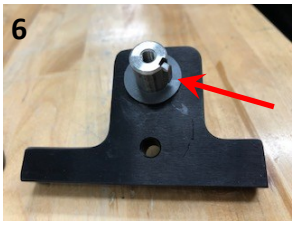
4. Pry the cam from the Internal Mounting Bracket.

5. Unscrew the two socket head screws from the Mounting Bracket.



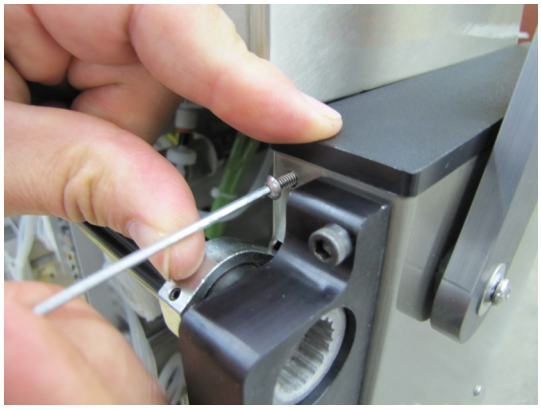


6. Use pliers to remove key.
   DO NOT LOSE THIS KEY

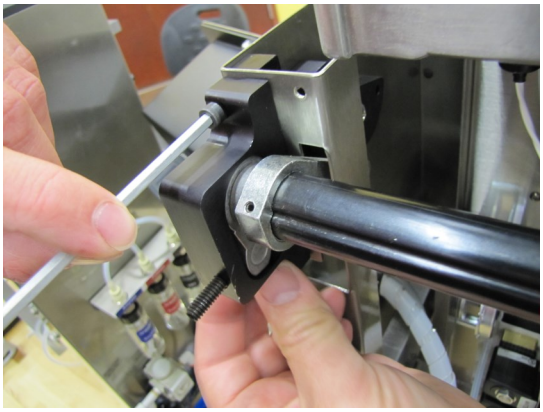


7. Separate the parts of the new Torsion Bar as shown.

8. Remove the support leg end caps by removing the two screws on the front and back of each. Save and set aside the parts.



9. Using a 5/32” Allen wrench, remove the two socket head screws on both external brackets that hold the torsion bar in place. Set aside the brackets and broken torsion bar. These parts will be replaced.



10. The old Internal Mounting Bracket and Cam will now be free and can be removed.

11. Follow steps A-H to attach the new right/left internal mounting brackets & cams to the right and left support legs. NOTE: There are specific right and left side parts that are not interchangeable.

A. Insert Cam shaft from outside of leg.

B. Slide Internal Mounting Bracket onto Cam Shaft on inside of leg with the short end on top and long end on

C. Obtain a 6057 Nylon Washer and insert onto Cam Shaft (only needed if gray bushing is recessed).

D. Slide Cam into Cam Shaft and align the grooves to make a square hole.

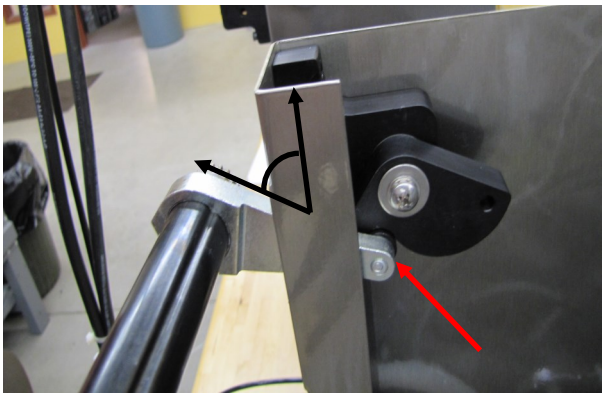
E. Insert key into square hole.

F. Screw on the button head screw w/ washer that was

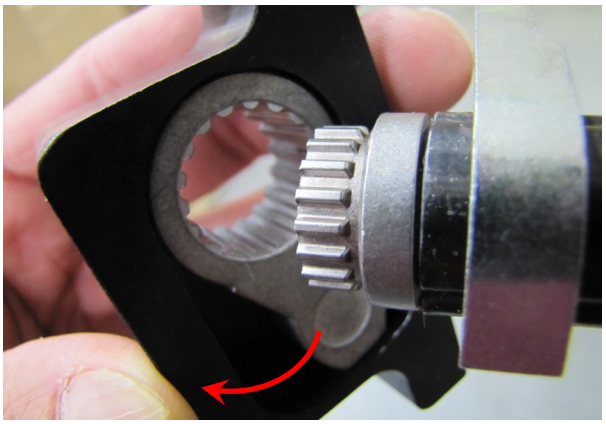
G. Make sure that the Cam is positioned correctly when tightened.

H. Check that there is clearance for screws to go through the back of the leg into the Internal Mounting Bracket screw holes (red arrows).

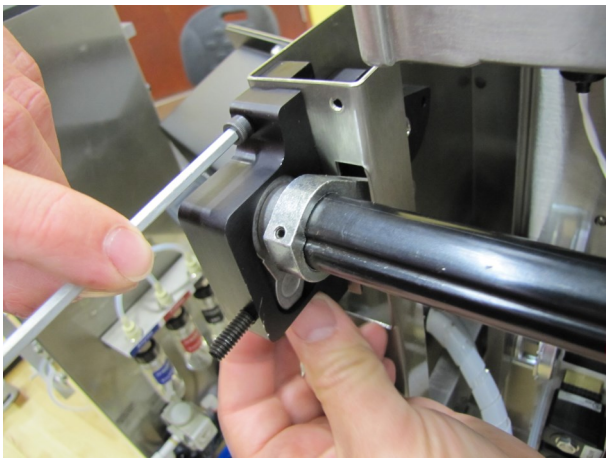
12. Insert both ends of the torsion bar with roller bearing inside the support leg and into the groove in the Cam. *IMPORTANT: Take note of the angle of the arm on the end of the torsion bar and that the teeth in the Cam Arm (below) will need to be engaged with the teeth on the end of the torsion bar in such a way to maintain this angle.*



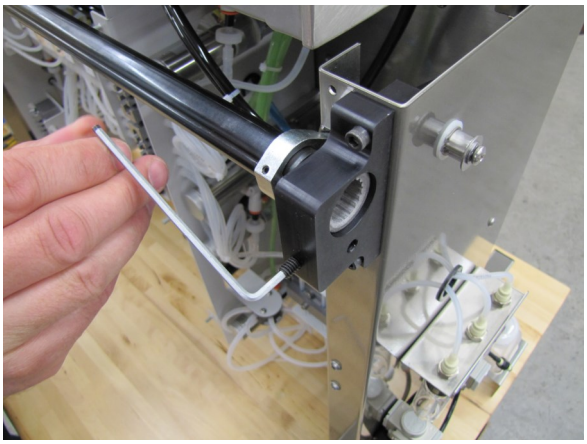
13. Connect the External Mounting Brackets onto the teeth on each end of the Torsion Bar. *See note in italics above.* Do so with the Cam Arm positioned toward the back of the cavity in the External Mounting Bracket (red arrow). This will allow for tightening of the tension adjustment set screws and increasing the tension on the torsion bar. It is easiest to do one side at a time and leave the mounting screws very loose until the opposite side is done.



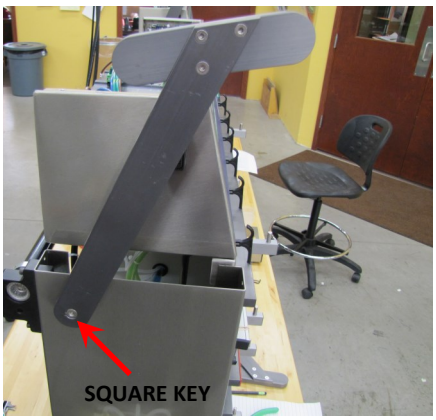
14. When both sides External Mounting Brackets are installed, tighten the screws with a 5/32” Allen wrench .

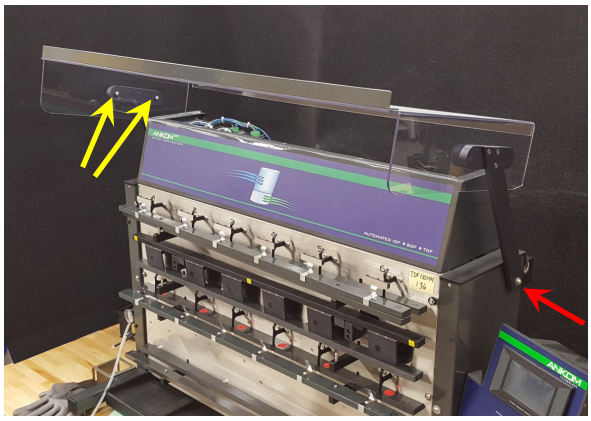


15. Tighten the tension adjustment set screws on the right and left external mounting brackets, about half way.



16. Reinstall the right and left pivot arms first and then the front safety cover using the square keys, screws and washers removed earlier. Also reinstall the original right and left support leg end caps removed in step 8.





17. As needed, further tighten the tension adjustment set screws (step 15) to ensure there is enough tension on the torsion bar to hold the front cover up at both the highest or an intermediate position. If the front cover drops on its own the way that the teeth of the cam arm engage with the teeth at the end of the torsion bar will need to be adjusted (steps 12-13). A smaller angle as shown in step 12 will be needed.
18. With the tension set correctly and front cover supported by the torsion bar, the ANKOM TDF instrument is ready to be returned to service.