

## LOOSE AXELS

JULY 2018

### ANY LOOSENESS IN THE MECHANISM?

The two levers that rock back and forth, the **Vane Lever (part #65)** and the **Bottom Lever (part #69)**, should be firmly in place – **unable to slide laterally**.

The rocking motion of the Hydrovane is facilitated by a total of 8 Axles – 4 each for each lever. Rock the vane to identify the four pivot points: 2 pair near the top for the Bobbin, 2 pair for the Bottom Lever (behind the Ratio Knob) – see one below the Ratio Knob and its partner is on the opposite side, then you can spot the 2 on each side of the Main Frame. Each of those 8 Axles are set in a plastic sleeve and held in place by an Axel Screw (set screw).

On examination you can discover the various locations for the set screws. Could one of your Axles come loose? It is possible that not all of the Axel Screws (set screws) are fastened onto the Axles as they should be.

### TESTS TO SEE IF THERE ARE LOOSE AXELS:

1. **VISUAL** - Can you see any of the Axles sticking out more than what you see in these pictures?  
Note there is only an upper pair that protrude more than the others.
2. **PUSH THE CASTINGS** – The castings that rock up and down - See if any slide laterally on their Axles. Push the 2 castings that rock (upper and lower) - push them laterally – on either the fore and aft direction or the side to side direction depending on which Axles you are testing.

### IF AN AXEL IS LOOSE, IT NEEDS TO BE RESET:

1. **Remove the Axel Screw** – Use a hex wrench (allen key) to loosen the screw. Must have the proper fit as the screw is set in Loctite and you need to crack it loose.
  - Pre 2016 units have 3/8" Axel Screws
  - Post 2016 units have 10mm Axel Screws
2. **Push the Axle all the way in** – push it hard enough so that the lever is firm on its Axles on both sides. Tap it lightly with a rubber mallet (or the rubber handle of a hammer or tool) to be sure it is firmly in place.

3. **Loctite** – Lather the threads of the screw and hole with Loctite.
4. **Tighten the Axel Screw** onto the Axle using Loctite to make sure it does not work loose.



Axles on Bobbin and Top Lever



Axles on Bottom Lever