Rotorway Reflex Edge Adjustment Instructions:

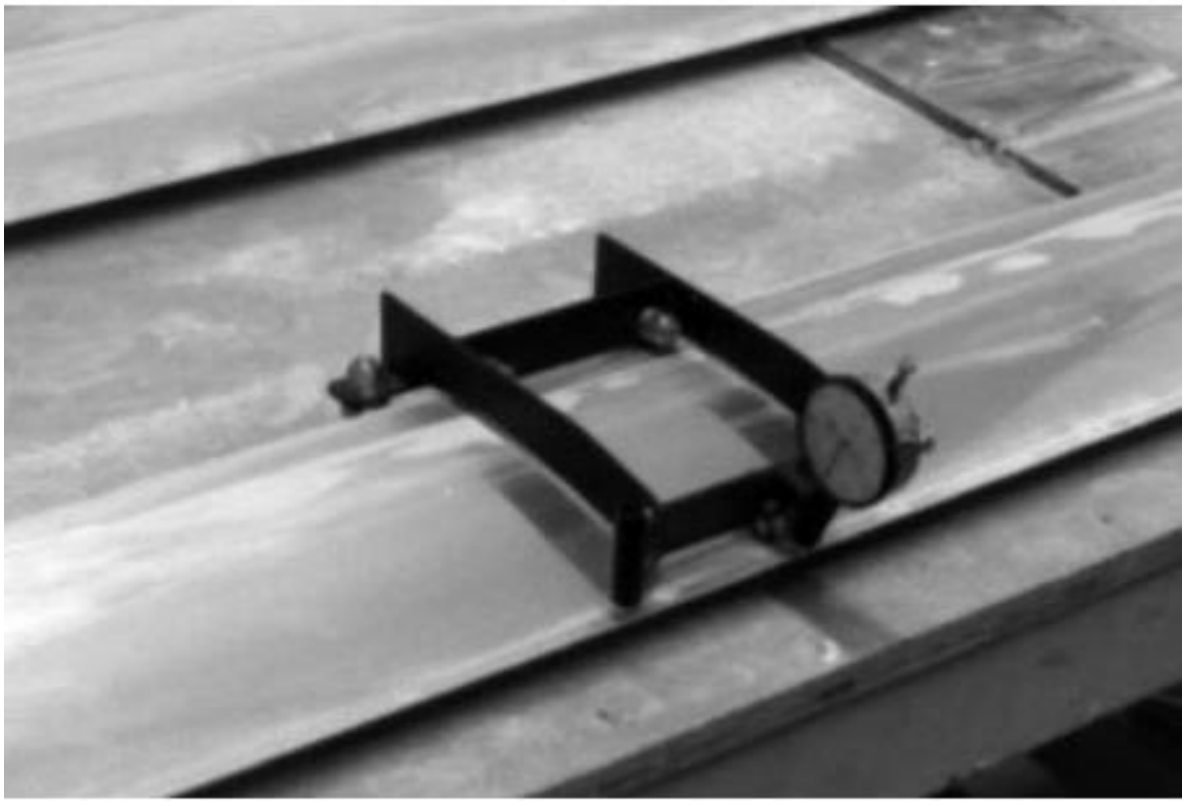
Parts List:

E08-1500: Reflex Edge Fixture (1 ea.)
E08-1510: Dial Indicator (1 ea.)
E08-1520: Bearings (5 ea.)
E00-2507 AN5-10A Bolts (5 ea.)
E00-3500: 5/16” Nuts (5 ea.)
E00-4501: 5/16 Washers (20 ea.)
E00-1200: #8 Phillips-head screw (1 ea.)

Description:

The reflex edge fixture is used to accurately check and adjust the trailing edge of the main rotor blades. With the use of a dial indicator mounted to the fixture, a portion, or all, of the blades can be adjusted. The position of the reflex edge has an effect on tracking of the blades, eliminating cyclic stick shake and collective pressures.

Normal tracking should be accomplished using the control rods (pitch links). A change in blade tracking through increased forward airspeed should be done with the reflex edge. Reflex edge adjustment may also be required if track changes considerably through increases in rotor RPM.



Fixture Assembly:

Two conditions apply for fixture set-up:

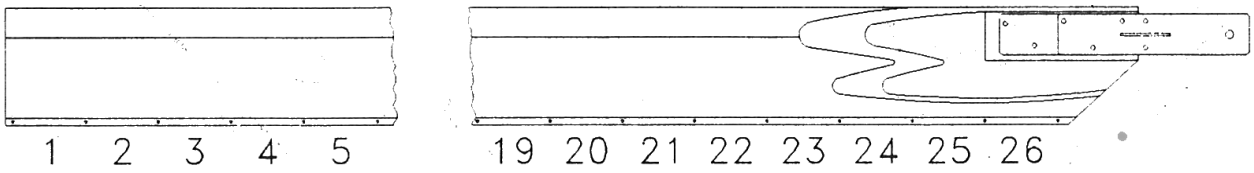
1. As it moved along the blade, the fixture must ride only on the bearings.
2. The indicator must ride between the rivets and the trailing edge of the blade.

To accomplish this, the bearings can be positioned to match the blade by placement of the 5/16" washers and by elongating the holes in the metal frame. When all five (5) bearings are mounted, the fixture should roll smoothly along the blade.

Adjustments:

When checking one blade against another, you may notice a difference in the readings. The airfoils are matched at the factory. Trying to have both blades identical may induce vibrations.

The first step is to have each blade adjusted to within .002" for its entire length. If your readings vary, you will need to average the readings and adjust accordingly. With the use of a crescent wrench or similar tool, the edge can be bent up or down as needed. Avoid use of a tool that might damage the skin surface.



After each blade is adjusted to within .002" along the entire length, only a portion of the blade will be adjusted to accomplish proper tracking or to control movements. Each blade has 26 panels; a panel consists of the area between two rivets. Panels are numbered from the tip to the root of each blade.

- **Panels #2 through #7** are the adjustment panels for controlling the blade path or track.

- **Panels #8 through #16** will affect collective stick pressures.

The amount of adjustment can range from .005" to .035". A small adjustment can have a great effect. Keep adjustments to .005" increments. Panel 1 can be difficult to adjust using this fixture. Adjust panel #1 by comparison to panel #2.

Collective lever adjustment:

- If the collective requires excess upward pressure (heavy), bend the reflex edge **UP**.
- If the collective is light or rises when let go, bend the reflex edge **DOWN**.

Conclusion:

Many things related to the rotor system and blades can affect the smoothness of the aircraft. Other items not to ignore are:

1. Shimming of the hub to shaft: Should be under .001” Total Indicated Runout.
2. Thrust blocks positioned correctly to the hub.
3. Position of main retention bolts to leading edge.
4. Wood filler blocks on the same plane as the chord line and each blade matched in dimension to the chord line.
5. Pitch horns mounted within tolerance.

These items are covered in Rotorway Construction and Maintenance Manuals.