

## TO CHECK NOCKS ON ARROWS FOR STRAIGHTNESS

First, the arrow must be straight. Then slide the bearings to each end of the straightener and place the arrow on the bearing carriage. Now with one hand, hold the dial indicator up and with the other hand, spin the shaft rapidly by placing your fingers on the arrow shaft directly above one pair of bearings and pulling your hand toward you. As the arrow spins, watch the nock carefully. If it is crooked, it will wobble. If a nock is crooked at all, it should be replaced using the straightener to make sure the new nock is installed straight.

With practice even the most inexperienced archer can become extremely efficient at straightening arrows. THE STRAIGHTENER has been designed so that the bearings may be closed down to within 2" of each other and this facility allows bends within  $\frac{3}{4}$ " of nock or point to be corrected. THE STRAIGHTENER has been designed to accommodate arrows in diameter from 14's to 24's without the need for wedges or accessories. Consequently it is an extremely efficient instrument for the Pro shop or individual.



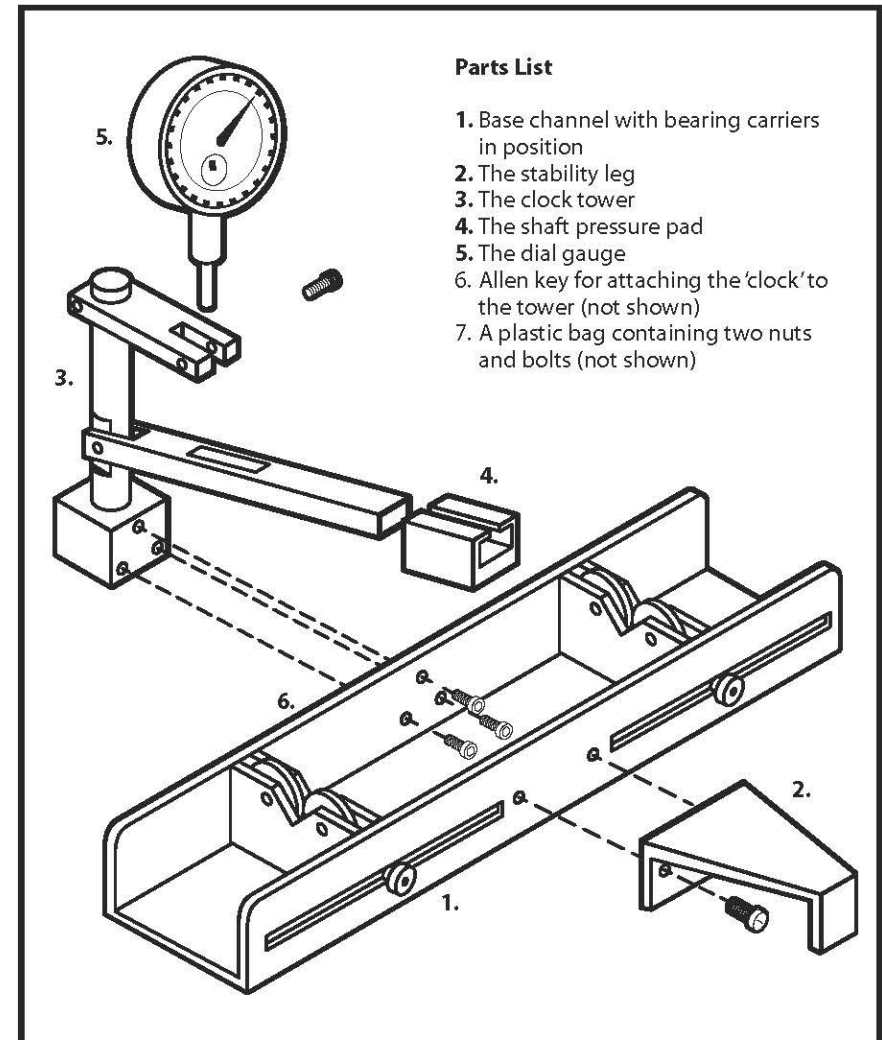
### ARIZONA ARCHERY ENTERPRISES

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## ARIZONA ARROW STRAIGHTNER

### Arrow Straightness Tester with Pressure Straightening Lever.



**ASSEMBLY DIAGRAM AND PARTS LIST**

## ASSEMBLY INSTRUCTIONS

Before you attempt to assemble THE STRAIGHTENER, check carefully the contents of the box. You should have 7 items in the box.

**Assembly is very straight forward and you should proceed in the following manner:**

- A. Attach the clock tower to the base channel by means of the three nuts, bolts and washers provided. This should be done on a smooth flat surface (such as glass or Formica) to ensure the clock tower is set truly vertical.
- B. Attach the stability leg to the base channel by means of the three nuts, bolts and washers provided.
- C. Fasten the dial gauge to the slot in the support segment using the Allen screw supplied and locking it tight with the Allen key. At this stage you should place an arrow across the bearings to ensure that the plunger from the clock rests central on the shaft. If it is not central simply ease the Allen screw loose and swivel the clock backwards or forwards until the plunger rests centrally on the arrow.
- D. To ensure the V in the pressure pad is centered on shaft, place an arrow on bearing and slid delrin pressure pad so that the V is centered on the shaft. The pad will be carried clear of the arrow by the lever. All the above operations should be completed with simple tools that are normally found in the home and tackle box and you should not need more than a screw driver, a small spanner, or pliers.

## METHOD OF OPERATIONS

THE STRAIGHTENER is extremely efficient and simple in its operations. We would point out that the 'feel' will vary between one arrow size and make and another and the operator should make efforts to gauge the 'feel' required.

For a basic start we would suggest that the bearing carriers be set about 4" to 5" apart. The arrow should be inserted and the operator should first check that the clock plunger is centered on the arrow shaft. If this is not so, the adjustment should be made by swiveling the clock backwards or forwards after loosening its holding screw. Once set the position remains constant whatever size of arrow is being straightened.

The clock face may be set to zero on any diameter of shaft although this is not a necessity. To achieve this, insert an arrow that you know to be straight and rotate the clock face until the '0' is under the finger. Any bent section of the arrow should now give you a 'plus' or 'minus' reading either side of the Zero. The arrow should now be rotated lightly by rolling the fingers across the shaft immediately above the bearings. If the fingers are used outside or inside of the bearings this can give a reading as if a bend were present.

The clock will register the amount of bend in the arrow at that particular point in contact with the plunger. Stop the arrow when the needle on the gauge has swung its greatest travel in a clockwise direction. You will now have the peak of the bend uppermost. Place the fingers of one hand under the stability leg and the thumb on the lever (as you would a pair of scissors) and press. We are not able to tell you how far to press, since we do not know what kind or size of arrow is being straightened. It is up to the individual to develop the necessary feel.

As a general rule, the bend needs to be depressed at least twice as far in the opposite direction to that amount by which it is bent. The easiest way is to make two or three small depressions with the lever rather than one large depression, which will either cause the bend to reverse or damage the arrow. After each depression rotate the arrow and take a new reading off the gauge. Once the needle is stationary then that section of shaft is perfectly straight. Proceed along the shaft at fairly short intervals (3") until each section has been checked and then open up the bearing carriers to a wider setting and check once more over longer lengths. The same arrow bends with much less pressure required when the bearings are further apart and again a different feel is required. With the bearing set to straighten a bend close to nock or point, we would caution users to use the pressure lever with care. It is possible to exert several tons of load onto a shaft through the lever and damage could result.

The marks on the dial Gauge are increments of  $\frac{1}{2}$  thousandths of an inch. An arrow which is no more than  $1 \frac{1}{2}$  thousandths of an inch out of straight is usually considered quite straight. With practice an individual can straighten an arrow to perfection or within  $\frac{1}{2}$  thousandths of an inch.