

"Voodoo Props Black Magic" Pitch Measuring Gauge.

Contained within package.

- 1) Base plate with attached Swing plate & Arbor assm.
- 1 ea) Round riser, Dial indicator mount arm, Stud/wing nut.
- 1) Digital dial indicator with 2 tips.
- *Option wire blade stop. (May differ from pictures)

... **INSTRUCTIONS**.... Note always start with a balanced propeller you will change pitching by balance and finishing afterwards we recommend the Voodoo Black Magic balancer.



Assemble stud / wing nut thru top of indicator arm and thru riser screwing into base plate. Place dial indicator into mounting arm with bottom of mounting stem just flush with bottom of arm. *Lightly* tighten holding screw so indicators face can rotate as needed.

* If using, screw in blade stop having jam nut and washer in place.



Let's measure some props

Start by having a prop placed on threaded stud drive dog side down, loosely screw jam nut on top securing it. While things are loose and moving around get a feel for what parts move where and general idea on the control and movement of the device.... That done let's get down to specifics of operation.

* On base plate you will notice 2 Allen cap screws within the horseshoe shaped area of swing plate. These are your control stops of which one stays in place at all times (top screw nearest riser) Bottom screw controls the limit of swing angle allowed and calculated pitch multiplier we will be using.



** The amount of swing angle is halved when 2 screws are in place which allows less distance to be covered on blades face making tip cupping or specific areas of blade much easier to figure. 1 screw allows twice the blade area too be swept by indicator giving a broader average measurement of blades pitch.

USING 1 Screw your multiplier of indicators reading is 10

USING 2 Screws your multiplier is 20 that of indicators reading.



As example:

After taking a stop to stop sweep, read indicator display and note distance displayed.

Say we have .442" displayed and we are using 1 stop screw....

Math is simply $.442 \times 10 = 4.42$ " which is actual average pitch in blade section measured.



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Start out with a simple reading by having both stop screws in place. Position a prop blade on arbor post adjusting stop wire so tip on indicator rests inward of outer most tip @ 1/4" or more while swing plate is full forward flush with base plate. Tighten Wire stop, Riser wing nut and prop securing nut.



Turn on indicator, now wiggle stuff around making sure all is snug ( Indicator reading will bounce if some things loose ) One satisfied your ready to take a measurement and TIP of indicator is where you wish to measure from RESET the Zero on indicator. Next simply rotate the swing plate allowing tip of measuring stem fall down along face of blade until swing plate stops against the second screw..... Simple huh.



\* Distance value on indicator is now multiplied X20 when 2 screws are in place & X10 if only one.

*IMPORTANT.... If wanting to back up the swing plate for another pass? PICK UP the stem on top of indicator while you swing the plate back. The indicators tip will not climb back up the face of blade well and will cause movement of your set points.*

When measuring the lead areas (Tongue) of a props blade we do the above process in reverse starting with the swing plate full rearward placing tip of indicator at leading edge.



RESET zero point and then lift stem at top of indicator and reset swing plate. Gently drop tip back onto blades surface then travel back down from above as is typical. (This places stop point of swing plate at blades leading edge)

*So it is just that easy ... pending on distance you wish to sweep blades surface for a measurement you use 1 or 2 stop screws, Rotate prop and stop wire for an orientation that places indicators tip on blades working face any where wanted. Pay attention to parts staying tight while measuring and your good to go blade to blade.*

*Now you have what you need to measure any place on a single blade of a 2 or multi blade prop.*

**\*\*** Measuring the other blades is as simple as unscrewing stop screw from behind props hub, Rotate prop while lifting indicator stem and allowing it to drop behind current blades trailing edge, then lifting prop up and indexing to next blade then tightening up prop once trailing edge again contacts wire stop.



Your next blade is in the EXACT same place you were before. (Note: *Wire stop is light duty and not strong enough to hold against hub rotation at arbor, Nut on back side of props hub must be firmly tightened*)

With frequent use you will get very comfortable measuring props blades and be able to make sure if you're modifying props that each blade is at any specific area the same. Used along with the Voodoo ball cupping block....



More speed and performance awaits you.

Thank you for purchasing another quality product Made In AMERICA.

**Best Regards.**

*The Voodoo Crew*

*Supplemental Information:*

At times personal preference or a blades shape, size etc require use without the wire stop. Using the devise is still easy when you mark each blade prior to measuring.

A divider or like tool is all that is required.



Simply mark each blade using a nearby edge to index a point of reference you will place indicators point upon prior to taking a measurement.



Tool and die makers dye you scratch off or a simple felt tip pens mark make it easier to see.