

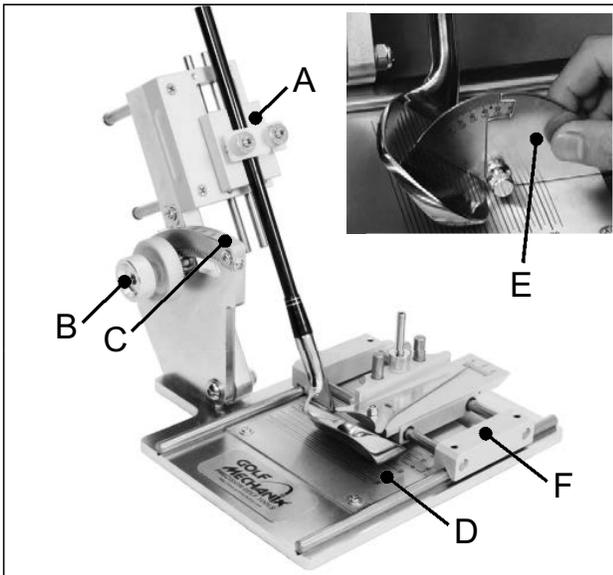
INTRODUCTION

You have purchased the GolfMechanix Professional Golf Club Measuring Gauge (#010331). You have purchased the finest made and most accurate clubhead measuring machine that is available today. This unit will allow you to accurately measure the following specifications for any wood head, iron head, wedge or putter, regardless of design and clubhead material:

- Loft Angle
- Lie Angle
- Face Angle (Woods)
- Face Progression
- Hosel Offset
- Sole Angle

The machine is designed to operate using the same methods as the specification measuring machines used by the vast majority of the world's golf club investment casting foundries to check the accuracy of the clubheads they produce. It is manufactured from 1/2" solid steel and is heavier and more substantial than any other machines made available to clubmakers for measuring the specifications of clubheads.

I. Key Features



A) Aluminum shaft clamp - The shaft clamp block is machined from soft aluminum to prevent marring or scratching composite or steel shafts. The thumb screw clamp release allows for a quick and easy changing of clubs in the machine, but will still prevent the shaft from slipping up or down. The sliding shaft holder makes it easy to measure multiple clubheads eliminating the need to re-clamp the shaft as every head is measured. The shaft holder also slides horizontally to accommodate deep breadth putter heads which often cannot be measured without special equipment.

B) Adjustable Lie Angle Knob - A convenient gear-driven dial moves the lie angle mechanism, which makes adjusting the clubhead for lie measurement easier than with any other machine. An interior tightening knob keeps the unit's lie angle position in place during measurement. The lie arm will not loosen or freeze up with use like other machines.

C) Lie Angle Scale - The lie measurement scale is positioned directly on top of the vertical plate where it is in full view while the lie arm is being adjusted. The scale allows measuring the lie angle in as little as 1/4° increments. Unlike other machines, the measuring scale cannot slip or move, thus ensuring full accuracy of all lie angle readings.

D) Etched Aluminum Measurement Plates - The measuring plates for reading the face progression and offset as well as for the face angle are machined from etched aluminum, not a screen printed Mylar label. The measurement increments are detailed in millimeters, providing the clubmaker with face progression and offset readings by referencing the leading edge of the club to the hosel centerline axis.

E) Custom Made Machinist's Loft Protractor - to measure the loft of both woods and irons, it is not necessary to use a magnetic protractor with an indicator needle that never settles into a single reading. It is also not necessary to use a

device which then has to be referenced to the face and then compared separately to a protractor. Instead, the Professional Loft/Lie Measuring Gauge has a custom-made loft protractor which can be positioned directly against the face of the clubhead to obtain accurate loft measurements.

F) Heavy Slide Mechanisms - The face angle slide mechanism is manufactured to a tolerance of ± 0.005 ". This eliminates chance of error when measuring face angle and properly setting iron heads in the machine. The height adjustment of the face angle gauge permits face angle measurements in variable vertical positions on the face. This is necessary because the face angles of many of today's woods are intentional inconsistent in their spec to optimize ball flight and set-up appearance.

II. Using The GolfMechanix Golf Club

Measuring Gauge The Professional Golf Club Measuring Gauge is shipped in its own individual container, with the slide mechanism, protractor and optional protractor arm packaged in a plastic wrap for protection. Before removing the machine from the case, first check to determine if all parts are present.

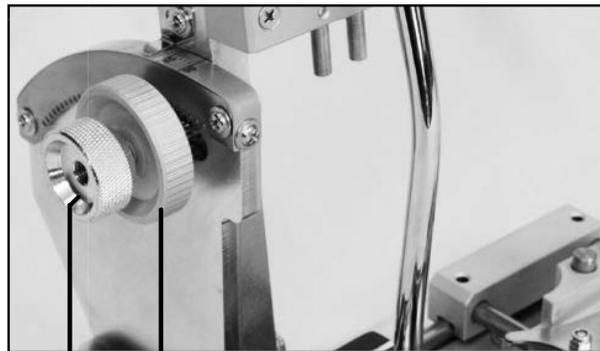
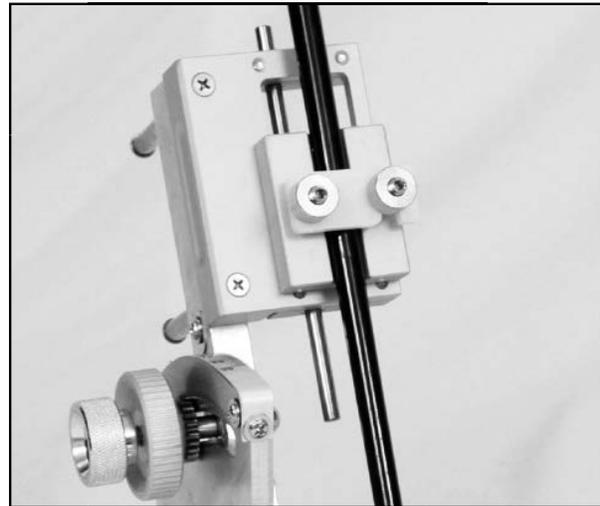
Golf Club Measuring Gauge (Parts List):

- Main Unit
- Face Angle Slide Mechanism
- Custom Machinist's Protractor
- Protractor Arm and Measuring Rule
- Instruction Manual

Before using the machine for the first time, take a few moments to familiarize yourself with the parts of the machine. Remove the measuring tools and slide mechanism, then remove the gauge from the shipping carton. The machine is constructed from heavy gauge steel, so take care not to drop the machine.

Step 1 - Positioning the Clubhead in the Machine for Measurement

Loosen the two thumbscrews so the clamping plate is far enough back to be able to cover the shaft. If the head is shafted, place the shaft in the V-block of the shaft clamp and lower the head to touch the base of the machine. Slide the clamping plate over the shaft while holding the club firmly and tighten the thumb screws. Double check to make sure the shaft is firmly bedded in the V-shaped channel.



Gear-driven lie adjustment knob.
Tightening knob.

Step 2 - Measuring a Wood Head or Putter for Lie

The correct lie angle measurement position is achieved when the sole of the clubhead is touching the base of the gauge at the center of

the face scoring area. You may wish to find this point on a wood head by measuring half the width of the score lines and faintly marking the location at the bottom of the face with a pencil or other marker which can latter be rubbed off. On a putter the center of face can be found by dividing the blade length in half and marking a mark at the bottom edge of the face. Setting the club in the correct lie position can be done by loosening the lie knob and rocking the club until the center of the sole touches the base of the gauge. When the wood head is close to touching the base at sole center, slide two business cards under the sole, until both cards stop the from the contact with the sole and the base of the machine. If the ends of the cards are equidistant from the center of the face, the wood head is in the proper lie position.



If the cards are not the same with respect to the face center, readjust the club by loosening the lie knob and shaft clamp and tilting the shaft until the correct position is achieved. The final check can always be verified by using the business cards. In time, clubmakers can position the clubhead by eye by looking at the base of the machine while tilting the shaft and noting the point at which the edge of the heel and toe are the same distance from the base of the machine. It is not recommended to rely on the score lines of a wood head to be perfectly

parallel to the base of the machine when the head is in the proper lie position. Wood head designers do not intentionally manufacture their models with the score lines parallel to the center of the sole. When the wood head is in the proper lie position, read the lie angle in degrees on the lie scale from the forward edge of the metal indicator. Once again, the lie angle is read from the TOP or FORWARD side of the metal indicator attached to the lie arm.

Step 3 - Measuring an Iron Head or Wedge for Lies

As with a wood head or putter, the correct lie angle measurement position for an iron or wedge is achieved when the center of the sole is touching the base of the machine at the center of the face scoring area. An easy way to find this position is to set the clubhead so the score lines are parallel to the base of the machine. Because there may be a few iron head or wedge designs on which the score lines are not engraved parallel to the center of the sole, be sure to check the lie angle position by using the business card method or with your eyes by looking at the relative positions of the heel and toe from the base of the unit. Reference the leading edge only when making such a visual check.



When the clubhead is in the proper lie position, read the lie angle in degrees on the lie scale from the forward edge of the metal indicator. Once again, the lie angle is read from the TOP or FORWARD side of the metal indicator attached to the lie arm.

Step 4 - Measuring a Wood Head for Loft

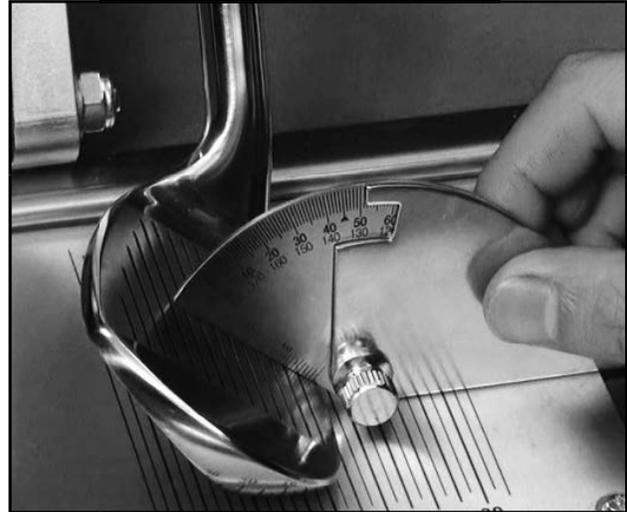
With the wood head positioned in the proper lie angle position in the gauge, slide the loft protractor perpendicular to the face. The wood head's face angle can make the face point open or closed, so to measure wood head loft, the protractor must be PERPENDICULAR to the face and not perpendicular to the lines on the base plate of the machine. Loosen the thumb screw on the protractor until the degree scale slides but is not too loose. Try to achieve the level of tightness so it is easy to slide the protractor but it will not move after you let go.



Keeping the base of the protractor perpendicular to the face and flat on the base on the machine, tilt the degree gauge into the face until the protractor is touching the vertical center of the face. Read the loft directly in degrees from the protractor scale.

Step 5 - Measuring an Iron Head, Wedge or Putter for Loft

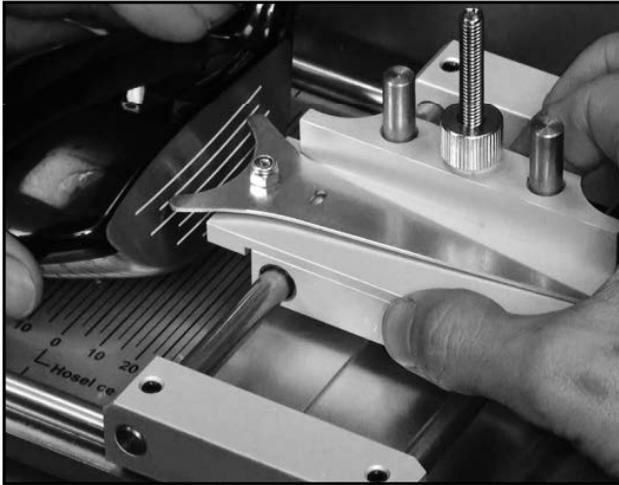
With the clubhead positioned in the proper lie angle position in the machine, visually check that the face is perfectly square. Keeping the face square, slide the loft protractor perpendicular to the face. Loosen the thumb screw on the protractor until the degree scale slides but is not too loose.



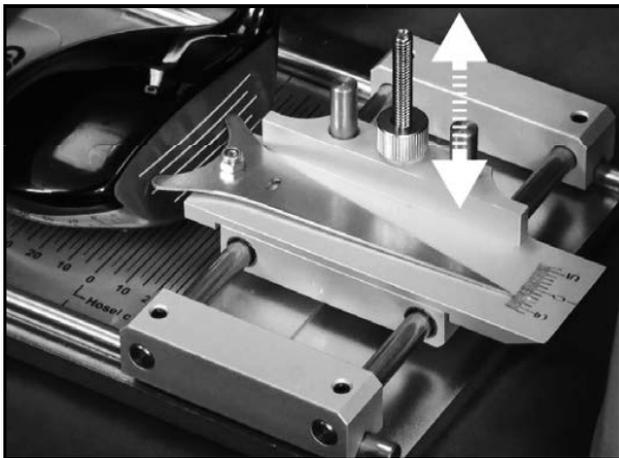
Adjust the pressure of the knob so it is easy to slide the protractor but it will not move after you let go. Keeping the base of the protractor perpendicular to the face and flat on the base of the machine, tilt the degree gauge into the face until the protractor is touching perfectly flat against the center of the face. Read the loft directly in degrees from the protractor scale.

Step 6- Measuring a Wood Head for Face Angle

Again, with the wood head in the proper lie position in the gauge, push lightly down on top of the wood head to make the head sit in its natural soled position. Be sure the head is still in its proper lie position. Position the face angle mechanism in the channel and slide it into place so that the two points of the face angle arrow touch the face equidistant from the center of the face scoring area.



Push down on top of the wood head to hold it in place while the face angle indicator is pushed against the face. The number of degrees the face angle is open (Slice) or closed (Hook) may be read with the tip of the indicator needle on the face angle scale. The face angle gauge can measure the face at variable heights.



Vertical Adjustment to Face Angle Gauge

Quite often a wood may have more of a closed face angle near the leading edge (lower on the face) and a more open face angle higher up the face to present a set up that does not look too closed. The opposite may be true with other designs. This is an intended shaping concept on behalf of the club designer to visually appeal

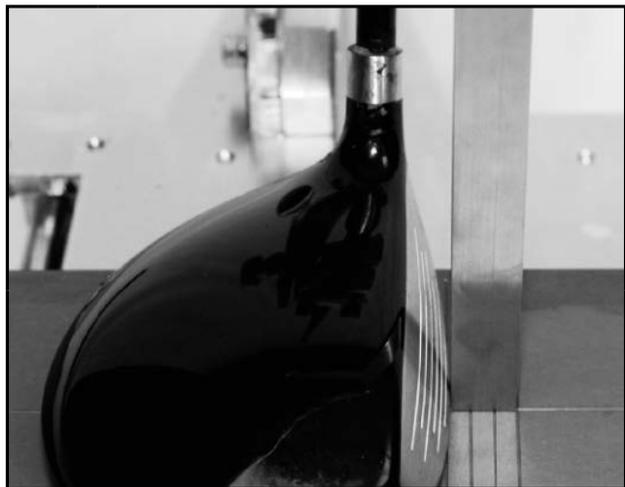
to certain golfers. Be consistent with your measurement points as you refer to different clubheads. You may elect to take multiple face angle locations on any given head, or measure each head from a consistent vertical point. To ensure proper readings you must be consistent on the location you choose to measure from.

Step 7- Measuring a Wood Head or Putter for Face Progression



With the wood head in the proper lie position, find the line on the base plate which is closest to the leading edge of the clubhead. Note the measurement of the face progression directly from the scale on the side of the gauge.

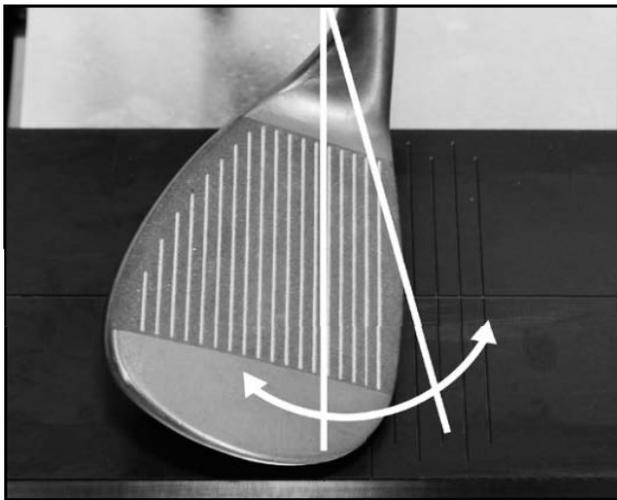
Step 8- Measuring an Iron Head or Wedge for Hosel Offset



With the iron Head or wedge in the proper lie position, re-check the face to be sure the leading edge is square(parallel to the lines on the base plate). Note the line on the base plate which is closest to the leading edge of the clubhead. Then position the protractor arm flat against the forward side of the hosel and note this line on the base plate. The difference between the reference lines is the hosel offset.

Step 9-Measuring an Iron Head or Wedge for Sole Angle

There are two accepted ways to measure the sole angle of an iron or wedge. Both methods begin by following the procedures in step 5 to measure the real loft of the clubhead. Retain this measurement for future use.



Method 1- After measuring the real loft, rotate the clubhead, either open or closed, whichever direction is required, to make the clubhead sit flat on its sole. Read the loft of the clubhead while it is in this new position. If the face has to be rolled CLOSED to sit flat on its sole, the clubhead has what is called a BOUNCE OR POSITIVE sole angle. The degree of BOUNCE or POSITIVE sole angle is the difference in degrees between the two measurements. If the face has to be rolled open OPEN to sit flat on its sole, the clubhead has what is called a SCOOP or NEGATIVE sole angle.

The degree of SCOOP or NEGATIVE sole angle is the difference in degrees between the two measurements.

Example #1

REAL LOFT: 56°

LOFT ROLLED CLOSED°: 44°

BOUNCE SOLE ANGLE: 12°

Example #2

REAL LOFT: 56°

LOFT ROLLED OPEN: 50°

SCOOP SOLE ANGLE: 6°

Method 2 - This method will require the use of a standard machinist's protractor. After measuring the real loft, remove the clubhead from the gauge. Using the machinist's protractor position one side of the protractor flat on the face. Make the longer arm of the protractor touch the center of the sole (from front to back). Note the reading on the protractor in degrees.

