

### About the Maltby Premium Golf Club Bending Machine

Congratulations on your purchase of the Maltby Premium Golf Club Bending Machine. Manufactured from high grade steel and aluminum, this machine is extremely sturdy. Mounted to the Maltby Premium Heavy Duty Floor Stand (MA2020), the user has full 360° access to the work at hand. The machine's wide base also allows it to be mounted to a sturdy work bench without any loss of stability. The quick change top clamp mechanism allows you to change the top clamp in seconds to accommodate the measuring and bending of drivers, fairway woods, hybrids, irons and most putters. The multiple bases needed for stabilizing heads during the bending and measuring process can also be changed in seconds by using the wrench (provided). All parts that come in contact with a clubhead are made of non-marring materials. The machine's smooth, sliding loft setting mechanism allows you to position each club, from a putter through a driver, with ease, without having to remove a stabilizing pin. Once you are at the setting needed, one quick tightening turn and the setting is secure. The smooth sliding protractor assembly has an added feature of a height adjuster, allowing you to position the protractor for accurate measurements, no matter how long the hosel.

We believe you will find this precision instrument the best available in the golf industry. If you have any questions please contact The Golfworks at 1-800-848-8358 or e-mail us at [golfworks@golfworks.com](mailto:golfworks@golfworks.com).



#### Features:

- Multiple base and top jaw fixtures to accommodate all types of club heads.
- Smooth sliding protractor assembly measures right and left-handed clubs for loft and lie to within 0.5°
- Height adjustable Protractor Assembly for measuring long hosel designs.
- Shaft guide assures the shaft is in the proper position when taking loft and lie readings
- Measure any type of golf club – putters (most models), wedges, irons, hybrids, fairway woods and drivers, right or left-handed
- Brass and rubber features on clamping jaws and clamping bases prevent marring.
- Brass toe stop prevents slippage.
- Heavy-duty T-Bar bolt moves smoothly for quick and secure tightening of heads.
- Quick tighten, one arm slide bolt allows for quick transition from setting to setting.
- Quick release rear bolt with speed turn handle allows fast tightening of the nylon non-marring back clamp.
- Can be bench mounted or use with the Maltby Premium Heavy Duty floor stand MA2020).

### Preparing the Maltby Premium Golf Club Bending Machine to Bend an Iron

The Maltby Premium Golf Club Bending Machine is designed with set loft and lie readings CNC milled into the top of the main bracket. The club numbers (1-9, PW, GW, SW, LW) are CNC milled on the opposite side of the main bracket (photo 1). To set the unit to bend an iron, loosen the one arm bolt on the side of the club designation and set it to the club number you are placing in the machine. This will require holding the T Bar housing that is attached to the inner bracket to the proper position. Align the black line on the one arm slide bolt to the white line indicator on the bracket (photo 2 shows the setting for a 6 iron).

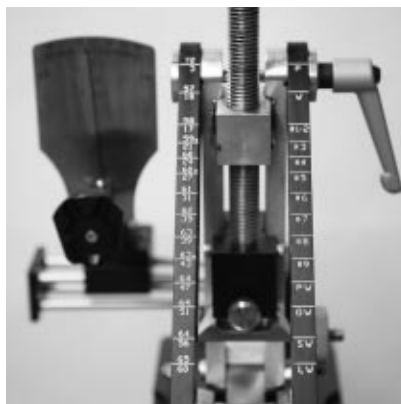


Photo 1

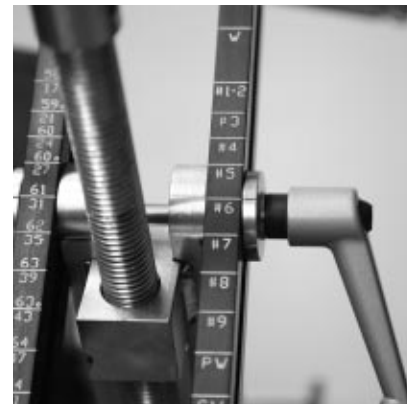


Photo 2

## Placing the Iron into the Machine

The Maltby Premium Golf Club Bending Machine is designed to hold any model of iron securely without marring the head. This is accomplished by the use of specially designed flat top brass soling pieces or the oval brass soling discs attached to the iron bending base. The base has guide holes (photo 3) to allow you to position the proper base into position. The base has pins on the bottom that will slide into these holes, preventing any movement of the base. Photo 4 shows installing the iron bending base (using the curved Allen wrench provided) into the proper position for using the flat top brass soling pieces. Photo 5 shows the base positioned with the brass soling discs in position for bending an iron and the brass toe stop feature to prevent slippage when the bending the lie of a club. Either brass base is acceptable to use.



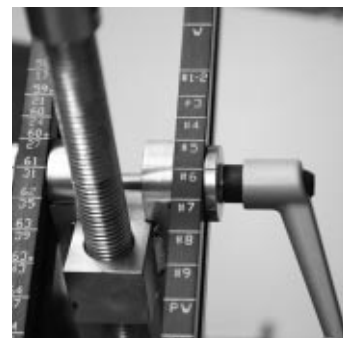
**Photo 3**



**Photo 4**

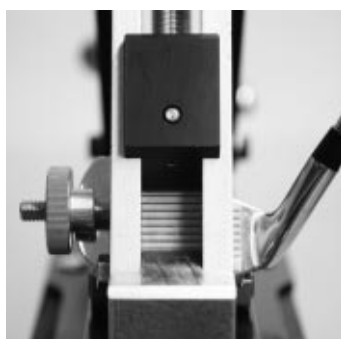


**Photo 5**



**Photo 6**

Once the base is in position, place the iron in the machine. First, loosen the one arm bolt and position it to the club number being installed into the machine (photo 6 shows setting for a 6 iron). Photo 7 shows the proper positioning of the iron head when clamped into the machine. A key feature of the machine is the face alignment guide. With the face of the iron flush against the inside bracket and the sole touching both the heel brass sole piece (see photo 8) and the toe brass sole piece (see photo 9), you can line up the grooves of any iron with the alignment aid. The grooves should be parallel to the edge of the face alignment aid. Once you have the head into position, hold the head in position with one hand and tighten down the T Bar bolt with the other (photo 10).



**Photo 7**



**Photo 8**



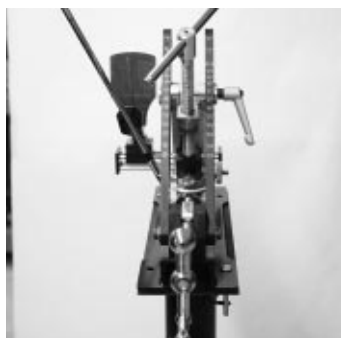
**Photo 9**



**Photo 10**

Watch to see if the head moves and re-adjust as necessary to maintain the proper face position, as shown in photo 7. Be sure the toe stop is adjusted so that it is touching the toe. The toe stop is also used to help level the grooves into position. The toe stop, when properly positioned, will prevent slippage when making lie adjustments. Photos 11A and 11B show the club properly placed in the machine and the position of the sliding protractor for right handed clubs (11A) and for left handed clubs (11B).

Once the club is secure in the machine, slide the loft and lie protractor into position. The shaft alignment socket slides forward from the protractor (photo 12A) and should be positioned flush up against the shaft and into position. It may be necessary to hold the shaft guide flush against the shaft while taking the readings (photo 12B). The socket is designed to slide up against the shaft and into position. With the socket and protractor in position, accurate reading of the loft and lie can be taken.



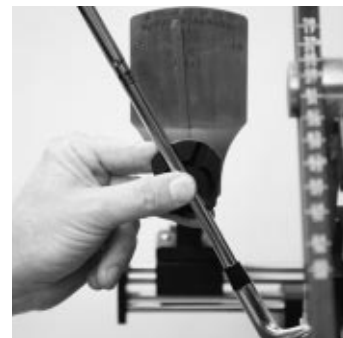
**Photo 11A**



**Photo 11B**



**Photo 12A**



**Photo 12B**

## Reading the Lie and Loft Measurement

The MA2019 Premium Bending Machine has two scales on the protractor assembly. Photo 13 shows the lie reading protractor scale and Photo 14 shows the loft reading protractor scale. The lie reading is an actual reading. Once the club is in position, the pointer on the scale will indicate what the lie angle is of the club being measured. Lie readings can be taken for readings 53 degrees to 77 degrees, for right and left handed clubs. The scale indicates "RH" for the right handed club readings and "LH" for the left handed club readings.

Photo 14 shows the loft reading scale. The readings are not in actual degrees, like the lie, but are presented in "S" for strong or "W" for weak. The scale is designed to measure from 5 degrees strong to 5 degrees weak. The base number for the club you are measuring is the lower number (loft number) engraved on the left hand side of the top bracket as shown in photo 1. These numbers are the industry average lofts. When measuring any particular club, the loft reading will be registered as either weak, or strong or "0". If the pointer points to "0", the club's loft is the same as the scale on the top bracket. If the pointer points to the "S" side of the "0", the loft is strong by the number degrees indicated by the pointer (between 1 and 5 degrees). If the pointer points to the "W" side of the "0", the loft of the club is weak by the number of degrees indicated by the pointer (between 1 and 5 degrees).



Photo 13

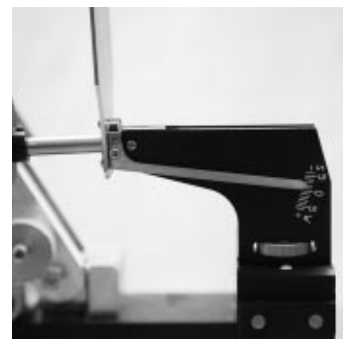


Photo 14

**EXAMPLE:** A 5 iron is placed into the MA2019 Premium Bending Machine. The industry standard measurements engraved on the top bracket indicate a lie angle of 60° and a loft angle of 27°. Once the club is positioned properly and the readings are taken, the lie pointer indicates 60°. The loft pointer is 2 marks toward the "S" side of the "0" on the loft scale. This indicates the loft is 2° stronger than the machine standard of 27°. So the actual loft is 25°. Remember, strong indicates less loft and weak indicates more loft.

## Bending

The MA2019 comes with an adjustable non-marring bending bar (BNMB) and a short hosel bending bar (GW1036). To adjust the lie of an iron, select the bending bar best suited for the iron design and place the bending bar on the hosel of the iron as shown in photos 15A and 15B (non-marring bending bar). It is easiest to open the jaws of the adjustable bending bar all the way, place it over the shaft, then slide it down to the proper position on the hosel. Photos 16A and 16B show the short hosel bending bar being used. When using the short hosel bending bar, you must slide the bar onto the shaft as shown in Photo 16A, then slide it down into position on the hosel as shown in photo 16B. When either bar is used, the bar should be positioned parallel to the face for adjusting the lie of the club. The bending bar jaws must be below the ferrule to prevent damage to the ferrule. If using the non-marring bending bar, tighten the brass jaws securely around the hosel of the club. If using the short hosel bending bar, simply position the bar in the middle of the hosel. A short, quick application of pressure or a constant pressure are the two techniques that are used. The material of the club head and the experience and preference of the user will dictate which technique is used.



Photo 15A



Photo 15B



Photo 16A



Photo 16B

To flatten the lie, pressure downward on the bar will bend the hosel to a flatter lie (see photo 17). Pressure upward will bend the hosel to make the iron more upright (see photo 18). It is recommended that the lie is re-checked at regular intervals during the bending process. Once you have finished applying pressure to bend the club, re-check the position of the head to be sure the head did not slip. The grooves should still be parallel to the face alignment guide. If the head has moved, re-position the head, re-tighten the clamp and re-measure to determine if the head was bent. Continue the procedure as needed to achieve the desired result.

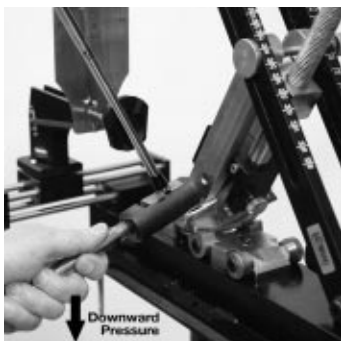


Photo 17

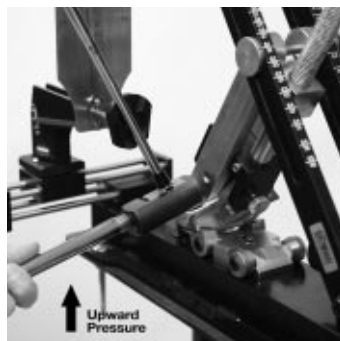


Photo 18

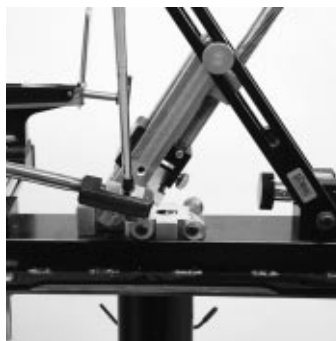


Photo 19



Photo 20

To adjust the loft of an iron place the bending bar on the hosel of an iron as shown in photo 19 (adjustable bar) or Photo 20 (short hosel bar). The bar should be positioned perpendicular to the face. By applying pressure downward on the hosel, you will increase the loft (see photo 21). By applying pressure towards the back of the iron or upward, the loft will be decreased (see photo 22).

**\*\*Special Notes:** Not all irons are made of the same materials. Some materials are more easily bent than others. The only sure way to determine whether an iron can be bent is to try it. Generally, 17-4 stainless and 431 stainless heads can be bent up to 2 degrees. Depending on the heat treatment of the material, some may be bent more than 2 degrees and some may not be bendable at all. Most Carbon Steel heads can be bent more than 2 degrees. Again, the only sure way to tell is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend irons.

The length of the hosel on an iron is also a determining factor in the amount an iron can be bent. Generally, the shorter the hosel, the less the hosel can be bent. Some short hosel designs may require a special or customized bending bar for adjustments to be possible. If the bending bar you are using will not fit entirely on the hosel, do not use it and do not attempt to bend the iron.

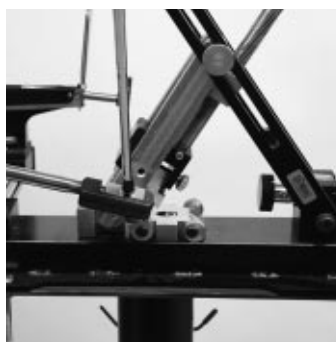


Photo 21

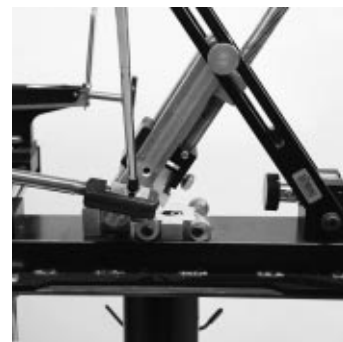


Photo 22

### Bending "Wide Sole Irons" – Set-Up Procedures

There are many different types of soles on today's iron models. The Maltby Premium Bending Machine was designed to allow you to securely clamp, measure and bend wide sole irons. In many cases, depending on the width and the sole camber (front to back and toe to heel), the exact same set and procedures can be used as described above. On some models, it may be necessary to use an alternative base to securely clamp the clubhead into the machine. The MA2019 comes with a base fixture that has two wide, flat brass sole rests on one end and two wide, flat rubber sole discs on the other (see photo 23). Photo 23 shows installing this base unit on the machine for use with the brass bases in position for soling an extremely wide sole iron. The base piece has a slot that allows adjustment of the base, as needed, to insure the iron sits securely in the machine when the top jaw is tightened.

When working with wide sole irons, use the same procedures for placing the iron in the machine as described previously for a standard sole iron. Once the wide sole iron is securely in the machine it should rest on the wide brass sole pieces as shown in photos 24A (heel view) and photo 24B (toe view). Photo 25 shows a wide sole 5 iron (face view) properly aligned in the machine.



Photo 23

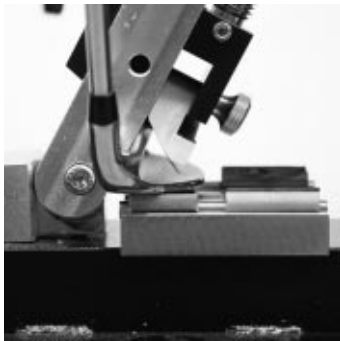


Photo 24A

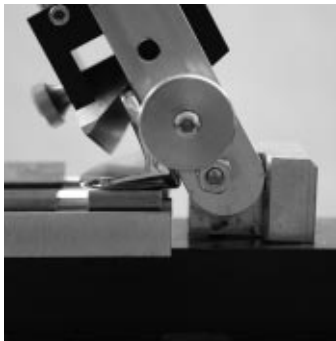


Photo 24B

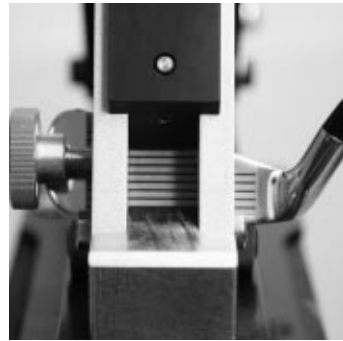


Photo 25

A wide sole, short hosel 5 iron is shown in the machine in photo 26, with the short hosel bending bar parallel to the face and in position to bend the lie of the iron. Photo 27 shows the short hosel bending bar perpendicular to the face and in position to add loft or decrease loft to the iron. A short, quick application of pressure or a constant pressure are the two techniques that are used when adjusting the loft and/or lie of the club. The material of the club head and the experience and preference of the user will dictate which technique is used. Once pressure is applied, check to see the club remained secure in the clamping device. It is more likely for wide, flat sole clubs to move or slip slightly when pressure is applied. If this occurs, re-set the club to the proper position in the machine and continue. It may be necessary to adjust the base fixture to secure the club during the bending process.

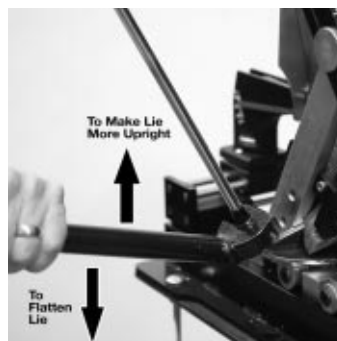


Photo 26

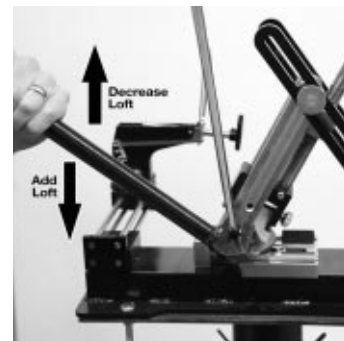


Photo 27

As mentioned before, the length of the hosel on an iron is a determining factor in the amount an iron can be bent. Generally, the shorter the hosel, the less the hosel can be bent. In addition, wide sole irons may be more difficult to secure in the machine. Be patient and be prepared to adjust the base to a position that will allow the club to stay secure during the bending process. The procedure for measuring using the slide protractor assembly is the same on wide sole, short hosel irons as it is for standard hosel and sole irons.

**\*\*Special Note:** A list of iron models that are not bendable is listed on The Golfworks website ([www.golfworks.com](http://www.golfworks.com)). Go to the right side of the home page under "Technical Information" and click (Iron models not recommended for loft and lie adjustment). The list is updated regularly as new information and models become available.

### Bending Left Handed Clubs

The only part of the MA2019 that requires disassembly for use with left hand clubs is the Brass Toe Stop. Using the 5mm hex wrench, simply loosen and remove the toe stop bolt with the brass toe stop disc attached (photo 28). Move to the opposite side of the machine and re-insert as shown in photo 29. Approximately 8 turns for the bolt should be sufficient to position the bolt securely into the bracket. Adjust the toe stop disc as needed.

The Sliding Protractor Assembly will simply slide to the Left Hand measuring side of the machine. No disassembly is required. Photo 30 shows the proper positioning of a left hand iron (face view). Photo 31 shows the protractor assembly positioned properly against the shaft of a left hand iron.



Photo 28



Photo 29

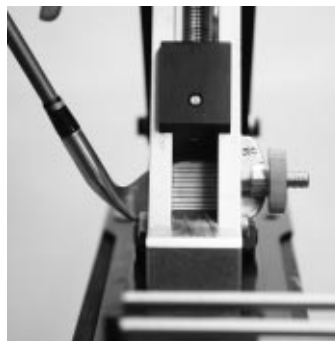


Photo 30



Photo 31

### Measuring and Bending Hybrids

The MA2019 was designed so that most hybrid club head designs can be secured, measured and adjusted using the same procedures used when bending iron clubs. Since there are a wide variety of loft options, when placing a hybrid club in the MA2019, choose the loft position of the machine that is the closest to that designated on the clubhead, or closest to the loft measured on a golf club gauge. For example: The loft of the hybrid is designated as 20°. Position the one arm slide bolt with indicator in the #3 slot where the loft designation of the machine is 21°. Once the head is secured in the machine and the loft and lie protractor are placed in the correct position on the shaft, you would get the actual lie reading of the head, and the loft would read 1° "S", or 1° "Strong". This assumes the head is actually the 20° loft that is actually marked on the head.

### Placing a Hybrid into the Machine

Before placing a hybrid into the machine loosen the one arm bolt on the side of the club designation and set it to the club number and/or loft of the club you are placing in the machine. This will require holding the T Bar housing that is attached to the inner bracket to the proper position. Align the black line on the one arm bolt slide to the white line indicator on the bracket (photo 32 shows the setting for a 21 degree hybrid).

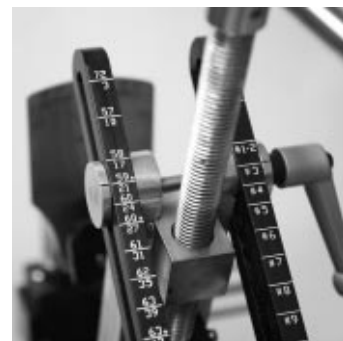


Photo 32

The Maltby Premium Bending machine is designed to hold most models of hybrids without marring the head. There are two different set ups that can be used to secure a hybrid into the machine. Both set ups require the rubber top clamp to be installed in the machine in place of the brass top jaw. To install the rubber top clamp you must first remove the brass top jaw. Photos 33a and 33b show removing the quick release pin that holds the top jaw assembly in place. Simply pull the pin, as shown, and remove the brass top jaw. Insert the rubber top jaw into position and re-insert the pin as shown in photos 34a and 34b.



Photo 33A



Photo 33B



Photo 34A



Photo 34B

Next, the wide, rubber sole rest must be installed on the base (see photo 35). The rubber sole rest fixture has a slot for the screw attachment allowing you to adjust the position of the sole pads as needed for any individual type of hybrid. The sole of the hybrid will rest on the dual rubber pads. Before securing the sole fixture, place the hybrid club in position with the face up against the face bracket (see photo 36). Position the hybrid so that it is contact with the sole rests, one on the toe side of the sole and one on the heel side of the sole (photo 37 shows heel side view). Once in position, remove the club and proceed with tightening down the sole fixture (photo 38).

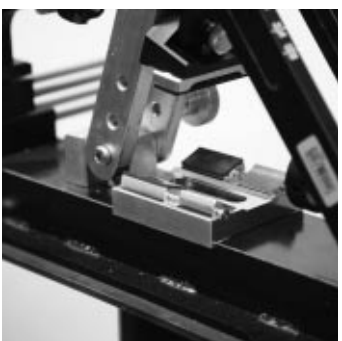


Photo 35

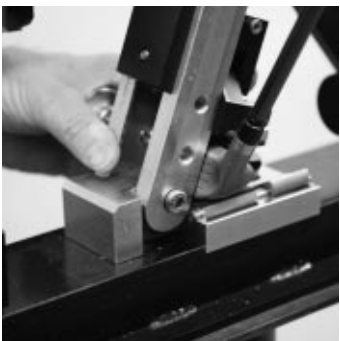


Photo 36



Photo 37



Photo 38

**Method 1** places the face of the hybrid up against the face bracket. Place the hybrid into the machine with the face up against the face bracket (photo 39). Since the face height of most hybrids is much shallower than irons, the top face alignment aid may not be of use on hybrids. In this case, the operator can use the bottom face alignment aid or simply position the head by sight, with the sole centered on the rubber sole pads and the grooves on the face as parallel to the ground line as possible (see photo 40). If the hybrid has bulge and roll radius on the face, not all parts of the face will be flush against the inside face bracket, however the head can still be secured in the groove parallel position. The grooves should be parallel to the edge of the face alignment aid and/or the ground line. Once you have the head in this position, hold the head in position with one hand and tighten down the T bar with the other hand (see photo 41). **Do not over tighten.** At this point, you simply want to snug down the top clamp to hold the club into position with the grooves parallel to the alignment aid or the ground line.



Photo 39

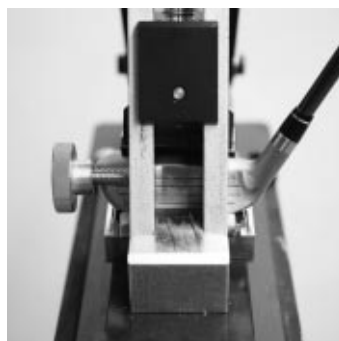


Photo 40



Photo 41

The key feature of the MA2019 that secures the hybrid into position is the quick slide back clamp. Release the quick slide mechanism and slide the round nylon pad up against the back of the hybrid club, making sure the face is up against the face bracket (photo 42). Engage the quick release back clamp to allow the tightening of the clamp (see photo 43). Tighten the back clamp up against the back of the hybrid by turning the quick clamp clockwise (see photo 44). **Do not over tighten.** Over tightening could cause damage to the back of the hybrid. Tighten enough so the club stays in place with the face up against the face bracket. Next, tighten the top clamp down onto the top of the hybrid (see photo 45). Again, do not over tighten. Over tightening the top clamp can cause damage to the crown of the hybrid. Additional pressure (tightening) of the back clamp and the top clamp may be needed to secure the hybrid for bending, but should be done in small increments. Once the head is secure, you are ready for measuring and bending.



Photo 42



Photo 43



Photo 44



Photo 45

**\*\*Special Note:** Since most Hybrids have a painted finish, it is recommended that the Brass Toe Stop be positioned away from the head (not touching) during the bending process. The pressure applied during bending can cause the toe stop to damage a painted finish. Photo 40 shows the brass knob positioned away from the toe of the hybrid.

The Method 1 set up allows you to use the slide protractor to get accurate loft and lie readings. To obtain the lie reading, slide the protractor assembly into position, with the shaft guide flush up against the shaft (see photo 46). The lie reading indicator will give an accurate reading of the lie of the club (see photo 47). For the loft reading, simply look at the loft indicator gauge (see photo 48). The scale is designed to measure from 5 degrees strong to 5 degrees weak. The base number for the club you are measuring is the lower number (loft number) on the scale engraved on the top bracket as shown. When measuring any particular club, the loft reading will be registered as either weak or strong or "0". If the pointer points at "0", the clubs loft is the same as the scale on the top bracket. If the pointer points toward the S side of the 0, the loft is strong by the number of degrees indicated by the pointer (between 1 and 5 degrees). If the pointer points toward the W side of the 0, the loft of the club is weak by the number of degrees indicated by the pointer (between 1 and 5 degrees).



Photo 46



Photo 47



Photo 48



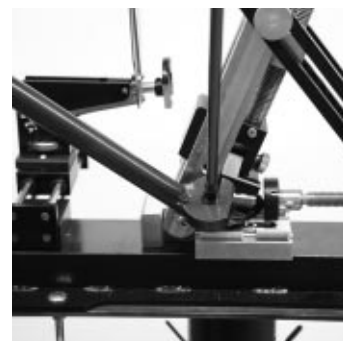
Photo 49

## Bending a Hybrid

The MA2019 comes with an adjustable non-marring bending bar (BNMB) and a short hosel bending bar (GW1036). To adjust the lie of a hybrid, select the bending bar best suited for the design and place the bending bar on the hosel of the hybrid as shown in photo 49 (short hosel bending bar). The bar should be positioned parallel to the face (photo 49). **Special Note:** Some hybrid designs have a painted finish that extends onto the hosel. If the bending bar is in contact with the painted portion of a hosel, some marring or scratching of the paint will occur during the bending process. **It is recommended that the painted portion of the hosel be covered with 3/4" masking tape or lead tape to prevent marring the finish during the bending process.** The bending bar jaws must be below the ferrule to prevent damage to the ferrule. If using the non-marring bending bar, tighten the brass jaws securely around the hosel of the club. If using the short hosel bending bar, simply position the bar in the middle of the hosel. A short, quick application of pressure or a constant pressure are the two techniques that are used. The material of the club head and the experience and preference of the user will dictate which technique is used. To flatten the lie, pressure downward on the bar will bend the hosel to a flatter lie. Pressure upward will bend the hosel to a more upright lie. It is recommended that the lie is re-checked at regular intervals during the bending process. Once you have finished applying pressure to bend the club, re-check the position of the head to be sure the head did not slip. The grooves should still be parallel to the face alignment guide. If the head has moved, re-position the head, re-measure, and determine if the head was bent. Continue the procedure as needed to achieve the desired result.



To adjust the “effective loft” (loft at impact) and face angle of a hybrid, place the bending bar on the hosel of the hybrid as shown in photo 50. The bar should be positioned perpendicular to the face. By applying pressure downward on the hosel, you will close the face angle and increase the effective loft. By applying pressure towards the back of the hybrid or upward, the effective loft will be decreased and the face angle will be adjusted more open. **Special note:** On hybrids, fairway woods and drivers, you can not adjust the loft without affecting the face angle of the club. When adding loft to a wood or hybrid design, the face angle will close 1° for every degree the club is bent. The affect will be to increase the “effective loft” or loft at impact by 1°. **Example:** A 15° actual loft fairway wood or hybrid with an actual square face angle is bent to increase loft by 1° (bending bar perpendicular to the face and pressure applied downward – photo 50). The specifications after this bend would be a face angle of 1° closed, an actual loft (measured loft) of 15° and an “effective loft” of 16°.



**Photo 50**

**\*\*Special Notes:** Not all hybrids are made of the same materials. Some materials are more easily bent than others. Some designs may have a different material in the face that is welded to the body. In this instance, bending is not recommended. The only sure way to determine whether a hybrid can be bent is to try it. Generally, 17-4 stainless heads (the most common material used) can be bent up to 2 degrees. Shorter hosel designs may be less. Depending on the heat treatment of the material, some may be bent more than 2 degrees and some may not be bendable at all. Again, the only sure way to tell is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend hybrids.

The length of the hosel on a hybrid is also a determining factor in the amount the club can be bent. Generally, the shorter the hosel, the less the hosel can be bent. Some short hosel designs may require a special or customized bending bar for adjustments to be possible. If the bending bar you are using will not fit entirely on the hosel, do not use it and do not attempt to bend the club. Photo 64 shows the face view of a hybrid that has been repositioned to allow a bending bar full access to the hosel. The club can still be clamped securely for bending, but the protractor readings will not be accurate. If this is necessary, after an adjustment is made, the club will need to be repositioned in the machine with the sole and grooves parallel to the ground line to obtain accurate readings of loft and lie.

**Method 2** utilizes the same rubber top clamp fixture and rubber sole pads. In addition, Method 2 utilizes the spring loaded rubber face clamp (see photo 51). This clamp insures that the face will not be marred during the bending process and helps prevent slipping when pressure is applied during the bending process. To install the rubber face clamp, first turn the T-Bar bolt counter clockwise to raise the top clamp.



**Photo 51**



**Photo 52**



**Photo 53**



**Photo 54A**

The top clamp must be in a position to allow the rubber face clamp to be installed underneath it. Once the top clamp is out of the way, position the rubber face clamp as shown in photo 52. The rubber face clamp is designed with a spring loaded securing mechanism to allow installation without the need for any tools. To install, reach through the front side of the face bracket and pull back on the rear portion of the rubber face clamp (see photo 53). Once the rear portion of the rubber face clamp clears the bracket, turn it 90 degrees and release (see photo 54a). The spring will contract and secure the clamp against the front of the face bracket. You should be able to slide the clamp up or down on the bracket to position it so that when a club is installed, the rubber face is in contact with the face of the hybrid (see photo 54b).

Using Method 2, it may be necessary to reposition (move back) the rubber sole pad fixture because the face of the club is positioned further back from the face bracket (see photo 55). Place the club in the machine with the sole centered on the rubber sole pads and face up against the rubber face clamp (see photo 56). Holding the head in place, turn the T-Bar bolt clockwise to position it on top of the crown of the hybrid (see photo 57).



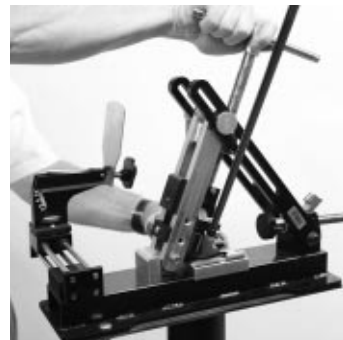
**Photo 54B**



**Photo 55**



**Photo 56**



**Photo 57**



**Do not over tighten.** At this point, you simply want to snug down the top clamp to hold the club into position with the grooves parallel to the alignment aid or the ground line. In Method 2, it is less effective to use the face line guide when lining up the head into the machine. Photo 58 shows the face view of a hybrid in the machine with the rubber face clamp being used. Observe the bottom of the rubber face clamp and the base of the face bracket and use them as guides to get the face/grooves parallel to the ground line (see photo 58).

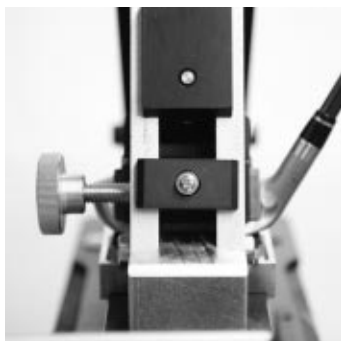


Photo 58



Photo 59



Photo 60



Photo 61

The key feature of the MA2019 that secures the hybrid into position is the quick slide back clamp. Release the quick slide mechanism and slide the round nylon pad up against the back of the hybrid club (photo 59), making sure the face is up against the rubber face bracket. Engage the quick release back clamp to allow the tightening of the clamp (see photo 60). Tighten the back clamp up against the back of the hybrid by turning the quick clamp clockwise (see photo 61). **Do not over tighten.** Over tightening could cause damage to the back of the hybrid. Tighten enough so the club stays in place with the face up against the face bracket. Next, tighten the top clamp down onto the top of the hybrid. Again, **do not over tighten.** Over tightening the top clamp can cause damage to the crown of the hybrid. Additional pressure (tightening) of the back clamp and the top clamp may be needed to secure the hybrid for bending, but should be done in small increments. Once the head is secure, you are ready for bending.

**\*\*Special Note:** Since the face of the hybrid is up against the rubber face clamp and not the face bracket in Method 2, the slide protractor readings will not give as accurate actual readings of the loft and lie. However, the amount (in degrees) that a club is being bent can be accurately seen. If using Method 2, note the readings of the loft and lie once the hybrid is secure in the machine. After bending, note the difference from the original readings to obtain information on how much the club was bent.

Although the actual readings are not as accurate using Method 2, the method of clamping the hybrid in the machine adds to the protection of the head and virtually eliminates the possibility of marring the head during the bending process.

**\*\*\*For the most accurate readings of a club's loft and lie specification, it is always recommended that a Golf Club Measuring Gauge be used. See the Golfworks catalog or go to the Golfworks website for details about Golf Club Measuring Gauges.**

**\*\*Special Note:** Since most Hybrids have a painted finish, it is recommended that the Brass Toe Stop be positioned away from the head (not touching) during the bending process. The pressure applied during bending can cause the toe stop to damage a painted finish. Photo 58 shows the brass knob positioned away from the toe of the hybrid.

## Bending a Hybrid

The MA2019 comes with an adjustable non-marring bending bar (BNMB) and a short hosel bending bar (GW1036). To adjust the lie of a hybrid, select the bending bar best suited for the design and place the bending bar on the hosel of the hybrid as shown in photo 62 (short hosel bending bar). The bar should be positioned parallel to the face (photo 62). **Special Note:** Some hybrid designs have a painted finish that extends onto the hosel. If the bending bar is in contact with the painted portion of a hosel, some marring or scratching of the paint may occur during the bending process. **It is recommended that the painted portion of the hosel be covered with 3/4" masking tape or lead tape to prevent marring the finish during the bending process.** The bending bar jaws must be below the ferrule to prevent damage to the ferrule. If using the non-marring bending bar, tighten the brass jaws securely around the hosel of the club. If using the short hosel bending bar, simply position the bar in the middle of the hosel. A short, quick application of pressure or a constant pressure are the two techniques that are used. The material of the club head and the experience and preference of the user will dictate which technique is used. To flatten the lie, pressure downward on the bar will bend the hosel to a flatter lie. Pressure upward will bend the hosel to a more upright lie. It is recommended that the lie is re-checked at regular intervals during the bending process. Once you have finished applying pressure to bend the club, re-check the position of the head to be sure the head did not slip. The grooves should still be parallel to the face alignment guide. If the head has moved, re-position the head, re-measure, and determine if the head was bent. Continue the procedure as needed to achieve the desired result.

To adjust the "effective loft" (loft at impact) and face angle of a hybrid, place the bending bar on the hosel of the hybrid as shown in photo 63.



Photo 62

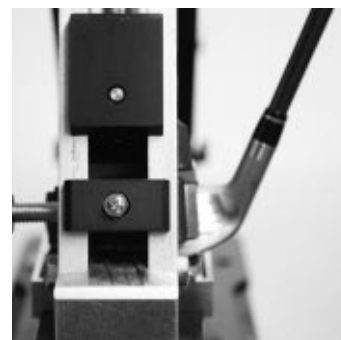


Photo 63

The bar should be positioned perpendicular to the face. By applying pressure downward on the hosel, you will close the face angle and increase the effective loft. By applying pressure towards the back of the hybrid or upward, the effective loft will be decreased and the face angle will be adjusted more open. **Special note:** On hybrids, fairway woods and drivers, you can not adjust the loft without affecting the face angle of the club. When adding loft to a wood or hybrid design, the face angle will close 1° for every degree the club is bent. The affect will be to increase the "effective loft" or loft at impact by 1°. Example: A 15° actual loft fairway wood or hybrid with an actual square face angle is bent to increase loft by 1° (bending bar perpendicular to the face and pressure applied downward – photo 63). The specifications after this bend would be a face angle of 1° closed, an actual loft (measured loft) of 15° and an "effective loft" of 16°.

**\*\*Special Notes:** Not all hybrids are made of the same materials. Some materials are more easily bent than others. Some designs may have a different material in the face that is welded to the body. In this instance, bending is not recommended. The only sure way to determine whether a hybrid can be bent is to try it. Generally, 17-4 stainless heads (the most common material used) can be bent up to 2 degrees. Shorter hosel designs may be less. Depending on the heat treatment of the material, some may be bent more than 2 degrees and some may not be bendable at all. Again, the only sure way to tell is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend hybrids.

The length of the hosel on a hybrid is also a determining factor in the amount the club can be bent. Generally, the shorter the hosel, the less the hosel can be bent. Some short hosel designs may require a special or customized bending bar for adjustments to be possible. If the bending bar you are using will not fit entirely on the hosel, do not use it and do not attempt to bend the club. **Special Note:** It may be necessary to reposition the head in the bending machine to gain access to the hosel for bending. Photo 64 shows the face view of a hybrid that has been repositioned to allow a bending bar full access to the hosel. The club can still be clamped securely for bending, but the protractor readings will not be accurate. If this is necessary, after an adjustment is made, the club will need to be repositioned in the machine with the sole and grooves parallel to the ground line to obtain readings of loft and lie. If Method 2 is used in the set up, accurate readings can best be obtained by measuring the club in a Golf Club Gauge (#LOLI2, GW1040, HGCG in the Golfworks catalog).

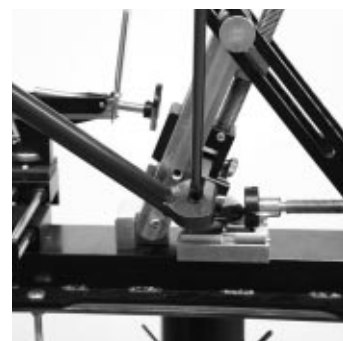


Photo 64

### Bending Left Handed Clubs

The only part of the MA2019 that requires disassembly for use with left hand clubs is the Brass Toe Stop. Even though the brass toe stop is not used when bending hybrids, it is necessary to move it to the left hand side when placing a left handed hybrid in the machine. Using the 5mm hex wrench, simply loosen and remove the toe stop bolt with the brass toe stop disc attached (photo 65). Move to the opposite side of the machine and re-insert as shown in photo 66. Approximately 8 turns for the bolt should be sufficient to position the bolt securely into the bracket. Adjust the toe stop disc as needed. The Sliding Protractor Assembly will simply slide to the Left Hand measuring side of the machine (photo 67). No disassembly is required.



Photo 65

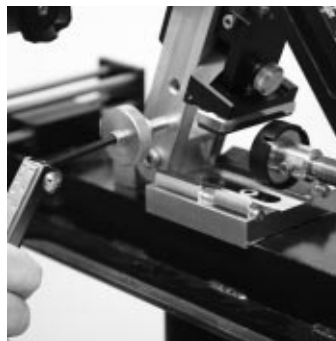


Photo 66



Photo 67

### Measuring and Bending Fairway Metal Woods

The MA2019 was designed so that most fairway wood club head designs can be secured, measured and adjusted using the same procedures used when bending hybrid clubs. Since there are a wide variety of loft options, when placing a fairway metal club in the MA2019, choose the loft position of the machine that is the closest to that designated on the clubhead, or closest to the loft measured on a golf club gauge.

**For example:** The loft of the fairway metal wood is designated as 15°. Position the one arm slide bolt with indicator in the #1-#2 slot where the loft designation of the machine is 17°. Once the head is secured in the machine and the loft and lie protractor are placed in the correct position on the shaft, you will get the actual lie reading of the club, and the loft would read 2° "S", or 2° "Strong". This assumes the head is actually the 15° loft that is marked on the head.

## Placing a Fairway Metal Wood into the Machine

The procedures for placing a fairway metal wood in the machine are the same as for hybrid clubs. Since the sole width of most fairway metal woods will be wider than hybrids, the sole rest may have to be adjusted (see photo 68). Once the sole rest is in position, tighten the sole rest bolt (see photo 69). The MA2019 is now ready for fairway metal wood measuring and bending.



Photo 68

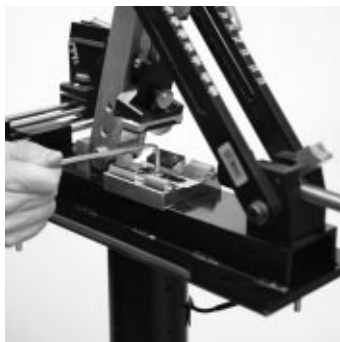


Photo 69

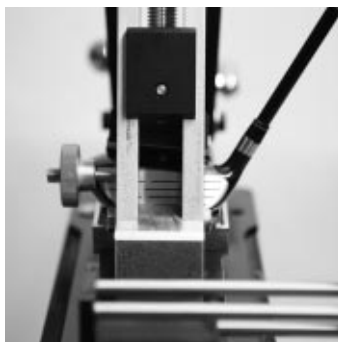


Photo 70



Photo 71

To place a fairway metal wood into the Maltby Premium Bending Machine, set the sole on the rubber sole pads with the face lines parallel to the ground line. The bottom of the face bracket can be used as a guide to setting the face lines parallel to the ground line (see photo 70).

**Special Note:** Due to the nature of face lines on woods and their relationship to the actual center of the sole, aligning the face lines parallel to the alignment guide may not give accurate lie readings on the lie side of the protractor. To get accurate lie readings, the center of the sole must be parallel to the ground line. This is best accomplished by measuring the actual lie of the wood in a Golf Club Gauge (see items LOLI2, GW1040, HGCG in The Golfworks catalog or on the Golfworks website [www.golfworks.com](http://www.golfworks.com)). *It is important to remember the Maltby Premium Bending Machine is primarily a bending machine and accurate measurements can only be obtained when the face lines and center of the sole are parallel to the ground line.*

Once the head is in position, tighten down the top clamp as shown in photo 71. **Do Not Over Tighten.** Over tightening can damage the crown of the fairway wood.

Next, slide the back clamp into position and snug up against the back of the fairway metal wood (see photo 72). Again, **Do Not Over Tighten.** Over tightening can cause damage to the back of the fairway metal wood.

The club head should now be secure in the bending machine, with the sole resting on both rubber soling pads and the rubber top clamp secure on the crown and the back clamp secure against the back of the club head. Photo 73 shows a rear view of a right handed fairway metal wood positioned properly in the bending machine machine. Photo 73 shows a rearward view of a left handed fairway metal wood positioned properly in the bending machine.



Photo 72



Photo 73



Photo 74

**\*\*Special Notes:** Not all fairway metal woods are made of the same materials. Some materials are more easily bent than others. Some designs may have a different material in the face that is welded to the body. In this instance, bending is not recommended. The only sure way to determine whether a hybrid can be bent is to try it. Generally, 17-4 stainless heads (the most common material used) can be bent up to 2 degrees. Shorter hosel designs may be less. Depending on the heat treatment of the material, some may be bent more than 2 degrees and some may not be bendable at all. Again, the only sure way to tell is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend fairway woods.

**Follow the same procedures for measuring and bending fairway metal woods as outlined in the "Bending a Hybrid" section of this manual.**

## Measuring and Bending Drivers

The MA2019 was designed so that most driver head designs can be secured, measured and adjusted using the same procedures used when bending fairway metal woods. The rubber face bracket must be installed and the sole pads will require adjustment. These procedures are outlined in the following section of this manual. Since there are a wide variety of loft options, when placing a driver in the MA2019, choose the loft position that is the closest to that designated on the clubhead, or closest to the loft measured on a golf club gauge. The "W" designation on the slide bracket will be the setting for most drivers (see photo 75). For example: The loft of the driver is designated as 11°. Position the one arm slide bolt with indicator in the "W" slot where the loft designation of the machine is 10°. Once the head is secured in the machine and the loft and lie protractor are placed in the correct position on the shaft, you would get the actual lie reading of the club, and the loft would read 1° "W", or 1° "Weak". This assumes the head is actually the 11° loft that is marked on the head.

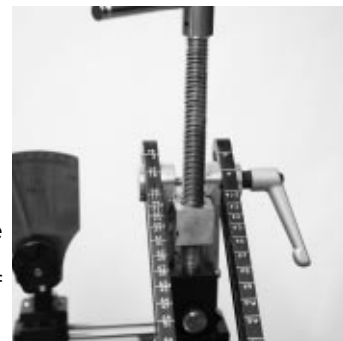


Photo 75

### Procedures for Placing a Driver into the Machine

The procedures for placing a driver in the machine are similar to those used for fairway metal woods. Since the sole width of a modern driver is substantially wider than that of fairway woods, the sole rest will have to be adjusted. Generally, most modern drivers will require the sole rest to be positioned as far back as possible. This is accomplished by loosening the sole rest bolt and sliding the sole rest as far to the rear as possible, or as far as the slot for the screw will allow. Once the sole rest is in position, tighten the sole rest bolt (see photo 76). It is



Photo 76



Photo 77A



Photo 77B



Photo 78

recommended that the rubber face clamp be installed and used when measuring and bending a driver. The rubber face clamp helps prevent marring the larger driver face and helps secure the driver in the machine. To install the rubber face clamp, first turn the T-Bar bolt counter clockwise to raise the top clamp. The rubber top clamp must be in a position to allow the rubber face clamp to be installed underneath it. Once the rubber top clamp is out of the way, position the rubber face clamp as shown in photos 77a and 77b. The rubber face clamp is designed with a spring loaded securing mechanism to allow installation without the need for any tools. To install, reach through the front side of the face bracket and pull back on the rear portion of the rubber face clamp (see photo 78). Once the rear portion of the rubber face



Photo 79

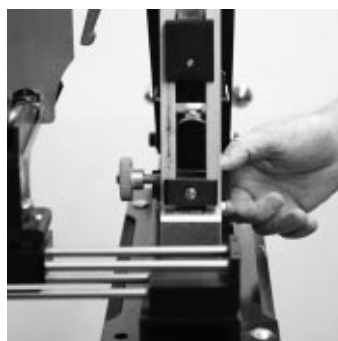


Photo 80A

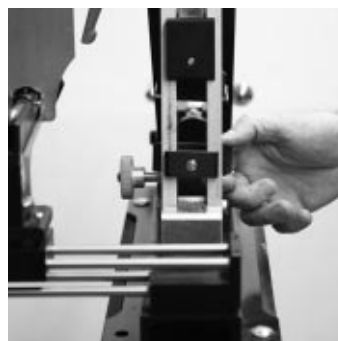


Photo 80B

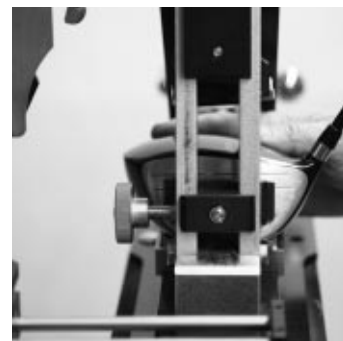


Photo 81

clamp clears the bracket, turn it 90 degrees and release (see photo 79). The spring will contract and secure the clamp against the front of the face bracket. You should be able to slide the clamp up or down on the bracket to position it so that when a club is installed, the rubber face is in contact with the center of the face of the driver (see photos 80a and 80b). Since most drivers will have some degree of vertical roll, along with horizontal bulge, and the fact that loft on drivers is measured from the center of the face, it is important to position the rubber face clamp as close to the center of the face as possible (see photo 81). This will insure the loft readings on the slide protractor are more accurate.

To place a driver into the Maltby Premium Bending Machine, set the sole on the rubber sole pads with the face lines parallel to the ground line. The bottom of the face bracket can be used as a guide to setting the face lines parallel to the ground line (see photo 81). **Special Note:** Due to the nature of face lines on woods (especially drivers) and their relationship to the actual center of the sole, aligning the face lines parallel to the alignment guide may not give accurate lie readings on the lie side of the protractor. To get accurate lie readings, the center of the sole must be parallel to the ground line. This is best accomplished by measuring the actual lie of the driver in a Golf Club Gauge (see items LOLI2, GW1040, HGCG in The Golfworks catalog or on the Golfworks website [www.golfworks.com](http://www.golfworks.com)). It is important to remember the

Maltby Premium Bending Machine is primarily a bending machine and accurate measurements can only be obtained when the face lines and center of the sole are parallel to the ground line.

Once the head is in position, tighten down the rubber top clamp as shown in photo 82. The top rubber clamp should be positioned towards the front of the crown (see photo 83). **Do Not Over Tighten.** Over tightening can damage the crown of the driver.

Next, slide the back clamp into position and snug up against the back of the driver head (see photo 83). Again, **Do Not Over Tighten.** Over tightening can cause damage to the back of the driver head.



Photo 82



Photo 83



Photo 84

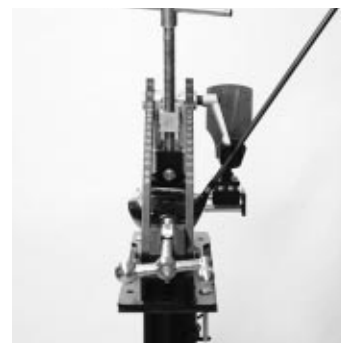


Photo 85

The club head should now be secure in the bending machine, with the sole resting on both rubber soling pads and the rubber top clamp secure on the front of the crown and the back clamp secure against the back of the driver head. Photo 84 shows a rear view of a right handed driver positioned properly in the bending machine. Photo 85 shows a rearward view of a left handed driver positioned properly in the bending machine. **\*\*Special Note:** On drivers, the toe stop will not be used. If the toe stop is touching the toe of the driver, marring of scratching of the finish can occur during the bending operation.

**\*\*Special Notes:** Not all drivers are made of the same materials. Some materials are more easily bent than others. Some designs may have a different material in the face that is welded to the body. The only sure way to determine whether a driver can be bent is to try it. Generally, 6-4 titanium (the most common material used) can be bent 1 degree. Shorter hosel designs may not be bendable and drivers with no hosels can not be adjusted. Depending on the heat treatment of the material and the length of the hosel, some may be bent more than 1 degree and some may not be bendable at all. Again, the only sure way to know for sure is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend irons.

**\*\*Special Notes:** Most driver designs have a painted finish that extends onto the hosel. If the bending bar is in contact with the painted portion of a hosel, some marring or scratching of the paint may occur during the bending process. **It is recommended that the painted portion of the hosel be covered with 3/4" masking tape or lead tape to prevent marring the finish during the bending process (see photo 86).** The bending bar jaws must be below the ferule to prevent damage to the ferule.

If using the non-marring bending bar, tighten the brass jaws securely around the hosel of the club. If using the short hosel bending bar, simply position the bar in the middle of the hosel. A short, quick application of pressure or a constant pressure are the two techniques that are used. The material of the club head and the experience and preference of the user will dictate which technique is used. To flatten the lie, pressure



Photo 86

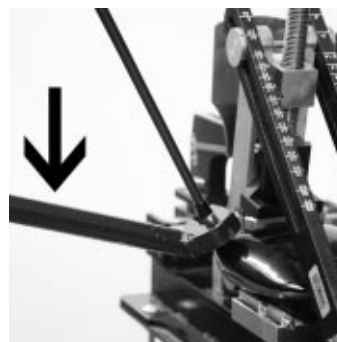


Photo 87

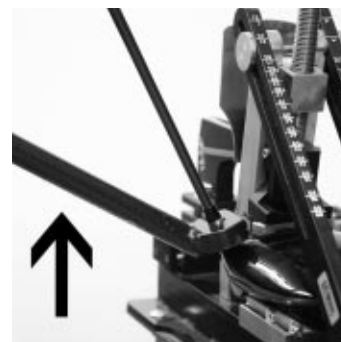


Photo 88

downward on the bar will bend the hosel to a flatter lie (see photo 87). Pressure upward will bend the hosel to a more upright lie (see photo 88). It is recommended that the lie is re-checked at regular intervals during the bending process. Once you have finished applying pressure to bend the club, re-check the position of the head to be sure the head did not slip. The grooves and or center of the sole should still be parallel to the face alignment guide. If the head has moved, re-position the head, re-measure, and determine if the head was bent. Continue the procedure as needed to achieve the desired result.

To adjust the "effective loft" (loft at impact) and face angle of a driver, place the bending bar on the hosel of the driver as shown in photo 89. The bar should be positioned perpendicular to the face. By applying pressure downward on the hosel, you will close the face angle and increase the effective loft. By applying pressure towards the back of the driver or upward, the effective loft will be decreased and the face angle will be adjusted more open. **Special note:** On hybrids, fairway woods and **drivers**, you can not adjust the loft without affecting the face angle of the club. When adding loft to a wood or hybrid design, the face angle will close 1° for every degree the club is bent. The affect will be to increase the "effective loft" or loft at impact by 1°. When decreasing the loft, the face angle will open 1° for every degree the club is bent. The affect will be to decrease the "effective loft" or loft at impact by 1°.



Photo 89

**Example:** A 10° actual loft driver with an actual square face angle is bent to increase loft by 1° (bending bar perpendicular to the face and pressure applied downward – photo 90). The specifications after this bend would be a face angle of 1°closed, an actual loft (measured loft) of 10° and an “effective loft” of 11°. Conversely, a 10° actual loft driver with an actual square face angle is bent to decrease loft by 1° (bending bar perpendicular to the face and pressure applied upward – photo 91). The specifications after this bend would be a face angle of 1°open, an actual loft (measured loft) of 10° and an “effective loft” of 9°.

**Follow the same procedures for measuring and bending drivers as outlined in the “Bending a Fairway Metal Wood” section of this manual.**

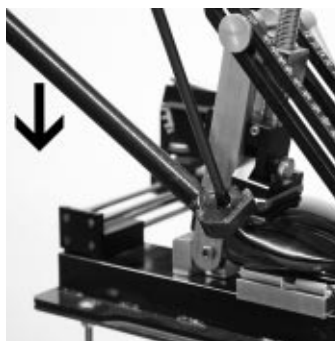


Photo 90

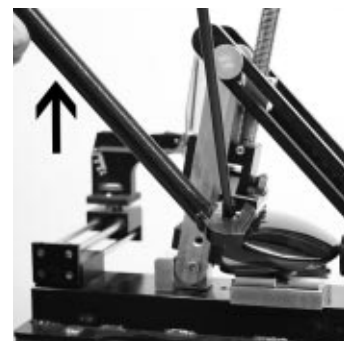


Photo 91

## Measuring and Bending Wedges

The MA2019 is designed to measure and bend most wedges on the market, both standard sole and wide sole, and lofts up to 60°. The wedge designations are marked on the slide bracket as PW, GW, SW, and LW. The corresponding lofts and lie angles are marked on the opposite bracket (see photo 92).

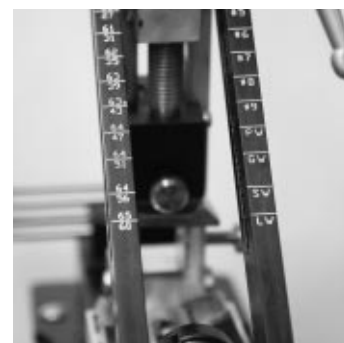


Photo 92

## Procedures for Set-up, Bending and Measuring Wedges

### Standard sole width wedges:

Standard sole width wedges generally have sole widths of less than 1” when measured in the center of the sole. Most wedges will be made either stainless or carbon steel and require the brass top jaw to secure the head. Install the brass top jaw using the quick release top jaw pin as shown in photos 93a and 93b. To set up the machine to measure and bend standard sole PW, GW, SW or LW, you must install the concave top brass soling discs into the proper position. First, positioned the base into the front base pin hole (see photo 94). Be sure the concave flat top on the brass soling pieces are positioned upward. Once the base is in position, tighten the allen screw in the base as shown in photo 95).



Photo 93A



Photo 93B



Photo 94



Photo 95

The oval brass soling

discs can also be used as the sole base for standard sole width wedges. To use the oval sole discs, position the base into the front base pin as shown in photo 96. The oval sole discs must be positioned as shown in photo 97, with the thicker part of the disc to the back. Once the base is in position and the discs are positioned properly, tighten the bolt to secure the base. The procedures for setting the club in the machine are same as are used with the flat brass soling pieces.

**\*\*Special Note:** There are many varieties of wedges on the market with a wide variety of sole designs. The Maltby Premium Bending machine has many possible configurations to secure a wedge into the machine for measuring and bending. Some designs may require some experimentation with different sole pads and different positions of sole pads to get the positioning of the wedge head in the machine. The machine set-ups and procedures listed should accommodate the majority of wedges currently on the market.



Photo 96

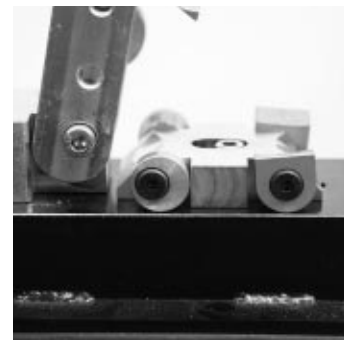
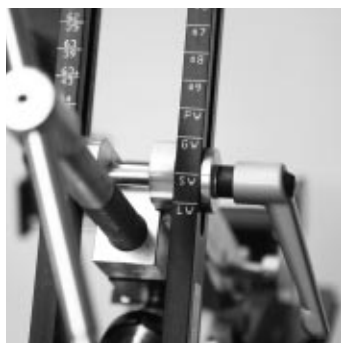
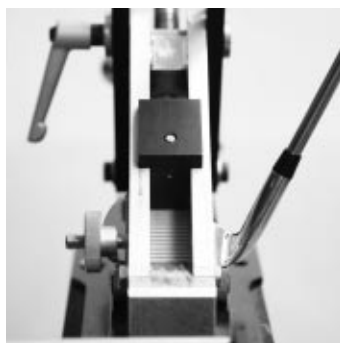


Photo 97

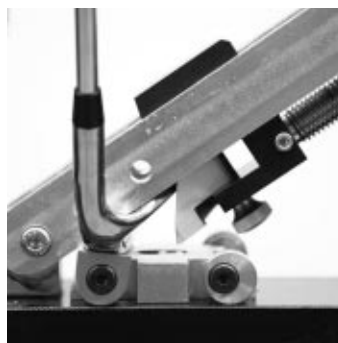
Once the base is in position and secure, you are ready to place the wedge in the machine. First, loosen the one arm bolt and position it to the club designation being installed into the machine. Photo 98 shows setting the machine to the "SW" mark. Tighten the one arm bolt. Place the SW in the machine as shown in photo 99. A key feature of the machine is the face alignment aid. With the face of the wedge flush against the inside bracket and the sole touching both the heel brass sole piece (see photo 100) and the toe brass sole piece (see photo 101), you can line up the grooves with the alignment aid. The grooves should be parallel to the edge of the face alignment aid.



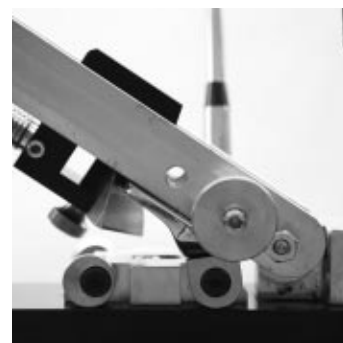
**Photo 98**



**Photo 99**



**Photo 100**

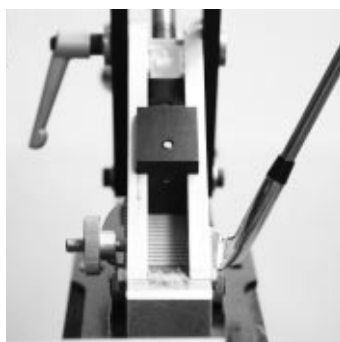


**Photo 101**

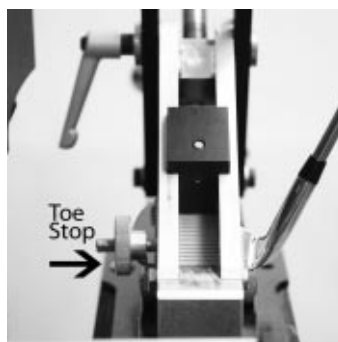
Once you have the head into position, hold the head with one hand and tighten down the T Bar bolt with the other (see photo 102). As you tighten, make sure the head does not move. If the head moves out of the parallel position, re-adjust and tighten. Once the T Bar bolt is tightened, the head should be positioned in the machine as shown in photo 103. The brass toe stop can be used to help position the head in the proper position and also prevents slippage from occurring during the bending process. The brass toe stop should be positioned so that it is touching the toe of the wedge when the grooves are in the parallel position (see photo 104). Photo 105a shows the club properly placed in the machine and the position of the sliding protractor for right handed wedges and photo 105b shows the proper position for left handed wedges.



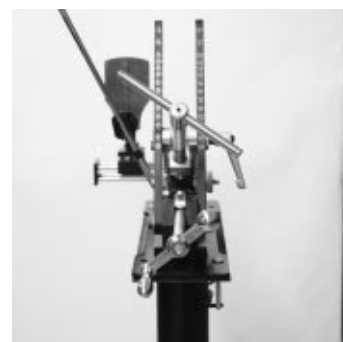
**Photo 102**



**Photo 103**



**Photo 104**

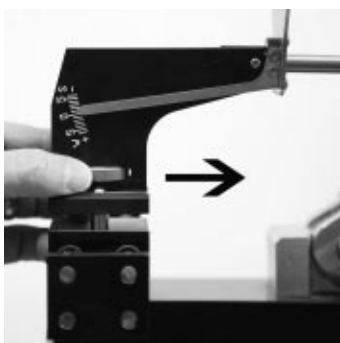


**Photo 105A**

With the club secure in the machine, slide the loft and lie protractor into position. Since many wedge designs have longer hosels and longer ferrules, it may be necessary to raise the shaft alignment socket using the height adjuster (see photo 106). The shaft alignment socket must be touching the shaft flush to get proper readings on the protractor. To raise the height of the protractor assembly, turn the brass knob in the direction of the arrow in photo 106. Slide the shaft alignment socket towards the shaft (see photo 107). Hold it flush against the shaft so that it is touching the shaft in both slots (see photo 108). With the socket and protractor in position, accurate reading of the loft and lie can be taken.



**Photo 105B**



**Photo 106**



**Photo 107**



**Photo 108**



## Reading the Lie and Loft Measurement of Wedges

The MA2019 Premium Bending Machine has two scales on the protractor assembly. Photo 109 shows the lie reading protractor scale and photo 110 shows the loft reading protractor scale. The lie reading is an actual reading. Once the club is in position with the shaft guide flush up against the shaft, the pointer on the scale will indicate what the lie angle of the club is. Lie readings can be taken for readings 53 degrees to 77 degrees, for right and left handed clubs. The scale indicates "RH" for the right handed club readings and "LH" for the left handed club readings. The readings are not in actual degrees, like the lie, but are presented in "S" for strong or "W" for weak. The scale is designed to measure from 5 degrees strong to 5 degrees weak. The base number for the club you are measuring is the lower number (loft number) engraved on the left hand side of the top bracket as shown in photo 111. These numbers are the industry average lofts. When measuring any particular club, the loft reading will be registered as either weak, or strong or "0". If the pointer points to "0", the club's loft is the same as the scale on the top bracket. If the pointer points to the "S" side of the "0", the loft is strong by the number degrees indicated by the pointer (between 1 and 5 degrees). If the pointer points to the "W" side of the "0", the loft of the club is weak by the number of degrees indicated by the pointer (between 1 and 5 degrees).



Photo 109



Photo 110



Photo 111

**Example:** A Sand Wedge (SW) is placed into the MA2019 Premium Bending Machine. The industry standard measurements engraved on the top bracket indicate a lie angle of 64° and a loft angle of 56°. Once the club is positioned properly and the readings are taken, the lie pointer indicates 64°. The loft pointer is 2 marks toward the "S" side of the "0" on the loft scale. This indicates the loft is 2° stronger than the machine standard of 56°. So the actual loft is 54°. Remember, strong indicates less loft and weak indicates more loft.

## Bending

The MA2019 comes with an adjustable non-marring bending bar (BNMB) and a short hosel bending bar (GW1036). To adjust the lie of a wedge, select the bending bar best suited for the iron design and place the bending bar on the hosel of the iron as shown in photos 112a and 112b (non-marring bending bar). It is easiest to open the jaws of the adjustable bending bar all the way, place it over the shaft (112a), then slide in down to the proper position on the hosel (112b). Photos 113a and 113b show the short hosel bending bar being used. When using the short hosel bending bar, you must slide the bar onto the shaft as shown in photo 113a, then slide it down into position on the hosel as shown in photo 113b. When either bar is used, the bar should be positioned parallel to the face for adjusting the lie of the club.

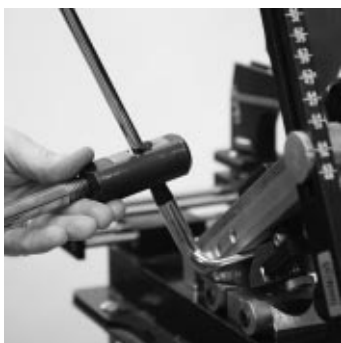


Photo 112A



Photo 112B



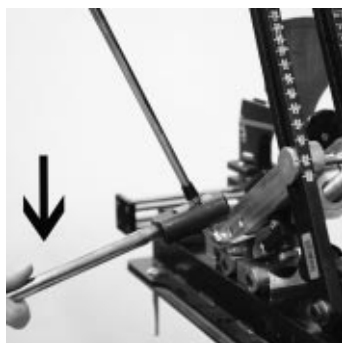
Photo 113A



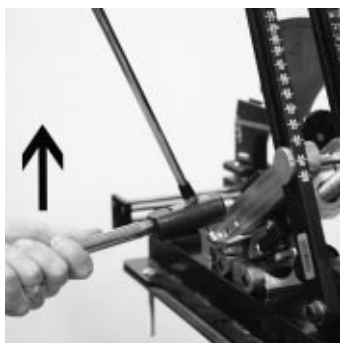
Photo 113B

The bending bar jaws must be below the ferrule to prevent damage to the ferrule. If using the non-marring bending bar, tighten the brass jaws securely around the hosel of the club. If using the short hosel bending bar, simply position the bar in the middle of the hosel. A short, quick application of pressure or a constant pressure are the two techniques that are used. The material of the club head and the experience and preference of the user will dictate which technique is used.

To flatten the lie, pressure downward on the bar will bend the hosel to a flatter lie (see photo 114). Pressure upward will bend the hosel to make the wedge more upright (see photo 115). It is recommended that the lie is re-checked at regular intervals during the bending process. Once you have finished applying pressure to bend the club, re-check the position of the head to be sure the head did not slip. The grooves should still be parallel to the face alignment guide. If the head has moved, re-position the head, re-tighten the clamp and re-measure to determine if the head was bent. Continue the procedure as needed to achieve the desired result.



**Photo 114**



**Photo 115**



**Photo 116**



**Photo 117**

To adjust the loft of an iron place the bending bar on the hosel of a wedge as shown in photo 116 (adjustable bar shown). The bar should be positioned perpendicular to the face. By applying pressure downward on the hosel, you will increase the loft (see photo 117). By applying pressure towards the back of the iron or upward, the loft will be decreased (see photo 118).

**\*\*Special Notes:** Not all wedges are made of the same materials. Some materials are more easily bent than others. The only sure way to determine whether a wedge can be bent is to try it. Generally, 17-4 stainless and 431 stainless wedges can be bent up to 2 degrees. Depending on the heat treatment of the material, some may be bent more than 2 degrees and some may not be bendable at all. Most Carbon Steel heads can be bent more than 2 degrees. Again, the only sure way to tell is to put the club in the machine and apply pressure. You should be able to tell right away if the club is bendable or not. Using old clubs and practicing is a great way to develop the feel required to accurately and properly bend wedges.

The length of the hosel on a wedge is also a determining factor in the amount it can be bent. Generally, the shorter the hosel, the less the hosel can be bent. Some short hosel designs may require a special or customized bending bar for adjustments to be possible. If the bending bar you are using will not fit entirely on the hosel, do not use it and do not attempt to bend the iron.



**Photo 118**

**\*\*Special Note:** A list of iron models that are not bendable is listed on The Golfworks website ([www.golfworks.com](http://www.golfworks.com)). Go to the right side of the home page under "Technical Information" and click (Iron models not recommended for loft and lie adjustment). The list is updated regularly as new information and models become available.

#### **Wide sole width wedges:**

Wide sole width wedges generally have sole widths of greater than 1" when measured in the center of the sole. Most wedges will be made either stainless or carbon steel and require the brass top jaw to secure the head. Install the brass top jaw using the quick release top jaw pin as shown in photos 119a and 119b. To set up the machine to measure and bend wide sole PW, GW, SW or LW club heads you must install the flat, brass wide sole pads. The flat brass sole pads should be positioned towards the face bracket as shown in photo 120. The base with the flat sole pieces has a long screw slot and slide on the machine base, allowing flexibility in positioning the sole pads (see photo 120). It may be necessary to try several positions, depending on the sole design. Once the best position for the wide sole brass pads is determined, tighten the allen screw bolt down to secure the base (see photo 121).



**Photo 119A**



**Photo 119B** If the front to



**Photo 120**



**Photo 121**

**\*\*Special Note:** The Sliding sole base can remain loose to allow the operator to slide the sole pads into position while placing the club head in the machine. The base tightening screw must be screwed in enough to prevent the screw head from coming in contact with the sole, but not so tight the slide will not move freely.

Once the base is in position and secure, you are ready to place the wedge in the machine. Photo 122 shows the heel view of the brass pads on a 1.25" sole width wedge. Photo 123 shows the toe view on a 1.25" sole wedge. Photo 124 shows the heel view when a 1.62" sole width wedge is installed in the machine. Photo 125 shows the toe view of the 1.62" sole width wedge.

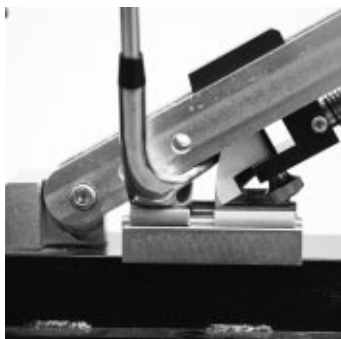


Photo 122

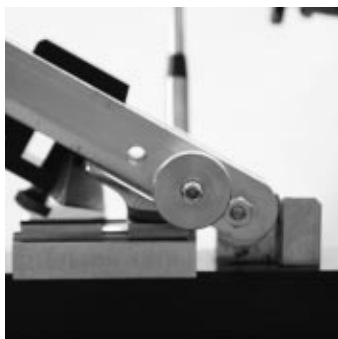


Photo 123

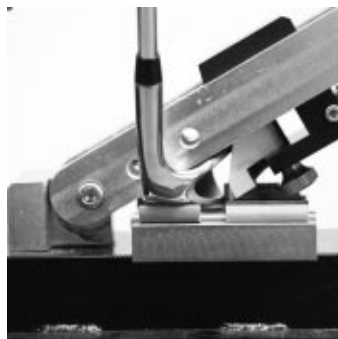


Photo 124

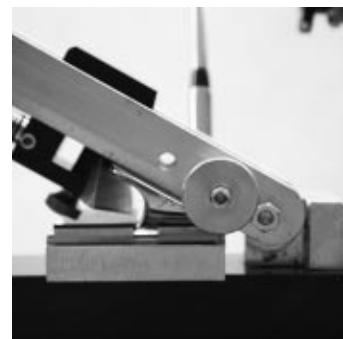


Photo 125

Follow the same procedures for measuring and bending as described in the "Standard" sole width wedge section.

**\*\*Special Note:** The same procedures described above will apply for "LW" designated wedges. The "LW" mark on the top bracket is set for 60 degree wedges. Some higher lofted wedges can be placed in the machine, up to 64 degrees. The sole design and the overall size of the head will determine if higher lofted wedges can be secured in the machine.

## Bending Putters

The MA2019 is designed to clamp many styles of putters securely for bending. Because of the variety of putter styles, there are limitations and there will be some models that can not be secured into the machine. The instructions that follow give the basic set up and procedures for securing several popular styles of putters into the machine. For any particular style of putter, the only sure way to know if it can be secured into the MA2019 is to try.

To place a putter into the machine, first loosen the one arm bolt and position the mark on the slide bolt to the "P" engraved on top of the right slide bracket. The corresponding club loft and lie for putters engraved on the left side bracket are "72 / 3", which indicates a 72° lie angle and a 3° loft angle (see photo 126). These numbers indicate the machine settings at the "P" mark.

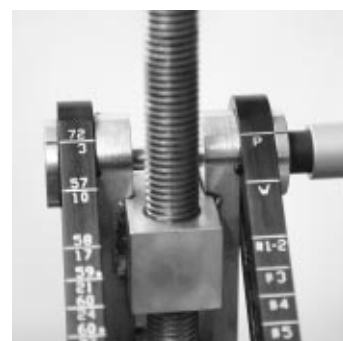


Photo 126

**\*\*Special Note:** The key feature to securing a putter in the machine is the back clamp. On putter styles in which the back clamp can be utilized (mallets, putters with a front to back dimension of 1 5/8" minimum), the back clamp will prevent slippage when pressure applied to increase the loft of the putter (primary purpose of the back clamp). The back clamp also helps keep the head in place when bending for lie and when bending to decrease the loft of the putter, but is not always necessary for these bends. There are some style putters that are short dimensionally from front to back and prevent the back clamp from tightening against the back of the club. On these types of putters, it will be necessary to use the dual rubber disc putter clamp as a shim against the back clamp to secure the back of the putter. Instructions for using the shim follow.

## Set-up and Procedures for bending blade style putters, non-mallet style putters or small mallet style putters with hosels

**\*\*Special Note:** The material and finish of some putter designs may be susceptible to marring. As a precaution, a piece of masking tape can be placed on the top of the putter to prevent scratching the finish.

Popular heel/toe weighted, non-mallet style putters like the models shown in photos 127a and 127b require installation of either the brass top jaw or the rubber disc putter clamp and the flat brass sole pads or the concave brass sole pads to properly secure the putter head in the machine. The brass top jaw should be used when the putter has a front to back dimension of less than 1 5/8" (see photo 128).



Photo 127A



Photo 127B



Photo 128

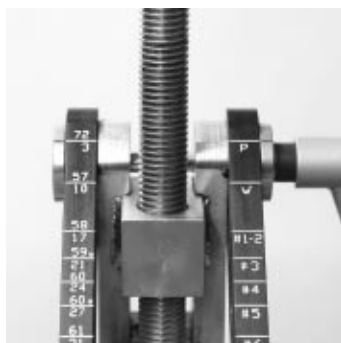
back dimension of the putter is greater than 1 5/8", you can use the same brass top jaw OR the rubber disc putter top clamp (see photo 129). The style and finish of the putter will determine which top jaw secures the head the best. It may be necessary to try each top jaw to determine which is best for the style of putter you are bending. If the dimension is greater than 1 5/8", the back clamp can be used in conjunction with the putter top clamp to secure the head. If the front to back dimension of the putter is less than 1 5/8", the dual rubber disc putter clamp will need to be used as a shim to secure the back of the putter. Instructions on securing the head with the rubber disc clamp as a shim follow.



**Photo 129**

**Method 1** for use on putters with a front to back dimension of less than 1 5/8

Set the one arm slide bolt indicator to the "P" position (see photo 130). Install the brass top jaw (see photo 131). Install the concave brass sole pads (see photo 132). While holding the putter in place with the face up against the face bracket, tighten the brass top clamp down on the putter (see photo 133). There must be sufficient distance between the hosel of the putter and the face bracket to allow the bending bar to be placed on the putter neck for bending (see photo 134). Make sure the brass top jaw is securely tightened against the top of the putter head enough to hold it in place. The face may pull away from the face bracket slightly during tightening.



**Photo 130**



**Photo 131**



**Photo 132**



**Photo 133**

This condition will be corrected when the back clamp and shim are set in place. At this point, the top jaw should just be tightened enough to hold the putter in the machine. After the back clamp and shim are installed and tightened, you will tighten the top jaw firmly. To secure the putter head for bending, it will be necessary to shim the back clamp. To do this, place the dual rubber disc putter clamp as shown in photo 135. Once in place, begin tightening the back clamp. You must hold the shim in place while the back clamp is secured up against the back of the putter head (see photo 136). Snug the back clamp up against the shim, which will be touching the back edge of the putter on the two rubber discs. Check the top clamp to be sure it is tight and then tighten the back clamp until it is secure against the shim and the back of the putter (see photo 137). You are now ready for bending.



**Photo 134**



**Photo 135**



**Photo 136**



**Photo 137**

**Special Note:** Since there must be ample space for the bending bar, the putter can not be placed perpendicular to the ground line, which is necessary for getting accurate lie readings. The purpose of the putter bending feature of the machine is to secure the putter head for bending. Accurate measurements of lie can only be achieved using a golf club gauge. (see items LOLI2, GW1040, HGCG in The Golfworks catalog or on the Golfworks website [www.golfworks.com](http://www.golfworks.com)). It is important to remember the Maltby Premium Bending Machine is primarily a bending machine and accurate measurements can only be obtained when the face lines, or in the case of a putter the top line, and center of the sole are parallel to the ground line.

If movement has occurred, re-position the putter head and repeat the bending operation until the desired result is achieved.

**Method 2** for use on putters with a front to back dimension of greater than 1 5/8"

Install the brass top jaw (see photo 138) or rubber disc top clamp as shown in photo 139, whichever is applicable for the putter head being adjusted. Install the flat brass sole pads as shown in photo 140. Once the proper top clamp and base are installed, place the putter in the machine (see photo 141). While holding the putter head in place with one hand, snug the back clamp up against the back of the putter (see photo 142a). This should hold the face of the putter up against the face bracket (142b). Next, tighten the top clamp (see photo 143).



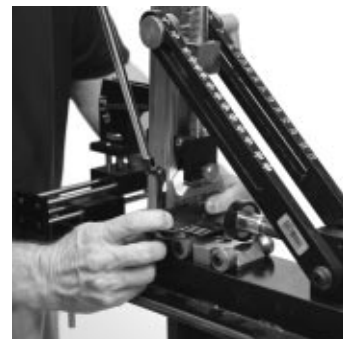
**Photo 138**



**Photo 139**



**Photo 140**

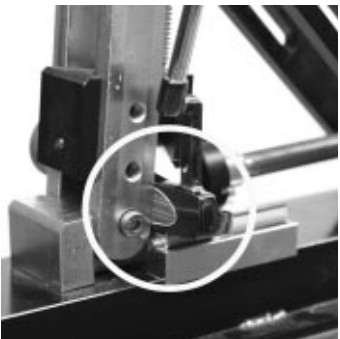


**Photo 141**

Once the top clamp and back clamp are securely holding the putter in place, tighten both the back clamp and top clamp firmly (see photo 144). Depending on the style of putter, the toe stop can be used to help prevent slippage. In this case, position the brass toe stop as shown in photo 145.



**Photo 142A**



**Photo 142B**

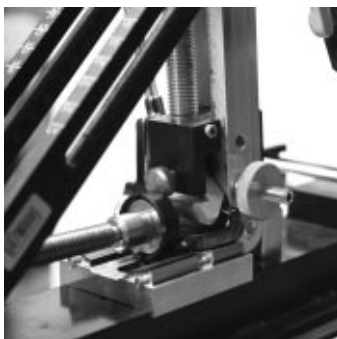


**Photo 143**

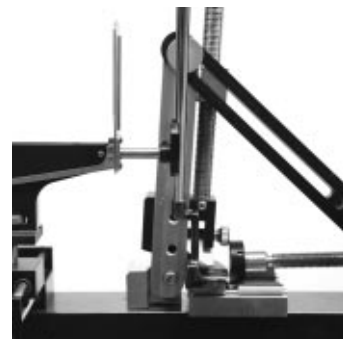


**Photo 144**

Once the head is secure, slide the shaft guide up against the shaft and note the loft reading (see photo 146). The loft reading of the "P" mark is 3°. The pointer on the loft scale will be pointing at 0 if the loft of the putter is 3°. If the putter is stronger, or has less loft than 3°, the pointer on the loft scale will point to the marks on the "S" side of the scale. If the loft of the putter is more than the 3°, the pointer on the loft scale will point to the marks on the "W" side of the scale. Each mark represents 1°. Example: The pointer points to the second mark on the "W" side of the scale. This indicates the loft is 2 degrees weak, or an actual loft of 5°. The putter is now ready for adjustment.



**Photo 145**



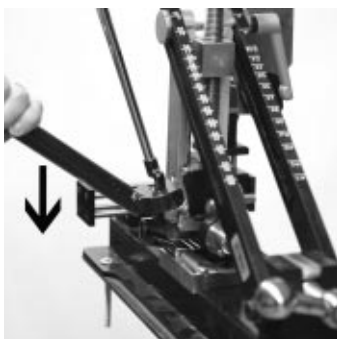
**Photo 146**

**Procedures for Bending putters with attached hosels**

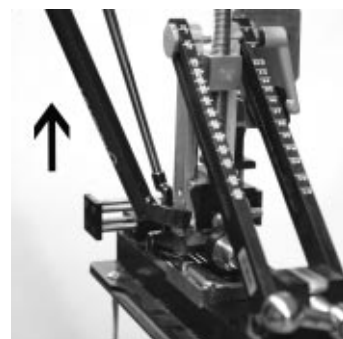
To adjust the lie of the putter that has an attached hosel, place the bending bar on the hosel parallel to the face as shown in photo 147. Downward pressure will make the lie of the putter flatter (see photo 148). Upward pressure will make the lie of the putter more upright (see photo 149). After pressure is applied, check to see if the putter head has moved in the clamp.



**Photo 147**



**Photo 148**



**Photo 149**

To change the loft of the putter, place the bending bar perpendicular to the face as shown in photo 150. Downward pressure will increase the loft of the putter (see photo 151). Upward pressure will decrease the loft of the putter (see photo 152). After pressure is applied, check to see if the putter head has moved in the clamp. If movement has occurred, re-position the putter head and repeat the bending operation until the desired result is achieved.

#### Set up and procedures for bending putters with double bend shafts

**\*\*Special Note:** Putter models that are designed with no hosels and have double bend putter shafts installed, require the use of a special bending bar for adjusting the loft and lie (Item #MDBB, not included with MA2019)(see photo 153).



Photo 150

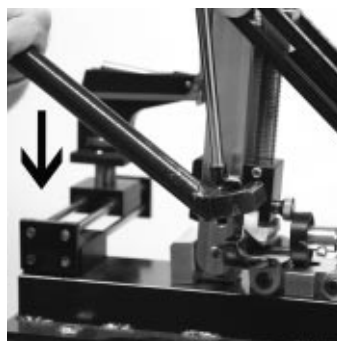


Photo 151



Photo 152

For putter models with double bend putter shafts that have a front to back dimension of less than 1 5/8", the same procedures for set up are used as previously described. Many of the most popular putter models with double bend shafts will have a front to back dimension greater than 1 5/8" (many mallet style putters – see photo 154 for example).

To prepare the MA2019 for a double bend shaft style putter with the front to back dimension greater than 1 5/8", set the slide bolt to the "P" position. Next, install the flat brass soling pad fixture. The base with the flat sole pieces has a long screw slot and slide on the machine base, allowing flexibility in positioning the sole pads (see photo 155). It may be necessary to try several positions, depending on the sole design. Once the best position for the wide sole brass pads is determined, tighten the screw bolt down to secure the base.

**\*\*Special Note:** The Sliding sole base can remain loose to allow the operator to slide the sole pads into position while placing the club head in the machine. The base tightening screw must be screwed in enough to prevent the screw head from coming in contact with the sole, but not so tight the slide will not move freely.



Photo 153

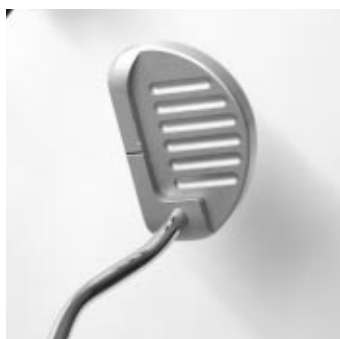


Photo 154



Photo 155



Photo 156

Once the flat brass soling pad fixture is in position, install the putter top clamp with the two rubber discs (see photo 156). Once the top clamp is installed, raise the top clamp by turning the T-Bar bolt so that there is enough clearance to allow the putter head to be placed on the flat brass soling pads.

To position the putter in the machine, place the sole on the flat brass soling pads so that the sole touches both pads (toe and heel). The face of the putter should be flat against the face bracket (see photo 157). You must leave enough clearance for the bending bar to be placed on the shaft for bending. Holding the putter head into position with one hand, snug the back clamp up against the back of the putter (see photo 158). This should hold the face of the putter up against the face bracket.



Photo 157



Photo 158

Next, tighten the top clamp (see photo 159). Once the top clamp and back clamp are securely holding the putter in place, tighten both the back clamp and top clamp firmly (see photo 160). Depending on the style of putter, the toe stop can be used to help prevent slippage. The putter is now ready for adjustment.



Photo 159



Photo 160

### Bending double bend shaft style putters

To adjust the lie of the putter that has a double bend shaft, place the bending bar on the shaft parallel to the face as shown in photo 161. Downward pressure will make the lie of the putter flatter (see photo 162). Reposition the double bend bar as in photo 163 and apply upward pressure to make the lie of the putter more upright. After pressure is applied, check to see if the putter head has moved in the clamp. If movement has occurred, re-position the putter head and repeat the bending operation until the desired result is achieved.



Photo 161

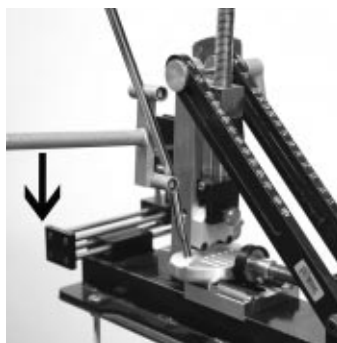


Photo 162

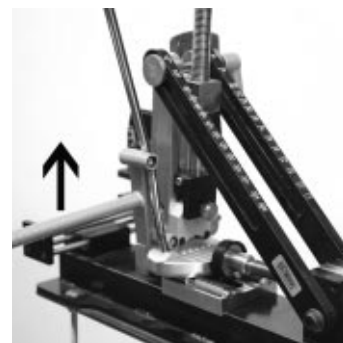


Photo 163

To change the loft of the putter, place the bending bar perpendicular to the face as shown in photo 164. Downward pressure will increase the loft of the putter (see photo 165). Reposition the bar as shown in photo 166 and apply upward pressure to decrease the loft of the putter. After pressure is applied, check to see if the putter head has moved in the clamp. If movement has occurred, re-position the putter head and repeat the bending operation until the desired result is achieved.



Photo 164

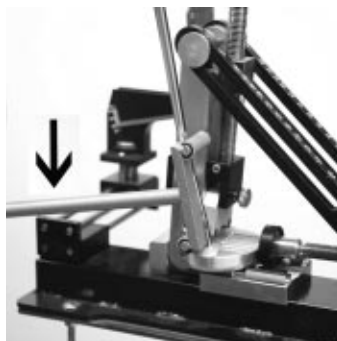


Photo 165

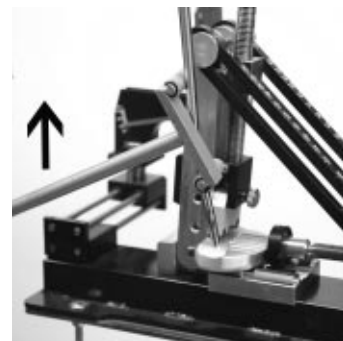


Photo 166

**Special Note:** Since there must be ample space for the bending bar, in many instances the putter can not be placed perpendicular to the ground line, which is necessary for getting accurate lie readings. The purpose of the putter bending feature of the machine is to secure the putter head for bending. Accurate measurements of lie can only be achieved using a golf club gauge. (see items LOLI2, GW1040, HGCG in The Golfworks catalog or on the Golfworks website [www.golfworks.com](http://www.golfworks.com)). It is important to remember the Maltby Premium Bending Machine is primarily a bending machine and accurate measurements can only be obtained when the face lines, or in the case of a putter the top line, and center of the sole are parallel to the ground line.