



Fitting System
using the MoRich
Fitting Ball



The MoRich Fitting Ball is designed to enable the pro shop operator to efficiently, effectively, and accurately measure the important factors needed to fit every bowler's hand. Using this fitting technique allows the bowler to comfortably deliver the ball, without excessive grip pressure, maximizing performance on today's lane conditions.

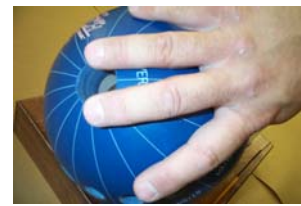
Begin by finding the smallest thumb hole on the fitting ball (these are the holes around the circumference of the bowling ball) into which the bowler's thumb will fit in. Extend the fingers towards the side of the ball marked "forward" for small hands. For larger hands, extend the fingers toward the side of the ball marked "reverse." Lay the hand over the scribed line so the middle and ring finger straddle the scribed line. Use the line that passes through the thumb hole being used to fit the bowler's hand.



Scribed Line for 1" Hole



Placing the Hand on the Line

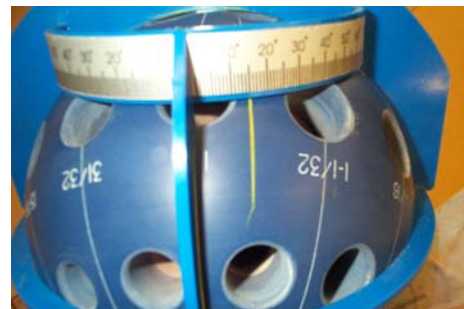


Fingers Straddling the Line

At the first knuckle, draw and extend a line between the bowler's middle and ring fingers. Measure the angle between the scribed line and the line drawn between the bowler's middle and ring finger. A Turbo 2n1 Pro-Sect is perfectly suited for this purpose. Use the following chart to determine the correct lateral finger pitches to be used for the bowler's grip.



Draw the Line Between the Bowler's Fingers



Measure the Angle of the Line (Ex. 16^o)

For Right Hand Bowler

	<u>Middle Finger</u>	<u>Ring Finger</u>
Line A	3/8" Left	1/2" Right
Line B	5/16" Left	9/16" Right
Line C	1/4" Left	5/8" Right
Line D	3/16" Left	11/16" Right
Line E	1/8" Left	3/4" Right

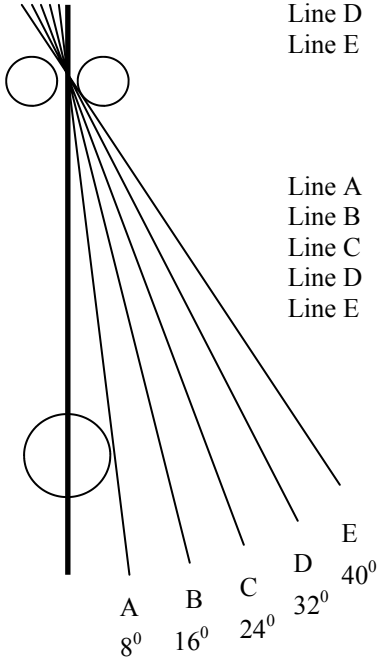


Diagram #1, For Right Hand Bowlers

For Left Hand Bowler

	<u>Ring Finger</u>	<u>Middle Finger</u>
Line A	1/2" Left	3/8" Right
Line B	9/16" Left	5/16" Right
Line C	5/8" Left	1/4" Right
Line D	11/16" Left	3/16" Right
Line E	3/4" Left	1/8" Right

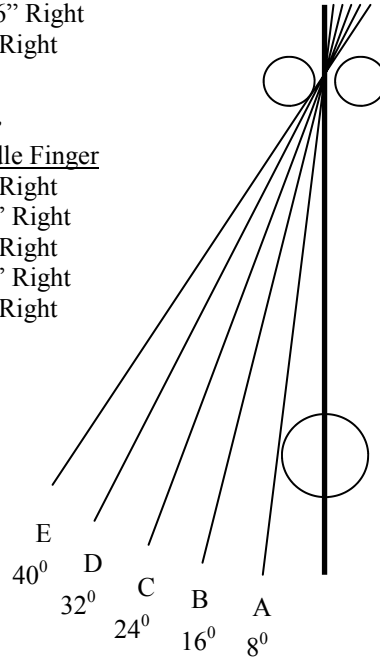
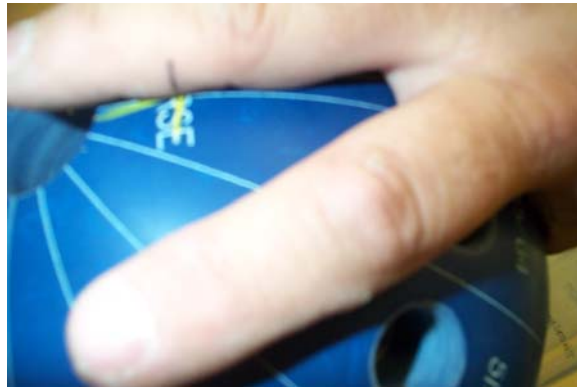


Diagram #1, For Left Hand Bowlers

Place the bowler's middle finger on the scribe line passing through the thumb hole being used. Put a mark on the scribed line measuring half the distance between the bowler's first and second knuckle.



Using one of the Jonell Span Gauges provided, measure the distance from the thumb hole to the mark. This will be the bowler's middle finger span measurement. It may need to be adjusted for finger flexibility later.

Rotate the hand slightly and place the bowler's ring finger on the scribed line passing through the thumb hole being used. Again, put a mark on the scribed line measuring half the distance between the bowler's first and second knuckle.



Using one of the Jonell Span Gauges, measure the distance from the thumb hole to the mark. This will be the bowler's ring finger span measurement. It may also need to be adjusted for finger flexibility later.

Check the bowler's middle finger and ring finger for flexibility to adjust either span, if necessary. Use the following system for adjusting the middle and ring finger spans to allow for finger flexibility:



90⁰, Very Flexible
Add 1/16" to span



70⁰, Normal Flex
Use Measured Span

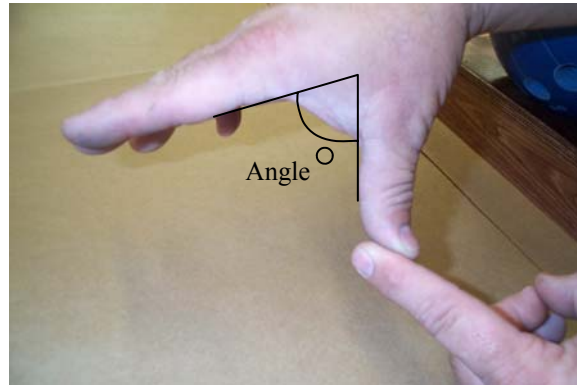


45⁰, Slightly Stiff
Subtract 1/16" from span



15⁰, Very Stiff
Subtract 1/8" off

To calculate the correct linear thumb pitch, forward or reverse, measure the tightness of the web by holding the bowler's palm parallel to the floor and pulling back on the thumb to create tension in the web as follows:



Estimate the thumb angle and refer to the Thumb Angle Conversion Pitch Chart on the next page to get the correct thumb pitch.

Determine the correct linear finger pitch, forward or reverse, from the bowler's basic linear thumb pitch using the following chart:

<u>Thumb Pitch</u>	<u>Finger Pitch</u>	<u>Thumb Pitch</u>	<u>Finger Pitch</u>
3/4 Reverse	1/2 Reverse	1/8 Forward	3/8 Forward
5/8 Reverse	3/8 Reverse	1/4 Forward	1/2 Forward
1/2 Reverse	1/4 Reverse	3/8 Forward	5/8 Forward
3/8 Reverse	1/8 Reverse	1/2 Forward	3/4 Forward
1/4 Reverse	-0-	5/8 Forward	7/8 Forward
1/8 Reverse	1/8 Forward	3/4 Forward	1 Forward
0 Reverse/Forward	1/4 Forward		

Adjust the measured thumb pitch according to the length of the thumb:

Long Thumb (longer than 2 3/8")

Add 1/8" reverse to linear thumb pitch (Subtract 1/8" forward for small spans)

Short Thumb (shorter than 1 7/8")

Subtract 1/8" reverse from linear thumb pitch (Add 1/8" forward for small spans)

Regular Thumb (1 7/8" - 2 3/8")

No Adjustment

If Necessary, adjust the linear thumb pitch for excessively dry (slick) skin or excessively moist (tacky) skin:

Dry Skin (Slick)

Subtract 1/8" reverse from linear thumb pitch

Moist Skin (Tacky)

Add 1/8" reverse to linear thumb pitch

Using the transparent cylindrical tubes, grab the tube following the directions on the tube to determine the correct lateral thumb pitch. The tube measures the natural gripping angle of the thumb which allows for the smoothest release.



Right Hander Gripping Tube



Left Hander Gripping Tube

Finally, adjust the linear finger pitches (forward or reverse) to allow for large lateral flexibility in the joint at the base of the thumb, if necessary. For hands using lines B or C on Lateral Finger Pitch Chart, add $1/16''$ forward to the middle finger pitch and subtract $1/16''$ forward from the ring finger pitch. This will give equal pressure on the pads of both fingers for bowlers with more than normal flexibility in the thumb.

Extremely flexible lateral thumb hinges will use lines D & E on the Lateral Finger Pitch Chart and require an adjustment of adding $1/8''$ forward pitch to the middle finger, along with subtracting $1/8''$ forward pitch from the ring finger to get equal pressure on the pads of both fingers.

Finally, to check the fit once the ball is drilled, place the bowler's gripping fingers in the ball one at a time. Check to see if there is any pressure on the bowler's finger nails.

Check the middle finger span by placing only the middle finger in the hole and then slide the thumb all the way into the thumb hole. If there is no pressure on the middle finger nail, then the span is correct. If there is some pressure on the finger nail, the span should be shortened by 1/16". If there is excessive pressure on the finger nail, the span should be shortened by 1/8". Repeat this procedure to check the ring finger span. This test procedure will confirm your fit for the bowler.

For consultation or technical support, please email our tech support from the MoRich website (www.morich.net), or call us toll-free at 1-877-530-0324. Thank you for your purchase.



Middle Finger Only in Ball



Ring Finger Only in Ball