

A VIEW ON FITTING

By Ron Hoppe

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How to determine if you have a fit problem

Tools Needed

Pitch gauges - thumb and finger.
Span gauge. Specification sheet. (See illustration A)
Available to bronze and silver level coaches in a kit

Span. Finger tip or conventional. (See illustration B)

Mark lines on fingers for a Fingertip or Conventional fit. Insert the thumb all the way in the thumb hole. Hold thumb in place so bowler doesn't pull thumb out a little to reach over to finger holes. If the mark on the finger misses the gripping edge of the finger hole, by the amounts below either short or long, you'll have a green, yellow or red light.

Line misses hole short or long by:	1/16 in	green light
	1/8 in	yellow light
	more than 1/8 in	red light

Thumb Pitch. Forward or Reverse. **Conventional or finger tip.** (See illustration C)

By using span gauge determine span drilled in ball (that is the distance from the gripping edge of thumb hole to gripping edge of finger hole.) write this number down. Using span chart determine recommended thumb pitch. Write this number down. Next by using thumb pitch gauge determine pitch of thumb hole drilled in ball. Write this number down.

If difference to chart forward or reverse is by	0 to 1/8 in	green light
	1/8 to 1/4 in	yellow light
	more than 1/4 in	red light

Thumb pitch. Left or Right. **Conventional or finger tip.**

If difference from ZERO is left or right by	0 to 1/8 in	green light
	1/8 to 1/4 in	yellow light
	more than 1/4 in	red light

Finger pitch. Conventional fit only. (See illustration D)

Use span chart for conventional.

If difference to chart forward or reverse is by	0 to 3/16 in	green light
	3/16 to 5/16 in	yellow light
	more than 5/16 in	red light

Finger pitch. Forward (finger tip only)

If difference from ZERO is forward by	0 to 1/8 in	green light
	1/8 to 1/4 in	yellow light
	more than 1/4 in	red light

Note: Pitching fingers forward can create a very slight increase in revolutions, however the forward pitch will also cause the student to miss their target 2 out of every 3 deliveries. There is also an increased risk of injury to the bowler's hand. Some professional bowlers may use extreme forward pitches.

Finger pitch. Reverse (finger tip only)

This pitch is used to accommodate stiff or arthritic fingers. Use of reverse pitch will also improve on accuracy.

If difference from ZERO is reverse by	0 to 1/2 in	green light
	1/2 to 3/4 in	yellow light
	more than 3/4 in	red light

Finger pitch. Left or Right (conventional or finger tip)

Add the two pitches together providing one is left and the other is right. If both are either left or right then subtract the smaller number of the two and that is your number for comparison.

If the amount adds up to	3/4 to 7/8 in	green light
	7/8 to 1 1/8 in	yellow light
	1/2 to 3/4 in	yellow light
	1 1/8 in or up	red light
	1/2 in or less	red light

The following are two very common pitches used currently. The first example is usually used with finger inserts, and can be for a right or left handed person. The second example would be for a right handed bowler, and usually a conventional grip.

Middle finger	3/8 in	left pitch
Ring finger	+ 3/8 in	right pitch
Total	6/8 in	green light

Middle finger	1/8 in	left pitch
Ring finger	+ 5/8 in	right pitch
Equals	6/8 in	green light

Note: These pitches are designed to create reasonably parallel holes being drilled into the ball and have very little effect on performance. They can also be changed to accommodate arthritic fingers.

SUMMARY

I did not include any information about SEMI-FINGER TIP. This fit was retired along with rubber balls.

At no point with the previous information have I talked about hole size. Specifically the thumb hole. The reason is simple, first the thumb hole size makes up only 20% of the overall fit, with the span being 40% and the thumb pitch 40%.

If the thumb hole is too tight it is very obvious, and if it is too big a few pieces of tape can correct the problem. I do believe the shape of the thumb hole should match the bowler's thumb.

Example: A thumb that is wider than thick should have a thumb hole made oval to match.

Another part of the thumb hole that should be looked at is the bevel at the top of the hole. This is very critical to creating consistent thumb timing. If a player has more than one ball (which is usually the case) all balls should be drilled the same, which includes the bevels.

The responsibility of the thumb during the swing and release is as follows:

To keep the ball securely on the hand and to release the ball at exactly the correct time.

When there is a problem with the span or thumb pitch the consistency of thumb timing will be affected.

Bad spans and thumb pitches will severely affect:-

ball speed (usually slower)
revolutions (usually less)
accuracy (usually *none*)

Any mistake made by a bowler will be multiplied by friction between the ball and the lane or the lack of it.

No amount of coaching can eliminate these problems.

Reactive resin balls skid more on oil and have more friction in the dry than any balls produced in the past. To help maintain control of ball reaction, today's bowler has had to increase the ball speed. This is another added stress to the hand.

Never in the history of bowling has more emphasis been placed on the pro shop operator to create the best possible fit. There are many factors that have brought this about.

Last note: All the previous information does not apply to fitting and drilling spinners (**HELICOPTERS**). That's another story.

Ron Hoppe

ILLUSTRATION "A"

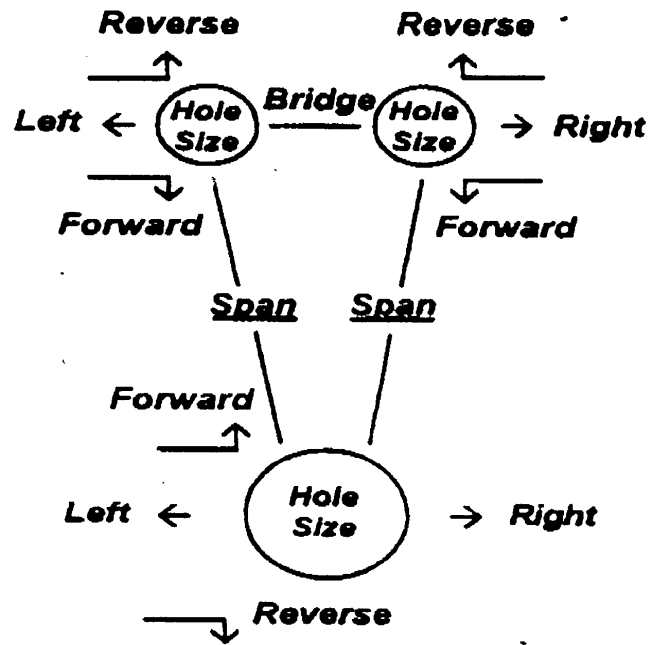
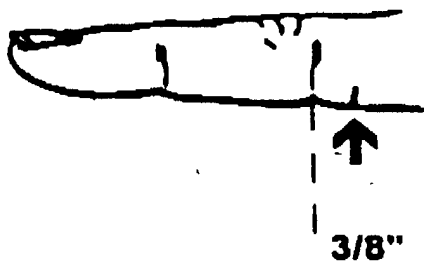
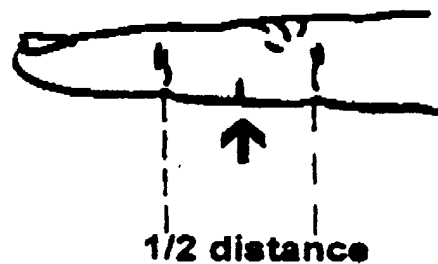


ILLUSTRATION "B"

Conventional fit span line



Finger Tip span line



Note: For conventional fit only.

Children 9 years to 13 years.....span mark line is $5/16$ inches.

Children 8 years and younger...span mark line is $1/4$ inches.

ILLUSTRATION “C”

Span and Thumb Pitch Chart

Finger Tip and Conventional

Span in Inches

Pitch

If span is this.....	Then the thumb pitch is this...
3 Inches	5/8 Forward
3 1/8 Inches	9/16 Forward
3 1/4 Inches	1/2 Forward
3 3/8 Inches	7/16 Forward
3 1/2 Inches	3/8 Forward
3 5/8 Inches	5/16 Forward
3 3/4 Inches	1/4 Forward
3 7/8 Inches	3/16 Forward
4 Inches	1/8 Forward
4 1/8 Inches	1/16 Forward
4 1/4 Inches	0 Forward
4 3/8 Inches	1/16 Reverse
4 1/2 Inches	1/8 Reverse
4 5/8 Inches	3/16 Reverse
4 3/4 Inches	1/4 Reverse
4 7/8 Inches	5/16 Reverse
5 Inches	3/8 Reverse
5 1/8 Inches	7/16 Reverse
5 1/4 Inches	1/2 Reverse
5 3/8 Inches	9/16 Reverse
5 1/2 Inches	5/8 Reverse

ILLUSTRATION “D”

Conventional Finger Pitch Chart

Span in Inches

Finger Pitches

If the span is this....	Then the finger pitch is this..
3 Inches	3/8 Forward
3 1/8 Inches	3/8 Forward
3 1/4 Inches	3/8 Forward
3 3/8 Inches	3/8 Forward
3 1/2 Inches	3/8 Forward
3 5/8 Inches	5/16 Forward
3 3/4 Inches	5/16 Forward
3 7/8 Inches	5/16 Forward
4 Inches	1/4 Forward
4 1/8 Inches	1/4 Forward
4 1/4 Inches	1/4 Forward