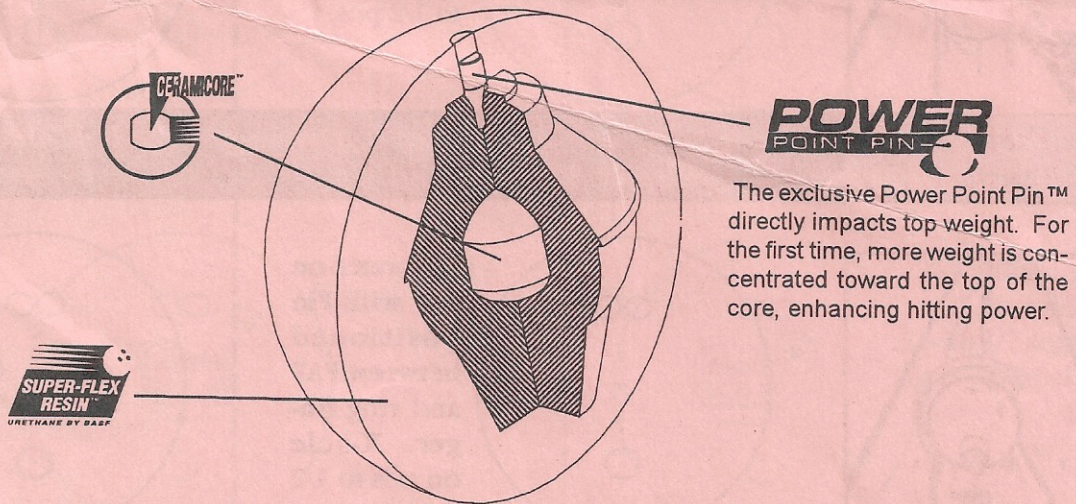


PULSE™

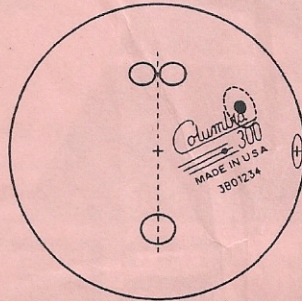
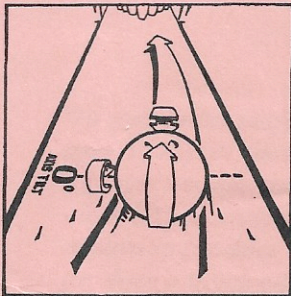
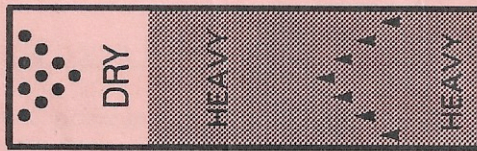
THIS DRILL SHEET IS DESIGNED TO BE USED AS A QUICK REFERENCE CHART FOR DETERMINING THE OPTIMUM DRILL PATTERN BY MATCHING SPECIFIC BOWLING STYLES TO SPECIFIC LANE CONDITIONS.



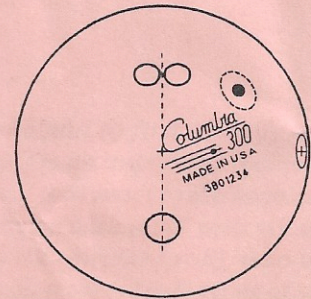
COLUMBIA 300

Columbia bowls the world over.™

Match your roll with a common lane condition to select a drill pattern.



Pin and cg located 3-3/8" from PAP. X-hole on axis to 1/2 positive.

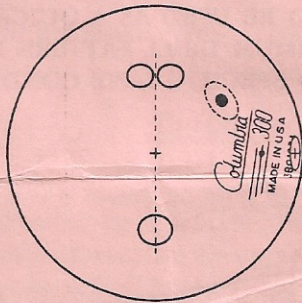
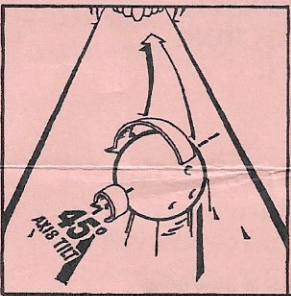


Pin a cate from hole to 1 tive.

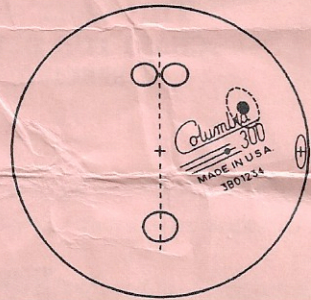
Probable Ball Surface

0 - 2" with 2.5 - 3.5 oz. top wt.
Degree 600 Ball Polish

Pin 0 - 2" with 3.0 - 4.0 oz.
Degree 1200 Ball Polish



Cg 2" from PAP and Pin located 3-3/8" from PAP. X-hole on axis to 1/2 pos.

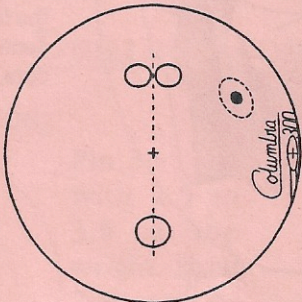
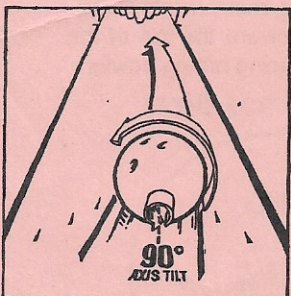


Pin a cate PAP. on a posi

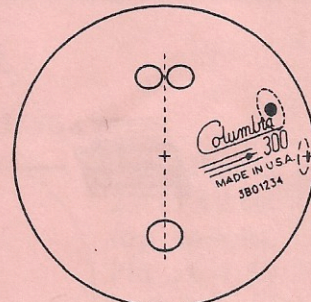
Probable Ball Surface

Pin 1 - 3" with 2.5 - 3.5 oz. top wt.
Degree 320 Ball Polish

Pin 0 - 2" with 2.5 - 3.5 oz.
Degree 600 Ball Polish



Cg located on PAP with Pin positioned between PAP and ring finger. X-hole on axis to 1/2 positive.



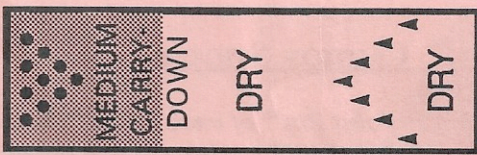
Pin a cate from hole one axis posi

Probable Ball Surface

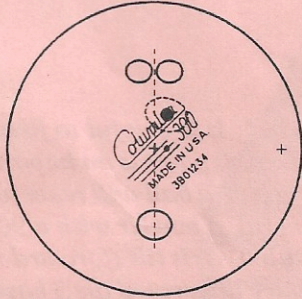
Pin 2 - 3+ with 2 - 3 oz. top wt.
Degree 320 Ball Polish

Pin 0 - 2" with 2.5 - 3.5 oz.
Degree 600 Ball Polish

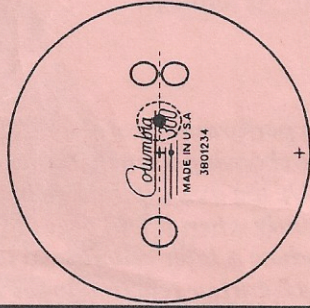
All diagrams assume Positive Axis Point is 6" over from center of grip.



and cg lo-
d 4-1/2"
PAP. X-
on axis
1/2 posi-



Pin located
5-1/2" from
PAP with 1/2
positive on la-
bel.



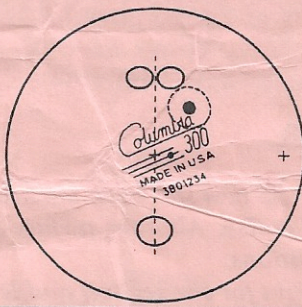
Pin located
6" from PAP
with 1/2 posi-
tive on label.

z. top wt.
ish

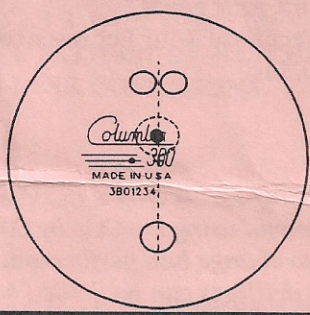
*Pin 0 - 1" with 3 - 4+ oz. top wt.
Degree 1200 Ball Polish*

*Pin 0 - 2" with 2.5 - 3.5 oz. top wt.
Degree 320 Ball Polish*

and cg lo-
d 1 1/4" from
X-hole
axis to 1/2
ive.



Pin located
5" from PAP
with 1/2 posi-
tive on label.



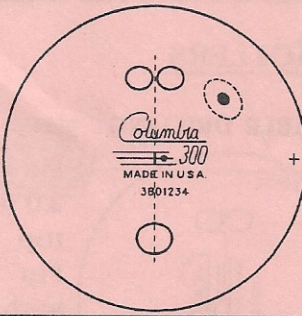
Pin located 6"
from PAP
with 1/2 nega-
tive on label.

z. top wt.
ish

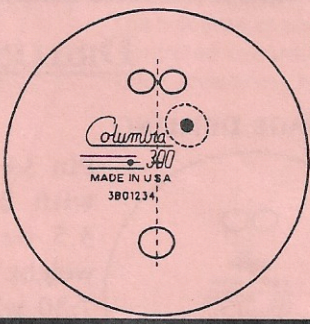
*Pin 1 - 2" with 3 - 4 oz. top wt.
Degree 1200 Ball Polish*

*Pin 0 - 2" with 2 - 3 oz. top wt.
Degree 320 Ball Polish*

and cg lo-
d 3-3/8"
PAP. X-
posit-
d 2" past
to 1/2
ive.



Pin located 4"
from PAP
with 1/2 posi-
tive on label.



Pin located 5-
1/2" from PAP
with 1/2 nega-
tive on label.

z. top wt.
ish

*Pin 2 - 3" with 2.5 - 3.5 oz. top wt.
Degree 1200 Ball Polish*

*Pin 1 - 2" with 2 - 3 oz. top wt.
Degree 320 Ball Polish*

See back page for additional information.

POWER POINT PIN™ CAUTION STICKER

A caution sticker has been applied around the Power Point Pin™ of each PULSE™ ball to indicate the area that should not be drilled into. This area was determined by using 1" pitch towards the pin. Use your own discretion when using less pitch. Avoid drilling into the pin by positioning the pin above or below the fingers while keeping the pin the same distance from the PAP. Strict adherence to this policy will avoid drill-bit damage.

EXPLAINING AXIS TILT

"To maximize performance of the PULSE™, with Super-Flex Resin™, it is helpful to first identify your axis tilt before choosing a particular drilling layout. Although the axis point is an important locator of a player's track, the axis tilt is more instrumental in determining how a ball will react to the lane, and more importantly when it will begin to react to the lane. In general, a bowler with a 90° axis tilt will naturally produce a later reaction to the lane than a bowler with 0° axis tilt (forward roll), who will produce a much earlier reaction to the lane. For this reason, I have illustrated the 3 basic types of axis tilts and matched them with four common lane conditions. Choose the axis tilt illustration which best resembles your roll, then choose the lane condition which most resembles the one at your bowling center and use that drilling pattern (or a variation there of). These are just a few suggestions to make the PULSE™ suit your game."

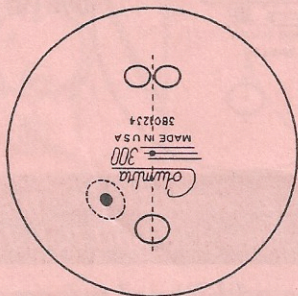
Dave Smart, Technical Tour Representative
Columbia 300, Inc.

THINGS TO REMEMBER

1. "Probable Surface" is only a recommended surface that should best suit each particular drilling. We recommend using ProGrip by Columbia 300 Degree Ball Polish. Alter the surface as necessary if you wish to change ball performance for varying lane conditions.
2. Any of the drillings can be drilled back to negative side-weight for earlier roll and less backend.
3. PAP is defined as Positive Axis Point.
4. Cg is defined as center of gravity (found near the Columbia 300 label).
5. Recognize that all illustrations shown are for right-handers. They must be reversed for left-handers.
6. **DO NOT DRILL ANY HOLES DEEPER THAN 2-3/4" TO AVOID HITTING THE CERAMICORE™.**

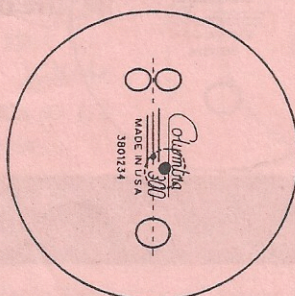
DRILLINGS FOR FULL ROLLERS

LEVERAGE DRILLING



Pin 3+" out
with 2.5 to
3.5 oz. top
weight. Pin at
7:30 with cg
in center of
grip.

STABLE DRILLING



Pin 0-2" with
2.0 to 3.0 oz.
top weight.
Pin at 4:30
with cg in
center of grip.