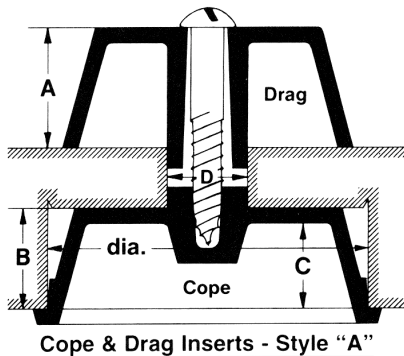


Precision Patterns in Wood – Plastic – Metal

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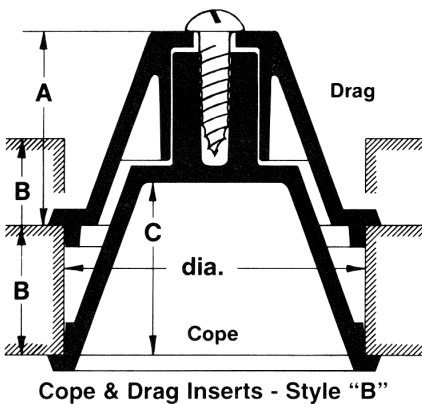
Introduction of Cope & Drag Inserts

Here it is, the best mold alignment system available to save you time and money: Our patented **Cope & Drag Inserts** create a quick, simple and accurate alignment of cope & drag mold halves. They eliminate the need for line up cores, are easily installed, and guarantee a perfect match every time. Use them on matchplates, match-boards, insert or cope & drag boards. Use them also in molding boxes for flaskless molding, on automatic molding machines for core alignment, and for any alignment system needs. Once you have used them, experienced the efficiency and time savings they provide, you



will use them for all your mounted patterns. Two or three inserts are all it takes to correct any wear on pins or misalignment problems you may have. They work independent from alignment pins, are mounted next to patterns, and create alignment holes and corresponding buttons in each mold half. They are used in greensand, airset/no bake molding, in vacuum molding for sand-castings, on automatic molding machines and many other means.

We have two different styles of inserts: style "A" and style "B". Both have mounting rims, which guarantee the correct depth of the cope insert. These rims, and the additional height of the drag insert, leave impressions in the sand which become sand traps, necessary for flaskless molding. They also make it possible to use either insert half on the cope or drag side.



Style "A" Inserts consist of two parts: one drag and one cope half. They are used in two ways: mounted on matchboards one above the other, or separately, like on cope & drag boards or molding boxes. They are available in 4 sizes and 3 different depths, and are made out of ABS plastic.

Style "B" Inserts consist of two parts specifically designed for matchplates and matchboards, including automatic molding machines. Both halves telescope together, and interlock at the parting line through a hole on either plates or boards of various thicknesses. Their inter-locking connection creates the deepest matching buttons possible. On 3/8" or 1/2" thick plates they produce a 3/4" or 1" deep bottom respectively. They can be mounted from either side, and one screw will keep both halves securely mounted. **Style "B" Inserts** are made out of a **tough new, non-sticking and acid-resisting plastic**, and are available in 4 different sizes and 3 different depths.

To install our inserts easily into wood we designed a cutter holder with a long 1/2" dia. pilot, and with inter-changeable cutting blades for all sizes of our inserts. Also available is a short video tape explaining the advantages of our inserts, showing how to install them, and when to use style "A" or style "B" inserts.

Now available: Style "B" Gray Inserts with **ZERO – TOLERANCE** on the diameter.

Sizes 1.5 B-O-T, 1.75 B-O-T, and 2.5 B-O-T for green sand molding; at **NO EXTRA COST TO YOU!**

As a patternmaker for almost 50 years, with quality and reliability in mind, I have designed, tested, and re-tested our inserts, and I guarantee them to be the fastest and easiest way of creating a perfect alignment of mold halves for the best quality castings possible.

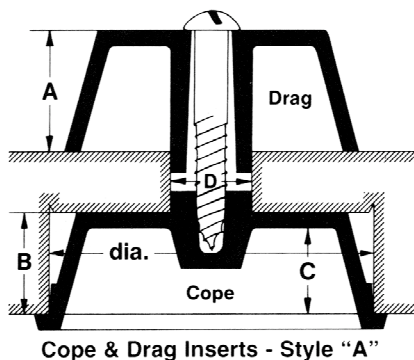
All our products are 100% unconditionally guaranteed!

Mounting Instructions for Cope & Drag Inserts Styles “A” and “B”

Style “A” Inserts on Matchboards:

Locate the spot for the inserts on the cope side: Then drill the matching holes of 1/2” dia. for all sizes except the #1.5A where a 3/8” dia. hole is needed. Counterbore from the cope side by using a flat bottom cutter on a pilot hole, or use our specifically designed cutter holder with a long 1/2” dia. pilot and interchangeable cutting blades for all sizes of our inserts. We recommend that you counterbore all holes .015 - .020” deeper than needed. The mounting rim will always keep the inserts at the correct depth for precise tolerances. They also create a sand trap to collect the loose sand which rubs off during closing mold halves. For secure mounting use a #12 screw for all inserts of style “A” or “B”, except for the #1.5A insert for which you will need a #10 screw. Screw length will vary according to your specific application.

Remember: To achieve perfect matches you must drill a precise hole!



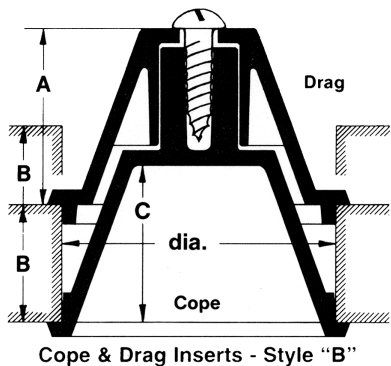
Style “A” Sizes

#	1.5A	2A	2.5A	2.5AA	3.5A
dia.	1.5	2	2.5	2.5	3.5
A	.5	.750	1.25	1.25	1.25
B	.5	.625	1	.625	1
C	.437	.531	.906	.531	.906
D	.375	.5	.5	.5	.5

Note: The 2.5A drag insert halves are also used for 2.5AA size inserts.

Style “B” Inserts on Matchplates and Matchboards:

Drill the holes for the selected insert size at 90° straight through matchplates or matchboards. Then simply engage the two insert halves from either side. They telescope and interlock at the parting line. For all style “B” inserts use a #12 screws to keep them securely mounted on plates or boards of various thicknesses. The inserts can be modified for thinner plates for special applications (see instructions on the reverse side).



Style “B” Sizes

#	1.12B	1.5B	1.75B	2.5B
dia.	1.12	1.5	1.75	2.5
A	1	.875	1.125	1.125
B	.5 – 1.125	.5 – 1.125	.625 – 1.125	.75 – 1.125
C	.875	.75	1	1

Style “B” inserts are useable on materials of various thicknesses. Note the above chart.

Style “A” Inserts on Insert Boards, in Molding Boxes, etc., when mounted separately:

Locate the spot for inserts on the cope side, and drill the matching holes all the way through. Then match the mounting surfaces face to face, but drill only 5/16” into the drag half for easier mounting of the drag inserts. To mount the cope inserts, counterbore just like style “A” inserts on matchboards (see above). One screw from the backside of the board will keep the insert in place. When boards are too thin for a screw use plastic body filler to glue the inserts in. Body filler adheres well to our ABS plastic inserts

When using our cutterholder for any inserts, all boards should be securely clamped to a machine surface!

All our products are 100% unconditionally guaranteed!

How to Modify Styles "B" Inserts for Thinner Plates or Boards

Inserts #1.5B are produced for plates of 1/2" and thicker. Remove 1/8" from the length of the stem of the cope insert, and it will fit on 3/8" plates. Then hold the drag insert in a jig in a lathe, and remove .010" from the inside wall. Also reduce the height of the collar and ribs by 1/8".

Inserts #1.75B are produced for plates of 5/8" and thicker. We have changed our drag die so that only the stem of the cope insert needs to be reduced by 1/8", and then both halves are ready for 1/2" plates. We left the stem 1/8" longer than they were originally designed for on 5/8" plates, so that they now have provide better interlocking on thicker plates or boards.

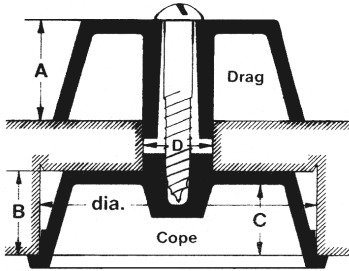
Inserts #2.5B are produced for plates or boards of 3/4" and thicker. To make them fit on thinner plates, remove the amount of material needed as above on #1.5B Inserts (minimum application is on 1/2" plates).

All our style "B" inserts are made out of a **tough new, non-sticking and acid resistant plastic**, and are available in 4 sizes and 3 different depths.

We also have modified inserts in stock!

The following diagrams illustrate our inserts:

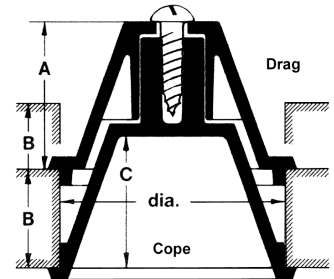
Style "A" Sizes



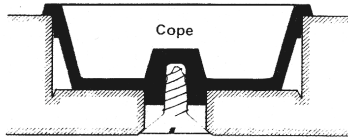
Cope & Drag Inserts - Style "A"

#	1.5A	2A	2.5A	2.5AA	3.5A
dia.	1.5	2	2.5	2.5	3.5
A	.5	.750	1.25	1.25	1.25
B	.5	.625	1	.625	1
C	.437	.531	.906	.531	.906
D	.375	.5	.5	.5	.5

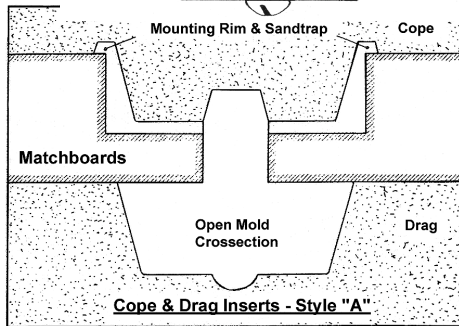
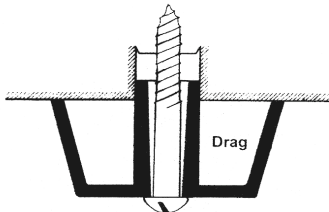
The 2.5A drag insert halves are also used for 2.5AA size inserts.



Cope & Drag Inserts - Style "B"



Style "A" Inserts Used Separately

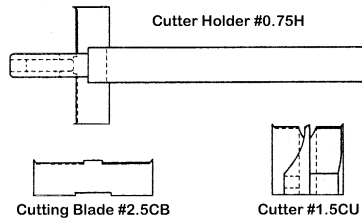


Cope & Drag Inserts - Style "A"

Woodcutting Tools for Inserts

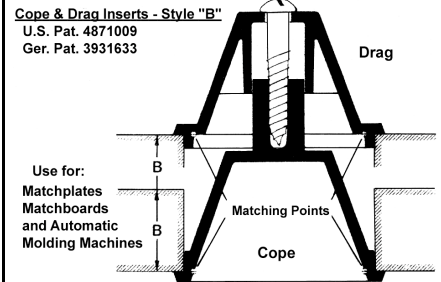
- #1.5 CU, 1.5" dia. cutter with 3/8" dia pilot hole
- #0.75 CH, 0.75" dia cutter holder
- 1/2" long pilot
- #1.5 CB, 1.5" dia cutting blade*
- #1.75 CB, 1.75" dia cutting blade*
- #2 CB, 2" dia cutting blade*
- #2.5 CB, 2.5 dia cutting blade*
- #3.5 CB, 3.5 dia cutting blade*

***Cutting Blades are interchangeable**



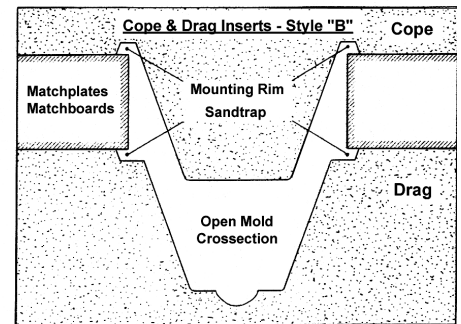
Cutter Holder #0.75H

Cutting Blade #2.5CB



Cope & Drag Inserts - Style "B"
U.S. Pat. 4871009
Ger. Pat. 3931633

Use for:
Matchplates
Matchboards
and Automatic
Molding Machines

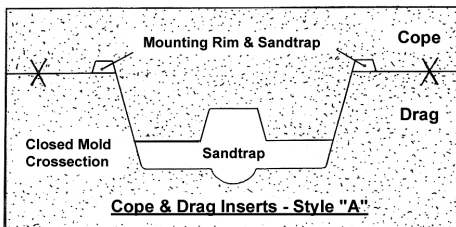


Cope & Drag Inserts - Style "B"

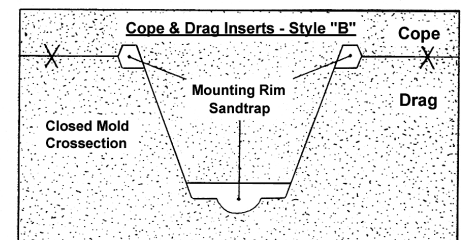
Style "B" Sizes

#	1.12B	1.5B	1.75B	2.5B
dia.	1.12	1.5	1.75	2.5
A	1	.875	1.125	1.125
B	.5 - 1.125	.5 - 1.125	.625 - 1.125	.75 - 1.125
C	.875	.75	1	1

Style "B" Inserts are useable on materials of various thicknesses. Note the above chart.



Cope & Drag Inserts - Style "A"



Cope & Drag Inserts - Style "B"