

## THE ORIGINAL UNI-LOC® PIN INSTALLATION PROCEDURE 321D REV03 5/19/08

UNI-LOC® Pins are best installed during the latter stage of finishing the butt. It is suggested to maintain less than .002 run-out in the front of the cue and less than .005 in the rear. You can accomplish this by holding the front of the cue in soft jaws in a chuck, or collet system that matches the taper of your cue. The rear of the cue will need to be supported in a similar manor. An alternative would be a split plastic bushing (see sketch #1).

The following is a suggested list of tools, that will enable the installer to correctly install a UNI-LOC® pin and UNI-LOC® insert. After completing the installation the pin should have a run-out of less than .001

Items marked (\*) are useful tools, for other cue building operations.

The following is a list of tools available at MSC Industrial Supply 1-800-645-7270 and where noted Atlas Billiard Supply 1-800-283-7845.

- \*1pc Phase-2 Quick change lathe tool post series 100 order # 09043019
- \*1pc Aloris - axa dovetail drill chuck holder order # 09061151
- 1 pc Premium Import - #4 HSS center drill order # 01031244
- \*1 pc Economy Import magnetic base with fine adjustment order # 06580039
- \*1 pc Fowler Test indicator order # 893058890
- 1 pc Atrax 17/64 solid carbide drill order # 85254175
- 1 pc 5/16-14 - Nut tap (*Available at Atlas*)
- 1 pc Scientific Cutting Tools ¼ carbide boring tool order # 0142837
- 1pc Cleveland reamer - .3125 diameter order # 63751200
- \*1 pc Import Reamer Blank ¼ diameter order # 01100163

It is assumed the installer has a good working knowledge of wood and metal working equipment. It is extremely important to follow all safety instructions and procedures accompanying your equipment, and to always wear your safety glasses!

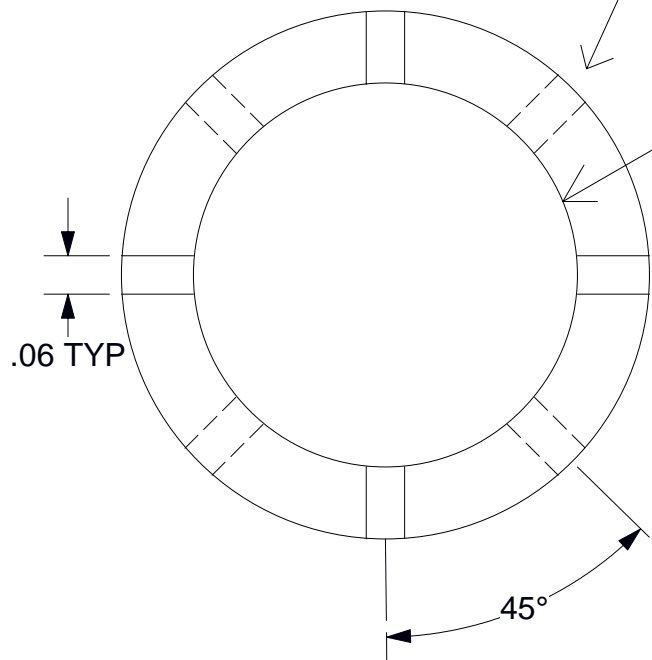
- 1) You will not need your tailstock, correct installation can be accomplished simply by using you're cross slide with the above referenced tooling.
- 2) Mount the Phase-2 Quick change lathe tool post on your cross-slide and snug it down reasonably square to your spindle.
- 3) Clean the Import Reamer Blank ¼ diameter and the Aloris - axa dovetail drill chuck. Snug the reamer blank in the chuck and mount the holder on the tool post.
- 4) Rest your Economy Import magnetic base with fine adjustment and the Fowler Test indicator on the lathe ways, or ½ plate. Place the indicator tip at the back edge of the blank. Move the carriage forward and note the reading. Make the necessary corrections by tapping the tool post left, or right, until the reading at the back of the blank is the same as the front of the blank ("0-0"). Repeat this procedure on the topside of the blank to assure the pin is parallel to the headstock. (you may need to shim the bottom of the tool post to attain the correct reading). Tighten the tool post securely and repeat the procedure to assure no movement has occurred. (See Sketch #2)

- 5) Mount the indicator on or in the spindle and sweep the blank circularly and adjust the concentricity of the drill chuck and the spindle. Tighten the tool by securing the 9/16 NUT (SEE SKETCH #3).
- 6) Now your drill chuck should be aligned precisely with the center of the headstock. Make sure you are dialing towards the right, eliminating backlash and set your cross-feed dial to "0" and tighten. This will allow you to perform other operations and return to the precise centerline of your headstock. (Provided you don't change the "0" setting).
- 7) Load your butt in the spindle and check its run-out at the front and rear of the cue. Adjust its run-out until it meets your run-out criteria.
- 8) Position the Premium Import - #4 HSS center drill in the chuck and center drill to a .27 diameter.
- 9) Remove the center drill and position the Atrax 17/64 solid carbide drill to hang out approximately 2-3/8 and drill 2.3 minimum deep.
- 10) Remove the drill and position the 5/16-14 - Nut tap in the chuck and tap 2.1 deep.
- 11) Remove the tap and position the Scientific Cutting Tools 1/4 carbide boring tool in the chuck and bore to .306-.311 diameter 1.14 deep. Note: (If you can size the bore to .3125 -.3130, operation 12 can be eliminated.
- 12) Remove the boring tool and position the reamer in the chuck. Ream the hole 1.4 deep to size the bore to .3125 -.313
- 13) By hand, re-tap the 5/16-14 thread to remove burrs, and blow or vacuum foreign material and wood chips from the hole.
- 14) Put the appropriate amount of epoxy in the hole, and on the pin, and install the pin into the butt.

*THINGS TO LOOK OUT FOR:*

- If your tap doesn't follow the hole and you make the bore too large the pin will not run true.
- If your tap doesn't follow the hole and you make the bore correctly the pin will bind during installation.
- You may have difficulty with operation #10, (if so use a Micro Tap Guide order# 95267472 available at MSC, 1-800-645-7270.) to support the tap, and a wrench to tap the hole. Clearing the chips every 3-4 turns. When the tap reaches final depth, check the run-out of the tap with the indicator and confirm its run-out.

4 SLOTS .06 WIDE X .75 LONG FAR SIDE  
90° APART

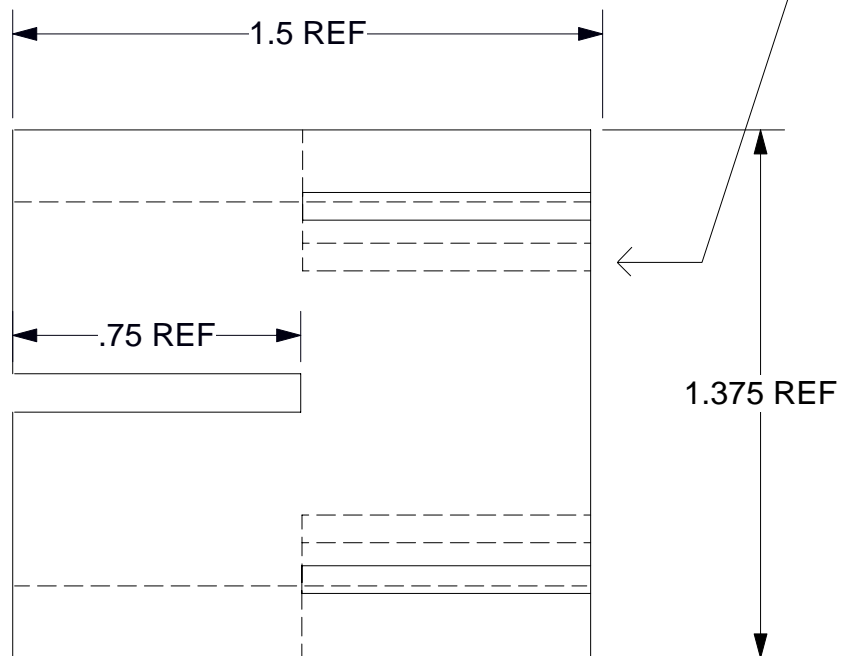


MATCH TAPER  
OF CUE

.06 TYP

45°

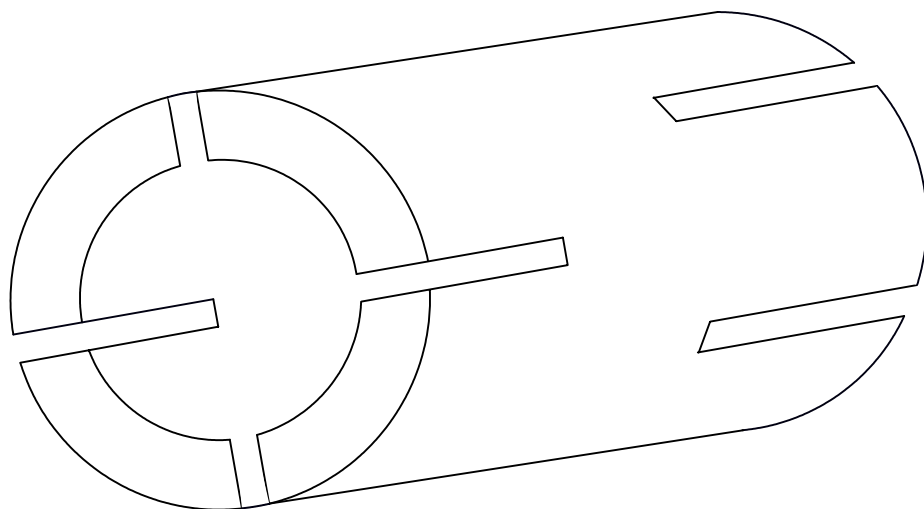
4 SLOTS .06 WIDE X .75 LONG NEAR SIDE  
90° APART



1.5 REF

.75 REF

1.375 REF



## UNI-LOC CORP. OF AMERICA

54 WAREHOUSE LANE ROWLEY, MA 01969

TEL 978-273-1315 FAX 978-948-2504 WWW.UNI-LOC.COM

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES

TOLERANCES:

ANGLES ± 1°

1 PLACE ± .02

2 PLACE ± .01

3 PLACE ± .005

MACHINE FINISH 63/

MAT'L DELRIN

DRAWN

PDC

CHECKED

DH

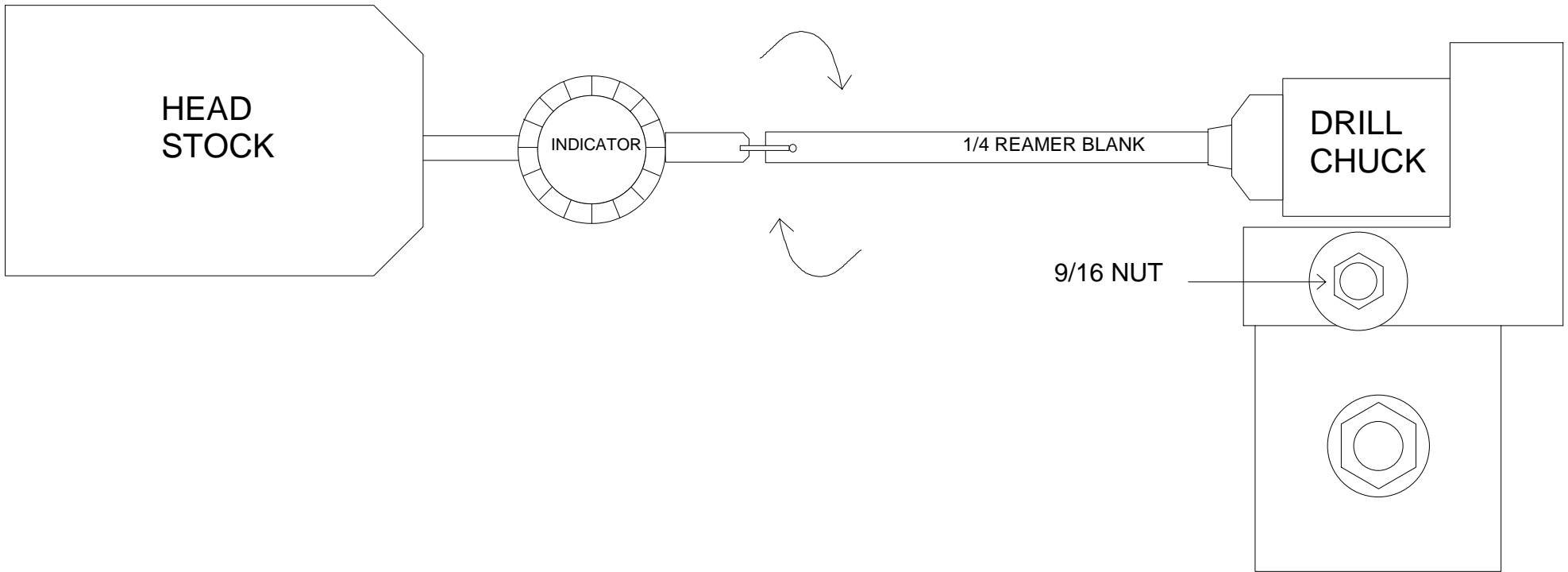
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF  
UNI-LOC CORP. EXCEPT AS AUTHORIZED BY UNI-LOC CORP. IN A  
SEPARATE WRITING, THIS DOCUMENT AND ITS INFORMATION  
SHALL NOT BE COPIED, USED OR DISCLOSED TO OTHERS, AND  
SHALL BE RETURNED TO UNI-LOC CORP. UPON REQUEST.

TITLE SPLIT BUSHING

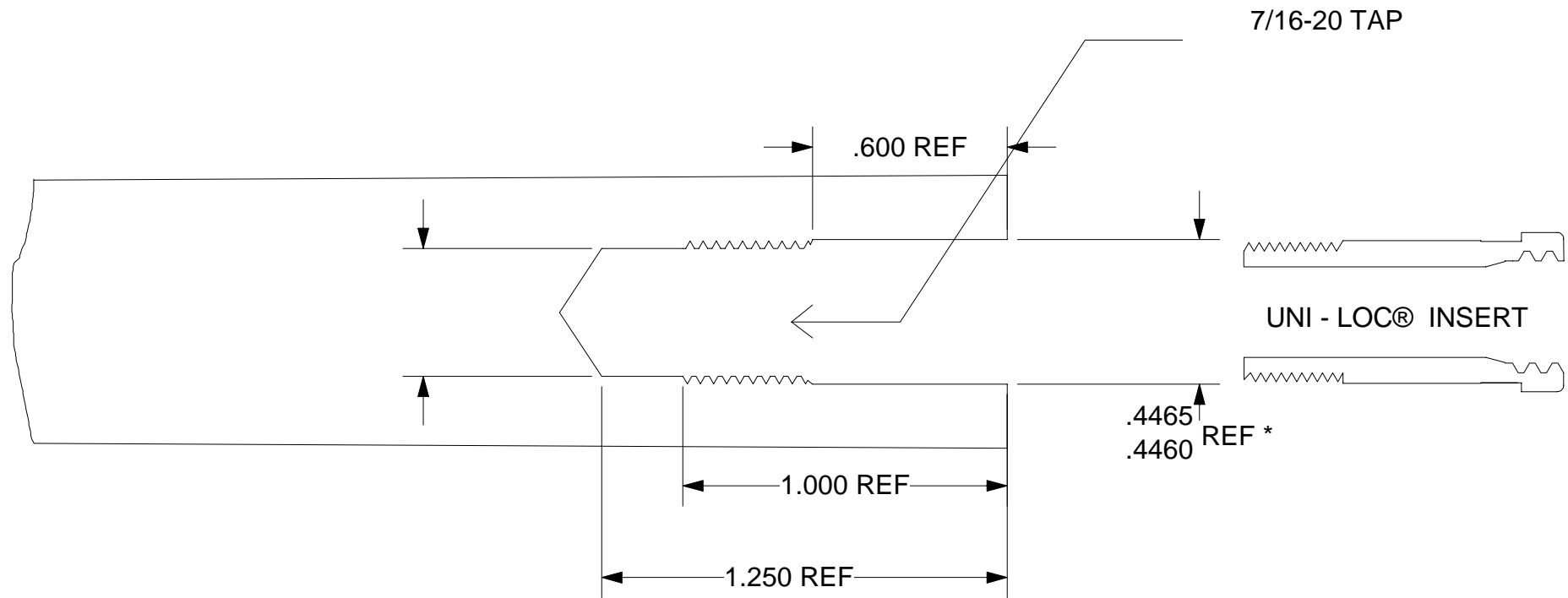
DRG NO. SKETCH # 1

REV  
C





<b>UNI-LOC CORP. OF AMERICA</b> 54 WAREHOUSE LANE ROWLEY, MA 01969 TEL 978-273-1315 FAX 978-948-2504 WWW.UNI-LOC.COM				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES $\pm 1^\circ$ 1 PLACE $\pm .02$ 2 PLACE $\pm .01$ 3 PLACE $\pm .005$	DRAWN	PDC	CHECKED	DH
	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UNI-LOC CORP. EXCEPT AS AUTHORIZED BY UNI-LOC CORP. IN A SEPARATE WRITING, THIS DOCUMENT AND ITS INFORMATION SHALL NOT BE COPIED, USED OR DISCLOSED TO OTHERS, AND SHALL BE RETURNED TO UNI-LOC CORP. UPON REQUEST.			
MACHINE FINISH $\nabla 63$	TITLE    STEP # 5			
MAT'L	DRG NO.    SKETCH # 3			REV C



## UNI-LOC® INSERT INSTALLATION PROCEDURE

1. # 2 CENTER DRILL TO A 5/16 DIAMETER
2. .390 DIAMETER DRILL 1.25 DEEP
3. 7/16-20 TAP 1.00 DEEP
4. BORE .446 DIAMETER .600 DEEP
5. REMOVE BURRS
6. EPOXY UNI-LOC® INSERT IN PLACE
7. \* MANUFACTURER'S RECOMMENDATION

UNI-LOC CORP. OF AMERICA				
54 WAREHOUSE LANE ROWLEY, MA 01969				
TEL 978-273-1315 FAX 978-948-2504 WWW.UNI-LOC.COM				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± 1° 1 PLACE ± .02 2 PLACE ± .01 3 PLACE ± .005	DRAWN	PDC	CHECKED	DH
	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF UNI-LOC CORP. EXCEPT AS AUTHORIZED BY UNI-LOC CORP. IN A SEPARATE WRITING, THIS DOCUMENT AND ITS INFORMATION SHALL NOT BE COPIED, USED OR DISCLOSED TO OTHERS, AND SHALL BE RETURNED TO UNI-LOC CORP. UPON REQUEST.			
MACHINE FINISH 63/	TITLE UNI-LOC INSERT INSTALLATION			
MAT'L WOOD	DRG NO.	W50276N	REV	C