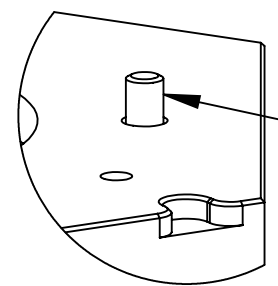


REV.	DESCRIPTION	INITIATOR	DATE
01	INITIAL DRAWING	JAR	3/9/2018

3X M10 SHCS PROVIDED TO FASTEN TOOL SIDE AID TO TOOL PLATE IF THE TOOL PLATE IS NOT PARALLEL TO THE FLOOR WHILE RESTING IN THE TOOL STAND.

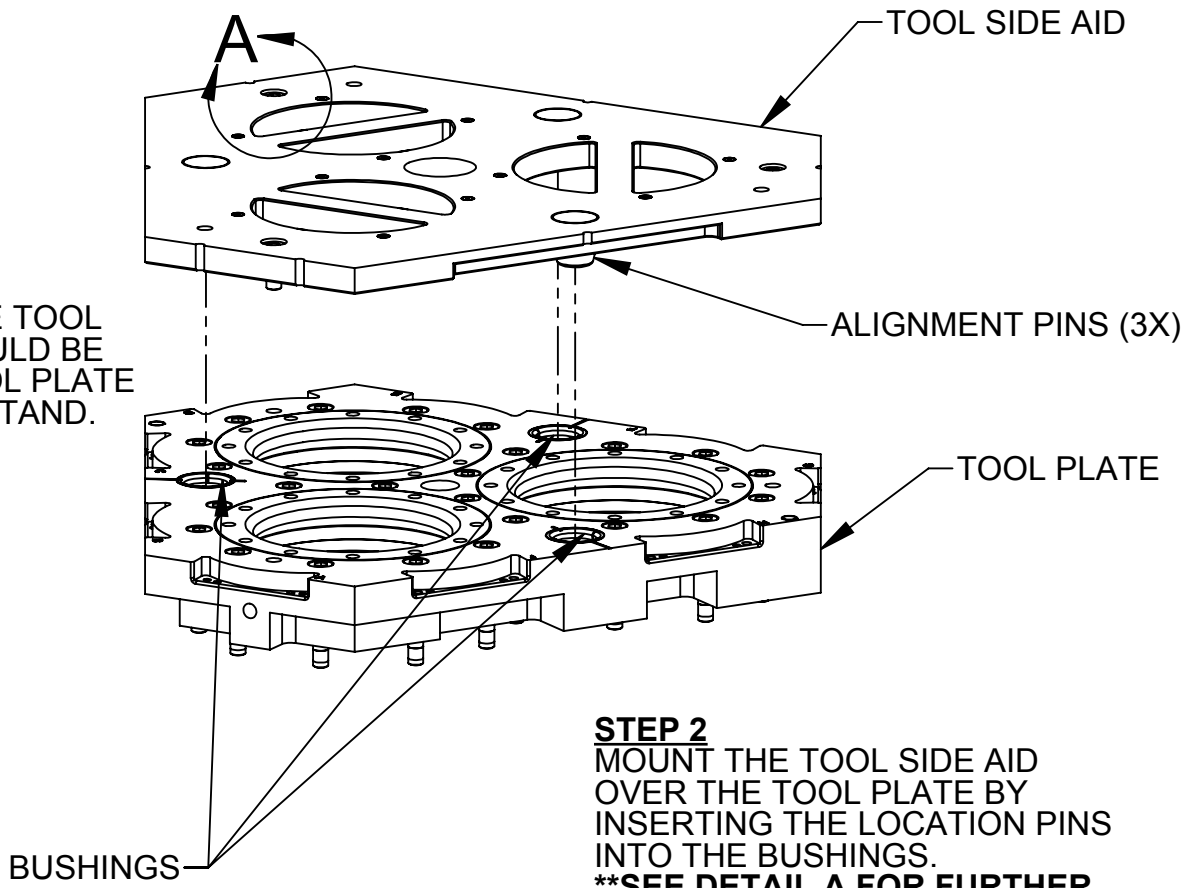
DETAIL A
SCALE 1 : 2



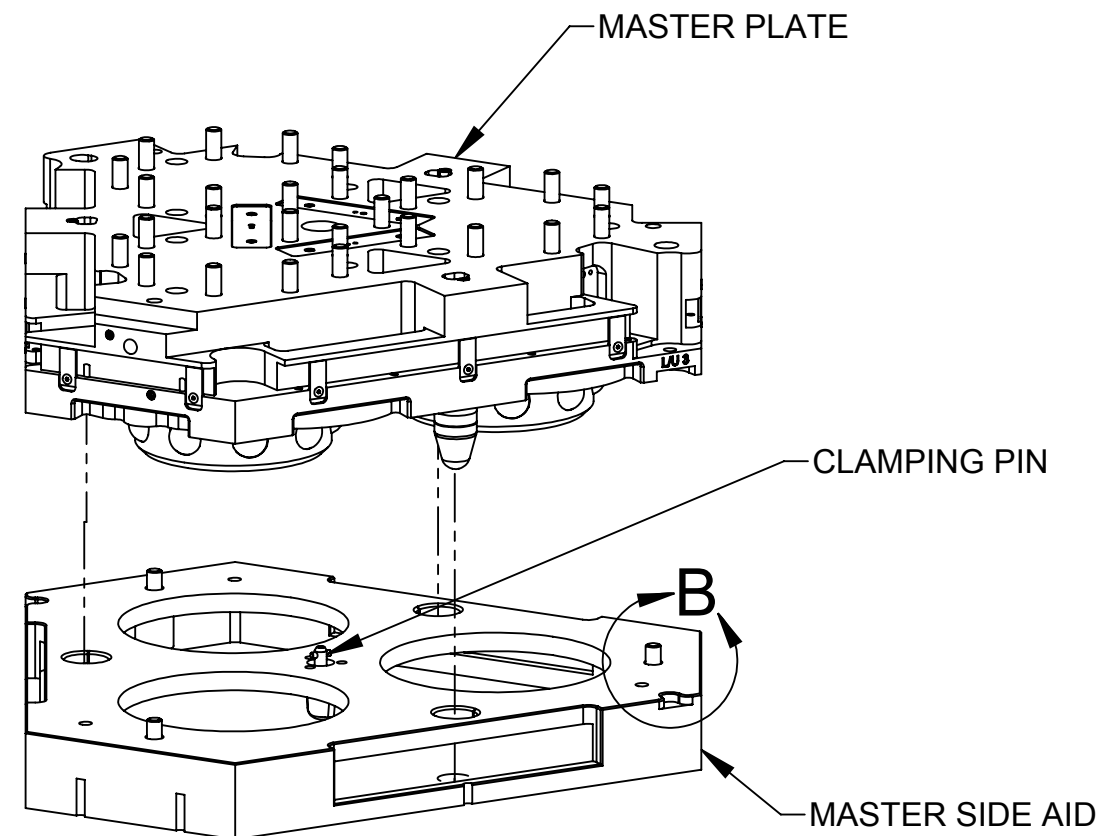
OPTIONAL: 3X M10 SHCS PROVIDED TO FASTEN MASTER SIDE AID TO MASTER PLATE IF ROBOT WRIST IS NOT PARALLEL TO THE FLOOR WHILE TEACHING.

DETAIL B
SCALE 1 : 2

STEP 1
PLACE THE TOOL IN THE TOOL STAND. PROGRAM SHOULD BE WRITTEN WITH THE TOOL PLATE RESTING IN THE TOOL STAND.



STEP 2
MOUNT THE TOOL SIDE AID OVER THE TOOL PLATE BY INSERTING THE LOCATION PINS INTO THE BUSHINGS.
****SEE DETAIL A FOR FURTHER INSTRUCTIONS****

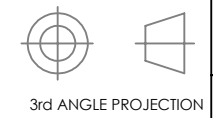


STEP 3
MOUNT THE MASTER SIDE AID TO THE QC MASTER PLATE ENSURING THAT THE TAPER PINS ENTER THE CORRESPONDING HOLES IN THE MASTER SIDE AID. TURN THE CLAMPING PIN TO ENSURE THAT THE MASTER SIDE AID LOCKS TO THE QC MASTER PLATE.
****SEE DETAIL B FOR FURTHER INSTRUCTIONS****

CAUTION: MAKE SURE HANDS AND FINGERS ARE FREE AND CLEAR OF THE LOCKING MECHANISM.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.



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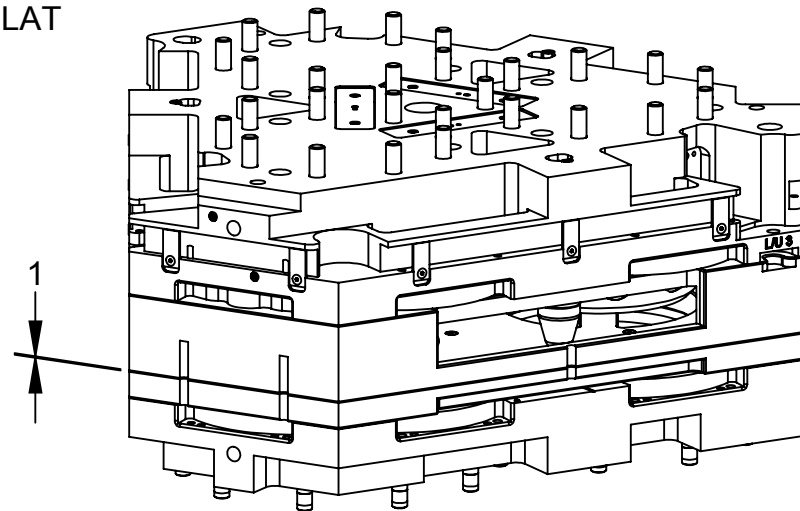
DRAWN BY: J.Ray, 3/9/18		TITLE	
CHECKED BY: D. BOHLE, 8/1/19		QC-1310 Teaching Aid Instruction Drawing	
PROJECT #	170802-2	SHEET	1 OF 2
SCALE	1:5	SIZE	B
DRAWING NUMBER	9230-20-8033	REVISION	01

THESE FACES
MUST BE PARALLEL

ALIGNMENT MARKS

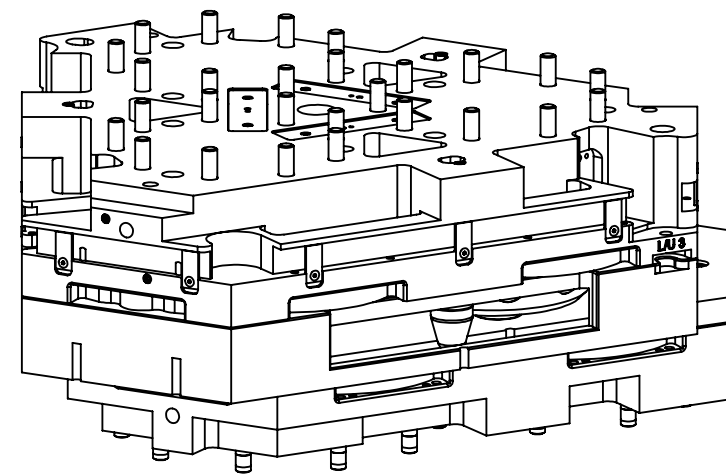
STEP 4

BRING THE MASTER PLATE ASSEMBLY TO A POSITION DIRECTLY OVER THE TOOL PLATE ASSEMBLY. THE MASTER PLATE ASSEMBLY'S FACE SHOULD BE PARALLEL TO THE TOOL PLATE ASSEMBLY'S FACE. ENSURE THAT THE ORIENTATION OF THE MASTER AND TOOL ASSEMBLIES ARE SUCH THAT THE FLAT ALIGNMENT MARKS CORRESPOND.



STEP 6

ADJUST THE POSITION OF THE ROBOT TO CORRECT FOR ANY LATERAL MISALIGNMENT. USE THE ALIGNMENT MARKS TO ALIGN THE TOOL SIDE AND MASTER SIDE AIDS.



STEP 5

MOVE THE MASTER PLATE ASSEMBLY SLOWLY DOWNWARD UNTIL THE MASTER AND TOOL SIDE AIDS ARE APPROXIMATELY 1MM APART.

+Z DIRECTION



STEP 7

RECORD THE ROBOT COORDINATES FROM STEP 6. A CORRECTION MUST NOW BE MADE TO THE Z COORDINATE TO ACCOUNT FOR THE THICKNESS OF THE TOOL AND MASTER SIDE TEACHING AIDS. ONLY IN THIS WAY CAN THE CORRECT "PICK-UP" AND "REPLACEMENT" COORDINATES BE DETERMINED. PERFORM THE FOLLOWING CALCULATION TO DETERMINE THE "PICK-UP" AND "REPLACEMENT" LOCATION:

$$Z \text{ "PICK-UP" COORDINATE} = (Z \text{ COORDINATE FROM STEP 6}) - (70\text{MM})$$

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3rd ANGLE PROJECTION



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DRAWN BY: J.Ray, 3/9/18

CHECKED BY: D.Bohle, 8/1/19

PROJECT # 170802-2 SHEET 2 OF 2

TITLE

QC-1310 Teaching Aid Instruction Drawing

SCALE
1:5

SIZE
B

DRAWING NUMBER
9230-20-8033

REVISION
01