Calibrating Star Probes with Parameter Sets

1. Build Star Probe and add desired angles. Then select angles to be calibrated with first Tool position. You will need to find one angle that can be used with all desired Tool positions, so that it can link the calibrations together. Typically T1A0B0 works well for this, and so is selected as the first tip in the User Defined Calibration Order.

Redit Window - Star_Probe_calibration.PRG			
Probe Utilities C:\PCDMIS_35_MR1	_BETA\Star_P	robe.PRB	
Probe File: Star_Probe	ок	Delete	
User Defined Calibration Order	Cancel	Add Angles	
Active Tip List	Measure	Results	
*TIA90B0 BALL 0,0,8,3071 0, A	Edit	Mark Used	
*11A90B90 BALL -6.9291,0,1. 2 *T2A0B0 BALL -0.6299,0,7.2	Tolerances	Global Used	
6 *T2A90B0 BALL -0.6299,5.8 *T2A90B90 BALL -5.8957,-0.6	Setup	File Format	
3 *T3A0B0 BALL 0,-0.6299,7.2 5 *T3A90B0 BALL 0,5.8957,2.0	Print List		
*T3A90B90 BALL -5.8957,0,2.			
Probe Description:			
Connect:PR0BETP2 Connect:EXTEN40MM Connect:EXTEN5WAY Tip #1:TIP2BY20MM Tip #2:TIPSTAR2BY30 Tip #3:TIPSTAR2BY30 Tip #4:TIPSTAR2BY30 Tip #5:TIPSTAR2BY30			

2. Add a Tool to be used with the first set of tips. All tips in this set must be able to clear the probe shank. Set any other desired calibration parameters, and then type in a name for this Parameter Set, and Save it. This will allow you to come back in to Probe Utilities and select that set. All parameters associated with that set are then recalled and used for calibration.

LDMI5_35_MR1	_BETA\Star_P		Measure Probe	쓰
obe 🔻	OK.	Delete	Number of Hits: 9	Measure
bration Order	Cancel	Add Angles	Prehit / Retract: 0.1	Cancel
0 8 3071 0 🗖	Measure	Results	Move Speed: 20	C Manual
6.9291,1.37	Edit	Mark Used	Touch Speed: 2	• DCC
6.9291,0,1.	Tolerances	Global Used	Turne of Operation	C ManDCC
0.6299,5.8 5.8957,-0.6	Setup	File Format	Calibrate Tips O Que	alification Check
-0.6299,7.2),5.8957,2.0	Print List		C Calibrate the Unit C Hor	me the Unit
5.8957,0,2.			C Cal	ibrate NC-100 Artifact
,			Calibration Mode	
_			C Default Mode Number o	f Levels: 3
ETP2	1.0		User Defined Sta	irt Angle: 25
EN5WAY			En En	id Angle: 190
BY20MM TAB2BY30			Wrist Calibration Angle Setup	Increment
TAR2BY30 TAR2BY30	E C	グレー	A: -140 140	10
TAR2BY30			B: -180 180	10
		<u> </u>		,
		×	J Shank Qual Number Sha Cham	ank Hits: 4
10 113 110350		<u>~</u>	Parameter Sets	K Oliset. Jo. 1969
New set:	Star_Probe_f	irst_set	Name	Save
na na	is been create		Star_Probe_tirst_set	Delete
	ок		Tool Mounted on Rotary Tab	le
			List of Available Tools:	
			Top_Y_Minus SPHERE 0,-0.1	7071,0.7071 0.75
			Add Tool Delete T	ool Edit Tool

3. Calibrate the first set. You will see the standard message regarding the reference tip, make sure it is the one you intended to designate.

WARNING: Tip is about to rotate to T1A0B0 !	×
In order for tips calibrated on the new tool position to relate to tips calibrated on the prior tool position, T1A0B0 must have been calibrated on the prior tool position Pressing OK means that T1A0B0 was calibrated on the prior tool position, or that you don't care if new tips calibrated relate back to the prior tool position. OK Cancel	

4. After calibrating the first set, move the tool to provide access for additional tips, and then select the desired additional tips. Remember to use the reference tip as the first tip in the calibration order.

<pre>&Edit Window - Star_Probe_calibration</pre>	.PRG	
Probe Utilities C:\PCDMI5_35_MR1	_BETA\Star_P	robe.PRB
Probe File: Star_Probe	ОК	Delete
🔽 User Defined Calibration Order	Cancel	Add Angles
Active Tip List:	Measure	Results
3 *T1A9080 BALL (6.9291,1.)	Edit	Mark Used
*12A90B90 BALL -5.8957,-0.6 *T3A90B90 BALL -5.8957,0,2.	Tolerances	Global Used
4 *T4A90890 BALL -5.8957,0.8 *T5A080 BALL 0,0.6299,7.27	Setup	File Format
T *T5A90B0 BALL 0,5.8957,0.74 *T5A90B90 BALL -5.8957,0,0.	Print List	
1 T1A0B0 BALL 0,0,8.3071 0,0		
Probe Description:		
Connect:PROBETP2 Connect:EXTEN40MM Connect:EXTEN5WAY Tip #1:TIP2BY20MM Tip #2:TIPSTAR2BY30 Tip #3:TIPSTAR2BY30 Tip #4:TIPSTAR2BY30 Tip #5:TIPSTAR2BY30		⇒ +

5. Once the tips are designated, select measure and then add a new tool definition for the new position.

Measure I	Probe	x	
Number o Prehit / B	of Hits: 9	Measure	
Move Sp	eed: 20	Cancel	
Touch		- Harryal	
rouch	4aa 1001		
– Туре і		ок	
⊙ Ca		ancel	
O Ca	T. UD.		
		rtifact	
– Calibra	Tool Type: SPH		
O De	Offset X:		
⊙ Us	Offset Y:		
	Offset Z:		
∟ ⊢Wrist I	Shank Vector I: 0		
	Shank Vector J: 1	ment	
A: [-	Shank Vector K: 1		
B: [·	Search Override I:		
🔲 Sha	Search Override J:		
	Search Override K:	9	
Paran Name	Diameter / Length: .750	04	
		ete	
Tool Mounted on Rotary Table			
List of Available Tools:			
Top_Y_Minus SPHERE 0,0.7071,0.7071 0.75			
A	dd Tool Delete Too	Edit Tool	

6. Select the additional parameters, and as before, enter a name for this new parameter set.



- 7. Calibrate the second tip and then repeat the procedure for any additional tip sets/tool positions.
- 8. You can also insert Auto-Calibrate commands into the part program. The first line is an example of the default code, the next two have been changed to reflect the example files used above. The key is that the parameter set store all of the associated calibration parameters selected by the user.

AUTOCALIBRATÉ/PROBE, PARAMETER_SET=ALL-TIPS-WITH-DEFAULTS, QUALTOOL_MOVED=NO, SHOW_SUMMARY=NO, OVERWRITE_RESULTSFILE=NO AUTOCALIBRATE/PROBE, PARAMETER_SET=STAR_PROBE_FIRST_SET, QUALTOOL_MOVED=YES, SHOW_SUMMARY=NO, OVERWRITE_RESULTSFILE=NO AUTOCALIBRATE/PROBE, PARAMETER_SET=STAR_PROBE_SECOND_SET, QUALTOOL_MOVED=YES, SHOW_SUMMARY=NO, OVERWRITE_RESULTSFILE=NO COMMENT/OPER,