Keysight i3070 Inline PLC Software Version 1.46 Release Note

Dear Customer,

Keysight Technologies is pleased to introduce the i3070 Inline PLC software version 1.46 (PLC 1.46) for our existing i3070 Series 5*i* Inline in-circuit testers. No pre-requisite is required to install this release.

What's new in PLC 1.46 release?

1. Memory storage for 50 recipe profiles based on unique fixture ID
2. Ability to load/unload fixture in one single step.
3. Display of fixture ID at Production mode
4. Read Press positions and error codes from computer

While the PLC 1.46 release improves the stability of the PLC software, the key enhancement is in fixture management. With the memory storage for 50 recipe profiles, you can now calibrate each individual fixture with the i3070 Inline system. The calibration data can then be stored based on the fixture ID for fast recall in future use, reducing setup time during product change. Fixture setup time is further reduced with the new one touch "Change Jig" command.

In addition, the test engineer no longer needs to navigate the touch panel in search of fixture ID and Press parameters. The fixture ID is now displayed at Production mode and all the Press parameters such as Standby position and error codes can be read from the PC. The engineer can also log these parameters and error codes into a log file for reference purpose.

The PLC 1.46 release will be the last software version supporting standard fixture profile namely; 75 mm, 85 mm and 100 mm. With the above enhancement, these 3 standard fixture profiles have become redundant and will be removed from future PLC software releases (effective from version 2.00).

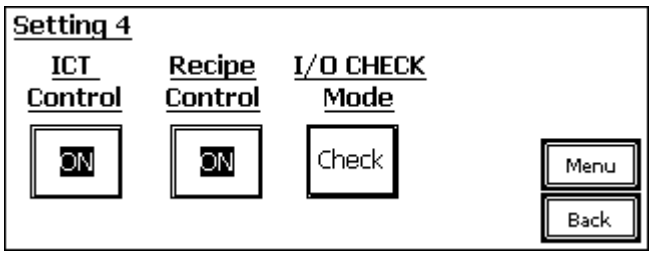
Other enhancements are listed in the Appendix.

Please visit http://www.keysight.com/find/i3070patches

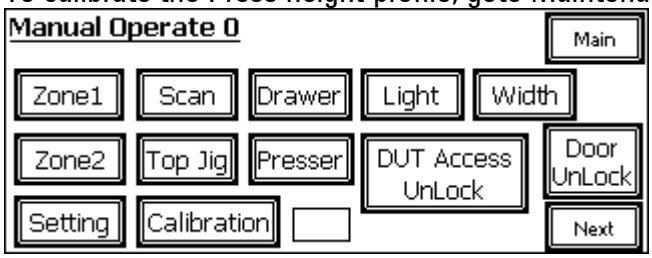
Appendix:

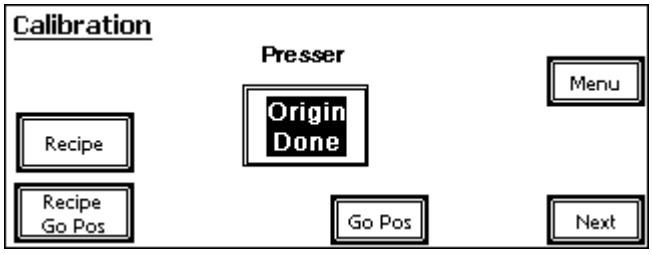
1. 50 recipe profiles for unique fixture ID and Press height

This feature is also known as Recipe control, in short. There are a total of 50 memory profiles and each memory profile can store a unique fixture ID along with its Press height positions. To use this, set Recipe Control to ON at Setting 4.



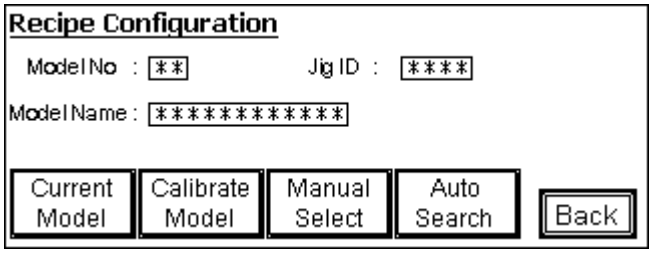
To calibrate the Press height profile, goto Maintenance -> Calibration



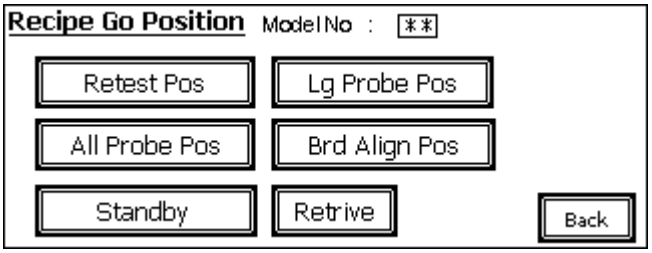


Then, initialize the Press to "Origin Done", select "Recipe" to enter into "Recipe Configuration"

Select "Recipe Go Pos" to enter "Recipe Go Position" to validate Press profiles.

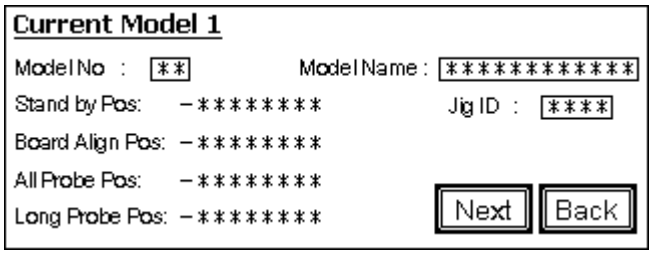


Current Model - view the existing Press height profiles in detail.
Calibrate Model - Adjust Press Height profile
Manual Select - manually select Press Height profile
Auto Search – Automatically select Press Height profile based on Top Jig ID

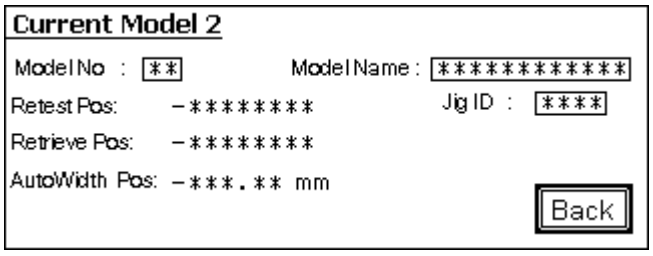


Validate Press positioning

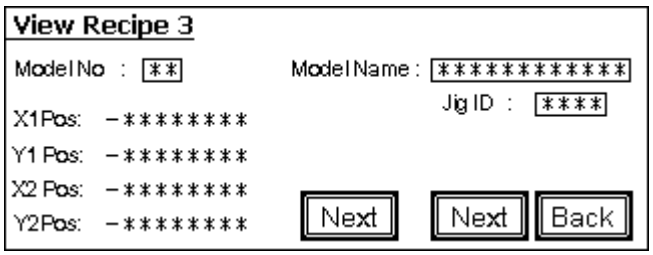
Select Current Model



Model No: Series numbering from 01 – 50
Model Name: Project or Product name
Jig ID: Top fixture ID or Autofile
Standby Pos: Position of the Press when idling, to allow board transfer between zones
Board Align Pos: Position of the Press when verifying if the board is seated properly on the tooling pin and support plate.
All Probe Pos: Position of the Press where board is in contact with all probes for analog and digtal in-circuit testing.
Long Probe Pos: Position of the Press where board is in contact with the long probes only.
Next: Go to next page
Back: Back to previous page

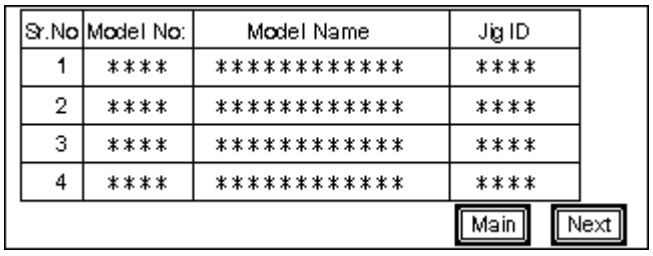


Retest Pos: Position of the Press where board doesn't contact any probes. Like Press Off.
Retrieve Pos: Position of the Press where fixture is safe to remove for maintenance.
Autowidth Pos: Position of the conveyor width where board can tranfers from one zone to another zone.

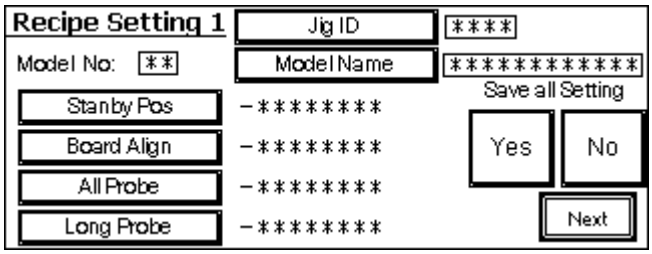


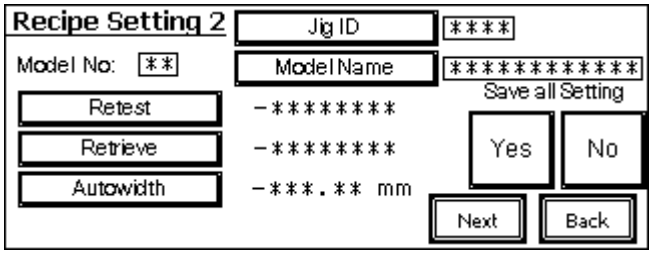
X1 Pos: 1st X-axis position for scanning a barcode.
Y1 Pos: 1st Y-axis position for scanning a barcode.
X2 Pos: 2nd X-axis position for scanning a barcode.
Y2 Pos: 2nd Y-axis position for scanning a barcode.

Select Calibrate Model



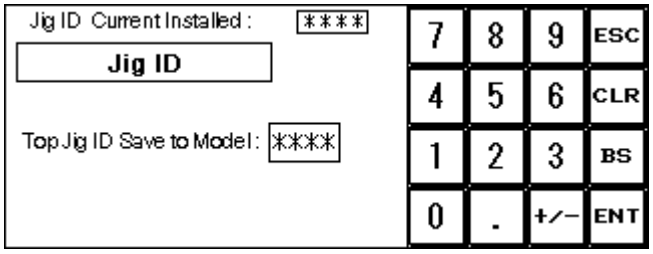
From the table listed above, select a location to store the Press profile. Recipe Setting 1 Page will show up.





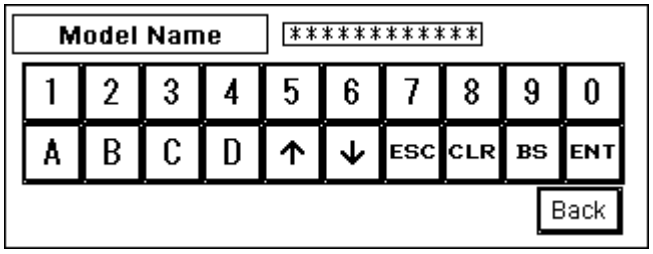
Select Jig ID, model Name, Standby Pos, Board Align Pos, All Probe Pos, Long Probe Pos, Retest Pos, Retrieve Pos and etc to store all the desired parameters.

Select **YES** at **Save all Setting** to save all parameters to memory.
Select **No** at **Save all Setting** will discard all parameters memory.



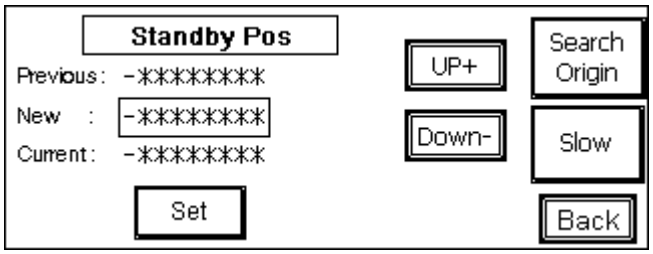
This page will appear when Jig ID is selected

Jig ID Current Installed: Top fixture ID detected
Top Jig ID Save to Model: Enter Autofile that matches the top fixture ID.



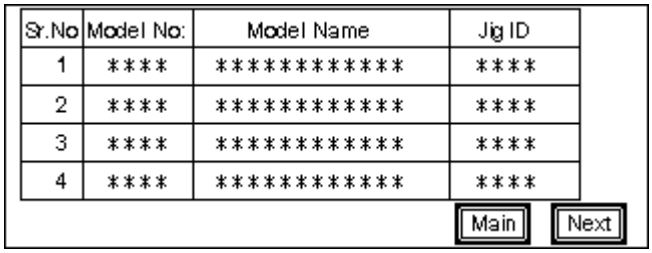
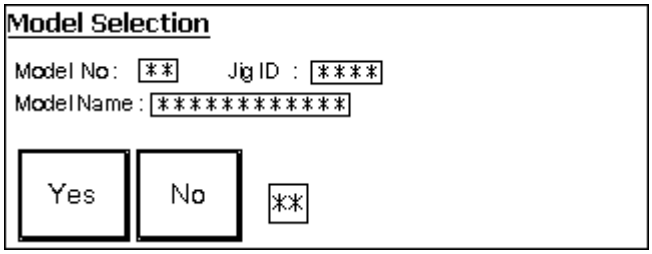
This page will appear when Model Name is selected

Model Name: Enter Project or Product Name

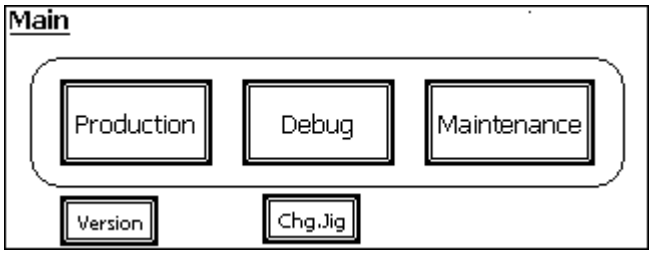
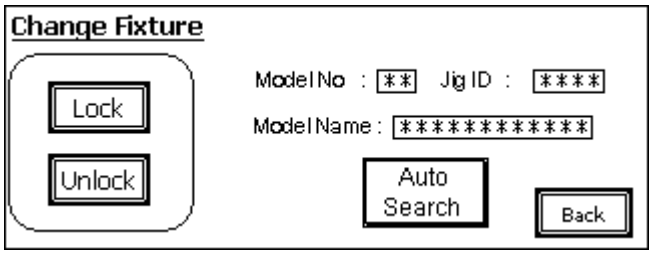


Page with various positioning naming will appear when selected
Standby Pos: **Board Align Pos**: **All Probe Pos**:
Long Probe Pos: **Retest Pos**: **Retrieve Pos**

Previous: Old Press Position saved in memory
New: New Press position to be saved in memory
Current: Existing Press Position being jogged
Set: Set Existing Press position as New position in memory
Select **Search Origin** to move the Press to the start position.
Select and hold **Up+** or **Down–** to manually jog the

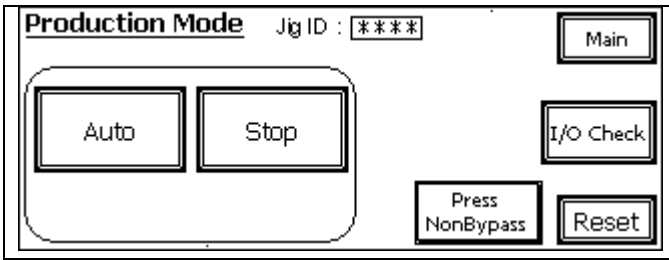
	Press to the desired position Use **Slow** to slow down the Press movement if needed. Select **Set** to save the desired Press position to memory.
	A table page will appear when "Manual Select" is selected. Select "Next" to scroll to next page. Select "Main" to scroll back to Recipe Configuration page. Select a row that is associated with JIG ID to manually load and use the profile.
	Model selection screen pop-out. Review and select **Yes:** Accept and use Jig ID **No:** Reject and Exit

2. Ability to load/unload fixture in one single step

	Select "**Chg. Jig**" button to enter to "Change Fixture" screen
	**Lock**: Secure the Top and Bottom fixture clamp **Unlock**: Press auto jog to Retrieve position, Unlock Top and bottom fixture clamp. **Auto Search**: Automatically select Press Height profile based on Top Jig ID

3. Display of Fixture ID at Production Mode

	Main: Back to Main Page



I/O Check: Check sensors, board stoppers reed switch, SMEMA and etc
Press NonByPass/Press ByPass: Bypassing Press to allow board transfer without testing. Example: link conveyor
Reset: Raise the Press to Retrieve position and eject the board if present in zone 2.

4. Read Press Positions and Error Codes from Computer
Here is the listing of PLC addresses used to read the Press positions.
An example of the subroutine to verify the position is also shown below.

Press Position	Address Byte	Read Byte
Standby Position	D5402+D5401	4
Board Align Position	D5404+D5403	4
All Probe Position	D5406+D5405	4
Long Probe Position	D5408+D5407	4
Retest Position	D5410+D5409	4
Retrieve Position	D5412+D5411	4
AutoWidth Position	D5414+D5413	4
Model No	D5400	2
Model Name	D5435+D5434+D5433+D5432+D5431+D5430	12
Jig ID	D5438	2

```
!#####################################################################
sub Check_Press_Height
global Using_BtBasic

! This routine is to check the Press height

print using "@"
print "Reading Press Height from PLC"

Read_Address1$ = "5401"      !Standby LSB
Read_Address2$ = "5402"      !Standby MSB
Read_Address3$ = "5403"      !Board Align LSB
Read_Address4$ = "5404"      !Board Align MSB


call Read_PLC (Read_Address1$, Read_Data1$)
call Read_PLC (Read_Address2$, Read_Data2$)
```

```
call Read_PLC (Read_Address1$, Read_Data3$)
call Read_PLC (Read_Address2$, Read_Data4$)


Standby_Pos$= Read_Data2$&Read_Data1$
Board_Align_Pos$= Read_Data4$&Read_Data3$

   print "Standby Position is: "; hti(Standby_Pos$)
   print "Standby Position is: "; hti(Board_Align_Pos$)

subend
!#####################################################################
```

User also can read the Error flag with following address and data byte.

Address	**ERROR ID**	**Message**
D7500	#1	Unable to Turn ON Zone1 Stopper.
D7500	#2	Unable to Turn OFF Zone1 Stopper.
D7500	#4	## Not in Use ##
D7500	#8	Unable to Turn Off Zone2 Stopper
D7500	#10	Unable to Turn ON Zone2 Stopper
D7500	#20	## Not in Use ##
D7500	#40	Board Jam at Zone1 Conveyor
D7500	#80	Board Jam at Zone2 Conveyor
D7500	#100	Board Zone1 to Zone2 Transfer Error
D7500	#200	Double Board Error ,Zone1 to Zone2 Transfer Error
D7500	#400	## Not in Use ##
D7500	#800	Unable to Move Press, Zone2 Entry or Exit Sensor triggered
D7500	#1000	Drawer Up Error
D7500	#2000	Drawer Down Error
D7500	#4000	Top Jig Lock Error
D7500	#8000	Top Jig UnLock Error
D7501	#1	Bottom Jig Lock Error
D7501	#2	Bottom Jig UnLock Error
D7501	#4	Press Home Move Error
D7501	#8	Lower Limit Trigger while Press Move
D7501	#10	Upper Limit Trigger while Press Move
D7501	#20	Board Orientation Error
D7501	#40	## Not in Use ##
D7501	#80	## Not in Use ##
D7501	#100	## Not in Use ##
D7501	#200	## Not in Use ##

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D7501	#400	## Not in Use ##
D7501	#800	## Not in Use ##
D7501	#1000	## Not in Use ##
D7501	#2000	## Not in Use ##
D7501	#4000	## Not in Use ##
D7501	#8000	## Not in Use ##
D7502	#1	NC Card Error
D7502	#2	Servo Driver Error
D7502	#4	Servo Motor Brake Error
D7502	#8	## Not in Use ##
D7502	#10	Right Side Drawer Not Down while trying to move.
D7502	#20	Front Safety Hook Not Release while trying to move Press
D7502	#40	Board Manually Removed during Auto Mode. Restart
D7502	#80	Left Side Drawer not down while trying to move
D7502	#100	Rear Safety Hook Not Release while Trying to move Press
D7502	#200	Board Without status present at Zone2
D7502	#400	Scanner Timeout - No feedback signal
D7502	#800	ICT Timeout - No feedback signal
D7502	#1000	Jig Height Error
D7502	#2000	Bottom Jig Not Lock While Moving Press
D7502	#4000	Top Jig Not Lock While Moving Press
D7502	#8000	Maintenance Key is ON While Auto Mode
D7503	#1	Top JIG Not Fully IN Error While Press Move
D7503	#2	Bottom Jig Not In While Press Move
D7503	#4	Engine Not Detect
D7503	#8	## Not in Use ##
D7503	#10	Demo Mode Conveyor Reverse Error.Z2 to Z1 Error
D7503	#20	Safety Hook Not Unlock While Auto Mode
D7503	#40	Press Retest position Error
D7503	#80	## Not in Use ##
D7503	#100	## Not in Use ##
D7503	#200	## Not in Use ##
D7503	#400	## Not in Use ##
D7503	#800	## Not in Use ##
D7503	#1000	## Not in Use ##
D7503	#2000	## Not in Use ##
D7503	#4000	## Not in Use ##
D7503	#8000	Board Present at Zone2 Exit
D7504	#1	## Not in Use ##
D7504	#2	## Not in Use ##
D7504	#4	## Not in Use ##

D7504	#8	## Not in Use ##
D7504	#10	## Not in Use ##
D7504	#20	Zone2 DC Motor Driver Error
D7504	#40	## Not in Use ##
D7504	#80	## Not in Use ##
D7504	#100	## Not in Use ##
D7504	#200	Board Not Clear on Conveyor While Auto Mode
D7504	#400	Board Not Clear on Conveyor While AutoWidth
D7504	#800	DUT Access not Lock While Auto
D7504	#1000	Board Alignment Check Error
D7504	#2000	## Not in Use ##
D7504	#4000	## Not in Use ##
D7504	#8000	## Not in Use ##
D7505	#1	Missing Model Number While Auto Mode
D7505	#2	Missing Model Name While Auto Mode
D7505	#4	Actual Jig ID Not Matching Jig ID selected While Auto Mode
D7505	#8	Standby Position No Value While Auto Mode
D7505	#10	Board Align Position No value While Auto Mode
D7505	#20	All Probe Position No value While Auto Mode
D7505	#40	Long Probe Position No Value While Auto Mode
D7505	#80	Retest Position No Value While Auto Mode
D7505	#100	Retrieve Position No Value While Auto Mode
D7505	#200	Auto Width No Value While Auto Mode
D7505	#400	## Not in Use ##
D7505	#800	## Not in Use ##
D7505	#1000	## Not in Use ##
D7505	#2000	## Not in Use ##
D7505	#4000	## Not in Use ##
D7505	#8000	Double Board Error.

5. Other Enhancements:

1. Press movement is slower now using Go position validation at Debug and Calibration
2. MCB3 no longer tripped if initializing Autowidth
3. Enhance Auto mode error message with details steps
4. Buzzer is computer controllable with autocode of Address#3004 and Data#0004.
5. Downstream timeout is optional
6. System re-starting Auto mode will check board present in zone 1 and zone 2.
7. All settings are relocated to Setting pages from 1-4.
8. Fixed Autowidth Reset to 60 mm in Maintenance mode.

Printed in Malaysia 07/2014

E9988-90080