Condor Plus MechTool™ Manual

Money Controls

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1. Diary of Changes

Issue 1.0 ..... August 2001

Issue 1.1 ..... 16th March 2002
- Applied TMWP V3.0 .

Issue 1.2 ..... 6th Sept 2002
- Modification to disclaimer.

Issue 1.3 ..... 6th Aug 2003
- Applied TMWP V3.2.

Issue 1.4 ..... 30th June 2004
- Changed footer.

Issue 1.5 ..... 7th October 2004
- Corrected the REPEAT steps.

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2. MechTool™ Mode

(The rotary switch has no functional effect in **CPxxxA** applications).

MechTool™ is a new feature on the Condor Plus. It allows basic programming functions, some of which are taken from the Condor Toolkit and some are new. (see MechToolTM Options - Page 5).

As before, the **MechTool™** option has to be set when ordering. If **MechTool™** is OFF then none of the following are available.

The LED, on the rear cover, is used to show at which stage the user is at when the Condor Plus is in **MechTool™** mode. The colours used are as follows:

- LED Green : Condor Plus normal operation - OK
- LED flashing Yellow : first level - **MechTool™** mode selected
- LED flashing Yellow / green : second level of **MechTool™** mode
- LED flashing Yellow / Red : third level of **MechTool™** mode

In some options the LED will flash Green and or Red to show flag states, window states and when changing critical data in EEPROM.

2.1 MechTool™ Entry

To enter **MechTool™**, set the rotary switch to position 0 and then press the program button until the LED changes colour from Green to flashing Yellow.

If the LED remains Green, then **MechTool™** has not been enabled by Money Controls and the following functions are not available.

If **MechTool™** can be entered, the functions listed on page 5 are available.

Flow charts, explain in detail, how to use each function.

2.2 MechTool™ Exit

To exit **MechTool™**, set the rotary switch to position 0 and then press the program button until the LED changes colour from flashing Yellow to Green.

If this is not done then the Condor Plus will time-out after approx. 30 secs. and assume normal operation.

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2.3 MechTool™ Options

0. **MechTool™** enter/exit.
1. Window tweaks mode.
   (after entering this mode select window number then select the tweak value).
2. Test VACS followed by credit – uses timers in EEPROM.
   (VACS timer, credit timer and credit gap timer).
3. Test Alarm.
4. Test Gate continuously.
   (pressing the push button or moving the rotary switch cancels the test).
5. Flag change mode.
   (after selecting this mode the following flags can be set):

   0. Teach off.
   1. Teach on.
   2. Alarm off.
   3. Alarm on.
   4. Diagnostic off.
   5. Diagnostic on.
   6. All coins window tuning off.
   7. All coins window tuning on.
   8. Individual window tweaks disabled.
   9. Individual window tweaks enabled.
   A. Secure tuning disabled.
   B. Secure tuning enabled.
   C. Master inhibit active HIGH - at the connector.
   D. Master inhibit active LOW - at the connector.
   E. Master inhibit drive LOW.
   F. Master inhibit drive HIGH.

6. Clear coin divert.
   (after entering this mode select window number).
7. Set coin divert.
   (after entering this mode select window number).
8. Reset all individual coin tweaks to zero.
9. Erase all windows.
   (also sets 'all coin tweaks' to zero).
A. Display flag status by pulsing LED.
   (green = 1 / red = 0).
B. Display windows programmed by pulsing LED.
   (green = window programmed / red = window not programmed).
C. Enable all coins.
D. Disable all coins.
E. Enable a coin.
   (after entering this mode select coin number).
F. Disable a coin.
   (after entering this mode select coin number).

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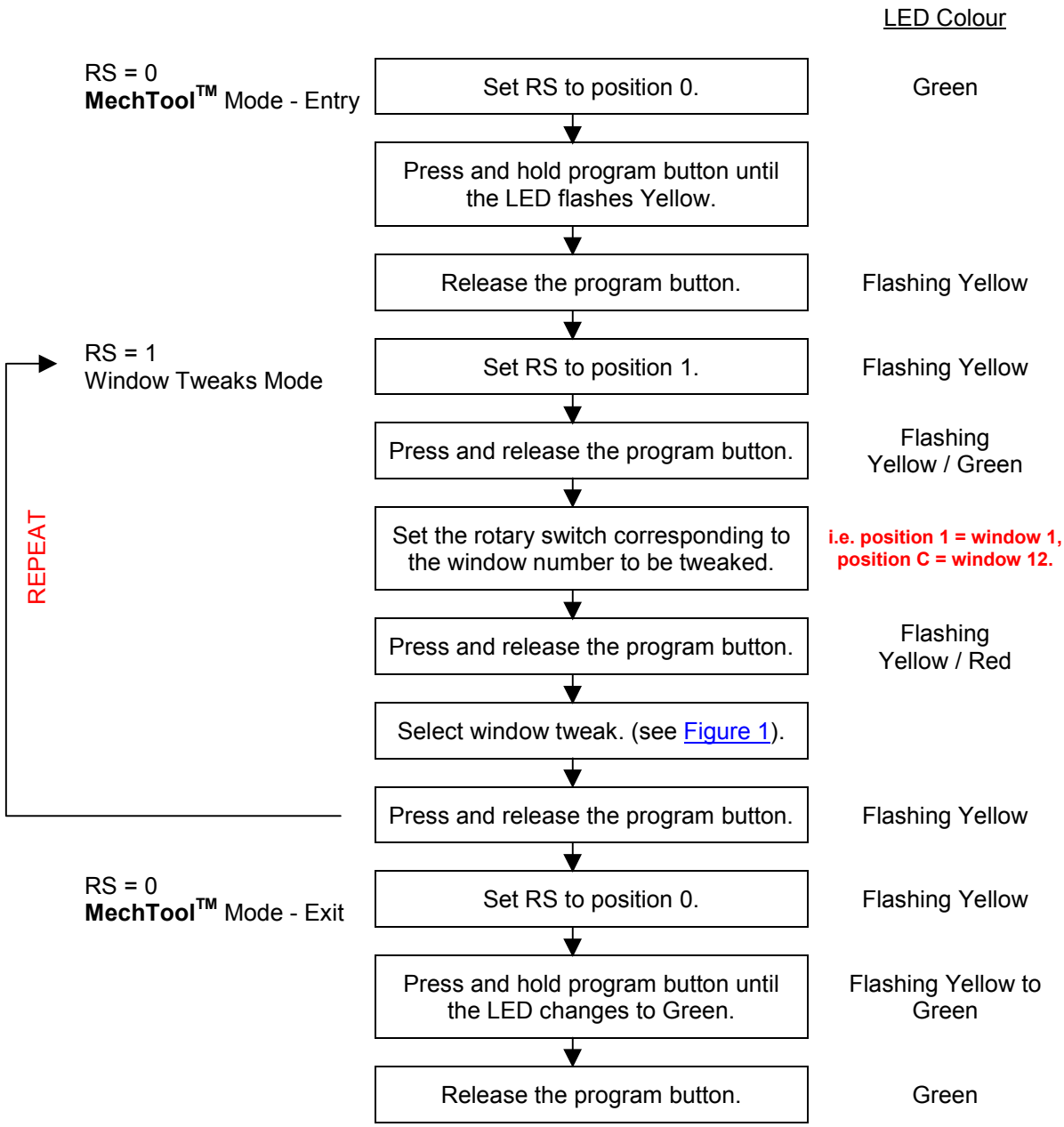
Flow Chart 1: Window Tweaks Mode

RS = Rotary Switch Position



This programs the window tweaks into memory.

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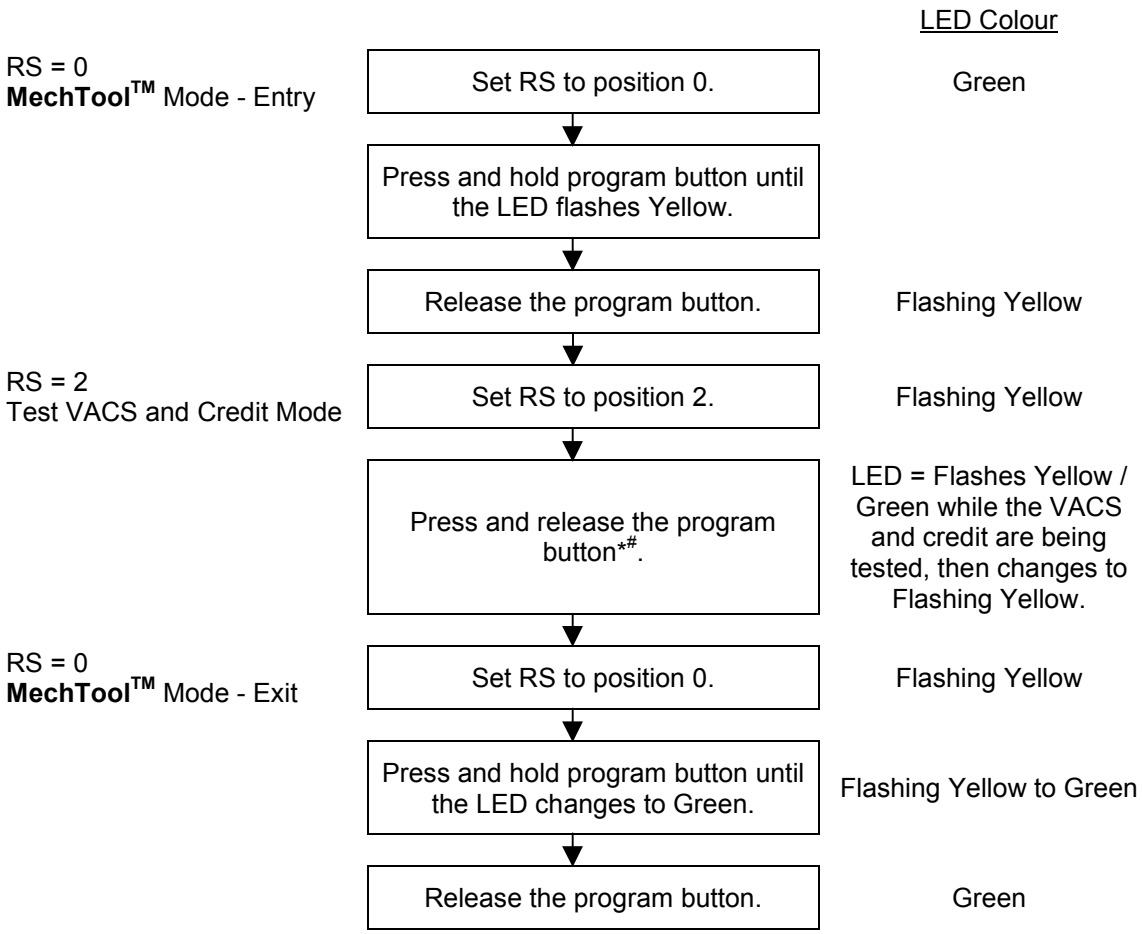
Flow Chart 2: Test VACS and Credit Mode

RS = Rotary Switch Position



*The VACS pin is pulsed, after a short gap the credit pin is pulsed, simulates real time pulses.

#To repeat, press the program button again.

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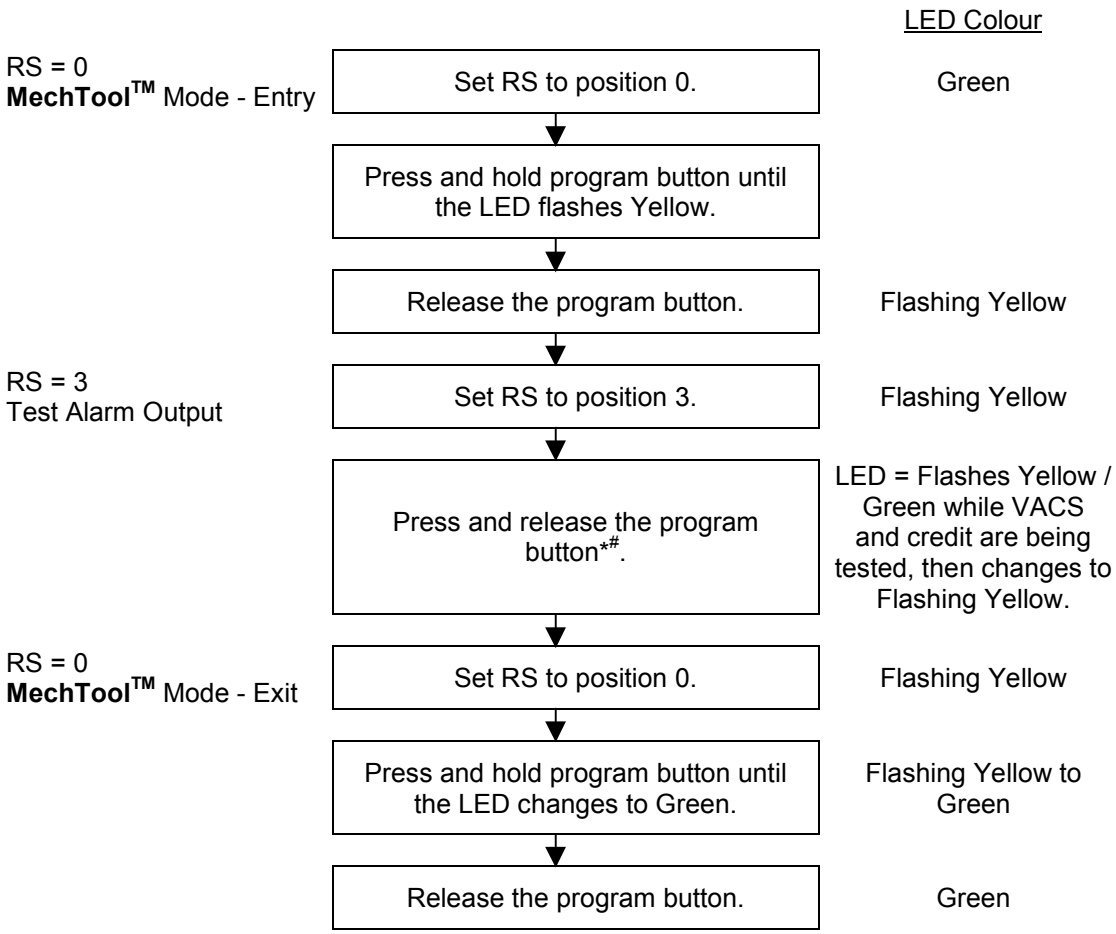
Flow Chart 3: Test Alarm Output

RS = Rotary Switch Position



*The Alarm pin will be active for the duration of the Alarm timer in EEPROM.

#To repeat, press the program button again.

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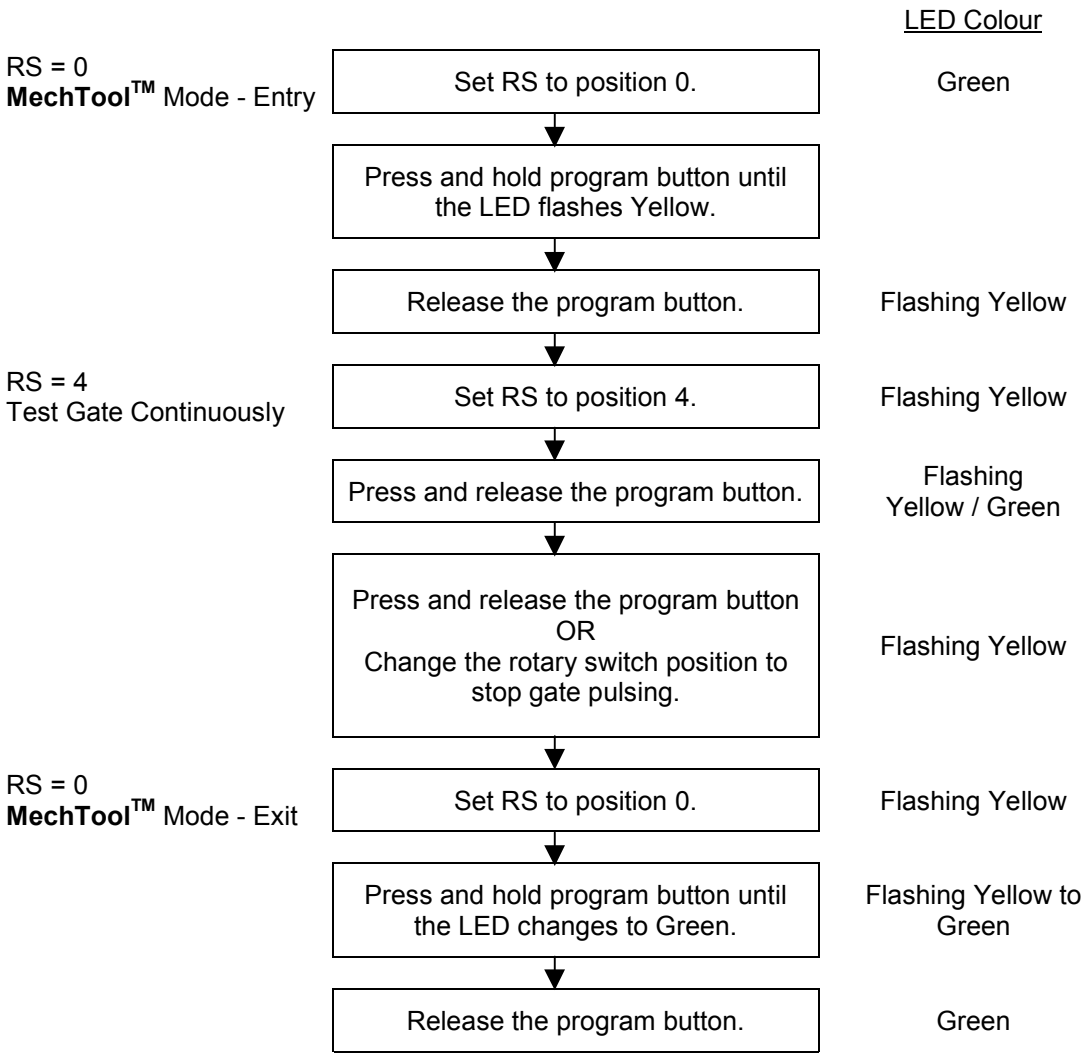
Flow Chart 4: Test Gate Continuously

RS = Rotary Switch Position



Accept gate pulsed with 50% duty cycle.

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Flow Chart 5: Flag Change Mode

RS = Rotary Switch Position

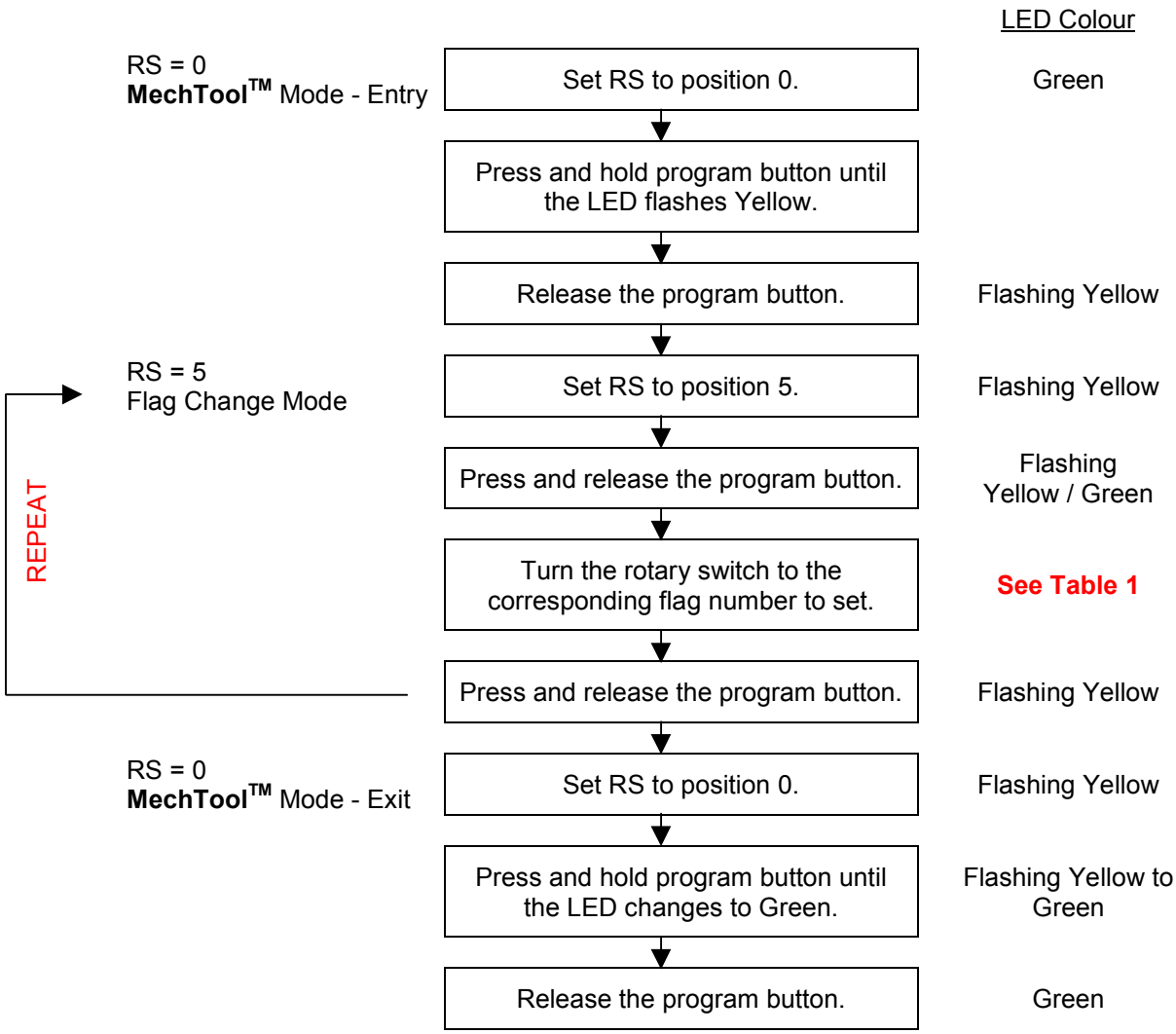

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Table 1: Eeprom flags v Rotary switch positions

Rotary switch position.	Flag function.	
0	Teach off.	
1	Teach on.	
2	Alarm off.	
3	Alarm on.	
4	Diagnostic off.	
5	Diagnostic on.	
6	Window Tuning OFF. (All coins window tuning OFF).	(See Table 2)
7	Window Tuning ON. (All coins window tuning ON).	(See Table 2)
8	Individual Tuning OFF. (Individual window tweaks DISABLED).	(See Table 2)
9	Individual Tuning ON. (Individual window tweaks ENABLED).	(See Table 2)
A	Secure Tuning OFF. (Window widening ENABLED).	(See Table 2)
B	Secure Tuning ON. (Window widening DISABLED).	(See Table 2)
C	Master Inhibit active high – at the conn.	(See Table 3)
D	Master Inhibit active low – at the conn.	(See Table 3)
E	Master Inhibit drive low.	(See Table 3)
F	Master Inhibit drive high.	(See Table 3)

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Table 2: Coin Security Options

Window Tuning[1]	Secure Tuning[2]	Individual Tuning[3]	Coin Security Level
OFF	OFF	OFF	No coin window modification is possible. (Condor – Security Switch OFF).
OFF	OFF	ON	Individual window tweaks possible. Windows can be widened or narrowed.
OFF	ON	OFF	No coin window modification is possible. (Condor – Security Switch OFF).
OFF	ON	ON	Individual window tweaks possible, but tweaks can only narrow programmed windows.
ON	OFF	OFF	*Standard Tuning*[1] on all windows which can be widened or narrowed – (Condor).
ON	OFF	ON	Both *Standard Tuning*[1] and individual window tweaks are possible on all windows which can be widened or narrowed. Their cumulative[4] effect on the window is used.
ON	ON	OFF	*Standard Tuning*[1] performed on ALL windows, but only to narrow programmed windows.
ON	ON	ON	Both *Standard Tuning*[1] and individual window tweaks are possible on all windows which can be narrowed only. Their cumulative[4] effect on the window is used.

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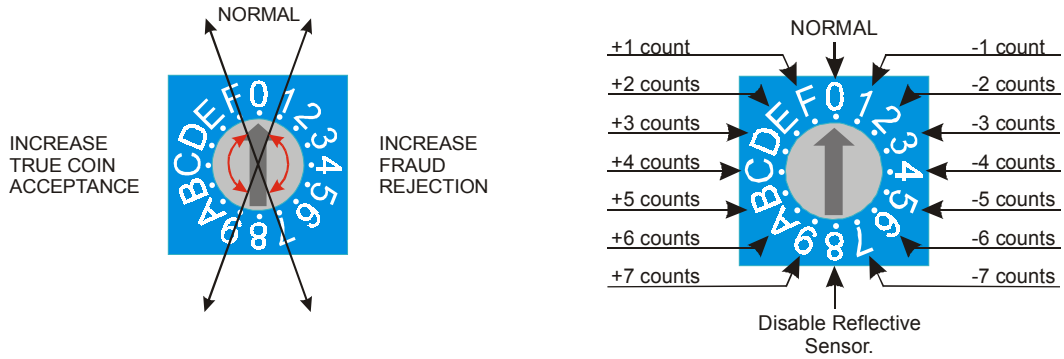
Figure 1: Coin Security – Rotary Switch



Each count is added/subtracted to/from the upper/lower limits of the programmed windows, therefore, each count represents an **actual** increase/reduction of 2 counts.

[1] Window Tuning (*Standard Tuning)*, when enabled, allows window tweaks during 'normal' operation of the Condor Plus. The window tweak selected is applied to ALL the windows simultaneously.

[2] Secure Tuning, when enabled, only allows windows to be narrowed – NOT widened.

Note:- Enabling Secure Tuning will IGNORE previously prog'd window WIDENING values.

[3] Individual Tuning, when enabled, allows individual window tweaks to be programmed into Eeprom.

Note:- Disabling Individual Tuning will IGNORE previously prog'd Individual Tuning values.

[4] Cumulative effect. Any *Standard Tuning* tweaks are added to tweaks programmed in Eeprom. e.g. Individual tweak = 2 (-2 counts), standard tuning tweak = D (+3 counts), total effect on the programmed window = +1 count top and bottom of each sensor window.

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Table 3: Inhibit Status v Eeprom Flags

Inhibit Digit	Inhibit Status	C/D	E/F
0	Inhibit High – Default Inhibit	**C**	**F**
1	Inhibit High – Default Accept	**C**	**E**
2	Inhibit Low – Default Inhibit	**D**	**E**
3	Inhibit Low – Default Accept	**D**	**F**

e.g. to change from a CP103 to a CP100 SET **C,** (**F** is already set).

Table 4: Inhibit Conversion

From \ To	CPxx0	CPxx1	CPxx2	CPxx3
CPxx0		E	D, E	D
CPxx1	F		D	D, F
CPxx2	C, F	C		F
CPxx3	C	C, E	E	

IMPORTANT:- Power must be removed and re-applied for changes to fully take place.

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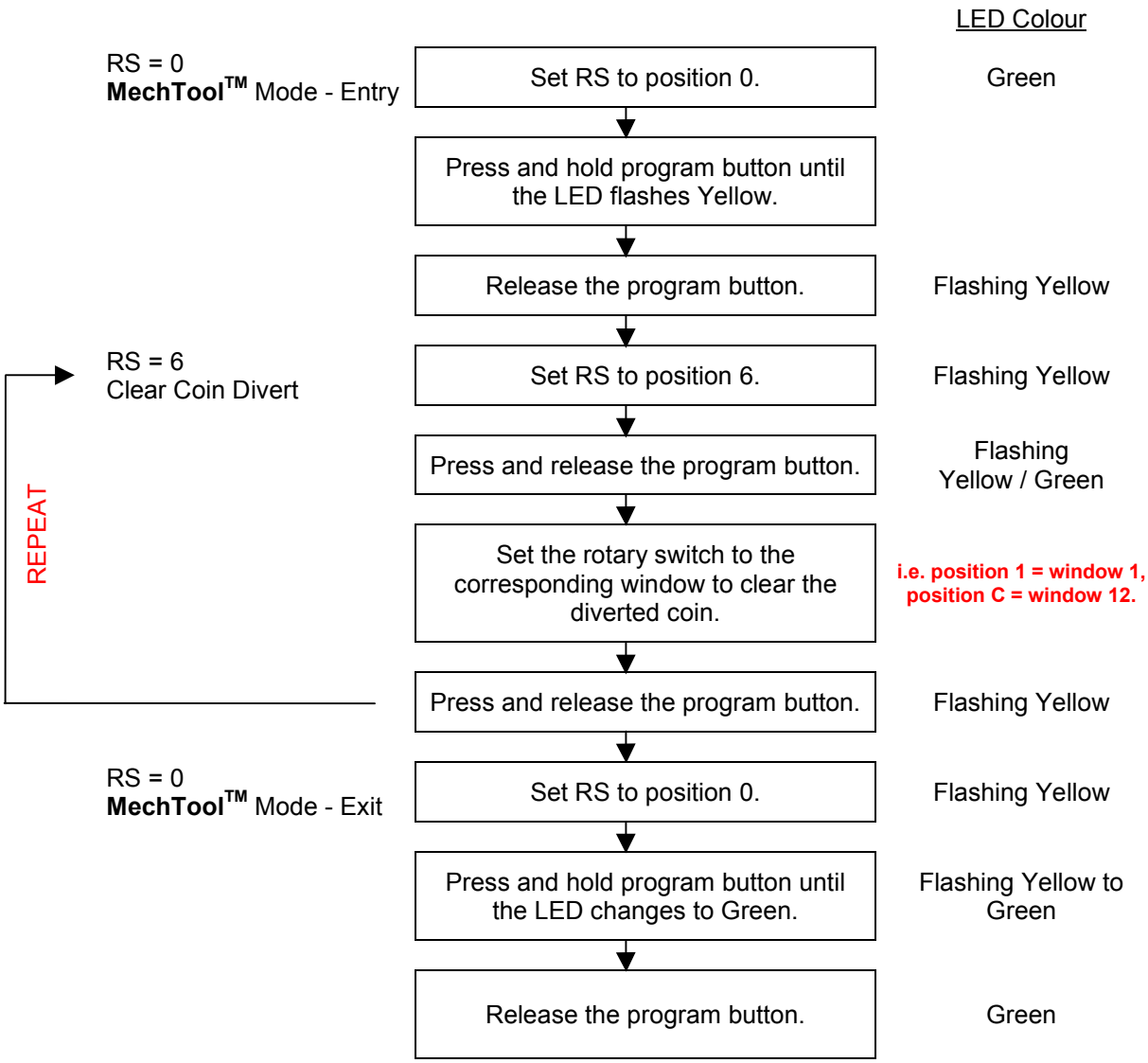
Flow Chart 6: Clear Coin Divert

RS = Rotary Switch Position



This clears the coin divert information from EEPROM memory.

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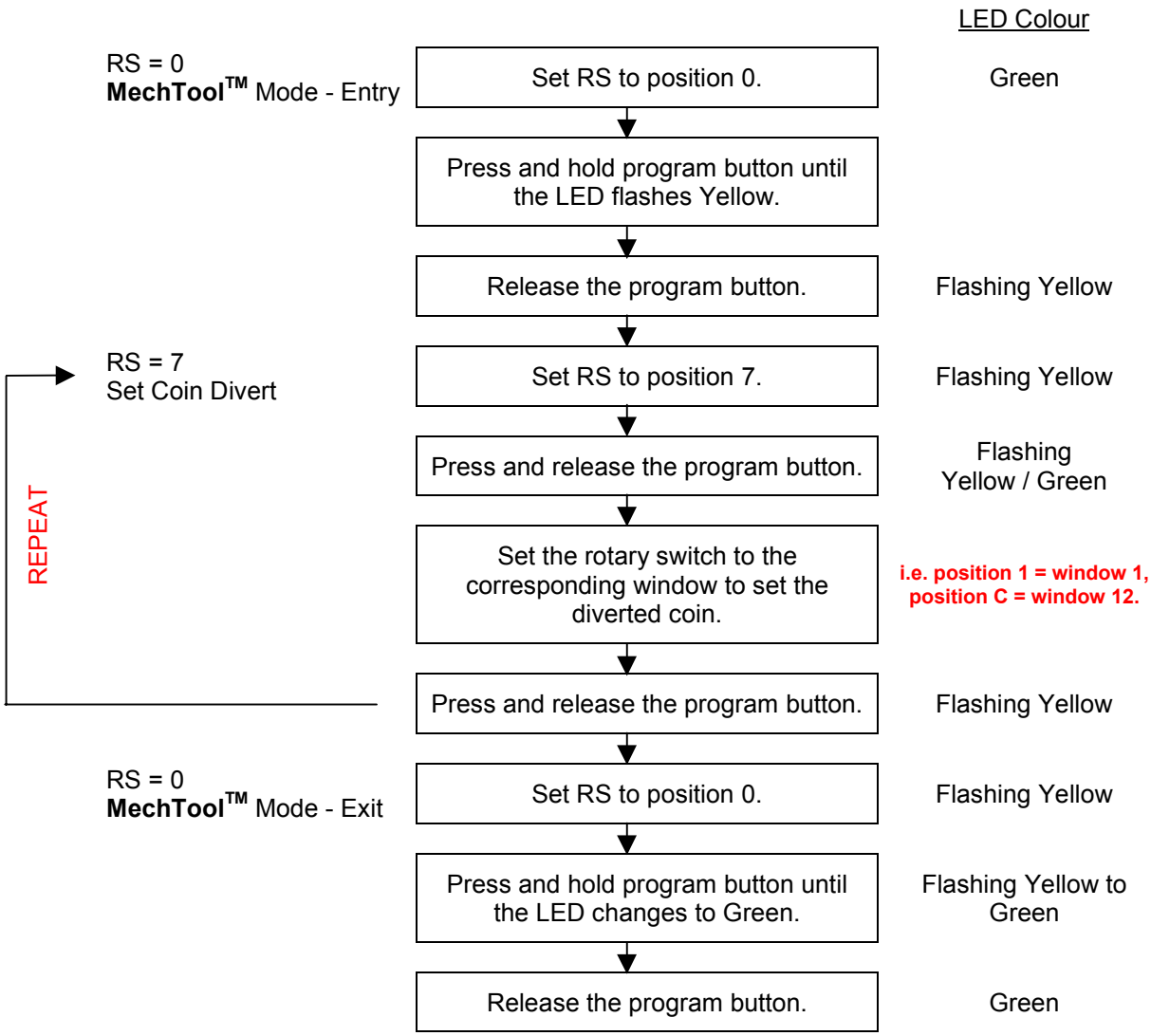
Flow Chart 7: Set Coin Divert

RS = Rotary Switch Position



This programs the coin divert information into EEPROM memory.

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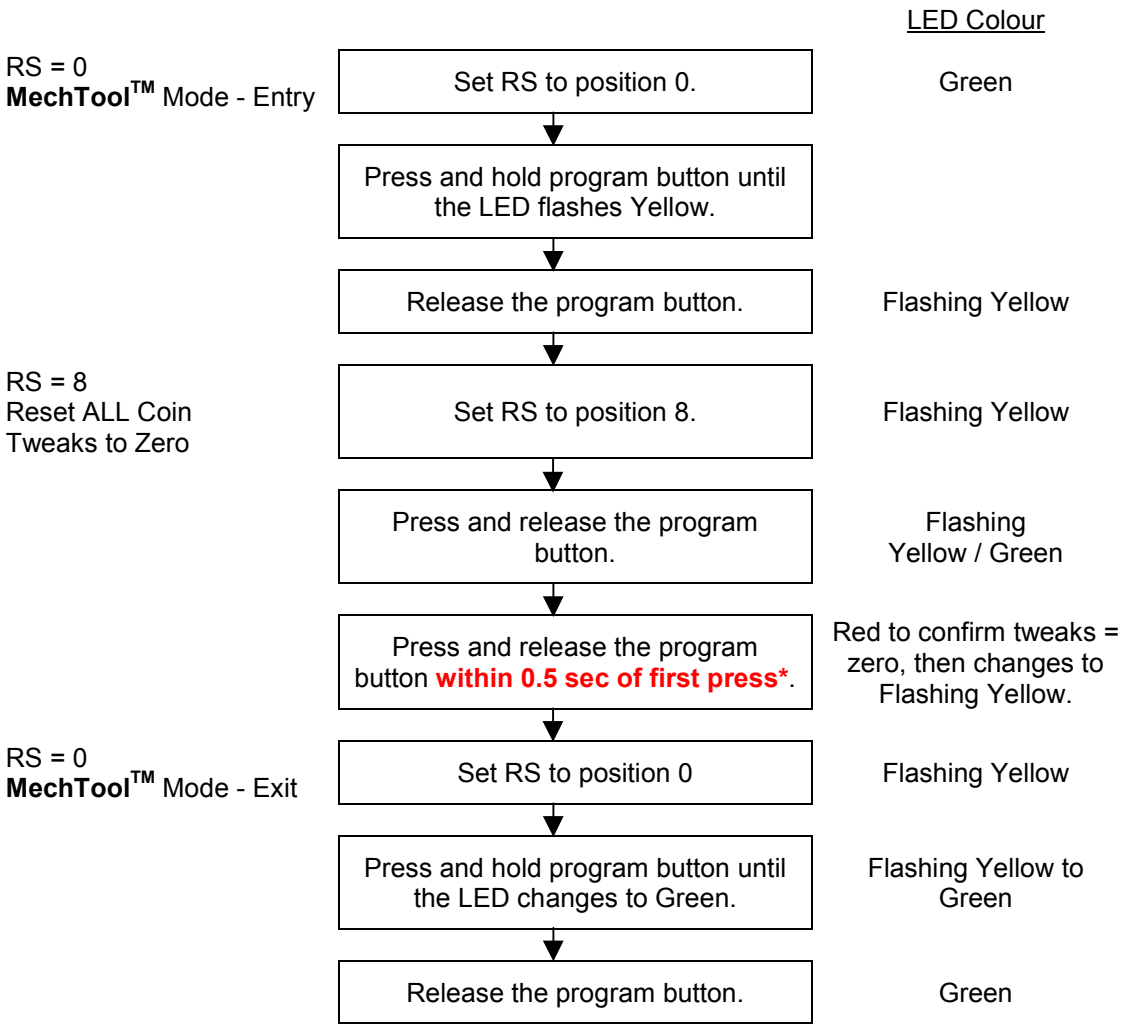
Flow Chart 8: Reset Coin Tweaks to Zero

RS = Rotary Switch Position



* Keep pressing twice – until the LED changes to RED = Tweaks Reset.

This clears ALL the window tweaks in EEPROM.
As a safeguard with this function, the program button must be pushed twice within $^1/_2$ second to ensure erasure of the window tweaks.
Failure to do so will leave the window tweaks intact.

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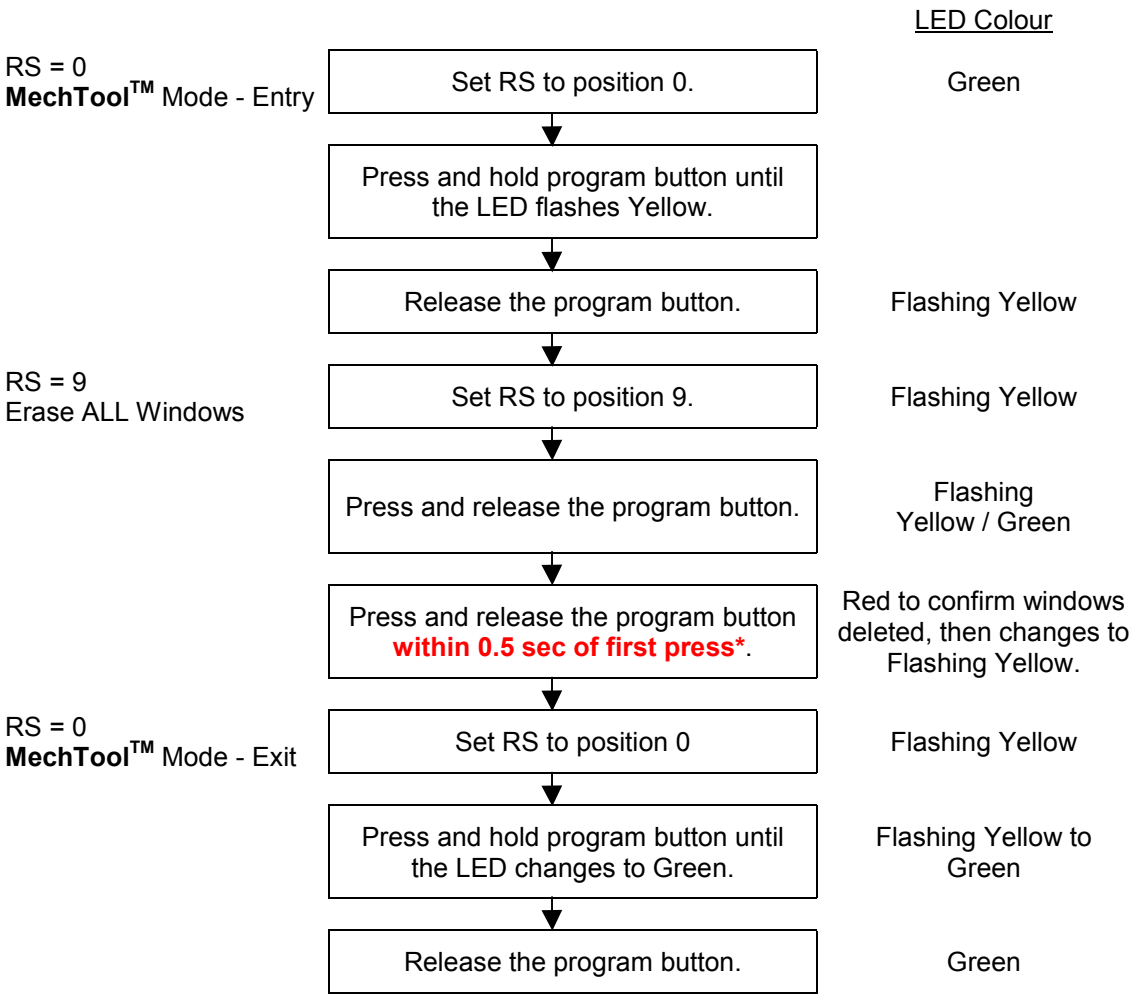
Flow Chart 9: Erase ALL Windows

RS = Rotary Switch Position



* Keep pressing twice – until the LED changes to RED = Windows Erased.

This clears ALL the windows in EEPROM, including window tweaks.
As a safeguard with this function, the program button must be pushed twice within $^{1}/_{2}$ second to ensure erasure of the coin windows.
Failure to do so will leave the coin windows intact.

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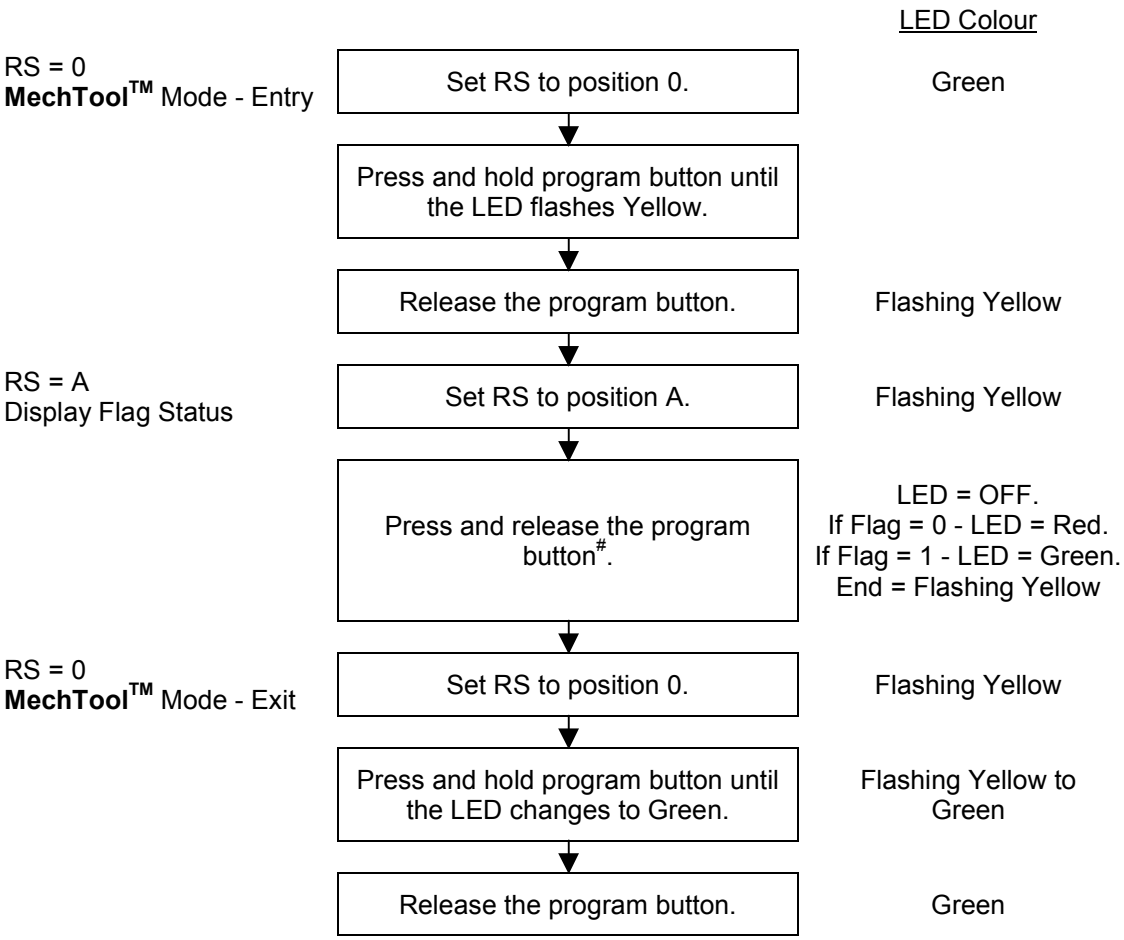
Flow Chart 10: Display Flag Status

RS = Rotary Switch Position



#Press again to repeat the sequence.

See Table 5 for an example of the sequence seen.

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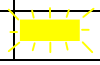
Table 5: LED Flag Status Example

Flag	Description	LED	Status
	Off		
0	Teach		**ON**
	Off		
1	Alarm		**ON**
	Off		
2	Diagnostics		**OFF**
	Off		
3	Window Tuning		**ON**
	Off		
4	Window Tweaks		**Disabled**
	Off		
5	Window Widening		**Enabled**
	Off		
6	Inhibit Polarity		**Low**
	Off		
7	Inhibit Drive		**High**
	Off		
			

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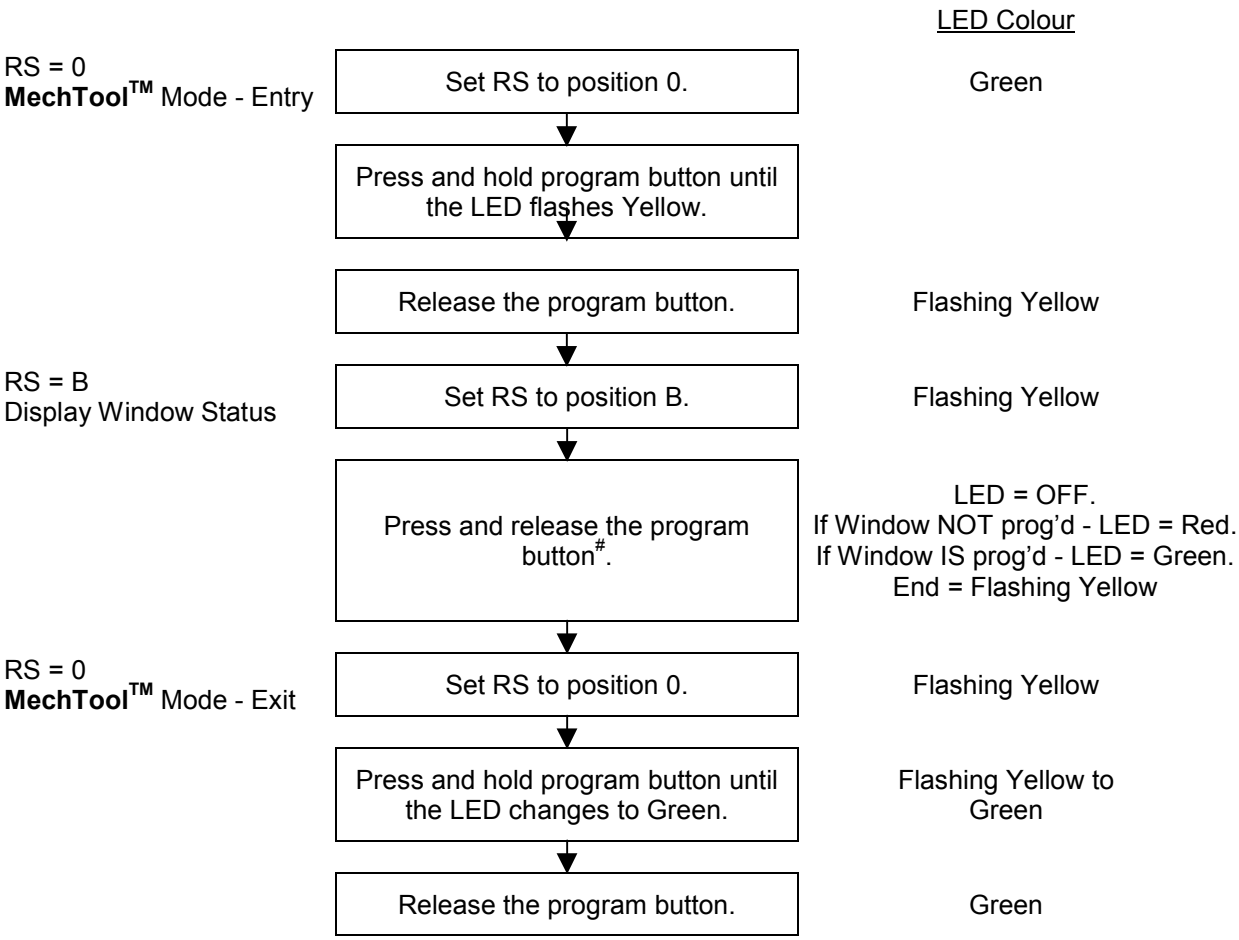
Flow Chart 11: Display Window Status

RS = Rotary Switch Position



#*Press again to repeat the sequence.*

See Table 6 for an example of the sequence seen.

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Table 6: Window Programmed Status Example

Window	Description	LED	Programmed
	Off		
1	Checks Window 1 Status		**YES**
	Off		
2	Checks Window 2 Status		**YES**
	Off		
3	Checks Window 3 Status		**YES**
	Off		
4	Checks Window 4 Status		**YES**
	Off		
5	Checks Window 5 Status		**YES**
	Off		
6	Checks Window 6 Status		**NO**
	Off		
7	Checks Window 7 Status		**NO**
	Off		
8	Checks Window 8 Status		**NO**
	Off		
9	Checks Window 9 Status		**NO**
	Off		
10	Checks Window 10 Status		**NO**
	Off		
11	Checks Window 11 Status		**NO**
	Off		
12	Checks Window 12 Status		**NO**
	Off		

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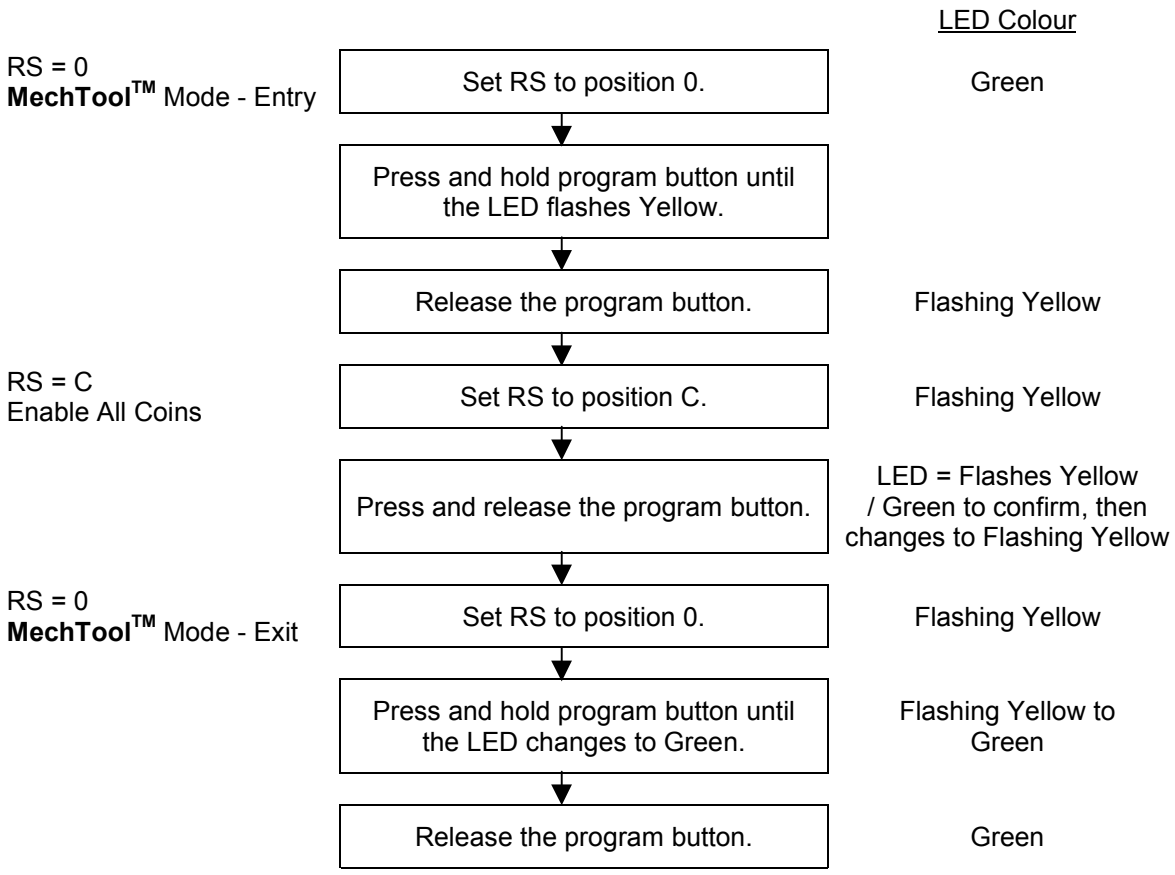
Flow Chart 12: Enable All Coins

RS = Rotary Switch Position



This Enables ALL the programmed coins.

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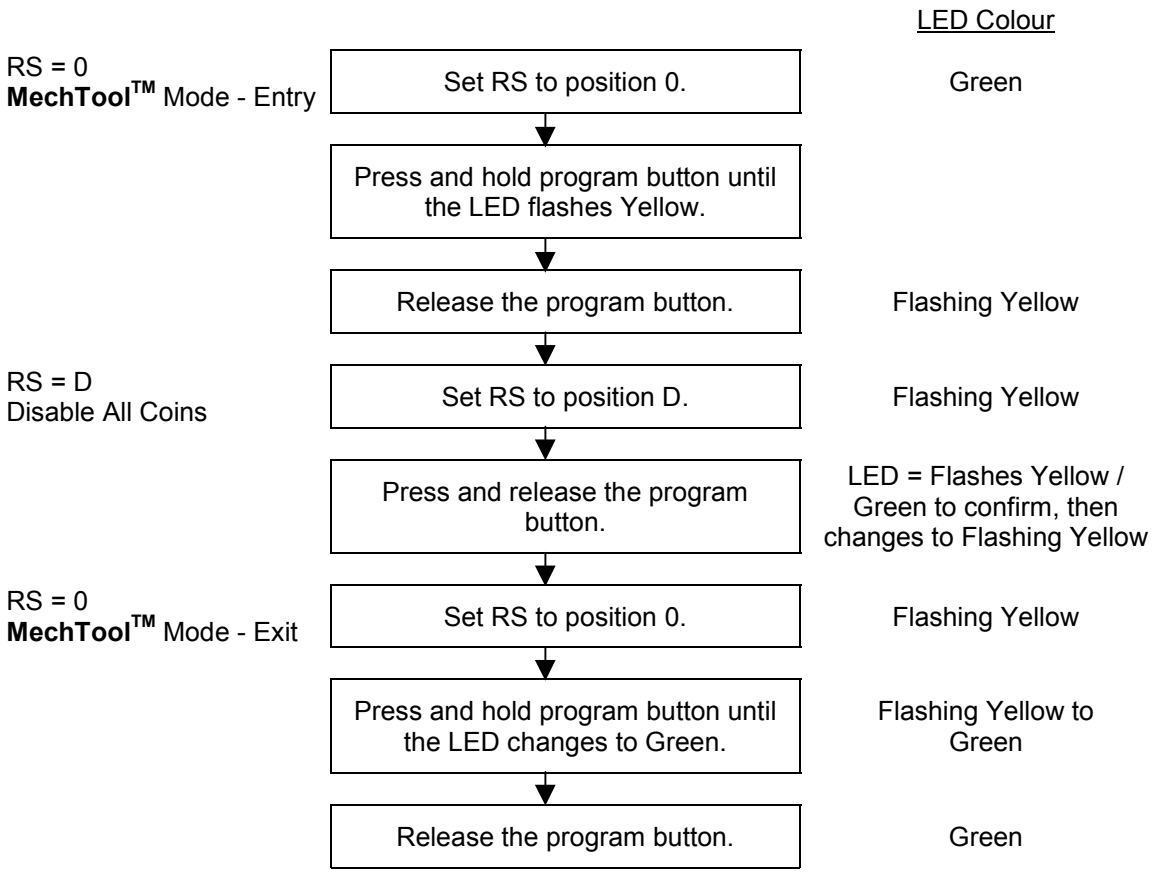
Flow Chart 13: Disable All Coins

RS = Rotary Switch Position



This Disables ALL the programmed coins.

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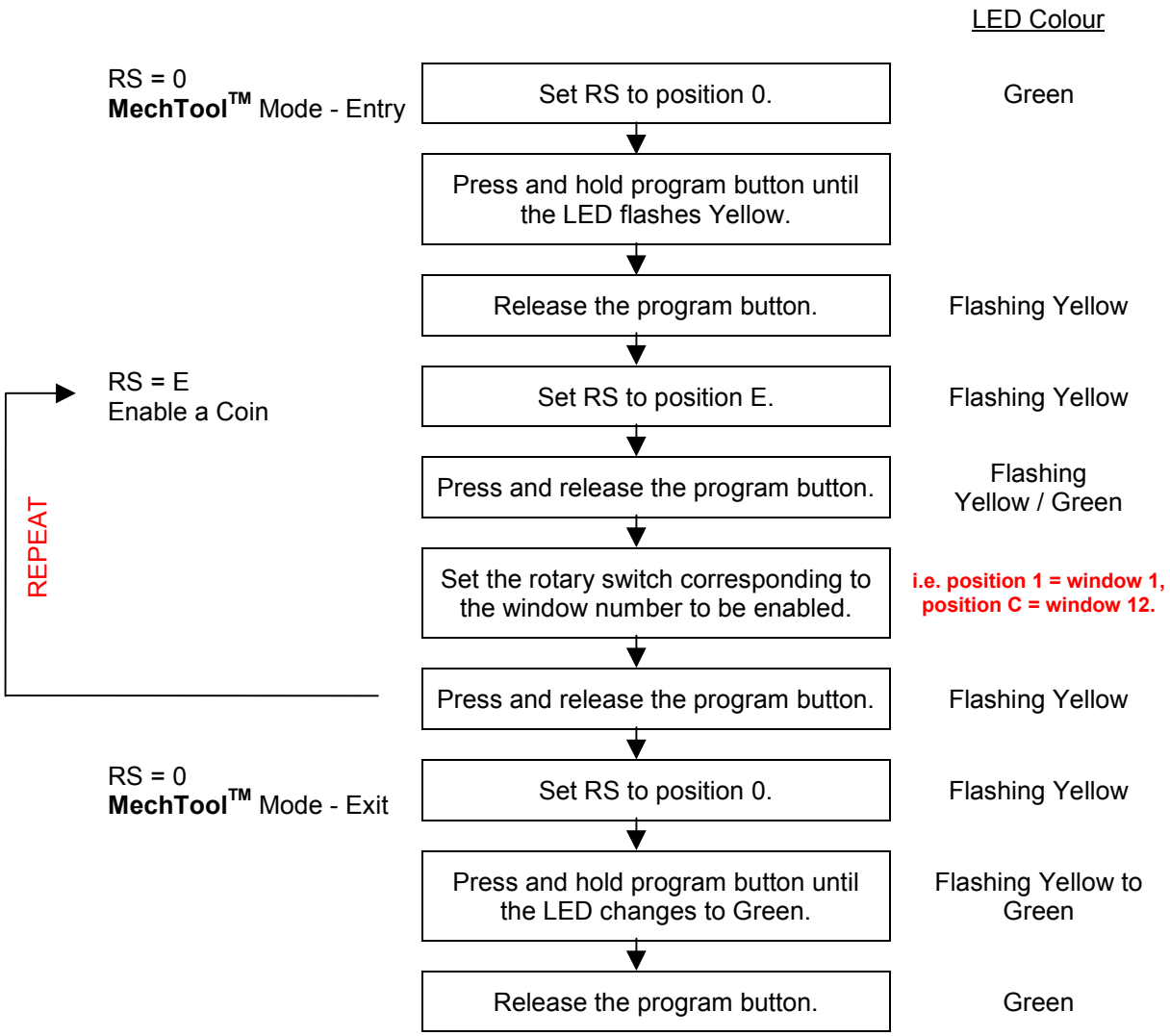
Flow Chart 14: Enable a Coin

RS = Rotary Switch Position



This enables the selected coin window.

Note: this does not affect any other coin, only the selected coin inhibit is changed.

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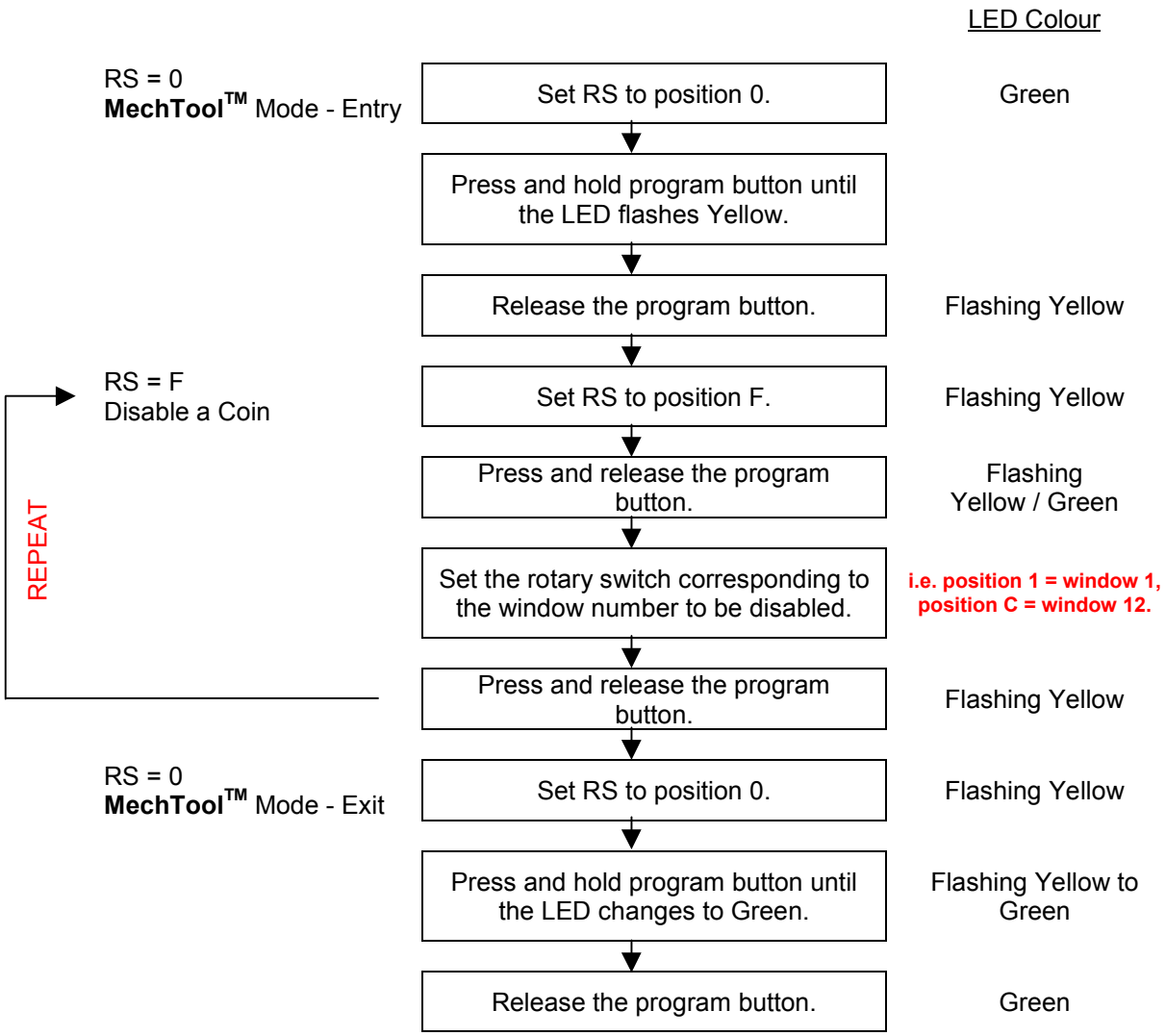
Flow Chart 15: Disable a Coin

RS = Rotary Switch Position



This disables the selected coin window.

Note: this does not affect any other coin, only the selected coin inhibit is changed.

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