



## Touch Stop & 3 Point Define Base.

# Brief description

## ➤ Purpose

Provide another solution to create a new base while the environment is not suitable for manual teaching (3 Points Define Base). Use Touch Stop function to teach the 3 points.

## ➤ Equipment

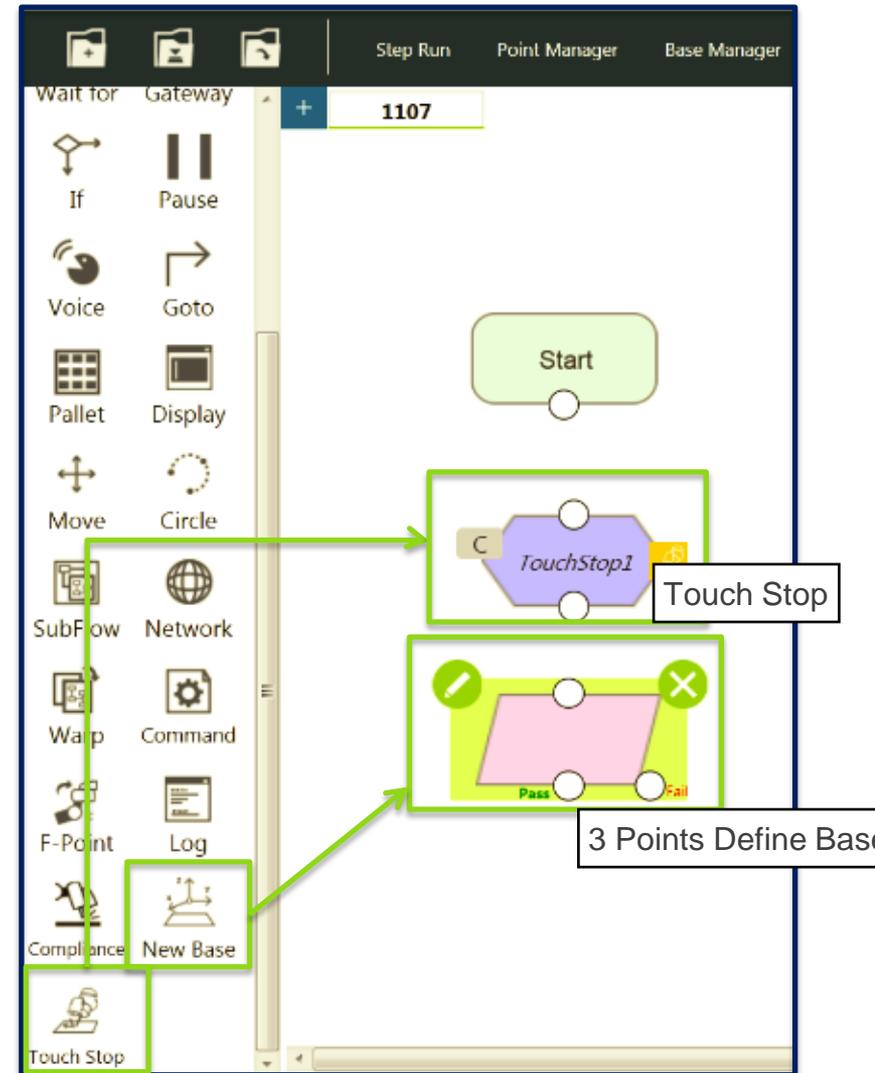
1. TM5
2. I/O switch

## ➤ Application instruction

## ➤ Function used

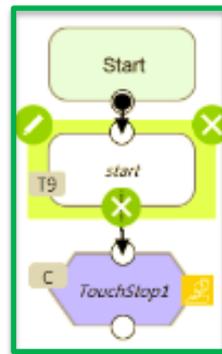
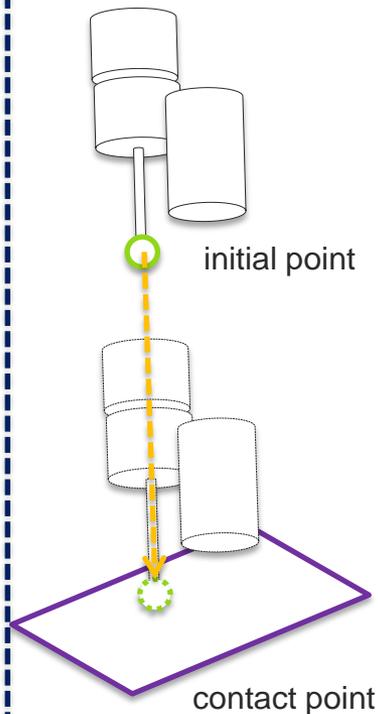
- (1) Touch Stop
- (2) 3 Points Define Base

## ➤ Flow example

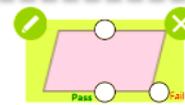


# Touch Stop & 3 Point Define Base

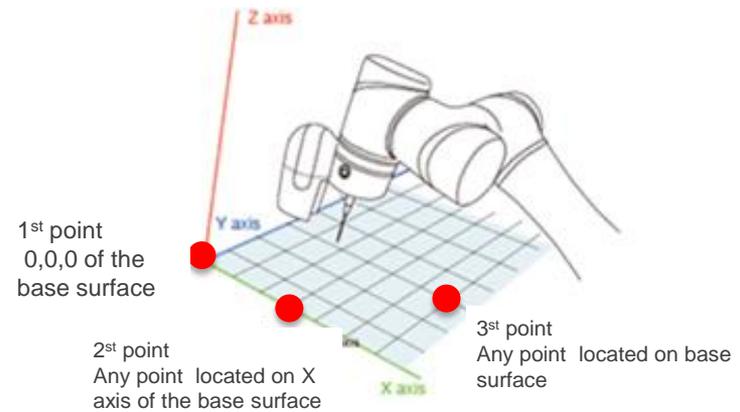
## Touch Stop



Use Compliance or Line to move from the initial point. While any stop criteria is triggered, robot will stop moving and record the stop position.



## 3 Point Define Base



1<sup>st</sup> point  
0,0,0 of the  
base surface

2<sup>nd</sup> point  
Any point located on X  
axis of the base surface

3<sup>rd</sup> point  
Any point located on base  
surface

D	123	1 <sup>st</sup> point	T0	>
D	456	2 <sup>nd</sup> point	T0	>
D	789	3 <sup>rd</sup> point	T0	>

After teaching 3 different points with Touch Stop function, user could define a new custom base with New Base function.



# Touch Stop - Compliance

- Node Name : Name the node
- Motion Setting : Choose the motion type, Compliance or Line.
- Coordinate Choose : Choose the coordinate system, Tool base or Current base, to move from the initial point
- Setting :

**Direction & Distance**

Direction:  ←choose the axis the to move along with

Distance:  mm ←moving distance limitation(unit: mm)

Force:  N ←force range 30~150 N

Velocity limit:  mm/s ←velocity range 30 ~150 mm/s

- Stop Criteria:
  - Time out :When exceeding the setting time, Node ends up.
  - Resisted : When detecting the resisted force, Node ends up.(The resisted force range depends on the Force setting , the bigger the Force setting the bigger the resisted force will be needed.)
  - Digital IO : Set a digital input as a stop condition to end up the Node. You can choose the High or Low factor.
  - Stroke % for DIO Detection : When the moving distance exceed the relatively setting percent, the robot will be given a different INT value for judging.

over do= int 2 ;  
 time out= int 3 ;  
 done = int 4 ;  
 float= int 6

e.g.1: 10mm Distance setting with 70% Stroke setting.  
 When D/I signal comes after 7mm moving, the result will be judged as done and int. value 4 will be returned .

- Variable : Set a variable to receive int. value.
- Analog IO : Set the analog input as a stop condition to end up the Node.
- Record Stopping Position on Point : When any stop criteria is triggered, user may set a point and record the current position. And the point could be used for 3 point define base.



# Touch Stop - Line

**Touch Stop** [X]

**Node Name** TouchStop1

**Motion Setting**  
 Compliance Line

**Coordinate Choose**  
 Tool Current Base

**Setting**  
 Single Axis

**Stop Criteria**  
 Digital IO [ ] [ ] H  
 Analog IO [ > ]  
 Brake distance 0 mm

Record Stopping Position on POINT 789 [ > ]

Test

OK Delete this node

- Node Name : Name the node
- Motion Setting : Choose the motion type, Compliance or Line.
- Coordinate Choose : Choose the coordinate system, Tool base or Current base, to move from the initial point

### ➤ Setting : **Direction & Distance**

Direction Z ←choose the axis to move along with

Distance 0 mm ←moving distance limitation(unit: mm)

Velocity 30 mm/s ←force range 30~150 N

Time to top speed 500 ms ←velocity range 30 ~150 mm/s

Precise positioning

←Precise positioning, need to click on to ensure a precise position.

### ➤ Stop Criteria:

- Digital IO: Set a digital input as a stop condition to end up the Node. You can choose the High or Low factor.
- Analog IO: Set the analog input as a stop condition to end up the Node..
- Brake Distance : The distance robot will stop after any Stop Criteria is triggered.

- Record Stopping Position on Point : When any stop criteria is triggered, user may set a point and record the current position. And the point could be used for 3 point define base.



# Touch Stop - Record Stopping Position on Point

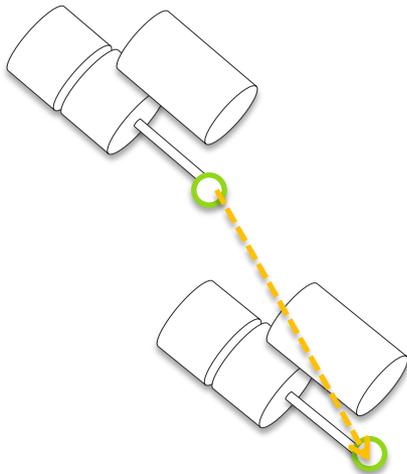
Record Stopping Position on POINT  > ←name the point

Test

←Click Test, the position will be recorded as point "789" while moving finished or any stop criteria triggered.

OK

Delete this node



The position will be recorded while moving finished or any stop criteria triggered.

Step Run Point Manager Base Manager Controller Variables Select EditBlock 0 RobotBa

1107

點位管理者

新增點位

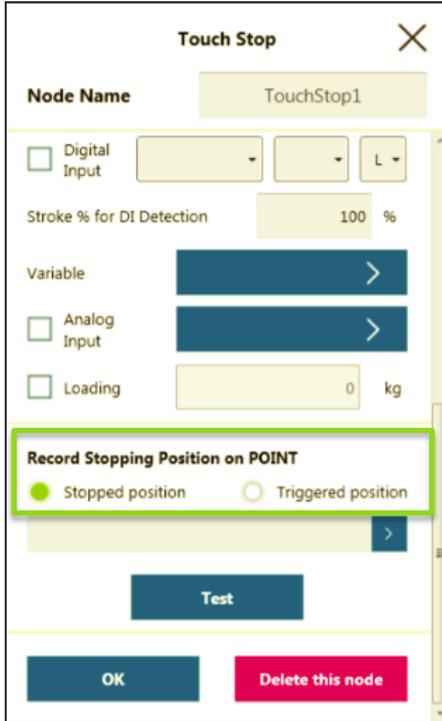
D	123	TO	>
D	456	TO	>
D	789	TO	>

Use Touch Stop Function to record three different points to for creating a Customer Base.

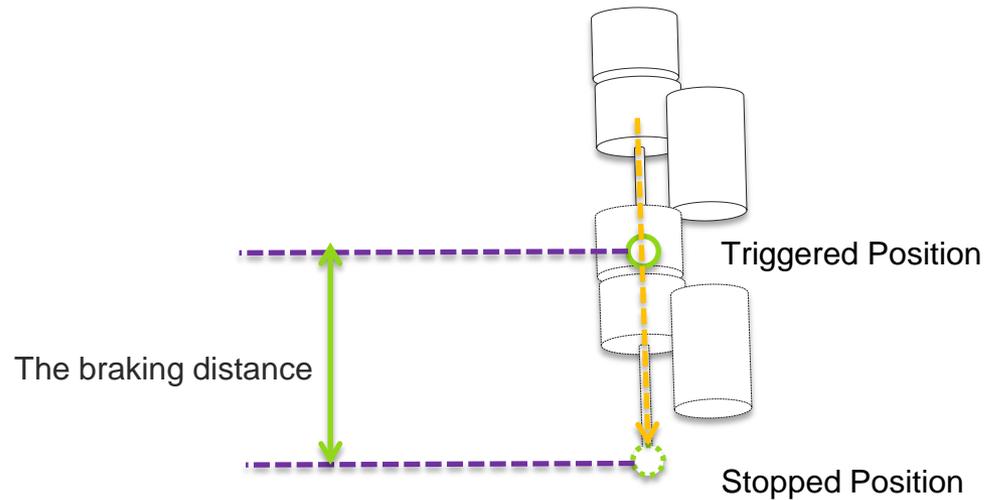
移動 (+) 手臂速度設定 1%

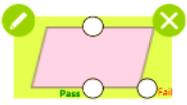


# TouchStop - New Function release For 1.66



- New function of increasing the flexibility of Recording Stop Position on POINT, Triggered Position or Stopped Position.
- ◆ Triggered Position : The position will be recorded once any stop criteria is triggered.
- ◆ Stopped Position: The position will be recorded after robot exactly stops.





# 3 Point Define Base

**New Base**

Please choose one of these two functions to create a new Base

Create a new Base by two Base

Create a new Base by three Point



**Three Point Create Base**

**Notice**

Please select three Point to create a new Base.

Base Name

Set 1st Point Set 2nd Point Set 3rd Point

OK

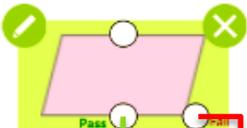
**點位管理者**

新增點位

D	123	TO	>
D	456	TO	>
D	789	TO	>

Three points recorded by Touch Stop.

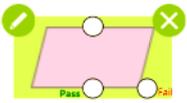
移動 (+) 手臂速度設定 1%



Build success

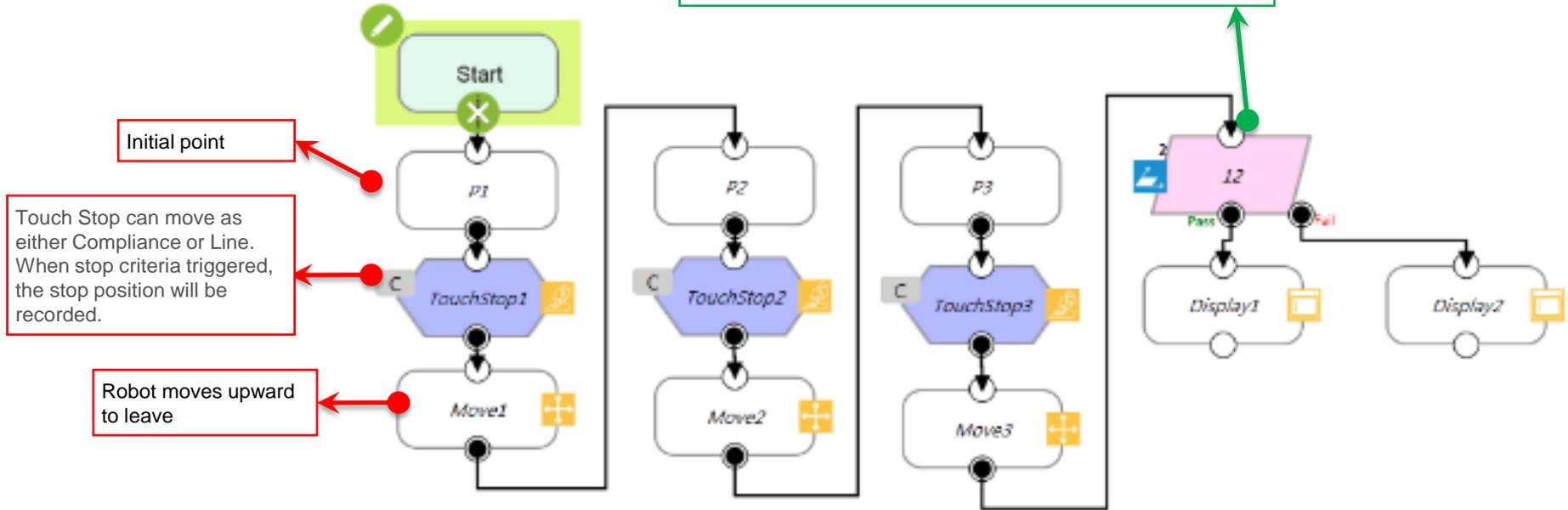
Build fail

Edit New Base and click "Create a new Base by three Point." It can't be used unless the user record three points with Touch Stop Function. Points with Robot base or Vision base can't be used to create the new base.



# 3 Point Define Base

After recording there different points with Touch Stop function, user can define a new customer base with New Base function.



END