

Cuty Axis

Sanmei Invention Servo
Sí servo

Operation Manual

Point-Table Part

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1. Before being Used

- This manual "Cuty Axis and Si servo Operation Manual [Point-table Part] SH035D052" explains point-table function of Cuty Axis and Si servo. Before using this product, read "Cuty Axis Operation manual [Main Part] SG972D001" and "Si servo Operation Manual [Main Part] SH035D001", "Cuty Axis and Si servo Operation Manual [Serial Communication Part] SH035D003" as well as other brochure attached to the driver and the motor. Before using the product, make sure to understand the proper operating procedures.
- Especially keep in mind the " Notes about Insurance" in "Cuty Axis Operation manual [Main Part] SG972D001" and "Si servo Operation Manual [Main Part] SH035D001". Ensure that you understand the manual and do not forget the proper procedures. In addition, be careful not to mishandle this product in any case. If care is not taken, in the worst case serious accidents or even loss of life may occur.
- After reading this Operating Manual and the brochures attached to the driver and the motor, keep them displayed where the operator can them at all times.

This document applies to the following servo driver models:

Cuty Axis	RT-0P3AXE RT-0P5AXE RT-001AXE RT-002AXE RT-004AXE RT-008AXE
Si servo	Si-02LDE Si-02DE Si-05LDE Si-05DE

2. Using Point-Table

2-1. Explanation of Item of Point-Table

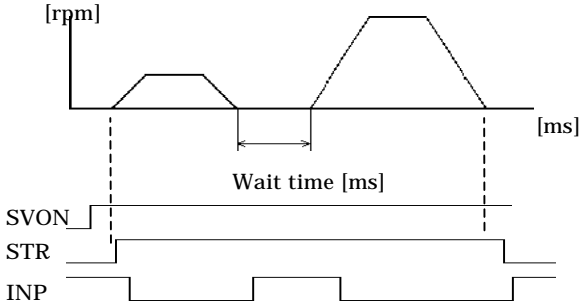
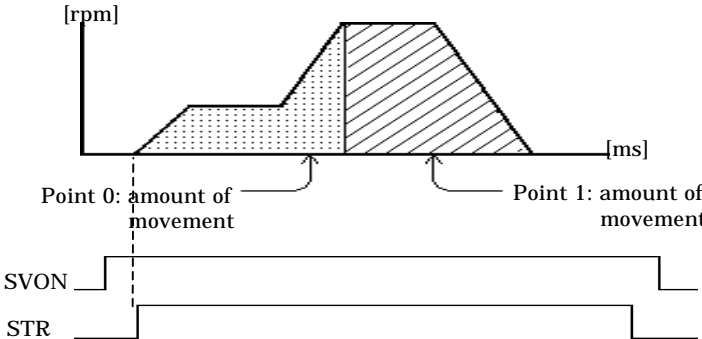
The serial communication command [TW] and [TR] specify the settings and reference for point-table data.

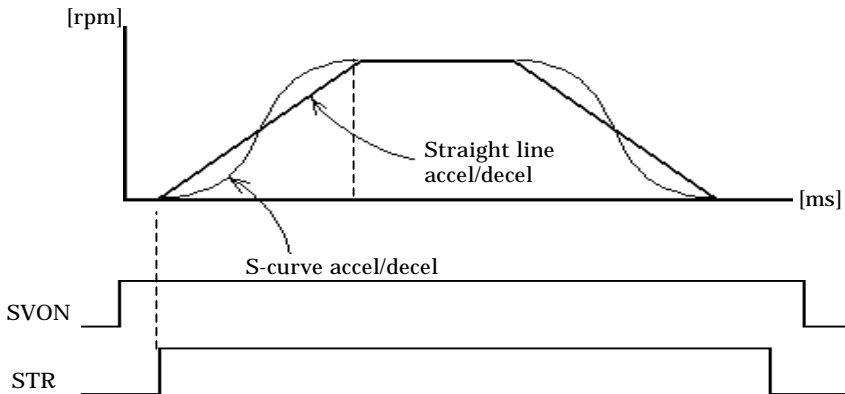
In CutyAxis, built-in digital-operator can also refer to point table.

Point-table setting item list (point-table number 0-255)

Setting Item	Contents	Unit	Minimum	Maximum
Abs/Inc	Specifies whether the value set for "amount of movement" item is an absolute position or an incremental movement amount. 0: Absolute position 1: Incremental movement amount	-	0	1
Amount of Movement	Specifies the absolute position or incremental movement amount in unit of pulse. (see note1)	Pulse	-9999999	9999999
Speed	Specifies the speed of motor rotational which executes point-table positioning operation in units of rpm.	rpm	1	Si...4500 Cuty...5000
Accel/Decel Time Const.	Specifies an inclination of acceleration and deceleration in the time to 3000-rpm acceleration.	ms	1	9999

The diagram illustrates the speed profile and digital signals for a point-table positioning operation. The speed profile shows a linear acceleration phase from 0 to 3000 rpm, a constant speed phase, and a linear deceleration phase back to 0 rpm. The acceleration and deceleration times are defined by the 'Accel/dec time const.' parameter. The digital signals SVON and STR are active during the acceleration and deceleration phases.

Wait Time	Specifies the wait time until the following point-table operation starts in units of ms, if some item of branching destination is set. This item is disregarded, if the "branching destination" is specified as "256" (program termination), and also if the item of "continuation" is set as "1".	ms	0	9999									
<div></div> <p>Note: The following point-table is executed after the positioning completion (INP) even if the waiting time is set to 0.</p>													
Continuation	When this item is set to "1", this point-table is connected with the following point-table operation.	-	0	1									
<p>Example: If point 0 and point 1 are set as follows, and start specifying point 0.</p> <div><table border="1" data-bbox="175 1115 663 1247"><thead><tr><th></th><th>Continuation</th><th>Branching destination</th></tr></thead><tbody><tr><td>Point 0</td><td>1</td><td>1</td></tr><tr><td>Point 1</td><td>0</td><td>256</td></tr></tbody></table></div>						Continuation	Branching destination	Point 0	1	1	Point 1	0	256
	Continuation	Branching destination											
Point 0	1	1											
Point 1	0	256											
Normal Branching Destination	After the point-table operation ends, the point-table number of setting value of this item is automatically executed if this item is set. At the program termination, "256" is set.	-	-1 ~256 1000 ~1255 (see note 2)										

S-Curve Accel/Decel	Specifies whether the positioning operation is done by straight line acceleration and deceleration or the positioning operation or by S-curve acceleration-and-deceleration. The actual time to accel/decel even if it sets it to either straight line accel/decel or S-curve accel/decel does not change. Therefore, when acceleration and deceleration time constant is the same, the maximum accel/decel torque grows as for S-curve accel/decel.	-	0	1																				
<p>[S-curve acceleration-and-deceleration operation]</p> 																								
Input Branching Destination	It jumps to the point-table that corresponds to the number (input branching destination) except for "normal branching destination" when EXIN, EXIN2 or EXIN3 signal is input when this item is set. Refer to "2-7. Input Condition Jump" for more details.	-	-1 ~ 256 1000~ 1255 (see note 2)																					
Input Branching Destination 2		-	-1 ~ 256 1000~ 1255 (see note 2)																					
Input Branching Destination 3		-	-1 ~ 256 1000~ 1255 (see note 2)																					
<table><tr><td>Control input signal</td><td>Serial communication command</td><td colspan="3">Corresponding input branching destination</td></tr><tr><td>EXIN</td><td>EXIN1ON, EXINON;1</td><td colspan="3">Input branching destination</td></tr><tr><td>EXIN2</td><td>EXIN2ON, EXINON;2</td><td colspan="3">Input branching destination 2</td></tr><tr><td>EXIN3</td><td>EXIN3ON, EXINON;3</td><td colspan="3">Input branching destination 3</td></tr></table>					Control input signal	Serial communication command	Corresponding input branching destination			EXIN	EXIN1ON, EXINON;1	Input branching destination			EXIN2	EXIN2ON, EXINON;2	Input branching destination 2			EXIN3	EXIN3ON, EXINON;3	Input branching destination 3		
Control input signal	Serial communication command	Corresponding input branching destination																						
EXIN	EXIN1ON, EXINON;1	Input branching destination																						
EXIN2	EXIN2ON, EXINON;2	Input branching destination 2																						
EXIN3	EXIN3ON, EXINON;3	Input branching destination 3																						
Loop Count	It jumps to the point-table of the number (after loop branching destination) besides "normal branching destination" after the point is executed repeating the frequency of the setting (loop count) when these items are set. Refer to "2-8. Loop Operation" for more details.	-	0	100																				
After Loop Branching Destination		-	0~ 256 1000~ 1255 (see note 2)																					

Torque	When this item is set, the torque is limited to the specified value (0~300%) if the point-table is executed. Refer to 2-9. "Torque Limitation" for more details.	%	0	300																																
Sensor	When this item is set, the sensor positioning operation is specified. 0: Sensor positioning operation is not executed. 1: Sensor positioning mode 1. 2: Sensor positioning mode 2. Refer to "2-10. Sensor Positioning" for more details	-	0	2																																
M-Code	When this item is set, the M-code output operation is specified. 0,8: M-cord output operation is not executed. 1~7: M code output before begins to execute point-table 9~15: M code output after point-table execution ends <table><tr><td>Value</td><td>Function</td></tr><tr><td>0,8</td><td>With no M-code output</td></tr><tr><td>1</td><td>Output the M-code "1" before point start</td></tr><tr><td>2</td><td>Output the M-code "2" before point start</td></tr><tr><td>3</td><td>Output the M-code "3" before point start</td></tr><tr><td>4</td><td>Output the M-code "4" before point start</td></tr><tr><td>5</td><td>Output the M-code "5" before point start</td></tr><tr><td>6</td><td>Output the M-code "6" before point start</td></tr><tr><td>7</td><td>Output the M-code "7" before point start</td></tr><tr><td>9</td><td>Output the M-code "1" after point end</td></tr><tr><td>10</td><td>Output the M-code "2" after point end</td></tr><tr><td>11</td><td>Output the M-code "3" after point end</td></tr><tr><td>12</td><td>Output the M-code "4" after point end</td></tr><tr><td>13</td><td>Output the M-code "5" after point end</td></tr><tr><td>14</td><td>Output the M-code "6" after point end</td></tr><tr><td>15</td><td>Output the M-code "7" after point end</td></tr></table> Refer to "2-11. M-Code Output" for more details.	Value	Function	0,8	With no M-code output	1	Output the M-code "1" before point start	2	Output the M-code "2" before point start	3	Output the M-code "3" before point start	4	Output the M-code "4" before point start	5	Output the M-code "5" before point start	6	Output the M-code "6" before point start	7	Output the M-code "7" before point start	9	Output the M-code "1" after point end	10	Output the M-code "2" after point end	11	Output the M-code "3" after point end	12	Output the M-code "4" after point end	13	Output the M-code "5" after point end	14	Output the M-code "6" after point end	15	Output the M-code "7" after point end	-	0	15
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14	Output the M-code "6" after point end																																			
15	Output the M-code "7" after point end																																			
Loop Clearance	When this item is set, the loop counter of the point-table of the set number is cleared. Refer to "2-8-2. Loop Counter Clearance" for more details.	-	-1	255																																

Note1: Specify the item of "amount of movement" to meet following requirements below. If these requirements are not met, the movement may not be as anticipated.

$$-2,000,000,000 < \text{set value} \times \frac{\text{Pos. Reference Multi-Ply (Numerator)}}{\text{Pos. Reference Multi-Ply (Denominator)}} < 2,000,000,000$$

Note2: If specified as 1000~1255, the single-block operation is executed. Refer to "2-6. Single-Block" for more details.

2-2. Starting Point-Table Operation

Point-table operation is executed by the control input signal or the serial communication command. The procedure is the following.

1. Specification of point-table number

To use the control input signal:

Specify the point table number with P0_IN~P7_IN.

To use serial communication command:

Specify the point-table number with the command [PNT].

Note: You must use the driver parameter "Input Method Select" to specify whether the control input signal or the serial communication command is used. Refer to the "Parameter" chapter of the separate volume "Operation Manual Main Part" (CutAxis: SG972D001, Si servo: SH035D001) for more details.

2. Start of operation

If the control input signal is used:

The rising edge of the control input signal STR or STRP executes the point-table.

If the serial communication command is used: (see note1)

The command [STRON] or [STRP] executes the point-table.

Note1: If the serial communication command [STRON] is used, you must transmit the command [STROFF] before the next [STRON]. *1)

Note2: You must set to driver's parameter "Input Method Select" to specify whether the control input signal or serial communication command is used. Refer to the "Parameter" chapter of the separate volume "Operation Manual Main Part" (CutAxis: SG972D001, Si servo: SH035D001) for more details.

Note3: If the motor is servo-off, the start operation is not executed until the motor is on.

2-3. Cancellation of Point-Table Operation

If the STR signal is turned OFF (see note1) during point-table operation, the motor decelerates to a stop, the point-table execution is discontinued and it returns to the start instruction waiting status. At this time, the point-table number that will be executed next time is set to the point-table that specified the point-table most recently (start-point).

Note: The following three methods can be used to turn OFF STR:

- The falling edge of the control input signal STR, or serial communication command [STROFF]:
Specify the driver parameter "Input Method Select" to use either the control input signal or the serial communication command. Refer to the "Parameter" chapter of the separate volume "Operation Manual Main Part" (CutAxis: SG972D001, Si servo: SH035D001) for more details.
- The control input signal STP or the serial communication command [STOP].
- Servo-off operation

2-4. HOLD of Point-Table Operation

When the STR signal is turned OFF during point-table operation, it temporarily stops. Refer to the "Point-Table Mode" clause of the separate volume "Operation Manual Main Part" for more details.

2-5. Teaching

The current position can be saved in the specified point-table by the control input signal TDIN or the serial communication command [TDIN] (teaching). Moreover, the data of "abs/inc" of the point-table that did the teaching is automatically set to 0 (absolute).

Refer to "Teaching Function" clause of a separate volume "Operation Manual Main Part" for more details about teaching procedure.

2-6. Single-Block

The single block operation is specified by setting the value in which "1000" is added (1000~1255) to the "Normal/Input branching destination" item (0~255) of the point-table. In the point-table to which the single-block operation is set, it stops after the movement is completed, and it shifts to the following operation by inputting the control input signal SBK or the serial communication command [SBKON]. The settings and procedure are explained in the following example.

Example: Procedure to operate with a single-block in order of point 0 => point 1 => point 2:

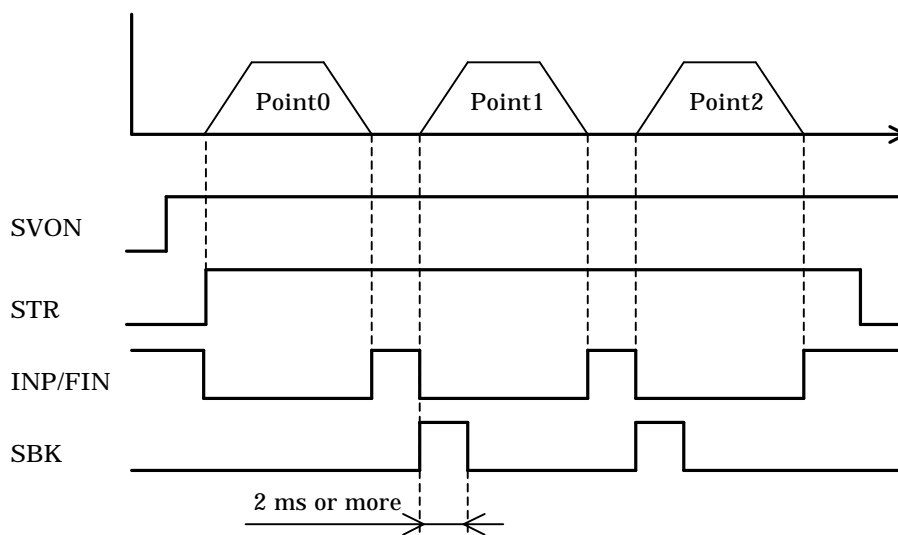
<Setting>

- 1 "1001", "1002", "256" (program termination) is set to "normal branching destination" of the point-table 0, 1, and 2 respectively (single-block operation setting).
- 2 "0" [ms] is set to each "wait time" of point-table 0 and 1. (see note 1)
- 3 "0" is set to each "continuation" of point-table 0 and 1. (see note 2)

Point	Wait time	Continuation	Branching destination
0	0	0	1001
1	0	0	1002
2	Arbitrary	Arbitrary	256

<Operation >

- 1 Starts point-table execution from the point-table 0.
- 2 When the execution of point 0 is completed, it becomes SBK waiting state, and execution of point 1 is started by the rising edge of the control input signal SBK or the serial communication command [SBKON] (see note 3).
- 3 When the execution of point 1 is completed, it becomes SBK waiting state, and execution of point 2 is started by the rising edge of SBK or command [SBKON]. (see note 4)
- 4 When the execution of point 2 is completed, the point-table operation is ended.



Note1: If "wait time" is set, SBK in wait time is disregarded.

Note2: If "continuation" is set as "1",

- If the following point-table moves in the same direction, continuous operation is executed.
- If the following point-table moves in another direction, the motor stops and in the SBK waiting status.

Note3: Turn on 2 ms or more for SBK.

Note4: If the serial communication command [SBKON] is used, you must execute the command [SBKOFF] before the next [SBKON].

2-7. Input Condition Jump

If an "input branching destination", and "2, 3" items of point-table are set up, when the rising edge of the control input signal EXIN, EXIN2, EXIN3 or the serial communication command [EXINON;n], [EXINnON] is input while executing the point-table, it jumps to "input branching destination" of the corresponding number after the point-table execution ends. At this time, a "normal branching destination" setting of the point-table is disregarded. When EXIN, EXIN2, EXIN3 or command [EXINON;n], [EXINnON] is not input to the point-table execution end, "input branching destination" is disregarded, and jumps to "normal branching destination".

The single-block operation can be set to an "input branching destination".

One of the following is set for the point-table that used the input condition jump: "000"~"255", "1000"~"1255" (single-block operation of "000"~"255") or "256". "-1" is set if it is not used.

Note: refer to "2-6. Single-Block" for more details about single-block.

"000" ~ "255"

If EXIN is input, it jumps to the point-table set by "000"~"25" after executing this point-table. If there is no input, jumps to the point-table set in "normal branching destination".

"1000" ~ "1255" (point-table number +1000)

The single-block operation is set at the jump destination. If EXIN is input, it jumps to the set point-table set by SBK after executing this point-table.

"256"

If EXIN is input, the point-table positioning operation is ended ("normal branching destination" is disregarded).

"-1"

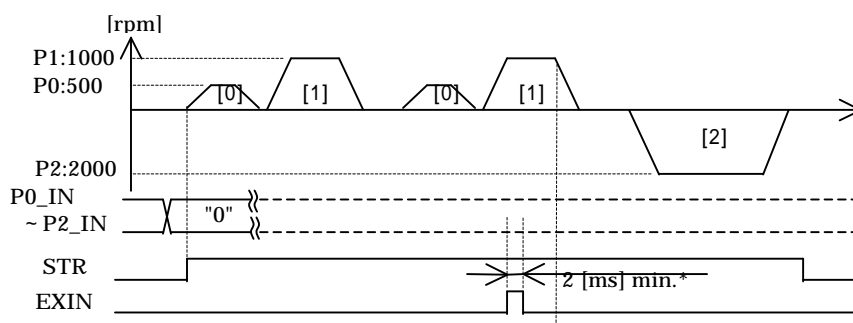
If the input condition jump is not used, "-1" is set to "input branching destination".

Example of input condition jump

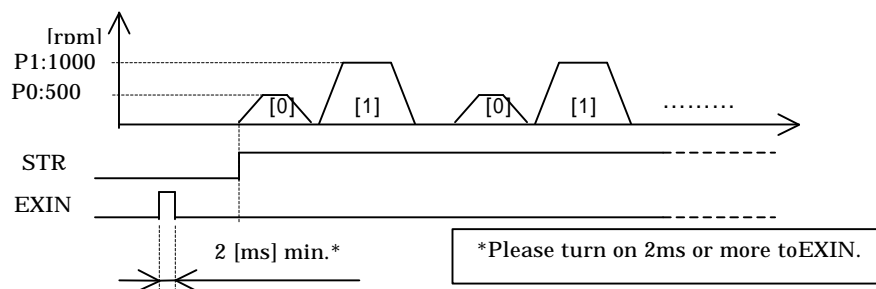
<Point-table settings>

Point	Abs/inc	Amount of movement	Speed	Normal branching destination	Input branching destination 1
0	1	4000	500	1	0
1	1	8000	1000	0	2
2	0	0	2000	0	0
:	:	:	:	:	:
:	:	:	:	:	:

- 1) If there is EXIN input (rising edge) up to the movement completion of a reference position of the point-table that sets "input branching destination", it jumps to the specified point.



- 2) EXIN input before STR input for the point-table start operation is invalid.

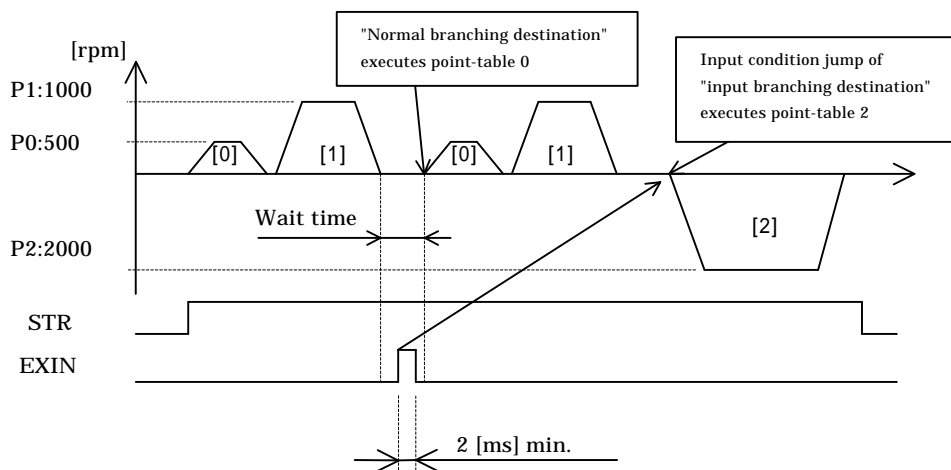


Note1: Put 1, 2, and 3 for "n".

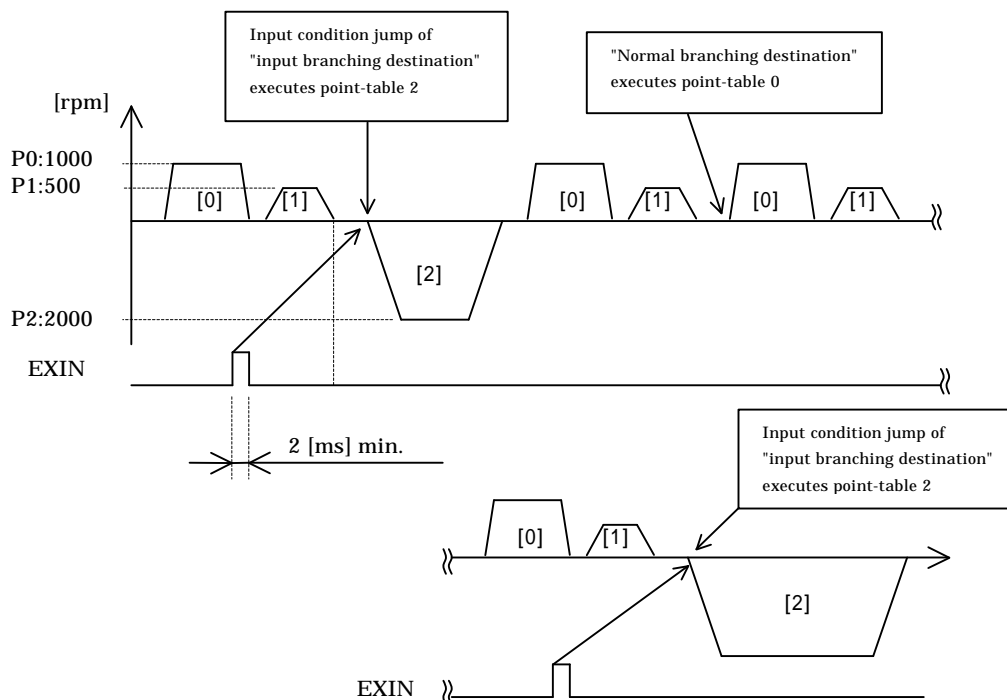
Note2: If the serial communication command [EXINON;n], [EXINnON] is used, you must execute the command [EXINOFF;n], [EXINnOFF] before the next [EXINON;n], [EXINnON].

- 3) If both "wait time" and "input branching destination" are specified, sometimes the rising edge of the control input signal SBK or the serial communication command [EXINON;n], [EXINnON] is detected. In this case, the specified setting the input condition jump at the point is not executed but the setting for "normal branching destination" is executed. However, the EXIN input at this time is saved internally in the driver, and the setting for EXIN input will be effective at the point of "input condition jump" when it is used next time.

In the following example, the number of the point-table to which the input condition jump is set is "1".



- 4) If the input condition jump is executed by the rising edge of the control input signal SBK or the serial communication command [EXINON;n], [EXINnON], the EXIN input becomes invalid. The input condition jump is not executed until the rising edge EXIN is detected. In the following example, the number of the point-table to which the input condition jump is specified as 1.



2-8. Loop Operation

2-8-1. Loop Operation

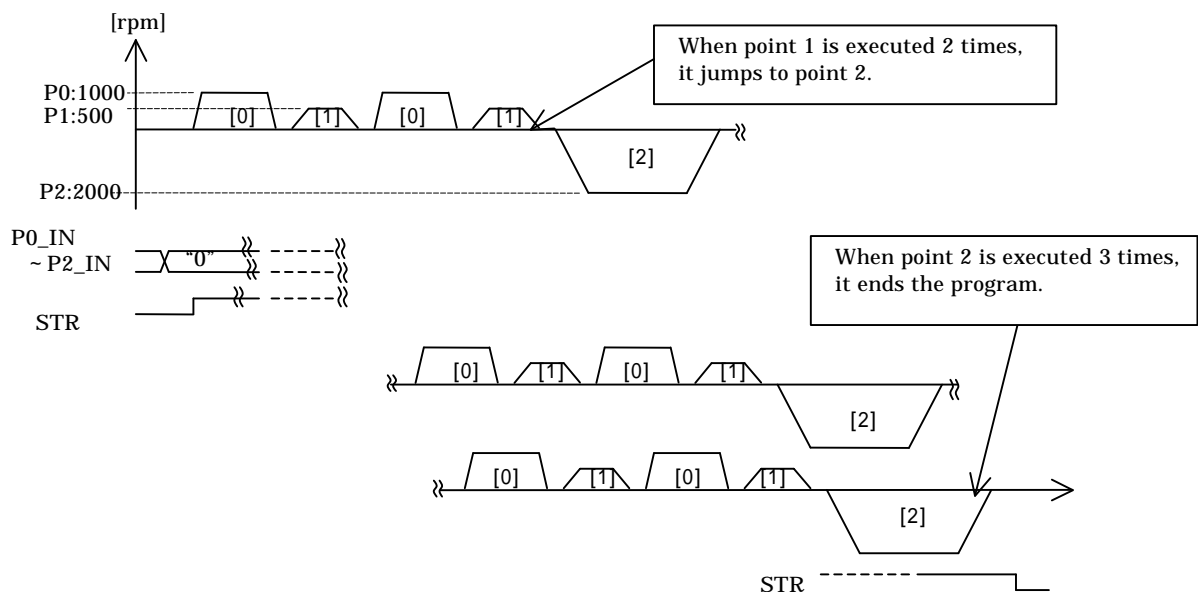
When "loop count" and "after loop branching destination" items of a point-table are specified, the point-table is executed "loop count" repeatedly. It jumps to the point-table No. for "after loop branching destination". The setting of "Normal branching destination" is disregarded.

The single-block operation can be specified to "after loop branching destination". Moreover, the loop can be nested.

Example of loop operation

<Point-table settings>

Point	Abs/inc	Amount of movement	Speed	Normal branching destination	Loop count	After loop branching destination
0	1	8000	1000	1	0	0
1	1	4000	500	0	2	2
2	0	0	2000	0	3	256
:	:	:	:	:	:	:
:	:	:	:	:	:	:



2-8-2. Loop Counter Clearance

The loop counter of the point-table of the number of a set value is cleared to "0".

"000" ~ "255"

If the point that sets the value is executed, the loop counter of the point-table of the number of a set value is cleared.

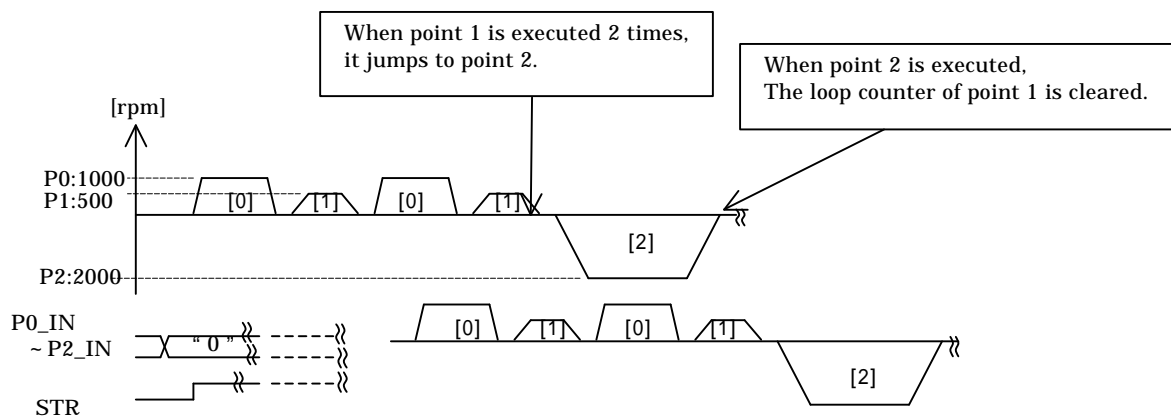
"-1"

The function of a loop clear counter is not used.

Example of loop counter clearance

<Point-table settings>

Point	Abs/inc	Amount of movement	Speed	Normal branching destination	Loop count	After loop branching destination	Loop Clearance
0	1	8000	1000	1	0	0	-
1	1	4000	500	0	2	2	-
2	0	0	2000	0	0	0	1
:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:



2-9. Torque Limitation

To limit the torque when a point-table is executed, specify a value for "Torque" item of the point table. The torque setting range is 0~300, a percentage of the rated torque of the motor.

Note1) If you set a torque limitation operation, you must set FIN to be the completion signal to the control output signal.

Note2) This function limits the torque output in the positioning operation by a positional control, and does not always output a constant torque.

Note3) In Cuty Axis, the motor might not follow to reference position, and the alarm of "Position Error Pulse Overflow" may occur.

Note4) Because the torque is limited by the current detection in the motor power line, an error margin of about $\pm 10\sim 15\%$ for the setting is caused in an actual torque output when the torque is limited by, for example, wire resistance of motor, variation of current detecting element, or temperature drift.

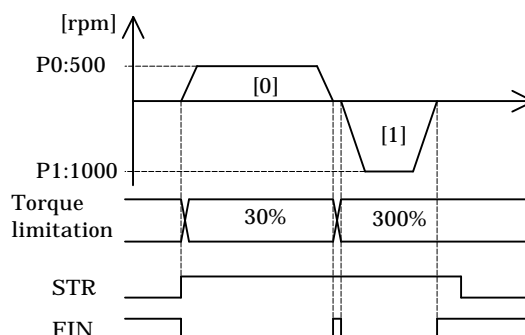
Note5) Keep in mind that the torque limitation value changes before the specified position according to the situation of the positional error pulse when "continuation" item of the point-table is set to "1" (effective) and the torque limitation operation is executed.

The following operations can be executed by combining torque limitation function and the setting of "wait time" item in the point-table.

(1) When "wait time" is set to "0" [ms]

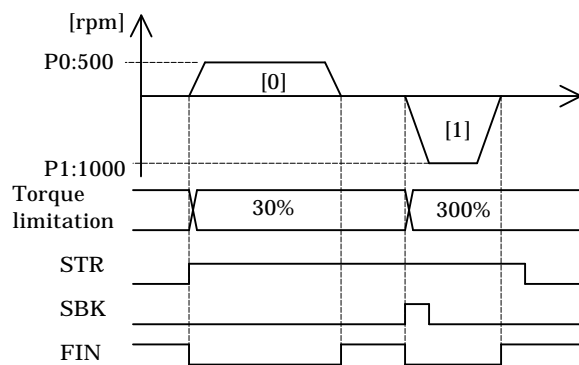
Example1: The FIN signal is turned ON in the completion of the movement of a reference position and the positional error pulse is the same of less than the value of parameter "In-Position Area". In the point-table to which the torque limitation is specified, FIN turns on when the point-table operation ends and the limitation of the torque is released. The point-table operation that sets the torque is continued until ON of the FIN signal is output.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	0	1	30
1	0	0	1000	0	256	0
:	:	:	:	:	:	:
:	:	:	:	:	:	:



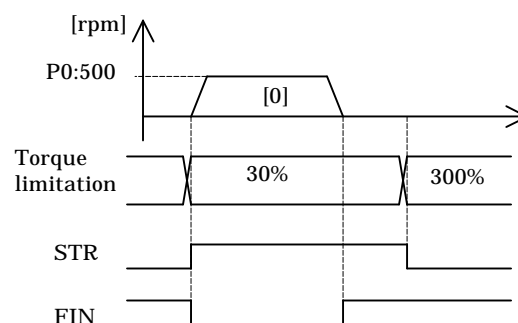
Example2: If the single-block operation is set to "normal/input branching destination" of the point-table to which the torque is set, the torque limitation is continued until the SBK signal is input even after the FIN signal is turned ON.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	0	1001	30
1	0	0	1000	0	256	0
:	:	:	:	:	:	:
:	:	:	:	:	:	:



Example3: If "256" is set to "normal/input branching destination" of the point-table to which the torque is set, after the FIN signal is ON output, the torque limitation is released by OFF of the STR input.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	0	256	30
:	:	:	:	:	:	:
:	:	:	:	:	:	:

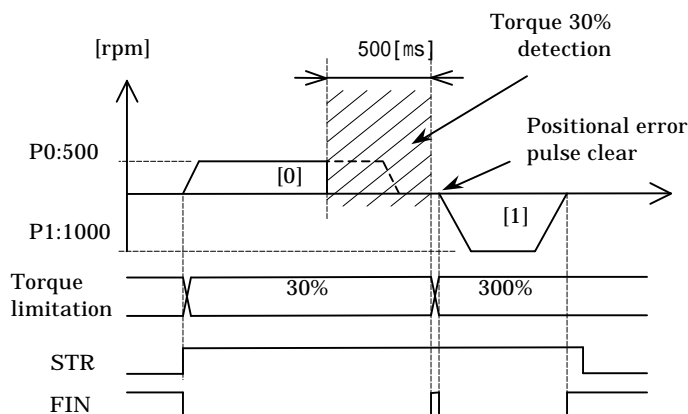


(2) If "wait time" is set excluding "0" (1~9999 ms)

After a torque limitation is detected during the set time, the positional error pulse is cleared. You can use this setting for the usage in which the machine is held in a constant torque. Moreover, you must set "abs/inc" item of the following point-table to "0" (absolute value) when you use this setting (when making it to "incremental value", the reference position might shift by a positional error pulse clear).

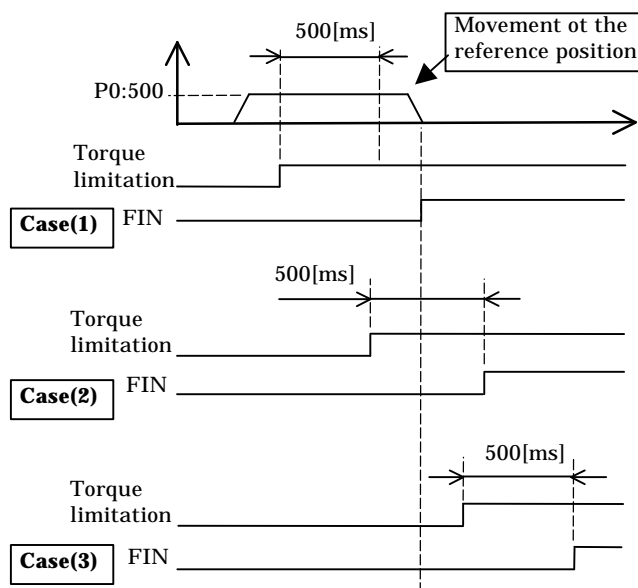
Example1: The FIN signal is output when the movement of a reference position was completed and the torque limitation continues at the time specified by "wait time" (See note). At this time, the torque limitation is released, and the positional error pulse is cleared automatically.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	500	1	30
1	0	0	1000	0	256	0
:	:	:	:	:	:	:
:	:	:	:	:	:	:

**Caution**

If positioning will be completed within the time specified for "wait time" and the value of the positional error pulse enters in the in-position area, it becomes a usual positioning, and the positional error pulse clear is not done. This is the same for example 2 and 3.

Note: Details of the timing of the FIN output (positional error pulse clear) are shown below.



(1) In case the torque limitation has already continued at that time of the setting before completing the movement of a reference position.

FIN is output at the same time as completing the movement of a reference position.

(2) In case the torque limitation is continuing (It doesn't reach at the time of the setting) when the movement of a reference position is completed.

When the continuance of the torque limitation reaches a set value of "wait time", FIN is output.

(3) In case the torque is not limited when the movement of a reference position is completed.

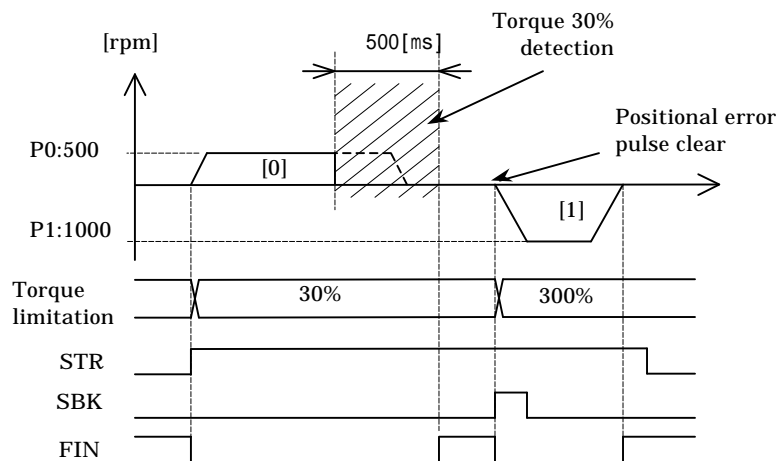
FIN is output when the torque limitation is begun, and it reaches a set value of "wait time"

The timing of the FIN output is the same for the following example 2 and 3.

Example2: If the single-block operation is set to "Normal/Input branching destination" of the point-table to which the torque is set, after the FIN signal outputs on, the rising edge of the control input signal SBK or the serial communication command [SBKON] is input. As a result, the release of the torque limitation and the clearness of the positional error pulse are done, and the operation of the following point-table is executed.

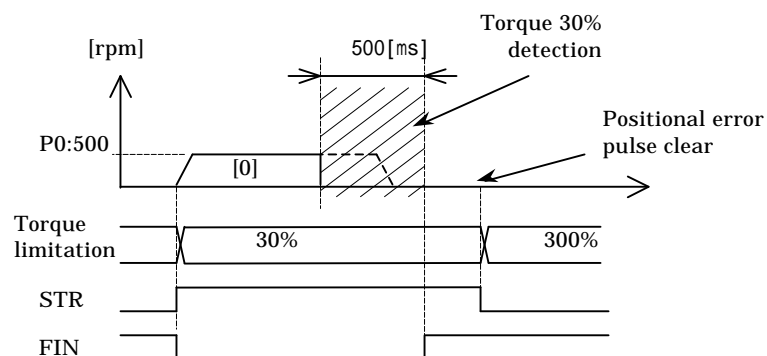
* Refer to "2-6. Single-Block" for more details about single-block.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	500	1001	30
1	0	0	1000	0	256	0
:	:	:	:	:	:	:
:	:	:	:	:	:	:



Example3: If "256" is set to "normal/input branching destination" of the point-table to which the torque is set, after the FIN signal is ON output, the release of torque limitation and the clearness of the positional error pulse are done by OFF of the STR input.

Point	Abs/inc	Movement	Speed	Wait time	Normal branch	Torque
0	0	8000	500	500	256	30
:	:	:	:	:	:	:
:	:	:	:	:	:	:



2-10. Sensor Positioning

The point-table that "sensor" item is set to "1" or "2" operates as "sensor positioning (mode 1)", "sensor positioning (mode 2)".

In the sensor positioning, the positions are based on the sensor input (SENS signal) from the outside. It positions where it was moved for the distance of set of "amount of movement" item of the point-table from the position in which the rising edge of the SENS signal was detected.

2-10-1. Point-Table Set Up for Sensor Positioning

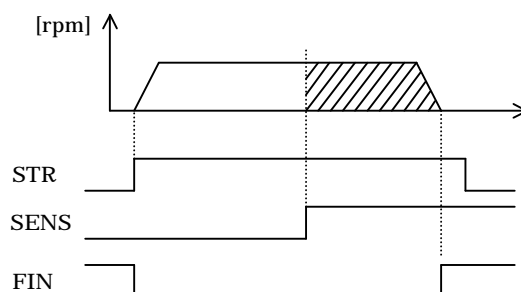
In point-tables for which "sensor" item is set, four items ("abs/inc", "amount of movement", "speed" and "accel/decel time const.") from other set items are effective.

Items	Contents of setting	Setting range
Abs/inc	The direction in which it searches for the sensor is specified.	0: Forward 1: Reverse
Amount of movement	The distance from position where the rising edge of sensor input is detected to the stop position is set.	-9999999~9999999 [pulse]
Speed	Motor rotational speed is set.	Si 1~4500 [rpm] Cuty 1~5000 [rpm]
Accel/decel time const.	Acceleration-and-deceleration time constant (time to 3000 -rpm acceleration) is set.	1~9999 [ms]

2-10-2. Sensor Positioning Functional Description

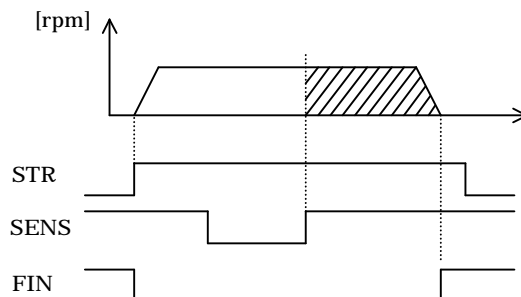
- 1) If the SENS signal is OFF at the time of starting ([mode 1] and [mode 2] commonness):

The distance for the set amount of the movement is moved from the rising edge of the SENS signal and it positions it.



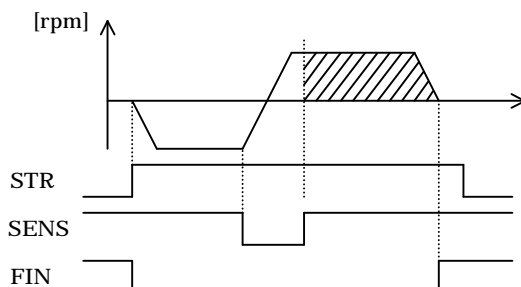
- 2) If the SENS signal is ON at the time of starting ([mode 1])

If the SENS signal is ON when you input the STR signal by "mode 1", it rotates in the direction set by "abs/inc" item, and positioning is done based on the rising edge of the following SENS signal.



3) If SENS signal is ON at the time of starting ([mode 2]):

If the SENS signal is ON when you input the STR signal by "mode 2", it rotates in the opposite direction set by "abs/inc" item. As a result, after removing ON of the SENS signal once, it searches the signal to the direction set by "abs/inc" item, and positioning is done based on the rising edge of the following SENS signal.



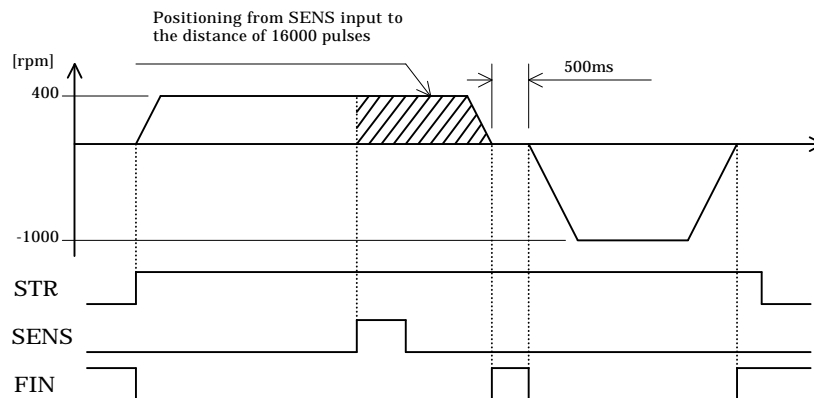
2-10-3. Sensor Positioning Use Example

Both [mode 1] and [mode 2] can be used combining the usual positioning point-table.

Example: Positioning from the sensor to the distance of 16000 pulses by sensor positioning [mode 1]

Returning to zero, after stopping for 500ms

Point	abs/inc	Movement	Speed	Wait time	Normal Branch	Sensor
0	0	16000	400	500	1	1
1	0	0	1000	0	256	0



2-11. M-code Output

By setting "M-code" item of the point-table, the M-code output function can be used.

In the point that is specified M-code output function, operations are executed as follows:.

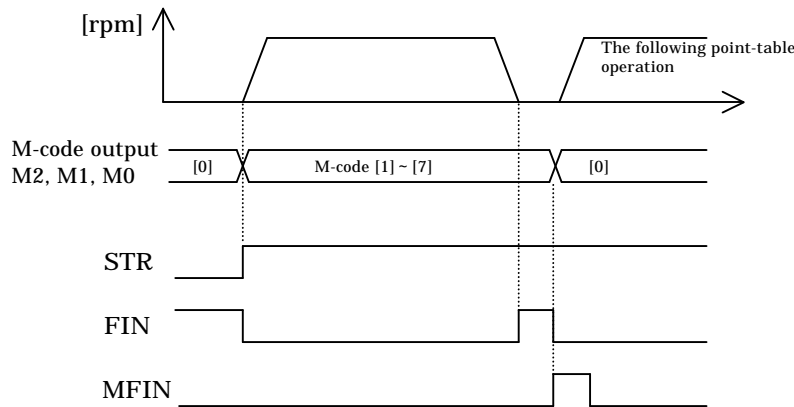
- If "M-code" item is set to "1"~"7", when the operation of the point-table is started, M-code is BIT output to outputs of M0, M1, M2.
- If "M-code" item is set to "9"~"15", after completing the operation of the point-table, M-code is BIT output to outputs of M0, M1, and M2.
- Outputs of M0, M1, and M2 are turned OFF by rising edge of control input signal MFIN or the serial communication command MFINON.
- When "normal/input branching destination" item is set, the following operation is not executed until MFIN is input.
- Please turn OFF the MFIN input signal ([MFINOFF] is transmitted for the serial communication command) after confirming OFF of M-code outputs (M0, M1, and M2).

When M-code output function is not used, "M-code" item is set to "0".

Setting value	M2 Output	M1 Output	M0 Output	Contents
0	0	0	0	M code output function is not used.
1	0	0	1	M-code output at the time of point-table start
2	0	1	0	
3	0	1	1	
4	1	0	0	
5	1	0	1	
6	1	1	0	
7	1	1	1	
8	0	0	0	M code output function is not used.
9	0	0	1	M-code output at the time of point-table completion
10	0	1	0	
11	0	1	1	
12	1	0	0	
13	1	0	1	
14	1	1	0	
15	1	1	1	

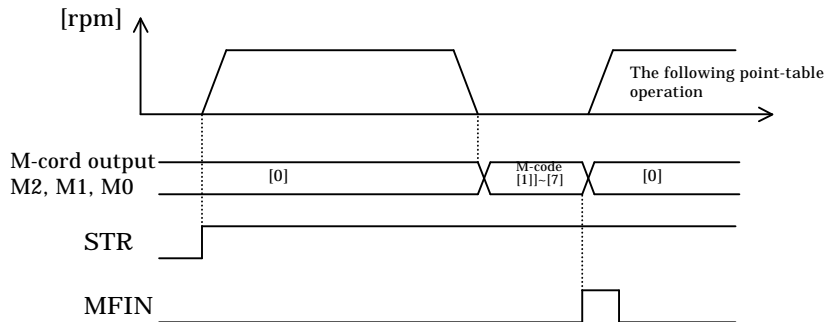
2-11-1. M-Code Output at the Time of Point-Table Start

[If "M-code" item is set to "1"~"7"]



2-11-2. M-Code Output at the Time of the Point-Table Completion

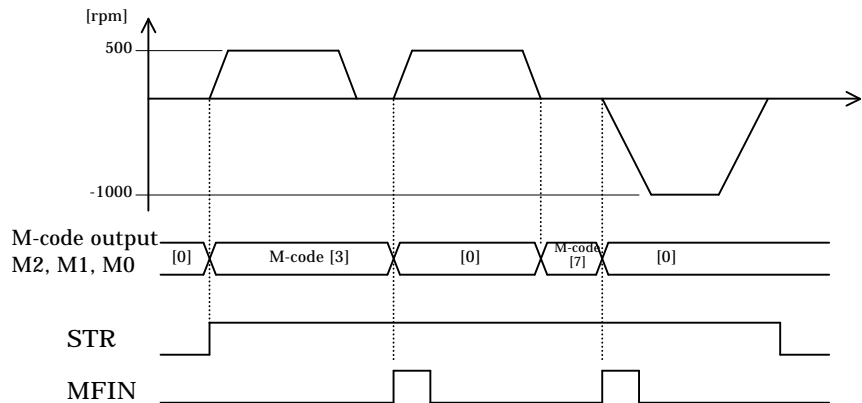
[If "M-code" item is set to "9"~"15"]



2-11-3. M-Code Output Use Example

Example: Setting the M-code output to point-table 0 and 1. Program operation by "normal branch" setup.

Point	Abs/inc	Movement	Speed	Normal Branch	M-code
0	0	16000	500	1	3 (M-code: 3 output: point-table start)
1	0	32000	500	2	15 (M-code: 7 output: point-table completion)
2	0	0	1000	256	0 (No M-code output)



++Reference ++

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