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## INTRODUCTION

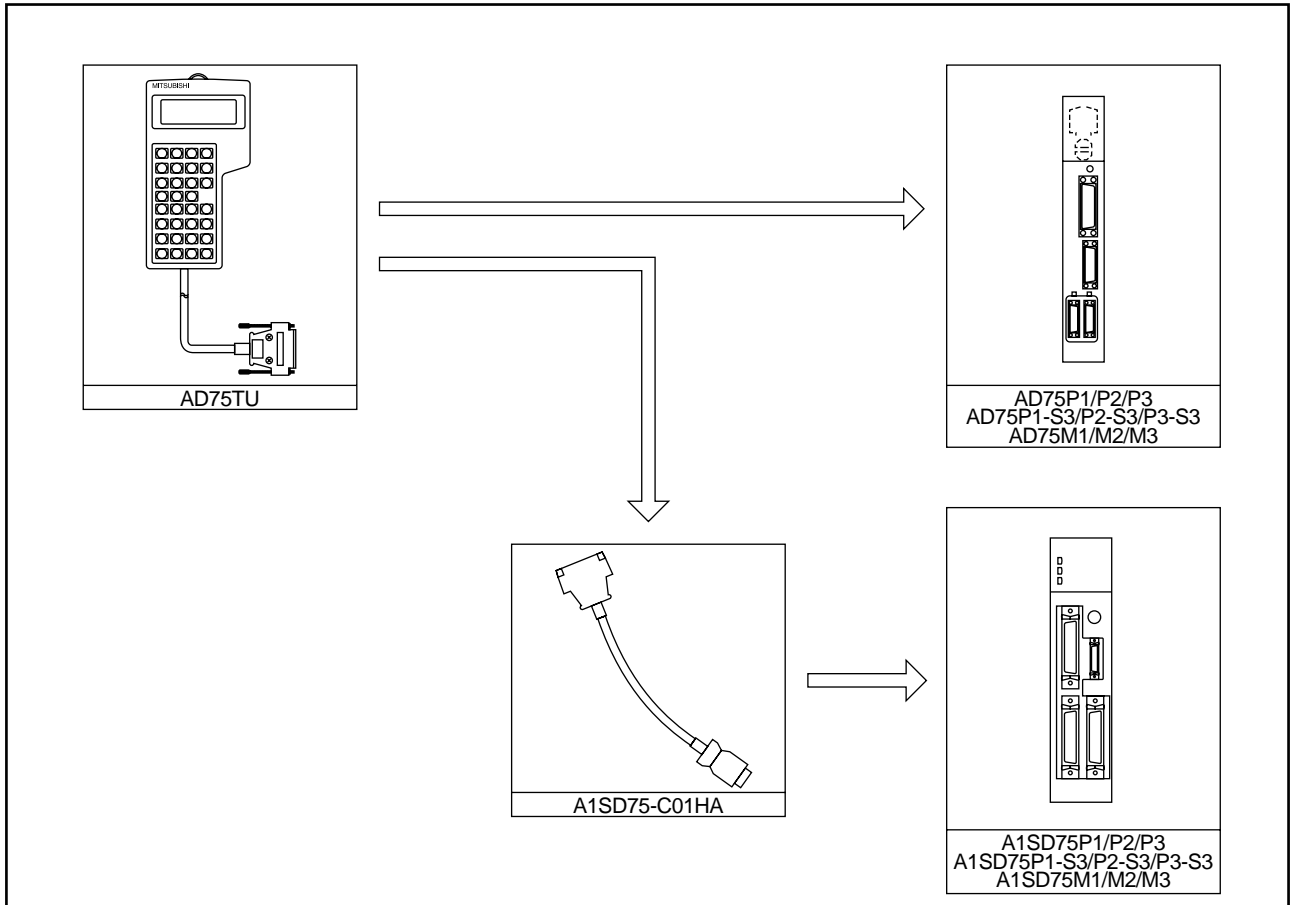
Thank you for choosing a Mitsubishi MELSEC-A Series General Purpose Programmable Controller. Before using your new PC, please read this manual thoroughly to gain an understanding of its functions so you can use it properly. Please forward a copy of this manual to the end user.

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# System Configuration

## 2.1 System Configuration

The following diagram shows the system configuration of the TU and AD75.



# Specifications

This chapter contains general specifications and performance specifications.

## 3.1 General specifications

Table 3.1 shows the TU's general specifications.

**Table 3.1 General Specifications**

Item	Specifications					
Ambient operating temperature	0 to 40 C					
Ambient storage temperature	-20 to 70 C					
Ambient operating humidity	20 to 85 % RH, Non-condensing					
Ambient storage humidity	10 to 90 % RH, Non-condensing					
Vibration resistance	Conforming to JIS B 3501, IEC 1131-2* <sup>3</sup>	Under intermittent vibration	Frequency	Acceleration	Amplitude	No. of sweeps 10 times each in X, Y, Z directions (for 80 min.)
			10 to 57 Hz	—	0.075 mm (0.003 in.)	
		Under continuous vibration	57 to 150 Hz	9.8 m/s <sup>2</sup> {1 G}	—	
			10 to 57 Hz	—	0.035 mm (0.001 in.)	
57 to 150 Hz	4.9 m/s <sup>2</sup> {0.5 G}	—				
Shock resistance	Conforming to JIS B3501, IEC 1131-2 (147 m/s <sup>2</sup> {15 G}, 3 times in each of 3 directions X Y Z)					
Operating ambience	No corrosive gases					
Operating elevation	2000 m (6562 ft.) max.					
Installation location	Control panel					
Over voltage category * <sup>1</sup>	II max.					
Pollution level * <sup>2</sup>	2 max.					

\*1 This specifies the switchboard to which the device is assumed to be connected, between the public service wire network and the machine inside the factory.

Category II applies to those devices that have power supplied from a fixed facility.

The surge resistance voltage of a device with a rated voltage of 300 V is 2500 V.

\*2 This indicates the amount of conductive material generated under the environment in which the device is being used.

Degree of contamination 2 indicates that only non-conductive material is generated.

However, under these environmental conditions, the unit could be conductive temporarily due to the rare occurrence of condensation.

\*3 JIS: Japanese Industrial Standard

## 3.2 Performance Specifications

Table 3.2 shows the TU's general specifications.

**Table 3.2 Performance Specifications**

Item	Specifications
Connected object	Positioning module type AD75P1/P2/P3, A1SD75P1/P2/P3 Positioning module type AD75P1-S3/P2-S3/P3-S3, A1SD75P1-S3/P2-S3/P3-S3 Positioning module type AD75M1/M2/M3, A1SD75M1/M2/M3
Power supply, current consumption	Receives from the connected object (5 V DC, 0.2 A)
Connection method	Hand held system (A conversion cable of type A1SD75-C01HA is required to connect the A1SD75□.)
Display method	LCD of 20 characters by 4 lines Not backlight
Operation method	31 keys
Confirmation of the key operation	Buzzer
Life of display module	50,000 hours or longer (Under an operating ambient temperature of 15 to 35 °C, and an operating ambient humidity of 65 % RH or less)
Life of keys	One million times
Cable length	3 m (9.84 ft.) (The cable is integrated into the AD75 TU main module)
External dimensions [mm (in.)]	195 (H) 105 (W) 27 (D) (7.68 4.13 1.06)
Weight [kg (lb.)]	0.5 (1.11)
Cooling method	Self-cooling system

### 3.3 Setting the Range of Parameters and Zero Return Data (Standard Mode)

This section contains parameter ranges, initial values, and zero return data. Use this information when you set the TU.

#### 3.3.1 Setting the AD75P

**Parameter**

Item	Setting range				
	mm	inch	degree	pulse	
Basic parameter 1	Unit setting	0	1	2	3
	Number of pulse per rotation	1 to 65535 pulse			
	Travel rate per rotation	0.1 to 6553.5 [ m]	0.00001 to 0.65535 [inch]	0.00001 to 0.65535 [degree]	1 to 65535 [pulse]
	Magnification of the travel per pulse	1: 1 time, 2: 10 times, 3: 100 times, 4: 1000 times			
	Pulse output mode	0: PLS/SIGN 1: CW/CCW 2: Phase A/Phase B			
Rotation direction setting	0: Increases the present value with forward pulse output 1: Increases the present value with backward pulse output				
Basic parameter 2	Speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.00 [degree/min]	1 to 1000000 [pulse/s]
	Acceleration time	1 to 65535 [ms]			
	Deceleration time				
Extended parameter 1	Backlash compensation	0 to 6553.5 [ m]	0 to 0.65535 [inch]	0 to 0.65535 [degree]	0 to 65535 [pulse]
	S/W stroke upper limit	-214748364.8 to 214748734.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	S/W stroke lower limit				
	S/W stroke limit selection	0: Present feed value multiplied by software stroke limit 1: Mechanical feed value multiplied by software stroke limit			
	Valid/invalid S/W stroke limit during JOG or manual pulse generator operation	0: Software stroke limit is invalid during JOG or manual pulse generator operation. 1: Software stroke limit is valid during JOG or manual pulse generator operation.			
	Command in-position range	0.1 to 3276700.0 [ m]	0.00001 to 327.67000 [inch]	0.00001 to 327.67000 [degree]	1 to 32767 [pulse]
	Torque limit value	1 to 500 [%]			
	M code ON signal output timing	0: WITH mode, 1: AFTER mode			
	Speed change type in speed switching mode	0: Standard speed switching mode, 1: Forward speed switching mode			
	Interpolation speed specification method (interpolation mode)	0: Composed speed, 1: Standard axis speed			
	Present feed value update request command during speed control	0: Present feed value is not updated during speed control. 1: Present feed value is updated during speed control.			
	Manual pulse generator selection	0: Manual pulse generator operation is not allowed. 1: Manual pulse generator 1 is used. 2: Manual pulse generator 2 is used. 3: Manual pulse generator 3 is used.			
Extended parameter 2	Acceleration time 1	1 to 65535 [ms]			
	Acceleration time 2				
	Acceleration time 3				
	Deceleration time 1				
	Deceleration time 2				
	Deceleration time 3				
	JOG speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pulse/s]
	JOG operation acceleration time selection	0 to 3			
	JOG operation deceleration time selection				
	Acceleration/deceleration process selection	0: Trapezoid acceleration/deceleration process 1: S-curve acceleration/deceleration process			
	S-curve ratio	1 to 100 [%]			
	Rapid stop deceleration time	1 to 65535 [ms]			
	Stop group 1 rapid stop selection	0: Normal deceleration stop 1: Rapid stop			
	Stop group 2 rapid stop selection				
	Stop group 3 rapid stop selection				
Positioning completed signal output time	0 to 65535 [ms]				
Circular interpolation error allowable range	0 to 10000.0 [ m]	0 to 1.00000 [inch]	0 to 1.00000 [degree]	0 to 100000 [pulse]	
External start function selection	0: External positioning start 1: External speed change request 2: Skip request				



	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	3				
	20000				
	20000				
	1				
	1				
	0				
	200000				
	1000				
	1000				
	0				
	2147483647				
	-2147483648				
	0				
	0				
	100				
	300				
	0				
	0				
	0				
	0				
	Axis 1: 1, Axis 2: 2, Axis 3: 3				
	1000				
	1000				
	1000				
	1000				
	1000				
	1000				
	20000				
	0				
	0				
	0				
	100				
	1000				
	0				
	0				
	0				
	300				
	100				
	0				

Zero return data

Item		Setting range			
		mm	inch	degree	pulse
Zero return basic parameter	Zero return method	0: Near-point dog 1: Mechanical stop (1) (due to time-out from the dwell timer) 2: Mechanical stop (2) (due to zero phase signal when the stopper is touched) 3: Mechanical stop (3) (Non near-point dog method) 4: Counting method (1) (Zero phase signal is used.) 5: Counting method (2) (Zero phase signal is not used.)			
	Zero return direction	0: Positive direction (address increase direction) 1: Negative direction (address decrease direction)			
	Zero address	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	Zero return speed	0.01 to 6000000.00 [mm/min]	0.001 to 6000000.00 [inch/min]	0.01 to 6000000.00 [degree/min]	1 to 1000000 [pules/s]
	Creep speed				
	Zero return retry	0: Zero return retry is not performed via upper/lower limit switch. 1: Zero return retry is performed via upper/lower limit switch.			
Zero return extended parameter	Zero return dwell time	0 to 65535 [ms]			
	Travel after near-point dog	0 to 214748364.7 [ m]	0 to 21474.83647 [inch]	0 to 21474.83647 [degree]	0 to 2147483647 [pulse]
	Zero return acceleration time	0 to 3			
	Zero return deceleration time				
	Zero shift amount	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	-21474.83648 to 21474.83647 [degree]	-2147483648 to 2147483647 [pulse]
Zero return torque limit value	1 to 300 [%]				

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	0				
	0				
	0				
	1				
	1				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	300				

<b>POINT</b>	Data setting method (setting unit) is the same as that for the SWaaa-AD75P.
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**3.3.2 Setting the AD75PS3**

**For standard mode**

**Parameter**

Item	Setting range				
	mm	inch	degree	pulse	
Basic parameter 1	Unit setting	0	1	2	3
	Number of pulse per rotation	1 to 65535 pulse			
	Travel rate per rotation	0.1 to 6553.5 [ m]	0.00001 to 0.65535 [inch]	0.00001 to 0.65535 [degree]	1 to 65535 [pulse]
	Magnification of the travel per pulse	1: 1 time, 2: 10 times, 3: 100 times, 4: 1000 times			
	Pulse output mode	0: PLS/SIGN 1: CW/CCW 2: Phase A/Phase B(4-multiplication) 3: Phase A/Phase B(1-multiplication)			
	Rotation direction setting	0: Increases the present value with forward pulse output 1: Increases the present value with backward pulse output			
Basic parameter 2	Speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pulse/s]
	Acceleration time	1 to 65535 [ms]			
	Deceleration time				
	Bias speed at start	0.01 to 6000000.00 [mm/min]	0.01 to 6000000.00 [inch/min]	0.001 to 6000000.000 [inch/min]	1 to 1000000 [pulse/s]
Stepping motor mode selection	0: Standard mode 1 1: Stepping motor mode				
Extended parameter 1	Backlash compensation	0 to 6553.5 [ m]	0 to 0.65535 [inch]	0 to 0.65535 [degree]	0 to 65535 [pulse]
	S/W stroke upper limit	-214748364.8 to 214748734.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	S/W stroke lower limit				
	S/W stroke limit selection	0: Present feed value multiplied by software stroke limit 1: Mechanical feed value multiplied by software stroke limit			
	Valid/invalid S/W stroke limit during JOG or manual pulse generator operation	0: Software stroke limit is invalid during JOG or manual pulse generator operation. 1: Software stroke limit is valid during JOG or manual pulse generator operation.			
	Command in-position range	0.1 to 3276700.0 [ m]	0.00001 to 327.67000 [inch]	0.00001 to 327.67000 [degree]	1 to 32767 [pulse]
	Torque limit value	1 to 500 [%]			
	M code ON signal output timing	0: WITH mode, 1: AFTER mode			
	Speed change type in speed switching mode	0: Standard speed switching mode, 1: Forward speed switching mode			
	Interpolation speed specification method (interpolation mode)	0: Composed speed, 1: Standard axis speed			
	Present feed value update request command during speed control	0: Present feed value is not updated during speed control. 1: Present feed value is updated during speed control. 2: When controlling speed, perform zero-clear of present feed value.			
	Manual pulse generator selection	0: Manual pulse generator operation is not allowed. 1: Manual pulse generator 1 is used. 2: Manual pulse generator 2 is used. 3: Manual pulse generator 3 is used.			
	Pluse output logical to drive module selection	0: Positive logical 1: Negative logical			
	Accelation/deceleration time setting size selection	0: 1 word type 1: 2 words type			
Extended parameter 2	Acceleration time 1	1 to 65535 [ms]			
	Acceleration time 2				
	Acceleration time 3				
	Deceleration time 1				
	Deceleration time 2				
	Deceleration time 3				
	JOG speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pulse/s]
	JOG operation acceleration time selection	0 to 3			
	JOG operation deceleration time selection				
	Acceleration/deceleration process selection	0: Trapezoid acceleration/deceleration process 1: S-curve acceleration/deceleration process			
	S-curve ratio	1 to 100 [%]			
	Rapid stop deceleration time	1 to 65535 [ms]			
	Stop group 1 rapid stop selection	0: Normal deceleration stop 1: Rapid stop			
	Stop group 2 rapid stop selection				
Stop group 3rapid stop selection					
Positioning completed signal output time	0 to 65535 [ms]				
Circular interpolation error allowable range	0 to 10000.0 [ m]	0 to 1.00000 [inch]	0 to 1.00000 [degree]	0 to 100000 [pulse]	

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	3				
	20000				
	20000				
	1				
	1				
	0				
	200000				
	1000				
	1000				
	0				
	0				
	0				
	2147483647				
	-2147483648				
	0				
	0				
	100				
	300				
	0				
	0				
	0				
	0				
	Axis 1: 1, Axis 2: 2, Axis 3: 3				
	0				
	0				
	1000				
	1000				
	1000				
	1000				
	1000				
	1000				
	20000				
	0				
	0				
	0				
	100				
	1000				
	0				
	0				
	0				
	300				
	100				
	0				

Zero return data

Item	Setting range				
	mm	inch	degree	pulse	
Zero return basic parameter	Zero return method	0: Near-point dog 1: Mechanical stop (1) (due to time-out from the dwell timer) 2: Mechanical stop (2) (due to zero phase signal when the stopper is touched) 3: Mechanical stop (3) (Non near-point dog method) 4: Counting method (1) (Zero phase signal is used.) 5: Counting method (2) (Zero phase signal is not used.)			
	Zero return direction	0: Positive direction (address increase direction) 1: Negative direction (address decrease direction)			
	Zero address	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	Zero return speed	0.01 to 6000000.00 [mm/min]	0.001 to 600000.00 [inch/min]	0.001 to 600000.00 [degree/min]	1 to 1000000 [pules/s]
	Creep speed				
	Zero return retry	0: Zero return retry is not performed via upper/lower limit switch. 1: Zero return retry is performed via upper/lower limit switch.			
Zero return extended parameter	Zero return dwell time	0 to 65535 [ms]			
	Travel after near-point dog	0 to 214748364.7 [ m]	0 to 21474.83647 [inch]	0 to 21474.83647 [degree]	0 to 2147483647 [pulse]
	Zero return acceleration time	0 to 3			
	Zero return deceleration time				
	Zero shift amount	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	-21474.83648 to 21474.83647 [degree]	-2147483648 to 2147483647 [pulse]
	Zero return torque limit value	1 to 300 [%]			
	Speed specification at zero shift	0*: Zero return speed, 1*: Creep speed			
Dwell time setting at zero return retry	0 to 65535 ms				

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	0				
	0				
	0				
	1				
	1				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	300				
	0				
	0				

<b>POINT</b>	Data setting method (setting unit) is the same as that for the SWaaa-AD75P.
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**For stepping motor mode**  
Parameter

Item	Setting range			
	mm	inch	degree	pulse
Unit setting	0	1	2	3
Number of pulse per rotation	1 to 65535 pulse			
Travel rate per rotation	0.1 to 6553.5 [ m]	0.00001 to 0.65535 [inch]	0.00001 to 0.65535 [degree]	1 to 65535 [pulse]
Magnification of the travel per pulse	1: 1 time, 2: 10 times, 3: 100 times, 4: 1000 times			
Pulse output mode	0: PLS/SIGN 1: CW/CCW 2: Phase A/Phase B(4-multiplication) 3: Phase A/Phase B(1-multiplication)			
Rotation direction setting	0: Increases the present value with forward pulse output 1: Increases the present value with backward pulse output			

Basic parameter 1

Basic parameter 2

Extended parameter 1

Extended parameter 2



	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	3				
	20000				
	20000				
	1				
	1				
	0				
	200000				
	1000				
	1000				
	0				
	0				
	0				
	2147483647				
	-2147483648				
	0				
	0				
	100				
	300				
	0				
	0				
	0				
	0				
	Axis 1: 1, Axis 2: 2, Axis 3: 3				
	0				
	0				
	1000				
	1000				
	1000				
	1000				
	1000				
	1000				
	20000				
	0				
	0				
	0				
	100				
	1000				
	0				
	0				
	0				
	300				
	100				
	0				

Item		Setting range			
		mm	inch	degree	pulse
Zero return basic parameter	Zero return method	0: Near-point dog 1: Mechanical stop (1) (due to time-out from the dwell timer) 2: Mechanical stop (2) (due to zero phase signal when the stopper is touched) 3: Mechanical stop (3) (Non near-point dog method) 4: Counting method (1) (Zero phase signal is used.) 5: Counting method (2) (Zero phase signal is not used.)			
	Zero return direction	0: Positive direction (address increase direction) 1: Negative direction (address decrease direction)			
	Zero address	-13421772.8 to 13421772.7 [ m]	-1342.17728 to 1342.17727 [inch]	0 to 359.99999 [degree]	-134217728 to 134217727 [pulse]
	Zero return speed	0.01 to 375000.00 [mm/min]	0.001 to 37500.000 [inch/min]	0.01 to 37500.000 [degree/min]	1 to 62500 [pules/s]
	Creep speed				
	Zero return retry	0: Zero return retry is not performed via upper/lower limit switch. 1: Zero return retry is performed via upper/lower limit switch.			
Zero return extended parameter	Zero return dwell time	0 to 65535 [ms]			
	Travel after near-point dog	0 to 13421772.7 [ m]	0 to 1342.17727 [inch]	0 to 1342.17727 [degree]	0 to 134217727 [pulse]
	Zero return acceleration time	0 to 3			
	Zero return deceleration time				
	Zero shift amount	-13421772.8 to 13421772.7 [ m]	-1342.17728 to 1342.17727 [inch]	0 to 359.99999 [degree]	-134217728 to 134217727 [pulse]
	Zero return torque limit value	1 to 300 [%]			
	Speed specification at zero shift	0*: Zero return speed, 1*: Creep speed			
Dwell time setting at zero return retry	0 to 65535 ms				

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	0				
	0				
	0				
	1				
	1				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	300				
	0				
	0				

<b>POINT</b>	Data setting method (setting unit) is the same as that for the SWaaa-AD75P.
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**3.3.3 Setting the AD75M**

**Parameter**

Item	Setting range				
	mm	inch	degree	pulse	
Basic parameter 1	Unit setting	0	1	2	3
	Number of pulse per rotation	1 to 65535 pulse			
	Travel rate per rotation	0.1 to 6553.5 [ m]	0.00001 to 0.65535 [inch]	0.00001 to 0.65535 [degree]	1 to 65535 [pulse]
	Magnification of the travel per pulse	1: 1 time, 2: 10 times, 3: 100 times, 4: 1000 times			
Basic parameter 2	Speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pulse/s]
	Acceleration time	1 to 65535 [ms]			
	Deceleration time				
Bias speed at start	0.01 to 6000000.00 [mm/min]	0.01 to 6000000.00 [inch/min]	0.001 to 6000000.000 [degree/min]	1 to 1000000 [pulse]	
Extended parameter 1	Backlash compensation	0 to 6553.5 [ m]	0 to 0.65535 [inch]	0 to 0.65535 [degree]	0 to 65535 [pulse]
	S/W stroke upper limit	-214748364.8 to 214748734.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	S/W stroke lower limit				
	S/W stroke limit selection	0: Present feed value multiplied by software stroke limit 1: Mechanical feed value multiplied by software stroke limit			
	Valid/invalid S/W stroke limit during JOG or manual pulse generator operation	0: Software stroke limit is invalid during JOG or manual pulse generator operation. 1: Software stroke limit is valid during JOG or manual pulse generator operation.			
	Command in-position range	0.1 to 3276700.0 [ m]	0.00001 to 327.67000 [inch]	0.00001 to 327.67000 [degree]	1 to 32767 [pulse]
	Torque limit value	1 to 500 [%]			
	M code ON signal output timing	0: WITH mode, 1: AFTER mode			
	Speed change type in speed switching mode	0: Standard speed switching mode, 1: Forward speed switching mode			
	Interpolation speed specification method (interpolation mode)	0: Composed speed, 1: Standard axis speed			
Present feed value update request command during speed control	0: Present feed value is not updated during speed control. 1: Present feed value is updated during speed control. 2: When controlling speed, perform zero-clear of present feed value.				
Manual pulse generator selection	0: Manual pulse generator operation is not allowed. 1: Manual pulse generator 1 is used. 2: Manual pulse generator 2 is used. 3: Manual pulse generator 3 is used.				
Acceleration/deceleration time setting size selection	0: 1 word type 1: 2 words type				
Extended parameter 2	Acceleration time 1	1 to 65535 [ms]			
	Acceleration time 2				
	Acceleration time 3				
	Deceleration time 1				
	Deceleration time 2				
	Deceleration time 3				
	JOG speed limit value	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pulse/s]
	JOG operation acceleration time selection	0 to 3			
	JOG operation deceleration time selection	0 to 3			
	Acceleration/deceleration process selection	0: Trapezoid acceleration/deceleration process 1: S-curve acceleration/deceleration process			
	S-curve ratio	1 to 100 [%]			
	Rapid stop deceleration time	1 to 65535 [ms]			
	Stop group 1 rapid stop selection	0: Normal deceleration stop 1: Rapid stop			
	Stop group 2 rapid stop selection				
Stop group 3 rapid stop selection					
Positioning completed signal output time	0 to 65535 [ms]				
Circular interpolation error allowable range	0 to 10000.0 [ m]	0 to 1.00000 [inch]	0 to 1.00000 [degree]	0 to 100000 [pulse]	
External start function selection	0: External positioning start 1: External speed change request 2: Skip request				

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	3				
	20000				
	20000				
	1				
	200000				
	1000				
	1000				
	0				
	0				
	2147483647				
	-2147483648				
	0				
	0				
	100				
	300				
	0				
	0				
	0				
	0				
	Axis 1: 1, Axis 2: 2, Axis 3: 3				
	0				
	1000				
	1000				
	1000				
	1000				
	1000				
	1000				
	20000				
	0				
	0				
	0				
	100				
	1000				
	0				
	0				
	0				
	300				
	100				
	0				

**Zero return data**

Item		Setting range			
		mm	inch	degree	pulse
Zero return basic parameter	Zero return method	0: Near-point dog 4: Counting method (1) (Zero phase signal is used.) 5: Counting method (2) (Zero phase signal is not used.) 6: Data set method			
	Zero return direction	0: Positive direction (address increase direction) 1: Negative direction (address decrease direction)			
	Zero address	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	0 to 359.99999 [degree]	-2147483648 to 2147483647 [pulse]
	Zero return speed	0.01 to 6000000.00 [mm/min]	0.001 to 600000.000 [inch/min]	0.001 to 600000.000 [degree/min]	1 to 1000000 [pules/s]
	Creep speed				
	Zero return retry	0: Zero return retry is not performed via upper/lower limit switch. 1: Zero return retry is performed via upper/lower limit switch.			
Zero return extended parameter	Zero return dwell time	0 to 65535 [ms]			
	Travel after near-point dog	0 to 214748364.7 [ m]	0 to 21474.83647 [inch]	0 to 21474.83647 [degree]	0 to 2147483647 [pulse]
	Zero return acceleration time	0 to 3			
	Zero return deceleration time				
	Zero shift amount	-214748364.8 to 214748364.7 [ m]	-21474.83648 to 21474.83647 [inch]	-21474.83648 to 21474.83647 [degree]	-2147483648 to 2147483647 [pulse]
	Zero return torque limit value	1 to 300 [%]			
	Speed specification at zero shift	0 : Zero return speed, 1 : Creep speed			
Dwell time setting at zero return retry	0 to 65535 ms				

**Servo Parameter**

Item		Setting range			
		mm	inch	degree	pulse
Zero return basic parameter	Setting the servo series	0: MR-H-B 1: MR-J-B 2: MR-J2-B			
	Setting the amplifier	0: Without setting 1: With setting			
	Setting the regenerator brake	0 to 31			
	Setting the external dynamic brake	0: Without setting 1: With setting			
	Setting the motor type	0 to 255			
	Setting the motor capacity	0 to 9999			
	Specifying the number of motor rotation	0 to 3			
	Setting the feedback pulse	0 to 7			
	Setting the rotation direction	0: Forward 1: Reverse			
	Setting the auto-tuning	0: In the case of interpolation axis control by the position control 1: For normal 2: It is not performed			
	Setting the servo response characteristics	0 to 12			
Zero return adjustm parameter	Load inertia ratio	0.0 to 100.0			
	Position control gain 1	4 to 1000 [rad/s]			
	Speed control gain 1	20 to 5000 [rad/s]			
	Position control gain 2	1 to 500 [rad/s]			
	Speed control gain 2	20 to 8000 [rad/s]			
	Speed integral compensation	1 to 1000 [msec]			
	Selecting the notch filter	0: Not used 1: 1125 [Hz] 2: 750 [Hz] 3: 562 [Hz] 4: 450 [Hz] 5: 375 [Hz] 6: 321 [Hz] 7: 281 [Hz]			
	Feed forward gain	0 to 100 [%]			
Setting the in-position range	0 to 5000 [pulse]				
Solenoid brake PC	0 to 1000 [ms]				

	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	0				
	0				
	0				
	1				
	1				
	0				
	0				
	0				
	0				
	0				
	0				
	0				
	300				
	0				
	0				

<b>POINT</b>	Data setting method (setting unit) is the same as that for the SWaaa-AD75P.
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	Initial value	Axis 1	Axis 2	Axis 3	Remarks
	0				
	0				
	0				
	0				
	0				
	0				
	1				
	0				
	0				
	1				
	1				
	3.0				
	70				
	1200				
	25				
	600				
	20				
	0				
	0				
	100				
	100				

Item	Setting range			
	mm	inch	degree	pulse
Zero return adjustm parameter	Selecting the monitor output 1 mode	0 to 10		
	Selecting the monitor output 2 mode	0 to 10		
	Selecting the amplifier EMG	0: Valid 1: Invalid		
	Selecting the carrier frequency mode	0 to 15		
	Selecting the serial encoder cable	0: 2-wire (normal) 1: 4-wire (corresponding with long distance cable)		
	Selecting the minute vibration suppress function	0: Invalid 1: Valid		
	Selecting the moter-less operation	0: Invalid 1: Valid		
	Solenoid brake interlock output timing	0: Invalid 1: Valid		
Zero return expanded parameter	Monitor output 1 offset	-9999 to 9999 [mV]		
	Monitor output 2 offset	-9999 to 9999 [mV]		
	Selecting the immediately before alarm data 1	0 to 10		
	Selecting the immediately before alarm data 2	0 to 10		
	Selecting the sampling time for immediately before alarm data	0: 1.77 [ms] 1: 3.55 [ms] 2: 7.11 [ms] 3: 14.2 [ms] 4: 28.4 [ms]		
	Zero speed	0 to 1000 [r/min]		
	Excessive error alarm level	0 to 1000 [kPLS]		
	Switching the PI-PID	0: Invalid 1: Droop switching valid during position control 2: Speed amplifier proportional control valid		
	Setting the maker	Setting is not allowed		
	Option function 6	Setting is not allowed		
	PI-PID switch position droop	0 to 5000 [PLS]		
	Setting the maker	Setting is not allowed		
	Speed derivative compensation	0 to 1000		
	Option function 7	Setting is not allowed		



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000	Initial value	Axis 1	Axis 2	Axis 3	Rema
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# Nomenclature and Handling

This chapter contains the name of each part and precautions for handling the TU.

## 4.1 Nomenclature

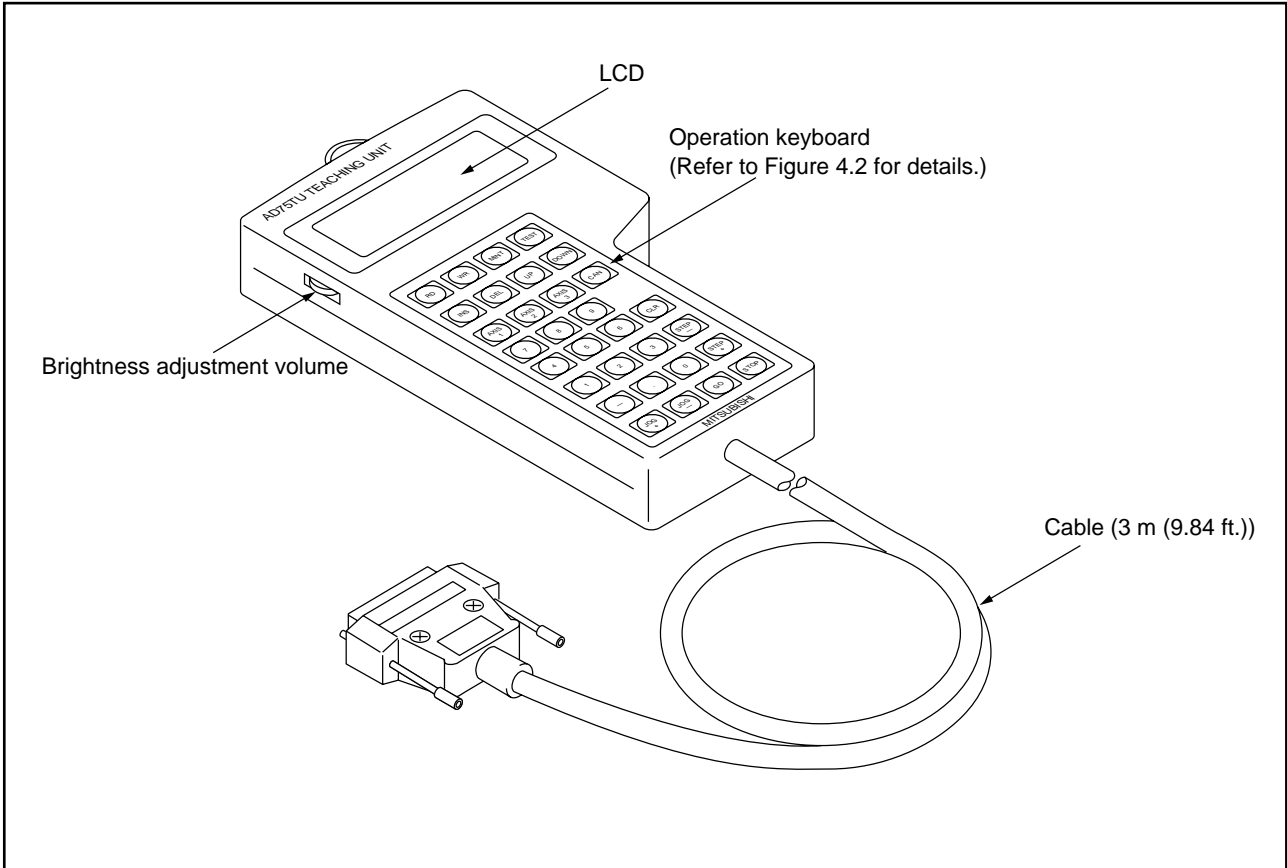


Fig 4.1 Nomenclature of the TU

### 4.2 Operation Keyboard

This section explains the TU's operation keyboard.

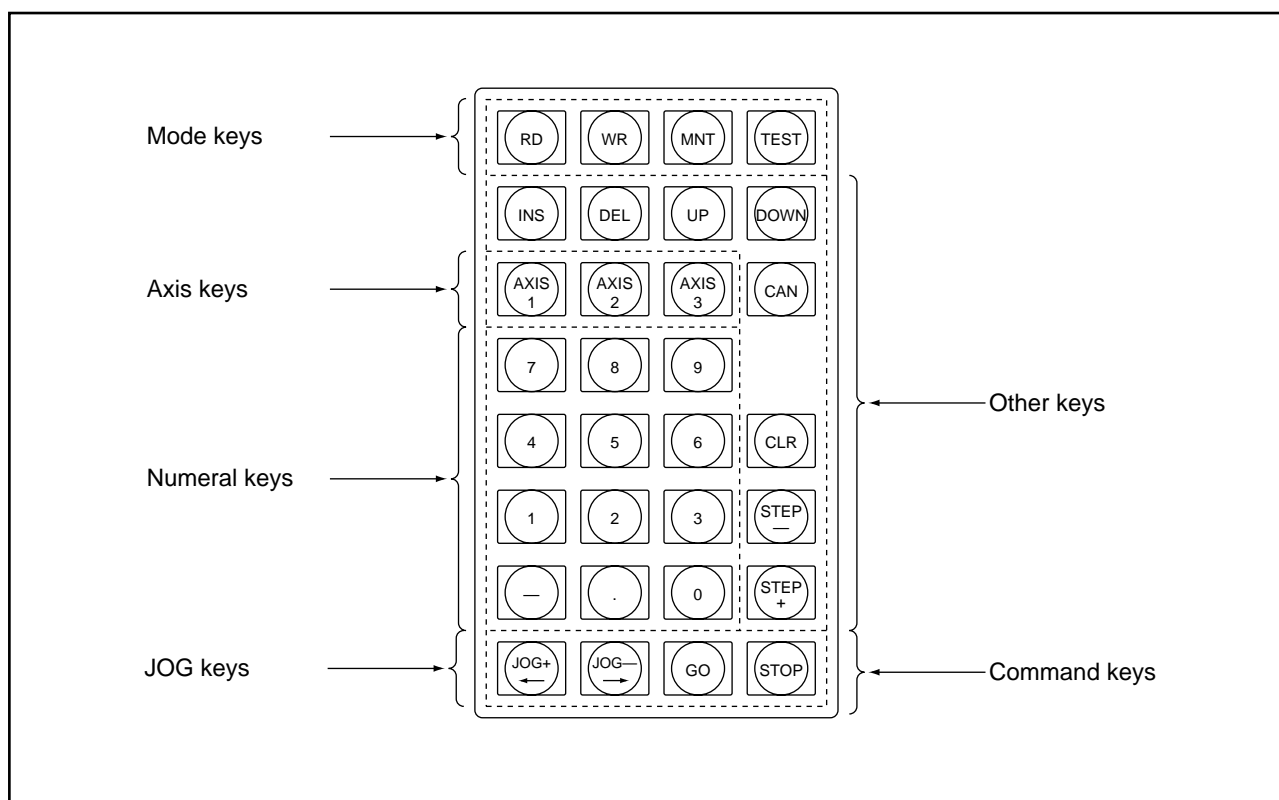


Fig 4.2 location of the operation keyboard

Name	Key	Function
Mode keys	RD	This key is used to set Read mode to read the parameters, zero return data, or positioning data.
	WR	This key is used to set Write mode to write the parameters, zero return data, or positioning data.
	MNT	This key is used to set Monitor mode (for the present value, error codes, M codes, or status information).
	TEST	This key is used to set Test operation mode (for zero return, positioning operation, or JOG operation).
Axis keys	AXIS 1	This key is used to specify Axis 1.
	AXIS 2	This key is used to specify Axis 2.
	AXIS 3	This key is used to specify Axis 3.
Numeral keys	0 to 9,	This key is used to enter data.
JOG keys	JOG +	This key is used for the Forward JOG operation during key input
	JOG -	This key is used for the Reverse JOG operation during key input
Command keys	GO	This key is used to confirm the setting data, or to start the test operation.
	STOP	This key is used to send the stop command to the AD75 (used in Test mode).
Other keys	STEP +	This key is used to increase the data number by +1 increment, to switch the monitoring item, or it executes the positioning (step) operation.
	STEP -	This key is used to decrease the data number by -1 decrement, or to switch the monitoring item.
	CLR	This key is used to clear the setting data.
	UP	This key is used to scroll the screen (to display the previous screen).
	DOWN	This key is used to scroll the screen (to display the next screen).
	CAN	This key is used to cancel the currently-displayed operation (to go back to the previous operation screen).
	INS	This key is used to insert the positioning data (to insert a unit of data into the present data No.).
DEL	This key is used to delete the positioning data (to delete the present data No.).	

### 4.3 LCD Indication

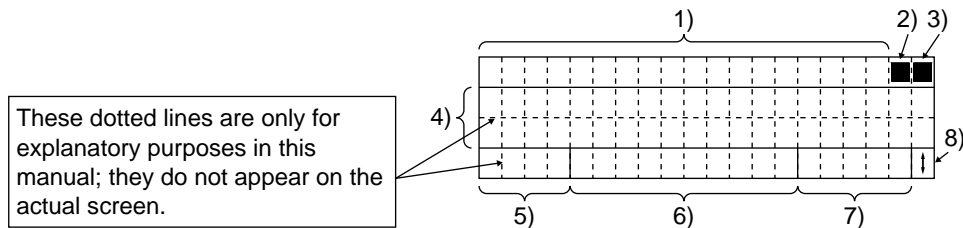
This section explains the content and position of the LCD indication.

**Display characters**

Alpha-numeric characters are used for indication. (Numeric value uses decimal.)

**Display area**

20 characters 4 lines



No.	Indication/settings	
1)	Setting item display area	This area shows the currently selected setting item.
2)	Mode display area	This area shows the current mode (highlighted). RD (Read mode) .....R WR(Write mode).....W MNT(Monitor mode).....M TEST(Test mode).....T
3)	Axis number display area	This area shows the currently selected axis number(highlighted). Selected axis number 1 .....1 Selected axis number 2 .....2 Selected axis number 3 .....3
4)	Display area	This area shows the selected item, current settings, or monitoring data.
5)	Data No., Point, and Condition No. display area	For setting the positioning data .....Data No. is shown. For setting the block start data .....Point is shown. For setting the condition data.....Condition No. is shown.
6)	Setting area	This area is used for entering the setting item number, or setting data.
7)	Error display area	This area shows an error code.
8)	Multiple screens indication	This indication appears when two or more menu screens are available.

\* The above description of the display indication may not apply to the device X monitor screen. Refer to the corresponding section for more information.

## 4.4 Handling Precautions

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This section contains precautions for handling the TU.

The case is plastic. Do not drop or apply a strong impact to the case.

Do not disassemble the case. (Otherwise, a malfunction may be caused.)

Do not touch the RS-422 connector pin with your hand. (Otherwise, a malfunction may be caused.)

Do not remove the main unit cover for the RS-422 connector or loosen the fixing screws on the cover. (Otherwise, a malfunction may be caused.)

Do not use thinner, alcohol, or freon-type material to clean the keyboard.

Operate the keys with your fingers. Never use a sharp object to press the keys. Otherwise, a malfunction may be caused. (You can confirm data entry by the buzzer sound when you press the key.)

Fasten a RS-422 connector installation screw within the following range when you install TU in AD75.

Screw type	Specified torque range
RS-422 connector installation screw (M2.6 screws)	19 to 24 N cm {1.9 to 2.4 kg cm}

## 4.5 Maintenance

---

You do not need to adjust, check, or replace the parts in the TU (other than the brightness adjustment). Follow the instructions below to store the TU:

Avoid the following environment when you store the CPU unit:

- A location in which the ambient temperature falls outside the range of -20 to 70 degrees Celsius
- A location in which the ambient humidity falls outside the range of 10 - 90%RH
- A location in which condensation may occur due to drastic changes in temperature
- A location exposed to rain, wind, or direct sunlight
- A location in which the unit is easily exposed to conductive powder, such as dust and iron filings, corrosive gas, oil mist, or salt

## 4.6 Installation and Removal

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### Installing the TU

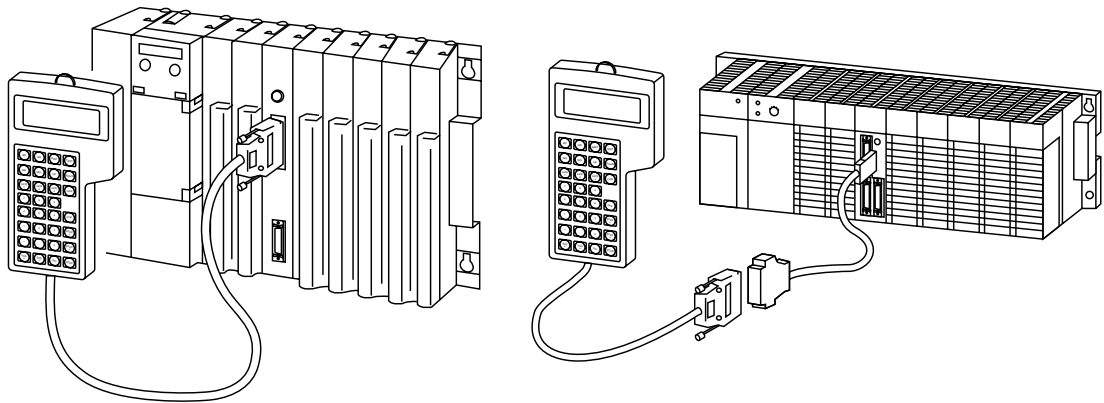
#### Installing the TU to the AD75□

Connect the RS-422 cable integrated into the TU to the AD75□, and tighten the connector fixing screw securely.

#### Installing the TU to the A1SD75□

Connect the RS-422 cable integrated into the TU to the conversion cable of type A1SD75-C01HA, and tighten the connector fixing screw securely.

Connect the conversion cable of type A1SD75-C01HA securely to the RS-422 connector of the A1SD75□.



### Removing the TU

#### Removing the TU from the AD75□

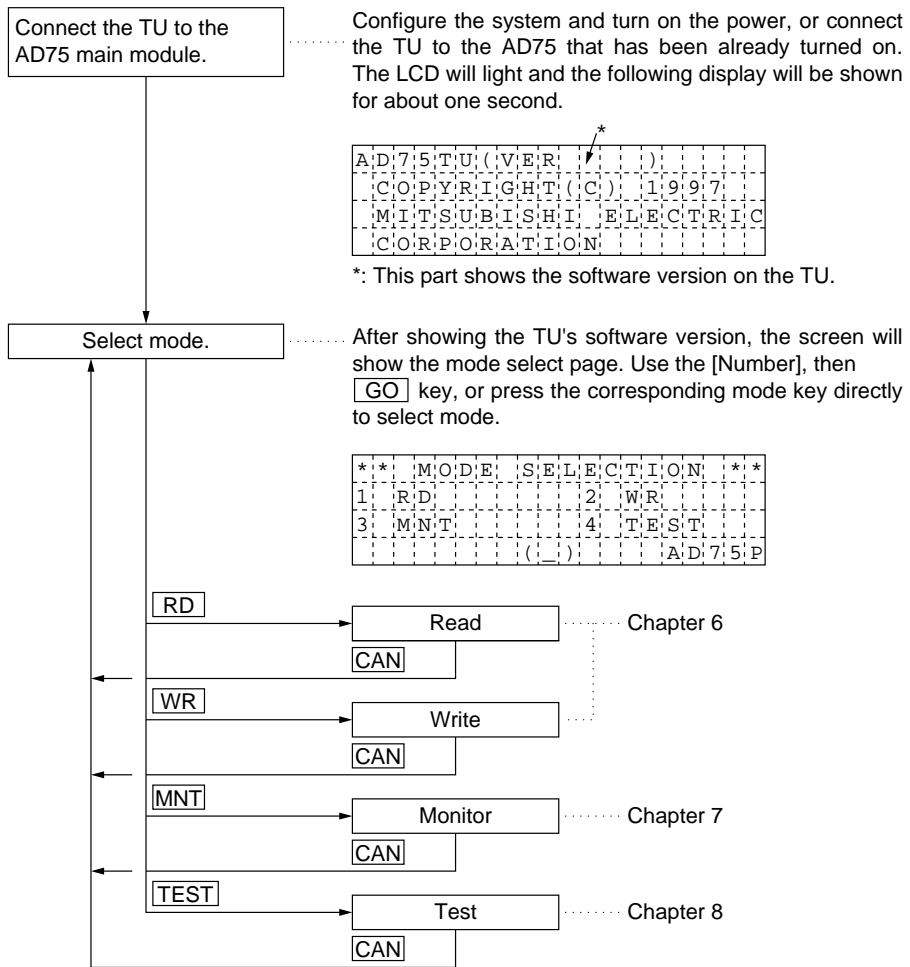
Remove the connector fixing screw of the RS-422 cable that is attached to the AD75□.

#### Removing the TU from the A1SD75□

Remove the A1SD75-C01HA type conversion cable from the A1SD75□.

Remove the connector fixing screw of the RS-422 cable that is integrated into the TU, and remove the type A1SD75-C01HA conversion cable.

### 4.7 Starting Procedure



## 4.8 General Operation

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This section explains general operation of the TU.

Pressing a mode key will cause the TU to engage the corresponding mode, except when the flash ROM is being written or when the Yes/No select screen is shown.

If multiple screens are available for item selection, you can scroll the screens using the [UP] / [DOWN] keys.

Use the [Number] key, then the [GO] key to select an item.

You can switch the setting axis using the [AXIS 1], [AXIS 2], and [AXIS 3] keys anytime, except when data is being written to the flash ROM or when the Yes/No select screen is shown.

Pressing the [CAN] key anytime during operation will restore the previous screen.

Buzzer will sound when an error occurs.

Press a mode key to change moded if you wish to stop all axes during operation.



# Function List

This chapter contains a list of TU functions.

## 5.1 Function List

Mode	Function		Description	Reference	
Write /Read	Writing/ reading a parameter	Basic parameter r 1	Setting the unit	This parameter sets the command unit for positioning control.	6.1.1
			Setting the number of pulses per rotation	This parameter sets the number of pulses per motor rotation determined by the mechanical system.	
			Setting the travel rate per pulse	This parameter sets the travel per motor rotation determined by the mechanical system.	
			Setting the unit multiplier	This parameter sets the magnification of travel per pulse.	
			Selecting the pulse output mode	This parameter selects the pulse output mode appropriate for the servo amplifier being used.	
			Setting the rotation direction	This parameter sets the direction of rotation when the present value is increased.	
		Basic parameter r 2	Setting the speed limit value	This parameter sets the maximum speed during the positioning operation (including the zero return and manual pulse generator operation).	6.1.2
			Setting acceleration time 0	This parameter sets time for the speed to reach the limit value from zero.	
			Setting deceleration time 0	This parameter sets time taken from the speed limit value to zero speed.	
		Extended parameter r 1	Setting backlash compensation	This parameter sets the backlash (play) amount of the machine.	6.1.3
			Setting the S/W stroke upper limit	This parameter sets the upper limit of the travel range of the machine.	
			Setting the S/W stroke lower limit	This parameter sets the lower limit of the travel range of the machine.	
			Selecting S/W stroke limit	This parameter determines whether the software stroke limit is multiplied by the present value or mechanical present value.	
			Setting the S/W stroke limit to valid or invalid	This parameter determines whether the software stroke limit is valid or invalid during the JOG operation or manual pulse generator operation.	
			Setting the command in-position range	This parameter sets the position where the command in-position signal is turned ON.	
			Setting the torque limit value	This parameter sets the torque limit value.	
			Setting the M code ON signal output timing	This parameter determines whether the M code ON signal is output in WITH mode or in AFTER mode.	
			Setting the speed change type for speed switching mode	This parameter determines whether the speed switching mode uses standard switching or advanced switching.	
			Setting the interpolation speed specifying method	This parameter determines whether the composed speed is specified or the standard axis speed is specified for line/circular interpolation.	
Present feed value update request command during speed control	This parameter determines whether the present feed value is updated or not during speed control.				
Selecting the manual pulse generator	This parameter selects one of the manual pulse generators connected to the axes 1 to 3.				

Mode	Function		Description	Reference	
Write /Read	Writing/ reading a parameter	Extended parameter r 2	Setting acceleration time 1/2/3	This parameter sets the time for the speed to reach the limit value from zero.	6.1.4
			Setting deceleration time 1/2/3	This parameter sets the time taken from the speed limit value to zero speed.	
			Setting a JOG speed limit value	This parameter sets the maximum speed for the JOG operation.	
			Selecting JOG operation acceleration time	This parameter selects one of the acceleration times 0-3 for the JOG operation.	
			Selecting JOG operation deceleration time	This parameter selects one of the deceleration times 0-3 for the JOG operation.	
			Selecting acceleration/decelera- tion process	This parameter selects the trapezoid acceleration/deceleration process or S-curve acceleration/deceleration process.	
			Setting the S-curve ratio	This parameter sets S-curve ratio for the S-curve acceleration/deceleration process.	
			Setting the rapid stop deceleration time	This parameter sets the time taken from the speed limit value to zero speed during a rapid stop.	
			Selecting stop group 1/2/3 rapid stop	This parameter determines whether the operation performs a normal deceleration stop or a rapid stop when the stop factor exists.	
			Setting the positioning completed signal output time	This parameter sets the output time of positioning completed signal output from the AD75.	
			Setting the circular interpolation error allowable range	This parameter sets the allowable range of error between the calculated arc locus and the end address.	
	Selecting the external start function	This parameter selects the function that uses the external start signal.			
	Zero return data	Zero return basic parameter	Setting the zero return method	This parameter sets the zero return method for zero return	6.2.1
			Setting the zero return direction	This parameter sets the direction of zero return.	
			Setting the zero address	This parameter sets the present zero point value at zero return completion.	
			Setting the zero return speed	This parameter sets the speed of zero return.	
			Setting the creep speed	This parameter sets the creep speed after the near-point dog is turned on.	
			Setting the zero return retry	This parameter determines whether zero return retry is performed or not via the upper/lower limit switches.	
		Zero return extended parameter	Setting the zero return dwell time	This parameter sets the time taken from when the near-point dog is on until zero return is completed via mechanical stop (1).	6.2.2
			Setting the travel after the near-point dog is turned on	This parameter sets the travel up to the zero point after the near-point dog is on during the count-type zero return.	
Setting the zero return acceleration time			This parameter selects one of the acceleration times 0-3 (specified in a different parameter) as a zero return acceleration time.		
Setting the zero return deceleration time			This parameter selects one of the deceleration times 0-3 (specified in a different parameter) as a zero return deceleration time.		
Setting the zero shift amount			This parameter sets the shift amount of the zero position from the detected zero-phase signal.		
Setting the zero return torque limit value	This setting is used to limit the torque of the servo motor after the creep speed is reached during zero return.				

Mode	Function		Description	Reference	
Write /Read	Positioning data (Reading/writing the M code comment is disabled.)	Setting the data No.	This function is used to specify the data No. for the positioning data setting.	6.3	
		Setting the operation pattern	This function is used to set the operation pattern for completing positioning.		
		Setting the control method	This function is used to select a control method for positioning control.		
		Setting the acceleration time	This function is used to select one of the acceleration times 0-3 specified by the parameter.		
		Setting the deceleration time	This function is used to select one of the deceleration times 0-3 specified by the parameter.		
		Setting the positioning address	Positioning via ABS method		This function is used to set the absolute address from the zero point.
			Positioning via INC method		This function is used to set the travel from the positioning start point.
		Setting the arc address	When the auxiliary point is specified		This function is used to set the passing point for circular interpolation.
			When the center point is specified		This function is used to set the center point address of the arc for circular interpolation.
		Setting the command speed	This function is used to set the command speed when positioning is executed.		
	Setting the dwell time	This function is used to set the delay time between the completion of the positioning and the execution of the next positioning.			
	Setting the M code	This function is used to set the M code output during positioning control.			
	Starting block data	Setting the point	This function is used to set the Point No. during the start block data setting.	6.4	
		Setting a mode	This function is used to determine whether the unit will quit after positioning the specified point or start another positioning.		
		Setting the data No.	This function is used to set the data No. that controls positioning.		
		Setting the special start	This function is used to set the positioning start condition.		
		Setting a parameter	This function is used to set the starting condition when condition start, wait start, simultaneous start, FOR loop, or FOR condition is selected for the special start.		
		Selecting the conditional operator	This function is used to set the condition data for condition start.		
	Clearing all memory (enabled only in write mode)		This function clears the entire memory inside the AD75.	6.5	
Writing data to the flash ROM (enabled only in write mode)		This function writes setting data into the flash ROM.	6.6		
Monitor	Status monitor	Device X	This function is used to monitor the ON/OFF condition of device X used on the AD75.	7.1	
		Device Y	This function is used to monitor the ON/OFF condition of device Y used on the AD75.		
		External input signal	This function is used to monitor the ON/OFF condition of the external input signal.		
		Status signal	This function is used to monitor the ON/OFF condition of the status signal.		
	Data monitor	Data for positioning control	This function is used to monitor the present feed value/mechanical value, feed speed, and axis control data.	7.2	
		Data for zero return	This function is used to monitor the zero point position, travel after the near-point dog is on, and torque limit value.		
		Data for JOG operation	This function is used to monitor the JOG speed and direction.		
		Data for manual pulse generator	This function is used to monitor the manual pulse generator enabled/disabled condition, and input multiplier.		
		Data for switching from speed to positioning	This function is used to monitor the travel after switching from speed to position.		
		Error history	This function is used to monitor an axis and an error code number in turn.		
Start history	This function is used to monitor an axis and start type in turn.				

Mode	Function	Description	Reference
Test	Starting zero return	This function is used to perform mechanical zero return/rapid zero return.	8.1
	Starting positioning	This function is used to set the condition for the test operation and start positioning.	8.2
	JOG operation	This function is used to set the JOG speed and perform the JOG operation.	8.3
	Manual pulse generator operation	This function is used to operate the manual pulse generator.	8.4
	Changing the present value	This function is used to change the present value.	8.5
	Error reset	This function resets an error.	8.6

## 5.2 Function List when Using AD75PS3

Mode	Function		Description	Reference	
Write /Read	Writing/reading a parameter	Basic parameter 1	Setting the unit	This parameter sets the command unit for positioning control.	6.1.1
			Setting the number of pulses per rotation	This parameter sets the number of pulses per motor rotation determined by the mechanical system.	
			Setting the travel rate per pulse	This parameter sets the travel per motor rotation determined by the mechanical system.	
			Setting the unit multiplier	This parameter sets the magnification of travel per pulse.	
			Selecting the pulse output mode	This parameter selects the pulse output mode appropriate for the servo amplifier being used.	
			Setting the rotation direction	This parameter sets the direction of rotation when the present value is increased.	
		Basic parameter 2	Setting the speed limit value	This parameter sets the maximum speed during the positioning operation (including the zero return and manual pulse generator operation).	6.1.2
			Setting acceleration time 0	This parameter sets time for the speed to reach the limit value from zero.	
			Setting deceleration time 0	This parameter sets time taken from the speed limit value to zero speed.	
			Setting the bias speed at start	This parameter sets the minimum starting speed required to start the rotation of the stepping motor smoothly.	
			Selecting stepping motor mode	This parameter toggles between standard mode and stepping motor mode.	
		Extended parameter 1	Setting backlash compensation	This parameter sets the backlash (play) amount of the machine.	6.1.3
			Setting the S/W stroke upper limit	This parameter sets the upper limit of the travel range of the machine.	
			Setting the S/W stroke lower limit	This parameter sets the lower limit of the travel range of the machine.	
			Selecting S/W stroke limit	This parameter determines whether the software stroke limit is multiplied by the present value or mechanical present value.	
	Setting the S/W stroke limit to valid or invalid		This parameter determines whether the software stroke limit is valid or invalid during the JOG operation or manual pulse generator operation.		
	Setting the command in-position range		This parameter sets the position where the command in-position signal is turned ON.		
	Setting the torque limit value		This parameter sets the torque limit value.		
	Setting the M code ON signal output timing		This parameter determines whether the M code ON signal is output in WITH mode or in AFTER mode.		
	Setting the speed change type for speed switching mode		This parameter determines whether the speed switching mode uses standard switching or advanced switching.		
	Setting the interpolation speed specifying method		This parameter determines whether the composed speed is specified or the standard axis speed is specified for line/circular interpolation.		
	Present feed value update request command during speed control		This parameter determines whether the present feed value is updated or not during speed control.		
	Selecting the manual pulse generator		This parameter selects one of the manual pulse generators connected to the axes 1 to 3.		
	Setting the pulse output logical to drive module	This parameter sets the logic which met the pulse input logic of the drive module connected to AD75.			
	Selecting the acceleration/deceleration time setting size	This parameter determines whether the acceleration time is 1 or 2 words type.			

Mode	Function		Description	Reference	
Write /Read	Writing/reading a parameter	Extended parameter 2	Setting acceleration time 1/2/3	This parameter sets the time for the speed to reach the limit value from zero.	6.1.4
			Setting deceleration time 1/2/3	This parameter sets the time taken from the speed limit value to zero speed.	
			Setting a JOG speed limit value	This parameter sets the maximum speed for the JOG operation.	
			Selecting JOG operation acceleration time	This parameter selects one of the acceleration times 0-3 for the JOG operation.	
			Selecting JOG operation deceleration time	This parameter selects one of the deceleration times 0-3 for the JOG operation.	
			Selecting acceleration/deceleration process	This parameter selects the trapezoid acceleration/deceleration process or S-curve acceleration/deceleration process.	
			Setting the S-curve ratio	This parameter sets S-curve ratio for the S-curve acceleration/deceleration process.	
			Setting the rapid stop deceleration time	This parameter sets the time taken from the speed limit value to zero speed during a rapid stop.	
			Selecting stop group 1/2/3 rapid stop	This parameter determines whether the operation performs a normal deceleration stop or a rapid stop when the stop factor exists.	
			Setting the positioning completed signal output time	This parameter sets the output time of positioning completed signal output from the AD75.	
			Setting the circular interpolation error allowable range	This parameter sets the allowable range of error between the calculated arc locus and the end address.	
	Selecting the external start function	This parameter selects the function that uses the external start signal.			
	Zero return data	Zero return basic parameter	Setting the zero return method	This parameter sets the zero return method for zero return	6.2.1
			Setting the zero return direction	This parameter sets the direction of zero return.	
			Setting the zero address	This parameter sets the present zero point value at zero return completion.	
			Setting the zero return speed	This parameter sets the speed of zero return.	
			Setting the creep speed	This parameter sets the creep speed after the near-point dog is turned on.	
			Setting the zero return retry	This parameter determines whether zero return retry is performed or not via the upper/lower limit switches.	
		Zero return extended parameter	Setting the zero return dwell time	This parameter sets the time taken from when the near-point dog is on until zero return is completed via mechanical stop (1).	6.2.2
Setting the travel after the near-point dog is turned on			This parameter sets the travel up to the zero point after the near-point dog is on during the count-type zero return.		
Setting the zero return acceleration time			This parameter selects one of the acceleration times 0-3 (specified in a different parameter) as a zero return acceleration time.		
Setting the zero return deceleration time			This parameter selects one of the deceleration times 0-3 (specified in a different parameter) as a zero return deceleration time.		
Setting the zero shift amount			This parameter sets the shift amount of the zero position from the detected zero-phase signal.		
Setting the zero return torque limit value			This setting is used to limit the torque of the servo motor after the creep speed is reached during zero return.		
Specifying the speed at zero shift			This parameter selects whether the operation speed during zero shift is zero return speed or creep speed.		
Setting the dwell time at zero return retry	This parameter sets dwell time in the stop after reverse operation at the time of the stop by the upper/lower limit detection with the zero return retry function due to near-point dog OFF.				

Mode	Function		Description	Reference	
Write /Read	Positioning data (Reading/writing the M code comment is disabled.)	Setting the data No.	This function is used to specify the data No. for the positioning data setting.	6.3	
		Setting the operation pattern	This function is used to set the operation pattern for completing positioning.		
		Setting the control method	This function is used to select a control method for positioning control.		
		Setting the acceleration time	This function is used to select one of the acceleration times 0-3 specified by the parameter.		
		Setting the deceleration time	This function is used to select one of the deceleration times 0-3 specified by the parameter.		
		Setting the positioning address	Positioning via ABS method		This function is used to set the absolute address from the zero point.
			Positioning via INC method		This function is used to set the travel from the positioning start point.
		Setting the arc address	When the auxiliary point is specified		This function is used to set the passing point for circular interpolation.
			When the center point is specified		This function is used to set the center point address of the arc for circular interpolation.
		Setting the command speed	This function is used to set the command speed when positioning is executed.		
	Setting the dwell time	This function is used to set the delay time between the completion of the positioning and the execution of the next positioning.			
	Setting the M code	This function is used to set the M code output during positioning control.			
	Starting block data	Setting the block No.	This function is used to set the start block number 1 to 10.	6.4	
		Setting the point	This function is used to set the Point No. during the start block data setting.		
		Setting a mode	This function is used to determine whether the unit will quit after positioning the specified point or start another positioning.		
		Setting the data No.	This function is used to set the data No. that controls positioning.		
		Setting the special start	This function is used to set the positioning start condition.		
		Setting a parameter	This function is used to set the starting condition when condition start, wait start, simultaneous start, FOR loop, or FOR condition is selected for the special start.		
		Selecting the conditional operator	This function is used to set the condition data for condition start.		
Clearing all memory (enabled only in write mode)	This function clears the entire memory inside the AD75.	6.5			
Writing data to the flash ROM (enabled only in write mode)	This function writes setting data into the flash ROM.	6.6			
Monitor	Status monitor	Device X	This function is used to monitor the ON/OFF condition of device X used on the AD75.	7.1	
		Device Y	This function is used to monitor the ON/OFF condition of device Y used on the AD75.		
		External input signal	This function is used to monitor the ON/OFF condition of the external input signal.		
		Status signal	This function is used to monitor the ON/OFF condition of the status signal.		
	Data monitor	Data for positioning control	This function is used to monitor the present feed value/mechanical value, feed speed, and axis control data.	7.2	
		Data for zero return	This function is used to monitor the zero point position, travel after the near-point dog is on, and torque limit value.		
		Data for JOG operation	This function is used to monitor the JOG speed and direction.		
		Data for manual pulse generator	This function is used to monitor the manual pulse generator enabled/disabled condition, and input multiplier.		
		Data for switching from speed to positioning	This function is used to monitor the travel after switching from speed to position.		
		Error history	This function is used to monitor an axis and an error code number in turn.		
Start history	This function is used to monitor an axis and start type in turn.				

<b>Mode</b>	<b>Function</b>	<b>Description</b>	<b>Reference</b>
Test	Starting zero return	This function is used to perform mechanical zero return/rapid zero return.	8.1
	Starting positioning	This function is used to set the condition for the test operation and start positioning.	8.2
	JOG operation	This function is used to set the JOG speed and perform the JOG operation.	8.3
	Manual pulse generator operation	This function is used to operate the manual pulse generator.	8.4
	Changing the present value	This function is used to change the present value.	8.5
	Error reset	This function resets an error.	8.6



### 5.3 Function List when Using AD75M

Mode	Function		Description	Reference
Write /Read	Basic parameter 1	Setting the unit	This parameter sets the command unit for positioning control.	6.1.1
		Setting the number of pulses per rotation	This parameter sets the number of pulses per motor rotation determined by the mechanical system.	
		Setting the travel rate per pulse	This parameter sets the travel per motor rotation determined by the mechanical system.	
		Setting the unit multiplier	This parameter sets the magnification of travel per pulse.	
	Basic parameter 2	Setting the speed limit value	This parameter sets the maximum speed during the positioning operation (including the zero return and manual pulse generator operation).	6.1.2
		Setting acceleration time 0	This parameter sets time for the speed to reach the limit value from zero.	
		Setting deceleration time 0	This parameter sets time taken from the speed limit value to zero speed.	
		Setting the bias speed at start	This parameter sets the minimum starting speed required to start the rotation of the stepping motor smoothly.	
		Selecting stepping motor mode	This parameter toggles between standard mode and stepping motor mode.	
	Extended parameter 1	Setting backlash compensation	This parameter sets the backlash (play) amount of the machine.	6.1.3
		Setting the S/W stroke upper limit	This parameter sets the upper limit of the travel range of the machine.	
		Setting the S/W stroke lower limit	This parameter sets the lower limit of the travel range of the machine.	
		Selecting S/W stroke limit	This parameter determines whether the software stroke limit is multiplied by the present value or mechanical present value.	
		Setting the S/W stroke limit to valid or invalid	This parameter determines whether the software stroke limit is valid or invalid during the JOG operation or manual pulse generator operation.	
		Setting the command in-position range	This parameter sets the position where the command in-position signal is turned ON.	
		Setting the torque limit value	This parameter sets the torque limit value.	
		Setting the M code ON signal output timing	This parameter determines whether the M code ON signal is output in WITH mode or in AFTER mode.	
		Setting the speed change type for speed switching mode	This parameter determines whether the speed switching mode uses standard switching or advanced switching.	
		Setting the interpolation speed specifying method	This parameter determines whether the composed speed is specified or the standard axis speed is specified for line/circular interpolation.	
		Present feed value update request command during speed control	This parameter determines whether the present feed value is updated or not during speed control.	
Selecting the manual pulse generator	This parameter selects one of the manual pulse generators connected to the axes 1 to 3.			
Setting the pulse output logical to drive module	This parameter sets the logic which met the pulse input logic of the drive module connected to AD75.			
Selecting the acceleration/deceleration time setting size	This parameter determines whether the acceleration time is 1 or 2 words type.			

Mode	Function		Description	Reference	
Write /Read	Writing/ reading a parameter	Extended parameter r 2	Setting acceleration time 1/2/3	This parameter sets the time for the speed to reach the limit value from zero.	6.1.4
			Setting deceleration time 1/2/3	This parameter sets the time taken from the speed limit value to zero speed.	
			Setting a JOG speed limit value	This parameter sets the maximum speed for the JOG operation.	
			Selecting JOG operation acceleration time	This parameter selects one of the acceleration times 0-3 for the JOG operation.	
			Selecting JOG operation deceleration time	This parameter selects one of the deceleration times 0-3 for the JOG operation.	
			Selecting acceleration/deceleration process	This parameter selects the trapezoid acceleration/deceleration process or S-curve acceleration/deceleration process.	
			Setting the S-curve ratio	This parameter sets S-curve ratio for the S-curve acceleration/deceleration process.	
			Setting the rapid stop deceleration time	This parameter sets the time taken from the speed limit value to zero speed during a rapid stop.	
			Selecting stop group 1/2/3 rapid stop	This parameter determines whether the operation performs a normal deceleration stop or a rapid stop when the stop factor exists.	
			Setting the positioning completed signal output time	This parameter sets the output time of positioning completed signal output from the AD75.	
			Setting the circular interpolation error allowable range	This parameter sets the allowable range of error between the calculated arc locus and the end address.	
			Selecting the external start function	This parameter selects the function that uses the external start signal.	
	Zero return data	Zero return basic parameter	Setting the zero return method	This parameter sets the zero return method for zero return	6.2.1
			Setting the zero return direction	This parameter sets the direction of zero return.	
			Setting the zero address	This parameter sets the present zero point value at zero return completion.	
			Setting the zero return speed	This parameter sets the speed of zero return.	
			Setting the creep speed	This parameter sets the creep speed after the near-point dog is turned on.	
			Setting the zero return retry	This parameter determines whether zero return retry is performed or not via the upper/lower limit switches.	
		Zero return extended parameter	Setting the zero return dwell time	This parameter sets the time taken from when the near-point dog is on until zero return is completed via mechanical stop (1).	6.2.2
			Setting the travel after the near-point dog is turned on	This parameter sets the travel up to the zero point after the near-point dog is on during the count-type zero return.	
Setting the zero return acceleration time			This parameter selects one of the acceleration times 0-3 (specified in a different parameter) as a zero return acceleration time.		
Setting the zero return deceleration time			This parameter selects one of the deceleration times 0-3 (specified in a different parameter) as a zero return deceleration time.		
Setting the zero shift amount			This parameter sets the shift amount of the zero position from the detected zero-phase signal.		
Setting the zero return torque limit value			This setting is used to limit the torque of the servo motor after the creep speed is reached during zero return.		
Specifying the speed at zero shift			This parameter selects whether the operation speed during zero shift is zero return speed or creep speed.		
Setting the dwell time at zero return retry			This parameter sets dwell time in the stop after reverse operation at the time of the stop by the upper/lower limit detection with the zero return retry function due to near-point dog OFF.		

Mode	Function		Description	Reference
Positioning data (Reading/writing the M code comment is disabled.)		Setting the data No.	This function is used to specify the data No. for the positioning data setting.	6.3
		Setting the operation pattern	This function is used to set the operation pattern for completing positioning.	
		Setting the control method	This function is used to select a control method for positioning control.	
		Setting the acceleration time	This function is used to select one of the acceleration times 0-3 specified by the parameter.	
		Setting the deceleration time	This function is used to select one of the deceleration times 0-3 specified by the parameter.	
		Setting the positioning address	This function is used to set the absolute address from the zero point.	
			This function is used to set the travel from the positioning start point.	
		Setting the arc address	This function is used to set the passing point for circular interpolation.	
			This function is used to set the center point address of the arc for circular interpolation.	
		Setting the command speed	This function is used to set the command speed when positioning is executed.	
		Setting the dwell time	This function is used to set the delay time between the completion of the positioning and the execution of the next positioning.	
	Setting the M code	This function is used to set the M code output during positioning control.		
Write /Read	Starting block data	Setting the block No.	This function is used to set the start block number 1 to 10.	6.4
		Setting the point	This function is used to set the Point No. during the start block data setting.	
		Setting a mode	This function is used to determine whether the unit will quit after positioning the specified point or start another positioning.	
		Setting the data No.	This function is used to set the data No. that controls positioning.	
		Setting the special start	This function is used to set the positioning start condition.	
		Setting a parameter	This function is used to set the starting condition when condition start, wait start, simultaneous start, FOR loop, or FOR condition is selected for the special start.	
		Selecting the conditional operator	This function is used to set the condition data for condition start.	
	Clearing all memory (enabled only in write mode)		This function clears the entire memory inside the AD75.	6.5
	Writing data to the flash ROM (enabled only in write mode)		This function writes setting data into the flash ROM.	6.6
Writing/ reading a servo parameter	Servo basic parameter	Setting the servo series	This function is used to select the servo amplifier series to be used.	6.7.1
		Setting the amplifier	This function is used to select amplifier setting.	
		Setting the regenerator brake	This function is used to selecting revival resistance to be used.	
		Setting the external dynamic brake	This function is used to select presence/absence of external dynamic brake to be used.	
		Setting the motor type	This function is used to set the motor type.	
		Setting the motor capacity	This function is used to set the motor capacity.	
		Specifying the number of motor rotation	This function is used to set the motor's rated rotation speed (r/min) multiplied by 10 <sup>-3</sup> .	
		Setting the feedback pulse	This function is used to set the feedback pulse.	
		Setting the rotation direction	This function is used to set the rotation direction relative to the load.	
		Setting the auto-tuning	This function is used to select the auto-tuning function.	
		Setting the servo response characteristics	This function is selected to increase servo response characteristics.	

Mode	Function		Description	Reference	
Write /Read	Writing/ reading a servo parameter	Servo adjustment parameter	Load inertia ratio	This function is used to set the load inertial moment ratio against the motor.	6.7.2
			Position control gain 1	This function is set to improve the follow-up of the specified position.	
			Speed control gain 1	This function is set to improve the follow-up of speed commands.	
			Position control gain 2	This function is set to improve the position response against load disturbance.	
			Speed control gain 2	This function is used when vibration occurs due to a large backlash in the machine.	
			Speed integral compensation	This function is used to set a constant during integral compensation.	
			Selecting the notch filter	This function is used to set the notch filter frequency.	
			Feed forward gain	This function is used to set the feedforward counting during position control.	
			Setting the in-position range	This function is used to set deviation counter pulses for error counter.	
			Solenoid brake PC	This function is used to set delay time from electromagnetic brake action until base disconnection.	
			Selecting the monitor output 1 mode	This function is used to set monitor items to perform real-time analog output.	
			Selecting the monitor output 2 mode	This function is used to set monitor items to perform real-time analog output.	
			Selecting the amplifier EMG	This function is used to set enable/disable of the amplifier ENG function.	
			Selecting the carrier frequency mode	This function is used to set normal/low-noise for the low-noise mode.	
			Selecting the serial encoder cable	This function is used to set 2-line/4-line of the serial encoder cable.	
			Selecting the minute vibration suppress function	This function is used to select valid/invalid for the minute vibration suppress function.	
			Selecting the moter-less operation	This function is used to set valid/invalid for non motor operation.	
			Solenoid brake interlock output timing	This function is used to set the output timing for electromagnetic brake interlock.	
	Servo expansion parameter	Monitor output 1 offset	This function is used to set an offset value of monitor output 1.	6.7.3	
		Monitor output 2 offset	This function is used to set an offset value of monitor output 2.		
		Selecting the immediately before alarm data 1	This function is used to set data 1 to be analog-output when an alarm occurs.		
		Selecting the immediately before alarm data 2	This function is used to set data 2 to be analog-output when an alarm occurs.		
		Selecting the sampling time for immediately before alarm data	This function is used to set the sampling period to be analog-output when an alarm occurs.		
		Zero speed	This function is used to set the speed at which motor speed is determined as 0.		
		Excessive error alarm level	This function is used to set a value at which an excessive deviation counter pulse alarm is output.		
		Switching the PI-PID	This function is used to set PI-PID switching.		
		Setting the maker	Unusable		
Option function 6		This function is used to select option function 6.			
PI-PID switch position droop		This function is used to set the position droop amount when switching the control from position to PI-PID.			
Setting the maker		Unusable			
Speed derivative compensation		This function is used to set the derivative compensation value for the actual speed loop.			
Option function 7	Unusable				

Mode	Function		Description	Reference
Moni - tor	Status monitor	Device X	This function is used to monitor the ON/OFF condition of device X used on the AD75.	7.1
		Device Y	This function is used to monitor the ON/OFF condition of device Y used on the AD75.	
		External input signal	This function is used to monitor the ON/OFF condition of the external input signal.	
		Status signal	This function is used to monitor the ON/OFF condition of the status signal.	
	Data monitor	Data for positioning control	This function is used to monitor the present feed value/mechanical value, feed speed, and axis control data.	7.2
		Data for zero return	This function is used to monitor the zero point position, travel after the near-point dog is on, and torque limit value.	
		Data for JOG operation	This function is used to monitor the JOG speed and direction.	
		Data for manual pulse generator	This function is used to monitor the manual pulse generator enabled/disabled condition, and input multiplier.	
		Data for switching from speed to positioning	This function is used to monitor the travel after switching from speed to position.	
		Error history	This function is used to monitor an axis and an error code number in turn.	
	Start history	This function is used to monitor an axis and start type in turn.		
Test	Starting zero return		This function is used to perform mechanical zero return/rapid zero return.	8.1
	Starting positioning		This function is used to set the condition for the test operation and start positioning.	8.2
	JOG operation		This function is used to set the JOG speed and perform the JOG operation.	8.3
	Manual pulse generator operation		This function is used to operate the manual pulse generator.	8.4
	Changing the present value		This function is used to change the present value.	8.5
	Error reset		This function resets an error.	8.6
	Servo ON/OFF instruction		This function is used to instruct the servo ON/OFF	8.7

# Write/Read Mode

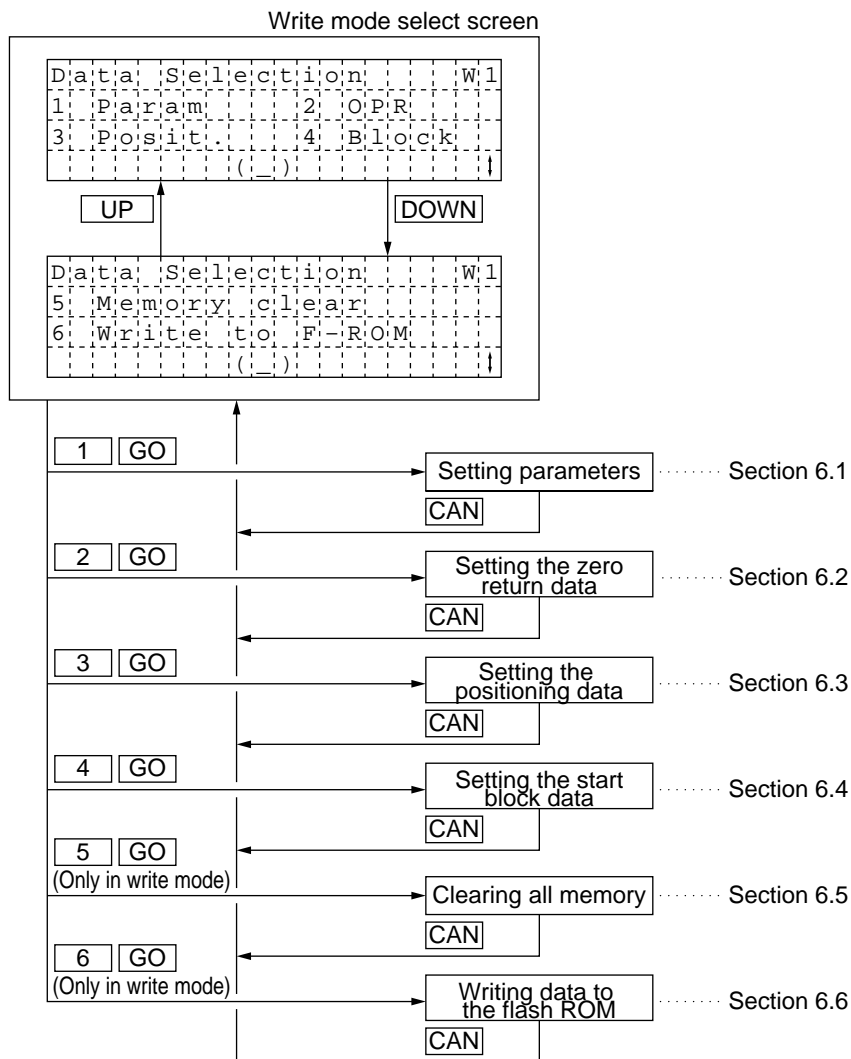
Use the [WR] key to display the write mode select screen, and use the [RD] key to display the read mode select screen.

The same operation procedure applies to both write and read modes, except for some functions and screen displays. Refer to Point below for difference between write mode and read mode.

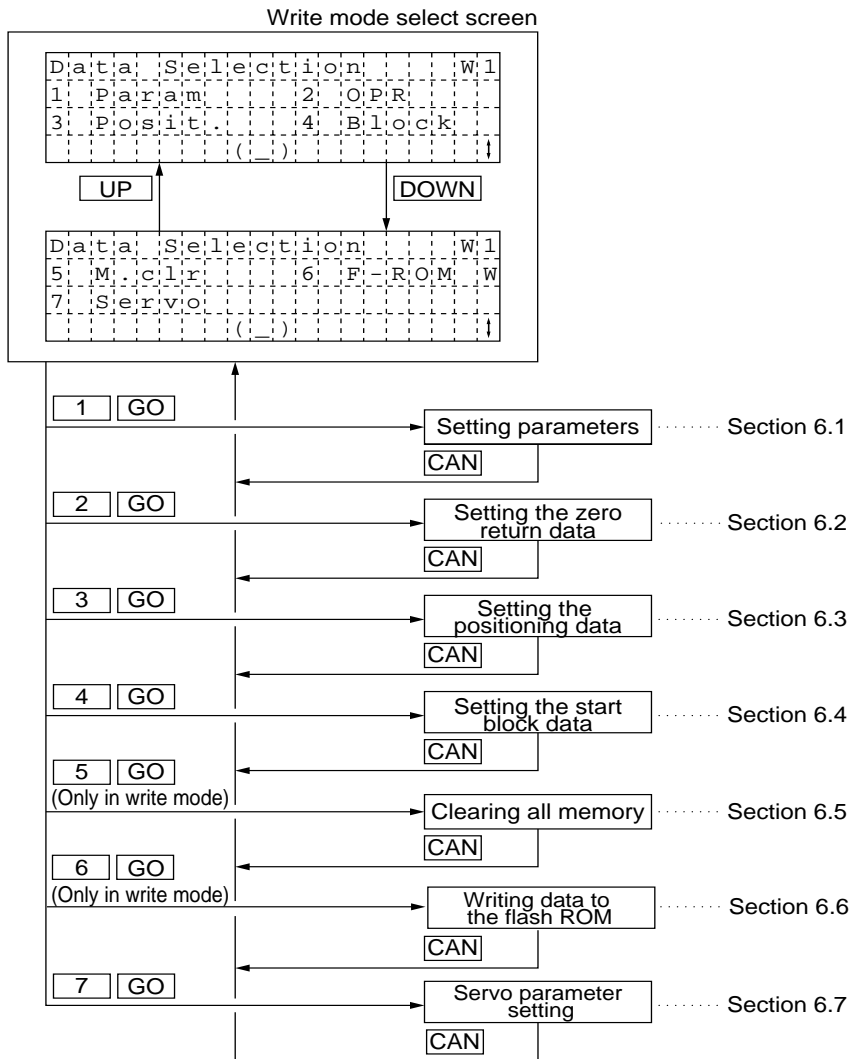
This chapter explains both modes using the write mode screen displays as examples. Use the [Setting Item Number] key, then the [GO] key to select setting items.

POINT
The difference between write mode and read mode is as follows:
(1) The mode display area in the upper right corner of the screen will show "W" in write mode, and "R" in read mode.
(2) The underline "_" appears in the setting area on the bottom center of the screen in write mode.
(3) The memory all clear function and the write flash ROM function are effective only in write mode.

When using AD75P, AD75PS3

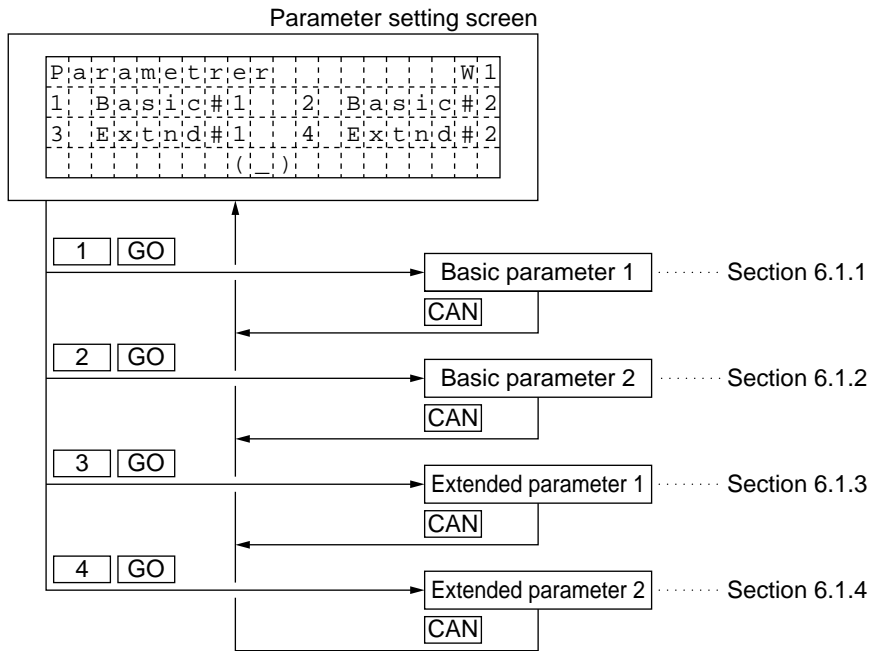


When using AD75M



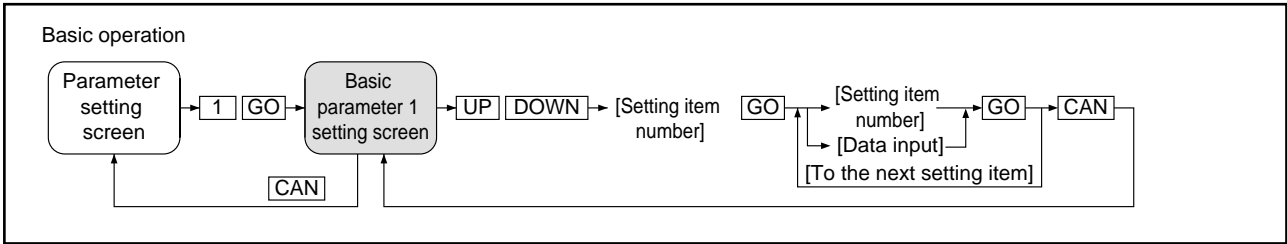
## 6.1 Setting a Parameter

This section explains parameter settings required for positioning control.



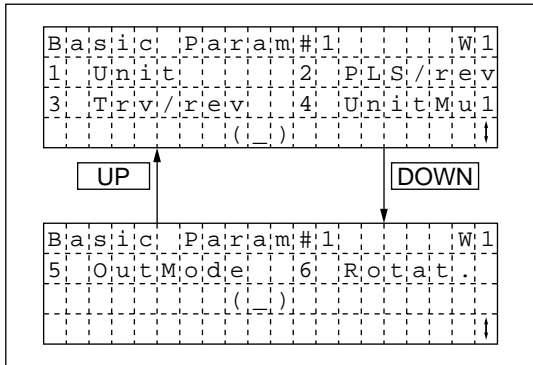


6.1.1 Setting basic parameter 1

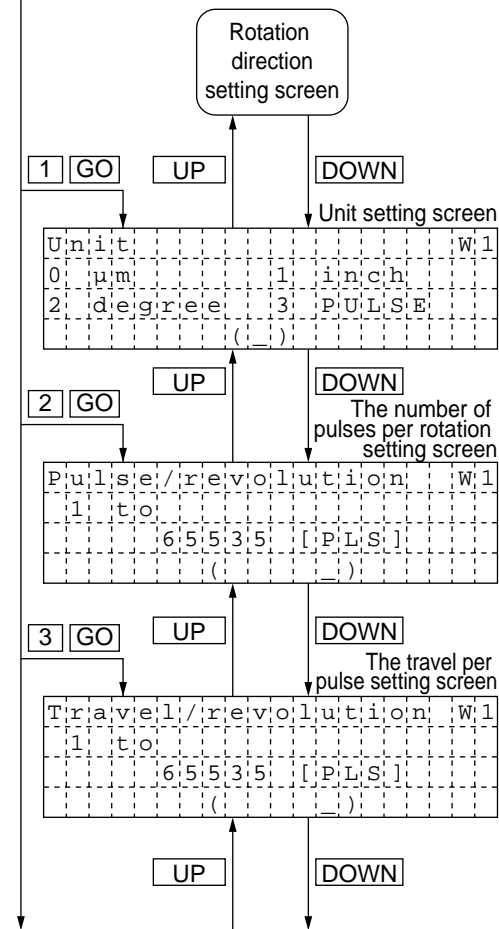


When using AD75P

Basic parameter 1 setting screen

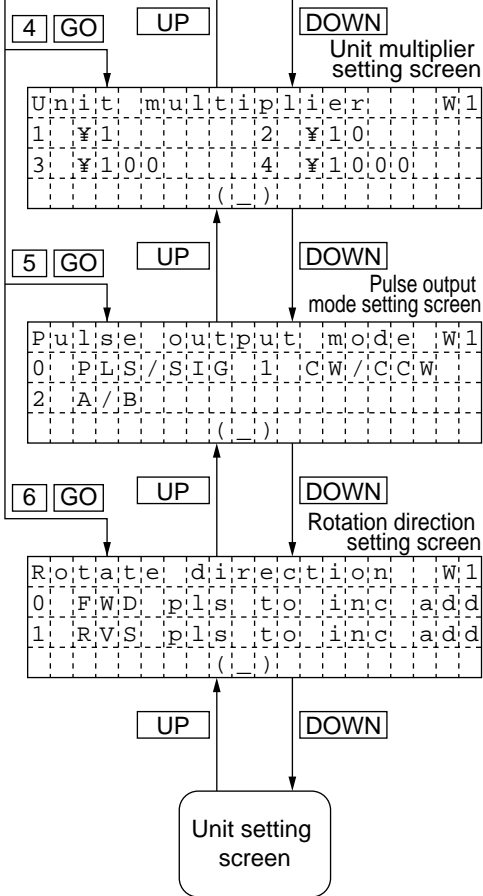


- 1 : Setting the unit
- 2 : Setting the number of pulses per rotation
- 3 : Setting the travel per pulse
- 4 : Setting the unit multiplier
- 5 : Selecting the pulse output mode
- 6 : Setting the rotation direction



(Continued to the next page)

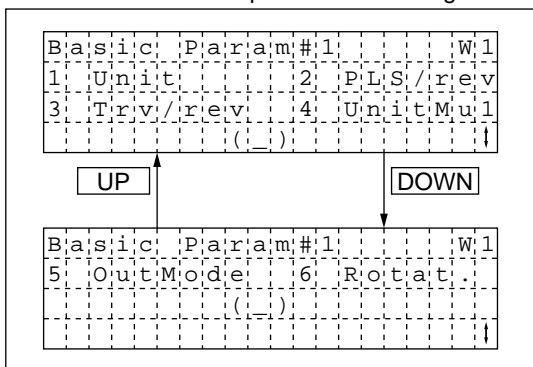
(Continued from the previous page)



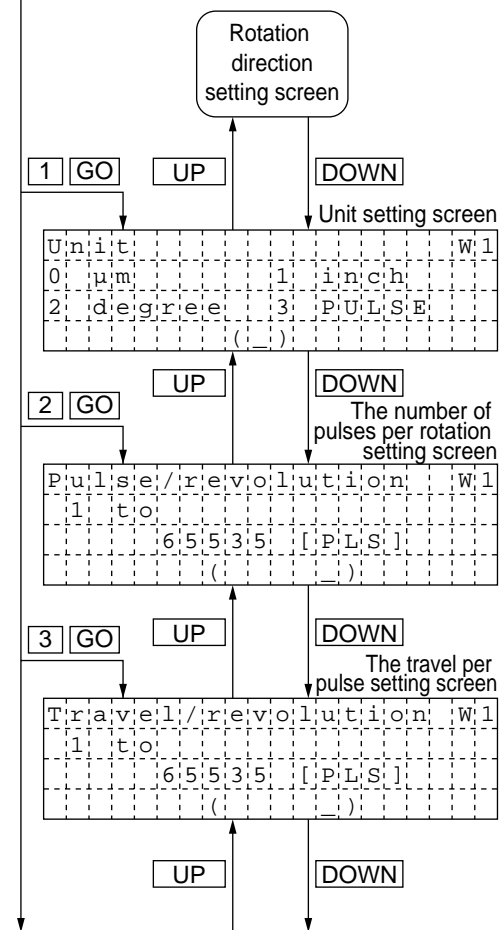
- 0 : Forward pulse output will increase the present value.
- 1 : Reverse pulse output will increase the present value.

When using AD75PS3

Basic parameter 1 setting screen

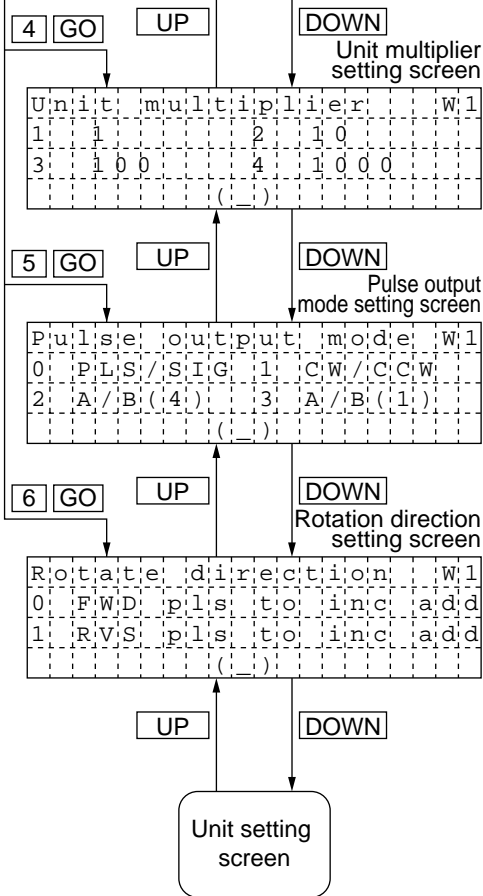


- 1 : Setting the unit
- 2 : Setting the number of pulses per rotation
- 3 : Setting the travel per pulse
- 4 : Setting the unit multiplier
- 5 : Selecting the pulse output mode
- 6 : Setting the rotation direction



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(Continued from the previous page)



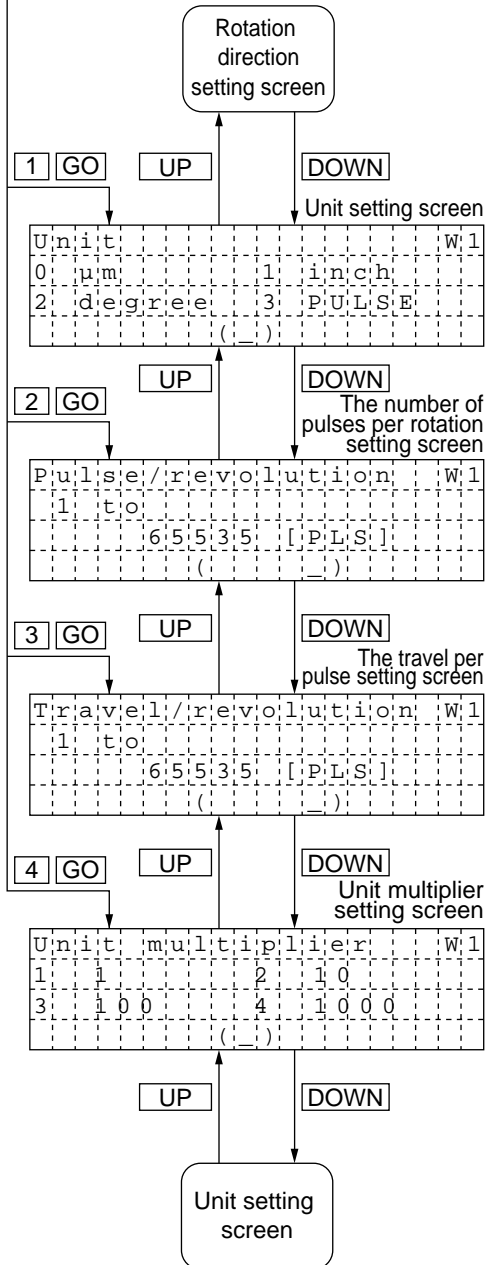
- 0 : Forward pulse output will increase the present value.
- 1 : Reverse pulse output will increase the present value.

When using AD75M

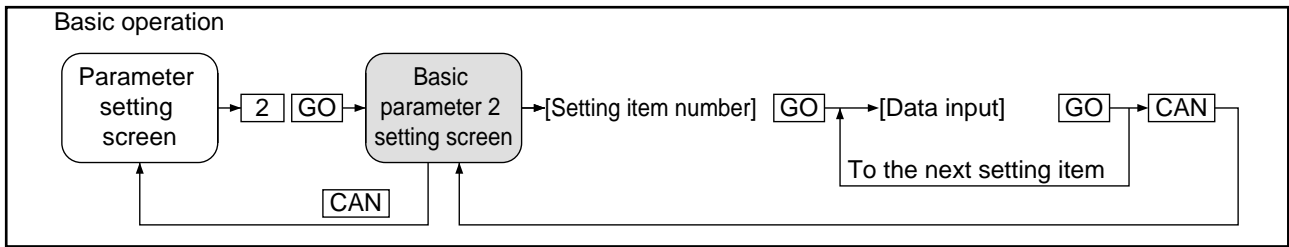
Basic parameter 1 setting screen

Basic Param#1				W1
1	Unit	2	P.L.S./rev	
3	Trv./rev	4	Unit Mu1	
				( )

- 1 : Setting the unit
- 2 : Setting the number of pulses per rotation
- 3 : Setting the travel per pulse
- 4 : Setting the unit multiplier

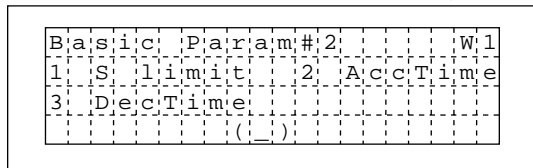


6.1.2 Setting basic parameter 2

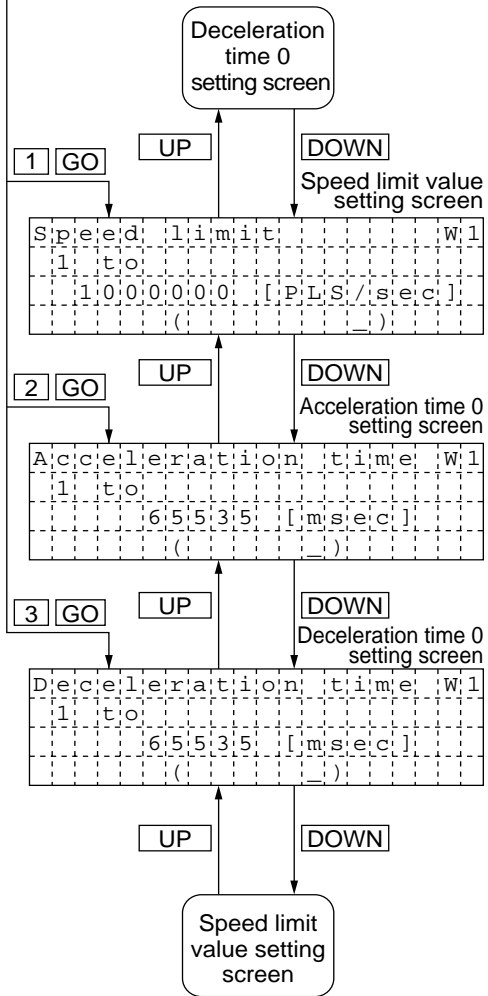


When using AD75P

Basic parameter 2 setting screen

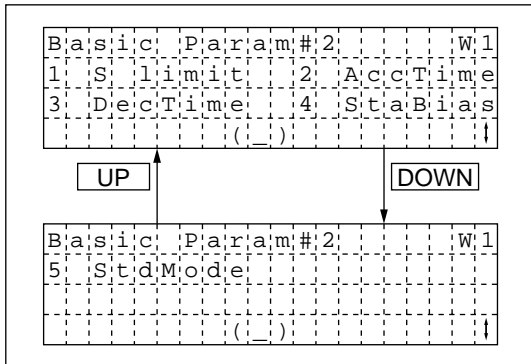


- 1 : Setting the speed limit value
- 2 : Setting the acceleration time 0
- 3 : Setting the deceleration time 0

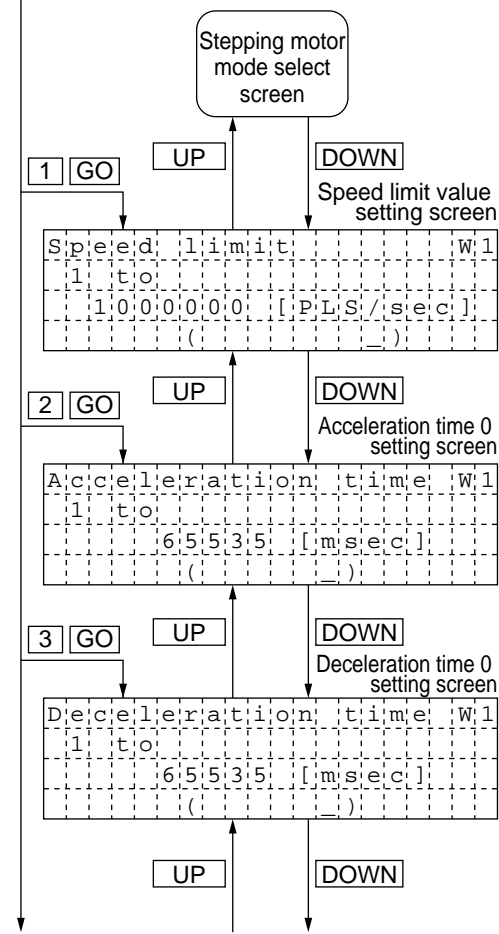


When using AD75PS3

Basic parameter 2 setting screen

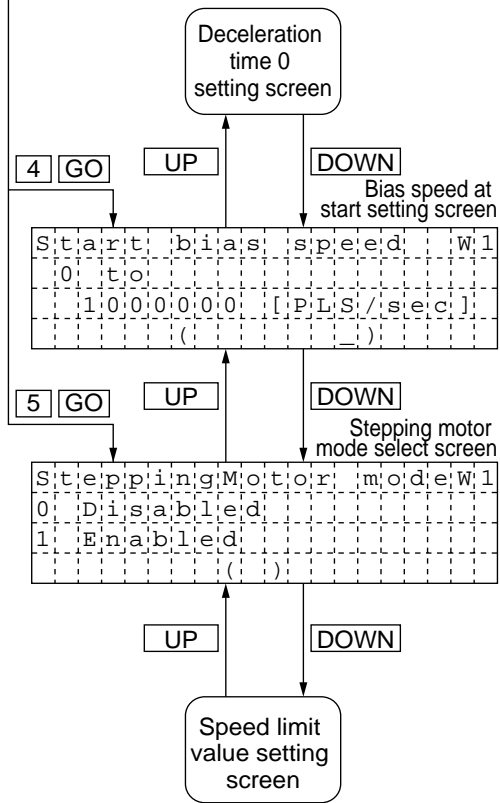


- 1 : Setting the speed limit value
- 2 : Setting the acceleration time 0
- 3 : Setting the deceleration time 0
- 4 : Setting the bias speed at start
- 5 : Selecting stepping motor mode



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- 0 : Standard mode
- 1 : Stepping motor mode

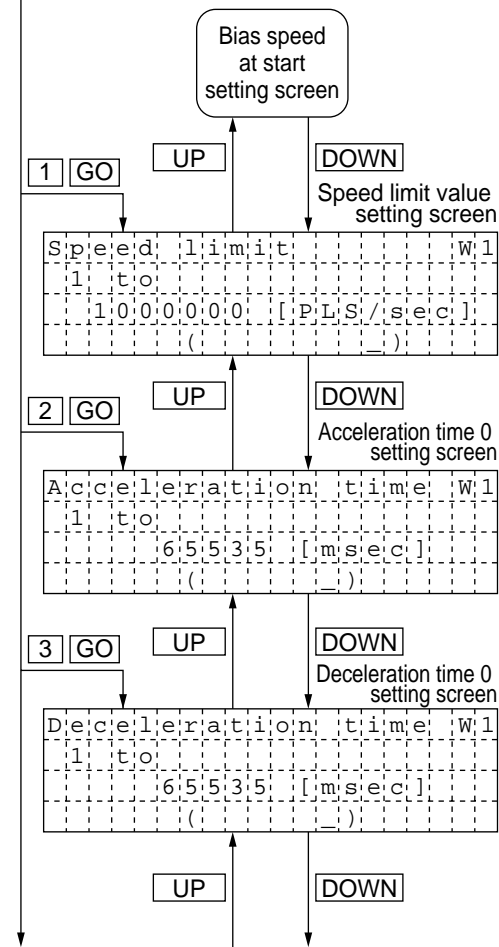


When using AD75M

Basic parameter 2 setting screen

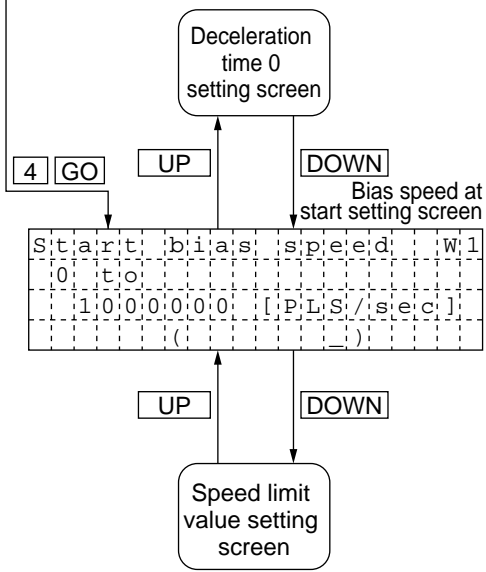
B	a	s	i	c	P	a	r	a	m	#	2	W	l		
1	S	l	i	m	i	t	2	A	c	c	T	i	m	e	
3	D	e	c	T	i	m	e	4	S	t	a	B	i	a	s
(	_	)	:												

- 1 : Setting the speed limit value
- 2 : Setting acceleration time 0
- 3 : Setting deceleration time 0
- 4 : Setting the bias speed at start

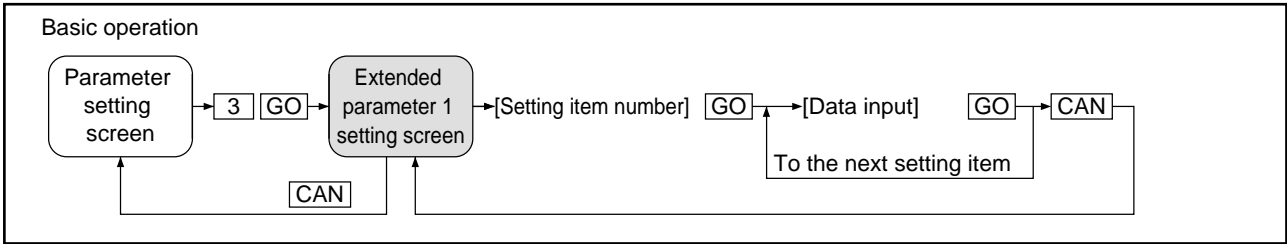


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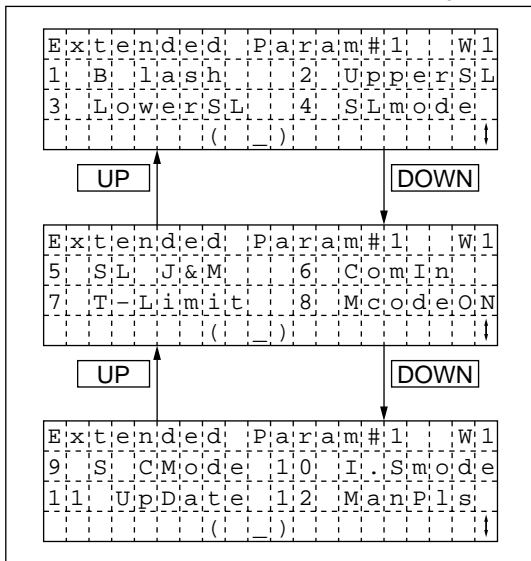


6.1.3 Setting extended parameter 1

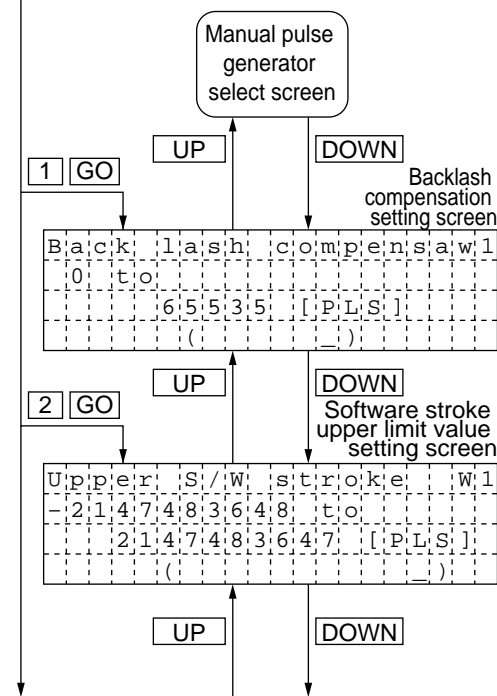


When using AD75P

Extended parameter 1 setting screen

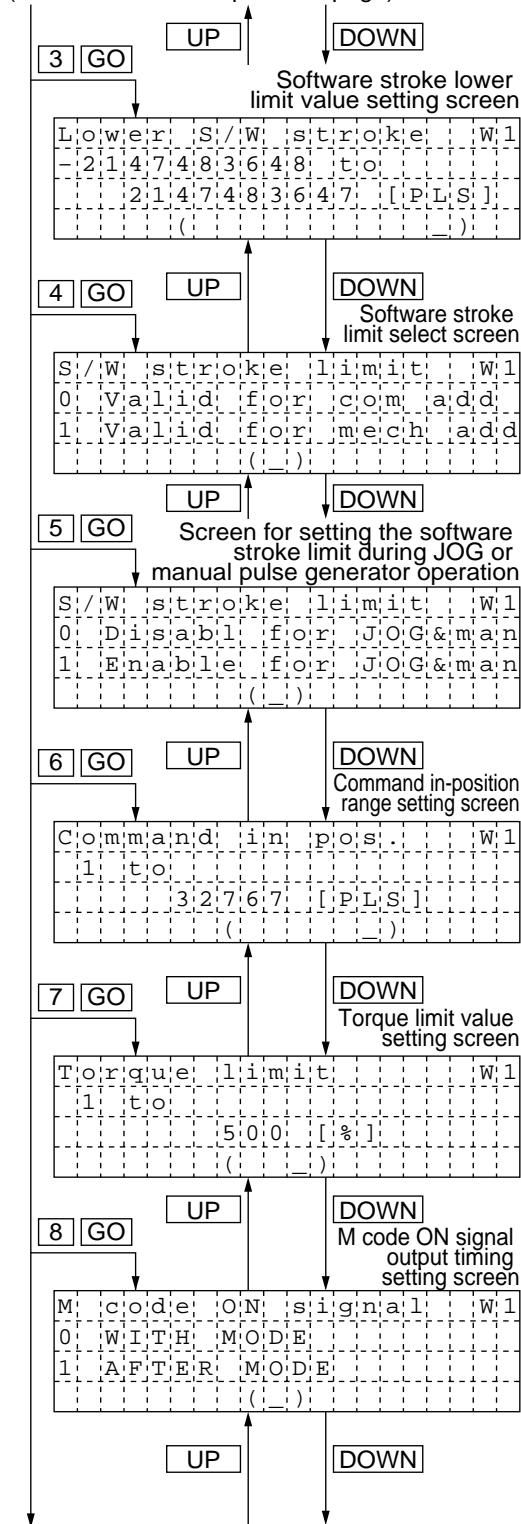


- 1 : Setting the backlash compensation
- 2 : Setting the software stroke upper limit value
- 3 : Setting the software stroke lower limit value
- 4 : Selecting the software stroke limit
- 5 : Setting the software stroke limit during JOG or manual pulse generator operation
- 6 : Setting the command in-position range
- 7 : Setting the torque limit value
- 8 : Setting the M code ON signal output timing
- 9 : Setting the speed change type for speed switching mode
- 10 : Setting the interpolation speed specifying method (interpolation mode)
- 11 : Present feed value update request command during speed control
- 12 : Selecting the manual pulse generator



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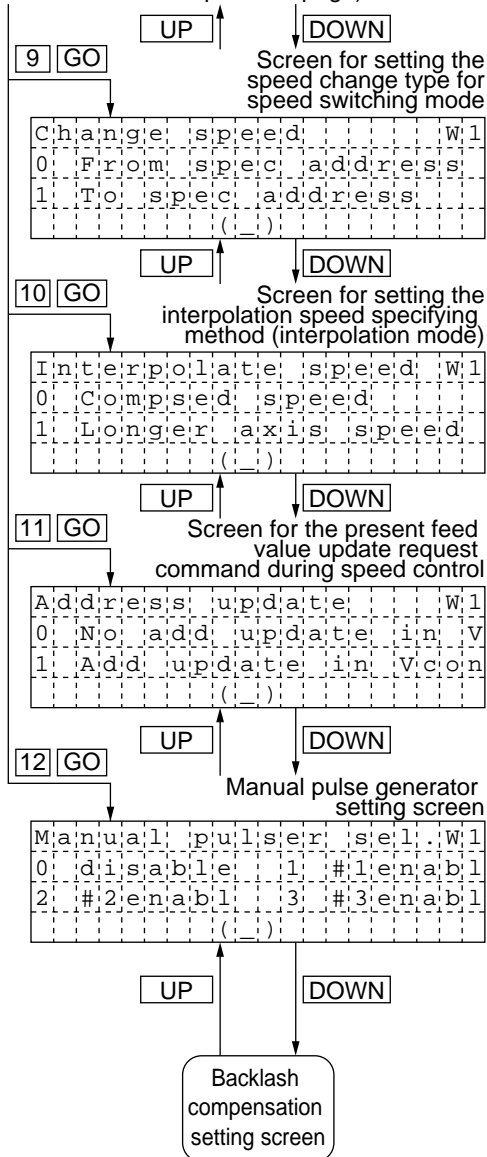


- 0 : The software stroke limit is multiplied for present feed value
- 1 : The software stroke limit is multiplied for mechanical value

- 0 : The software stroke limit is invalid-during JOG or manual pulse generator operation
- 1 : The software stroke limit is valid during JOG or manual pulse generator operation

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- 0 : Standard speed switching mode
- 1 : Advanced speed switching mode

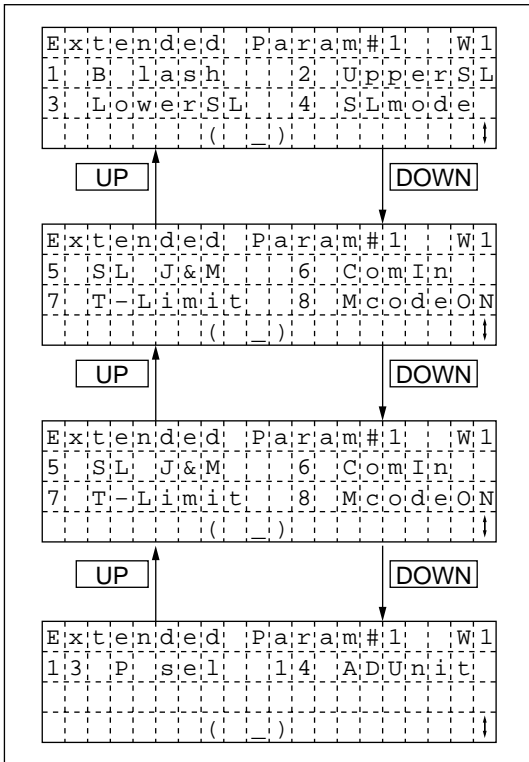
- 0 : Composed speed
- 1 : Standard axis speed

- 0 : Present feed value is not updated during speed control.
- 1 : Present feed value is updated during speed control.

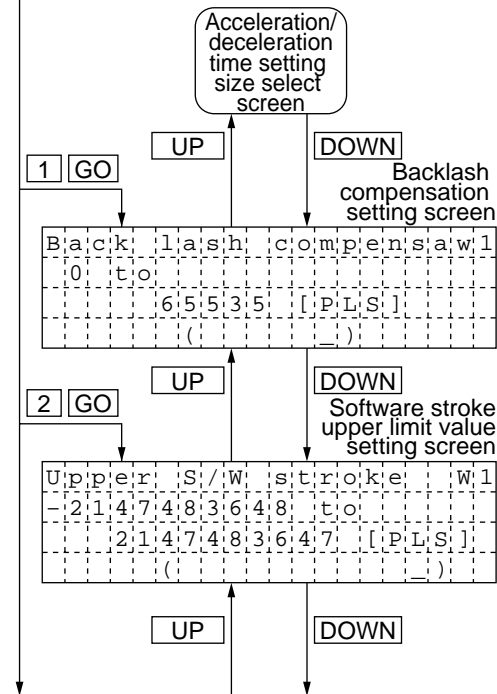
- 0 : Manual pulse generator operation is not allowed.
- 1 : Manual pulse generator 1 is used.
- 2 : Manual pulse generator 2 is used.
- 3 : Manual pulse generator 3 is used.

When using AD75PS3

Extended parameter 1 setting screen

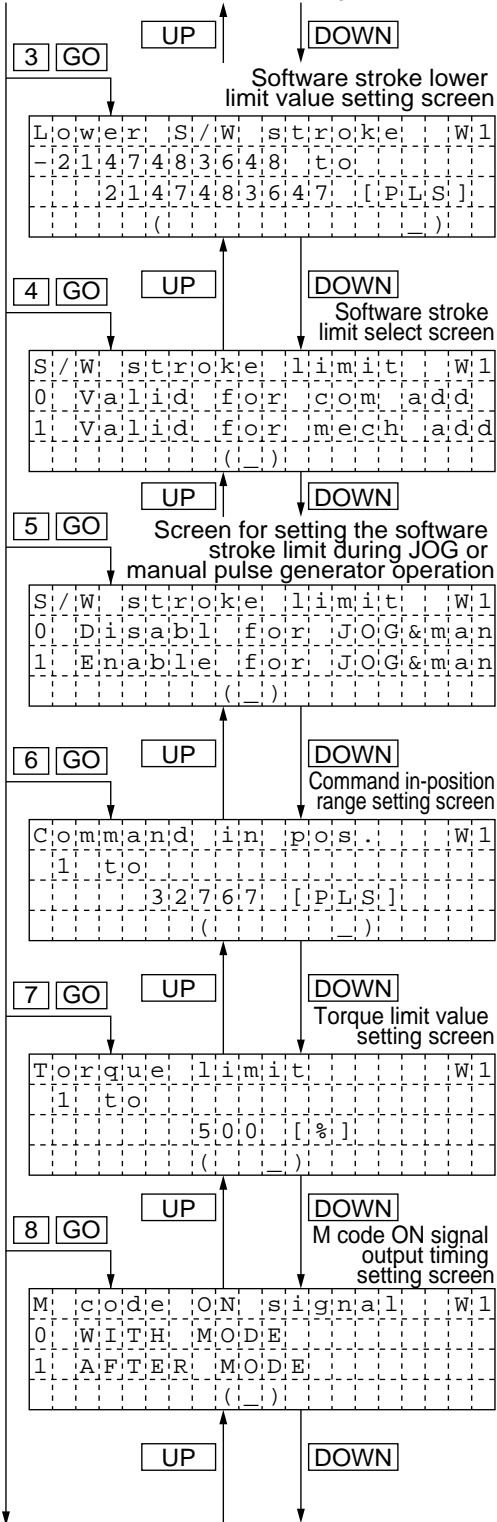


- 1 : Setting the backlash compensation
- 2 : Setting the software stroke upper limit value
- 3 : Setting the software stroke lower limit value
- 4 : Selecting the software stroke limit
- 5 : Setting the software stroke limit during JOG or manual pulse generator operation
- 6 : Setting the command in-position range
- 7 : Setting the torque limit value
- 8 : Setting the M code ON signal output timing
- 9 : Setting the speed change type for speed switching mode
- 10 : Setting the interpolation speed specifying method (interpolation mode)
- 11 : Present feed value update request command during speed control
- 12 : Selecting the manual pulse generator
- 13 : Pulse output logical to drive module
- 14 : Selecting the acceleration/deceleration time setting size



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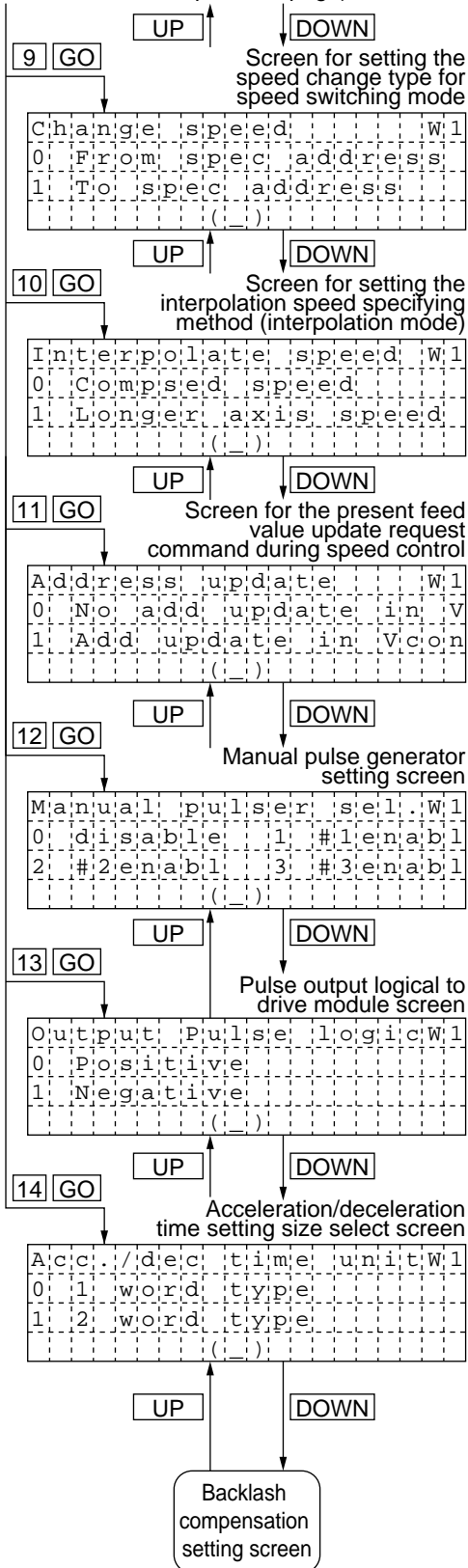


- 0 : The software stroke limit is multiplied for present feed value
- 1 : The software stroke limit is multiplied for mechanical value

- 0 : The software stroke limit is invalid-during JOG or manual pulse generator operation
- 1 : The software stroke limit is valid during JOG or manual pulse generator operation

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- 0 : Standard speed switching mode
- 1 : Advanced speed switching mode

- 0 : Composed speed
- 1 : Standard axis speed

- 0 : Present feed value is not updated during speed control.
- 1 : Present feed value is updated during speed control.

- 0 : Manual pulse generator operation is not allowed.
- 1 : Manual pulse generator 1 is used.
- 2 : Manual pulse generator 2 is used.
- 3 : Manual pulse generator 3 is used.

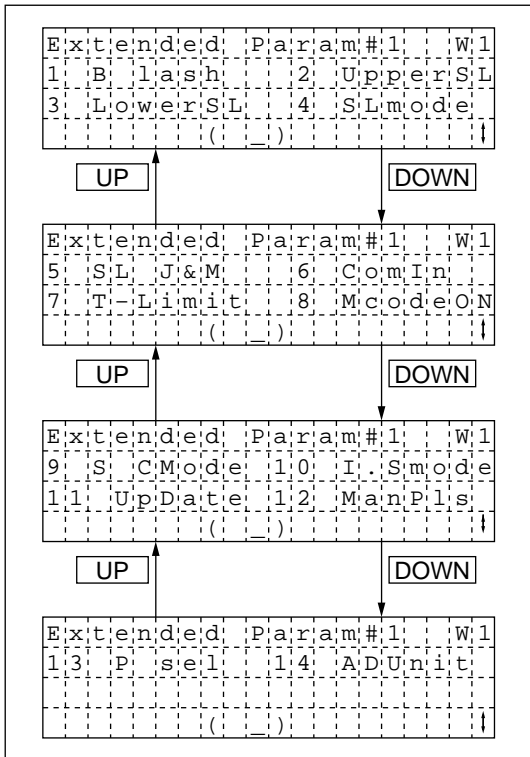
- 0 : Positive logical
- 1 : Negative logical

- 0 : 1 word type
- 1 : 2 word type

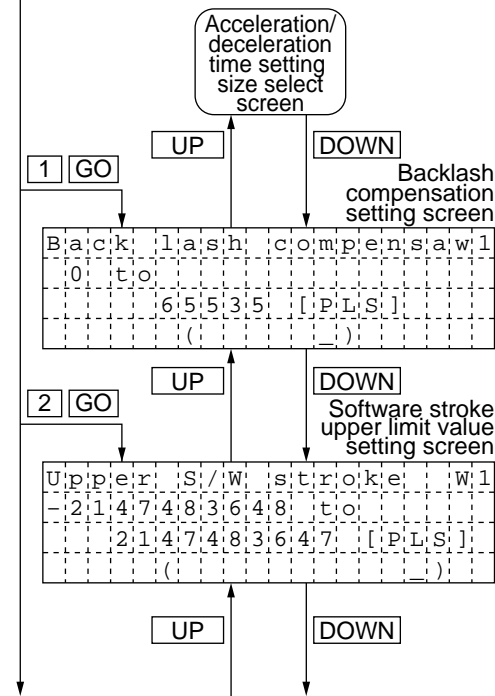


When using AD75M

Extended parameter 1 setting screen

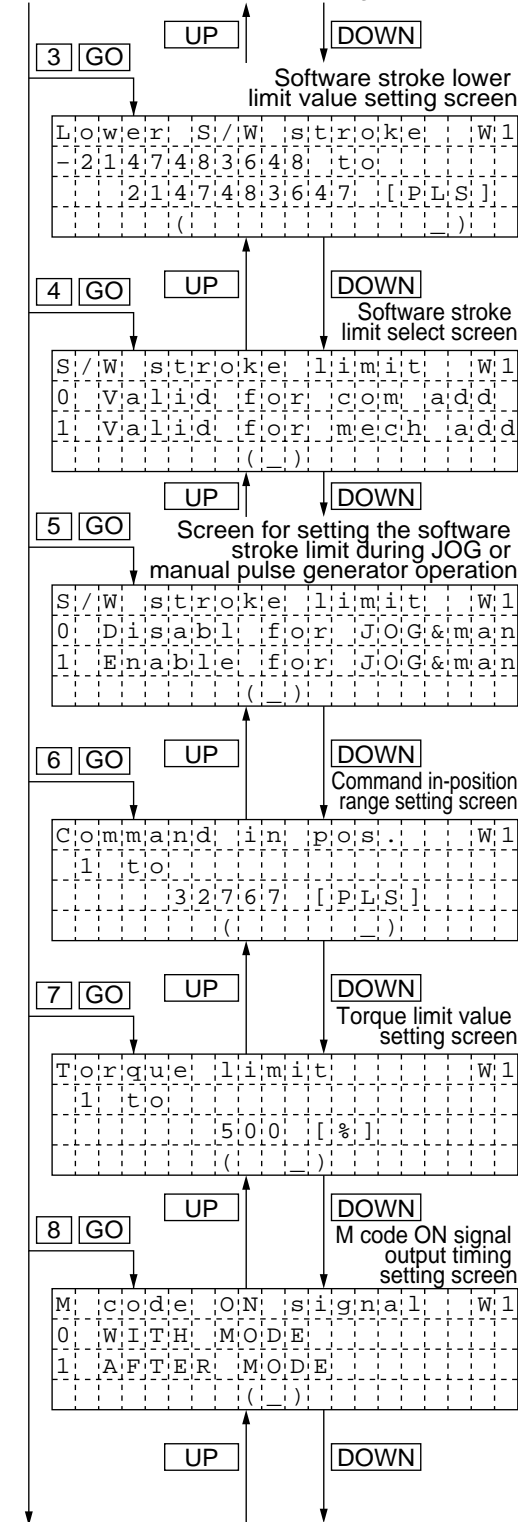


- 1 : Setting the backlash compensation
- 2 : Setting the software stroke upper limit value
- 3 : Setting the software stroke lower limit value
- 4 : Selecting the software stroke limit
- 5 : Setting the software stroke limit during JOG or manual pulse generator operation
- 6 : Setting the command in-position range
- 7 : Setting the torque limit value
- 8 : Setting the M code ON signal output timing
- 9 : Setting the speed change type for speed switching mode
- 10 : Setting the interpolation speed specifying method (interpolation mode)
- 11 : Present feed value update request command during speed control
- 12 : Selecting the manual pulse generator
- 13 Pulse output logical to drive module
- 14 Selecting the acceleration/deceleration time setting size



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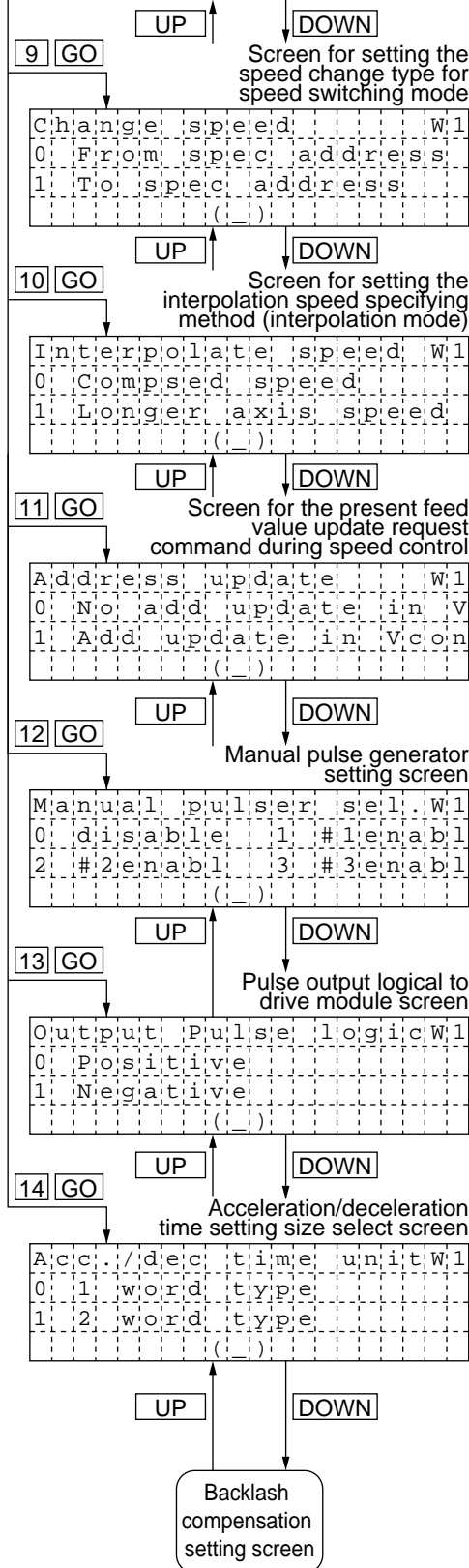


- 0 : The software stroke limit is multiplied for present feed value
- 1 : The software stroke limit is multiplied for mechanical value

- 0 : The software stroke limit is invalid-during JOG or manual pulse generator operation
- 1 : The software stroke limit is valid during JOG or manual pulse generator operation

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- 0 : Standard speed switching mode
- 1 : Advanced speed switching mode

- 0 : Composed speed
- 1 : Standard axis speed

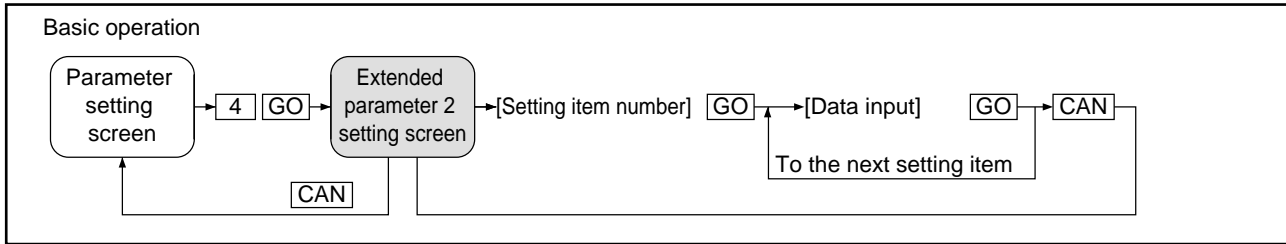
- 0 : Present feed value is not updated during speed control.
- 1 : Present feed value is updated during speed control.

- 0 : Manual pulse generator operation is not allowed.
- 1 : Manual pulse generator 1 is used.
- 2 : Manual pulse generator 2 is used.
- 3 : Manual pulse generator 3 is used.

- 0 : Positive logical
- 1 : Negative logical

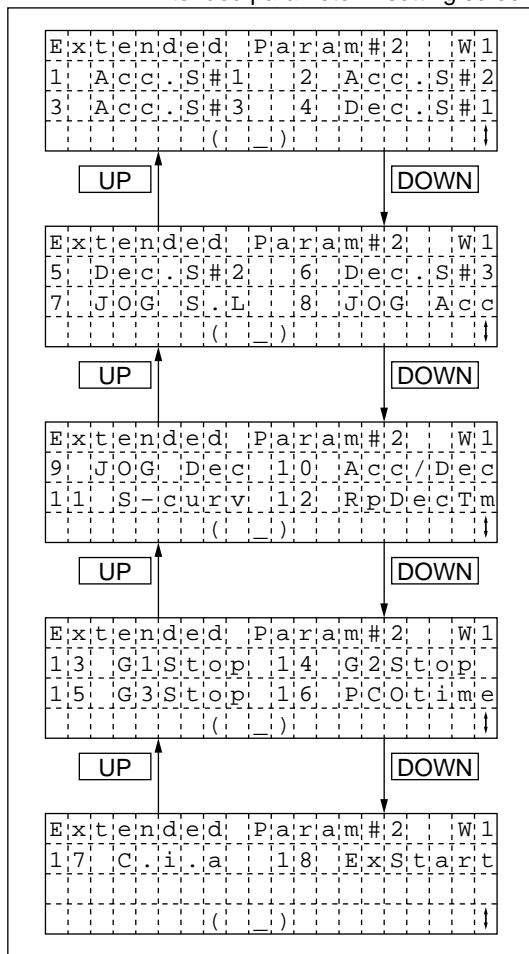
- 0 : 1 word type
- 1 : 2 word type

6.1.4 Setting extended parameter 2



When using AD75P

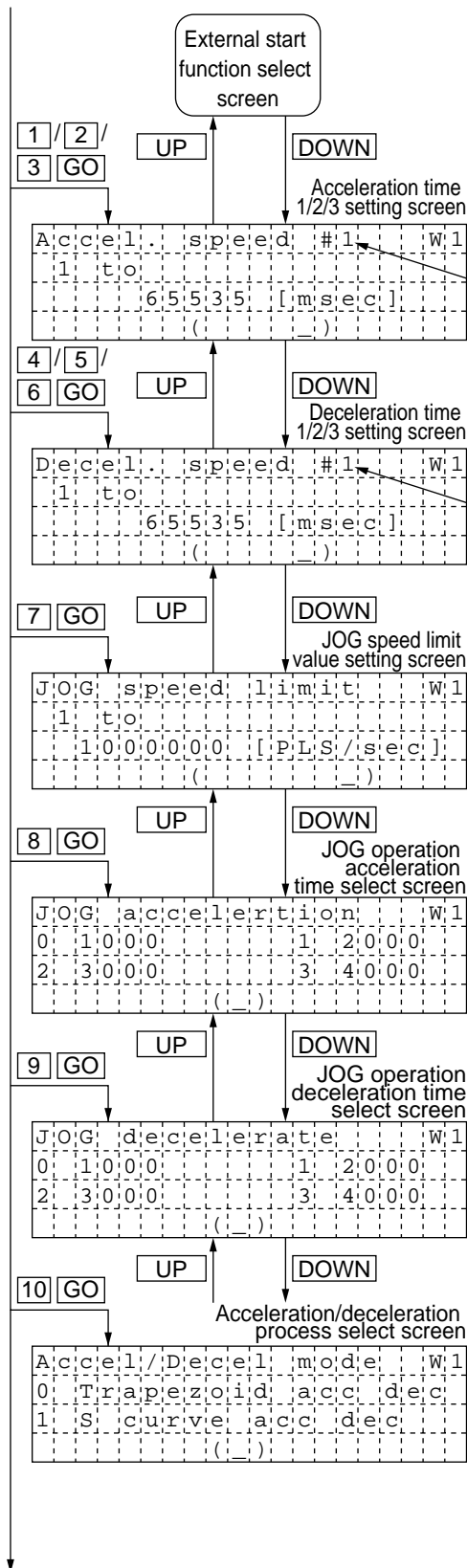
Extended parameter 2 setting screen



- 1 : Setting acceleration time 1
- 2 : Setting acceleration time 2
- 3 : Setting acceleration time 3
- 4 : Setting deceleration time 1
- 5 : Setting deceleration time 2
- 6 : Setting deceleration time 3
- 7 : Setting a JOG speed limit value
- 8 : Selecting JOG operation acceleration time
- 9 : Selecting JOG operation deceleration time
- 10 : Selecting acceleration/deceleration process
- 11 : Setting the S-curve ratio
- 12 : Setting the rapid stop deceleration time
- 13 : Selecting stop group 1 rapid stop
- 14 : Selecting stop group 2 rapid stop
- 15 : Selecting stop group 3 rapid stop
- 16 : Setting the output time of positioning completed signal
- 17 : Setting the circular interpolation error allowable range
- 18 : Selecting the external start function

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\*1 : The screen will show the following when acceleration time 1/2/3 is set:  
 Setting acceleration time 1 ... #1  
 Setting acceleration time 2 ... #2  
 Setting acceleration time 3 ... #3

\*2 : The screen will show the following when deceleration time 1/2/3 is set:  
 Setting deceleration time 1 ... #1  
 Setting deceleration time 2 ... #2  
 Setting deceleration time 3 ... #3

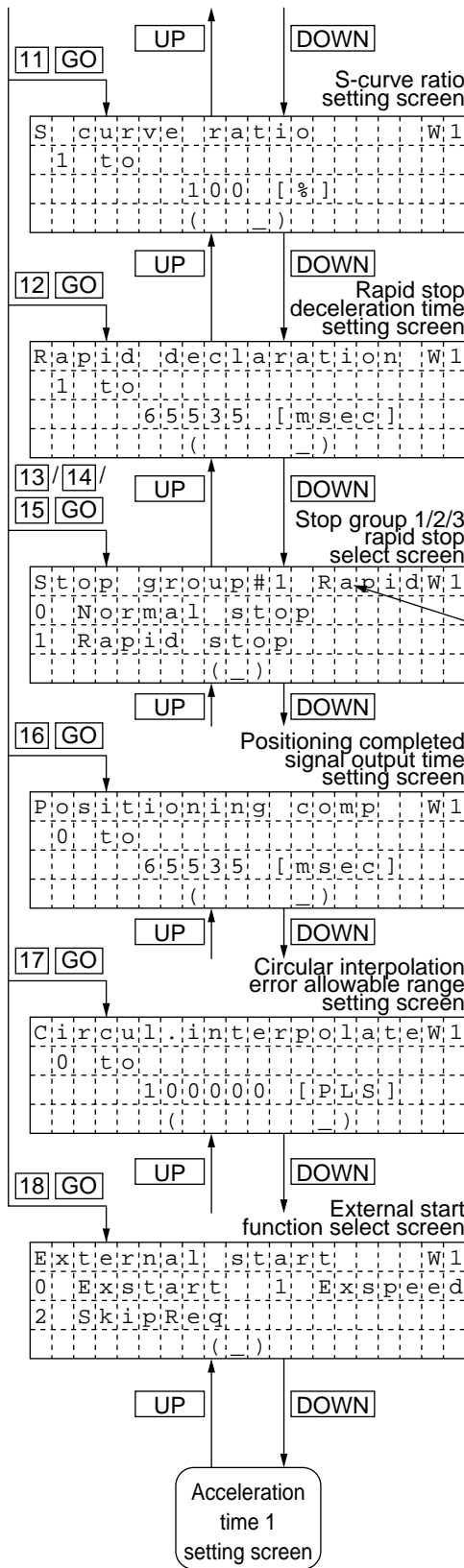
Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1-3 (Extended parameter 2).

Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1-3 (Extended parameter 2).

- 0 : Trapezoid acceleration/deceleration process
- 1 : S-curve acceleration/deceleration process

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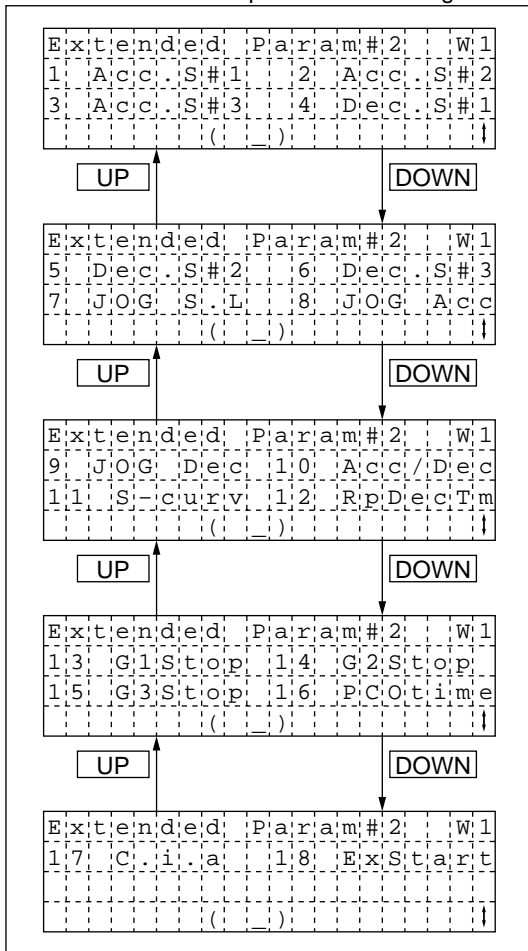
- 0 : Normal acceleration stop
- 1 : Rapid stop

\*A : The screen will show the following when Stop group 1/2/3 is set:  
 Setting Stop group 1: #1  
 Setting Stop group 1: #2  
 Setting Stop group 1: #3

- 0 : External positioning start
- 1 : External speed change request
- 2 : Skip request

When using AD75PS3 and AD75M

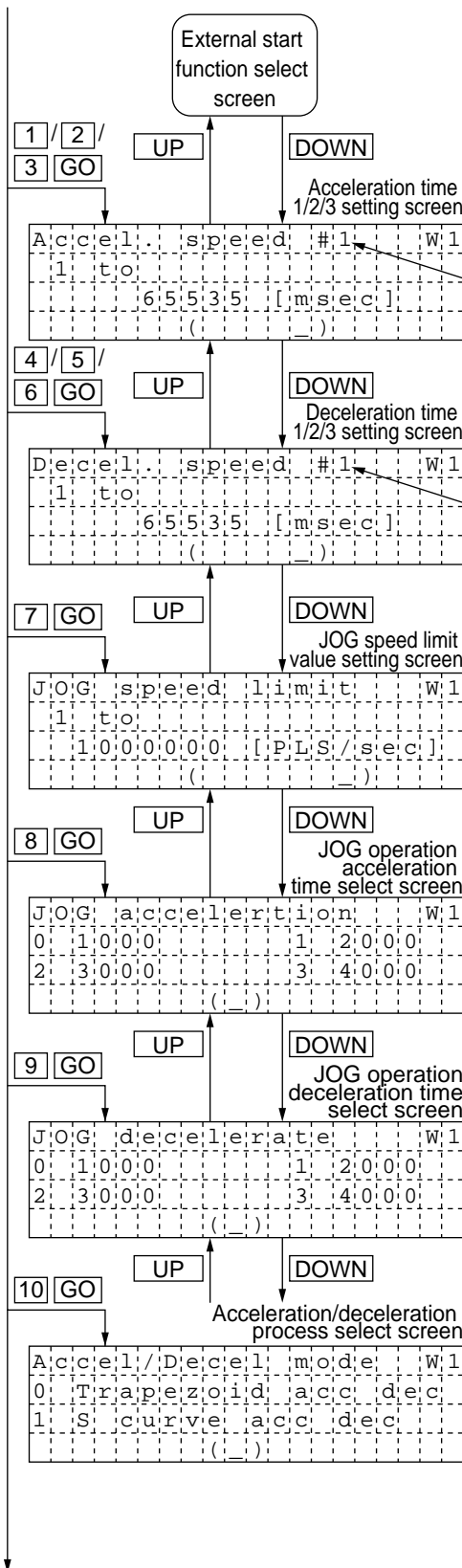
Extended parameter 2 setting screen



- 1 : Setting acceleration time 1
- 2 : Setting acceleration time 2
- 3 : Setting acceleration time 3
- 4 : Setting deceleration time 1
- 5 : Setting deceleration time 2
- 6 : Setting deceleration time 3
- 7 : Setting a JOG speed limit value
- 8 : Selecting JOG operation acceleration time
- 9 : Selecting JOG operation deceleration time
- 10 : Selecting acceleration/deceleration process
- 11 : Setting the S-curve ratio
- 12 : Setting the rapid stop deceleration time
- 13 : Selecting stop group 1 rapid stop
- 14 : Selecting stop group 2 rapid stop
- 15 : Selecting stop group 3 rapid stop
- 16 : Setting the output time of positioning completed signal
- 17 : Setting the circular interpolation error allowable range
- 18 : Selecting the external start function
- 19 : Restart allowance range setting (AD75M only)
- 20 : Locus control selection for selecting the neighbor passing mode

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\*1 : The screen will show the following when acceleration time 1/2/3 is set:  
 Setting acceleration time 1 ... #1  
 Setting acceleration time 2 ... #2  
 Setting acceleration time 3 ... #3

\*2 : The screen will show the following when deceleration time 1/2/3 is set:  
 Setting deceleration time 1 ... #1  
 Setting deceleration time 2 ... #2  
 Setting deceleration time 3 ... #3

Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1-3 (Extended parameter 2).

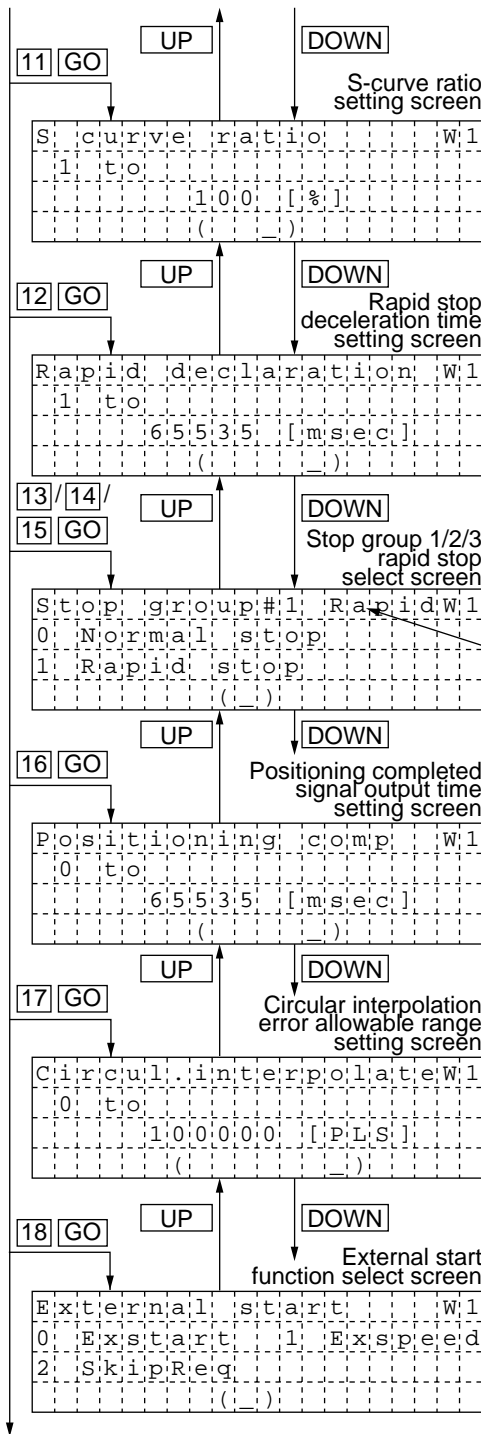
Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1-3 (Extended parameter 2).

0 : Trapezoid acceleration/deceleration process  
 1 : S-curve acceleration/deceleration process

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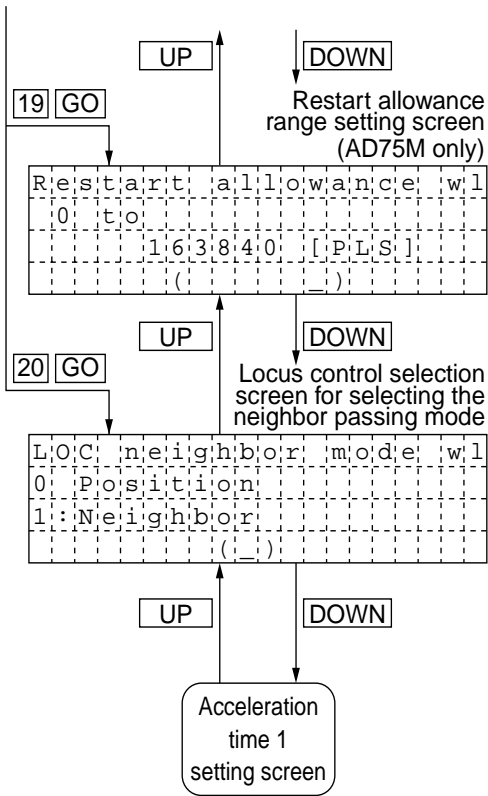
- 0 : Normal acceleration stop
- 1 : Rapid stop

\*A : The screen will show the following when Stop group 1/2/3 is set:  
 Setting Stop group 1: #1  
 Setting Stop group 1: #2  
 Setting Stop group 1: #3

- 0 : External positioning start
- 1 : External speed change request
- 2 : Skip request

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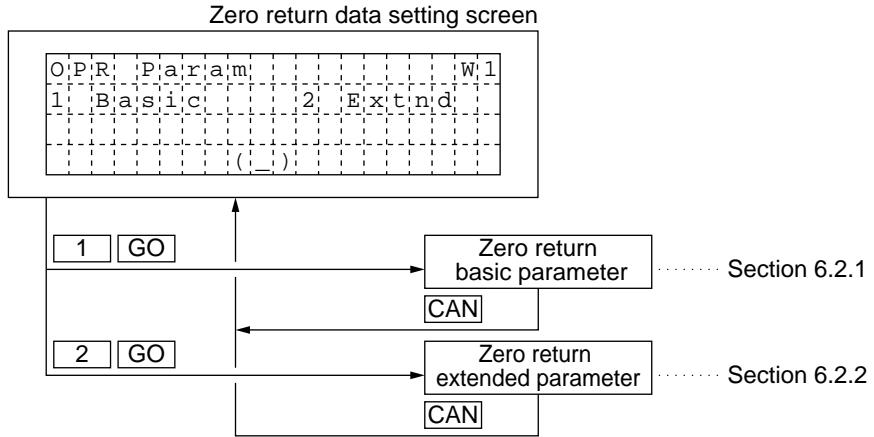


- 0 : Restart disabled
- 1 to 163840 : Restart allowance range setting

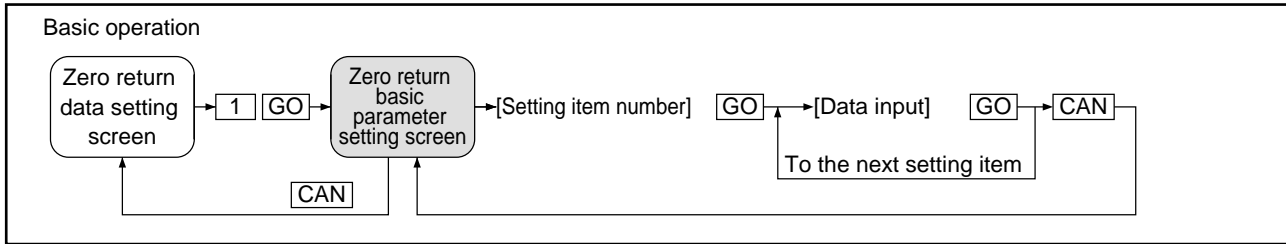
- 0 : Positioning-address passing mode
- 1 : Neighbor passing mode

## 6.2 Setting Zero Return Data

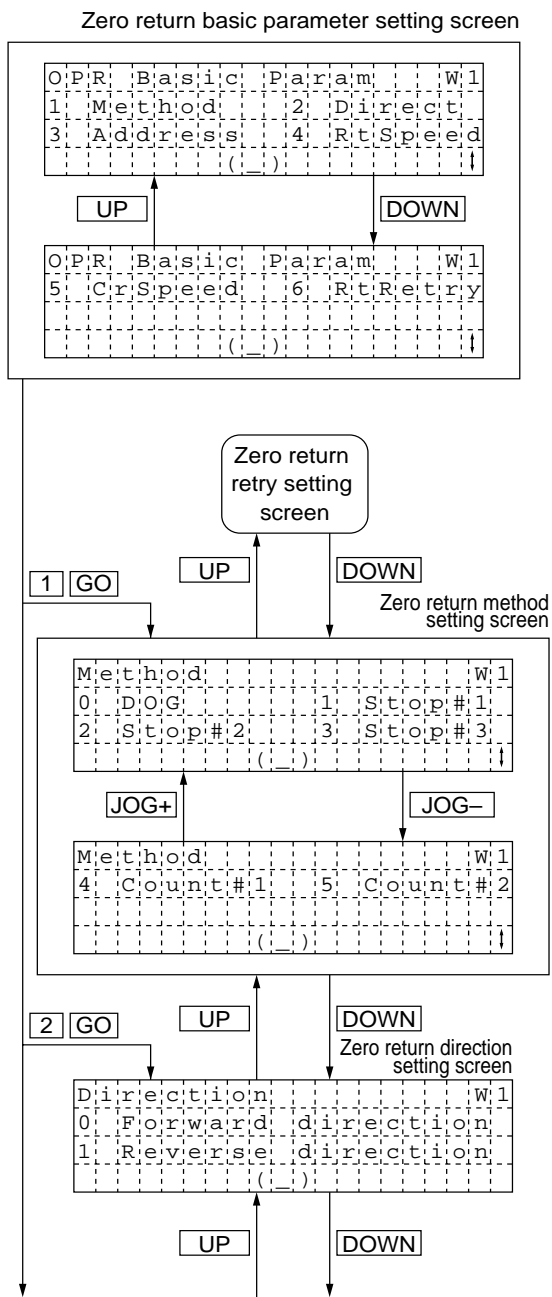
This section explains parameter settings required for zero return.



6.2.1 Setting zero return basic parameters



When using AD75P and AD75PS3



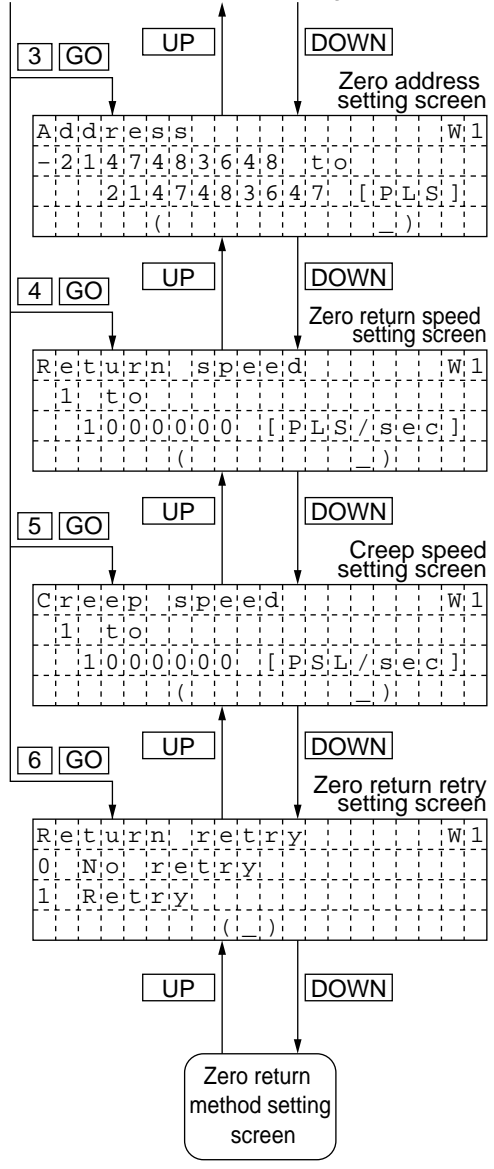
- 1 : Setting the zero return method
- 2 : Setting the zero return direction
- 3 : Setting the zero address
- 4 : Setting the zero return speed
- 5 : Setting the creep speed
- 6 : Setting the zero return retry

- 0 : Near-point dog method
- 1 : Mechanical stop 1
- 2 : Mechanical stop 2
- 3 : Mechanical stop 3
- 4 : Count method 1
- 5 : Count method 2

- 0 : Forward
- 1 : Reverse

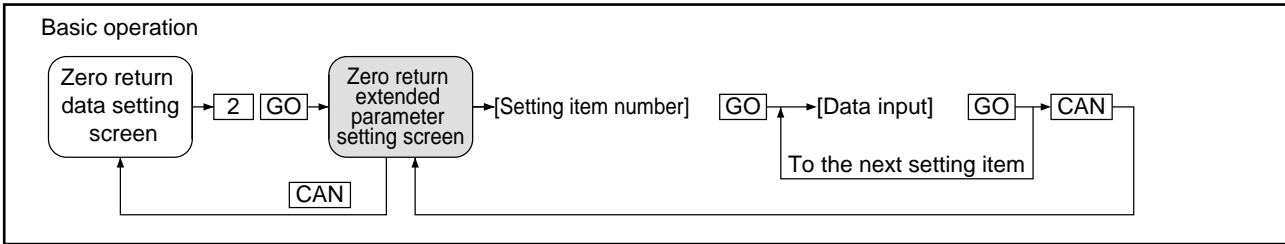
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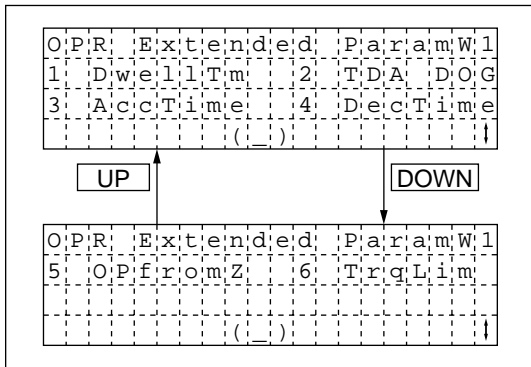
- 0 : Zero return retry is not performed.
- 1 : Zero return retry is performed.

6.2.2 Setting zero return extended parameters

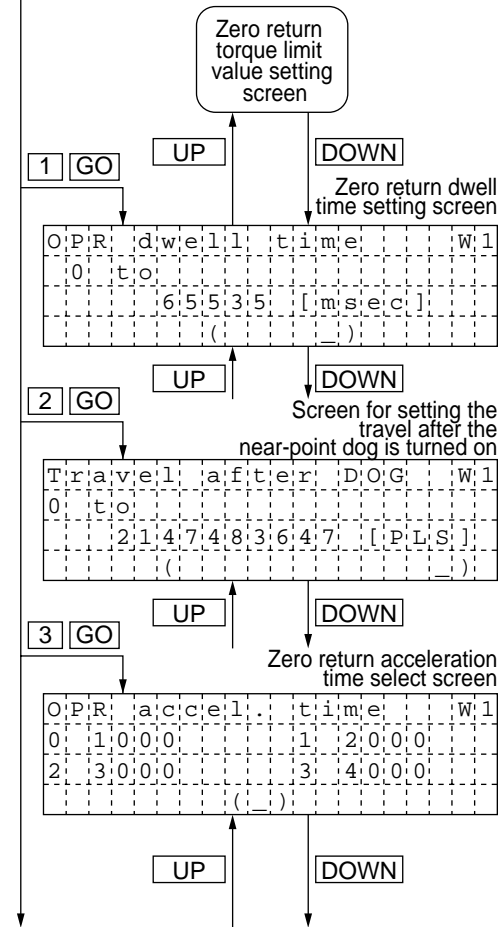


When using AD75P

Zero return extended parameter setting screen



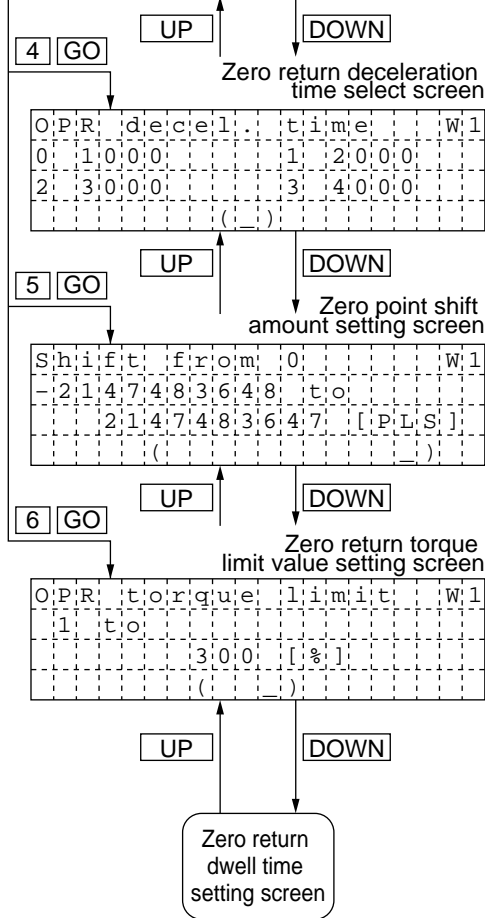
- 1 : Setting the zero return dwell time
- 2 : Setting the travel after the near-point dog is turned on
- 3 : Setting the zero return acceleration time
- 4 : Setting the zero return deceleration time
- 5 : Setting the zero point shift amount
- 6 : Setting the zero return torque limit value



Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

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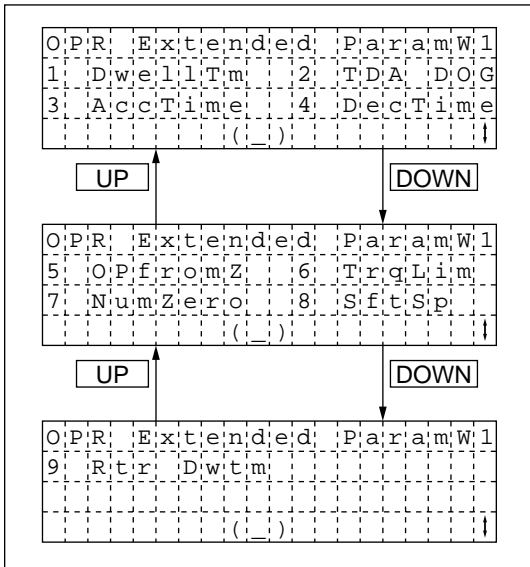
(Continued from the previous page)



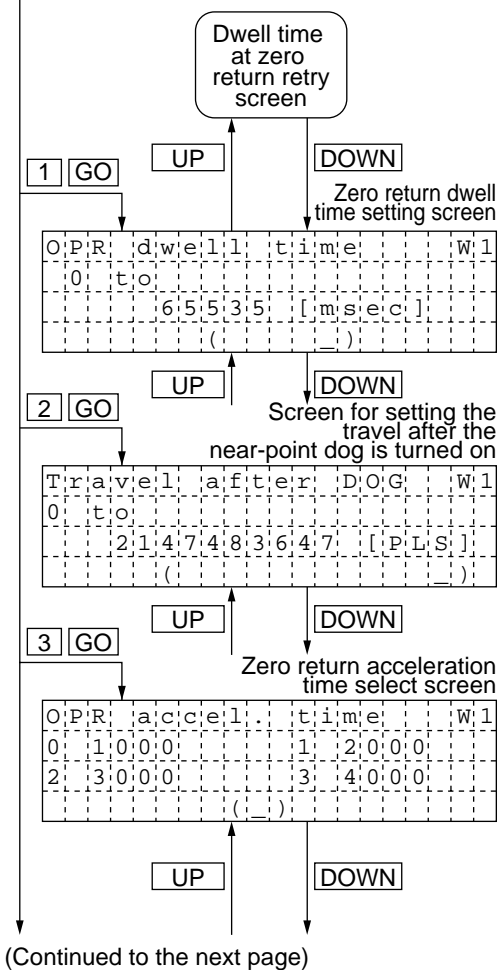
Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).

When using AD75PS3

Zero return extended parameter setting screen



- 1 : Setting the zero return dwell time
- 2 : Setting the travel after the near-point dog is turned on
- 3 : Setting the zero return acceleration time
- 4 : Setting the zero return deceleration time
- 5 : Setting the zero point shift amount
- 6 : Setting the zero return torque limit value
- 7 : Number of zero signal counts - Setting not available (Setting the maker)
- 8 : Speed specification at zero shift
- 9 : Dwell time at zero return retry

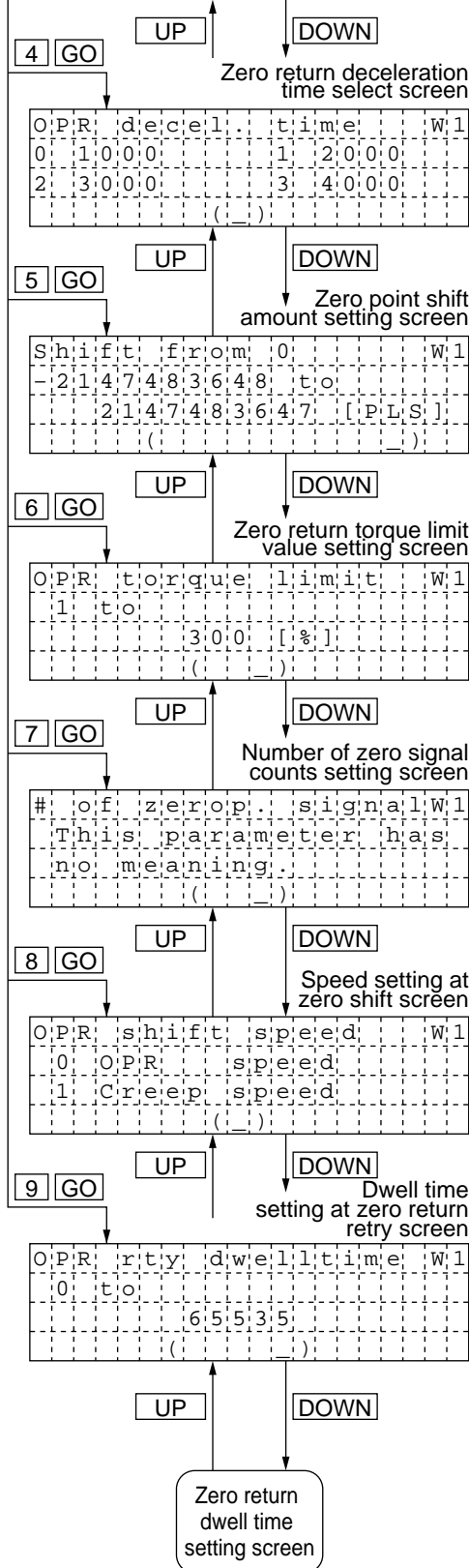


Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

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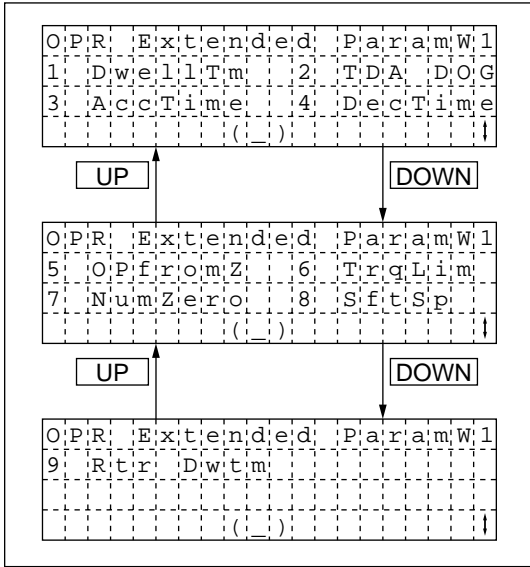
Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).

Setting not available (Setting the maker)

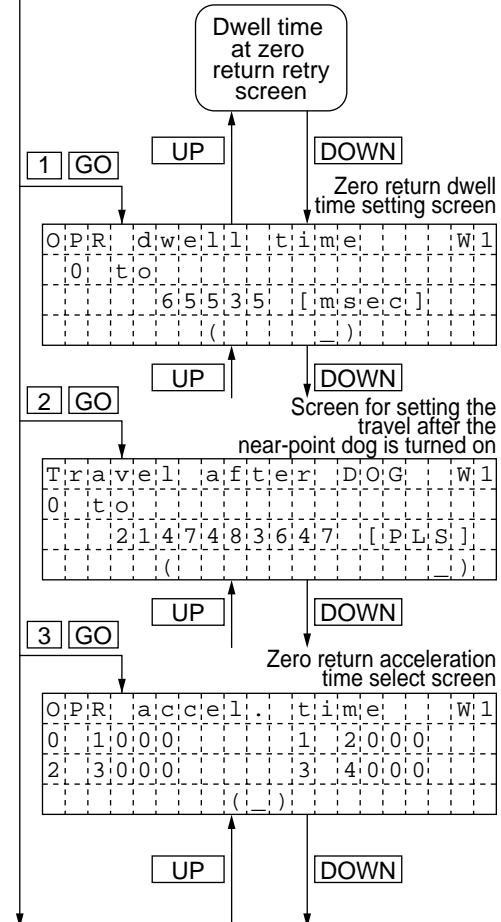
- 0 : Zero return speed
- 1 : Creep speed

When using AD75M

Zero return extended parameter setting screen



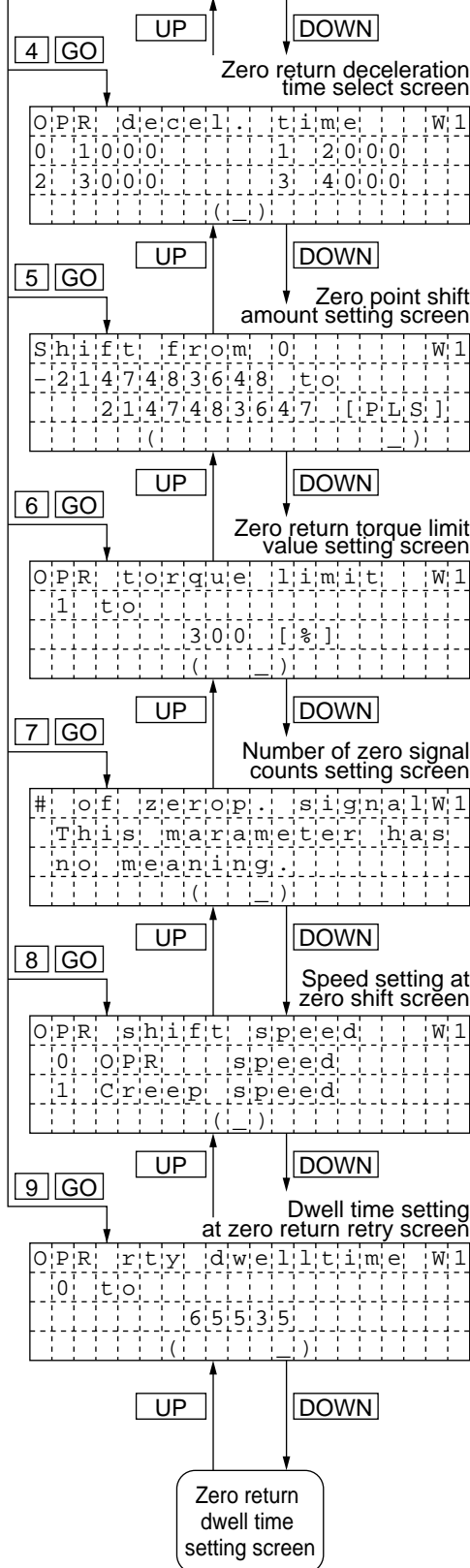
- 1 : Setting the zero return dwell time
- 2 : Setting the travel after the near-point dog is turned on
- 3 : Setting the zero return acceleration time
- 4 : Setting the zero return deceleration time
- 5 : Setting the zero point shift amount
- 6 : Setting the zero return torque limit value
- 7 : Number of zero signal counts - Setting not available (Setting the maker)
- 8 : Speed specification at zero shift
- 9 : Dwell time at zero return retry



Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

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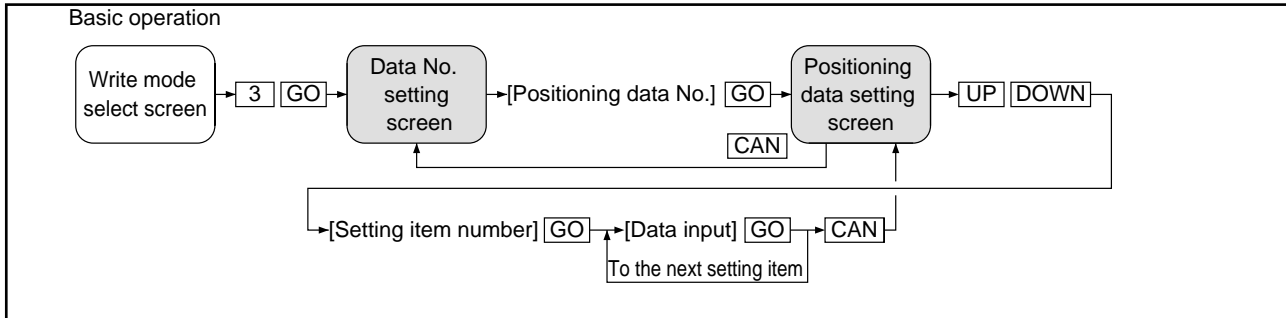


Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).

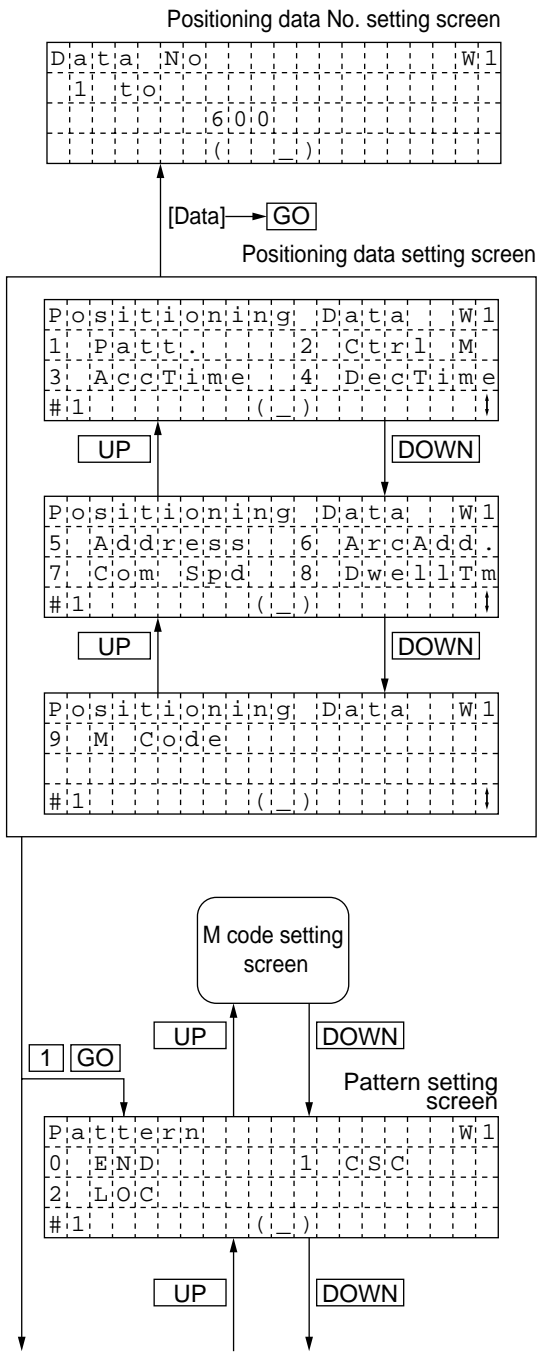
Setting not available (Setting the maker)

- 0 : Zero return speed
- 1 : Creep speed

### 6.3 Setting Positioning Data



When using AD75P



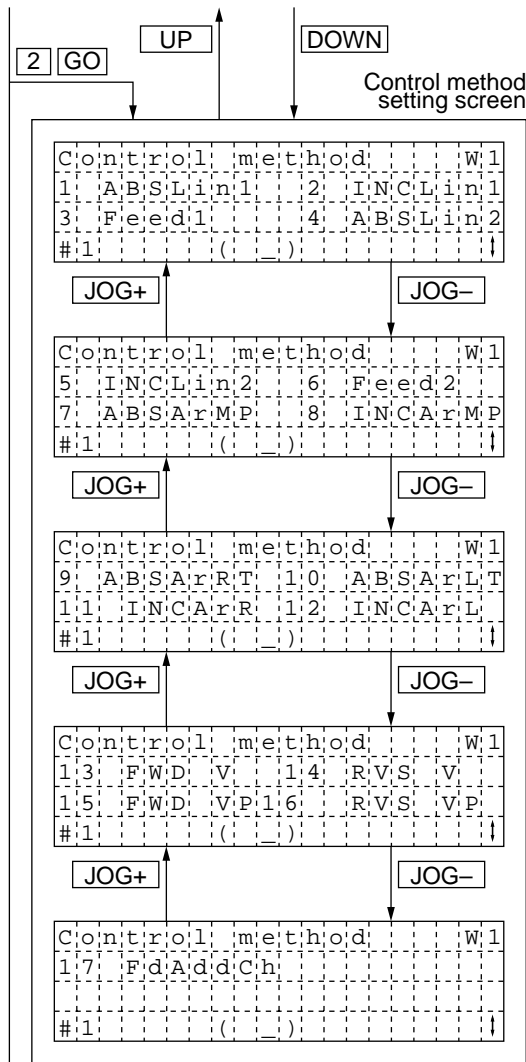
[STEP+] : Pressing this key will select the next data number.  
 [STEP-] : Pressing this key will select the previous data number.  
 [INS] : Pressing this key will insert one unit of data in the current data number.  
 [DEL] : Pressing this key will delete the current data of the data number.

- 1 : Setting the pattern
- 2 : Setting the control method
- 3 : Setting the acceleration time
- 4 : Setting the deceleration time
- 5 : Setting the address
- 6 : Setting the arc address
- 7 : Setting the command speed
- 8 : Setting the dwell time
- 9 : Setting the M code

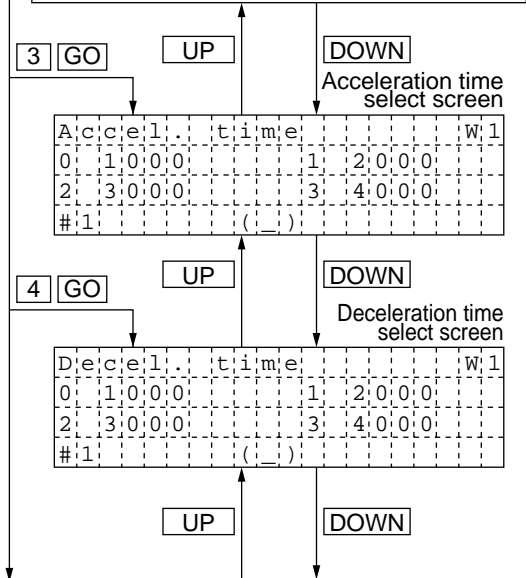
- 0 : Completion
- 1 : Continuous positioning control
- 2 : Continuous locus control

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- 1 : ABS line 1
- 2 : INC line 1
- 3 : Standard feed 1
- 4 : ABS line 2
- 5 : INC line 2
- 6 : Standard feed 2
- 7 : ABS circular interpolation
- 8 : INC circular interpolation
- 9 : ABS arc right turn
- 10 : ABS arc left turn
- 11 : INC arc right turn
- 12 : INC arc left turn
- 13 : Forward speed control
- 14 : Reverse speed control
- 15 : Forward speed/position switching control
- 16 : Reverse speed/position switching control
- 17 : Present feed value change

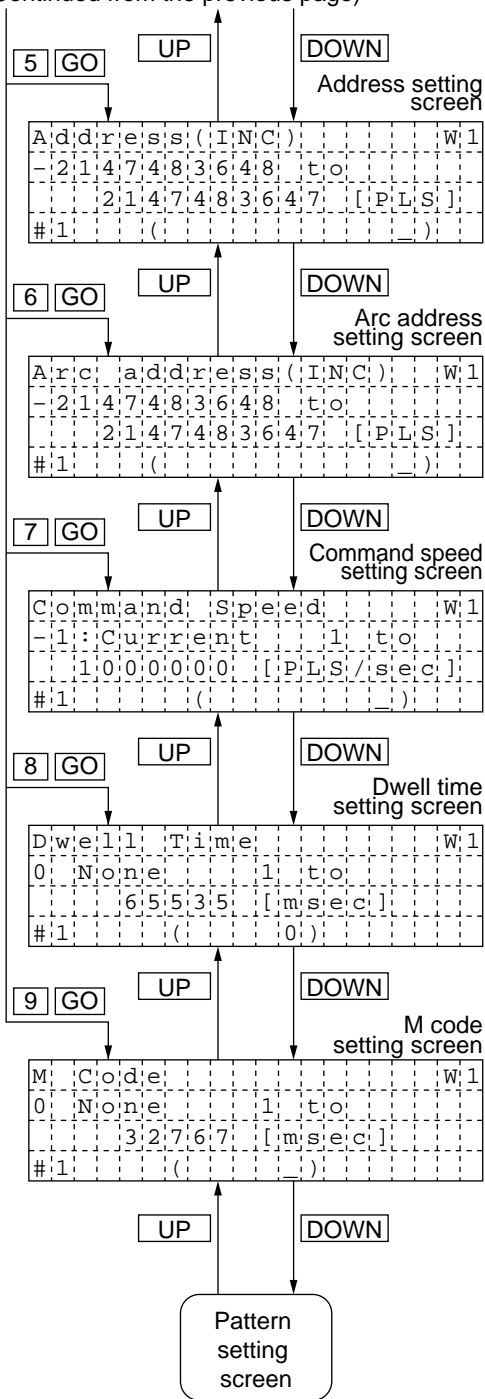


Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).

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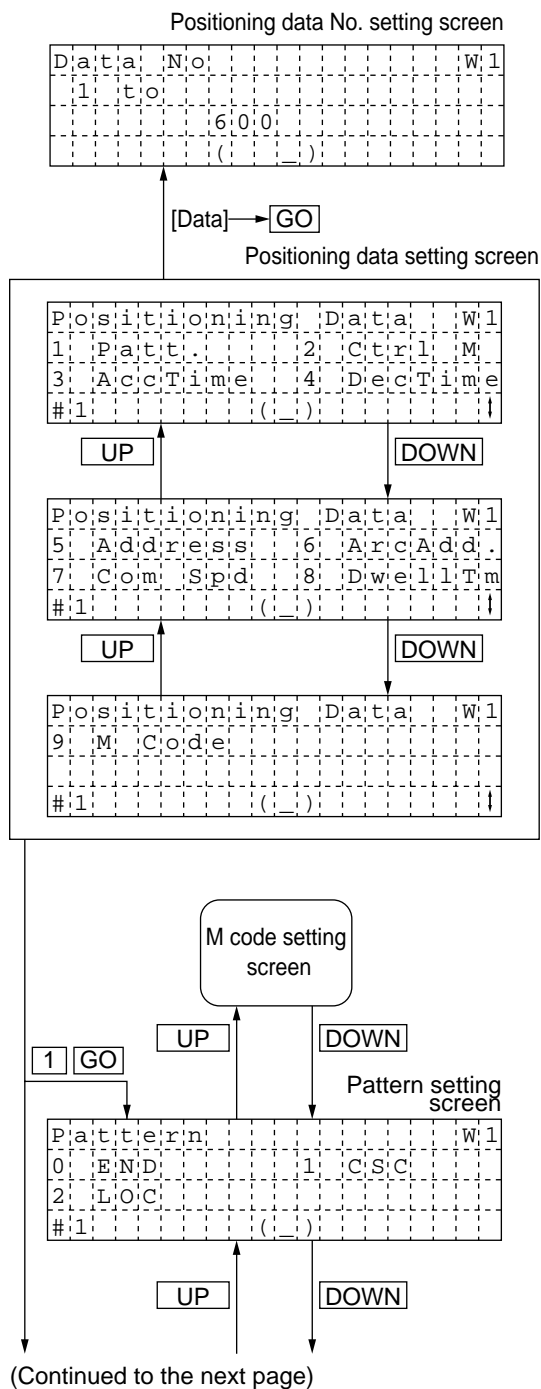


-1 : Current speed is used.

0 : No setting

0 : No setting

When using AD75PS3, AD75M (For standard mode)

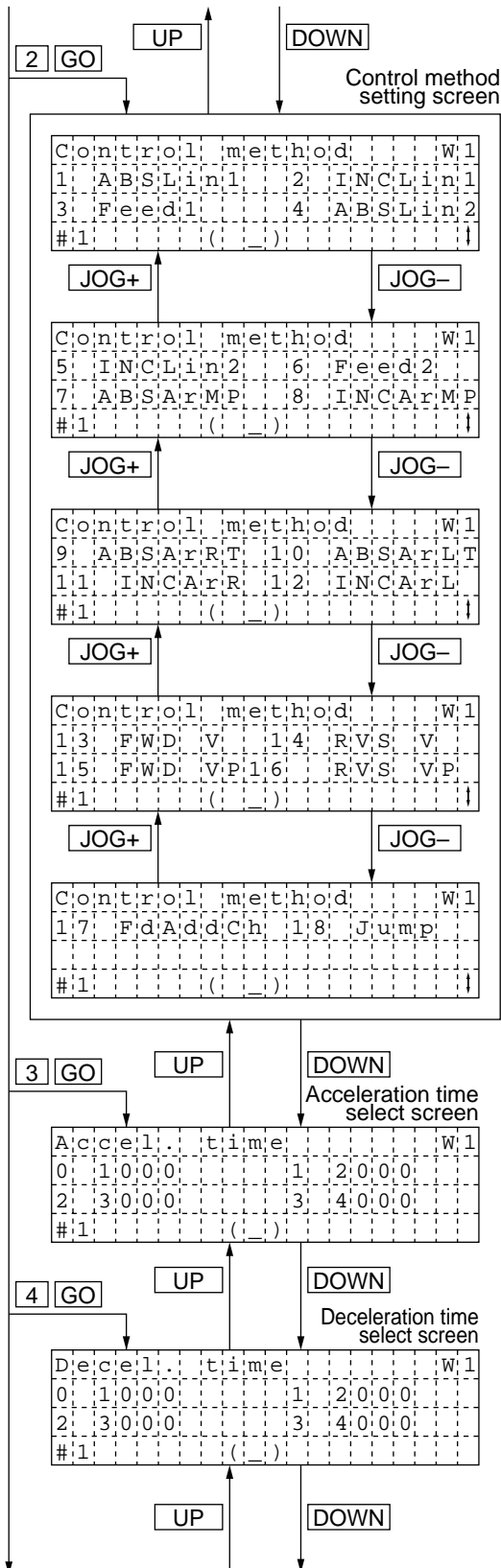


- [STEP+] : Pressing this key will select the next data number.
- [STEP-] : Pressing this key will select the previous data number.
- [INS] : Pressing this key will insert one unit of data in the current data number.
- [DEL] : Pressing this key will delete the current data of the data number.

- 1 : Setting the pattern
- 2 : Setting the control method
- 3 : Setting the acceleration time
- 4 : Setting the deceleration time
- 5 : Setting the address
- 6 : Setting the arc address
- 7 : Setting the command speed
- 8 : Setting the dwell time
- 9 : Setting the M code

- 0 : Completion
- 1 : Continuous positioning control
- 2 : Continuous locus control

(Continued from the previous page)



- 1 : ABS line 1
  - 2 : INC line 1
  - 3 : Standard feed 1
  - 4 : ABS line 2
  - 5 : INC line 2
  - 6 : Standard feed 2
  - 7 : ABS circular interpolation
  - 8 : INC circular interpolation
  - 9 : ABS arc right turn
  - 10 : ABS arc left turn
  - 11 : INC arc right turn
  - 12 : INC arc left turn
  - 13 : Forward speed control
  - 14 : Reverse speed control
  - 15 : Forward speed/position switching control
  - 16 : Reverse speed/position switching control
  - 17 : Present feed value change
  - 18 : Jump instruction
- 7 through 12 are not displayed and cannot be selected in the stepping motor mode.

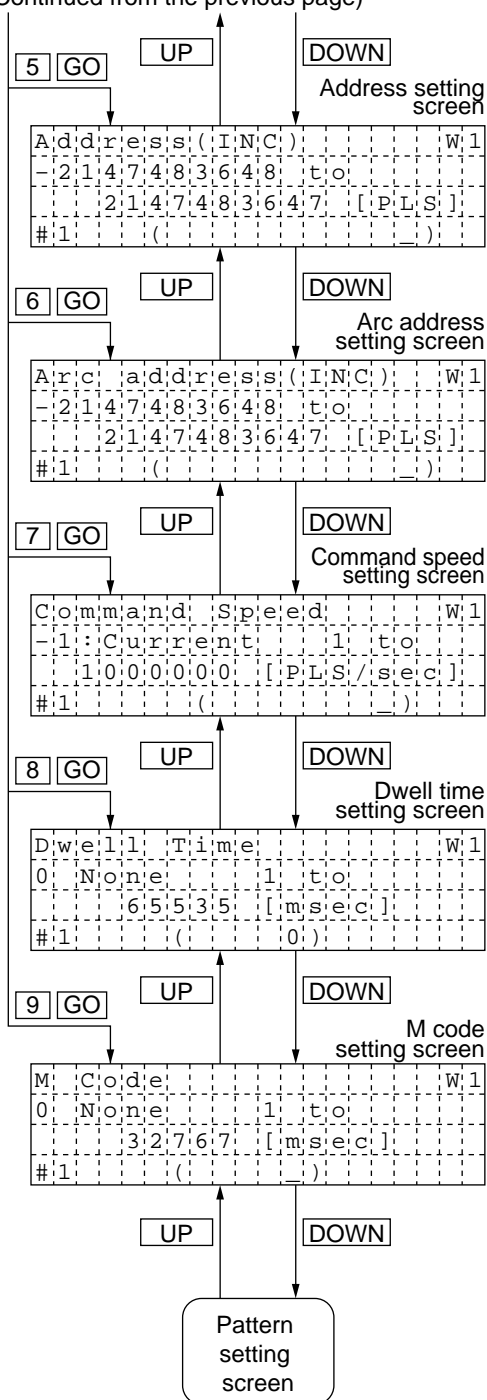
(Continued to the next page)

Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).



(Continued from the previous page)

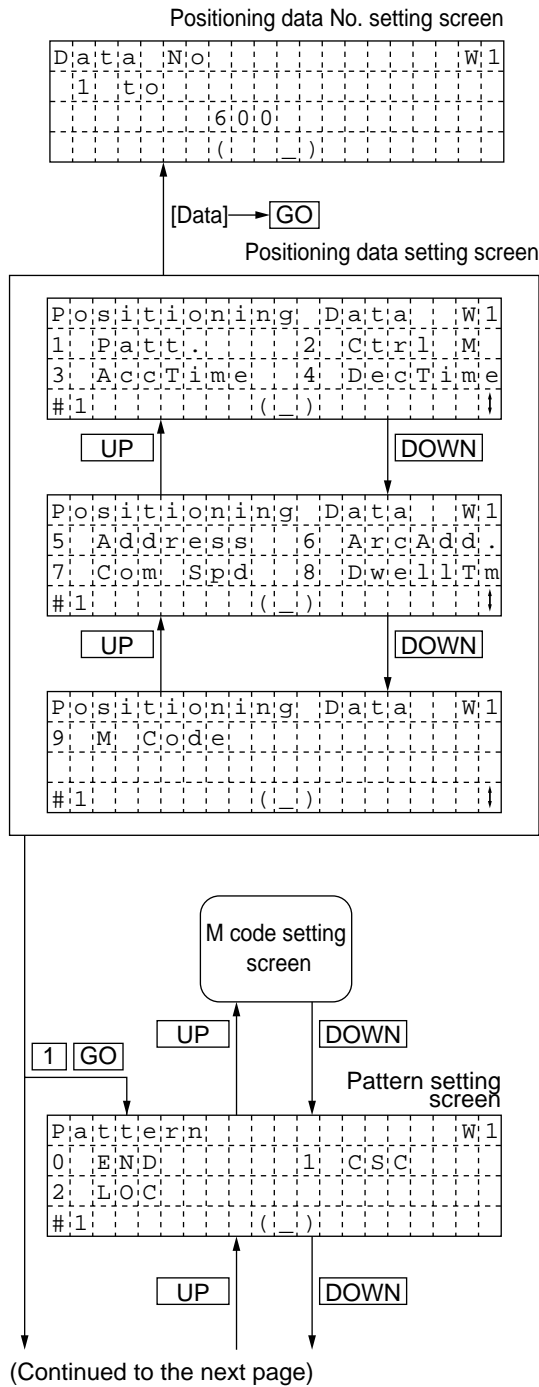


-1 : Current speed is used.

0 : No setting

0 : No setting

When using AD75PS3, AD75M (For setting jump instruction)

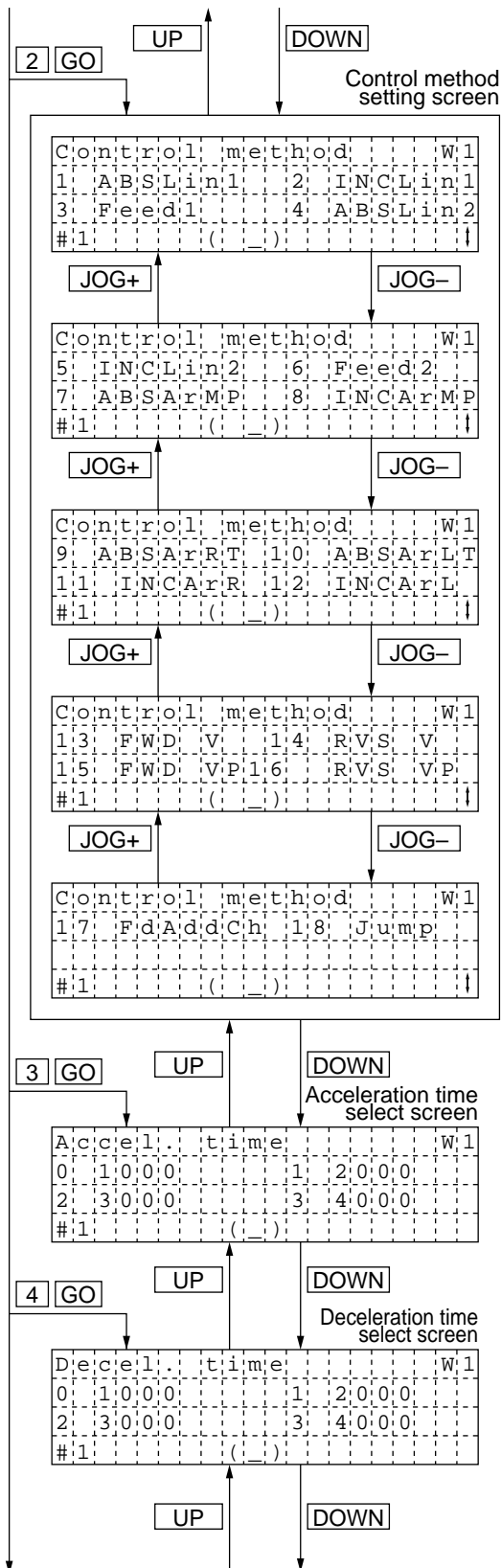


- [STEP+] : Pressing this key will select the next data number.
- [STEP-] : Pressing this key will select the previous data number.
- [INS] : Pressing this key will insert one unit of data in the current data number.
- [DEL] : Pressing this key will delete the current data of the data number.

- 1 : Setting the pattern
- 2 : Setting the control method
- 3 : Setting the acceleration time
- 4 : Setting the deceleration time
- 5 : Setting the address
- 6 : Setting the arc address
- 7 : Setting the command speed
- 8 : Setting the Jump destination data No.
- 9 : Setting the Jump destination condition data No.

- 0 : Completion
- 1 : Continuous positioning control
- 2 : Continuous locus control

(Continued from the previous page)



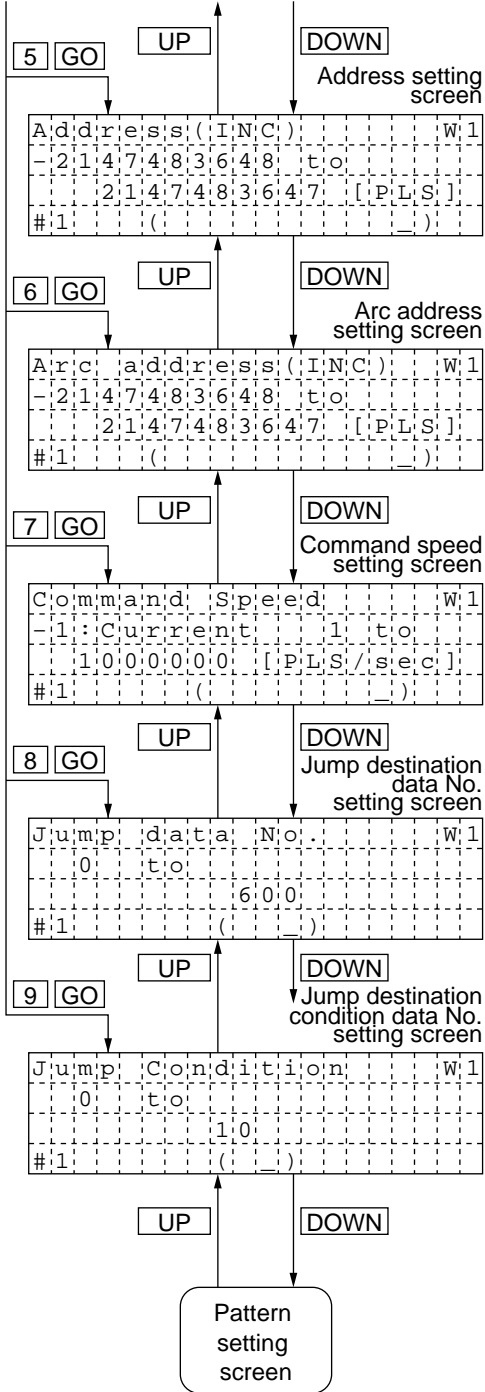
- 1 : ABS line 1
- 2 : INC line 1
- 3 : Standard feed 1
- 4 : ABS line 2
- 5 : INC line 2
- 6 : Standard feed 2
- 7 : ABS circular interpolation
- 8 : INC circular interpolation
- 9 : ABS arc right turn
- 10 : ABS arc left turn
- 11 : INC arc right turn
- 12 : INC arc left turn
- 13 : Forward speed control
- 14 : Reverse speed control
- 15 : Forward speed/position switching control
- 16 : Reverse speed/position switching control
- 17 : Present feed value change
- 18 : Jump instruction

Acceleration time is indicated as a value set for Acceleration time 0 (Basic parameter 2) and Acceleration time 1 to 3 (Extended parameter 2).

Deceleration time is indicated as a value set for Deceleration time 0 (Basic parameter 2) and Deceleration time 1 to 3 (Extended parameter 2).

(Continued to the next page)

(Continued from the previous page)

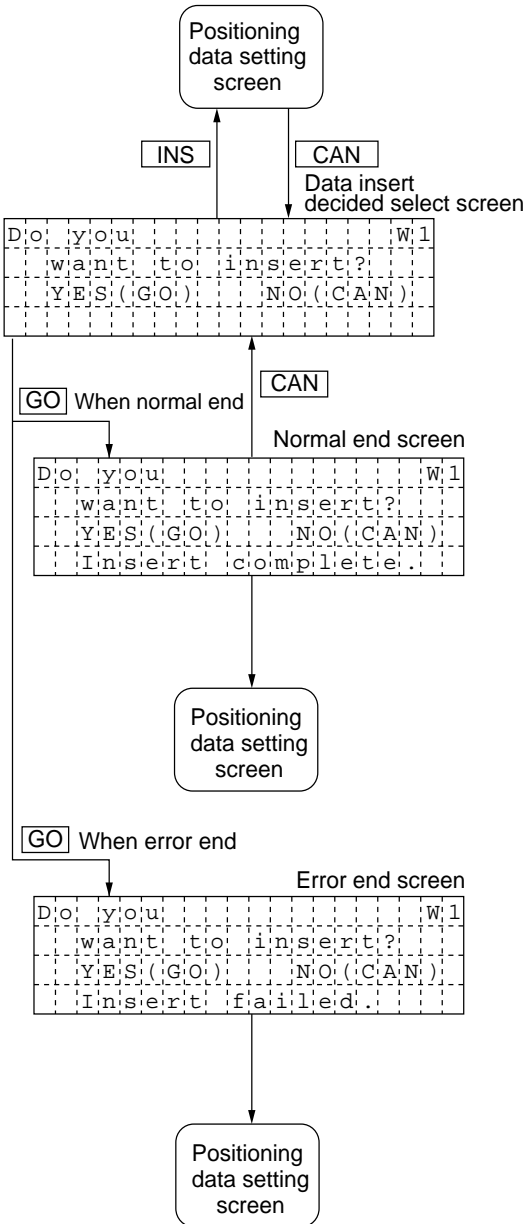


-1 : Current speed is used.

**6.3.1 Inserting/deleting data when setting positioning data**

This section explains how to insert/delete data when setting the positioning data.

When inserting data

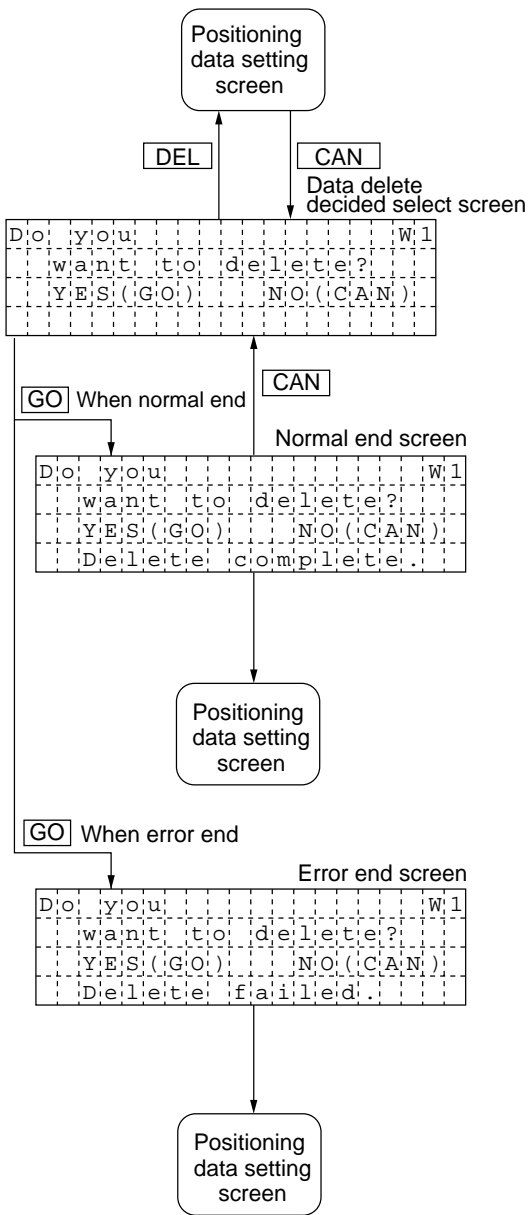


- \*1 Only the GO key and CAN key are activated.
- \*2 Data cannot be inserted when the axis is BUSY.

After a clicking sound, the message "Insert complete." appears at the bottom of the screen for two seconds, then the screen returns to the original setting screen.

After a clicking sound, the message "Insert failed." appears at the bottom of the screen for two seconds, then the screen returns to the original setting screen.

When deleting data

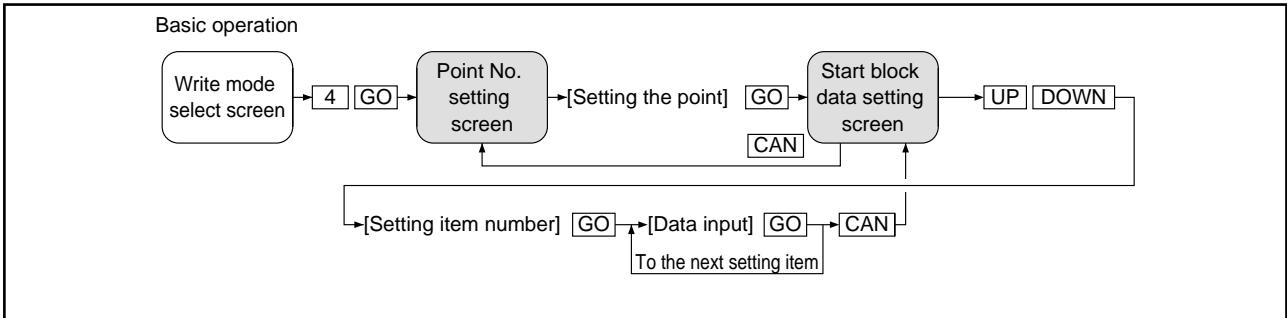


- \*1 Only the GO key and CAN key are activated.
- \*2 Data cannot be inserted when the axis is BUSY.

After a clicking sound, the message "Insert complete." appears at the bottom of the screen for two seconds, then the screen returns to the original setting screen.

After a clicking sound, the message "Insert failed." appears at the bottom of the screen for two seconds, then the screen returns to the original setting screen.

### 6.4 Setting Start Block Data



When using AD75P

Point No. setting screen

P	o	i	n	t	N	o	.	W	l
1	:	t	o		5	:	0		
					(		)		

[Data] → [GO]

Start block data setting screen

S	t	a	r	t	b	l	o	c	k	W	l				
1	:	M	o	d	e	2	:	D	a	t	a	N	o	.	
3	:	S	.	S	t	a	r	t	4	:	P	a	r	a	m
#	1	:			(		)								

UP DOWN

S	t	a	r	t	b	l	o	c	k	W	l				
5	:	C	o	n	d	i	t	i	o	n	.	d	a	t	a
#	1	:			(		)								

[STEP+] key : Pressing this key will select the next data number.  
 [STEP-] key : Pressing this key will select the previous data number.

- 1 : Setting the mode
- 2 : Setting the data No.
- 3 : Setting the special start command
- 4 : Setting a parameter
- 5 : Setting the condition data

Condition data setting screen

1 GO UP DOWN

M	o	d	e	W	l
0	:	E	N	D	
1	:	C	T	N	
#	1	:		(	)

2 GO UP DOWN

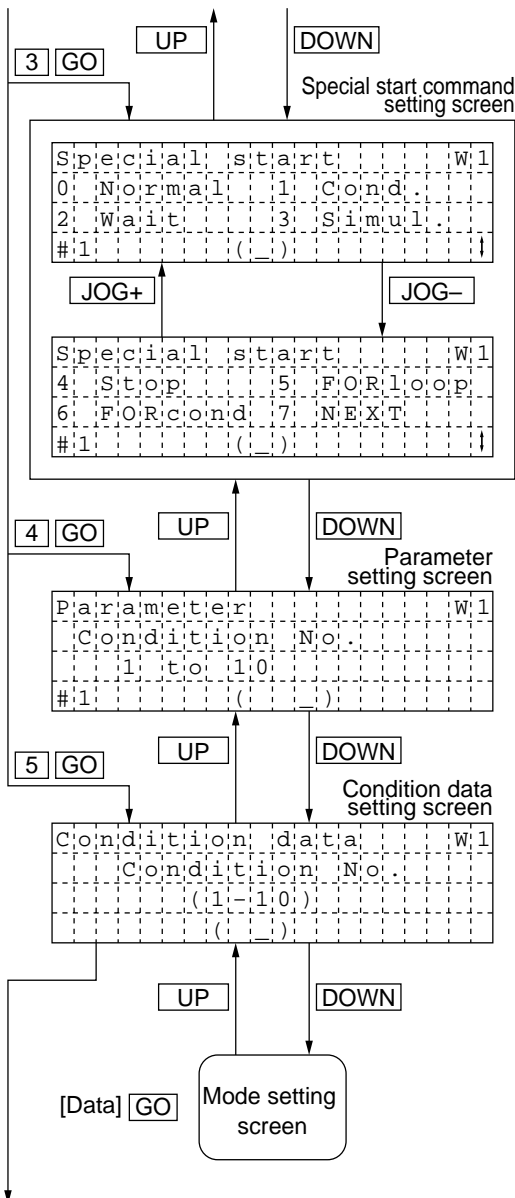
D	a	t	a	N	o	.	W	l
1	:	t	o	6	:	0	:	0
#	1	:		(		)		

UP DOWN

- 0 : Complete
- 1 : Continue

(Continued to the next page)

(Continued from the previous page)



- 0 : Normal start
- 1 : Conditional start
- 2 : Wait start
- 3 : Simultaneous start
- 4 : Stop
- 5 : FOR loop
- 6 : FOR condition
- 7 : NEXT start

If one of the following selections is for the special start command, set the condition data No.

- Condition start
- Wait start
- Simultaneous start
- FOR condition

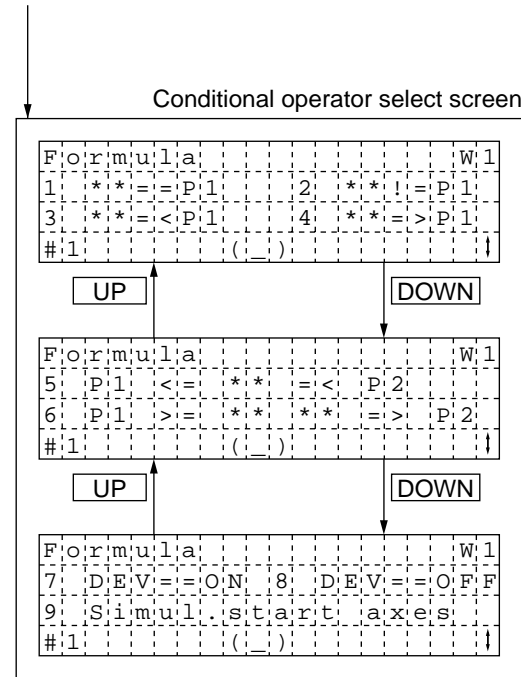
If the selection is for loop, set the number of presents.

The display will show .....if the selecting is normal start, stop start, or NEXT start for the special start command.

(Continued to the next page)

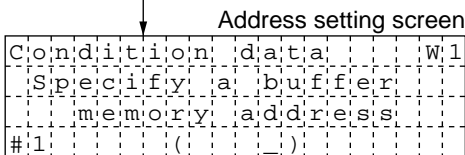


(Continued from the previous page)



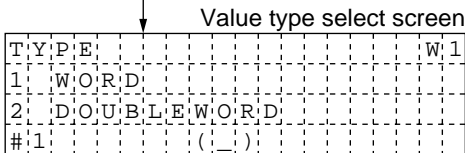
- 1 : \*\*=P1
- 2 : \*\*NOT = P1
- 3 : \*\*<=P1
- 4 : \*\*>=P1
- 5 : P1<=<=<=P2
- 6 : P1>=>=>=P2
- 7 : DEV=ON
- 8 : DEV=OFF
- 9 : Specifying the simultaneously starting axis

1 ~ 6 GO



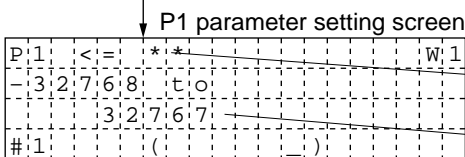
Setting range : 0 to 9999

[Data] GO



- 1 : Word
- 2 : Double word

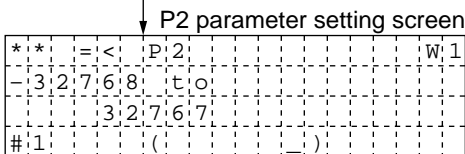
[Data] GO



The selected conditional operator will be shown here.

The range is -2147483648 to 2147483647 when DOUBLEWORD is selected on the value type select screen.

[Data] GO



(Only when the conditional operator 5 or 6)

[Data] GO

Setting completed.  
Go to the conditional operator setting screen.

(Continued to the next page)

(Continued from the previous page)

[7] [8] [GO]

```

Device select screen
-----
D e v i c e       =   O n       W r i
1  X d e v i c e
2  Y d e v i c e
# 1 ( _ )
    
```

- 1 : Device X
- 2 : Device Y

[1] [GO]

```

Device X input screen
-----
D E V   =   O N       W r i
X d e v i c e
0 - 1.5
# 1 ( _ )
    
```

The selected conditional operator will be shown here.

[Data] [GO]

Setting completed. Go to the conditional operator setting screen.

[2] [GO]

```

Device Y input screen
-----
D E V   =   O N       W r i
Y d e v i c e
1.6 - 3.1
# 1 ( _ )
    
```

[Data] [GO]

Setting completed. Go to the conditional operator setting screen.

[9] [GO]

```

Corresponding axis select screen
-----
C o r r e s p o n d i n g   a x i s   W r i
1  1 2 2 3 1 - 2
4  3 5 1 - 3 6 2 - 3
# 1 ( _ )
    
```

- 1 : Specifying Axis 1
- 2 : Specifying Axis 2
- 3 : Specifying Axes 1 and 2
- 4 : Specifying Axis 3
- 5 : Specifying Axis 1 and 3
- 6 : Specifying Axis 2 and 3

[Data] [GO]

```

Axis 1 data No. input screen
-----
A x i s   1   D a t a   N o .   W r i
1 t o
6 0 0
# 1 ( _ )
    
```

[Data] [GO]

```

Axis 2 data No. input screen
-----
A x i s   2   D a t a   N o .   W r i
1 t o
6 0 0
# 1 ( _ )
    
```

[Data] [GO]

```

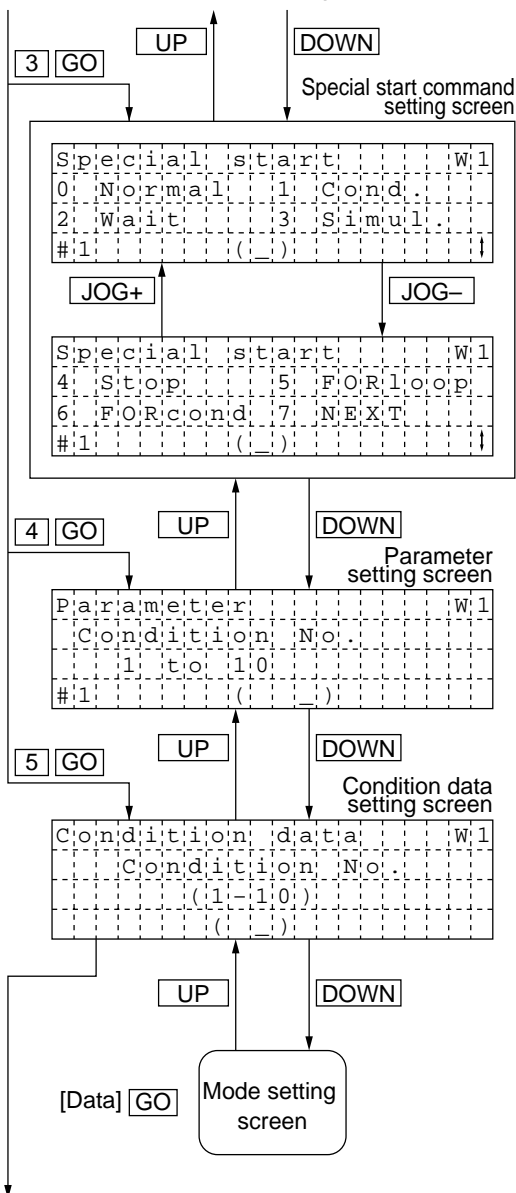
Axis 3 data No. input screen
-----
A x i s   3   D a t a   N o .   W r i
1 t o
6 0 0
# 1 ( _ )
    
```

[Data] [GO]

Setting completed. Go to the conditional operator setting screen.



(Continued from the previous page)



- 0 : Normal start
- 1 : Conditional start
- 2 : Wait start
- 3 : Simultaneous start
- 4 : Stop
- 5 : FOR loop
- 6 : FOR condition
- 7 : NEXT start

If one of the following selections is for the special start command, set the condition data No.

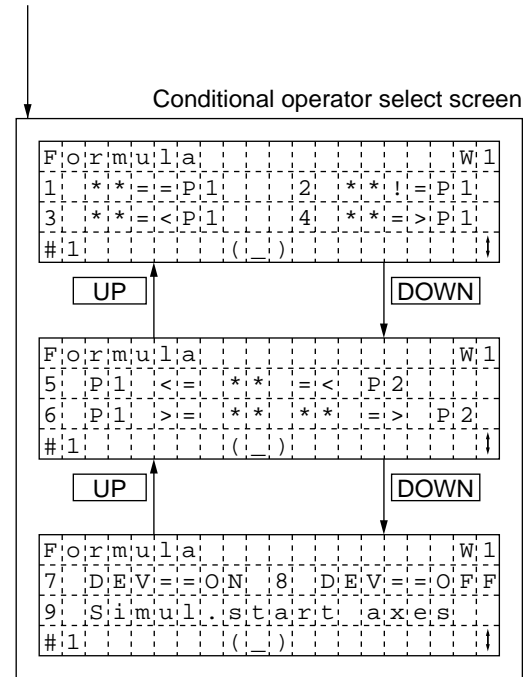
- Condition start
- Wait start
- Simultaneous start
- FOR condition

If the selection is for loop, set the number of presents.

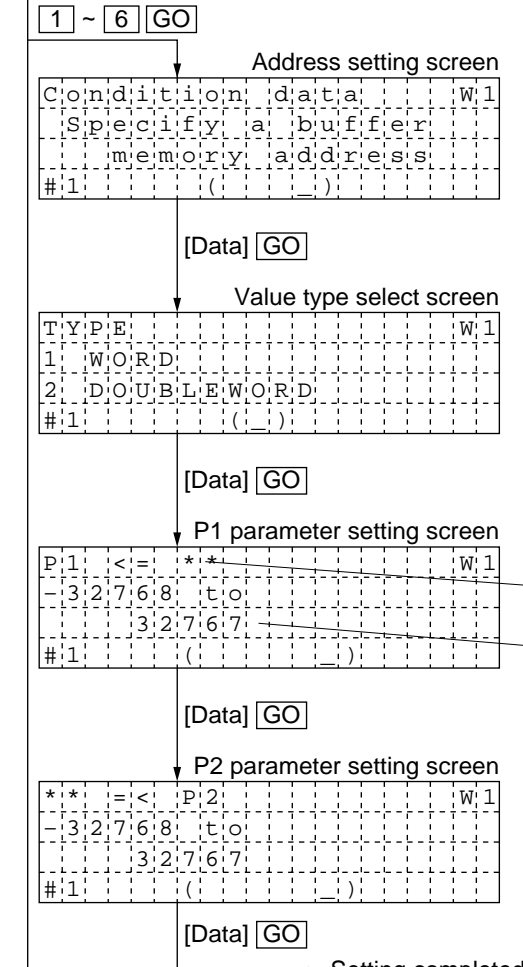
The display will show .....if the selecting is normal start, stop start, or NEXT start for the special start command.

(Continued to the next page)

(Continued from the previous page)



- 1 : \*\*=P1
- 2 : \*\*NOT = P1
- 3 : \*\*<=P1
- 4 : \*\*>=P1
- 5 : P1<=<=<=P2
- 6 : P1>=>=>=P2
- 7 : DEV=ON
- 8 : DEV=OFF
- 9 : Specifying the simultaneously starting axis



Setting range : 0 to 9999

- 1 : Word
- 2 : Double word

The selected conditional operator will be shown here.

The range is -2147483648 to 2147483647 when DOUBLEWORD is selected on the value type select screen.

(Only when the conditional operator 5 or 6)

Setting completed.  
Go to the conditional operator setting screen.

(Continued to the next page)

(Continued from the previous page)

7 / 8 GO

Device select screen			
Device	Condition	Operator	W
1	X device		1
2	Y device		
#1	( )		

- 1 : Device X
- 2 : Device Y

1 GO

Device X input screen			
Device	Condition	Operator	W
X	device		1
		0-1.5	
#1	( )		

The selected condition operator will be shown here.

[Data] GO

Setting completed. Go to the conditional operator setting screen.

2 GO

Device Y input screen			
Device	Condition	Operator	W
Y	device		1
		1.6-3.1	
#1	( )		

[Data] GO

Setting completed. Go to the conditional operator setting screen.

9 GO

Corresponding axis select screen			
Corresponding axis	W	1	2
1	1	2	3
4	3	5	6
#1	( )		

- 1 : Specifying Axis 1
- 2 : Specifying Axis 2
- 3 : Specifying Axis 1 and 2
- 4 : Specifying Axis 3
- 5 : Specifying Axis 1 and 3
- 6 : Specifying Axis 2 and 3

[Data] GO

Axis 1 data No. input screen			
Axis	Data No.	W	1
1	to		
		60:0	
#1	( )		

[Data] GO

Axis 2 data No. input screen			
Axis	Data No.	W	1
2	to		
		60:0	
#1	( )		

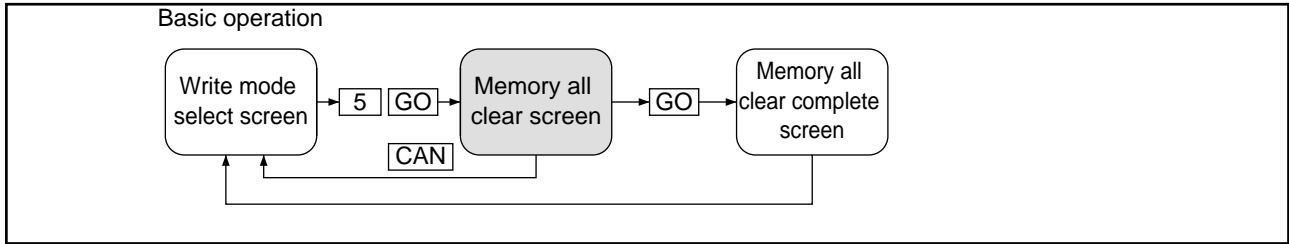
[Data] GO

Axis 3 data No. input screen			
Axis	Data No.	W	1
3	to		
		60:0	
#1	( )		

[Data] GO

Setting completed. Go to the conditional operator setting screen.

### 6.5 Memory All Clear



Memory all clear screen

```

*** Memory clear ***
OK?
OK (GO)      NO (CAN)
  
```

GO

Memory all clear complete screen

```

*** Memory clear ***
OK?
OK (GO)      NO (CAN)
clear complete.
  
```

After memory clear is completed, the display on the left will appear for about two seconds, and the data select screen will be restored.

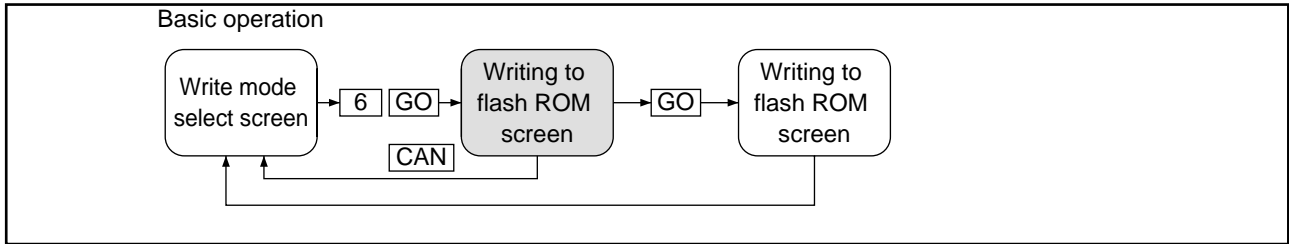
Memory all clear failed screen

```

*** Memory clear ***
OK?
OK (GO)      NO (CAN)
clear failed.
  
```

When memory clear fails, the display on the left will appear for about two seconds, and the data select screen will be restored.

### 6.6 Writing to Flash ROM



Writing to flash ROM screen

```

** Write to F-ROm **
OK?
OK (GO) NO (CAN)
  
```

[GO]

Writing to flash ROM complete screen

```

** Write to F-ROm **
OK?
OK (GO) NO (CAN)
Write complete.
  
```

After writing to flash ROM is completed, the display on the left will appear for about two seconds, and the data select screen will be restored.

Writing to flash ROM failed screen

```

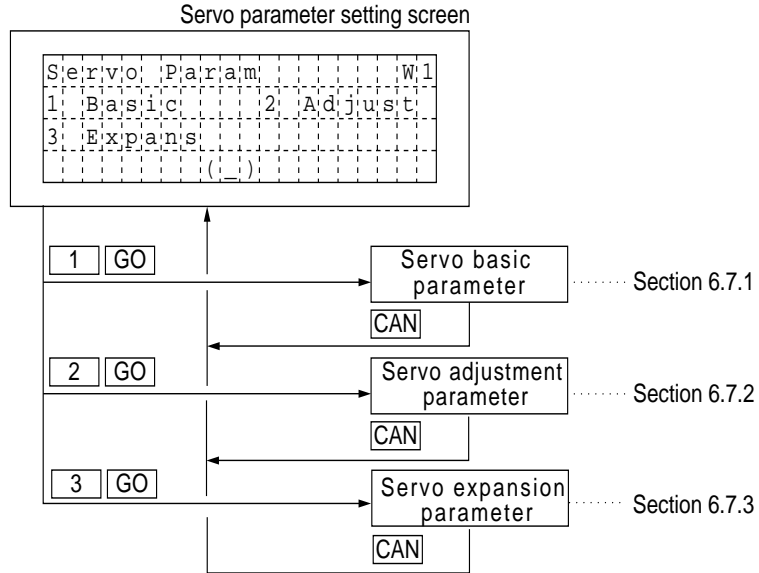
** Write to F-ROm **
OK?
OK (GO) NO (CAN)
Write failed.
  
```

When writing to flash ROM fails, the display on the left will appear for about two seconds, and the data select screen will be restored.

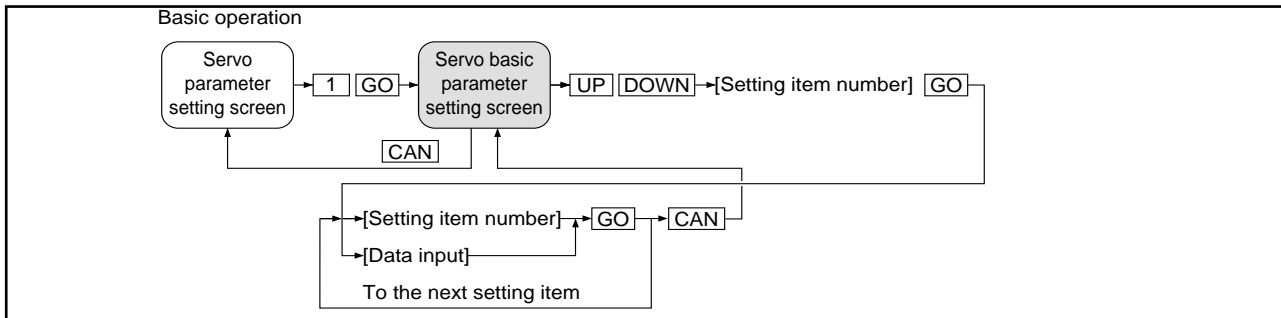


## 6.7 Setting Servo Parameter

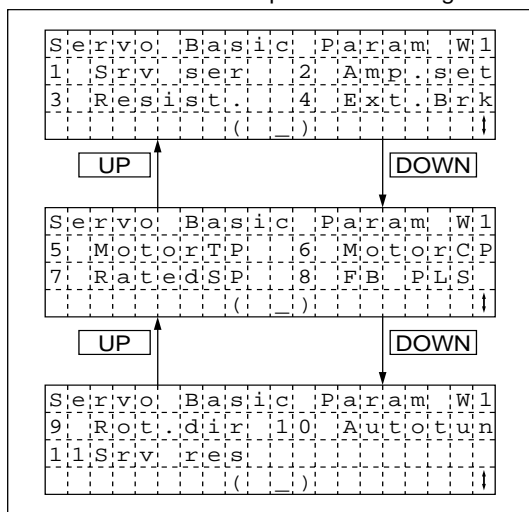
This section explains parameter settings required for positioning control.



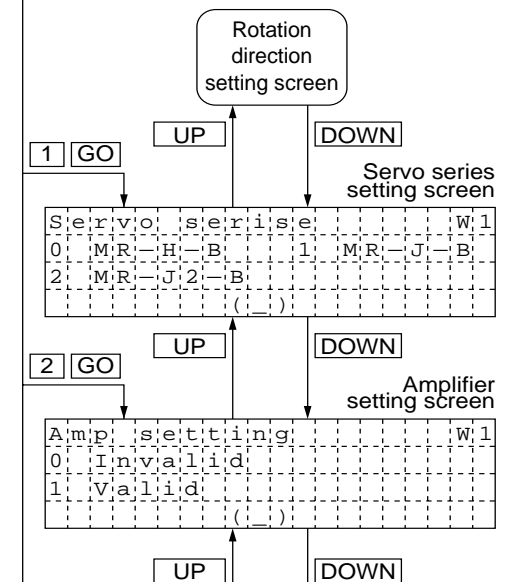
6.7.1 Setting servo basic parameter



Servo basic parameter setting screen



- 1 : Setting the servo series
- 2 : Setting the amplifier
- 3 : Setting the regenerator brake
- 4 : Setting the external dynamic brake
- 5 : Setting the motor type
- 6 : Setting the motor capacity
- 7 : Specifying the number of motor rotation
- 8 : Setting the feedback pulse
- 9 : Setting the rotation direction
- 10 : Setting the auto-tuning
- 11 : Setting the servo response characteristics

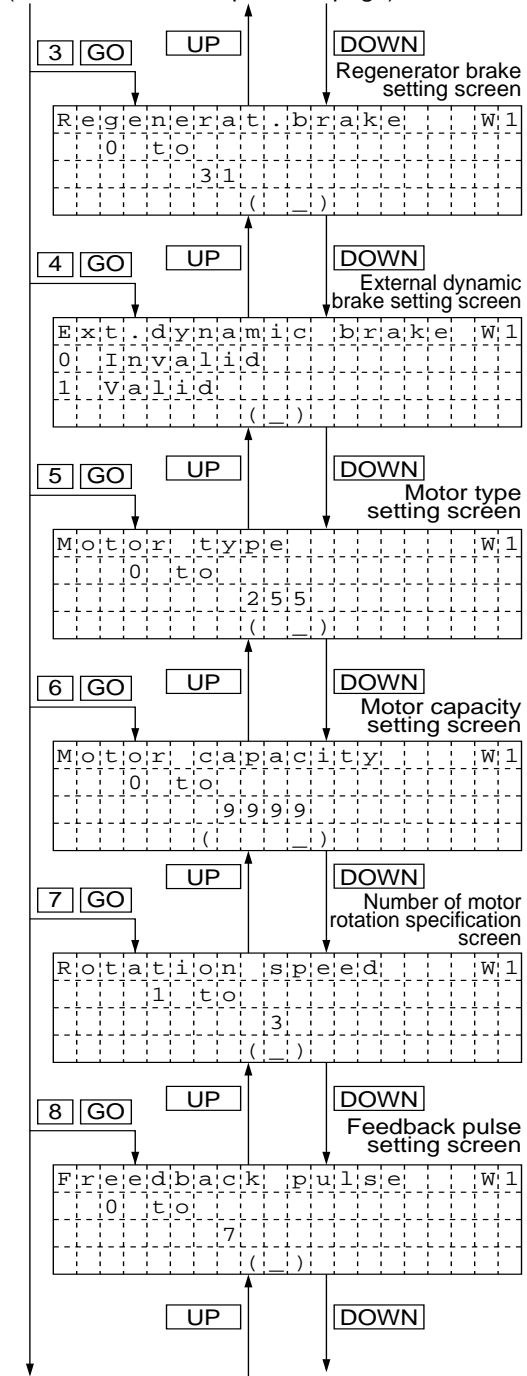


- 0 : MR-H-B
- 1 : MR-J-B
- 2 : MR-J2-B

- 0 : Without absolute position detection
- 1 : With absolute position detection

(Continued to the next page)

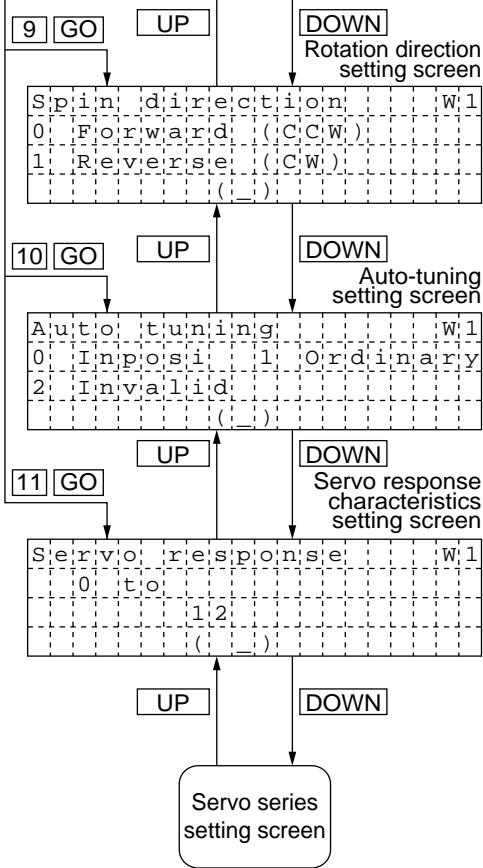
(Continued from the previous page)



- 0 : Without setting the dynamic brake
- 1 : With setting the dynamic brake

(Continued to the next page)

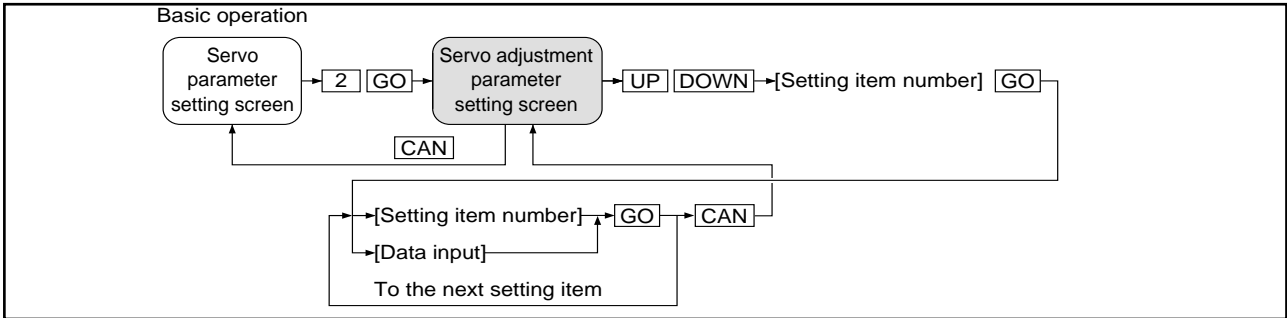
(Continued from the previous page)



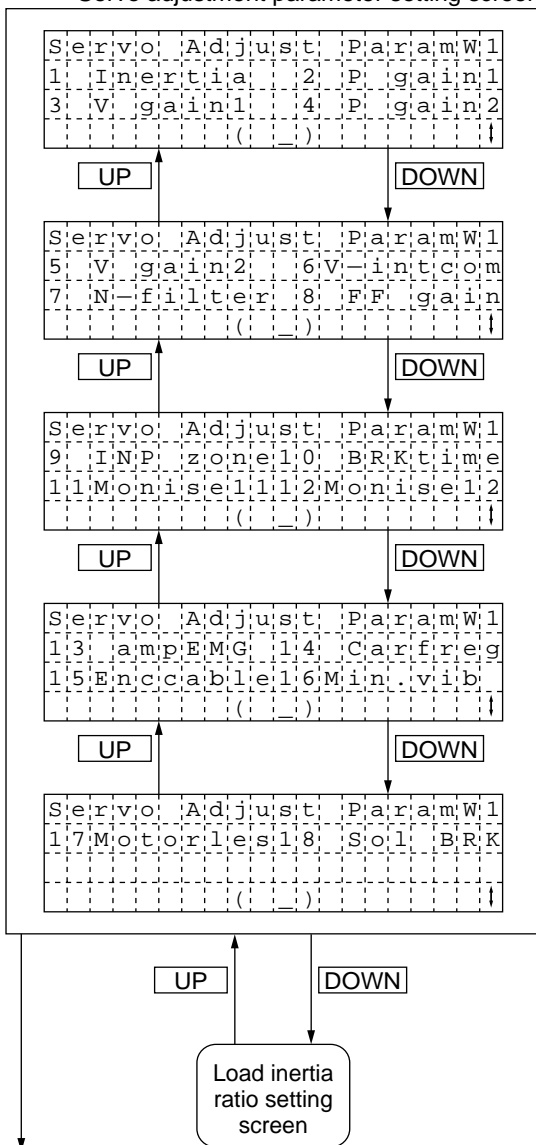
- 0 : Forward by increase in positioning address
- 1 : Reverse by increase in positioning address

- 0 : In the case of the interpolation axis control by the position
- 1 : For normal
- 2 : It is not performed (Auto-tuning invalid)

6.7.2 Setting servo adjustment parameter



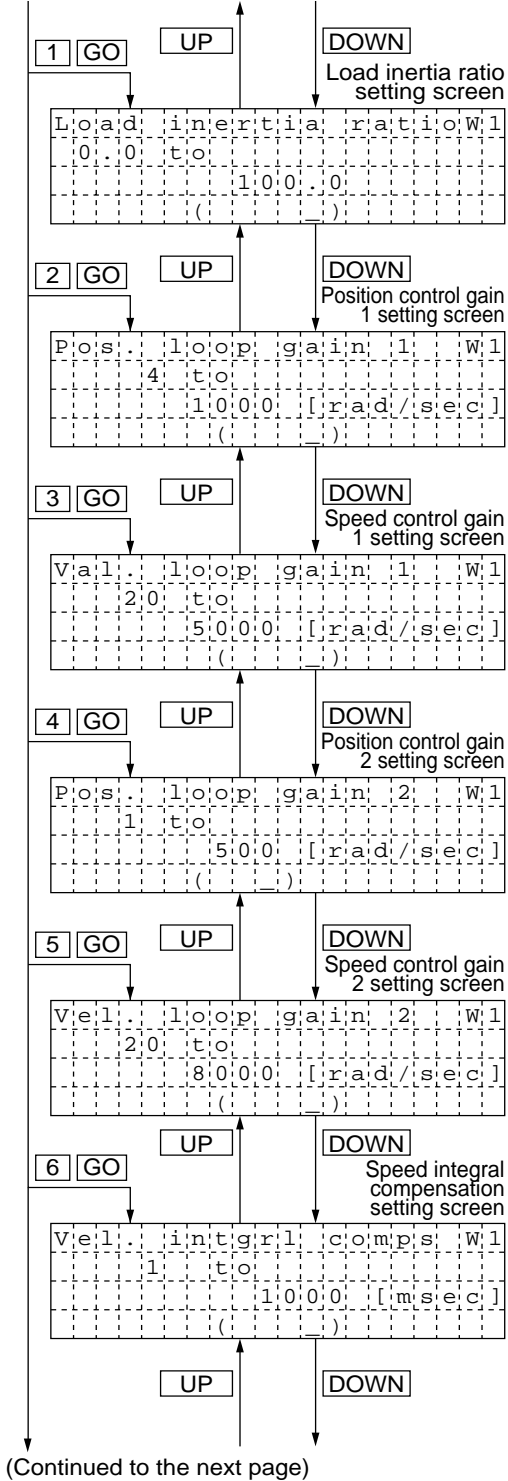
Servo adjustment parameter setting screen



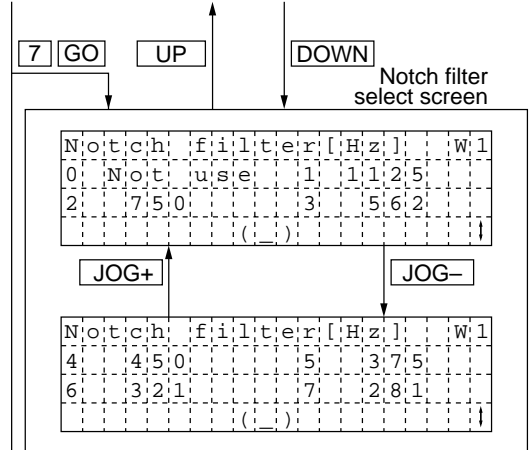
- 1 : Load inertia ratio
- 2 : Setting the position control gain 1
- 3 : Setting the speed control gain 1
- 4 : Setting the position control gain 2
- 5 : Setting the speed control gain 2
- 6 : Setting the speed integral compensation
- 7 : Selecting the notch filter
- 8 : Setting the feed forward gain
- 9 : Setting the in-position range
- 10 : Setting the solenoid brake PC output
- 11 : Setting the monitor output 1
- 12 : Selecting the monitor output 2
- 13 : Selecting the amplifier EMG
- 14 : Selecting the carrier frequency mode
- 15 : Selecting the serial encoder cable
- 16 : Selecting the minute vibration suppress function
- 17 : Selecting the motor-less operation
- 18 : Setting the solenoid brake interlock output timing

(Continued to the next page)

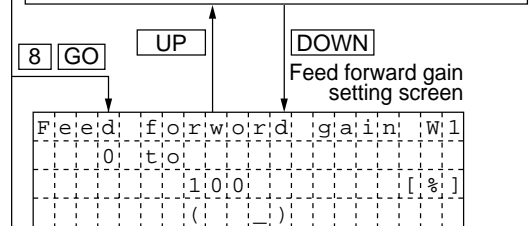
(Continued from the previous page)



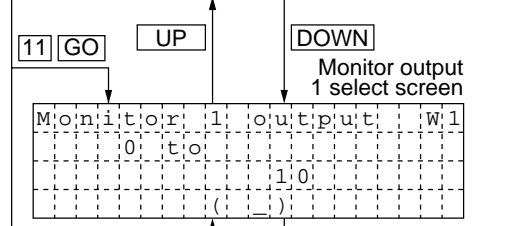
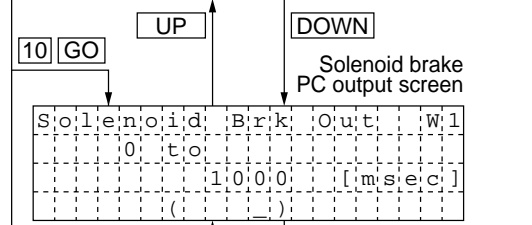
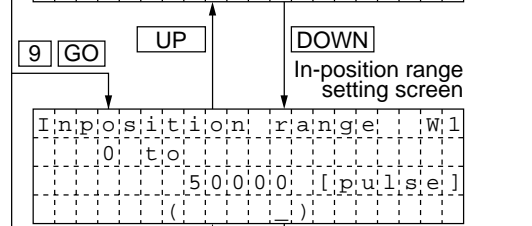
(Continued from the previous page)



- 0 : Not used
- 1 : 1125Hz
- 2 : 750Hz
- 3 : 562Hz
- 4 : 450Hz
- 5 : 375Hz
- 6 : 321Hz
- 7 : 281Hz

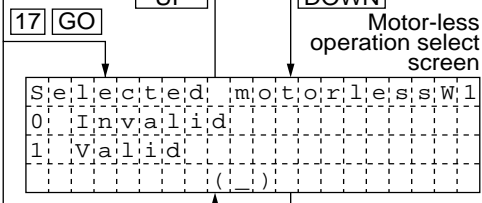
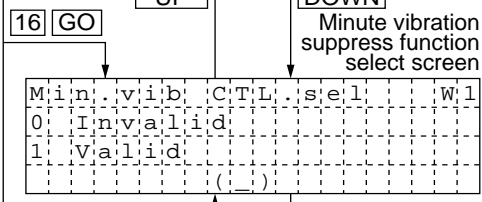
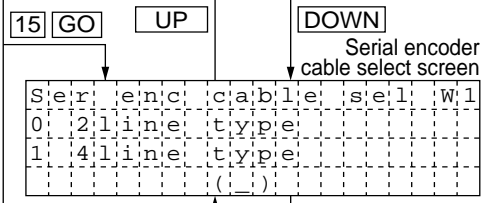
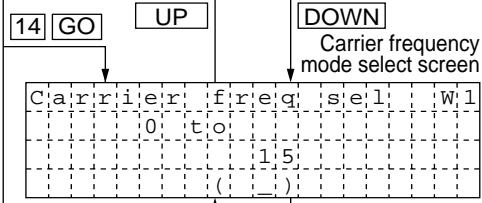
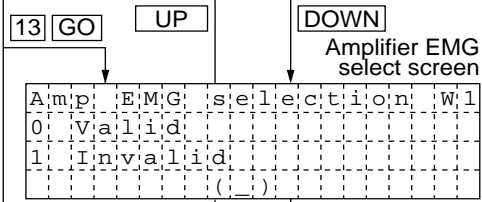
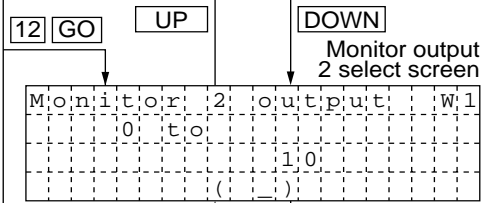


- 0 : It is not performed the feed forward control



(Continued to the next page)

(Continued from the previous page)



0 : Valid  
1 : Invalid

0 : 2-wire (Normal)  
1 : 4-wire (Corresponding with long distance cable)

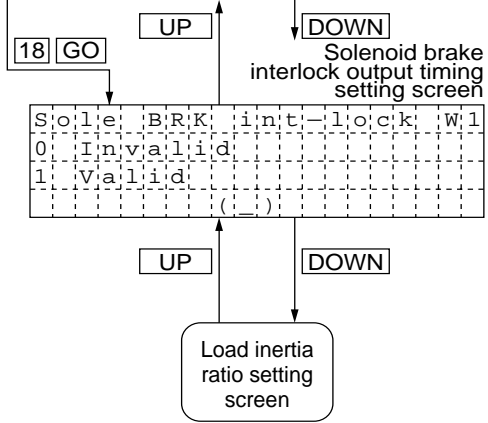
0 : Invalid  
1 : Valid

0 : Invalid  
1 : Valid

(Continued to the next page)

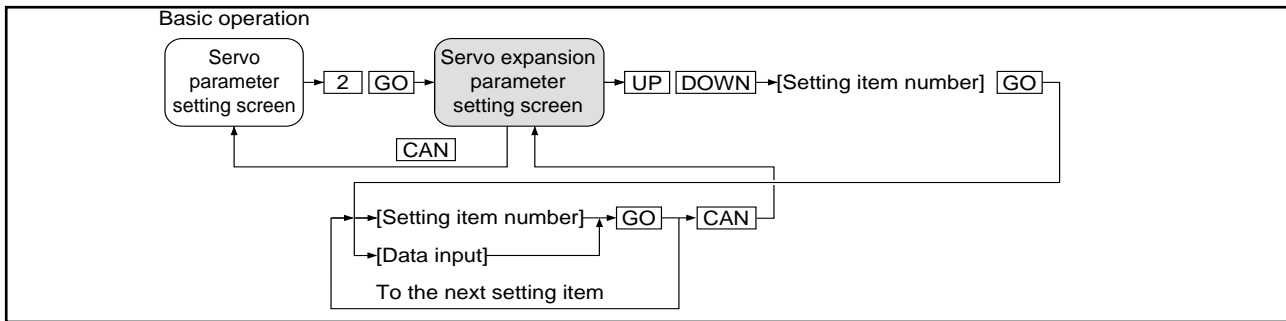


(Continued from the previous page)

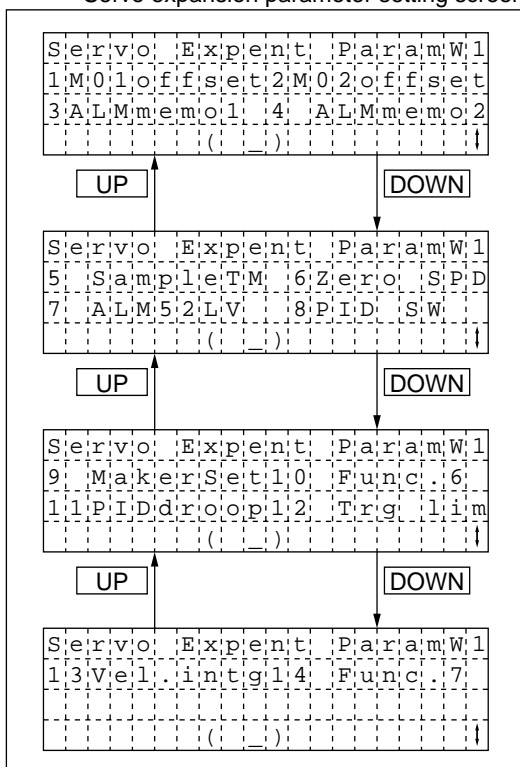


0 : Invalid  
1 : Valid

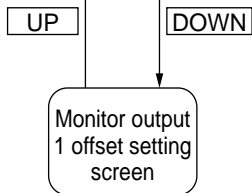
6.7.3 Setting servo expansion parameter



Servo expansion parameter setting screen

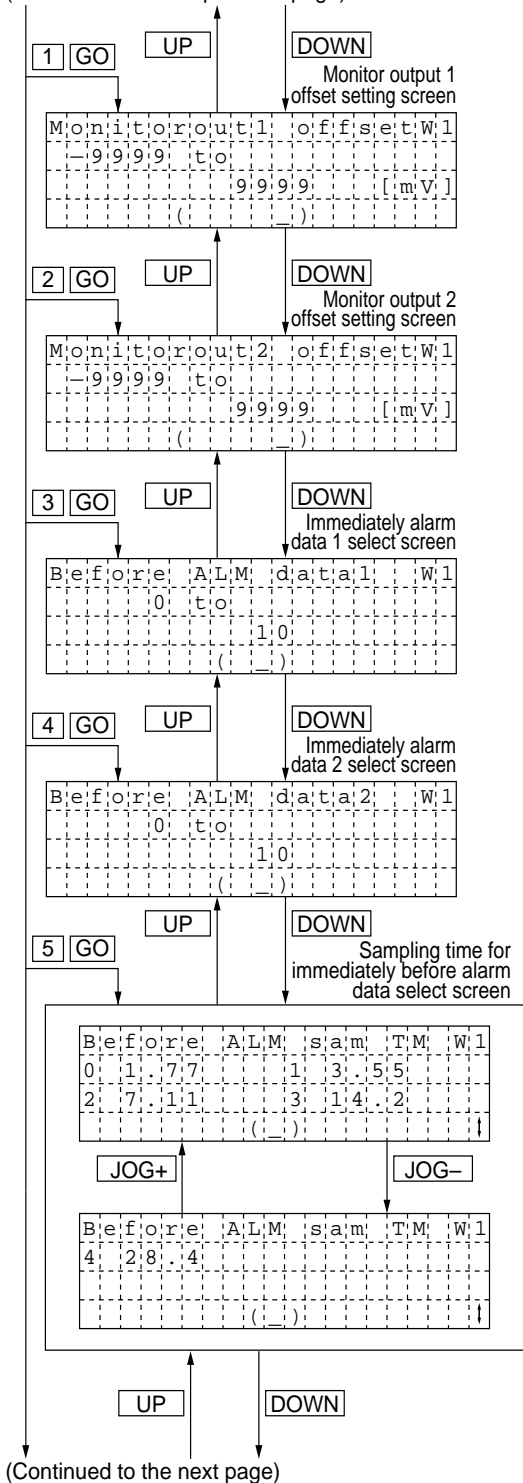


- 1 : Setting the monitor output 1 offset
- 2 : Setting the monitor output 2 offset
- 3 : Selecting the immediately before alarm data 1
- 4 : Selecting the immediately before alarm data 2
- 5 : Selecting the minute vibration suppress function
- 6 : Setting the zero speed
- 7 : Excessive error alarm level
- 8 : Setting the PI-PID switching
- 9 : Setting the maker (Setting not available)
- 10 : Option function 6 (Setting not available)
- 11 : PI-PID switch position droop
- 12 : Setting the maker (Setting not available)
- 13 : Setting the speed derivative compensation
- 14 : Option function 7 (Setting not available)



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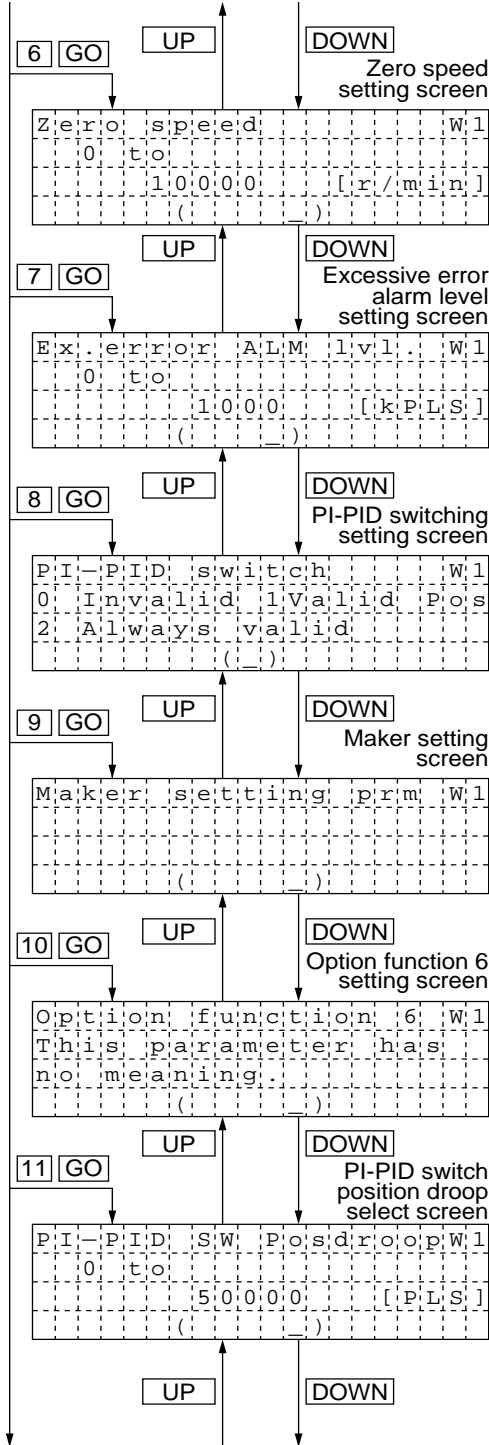
(Continued from the previous page)



- 0 : 1.77 ms
- 1 : 3.55 ms
- 2 : 7.11 ms
- 3 : 14.2 ms
- 4 : 28.4 ms

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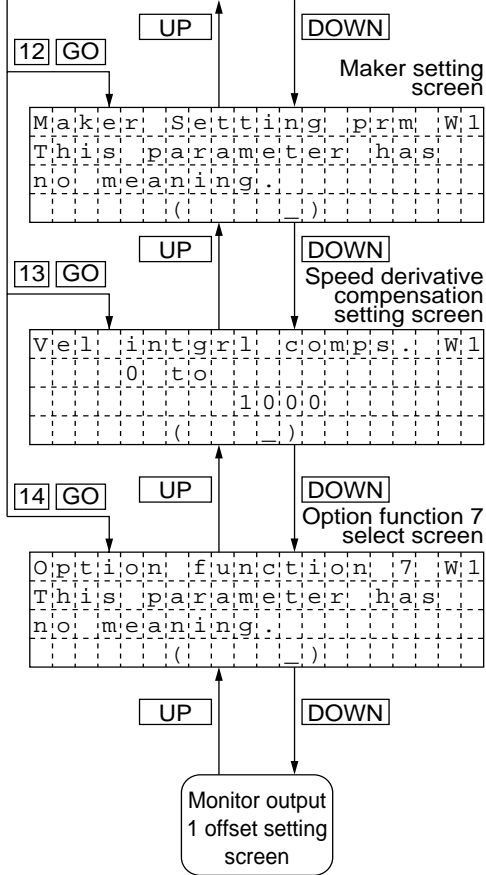
(Continued from the previous page)



- 0 : Invalid
- 1 : Droop switching valid during position control
- 2 : Speed amplifier proportional control valid
  
- 0 : Setting the maker (User setting is not allowed.)
  
- 0 : Setting the maker (User setting is not allowed.)

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Setting the maker (User setting is not allowed.)

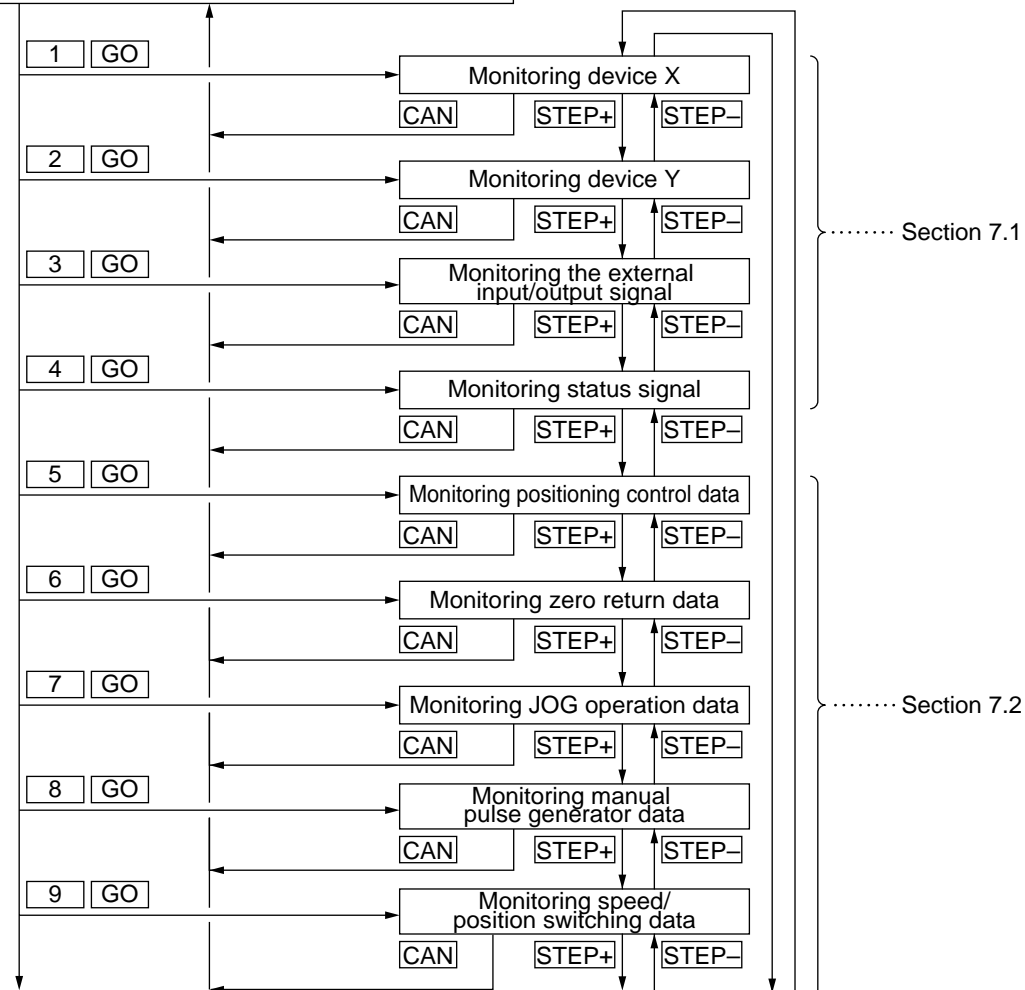
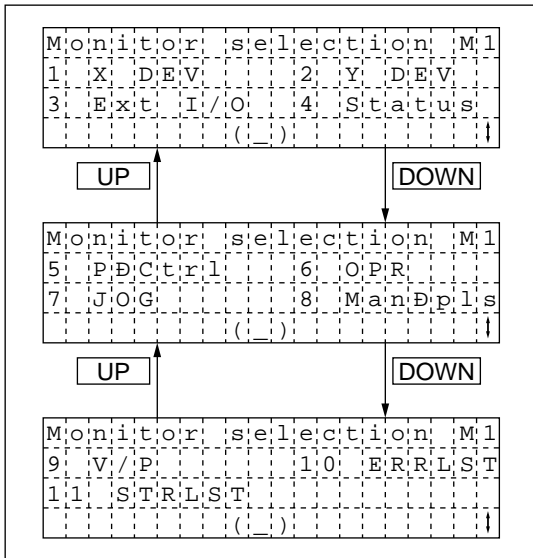
Setting the maker (User setting is not allowed.)

# Monitor Mode

Use the [MNT] key to monitor the control condition of the AD75. Select a monitoring item using the [Monitor item number] key, then [GO] key.

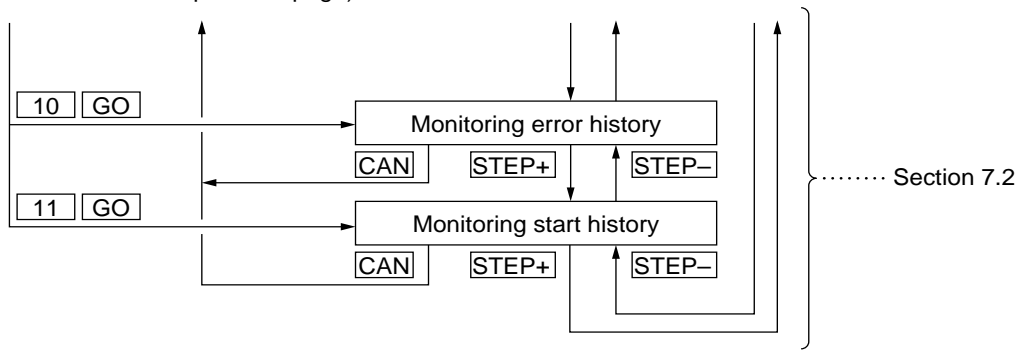
When using AD75P, AD75PS3

Monitor mode select screen

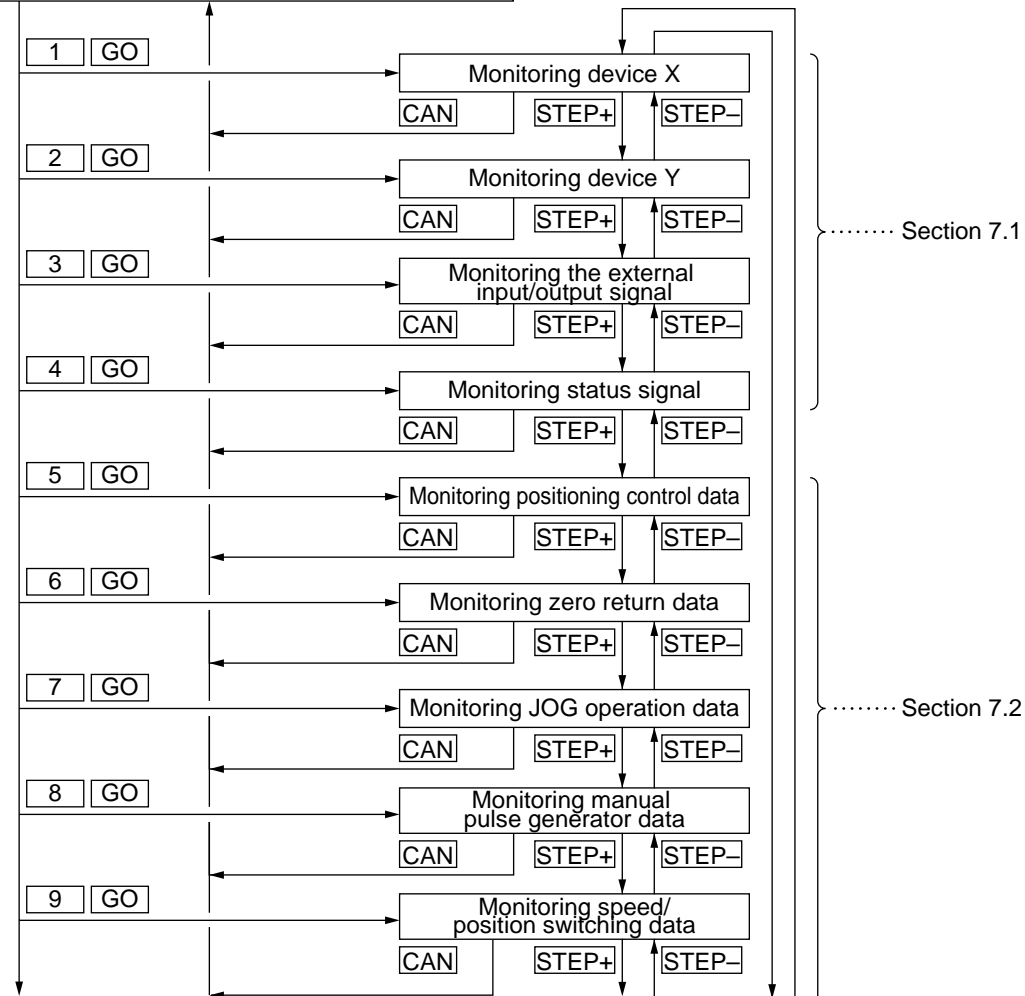
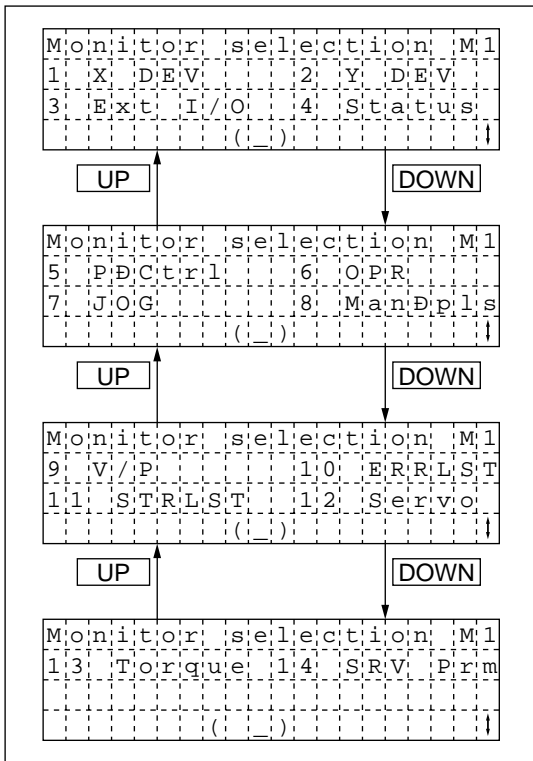


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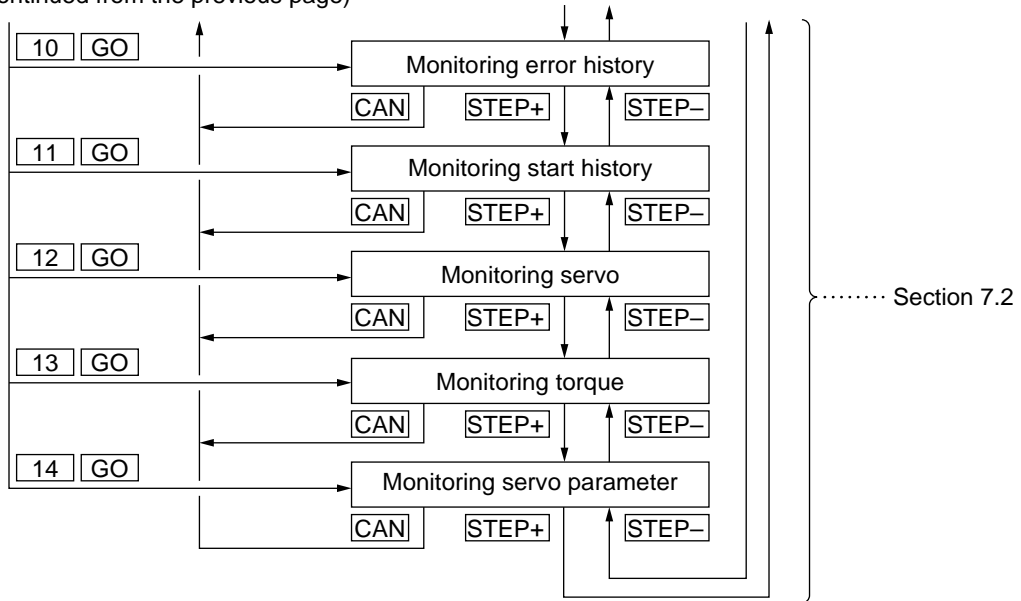
When using AD75M  
Monitor mode select screen



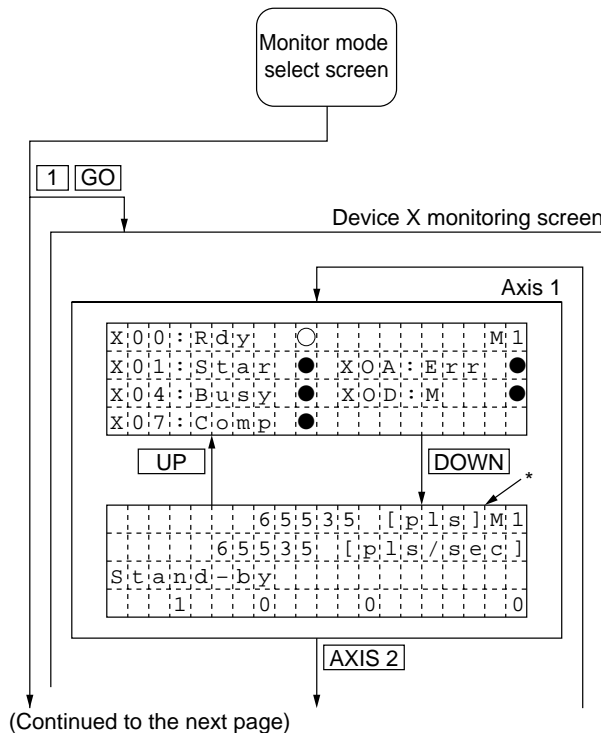
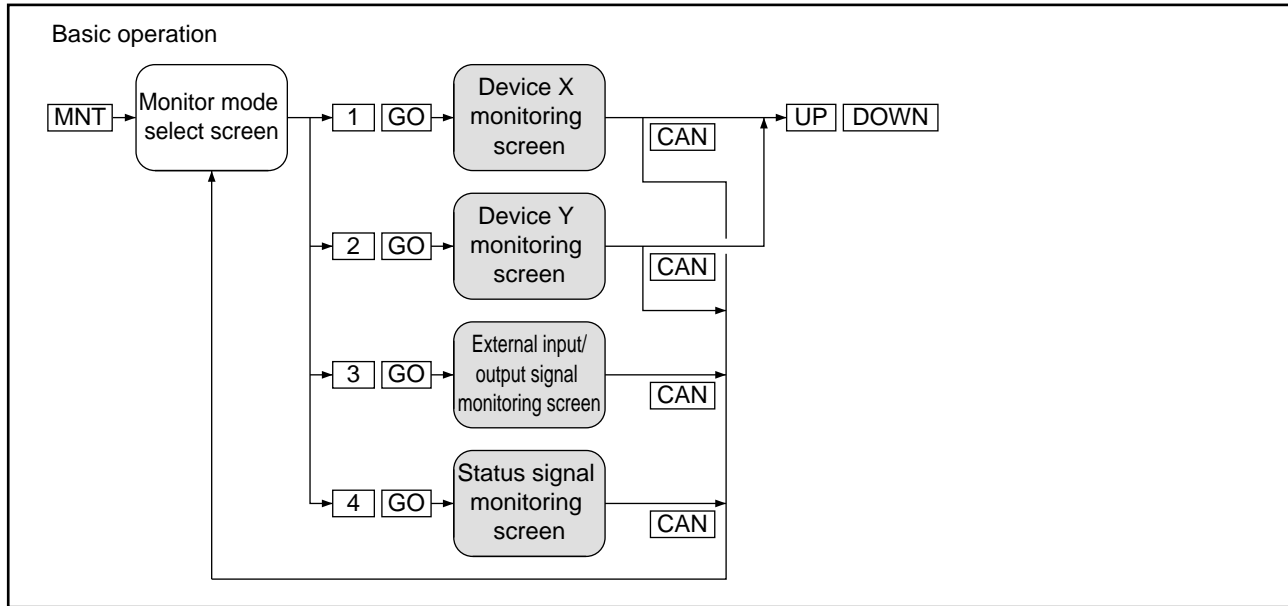
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### 7.1 Monitoring the Status



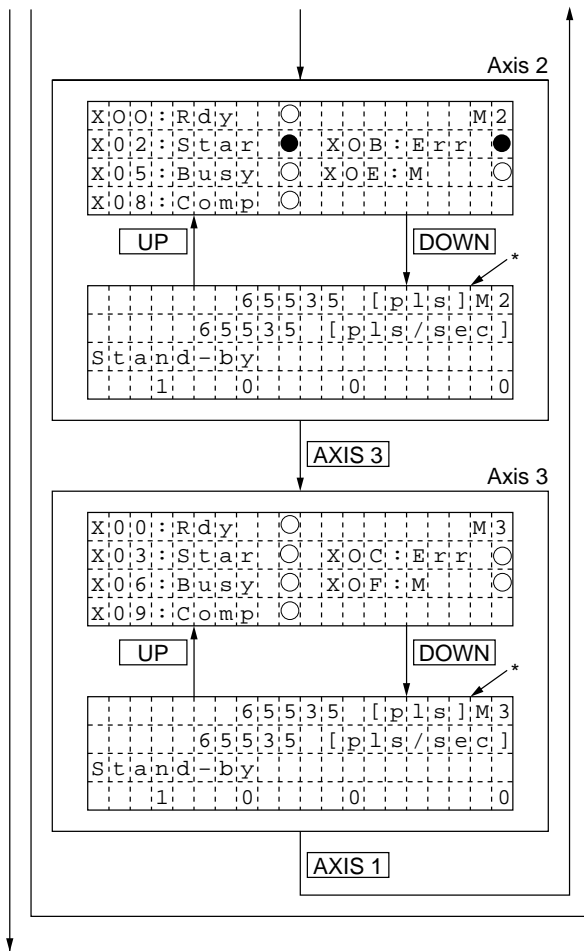
- y : ON
- b : OFF
- X00 : AD75 ready signal
- X01 : Axis 1 positioning start complete signal
- X02 : Axis 2 positioning start complete signal
- X03 : Axis 3 positioning start complete signal
- X04 : Axis 1 BUSY signal
- X05 : Axis 2 BUSY signal
- X06 : Axis 3 BUSY signal
- X07 : Axis 1 positioning complete signal
- X08 : Axis 2 positioning complete signal
- X09 : Axis 3 positioning complete signal
- X0A : Axis 1 error detected signal
- X0B : Axis 2 error detected signal
- X0C : Axis 3 error detected signal
- X0D : Axis 1 M code ON signal
- X0E : Axis 2 M code ON signal
- X0F : Axis 3 M code ON signal

(Continued to the next page)

The device number is represented by X00 to Y0F, regardless of the head I/O number of the slot to which the AD75 is installed.

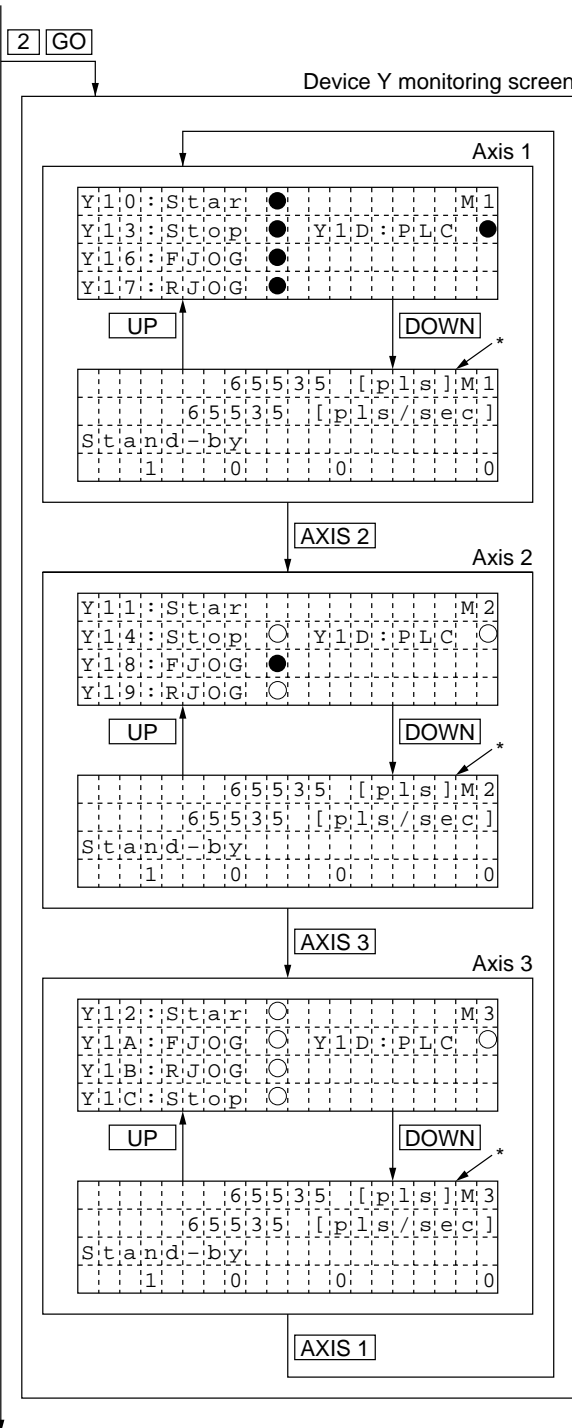
\* : Data monitoring screen for positioning control is shown. (Refer to section 7.2.)

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y : ON  
b : OFF

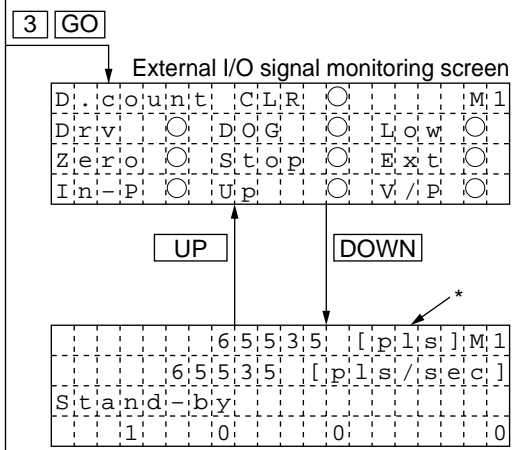
- Y10 : Axis 1 positioning start signal
- Y11 : Axis 2 positioning start signal
- Y12 : Axis 3 positioning start signal
- Y13 : Axis 1 stop signal
- Y14 : Axis 2 stop signal
- Y16 : Axis 1 forward JOG start signal
- Y17 : Axis 1 reverse JOG start signal
- Y18 : Axis 2 forward JOG start signal
- Y19 : Axis 2 reverse JOG start signal
- Y1A : Axis 3 forward JOG start signal
- Y1B : Axis 3 reverse JOG start signal
- Y1C : Axis 3 stop signal
- Y1D : PC ready signal

The device number is represented by Y10 to Y1D, regardless of the head I/O number of the slot to which the AD75 is installed.

\* : Data monitoring screen for positioning control is shown. (Refer to section 7.2.)

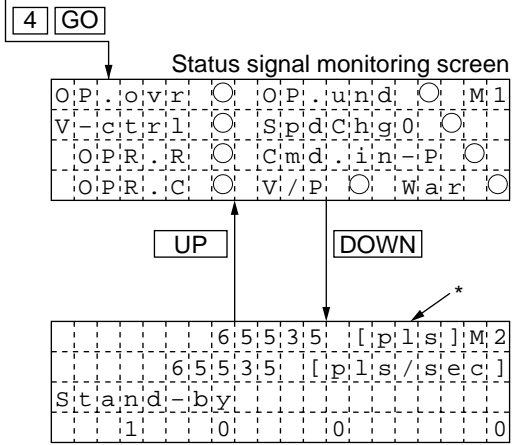
(Continued to the next page)

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- y : ON      D. count CLR : Error counter clear signal
- b : OFF      Drv : Drive unit ready signal
- Zero : Zero-phase signal
- In-P : In-position signal
- DOG : Near-point dog signal
- Stop : Stop signal
- Up : Upper limit signal
- Low : Lower limit signal
- Ext : External start signal
- V/P : Speed/position switching signal

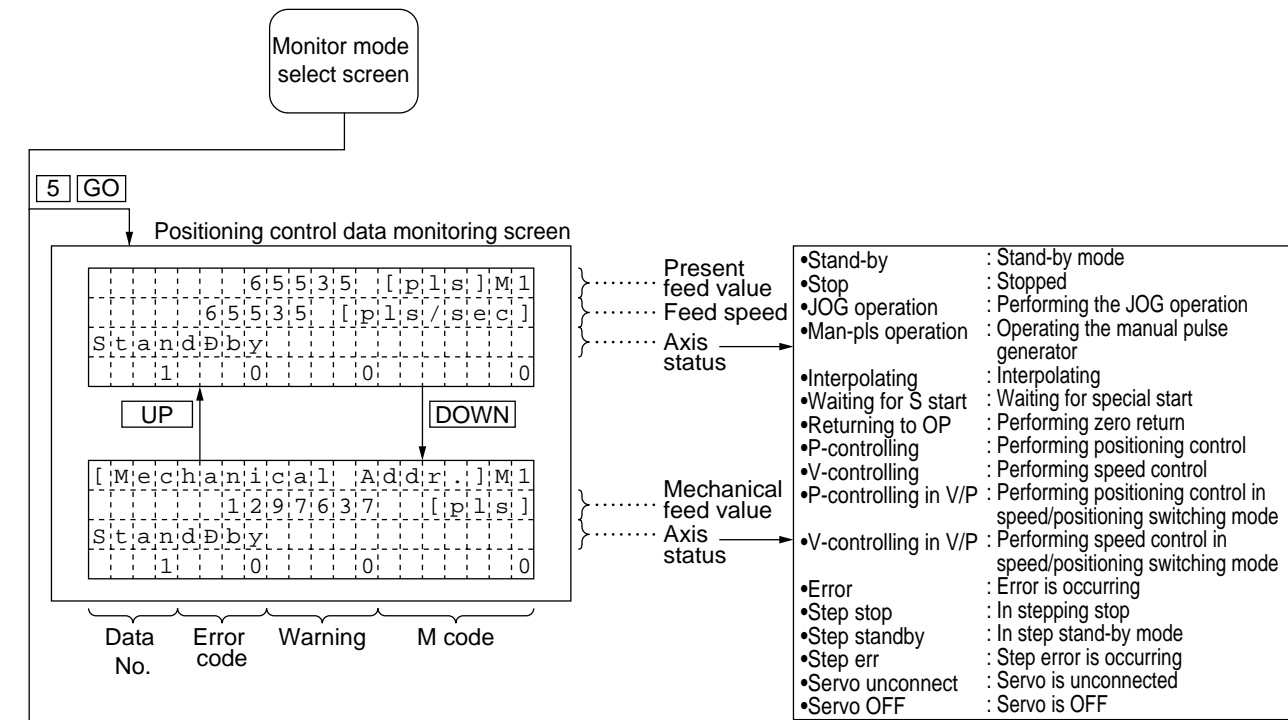
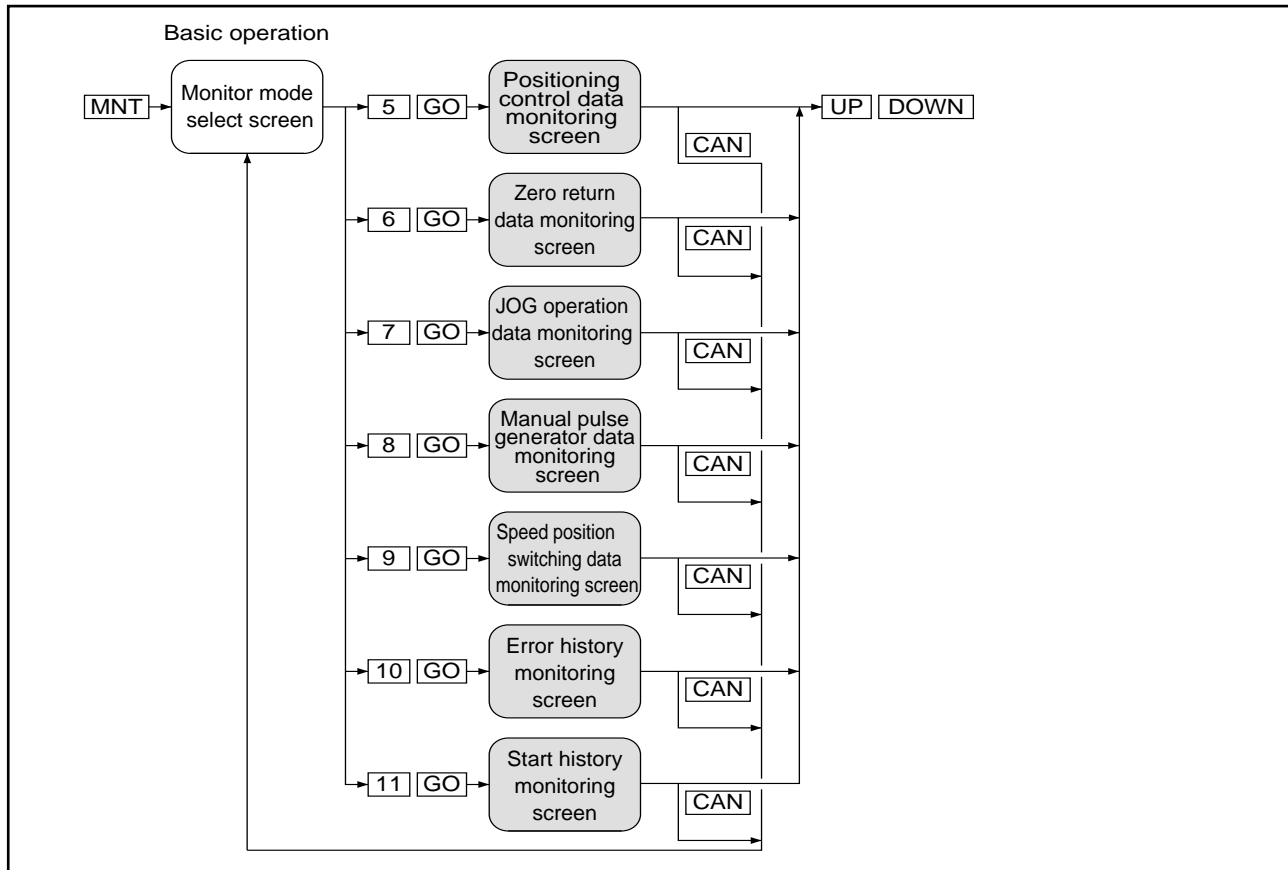
\* : Data monitoring screen for positioning control is shown. (Refer to section 7.2.)



- y : ON      OP. ovr : Zero point absolute position overflow flag
- b : OFF      OP. und : Zero point absolute position underflow flag
- V-ctrl : Speed controlling flag
- OPR. R : Zero return request flag
- OPR. C : Zero return complete flag
- SpdChg0 : Speed change 0 flag
- Cmd. in-P : Specified in-position flag
- V/P : Speed/position switching latch flag
- War : Axis warning detected

### 7.2 Monitoring Data

When using AD75P, AD75PS3

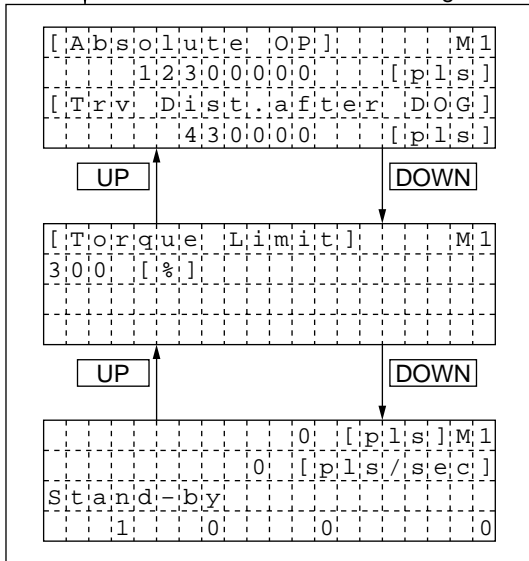


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6 GO

Zero return data monitoring screen

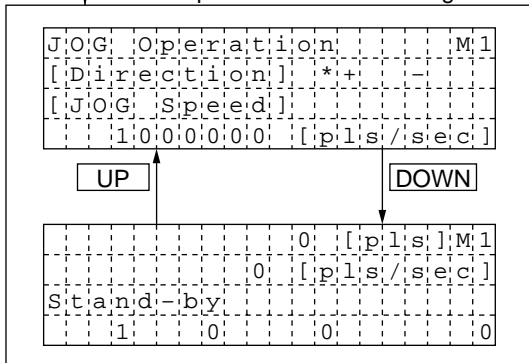


} ..... Zero point absolute position  
 } ..... Travel after the rear-point dog is ON

} ..... Torque limit value

7 GO

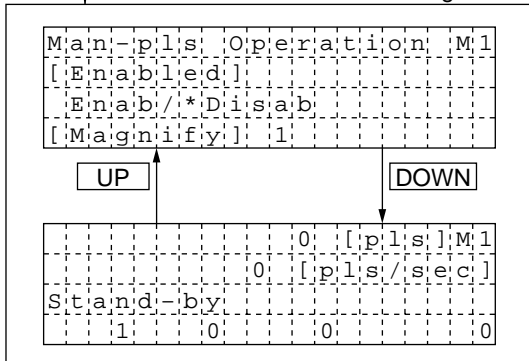
JOG operation data monitoring screen



} ..... JOG operation direction → \*+ -: Forward JOG start  
 + \* -: Reverse JOG start  
 } ..... JOG speed

8 GO

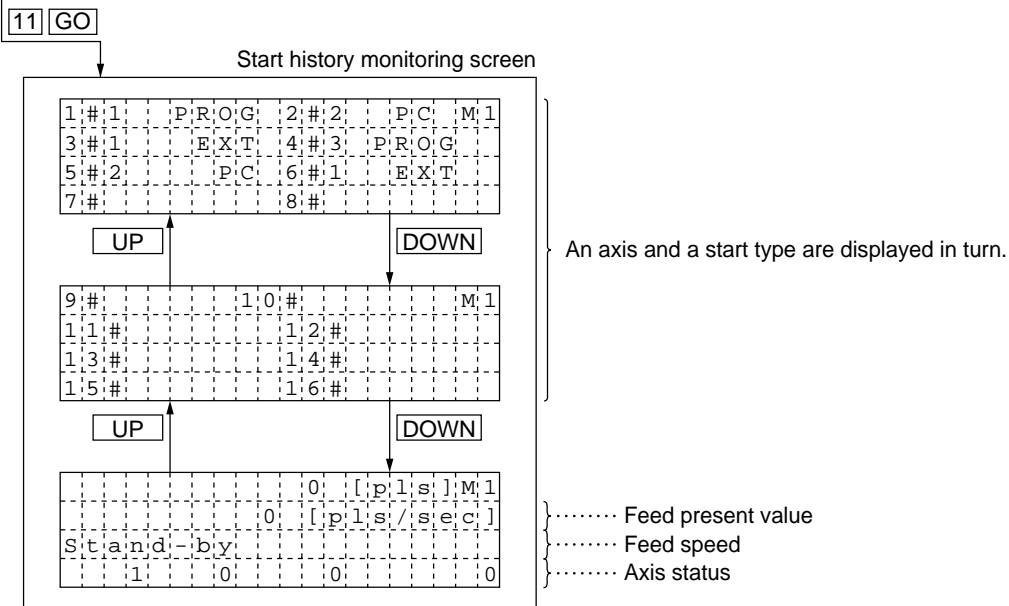
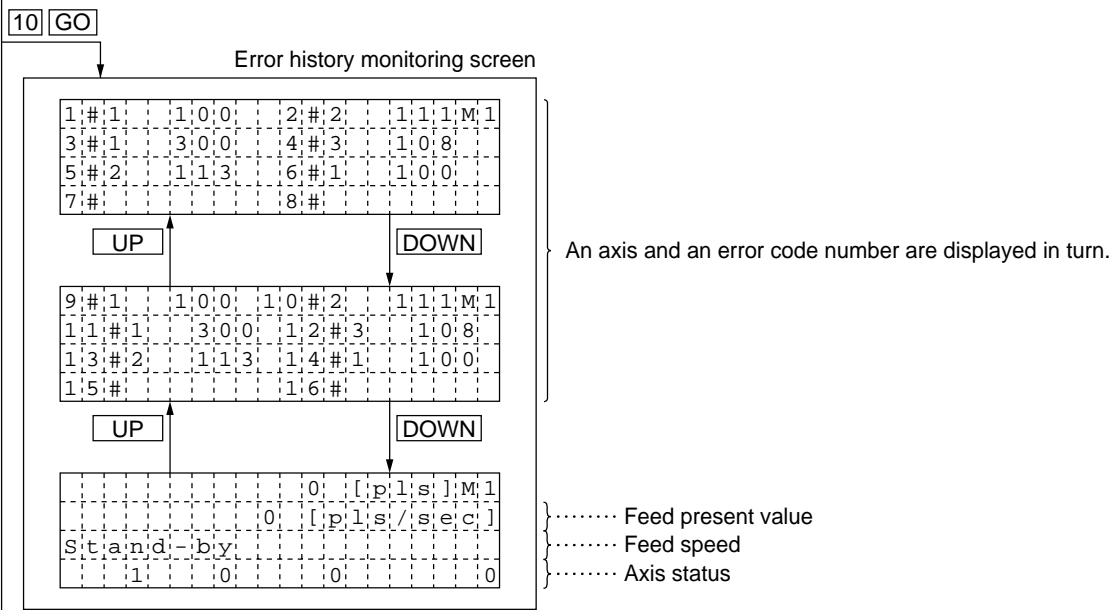
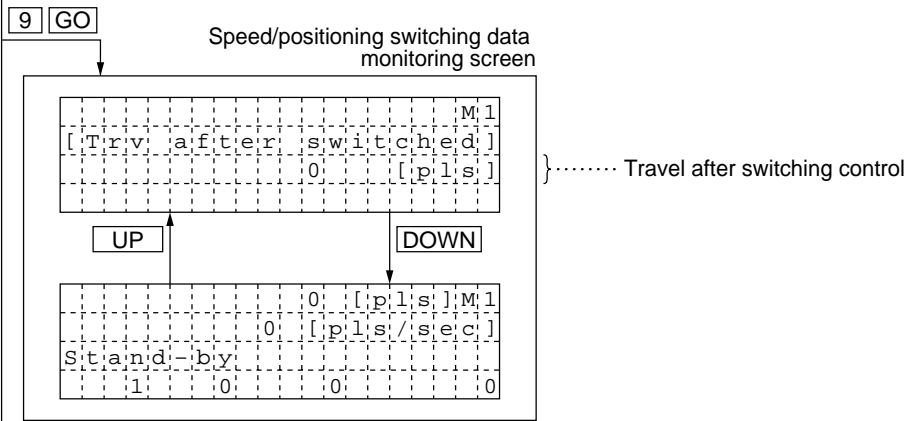
Manual pulse generator data monitoring screen



} ..... Enabled/disabled → \*Enab/ Disab: Manual pulse generator operation is enabled.  
 Enab/\*Disab: Manual pulse generator operation is disabled.  
 } ..... Magnification

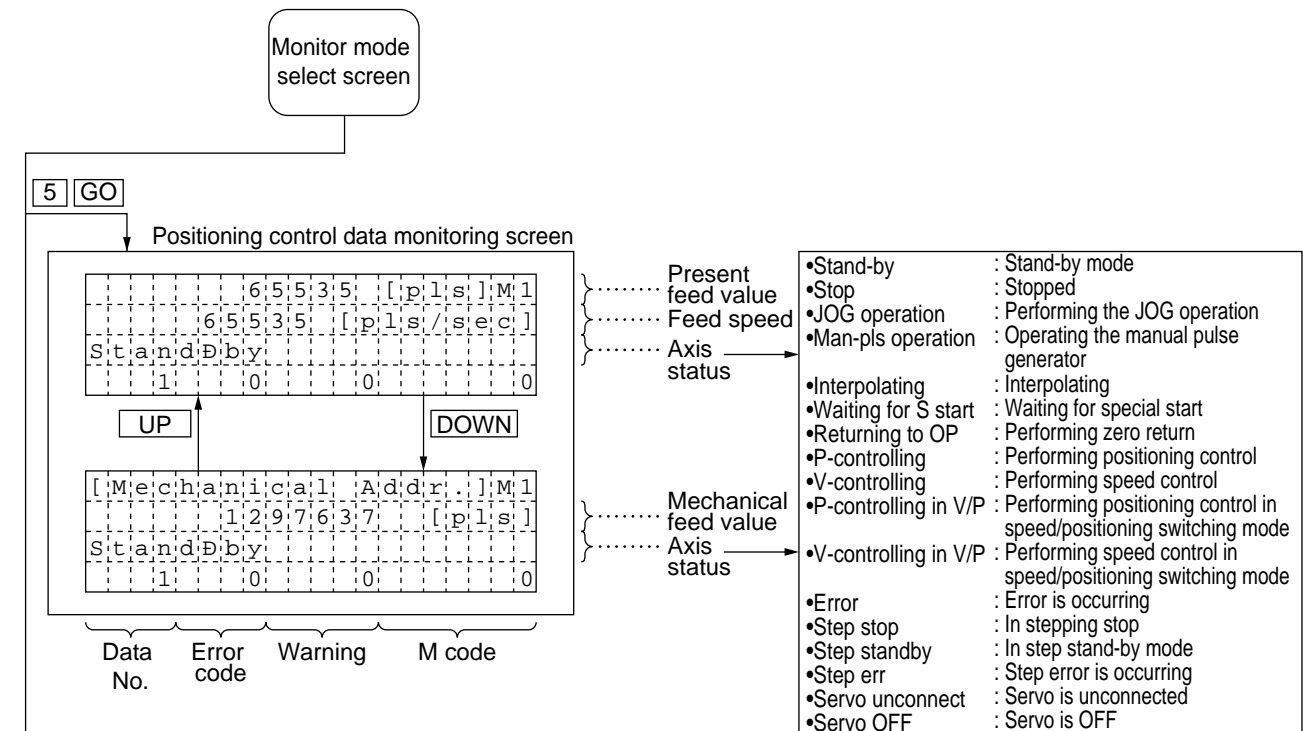
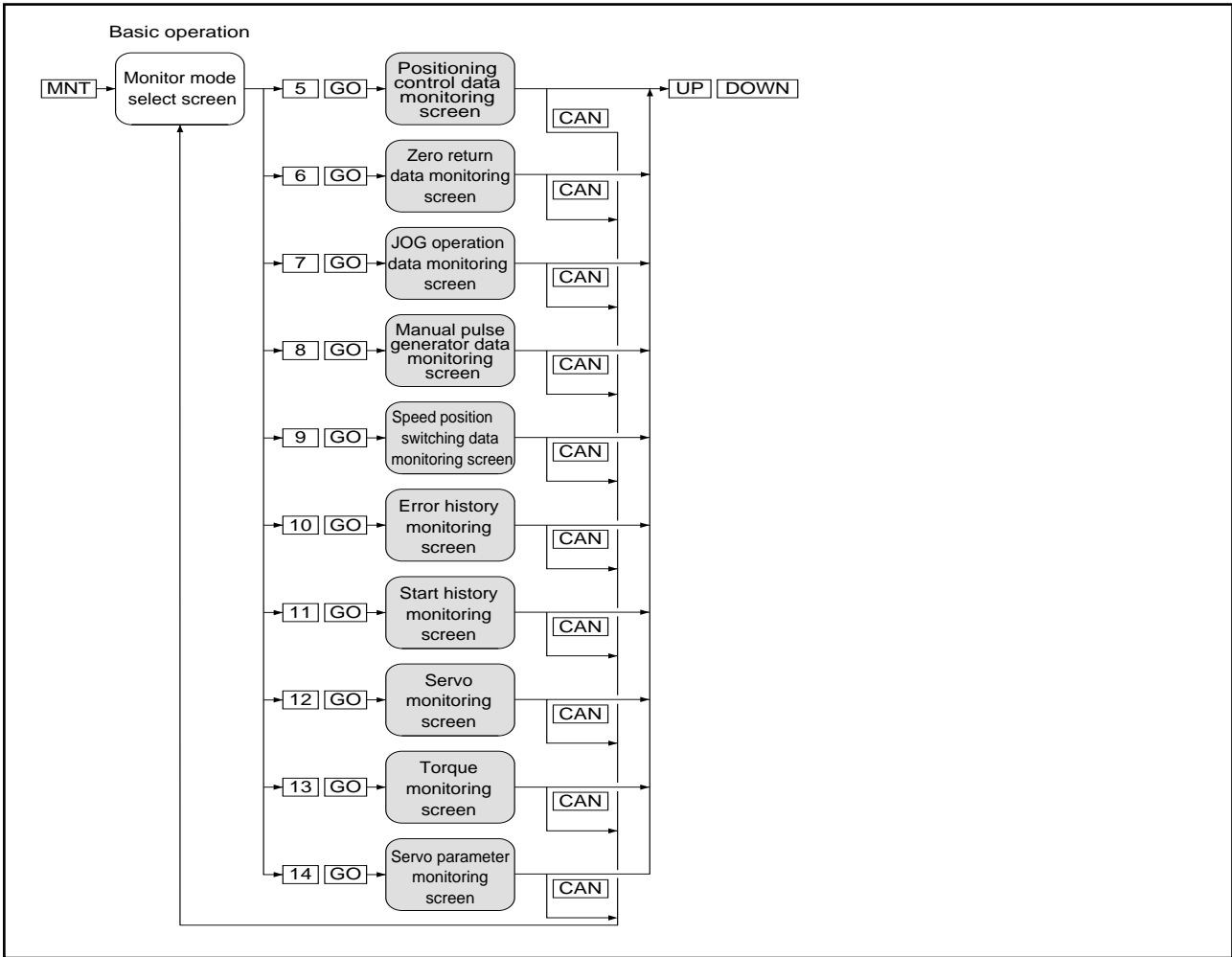
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When using AD75M



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6 GO

Zero return data monitoring screen

[A,b,s,o,l,u,t,e,O,P] M1	
123000000 [p,l,s]	
[T,r,v,D,i,s,t,a,f,t,e,r,D,O,G]	
4300000 [p,l,s]	
UP	DOWN
[T,o,r,q,u,e,L,i,m,i,t] M1	
300 [%]	
UP	DOWN
.0 [p,l,s] M1	
.0 [p,l,s]/s,e,c]	
S,t,a,n,d-b,y	
1 0 0 0	

}..... Zero point absolute position  
 }..... Travel after the rear-point dog is ON  
 }..... Torque limit value

7 GO

JOG operation data monitoring screen

J,O,G,O,p,e,r,a,t,i,o,n M1	
[D,i,r,e,c,t,i,o,n] *+}	
[J,O,G,S,p,e,e,d]	
10000000 [p,l,s]/s,e,c]	
UP	DOWN
.0 [p,l,s] M1	
.0 [p,l,s]/s,e,c]	
S,t,a,n,d-b,y	
1 0 0 0	

}..... JOG operation direction → \*\* - : Forward JOG start  
+ \* - : Reverse JOG start  
 }..... JOG speed

8 GO

Manual pulse generator data monitoring screen

M,a,n,p,l,s,O,p,e,r,a,t,i,o,n M1	
[E,n,a,b,l,e,d]	
E,n,a,b/*D,i,s,a,b	
[M,a,g,n,i,f,y] 1	
UP	DOWN
.0 [p,l,s] M1	
.0 [p,l,s]/s,e,c]	
S,t,a,n,d-b,y	
1 0 0 0	

}..... Enabled/disabled → \*Enab/ Disab: Manual pulse generator operation is enabled.  
Enab/\*Disab: Manual pulse generator operation is disabled.  
 }..... Magnification

(Continued to the next page)

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9 GO

Speed/positioning switching data monitoring screen

[T]r	[v]	[a]	[f]	[t]	[e]	[r]	[s]	[w]	[i]	[t]	[c]	[h]	[e]	[d]	[M]	[1]
[0]	[.]	[p]	[l]	[s]	[/]	[s]	[e	[c]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]
[S]	[t]	[a]	[n]	[d]	[.]	[b]	[y]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]
[1]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]

UP DOWN

..... Travel after switching control

10 GO

Error history monitoring screen

1	#	1	:	1	:	0	:	0	:	2	#	2	:	1	:	1	:	1	:	M	1
3	#	1	:	3	:	0	:	0	:	4	#	3	:	1	:	0	:	8	:	:	:
5	#	2	:	1	:	1	:	3	:	6	#	1	:	1	:	0	:	0	:	:	:
7	#	:	:	:	:	:	:	:	:	8	#	:	:	:	:	:	:	:	:	:	:

UP DOWN

An axis and an error code number are displayed in turn.

9	#	1	:	1	:	0	:	0	:	1	:	0	:	2	:	1	:	1	:	M	1	
1	:	1	:	3	:	0	:	0	:	1	:	2	:	3	:	1	:	0	:	8	:	:
1	:	3	:	2	:	1	:	1	:	3	:	1	:	4	:	1	:	1	:	0	:	0
1	:	5	:	#	:	:	:	:	:	1	:	6	:	#	:	:	:	:	:	:	:	:

UP DOWN

[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]
[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]
[S]	[t]	[a]	[n]	[d]	[.]	[b]	[y]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]
[1]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]

..... Feed present value  
 ..... Feed speed  
 ..... Axis status

11 GO

Start history monitoring screen

1	#	1	:	P	:	R	:	O	:	G	:	2	#	2	:	P	:	C	:	M	1	
3	#	1	:	E	:	X	:	T	:	:	:	4	#	3	:	P	:	R	:	O	:	G
5	#	2	:	:	:	:	:	:	:	:	:	6	#	1	:	E	:	X	:	T	:	:
7	#	:	:	:	:	:	:	:	:	:	:	8	#	:	:	:	:	:	:	:	:	:

UP DOWN

An axis and a start type are displayed in turn.

9	#	:	:	1	:	0	:	#	:	:	:	:	:	:	:	:	:	:	:	:	:	M	1	
1	:	1	:	#	:	:	:	:	:	1	:	2	:	#	:	:	:	:	:	:	:	:	:	:
1	:	3	:	#	:	:	:	:	:	1	:	4	:	#	:	:	:	:	:	:	:	:	:	:
1	:	5	:	#	:	:	:	:	:	1	:	6	:	#	:	:	:	:	:	:	:	:	:	:

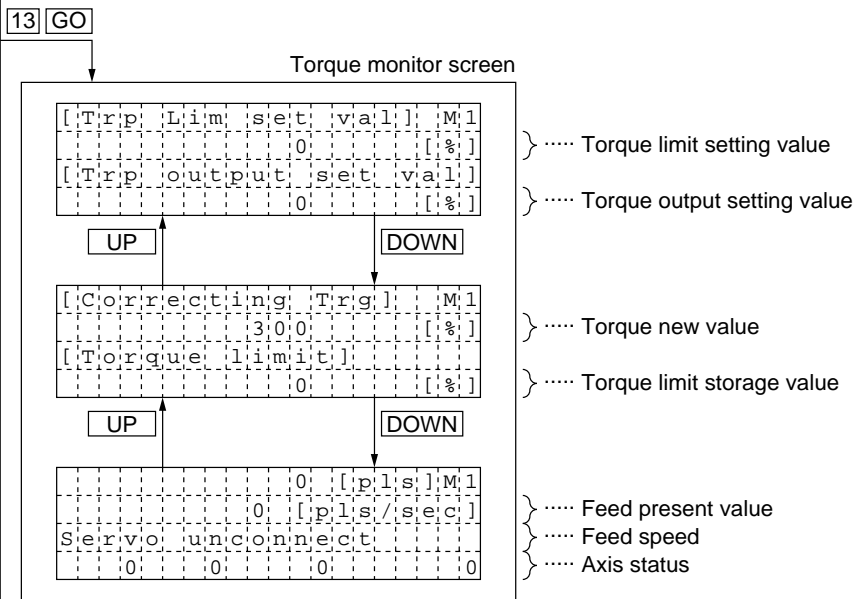
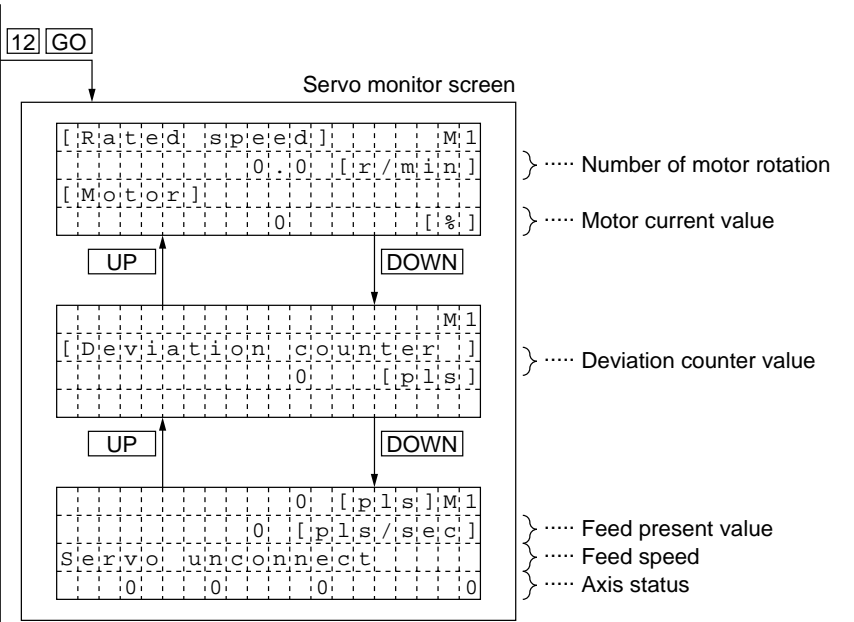
UP DOWN

[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]
[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]
[S]	[t]	[a]	[n]	[d]	[.]	[b]	[y]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]	[.]
[1]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]	[0]	[.]

..... Feed present value  
 ..... Feed speed  
 ..... Axis status

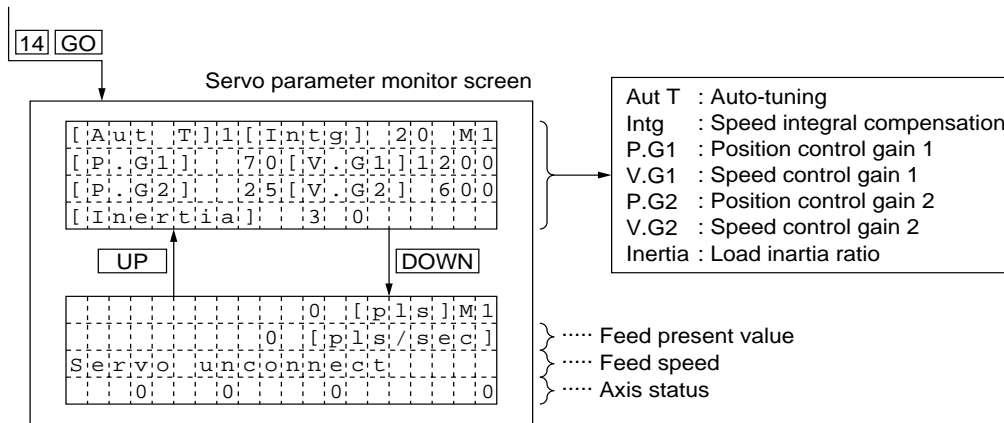
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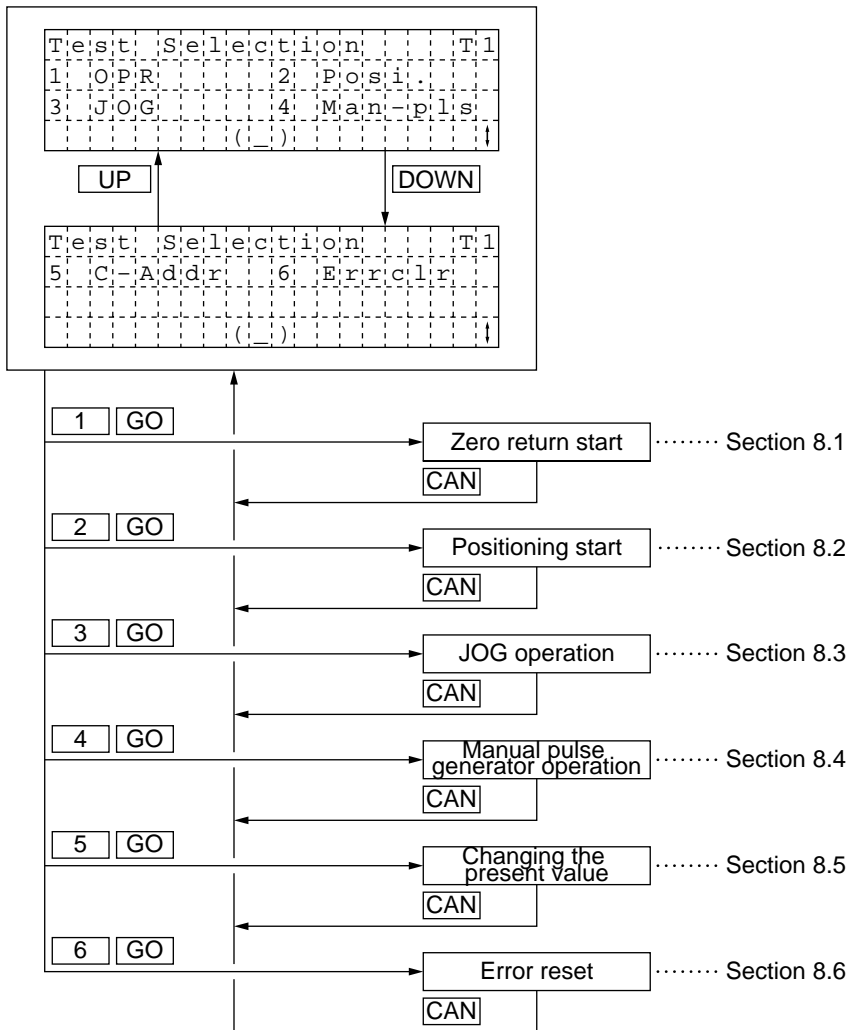
# Test Mode

Use the [TEST] key to perform test operations, such as zero return start, positioning start, and JOG operation. (You cannot select test mode while the axis is busy.)

Pressing the [Test item number] key, then [GO] key will allow you to select a test item.

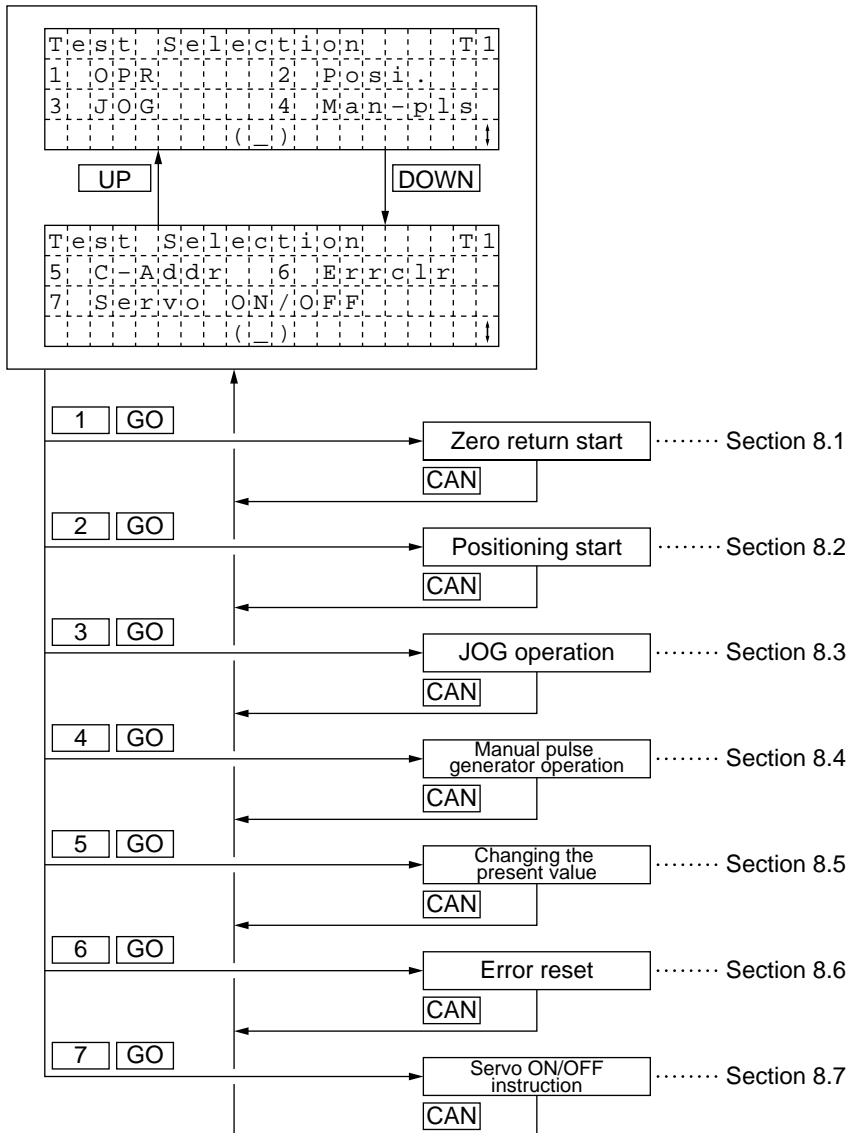
When using AD75P, AD75PS3

Test mode select screen

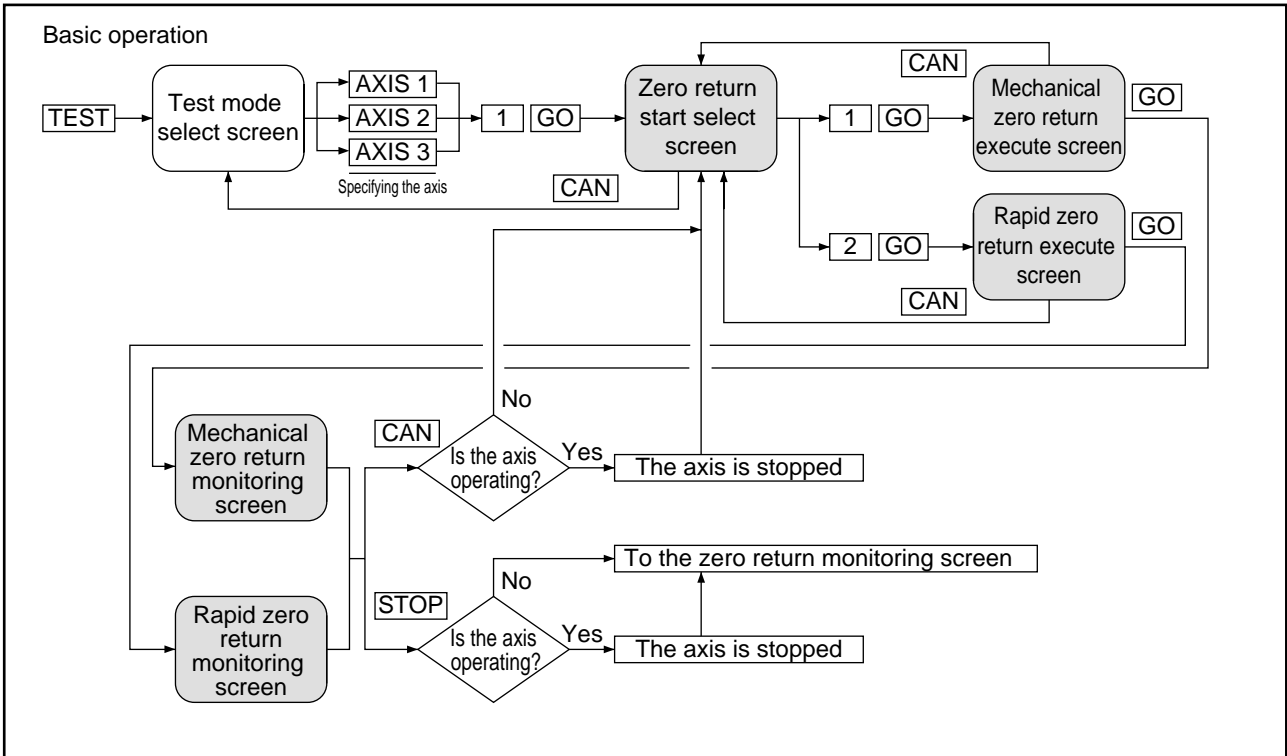


When using AD75M

Test mode select screen



### 8.1 Zero Return Start



Zero point start select screen

```

O.P.R. Start T:1
1 Mech 2 Rapid
( )
    
```

- 1 : Mechanical zero return
- 2 : Rapid zero return

```

1 GO
Mechanical zero
return execute screen
Mech O.P.R. Start T:1
OK?
OK (GO) NO (CAN)
    
```

```

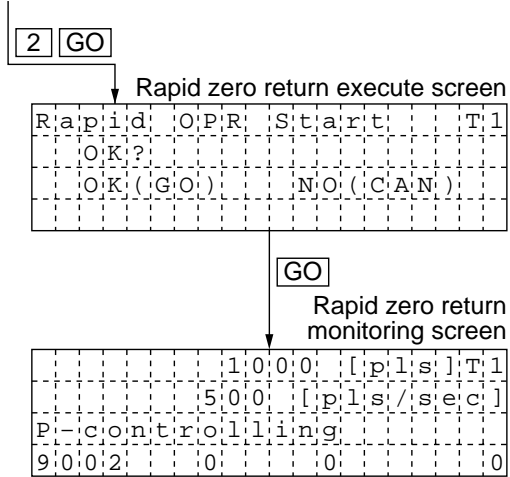
GO
Zero return
monitoring screen
1:0:0:0 [p|s|]T:1
5:0:0 [p|s|/s|e|c|]
Returning to O.P
9:0:0:1 0 0 0
    
```

- Data monitoring screen for positioning control is shown. (Refer to section 7.2.)

(Continued to the next page)

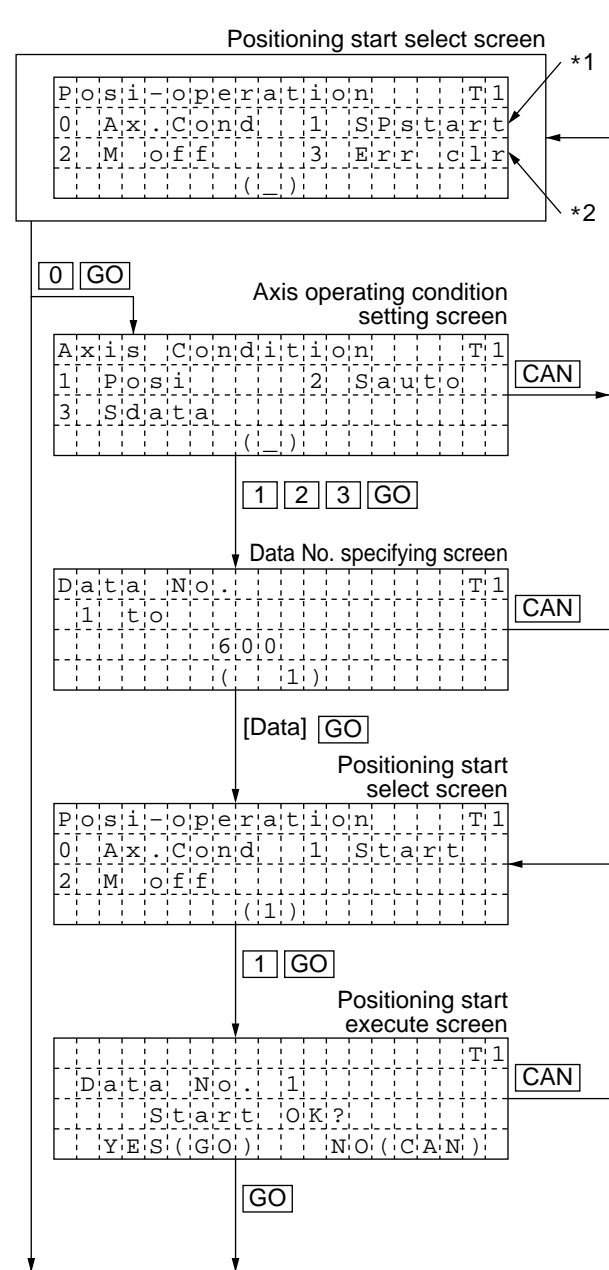
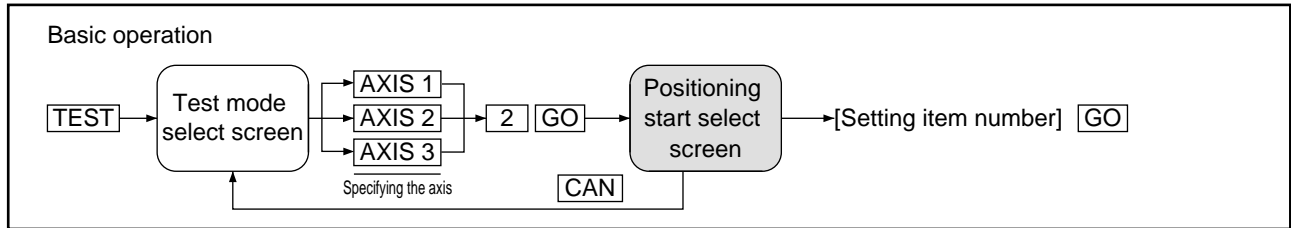


(Continued from the previous page)



- Data monitoring screen for positioning control is shown. (Refer to section 7.2.)

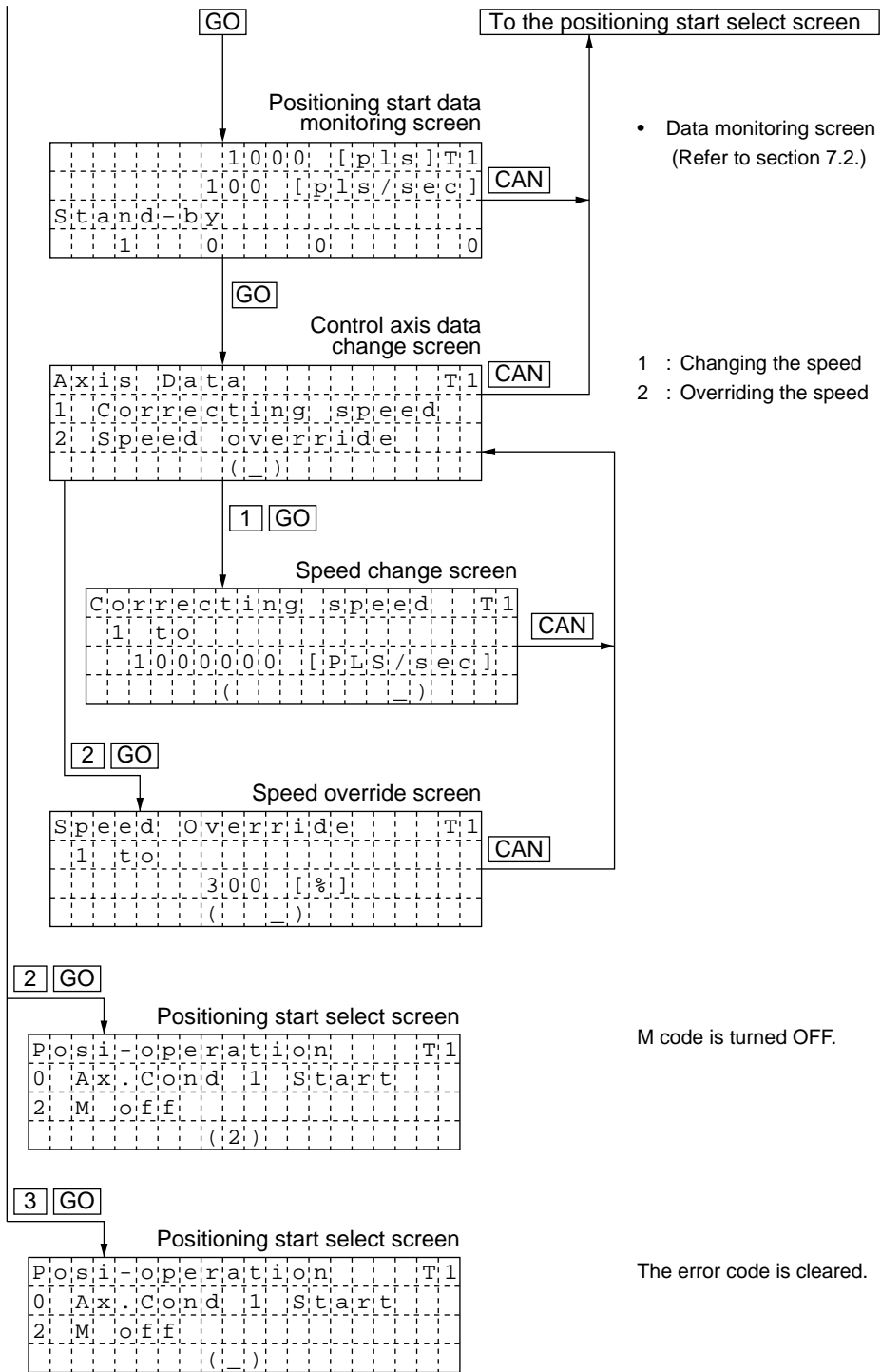
## 8.2 Positioning Start



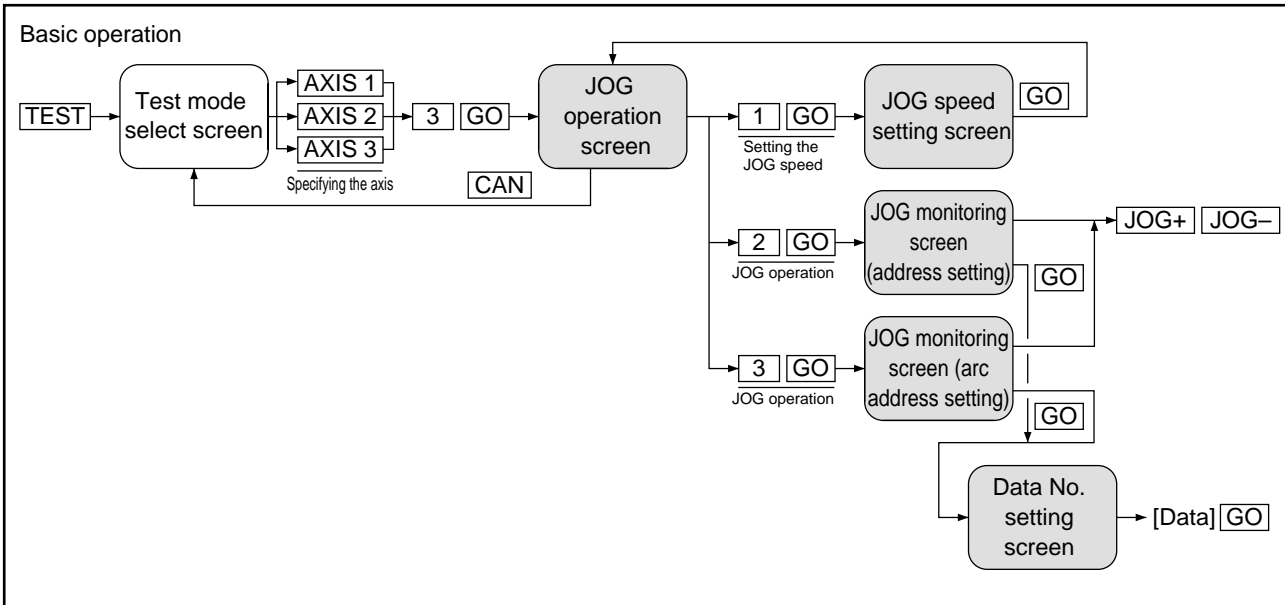
- 0 : Setting the axis operating conditions
  - 1 : Positioning start
  - 2 : M code OFF
  - 3 : Error clear
- \*1 If the axis is stopped during the step operation, if the unit is in stand-by mode for SPstar positioning operation, or if the axis is stopped during the Start positioning operation, Rstart will appear here.
- \*2 This appears only while an error is occurring.
- 1 : Positioning operation
  - 2 : Step auto deceleration
  - 3 : Step data No. unit operation

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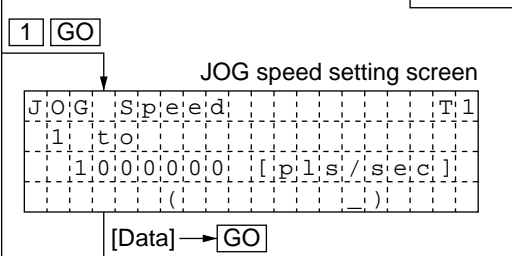
### 8.3 JOG Operation



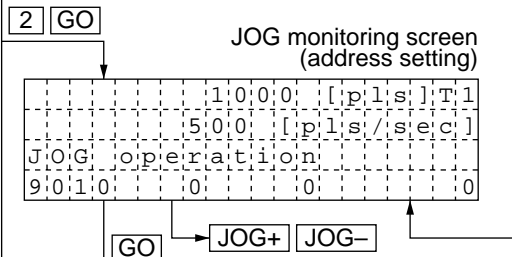
JOG operation screen

```
JOG operation T1
1 JOG speed
2 JOG 3 JOG (Arc)
( )
```

- 1 : Setting the JOG speed
- 2 : Teaching JOG operation (address setting)
- 3 : Teaching JOG operation (arc address setting)

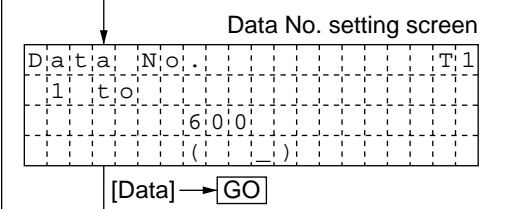


Set the JOG speed under the JOG speed limit value specified for the extended parameter.



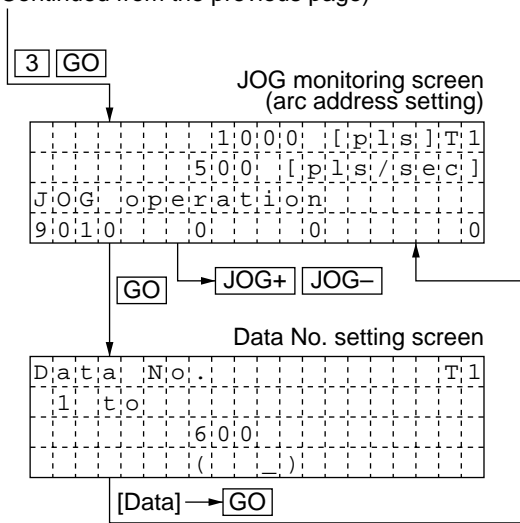
Data monitoring screen for positioning control is shown. (Refer to section 7.2.)

- [JOG+] : Forward JOG operation
- [JOG-] : Reverse JOG operation



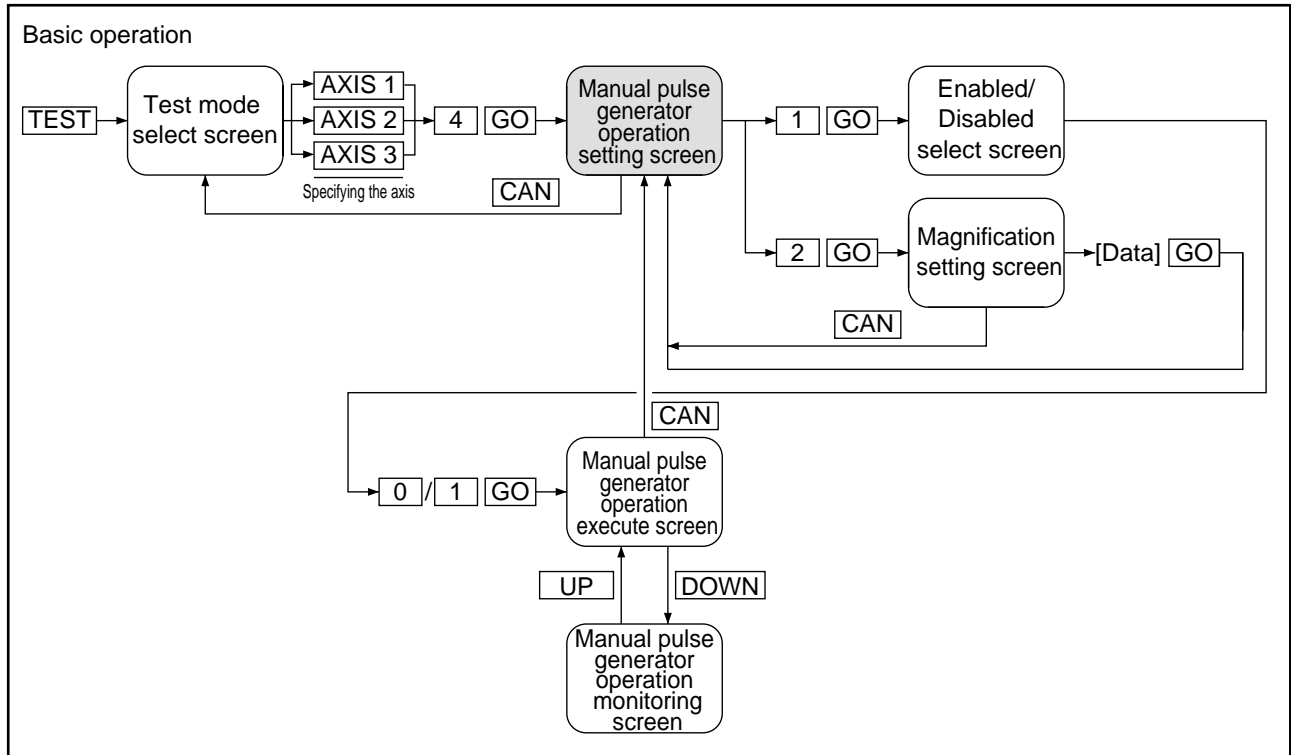
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Data monitoring screen for positioning control is shown.  
(Refer to section 7.2.)

### 8.4 Operating the Manual Pulse Generator



Manual pulse generator operation setting screen

```

M:an-p:ls Magnify T:1
1: Disable/Enable
2: Magnify
( )
    
```

1 GO

Enabled/Disabled select screen

```

M:an-p:ls enable T:1
0: Disable
1: Enable
( )
    
```

0/1 GO

Manual pulse generator operation execute screen

```

M:an-p:ls Operation T:1
[Enable/Disab]
Enable/Disab
[Magnify] 0
    
```

UP

DOWN

Manual pulse generator operation monitoring screen

```

          1000 [p:ls] T:1
          500 [p:ls/sec]
M:an-p:ls Operation
9011 0 0 0
    
```

When enabled \*Enabl/ Disab  
 When disabled Enabl/\*Disab

\* Data monitoring screen for positioning control is shown.  
 (Refer to section 7.2.)

(Continued to the next page)

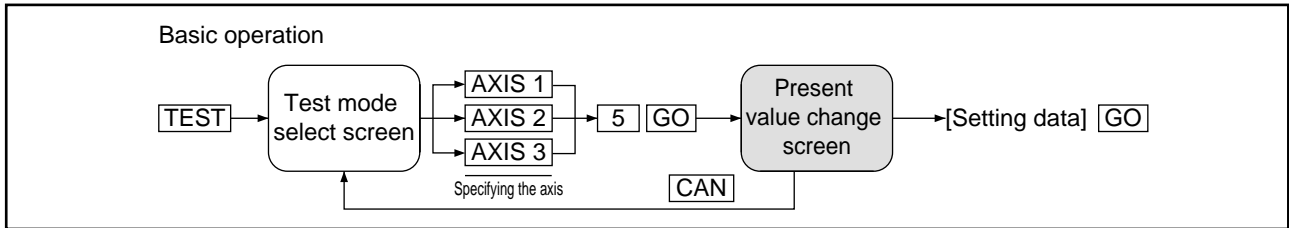
(Continued from the previous page)

2 GO

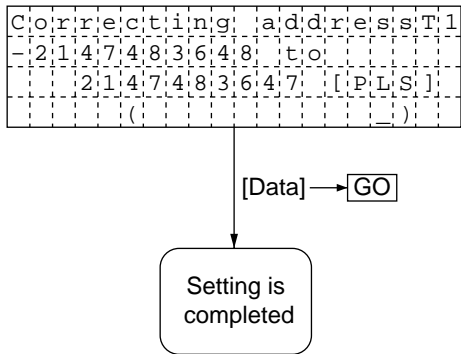
Magnification setting screen

M	a	n	-	p	l	s	M	a	g	n	i	f	y	T	l
1	t	o													
							1	0	0						
							(	_	)						

### 8.5 Changing the Present Value

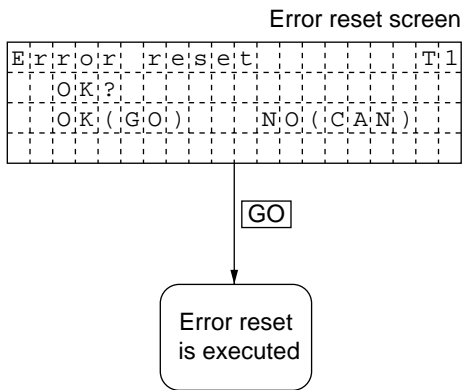
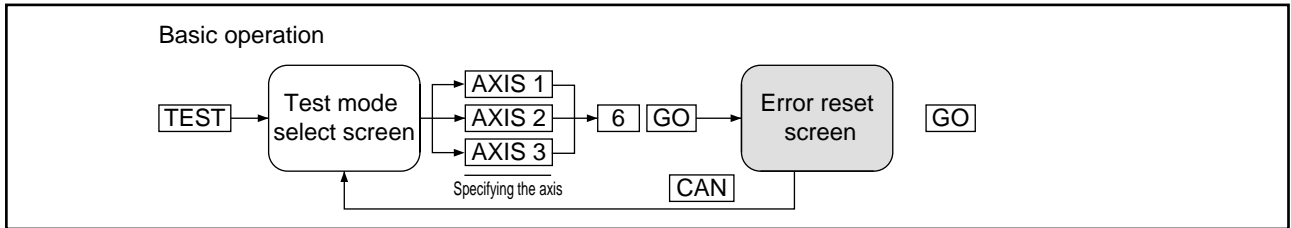


Present value change screen

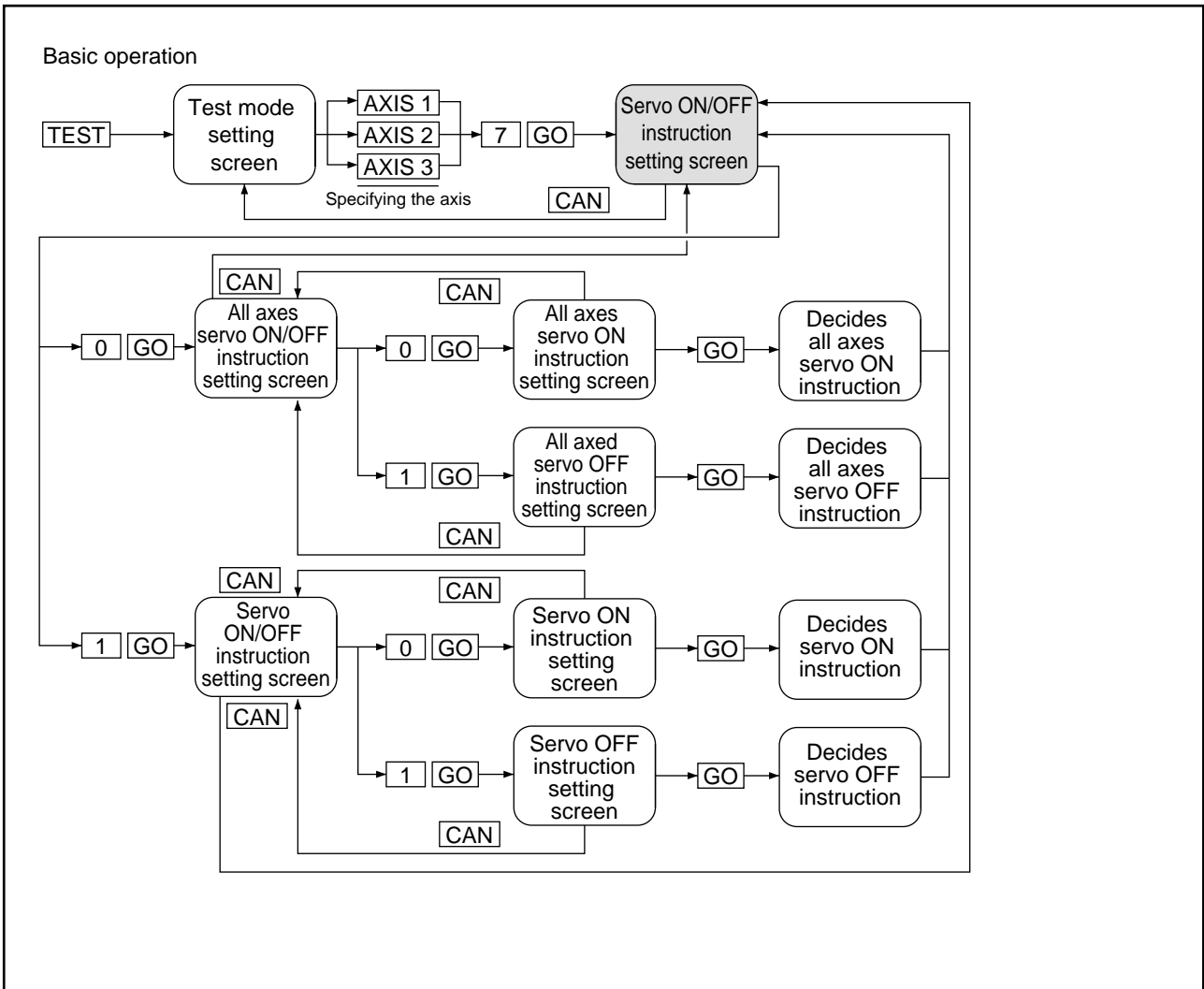


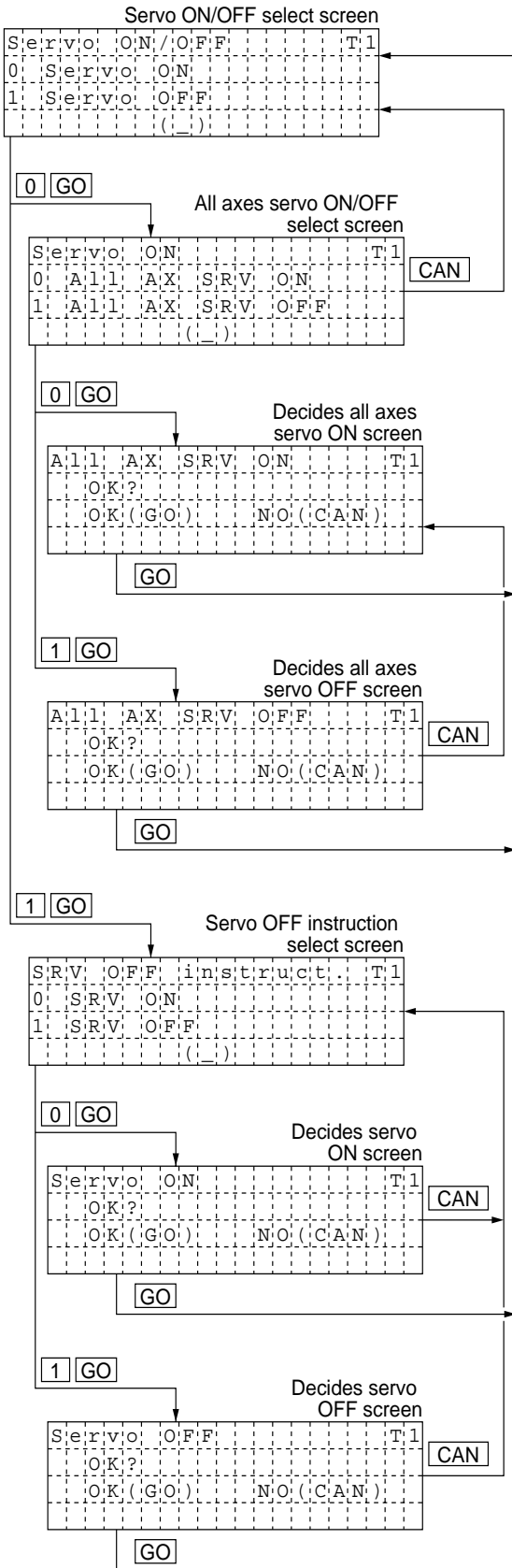


### 8.6 Error Reset



### 8.7 Servo ON/OFF Instruction





0 : Servo ON  
1 : Servo OFF

0 : All axes servo ON  
1 : All axes servo OFF

OK : Decides all axes servo ON

OK : Decides all axes servo OFF

0 : Servo ON  
1 : Servo OFF

OK : Decides servo ON

OK : Decides servo OFF