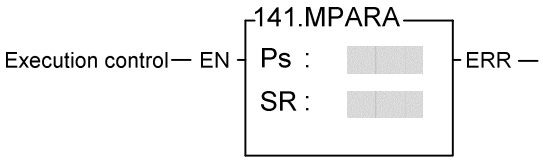
FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA

Ladder symbol



Ps: The set number of Pulse Output (0～3).

SR: Starting register for parameter table, it has totally 18 parameters which controlled by 24 registers.

Range / Operand	HR	DR	ROR	K
	R0 | R3839	D0 | D3999	R5000 | R8071	
Ps				0～3
SR	○	○	○	

Instruction explanation

1. This instruction is not necessary if the system default for parameter value is matching what users need. However, if it needs to open the parameter value to do dynamic modification, this instruction is required.
2. This instruction incorporates with FUN140 or FUN147 for positioning control purpose, each axis can have one FUN141 instruction only.
3. Whether the execution control input “EN” = 0 or 1, anyway, this instruction will be performed.
4. When there is error in parameter value, the output indication “ERR” will be ON, and the error code is appeared in the error code register.

Explanation for the parameter table:

SR =Starting register of parameter table, suppose it is R2000.

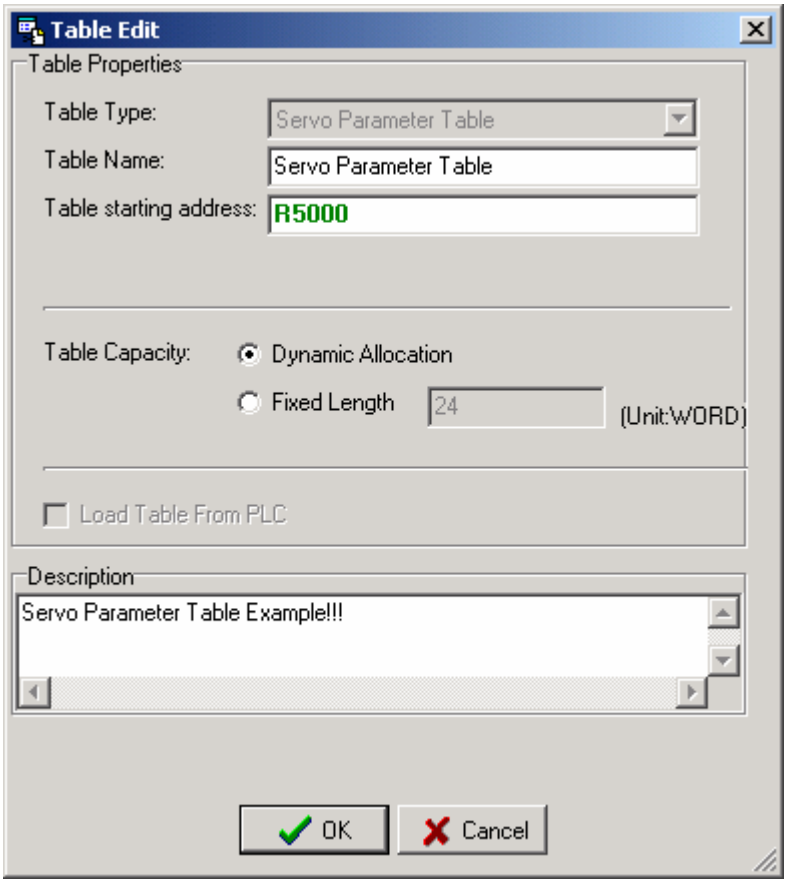
R2000 (SR+0)	0～2		Parameter 0	System default =1
R2001 (SR+1)	1～65535 Ps/Rev		Parameter 1	System default =2000
DR2002 (SR+2)	1～999999 μM/Rev 1～999999 mDeg/Rev 1～99999930.1 mInch/Rev		Parameter 2	System default =2000
R2004 (SR+4)	0～3		Parameter 3	System default =2
DR2005 (SR+5)	1～921600 Ps/Sec 1～153000		Parameter 4	System default =460000
DR2007 (SR+7)	0～921600 Ps/Sec 1～153000		Parameter 5	System default =141
R2009 (SR+9)	1～65535 Ps/Sec		Parameter 6	System default =1000
R2010 (SR+10)	0～32767		Parameter 7	System default =0
R2011 (SR+11)	0～30000		Parameter 8	System default =5000
R2012 (SR+12)	0～1	0～1	Parameter 9	System default =0100H
R2013 (SR+13)	-32768～32767		Parameter 10	System default =0
R2014 (SR+14)	-32768～32767		Parameter 11	System default =0
R2015 (SR+15)	0～30000		Parameter 12	System default =0
R2016 (SR+16)	0～30000		Parameter 13	System default =500
DR2017 (SR+17)	0～1999999		Parameter 14	System default =0
DR2019 (SR+19)	00H～FFH	00H～FFH	Parameter 15	System default =FFFFFFFFH
	00H～FFH	00H～FFH		
DR2021 (SR+21)	-999999～999999		Parameter 16	System default =0
R2023 (SR+23)	0～255		Parameter 17	System default =1

FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA

Editing Servo Parameter Table with WinProladder

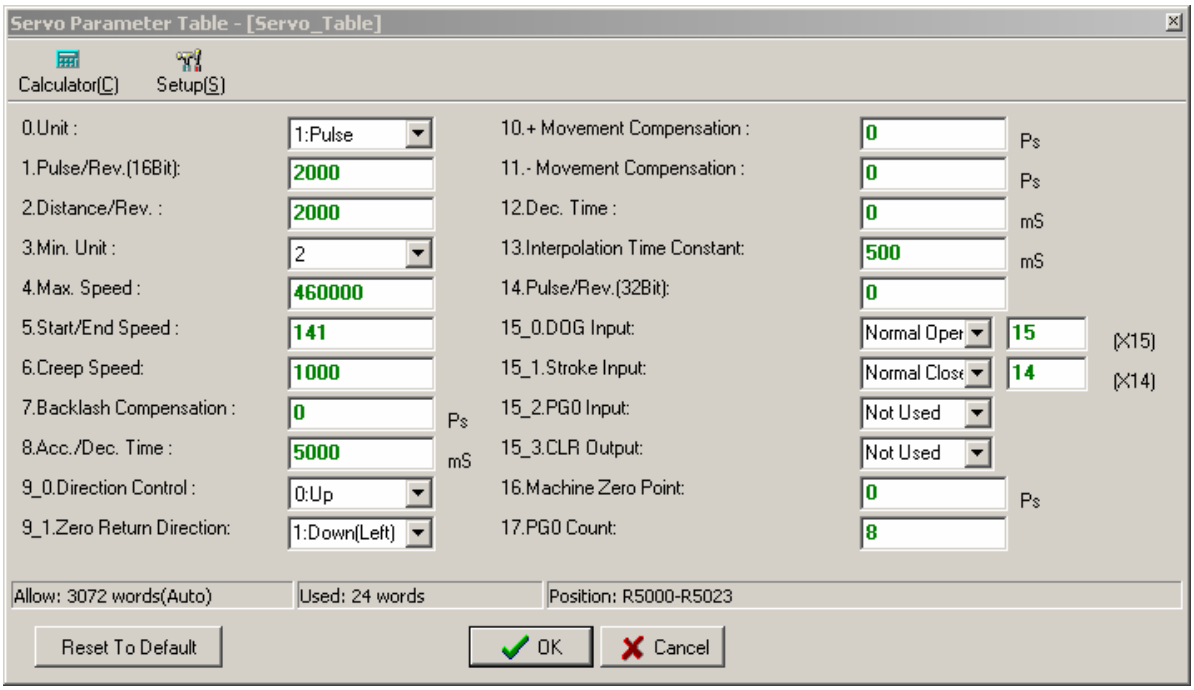
Click the “Servo Parameter Table” Item which in project windows :

Project name
└ Table Edit
└ Servo Parameter Table → Click right button and select “New Table”



- Table Type : It will be fixed to ” Servo Parameter Table ”.
- Table Name : For modify or debug, you can give a convenient name.
- Table Starting address : Enter the address which Starting register of Servo Parameter Table.

FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA



Explanation for the parameter:

- Parameter 0: The setting of unit, its default is 1.

  - When the setting value is 0, the moving stroke and speed setting in the positioning program will all be assigned with the unit of mm, Deg, Inch, so called machine unit.
  - When the setting value is 1, the moving stroke and speed setting in the positioning program will all be assigned with the unit of Pulse, so called motor unit.
  - When the setting value is 2, the moving stroke setting in the positioning program will all be assigned with the unit of mm, Deg, Inch, and the speed setting will all be assigned with the unit of Pulse/Sec, which is called as compound unit.

Parameter 0, unit setting	"0" machine unit	"1" motor unit	"2" compound unit
Parameter 1, 2	Must be set	No need to set	Must be set
Parameter 3, 7, 10, 11	mm，Deg，Inch	Ps	mm，Deg，Inch
Parameter 4,5,6,15,16	Cm/Min，Deg/Min，Inch/Min	Ps/Sec	Ps/Sec

- Parameter 1: Pulse count/1-revolution, its default is 2000, i.e. 2000 Ps/Rev.

  - The pulse counts needed to turn the motor for one revolution
    A= 1～65535 (for value greater than 32767, it is set with unsigned decimal) Ps/Rev
  - When Parameter 14 = 0, Parameter 1 is the setting for Pulse /Rev
  - When Parameter 14 ≠ 0, Parameter 14 is the setting for Pulse/Rev

- Parameter 2: Movement/1 revolution, its default is 2000, i.e. 2000 Ps/Rev.

  - The movement while motor turning for one revolution.
    B=1～999999 μM/Rev
    1～999999 mDeg/Rev
    1～999999×0.1 mInch/Rev

FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA

- Parameter 3: The resolution of moving stroke setting, its default is 2.

Parameter 0 / Parameter 3	Set value=0, machine unit; Set value=2, compound unit;			Set value=1 motor unit (Ps)
	mm	Deg	Inch	
Set value =0	×1	×1	×0.1	×1000
Set value =1	×0.1	×0.1	×0.01	×100
Set value =2	×0.01	×0.01	×0.001	×10
Set value =3	×0.001	×0.001	×0.0001	×1

- Parameter 4: The limited speed setting, its default is 460000, i.e. 460000 Ps/Sec.
  - Motor and compound unit: 1～921600 Ps/Sec.
  - Machine unit: 1～153000 (cm/Min, ×10 Deg/Min, Inch/Min).

    However, the limited frequency can't be greater than921600 Ps/Sec.

    $f_max = (V_max \times 1000 \times A) / (6 \times B) \leq 921600$ Ps/Sec

    $f_min \geq 1$ Ps/Sec

  Note: A = Parameter 1, B =Parameter 2.

- Parameter 5: Initiate/Stop speed, the default = 141.
  - Motor and compound unit: 1～921600 Ps/Sec.
  - Machine unit: 1～15300 (cm/Min, ×10 Deg/Min, Inch/Min).

    However, the limited frequency can't be greater than 921600 Ps/Sec.

- Parameter 6: Creep speed for machine zero return; the default is 1000.

  Motor and compound unit : 1～65535 Ps/Sec

  Machine unit : 1～15300 (Cm/Min, ×10 Deg/Min, Inch/Min)

- Parameter 7: Backlash compensation, the default =0. (Not used in linear interpolation instruction)
  - Setting range: 0～32767 Ps.
  - While backward traveling, the traveling distance will be added with this value automatically.

- Parameter 8: Acceleration/Deceleration time setting, (Not used in linear interpolation instruction)

  the default = 5000, and the unit is mS.
  - Setting range: 0～30000 mS.
  - The setting value represents the time required to accelerate from idle state up to limited speed state or decelerate from the limited speed state down to the idle state.
  - The acceleration/deceleration is constant slope depending on Parameter 4 / Parameter 8
  - When Parameter 12 = 0, Parameter 8 is the deceleration time
  - There will have the auto deceleration function for short stroke movement.

- Parameter 9: Rotation and zero return direction; the default is 0100H (Not used in linear interpolation mode)

	b15 b8	b7 b0
SR+12	Para 9-1	Para 9-0

FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA

• Parameter 9-0：Rotation direction setting; the default is 0
Setting value=0, the present value increases while in forward pulse output; the present value decreases while in backward pulse output
Setting value=1, the present value decreases while in forward pulse output; the present value increases while in backward pulse output

• Parameter 9-1：Zero return direction setting; the default is 1
Setting value=0, direction in which the present value increases.
Setting value=1, direction in which the present value decreases.

- Parameter 10: Forward movement compensation, the default = 0. (Not used in linear interpolation instruction)
  - Setting range: –32768～32767 Ps.
  - When it is in forward pulse output, it will automatically add with this value as the moving distance.
- Parameter 11: Backward movement compensation, the default =0. (Not used in linear interpolation instruction)
  - Setting range: –32768～32767 Ps.
  - When it is in backward pulse output, it will automatically add with this value as the moving distance.
- Parameter 12: Deceleration time setting, and the unit is mS. (default =0) (Not used in linear interpolation mode)
  - Setting range: 0～30000 mS.
  - When Parameter 12 = 0, Parameter 8 is the deceleration time
  - When Parameter 12 ≠ 0, Parameter 12 is the deceleration time
- Parameter 13: Interpolation time constant; the default is 500.
  - Setting range : 0～30000 mS
  - Set the time required to achieve the speed specified by the program. (The initiate speed is always regarded as “0”.)
  - This parameter is valid while interpolation control
- Parameter 14: Pulse count/1-revolution, the default = 0.
  - The pulse counts needed to turn the motor for one revolution
  - Setting range is 0～1999999
  - When Parameter 14 = 0, Parameter 1 is the setting for Pulse /Rev
  - When Parameter 14 ≠ 0, Parameter 14 is the setting for Pulse/Rev
- Parameter 15: I/O control interface for DRVZ; the default is FFFFFFFFH

	b15 b8	b7 b0
SR+19	Para 15-1	Para 15-0
SR+20	Para 15-3	Para 15-2

• Parameter 15-0：Setting of DOG input (SR+19),
it must be the input of the main unit
b6～b0 **:** Reference number of DOG input （0～15, it means X0～X15）
b7 = 0 **:** Contact A or Normal Open
= 1 **:** Contact B or Normal Close
b7～b0=FFH, Without DOG input

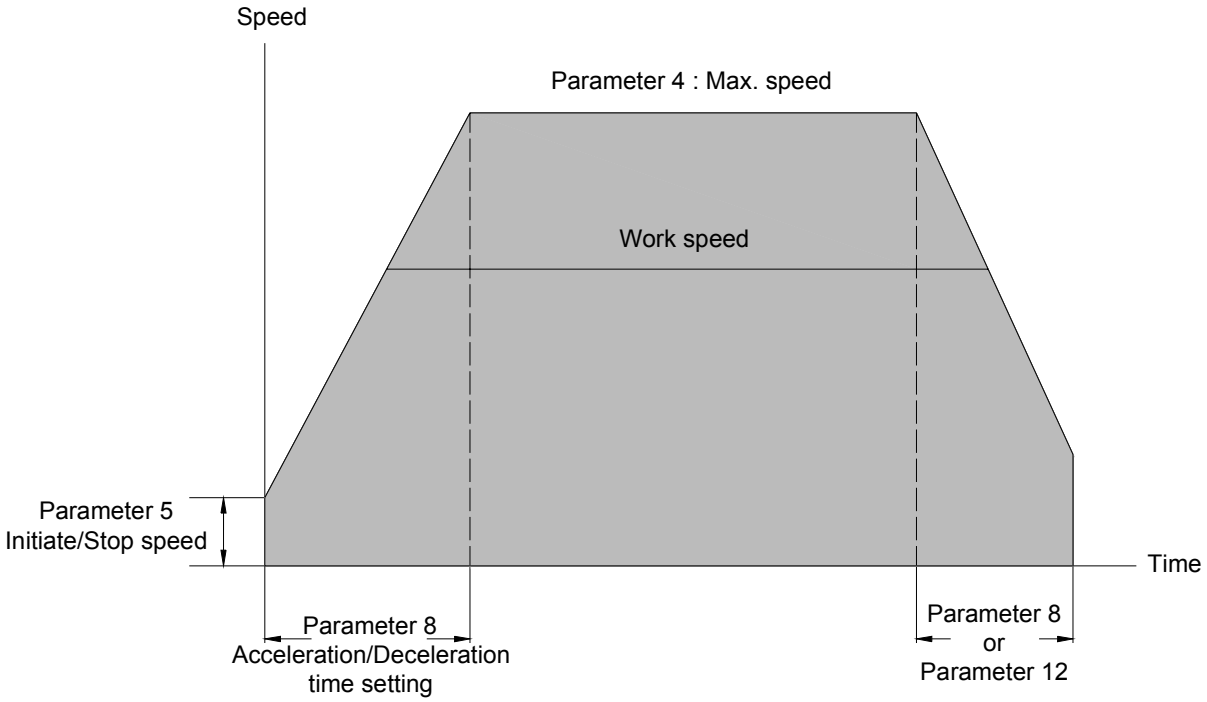
FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA

• Parameter 15-1：Setting of stroke limit input (SR+19)
b14～b8 **:** Reference number of limit input (0～125, it means X0～X125）
b15 = 0 **:** Contact A or Normal Open
= 1 **:** Contact B or Normal Close
b15～b8=FFH, Without limit input

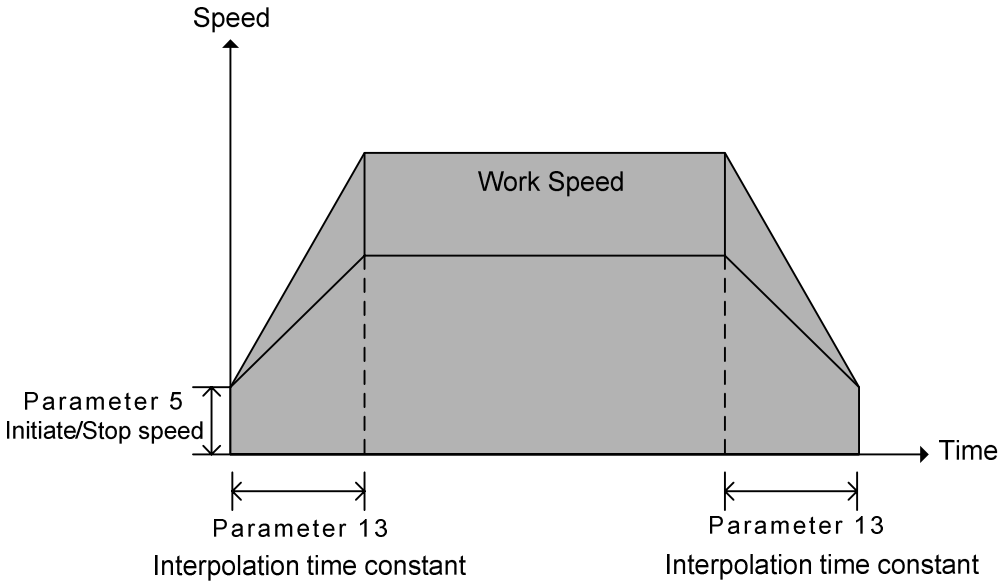
• Parameter 15-2：Setting of PG0 signal input (SR+20),
it must be the input of the main unit
b6～b0 **:** Reference number of PG0 input（0～15, it means X0～X15）
b7 = 0 **:** Start counting at front end of sensing DOG input
b7 = 1 **:** Start counting at rear end of sensing DOG input
b7～b0 = FFH, Without PG0 input

• Parameter 15-3：Setting of CLR signal output (SR+20),
it must be the output of the main unit
b15～b8 **:** Reference number of CLR output（0～23, it means Y0～Y23）
b15～b8=FFH, Without CLR output

- Parameter 16: Machine zero point address; the default is 0 Setting range : -999999～999999 Ps
- Parameter 17: Number of zero point signals (Sensing of PG0 input); the default is 1. Setting range : 0～255 Count



FUN 141 MPARA	Instruction of Parameter Setting for Positioning Program	FUN 141 MPARA



※ The parameter 13 of the axis with longest movement is used for acceleration and deceleration control for linear interpolation if each axis owns its own motion parameter table

※ Using the same motion parameter table (through FUN141 and give the same starting address of SR operand for each axis) for the simultaneous linear interpolation axes, it is the best way for multi-axis linear interpolation motion control