FANUC

GE Fanuc Automation

Computer Numerical Control Products

Series 0 / 00 / 0-Mate for Machining Center

Parameter Manual

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Warnings, Cautions, and Notes as Used in this Publication

Warning

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note

Notes merely call attention to information that is especially significant to understanding and operating the equipment.

This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Fanuc Automation assumes no obligation of notice to holders of this document with respect to changes subsequently made.

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Applicable models

The models covered by this manual, and their abbreviations are:

Product Name	Abbreviations	
FANUC Series O-MC	O-MC	Series 0
FANUC Series 0-MF	0-MF	
FANUC Series 0-GSC	0-GSC	
FANUC Series 00-MC	00-MC	Series 00
FANUC Series OO-GSC	00-GSC	
FANUC Series O-Mate MC	O-Mate MC	Series O-Mate
FANUC Series O-Mate MF	O-Mate MF	

Related manuals

The table below lists manuals related to the Series O/00/0-Mate. In the table, this manual is marked with an asterisk (*).

Table 1 Manuals Related to the FANUC Series 0/00/0–Mate

Manual name	Specification Number	
FANUC Series O/00/0-Mate DESCRIPTIONS	B-61 392E	
FANUC Series O/00/0-Mate CONNECTION MANUAL	B-61 393E	
FANUC Series O/00/0-Mate FOR LATHE OPERATOR'S MANUAL	B-61 394E	
FANUC Series O/00/0-Mate FOR MACHINING CENTER OPERATOR'S MANUAL	B-61 404E	
FANUC Series 0/00/0–Mate MAINTENANCE MANUAL	B-61 395E	
FANUC Series O/00/0-Mate OPERATION AND MAINTENANCE HANDBOOK	B-61 397E	
FANUC Series O/00/0-Mate FOR LATHE PARAMETER MANUAL	B-61 400E	
FANUC Series O/00/0-Mate FOR MACHINING CENTER PARAMETER MANUAL	B–61410E	*
GRAPHIC CONVERSATION A FOR LATHE (Series 0-TF, Series 0-TC) OPERATOR'S MANUAL	B-61 424E	
GRAPHIC CONVERSATION B/C FOR LATHE (Series 0-TF, Series 0-TC) OPERATOR'S MANUAL	B–61424E–1	
GRAPHICS CONVERSATION FOR MACHINING CENTER (Series O-MC, Series 0-MF, Series O-Mate MF) OPERATOR'S MANUAL	B-61 434E	
FANUC PMC-MODEL K/L/M/P PROGRAMMING MANUAL (LADDER LANGUAGE)	B-551 93E	
FANUC Series O/O-Mate PROGRAMMING MANUAL (Macro Compiler/Macro Executer)	B-61 393E–1	

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FUNCTION PARAMETERS (FOR MACHINING SERIES)

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NOTES

(1) A bit parameter has two meanings, each described on the left and right of |. The meaning on the left applies when the bit is set to 0 and the meaning on the right applies when it is set to 1.
(Example) The current value is O/l.
(2) For details, refer to "Description of Parameters".

(1) Setting parameters (1/1)

No.	Symbol	Description
0000	REVX, Y, 4	The mirror image of each axis is disabled/enabled.
0000	TVON	When a program is registered, a TV check is not executed/is executed.
0000	ISO	The code system used to output a program is EIA/ISO.
0000	INCH	The least input increment (input unit) of a program is one millimeter/one inch.
0000	I/O	Input/output unit on the reader/punch interface
0000	ABS	In the MDI mode, commands are specified with incremental values/absolute values.
0000	SEQ	Sequence numbers are not automatically inserted/are automatically inserted.
0000	PWE	Parameters cannot be written/can be written.
0000	TAPEF	The tape format is not converted/is converted.
0000	PRGNO	Number of the program to be stopped when the specified sequence number is found
0000	SEQNO	Number of the sequence to be stopped when it is found3

(2) Parameters related to the reader/punch interface and remote buffer (I/I)

No.	Symbol	Description
0002#0 0012#0 0050#0 0051 #0	STP2 STP2 STP2 STP2	(I/O=0) The stop bit is 1/2. (I/O=1) (I/O=2) (I/O=3)
0002#2 0012#0	ASR33 ASR33	(I/O=0) FANUC PPR etc./20–mA current interface (I/O=1)
0002#3 0012#3 0050#3 0051#3	RSASCI RSASCI RSASCI RSASCI	(I/O=0) The input/output code is ISO or EIA/ASCII. (I/O= 1) (I/O=2) (I/0=3)
0002#7 0012#7 0050#7 0051#7	NFED NFED NFED NFED	(I/O=0) Beforehand and afterwards, a feed character is output/is not output. (I/O=1) (I/O=2) (I/O=3)
0015#5	PRWD	The rewind signal is not output/is output to the portable tape reader.
0018#6	TVC	In the comment section of a program, a TV check is not executed/is executed.
0038#1, #2 0038#4, #5 0038#6, #7	***, *** ***, *** ***, ***	(I/O=3) Setting the input/output unit (I/O=2) (I/O=0, I)
0051 #1	PARTY	(I/O=3) A parity bit is provided/is not provided.
0051#2	SYNAK	With protocol B, the output of the SYN and NAK codes is not controlled/is controlled.
0051#4	NCKCD	On the remote buffer interface, the CD (signal quality detection) status is monitored/is not monitored.
0051#5	ECKL	The baud rate clock of the remote buffer is an internal clock/external clock.
0055#0	ASCII	Communication of all data except NC data is executed in ISO code/ASCII code.
0055#1	ETX	The end code is CR/ETX.
0055#2	PROTCA	Communication protocol B/A
0055#3	RS42	The remote buffer interface is RS–232C/RS–422.
0055#7	RMSTS	If the remote buffer interface is used with protocol A, the status of the remote buffer in the SAT message is always returned without specification (= O)/host's request for switching the SET message is unconditionally returned.
0070#7	ICR	If data is output in ISO code, the EOB code is LF, CR, or CR/LF.
0075#7	IONUL	If a null character is detected while EIA codes are read, an alarm does not occur/occurs.
0076#5	PRWD	On reader/punch interface 2, rewinding is not executed/is executed.
0391#6	RS23BN	On the RS-232C interface, the DC code is used/is not used.
0396#0	NCKER	The ER (RS-232C) or TR (RS–422) signal is checked/is not checked.
0396#2	BCC	The BCC value is checked/is not checked.
0396#3	ERCODE	A 4–digit hexadecimal error code is not appended to a negative acknowledgement/is appended to a negative acknowledgement.
0399#6	FEDNUL	A feed character in a significant information section is output as a space character/null character.
0250 0251 0552 0553	- - - - - - – – – – – – – – – – – – – – – – – –	(I/O=2) Baud rate (I/0=3) (I/O=0) (I/O=1)

(3) Parameters related to controlled axes and the increment system (I/I)

No.	Symbol	Description
0001 #0 7001 #0	SCW SCWS	The least command increment (output unit) for a linear axis is one millimeter/inch.
0003#0 to #3 0066#4, #5 7003#0, #1	ZM*	(X to 4) The direction of a reference position return and initial direction are positive/ negative. (7, 8) (5, 6)
0008#2 to #4 0280 0285, 0286 7130, 7131	ADW* ------ - - - - - - - - - - - -	(4) Axis name (4) (7, 8) (5, 6)
0011#2 0062#4, #5 7032#0, #1	ADLN ADLIN* ROT*	(4) Rotation axis/linear axis (7, 8) Rotation axis/linear axis (5, 6) Linear axis/rotation axis
0024#1	LII10	The input/output unit is IS-B/IS-A.
0049#4	S3JOG	The number of axes that can be simultaneously controlled in manual operation is one/ up to three.
0057#3	MIC	If a decimal point is omitted, the least input increment is not multiplied/is multiplied by ten.
0062#7	C8NG	The eighth axis is enabled/disabled.
0066#1	NBD78	If there are more servo axes than controlled axes, the single-axis extension function for the controlled axis is disabled/enabled.
0074#0 to #3	CRF*	If a reference position return is not made and a movement command other than G28 is specified, an alarm does not occur/occurs.
0076#1	JZRN	The function for setting the reference position without dogs is disabled/enabled.
0391 #0 to #5	JZRN*	The function for setting the reference position without dogs is enabled/disabled.
0398#1	ROAX	The roll-over function is disabled/enabled.
0398#2	RODRC	The direction of rotation specified in ABS mode is determined so that the distance of rotation is minimized/determined according to the sign of the specified value.
0398#3	ROCNT	Relative coordinates which are not multiples of the travel distance per rotation are not rounded/are rounded.
0399#7	OUTZRN	If the remaining travel distance or active miscellaneous function is found at a manual return to the reference position, an alarm occurs/does not occur.
0269 to 0274	------	Number of a servo axis
0279	------	Attribute of the fourth axis
7032#7	ROT1 OS	If inch output is specified for the fifth or sixth axis, the unit of parameters related to feedrate is 0.1 deg/min/1deg/min.

(4) Parameters related to coordinate systems (I/I)

No.	Symbol	Description
0010#7 7010#7	APRS APRSS	At a manual reference position return, automatic coordinate system setting is not executed/is executed.
0024#6	CLCL	At a manual reference position return, the local coordinate system is not canceled/is canceled.
0028#5	EX10D	When an external workpiece coordinate system shift is executed, the offset value is the input value/ten-times the input value.
0708 to 0711 0815 to 0818 0825, 0826 7708, 7709	------ ------ ------ ------ (5, 6)	(X to 4) Coordinates of the reference position for automatic coordinate system setting (X to 4) (7, 8)
0735 to 0738 0866, 0867	------ ------ (7, 8)	(X to 4) Distance from the first reference position to the second reference position
0751 to 0754	------	Offset from the external workpiece reference point on each axis
0755 to 0758	------	Offset from the first workpiece reference point on each axis (G54)
0759 to 0762	------	Offset from the second workpiece reference point on each axis (G55)
0763 to 0766	------	Offset from the third workpiece reference point on each axis (G56)
0767 to 0770	------	Offset from the fourth workpiece reference point on each axis (G57)
0771 to 0774	------	Offset from the fifth workpiece reference point on each axis (G58)
0775 to 0778	------	Offset from the sixth workpiece reference point on each axis (G59)
0780 to 0783 0868 to 0869	------ ------ (7, 8)	(X to 4) Distance from the first reference position to the third reference position
0784 to 0787 0870, 0871	------ ------ (7, 8)	(X to 4) Distance from the first reference position to the fourth reference position
0860	------	Travel distance per revolution about the rotation axis
7717	------	Machine coordinate system when the fifth or sixth axis is a rotation axis

(5) Parameters related to the stroke limit (I/I)

No.	Symbol	Description
0008#6	OTZN	A Z-axis stored stroke check is executed/is not executed.
0015#4	LM2	The signal for switching the second stored stroke limit is disabled/enabled.
0024#4	INOUT	The inhibited area of the third stored stroke limit is the inside/outside.
0057#5	HOT3	The hardware OT signals ∗+LX to ∗–LZ (X020, #0 to #5) are disabled/enabled.
0065#3	PSOT	Before a reference position return is made, the stored stroke limit is checked/is not checked.
0076#7	OTRFOM	An alarm occurs after the stroke limit is exceeded/before the stroke limit is exceeded.
0380#7	MTCHK	Upon power-on, shift of the machine position is not checked/is checked.
0700 to 0703 0821, 0822 7700, 7701	–––––– –––––– ––––––	(X to 4) First stored stroke limit in the positive direction on each axis (7, 8) (5, 6)
0704 to 0707 0823, 0824 7704, 7705	–––––– –––––– ––––––	(X to 4) First stored stroke limit in the negative direction on each axis (7, 8) (5, 6)
0743 to 0746	––––––	Second stored stroke limit in the positive direction on each axis
0747 to 0750	––––––	Second stored stroke limit in the negative direction on each axis
0804 to 0806	––––––	Third stored stroke limit in the positive direction on each axis
0807 to 0809	––––––	Third stored stroke limit in the negative direction on each axis
0988 to 0993 7721, 7722	––––––	(1 to 4, 7, 8) Maximum allowable machine position shift for each axis (5, 6)
0994 to 0999 7723, 7724	––––––	(1 to 4, 7, 8) Machine position prior to power-off for each axis (5, 6)

(6) Parameters related to the feedrate (1/2)

No.	Symbol	Description
0001#6 7001#6	RDRN RDRNS	For the rapid traverse command, a dry run is disabled/enabled.
0008#5	ROVE	The rapid traverse override signal ROV2 (G117, #7) is enabled/disabled.
001 0#0	ISOT	When a reference position is not established, manual rapid traverse is disabled/enabled.
0011#3	ADNW	Feedrate specification A/B
0015#3	SKPF	With G31, a dry run, override, or automatic acceleration/deceleration is disabled/enabled.
0049#6	NPRV	When a position coder is not used, the command of feed per rotation is disabled/enabled.
0049#7	FML10	The unit of parameters in which the rapid traverse rate and cutting feedrate are specified is not multiplied/is multiplied by ten.
0059#0 to #2	EDP∗	Of the commands specifying feed in the positive direction on each axis, external deceleration is valid for rapid traverse only/for both rapid traverse and cutting feed.
0059#3 to #5	EDM∗	Of the commands specifying feed in the negative direction on each axis, external deceleration is valid for rapid traverse only/for both rapid traverse and cutting feed.
0393#1	COVOUT	The function for changing the speed of outer arc machining is disable/enabled.

(6) Parameters related to the feedrate (2/2)

No.	Symbol	Description
0393#4	HLCLMP	In helical interpolation, the feedrate is not clamped/is clamped to the maximum cutting feedrate.
0393#5	STOVO	If the cutting feedrate override is 0% in rapid traverse, a stop does not occur/occurs.
0397#2	OVR255	The signal of feedrate override in 1% steps is disable/enabled.
0213	------	Minimum deceleration ratio for the speed of inner arc machining by automatic corner override (MDR)
0214	------	Amount of automatic override for the inside of a corner
0215	------	Inside angle for determining whether to use automatic override for the inside of a corner
0216	------	Feedrate change corresponding to a graduation on the manual pulse generator when the F command is specified with one digit
0482	------	Feedrate after acceleration/deceleration for automatic corner deceleration
0483	------	Difference between feedrates of two blocks, for each axis, for automatic corner deceleration
0487	------	Feedrate after acceleration/deceleration for automatic corner deceleration (for look-ahead control)
0495	------	Maximum feedrate with standard arc radius
0496	------	Minimum feedrate with standard arc radius
0518, 7518, 7519, 0643, 0644 to 0521	------ ------ ------	(X to 4) Rapid traverse feedrate for each axis
0527	------	Maximum cutting feedrate
0530 7530	------	(X to 4) FL speed in exponential acceleration/deceleration of cutting feed (5, 6)
0533 7533	------	(X to 4) FO speed of rapid traverse override (5, 6)
0534 7534	------ -i----	(X to 4) FL speed at a reference position return
0548	------	FL speed in exponential acceleration/deceleration of manual feed
0549	------	(Cutting feedrate in the automatic mode at power-on
0559 to 0562	------	Jog rapid traverse rate for each axis
0565, 0566	------	Jog feedrate when the rotary switch is set to position 10
0567	------	Maximum cutting feedrate with feedrate specification B
0568	------	FO speed of rapid traverse override on an additional axis with feedrate specification B
0569	------	FL speed at a reference position return on an additional axis with feedrate specification B
0538, 0584	------	Maximum feedrate by the F command specified with one digit
0580	------	Start distance (Le) for inner corner automatic override
0581	------	End distance (Ls) for inner corner automatic override
0605 to 0608	------	FL speed of exponential acceleration/deceleration for manual feed on each axis
0636	------	External deceleration speed
0684	------	Feedrate with which the error detect function assumes that deceleration is completed
0788 to 0796	- - - - - -	Feedrate corresponding to the F command specified with one digit
0878	------	FL speed for exponential acceleration/deceleration of cutting feed (for look-ahead control)

(7) Parameters related to acceleration/deceleration control (1/2)

No.	Symbol	Description
0020#5	NCIPS	A position check is executed/is not executed.
0045#3	LSUP	For cutting feed, exponential acceleration/deceleration is executed/linear acceleration/deceleration after interpolation is executed.
0045#4	CCINP	The in-position width for cutting feed is specified with the same parameters as those used for rapid traverse (No. 0500 to 0503)/with different parameters (No. 0609 to 0612).
0048#4	SMZCT	Rapid traverse block overlap is disabled/enabled.
0076#0	ERDT	The error detect function is disable/enabled.
0393#0	FERDT	Automatic corner deceleration is disabled/enabled.
0395#3	CHEAFD	For automatic corner deceleration, control based on the feedrate difference is disabled/enabled.
0395#6	FWBTYP	Linear acceleration/deceleration prior to interpolation is type A/type B.
0399#2	RPDFF	Feed forward control is applied only to cutting feed/applied to both cutting feed and rapid traverse.
0399#4	CINPS	For feed-type-based in-position check (CCINP: bit 4 of parameter 0045), the in-position width for cutting feed is specified using parameters other than those for rapid traverse, only when the next block also specifies cutting feed/regardless of the type of feed specified in the next block.
0379	------	Feedrate ratio at which the next block is started for block overlap
0480	------	Parameter 1 for setting the acceleration for linear acceleration/deceleration prior to interpolation
0481	------	Parameter 2 for setting the acceleration for linear acceleration/deceleration prior to interpolation
0482	------	Feedrate after acceleration/deceleration for automatic corner deceleration
0483	------	Difference between feedrates of two blocks, for each axis, for automatic corner deceleration
0485	------	Parameter 1 for setting the acceleration for linear acceleration/deceleration prior to interpolation (for look-ahead control)
0486	------	Parameter 2 for setting the acceleration for linear acceleration/deceleration prior to interpolation (for look-ahead control)
0522 to 0525 0645, 0646 7522, 7523	------ ------ ------	(X to 4) Time constant of linear acceleration/deceleration in rapid traverse on each axis (7, 8) (5, 6)
0529 7529	------ ------	Time constant of exponential acceleration/deceleration in cutting feed or manual feed (5, 6)
0601 to 0604	------	(X to 4) Time constant of exponential acceleration/deceleration in manual feed on each axis
0635	------	Time constant of linear acceleration/deceleration after interpolation in cutting feed
0651 to 0656 7651, 7652	------ ------ (5, 6)	(X to 8) Time constant of exponential acceleration/deceleration in cutting feed on a PMC axis
0863	------	Standard arc radius for feedrate clamp according to arc radius
0864	------	Critical angle between two blocks for automatic corner deceleration (for look-ahead control)

7) Parameters related to acceleration/deceleration control (2/2)

No.	Symbol	Description
0865	------	Critical angle between two blocks for automatic corner deceleration
0877	- - - - - -	Time constant for exponential acceleration/deceleration of cutting feed (for look-ahead control)
0879	------	Time constant for linear acceleration/deceleration after interpolation of cutting feed (for look-ahead control)
0952 to 0955	------	(X to 4th) Time constant T2 for rapid traverse bell-shaped acceleration/deceleration for each axis

(8) Parameters related to servo motors (1/2)

No.	Symbol	Description
0004 to 0007	GRD*	(X to 4) Capacity of the reference counter of each axis
0067, 0068	GRD*	(7, 8)
0570 to 0575	- - - - - -	(X to 8)
7004, 7005	DMR*	(5, 6)
7570, 7571	- - - - - -	(5, 6)
0004 to 0007	DMR*	(X to 4) Detection multiplication of each axis (DMR)
0067, 0068	DMR*	(7, 8)
7004, 7005	DMR*	(5, 6)
0010#2	OFFVY	If VRDY is set to 1 before PRDY is set to 1, an alarm occurs/does not occur.
7010#2	OFFWS	
0021 #0 to #5	APC*	(X to 8) For each axis, an absolute-position detector is not used/is used.
7021#0, #1	APC*	(5, 6)
0021#6	NOFLUP	At power-on before the reference position is established by the absolute-position detector, a follow-up is executed/is not executed.
0022#0 to #5	ABS*	(X to 8) The reference position has not yet been established/has already been established by the absolute-position detector.
7022#0, #1	ABS*	(5, 6)
0035#7	ACMR	(X to 8) An optional CMR is not used/is used.
7035#7	ACMRS	(5, 6)
0037#0 to #5	SPTP*	(X to 8) As a position detector, a separate pulse coder is not used/is used.
7037#0, #1	SPTP*	(5, 6)
0037#7	PLCO1	(X to 8) A high-resolution pulse coder is not used/is used.
7037#7	PLCO1S	(5, 6)
0047#0 to #5	ZSSTP*	(1 to 4, 7, 8) The single-revolution signal for the servo motor is input from the built-in pulse coder interface/separate pulse coder interface.
0076#4	ADBLS	Cutting feed and rapid traverse separate backlash is disabled/enabled.
0390#0 to #5	NREQ*	If an absolute pulse coder is used for each axis and the zero point is not established before power-on, an alarm requesting a return to the reference position occur/does not occurs.
0399#3	SFDEC	The reference position shift function is disabled/enabled.
0399#5	FUNO	If a servo alarm is detected by the CNC, a follow-up is executed/is not executed.
0100 to 0103	------	(X to 4) Command multiplication of each axis (CMR)
0275, 0276	- - - - - -	(7, 8)
7100, 7101	- - - - - -	(5, 6)

(8) Parameters related to servo motors (2/2)

No.	Symbol	Description
0265	------	Time interval for leveling the current value display on the servo adjustment screen
0405	------	Maximum position deviation for which manual reference position return is assumed to be possible
0452 to 0457	------	(X to 8 3RD WORD) Count at the zero point of the APC
0739 too742	- - - - - -	(X to 4 LOWER 2 WORD)
0827, 0828	- - - - - -	(7, 8 LOWER 2 WORD)
7580, 7581	------	(5, 6 3RD WORD)
7739, 7740	- - - - - -	(5, 6 LOWER2 WORD)
0500 to 0503	------	(X to 4) Effective area on each axis
0637, 0638	- - - - - -	(7, 8)
7500, 7501	- - - - - -	(5, 6)
0504, 0507	- - - - - -	(X to 4) Limit on position error for each axis during traveling
0639, 0640	- - - - - -	(7, 8)
7504, 7505	- - - - - -	(5, 6)
0507 to 0511	------	(X to 4) Grid shift amount for each axis
0641, 0642	- - - - - -	(7, 8)
7508, 7509	- - - - - -	(5, 6)
0512 to 0515	------	(X to 4) Loop gain of position control for each axis
0632, 0633	- - - - - -	(7, 8)
0517	------	(X to 4) Loop gain of position control common to all axes
7517	------	(5, 6)
0535 to 0538	- - - - - -	(X to 4) Backlash compensation for each axis
0647, 0648	- - - - - -	(7, 8)
7535, 7536	- - - - - -	(5, 6)
0593 to 0596	- - - - - -	(X to 4) Limit on position error for each axis during a stop
0649, 0650	- - - - - -	(71 8)
7593, 7594	- - - - - -	(5, 6)
0609 to 0612	------	(X to 4th) In-position width for cutting feed for each axis
0956	------	Distance between the position at which the deceleration dog is turned off and the first grid point

(9) Parameters related to DI/DO (1/1)

No.	Symbol	Description
0001#2	DCS	The START key on the MDI panel is connected through the machine/is not connected through the machine.
0001#5 7001#5	DECI DECIS	(X to 4) At a reference position return, deceleration occurs when the deceleration signal is set to 0/1. (5, 6)
0003#4 7003#4	OVRI OVRIS	(X to 4) Acceleration occurs when the override signal or rapid traverse override signal is set to 0/1. (5, 6)
0008#7	EILK	Interlock occurs on all axes or Z-axis only/on an individual axis.
0009#0 to #3 7009#0 to #3	TFIN TFIN	(X to 4) Time period in which the signal (FIN, bit 3 of G120) indicating that the miscellaneous function, spindle-speed function, or tool function has been completed is accepted (5, 6)
0009#4 to #7 7009#4 to #7	TMF TMF	(X to 4) Period up to the time when the signal indicating that the code of the miscellaneous function, spindle-speed function, or tool function is read is sent (5, 6)
0012#1	ZILK	Interlock occurs on all axes/Z-axis only.
0015#2	RIKL	The high-speed interlock signal *RILK (X008, #5) is disabled/enabled.,
0019#1	C4NG	The signal to ignore the fourth axis 4NG (X004, #7) is disabled/enabled.
0020#4	BCD3	For the B code, six digits/three digits are output.
0045#2	RWDOUT	The rewind signal RWD (F164, #6) is output only when the tape reader is rewinding/is output while a program in memory is rewound.
0045#7	HSIF	For processing the M, S, T, and B codes, the standard interface is used/the high–speed interface is used.
0049#0	DILK	The signal for separate interlock in the direction of each axis is disabled/enabled.
0049#1	RDIK	The high-speed interlock signal is always enabled/is disabled when the signal for separate interlock in the direction of each axis is set to 1.
0070#4	DSTBGE	When output is started in background editing, the signal for starting manual data input DST (F150, #5) is not output/is output.
0252	------	Extension time for the reset signal

(10) Parameters related to the CRT/MDI, display, and editing (1/4)

No.	Symbol	Description
0001 #1	PROD	In the relative coordinate display, tool length compensation is included/is not included.
0001#4	IOF	An offset value is input from the MID panel in the ABS mode/INC mode.
0002#1 7002#1	PPD PPDS	Coordinate system setting does not cause relative coordinates to be pre-set/causes relative coordinates to be pre-set.
001 0#1	EBCL	When a program in memory is displayed, the EOB code is displayed as ;/*.
0010#3	EXOPE	Operating monitor display is not expanded/is expanded.
0011#7	MCINP	By MINP (G120, #0), a program is not registered/is registered in memory.
0013#4	INHMN	Menus are displayed/are not displayed.
0015#0	CBLNK	The cursor blinks/does not blink.

(10) Parameters related to the CRT/MDI, display, and editing (2/4)

No.	Symbol	Description
0015#1	NWCH	The amount of tool wear compensation is displayed with a character W/without a character W.
0015#6	REP	If a program registered from the reader/punch interface has the same number as another program registered in memory, an alarm occurs/the program is replaced.
0018#5	PROAD	In the absolute coordinate display, tool length compensation is included/is not included.
0018#7	EDITB	With the standard keyboard, editing A is executed/editing B is executed.
0019#6	NEOP	M02, M30, or M99 terminates program registration/does not terminate program registration.
0019#7	DBCD	On the diagnostic screen, the data of a timer counter is displayed in binary/decimal.
0023#0 to #6	****	Setting of the language to be used on the display
0028#0	PRCPOS	On the program check screen, relative coordinates are displayed/absolute coordinates are displayed.
0028#2	DACTF	The actual speed is not displayed/is displayed.
0028#3	MMDL	In MDI operation B, the modal status is not displayed/is displayed.
0029#6	DSPSUB	On the absolute or relative position display screen, the fifth or sixth axis is not displayed/is displayed.
0030#4	LCD	The display unit is a CRT/LCD.
0032#2	TYPE1	The master printed circuit board is a normal master printed circuit board/high-speed master printed circuit board (type 1).
0032#3	TYPE2	The master printed circuit board is a normal master printed circuit board/high-speed master printed circuit board (type 2).
0032#7	NORMAL	The high-speed master printed circuit board is used as a high-speed master printed circuit board/as a normal master printed circuit board.
0035#0 to #3	NDSP*	The current position on each axis is displayed/is not displayed.
0038#3	FLKY	With the CRT or MDI, a standard keypad is used/full keypad is used.
0040#0	NAMPR	On the program directory screen, program names are not displayed/are displayed.
0040#4	SORT	On the program directory screen, programs are arranged in the order in which they are registered/in the ascending order of program numbers.
0045#0	RDL	Under I/O unit external control, reading depends on the REP bit (bit 6 of parameter 0015)/a program is registered after all programs are deleted.
0045#1	RAL	Reading on the reader/punch interface causes all programs to be registered/only the first program to be registered.
0046#4	BGREL	When the amount of part program storage is 120 or 320 m, deleting a program as part of background editing does not releases the part program storage area used by that program/release the area.
0048#1	DAC	In absolute coordinate display, displayed positions are actual positions that consider cutter compensation/programmed positions that ignore cutter compensation.
0048#2	DRC	In relative coordinate display, displayed positions are actual positions that consider cutter compensation/programmed positions that ignore cutter compensation.
0048#5	ATREV	On the LCD, ladder dynamic display ON/OFF is indicated by varying the display intensity/by using normal and reverse video display.
0048#7	SFFDSP	The soft-key display and control depend on the configuration of additional functions/ are executed regardless of additional functions.

(IO) Parameters related to the CRT/MDI, display, and editing (3/4)

No.	Symbol	Description
0050#1	NOFMK	When a sequence number is searched for, the format is checked/is not checked.
0056#0	NOCND	When the length of part program storage is 120 or 320 m, or if the background editing function is provided, memory is automatically compressed/is not automatically compressed.
0057#0	PWNNC	At power-n, the MMC screen is displayed/CNC screen is displayed.
0057#1	ALMNC	If an alarm occurs in the CNC while the MMC screen is displayed, the MMC screen is displayed/CNC screen is displayed.
0057#2	SALNC	If a system alarm occurs in the CNC while the MMC screen is displayed, the MMC screen is displayed/CNC screen is displayed.
0060#0	DADRDP	On the diagnostic screen, addresses are not displayed/are displayed.
0060#2	LDDSPG	Dynamic ladder display is not executed/is executed.
0060#3	Cl 4DGN	When a 14–inch CRT is used, the diagnostic screen of the 9-inch format is displayed/l 4-inch format is displayed.
0060#5	OPMNDP	Operating monitor display is invalid/valid.
0060#6	EXTSP	The function to search for or display a protected program is disabled/enabled.
0060#7	IGNCOL	On a 9–inch high-resolution CRT, monochrome screens are displayed/color screens are displayed.
0061#6	DSP78	In absolute and relative coordinates on the current position display, the coordinate on the seventh or eighth axis is not included/is included.
0063#0	MTDSPI	Machine coordinates are not displayed according to the input system/are displayed according to the input system.
0063#1	PRSTIN	Automatic coordinate system setting in the inch input mode is specified in parameter 0708 and subsequent parameters/in parameter 0815 and subsequent parameters.
0064#0	SETREL	Pre-setting relative coordinates causes clearing to zero/optional values to be used.
0064#1	ALLPRE	For pre-setting relative coordinates, the standard specification is selected/axes are selected by numeric keys.
0064#3	COMDGN	On the diagnostic screen, DI/DO of the I/O Link and an extended R/D area are not displayed/are displayed.
0064#5	NPA	If an alarm occurs or an operator message is input, the alarm or message screen is displayed instead/is not displayed.
0066#0	ALL56	On the complete current position screen, the fifth or six axis is not displayed/is displayed.
0076#2	IOP	Input or output of an NC program can be stopped by an NC reset/only by pressing the [STOP] soft key.
0077#2	SGD	Servo waveform display is invalid/valid.
0077#6	HLKEY	The MDI keys are not processed in the high-speed mode/are processed in the high–speed mode.
0078#0	NOINOW	The amount of tool wear compensation can be input with the MDI keys/cannot be input with the MDI keys.
0078#1	NOINOG	The amount of tool geometry compensation can be input with the MDI keys/cannot be input with the MDI keys.
0078#2	NOINMV	A macro variable can be input with the MDI keys/cannot be input with the MDI keys.
0078#3	NOINWZ	An offset from the workpiece reference point can be input with the MDI keys/cannot be input with the MDI keys.

(IO) Parameters related to the CRT/MDI, display, and editing (4/4)

No.	Symbol	Description
0380#0	KEYOW	The wear offset protection state is based on bit 0 (NOINOW) of parameter No. 0078/program protection signal KEY <G122#3>.
0380#1	KEYOG	The geometry offset protection state is based on bit 1 (NOINOG) of parameter No. 0078/program protection signal KEY <G122#3>.
0380#2	KEYMV	The macro variable protection state is based on bit 2 (NOINMV) of parameter No. 0078/program protection signal KEY <G122#3>.
0380#3	KEYWZ	The workpiece origin offset protection state is based on bit 3 (NOINWZ) of parameter No. 0078/program protection signal KEY <G122#3>.
0380#4	KEYPR	The parameter protection state is based on setting parameter PWE/program protection signal KEY <G122#3>.
0389#0	SRVSET	The servo setting screen is displayed/is not displayed.
0389#1	SPPRM	The spindle adjustment screen is not displayed/is displayed.
0393#2	WKNMDI	If the automatic operation is started or halted, an offset from the workpiece reference point can be input with the MDI keys/cannot be input with the MDI keys.
0393#7	DGNWEB	If PWE is set to 0, a PMC parameter cannot be input/can be input.
0395#1	TLSCUR	On the offset screen, the cursor position is not retained/is retained.
0397#7	SERNAI	The contents of alarm 409 are not displayed/are displayed.
0398#0	WKINC	With the MDI keys, an offset from the workpiece reference point is input in the ABS mode/INC mode.
0337 to 0346	------	Character codes of the title
0351 too355	- - - - - -	Character codes of the NC name
0404	------	Output destination address for CNC status signal
0550	------	Increment used when the sequence number is automatically inserted
0797	- - - - - -	Encryption
0798	------	Key

(11) Parameters related to programming (I/I)

No.	Symbol	Description
0010#4	PRG9	Editing of subprograms from 09000 to 09999 is not inhibited/is inhibited.
0011#6	G01	The mode selected at power-on is G00/G01.
0015#7	CPRD	If a decimal point is omitted, the selected unit is the least input increment/mm, inch, deg, and sec.
0016#3	NPRD	Decimal point input or display is used/is not used.
0019#5	M02NR	After MO2 is executed, a return to the beginning of the program is made/is not made.
0028#4	EXTS	External program number search is invalid/valid.
0029#5	MABS	In MDI operation B, the ABS or INC command depends on setting ABS/G90 or G91.
0030#7	G91	The mode selected at power-on is G90/G91.
0045#6	CLER	Pressing the RESET key, setting the external reset signal or an emergency stop sets the system in the reset state/clear state.
0057#7	MBCLR	When a reset occurs, MDI-B programs are not cleared/are cleared.
0063#2	MI 98P	Address P of M1 98 is used with a file number/program number.
0065#7	M3B	A single block can contain only one M code/up to three M codes.
0389#2	PRG8	Editing of programs from 08000 to 8999 is not inhibited/is inhibited.
0391#7	NOCLR	In the clear state, a specific G code is cleared/is not cleared.
0393#3	M3PQNG	An M code specified with three digits is valid/invalid.
0393#6	RADCHK	When circular interpolation is specified, the difference between the radius values at the start point and end point is not checked/is checked.
0394#6	WKZRST	In workpiece coordinate system setting, an NC reset does not cause a return to G54/causes a return to G54.
0394#7	CAKEY	On the parameter, diagnostic, or offset screen, pressing the CAN key does not erase a single character/erases a single character.
0395#0	DLG99	In the feed per rotation mode, the dwell command is specified with a time period/ spindle speed.
0396#7	EORRE	If EOR is read without the program end command, an alarm occurs/a reset occurs.
0111, 0112	------	M code which is not buffered
0212	------	Plane selected at power-on
0484	------	Program number for parameter, macro variable, or diagnostic data
0634	------	Program number registered in a simultaneous input/output operation
0876	------	Limit of arc radius error

(12) Parameters related to pitch error compensation (I/I)

No.	Symbol	Description
0011#0, #1	PML*	(X to 4) Magnification of pitch error compensation (5, 6)
7011 #0,#1	PML*S	
0712 to 0715	------	(X to 4) Interval of pitch error compensation for each axis (5, 6)
7713, 7714	------	
1000 to 6000	------	Reference position of pitch error compensation for each axis
1001 to 6128	------	Pitch error compensation for each axis

(13) Parameters related to spindle control (1/2)

No.	Symbol	Description
0003#5	GST	By SOR (G120, #5), spindle orientation is executed/a gear-change is executed.
0012#6	G84S	If the G74 or G84 cycle is specified, the gear is changed at a point specified through S analog output gear–change method A or B/at a point specified in parameters 0540 and 0556.
0013#5	ORCW	In spindle orientation, S analog output is positive/negative.
0013#6, #7	TCW, CWM	Sign output in S analog output
0014#0	SCTA	The spindle speed arrival signal is checked conditionally/always.
0020#7	SFOUT	SF (F150, #2) is output when a gear-change is made/even if a gear-change is not made.
0024#2	SCTO	The spindle speed arrival signal SAR (G120, #4) is not checked/is checked.
0028#6, #7	PSG*	Gear ratio between the spindle and position coder
0029#4	SFOB	Under constant surface speed control, SF (F150, #2) is output/is not output.
0035#6	LGCM	The gear-change speed is the maximum speed of each gear (method A)/is determined by parameters 0585 and 0586 (method B).
0041#4, #5	SSCA*	Axis used as the calculation standard under constant surface speed control
0062#3	SPMRPM	Parameters of spindle speed control are specified in units of 1 RPM/I 0 RPM.
0065#1	CZRN	For the first G00 command after the Cs contour control mode is selected, a reference position return is made, then positioning is executed/normal positioning is executed.
0070#0, #1	DAC*	For D/A conversion, the analog interface board is not used/is used.
0071 #0	ISRLPC	When the serial interface spindle is used, the position coder signal is fetched from the optical fiber cable/connector M27.
0071#4	SRL2SP	The number of serial interface spindles connected is one/two.
0071#7	FSRSP	The serial interface spindle is not used/is used.
0080#2, #3	MORCM*	For the first and second spindle motors, the spindle orientation function with the stop position set externally is not used/is used.
0080#6, #7	SP*NEG	The directions of rotation of the first and second spindles during synchronous control of the spindle are the same as the specified sign/are the opposite of the specified sign.
0108	------	Spindle speed in stable spindle rotation
0108	------	Spindle motor speed at a gear-change
0110	------	Delay timer if the spindle speed arrival signal SAR (G120, #4) is checked
0303	------	Permissible difference in the number of error pulses for phasing in the synchronous control mode
0516	------	Data for adjusting the gain under constant surface speed control (analog output)
0539	------	[Neutral gear] Maximum spindle speed
0541	------	[Low gear]
0555	------	[High gear]
0540 to 0543	------	Spindle speed when the voltage for specifying the spindle speed of each gear is 10 V
0540	------	[Neutral gear] Minimum spindle speed in a tapping cycle
0556	------	[High gear]
0542	------	Upper limit of the value output to the spindle motor
0543	------	Lower limit of the value output to the spindle motor
0551	------	Minimum spindle speed in the constant surface speed control mode (G96)

(13) Parameters related to spindle control (2/2)

No.	Symbol	Description
0556	------	Maximum spindle speed for the constant surface speed control function
0576	------	Permissible error in the number of error pulses between two spindles in the mode of (simple) synchronous control of the spindle
0577	------	Spindle speed offset compensation
0585, 0586	------	Gear-change point in S analog switching method B
0673	------	(Channel 1) Data for adjusting the gain in analog output
0677	------	(Channel 2)
0674	------	(Channel 1) Offset compensation in analog output
0678	------	(Channel 2)
0957 to 0959	------	Limit of position error during spindle rotation at the maximum spindle speed
6780 to 6783	------	Position loop gain of the servo axis in the Cs contour control mode
6784 to 6787	------	(X)Position loop gain of the servo axis in the Cs contour control mode of each gear
6788 to 6791	------	(Y)
6792 to 6795	------	(Z)
6796 to6799	------	(4)
7516	------	Data for adjusting the gain under sub-spindle control by the S command specified with four or five digits
7539	------	Sub-spindle speed offset compensation

(14) Parameters related to tool compensation (I/I)

No.	Symbol	Description
0001#3	RS43	When a reset occurs, the vector of tool length compensation is cleared/is not cleared.
0003#6	TSLT	Tool length compensation is executed on the Z-axis (type A)/an axis vertical to the specified plane (type B).
0016#2	SUPM	In cutter compensation C, start-up and cancellation are executed through the method of type A/B.
0019#3	TLCD	Tool length compensation A or B/C
0024#3	G37GI	When measurement is performed without applying offsets in automatic tool length compensation, the wear offset is rewritten and the geometry offset is cleared/the geometry offset is rewritten and the wear offset is cleared.
0030#2	OFCDH	Tool compensation memory C is disable/enabled.
0036#5	TLCDOK	In tool length compensation of type C, offset of two or more axes is disabled/enabled.
0036#6	OFRD	Tool length compensation and cutter compensation are specified with the H code./ Tool length compensation and cutter compensation C are specified with the H code and D code, respectively.
0062#2	G40V	Operation by a single command (G40, G41, or G42)
0397#3	NOPS41	For cutter compensation, interference check is performed/not performed.
0557	------	Maximum travel distance that can be ignored on the outside of a corner in cutter compensation C

(15) Parameters related to canned cycles (1 /1)

No.	Symbol	Description
0002#4, #5	PMXY1, 2	Axis and direction on and in which the tool is retracted in canned cycle G76 or G87
0011#4	MCF	When positioning of G81 terminates, the signal to specify an external operation function is not output/is output.
0012#4	FXCS	In canned cycle G74 or G84, reverse and forward spindle rotations are executed after MO5 is output/even if MO5 is not output.
0012#5	FXCO	In canned cycle G76 or G87, an oriented spindle stop is executed after MO5 is output/even if M05 is not output.
0057#6	FXY	The drilling axis in a canned cycle is always the Z-axis/is a programmed axis.
0304	------	M code for small-diameter peck drilling cycle
0305, 0306	------	Spindle speed change ratio for small–diameter peck drilling cycle
0307, 0308	------	Cutting feedrate change ratio for small-diameter peck drilling cycle
0309	------	Minimum cutting feedrate ratio for small-diameter peck drilling cycle
0327	------	Number of macro variable for counting number of retractions
0328	------	Number of macro variable for counting number of times overload signal has been received
0398#6	CHGSKP	Using the overload torque signal, the feedrate and spindle speed are not changed/are changed.
0398#7	CHGNRM	Without using the overload torque signal, the feedrate and spindle speed are not changed/are changed.
0403	------	Clearance/cutting start point in a peck tapping cycle
0492	------	Feedrate of retraction to the R position when address I is omitted
0493	------	Feedrate of forward movement from the R position when address I is omitted
0531	------	Clearance in canned cycle G73 (high-speed peck drilling cycle)
0532	------	Cutting start point in canned cycle G83 (peck drilling cycle)
0941	------	Clearance for small-diameter peck drilling cycle

(16) Parameters related to rigid tapping (1/2)

No.	Symbol	Description
0019#4	SRGTP	The rigid tapping selection signal (RGTAP) is G123, #1/G135, #O.
0035#5	RGCTO	When the tool is retracted in rigid tapping, the time constant of acceleration/deceleration on the spindle and tapping axis is the same parameter as that for starting cutting/is a different parameter from that for starting cutting.
0037#6	VALT	In rigid tapping, the variable time constant switching function is not used/is used.
0040#2	RGTPE	In rigid tapping, the rigid mode is canceled after the rigid DI signal is turned off/even before the rigid DI signal is turned off.
0063#3	VSLPC	An optional gear ratio between the spindle and position coder is not used/is used.
0063#4	RGDOV	When the tool is retracted, an override is disabled/enabled.
0065#5	TAPDRN	During tapping, a dry run is enabled/disabled.
0076#3	G84RGD	G84 and G74 are not handled as G codes for rigid tapping/are handled as G codes for rigid tapping.
0077#1	CT3G	Three-stage time constant switching is disabled/enabled.
0388#0	PCTPH	A peck tapping cycle is handled as a high-speed peck tapping cycle.
0388#2	RGMFH	A feed hold and single-block operation are enabled/disabled.

(16) Parameters related to rigid tapping (2/2)

No.	Symbol	Description
0388#3	RGORT	When rigid tapping is started, a spindle reference position return is not made/is made.
0388#5	SIG	At a gear-change, the SIND signal is disabled/enabled.
0388#6	CHKERC	During spindle rotation, the position error is checked according to the maximum spindle speed/specified spindle speed.
0254	------	Type of acceleration/deceleration for the spindle and tapping axis
0255	------	Spindle backlash amount in rigid tapping
0256	------	M code for specifying the rigid tapping mode
0258	------	Override value when the tool is retracted in rigid tapping
0378	------	Override for rigid tapping return
0400 to 0402	------	Time constant of acceleration/deceleration on the spindle and tapping axis when the tool is retracted
0613	------	Time constant of acceleration/deceleration on the spindle and tapping axis
0614	------	FL speed of exponential acceleration/deceleration on the spindle and tapping axis
0615	------	Loop gain of position control on the spindle and tapping axis
0616	------	(Low gear) Multiplier of loop gain on the spindle
0624	------	(Neutral gear)
0625	------	(High gear)
0617	------	Allowable maximum spindle speed in rigid tapping
0618	------	Effective area on the tapping axis in rigid tapping
0619	------	Effective area on the spindle in rigid tapping
0620	------	Limit of position error on the tapping axis during traveling
0621	------	Limit of position error on the spindle during traveling
0622	------	Limit of position error on the tapping axis under a stop
0623	------	Limit of position error on the spindle under a stop
0626	------	Feedrate for defining the reference lead in rigid tapping
0627	------	Position error on the spindle in rigid tapping
0628	------	Spindle pulse distribution in rigid tapping
0663 to 0665	------	Number of teeth on the spindle when an optional gear ratio is selected
0666 to 0668	------	Number of teeth on the position coder when an optional gear ratio is selected
0669 to 0671	------	Loop gain of position control
0692	------	(Low gear) Time constant of acceleration/deceleration on the spindle and tapping axis
0693	------	(Neutral gear)
0694	------	(Low gear) Maximum spindle speed in rigid tapping
0695	------	(Neutral gear)
0696	------	Instantaneous difference between errors on the spindle and tapping axis
0697	------	Maximum difference between errors on the spindle and tapping axis
0799	------	Integrated spindle pulse distribution in rigid tapping
0960	------	Amount of return a for rigid tapping return

(17) Parameters related to scaling and coordinate system rotation (l/l)

No,	Symbol	Description
0036#0 to #2	SCL*	Scaling for each axis is disabled/enabled.
0036#7	SCR	The unit of scaling magnification is 0.00001/0.001 .
0041 #0	RIN	An angle of coordinate system rotation is always specified in the absolute mode/is specified according to G90 or G91.
0063#6	ESCAL	Scaling and programmable mirror image on each axis are disabled/enabled.
0730	------	Angle assumed when the angle of coordinate system rotation is not specified
0731 too733	------	Magnification assumed when a scaling magnification is not specified

(18) Parameters related to unidirectional positioning (1 /1)

No.	Symbol	Description
0029#0 to #3	G60*	In unidirectional positioning (G60) for each axis, the direction of approach is positive/ negative.
0204 to 0207	------	Distance of approach in unidirectional positioning for each axis

(19) Parameters related to control in the normal direction (l/l)

No.	Symbol	Description
0683	------	Rotation speed around a controlled axis in the normal direction
0832	------	Limit up to which an inserted rotation around a controlled axis in the normal direction can be ignored
0833	------	Limit on travel distance that can be executed with the angle in the normal direction of the previous block

(20) Parameters related to index table indexing (l/l)

No.	Symbol	Description
0079#0	IXDDP	For the axis of index table indexing, the decimal point is input using the conventional method/pocket-calculator method.
0079#1	IXREL	On the screen, relative coordinates on the indexing axis which are not multiples of 360° are not rounded/are rounded.
0079#2	IXABS	On the screen, absolute coordinates on the indexing axis which are not multiples of 360° are not rounded/are rounded.
0079#3	IXINC	When the M code for rotation in the negative direction is not specified, the direction of rotation in the G90 mode minimizes the distance of rotation/does not minimize the distance of rotation.
0079#4	IXG90	An index command depends on specification of the G90 or G91 mode/always assumed that the G90 mode.
0079#7	IXTYP	Sequence of type A/type B
0249	------	Code specifying a rotation in the negative direction
0839	------	Minimum angle in index table indexing

(21) Parameters related to custom macro (1/1)

No.	Symbol	Description
0011#5	SBKM	By a macro statement, a single-block stop is not made/is made.
0040#1	DPOSUP	If data is output by the DPRINT command, leading zeros are output as space characters/as they are.
-- 0040#5	TMCR	A T code is processed as the code of the tool function/code for calling 09000.
0040#6	COMC	When a reset occurs, common variables (#100 to #149) are made null/are not made null.
0040#7	LOCC	When a reset occurs, local variables (#01 to #33) are made null/are not made null.
0042	ASTCD	Hole pattern of the EIA code of an asterisk (*)
0043	EQCD	Hole pattern of the EIA code of an equal sign (=)
0044	SHPCD	Hole pattern of the EIA code of a sharp (#)
0053	LBLCD	Hole pattern of the EIA code of a square bracket ([)
0054	RBLCD	Hole pattern of the EIA code of a square bracket (])
0056#1	MSKT	At an interrupt, absolute coordinates are not set as skip coordinates/are set as skip coordinates.
0056#2	MBLK	Custom macro interrupt of type I/type II
0056#3	MSTE	The interrupt signal uses the edge trigger method/status trigger method.
0056#4	MPRM	The M codes for enabling and disabling an interrupt are M96 and M97 respectively/ are specified in parameters.
0056#5	MSUB	When an interrupt occurs, local variables are of the macro type/subprogram type.
0056#6	MCYL	During a cycle operation, a custom macro interrupt is disabled/enabled.
0056#7	MUSR	The custom macro interrupt function is disabled/enabled.
0057#4	CROUT	After data output in ISO code is completed with B/D PRINT, LF is output/CR/LF is output.
0220 to 0229	------	I G code for calling custom macro from 09010 to 09019
0230 too239	------	M code for calling a custom macro from 09020 to 09029
0240 to 0242	------	I M code for calling a subprogram from 09001 to 09003
0246	------	M code for enabling a custom macro interrupt
0247	------	M code for disabling a custom macro interrupt
0248	------	M code for calling a program registered in a file

(22) Parameters related to automatic tool length measurement (I/I)

No.	Symbol	Description
0558	------	Feedrate during automatic tool length measurement
0813	------	Value of y in automatic tool length measurement
0814	------	Value of ε in automatic tool length measurement

(23) Parameters related to graphic display (I/I)

No.	Symbol	Description
0046#5	GRPOS	On the screen of a solid drawing or tool path drawing, the current position is not displayed/is displayed.
0058#0	SGORG	If the coordinate system is changed during drawing, drawing is executed on the same coordinate system/on the assumption that the current drawing point is the current position set in the new coordinate system.
0058#1	SGTLC	During drawing of a solid drawing, tool length compensation is not executed/is executed.
0058#2	SG3PL	During drawing of a solid drawing, a triplane drawing is drawn with the first angle projection/third angle projection.
0058#3	SGPLN	During drawing of a solid drawing, a top view is drawn without ridgelines/with ridgelines.
0058#4	SGFIN	During drawing of a solid drawing, a machining profile is drawn in the coarse mode/fine mode.
0058#5	SGCSR	On a tool path drawing, the current tool position or the center of a partial magnification is marked with ❑ /x.
0253	------	Change in the position of the cross section on a triplane drawing
0589 to 0592	------	Margin on a solid drawing
0630, 0631	- - - - - -	Dot shift of 9-inch high-resolution graphic display

(24) Parameters related to the display of operation time and number of parts (1/1)

No.	Symbol	Description
0040#3	RWCNT	With MO2 or M30, the total number of parts to be machined and the number of parts machined are counted/are not counted.
0219	------	M code for counting the total number of parts to be machined and the number of parts machined
0600	------	Number of parts required
0779	------	Total number of parts to be machined

(25) Parameters related to tool life management (l/l)

No.	Symbol	Description
0039#0, #1	GST*	Number of tool groups that can be registered
0039#2	LCTM	The tool life is specified in terms of the number of times used/time period.
0039#3	TLSK	If the tool skip signal TLSKP (G140, #0) is input, the current group is skipped/the group number is input together.
0039#4	GRST	If the tool skip signal TLSKP (G140, #0) is input, the execution data of the current group is cleared/the execution data of all groups is cleared.
0039#5	IGSK	The tool skip signal TLSKP (G140, #0) is accepted always/only while a tool under tool life management is used.
0039#6	IGIN	The tool back numbers are not ignored/are ignored.
0039#7	M6TCD	A T code in the block containing MO6 is assumed as a back number/the command of the group to be selected next.
0041#7	M6TST	If a T code is specified in the block containing MO6 under tool life management, the T code is processed as a back number or the number of the group to be selected next/ the counting of the life of the tool group is started immediately.
0336	------	M code for resuming the counting of the tool life
0599	------	Number with which tool life management is ignored

(26) Parameters related to the position switch function (l/l)

No.	Symbol	Description
0310 to0319	------	Axis corresponding to the position switch
0840 to 0849	------	Maximum value in the operating area of the position switch
0850 to0859	------	Minimum value in the operating area of the position switch

(27) Parameters related to manual handle feed/manual handle interrupt (1/1)

No.	Symbol	Description
0002#6	TJHD	During teaching in jog mode, the manual pulse generator is disabled/enabled.
0003#7	HSLE	If the manual pulse generators for three units are mounted, the axis selection signal is disabled/enabled.
0013#0	JHD	In the jog mode, the manual pulse generator is disable/enabled.
0018#0 to #3	N*MP2	For each axis, the magnification of handle feed (x 100) is enabled/disabled.
0019#0	MHPGB	Multihandle function of specification A/specification B
0060#4	HDLPM	If the handle of the manual pulse generator is rotated quickly, the reading and travel distance may not agree/the travel distance depends on the reading.
0075#2	INHND	The travel increment of manual handle interrupt is set as the output unit and acceleration/deceleration is disabled/input unit and acceleration/deceleration is enabled.
0386#4 to #7	HDPIG*	For each axis, the magnification of manual handle feed (x 1000) is enabled/disabled.
0117	------	Manual handle pulse generator of the Z-axis or the fourth axis
0118	- - - - - -	Number of manual pulse generators used
0121	------	Magnification of manual handle feed (M)
0 6 9 9	- - _ - - -	Magnification of manual handle feed (N)

(28) Parameters related to the software operator's panel (I/I)

No.	Symbol	Description
0017#0	OPG1	On the software operator's panel, the mode is not selected/is selected.
0017#1	OPG2	On the software operator's panel, the selection of a jog feed axis or rapid traverse is not executed/is executed.
0017#2	OPG3	On the software operator's panel, the selection of the manual pulse generator axis switch or magnification switch is not executed/is executed.
0017#3	OPG4	On the software operator's panel, jog feedrate override switch is not executed/is executed.
0017#4	OPG5	On the software operator's panel, BDT, SBK, MLK, or DRN switch is not executed/is executed.
0017#5	OPG6	On the software operator's panel, protect switch is not executed/is executed.
0017#6	OPG7	On the software operator's panel, feed hold switch is not executed/is executed.
0130 to 0137	------	Axis and direction of jog feed corresponding to keys on the software operator's panel
0140 to0203	------	Character code of general-purpose switches on the software operator's panel

(29) Parameters related to program resumption (I/I)

No.	Symbol	Description
0387#0	SQDNC	During DNC operation, program resumption is disabled/enabled.
0124 to 0127	- - - - - -	Sequence of a jump to the program resumption point

(30) Parameters related to the high-speed cycle machining/high-speed remote buffer (I/I)

No.	Symbol	Description
0055#4 to #6	ITPCNT	Interval compensated for by GO5 data
0597	------	Number of controlled axes of the high-speed remote buffer, Maximum number of axes that can be simultaneously controlled in high-speed cycle machining

(31) Parameters related to PMC axis control (1 /1)

No.	Symbol	Description
0024#0	IGNPMC	PMC axis control is enabled/disabled.
0030#0, #1	EAC*	Axis setting for executing PMC axis control (specification A)
0032#4 7032#4	PNGMLK PNGMLKS	On a PMC axis, a machine lock is enabled/disabled.
0032#6	EACSB	PMC axis control of specification A/specification B
0049#5	EFML10	Under PMC axis control, the specified feedrate (cutting feed) is multiplied by one/ten.
0052#0 to #7	NODIC*	Under PMC axis control, the current position display depends on the position of the decimal point with increment system 1 or 1 O/depends on the standard specifications.
0061#0 to #5	EBC*	Under PMC axis control (specification B), DI and DO used for each axis are of group A/B.
0062#6	AXPCF	To the actual speed display, traveling along a PMC controlled axis is added/is not added.
0063#5 7063#5	EAXOV EAXOVS	On a PMC axis, a dry run and override are disabled/enabled.
0066#3	EPMSKP	The skip signal used under PMC axis control is the same as the corresponding signal of the CNC/is a unique signal.
0066#6, #7	ERVF*	Magnification of the speed of feed per rotation under PMC axis control
0078#4	OVRIE	Under PMC axis control, the speed increases when the override signal is set to 0/1.
0078#6	RDRNE	Under PMC axis control, a dry run for the rapid traverse command is disable/enabled.
0078#7	EAXOVE	The dry run signal and override signal used under PMC axis control are the same as the corresponding signals of the CNC/are unique signals.
0387#7	EFERPD	Under PMC axis control, the parameter of the rapid traverse rate is the same as that of the CNC/the rapid traverse rate is determined by the feedrate data specified with the axis control command.
0389#4	EADSL	In PMC axis control (specification B), the switching of the axis selection signal (G144) for an unspecified path is disabled/enabled.
0350	0 ------	Axis for which the velocity command is executed under PMC axis control
0462	2 ------	Time constant of linear acceleration/deceleration for the velocity specified with the velocity command
0657 to 0662 7657, 7658	------ - - - - - -	(X to 4) FL speed of exponential acceleration/deceleration on a PMC axis during cutting feed (5, 6)
0672	2 ------	FL speed on a PMC controlled axis during reference position return
0685	5 ------	FO speed of independent rapid traverse override on a PMC controlled axis
0698	8 ------	Maximum speed of feed per rotation about a PMC controlled axis
7021#6	SUB1	PMC controlled axes on the sub-CPU are the fifth and sixth axes/the fifth axis only.

(32) Parameters related to the surface grinding machine (slanted axis control) (l/l)

No.	Symbol	Description
0077#4	ZRTM1	When a manual reference position return is performed on the Y-axis, movement occurs on the Z-axis/does not occur on the Z-axis.
0077#5	AGLST	Slanted axis control is not executed/is executed.
0837	------	Slant angle of the Y-axis
0838	------	Minimum diameter of the grinding wheel when the diameter is checked

(33) Parameters related to simple synchronous control (1 /1)

No.	Symbol	Description
0075#0, #1	SYNM*	Master axis under simple synchronous control
0475	------	Limit of difference between position errors of the master axis and slave axis

(34) Parameters related to the PMC (l/l)

No.	Symbol	Description
0028#1	PRCMSG	On the program check screen, the remaining travel distance is displayed/a message from the PMC is displayed.
0032#5	NOPCAL	If a PC alarm is issued, ladder data in the PMC RAM is cleared/not cleared.
0060#1	PCLDB	The baud rate during ladder loading is 4800 bps/9600 bps.
0070#6	PEXRD	The R or D area of the PMC-M is not extended/is extended.
0071#6	DPCRAM	With the PMC RAM board, PMC LOAD MENU is displayed/is not displayed.
0356 to 0359	------	Number of characters that can be displayed in the remaining travel distance field on the program check screen
0476 to 0479	------	First PMC address at which the characters in the remaining travel distance field are set

(35) Parameters related to the function for setting the zero point using the butt method (l/l)

No.	Symbol	Description
0360 to 0363	------	-Torque limit when the cycle for setting the zero point using the butt method is in progress
0942, 0943	------	(Butt speed when the cycle for setting the zero point using the butt method is executed
0944 to 0947	------	Traveling speed when the zero point is set in the cycle for setting the zero point using the butt method
0948 to 0951	------	Distance for setting the zero point when the cycle for setting the zero point using the butt method is executed

(36) Parameters related to the DNC

No.	Symbol	Description
0390#7	NODC3	During DNC operation, reading is executed for each block/until the buffer is filled.
0320	------	Time-out period of the no-response timer
0321	------	Time-out period of the EOT signal timer
0323	------	Maximum illegal data count
0324	------	Maximum number of times a message is re-sent by NAK
0325	------	Maximum number of characters that can be received after processing to stop transmission is completed
0347	------	Format of connection between the CNC and the host on the DNC1 interface
0348	------	Station address of the CNC on the DNC1 interface
0490	------	Maximum length of the datagram (data section)

(37) Parameters related to the M-NET

No.	Symbol	Description
0392#2	SRL1	The character length of the M-NET is 7 bits/8 bits.
0392#4	SRPE	The vertical parity check of the M-NET is not executed/is executed.
0392#5	SREP	The vertical parity of the M-NET is an odd parity/even parity.
0392#7	SRS2	The stop bit of the M-NET is bit l/bit 2.
0259	------	Byte length of DI of the M-NET
0260	------	Byte length of DO of the M-NET
0261	------	Station address of the M-NET
0262	------	Baud rate of the M-NET
0458	------	Timer monitor value after the sequence preparing for a connection to the same station is completed
0459	------	Polling time monitor value in the normal sequence to the same station
0460	------	Timer monitor value from the beginning of SAI transmission to the end of BCC transmission
0461	------	Timer value from the end of reception to the beginning of transmission
0463	------	Destination address of the spindle orientation signal

[SETTING I]

(1) REVX:
REVY: Specify whether to enable a mirror image for the X/Y-axis.
1: Enable
0: Disable

Note) If a mirror image is enabled for an axis, the movement of the axis is reversed during automatic operation except for a movement from the middle point to the reference position for an automatic reference position return. The mirror image function is ineffective during manual operation.

(2) TVON : Specifies whether to make a TV check when a program is registered in memory.
1: Makes a TV check.
0: Does not make a TV check.

Note 1) The TV check (tape vertical parity check) function makes a parity check for each block, This function issues an alarm (P/S 002) if one block (from one EOB to the next EOB) contains an odd number of characters.

Note 2) Parameter No. 0018#6 (TVC) determines whether to make a TV check on comments in a program.

(3) ISO: Specifies which code system is to be used in outputting a program from memory.
1: ISO code
0: EIA code

Note 1) This parameter is valid under the following condition.
No. 0002#3 (I/O = 0), No. 0012#3 (I/O = I), No. 0050#3 (I/O = 2), No. 0051#3 (I/O = 3) RSASCI = 0

Note 2) An automatic decision is made on the code to be used in registering programs in memory according to the first EOB code.
LF: ISO code is assumed.
CR: EIA code is assumed.

(4) INCH: Specifies the type of least input increment (input unit) for programs.
1: Inch input
0: Metric input

Note) The least command increment (output unit) is specified by No. 0001#0 (SCW) and No. 7001#0 (SCWS).

(5) I/O: Specifies an input/output unit to be used on the reader/punch interface.
0: Selects a unit on channel 1.
(Miscellaneous setting = No. 0002, I/O unit setting = No. 0038#6/7, baud rate = No. 0552)
1: Selects a unit on channel 1.
(Miscellaneous setting = No. 0012, I/O unit setting = No. 0038#6/7, baud rate = No. 0553)
2: Selects a unit on channel 2.
(Miscellaneous setting = No. 0050, I/O unit setting = No. 0038#4/5, baud rate = No. 0250)
3: Selects a unit on channel 3.
(Miscellaneous setting = No. 0051, I/O unit setting = No. 0038#1/2, baud rate = No. 0251)

(6) ABS: Specifies whether commands issued during the MDI mode are absolute or incremental.
1: Absolute command
0: Incremental command

Note) This parameter does not depend on G90/G91. (See descriptions of No. 0029#5, or MABS.)

(7) SEQ: Specifies whether to insert sequence numbers automatically.
1: Automatic insertion
0: No automatic insertion

Note) No. 0550 specifies what increment is to be used in automatic insertion.

[SETTING 2]

(8) PWE: Specifies whether to enable parameter writing.
1: Enables.
0: Disables.

(9) REV4: Specifies whether to enable a mirror image for the fourth axis.
1: Enable
0: Disable

(IO) TAPEF: Specifies the type of a tape format.
1: F10/F11 format after conversion
0: FSO standard format without conversion

[SEQUENCE STOP]

(11) PRGNO: Program number where the sequence number check/stop function is applied.
SEQNO: Sequence number where the sequence number check/stop function is applied.

Note) The sequence number check/stop function places a program in a single block stop state if a block with a specified program number and sequence number is executed. In this case, the SEQNO is decremented by one, but the PRGNO does not change.

[01. Setting method]

1) Preparation

(A) Select the MDI mode.

(B) Press the function button [DGNOS/PARAM] to display the parameter setting screen.

(C) Key in address "No." and value "0" in the stated order, then press the [INPUT] button; the setting parameter screen will appear. Set PWE = 1.

(D) Executing the above steps enables parameter input.

2) Setting

(A) On the parameter setting screen, key in address "No." and the desired parameter number in the stated order, then press the [INPUT] button. The desired number will be searched for. Using the cursor/page key can also switch the screen sequentially.

(B-l) Bit-type parameter

Specify 0 or 1 in the 8 bits of the parameter. One parameter consists of 8 bits. Bit 7 is the highest bit, and bit 0 is the lowest. It is impossible to set or reset an individual bit separately from another bit. All bits must be manipulated simultaneously.

Example) If you want to change "00001000" to "10001000", key in "10001 000"[INPUT].
The highest bit must be entered first, then the next highest, and so on. The lowest bit must be entered last. If only less than 8 bits are entered, any bit left unspecified is regarded as 0.

Example) "1001 [INPUT]" is equivalent to "0001001 [INPUT]".

(B-2) Nonbit-type parameter

Key in a value within the valid data range, and press the [INPUT] button.

3) Resume the setting that was changed in item 1).

Note)Set all parameters that were not explained to 0.

[02. Terminology]

Least input increment (input unit): ..... The unit of measure used in programming. The least input increment varies with the increment system used (1/10 or 10 times). For the linear axis, it also varies depending on whether a metric or inch input is selected.

Least command increment (output unit): .... The unit of measure used by the NC when it gives instructions to the machine. The least command increment varies depending on whether the machine is a metric or inch type.

Detection increment: ..... The unit of measure used in detecting the machine position.

IS-A: ..... The input/output unit is 0.01 [mm]/0.001 [inch].

IS-B: ..... The input/output unit is 0.001 [mm]/0.0001 [inch].

IS-C: ..... The input/output unit is 0.0001 [mm]/0.00001 [inch].

Option with an input increment of 1/10	No. 0024#1 LII10	Input increment
No	0	IS-B
No	1	IS-A
Yes	0	IS-C
Yes	1	IS-B

[03. Cautions]

1) If a parameter with “POWER OFF” is rewritten, the P/S **000** alarm (turn off the power) occurs. In this case, it is necessary to turn off the power. This also applies when the programmable parameter input (G10) function is used to rewrite the parameter.

2) Always set undefined parameter numbers/bits to **0.**

0001							
	RDRN	DECI	IOF	RS43	DCS	PROD	SCW
7	6	5	4	3	2	1	0

RDRN 1: Dry run is effective for rapid traverse.
0: Dry run is not effective for rapid traverse.

DECI 1: Decelaration signal " 1" in refernce point return indicates deceleration.
0: Decelaration signal "0" . in refernce point return indicates deceleration.

IOF 1: Offset value is input in absolute value.
0: Offset value is input in incremental value.

RS43 1: Offset vector in G43, G44 remains in reset state.
0: Offset vector in G43, G44 is cleared in reset state.

DCS 1: Pushing the START button on the MDI panel directly actuate the CNC start without going through the machine side (MDI mode only)
0: Pushing the START button on the MDI panel issues the signal to the machine side. The CNC start is actuated when the CNC receives the start signal from machine side.

PROD 1: In the display of relative coordinate value, the programmed position is displayed.
0: In the display of relative coordinate value, the actual position considering the offset is displayed

SCW 1: Least command increment is input in inch system.
(Machine tool: inch system)
0: Least command increment is input in metric system.
(Machine tool:metric system)
If you want to change this parameter, turn off power.

0002							
NFED	TJHD	PMXY2	PMXY1		ASR33	PPD	STP2
7	6	5	4	3	2	1	0

NFED 1: Feed is not output before and after progtam is output by using the reader / puncher interface . (Set " 1" for FANUC casette .)
0 : Feed is output before and after program is output by using the reader / puncher interface .
(Effective when the seting parameter I / 0 is 0 .)

TJHD 1 : Handle feed in the TEACH IN JOG mode by manual pulse generator is possible.
0: Handle feed in the TEACH IN JOG mode by manual pulse generator is not possible.

PMXY2, 1 Set the tool escape direction in the fixed cycle G76 or G87.
The setting is as shown below according to the plane selection.

PMXY2	PMXY1	G17	G18	G19
0	0	+X	+Z	+Y
0	1	−X	−Z	−Y
1	0	+Y	+X	+Z
1	1	−X	−X	−Z

ARS33 1 : The 20mA current interface is used as the reader / puncher interface.
0 : FANUC PPR, FANUC cassette, or portable tape reader are used as the reader / punch interface. (Effective when the setting parameter I /O is 0.)

PPD 1: The relative coordinate value is preset when the coordinate system is set.
0: The relative coordinate value is not preset when the coordinate system is set.

STP2 1: In the reader / puncher interface, the stop bit is set by 2 bits.

0: In the reader / puncher interface, the stop bit is set by 1 bit.

(Effective when the setting paramerter I/O is 0.)

(Note) The band rate is set by parameter No.0552.

0003							
HSLE	TLCP	GST	OVRI	ZM4	ZMZ	ZMY	ZMX
7	6	5	4	3	2	1	0

PSG2, 1 Gear ratio of spindle and position coder.

Magnification	PSG2	PSG1
x 1	0	0
x2	0	1
x 4	1	0
×8	1	1

Magnification =

$$\frac{\text{Number of spindle rotation}}{\text{Number of position coder rotation}}$$

HSLE 1: When the manual pulse generators are provided for three axes, the axis selecting signal is valid.

(When the axis selecting signal is off, the manual pulse generators can not operate.)

0: When the manual pulse generators are provided for three axes, the axis selecting signal is invalid.

(The axis whose manual pulse generator is rotated is moved regardless of the axis selecting signal.)

(When one or two manual pulse generators are provided, set "0" to this parameter.)

TLCP 1 The tool length offset is performed in the axis direction being normal to the plane specified by plane selection (G17, G18, G19)

(Tool length offset B).

0: The tool length offset is performed in the Z axis irrespective of plane selection. (Tool length offset A).

GST 1: Gear shift is performed by SOR signal when S analog is outputted. (Spindle speed is constant)

0: Spindle orientation is performed by SOR signal when S analog is outputted. (Spindle speed is constant)

OVRI 1: When the polarity of override signal (*OV1 to +OV8, ROV1, ROV2) is set to 1, the speed increases.

0: When it is set to 0, the speed increases.

ZMX, ZMY,ZMZ, ZM4, (OM)

The reference point return direction and the backlash initial direction at power on for X, Y, Z and 4th axes in order.

1: Minus

0: Plus

(Note) The backlash compensation is initially performed when the axis moves in the opposite direction against the direction which is set by this parameter after the power is turned on.

0004							
	DMRX				GRDX		
7	6	5	4	3	2	1	0

0005							
	DMRY				GRDY		
7	6	5	4	3	2	1	0

0006							
	DMRZ				GRDZ		
7	6	5	4	3	2	1	0

0007							
	DMR4				GRD4		
7	6	5	4	3	2	1	0

DMRX to **DMR4** Setting of detective multiplier

Setting code			Detective multiplier	
6	5	4	Analog servo	Digital servo
0	0	0	1 / 2	1 / 2
0	0	1	1	1
0	1	0	1	3 / 2
0	1	1	2	2
1	0	0	3 / 2	5 / 2
1	0	1	3	3
1	1	0	2	7 / 2
1	1	1	4	4

GRDX to GRD4 Capacity of reference counter

Setting code				Capacity of reference counter		
3	2	1	0	Analog servo	Except for 0.1 μ detector for Digital servo	0.1 μ detector for Digital servo
0	0	0	0		1000	10000
0	0	0	1	2000	2000	20000
0	0	1	0	3000	3000	30000
0	0	1	1	4000	4000	40000
0	1	0	0	5000	5000	50000
0	1	0	1	6000	6000	60000
0	1	1	0		7000	70000
0	1	1	1	8000	8000	80000
1	0	0	0		9000	90000
1	0	0	1	10000	10000	100000
1	0	1	0		11000	110000
1	0	1	1		12000	120000
1	1	0	0		13000	130000
1	1	0	1		14000	140000
1	1	1	0		15000	150000
1	1	1	1		16000	160000

Relationship among DMR, CMR and GRD. (In case of System series M)

Metric system

Moving distance per 1 revolution of motor (Pulse coder)	Counting (detection unit) (μm)	Command multiply ratio (CMR)	Detect multiply ratio (DMR)			Capacity of reference counter
			Pulse coder 2000	Pulse coder 2500	Pulse coder 3000	
12 mm	1	1			4	6000
IO mm	1	2		4		10000
8 mm	1	1	4			8000
6 mm	1	1	3		2	6000
5 mm	1	1		2		5000
4 mm	1	1	2			4000
3 mm	1	1	1.5		1	3000
2 mm	1	1	1			2000
1 mm	0.5	2	1			2000

Note 1) Data in the above table is standard. Command and detect multiply ratio can be changed, but in that case there is limit for maximum feedrate.

Inch system

Moving distance per 1 revolution of motor (Pulse coder)	Counting (detection) unit (μm)	Command multiply ratio (CMR)	Detect multiply ratio (DMR)			Capacity of reference counter
			Pulse coder 2000	Pulse coder 2500	Pulse coder 3000	
0.6 inch	1	1	3		2	6000
0.5 inch	1	1		2		5000
0.4 inch	1	1	2			4000
0.3 inch	1	1	1.5		1	3000
0.25 inch	0.5	2		2		5000
0.2 inch	1	1	1			2000
0.15 inch	0.5	2	1.5		1	3000
0.1 inch	0.5	2	1			‘2000

Note 1) Data in the above table is standard. Command and detect multiply ratio can be changed, but in that case there is limit for maximum feedrate.

0008							
EILK	OTZN	ROVE	ADW2	ADW1	ADWO		
7	6	5	4	3	2	1	0

EILK **1:** interlock is performed for each axis. (FANUC PMC-MODEL L is necessary.)

0: interlock is performed for all axes or for Z axis only (it needs that No. 012 ZILK = **1).**

OTZN **1:** Z axis stored strok check is not done.

0: Z axis stored strok check **is** done.

ROVE 1: Rapid traverse override signal ROV2 is not effective. **(1** 00%, Fo)

0: Rapid traverse override signal ROV2 is effective. (100%, 50%, 25%, Fo)

ADW2, ADW1, ADWO

Name of the 4th axis

ADW2	ADW1	ADWO	Name
0	0	0	A
0	0	1	B
0	1	0	C
0	1	1	U
1 '	**0**	0	V
1	0	1	W
1	1	0	A
1	1	1	A

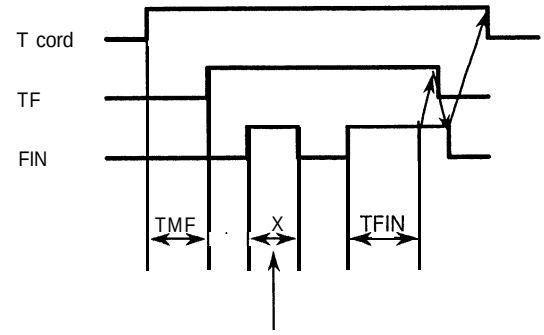
0009							
TMF				TFIN			
7	6	5	4	3	2	1	0

TMF Time from M, S, T code issue to MF, SF, TF issue.

Setting range : 16 to 256 msec. (16 msec increment).

TFIN Time of reception width of FIN.

Setting range : 16 to 256 msec.



FIN signal is ignored, because X < TFIN

TMF	TFIN	Parameter setting			
16msec	More then 16 msec	0	0	0	0
32msec	More then 32 msec	0	0	0	**1**
48msec	More then 48 msec	0	0	1	0
64msec	More then 64 msec	0	0	1	1
80msec	More then 80 msec	0	1	0	0
96msec	More then 96 msec	0	1	0	1
112msec	More then 112 msec	0	1	**1**	**0**
128msec	More then 128 msec	0	1	1	**1**
144msec	More then 144 msec	1	0	0	0
160msec	More then 160 msec	1	0	0	**1**
176msec	More then 176 msec	1	0	1	0
192msec	More then 192 msec	1	0	1	**1**
208msec	More then 208 msec	1	1	0	0
224msec	More then 224 msec	1	1	0	**1**
240msec	More then 240 msec	1	1	**1**	0
256msec	More then 256 msec	1	1	1	**1**

0010							
APRS			PRG9		OFFVY	EBCL	ISOT
7	6	5	4	3	2	1	0

APRS 1: Automatic coordinate system setting is conducted
when manual reference point return is perfomed.
0: Automatic coordinate system setting is not
conducted.

PRG9 1: The subprograms with program number 9000 to 9999 are protected. The foilowing edit function are disabled.
(1) Deletion of program
When the deletion of all program is specified, the programs with programs number 9000 to 9999 are not deleted.
(2) Punch of program
These subprograms are not punched out when the punch of all programs is specified.
(3) Program number search.
(4) Edit of program after registration
(5) Registration of program
Registration by MDI key and through paper tape.
(6) Collation of program

0: The subprograms with program number 9000 to 9999 can also be edited.

OFFVY 1: Servo alarm is not actuated when VRDY is on before PRDY is output.
0: Servo alarm is acturated when VRDY is on before PRDY is output.

EBCL 1: In the display of the program stored in the memory, the EOB code is indicated by *(asterrisk).
0: In the desplay of the program stored in the memory, the EOB code is indicated by; (semicolon).

ISOT 1: Rapid traverse is effective even when reference point return is not conducted after turning the power on.
0: Rapid traverse is invalid unless refernce point return is conducted after turning the power on.

0011							
MCINP	G01	SBKM	MCF	ADNW	ADLN	PML2	PML1
7	6	5	4	3	2	1	0

MCINP 1: Program input is started with the data input external start signal MINP.
0: Program input is not started with the data input external start signal MINP.

G01 1: G01 mode when power is on.
0: G00 mode when power is on.

SBKM 1: Machine is stopped in single block skip by macro
command.
0: Machine is not stopped in single block skip by macro command.
(usually set “0”)

MCF 1: EF (external operation signal) is output when G81 positioning is not completed.
0: EF (external operation signal) is not output when G81 positioning is not completed.

ADNW 1: Select B type for feed rate.

0: Select A type for feed rate.

(A type)

(1) JOG feed rate

JOG feed rate of additional (rotary) axis is the same as that of basic axes (X, Y, Z).

(2) Cutting feed upper limit feed' rate

Tangential speed is clamped at parameter value for all axis.

(B type)

(1) JOG feed rate

JOG feed rates of basic axes and additional axis can be set by differnt parameter (No. 565, 566).

When an additional axis is moved with another axis in simulteneously 2 or more axes control, feed rate is the same as that of basic axes.

(2) Cutting feed upper limit feed rate

When command linear interpolation including additoional axis, (G01), clamp each axis feed rate at smaller than the setting value in another parameter

(No. 567). In circular interpolation, tangential speed is clamped at parameter value.

(Same as A Type)

(3) Minimum rapid traverse rate (Fo)

Only additional axis is set by another para-meter.

(No. 0568)

(4) Low feedrate (FL) additonal axis at reference point return is set to another parameter.

(No. 0569)

ADLN 1: 4th axis is used as a linear axis.

0: 4th axis is used as a rotary axis.

When 4th axis used as linear axis, there are following restrictions.

1) Circular interpolation including the 4th axis cannot be performed.

2) Cutter compensation B / C in the 4th axis cannot be applied.

3) Tool length compensation in the 4th axis cannot be applied.

PML2, 1 Pitch error compensation magnification.

The value, with this magnification multiplied to the set compensation value, is output

PML2	PML1	Magnification
0	0	XI
0	1	x2
1	0	x4
1	1	X8

(Common to all axes)

0012

7	6	5	4	3	2	1	0
NFED	G84S	FXCO	FXCS		ASR33	ZILK	STP2

NFFD 1: Feed is not output before and after the program is output by using the reader / puncher interface

(Set to "1" when FANUC cassette is used.)

0: Feed is output before and after the program is output by using the reader / puncher interface.

(Effective when the setting parameter I/ 0 is 1.)

Remarks Baudrate is set by parameter No. 0553.

G84S 1: Type B is effective in canned cycle G74 and G84 with S analog voltage output.

0: Type A is effective in canned cycle G74 and G84 with S analog voltage output.

(See connecting manual for type A / B.)

FXCO 1: in canned cycle G76 and G87, the oriented spindle stop is performed without outputting M05.

0: In canned cycle G76 and G87, the oriented spindle stop is performed after outputting M05.

FXCS 1: In canned cycle G74 or G84, spindle CW/CCW rotatioin is performed without MO5 code output.

0: In canned cycle G74 or G84, spindle CW / CCW rotation is performed after MO5 signal output.

ASR33 1: The 20mA current interface is used as the reader / puncher interface.

0: FANUC PRR, FANUC cassette, or portable tape reder are used as the reader / puncher interface (Effective when the setting parameter I / 0 is 1.)

ZILK 1: Interlock is **effective only** for Z axis.

0: Interlock is effective for all axes.

Remarks Associated parameter is EILK at No.008.

STP2 1: In the reader / puncher interface, the stop bit is set by 2 bits.

0: In the reader / puncher interface, the stop bit isset by 1 bit.

(Effective when the setting parameter I / 0 is 1.)

0013							
TCW	CWM	ORCW	INHMN				JHD
7	6	5	4	3	2	1	0

TCW, CWM Output code at S analog output.

TCW	CWM	Output code
0	0	Plus output for both MO3 and M04..
0	1	Minus output for both MO3 and MO4
1	0	Plus ouptut for M03, minus output for M04.
1	1	Minus output for M03, Plus output for MO4

ORCW 1: Minus output in orientation S analog output.

0: Plus output in orientation S analog output.

INHMN

1: The menu is not indicated even when the menu programing option is provided.

0: The menu is indicated when the menu programing option is provided.

JHD 1: The manual pulse gener-ator is valid in JOG mode. Incremental feed is enabled in manual handle feed mode.

0: The manual pulse generator is invalid in JOG mode.

0015							
CPRD	REP	PRWD	LM2	SKPF	RILK	NWCH	CBLNK
7	6	5	4	3	2	1	0

CPRD 1: Unit is set to mm, inch or sec. when the decimal point is omitted in the address for which the decimal point can be used.

0: The least input increment is set when the decimal point is omitted in the address for which the decimal point can be used.

PRWD 1: Rewind signal is output by portable tape reader.

0: Rewind signal is not output by portable tape reader.

REP 1: When the program with same program number in the memory is registered through reader / puncher interface , the alarm does not occur and the registered program is replaced.

0: When the program with same program number in the memory is registered through reader / puncher interface, the alarm occurs.

LM2 1: Makes valid stroke limit 2 switch-ing signal (EXLM2 G129.6).

0: Makes invalid stroke limit 2 switching signal (EXLM2, G 129.6).

SKPF 1: Dry run, override and automatic acceleration / deceleration is effective in skip function (G31).

0: Dry run, override and automatic acceleration / deceleration is ineffective in skip function (G31).

RILK 1: Interlock processing is done at high speed. (FANUC PMC-MODEL L or M is necessary.)

0: Normal interlock processing is done.

NWCH 1: In the display of tool wear/geometry compensation, "W" is not displayed in the left of each number.

0: In the display of tool wear/geometry compensation, "W" is displayed in the left of each number.

CBLNK 1: The cursor does not blink.
0: The cursor blinks.

0016							
				NPRD	SUPM		
	6	5	4	3	2		0

NPRD 1: Input and display with dicimal point is ineffective.
0: Input and display with decimal point is effective.

SUPM 1: Start-up B type is effec-tive in cutter compensation C.
0: Start-up A type is effective in cutter compensation C.
For details of start - up, refer to the item of cutter compensation.

0017							
	0PG7	0PG6	0PG5	OPG4	OPG3	0PG2	OPG1
7	6	5	4	3	2	1	0

OPG7 1: Feed hold is effected with the software operator's panel.
0: Feed hold is not effected with the software operator's panel.

0PG6 1: Pct key is actuated with the software operator's panel .
0: Protect key is not actuated with the software operator's panel.

OPG5 1: Optional block skip, single block, machine lock and dry run switches are actuated with the software operator's panel.
0: The above switches are not actuated with the software operator's panel.

0PG4 1: Jog feed rate, override, and rapid traverse override
switches are actuated with the software operator's panel.
0: The above swithes are not actuated with the software operator's panel.

0PG3 1: Axis select (HX, HY, HZ) and magnification (x10, x100) switches for manual pulse generator are actuated
with the software operator's panel
0: The above switches are not actuated with the software operator's panel.

OPG2 1: Jog feed axis select and jog rapid traverse buttons are actuated with the software operators,s panel.
0: The above buttons are not actuated with the software operator's panel.

OPG1 1: Mode select (MD1 to MD4, ZRN) is conducted from the software operator's panel.
0: Mode select is not conducted from the software operator's panel.

(Note) The above parameters are effective only when the optional software operator's panel is selected.

0018							
EDITB	TVC	PROAD	SQTYP	NZMP4	NZMP2	NYMP2	NXMP2
7	6	5	4	3	2		0

EDITB 1: Editing on standard keyboard shall be editing operation B.
0: Editing operation shall be as specified in standard specifications.

TVC 1: No TV check at the comment.
0: TV check at the comment.

PROAD 1: In the display of absolute coordinate value, the programmed position is displayed.
0: In the display of absolute coordinate value, the actualposition considering the offset is displayed.

SQTYP 1: The program restart method should be R type. (not available)
0: The program restart method should be P or Q type.

NXMP2, NYMP2, NZMP2, NZMP4

1: Handle feed magnificaiton xl 00 is ineffective for X, Y, Z and 4th axes, respectively.

0: Handle feed magnification xl 00 is effective for X, Y, Z and 4th axis,respectively.

(Note) The magnification of an axis whose magnification xl **00** is ineffective becomes xl or x10 by singnal MP1.

MP1 = 1 : x 10

MP1= 0 : x **1**

0019

DBCD	NEOP	M02NR	SRGTP	TLCD		C4NG	MHPGB
7	6	5	**4**	3	2	1	0

DBCD 1: In the diagnosis display, the timer counter data is displayed in decimal.

0: The diagnosis display is displayed in binary as usual.

NEOP 1: M02, M30 and M99 command the end of registration into part program storage editing area.

0: M02, M30 and M99 do not command the end of registration into part program storage editing area..

M02NR 1: Return to the head of program after executing M02.

0: Do not return to the head of program after executing M02.)

SRGTP 1: G135.0 is used for the rigid tap selection signal

0: G 123.1 is used for the rigid tap selection signal.

TLCD **1:** Tool length compensation is the type C.

0: Normal tool length compensation.

(Note) When this parameter is set to 1, be sure to set OFRD (PRM No.36 bit6) to 1.

C4NG 1: 4th axis neglect signal is valid.

0: 4th axis neglect signal is invalid.

MHPGB 1: Multi-handle function is specification B.

0: Multi-handle function is specification A.

(For specification A/B, see connecting manual.

0020

SFOUT		NCIPS	BCD3				
7	6	5	**4**	3	2	1	0

SFOUT 1: SF is output in S4/5 digit even if gear change is not performed.

0: SF is output in S4/5 digit on changing a gear.

NCIPS 1: In deceleration, the control proceeds to the next block after the specified speed has become zero.

The control does not confirm that the machine position meets a specified position.(No inposition checking).

0: The control proceeds to the next block after the specified speed has become zero and confirms that the machine position has reached the specified position in deceleration. (Inposition checking).

BCD3 1: B code is 3-digit output.

0: B code is 6-digit output.

0021

		APC8	APC7	APC4	APCZ	APCY	APCX
7	6	5	**4**	3	2	1	0

APCX, Y, Z, **4, 7,** 8

1: When absolute pulse coder is optioned.

0: When absolute pulse coder is not optioned.

0022

		ABS8	ABS7	ABS4	ABSZ	ABSY	ABSX
7	6	5	**4**	3	2	1	0

ABSX, Y, Z, 4, 7, 8

1: Reference point position in absolute pulse coder is settled.

0: Reference point position in absolute pulse coder is not settled.

(It is automatically set to "1" when manualreference point return is executed. Do not change the setting without changing the detector.)

Set 0 without fail when primary field installation and adjustment and when position detector exchanging. And exexcu te manual reference point return after power off/on.

0023

	DSPN	DHNG	DITA	DCHI	DFRN	DGRM	DJPN
7	6	5	4	3	2	1	0

DHNG The CRT screen is displayed in Hangeul.

DSPN The CRT screen is displayed in Spanish.

DITA CRT screen is displayed in Italian

DCHI CRT screen is displayed in Chinese (Formosan)

DFRN CRT screen is displayed in French.

DGRM CRT screen is displayed in German.

DJPN CRT screen is displayed in Japanese.

0024

	CLCL	UWKN	INOUT		SCTO	LII10	IGNPMC
7	6	5	4	3	2	1	0

CLCL 1: The local coordinate system is canceled by automatic reference point return.

0: Not canceled.

UWKN 1: When the work zero point offset value is modified, absolute coordinate value is changed at once.

(Not available)

0: After modification, the absolute coordinate value is updated at the initial preprocessing.

INOUT 1: Outside of the 2nd stored stroke limit is set to the forbidden area.

0: Inside of the 2nd stored stroke limit is set to the forbidden area.

SCTO 1: Spindle speed reach signal is checked.

0: Spindle speed reach signal is not checked.

LII10 1: Inputting/Outputting unit is 0.01 mm/0.001 inch.

0: Inputting/Outputting unit is 0.001 mm/ 0.0001 inch

(Usual)

IGNPMC 1: Control by PMC is made ineffective.

(Same as without PMC.)

0: Control by PMC is made effective.

0028

PSG2	PSG1	EXIOD	EXTS	MMDL	DACTF	RCMSG	PRCPOS
7	6	5	4	3	2	1	0

PSG1, 2 Gear ratio of spindle and position coder

$$\text{Scale} = \frac{\text{Spindle speed}}{\text{Position coder speed}}$$

Scale	PSG2	PSG1
X1	0	0
x2	0	1
×4	1	0
×8	1	1

EXIOD 1: External work coordinate system shift function:

10 times the input value corresponds to the

external work zero point offset value.

0: The input value corresponds to the external work zero

point offset value.

EXTS **1:** External program number search is valid.

0: External program number search is invalid.

(Option)

MMDL 1: Modal status is displayed in MDI operation B.
0: Modal status is not displayed in MDI operation B.

DACTF 1: Actual speed is displayed on the current positon display screen and program check screen.
0: Not displayed.

PRCMSG 1: On the program check screen, a message from PMC is displayed. (not available)
0: The remaining motion is displayed.

PRCPOS 1: On the program check screen, the absolute coordinates are displayed.
0: The relative coordinates are displayed.

0029

	DSPSUB	MABS	SFOB	G604	G60Z	G60Y	G60X
7	6	5	4	3	2	1	0

DSPSUB 1: Displays 5th/6th axis current positions for PMC axis.
0: Does not display 5th/6th axis current positions for PMC axis. The axis name is in accordance with the parameters (No. 7130, 7131).

MABS 1: In MDI operation B the absolute incremental is by G90/91.
0: In MDI operation B the absolute incremental is by setting.

SFOB At the constant surface speed control:
1: SF is not outputted.
0: SF is outputted.
(Note) In M DI operation A, parameter ABS is always set to specify whether an absolute or incremental command is used.

G60X to 4 Specify the approach direction in the single direction positioning of X - axis, Y - axis, Z - axis and 4th axis in sequence.
1: Minus direction
0: Plus direction

0030

G91						EAC1	EAC0
7	6	5	4	3	2	1	0

G91 1: When the power is turned on, G91 mode is set.
0: When the power is turned on, G90 mode is set.

EACO, EAC1:
Axis setting for PMC axis control

EAC1	EAC0	Controlled axis
0	0	4th axis
0	1	X axis
1	0	Y axis
1	1	Z axis

0032

	EACSB		PNGMLK				
7	6	5	4	3	2	1	0

EACSB 1: PMC axis control is of the B specification.
0: PMC axis control is of the A specification. (For the details, refer to the Connecting Manual.)

PNGMLK 1: In PMC axis control, machine lock shall be invalid.
0: In PMC axis control, machine lock shall be valid.

0035

ACMR	LGCM			NDSP4	NDSPZ	NDSPY	NDSPX
7	6	5	4	3	2	1	0

ACMR 1: Optional CMR is used.
0: Optional CMR is not used.

LGCM 1: Low - and high - speed gear changing speed rpm depends on parameter SPDMXL (No. 585). When gear 3 - step is used, low and medium - speed gears, and medium - and high - speed gears changing speed on parameter SPDMXL (No. 585) and SPDMXH (No. 586).

0: Gear changing speed rpm shall be the respective maximum gear speed rpm.

NDSPX, Y, Z, 4

Whether the current positions of X, Y, Z and 4th axes are displayed or not

1: The current position is not displayed.

0: The current position is displayed.

0036

SCR	OFRD	TLCDOK			SCLZ	SCLY	SCLX
7	6	5	4	3	2	1	0

SCR 1: The scaling magnification increment shall be 0.001.

0: The scaling magnification increment shall be 0.00001.

OFRD 1: Tool length compensation is specified by H-code, and cutter compensation is specified by D-code.

0: Tool length compensation and cutter compensation are specified by H-code as usual.

TLCDOK 1: An alarm is not given even if more than two axes are offset in the tool length compensation of type C.

0: An alarm is given when more than two axes are offset in the tool length compensation of type C.

SCLX, SCLY, SCLZ

1: Each axis scaling is valid.

0: Each axis scaling is invalid.

0037

PLCO1	V A L T	SPTP8	SPTP7	SPTP4	STPZ	SPTPY	SPTPX
7	6	5	4	3	2	1	0

PLC01 1: A pulse coder of 0.1 μ detection is to be used.

0: A pulse coder of 0.1 μ detection is not to be used.

VALT 1: Time constant is steplessly switched in rigid tapping.

0: Time constant is not steplessly switched in rigid tapping.

(Note) In the case of stepless switching of time constant, specify the gear to make tapping by using the S-analog output type B (parameter No.1 2 G84S = 1) if the gear is one stage or more stages. Don't use it in the system in which tapping is made over several stages of gear.

SPTPX to SPTP8

Types of position detector of the X, Y (Z), Z (Cf) and to the 8th axis in this order.

1: The separate type pulse coder is to be used as a detector.

0: The separate type pulse coder is not to be used as a detector.

In case of the O-G with 0.1 μ pulse coder, set the following parameters in units of 1μ. (The set data is multiplied by ten within the CNC)

No.	Parameter*	Contents
0504	SERRX (X)	Limitation value of position. deviation amount during movement of X axis.
0505	SERRT (Z)	Limitation value of position deviation amount during movement of Y (Z) axis.
0506	SERRZ (3)	Limitation value of position deviation amount during movement of Z (3rd) axis.
0507	S E RR Z 4 (4)	Limitation value of position deviation amount during movement of Z 4th axis.
0508	GRDSX (X)	Grid shift amount of the X - axis.
0509	GRSDY (Z)	Grid shift amount of the Y ((?) - axis..
0510	GRDSZ (3)	Grid shift amount of the Y (3rd) - axis.
0511	GRDS4 (4)	Grid shift amount of the 4th axis.

Note) Above explanation is applied when the parameter "PL01" (No. 0037 bit 7) = 1

0038

7	6	5	4	3	2	1	0
RSCMD1	DEVFL1	RSCMD2	DEVFL2	FLKY	RSCMD3	DEVFL3	

RSCMD1, DEVFL **1** :

Setting I / 0 device of reader/ puncher interface channel 1.

RSCMD1	DEVFL1	I/O device used
0	0	Bubble cassette
0	1	Floppy cassette
1	0	RS232, PPR
1	1	New interface

RSCMD2, DEVFL 2 :

Setting I / 0 device of reader/ puncher interface channel 2.

RSCMD3, DEVFL 3 :

Setting I / 0 device of remote buffer channel.

RSCMD3	DEVFL3	I/O device to be used
0	0	Bubble cassette, PPR
0	1	Floppy cassette
1	0	Paper tape reader, etc.
1	1	Paper tape reader, etc.

FLKY 1: CRT / MDI keyboard uses a full key.

0: CRT / MDI keyboard uses a standard key.

1 0039

7	6	5	4	3	2	1	0
M6TCD	IGIN	IGSK	GRST	TLSK	LCTM	GST2	GST1

Following is the setting for tool life management.

M6TCD 1: Regards MO6 and the same block T code as the next tool group command.

0: Regards MO6 and the same block T code as back-number.

IGIN 1: Ignores tool backnumber.

0: Does not ignore tool back-number.

IGSK 1: Took skip signal is accepted only while the tool life managed tool is in use.

0: Tool skip signal is always accepted.

GRST 1: Clears all group execution data at the time of tool reset signal input. (This is the same with when this operation is performed.)

0: Clears the execution data for the groups specified with G139#0 (TL21) to #6(TL64), at the time of tool reset signal input.
(Only the group shown by the cursor position when this operation is performed from MDI.)

TLSK 1: At the time of tool skip signal input, Group No. is also entered.

0: At the time of tool skip signal input, the group currently being selected is skipped.

LCTM 1: Designates the tool life by time.

0: Designates the tool life by frequency.

GST1/GST2:

Designate the number of registerable groups in tool group setting.

GST2	GST1	No. of groups	No. of tools/group
2		1 ~ 16	1-16
0	0	1 ~ 32	1 - 8
0	1	1 ~ 64	1 - 4
1	0	1-128	1 ~ 2

0040

LOCC	COMC	TMCR	SORT	RWCNT		DPOSUP	NAMPR
7	6	5	4	3	2	1	0

LOCC 1: Does not place local variables (#1 to 33) in(vacant) state during resetting.

0: Places local variables (#1 to 33) in (vacant) state during resetting.

COMC 1: Does not place common variables (#100 to 149) in (vacant) state during resetting.

0: Places common variables (#100 to149) in (vacant) state during resetting.

TMCR 1: T code calling subprogram 09000

0: T code as a normal tool function

SORT 1: At the display of program library, it is displayed in numerical order.

0: Program library is displayed in normal specification.

RWCNT 1: Does not count the total number of parts machinedand the number of parts machined even when M02/M30 are executed.

0: Counts the total number of parts machined and the number of parts machined each time M02/M30 are executed.

DPOSUP 1: At data output by DPRINT command, a space is outputted for reading zero.

0: At data output by DPRINT command, nothing is done for reading zero.

NAMPR 1: Displays the program name on the directory display screen.

0: Does not display the program name on the program directory display screen.

0041

M6TST		SSCAI	SSCAO				RIN
7	6	5	4	3	2	1	0

M6TST 1: When a T-code is specified in the same block as MO6 in the tool life management, the life of that tool group is immediately counted.

0: When a T-code is specified in the same block as MO6 in the tool life management, the T-code is handled as a return number of a group number to be next selected. It depends upon PRM No. 39 M6TCD.

SSCAO, SSCAI

This is use to set an axis that is considered as a reference for calculation in the constant surface speed control.

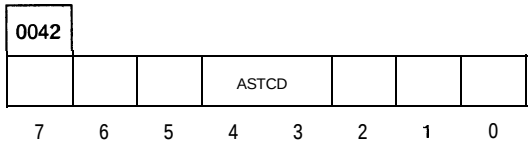
SSCA1	SSCA0	Axis
0	0	X
0	1	Y
1	0	Z
1	1	4

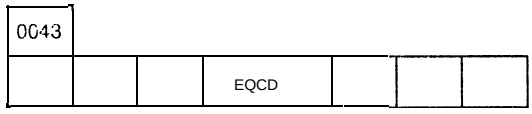
(Note) This parameter is used when PO or P is not specified with a G96 command.

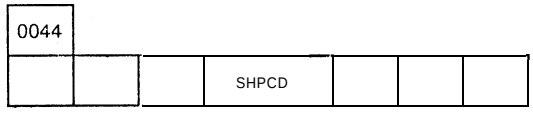
Remarks Effective only when PMC is equipped.

RIN 1: Command the coordinate rotation angle by incremental command.

0: Commands the coordinate rotation angle by absolute command.

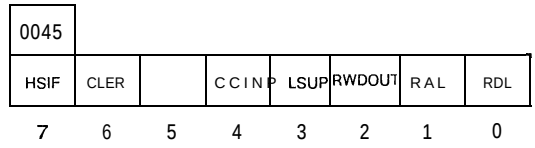






ASTCD, EQCD, SHPCD:

Set the hole pattern of *, =, # of EIA codes in custom macro B in sequence, using El-bit data.



HSIF 1: M/S/T/B code processing shall be a high-speed interface.
0: M/S/T/B code processing shall be a normal interface.

CLER 1: Selects clear conditions, using the reset button,external reset signal and emergency stop.
0: Selects reset conditions, using the reset button, external signal and emergency stop.

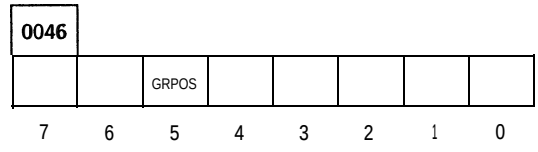
CCINP 1: The in-position width for cutting feed is specified with different parameters from those used for rapid traverse (No. 0609 to 0612).
0: The in-position width for cutting feed is specified with the same parameters as those used for rapid traverse (No. 0500 to 0503).

LSUP 1: Cutting feed acceleration / deceleration becomes to be the linear type after interpolation.
0: Cutting feed acceleration / deceleration becomes to be the exponential type.

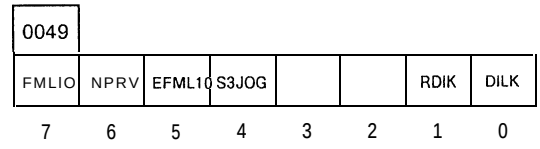
RWDOUT 1: No signal is outputted in rewinding.
0: A signal is outputted in rewinding.

RAL 1: Registers only one program for reading through reader/ puncher inter-face.
0: Registers all programs for reading through reader/ puncher interface.

RDL 1: Registers a program after all programs are erased for reading for I/O device external control.
0: The reading is the same as in normal specification for I/O device external control.



GRPOS 1: A current position is displayed in a projection view (machine figure) drawing and a tool path drawing.
0: A current position is not displayed in a projection view (machine figure) drawing and a tool path drawing.



FML10 1: The rapid traverse rate and cutting feed upper limit speed parameter increment system shall be 10 mm/min or 1 inch/min.
e.g) For 100 m/min, the setting value shall be 10000.
0: As per normal specifications.

(Note) If the optional 1/10 incretnent system function is used, this parameter is invalid and must be set to 0.

NPRV 1: Even when no position coder is provided, the per-revolution feed command shall be valid. (The per-revolution feed command is converted automatically to the per-minute feed in CNC.)
0: When no position coder is provided, the per-revolution feed command shall be invalid.

EFML10 1 : The feedrate command (cutting feed) of PMC axis control is used by 10 times.
0: Standard specification.

S3JOG 1: The number of simultaneously controlled axes in manual operation is 3 maximum.
0: The number of simultaneously controlled axes in manual operation is 1 maximum.

RDIK 1: The high-speed interlock signal shall be invalid when the each axis interlock signal goes off.
0: The high-speed interlock signal shall be always valid.

DILK 1: The each axis interlock signal shall be valid, only in manual operation.
0: The each axis interlock signal shall be invalid.

0050

NFED				RSASCI			STP2
7	6	5	4	3	2	1	0

0051

NFED		ECLK	NCKCD	RSASCI	SYNAK	PARTY	STP2
7	6	5	4	3	2	1	0

Parameter Nos. 0050/0051 correspond to setting I/O = 2 and 3, respectively.

NFED 1: When the reader/puncher interface is used to output a program, no feed is output before and after that.
0: When the reader/puncher interface is used to output a program, feed is output before and after that.

ECLK 1: Remote buffer band rate clock is effected by an external clock.
0: Remote buffer band rate clock is effected by an internal clock.
(Note) Valid only in the case of RS422 interface.

NCKCD 1: Signal (CD) status is, not monitored in the remote buffer interface.
0: Signal (CD) status is monitored in the remote buffer interface.

RSASCI 1: When the reader/puncher interface is used to input a program, ASCII code is used.
0: When the reader/puncher interface is used to input a program, ISO/EIA code is used.

SYNAK 1: In the case of protocol B in the remote buffer interface, the output of "SYN" and "NAK" codes is controlled.
0: In the case of protocol B in the remote buffer interface, the output of "SYN" and "NAK" codes is controlled.

STP2 1: Stop bit shall be 2 bits in the reader/puncher interface.
0: Stop bit shall be 1 bit in the reader/ puncher interface.

PARTY 1: Parity bit shall be present.
0: Parity bit shall be absent.

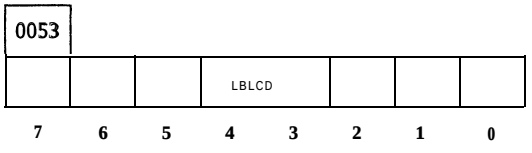
0052

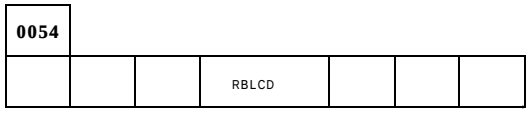
NODIC8	NODIC7	NODIC6	NODIC5	NODIC4	NODIC2	NODICY	NODICX
7	6	5	4	3	2	1	0

NODICX-NODIC8:
For increment system 1/1 0, this sets whether the decimal point position of the current position display of each axis during PMC axis control is made identical to increment system 1 /10 or not.

NODIC 1: The current position display of PMC axis control shall be the same as in standard specifications, not in accordance with the decimal point position of increment system 1/10.

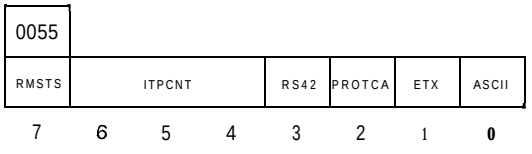
0: The current position display of PMC axis control is in accordance with the decimal point position of increment system 1/10.





LBLCD/RBLCD:

The hole pattern of and in EIA code in custom macro B is set by 8-bit data in sequence.



ITPCNT
000: Interpolates GO5 data in 8 msec.
001: Interpolates G05 data in 2 msec.
010: Interpolates G05 data in 4 msec.
011: Interpolates G05 data in 1 msec.
100: Interpolates G05 data in 16 msec.

RS42 1: Remote buffer interface is made by RES422.
0: Remote buffer interface is made by RS232C.

RMSTS 1: In the case of protocol A in the remote buffer interface, the remote buffer status of “SAT” telegram is returned unconditionally by switching to the “SET” telegram from the host computer.

0: In the case of protocol A in the remote buffer interface, the remote buffer status of “SAT” telegram is usually returned with no specification (= 0).

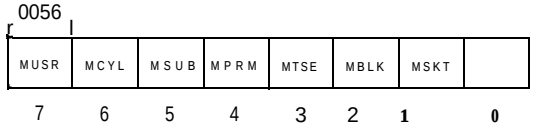
PROTCA 1: For communication protocol, protocol A is used.

0: For communication protocol, protocol B is used.

EXT 1: End Code shall be "ETX".
0: End Code shall be “CR”.

ASCII 1: For all communications except NC data, ASCII code is used.

0: For all communications except NC data, ISO code is used.



MUSR 1: The custom macro interrupt function is used.
0: The custom macro interrupt function is not used.

MCYL 1: Custom macro interruption is executed even in the cycle operation.
0: Custom macro interruption is not executed even in the cycle operation.

MSUB 1: The local variable of interruption program is the same as that of the main program. (Subprogram type)
0: The local variable of interruption program unique. (Macro type)

MPRM 1: Interruption valid/invalid M-code is set in a parameter.
0: Interruption valid/invalid M-code is M96 / M97.

MTSE 1: Interruption signal is of the status trigger type.
0: Interruption signal is of the edge trigger type.

MBLK 1: The NC statement of interruption program is executed after the block ends.
(Custom macro interruption type II)
0: The NC statement of interruption program is executed by interrupting the block. (Custom macro interruption type I)

MSKT 1: At interruption, an absolute coordinate is set to a skip coordinate.

0: At interruption, an absolute coordinate is not set to a skip coordinate.

0057

MBCLR	FXY	HOT3	CROUT	MIC			
7	6	5	4	3	2	1	0

MBCLR 1: MDI-B program is cleared by the reset operation.

0: MDI-B program is not cleared by the reset operation.

FXY 1: The drilling axis in a fixed cycle is the axis selected by a program.

0: The drilling axis in a fixed cycle is usually Z-axis.

HOT3 1: Signals (X020#0∗+ LX to ∗-LZ) of hardware OT is valid.

0: Signals (X020#0∗+ LX to ∗-LZ) of hardware OT is invalid.

CROUT In B/D PRINT, after the data is outputted in ISO code:

1: "LF" and “CR” are outputted.

0: Only the "LF" is outputted.

MIC 1: At omission of decimal point, the minimum set unit is multiplied by ten.

0: At omission of decimal point, the minimum set unit is notmultiplied by ten.

0058

		SGCSR	SGFIN	SGPLN	SG3PL	SGTLC	SGORG
7	6	5	4	3	2	1	0

SGCSR 1: In tool path drawing, the tool current position and the center position of partial magnification is shown by the " " mark.

0: In tool path drawing, the tool current, position and the center position of partial magnification is shown by the "X" mark.

SGFIN 1: In projection view drawing, the machine figure drawing is shown in the fine mode.

0: In projection view drawing, the machine figure drawing is shown in the rough mode.

SGPLN 1: In projection view drawing, a plane view with a ridgeline is drawn.

0: In projection view drawing, a plane view without a ridgeline is drawn.

SG3PLN 1: In projection view drawing, a three-plane view is drawn in the third angle projection.

0: in projection view drawing, a three-plane view is drawn in the first angle projection.

SGTLC 1: In projection view drawing, tool length compensation is made.

0: In projection view drawing, tool length compensation is not made.

SGORG 1: When the coordinate system is changed in drawing, the current drawing point is regarded as a current position set in a new coordinate system, and the drawing is continued. (Tool path drawing only)

0: Drawing is continued in the same coordinate system even if the coordinate system is changed in drawing.

0059

		EDMZ	EDMY	EDMX	EDPZ	EDPY	EDPX
7	6	5	4	3	2	1	0

(Note) The deceleration speed is specified with parameter No.0636.

EDMX,EDMY,EDMZ

For the command in the minus direction of X, Y and Z axes:

1: External deceleration is valid for rapid traverse and cutting feed.

0: External deceleration is valid only for rapid traverse.

EDPX,EDPY,EDPZ

For the command in the plus direction of X, Y and Z axes:

1: External deceleration is valid for rapid traverse and cutting feed.

0: External deceleration is valid only for rapid traverse.

0060							
IGNCOL				C14DGN			
7	6	5	4	3	2	1	0

IGNCOL 1: 9" high-resolution color display.

0: 9" high-resolution monochrome display.

C14DGN 1: 14" diagnose screen.

0: 9" diagnose screen.

0061							
ALL78	DSP78	EBC8	EBC7	EBC4	EBCZ	EBCY	EBCX
7	6	5	4	3	2	1	0

EBCX - EBC8

1: B is used for DI/DO of PMC axis control.

0: A is used for DI/DO of PMC axis control.

DSP 78 1: The 7th and 8th axes are displayed in the absolute and relative coordinates of current position.

0: The 7th and 8th axes are not displayed in the absolute and relative coordinates of current position.

ALL78 1: The 7th and 8th axes are displayed in the general of current position. (Use forbidden)

0: The 7th and 8th axes are not displayed in the general of current position.

0062							
C8NG		ADLIN8	ADLIN7				
7	6	5	4	3	2	1	0

ADLIN7,ADLIN8

This sets the linear axis/rotary axis of 7th and 8th axes.

1: Rotary axis

0: Linear axis

C8NG 1: The 8th axis is invalid.

0: The 8th axis is valid.

0063							
SPMRPM	ESCAL	EAXOV	RGDOV	VALPC	M198P	PRSTIN	MTDSPI
7	6	5	4	3	2	1	0

SPMRPM 1: At S5-digit analog control, the maximum spindle speed is 99999rpm.

0: At S5-digit analog control, the maximum spindle speed is the standard value.

ESCAL 1: Each axis scaling and programmable mirror image are enabled (the scaling magnification is specified with I, J, and K). (Note 1)

0: Each axis scaling and programmable mirror image are disabled (the scaling magnification is specified with P). (Note 2)

(Notel) Bits 0 to 2 of parameter 0036 (SCLX, SCLY, and SCLZ) must be set to 1.

(Note2) Scaling is enabled when bits 0 to 2 of parameter 0036 (SCLX, SCLY, and SCLZ) are set to 1.

EAXOV 1: Dry run and override is valid for the PMC axis.

0: Dry run and override is invalid for the PMC axis.

RGDOV 1: Override is valid in drawing in rigid tapping.

0: Override is invalid in drawing in rigid tapping.

{Note) Override value is specified by the parameter No. 258 (RGOVR).

VALPC **1**: Optional gear ratio is used between the spindle and the position coder in rigid tapping.

0: Optional gear ratio is not used between the spindle and the position coder in rigid tapping.

(Note) When VALPC = 1, the optional gear ratio between the spindle and the position coder is set in parameters No. 259 -264. When VALPC = 0, the gear ratio between the spindle and the position coder is set in the parameter No. 28.

M198P 1: The address P of Ml 98 indicates a program number.

0: The address P of **Ml 98** indicates a file number.

PRSTIN1: When the input is of the inch system, automatic coordinate system setting is handled as a separate parameter.

0: When the input is of the inch system, automatic coordinate system setting is not handled as a separate parameter.

MTDSPI 1: Machine coordinate system is displayed to meet the input system.

0: Machine coordinate system is not displayed to meet the input system.

0064

		NPA					SETREL
7	6	5	4	3	2	1	0

NPA 1: The screen is not switched to the alarm/message screen at occurrence of alarm or at the entry of operator message.

0: The screen is switched to the alarm/message screen at occurrence of alarm or at the entry of operator message.

SETREL 1: Preset is made for each axis in the relative position display.

0: Preset is as usual.

0065

M3B							
7	6	5	4	3	2	1	0

M3B 1: Maximum 3M codes can be disignated in one block.

2: M-code designations in one block are as usual.

0066

		ZM8	ZM7				
7	6	5	4	3	2	1	0

ZM7, ZM8 This is used to set the reference point return direction of the 7th and 8th axes, and the backlash initial direction at power on.

1: Minus

0: Plus

0067

	DMR7					GRD7	
7	6	5	4	3	2	1	0

Refer to the parameter Nos. 0004 - 0007.

0068 0068

	DMR8					GRD8	
7	6	5	4	3	2	1	0

DMR7, DMR8:

Set the detection multiply of the 7th and 8th axes.

GRD7, GRD8:

Set the reference counter capacity of the 7th and 8th axes.

0100

CMRX							
7	6	5	4	3	2	1	0

0101

CMRY							
7	6	5	4	3	2	1	0

0102

CMRZ							
7	6	5	4	3	2	1	0

0103

CMR4							
7	6	5	4	3	2	1	0

CMRX, CMRY, CMRZ, CMR4 :

Command multiply for X, Y, Z and 4th axes, respectively.

Setting code	Multiplier
1	0.5
2	1
4	2
10	5
20	10

When an arbitrary command multiply (No. 0035 ACMR = 1) is used, there are 2 types of setting methods as follows.

1) When a command multiply is 1/2 to 1/27:

$$\text{Preset value} = \frac{1}{\text{Command multiply}} + 100$$

2) When a command multiply is 2 to 48 :

Preset value = 2 x (Command multiply)

(Note 1) For (2) above, be sure to set a value such that the command multiply should be always an integer.

(Note 2) Set the backlash compensation and pitch error compensation values with detection unit when an arbitrary command multiply is used.

0108

SPLOW

SPLOW Spindle speed during constant speed spindle rotation, or spindle speed at gear shift. (when parameter No. 0003, GST = 1),

$$\text{Setting value} = \frac{\text{Spindle motor speed at gear shift}}{\text{Max. motor speed}} \times 4095$$

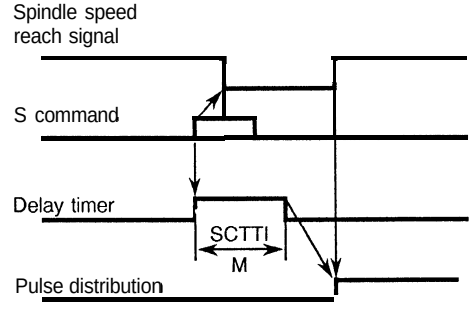
Setting range : 0 to 255 (unit : rpm
(1 Orpm at parameter No.0062#3 = 1))

0110

SCTTIM

SCTTIM Set the delay timer for checking the spindle speed reach signal. This sets the time required from execution of the S function to the beginning of checking the spindle speed reach signal.

Setting range: 0 to 255 (unit: msec)



0111

MBUF1

0112

MBUF2

MBUF1, 2

Up to two M codes which are not subjected to buffering for the next block can be set.When 03 is set, MO3 is not subjected to buffering for the next block.

0117

H4NO + HZNO 1

HZNO In case of multi-handle B specification, which manual pulse generator is used for the Z axis is specified.

Setting value: 12 to 32

H4NO In case of multi-handle B specifi-cation, which manual pulse generator is used for the 4th axis is specified.

Setting value: 12 to 32

Setting method 2nd digit: H4 NO

1st digit : HZNO

(Example) When the 2nd manual pulse generator is used for the Z-axis and the **3rd manual pulse generator** is used for the 4th axis, Setting **value is 32**

0118

NUMHG

Parameters related with tool life management.

NUMHG The number of manual pulse generators to be used in multi-handle is set.

Setting value: 1/2/3 (unit)

0121

MULHPG

MULHPG Multiplier n of the manual handle feed.

Setting value: **1 - 127**

Multiplier n when selection signal MP2 for the manual hand feed move distance in on, set to 100 as a standard value.

0124

PSRNQ1

0125

PSRNQ2

0126

PSRNQ3

0127

PSRNQ4

PSRNQ1 to 4

Set the order of moving to the dry run restart position in program restart of X-axis, Y-axis, Z-axis and 4th axis in sequence.

Setting value: **1** - No. of axes (Moves in the order of 1, 2, 3 and 4)

(e.g.) When these parameters are set as PSRNQ1 = 2, PSRNQ2 = 3, PSRNQ3 = 4 and PSRNQ4 = 1, the tool moves to the restart position by one axis in the order of 4th - X - Y - Z.

(Note) When all zero, the value out of the setting range or the same value is overlapped on the above parameter for setting, the setting is made automatically in the order of 4th - X - Y - Z.

0130

UPKY

0131

DWNKY

0132

RGTKY

0133

LFTKY

0134

FWDKY

0135
BACKY

Specify the JOG move axis and direction on the software operator's panel corresponding to keys. ↑, ↓, →, ←, ↙, ↗

Setting value: 1 to 6

Axis/Direction	Setting Value
+X	1
- X	2
+ z	3
- Z	4
+3	5
- 3	6

(Example) When setting ↑ to + X, ↓ to – X → to +Z, ← to – Z, ↙ to + 3 andrto – 3 set as follows.

UPKY = 1, DWNKY = 2, RGTKY = 3, LFTKY = 4, FWDKY = 5, BACKY = 6.

0136
RTDKY
0137
LTULY

RTDKY = 7, LTOKY = 8

a) In case of T series

UPKY, DWNKY, RGTKY, LFTKY

Sets the jog feed axes and directions on the Software operator's panel corresponding to ↑, ↓, → and ← keys.

LFTKY

Axis/Direction	Setting Value
+X	1
– X	2
+ Z	3
- Z	4

(Example) When setting ↑ to + X, ↓ to-X, → to + Z and ← to – Z, set as follows.

UPKY = 1, DWNKY = 2, RGTKY = 3, LFTKY = 4,

b) In case of M series

URKY to LTUKY

Set the jog feed axes and directions on the software operator's panel corresponding to ↑, ↓, →, ←, ↙, ↗, and keys.

Axis/Direction	Setting Value
+X	1
- X	2
+Y	3
– Y	4
+Z	5
– Z	6
+4	7
– 4	8

(Example)

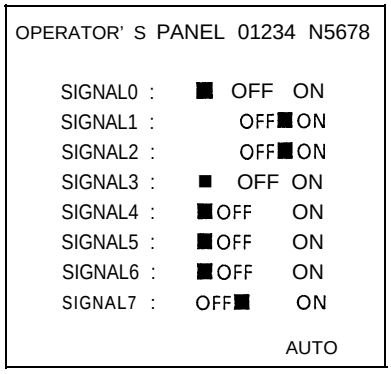
When setting ↑ to + X, ↓ to – ×, → to + Z and ← to -Z, set as follows. UPKY = 5, DWNKY = 6, RGTKY = 1, LFTKY = 2, FWDKY = 4, BACKY = 3.

0140
NSW11

⋮

0203
NSW88

The names of general purpose switches (SIGNAL 0 - SIGNAL 7) on the software operator's panel in the following figure are set as follows.



Characters are set by codes in parameters 0140 to 0203 as follows:

PRM. No. 140

Code (083) corresponding to character "S" of SIGNAL in the above figure is set.

PRM. No. 141

Code (073) corresponding to character "I" of SIGNAL 0 in the above figure is set.

PRM. No. 142

Code (071) corresponding to character "G" of SIGNAL 0 in the above figure is set.

PRM. No. 143

Code (078) corresponding to character "N" of SIGNAL 0 in the above figure is set.

PRM. No. 144

Code (065) corresponding to character "A" of SIGNAL 0 in the above figure is set.

PRM. No. 145

Code (076) corresponding to character "L" of SIGNAL 0 in the above figure is set.

PRM. No. 146

Code (032) corresponding to character " "(space) of SIGNAL 0 in the above figure is set.

PRM. No. 147

Code (048) corresponding to character "0" of SIGNAL 0 in the above figure is set.

PRM. No. 0148-0155

Characters corresponding to SIGNAL 1 in the above figure.

PRM. No. 0156-0163

Characters corresponding to SIGNAL 2 in the above figure.

PRM. No. 0164-0171

Characters corresponding to SIGNAL 3 in the above figure.

PRM. No. 0172-0179

Characters corresponding to SIGNAL 4 in the above figure.

PRM. No. 0180-0187

Characters corre-sponding to SIGNAL 5 in the above figure.

PRM. No. 0188-0195

Characters corresponding to SIGNAL 6 in the above figure.

PRM. No. 0196-0203

Characters corresponding to SIGNAL 7 in the above figure.

For character codes, refer to the characters-to-codes table in the next page.

Setting value 0 is a space.

Character-to-codes Correspondence Table

Character	Code	Comment	Character	Code	Comment
A	065		6	054	
B	066		7	055	
C	067		8	056	
D	068		9	057	
E	069			032	Space
F	070		!	033	Exclamation mark
G	071		ll	034	Quotation mark
H	072		#	035	Sharp
I	073		$	036	Dollar symbol
J	074		%	037	Percent
K	075		&	038	Ampersand
L	076		,	039	Apostrophe
M	077		(	040	Left parenthesis
N	078		)	041	Right parenthesis
0	079		*	042	Asterrisk
P	080		+	043	Plus sign
Q	081		,	044	Comma
R	082			045	Minus sign
S	083		.	046	Period
T	084		/	047	Slash
U	085			058	Colon
V	086			059	Semi - colon
W	087		〈	060	Left angle bracket
X	088			061	Sign of equality
Y	089		〉	062	Right angle bracket
Z	090		?	063	Question mark
0	048		@	064	Commercial at mark
1	049		⊏	091	Left square bracket
2	050		A	092	
3	051		¥	093	Yen symbol
4	052		7	094	Right square bracket
5	053		_	095	Underline

0204

POSTN 1

0205

POSTN2

0206

POSTN3

0207

POSTN4

POSTN1 to 4

Approach amount for single direction positioning of X-axis, Y-axis, Z-axis and 4th axis Setting value : 0 to 255 Unit 0.01 mm (metric output) Setting value : 0 to 255 Unit 0.001 inch (inch output)

(Note) In increment system 1/1 0, the unit is the same as above. But the Max. value is 163.

0212

INTPLN

INTPLN 0: G17 is selected with power on.
1: G18 is selected with power on.
2: G19 is selected with power on.

0213

AOVMDR

AOVMDR Minimum deceleration ratio of inside circular cutting speed for the automatic override.
Setting range: 1 to 100% Standard preset value: 1
Set the minimum deceleration ratio (MDR) when the inside circular cutting speed is changed.

0214

AOVOR

AOVOR Deceleration ratio of inside corner automatic override.
Setting range: 1 to 100%
Standard preset value: 50
Set the inside corner override value.

0215

AOVTH

AOVTH Inside judgement angle of automatic override at inside corner part.
Setting range: 1 to 1799
Standard preset value: 91

0216

FIDN

FIDN Constant to find the feedrate variations when manual pulse generator is rotated one scale for Fl digit command.

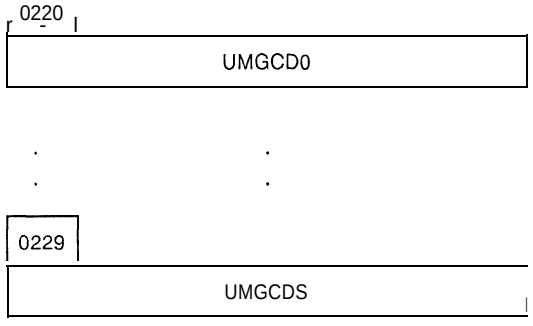
$$AF = \frac{Fmax\ i}{100\ n}$$

Set n above. In other words, set the feedrate Fmax when the manual pulse generator is rotated.
Setting value : 1 to 127
Fmax i in the above equation is the upper limit value of feedrate for F1 digit command: set it to parameter Nos. 0583/0584.
Fmax 1: Upper limit value of F1 to F4 feedrate
Fmax 2: Upper limit value of F5 to F9 feedrate

0219

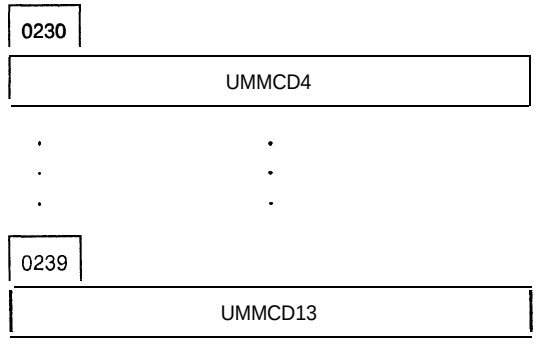
MCDCNT

MCDCNT When the preset M code is executed, the total number of machined parts and the number of machined parts are counted.
Setting value: 1 to 255
(0 is equivalent to no setting.98 and 99 cannot be set.)



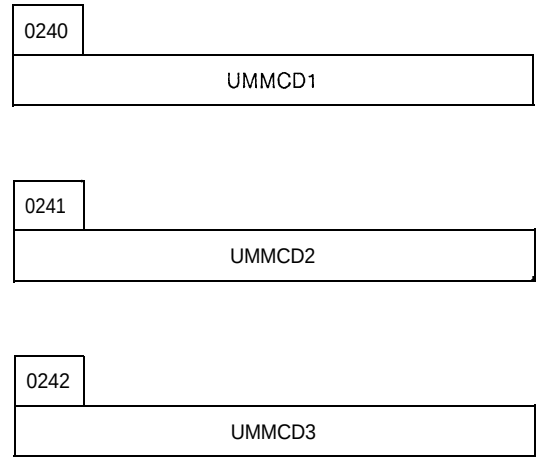
Set up to 10 G codes calling custom macro.

UMGCDO: G code calling custom macro body 09010
UMGCD1: G code calling custom macro body 09011
UMGCD2: G code calling custom macro body 09012
UMGCD3: G code calling custom macro body 09013
UMGCD4: G code calling custom macro body 09014
UMGCDS: G code calling custom macro body 09015
UMGCD6: G code calling custom macro body 09016
UMGCD7: G code calling custom macro body 09017
UMGCD8: G code calling custom macro body 09018
UMGCDS: G code calling custom macro body 09019
Setting value: 001 to 225
(With MOO, no custom macro can be called.
Even when 0 is set, it is equivalent to no setting.)



Set up to 10 M codes calling custom macro.

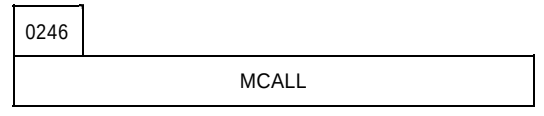
UMMCD4: M code calling custom macro body 09020
UMMCD5: M code calling custom macro body 09021
UMMCD6: M code calling custom macro body 09022
UMMCD7: M code calling custom macro body 09023
UMMCD8: M code calling custom macro body 09024
UMMCD9: M code calling custom macro body 09025
UMMCD10: M code calling custom macro body 09026
UMMCD11: M code calling custom macro body 09027
UMMCD12: M code calling custom macro body 09028
UMMCD13: M code calling custom macro body 09029
Setting value: 006 to 255
(With MOO, no custom macro can be called.
Even when 0 is set, it is equivalent to no setting.)



Set up to 3 M codes calling custom macro.

UMMCDI: M code calling custom macro body 09001
UMMCD2: M code calling custom macro body 09002
UMMCD3: M code calling custom macro body 09003

Setting value: 003 to 255
(With MOO, no custom macro can be called.
Even when 0 is set, it is equivalent to no setting.)



MACALL: M-code to enable custom macro inter-ruption.
Set value: 0 - 255

0247

MACRET

MACRET: M-code to disable custom macro inter-ruption.
Set value: 0 - 255

0248

M198M

M198M: M-code to call the program registered in a program by the method other than MI 98.
Set value: 1 - 255

(Note) When the set value is 0, it is equivalent to no setting.

0250

BRATE2

0251

BRATE3

BRATE2: Baud rate when the reader/ puncher interface is used. (valid when setting parameter I/O is 2).
Set value: 1 - 12

BRATE3: Baud rate when remote buffers A/B are used. (valid when setting parameter I/O is 3)
Set value: 1 - 25

The correspondence between Setting No. and actual baud rate is as follows.

Setting No	Baud rate	Setting No	Baud rate
1	50	13	38400
2	100	14	76800
3	110	15	86400
4	150	16	153600
5	200	17	307200
6	300	18	335100
7	600	19	368400
8	1200	20	409600
9	2400	21	460800
10	4800	22	526600
11	9600	23	614400
12	19200	24	737300
		25	921600

(Note1) For asynchronous communication, the maximum baud rate is as follows:
RS-232C : 19200 bps
RS-422 : 76800 bps

(Note2) For a baud rate of 86400 bps or higher, external clock synchronization is required (set bit 5 of parameter 0051 (ECKL) to 1).

(Note3) When using the RS-422 interface with external clock synchronization, use connector M73.

0252

PRSTCT

PRSTCT: Set this parameter to prolong the RST signal output time. The time is set by the parameter in units of 16 msec.
(RST signal output time) = (Reset time) + (Parameter value) x 16 msec
Set value: 0 - 255

0254

TPSUP

TPSUP: Spindle and Z-axis acceleration/deceleration type in the rigid tapping.
Data type: Byte type
Set value 0: Exponential acceleration/ deceleration
1: Linear acceleration/deceleration
Standard set value: 0

0255

BKL9

BKL9: Spindle backlash amount in the rigid tapping mode
Data type : Byte type
Set value : 0 - 127
Unit : Detection unit

0256

MCODE

POFF

MCODE: M-code to specify the rigid tapping mode
Data type : Byte type
Set value : 0 - 256
(Note) When 0 is set, regard as 29 (M29).
Please caution no to double with M code using for other purpose.

0258

RGOVR

RGOVR: This is used to set the override value at drawing in rigid tapping.
Data type: Byte type
Set value: 0 - 20
Unit: 10%

0269

SVAXX

0270

SVAXY

0271

SVAXZ

0272

SVAX4

0273

SVAX7

0274

SVAX8

SVAXX Set the servo axis number to output the X-axis command.

SVAXY Set the servo axis number to output the Z(Y)-axis command.

SVAXZ Set the servo axis number to output the 3(Z)-axis command.

SVAX4 Set the servo axis number to output the 4th axis command.

SVAX7 Set the servo axis number to output the 7th axis command.

SVAX8 Set the servo axis number to output the 8th axis command.

Setting value 1 to 6.

Setting value	Axis number	Connector number	
		A or B phase pulse coder	Serial pulse coder
1	1	M34, M35	M184, MI85
2	2	M37, M38	M187, MI88
3	3	M44, M45	M194, MI95
4	4	M47, M48	M197, MI98
5	7	M134, M135	M224, M225
6	8	M137, MI38	M227, M228

Remark: The normal setting is 0.

Example) When 1 is set to No.269, 3 is set to No.270, and 5 is set to No.271, a pulse will be output to the following.

T system M system
X axis/X axis : Servo axis No.1
Z axis/Y axis : Servo axis No.3
C axis/Z axis : Servo axis No.7

(Note) Set these parameters for all of the control axis. A servo alarm will be generated when all of the axis are not set or when there are errors in the setting.

(Note) When the 4 axis on the master print board are used for high-speed cycle machining, a 2 axis interface is required. (The setting for the high-speed axis is a digital servo parameter.) For example, the following shows an example of the parameter settings when the X axis is the high speed at the T system and the axis configuration is X, Z, and C.

	Set Value
0269	1
0270	3
0271	4

0269 0270 0271 Set Value 4 3 1

(The X axis is the high speed axis, so 2 cannot be set.)

0275
CMR7

0276
CMR8

CMR7, CMR8:

Set the command multiply of the 7th and 8th axes, respectively.

Remarks: Refer to the parameter Nos. 0100 - 0130.

0279
PSELP4

PSELP4:

0285
DPAX7

0286
DPAX8

DPAX7, 8: Set the names (character codes) of 7th and 8th axes, respectively.

The set code is conformable to the code of the general purpose switch on the operator's panel. (When the value is 0, "55" and "56" are set as a default value.)

0336
TLCMCD

M code for counting the number of times the tool is used (tool life count)

Setting : 0 to 255

Note 1) The M code is not buffered.

Note 2) 0 is ignored.

Note 3) Do not use M01, M02, M30, M98, or M99.

Example)

(1) Conventional case

Reset state

↓

N10 T0199 ; (Group 01 is selected, and the counter is incremented by 1.)

N20 G01 . . . .

:

:

N80 T0199 ; (Group 01 is selected, but the counter is not incremented.)

(2) When the M code is issued

Reset state

↓

N10 T0199 ; (Group 01 is selected, and the counter is incremented by 1.)

N20 G01 . . . .

:

:

N70 M16; (Code to restart counting the tool life)

N80 T0199 ; (Group 01 is selected, and the counter is incremented by 1.)

Note 1) If a group manages the tool life by counting the number of times or how long it has been used, tool management is stopped, and the machine enters the state that the tool whose life is not managed is used.

0394

#7	#6	#5	#4	#3	#2	#1	#0
							TLCSAM

TLCSAM When a multi-offset command is issued during tool life management,

1 : The tool life is counted for each tool.

0 : The tool life is counted for each identical tool number.

(Example) When TLCSAM = 0

Tape format	Meaning
P004L0500 ; T0101 ; T0105 ; TO108 ; TO206 ; TO203 ; TO202 ; TO209 ; TO304 ; TO309 ; P005L1200 ; TO405 ;	(1) Tools having the same tool number in group 4 are used 500 times or for 500 minutes in total along the program steps group (1) to (3). (2) When the group is specified three times in a single process, the offset numbers are selected in the order of 01, 05, and 08 for tool number 1, (3) in the order of 06, 03, and 02 for tool number 2, and in the order of 04, 09, and 09 for tool number 3.

(Example) When TLCSAM = 1

Tape format	Meaning
P004L0500 ; **T0101 ;** **T0105;** **T0108;** **T0206;** **T0203;** **T0202;** **T0209;** **T0304;** **T0309;** P005L1200 ; **T0405;**	Each tool in group 4 is used 500 times or for 500 minutes. The tools are not regarded as the same tools. When the group is specified three times in a single process, the offset numbers are selected in the order of 01, 01, and 01, in the order of 05, 05, and 05, and in the order of 08, 08, and 08 for each tool number.

0500

INPX

Remarks: Standard setting 20 (metric output)

12 (inch output)

0501

INPY

0502

INPZ

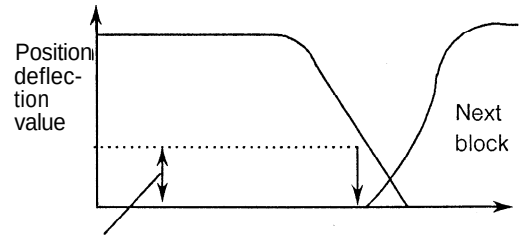
0503

INP4

INPX, INPY, INPZ, INP4

In-position width for X, Y, Z and 4th axis, respectively.

Setting range: 0 to 32767 (detection unit)



In position check is performed when the feed mode changes from rapid traverse to rapid traverse, rapid traverse to cutting feed, or cutting feed to rapid traverse.

0504

SERRX

0505

SERRY

0506

SERRZ

0507

SERR4

SERRX, SERRY, SERRZ, SERR4

Limitation value of position deviation amount during movement for X, Y, Z and 4th axis, respectively.

Setting range: 0 to 32767 (detection unit)

(Example) When the rapid traverse rate is 10 m/min. and the position gain is 30, the error is calculated by: Conversion of 10 m/min. into

$$E = \frac{F}{G}$$

pulses/sec. with the detection unit of 1μ/pulse gives 166,666 pulses/sec. Therefore, E = 166,666/30 = 5,555 pulses. Multiply this value by a factor of 1.5, and set the obtained value 8333 as the parameter.

0508
GRDSX

0509
GRDSY

0510
GRDSZ

0511
GRDS4

GRDSX, GRDSY, GRDSZ, GRDS4

Setting of grid shift amount of X , Y , Z and 4th axis, respectively.

Setting range : 0 to ± 32767 (detect unit).

When the reference point is shifted, the sign of this parameter is necessary.

(Note) If bit 3 (SFDEC) of parameter No. 0399 is set to 1, the above parameters are used to set the amount of reference position shift.

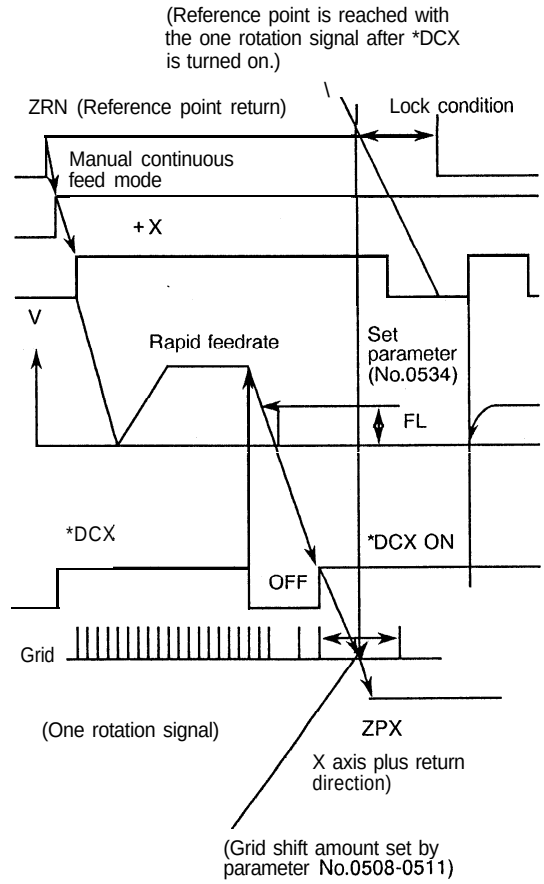
(1) Reference point return procedure (Grid method)

Select manual continuous feed mode, and turn signal ZRN on (connect it with + 24V). When feed towards the reference point is designated with the manual feed button, the moving part of the machine moves at rapid traverse. When the deceleration limit switch is operated and the contact of reference point return deceleration signal *DCX, *DCY, *DCZ, *DC4 opens, and the feed is decelerated.Thereafter, the moving part moves at a pre-determined low speed.

Thereafter, when the deceleration limit switch is operated and the moving part reaches the electric grid position, feed stops, and reference point return completion signal ZPX, ZPY, ZPZ, ZP4 is output. The direction in which an axis is returned to reference point can be set for each axis.

Once an axis is returned to reference point and the corresponding signal ZPX, ZPY, ZPZ or ZP4 is output, jog feed for that axis is invalid until signal ZRN is turned off.

(2) Reference point return Timing chart (Grid method)



0516

PSANGN

S4/S5 digits control (Analog output)

PSANGN

Sets the data for adjusting the gain of analog ouptut.

Setting range: 700 to 1250

Standard settingvalue : 1000

(Adjusting method)

(1) Set the standard setting value 1000.

(2) Designate the maximum S analog value (10V).

(3) Measure the output voltage.

(4) Set this value according to the following

$$\text{Setting value} = \frac{10.0}{\text{Measured voltage (V)}} \times 1000$$

(5) After setting the parameter, designate the maximum S analog value (1 OV) again, and make sure that the output voltage is 10V.

0517

LPGIN

LPGIN Setting of servo loop gain in position control.

Setting range: 1 to 9999 (unit: 0.01 sec)

(Note) To set a loop gain to each axis, set No. 517 to 0 and set a loop gain of X axis, Y axis and so on. (The increment system is the same.)

Remarks : Generally set 3000.

0518

RPDFX

0519

R P D F Y

0520

RPDFZ

0521

PRDF4

RPDFX, RPDFY,RPDFZ, RPFD4

Rapid traverse rate of X, Y, Z and 4th axes in turn.

Setting range:

30 to 24000 Unit mm/min (mm output)

30 to 9600 Unit 0.1 inch/min (inch output)

(Note 1) Set "1" to the FML10 of parameter No. 49 for the other seting values.

(Note 2) In increment system 1/10, the unit is the same.

0522

LINTX

0523

LINTY

0524

LINTZ

0525

LINT4

LINTX, LINTY, LINTZ, LINT4

Time constant of linear acceleration/deceleration of X, Y, Z and 4th axes in turn during rapid traverse.

Setting range: 8 to 4000 (unit: msec.)

0527

FEDMX

FEDMX Upper speed of cutting feed (available for X, Y, Z axes)

Setting range: 6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Note 1) Set "1" to the FML10 of parameter No. 49 for the other cutting values.

(Note 2) In increment system 1/10, the unit is the same.

0529

FEEDT

FEEDT Time constant of the exponential acceleration/deceleration in cutting feed and jog feed.

Setting range:

0 to 4000 unit: msec Set this to "0", when the exponential acceleration/ deceleration is not used.

0530

FEDFL

FEDFL The lower feed rate in exponential acceleration/deceleration.

Setting range :

6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Note) In increment system I/I 0, the unit is thesame.

0531

CYCR

CYCR Setting of relief amount in canned cycle G73 (high speed peck drilling cycle)

Setting range:

0 to 32767 unit: 0.001 mm (mm input)

0 to 32767 unit: 0.0001 inch (inch input)

(Note) In increment system 1/10, the unit is the same.

0532

CYCD

CYCD Setting of the cutting start point in canned cycle G73 (peck drilling cycle)

Setting range:

0 to 32767 unit: 0.001 mm (mm input)

0 to 32767 unit: 0.0001 inch (inch input)

(Note) In increment system I/I 0, the unit is the same.

0533

RPDFL

RPDFL The least speed of rapid traverse override (Fo)

(Common to all axes)

Setting range

6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Note) In increment system I/I 0, the unit is the same.

0534

ZRNFL

ZRNFL Low feed speed at reference point return (FL)

(Common to all axes)

Setting range

6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Note) In increment system I/I 0, the unit is the same.

0535

BKLX

0536

BKLY

0537

BKLZ

0538

BKL4

BLKX, BKLZ / Y, BKLZ, BLK4

Backlash amount of X, Y, Z and 4th axes, respectively.

Setting amount :

0 to 2550 unit: 0.001 mm (mm output)

0 to 2550 unit: 0.0001 inch (inch output)

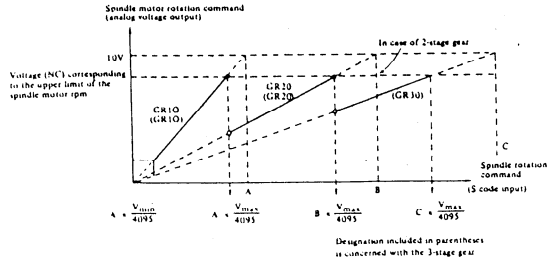
In diameter programming, set the value of X axis in diameter value. (For T series)

(Note 1) Unit becomes 1 /10 in increment system 1 /10.

(Note 2) Set a backlash compensation value with a detection unit when an arbitrary command multiply is used.

Setting M Series spindle function

Gear selection signal	2-stage gear	3-stage gear	Remarks
GR10	Low	Low	Low : Low Gear
GR20	High	Middle	Middle : Middle Gear
GR30		High	High : High Gear



The following values are first set in the parameters

· Constant Vmax regarding the upper limit of the spindle motor speed (parameter No. 542).
This constant is obtained by the equation below.

$$Vmax = 4095 \times \frac{\text{The upper limit of thespindle motor speed}}{\text{The spindle motor speed when the command voltage is 10 V}}$$

. Constant Vmin regarding the lower limit of the spindle motor rpm (parameter No. 543)

$$Vmax = 4095 \times \frac{\text{The lower limit of the spindle motor speed}}{\text{The spindle motor speed when the command voltage is 10 V}}$$

. Constant Vmin regarding the lower limit of the spindle motor rpm (parameter No. 543)

$$Vmax = 4095 \times \frac{\text{The lower limit of the spindle motor speed}}{\text{The spindle motor speed when the command voltage is 10 V}}$$

· Spindle speed A with low gear when the command voltage is 10 V (parameter No. 541)

· Spindle speed B with high (or middle) gear when the command voltage is 10 V (parameter No. 539)

. Spindle speed C with high gear when the command voltage is 10 V (parameter No. 555) (3-stage gear)

(Note) If the specified voltage exceeds the allowable input voltage for the spindle drive system, speed at 10 V is assumed by proportional calculation, and the resultant assumption should be used.
From above, the spindle motor rotation command (0 - 10 V) and the gear selection command (GR30, GR20, GR1O) are output for the specified S code, as shown in the Fig. above.

0539

GRHMAX

GRHMAX Maximum spindle speed (for analog output with spindle function) at high gear (middle gear in case of 3-stage gear).
(Spindle speed with spindle speed voltage of 10V)
Setting range: 1 to 19999 (unit: rpm)
However, when SPMRPM = 1:
Set value: 1 - 9999 Unit: x10rpm
(Set the value of 1 /10 of the speed to be set.)

Remarks: In case of only one gear, set this value to low gear.

0540

GRHMIN / GRMX1

0541

GRLMAX / GRMX2

0542

SPDMAX / GRMX3

0543

SPDMIN / GRMX4

GRMXl to4

The spindle speed cone-sponding to gears 1 to 4 when the spindle speed command is 1 OV.(for constant surface speed control)

Setting range: 1 to 19999 (unit: rpm)

GRHMIN Setting of the lower limit of the spindle speed when using high speed gear. (middle speed gear in 3-step gear selection) (for S analog output type B) (for S analog output)

Setting range: 1 to 19999 (unit: rpm)

GRLMAX Setting of the max. spindle speed at low speed gear (for S analog output). Set the spindle speed when the velocity command voltage is 10V.

Setting range: 1 to 19999 (unit: rpm)

SPDMAX Setting of the upper limit of output value to the spindle motor.

(for S analog output)

$$\text{Setting value} = \frac{\text{Upper limit spindle motor speed}}{\text{Max. spindle motor speed}} \times 4095$$

Setting range: 1 to 4095

SPDMIN Setting of the lower limit of output value to the spindle motor.

(for S analog output)

$$\text{Setting value} = \frac{\text{Lower limit spindle motor speed}}{\text{Max. spindle motor speed}} \times 4095$$

Setting range: 1 to 4095

GRMXl - GRMX4, GRMAX, GRHMIN

However, when SPMRPM = 1:

Set value:1- 9999 Unit: xl Orpm

Set the value of 1/10 of the speed to be set.)

(Note) The other parameters are usually set for the above parameters 0540 - 0543.

Set GRMXl - GRMX4 when the constant surface speed control option is selected.

0548

JOGFL

JOGFL The lower limit of jog feed in exponential acceleration/ deceleration (FL)

Setting range :

6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Note) In increment system l/l 0, the unit is the same.

0549

FINT

FINT The cutting feedrate in AUTO mode at turning power on.

Setting range :

6 to 15000 unit: mm/min (mm output)

6 to 6000 unit: 0.1 inch/min (inch output)

(Generally, set "0" to this parameter and change it by program command. When the feedrate is constant and it is not necessary to change, set the feedrate to this parameter.)

0550

SEQINC

SEQINC Number increment value in automatic insertion of equence No.

Setting range: 0 to 9999

0551

LOWSP

LOWSP Minimum spindle speed in constant surface speed control mode (G96)

Setting range: 0 to 19999 (unit: rpm)

0552

BRATEO

BRATE 0 This sets the baud rate when the reader/puncher interface is used.
(Effective when the setting parameter I/O is 0.)
Relation between the setting value and the baud rate is as follows:

Setting value	Baud rate
1	50
2	100
3	110
4	150
5	200
6	300
7	600
8	1200
9	2400
10	4800
11	9600

0553

BRATE1

BRATE1 This sets the baud rate when the reader / puncher interface is used.
(Effective when the setting parameter I / 0 is 1.)
Relation between the setting value and the baud rate is as follows:

Setting value	Baud rate
1	50
2	100
3	110
4	150
5	200
6	300
7	600
8	1200
9	2400
10	4800
11	9600

0555

GRTMAX

GRTMAX Setting of the max. spindle speed at high speed gear in 3-step gear selection (for S analog output)
Setting range: 1 to 19999 (unit: rpm) /
However, when SPMRPM = 1:
Set value: 1 - 9999 Unit: x10rpm
(Set the value of 1/1 0 of the speed to be set.)

0556

GRTMIN /SCLMP

SCLMP Upper limit of spindle speed (for constant surface speed control)
Setting range: 1 to 19999 (unit: rpm)
(Valid both in G96 and G97 modes.)

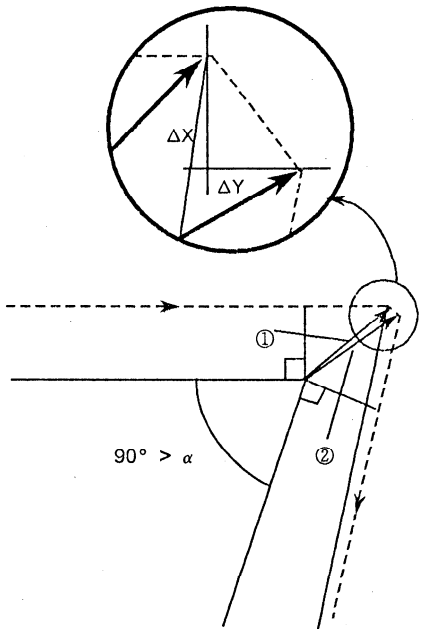
GRTMIN Setting of the lower limit of the spindle speed when using high speed gear in 3-step gear selection. (For S analog output type B)
Setting range: 1 to 9999 (unit: rpm)

0557

CRCDL

CRCDL When tool moves along the outside of an acute angle close to 90° during tool nose radius compensation (T-system) or cutter compensation (M-system), limitations on ignoring a small movement amount.
If both AX and AY are less than the set value, vector ② is ignored.
Setting range:
0 to 16383 unit: 0.001 mm (mm input)
0 to 16383 unit: 0.0001 inch (inch input)

(Note) Unit becomes 1 /10 in increment system 1/1 0.



if ΔX < CRCDL and ΔZ(ΔY) < CRCDL, the smallmovement is ignored. This prevents the workpiece from being affected by stopping the tool at the corner.

0559

RPDJX

0560

RPDJY

0561

RPDJZ

0562

RPDJ4

RPDJX, RPDJY, RPDJZ, RPDJ4

Rapid traverse rate in JOG mode for X, Y, Z and 4th axis in turn.

Setting range:

30 to 24000 unit: mm/min (mm output) 30 lo 9600 unit: 0.1 inch/min (inch output)

If "0" is set to these parameters, the set values of parameter No. 0518, 0519, 0520 and 0521 are used.

(Note 1) Set the FML10 of parameter No. 49 to 1 for the other setting values.

(Note 2) In increment system 1/10, the unit is the same.

0565

JOGF

JOGF Jog feed rate when the rotary switch position is 10 in feed rate B specification:

Setting value :

1 to 2000 Unit mm/min. deg/min (Metric output)

Setting value :

1 to 800 Unit 0.1 inch/min deg/min(Inch output)

(Note) In increment system 1 /10, the unit is the same.

(e. g) When 200 is set to Parameter No. 565: Feed rate becomes geometrical series of 200 mm/min (for metric output) or 20 inch/min (for inch output) in rotary Switch position 10.

See Table 2

0566

JOGFAD

JOGFAD Jog feed rate when rotary switch position is 10 for the additional axis (rotary axis) in feed rate B specification

Setting value : 1 to 2000 unit: deg/min

(e.g) When 200 is set to parameter No. 566: Feed rate becomes geometrical series of 200 deg/min in rotary switch position 10.

0567

FEDMAD

FEDMAD Upper limit of feed rate of all axes in case of feed rate B specification.
Setting range:
6 to 15000 unit: deg/min (rotary axis)
6 to 15000 unit: mm/min (mm output)
6 to 600 unit: inch/min (inch output)

(Note) In increment system 1 /10, unit is the same.

0568

RPDFLAD

RPDFLAD Low speed (Fo) of rapid traverse override for the additional axis in case of feed rate B specification.
Setting range: 6 to 15000 unit: deg/min

(Note) In increment system l/l 0, unit is the same.

0569

ZRNFLAD

ZRNFLAD Low feed rate (FL) at reference point return of the additional axis in case of feed rate B specification.
Setting range: 6 to 15000 unit: deg/min

(Note) In increment system l/l 0, unit is the same.

0577

SPDLC

SPDLC Set the compensation value for zero offset of spindle speed command voltage (for S4/S5 digits control option)
Setting range: 0 - ± 8191 unit: VELO

0580

AOVLE

AOVLE End point deceleration distance of automatic override at inside corner part.
Setting range: 1 to 3999
Unit: 0.1 mm - Metric input
0.01 inch - Inch input
Set the operating range Le.

0581

AOVLS

AOVLS End point deceleration distance of automatic override at inside corner.
Setting range: 1 to 3999
Unit: 0.1 mm - Metric input
0.01 inch - Inch input
Set the operating range Ls.

0583

Fl DMAXI

0584

F1 DMAX2

F1DMAX1/F1 DMAX2:
Upper limit of **Fl** digit command feedrate

F1DMAX1 Upper limit of Fl to F4 feedrate

Fl DMAX2 Upper limit of F5 to F9 feedrate
Setting value:
0 to 15000 unit 1 mm/min (Metric output)
1 to 6000 unit 0.1 inch/min (Inch output)
For deviation, refer to parameter No. 216.

0585

SPDMXL

SPDMXL Sets the spindle speed rpm when low- and high-speed gears are changed over. Or set the spindle speed rpm when low- and medium-gears (3-step gears are used) are changed over.

$$\text{Setting value} = \frac{\text{Spindle changing speed}}{\text{Spindle max. speed}} \times 4095$$

Setting value: 1 to 4095

0586

SPDMXH

SPDMXH Sets the spindle motor speed rpm at the time of medium- and high-speed gear change when 3-step gears are used.

$$\text{Setting value} = \frac{\text{Spindle changing speed}}{\text{Spindle max. speed}} \times 4095$$

Setting value: 1 to 4095

0589

PSGSPR

0590

P S G S P L

0591

PSGSPA

0592

PSGSPB

Set the escape value (d) during deep hole drilling in hole machining cycle.

Setting value 0 to 32767 Unit 0.001 mm (Metric input)

Setting value 0 to 32767 Unit 0.0001 inch (inch input)

(Note) Unit becomes 1 /10 in increment system 1 /10.

PSGSPR,PSGSPL,PSGSPA,PSGSPB

Set the margin on right, left, upper and lower sides, respectively in projection view drawing.

Set unit: Dot

Set range: Not specified

「0589」～「0593」

Drawing point in machine view drawing is set by the margin for CRT screen. Unit is point.

Parameter No.	The margin	Standard setting value			
		GRPOS = 0		GRPOS = 0	
		9" CRT	14" CRT	9" CRT	14" CRT
0589	Right	0	0	200	100
0590	Left	0	0	0	0
0591	Upper	25	32	25	32
0592	Lower	0	10	0	10

0593

STPEX

0594

STPEY

0595

STPEZ

0596

STPE4

STPEX, Y, Z, 4

Position error limit value during X-axis, Y-axis, Z -axis and 4th axis stop in sequence

Setting value : 0 to 32767 Detecting unit

0597

G05NOM / G05AXIS

G05NOM Number of controlled axes for high-speed remote buffer.

Setting range: 1 to Max.No. of controlled axes

(Note) Always set 3 for high-speed remote buffer B. Set the maximum number of simultaneously controlled axes.

G05AXIS When high speed cycle works setting of Max, Simultaneous axisw No. during specification G05.

0599

TLCNEG

TLCNEG Tool life management ignore No.

Setting value : 0 to 9999

0600

PARTRQ

PARTRQ Sets the number of machined parts required.

Setting value : 0 to 9999

0601

PEXPJX

0602

PEXPJY

0603

PEXPJ3

0604

PEXPJ4

PEXPJX- PEXPJ4

Sets exponential acceleration/deceleration time constant sequentially in manual feed.

Setting value : 0 to 4000

Unit: msec

Note) If 0 is set then cutting feed and common data (PRM529) is used.

0605

PFLJGX

0606

PFLJGY

0607

PFLJGZ

0608

PFLJ G4

PFLJGX-PFLJG4

Sets exponential acceleration/ deceleration rate sequentially in manual feed.

Setting value : 6 to 15000

Unit: mm/min

Setting value : 6 to 6000

Unit: inch/min

Note) If 0 is set then all axes common data (PRM548) is used.

0613

TPFDT

Note) When this parameter is set, the power must be turned off before operation is continued.

TPFDT Time constants of spindle and Z - axis acceleration / deceleration in the tapping in the rigid mode

(Exponential / linear type is selected by TPSUP.)

The threading accuracy is affected when the time constant is either too long or too short.

Data type : Word type

Set value : 0 - 4000

Unit : msec

Standard setting: 200 -150

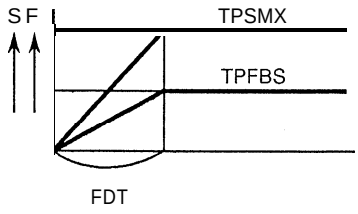
◎ When VALT (parameter No. 37) = 1

Set the time constant when cutting the thread of

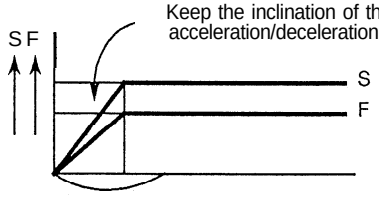
$$\text{standard lead} = \frac{\text{TPFBS (parameter No. 626)}}{\text{TPSMX (parameter No. 617)}}$$

The inclination of the acceleration/deceleration of the spindle is defined by this.

This function adjusts the actual time constant so as to maintain the inclination of the acceleration/dcelartion of the spindle even when any lead thread is cut under any conditions.



$\frac{TPFBS}{TPSMX}$ ——— Standard thread

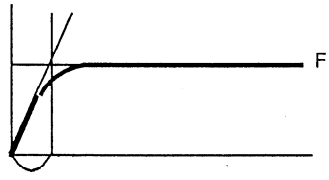


$\frac{F}{S}$ ---- Actual lead

Note) Becauses the time constant is produced by proportional calculation even in the case of exponential-type aceleration/deceleration, there will be a small increase in error compared to linear-type acceleration/deceleration.

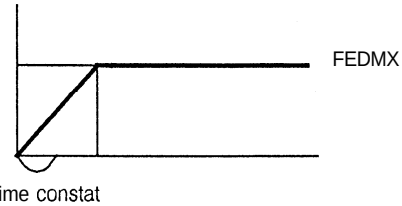
◎ When VALT (parameter No. 37) =0

1. In case of exponential-type acceleration/deceleration



2. In case of linear-type acceleration/deceleration

Set the time taken to reach the lower limit speed (parameter No. 527 FEDMX) of the cutting feed.



0614

TPFFL

Note) When this parameter is set, the power must be turned off before operation is continued.

TPFFL Lower speed limit (valid only when TPSUP = 0) at exponential acceleration / deceleration of the spindle and Z - axis in the rigid tapping. When this is increased, tact time is reduced, but the threading accuracy is affected.

Data type: Word type
Set value : 6 - 15000
Unit : mm / min
Standard setting; 30 - 10

0615

TPLPG

Note) When this parameter is set, the power must be turned off before operation is continued.

TPLPG Spindle and Z-axis position control loop gain in the parameter in rigid tapping.
This has a large influence upon the threading accuracy. Make fine adjustment to obtain theoptimum value by performing the cutting test and matching with the loop gain multiplier.

Data type : Word type
Set value : 1 - 9999
Unit : 0.01 msec-1
Standard set value:1500 - 3000

(Note) To change the loop gain for each gear, reset the value of this parameter to 0 and set the loop gain for each gear in TPLGL (No. 0669), TPLGM (No. 0670) and TPLGH (No. 0671). If this parameter is not 0, the loop gain for each gear becomes invalid and the value set in this parameter is taken as a loop gain common to all gears.

0616

LPGM9

Note) When this parameter is set, the power must be turned off before operation is continued.

LPGM9 Loop gain multiplier of the spindle in the rigid tapping for the high speed range. This has a large influence upon the thread accuracy. Make fine adjustment to obtain the optimum value by performing the cutting test and matching with the loop gain.

Data type: Word type

Set value: 1 - 32767

Set value = 2048 x E/L x @ x 1000

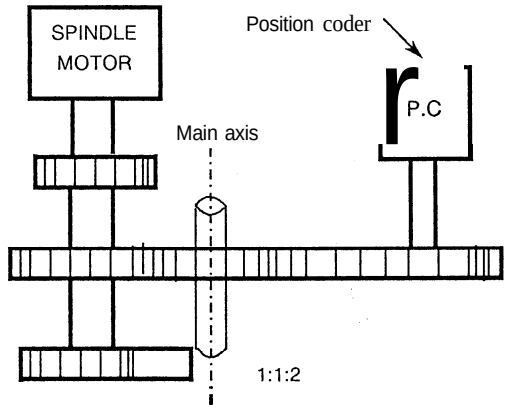
E = Speed command voltage at 1000 rpm

L = Spindle rotation angle per spindle motor rotation

@ = Detection unit

Calculation example:

When the configuration is as shown in the following figure:



E = 1.667 [V]

(motor of 6000 rpm at 10 [V])

L = 360°

(Spindle is rotated one turn by one spindle motor rotation.)

@ = La/4096

= 720°/4096

= 0.17587°

La = 720"

Spindle must make two rotations = 360 °* 2 for rotating the position coder one turn.)

4096 = Detection pulse per position coder rotation.

◎ Gear ratio between the spindle and the position coder

1 : 1 . . . 0.08789 deg

1 : 2 . . . 0.17578 deg

1 : 4 . . . 0.35156 deg

1 : 8 . . . 0.70313 deg

Therefore, the loop gain multiplier

= 2048 ×1.667/360× 0.17578 × 1000

= 1667

(Note) Donot miss to set the gear ratio parameter (No. 0028) between the detection unit based on this parameter.

0617

TPSMX

Note) When this parameter is set, the power must be turned off before operation is continued.

TPSMX Maximum allowable speed of the spindle in the rigid tapping.

Data type: Word type

Set value: (for spindle and position coder gear ratio)

Gear ratio	Setting range
1 : 1	0 - 7400
1 : 2	0 - 9999
1 : 4	0 - 9999
1 : 8	0 -9999

Unit : PRM

Standard setting : 3600

0618

TPIPZ

TPIPZ Z-axis in-position width in the rigid tapping

Data type: Word type

Set value: 1 - 32767

Unit: Detection unit

Standard setting : 20

0619

INP9

INP9 Spindle in-position width in the rigid tapping When this is too much increased, the threading accuracy is affected.

Data type: Word type

Set value: 0 - 32767

Unit: Detection unit

Standard setting: 20

0620

TPERZ

TPERZ: Limit value of position deviation during movement of Z axis in the rigid tapping mode

Data type: Word type

Set value: 0 - 32767

Unit : Detection unit

When a one-tenth resolution detector is used, the unit becomes ten times the detection unit.

0621

TPER9

TPER9 Limit value of position deviation during movement of the spindle in the rigid mode tapping

Data type: Word type

Set value: 1 - 32767

Set value:

= S x 360/60 x I/G x 1/@ x 100 x 1.5

S: Maximum spindle speed to perform the rigid tapping

(Value of parameter No. 0617)

G: Loop gain in the rigid mode tapping axis

(Value of parameter No. 0615)

@: Detection unit for spindle and position coder gear ratio

Gear ratio	Detection unit
1:1	0.8789 deg
1:2	0.17578 deg
1:4	0.35156 deg
1:8	0.70313 deg

Calculation example:

S = 3600

G = 3000

@ = 0.17578

(Gear ratio between spindle and position coder 1:2)

TPER9 = (3600 x 360)/60 x 1/3000 x 1/0.17578 x 100 x 1.5

= 6144

0622

TPESZ

TPESZ Limit value of position deviation during stop of Z axis in the rigid mode tapping

Data type: Word type

Set value: 0 - 32767

Unit : Detection unit

Standard value: 500

0623

TPES9

TPES9 Limit value of position deviation during stop of the spindle in the rigid mode tapping

Data type: Word type

Set value: 0 - 32767

Unit : Detection unit

Standard value: 500

0624

LGM9M

Note) When this parameter is set, the power must be turned off before operation is continued.

LPGM9 Spindle loop gain multiplier in the rigid mode tapping for middle gear. (Set when two-stage or more gears are used).

Data type: Word type

Set value: 1 - 32767

Set value = 2048 x E/L x @ x 1000

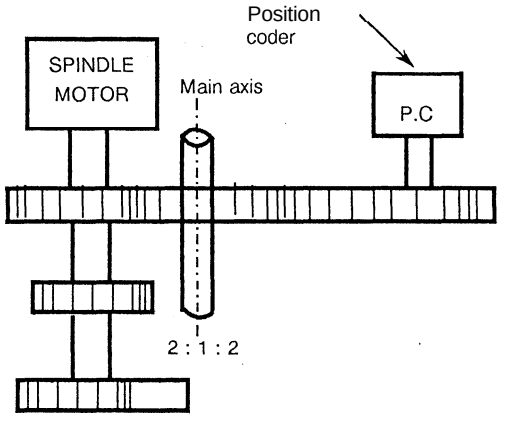
E = Speed command voltage at 1000 rpm

L = Spindle rotation angle per spindle motor rotation

@ = Detection unit

Calculation example:

When the configuration is as shown in the following figure:



E = 1.667 [V] (motor of 6000 rpm at 10 [V])

L = 720°

(Spindle is rotated one turn by one spindle motor rotation.)

@ = La/4096

= 720°/4096 = 0.17578'

La = 720°

(Spindle must make two rotations = 360° x 2 for rotating the position coder one turn.)

4096 = Detection pulse per position coder rotation

Loop gain multiplier

=2048x1.667 ×360×0.17578×1000

0625

LGM9H

Note) When this parameter is set, the power must be turned off before operation is continued.

LGM9H Spindle loop gain multiplier for high speed gear in parameter is the rigid tapping. (Used for 3-stage gear).

Data type : Word type

Set value: 1 to 32767

(Note) Refer to parameter No. 0624 for calculation formula.

Send speed for rigid mode tapping standard lead constant

TPFBS: Send speed for standard read constant for rigid mode tapping.

0626

TPPBS

Note) When this parameter is set, the power must be turned off before operation is continued.

TPFBS: Feedrate for standard lead constant for rigid mode tapping.

Data type: Word type

Setting value : 6-15000

Unit : mm/min

Note: VALT (parameter No.37) = 1 is valid.

Outside the above setting range, use FML10 = 1 of parameter No.49 Also, even when setting unit is 1/10 the unit is the same.

0627

ERR9

ERR9 Spindle position deviation value in the rigid tapping. (Used for diagnosis)

Data type: Word type

Unit : Detection unit

0628

IPR9

IPL9 Spindle distribution amount in the rigid tapping. (Used for diagnosis)

Data type: Word type

Unit : Detection unit

0630

9HRDSX

9HRDSX Dot shift amount (horizontal direction) of 9" high-resolution graphic.

Set value: 0 - ± 32767

0631

9HRDSY

9HRDSY Dot shift amount (vertical direction) of 9" high-resolution graphic.

Set value : 0 - ± 32767

0635

PLNTC

PLNTC Set the time constant of linear acceleration/deceleration after interpolation of cutting feed for all axes. When the set value is 0, the acceleration/deceleration type is exponential.
Set value: 8 - 1024 Unit: msec

0636

PEXDEC

PEXDEC External deceleration speed (command to all axes).
Set value:
6 - 15000 Unit: mm/min (metric output)
6-6000 Unit: 0.1 inch/min (inch output)

0637

INP7

0638

INP8

INP7, INP8 In-position width of 7th and 8th axes.
Set value: 0 - 32767 Detection unit

0639

SERR7

0640

SERR8

SERR7, SERR8
Position deviation limit values of 7th and 8th axes.
Set value: 0 - 32767 Detection unit

0641

GRDS7

0642

GRDS8

GRDS7, GRDS8
Grid shift amount of 7th and 8th axes.
Set value: 0 - + 32767 Detection unit

(Note 1) Set a positive (negative) value to shift the reference point in the positive (negative) direction.

(Note 2) If bit 3 (SFDEC) of parameter No. 0399 is set to 1, the above parameters are used to set the amount of reference position shift.

0643

RPDF7

0644

RPDF8

RPDF7, RPDF8
Rapid traverse speeds of 7th and 8th axes.
Set value:
30 - 2400 Unit: mm/min (metric output)
30 - 9600 Unit: 0.1 inch.min (inch output)

0645

LINT7

0646

LINT8

LINT7, LINT8 Time constants of linear acceleration/deceleration (for rapid traverse) of 7th and 8th axes.
Set value: 8 - 4000 Unit: msec

0647

BKL7

0648

BKL8

BKL7, BKL8 Backlash amount of 7th and 8th axes.
Set value:
0 - 2550 Unit: 0.001mm (metric output)
0 - 2550 Unit: 0.0001 inch (inch output)

0649

STPE7

0650

STPE8

STPE7, STPE8 Position deviation limit values in stop of 7th and 8th axes.
Set value: 0 - 32767 Detection unit

0651

PEFDTX

0652

PEFDTY

0653

PEFDTZ

0654

PEFDT4

0655

PEFDT7

0656

PEFDT8

PEFDTX - 8 Time constants of exponential acceleration/ deceleration of PMC axis cutting feed for each axis.
Set value: 0 - 4000 Unit: msec

(Note) When 0 is set, the data for' NC (PRM No. 529) is used.

0657

PEAFLX

0658

PEAFLY

0659

PEAFLZ

0660

PEAFL4

0661

PEAFL7

0662

PEAFL8

PEAFLX - 8 Lower limit speeds (FL) at exponential acceleration/deceleration of PMC axis cutting feed for each axis.
Set value:
6 - 15000 Unit:mm/min (metric output)
6 - 6000 Unit:0.1 inch/min (inch output)

(Note) When 0 is set, the cutting FL speed for NC (PRM No. 530) is used.

0663

GRPLW

GRPLW Set the number of teeth of the 1 st stage gear in the spindle when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767

(Note) Valid when VALPC (parameter No.63) = 1. When the position coder is provided in the spindle, set the same value in GRPLW, GRPMD and GRPHI.

0664

GRPMD

GRPMD Set the number of teeth of the 2nd stage gear in the spindle when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767
(Note) Valid when VALPC (parameter No.63) = 1.

0665

GRPHI

GRPHI Set the number of teeth of the 3rd stage gear in the spindle when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767
(Note) Valid when VALPC (parameter No.63) = 1.

0666

GRQLW

GRQLW Set the number of teeth of the 1 st stage gear in the position coder when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767
(Note) Valid when VALPC (parameter No.63) = 1. When' the position coder is provided in the spindle, set the same value in GRQLW, GRQMD and GRQHI. When the spindle coder is built in the spindle motor, a position coder of 2048 p/rev is available. At this time, set the number of teeth by the value double the actual number. (For converting to 4096 p/rev) This is the same for GRQMD and GRQHI.

0667

GRQMD

GRQMD Set the number of teeth of the 2nd stage gear in the position coder when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767
(Note) Valid when VALPC (parameter No.63) = 1

0668

GRQHI

GRQHI Set the number of teeth of the 3rd stage gear in the position coder when the gear ratio is optional in the rigid tapping mode.
Data type: Word
Set value: 1 - 32767
(Note) Valid when VALPC (parameter No.63) = 1.

0669

TPLGL

TPLGL Loop gain for position control of the spindle and Z- axis of each gear in the rigid tapping mode. Set the position control loop gain of the 1 st stage gear.
Data type: Word
Set value: 1 - 9999
Unit: 0.01 msec-1
Set value: 1 - 200 Unit:PSU/min (FS6M interface)

0670

TRLGM

TRLGM Loop gain for position control of the spindle and Z- axis of each gear in the rigid tapping mode. Set the position control loop gain of the 2nd stage gear.
Data type: Word
Set value: 1 - 9999
Unit: 0.01 msec-1

0671

TPLGH

TPLGH Loop gain for position control of the spindle and Z- axis of each gear in the rigid tapping mode. Set the position control loop gain of the 3rd stage gear.

Data type: Word

Set value: 1 -9999

Unit: 0.01 msec-1

0700

LT1X1

0701

LT1Y1

0702

LT1Z1

0703

LT141

0704

LT1X2

0705

LT1Y2

0706

LTIZ2

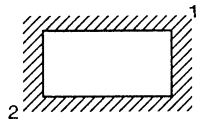
0707

LT142

LT1□□

nth top in square zone (see figure).

axis



Set stroke limit mentioned above.

Setting range : 0 to 199999999 (unit: 0.001 mm in mm output or 0.0001 inch in inch output)

Set with the distance from the reference point.

In the case of diameter designation, set with the diameter designation value.

The outside of the boundary set with the parameter is set as the inhibited region. Normally, set at the max. stroke of the machine.

When the axis enters the inhibited region, over-travel alarm is indicated. A margin should be provided with respect to the stroke to cope with the fluctuation in the detecting operation. As a rule, in the case of metric designation, multiply the rapid traverse by a factor of 1/5 and set it as the margin.

Example) Rapid traverse 10 m/min.

IO x 1/5 = 2 mm

The actual position of the machine slightly differs from the position stored in the CNC unit after the power is turned on, emergency stop is reset, or servo alarm is reset. Therefore, before starting operation, be sure to return the axes to reference point. Otherwise, over-travel detecting position deviates by the value corresponding to the above-described deviation in the position. When the parameters are set as follows, the stroke limit becomes infinite.

LT1□1<LT1□2

Axis name

Example) LT1ZI = -1 and LTIZ2 = 1

the Z axis stroke becomes infinite.

(Note 1) For the axis whose stroke is infinite, the incremental command can be specified. If the absolute command is specified, the absolute register may overflow and it is not operated normally.

(Note 2) These parameters cannot be set for the rotary axis.

(Note 3) Unit becomes 1/10 in increment system 1/10.

0708

PRSX

0709

PRSY

0710

PRSZ

0711

PRS4

PRSX, PRSY, PRSZ, PRS4

These set the coordinate values of the reference point of the X, Y, Z and 4th axes when automatic coordinate system setting is conducted, respectively.

Setting range:

0 to ±99999999

unit: 0.001 mm (mm input)

unit: 0.0001 inch (inch input)

(Note) Unit becomes 1/10 in increment system 1/10.

0712

PECINTX

0713

PECINTY

0714

PECINTZ

0715

PECINT4

PECINTX, PECINTY, PECINTZ, PECINT4

Pitch error compensation interval for each axis

Setting range :

8000 to 99999999 unit: 0.001 mm (mm input)

4000 to 99999999 unit: 0.0001 inch (inch input)

(Note 1) If zero is set, no compensation is done.

(Note 2) Unit becomes 1/10 in increment system 1/10.

0730

PROTAG

PROTAG Parameter of angle value used when no angle command is present at coordinate rotation.

Setting value:

-360000 to 360000

unit: 0.001 deg.

0731

PSCRT

PSCRT Parameter of magnification value used when the magnity command is not specified in scalling.

Setting value : 1 to 9999999

Unit: 0.001 magnification

0.00001 magnification

0732

PSCRT2

0733

PSCRT3

PSCRT2, PSCRT3

Set the magnifications of Y and Z axes when the magnify command is not specified in scaling.

Set value: + 1 - + 99999

Unit: 0.001 magnification

0.00001 magnification

(Note) When PRM No.63 bit 6 ESCAL = 1 (mirror image, each axis scaling is valid), be sure to set a value other than 0 in PRM No. 731 - 733.

0735

REF2X

0736

REF2Y

0737

REF2Z

0738

REF24

REF2X,REF2Y,REF2Z, REF24

Distance frim the reference point to the 2nd reference point for X, Y, Z, and 4th axes, respectively.

Setting range:

0 to ± 99999999 unit: 0.001 mm (mm output)

0 to ± 99999999 unit: 0.0001 inch (inch output)

0 to ± 99999999 unit: 0.001 deg (rotary axis)

(Note) Unit becomes l/l 0 in increment system 1 /10.

0739

ABSXP

0740

ABSYP

0741

ABSZP

0742

ABS4P

ABSXP, ABSYP, ABSZP, ABS4P

Counter data at the reference point when the absolute pulse ABSYP, coder is used.

These parameters are automatically set when the tool has returned to the reference point. So it is not necessary to set values to these parameters.

0743

LT2X1

0744

LT2Y 1

0745

LT2Z1

0746

L-J-24 1

0747

LT2X2

0748

LT2Y2

0749

LT2Z2

0750

LT242

LT2X1 U-242

Check stroke limit using these parameters, not parameter Nos. 0700 to 0707 when EXLM2 (G129.6) signal is ON.

(Note) Valid only when parameter No. 915LM2 = 1.

0751

LT2X2

LT2□□

- □□ — Apex No. of square area
- LT2 — Repressnts the axis

Set the stroke limit represented above.

Setting value: 0 to ± 99999999 Unit 0.001 mm (Metric output)

0 to 299999999 Unit 0.0001 inch (inch output)

Set the stroke limit by the distance from the reference point. For the designation of diameter, set X-axis with the diameter designated value. Use parameter INOUT (No. 24) to set the forbidden area to the inside or outside.

(Note) Unit becomes 1/10 in increment system 1/10.

0753

EXOFS3

0754

EXOFS4

EXOFS1-4 External work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th-axis in sequence.

Setting value :

0 to ± 7999 Unit 0.001 mm (Metric output)

0 to ± 7999 Unit 0.0001 inch (Inch output)

(Note) Unit becomes 1/10 in increment system 1/10.

This parameter sets the zero-point position of work coordinate system (G54 to G59). The work zero-point offset amount is different for every work coordinate system, but this parameter sets the offset amount common to all work coordinate systems. Normally, machine-side input (external data input) is used for automatic setting.

0755

ZOF1S1

0756

ZOF1S2

0757

ZOF1S3

0758

ZOF1S4

ZOFIS1 to 4 1st work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence. (G54)

Setting value: 0 to ± 99999999

Unit 0.001 mm (Metric output)

Setting value: 0 to ± 99999999

Unit 0.0001 inch (inch output)

Normally, data are inputted from the work coordinate system setting screen.

(Note) Unit becomes 1/10 in increment system 1/10.

0759

ZOF2S1

0760

ZOF2S2

0761

ZOF2S3

0762

ZOF2S4

ZOFISI to 4 2nd work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence. (G55)

Setting value: 0 to ± 99999999

Unit 0.001 mm (Metric output)

0 to ± 99999999

Unit 0.0001 inch (inch output)

Normally, data are inputted from the work coordinate system setting screen.

(Note) Unit becomes l/l 0 in increment system 1 /10.

0763

ZOF3S1

0764

ZOF3S2

0765

ZOF3S3

0766

ZOF3S4

ZOF3S1-4 3rd work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence.

0767

ZOF4S1

0768

ZOF4S2

0769

ZOF4S3

0770

ZOF4S4

ZOF4S1 to 4 4th work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence. (G57)

Setting value :

0 to ± 99999999

Unit 0.001 mm (Metric input)

0 to ± 99999999

Unit 0.0001 inch (Inch input)

Normally, data are input from the work coordinate system setting screen.

(Note) Unit becomes 1 / 1 0 in increment system l/l 0.

0771

ZOF5S1

0772

ZOF5S2

0773

ZOF5S3

0774

ZOF5S4

ZOF5S1 to 4 5th work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence. (G58)

Setting value :

0 to ± 99999999

Unit 0.001 mm (Metric input)

0 to ± 99999999

Unit 0.0001 inch (Inch input)

Normally, data are input from the work coordinate system setting screen.

(Note) Unit becomes 1 /10 in increment system 1/10.

0775

ZOF6S1

0776

ZOF6S2

0777

ZOF6S3

0778

ZOF6S4

ZOF6S1 to 4 6th work zero-point offset amount of X-axis, Y-axis, Z-axis and 4th axis in sequence. (G59).

Setting value :

0 to ± 99999999

Unit 0.001 mm (Metric input)

0 to ± 99999999

Unit 0.0001 inch (Inch input)

Normally, data are input from the work coordinate system setting screen.

(Note) Unit becomes 1/1 0 in increment system

0779

PARTAL

PARTAL: No. of machined parts in total

Setting value : 0 to 99999999

0780

REF3X

0781

REF3Y

0782

REF3.Z

0783

REF34

REF3X-REF34

Sets distance of 3rd reference point on X axis to 4th axis from 1st reference point sequentially.

Setting value :

0 to ± 99999999

Unit 0.001 mm (Metric input)

0 to ± 99999999

Unit 0.0001 inch (Inch input)

0784

REF4X

0785

REF4Y

0786

REF4Z

0787

REF44

REF4X -REF44

Sets distance of 4th reference point on X axis to 4th axis from 1st reference point sequentially.

Setting value :

0 to ± 99999999

Unit 0.001 mm (Metric input)

0 to 199999999

Unit 0.0001 inch (Inch input)

r-l 0788

F1DF1

0789

FIDF2

0790

F1 DF3

0791

FIDF4

0792

FIDF5

0793

FIDF6

0794

FIDF7

0795

FIDF8

0796

FIDF9

F1DF1 to 9 Feedrate for Fl digit commands F1 to F9 in sequence

Setting value :

0 - 15000 Unit: 0.1 mm/min (Metric output)

0 - 6000 Unit: 0.1 inch/min (Inch output)

When the manual pulse generator is rotated to change the feedrate for Fl digit command, the value of this parameter changes accordingly. This parameter can be set even in setting.

0799

ABS9

ABS9 Spindle distribution cumulative value for the rigid tapping. (Used for diagnosis)

Data type : 2-word type

Unit : Detection unit

0804

LT3X1

0805

LT3Y 1

0806

LT3Z1

0807

LT3X2

0808

LT3Y2

0809

LT3Z2

LT3 □□
- Number of the vertex of square area.
- indicates an axis.

Set the stroke limit indicated by the above.

Set value: 0 - + 99999999

Unit: 0.001 mm (metric output)

Set value: 0 - + 99999999

Unit: 0.0001 inch (inch output)

Set by the distance from the reference point.

Whether the forbidden area is outside or inside is determined by the parameter INOUT (No.24).

(Note) When the set unit is 1/1 0, the unit is 1/1 0.

Refer to the parameter 0747 - 0752.

0815

PRSTIX

0816

PRSTIY

0817

PRSTIZ

0818

PRSTI4

PRSTIX - PRSTI8

Coordinate values of the reference point in automatic coordinate system setting.

(Input is in inch and PRM No.63 bit 1 PRSTIN = 1)

Set value: 0 - + 99999999 Unit: 1 .10

(Note) When the set unit is l/l 0, the unit is l/l 0.

0821

LT171

0822

LT181

0823

LT172

0824

LT182

LT1 □□
- Number of the vertex of square area.
- Indicates an axis.

Set the stroke limit of the 7th and 8th axes indicated by the above.

Set value: 0 - + 99999999

Unit: 0.001 mm (metric output)

Set value: 0 - + 99999999

Unit: 0.0001 inch (inch output)

Set by the distance from the reference point.

0825

PRS7

0826

PRS8

PRS7, PRS8 Coordinate values of the reference points of 7th and 8th axes in automatic coordinate system setting. (Specify in the unit of input system.)

Set value: 0 - + 99999999

Unit: 0.001 mm (metric output)

Unit: 0.0001 inch (inch output)

0827

ABS7P

0828

ABS8P

ABS7P, ABS8P

Counter data values at the reference point return position when the absolute pulse coder is used. This value is automatically set at the completion of manual reference point return, and unnecessary to set.

1000

PECORGX

PECORGX X axis sero point of pitch error compensation.
Setting range : 0 to 127

1001 to 1128 Setting of pitch error compensa-tion amount for Z axis.
Setting range : 0 to ± 7.

2000

PECORGY

PECORGY Y axis zero point of pitch error compensation. (M series)
Setting range : 0 to 127

2001 to 2128 Setting of pitch error compensa-tion amount for Z axis. (for M series), Z axis (for T series)
Setting range : 0 to ± 7.

3000

PECORGZ

PECORGZ Z axis zero point of pitch error compensation. (M series)
Setting range : 0 to 127

3001 to 3128 Setting of pitch error compensa-tion amount for Z axis. (for M series), 3rd axis (for T series)
Setting range : 0 to ± 7.

4000

PECORG4

PECORG4 4th axis zero point of pitch error compensation.
Setting range : 0 to 127

4001 to 4128 Setting of pitch error compensa-tion amount for 4th axis.
Setting range : 0 to ± 7.

5000

PECORG5

PECORG5 5th axis zero point of pitch error compensation.
Setting range : 0 to ± 127

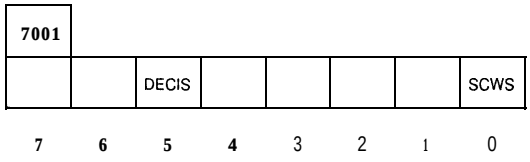
5001 to 5128 Setting of pitch error compensa-tion amount for 5th axis.
Setting range : 0 to ± 7.

6000

PECORG6

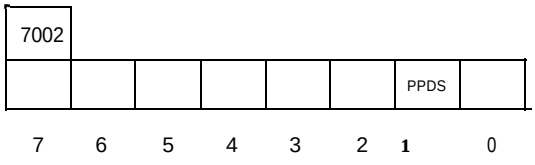
PECORG6 6th axis zero point of pitch error compensation.
Setting range : 0 to 127

6001 to 6128 Setting of pitch error compensa-tion amount for 6th axis.
Setting range : 0 to ± 7.

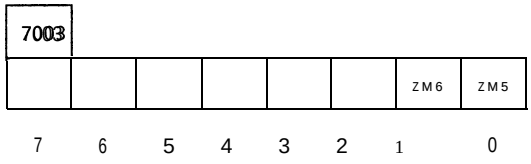


DECIS
1: Machine decelerates when deceleration signal is 1 inreference point return.
0: Machine decelerates when deceleration signal is 0 in reference point return.

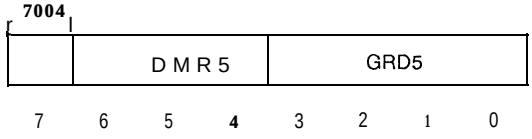
SCWS
1: Minimum command increment is the inch system (Machine inch system).
0: Minimum command increment is the metric system (Machine metric system).

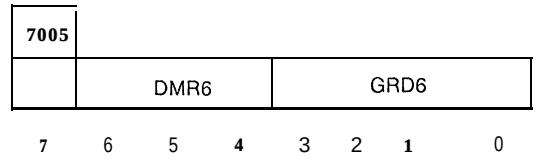


PPDS
1: Relative coordinate is also preset by coordinate setting.
0: Relative coordinate is not preset by coordinate setting.



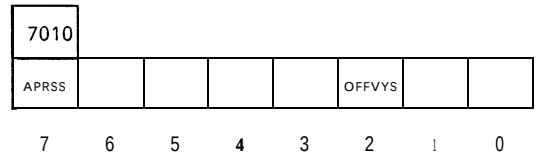
ZM5, ZM6 5th/6th axes reference point return direction and backlash initial direction at power ON , respectively.
1: Minus direction
0: Plus direction





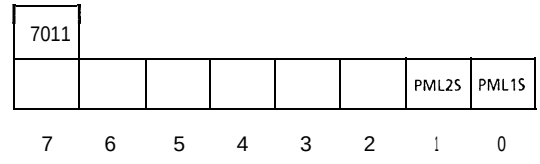
DMR5, DMR6
Detection multiplier for 5th and 6th axes, respectively.

GRD5, GRD6
Reference counter capacity for 5th and 6th axes, respectively.



APRSS
1: Sets automatic coordinate system at reference point return.
0: Does not set automatic coordinate system at reference point return.

OFFVYS
1: Servo alarm does not occur even when VRDI is ON before outputt-ing PRDY.
0: Servo alarm occurs when VRDY is ON before outputting PRDY.



PML1S, PML2S : Pitch error compensation multiplier for pitch error compensation (common to axis 5 and axis 6)

PML1S	PML2S	Multiplier
0	0	X1
0	1	x2
1	0	x4
1	1	x8

7021

	SUB1					APC6	APC5
7	6	5	4	3	2	1	0

APC5/APC6 1: When the absolute pulse coder detector is mounted for 5th/6th axes.

0: When the absolute pulse coder detector is not mounted for 5th/ 6th axes.

SUB1 1: PMC axis control is the 5th axis.

0: PMC axis control is the 5th/6th axes.

7022

						ABS6	ABS5
7	6	5	4	3	2	1	0

ABS5, ABS6

1: Reference point position in absolute pulse coder is defined for 5th/6th axes.

0: Reference point position in absolute corder is not defined for 5th/6th axes.
(the signal becomes "1" automatically if the reference point return is performed by PMC axis control. Do not change setting by the time the detector is replaced.)
When installing the CNC or replacing the position detector, always set these parameter to 0, turn off and on the power then perform manual reference point return.

7032

			PNCMLK			ROT6	ROT5
7	6	5	4	3	2	1	0

PNGMLK 1: MLK signal is invalid for the 5th/6th axes.

0: MLK signal is valid for the 5th/6th axes.

ROT5, 6 1: The 5th/6th axes is a rotary axis.

0: The 5th/6th axes is a linear axis.

7037

PLCOIS						SPTP6	SPTP5
7	6	5	4	3	2	1	0

PLCO1S 1: 0.1 μ pulse-coder is used.

0: 0.1 μ pulse-coder is not used.

SPTP5, 6 Type of position detector for 5th/6th axes, respectively

1: The separate type pulse coder is used.

0: The separate type pulse coder is not used.

7100

CMR5

7101

CMR6

CMR5, 6 Command multiplier for 5th/6th axes, respectively.

7130

DSPSUBI

7131

DSPSUB2

DSPSUB1, 2 Set the axis names of the 5th/6th axes in sequence.

The setting code shall be in accordance with the general switch code on the operator's panel. Usable characters:
(X, Y, Z, U, V, W, A, B, C, H, 0 - 9, O, N, D, -, .)

(Note) When displaying the 5/6th axis positions, the run hour, for example, is displayed on the overall position display screen.

7500

INP5

7501

INP6

INP5, 6 In-position width for 5th/6th axes, respectively.

7504

SERR5

7505

SERR6

SERR5, 6 Limit value of moving position deviation for 5th/6th axes, respectively.

7508

GRDS5

7509

GRDS6

GRDS5, 6 Grid shift amount for 5th/6th axes, respectively.

7516

PSANGNS

PSANGNS Subspindle S4/S5 digit control (analog ouptut).
Analog output gain adjusting data. (Set the data for gain adjustment at analog output.)
The setting range, etc. is the same as with the main spindle parameter (No. 516).

7517

LPGINS

LPGIN5 Setting of position control loop gain (5th/6th axes in common).

7518

RPDFS

7519

RPDF6

RPDF5, 6 Rapid traverse rate for 5th/6th axes, respectively.

7522

LINT5

7523

LINT6

LINT5, 6 Time constant of liner acceleration and deceleration for 5th/6th axes respectively.

7529

FEEDTS

FEEDTS Time constant of cutting feed exponential acceleration/deceleration (5th/6th axes in common.)

7530

FEDFLS

FEDFLS Lower limit speed of cutitng feed exponential acceleration and deceleration (FL) (5th/6th axes in common).

Usually set this parameter to 0.

7533

RPDFLS

RPDFLS Sets the lowest feedrate (F_{0}) for the rapid traverse override (Common to axis 5 and axis 6)

When mm output, the setting range is 6-15000 (unit: mm/min).

When inch output, the setting range is 6-15000 (unhit: 0.1 inch/min).

Note: Even when setting unit is 1/10 the unit is the same.

7534

ZRNFLS

ZRNFLS Low feedrate at reference point return (FL) (5th/6th axes in common).

7535

BKL5

7536

BKL6

BKL5,6 Backlash amount for 5th/6th axes, respectively.

7539

SPDLCS

SPDLCS Set the subspindle speed offset compensated value ; the zero offset compensation value of subspindle speed command voltage.

7593

STPE5

7594

STPE6

STPE5, 6 Limit value of positional deviation for 5th and 6th axes 6th axes at stop, respectively.

7652 EFDT6

EFDT6 Cutting feed exponential acceleration/deceleration time constant for axis 5 and axis 6 in order

Setting value O-4000

Unit: msec

However, when 0 is set the value becomes No.7529.

7658	EAFL6

EAFL6 Cutting feed exponential acceleration/deceleration lower
Limit speed (FL) in order
Setting value : 0.6-I 5000
Unit : mm/min (mm outupt)
Setting value : 0.6-6000
Unit: 0.1 inch/min (inch output)
However, when 0 is set the value becomes No.7530.

7700
LT151

7701
LT161

7704
LT152

7705
LT162

LT151, 161, 152, 162
Stored stroke limit of 5th and 6th axes.

7708
PRS5

7709
PRS6

PRS5, PRS6 Coordinate value of 5th and 6th axes reference point.

7713
RPS5

7714
RPS6

PECINT5, 6 Compensation intervals at pitch error compensation of 5th/6th axes.
Setting value :
8000 to 99999999
unit 0.001 mm (metric ouptut)
4000 to 99999999
unit 0.0001 inch (inch output)
(Note) When 0 is set to this parameter, the compensation is not performed.

8500 ~ 8565 Parameters related to dogital servo for 5th axis

8600 ~ 8665 Parameters related to dogital servo for 6th axis

E I

(Note) For the contents, refer to FOT-A OPERATION MANUAL (B-55254E)

The parameters of each axis for the digital servo are as shown in the following:

8500	Parameter No.	Product	Axis
The 1 st axis	8100-8165	0T/0G	X axis
		OM	X axis
The 2nd axis	8200~8265	0T/0G	Z axis
		OM	Y axis
The 3rd axis	8300~8365	0T/0G	Cf axis, PMC axis
		0M	Z axis
The 4th axis	8400~8465	0T/0G	Y axis, PMC axis
		0M	4th axis

In the following, parameter numbers of each axis are to be indicated by*.

8000

						DGPRM	
7	6	5	4	3	2	1	0

DGPRM While the power is turned on, the standard values of parameters related to Digital Servo are
0: to be set
1: not to be set
When this parameter is set to 0 after setting the motor type, the standard values which have been set corresponding to the motor type of the parameter 8 * 20 are automatically set and this parameter becomes " 1 ".

8001

		AMR5	AMR4	AMR3	AMR2	AMR1	AMRO
7	6	5	4	3	2	1	0

AMRO-AMR5

Motor type	No. of pulse/pulse coder rotation (p/r)	AMR					
		5	4	3	2	1	0
2-0, I-O, 0, 5,	2000	0	1	1	1	1	1
IO, 20, 20M,	2500	0	1	1	0	1	0
30, 30R	3000	0	1	0	0	0	1
4-0, 3-0	2000	0	1	0	1	0	1
5-0	1000	0	1	0	0	0	0
2-0, 1-0, 0, 5,	12500	0	0	0	0	0	1
10, 20, 20M,	20000	1	1	1	1	1	1
30, 30R	25000	1	1	1	0	1	0

8002

			VFSEL	PSSEL			
7	6	5	4	3	2	1	0

Since the set value has been fixed as in the following, never change it.
The setting value of the PSSEL is 1. While that of the VFSEL is 0.

8003

7	6	5	4	3	2	1	0

8□04

7	6	5	4	3	2	1	0

(Note) When parameter No. 8 * 00 bit 1 (DGPRM) is set to 0, the standard values of these parameters are autmatically set. Normally, never change these values.

8□20 | Motor type

Parameter input
Data type : Word axis type
Data unit :
Data range: 1 to 32767
The standard values of the parameters related to the Digital Servo are stored in the memory of the NC corresponding to each motor type. Set them for each axis. When this parameter is 0 or less or an unavailable value is set, an alarm results.

Parameter No.	Motor type				
	5-0	4-0	3-0	2-0	1-0
8020	3	4	5	6	7

Parameter No.	Motor type				
	0	5	IO	20M	20
8□20	8	9	IO	11	12

Parameter No.	Motor type				
	30	30R			
8020	13	14			

8□21

Load inertia **ratio** (LDINT)

Parameter input

Data type : Word axis type

Data unit

Data range: 1 to 32767

When Digital Servo is to be used, calculate the inertia ratio of the load inertia and motor rotor inertia according to the following expression and set it for each axis.

$$\text{Load inertia ratio} = \frac{\text{Load inertia}}{\text{Rotor inertia}} \times 256$$

8□22

Rotating direction of motor (DIRCTL)

Parameter input

Data type : Word axis type

Set the rotating direction of a motor.

111: The motor rotates in the positive direction (Viewed from the motor shaft side, it rotates in the CCW direction.)

-111: The motor rotates in the negative direction (Viewed from the motor shaft side, it rotate in the CW direction.

If a value except the aobve has been set, an alarm results.

8□23

Digital Servo related (PULCO)

Parameter input

Data type : Word axis type

Data unit : PULSE/REV

Data range : 1 to 32767

When Digital Servo is to be used, set the number of pulses per rotation of the motor of the detector to be used for the velocity feedback. Perform calculation supposing that there are four pulses per pulse cycle phases A and B.

However, when a pulse coder of 0.1 μ is to be used, set 1/10 data.

If this parameter is 0 or less, an alarm results.

8□24

DIGITAL SERVO RELATED (PPLS)

Parameter input

Data type : Word axis type

Data unit : PULSE/REV

Data range: **1** to 32767

When Digital Servo is to be used, set the number of pulses per one rotation of the motor of the detector to be used for the position feed back. Perform calculation supposing that there are Four pulses per pulse cycle of phases A and B. (Example, 2,000 x **4** = 8,000 for a pulse coder of 2,000 p/r.)

However, when a pulse coder of 0.1 μ is to be used, set 1 /1 **0** data.

If this parameter is 0 or less, an alarm results.

8□40

~

8□65

Digital Servo related

Parameter input

Data type : Word axis type

Data unit

Data range:

Parameters related to Digital Servo.

(Note) When parameter No. 8 * 00 bit 1 (DGPRM) is set to 0 and the motor type is set to parameter No. 8 * 20, the standard value is automatically set. Normally, it is not necessry to change this parameter.

Parameters which can be determined byn the motor to be applied.
(Data type: Word axis type) (1)

Parameter No.	AC servo motor to be applied					
	5-0	4-0	3-0	2-0	1-0	0
8040	241	460	669	322	469	828
8041	-527	-1461	-2126	-1103	-1625	-2782
8□42	-1873	-2373	-2374	-2488	-2503	-2457
8043	80	104	96	267	217	226
8□44	-300	-517	-477	-1330	-1082	-1127
8□45	0	0	0	0	0	0
8□46	-16471	-16471	-16471	-16471	-16471	-16471
8□47	0	0	0	22556	13682	4173
8□48	0	0	0	1024	1024	1024
8049	0	0	0	22552	13679	4172
8□50	2607	2607	2607	2607	2607	2607
8□51	5560	5560	5560	5560	5560	5560
8□52	0	0	0	0	0	0
8□53	21	21	21	21	21	21
8□54	3787	3787	3787	3787	3787	3787
8□55	319	319	319	319	319	319
8□56	0	0	0	0	0	0
# 8□57	2330	2330	2330	2330	2330	2330
8058	57	57	57	57	57	57
8□59	0	0	0	0	0	0
8060	7282	7282	7282	7282	7282	7282
8061	32256	32256	32256	32256	32256	3256
8□62	32514	32543	32576	32576	32519	32712
8□63	3173	2817	2401	2401	3112	706
8□64	85	225	475	475	1728	5440
8□65	9437	8375	7136	7136	9256	2094

Parameters which can be determined by the motor to be applied.
(Data type: Word axis type) (2)

Parameter No.	AC servo motor to be applied					
	5	10	20M	20	30	30R
8□40	1720	944	808	9970	1452	705
8□41	-2781	-3532	-3074	-3682	-5576	-2716
8□42	-3052	-2622	-2649	-2646	-2665	-2669
8□43	359	654	824	535	5-5	674
8044	-1789	-3259	-4103	-2666	-2516	-3356
8045	0	0	0	0	0	0
8□46	-16471	-16471	-16471	-16471	-16471	-16471
8□47	1941	835	491	491	491	491
8□48	1024	1024	1024	1024	1024	1024
8049	1941	834	491	491	491	491
8□50	2607	2607	2607	2607	2607	2607
8□51	5560	5560	5560	5560	5560	5560
8□52	0	0	0	0	0	0
8053	21	21	21	21	21	21
8□54	3787	3787	3787	3787	3787	3787
8□55	319	319	319	319	319	319
8□56	0	-0	0	0	0	0
# 8□57	230	2330	2330	2330	2330	2330
8□58	57	57	57	57	57	57
8059	0	0	0	0	0	0
8060	7282	7282	7282	6918	6918	6554
8061	32256	32256	32256	32256	32256	32256
8□62	32645	32464	32155	32509	32452	32419
8□63	1539	3796	7,659	3242	3947	4366
8□64	7372	9410	12705	19556	29250	21926
8□65	4567	11299	22907	9644	11752	13005

Note 1) When a pulse coder of 0.1 μ is used, the values of the parameters marked by # are to be changed to Ill 0.

Common parameters for each motor model
(Data type: bit axis type)

Parameter No.	Data							
	#7	#6	#5	#4	#3	#2	#1	#0
8□03	0	0	0	0	0	0	0	1
8□04	0	0	0	1	1	0’	1	0

Table 1. Relation between override signal and manual constant feed rate

Condition of contact on the machine				Parameter OVRI = 1			Parameter OVRI = 0		
				Override value	Manual constant feedrate		Override value	Manual constant feedrate	
*OV1	*OV2	*OV4	*OV8		MM series	INCH series		MM series	INCH series
				0%	0mm/min	0inch/min	150%	1260mm/min	50inch/min
0				10	2.0	0.08	140	790	30
				20	3.2	0.12	130	500	20
0	0			30	5.0	0.2	120	320	12
		0		40	7.9	0.3	110	200	8.0
0		0		50	12.6	0.5	100	126	5.0
	0	0		60	20	0.8	90	79	3.0
0	0	0		70	32	1.2	80	50	2.0
			0	80	50	2.0	70	32	1.2
0			0	90	79	3.0	60	20	0.8
	0		0	100	26	5.0	50	12.6	0.5
0	0		0	110	200	8.0	40	7.9	0.3
		0	○	120	320	12	30	5.0	0.2
○		○	○	130	500	20	20	3.2	0.12
	○	○	○	140	790		30	10	2.0	0.08
○	○	○	○	150	1260	50	0	0	0

Table. 2

Condition of rotary switch									Manual constant feedrate			
Position	Parameter OVRI = 0				Parameter OVRI = 1				MM Input		INCH Output	
	*OV8	*OV4	*OV2	*OV1	*OV8	*OV4	*OV2	*OV1	MM Input	INCH input	MM Output	INCH Output
0					0	0	0	○	0mm/min	0inch/min	0mm/min	0inch/min
1				0	0	0	0		IO	0.4	25	1.0
2			0		○	○		○	14	0.5	35	1.4
3			O	○	○	○			20	0.8	49	2.0
4		0			0		0	0	27	1.1	68	2.7
5		0		0	0		0		37	1.5	95	3.7
6		0	0		0			0	52	2.0	132	5.2
7		0	0	0	0				72	3.0	183	7.2
8	○					○	○	○	100	4.0	250	10.0
9	○			0		0	0		140	5.0	350	14.0
10	○		0			○		○	200	8.0	490	20.0
11	0		0	0		0			270	11.0	680	27.0
12	0	0					○	○	370	15.0	950	37.0
13	0	0		0			0		520	20.0	1320	52.0
14	0	0	0					0	720	30.0	1830	72.0
15	0	0	0	0					1000	40.0	2500	100.0

Note 1) 0 in the upper table display that the contact of single is open. In case of blank, it displays closed.

Table. 3

Position	Condition of rotary switch								Manual constant feedrate
	Parameter OVRI = 0				Parameter OVRI = 1				
	*OV8	*OV4	*OV2	*OV1	*OV8	*OV4	*OV2	*OV1	
0					○	○	0	0	0deg/min
1				○	○	0	0		10
2			0		0	0		0	14
3			0	0	0	0			20
4		0			0		○	○	27
5		0		0	0		0		37
6		0	0		0			0	52
7		0	0	0	0				72
8	0					0	0	0	100
9	0			0		0	0		140
10	0		0			0		0	200
11	0		0	0		0			270
12	0	0					0	0	370
13	0	0		0			0		520
14	0	0	0					0	720
15	0	0	0	0					1000

Note 1) 0 in the upper table display that the contact of signal is open. In case of blank, it displays closed.'

Note 2) Unit is same for setting unit 1/10.

Table **4**

Condition of rotary switch									Manual constant feedrate (PSU/min)
Position	Parameter								
	Parameter OVRI = 0				Parameter OVRI = **1**				
	*OV8	*OV4	*OV2	*OV1	*OV8	*OV4	*OV2	*OV1	
0					○	○	0	0	0
1				0	○	0	0		10
2			0		0	0		0	14
3			0	0	○	○			120
4		○			0		0	0	27
5		0		0	0		0		37
6		○	○		0			0	52
7		0	0	0	0				72
8	0					0	0	0	100
9	0			0		0	0		140
10	0		0			0		○	200
11	0		0	0		0			270
12	0	0					○	○	370
13	0	0		0			0		520
14	0	0	0					0	720
15	0	0	0	0					1000

(OVRI : PRM No. 3 bit4)

○ in the upper table display that the contact of signal is open. In case of blank, it displays closed.

Specifications of Additional Parameters.

- This document is a description of the additional parameter applied in FANUC Series O-MC 0466/20 or later. Therefore, some parameters might not be applied in other series/edition.

- Because the specification might be limited, please refer to each specifications when applying these parameters.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0002					RSASC I			

1 :
0 :

1 :
0 :

1 :
0 :

RSASC I 1 : ASCII code is used for reader/puncher interface.
0 : ISO/EIA code is used for reader/puncher interface.
(Note) This parameter is valid only when I/O on (SETTING 1) is set to "0".

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0010					EXOPE			

1 :
0 :

1 :
0 :

1 :
0 :

EXOPE 1 : Operating monitor display is expanded.
0 : Operating monitor display is not expanded.
(Note) This parameter is valid only when bit 5 (OPMNDP) of parameter No. 0060 is set to 1. Operating monitor display is a basic function, but optional ROM (optional assembly 2) is required to expand it.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	x 7	#6	#5	#4	#3	#2	X 1	#0
NO. 0012					RSASC I			

1 :
0 :

1 :
0 :

1 :
0 :

RSASC I 1 : ASCII code is used for reader/puncher interface.
0 : ISO/EIA code is used for reader/puncher interface.
(Note) This parameter is valid only when I/O on (SETTING 1) is set to “1”.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0014								SCTA

SCTA 1 : Spindle speed arrival signal (SAR) is always checked during cutting.
0 : Spindle speed arrival signal (SAR) is checked at the start of cutting.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0021		NOFLUP						

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

NOFLUP When equipping absolute pulse coder,
1 : there is no coordinate running without axes motion at initial power-up.
0 : there is coordinate running without axes motion at initial power-up.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0024					G37G I			

1 :
0 :

1 :
0 :

1 :
0 :

G37G I When measurement is performed without applying offsets in automatic tool length compensation,
1 : the geometry offset is rewritten and the wear offset is cleared.
0 : the wear offset is rewritten and the geometry offset is cleared.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0030		AXS4D		LCD		OFCDH		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

OFCDH 1 : Tool offset memory C is used.
0 : Tool offset memory C is not used.
(Note) It is necessary to set parameter 036#6 (OFRD) to "1" when this parameter is set to "1".

1 :
0 :

LCD 1 : The display unit is an LCD (liquid crystal display).
0 : The display unit is a CRT (cathode ray tube).

1 :
0 :

AXS4D 1 : 4th-axis name is displayed depending on parameter 280.
0 : 4th-axis name depends on parameter 008 ADWO,ADWl and ADW2.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0032	NORMAL		NOPCAL		TYPE2	TYPE1		

1 :
0 :

1 :
0 :

TYPE1 1 : The master printed circuit board is a high-speed master printed circuit board (type 1).
0 : The master printed circuit board is a normal master printed circuit board.
(Note) This parameter is used for self-diagnosis. It does not have to be set by the user.

TYPE2 1 : The master printed circuit board is a high-speed master printed circuit board (type 2).
0 : The master printed circuit board is a normal master printed circuit board.
(Note) This parameter is used for self-diagnosis. It does not have to be set by the user.

1 :
0 :

NOPCAL 1 : If a PC alarm (600 to 699) is issued, ladder data in the PMC RAM is not cleared.
0 : If a PC alarm (600 to 699) is issued, ladder data in the PMC RAM is cleared.

1 :
0 :

NORMAL 1 : The high-speed master printed circuit board is used as a normal master printed circuit board.
0 : The high-speed master printed circuit board is used as a high-speed master printed circuit board.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0035			RGCTO					

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

RGCTO When using rigid tapping,
1 : time constant during pulling out spindle is different from that of tapping. (Time constants are set in parameter 400,401 and 402.)
0 : time constant during pulling out spindle is same as that of tapping.

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	x1	#0
NO. 0040						RGTPE		

1 :
0 :

1 :
0 :

RGTPE When releasing rigid tapping mode,
1 : rigid tapping signal (RGTAP/RGTPN) off is not checked.
0 : rigid tapping signal (RGTAP/RGTPN) off is checked.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	x 5	#4	#3	#2	#1	#0
NO. 0046				BGREL				

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

BGREL When the amount of part program storage is 120 or 320 m,
1 : deleting a program as part of background editing releases the part program storage area used by that program.
0 : deleting a program as part of background editing does not release the part program storage area used by that program.

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0047			ZSSTP8	ZSSTP7	ZSSTP4	ZSSTP3	ZSSTP2	ZSSTP1

ZSSTP1
ZSSTP2
ZSSTP3
ZSSTP4
ZSSTP7
ZSSTP8 1 : The single-revolution signal for the servo motor is input from the separate pulse coder interface.
0 : The single-revolution signal for the servo motor is input from the built-in pulse coder interface.

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	x3	x2	#1	#0
NO. 0048	SFFDSP		ATREV	SMZCT		DRC	DAC	

1 :
0 :

DAC In absolute coordinate display,
1 : displayed positions are programmed positions that ignore cutter compensation.
0 : displayed positions are actual positions that consider cutter compensation.

DRC In relative coordinate display,
1 : displayed positions are programmed positions that ignore cutter compensation.
0 : displayed positions are actual positions that consider cutter compensation.

1 :
0 :

SMZCT 1 : Rapid traverse block overlap is used.
0 : Rapid traverse block overlap is not used.

ATREV 1 : On the LCD, ladder dynamic display ON/OFF is indicated by using normal and reverse video display.
0 : On the LCD, ladder dynamic display ON/OFF is indicated by varying the intensity of the display.

1 :
0 :

SFFDSP 1 : Soft-key is displayed regardless of equipping options.
0 : Whether soft-key is displayed or not depends on equipping options.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0050							NOFMK	

1 :
0 :

NOFMK 1 : Tape format check is not done during sequence No. search.
0 : Tape format check is done during sequence No. search.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0056								NOCND

NOCND When equipping tape storage memory 120/320m or back-ground edit,
1 : condensing part program memory is not automatically done.
(Condensing is done by pressing soft-key “CONDNS”.)
0 : condensing part program memory is automatically done by CNC reset after edit operation.)

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	x7	#6	#5	#4	#3	#2	#1	#0
NO. 0057						SALNC	ALMNC	PWNNC

PWNNC 1 : CNC screen is displayed after CNC power-up.
0 : MMC screen is displayed after CNC power-up.
(Note) This parameter is valid on 00-MC.

ALMNC 1 : Screen changes to CNC screen automatically when CNC alarm happens in displaying MMC screen.
0 : Screen stays in MMC screen after CNC alarm happens in displaying MMC screen.
(Note) This parameter is valid on 00-MC.

SALNC 1 : Screen changes to CNC screen automatically when system alarm happens in displaying MMC screen.
0 : Screen stays in MMC screen after system alarm happens in displaying MMC screen.
(Note) This parameter is valid on 00-MC.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	x5	#4	#3	#2	#1	#0
NO. 0060		EXTSP	OPMNDP	HDLPM		LDDSPG	PCLDB	DADRDP

(Note) It is necessary to turn off CNC power after changing these parameters.

DADRDP 1 : Addresses X, Y, G, I? R and D are displayed on DGN screen.
0 : Addresses X, Y, G, F, R and D are not displayed on DGN screen.

PCLDB 1 : Baud rate for ladder program loading is 9600.
0 : Baud rate for ladder program loading is 4800.

LDDSPG 1 : Ladder dynamic display is valid.
0 : Ladder dynamic display ‘is invalid.

1 :
0 :

HDLPM When manual pulse generator is rotated rapidly,
1 : movements always coincide with rotated amounts.
0 : movements happens not to coincide with rotated amounts by clamping with rapid traverse rate.

OPMNDP 1 : Operating monitor display is valid.
0 : Operating monitor display is invalid.

EXTSP 1 : Program No.search and display are valid for the protected part programs by parameter PRG9.
0 : Program No.search and display are inhibited for the protected part programs by parameter PRG9.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0062		AXPCF			SPMRPM	G40V		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

G40V When G40, G41 and G42 are commanded without motion,
1 : offset motion is vertical to the next start movement in case of start-up or it is vertical to the previous end movement in case of cancelling.
0 : offset motion is as described in operator's manual.

SPMRPM 1 : Unit of parameters related to the spindle rotation speed is 10 rpm.
0 : Unit of parameters related to the spindle rotation speed is 1 rpm.
(Note) When setting this parameter, setting unit of parameter 0539, 0540, 0541, 0542, 0543, 0551, 0555 and 0556 is 10 rpm.

1 :
0 :

1 :
0 :

AXPCF 1 : Axes movement by PMC axis control is not added in actual speed display.
0 : Axes movement by PMC axis control is added in actual speed display.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0064					IOMDGN		ALLPRE	

1 :
0 :

ALLPRE 1 : Origin setting of relative coordinates is performed by numeric key.
0 : Origin setting of relative coordinates is performed by address key.

1 :
0 :

I OMDGN 1 : Signals of I/O link and expanded R/D data are displayed on DGN screen.
0 : Signals of I/O link and expanded R/D data are not displayed on DGN screen.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0065			TAPDRN		PSOT		CZRN	

1 :
0 :

CZRN When using Cs contouring control of serial interface spindle,
1 : G28 is necessary before first COO command.
0 : G28 is automatically performed before first G00 command.

1 :
0 :

PSOT 1 : Stored stroke check is ignored until reference point return is finished after CNC power-up.
0 : Stored stroke check is valid just after CNC power-up.

1 :
0 :

TAPDRN 1 : Dry-run is ignored for tapping cycle (G74, G84).
0 : Dry-run is valid for tapping cycle (G74, G84).

1 :
0 :

1 :
0 :

	#7	#6	x 5	x 4	#3	#2	#1	#0
NO. 0066	ERVF2	ERVF1			EPMSKP		NBD78	ALL56

(Note) It is necessary to turn off CNC power after changing these parameters.

ALL56 1 : Position of 5/6th axis is displayed in over-all position screen.
0 : Position of 5/6th axis is not displayed in over-all position screen.
(Note-l) This parameter is valid only when parameter 029#6(DSPSUB) is set to "1".
(Note-Z) Run hour and parts count are not displayed when setting this parameter.

NBD78 When using Cs axis control or Cs contouring control,
1 : 7th or 8th axis control is valid in spite of 4th or '7th axis control PCB.
0 : number of control axes is same as axis control PCB.

1 :
0 :

EPMSKP 1 : Skip signal for PMC axis control is independent of CNC skip signal.
0 : Skip signal for PMC axis control is same as CNC skip signal.

1 :
0 :

1 :
0 :

ERVF2	ERVF1	Multiplier for feed per rev. by PMC axis control
0	0	x 1
1	1	
0	1	× 10
1	0	×100

	#7	#6	#5	x4	#3	#2	#1	#0
NO. 0070	ICR	PEXRD		DSTBGE			DAC2	DAC1

DAC1 1 : D/A converter channel-l on Input/Output Interface board is used.
0 : D/A converter channel-l on Input/Output Interface board is not used.

DAC2 1 : D/A converter channel-2 on Input/Output Interface board is used.
0 : D/A converter channel-2 on Input/Output Interface board is not used.

1 :
0 :

1 :
0 :

DSTBGE 1 : "DST" is not output when pressing START key in background edit in order to punch out part programs.
0 : "DST" is output always when pressing START key.

1 :
0 :

PEXRD 1 : Expanded R/D data on PMC-M is used.
0 : Expanded R/D data on PMC-M is not used.

ICR 1 : EOB is punched out as "LF" when punching with IS0 code.
0 : EOB is punched out as "LF" "CR" "CR" when punching with IS0 code.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0071	FSRSP	DPCRAM		SRL2SP				I SRLPC

(Note) It is necessary to turn off CNC power after changing these parameters.

I SRLPC 1 : Position coder cable is connected to M27 on memory PCB when using serial interface spindle.
0 : Position coder cable is connected to spindle amplifier when using serial interface spindle.

1 :
0 :

1 :
0 :

1 :
0 :

SRL2SP 1 : Two serial interface spindles are connected serially.
0 : One serial interface spindle is connected.

1 :
0 :

DPCRAM 1 : PMC starts automatically at power-up when using PMC RAM board.
0 : "PMC LOAD MENU" is displayed at power-up when using PMC RAM board.

FSRSP 1 : Serial interface spindles are used.
0 : Serial interface spindles are not used.
(Note) This parameter is effective only on 0-MF.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0074					CRF4	CRFZ	CRFY	CRFX

CRFX When the motion other than G28 is commanded for X-axis whose machine coordinate is not fixed yet,
1 : alarm 224 appears.
0 : no alarm appears.

CRFY When the motion other than G28 is commanded for Y-axis whose machine coordinate is not fixed yet,
1 : alarm 224 appears.
0 : no alarm appears.

CRFZ When the motion other than G28 is commanded for Z-axis whose machine coordinate is not fixed yet,
1 : alarm 224 appears.
0 : no alarm appears.

CRF4 When the motion other than G28 is commanded for 4th-axis whose machine coordinate is not fixed yet,
1: alarm 224 appears.
0 : no alarm appears.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0075	I ONUL					I NHND	SYNMl	SYNMO

SYNMl	SYNMO	Master axis of simple synchronization of feed axis
0	0	No synchronization
0	1	X-axis (4th-axis is synchronized with X-axis.)
1	0	Y-axis (4th-axis is synchronized with Y-axis.)
1	1	Z-axis (4th-axis is synchronized with Z-axis.)

I NHND 1 : Unit of handle interruption is input increment and acc/dec is effective for handle interruption.
0 : Unit of handle interruption is output increment and acc/dec is ineffective for handle interruption.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

I ONUL 1 : Alarm appears when detecting a null code in reading EIA code.
0 : No alarm appears when detecting a null code in reading EIA code.

	x7	#6	#5	#4	x3	x2	#1	#0
NO. 0076	OTRFOM		PRWD	ADBLS	G84RGD	IOP	JZRN	ERDT

ERDT 1 : Error detect function is effective.
0 : Error detect function is ineffective.

JZRN 1 : Dogless reference point return is effective. (Note)
0 : Dogless reference point return is ineffective.
(Note) This parameter is applied to all axes. To set each axis individually, set this parameter to 1, then set bits 0 to 5 of parameter No. 0391 as required.

IOP 1 : Soft-key "STOP" interrupts reading/punching.
(Reset operation does not stop reading/punching.)
0 : Reset operation stops reading/punching.

G84RGD 1 : M29 is not necessary for shifting rigid tapping mode.
0 : M29 is necessary for shifting rigid tapping mode.

ADBLS 1 : Cutting feed and rapid traverse separate backlash compensation is valid.
0 : Cutting feed and rapid traverse separate backlash compensation is invalid.
(Note) The backlash compensation values for rapid traverse are specified with parameters No. 0686 to 0691.

PRWD 1 : Tape rewind signal (RWD) is output when using channel-2 of reader/puncher interface.
0 : Tape rewind signal (RWD) is not output when using channel-2 of reader/ puncher interface.

1 :
0 :

OTRFOM 1 : Stored stroke limit alarm appears just before exceeding it.
0 : Stored stroke limit alarm appears just after exceeding it.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0077		HLKEY				SGD	CT3G	

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

CT3G 1 : Time constant on rigid tapping is changing according to gear selection.
0 : Time constant on rigid tapping is fixed although gear selection changes.

SGD 1 : Servo waveform display is valid. (Note)
0 : Servo waveform display is invalid.
(Note) Servo waveform display is a basic function but requires the installation of the optional graphic PCB and soft keys.

1 :
0 :

1 :
0 :

1 :
0 :

HLKEY 1 : MDI key operation is treated with high priority.
0 : MDI key operation is treated with low priority.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0078	EAXOVE	RDRNE		OVRIE	NOINWZ	NOINMV	NOINOG	NO I NOW

NO I NOW 1 : Changing wear offset values by using MDI key is prohibited.
0 : Changing wear offset values by using MDI key is allowed.

NOINOG 1 : Changing geometry offset values by using MDI key is prohibited.
0 : Changing geometry offset values by using MDI key is allowed.

NOINMV 1 : Changing macro variables by using MDI key is prohibited.
0 : Changing macro variables by using MDI key is allowed.

NO I NWZ 1 : Changing work zero offset values by using MDI key is prohibited.
0 : Changing work zero offset values by using MDI key is allowed.

OVRIE 1 : The logic of override signals for PMC axis control is that "1" means high speed.
0 : The logic of override signals for PMC axis control is that "1" means low speed.
(Note) This parameter is effective only when parameter 078#7 (EAXOVE) is set to "1".

1 :
0 :

RDRNE 1 : Dry-run signals is effective for rapid traverse of PMC axis control.
0 : Dry-run signals is ineffective for rapid traverse of PMC axis control.
(Note) This parameter is effective only when parameter 078#7 (EAXOVE) is set to "1".

EAXOVE 1 : Dry-run and over-ride signals of PMC axis control are different from CNC axis control.
0 : Dry-run and over-ride signals of PMC axis control are same as CNC axis control.

	#7	#6	x 5	#4	#3	x 2	X 1	#0
NO. 0079	I XTYP			I XG90	IXINC	I XABS	I XREL	I XDDP

(Note) It is necessary to turn off CNC power after changing these parameters.

I XDDP 1 : Decimal point for table indexing is treated as calculator type.
0 : Decimal point for table indexing is treated as usual.

I XREL 1 : Relative coordinate value for table index axis is rolled over with 360" .
0 : Relative coordinate value for table index axis is not rolled over.

I XABS 1 : Absolute coordinate value for table index axis is rolled over with 360" .
0 : Absolute coordinate value for table index axis is not rolled over.

IXINC 1 : Motion for table index is decided in shorter direction when commanding absolute coordinate. (Parameter IXABS should be set to "1".)
0 : Motion for table index follows command direction when commanding absolute coordinate.

I XG90 1 : Command for table index axis is always regarded as absolute.
0 : Absolute or incremental command for table index axis follows G90/G91.

1 :
0 :

1 :
0 :

IXTYP 1 : The sequence of table index is type-B.
0 : The sequence of table index is type-A.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0080	SP2NEG	SPlNEG .			MORCM2	MORCMl		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

MORCMl 1 : Spindle orientation whose position is specified from PMC is used for 1st serial interface spindle.
0 : Spindle orientation whose position is specified from PMC is not used for 1st serial interface spindle.

MORCM2 1 : Spindle orientation whose position is specified from PMC is used for 2nd serial interface spindle.
0 : Spindle orientation whose position is specified from PMC is not used for 2nd serial interface spindle.

1 :
0 :

1 :
0 :

SPlNEG 1 : Rotary direction of 1st spindle is reverse of command direction during synchronous control with two serial interface spindles.
0 : Rotary direction of 1st spindle is same as command direction during synchronous control with two serial interface spindles.

SP2NEG 1 : Rotary direction of 2nd spindle is reverse of command direction during synchronous control with two serial interface spindles.
0 : Rotary direction of 2nd spindle is same as command direction during synchronous control with two serial interface spindles.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0380	MTCHK			KEYPR	KEYWZ	KEYMV	KEYOG	KEYOW

KEYOW 1 : The wear offset protection state is based on program protection signal KEY <G122#3>.
0 : The wear offset protection state is based on bit 0 (NOINOW) of parameter No. 0078.

KEY OG
1 : The geometry offset protection state is based on program protection signal KEY <G122#3>.
0 : The geometry offset protection state is based on bit 1 (NOINOG) of parameter No. 0078.

KEYMV
1 : The macro variable protection state is based on program protection signal KEY <G122#3>.
0 : The macro variable protection state is based on bit 2 (NOINMV) of parameter No. 0078.

KEYWZ
1 : The workpiece origin offset protection state is based on program protection signal KEY <G122#3>.
0 : The workpiece origin offset protection state is based on bit 3 (NOINWZ) of parameter No. 0078.

KEYPR
1 : The parameter protection state is based on program protection signal KEY <G122#3>.
0 : The parameter protection state is based on setting parameter PWE.

1 :
0 :

1 :
0 :

MTCHK
1 : Upon power-on, shift of the machine position is checked.
0 : Upon power-on, shift of the machine posit ion is not checked.
(Note) If a shift is detected, OT alarm 5n6 is issued (n: axis number). Use parameters No. 0988 to 0993 to set the maximum allowable shift.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0386	HDPIGB4	HDPIGBZ	HDPIGBY	HDPIGBX				

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

HDPIGBX
1 : Handle multiply of both MP1 and MP2 on is effective for X-axis.
0 : Handle multiply of both MP1 and MP2 on is ineffective for X-axis.

HDPIGBY
1 : Handle multiply of both MP1 and MP2 on is effective for Y-axis.
0 : Handle multiply of both MP1 and MP2 on is ineffective for Y-axis.

HDPIGBZ
1 : Handle multiply of both MP1 and MP2 on is effective for Z-axis.
0 : Handle multiply of both MP1 and MP2 on is ineffective for Z-axis.

HDPIGB4
1 : Handle multiply of both MP1 and MP2 on is effective for 4th-axis.
0 : Handle multiply of both MP1 and MP2 on is ineffective for 4th-axis.

	x7	#6	#5	#4	#3	#2	#1	#0
NO. 0387	EFERPD							SQDNC

SQDNC 1 : Program restart is effective not only memory operation but DNC operation.
0 : Program restart is effective only for memory operation.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

EFERPD 1 : Rapid traverse rate for PMC axis control is specified in feedrate command of PMC axis control.
0 : Rapid traverse rate for PMC axis control is same as rapid feedrate in parameter.

	#7	#6	#5	x4	x3	#2	#1	#0
NO. 0388		CHKERC	SIG		RGORT	RGMFH		PCTPH

PCTPH When using rigid tapping cycle for deep hole,
1 : Z-axis returns to R-position for each pecking motion.
0 : Z-axis returns to previous cutting start position for each pecking motion.

1 :
0 :

RGMFH 1 : Feedhold and single block are ineffective during rigid tapping.
0 : Feedhold and single block are effective even during rigid tapping.

RGORT 1 : Spindle orientation is performed before rigid tapping.
0 : Spindle orientation is not performed before rigid tapping.
(This parameter is effective only for serial interface spindle.)

1 :
0 :

SIG 1 : SIND signal is effective in rigid tapping mode.
0 : SIND signal is ineffective in rigid tapping mode.

CHKERC 1 : Excess error check of spindle is performed based on command spindle speed in program during rigid tapping.
0 : Excess error check of spindle is performed based on maximum spindle speed in parameter during rigid tapping.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0389				EADSL		PRG8	SPPRM	SRVSET

(Note) It is necessary to turn off CNC power after changing these parameters.

SRVSET 1 : Servo tuning/setting screen is not displayed.
0 : Servo tuning/setting screen is displayed.

SPPRM 1 : The spindle adjustment screen is displayed.
-0 : The spindle adjustment screen is not displayed.
(Note) Only the first spindle can be adjusted. The second spindle cannot be adjusted.

PRG8 1 : Editing of part program No. from 8000 to 8999 is protected.
0 : Editing of part program No. from 8000 to 8999 is not protected.

1 :
0 :

EADSL 1 : In PMC axis control (specification B), the switching of the axis selection signal (G144) for an unspecified path is enabled.
0 : In PMC axis control (specification B), the switching of the axis selection signal (G144) for an unspecified path is disabled. (P/S 139)

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	x1	#0
NO. 0390	NODC3		NREQ8	NREQ7	NREQ4	NREQZ	NREQY	NREQX

NREQX When machine coordinate of X-axis is not fixed at power-up with using absolute pulse coder,
1 : no alarm is displayed.
0 : alarm 310 is displayed.

NREQY When machine coordinate of Y-axis is not fixed at power-up with using absolute pulse coder,
1 : no alarm is displayed.
0 : alarm 320 is displayed.

NREQZ When machine coordinate of Z-axis is not fixed at power-up with using absolute pulse coder,
1 : no alarm is displayed.
0 : alarm 330 is displayed.

NREQ4 When machine coordinate of 4th-axis is not fixed at power-up with using absolute pu 1 se coder,
1 : no alarm is displayed.
0 : alarm 340 is displayed.

NREQ7 When machine coordinate of 7th-axis is not fixed at power-up with using absolute pulse coder,
1 : no alarm is displayed.
0 : alarm 370 is displayed.

NREQ8 When machine coordinate of 8th-axis is not fixed at power-up with using absolute pu 1 se coder,
1 : no alarm is displayed.
0 : alarm 380 is displayed.

1 :
0 :

NODC3 1: DC3 is not output until CNC buffer becomes full in DNC operation with using reader/puncher interface channel-l or -2.
0 : DC3 is output when EOB is read in DNC operation with using reader/puncher interface channel-l or -2.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0391	NOCLR	RS23BN	JZRN8	JZRN7	JZRN4	JZRNZ	JZRNY	JZRNX

JZRNX 1 : Dogless reference point return of X-axis is not available.
0 : Dogless reference point return of X-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

JZRNY 1 : Dogless reference point return of Y-axis is not available.
0 : Dogless reference point return of Y-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

JZRNZ 1 : Dogless reference point return of Z-axis is not available.
0 : Dogless reference point return of Z-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

JZRN4 1 : Dogless reference point return of 4th-axis is not available.
0 : Dogless reference point return of 4th-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

JZRN7 1 : Dogless reference point return of 7th-axis is not available.
0 : Dogless reference point return of 7th-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

JZRN8 1 : Dogless reference point return of 8th-axis is not available.
0 : Dogless reference point return of 8th-axis is available.
(Note) This parameter has meaning only when parameter 076#1(JZRN) is set to "1".

RS23BN 1 : DC code is not used for controlling reader/puncher interface.
0 : DC code is used for controlling reader/puncher interface.

NOCLR 1 : Special G-codes are not cleared by reset operation.
0 : All G-codes are cleared by reset operation.
(Note) This parameter has meaning only when parameter 045#6(CLER) is set to "1".

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0392	SRS2		SREP	SRPE		SRL1		

1 :
0 :

1 :
0 :

SRL1 1 : Bit length of a charactor on M-NET is 8 bits.
0 : Bit length of a charactor on M-NET is 7 bits.

1 :
0 :

SRPE 1 : Parity check of a charactor on M-NET is done.
0 : Parity check of a charactor on M-NET is not done.

SREP 1 : Parity bit of a charactor on M-NET is even.
0 : Parity bit of a charactor on M-NET is odd.

1 :
0 :

SRS2 1 : Two stop bits are used on M-NET.
0 : One stop bit is used on M-NET.

NO. 0393	DGNWEB	RADCHK	STOVO	HLCFCLMP	M3RQNG	WKNOMD I	COVOUT	FERDT

FERDT 1 : Automatic corner deceleration function is valid.
0 : Automatic corner deceleration function is invalid.

COVOUT 1 : Corner override is effective for moving not only inside of circles but also outside of circles.
0 : Corner override is effective only for moving inside of the circle.

WKNOMD I 1 : Work zero offset can not be changed from MDI-key during feed-hold or cycle start status.
0 : Work zero offset can be changed from MDI-key always.

M3RQNG 1 : 3-digit M-code causes. alarm 003.
0 : 3-digit M-code is available.

HLCFCLMP 1 : Linear axis cutting feedrate during helical interpolation is clamped with the maximum cutting feedrate in parameter.
0 : Linear axis cutting feedrate during helical interpolation is not clamped with cutting feedrate.

STOVO 1 : Feedrate override 0 stops rapid traverse (G00).
0 : Feedrate override 0 does not influence rapid traverse (G00).

RADCHK 1 : Tolerance check of circle radius between start point and end point is effective.
0 : Tolerance check of circle radius between start point and end point is ineffective.

DGNWEB 1 : Changing PMC parameter from MDI key is allowed regardless of PWE setting.
0 : Changing PMC parameter from MDI key is allowed only in PWE setting = 1.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0394	CAKEY	WKZRST						

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

WKZRST 1 : Work coordinate is changed to G54 by reset operation.
0 : Work coordinate is not changed by reset operation.

CAKEY 1 : One charactor cancel by “CAN” key is available in parameter/DGN and offset screen.
0 : One charactor cancel by “CAN” key is not available.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0395		FWBTYP			CHEAFD	LSUP2	TLSCUR	DLG99

DLG99 1 : Command unit of dwell (G04) in feed per rev. (G95) is spindle revolution.
0 : Command unit of dwell (G04) in feed per rev. (G95) is second.

TLSCUR 1 : Cursor returns to the previous position when displaying offset screen again.
0 : Cursor returns to top position when displaying offset screen again.

LSUP2 1 : Acceleration/deceleration to be applied after interpolation for cutting feed in look-ahead control mode is specified as linear acceleration/ deceleration after interpolation.
0 : Acceleration/deceleration to be applied after interpolation for cutting feed in look-ahead control mode is specified as exponential acceleration /deceleration.

CHEAFD 1 : For automatic corner deceleration, control based on the feedrate difference is enabled.
0 : For automatic corner deceleration, control based on the feedrate difference is disabled.

1 :
0 :

1 :
0 :

FWBTY P 1 : Linear acceleration/deceleration prior to interpolation is type B. (Note-l)
0 : Linear acceleration/deceleration prior to interpolation is type A. (Note-2)

(Note-l) Acceleration: Started at the start point of the feedrate changing block.
Deceleration: Started from the block preceding the feedrate changing block, such that deceleration will have been completed at the start point of the feedrate changing block.

(Note-2) Acceleration or deceleration is started at the start point of the feedrate changing block.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0396	EORRE				ERCODE	NCKER		BCC

BCC 1 : The BCC value is not checked.
0 : The BCC value is checked.

1 :
0 :

NCKER 1 : The ER (RS-232C) or TR (RS-422) signal is not checked.
0 : The ER (RS-232C) or TR (RS-422) signal is checked.

ERCODE 1 : A 4-digit hexadecimal error code is appended to a negative acknowledgement.
0 : A 4-digit hexadecimal error code is not appended to a negative acknowledgement.

1 :
0 :

1 :
0 :

1 :
0 :

EORRE When detecting EOB or % during auto operation,
1 : CNC turns to reset status internally.
0 : alarm 008 appears.

	#7	#6	#5	#4	x3	#2	#1	#0
NO. 0397	SERNA I				NOPS41	OVR255		

1 :
0 :

1 :
0 :

OVR255 1 : Feedrate override is 1% unit.
0 : Feedrate override is 10% unit.

NOPS4 1 1 : Interference check is not performed for cutter compensation.
0 : Interference check is performed for cutter compensation.

1 :
0 :

1 :
0 :

1 :
0 :

SERNAI 1 : Details of serial interface spindle alarm 409 are displayed on alarm screen.
0 : Details of serial interface spindle alarm 409 are not displayed.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0398	CHGNRM	CHGSKP			ROCNT	RODRC	ROAX	WKINK

WKINC 1 : Input of work zero offset with MDI key is regarded as incremental value.
0 : Input of work zero offset with MDI key is regarded as absolute value.

ROAX 1 : Roll-over of absolute coordinate for rotary axis is available.
0 : Roll-over of absolute coordinate for rotary axis is not available.
(Note) This parameter is effective only for 4th axis

RODRC 1 : Sign of command is regarded as direction when commanding absolute value for rotary axis.
0 : Shorter motion is selected when commanding absolute value for rotary axis.
(Note) This parameter is effective only when parameter 0398#1(ROAX) is set to “1”.

ROCNT 1 : Roll-over of relative coordinate for rotary axis is available.
0 : Roll-over of relative coordinate for rotary axis is not available.
(Note) This parameter is effective only when parameter 0398#1(ROAX) is set to “1”.

1 :
0 :

1 :
0 :

CHGSKP 1 : Upon the reception of the overload torque signal, the feedrate and spindle speed are changed.
0 : Upon the reception of the overload torque signal, the feedrate and spindle speed are not changed.

CHGNRM 1 : If the one-cycle cutting depth is reached without reception of the overload torque signal, the feedrate and spindle speed are changed.
0 : If the one-cycle cutting depth is reached without reception of the overload torque signal, the feedrate and spindle speed are not changed.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0399	OUTZRN	FEDNUL	FUNO	CINPS	SFDEC	RPDFF		

1 :
0 :

1 :
0 :

RPDFF 1 : Feed forward control is applied to both cutting feed and rapid traverse.
0 : Feed forward control is applied only to cutting feed.

SFDEC 1: The reference position shift function is enabled. (Note)
0: The reference position shift function is disabled.
(Note) When SFDEC is set to 1, parameters 0508 to 0511, 0641, and 0642 are used to specify the reference position shift.

CINPS 1 : For feed-type-based in-position check (CCINP: bit 4 of parameter 0045), the in-position width for cutting feed is specified with parameters other than those used for rapid traverse, regardless of the type of feed specified in the next block.
0 : For feed-type-based in-position check (CCINP: bit 4 of parameter 0045), the in-position width for cutting feed is specified with parameters other than those used for rapid traverse, only when the next block also specifies cutting feed.

(Note)

		No. 0399#4 CINPS			
		0		1	
No. 0045#4 CCINP	0	Rapid traverse → Rapid traverse	A	Rapid traverse → Rapid traverse	A
		Rapid traverse → Cutting feed	A	Rapid traverse → Cutting feed	A
		Cutting feed → Rapid traverse	A	Cutting feed → Rapid traverse	A
		Cutting feed → Cutting feed	A	Cutting feed → Cutting feed	A
	1	Rapid traverse → Rapid traverse	A	Rapid traverse → Rapid traverse	A
		Rapid traverse → Cutting feed	A	Rapid traverse → Cutting feed	A
		Cutting feed → Rapid traverse	A	Cutting feed → Rapid traverse	B
		Cutting feed → Cutting feed	B	Cutting feed → Cutting feed	B

A : Same parameters as those used for rapid traverse (No. 0500 to 0503)
B : Different parameters from those used for rapid traverse (No. 0609 to 0612).

FUNO 1 : Absolute position is read from absolute pulse coder only after detection error appears.
0 : Absolute position is read from absolute pulse coder after servo alarm appears.

FEDNUL 1 : “NULL” code is output as feed data during meaning information.
0 : “SPACE” code is output as feed data during meaning information.

OUTZRN When reference point return is operated during feed-hold status,
1 : no alarm appears.
0 : alarm 91 appears. (P/S 091)

NO. 0249 | M-code for Minus direction of table indexing

Data Type : Byte
Data Range : 0 to 255

0 : Motion direction of table indexing is decided by command direction and parameter 079 IXINC.

1 ～255 : M-code for moving minus direction in table indexing is set.
When the M-code is commanded together with table indexing, the motion is regarded as minus motion.

(Note) Parameter 079 IXABS must be set to “1”.

NO.0253 | Step of section position for 3-dimensional drawing in dynamic graphic

Data Type : Byte
Data Range : 0 to 10

Step of cursor position for section plane on 3-dimensional drawing in dynamic graphic is set. When "0" is set, it is regarded as “1”.

NO.0259 | Byte length of DI on M-NET

Data Type : Byte
Data Range : 1 to 16

Byte length of transfer data from PLC to CNC on M-NET is set.

NO. 0260 | Byte length of DO on M-NET

Data Type : Byte
Data Range : 1 to 16

Byte length of transfer data from CNC to PLC on M-NET is set.

NO. 0261 | Station address of M-NET

Data Type : Byte
Data Range : 1 to 7

Station address of M-NET is set.

NO. 0262 | Baud rate of M-NET

Data Type : Byte
Data Range : 0 to 4
Standard value : 3

Communication baud rate of M-NET is set.

Value	Baud Rate
0	2400
1	4800
2	9600
3	19200
4	38400

NO. 0265 | Time interval of averaging servo current on servo tune screen

Data Type : Byte
Data Range : 0 to 7

Time interval of averaging servo current to display on servo tune screen is set.
The relation of time interval and setting value "n" is as follows.

$$\text{Time interval(msec)} = 64 \times 2^{n}$$

NO.0280 | Display name of 4th-axis

Data Type : Byte

Display name of 4th-axis is set.

(Note-l) Setting value is same as software operator's panel general purpose switch.
(Note-2) Available letter is X, Y, Z, U, V, W, A, B, C, H, 0 ~ 9, 0, N, D, F, -, and ..
(Note-31 Parameter 030#6 AXS4D must be set to "1".
(Note-4) It is necessary to turn off CNC power after changing the parameter.

NO. 0303 | Tolerance pulse of phase synchronization between 2 serial interface spindles

Data Type : Byte
Setting Unit : Detection Unit of spindle
Setting Range : 0 to 255

The tolerance pulse during phase synchronization between two serial interface spinldes is set.

NO. 0304 | M code for small-diameter peck drilling cycle

Data unit : Characters
Data range : 3 to 999
Description : This parameter specifies the M code for a small-diameter peck drilling cycle.

NO. 0305 | Spindle speed change ratio for small-diameter peck drilling cycle (with load torque signal)

NO. 0306 | Spindle speed change ratio for small-diameter peck drilling cycle (without load torque signal)

Data unit : [%]
Data range : 0 to 255
Description : These parameters specify the ratio at which the spindle speed is to be changed upon retraction in a small-diameter peck drilling cycle using the load torque signal, and that for a small-diameter peck drilling cycle that does not use the load torque signal.

NO. 0307 | Cutting feedrate change ratio for small-diameter peck drilling cycle (with load torque signal)

NO. 0308 | Cutting feedrate change ratio for small-diameter peck drilling cycle (without load torque signal)

Data unit : [%]
Data range : 0 to 255
Description : These parameters specify the ratio at which the cutting feedrate is to be changed upon retraction in a small-diameter peck drilling cycle using the load torque signal, and that for a small-diameter peck drilling cycle that does not use the load torque signal.

NO. 0309 | Minimum cutting feedrate ratio for small-diameter peck drilling cycle

Data unit : [%]
Data range : 0 to 255
Description : This parameter specifies the minimum ratio to which the cutting feedrate can be reduced as a result of several changes in a small-diameter neck drilling cycle.

NO. 0310 Axis No. for 1st position switch

NO. 0319 Axis No. for 10th posit ion switch

Data Type : Byte
Setting Range : 0, 1, 2, 3, 4, 7, 8

Axis No. for position switches from 1st to 10th are set in order. Setting value "0" indicates "Not Used". Setting values 1, 2, 3, 4, 7 and 8 indicate X-axis, Y-axis, Z-Axis, 4th-axis, 7th-axis and 8th-axis respectively.

NO. 0320 Time-out interval for no answer on DNC-2

Data Type : Byte
Setting Unit : 1 sec
Setting Range : 0 to 60
standard value : 5

Time-out interval of no answer for DNC-2 is set. "0" means the standard value.

NO. 0321 Time-out interval for EOT on DNC-2

Data Type : Byte
Setting Unit : 1 sec
Setting Range : 0 to 60
standard value : 5

Time-out interval of EOT for DNC-2 is set. "0" means the standard value.

NO. 0323 Maximum retry time for irregal answer on DNC-2

Data Type : Byte
Setting Unit : time
Setting Range : 0 to 10
standard value : 5

Maximum retry time for irregal answer or no answer in data link layer on DNC-2 is set. "0" means the standard value.

NO. 0324 Maximum retry time for NAK on DNC-2

Data Type : Byte
Setting Unit : time
Setting Range : 0 to 10
standard value : 3

Maximum retry time for NAK on DNC-2 is set. "0" means the standard value.

NO. 0325 | Maximum recieving charactor length after communication stop on DNC-2

Data Type : Byte
Setting Unit : charactor
Setting Range : 10 to 255
standard value : 255

Maximum recieving charactor length after communication stop on DNC2 is set.
"0" means the standard value.

NO. 0327 | Number of macro variable for counting number of retractions in small-diameter peck drilling cycle

Data unit : Characters
Data range : 100 to 149
Description : This parameter specifies the common variable number of the macro used to output the number of retractions performed during cutting in a small -diameter peck dri 11 ing cycle. If 0 is set, the number of retractions is not output.

NO. 0328 | Number of macro variable for counting number of times overload signal is received in small-diameter peck drilling cycle

Data unit : Characters
Data range : 100 to 149
Description : This parameter specifies the common variable number of the macro used to output the number of retractions, performed upon the reception of the overload signal, in a small-diameter peck drilling cycle. If 0 is set, the number of retractions is not output.

NO. 0336 | M-code for re-counting tool life management

Data Type : Byte
Setting Range : 0 to 255 (except for 01, 02, 06, 30, 98, 99)

Re-counting M-code for tool life management is set. This M-code works same as M02/M30 for tool life management. Value "0" means no re-counting M-code. This M-code should be specified as M-code of buffering stop.

NO. 0337 | Charactor code-l of title at power-up

to

NO. 0346 | Charactor code-10 of title at power-up

Data Type : Byte

The setting IO-charactor are displayed on CRT at power-up instead of CNC software series/edition.

(Note-l) Setting value is same as software operator's panel general purpose switch.
(Note-Z) Available charactor is numerals, alphabets, minus, period and space.
(Note-31 When undefined charactors are specified, they are regarded as "space".

NO. 0347 | Connection type between CNC and host computer on DNC-1

Data Type : Byte
Data Range : 1 or 2

Connection type between CNC and host computer on DNC-1 is set.
The relation of setting value and connection type is as follows.

Value = 1 : Point to Point
2 : Multi-point

NO. 0348 | Station address of CNC on DNC-1

Data Type : Byte
Data Range : 2 to 31

Stat ion address of CNC is set when specif ing multi-point connect ion on DNC-1.

NO. 0350 | Axis No. for controlling continuous feed without position loop

Data Type : Byte
. Data Range : 0 to 6

Axis No. for controlling continuous feed without position loop by using PMC axis control is set as follows.

Value	Axis Name
0	No-axis
1	X-axis
2	Y-axis
3	Z-axis
4	4th-axis
5	7th-axis
6	8th-axis

(Note) It is necessary to turn off CNC power after changing this parameter.

NO. 0351	Charactor code-l of title
to	
NO. 0355	Charactor code-5 of title

Data Type : Byte

The setting 5-charactors are displayed on screen instead of program number.

(Note) Setting value is same as software operator's panel general purpose switch.

NO. 0356	Charactor length of 1st line on "DIST TO GO" display
to	
NO. 0359	Charactor length of 4th line on "DIST TO GO" display

Data Type : Byte
Data Range : 0 to 11

Charactor length of lst, 2nd, 3rd and 4th line which is displayed instead of "DISTANCE TO GO" on program check screen is set respectively. The display charactors should be set on R-data on PMC.

NO. 0360	Torque limit value of X-axis on origin setting by pressing stopper
NO. 0361	Torque limit value of Y-axis on origin setting by pressing stopper
NO. 0362	Torque limit value of Z-axis on origin setting by pressing stopper
NO. 0363	Torque limit value of 4th-axis on origin setting by pressing stopper

Data Type : Byte
Data Range : 0 to 255

Torque limit value of X, Y, Z and 4th-axis is set respectively. These parameters are used ,for origin setting by pressing axes to the stoppers instead of reference point return. The value is set with the following formula. If value "0" is specified, no torque limit is effective.

$$(\text{Value}) = (\text{Override Value}) \div 100 \times 255$$

Ex) If 15% torque limit is required, $15 \div 100 \times 255 = 38.25$. Then, 38 should be set in the parameter.

NO. 0378 | The override value for rigid tapping return

Data unit : 10[%]
Data range : 0 to 20
Description : This parameter specifies the override value for rigid tapping return. If 0 is set, no override is applied.

(Note) This parameter is effective when bit 4 of parameter 0063 (RGDOV) is set to 1.

NO. 0379 | Feedrate ratio at which the next block is started for rapid traverse block over lap

Data unit : 0[%]
Data range : 0 to 100
Description : For rapid traverse block overlap, the feedrate ratio at which the next block will be started is set. If this parameter is set to 80, the next block is started once the feedrate has decelerated to 80% at the end point of the current block. The value to be set is determined using the following formula:

Current block feedrate at which next block is started
= Specified current block feedrate× set value/100

(Note) If this parameter is set to 100, the next block is started upon the start of deceleration for the current block.

NO. 0400 | Time constant of rigid tapping during pulling-up motion (for Low Gear)

Data Type : Word
Data Unit : msec
Data Range : 0 to 4000

Time constant of rigid tapping during pulling-up motion for low gear is set.

(Note) This parameter is effective when both parameter 077#1(CT3G) and 035#5(RGCTO) are set "1".

NO. 0401 | Time constant of rigid tapping during pulling-up motion (for Middle Gear)

Data Type : Word
Data Unit : msec
Data Range : 0 to 4000

Time constant of rigid tapping during pulling-up motion for middle gear is set.

(Note) This parameter is effective when both parameter 077#1(CT3G) and 035#5 (RGCTO) are set "1".

NO. 0402 | Time constant of rigid tapping during pulling-up motion

Data Type : Word
Data Unit : msec
Data Range : 0 to 4000

Time constant of rigid tapping during pulling-up motion is set.
When parameter 077#1(CT3G) is set to "O", this parameter is common with all gear selection. However, if parameter 077#1(CT3G) is set to "1", this parameter is effective only for high gear selection.

(Note) This parameter is effective when parameter 035#5(RGCTO) is set "1".

NO. 0403 | Clearance of rigid tap pecking cycle

Data Type : Word
Data Unit : minimum input increment
Data Range : 0 to 32767

Clearance of rigid tap pecking cycle is set.

NO. 0404 | Output destination address for CNC status signal

Data Type : Address
Data Range : 300 to 697 (PMC-L), 300 to 993 (PMC-M)

This parameter is used to set the address of the PMC R area to which the CNC status is to be output. The status signal is output to the three consecutive bytes starting from the set address. If 500 is set, for example, the CNC status is output to addresses 500, 501, and 502.

NO. 0405 | Maximum position deviation for which manual reference position return is assumed to be possible

Data Unit : Detection unit
Data Range : 0 to 32767 (If 0 is set, 128 (or 1280 if 1/10 increments are specified) is assumed.)

This parameter is used to set the position deviation for which manual reference position is assumed to be possible.

NO. 0452 | Absolute counter value of X-axis at reference point

NO. 0453 | Absolute counter value of Y-axis at reference point

NO. 0454	Absolute counter value of Z-axis at reference point
NO. 0455	Absolute counter value of 4th-axis at reference point
NO. 0456	Absolute counter value of 7th-axis at reference point
NO. 0457	Absolute counter value of 8th-axis at reference point

Data Type : Word .

These parameters are set automatically when using absolute encoder with serial interface.

NO. 0458	Maximum time interval from the connection to normal sequence on M-NET

Data Type : Word
Data Unit : 1 msec
Standard Value : 10000

Maximum time interval from the connection sequence to normal sequence on M-NET is set.

NO. 0459	Maximum time interval of normal sequence on M-NET

Data Type : Word
Data Unit : 1 msec
Standard Value : 500

Maximum time interval of normal sequence on M-NET is set.

NO. 0460	Maximum time interval from “SAI” to “BCC” on M-NET

Data Type : Word
Data Unit : 1 msec
Standard Value : 50

Maximum time interval from “SAI” to “BCC” on M-NET is set.

NO. 0461	Time interval from “end of recieve” to “start of send” on M-NET

Data Type : Word
Data Unit : 1 msec
Standard Value : 1

Interval timer from the end of recieve to the start of send on M-NET is set.

NO. 0462 | Time constant of velocity loop on continuous feed without position loop

Data Type : Word
Data Unit : 1 msec/1000rpm
Data Range : 0 to 32767

Time constant of velocity loop on continuous feed without position loop by using PMC axis control is set. The value is required acceleration time from 0 to 1000 rpm.

NO. 0463 | Address of spindle orientation on M-NET

Data Type : Word

Address of spindle orientation on M-NET is set. Spindle orientation signals (H01 TO H12) should be output on this R data of PMC.

Example) Setting value is 500,

	#7	#6	#5	#4	#3	#2	x1	#0
R 0500	H08	H07	H06	H05	H04	H03	H02	H01
R 0501					H12	H11	H10	H09

NO. 0475 | Tolerance of servo lags on simple synchronous control of feed axes

Data Type : Word
Data Unit : Detection Unit
Data Range : 0 to 32767

Tolerance of servo lags between master axis and slave axis on simple synchronous control is set. When the difference of servo lags exceeds the setting value, alarm 213 will happen.

NO. 0476 | Stored address of 1st line charactors displayed on “DISTANCE TO GO”

to

NO. 0479 | Stored address of 4th line charactors displayed on “DISTANCE TO GO”

Data Type : Word
Data Range : 300 to 699

The stored address of lst, 2nd 3rd and 4th line which is displayed instead of “DISTANCE TO GO” on program check screen is set.

NO. 0480 | Parameter 1 for setting the acceleration for linear acceleration/ deceleration prior to interpolation

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the maximum machining speed during linear acceleration/deceleration prior to interpolation.

NO. 0481 | Parameter 2 for setting the acceleration for linear acceleration/ deceleration prior to interpolation

Data unit : [msec]
Data range : 1 to 4000
Description : This parameter specifies the time (time constant) required to reach the speed specified with parameter 0480.

(Note-l) Linear acceleration/deceleration prior to interpolat ion is not applied when parameter 0480 and/or 0481 is set to 0.
(Note-21 Set the values which satisfy the following:

$$\frac{\text{No. 0480}}{\text{No. 0481}} \geq 5$$

NO. 0482 | Feedrat e after acceleration/deceleration for automatic corner deceleration

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the feedrate after acceleration/deceleration at which the next block will be started, for automatic corner deceleration.

NO. 0483 | Difference between feedrates of two blocks, for each axis, for automatic corner deceleration

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the difference between the feedrates of two blocks, for each axis, for automatic corner deceleration. The value specified with this parameter is applied to all axes.

NO. 0484 | Program No. of parameter for Power Mate

Data Type : Word

Program No. of parameter for Power Mate #0 is set. This parameter is used for recognizing data contents when communicating with Power Mate through I/O Link.
The relations between setting value and data contents of Power Mate #n are as follows.

Data Content	Program No.
Parameter	Setting value + n * 10 + 0
Macro Variables	Setting value + n * 10 + 1
DGN data	Setting value + n * 10 + 2

NO. 0485 | Parameter 1 for setting the acceleration for linear acceleration/ deceleration prior to interpolation (for look-ahead control)

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the maximum machining speed during linear acceleration/deceleration prior to interpolation, in look-ahead control mode.

NO. 0486 | Parameter 2 for setting the acceleration for linear acceleration/ deceleration prior to interpolation (for look-ahead control)

Data unit : [msecl
Data range : 1 to 4000
Description : This parameter specifies the time (time constant) required to reach the speed specified with parameter 0485, in look-ahead control mode.

(Note-l) Linear acceleration/deceleration prior to interpolat ion is not applied when parameter 0485 and/or 0486 is set to 0.
(Note-2) Set the values which satisfy the following:

$$\frac{\text{No. 0485}}{\text{No. 0486}} \geqq 5$$

NO. 0487 | Feedrate after acceleration/deceleration for automatic corner deceleration (for look-ahead control)

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Mi 11 imeter machine	1 [mm/m i n]	6 to 15000	6 to 12000
Inch machine	0 . 1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the feedrate after acceleration/deceleration at which the next block will be started, for automatic corner deceleration in look-ahead control mode.

NO. 0490 | Maximum length of packet on DNC-2

Data Type : Word
Data Unit : Charactors
Data Range : 80 to 256
Standard value : 256

Maximum length of packet is set. The actual packet length is added 9 to the setting value.

NO. 0492 | Feedrate of retraction-to the R position when address I is omitted from small-diameter peck drilling cycle

NO. 0493 | Feedrate of forward movement from the R position when address I is omitted from small-diameter peck drilling cycle

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Metric input	1 [mm/min]	0 to 10000	0 to 12000
Inch input	0.01 [inch/min]	0 to 4000	6 to 4800

Description : These parameters specify the feedrate of retraction to the R position and that of forward movement from the R position when address I is omitted from a small-diameter peck drilling cycle.

NO. 0495 Maximum feedrate with standard arc radius

NO. 0496 Minimum feedrate with standard arc radius

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	0 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : These parameters specify the maximum and minimum feedrates with the standard arc radius, for feedrate clamp according to the arc radius.

NO. 0512 Position loop gain of X-axis

NO. 0513 Position loop gain of Y-axis

NO. 0514 Position loop gain of Z-axis

NO. 0515 Position loop gain of 4th-axis

Data Type : Word
Data Unit : 0.01 /sec
Data Range : 1 to 9999

Position loop gains of X, Y, Z and 4th-axis are set in order.

(Note-l) These parameters are effective only when parameter 517 (position loop gain for all axes) is set to "0".
(Note-21 It is necessary to turn off CNC power after changing these parameters.

NO. 0558 Measuring feedrate of tool length automatic measurement

Data Type : Word
Data Unit : 1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output), 6 to 6000 (inch output)

Measuring feedrate of tool length automatic measurement is set.

NO. 0570	Capacity of reference counter for X-axis
NO. 0571	Capacity of reference counter for Y-axis
NO. 0572	Capacity of reference counter for Z-axis
NO. 0573	Capacity of reference counter for 4th-axis
NO. 0574	Capacity of reference counter for 7th-axis
NO. 0575	Capacity of reference counter for 8th-axis

Data Type : Word
Data Range : 0 to 32767

Capacities of reference counter for X, Y, Z, 4th, 7th and 8th-axis are set in order.

(Note-l) The setting value is multiplied with 10 when using high resolution pulse coder.
(Note-2) Parameter 004 to 007, 067 and 068 are valid when the these parameters are set to "0".
(Note-3) It is necessary to turn off CNC power after changing these parameters.

NO. 0576	Tolerance of error pulses of spindles during synchronous control

Data Type : Word
Data Unit : pulses
Data Range : 0 to 32767

Tolerance of error pulses during synchronous control or simple synchronous control with using two serial interface spindles is set.
When the actual error pulses between two serial interface spindles exceed the setting value during synchronous control or simple synchronous control, synchronous spindle alarm signal (SYCAL) turns on.

NO. 0609	In-position width for cutting feed for X-axis
NO. 0610	In-position width for cutting feed for Y-axis
NO. 0611	In-position width for cutting feed for Z-axis

NO. 0612 | In-position width for cutting feed for 4th axis

Data Unit : Detection unit
Data Range : 0 to 32767
Description : These parameters specify the in-position width for cutting feed, for the cutting feed and rapid traverse separate in-position check function.

(Note-l) These parameters are effective when bit 4 of parameter 0045 (CCINP) is set set to 1.

NO. 0632 | Position loop gain of 7th-axis

NO. 0633 | Position loop gain of 8th-axis

Data Type : Word
Data Unit : 0.01 /sec
Data Range : 1 to 9999

Position loop gains of 7th and 8th-axis are set in order.

(Note-l) These parameters are effective only when parameter 517 (position loop gain for all axes> is set to "0".
(Note-21 It is necessary to turn off CNC power after changing these parameters.

NO. 0634 | Program number of simultaneous operation of reading and machining

Data Type : Word
Data Range : 1 to 9999

When a number is set in the parameter, the part program is registered with the new part program number on simultaneous operation of reading and machining.

(Note) When the value out of range is set, the part program number is regarded as that on the part program.

NO. 0672 | FL speed of reference point return by PMC axis control

Data Type : Word
Data Unit : 1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output), 6 to 6000 (inch output)

FL speed of reference point return by PMC axis contro1 is set. When “0” is set, parameter 534 is used for FL spped of PMC axis contro1.

NO. 0673 | Gain adjustment value for D/A converter channel-l

Data Type : Word
Data Range : 700 to 1250
Standard Value : 1000

Gain adjustment value for D/A converter channel-l on Analog Input/Output Interface board is set.

NO. 0674 | Offset compensation value for D/A converter channel-l

Data Type : Word
Data Range : 0 to ±1023
Standard Value : 0

Offset compensation value for D/A converter channel-l on Analog Input/Output Interface board is set.

NO. 0677 | Gain adjustment value for D/A converter channel-2

Data Type : Word
Data Range : 700 to 1250
Standard Value : 1000

Gain adjustment value for D/A converter channel-2 on Analog Input/Output Interface board is set.

NO. 0678 | Offset compensation value for D/A converter channel-2

Data Type : Word
Data Range : 0 to ±1023
Standard Value : 0

Offset compensation value for D/A converter channel-2 on Analog Input/Output Interface board is set.

NO. 0683 | Rotation speed of normal direction control

Data Type : Word
Data Unit : 1 deg/min
Data Range : 6 to 15000

Rotation speed for inserted rotary axis motion at the corner is set when using normal direction control.

NO. 0684 | Declaration end speed of error detect function

Data Type : Word
Data Unit : 1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 0 to 15000 (metric output), 0 to 6000 (inch output)

Declaration end speed of error detect function is set. When command speed becomes less than the setting value, the next block starts.

NO. 0685 | FO speed of PMC axis control with using independent rapid override

Data Type : Word
Data Unit : 1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 0 to 15000 (metric output), 0 to 6000 (inch output)

FO speed of PMC axis control is set when using override independent of CNC axis control.

(Note) This parameter is effective when setting both parameter 078#7 (EAXOVE) and 078#6 (RDRNE) are set to "1".

NO. 0686 | Backlash compensation value for rapid traverse for X-axis

NO. 0687 | Backlash compensation value for rapid traverse for Y-axis

NO. 0688 | Backlash compensation value for rapid traverse for Z-axis

NO. 0689 | Backlash compensation value for rapid traverse for 4th axis

NO. 0690 | Backlash compensation value for rapid traverse for 7th axis

NO. 0691 | Backlash compensation value ,for rapid traverse for 8th axis

Data unit

Increment system	IS-A	IS-B	IS-C
Mi 11 imeter machine Cmml	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

Data range : 0 to 2550
Description : These parameters specify the backlash compensation value for rapid traverse for each axis.

NO. 0692 | Time constant of rigid tapping for low gear

Data Type : Word
Data Unit : 1 msec
Data Range : 0 to 4000

Time constant of acc/dec in rigid tapping for low gear is set. When linear acc/dec (parameter 254 = 1) and parameter 037#6(VALT)1 are selected, this parameter indicates required time from spindle speed 0 to parameter 694. Actual time constant varys proportionally to the actual spindle speed. When parameter 037#6(VALT) is set to 0, this parameter indicates real time constant for all tapping with low gear.

(Note-l) This parameter is effective only when parameter 077#1(CT3G) is set to "1".
(Note-Z) Parameter 0613 should be set the time constant for high gear.

NO. 0693 | Time constant of rigid tapping for middle gear

Data Type : Word
Data Unit : 1 msec
Data Range : 0 to 4000

Time constant of acc/dec in rigid tapping for middle gear is set. When linear acc/dec (parameter 254 = 1) and parameter 037#6(VALT) = 1 is selected, this parameter indicates the required time from spindle speed 0 to parameter 695. Actual time constant varys proportionally to the actual spindle speed. When parameter 037#6(VALT) is set to 0, this parameter indicates real time constant for all tapping with middle gear.

(Note-l) This parameter is effective only when parameter 077#1(CT3G) is set to "1".
(Note-2) Parameter 0613 should be set the time constant for high gear.

NO. 0694 | Maximum spindle speed of rigid tapping for low gear

Data Type : Word
Data Unit : rpm

Gear Ratio between Spindle and Position coder	Data Range
1 : 1	0 to 7400
1 : 2	0 to 9999
1 : 4	0 to 9999
1 : 8	0 to 9999

Maximun spindle speed of rigid tapping for low gear is set.

(Note-l) This parameter is effective only when both parameter 077#1(CT3G) and 037#6 (VALT) are set to "1".
(Note-2) Maximum spindle speed of rigid tapping for high gear should be set in parameter 617.

NO. 0695 | Maximum spindle speed of rigid tapping for middle gear

Data Type : Word
Data Unit : rpm

Gear Ratio between Spindle and Position coder	Data Range
1 : 1	0 to 7400
1 : 2	0 to 9999
1 : 4	0 to 9999
1 : 8	0 to 9999

Maximun spindle speed of rigid tapping for middle gear is set.

(Note-l) This parameter is effective only when both parameter 077#1(CT3G) and 037#6 (VALT) are set to "1".
(Note-2) Maximum spindle speed of rigid tapping for high gear should be set in parameter 617.

NO. 0696 | Instantaneous difference of servo lags between tapping axis and spindle

Data Type : Word
Data Unit : %

Instantaneous difference of servo lags between tapping axis and spindle is indicated as DGN data.

NO. 0697 | Maximum difference of servo lags between tapping axis and spindle

Data Type : Word
Data Unit : %

Maximum difference of servo lags between tapping axis and spindle is indicated as DGN data.

NO. 0698 | Maximum feedrate per revolution by PMC axis control

Data Type : Word
Data Unit : 1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output), 6 to 6000 (inch output)

Maximum feedrate per revolution by PMC axis control is set.

NO. 0699 | Multiplier for handle feed

Data Type : Word
Data Range : 0 to ±1000

The multiplier of handle feed with both handle motion select signals MP1 and MP2 on is set. When minus value is specified, the actual motion is opposite of handle direction.

(Note) When "0" is specified, parameter 121 becomes effective instead of this parameter.

NO. 0797	Lock for displaying part program No.9000 to 9999

Data Type : 2 word
Data Range : 0 to 99999999

A number is set to prohibit displaying part programs which program number is from 9000 to 9999. This parameter is effective only when 010#4(PRG9) is set to "1". Parameter PRG9 can not be turned to "0" unless parameter 798 is coincident with the parameter. Setting value "0" means no lcok is available.
The actual setting value is not displayed.

NO.0798	Key for displaying part program No. 9000 to 9999

Data Type : 2 word
Data Range : 0 to 99999999

Parameter PRG9 can be turned to "0" if the same number as parameter 797 is set in this parameter.
The actual setting value is not displayed too.

NO. 0800	1st reference point of X-axis on machine coordinate
NO. 0801	1st reference point of Y-axis on machine coordinate
NO. 0802	1st reference point of Z-axis on machine coordinate
NO. 0803	1st reference point of 4th-axis on machine coordinate

Data Type : 2 word
Data Unit : Output increment
Data Range : 0 to ±99999999

Machine coordinate values of X, Y, Z and 4th-axis on 1st reference point are set in order.

(Note) It is necessary to turn off CNC power after changing these parameters.

NO. 0813	γ value of tool length automatic measurement
NO. 0814	ε value of tool length automatic measurement

Data Type : 2 word
Data Unit : Output increment
Data Range : 0 to 99999999

7 and ε values of tool length automatic measurement are set in order.

(Note) In case of input increment 1/10, data unit ids changed to 1/10.

NO. 0832 | Limit angle of inserting rotary axis motion for normal direction control

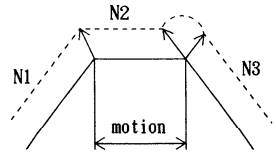
Data type : 2 words
Data Unit : 0.001 deg
Data Range : 1 to 99999999

When the rotation angle is less than the specified value, no rotary axis motion of normal direction control is inserted.

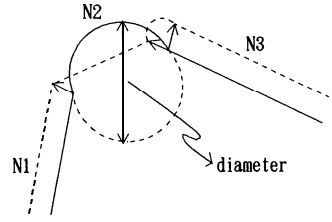
NO. 0833 | Limit motion for inserting ratary axis motion for normal direction control

Data type : 2 words
Data Unit : input increment
Data Range : 1 to 99999999

When tha command motion is less than the specified value, no rotary axis motion of normal direction control is inserted.



In case of linear motion,
If the motion of N2 is less than the specified value, no rotary axis motion is inserted at the corner of N1/N2.



In case of circle motion,
if the diameter of N2 is less than the specified value, no rotary axis motion is inserted at the corner of N1/N2 and along the circle N2.

NO. 0839 | Minimum input increment for table indexing

Data type : 2 words
Data Unit : 0.001 deg
Data Range : 0 to 360000

Minimum input increment of table indexing is set. If the motion that is not multiplied with this specified value is commanded for table indexing, alarm 135 appears.

(Note) If "0" is specified, every value can be commanded.

NO. 0840 | Maximum coordinate value of 1st position switch

to

NO. 0849 | Maximum coordinate value of 10th position switch

Data type : 2 words
Data Unit : output increment
Data Range : 0 to ±99999999

The maximum coordinate value of position switch from 1st to 10th is set in order.

NO. 0850 | Minimum coordinate value of 1st position switch

to

NO. 0859 | Minimum coordinate value of 10th position switch

Data type : 2 words
Data Unit : output increment
Data Range : 0 to ±99999999

The minimum coordinate value of position switch from 1st to 10th is set in order.

NO. 0860 | Movement of rotary axis per one revolution

Data type : 2 words
Data Unit : input increment
Data Range : 1000 TO 10000000

Movement of rotary axis per one revolution is set for roll-over function.

NO. 0863 | Standard arc radius for feedrate clamp according to arc radius

Data unit

Increment system	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

Data range : 1000 to 99999999
Description : This parameter specifies the standard arc radius for feedrate clamp according to the arc radius.

NO. 0864 | Critical angle between two blocks for automatic corner deceleration (for look-ahead control)

Data unit : 0.001[deg]
Data range : 0 to 180000
Description : This parameter specifies the critical angle between two blocks for automatic corner deceleration in look-ahead control mode.

NO. 0865	Critical angle between two blocks for automatic corner deceleration

Data unit : 0.001[deg]
Data range : 0 to 180000
Description : This parameter specifies the critical angle between two blocks for automatic corner deceleration.

NO. 0866	2nd reference point of 7th axis

NO. 0867	2nd reference point of 8th axis

Data type :2 words
Data Unit : output increment
Data Range : 0 to ±99999999

The 2nd reference point of 7th and 8th axis is set respectively.

NO. 0868	3rd reference point of 7th axis

NO. 0869	3rd reference point of 8th axis

Data type :2 words
Data Unit : output increment
Data Range : 0 to ±99999999

The 3rd reference point of 7th and 8th axis is set respectively.

NO. 0870	4th reference point of 7th axis

NO. 0871	4th reference point of 8th axis

Data type :2 words
Data Unit : output increment
Data Range : 0 to ±99999999

The 4th reference point of 7th and 8th axis is set respectively.

NO. 0876	Tolerance of circle radius between start point and end point

Data type : 2 words
Data Unit : input increment
Data Range : 0 to 99999999

The tolerance of circle radius between start point and end point is set. When the difference of radius between start point and end point exceeds the specified value, alarm 20 will appear.

NO. 0877 | Time constant for exponent ial acceleration/deceleration of cutting feed (for look-ahead control)

Data unit : [msecl
Data range : 1 to 4000
Description : This parameter specifies the time constant for exponential acceleration/ deceleration of cutting feed in look-ahead control mode.

NO. 0878 | The FL speed for exponential acceleration/deceleration of cutting feed

Data unit
Data range

Increment system	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

Description : This parameter specifies the FL speed for exponential acceleration /deceleration of cutting feed in look-ahead control mode.

NO. 0879 | Time constant for linear acceleration/deceleration after interpolation of cutting feed (for look-ahead control)

Data unit : [msecl
Data range : 8 to 1024
Description : This parameter specifies the time constant for linear acceleration /deceleration after interpolation of cutting feed in look-ahead control mode.

NO. 0941 | Clearance for small-diameter peck drilling cycle

Data unit

Increment system	IS-A	IS-B	IS-C
Metric input Cmml	0.01	0.001	0.0001
Inch input [inch]	0.001	0.0001	0.00001

Data range : 0 t 0 ±99999999
Description : Thisparameter specifies the first microclearance for return to the R position and the second and subsequent clearance of the cutting start point, for a small-diameter peck drilling cycle.

NO. 0942 | Approach speed for origin setting by pressing stopper

Data Type :2 words
Data Unit :1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output) , 6 to 6000 (inch output)

Approach speed to stopper for origin setting by pressing stopper is set.

NO. 0943 | Detection speed for origin setting by pressing stopper

Data Type :2 words
Data Unit :1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output) , 6 to 6000 (inch output)

Detection speed to stopper for origin setting by pressing stopper is set.

NO. 0944 | X-axis motion speed from stopper to origin point

NO. 0945 | Y-axis motion speed from stopper to origin point

NO. 0946 | Z-axis motion speed from stopper to origin point

NO. 0947 | 4th-axis motion speed from stopper to origin point

Data Type :2 words
Data Unit :1 mm/min (metric output), 0.1 inch/min (inch output)
Data Range : 6 to 15000 (metric output) , 6 to 6000 (inch output)

Motion speed from stopper to origin point for X, Y, Z and 4th-axis is set respectively.

NO. 0948 | X-axis distance from stopper to the origin point

NO. 0949 | Y-axis distance from stopper to the origin point

NO. 0950 | Z-axis distance from stopper to the origin point

NO. 0951 | 4th-axis distance from stopper to the origin point

Data Type :2 words
Data Unit : input increment
Data Range : 0 to t99999999

The distance from stopper to origin point for X, Y, Z and 4th-axis is set respectively.

NO. 0952	Time constant T2 for rapid traverse bell-shaped acceleration/deceleration for X-axis
NO. 0953	Time constant T2 for rapid traverse bell-shaped acceleration/deceleration for Y-axis
NO. 0954	Time constant T2 for rapid traverse bell-shaped acceleration/deceleration for Z-axis
NO. 0955	Time constant T2 for rapid traverse bell-shaped acceleration/deceleration for 4th axis

Data unit : [msec]
Data range : 0 to 512
Description : Time constant T2 for rapid traverse bell-shaped acceleration/ deceleration is set for each axis.

(Note-l) If any of these parameters is set to 0, linear acceleration/deceleration is specified for the corresponding axis.
(Note-2) Time constant T1 is specified with parameters 0522 to 0525.

NO. 0956	Distance between the position at which the deceleration dog is turned off and the first grid point, for reference position shift

Data unit

Increment system	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

Data range : 0 t 0 ±99999999
Description : For reference position shift, this parameter indicates the distance between the position at which the deceleration dog is turned off and the first grid point. (This parameter is used as diagnosis.)

NO. 0957	Maximum spindle lag of rigid tapping for low gear
NO. 0958	Maximum spindle lag of rigid tapping for middle gear
NO. 0959	Maximum spindle lag of rigid tapping for high gear

Data Type : 2 words
Data Unit : detection unit of spindle
Data Range : 0 to 32767

Maximum spindle lag of rigid tapping for low, middle and high gear is set respectively.

(Note) These parameter are effective only when parameter 388#6(CHKERC) is set to "1".

NO. 0960 | Amount of return a or rigid tapping return

Data unit

Increment system	IS-A	IS-B	IS-C
Metric input [mm]	0.01	0.001	0.0001
Inch input [inch]	0.001	0.0001	0.00001

Data range : 0 to ±99999999
Description : The amount of additional return for rigid tapping return is set. Once the tool has been returned to the proximity of the R position, it is returned by an additional amount a. If rigid tapping return has already been completed, the tool is only returned by a.

NO, 0988 | Maximum allowable machine position shift for the first axis

NO. 0989 | Maximum allowable machine position shift for the second axis

NO. 0990 | Maximum allowable machine position shift for the third axis

NO. 0991 | Maximum allowable machine position shift for the fourth axis

NO. 0992 | Maximum allowable machine position shift for the seventh axis

NO. 0993 | Maximum allowable machine position shift for the eighth axis

Data unit

Increment system	IS-A	IS-B	IS-C
Metric machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001
Rotat ion axis [deg]	0.01	0.001	0.0001

Data range : 0 to 999999999 (A shift is not checked if 0 is set.)

These parameters are used to set the maximum allowable shift of the machine position upon power-on.

NO. 0994	Machine position prior to power-off for the first axis
NO. 0995	Machine position prior to power-off for the second axis
NO. 0996	Machine position prior to power-off for the third axis
NO. 0997	Machine position prior to power-off for the fourth axis
NO. 0998	Machine position prior to power-off for the seventh axis
NO. 0999	Machine position prior to power-off for the eighth axis

Data unit

Increment system	IS-A	IS-B	IS-C
Metric machine Cmml	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001
Rotat ion axis [deg]	0.01	0.001	0.0001

Data range : 0 t 0 t999999999

These parameters display the machine position prior to power-off. They are used for self -diagnosis and need not be set.

NO. 7721	Maximum allowable machine position shift for the fifth axis
NO. 7722	Maximum allowable machine position shift for the sixth axis

Data unit

Increment system	IS-B	IS-C
Metric machine [mm]	0.001	0.0001
Inch machine [inch]	0.0001	0.00001
Rotat ion axis [deg]	0.001	0.0001

Data range : 0 to 999999999 (The shift is not checked if 0 is set.)

These parameters are used to set the maximum allowable shift of the machine position upon power-on.

NO. 7723	Mdch ine position prior to power-off for the fifth axis

NO. 7724 | Machine position prior to power-off for the sixth axis

Data unit

Increment system	IS-B	IS-C
Metric machine [mm]	0.001	0.0001
Inch machine [inch]	0.0001	0.00001
Rotat ion axis [deg]	0.001	0.0001

Data range : 0 to t999999999

These parameters display the machine position prior to power-off. They are used for self -diagnosis and need not be set.

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Revision Record

FANUC Series 0/00/0–Mate For Machining Center PARAMETER MANUAL (B–61410E)

Edition	Date	Contents	Edition	Date	Contents
03	Nov., '96	• Correction of errors			

02	Mar., '96	• Following parameters have been added.
		  • Linear acceleration/deceleration before cutting feed
		  • Automatic corner deceleration
		  • Rapid traverse bell–shaped acceleration/deceleration
		  • Small–diameter peck drilling cycle
		  • Operating monitor display
		  • etc.
		• Correction of errors			

01	Dec., '94	———			