



GE Fanuc Automation

Computer Numerical Control Products

*Series 0 / 00 / 0-Mate
for Lathe*

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.

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Preface

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

Product Name	Abbreviations	
FANUC Series 0-TC	0-TC	Series 0
FANUC Series 0-TF	0-TF	
FANUC Series 0-TTC	0-TTC	
FANUC Series 0-GCC	0-GCC	
FANUC Series 00-TC	00-TC	Series 00
FANUC Series 00-GCC	00-GCC	
FANUC Series 0-Mate TC	0-Mate TC	Series 0-Mate

The table below lists manuals related to the Series 0/00/0-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 0/00/0-Mate DESCRIPTIONS	B-61392E	
FANUC Series 0/00/0-Mate CONNECTION MANUAL	B-61393E	
FANUC Series 0/00/0-Mate For Lathe OPERATOR'S MANUAL	B-61394E	
FANUC Series 0/00/0-Mate For Machining Center OPERATOR'S MANUAL	B-61404E	
FANUC Series 0/00/0-Mate MAINTENANCE MANUAL	B-61395E	
FANUC Series 0/00/0-Mate OPERATION AND MAINTENANCE HANDBOOK	B-61397E	
FANUC Series 0/00/0-Mate For Lathe PARAMETER MANUAL	B-61400E	*
FANUC Series 0/00/0-Mate For Machining Center PARAMETER MANUAL	B-61410E	
GRAPHIC CONVERSATION A FOR LATHE (Series 0-TF, Series 0-TC) OPERATOR'S MANUAL	B-61424E	
GRAPHIC CONVERSATION B/C FOR LATHE (Series 0-TF, Series 0-TC) OPERATOR'S MANUAL	B-61424E-1	
GRAPHICS CONVERSATION FOR MACHINING CENTER (Series 0-MC, Series 0-MF, Series 0-Mate MF) OPERATOR'S MANUAL	B-61434E	
FANUC PMC-MODEL K/L/M/P PROGRAMMING MANUAL (LADDER LANGUAGE)	B-55193E	
FANUC Series 0/0-Mate PROGRAMMING MANUAL (Macro Compiler/Macro Executer)	B-61393E-1	

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List of Parameters for each Function

The Parameters for each function is the following. For details, see "Parameter Explanation".

- (1) Parameters related to setting
- (2) Parameters related to the reader/punch interface/remote buffers
- (3) Parameters related to controlled axes/increment systems
- (4) Parameters related to coordinate systems
- (5) Parameters related to stroke limits
- (6) Parameters related to the feedrate
- (7) Parameters related to acceleration/deceleration control
- (8) Parameters related to the servo system
- (9) Parameters related to DI/DO
- (10) Parameters related to CRT/MDI, display, and editing
- (11) Parameters related to programs
- (12) Parameters related to pitch error compensation
- (13) Parameters related to spindle control
- (14) Parameters related to tool compensation
- (15) Parameters related to canned cycles
- (16) Parameters related to rigid tapping
- (17) Parameters related to custom macros
- (18) Parameters related to automatic tool compensation
- (19) Parameters related to graphic display
- (20) Parameters related to run time/parts count display
- (21) Parameters related to tool life management
- (22) Parameters related to the position switch function
- (23) Parameters related to manual handle feed/manual handle interrupt
- (24) Parameters related to the software operator's panel
- (25) Parameters related to restarting programs
- (26) Parameters related to high-speed cycle machining/high-speed remote buffers
- (27) Parameters related to PMC-based axis control
- (28) Parameters related to cylindrical grinding machines (FS0/00-GCC)
- (29) Parameters related to the PMC
- (30) Parameters related to the butt-type reference position setting function
- (31) Parameters related to the DNC
- (32) Parameters related to the M-NET
- (33) Parameters related to the Cf-axis
- (34) Parameters related to 2-path lathes (TT)
- (35) Parameters related to polygon turning
- (36) Parameters related to synchronized control/axis recomposition

Notes

- (1) In the explanation of each bit parameter, the left-hand side of a slash (/) indicates the state when the bit is set to 0, and the right-hand side of a slash indicates the state when the bit is set to 1.
Example: The current setting is 0/1.

(1) Parameters related to setting (1/1)

No.	Symbol	Description
0000	TVON	A TV check is not performed/is performed for program registration.
0000	ISO	EIA/ISO is used as the code system for program output.
0000	INCH	The metric/inch system is used as the least input increment (input unit) for programs.
0000	I/O	Input/output unit used via the reader/punch interface
0000	SEQ	Automatic sequence number insertion is not performed/is performed.
0000	PWE	Parameter write operation is disabled/enabled.
0000	TAPEF	Tape format is not converted/is converted.
0000	PRGNO	Program number for which sequence number reference is to be stopped
0000	SEQNO	Sequence number for which sequence number reference is to be stopped

(2) Parameters related to the reader/punch interface/remote buffers (1/1)

No.	Symbol	Description
0002#0 0012#0 0050#0 0051#0	STP2 STP2 STP2 STP2	(I/O=0) The number of stop bits is 1/2. (I/O=1) (I/O=2) (I/O=3)
0002#2 0012#2	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) ISO or EIA/ASCII is used as the input code. (I/O=1) (I/O=2) (I/O=3)
0002#7 0012#7 0050#7 0051#7	NFED NFED NFED NFED	(I/O=0) Line feed codes are output/not output before and after data output. (I/O=1) (I/O=2) (I/O=3)
0015#5	PRWD	The rewind signal is not output/is output to a portable tape reader.
0015#6	REP	If the same program number is already contained in memory when programs are registered via the reader/punch interface, an alarm is issued/the program is replaced.
0018#6	TVC	In a program comment, a TV check is performed/is not performed.
0038#1, #2 0038#4, #5 0038#6, #7	***, *** ***, *** ***, ***	(I/O=3) Input/output unit setting (I/O=2) (I/O=0,1)
0051#1	PARTY	(I/O=3) A parity bit is not provided/is provided.
0051#2	SYNAK	When protocol B is used, SYN and NAK code output control is not exercised/exercised.
0051#4	NCKCD	With the remote buffer interface, the CD (signal quality detection) state is monitored/not monitored.
0051#5	ECKL	An internal/external clock is used for the remote buffer baud rate clock.
0055#0	ASCII	ISO/ASCII code is used for communication of all data except NC data.
0055#1	ETX	The end code is CR/ETX.
0055#2	PROTCA	Communication protocol B/A is used.
0055#3	RS42	The remote buffer interface is RS-232-C/RS-422.
0055#7	RMSTS	When protocol A is used with the remote buffer interface, remote buffer state data in an SAT message is always sent back with no specification (=0)/a switching request in a SET message from the host is sent back unconditionally.
0070#7	ICR	In output using ISO code, the EOB code consists of an LF, CR, and CR/LF.
0075#7	IONUL	When a null character is included in EIA code being read, an alarm is not issued/is issued.
0076#5	PRWD	When reader/punch interface 2 is used, rewind is not performed/is performed.
0391#6	RS23BN	When the RS-232-C interface is used, the DC code is used/not used.
0399#6	FEDNUL	For feed operation in a significant information section, space/null characters are used.
0250 0251 0552 0553	----- ----- ----- -----	(I/O=2) Baud rate (I/O=3) (I/O=0) (I/O=1)

(3) Parameters related to controlled axes/increment systems (1/1)

No.	Symbol	Description
0001#0 7001#0	SCW SCWS	The metric/inch system is used for the least command increment (output unit) for linear axes.
0003#0 to #3 0066#4, #5 7003#0, #1	ZM*	(X to 4) The reference position return direction and initial direction are positive/negative. (7, 8) (5, 6)
0019#2	XRC	For the X-axis, a diameter/radius is specified.
0024#1	LII10	The input/output unit is IS-B/IS-A.
0030#0, #4 0210, 0211 0285, 0286 7130, 7131	ADW*0 ----- ----- -----	(3, 4) Axis name (Display) (3, 4) (Command) (7, 8) (Display) (5, 6) (Display)
0032#2, #3 0062#4, #5 7032#0, #1	LIN* ADLIN* ROT*	The third and fourth axes are rotation axes/linear axes. The seventh and eighth axes are rotation axes/linear axes. (5, 6) Linear axis/rotation axis
0032#7 7032#7	ROT10 ROT10S	The parameter unit for inch output is 0.1 [deg/min]/1 [deg/min].
0049#4	S3JOG	The maximum number of simultaneously controlled axes in manual operation is 1/3.
0057#3	MIC	When the decimal point is omitted, the least input increment is not multiplied by 10/multiplied by 10.
0062#7	C8NG	The eighth axis is enabled/disabled.
0066#1	NBD78	When the number of controlled axes is greater than the number of servo axes, the extension of one controlled axis is disabled/enabled.
0069#4	BAX	As a command address for the third and fourth axes, B is not used/used.
0069#5, #6	***	Incremental or absolute command address for the third and fourth axes
0074#0 to #3	CRF*	If a command other than G28 specifies a movement by automatic operation when reference position return is not performed, an alarm is not issued/is issued.
0076#1	JZRN	The function for setting the reference position without dogs is disabled/enabled.
0385#6	RTLIN	Manual reference position return operation for a rotation axis is not performed/is performed linearly.
0388#1	ROAXC	The roll-over function for absolute coordinates is disabled/enabled.
0388#2	RODRC	When the ABS command is specified, the direction of rotation is the direction with the shortest distance/follows the sign of the specified value.
0388#3	ROCNT	The roll-over function for relative coordinates is disabled/enabled.
0388#5	IGPS90	P/S 090 is enabled/disabled.
0391#0 to #5	JZRN*	The function for setting the reference position without dogs is enabled/disabled.
0396#6	HZRNOK	After the reference position is established, manual reference position return is performed based on the grid/at the rapid traverse rate
0399#7	OUTZRN	If there is distance remaining to travel in manual reference position return, or a miscellaneous function is being executed, an alarm (P/S 091) is issued/not issued.
0269 to 0274	-----	Servo axis number
0279, 0280	-----	Attributes of the third and fourth axes
0281, 0282	-----	Axis synchronized with the X-/Z-axis or the third/fourth axis in synchronized control
0291, 0292	-----	Linear axis/rotation axis to which polar coordinate interpolation is applied

(4) Parameters related to coordinate systems (1/1)

No.	Symbol	Description
0002#1	PPD	Relative coordinates are not preset/are preset by coordinate system setting.
0010#6	WSFT	Workpiece coordinate system shift operation is not performed/is performed.
0010#7 7010#7	APRS APRSS	Automatic coordinate system setting is not performed/is performed in manual reference position return operation.
0028#5	RSFT	In direct input of a workpiece coordinate system shift amount, a diameter value/radius value is entered for the value of MX.
0075#6	CLCL	The local coordinate system is not canceled/is canceled in manual reference position return.
0388#6	WKZRST	In workpiece coordinate system setting, the workpiece coordinate system is not returned/is returned to G54 by an NC reset.
0388#7	WKZSFT	The workpiece shift and offset from the external workpiece reference point are not stored/are stored in the same memory location.
0708 to 0711 0815 to 0820 0825, 0826 7708, 7709	----- ----- ----- -----	(X to 4) Reference position coordinates in automatic coordinate system setting (X to 8) (7, 8) (5, 6)
0735 to 0738 0866, 0867	----- -----	(X to 4) Distance of the second reference position from the first reference position (7, 8)
0780 to 0783 0868, 0869	----- -----	(X to 4) Distance of the third reference position from the first reference position (7, 8)
0784 to 0787 0870, 0871	----- -----	(X to 4) Distance of the fourth reference position from the first reference position (7, 8)
0788	-----	Travel distance per rotation of a rotation axis
0940 to 0943	-----	Offset from the external workpiece reference point for each axis
0944 to 0947	-----	Offset from the first workpiece reference point for each axis (G54)
0948 to 0951	-----	Offset from the second workpiece reference point for each axis (G55)
0952 to 0955	-----	Offset from the third workpiece reference point for each axis (G56)
0956 to 0959	-----	Offset from the fourth workpiece reference point for each axis (G57)
0960 to 0963	-----	Offset from the fifth workpiece reference point for each axis (G58)
0964 to 0967	-----	Offset from the sixth workpiece reference point for each axis (G59)
7717	-----	Machine coordinate system when the fifth/sixth axis is a rotation axis

(5) Parameters related to stroke limits (1/1)

No.	Symbol	Description
0015#2	COTZ	The hardware overtravel signals (X018#5 *+LZ, X040#6 *-LZS) are valid/invalid.
0020#4	LM2	The switching signal for the second stored stroke limit is invalid/valid.
0024#4	INOUT	The out-of-range area of the third stored stroke limit is the inside/outside.
0065#3	PSOT	A stored stroke limit check is performed/is not performed until reference position return operation is performed.
0076#7	OTRFOM	An alarm is issued after/before a stroke limit is exceeded.
0079#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 for each axis (7, 8) (5, 6)
0704 to 0707 0823, 0824 7704, 7705	----- ----- -----	(X to 4) First stored stroke limit in the negative direction for each axis (7, 8) (5, 6)
0747 to 0748	-----	Third stored stroke limit in the positive direction for each axis
0751 to 0752	-----	Third stored stroke limit in the negative direction for each axis
0760 to 0761	-----	Fourth stored stroke limit in the positive direction for each axis
0764 to 0765	-----	Fourth stored stroke limit in the negative direction for each axis
0770 to 0773	-----	Second stored stroke limit in the positive direction for each axis
0774 to 0777	-----	Second stored stroke limit in the negative direction for 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 (1/1)

No.	Symbol	Description
0001#6 7001#6	RDRN RDRNS	For a rapid traverse command, dry run is disabled/enabled.
0008#4	MFPR	Manual synchronized feed (feed by spindle rotation) is disabled/enabled.
0008#5	ROVE	The rapid traverse override signal (G117#7 ROV2) is valid/invalid.
0010#0	ISOT	When no reference position is established, manual rapid traverse is disabled/enabled.
0015#3	SKPF	When G31 is specified, dry run, override, and automatic acceleration/deceleration are disabled/enabled.
0041#2	ZRNJF	Manual reference position return is not performed/performed at the jog feedrate.
0049#6	NPRV	When no position coder is used, the command for feed per rotation is disabled/enabled.
0049#7	FML10	The units of the parameters for setting the rapid traverse rate and cutting feedrate are not multiplied/are multiplied by 10.
0059#0, #1	EDP*	For a plus-direction command for each axis, external deceleration is enabled only for rapid traverse/external deceleration is enabled for rapid traverse and cutting feed.
0058#3, #4	EDM*	For negative-direction commands for each axis, external deceleration is enabled only for rapid traverse/external deceleration is enabled for rapid traverse and cutting feed.
0065#5	G92ZAX	The parameters for a Z-axis time constant in threading and for an FL feedrate for acceleration/deceleration are common to all axes/Nos. 0627 and 0628.
0077#5	MICRF	The unit of the feedrate specified in F is 1 [mm/min]/0.001 [mm/min].
0393#5	STOVO	In rapid traverse, the tool is not stopped/stopped when a cutting feedrate override of 0% is specified.
0394#1	TFHOVR	The rapid traverse override for threading cycle retraction is the parameter-specified value/100 [%].
0397#2	OVR255	The 1%-step feedrate override signal is invalid/valid.
0399#2	PLAUT	During polar coordinate interpolation, if the specified rotation axis feedrate exceeds the maximum cutting feedrate, the command is output as is/the command is split.
0518 to 0521 0643, 0644 7518, 7519	----- ----- -----	(X to 4) Rapid traverse rate for each axis (7, 8) (5, 6)
0527	-----	Maximum allowable cutting feedrate
0528	-----	FL feedrate for acceleration/deceleration along the X-axis in threading (G92)
0530 7530	----- -----	(X to 4) FL feedrate for exponential acceleration/deceleration in cutting feed (5, 6)
0533 7533	----- -----	(X to 4) F0 feedrate for rapid traverse override (5, 6)
0534 7534	----- -----	(X to 4) FL feedrate for reference position return (5, 6)
0548	-----	FL feedrate for exponential acceleration/deceleration in manual feed
0559 to 0562	-----	Jog rapid traverse rate for each axis
0605 to 0608	-----	FL feedrate for exponential acceleration/deceleration in manual feed for each axis
0628	-----	FL feedrate for acceleration/deceleration along the Z-axis in threading (G92)
0636	-----	Feedrate for external deceleration
0657 to 0662 7657, 7658	----- -----	(X to 4) FL feedrate for exponential acceleration/deceleration in cutting feed for PMC axes (5, 6)

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

No.	Symbol	Description
0020#5	NCIPS	An in-position check is performed/is not performed.
0045#3	LSUP	For acceleration/deceleration in cutting feed, exponential acceleration/deceleration/linear acceleration/deceleration after interpolation is used.
0050#4	SMZCT	Rapid traverse block overlap is invalid/valid.
0065#5	G92ZAX	The parameters for a Z-axis time constant in threading and for an FL feedrate for acceleration/deceleration are common to all axes/Nos. 0627 and 0628.
0522 to 0525	-----	(X to 4) Time constant for rapid traverse using linear acceleration/deceleration for each axis
0645, 0646	-----	(7, 8)
7522, 7523	-----	(5, 6)
0526	-----	Time constant for the X-axis in threading (G92)
0529	-----	Time constant for exponential acceleration/deceleration in cutting feed and manual feed
7529	-----	(5, 6)
0555	-----	Feedrate ratio at which the next block is started for rapid traverse block overlap
0601 to 0604	-----	(X to 4) Time constant for exponential acceleration/deceleration in manual feed for each axis
0627	-----	Time constant for the Z-axis in threading (G92)
0635	-----	Time constant for linear acceleration/deceleration after interpolation in cutting feed
0651 to 0656	-----	(X to 8) Time constant for exponential acceleration/deceleration in cutting feed for PMC axes
7651, 7652	-----	(5, 6)

(8) Parameters related to the servo system (1/2)

No.	Symbol	Description
0004 to 0007 0067, 0068 7004, 7005 0570 to 0575 7570, 7511	GRD* GRD* GRD* ----- -----	(X to 4) Size of a reference counter for each axis (7, 8) (5, 6) (X to 8) (5, 6)
0004 to 0007 0067, 0068 7004, 7005	DMR* DMR* DMR*	(X to 4) Detection multiplication factor (DMR) for each axis (7, 8) (5, 6)
0010#2 7010#2	OFFVY OFFVYS	If VRDY=1 is set before PRDY=1, an alarm is issued/is not issued.
0021#0 to #5 7021#0, #1	APC* APC*	(X to 8) For each axis, an absolute-position detector is not used/used. (5, 6)
0021#6	NOFLUP	When the power is turned on before a reference position is established with an absolute-position detector, follow-up operation is performed/is not performed.
0022#0 to #5 7022#0, #1	ABS* ABS*	(X to 8) A reference position is not established/is already established with an absolute-position detector. (5, 6)
0035#7 7035#7	ACMR ACMRS	(X to 8) An arbitrary CMR is not used/is used. (5, 6)
0037#0 to #5 7037#0, #1	SPTP* SPTP*	(X to 8) As a position detector, a separate pulse coder is not used/is used. (5, 6)
0037#7 7037#7	PLCO1 PLCO1S	(X to 8) A high-resolution pulse coder is not used/is used. (5, 6)
0041#1	THRDB	The threading start type is type A/type B.
0072#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 compensation is invalid/valid.
0389#3	TSKECR	When the torque limit skip function is used, the servo error present at the time of skipping is recovered/not recovered.
0390#0 to #5	NREQ*	When a reference position is not established upon power-up, an alarm is issued/is not issued to request reference position return when an absolute pulse coder is used for each axis.
0399#4	FUNO	When a servo alarm is detected by the CNC, follow-up operation is performed/is not performed.
0100 to 0103 0275, 0276 7100, 7101	----- ----- -----	(X to 4) Command multiplication factor (CMR) for each axis (7, 8) (5, 6)
0255	-----	Time interval for averaged current value display on the servo adjustment screen
0269 to 0274	-----	Servo axis number

(8) Parameters related to the servo system (2/2)

No.	Symbol	Description
0452 to 0457 0739 to 0742 0827, 0828 7580, 7581 7739, 7740	----- ----- ----- ----- -----	(X to 8 3RD WORD) Counter value at the APC reference position (X to 4 LOWER 2 WORD) (7, 8 LOWER 2 WORD) (5, 6 3RD WORD) (5, 6 LOWER 2 WORD)
0463	-----	Maximum position deviation for which manual reference position return is assumed to be possible
0500 to 0503 0637, 0638 7500, 7501	----- ----- -----	(X to 4) In-position width for each axis (7, 8) (5, 6)
0504 to 0507 0639, 0640 7504, 7505	----- ----- -----	(X to 4) Limit of position deviation during movement along each axis (7, 8) (5, 6)
0508 to 0511 0641, 0642 7508, 7509	----- ----- -----	(X to 4) Grid shift for each axis (7, 8) (5, 6)
0512 to 0515 0517 0632, 0633 7517	----- ----- ----- -----	(X to 4) Position control loop gain for each axis (X to 8) Position control loop gain common to all axes (7, 8) Position control loop gain for each axis (5, 6)
0535 to 0538 0647, 0648 7535, 7536	----- ----- -----	(X to 4) Backlash compensation for each axis (7, 8) (5, 6)
0593 to 0596 0649, 0650 7593, 7594	----- ----- -----	(X to 4) Limit of position deviation in the stop state for each axis (7, 8) (5, 6)
0673 to 0678	-----	(X to 4) Rapid traverse backlash compensation value for each axis

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

No.	Symbol	Description
0001#2	DCS	The signal from the START button on the MDI panel is routed/not routed via the machine.
0001#5 7001#5	DECI DECIS	(X to 4) The deceleration signal for reference position return starts deceleration when this bit is set to 0/1. (5, 6)
0003#4 7003#4	OVRI OVRIS	(X to 4) The override signal and rapid traverse override signal increase speed when this bit is set to 0/1. (5, 6)
0008#7	EILK	The start lock signal is common to all axes/defined for each axis.
0009#0 to #3 7009#0 to #3	TFIN TFIN	(X to 4) Acceptance time width for the M, S, or T function completion signal (G120#3 FIN) (5, 6)
0009#4 to #7 7009#4 to #7	TMF TMF	(X to 4) Time before the M, S, or T function code read signal is sent (5, 6)
0024#7	EDILK	The interlock signal for each axis direction is invalid/valid.
0031#5	ADDCF	The PMC address for the GR1, GR2, and DRN signals is G0118/G0123.
0038#0	DEC34	The PMC addresses for the *DEC3 and *DEC4 signals are GX19#7 and X19#5/G16#7 and G17#7.
0041#3	ROVC	The rapid traverse override signals are ROV and ROV2/ROV1D, ROV2D, and ROV3D.
0045#2	RWDOUT	The rewind in-progress signal (F164#6 RWD) is output only while the tape reader is being rewound/while programs in memory are being rewound.
0045#7	HSIF	M, S, T, and B code processing is performed using an ordinary/high-speed interface.
0070#4	DSTBGE	When output is started in background editing, the manual data input start signal (F150#5 DST) is output/is not output.
0394#6	POSILK	The start lock signal is invalid/valid for manual feed.
0113, 0114	-----	Position signal output grid number for each axis
0252	-----	Reset signal extension time
0713, 0714	-----	Position signal output grid width for each axis
0743 to 0746	-----	Distance to a contact surface for each axis

(10) Parameters related to CRT/MDI, display, and editing (1/3)

No.	Symbol	Description
0001#1	PROD	Tool length compensation data is included/is not included in relative coordinate display.
0002#1	PPD	Relative coordinates are not preset/are preset by coordinate system setting.
7002#1	PPDS	
0008#3	LCD	The display unit is a CRT/LCD.
0010#1	EBCL	When programs stored in memory are displayed, the EOB code is displayed using ;/*.
0011#7	MCINP	Programs are not stored/are stored in memory with G117#0 MINP.
0013#4	INHMN	Menu display is performed/not performed.
0014#2	STDP	The actual speed of the spindle, S codes, and T codes are not displayed/are displayed.
0015#0	CBLNK	The cursor blinks/does not blink.
0015#1	NWCH	When tool wear compensation values are displayed, the character W is displayed/is not displayed.
0015#6	REP	If the same program number is already contained in memory when programs are registered via the reader/punch interface, an alarm is issued/the program is replaced.
0018#7	EDITB	The type of editing using the standard keyboard is edit operation A/B.
0019#6	NEOP	When a program is registered, M02, M30, or M99 ends/does not end registration.
0019#7	DBCD	When the diagnostic screen is displayed, timer and counter data are displayed in binary/decimal.
0023#0 to #6	****	Display language setting
0028#0	PRCPOS	On the program check screen, relative/absolute coordinates are displayed.
0028#2	DACTF	Actual speed is not displayed/is displayed.
0028#3	MMDL	In MDI operation B, the modal state is not displayed/is displayed.
0029#0, #1	DSP*	The current position of the third/fourth axis is not displayed/is displayed.
0029#6	DSPSUB	The fifth/sixth axis is not displayed/is displayed on the absolute/relative position display screen.
0038#3	FLKY	The keyboard of the CRT unit or MDI panel employs the standard keys/full keypad.
0040#0	NAMPR	Program names are not displayed/are displayed in the program directory.
0040#4	SORT	The program directory is displayed in the order of program registration/in the ascending order of program numbers.
0045#0	RDL	During external control of input/output units, read operation follows the specification of No. 0015#6 REP/registration is performed after deletion of all programs.
0045#1	RAL	In reading via the reader/punch interface, all programs are registered/only the first program is registered.
0048#7	SFFDSP	Soft keys are displayed and controlled according to the additional option function specification/regardless of the additional option function specification.
0050#1	NOFMK	In sequence number search, a format check is performed/is not performed.
0056#0	NOCND	When the part program storage length is 120 m/320 m, or when the background edit function is provided, automatic memory compression is performed/is not performed.
0057#0	PWNNC	The MMC/CNC screen is displayed when the power is turned on.
0057#1	ALMNC	When an alarm is issued on the CNC during MMC screen display, the MMC/CNC screen is displayed.

(10) Parameters related to CRT/MDI, display, and editing (2/3)

No.	Symbol	Description
0057#2	SALNC	When a system alarm is issued on the CNC during MMC screen display, the MMC/CNC screen is displayed.
0060#0	DADRD	Addresses are not displayed/are displayed on the diagnostic screen.
0060#2	LDDSPG	Dynamic ladder display is not performed/is performed.
0060#3	C14DGN	When the 14-inch CRT unit is used, the diagnostic screen is displayed in the 9-inch/14-inch format.
0060#5	OPMNDP	Operating monitor display is invalid/valid.
0060#6	EXTSP	The display and search operations are disabled/enabled for protected programs.
0060#7	IGNCOL	When the 9-inch high-resolution CRT unit is used, a monochrome/color display is used.
0061#6	DSP78	For current position display using absolute and relative coordinates, the seventh and eighth axes are not displayed/are displayed.
0063#0	MTDSPI	Output system/input system for machine coordinate display
0063#1	PRSTIN	For automatic coordinate system setting based on inch input, No. 0708 and up/No. 0815 and up are used.
0064#0	SETREL	For relative coordinate presetting, the relative coordinates are cleared to 0/preset to arbitrary values.
0064#1	ALLPRE	For relative coordinate presetting, the standard specification is used/axis selection is performed using numeric keys.
0064#3	IOMDGN	On the diagnostic screen, I/O link and extended R/D area DI/DO display are not provided/are provided.
0064#5	NPA	When an alarm is issued or an operator message is entered, the screen display switches/does not switch to the alarm screen or message screen.
0066#0	ALL56	On the overall current position screen, the fifth and sixth axes are not displayed/are displayed.
0076#2	IOP	NC program input and output operations can be stopped by resetting the NC/only by selecting the [STOP] soft key.
0077#2	SGP	Servo waveform display is invalid/valid.
0077#6	HLKEY	MDI key processing is/is not high-speed.
0078#0	NOINOW	Input of a tool wear compensation value through the MDI keys is not prohibited/is prohibited.
0078#1	NOINOG	Input of a tool geometry compensation value through the MDI keys is not prohibited/is prohibited.
0078#2	NOINMV	Input of macro variables through the MDI keys is not prohibited/is prohibited.
0078#3	NOINWZ	Input of an offset from the workpiece reference point through the MDI keys is not prohibited/is prohibited.
0079#0	KEYOW	The wear offset protection state is based on bit 0 (NOINOW) of parameter No. 0078/program protection signal KEY <G122#3>.
0079#1	KEYOG	The geometry offset protection state is based on bit 1 (NOINOG) of parameter No. 0078/program protection signal KEY <G122#3>.
0079#2	KEYMV	The macro variable protection state is based on bit 2 (NOINMV) of parameter No. 0078/program protection signal KEY <G122#3>.
0079#3	KEYWZ	The workpiece origin offset protection state is based on bit 3 (NOINWZ) of parameter No. 0078/program protection signal KEY <G122#3>.
0079#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.

(10) Parameters related to CRT/MDI, display, and editing (3/3)

No.	Symbol	Description
0389#1	SPPRM	The spindle adjustment screen is not displayed/is displayed.
0393#2	WKNMDI	In the automatic operation activation state/automatic operation stop state, input of an offset from the workpiece reference point through the MDI keys is not prohibited/is prohibited.
0393#7	DGNWEB	When PWE=0, PMC parameter input is prohibited/is not prohibited.
0394#7	CAKEY	On the parameter, diagnostic, and offset screens, one-character cancellation using the CAN key is disabled/enabled.
0395#1	TLSCUR	On the offset screen, the cursor position is not preserved/is preserved.
0397#7	SERNAI	The details of alarm 409 are not displayed/are displayed.
0398#1	TYPE1	The master printed circuit board is a normal master printed circuit board/high-speed master printed circuit board (type 1).
0398#2	TYPE2	The master printed circuit board is a normal master printed circuit board/high-speed master printed circuit board (type 2).
0398#3	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.
0398#4	ATREV	On the LCD, ladder dynamic display ON/OFF is indicated by varying the display intensity/by using normal and reverse video display.
0398#5	EXOPE	Operating monitor display is not expanded/is expanded.
0257 to 0263	-----	Tool post name (first to seventh characters) displayed on the screen
0264 to 0267	-----	Axis name subscript for each axis
0337 to 0346	-----	Title character code
0351 to 0355	-----	NC name character code
0457	-----	Output destination address for CNC status signal for 0-TTC tool post 2
0474	-----	Output destination address for CNC status signal
0550	-----	Incremental value for automatic sequence number insertion
0797	-----	Password
0798	-----	Key

(11) Parameters related to programs (1/1)

No.	Symbol	Description
0010#4	PRG9	The editing of subprograms O9000 to O9999 is not prohibited/is prohibited.
0011#6	G01	Upon power-up, the G00/G01 mode is set.
0015#7	CPRD	When the decimal point is omitted, the least input increment/mm, inch, deg, or sec unit is used.
0016#3	NPRD	The decimal point input and display function is used/is not used.
0016#5	SPAG	An angle for direct drawing dimension programming is specified by angle/supplementary angle.
0019#5	M02NR	After M02 is executed, control returns/does not return to the start of the program.
0028#4	EXTS	External program number search is invalid/valid.
0029#4	ADRC	As a chamfering or corner R address, C or R/,C or ,R is used.
0030#7	G91	Upon power-up, the G90/G91 mode is set.
0032#5	BLIN	For B 8-digit input, 1.000 is always used/1.000 (millimeter) or 1.0000 (inch) is used.
0036#1	GSP	The G code system is of type A/type B.
0036#5	GSPC	The G code system is of type B (A)/type C.
0040#2	MAPS	Address Q for the pass point signal output function cannot be used/can be used.
0040#5	TMCR	The T code is for a tool function/for calling O9000.
0045#6	CLER	The reset button, external reset signal, and emergency stop operation set the reset state/clear state.
0057#7	MBCLR	Upon reset, MDI-B programs are not cleared/are cleared.
0063#2	M198P	M198 address P specifies a file number/program number.
0065#7	M3B	One block can contain only one M code/up to three M codes.
0389#2	PRG8	The editing of subprograms O8000 to O8999 is not prohibited/is prohibited.
0391#7	NOCLR	When the clear state is entered, certain G codes are cleared/are not cleared.
0393#3	M3RQNG	The specification of a three-digit M code is valid/invalid.
0393#6	RADCHK	When circular interpolation is specified, the difference between the radius at the start point and the radius at the end point is not checked/is checked.
0395#0	DLG99	In the feed per rotation mode, a dwell command is specified by time/spindle speed.
0396#7	EORRE	If an EOR is read without reading a program end code, an alarm is issued/the reset state is set.
0111, 0112	-----	M code which performs no buffering
0243	-----	Third digit (hundreds digit) of a wait M code
0248	-----	M code for calling programs stored in a file
0554	-----	Program number for parameters/macro variables/diagnostic data
0587	-----	M code for specifying spindle orientation
0588	-----	M code for canceling spindle indexing
0589	-----	Initial value of an M code used for spindle indexing
0876	-----	Arc radius error limit

(12) Parameters related to pitch error compensation (1/1)

No.	Symbol	Description
0011#0, #1 7011#0, #1	PML* PML*S	(X to 4) Pitch error compensation magnification (5, 6)
0756 to 0759 7713, 7714	----- -----	(X to 4) Compensation interval in pitch error compensation for each axis (5, 6)
1000 to 6000	-----	Zero position for 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#6, #7 0064#6, #7	PSG* P2SG*	Gear ratio between the spindle and position coder Gear ratio between the spindle and second position coder
0013#5	ORCW	In orientation, S analog output is positive/negative.
0013#6, #7	TCW, CWM	Sign of S analog output
0024#2	SCTO	The spindle speed arrival signal (G120#4 SAR) is not checked/is checked.
0028#7	PNOSMP	The number of sampling operations for finding the average spindle speed is 4/1.
0031#0	SNRL	Upon reset, the spindle indexing mode is not canceled/is canceled.
0031#1	SDRT	The direction of spindle indexing with an M code is positive/negative.
0049#0	EVSF	When an S code is specified, the S code and SF are not output/are output at all times.
0049#2	CHKSP	When SIND=1, spindle speed fluctuation detection is disabled/enabled.
0062#3	SPMRPM	The unit of parameter data for spindle speed control is 1/10 [RPM].
0065#1	CZRN	The first G00 command after the mode is switched to the Cs contour control mode performs positioning after performing a reference position return/performs ordinary positioning.
0070#0, #1	DAC*	For D/A conversion, the analog interface board is not used/used.
0070#3	MSPDB	The multi-spindle control method is type A/type B.
0071#0	ISRLPC	When a serial interface spindle is used, the position coder signal is received through an optical fiber/M27 connector.
0071#1	HISSC	The sampling time for constant surface speed control remains unchanged from the conventional value/is the conventional value divided by 4.
0071#2	SRLMSP	In multi-spindle control, the second axis is analog/serial.
0071#3	SSMPC	M27/the second spindle control unit is used for the second position coder.
0071#4	SRL2SP	One/two serial interface spindles is/are connected.
0071#7	FSRSP	Serial interface spindles are not used/are used.
0074#7	PLCREV	A feedback pulse signal from a position coder represents an absolute value/is signed.
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	During spindle synchronization, the rotation directions of the first and second spindle motors are the same as the specified sign/opposite to the specified sign.
0381#7	IGNSIC	A serial/analog spindle is connected to tool post 2.
0397#0	SPLME	The permissible rate and fluctuation rate of the spindle speed fluctuation detection function are 1 [%]/0.1 [%].

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

No.	Symbol	Description
0108	-----	Spindle speed when the spindle rotates at a constant speed
0110	-----	Delay timer used to check the spindle speed arrival signal (G120#4 SAR)
0249	-----	Magnification for spindle speed ratio control over serial interface spindles
0516	-----	Data for gain adjustment in constant surface speed control (analog output)
0303	-----	Permissible pulse error for phase synchronization in the synchronized control mode
0531	-----	Permissible rate (Q) used in spindle speed fluctuation detection for determining whether a specified speed is reached
0532	-----	Spindle speed fluctuation rate (R) used in spindle speed fluctuation detection for issuing an alarm
0539	-----	Spindle speed offset value
0540 to 0543	-----	Speed when the spindle speed command voltage for each gear is 10 [V]
0546	-----	Value for compensating for drift that occurred in a Cs-axis servo loop
0551	-----	Minimum spindle speed in the constant surface speed control mode (G96)
0556	-----	Maximum spindle speed for the constant surface speed control option
0564	-----	Permissible speed fluctuation that does not cause an alarm to be issued in spindle speed fluctuation detection
0576	-----	Permissible pulse error between two spindles in the spindle (simple) synchronized control mode
0580 to 0583	-----	Spindle servo loop gain multiplier in Cs-axis control for each gear
0584	-----	Spindle loop gain
0585	-----	F0 feedrate for spindle rapid traverse override
0586	-----	FL feedrate for spindle orientation
0587	-----	M code for specifying spindle orientation
0588	-----	M code for canceling spindle indexing
0589	-----	Initial value of an M code used for spindle indexing
0590	-----	Basic angular displacement for spindle indexing using an M code
0613	-----	Data for second spindle gain adjustment in constant surface speed control
0614	-----	Spindle speed offset value for the second spindle
0615, 0616	-----	Speed when the second spindle speed command voltage for each gear is 10 [V]
0617	-----	Data for third spindle gain adjustment in constant surface speed control
0618	-----	Spindle speed offset value for the third spindle
0619, 0620	-----	Speed when the third spindle speed command voltage for each gear is 10 [V]
0712	-----	Time before a spindle speed fluctuation check is started
6780 to 6783	-----	Position loop gain of a servo axis in the Cs contour control mode
6784 to 6787	-----	(X) Position loop gain of a servo axis in the Cs contour control mode for each gear
6788 to 6791	-----	(Y)
6792 to 6795	-----	(Z)
6796 to 6799	-----	(4)
7516	-----	Data for gain adjustment in subspindle S4/S5 digit control
7539	-----	Subspindle speed offset value

(14) Parameters related to tool compensation (1/1)

No.	Symbol	Description
0001#3	TOC	In the reset state, offset vectors are not canceled/are canceled.
0001#4	ORC	For offset values, a diameter value/radius value is specified.
0008#6	NOFC	Offset values are loaded/are not loaded into a counter.
0010#5	DOFSI	Direct input of tool offset values is not performed/is performed.
0013#1	GOFU2	A tool geometry compensation number is specified using the least significant/most significant digit of a T code.
0013#2	GMOFS	Tool geometry compensation is performed by shifting the coordinate system/by moving the tool.
0013#3	GOFC	Tool geometry compensation is not canceled/is canceled by position number 0.
0014#0	T2D	A T code is specified using 4 digits/2 digits.
0014#1	GMCL	Tool geometry compensation is not canceled/is canceled when the reset state is entered.
0014#4	OFSB	Tool offsetting is performed in a block containing a T code/performed together with axis movement.
0014#5	WIGA	A limit is not imposed/is imposed on tool offset setting.
0014#6	T2T4	When a T code is specified using 2 digits, the upper 2 digits are assumed to be 00/are assumed to be the same as the lower 2 digits.
0015#4	MORB	In direct input of measurement values, the record button is not used/is used.
0024#6	QNI	When tool compensation measurement direct input function B is used, a tool compensation number is not selected/is selected automatically in the offset write mode.
0036#3	YOF3	Y-axis offset is used with the fourth axis/third axis.
0075#3	WNPT	A virtual tool tip number for tool-tip radius compensation is specified using a geometric/wear compensation number.
0395#4	ADDLA	During tool-tip radius compensation, if two blocks specifying no movement are specified consecutively, the offset vector is assumed to be the vector perpendicular to the movement performed in the previous block at the end point/the intersection vector.
0399#0	NOPS41	For tool nose radius compensation, interference check is performed/not performed.
0122	-----	Tool compensation number when the tool compensation measurement value direct input B function is used
0557	-----	Maximum ignorable travel distance along the outside of a corner in tool-tip radius compensation
0728	-----	Maximum tool wear compensation value in incremental input
0729	-----	Maximum tool wear compensation value

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

No.	Symbol	Description
0031#2	TAPM	In a tapping cycle, M03 or M04/M05 is output in the case of forward or reverse rotation.
0031#3	ILVL	In a drilling cycle, the initial point is not updated/is updated when a reset occurs.
0031#4	RTCT	The peck drilling cycle is type A/B.
0393#1	MCQSCH	In a multiple repetitive canned cycle for lathes, a sequence number check with Q specified is not performed/is performed.
0393#4	CHKMRC	In a multiple repetitive canned cycle for lathes, specification of a pocket figure is valid/invalid.
0109	-----	Cut width in threading cycle G92/G76
0204	-----	M code for C-axis clamping in a drilling canned cycle
0212, 0213	-----	M code for forward spindle rotation/reverse spindle rotation in a drilling canned cycle
0591	-----	Dwell time used when C-axis unclamping is specified in a drilling cycle
0592	-----	Retract dimension (d) used for peck drilling in a drilling cycle
0717, 0718	-----	Depth of cut/retract dimension in the multiple repetitive canned cycles (G71, G72)
0719, 0720	-----	Retract dimension for each axis in the multiple repetitive canned cycle (G73)
0721	-----	Number of divisions in the multiple repetitive canned cycle (G73)
0722	-----	Return distance in the multiple repetitive canned cycles (G74, G75)
0723	-----	Number of times finishing is performed in the multiple repetitive canned cycle (G76)
0724	-----	Tool angle in the multiple repetitive canned cycle (G76)
0725	-----	Minimum depth of cut in the multiple repetitive canned cycle (G76)
0726	-----	Finishing allowance in the multiple repetitive canned cycle (G76)

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

No.	Symbol	Description
0029#3	RGCTO	In rigid tapping, the time constant for acceleration/deceleration of the spindle and tapping axis during withdraw are specified using the same parameter as for cutting/using a separate parameter.
0041#0	RGTPPE	In rigid tapping, the rigid mode is canceled after/before the rigid DI signal is turned off.
0063#4	RGDOV	Withdraw operation overriding is disabled/enabled.
0063#6	VSLPC	An arbitrary gear ratio is not used/is used between the spindle and position coder.
0076#3	G84RGD	G84 and G74 are not used/are used as G codes for rigid tapping.
0397#3	RGMFH	The feed hold and single block functions are enabled/disabled.
0399#5	SIG	In gear switching, the SIND signal is invalid/valid.
0214 to 0217	-----	Spindle backlash distance in rigid tapping
0253	-----	M code for specifying the rigid tapping mode
0254	-----	Override value for withdraw in rigid tapping
0400	-----	Tapping axis in-position width in rigid tapping
0401	-----	Spindle in-position width in rigid tapping
0402	-----	Limit on position deviation during movement along the tapping axis
0403	-----	Limit on position deviation during spindle movement
0404	-----	Limit on position deviation while movement along the tapping axis is stopped
0405	-----	Limit on position deviation while spindle movement is stopped
0406	-----	Loop gain for position control over the spindle and tapping axis (for each gear)
0407 to 0410	-----	
0411 to 0414	-----	Spindle loop gain multiplier
0415 to 0418	-----	Time constant for acceleration/deceleration for the spindle and tapping axis
0419 to 0422	-----	Time constant for acceleration/deceleration for the spindle and tapping axis during withdraw
0423 to 0426	-----	Maximum allowable spindle speed during rigid tapping
0427 to 0430	-----	Number of teeth on the spindle side when an arbitrary gear ratio is used
0431 to 0434	-----	Number of teeth on the position coder side when an arbitrary gear ratio is used
0435	-----	Position deviation of the spindle during rigid tapping
0436	-----	Amount of pulse distribution to the spindle during rigid tapping
0473	-----	Momentary error difference between the spindle and tapping axis
0483	-----	Maximum error difference between the spindle and tapping axis

(17) Parameters related to custom macros (1/1)

No.	Symbol	Description
0011#5	SBKM	A macro statement does not cause/causes a single block stop.
0040#1	DPOSUP	When data is output with the DPRINT command, spaces are output/no particular operation is performed for leading zeros.
0040#5	TMCR	The T code is for a tool function/ for calling O9000.
0040#6	COMC	Upon reset, common variables (#100 to #149) are placed/not placed in the null state.
0040#7	LOCC	Upon reset, local variables (#01 to #33) are placed/not placed in the null state.
0042	ASTCD	Hole pattern corresponding to EIA code *
0043	EQCD	Hole pattern corresponding to EIA code =
0044	SHPCD	Hole pattern corresponding to EIA code #
0053	LBLCD	Hole pattern corresponding to EIA code [
0054	RBLCD	Hole pattern corresponding to EIA code]
0056#1	MSKT	When an interrupt is generated, absolute coordinates are not set/are set as skip coordinates.
0056#2	MBLK	Custom macro interrupt type I/II
0056#3	MSTE	The interrupt signal is based on the edge trigger method/status trigger method.
0056#4	MPRM	M codes for enabling and disabling an interrupt are M96 and M97 respectively/determined by parameter setting.
0056#5	MSUB	The local variables used for an interrupt are macro type/subprogram type.
0056#6	MCYL	During cycle operation, the custom macro interrupt function is disabled/enabled.
0056#7	MUSR	The custom macro interrupt function is disabled/enabled.
0057#4	CROUT	Upon completion of ISO code data output by B/D PRINT, an LF code/CR and LF codes are output.
0218	-----	Number of macro variables common to tool posts
0220 to 0229	-----	G code for calling custom macros O9010 to O9019
0230 to 0239	-----	M code for calling custom macros O9020 to O9029
0240 to 0242	-----	M code for calling subprograms O9001 to O9003
0246	-----	M code for enabling custom macro interrupts
0247	-----	M code for disabling custom macro interrupts
0248	-----	M code for calling programs stored in a file

(18) Parameters related to automatic tool compensation (1/1)

No.	Symbol	Description
0558	-----	Feedrate used for measurement in automatic tool compensation
0731, 0732	-----	Value of γ in automatic tool compensation
0733, 0734	-----	Value of ϵ in automatic tool compensation

(19) Parameters related to graphic display (1/1)

No.	Symbol	Description
0024#3	GNSR	The actual position with tool-tip radius compensation reflected is drawn/the programmed position is drawn.
0046#5	GRPOS	On the graphic display screen, the current position is not displayed/is displayed.
0123	-----	Drawing coordinate system used with the graphic function
0630, 0631	-----	Dot shift amount for 9-inch high-resolution graphic display

(20) Parameters related to run time/parts count display (1/1)

No.	Symbol	Description
0040#3	RWCNT	With M02 or M30, the total number of machined parts and the number of machined parts is counted/is not counted.
0219	-----	M code for counting the total number of machined parts and the number of machined parts
0600	-----	Number of required parts
0779	-----	Total number of machined parts

(21) Parameters related to tool life management (1/1)

No.	Symbol	Description
0039#0, #1	GST*	Number of groups that can be registered in tool group setting
0039#2	LCTM	Tool life is specified by a count/time.
0039#3	TL SK	When the tool skip signal (G140#0 TL SKP) is applied, the group currently selected is skipped/the group number is also entered.
0039#4	GRST	When the tool skip signal (G140#0 TL SKP) is applied, the execution data of the group/execution data of all groups is cleared.
0039#5	IGSK	The tool skip signal (G140#0 TL SKP) is accepted always/only when a tool subject to tool life management is being used.
0394#0	TLCSAM	When multiple offset numbers are involved, counting is performed for each identical tool number/each tool.
0394#5	NOWOFS	@ is prefixed/is not prefixed to a compensation number subject to tool life management.
0117	-----	Offset number compensation value used with the simplified tool life management function
0118	-----	Tool selection number compensation value used with the simplified tool life management function
0119	-----	Maximum offset number used with the simplified tool life management function
0120	-----	Maximum tool selection number used with the simplified tool life management function
0336	-----	M code for restarting tool life count operation
0599	-----	Tool life management ignore number

(22) Parameters related to the position switch function (1/1)

No.	Symbol	Description
0310 to 0319	-----	Axis corresponding to a position switch
0840 to 0849	-----	Maximum position switch operation range
0850 to 0859	-----	Minimum position switch operation range

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

No.	Symbol	Description
0002#5	HSLE	When two manual pulse generators are installed, the axis selection signal is invalid/valid.
0002#6	TJHD	In the TEACH IN JOG mode, a manual pulse generator is disabled/enabled.
0013#0	JHD	In the JOG mode, a manual pulse generator is disabled/enabled.
0075#2	INHND	The unit of manual handle interrupt movement is the output unit with acceleration/deceleration disabled/is the input unit with the acceleration/deceleration enabled.
0077#4	HDLPM	When the handle of a manual pulse generator is turned quickly, the scale indication and travel distance may not match/the scale indication and travel distance match.
0386#0 to #3	HPNEG*	For each axis, the direction of manual handle feed is the same/opposite.
0386#4 to #7	HDPIG*	For each axis, the magnification (x 10000) of manual handle feed is used/is not used.
0121	-----	Manual handle feed magnification (M)
0699	-----	Manual handle feed magnification

(24) Parameters related to the software operator's panel (1/1)

No.	Symbol	Description
0017#0	OPG1	On the software operator's panel, mode selection is not performed/is performed.
0017#1	OPG2	On the software operator's panel, jog feed axis selection is not performed/is performed.
0017#2	OPG3	On the software operator's panel, manual pulse generator axis selection and magnification switching are not performed/are performed.
0017#3	OPG4	On the software operator's panel, jog feedrate override switching is not performed/is performed.
0017#4	OPG5	On the software operator's panel, BDT, SBK, MLK, and DRN switching is not performed/is performed.
0017#5	OPG6	On the software operator's panel, protect switching is not performed/is performed.
0017#6	OPG7	On the software operator's panel, feed hold switching is not performed/is performed.
0130 to 0137	-----	Jog feed axes and directions of the keys on the software operator's panel
0140 to 0203	-----	Character codes of the general-purpose switches on the software operator's panel

(25) Parameters related to restarting programs (1/1)

No.	Symbol	Description
0387#0	SQDNC	In DNC operation, program restarting is disabled/enabled.
0124 to 0127	-----	Order of movement to program restart positions

(26) Parameters related to high-speed cycle machining/high-speed remote buffers (1/1)

No.	Symbol	Description
0055#4 to #6	ITPCNT	G05 data interpolation interval
0597	-----	Number of high-speed remote buffer controlled axes

(27) Parameters related to PMC-based axis control (1/1)

No.	Symbol	Description
0019#4	EAUNT	Commands for a single linear PMC controlled axis are specified in input increments/output increments.
0032#4 7032#4	PNGMLK PNGMLKS	Machine locking along a PMC axis is enabled/disabled.
0032#6	EACSB	PMC axis control is based on specification A/B.
0049#5	EFML10	A feedrate command (cutting feed) for PMC axis control is multiplied by 1/10.
0052#0 to #7	NODIC*	Current position display for PMC axis control follows the decimal point position based on the setting unit 1/10/follows the standard specifications.
0061#0 to #5	EBC*	For each axis, group A/B of the DI and DO signals for PMC axis control (specification B) is used.
0062#6	AXPCF	Movement along a PMC controlled axis is added/is not added to actual speed display.
0063#5 7063#5	EAXOV EAXOVS	For PMC axes, the dry run and override functions are disabled/enabled.
0066#3	EPMSKP	In PMC-based axis control, the same skip signal used with the CNC/a separate signal is used.
0066#6, #7	ERVF*	Magnification of a feedrate for feed-per-rotation in PMC axis control
0078#4	OVRIE	In PMC axis control, the override signal increases speed when this bit is set to 0/1.
0078#6	RDRNE	In PMC axis control, the dry run function cannot/can be used with a rapid traverse command.
0078#7	EAXOVE	In PMC axis control, the dry run and override signals are the same as those used with the CNC/separate dry run and override signals are used.
0387#7	EFERPD	A rapid traverse rate in PMC axis control is specified by the same parameter as with the CNC/specified by the feedrate data of an axis control command.
0398#0	EADSL	In PMC axis control (specification B), the switching of the axis selection signal (G144) for an unspecified path is disabled/enabled.
0350	-----	Axis for which a feedrate is specified in PMC axis control
0651 to 0656 7651, 7652	----- -----	(X to 8) Time constant for exponential acceleration/deceleration during cutting feed for a PMC axis (5, 6)
0657 to 0662 7657, 7658	----- -----	(X to 8) FL feedrate for exponential acceleration/deceleration during cutting feed for a PMC axis (5, 6)
0672	-----	FL feedrate for reference position return operation along a PMC controlled axis
0685	-----	F0 feedrate for independent rapid traverse override along a PMC controlled axis
0698	-----	Maximum feedrate for feed per rotation along a PMC controlled axis
7021#6	SUB1	PMC axis control on the sub-CPU side is applied to the fifth and sixth axes/the fifth axis only.

(28) Parameters related to cylindrical grinding machines (FS0/00–GCC) (1/1)

No.	Symbol	Description
0033#0 to #3	P1S*	The skip signal used with G31 P1 is invalid/valid.
0033#4 to #7	P2S*	The skip signal used with G31 P2 is invalid/valid.
0034#0 to #3	P3S*	The skip signal used with G31 P3 is invalid/valid.
0034#4 to #7	P4S*	The skip signal used with G31 P4 is invalid/valid.
0035#0 to #3	DS*	The skip signal used with the dwell skip function is invalid/valid.
0036#0	AGLST	Slanted axis control is not exercised/is exercised.
0036#1	GSP	The G code system is type A/type B.
0036#2	ZRTM1	Movement is performed/is not performed along the Z-axis in manual reference position return operation along the X-axis.
0036#4	G98	Upon power-up, the feed-per-rotation mode/feed-per-minute mode is set.

(29) Parameters related to the PMC (1/1)

No.	Symbol	Description
0024#0	IGNPMC	PMC-based axis control is enabled/disabled.
0028#1	PRCMSG	The program check screen displays the remaining travel distance/message from the PMC.
0060#1	PCLDB	The baud rate used for ladder loading is 4800 [bps]/9600 [bps].
0070#6	PEXRD	The R and D areas of the PMC-M are not expanded/are expanded.
0071#6	DPCRAM	When a PMC RAM board is used, PMC LOAD MENU is displayed/is not displayed.
0398#7	NOPCAL	If a PC alarm is issued, ladder data in the PMC RAM is cleared/not cleared.
0356 to 0359	-----	Number of characters displayed in the remaining travel distance field on the program check screen
0476 to 0479	-----	Start PMC address where remaining travel distance field characters are set

(30) Parameters related to the butt-type reference position setting function (1/1)

No.	Symbol	Description
0372 to 0375	-----	Torque limit value during execution of a butt-type reference position setting cycle
0451, 0458	-----	Butting speed used when a butt-type reference position setting cycle is executed
0459 to 0462	-----	Speed for reference position setting when a butt-type reference position setting cycle is executed
0872 to 0875	-----	Reference position setting distance used when a butt-type reference position setting cycle is executed

(31) Parameters related to the DNC (1/1)

No.	Symbol	Description
0387#0	SQDNC	In DNC operation, program restart is disabled/enabled.
0390#7	NODC3	In DNC operation, reading is performed block by block/until the buffer becomes full.
0396#0	BCC	A BCC value check is performed/is not performed.
0396#2	NCKER	An ER (RS-232-C) or TR (RS-422) check is performed/is not performed.
0396#3	ERCODE	A 4-digit hexadecimal error code is not added/is added to a negative acknowledgment.
0347	-----	Mode of connection between the CNC and host when the DNC1 interface is used
0348	-----	CNC station address when the DNC1 interface is used
0365	-----	Time-out period for the no-response timer
0366	-----	Time-out period for the EOT signal timer
0368	-----	Maximum invalid data count value
0369	-----	Maximum number of message retransmissions due to NAK
0370	-----	Maximum number of characters receivable after transmission termination processing
0490	-----	Maximum datagram (data section) length

(32) Parameters related to the M-NET (1/1)

No.	Symbol	Description
0392#2	SRL1	The M-NET character length is 7/8 bits.
0392#4	SRPE	An M-NET vertical parity check is not performed/is performed.
0392#5	SREP	The M-NET vertical parity is odd/even.
0392#7	SRS2	The number of M-NET stop bits is 1/2.
0360	-----	M-NET DI byte length
0361	-----	M-NET DO byte length
0362	-----	M-NET station address
0363	-----	M-NET baud rate
0464	-----	Timer monitoring value after a connection preparation sequence for the local station is completed
0465	-----	Polling time monitoring value for an ordinary sequence for the local station
0466	-----	Timer monitoring value from start of SAI transmission to completion of BCC transmission
0467	-----	Timer value from completion of reception to start of transmission
0468	-----	Output destination address for the spindle orientation signal

(33) Parameters related to the Cf-axis (1/1)

No.	Symbol	Description
0031#6	ESFC	In the turning mode, a feedback pulse signal from a position detector is invalid/valid.
0031#7	CNRST	In reference position return operation, a relative coordinate along the Cf-axis is not cleared/is cleared.
0032#7	ROT10	The parameter unit for inch output is 0.1 [deg/min]/1 [deg/min].

(34) Parameters related to 2-path lathes (TT) (1/1)

No.	Symbol	Description
0046#0	RSTSW	The reset key is enabled for both tool posts/only one selected tool post.
0046#1	SBAB	On the common screen, tool post 2/tool post 1 is displayed on the upper side of the screen.
0046#2	IGNAL	When an alarm is issued on a tool post, the feed hold state is set/is not set.
0047#0	TIST	The tool post selection signal is valid/invalid.
0047#1	SP2C	Graphic drawing is common to both tool posts/varies for each tool post.
0047#2	SEPH	Output destination of the manual handle pulse signal
0047#3	2SP	The number of spindles is 1/2.
0047#4	M3LMT	A wait M code is specified by No. 0243+100/Nos. 0243 to 999.
0047#5, #6	VR*	Start number of custom macro variables common to tool posts
0048#0, #1	TY*	Tool post coordinate system relationship
0048#2	ITO	Tool post interference check method
0048#3	IFM	In the manual mode, a tool post interference check is not performed/is performed.
0048#4	IFE	A tool post interference check is performed/is not performed when satisfactory conditions are present.
0048#5	ZCLR	A tool post interference check along the Z-axis is performed/is not performed.
0049#3	WTRDY	PRDY is output with the timing specific to each tool post/simultaneously.
0075#1	STHRD	Simultaneous feed per rotation and threading on both tool posts is impossible/is possible.
0381#7	IGNSIC	A serial/analog spindle is connected to tool post 2.
0383#6	FE34	On tool post 2, Cf-axis and Y-axis control is not exercised/is exercised.
0383#7	FEPA	On tool post 2, PMC axis control is not exercised/is exercised.
0384#6	FESS	A serial spindle is not connected/is connected to tool post 2.
0384#7	FECS	On tool post 2, Cs-axis control is not exercised/is exercised.
0385#7	MEMEX	On tool post 2, the part program storage length is not expanded/is expanded.
0397#4	SPCCK	Balance cut threading with one spindle on two tool posts is disabled/enabled.
0397#5, #6	BOVR*	Balance cut override
0218	-----	Number of macro variables common to tool posts
0243	-----	Third digit (hundreds digit) of a wait M code
0249	-----	Magnification for controlling the spindle speed ratio of serial interface spindles
0257 to 0263	-----	Tool post name (first to seventh characters) displayed on the screen
0264 to 0267	-----	Axis name subscript for each axis
0598	-----	Minimum program number shared by the tool posts
0730	-----	Coordinate system shift distance between the tool posts
0768, 0769	-----	Distance between the reference point of tool post 1 and the reference point of tool post 2 for each axis

(35) Parameters related to polygon turning (1/1)

No.	Symbol	Description
0069#0	PLGN3	The third axis is not set/is set as a synchronized axis for polygon turning.
0069#1	PLGN4	The fourth axis is not set/is set as a synchronized axis for polygon turning.
0069#2	PLG7	The seventh axis is not set/is set as a synchronized axis for polygon turning.
0069#3	PLG8	The eighth axis is not set/is set as a synchronized axis for polygon turning.
0069#7	PLHZ	Reference position return operation along a synchronized axis with G28 is performed by rapid traverse/always at low speed.
0667	-----	Maximum allowable speed of a synchronized axis
0668	-----	Speed of a synchronized axis
0669	-----	Jog feedrate when the rotary switch for a synchronized axis is positioned at 10
0670	-----	F0 feedrate for rapid traverse override of a synchronized axis
0671	-----	FL feedrate for reference position return along a synchronized axis
0778	-----	Travel distance per synchronized axis rotation

(36) Parameters related to synchronized control/axis recomposition (1/1)

No.	Symbol	Description
0380#0 to #5	SMR*	Synchronized control with mirror image on is not exercised/is exercised.
0380#6	SPERR	An acceleration/deceleration difference is not added/is added to an out-of-sync distance in synchronized axis recomposition.
0380#7	NRST	Synchronized axis recomposition is canceled/is not canceled upon reset.
0381#0 to #5	SER*	If an excessive position deviation occurs in synchronized axis recomposition, an alarm is not issued/is issued.
0382#0 to #5	PKU*	When parking is performed during synchronized axis recomposition, absolute and relative coordinates are not updated/are updated.
0383#0 to #5	MPM*	When synchronized axis recomposition is started, a workpiece coordinate system is not set/is set automatically.
0384#0 to #5	MPS*	At the end of synchronized axis recomposition, the workpiece coordinate system is not reset/is reset to the original one.
0385#0 to #5	MCD*	Axis recomposition with mirror image on is not performed/is performed.
0320 to 0323	-----	Master axis with which each axis is synchronized
0326 to 0329	-----	Axis of tool post 1 for which the axis of tool post 2 is used to perform axis recomposition
0686 to 0691	-----	Limit on position deviation difference in synchronized control where each axis serves as a slave axis
0692 to 0697	-----	Position deviation difference in synchronized control where each axis serves as a slave axis
0860 to 0865	-----	Reference position coordinates in the coordinate system in axis recomposition for each axis

Parameter description

[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-1) 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 "10001000"[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.
- 3) Parameter No. 0032#7 (ROT10) does not affect the input increment parameter related to the feedrate of a synchronous axis used in polygonal machining. Instead, the following apply:
 - Parameter No. 0001#0 (SCW) = 0: Least command increment of the synchronous axis \times 1000
 - Parameter No. 0001#0 (SCW) = 1: Least command increment of the synchronous axis \times 100This unit is called a PSU (polygon axis setting unit).

Setting parameter

[SETTING 1]

(1) 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.

(2) 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 = 1), 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.

(3) 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).

(4) 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)

(5) 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]

(6) PWE: Specifies whether to enable parameter writing.

- 1: Enables.
- 0: Disables.

(7) TAPEF: Specifies the type of a tape format.

- 1: F10/F11 format after conversion
- 0: FS0 standard format without conversion

[SEQUENCE STOP]

(8) 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.

0001							
	RDRN	DECI	ORC	TOC	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: Deceleration signal "1" in reference point return indicates deceleration.
0: Deceleration signal "0" in reference point return indicates deceleration.
- ORC** 1: Offset value becomes a diameter designation.
0: Offset value becomes a radius designation.
- TOC** 1: Offset is cancelled by reset button.
0: Offset is not cancelled by reset button.
- 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.

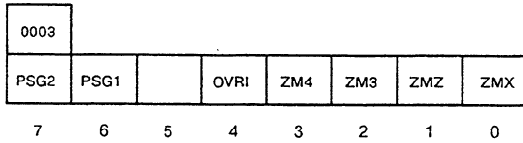
0002							
NFED	TJHD	HSLE			ASR33	PPD	STP2
7	6	5	4	3	2	1	0

- NFED** 1: Feed is not output before and after program is output by using the reader / puncher interface . (Set " 1" for FANUC cassette .)
0: Feed is output before and after program is output by using the reader / puncher interface .
(Effective when the setting parameter I / O 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.
- HSLE** 1: When the manual pulse generators are provided for two 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 two axes, the axis selecting signal is invalid. (The axes whose manual pulse generator is rotated is moved regardless of the axis selecting signal.)

(Note) when one manual pulse generator is provided, set 0 to this parameter.
- ASR33** 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 parameter I / O is 0.)

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



PSG2, 1 Gear ratio of spindle and position coder.

Magnification	PSG2	PSG1
×1	0	0
×2	0	1
×4	1	0
×8	1	1

Magnification =

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

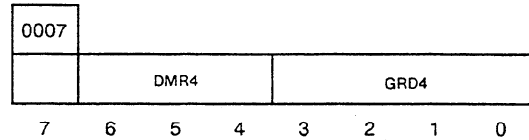
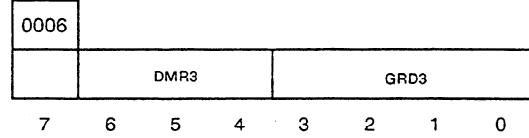
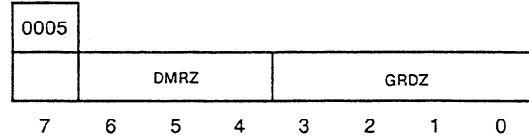
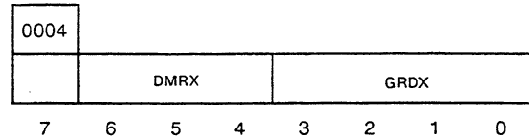
- OVRI 1: When the polarity of override signal (*OV1 to +OV8, ROV1, ROV2) is set to 1, the speed increases.
 0: When it is set to 0, the speed increases.

ZMX, ZMZ, ZM3, ZM4,

The reference point return direction and the backlash initial direction at power on for X, Z, 3rd 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.



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.

Metric system

Moving distance per 1 revolution of motor (Pulse coder)	Axis	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	X	1	1 / 0.5			4	6000
	Z	1	1			4	6000
10 mm	X	1	1 / 0.5		4		10000
	Z	1	1		4		10000
8 mm	X	1	1 / 0.5	4			8000
	Z	1	1	4			8000
6 mm	X	1 / 0.5	1	3		2 / 4	6000
	Z	1	1	3		2	6000
5 mm	X	1 / 0.5	1		2 / 4		5000 / 10000
	Z	1	1		2		5000
4 mm	X	1 / 0.5	1	2 / 4			4000 / 8000
	Z	1	1	2			4000
3 mm	X	1 / 0.5	1	1.5 / 3		1 / 2	3000 / 6000
	Z	1	1	1.5		1	3000
2 mm	X	1 / 0.5	1	1 / 2			2000 / 4000
	Z	1	1	1			2000
1 mm	X	0.5	2 / 1	1			2000
	X	0.5	2	1			2000

Note 1) In the above table, right side value is in diameter designation, and left side value is in radius designation in X axis.

Note 2) 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.

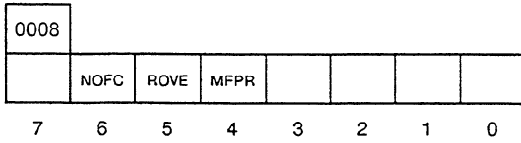
Relationship among DMR, CMR and GRD.

Inch system

Moving distance per 1 revolution of motor (Pulse coder)	Axis	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	X	1 / 0.5	1	3		2 / 4	6000
	Z	1	1	3		2	6000
0.5 inch	X	1 / 0.5	1		2 / 4		5000 / 10000
	Z	1	1		2		5000
0.4 inch	X	1 / 0.5	1	2 / 4			4000 / 8000
	Z	1	1	2			4000
0.3 inch	X	1 / 0.5	1	1.5 / 3		1 / 2	3000 / 6000
	Z	1	1	1.5		1	3000
0.25 inch	X	1 / 0.5	1		1 / 2		5000
	Z	0.5	2		2		5000
0.2 inch	X	1 / 0.5	1	1 / 2			2000 / 4000
	Z	1	1	1			2000
0.15 inch	X	0.5	2	1.5		1	3000
	Z	0.5	2	1.5		1	3000
0.1 inch	X	0.5	2	1			2000
	Z	0.5	2	1			2000

Note 1) In the above table, right side value is in diameter designation, and left side value is in radius designation in X axis.

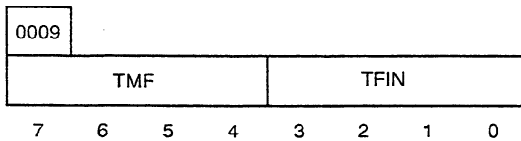
Note 2) Data in the above table is standard. Command and detect multiply ratio can be changed, but in that case there is limit for maximum feedrate.



NOFC 1: Offset counter input is not used.
0: Offset counter input is used.

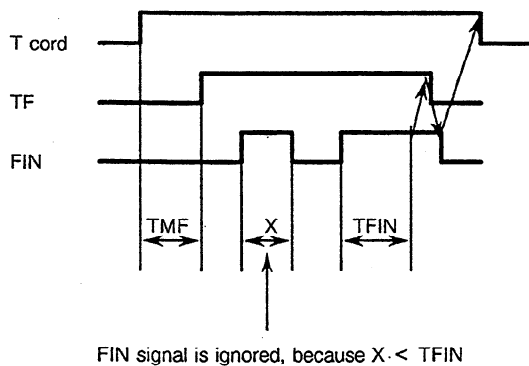
ROVE 1: Rapid traverse override signal ROV2 is not effective. (100%, Fo)
0: Rapid traverse override signal ROV2 is effective. (100%, 50%, 25%, Fo)

MFPR 1: Manual synchronous feed is done.
0: Manual synchronous feed is not done.

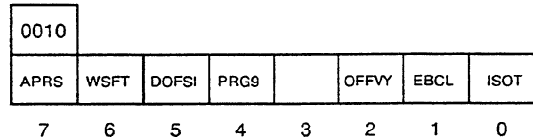


TMF Time from M, S, T code issue to MF, SF, TF issue.
Setting range : 16 to 256 msec. (16 msec increment).

TFIN Time of reception width of FIN.
Setting range : 16 to 256 msec. (16 sec increment).



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



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

WSFT 1: The direct measured value input for tool offset is set in the work shift memory.
0: The work coordinate system is not shifted.

- DOFSI 1: The direct measured value input for tool offset is effective.
 0: The direct measured value input for tool offset is effective.

- PRG9 1: The subprograms with program number 9000 to 9999 are protected. The following 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 actuated 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 display 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				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")

PML2, 1 Pitch error compensation magnification.

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

PML2	PML1	Magnification
0	0	X1
0	1	X2
1	0	X4
1	1	X8

(Common to all axes)

0012								
NFED					ASR33			STP2
	7	6	5	4	3	2	1	0

NFED 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/O is 1.)

Remarks Baudrate is set by parameter No. 0553.

ASR33 1: The 20mA current interface is used as the reader / puncher interface.
 0: FANUC PRR, FANUC cassette, or portable tape reader are used as the reader / puncher interface (Effective when the setting parameter I/O is 1.)

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 parameter I/O is 1.)

0013								
TCW	CWM	ORCW	INHMN	GOFC	GMOFS	GOFU2	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 M03 and M04..
0	1	Minus output for both M03 and M04
1	0	Plus output for M03, minus output for M04.
1	1	Minus output for M03, Plus output for M04

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

GOFC 1: The tool geometry offset is also cancelled with the designation of offset No. 0.
 0: The tool geometry offset is not cancelled with the designation of offset No. 0.

GMOFS 1: The tool geometry offset is cancelled with vector processing, i. e. tool movement
 0: The tool geometry offset is conducted by the shifting of the coordinate system.

GOFU2 1: The geometry offset number is designated by two high order digits of the T code.
 0: The geometry offset number is designated by two low order digits of the T code.

JHD 1: The manual pulse generator is valid in JOG mode.
 0: The manual pulse generator is invalid in JOG mode.

0014							
	T2T4	WIGA	OFSB		STDP	GMCL	T2D
7	6	5	4	3	2	1	0

- T2T4**
- 1: When the T code is designated with a 2 - digit value, it is regarded that the two high order digits are equal to the two low order digits and the T code is set to the 4 - digit value.
 - 0: When the T code is designated with a 2 - digit value, the two high order digits are regarded as 00, and the T code is set to the 4 - digit value.

Remarks Effective only when parameter TD2=0 at No.014.

- WIGA**
- 1: Setting of the tool wear offset amount is limited to incremental designation, and the setting of the tool geometry offset amount is limited to absolute designation.
 - 0: The incremental and absolute designations are possible for both tool wear offset amount and tool geometry offset amount.

- OFSB**
- 1: Tool offset is conducted together with axis movement.
 - 0: Tool offset is conducted by the T code block.
(The tool geometry offset by the shifting of the co-ordinate system is conducted by the T code block regardless of this parameter.)

- STDP**
- 1: The actual spindle speed and the T code are always displayed.
 - 0: The actual spindle speed and the T code are not always displayed.

- GMCL**
- 1: Cancels the tool geometry offset vector by resetting.
 - 0: Does not cancel the tool geometry offset vector by resetting.

- T2D**
- 1: T code is specified in 2 - digit.
 - 0: T code is specified in 4 - digit.

0015							
CPRD	REP	PRWD	MORB	SKPF	COTZ	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.

- 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.

- PRWD**
- 1: Rewind signal is output by portable tape reader.
 - 0: Rewind signal is not output by portable tape reader.

MORB 1: The direct measured value input for tool offset and work coordinate system shift is performed by retracting both 2 axes after cutting and pushing the RECORD button. (FANUC PMC-L/M is necessary for this function)

0: The RECORD button is not provided for direct measured value input.

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).

COTZ 1: The over-travel limit signal (*+LZ) is invalid.

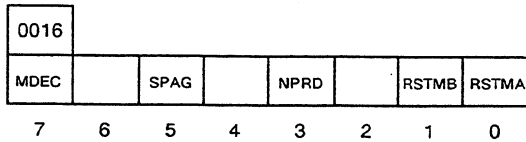
0: The over-travel limit signal (*+LZ) is valid.

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.

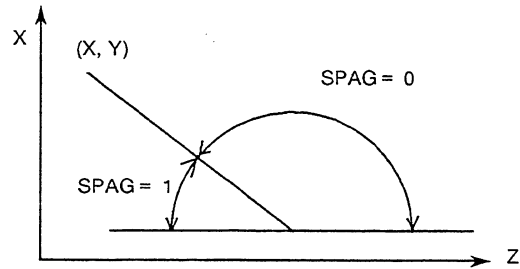


MDEC 1: M code is output in decode signal. (not available)

0: M code is output in BCD 2 digits.

SPAG 1: A supplementary angle is given in the angle specification in direct drawing dimensions programming.

0: Normal specifications in the angle specification in direct drawing dimensions programming.



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

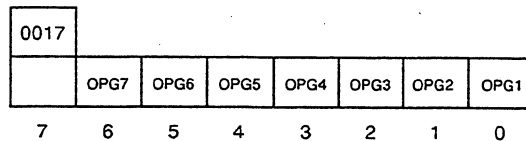
0: Input and display with decimal point is effective.

RSTMB 1: B group decode M signal (M21A, M22A) is cleared by reset. (not available)

0: B group decode M signal is not cleared by reset.

RSTMA 1: A group decode M signal (M11A to M13B) is cleared by reset. (not available)

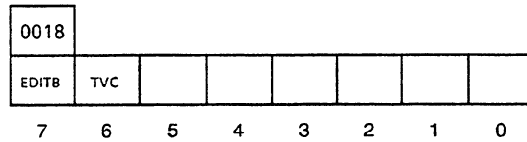
0: A group decode M signal is not cleared by reset.



OPG7 1: Feed hold is effected with the software operator's panel.

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

- OPG6 1: Pct key is actuated with the software operator's panel.
 0: Protect key is not actuated with the software operator's panel.

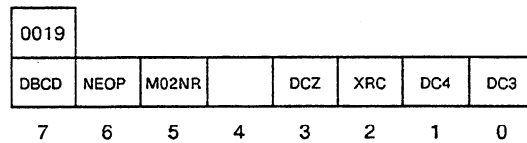


- OPG5 1: Optional block skip, single block, machine lock and dry run switches are actuated with the software operator's panel.
 0: The above switches are not actuated with the software operator's panel.

- 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.

- OPG4 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



- OPG3 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.

- 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..

- 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.

- M02NR 1: Return to the head of program after executing M02.
 0: Do not return to the head of program after executing M02.)

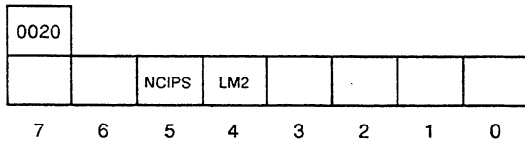
- OPG1 1: JMode select (MD1 to MD4, ZRN) is conducted from the software operator's panel.
 0: Mode select is not conducted from the software operator's panel.
 (Note) The above parameters are effective only when the optional software operator's panel is selected.

- DCZ 1: Diameter designated for Z axis (Disable)
 0: Radius designated for Z axis.

- XRC 1: Radius designated for X axis
 0: Diameter designated for X axis

- DC4 1: Diameter designated for 4th axis (Disable)
 0: Radius designated for 4th axis.

- DC3 1: Diameter designated for 3rd axis (Disable).
 0: Radius designated for 3rd axis.

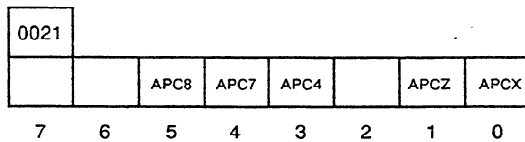


NCIPS 1: In deceleration, the control proceeds to the next block after the specified speed has become zero.
The control does not confirm that the machine position meets a specified position.(No inposition checking).

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).

LM2 1: The switching signal (G129.6) of stroke limit 2 is enabled.

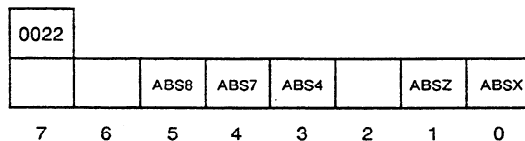
0: The switching signal (G129.6) of stroke limit 2 is disabled.



APCX, Z, 4, 7, 8

1: When absolute pulse coder is optioned.

0: When absolute pulse coder is not optioned.



ABSX, Z, 4, 7, 8

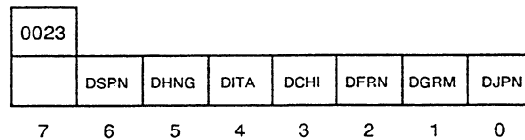
1: Reference point position in absolute pulse coder is settled.

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

(It is automatically set to "1" when manual reference 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 execute manual reference point return after power off/on.



DSPN The CRT screen is displayed in Spanish.

DHNG The CRT screen is displayed in Hangeul.

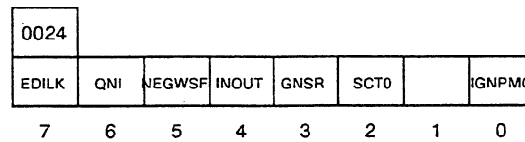
DITA CRT screen is displayed in Italian

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.



EDILK 1: Interlock signal per axis direction is valid.
0: Interlock signal per axis direction is invalid.

QNI 1: Automatic selection of tool offset number is done during offset writing mode.
0: Automatic selection of tool offset number is not done during offset writing mode.

NEGWSF

1: When work shift amount is input in incremental system, sign is converted and input to memory.

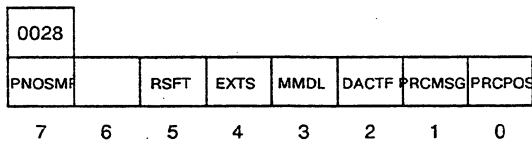
0: When work shift amount is input in incremental system, sign is not converted.
(Usual)

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.

GNSR 1: Programmed position is drawn in graphic function.
 0: Actual position where tool nose radius compensation is thought in is drawn in graphic function.

SCTO 1: Spindle speed reach signal is checked.
 0: Spindle speed reach signal is not checked.

IGNPMC 1: Control by PMC is made ineffective.
 (Same as without PMC.)
 0: Control by PMC is made effective.



PNOSMP 1: In seeking the average spindle speed, the sampling time is made once.
 0: In seeking the average spindle speed, the sampling is made four times.
 (Usually, set 0.)

RSFT 1: MX value is entered with a radius value in work coordinate system shift.
 0: MX value is entered with a diameter value in work coordinate system shift.
 (It is valid only when radius designation XRC=1.)

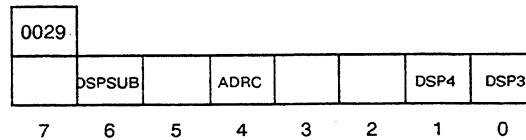
EXTS 1: External program number search is valid.
 0: External program number search is invalid.

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 position 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.



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).

ADRC 1: Use "I" or "K", not "C" for the address in chamfering and corner radius (R). For the addresses used for direct drawing dimension programming, use "C" and "R" (a comma is put before C and R).
 0: For the address in chamfering, corner R, and direct drawing dimension programming, use "C" and "R" as per the standard specification.
 (3rd axis cannot be used with address "C".)

DSP3, 4 The current position of 3rd and 4th axes is displayed in sequence.
 1: The present position is displayed.
 0: The present position is not displayed.

0030								
G91			ADW40					ADW30
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.

ADW30, 40

The name of 3rd and 4th axes is specified in sequence.

- 1: The name is C and the Y axis control is used.
 0: The name is B.

0031								
CNRST	ESFC	ADDCF	RTCT	ILVL	TAPM	SDRT	SNRL	
7	6	5	4	3	2	1	0	

- CNRST** 1: At the time of reference point return, Cf axis relative coordinate value is cleared.
 0: At the time of reference point return, Cf axis relative coordinate value is not cleared.

- ESFC** 1: Even in the turning mode (Signal COFF is closed) in Cf axis control, the feedback pulse from the position detector becomes effective.
 0: The feedback pulse in the turning mode in Cf axis control becomes invalid.

- ADDCF** 1: Signals DRN, GR1, GR2 are set to G123 (DGN 123) of PMC address.
 0: Signals DRN, GR1, GR2 are set to G118 (DGN 118).
 (standard specifications).

- RTCT** 1: In the deep hole drilling cycle (G83, G87), the tool returns to R point level in the course of drilling. (B type)

- 0: In the deep hole drilling cycle (G83, G87), the tool returns by the retract amount in the course of drilling. (Type A)

- ILVL** 1: In the drilling cycle, the initial point level is updated by resetting.
 0: In the drilling cycle, no initial point level is updated by resetting.

- TAPM** 1: In the tapping cycle, M05 is sent out first when the spindle rotates CW and CCW.
 0: In the tapping cycle, M03 and M04 are sent out when the spindle rotates CW and CCW.

- SDRT** 1: The spindle indexing direction by M command is minus.
 0: The spindle indexing direction by M command is plus.

- SNRL** 1: The spindle indexing mode is released by resetting.
 0: The spindle indexing mode is not released by resetting.

0032							
ROT10	EACSB	BLIN	PNGMLK	LIN4	LIN3		
7	6	5	4	3	2	1	0

- ROT10** 1: The parameter unit of JOG feed, cutting feed upper limit speed, rapid Fo speed and FL speed for reference point return at the time of inch output for Cs axis is 1 deg / min
 0: The parameter unit is 0.1 deg / min.

- 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.)

- BLIN** 1: For B8 - digit input, the input unit when the decimal point is inputted is 1.000 (metric system) and 1.0000 (inch system).
 0: 1.000 regardless of the input unit.

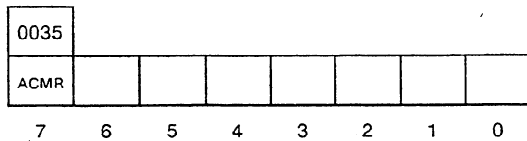
PNGMLK 1: In PMC axis control, machine lock shall be invalid.

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

LIN3, 4 Selection of linear / rotary axis for 3rd and 4th axis.

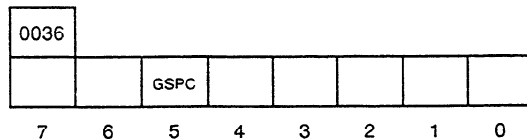
1: Linear axis

0: Rotary axis



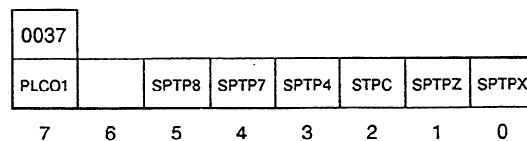
ACMR 1: Optional CMR is used.

0: Optional CMR is not used.



GSPC 1: Special G code system shall be C type.

0: Special G code system shall be B type.



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.

SPTPX to SPTP8

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

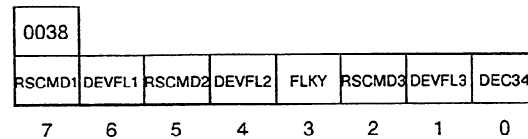
1: The separate type pulse coder is to be used as a detector.

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

In case of the 0-G with 0.1 μ pulse coder, set the following parameters in units of 1 μ . (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	SERRZ 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 (Z) - 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



RSCMD1, DEVEL 1 :

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

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

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

0: CRT / MDI keyboard uses a standard key.

RSCMD2, DEVFL 2 :

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

RSCMD3, DEVFL 3 :

Setting I / O 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.

DEC34: Changes deceleration signals for reference point return *DEC3 / *DEC4 addresses

	DEC34 = 0	DEC34 = 1
*DEC 3	X19.7	X16.7
*DEC 4	X19.5	X17.7

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 to 149) in (vacant) state during resetting.

TMCR 1: T code calling subprogram O9000
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 machined and 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							
				ROVC	ZRNJF		
7	6	5	4	3	2	1	0

ROVC 1: Signals ROV1D - ROV3D are used for a rapid traverse override signal.

0: Signals ROV1 and ROV2 are used for a rapid traverse override signal.

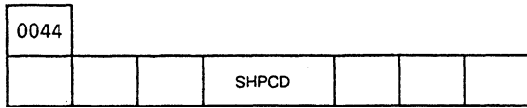
ZPNJF 1: Manual reference point return is executed in the jog feed mode.

0: Manual reference point return is not executed in the jog feed mode.

Valid only when PMC is provided.

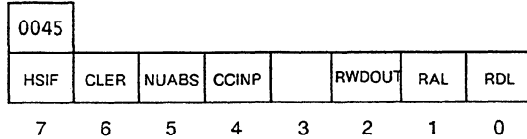
0042							
			ASTCD				
7	6	5	4	3	2	1	0

0043							
			EQCD				
7	6	5	4	3	2	1	0



ASTCD, EQCD, SHPCD:

Set the hole pattern of *, =, # of EIA codes in custom macro B in sequence, using 8-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.

NUABS 1: Returns to the status when the coordinate system is ON with machine lock signal OFF. (Disable)

0: Does not return to the status when the coordinate system is ON with machine lock signal OFF.

CCINP 1: In-position width between a feed block and a feed block is set by another parameter (No. 0609 to 0612) (Must not be used)

0: In In-position width is set by normal parameter.

RWDOUT 1: No signal is outputted in rewinding.

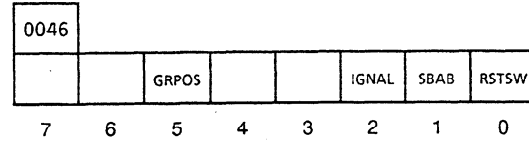
0: A signal is outputted in rewinding.

RAL 1: Registers only one program for reading through reader/ puncher interface.

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.

IGNAL 1: Even when an alarm occurs on the other tool post, no feed hold status is reached.

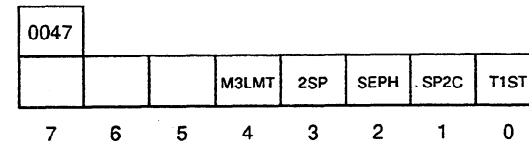
0: When an alarm occurs on the other tool post, the feed hold status is selected. (only 0-TT)

SBAB 1: Head 1 is upper on the common screen. (only 0-TT)

0: Head 2 is upper on the common screen.

RSTSW 1: The reset key is valid only for the tool post (only 0-TT)

0: The reset key is valid for both tool posts.



M3LMT 1: The range of the waiting M code is (Parameter No. 243 value) x 100 to 999. (only 0-TT)

0: The range of the waiting M code is (parameter No. 243 value) x 100 to 100.

2SP 1: Two spindle (Two spindle Two tool posts) (only 0-TT)

0: Single spindle (Single spindle Two tool posts)

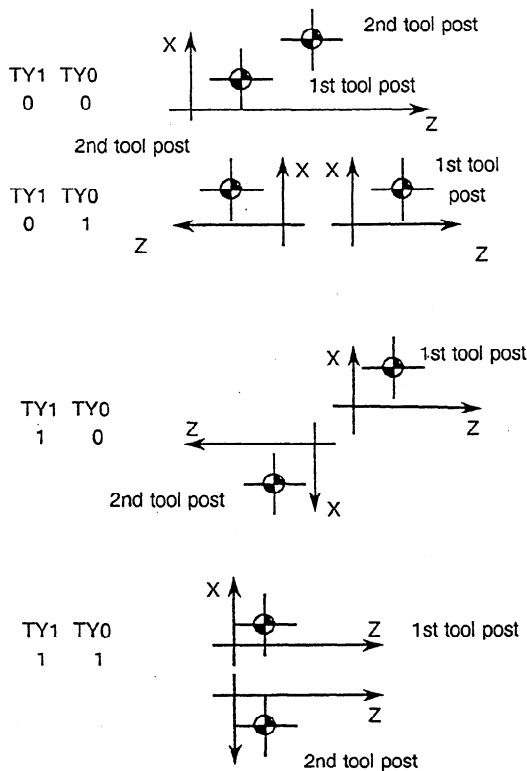
- SEPH 1: The 1st handle pulse of manual handle feed is sent to 1st tool post, and the 2nd handle pulse to the 2nd tool post. (only 0-TT)
 0: The handle pulse of manual handle feed is sent in parallel to both tool posts.
- SP2C 1: Graphics are drawn on a single screen for both tool posts. (only 0-TT)
 0: Graphics are drawn on a separate screen by both tool posts.
- T1ST 1: Tool post selecting signal is invalid (HEAD1 only). (only 0-TT)
 0: Tool post selecting signal is valid.

0048							
			IFE	IT0	IFM	TY1	TY0
7	6	5	4	3	2	1	0

Remarks: for 0-TTC only

Set the parameter only to 1st tool post

TY1, TY0: Set the relation of coordinate system for both tool posts.



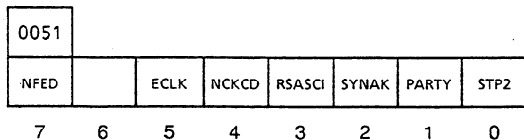
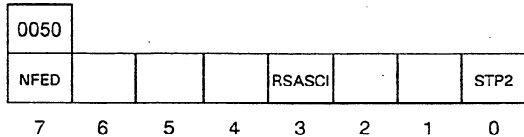
- IFE 1: Even when the conditions for tool post checking are established, no tool post interference is checked.
 0: When the conditions for tool post checking are established, tool post interference is checked.
- IT0 1: When Offset No. 0 is designated by T code, interference check is continued according to the current Offset No.
 0: When Offset No. 0 is designated by T code, tool post interference check is interrupted until offset No. other than 0 is designated by the next T code.
- IFM 1: Tool post interference is checked in the manual mode.
 0: Tool post interference is not checked in the manual mode.

0049							
FML10	NPRV	EFML10	S3JOG		CHKSP		
7	6	5	4	3	2	1	0

- 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.
- 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.

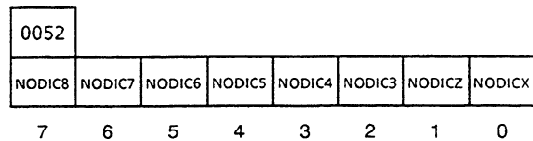
- CHKSP** 1: Spindle fluctuation detection is operative even when the PMC signal "SIND" is on.
 0: Spindle fluctuation detection is inoperative even when the PMC signal "SIND" is on.



- 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.

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

- 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.



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.

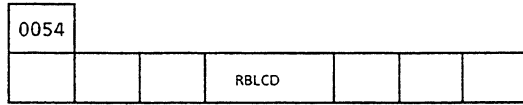
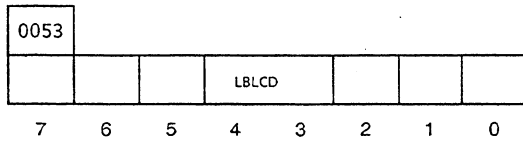
- NCKCD** 1: Signal (CD) status is not monitored in the remote buffer interface.
 0: Signal (CD) status is monitored in the remote buffer interface.

- 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.

NODICX-NODIC8:

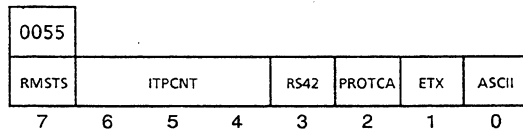
For increment system 1/10, this sets whether the decimal point position of the current position display of each axis during PMC axis control is made identical to increment system 1/10 or not.

- 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.



- 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).

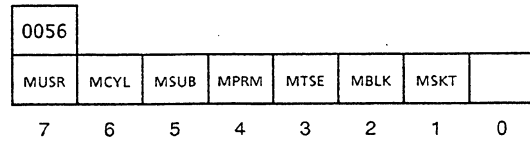
- ITPCNT** 000: Interpolates G05 data in 8 msec.
- 001: Interpolates G05 data in 2 msec.
- 010: Interpolates G05 data in 4 msec.
- 011: Interpolates G05 data in 1 msec.
- 100: Interpolates G05 data in 16 msec.

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

- 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.

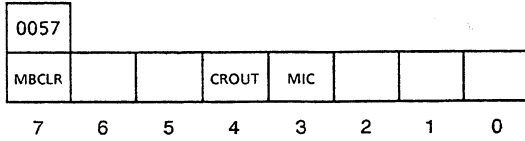
- MSUB** 1: The local variable of interruption program is the same as that of the main program. (Subprogram type)
- 0: The local variable of interruption program unique. (Macro type)

- 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)

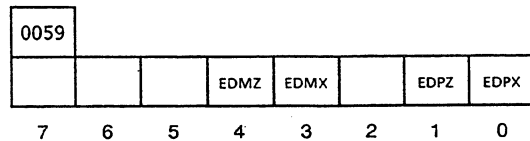
- MSKT** 1: At interruption, an absolute coordinate is set to a skip coordinate.
 0: At interruption, an absolute coordinate is not set to a skip coordinate.



- MBCLR** 1: MDI-B program is cleared by the reset operation.
 0: MDI-B program is not cleared by the reset operation.

- 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 not multiplied by ten.



EDMX,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.

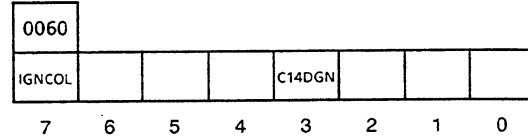
(Note) The deceleration speed is specified with parameter No. 0636.

EDPX,EDPZ

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

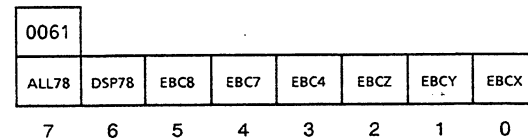
- 1: External deceleration is valid for rapid traverse and cutting feed.
 0: External deceleration is valid only for rapid traverse.

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



- IGNCOL** 1: 9" high-resolution color display.
 0: 9" high-resolution monochrome display.

- C14DGN** 1: 14" diagnose screen.
 0: 9" diagnose screen.

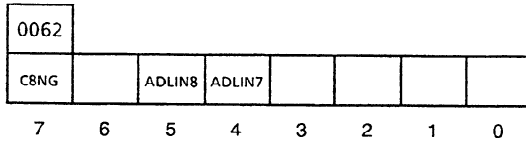


EBCX - EBC8

- 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.

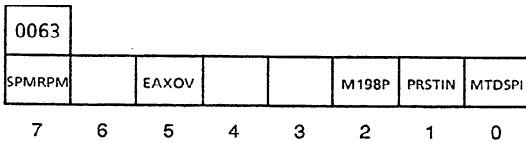


ADLIN7,ADLIN8

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.



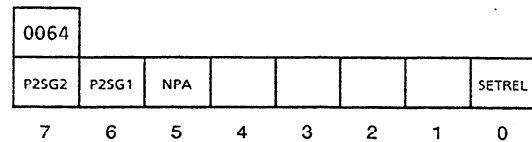
- SPMRPM**
- 1: At S5-digit analog control, the maximum spindle speed is 99999rpm.
 - 0: At S5-digit analog control, the maximum spindle speed is the standard value.

- EAXOV**
- 1: Dry run and override is valid for the PMC axis.
 - 0: Dry run and override is invalid for the PMC axis.

- M198P**
- 1: The address P of M198 indicates a program number.
 - 0: The address P of M198 indicates a file number.

- PRSTIN**
- 1: 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.



P2SG2, P2SG1

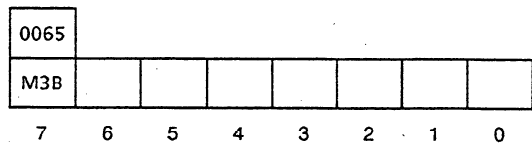
The gear ratio between the spindle and the 2nd position coder.

Magnification	P2SG2	P2SG1
×1	0	0
×2	0	1
×4	1	0
×8	1	1

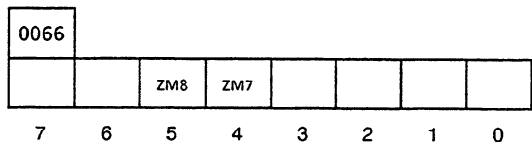
$$\text{Magnification} = \frac{\text{Spindle magnification}}{\text{2nd position coder speed}}$$

- 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.

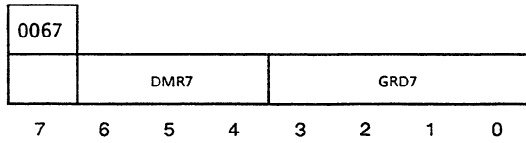


- M3B**
- 1: Maximum 3M codes can be designated in one block.
 - 2: M-code designations in one block are as usual.

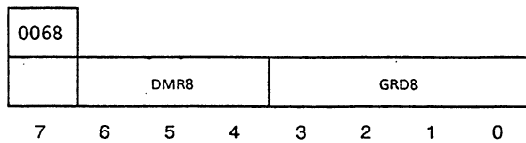


ZM7,ZM8 This is used to set the reference point return direction of the 7th and 8th axes, and the backlash initial direction at power on.

- 1: Minus
- 0: Plus



Refer to the parameter Nos. 0004 - 0007.

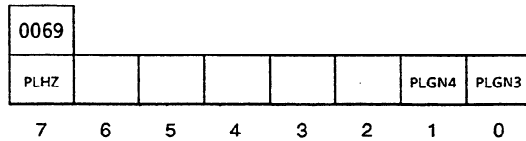


DMR7, DMR8:

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

GRD7, GRD8:

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



PLHZ

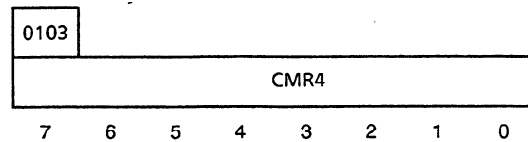
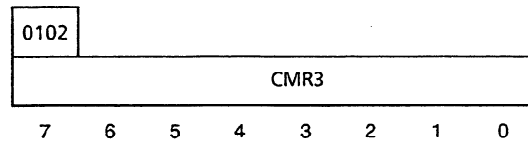
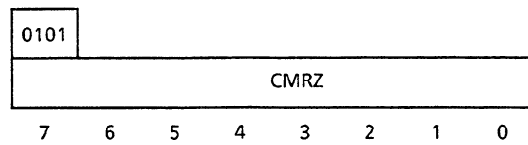
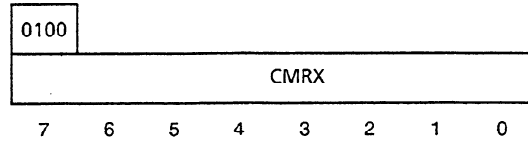
- 1: When the reference point return has been done twice or more times after the power is turned on, the reference point return of the synchronous axis by the command G28 should be the positioning at a rapid traverse speed.
- 0: The reference point return of the synchronous axis by the command G28 should be always low speed (the same method as the manual reference point return).

PLGN3, PLGN4

- 1: The 3rd axis is used for the synchronous axis used in polygon machining.
- 0: The 4th axis is used for the synchronous axis used in polygon machining.

(Note) Set one of PLGN3 and PLGN4 to 1. The 4th axis is the synchronous axis if the both are 0, and the 3rd axis is the synchronous axis if the both are 1. The axis used as asynchronous axis must be the axis that is usable as an NC control axis or a PMC control axis.

All subsequent parameters are set in decimal



CMRX, CMRZ, CMR3, CMR4 :

Command multiply for X, Z, 3rd 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:

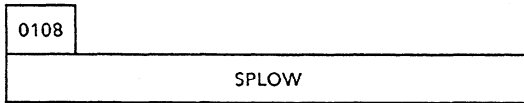
$$\text{Preset value} = \frac{1}{\text{Command m multiply}} + 100$$

2) When a command multiply is 2 to 48 :

$$\text{Preset value} = 2 \times (\text{Command multiply})$$

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

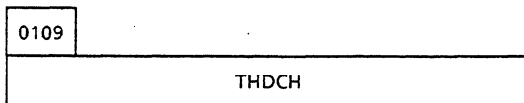
(Note 2) Set the backlash compensation and pitch error compensation values with detection unit when an arbitrary command multiply is used.



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

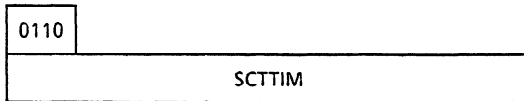
$$\text{Setting value} = \frac{\text{Spindle motor speed at gear shift}}{\text{Max. motor speed}} \times 4095$$

Setting range : 0 to 255
(unit : rpm (10 [rpm] by parameter (No. 0062 #3) = 1))



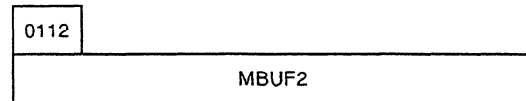
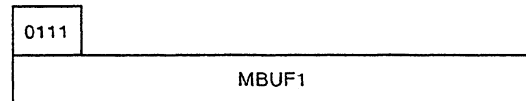
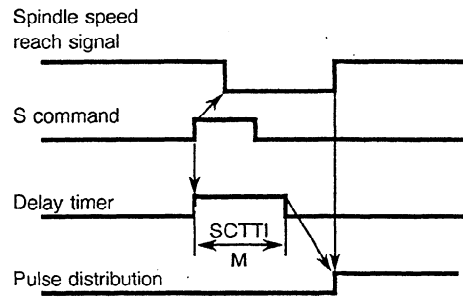
THDCH Width of chamfering for thread cutting cycle in G92.

Setting range: 0 to 127 (unit: 0.1 lead)



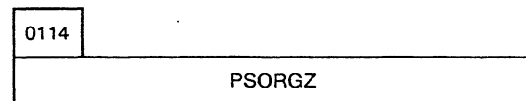
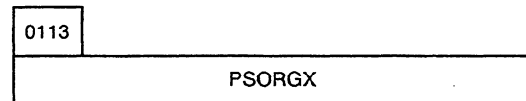
SCTTIM Set the delay timer for checking the spindle speed reach signal. This sets the time required from execution of the S function to the beginning of checking the spindle speed reach signal.

Setting range: 0 to 255 (unit: msec)



MBUF1, 2

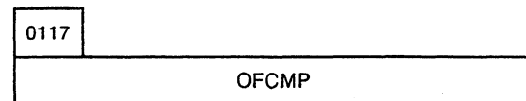
Up to two M codes which are not subjected to buffering for the next block can be set. When 03 is set, M03 is not subjected to buffering for the next block.



PSORGX; PSORGZ

Grid numbers at the reference point of X and Z axes, respectively.

Setting range: 0 to 255



0118
TLCMP

0119
OFMAX

0120
TLMAX

Parameters related with tool life management.

- OFCMP Offset value compensation value
Setting value; 0 - 32.
- TLCMP Tool selection number compensation value
Setting value: 0 - 99
- OFMAX Maximum value of offset number
Setting value: 0 - 32
- TLMAX Maximum value of tool selection number
Setting value : 0 - 99

0121
MULHPG

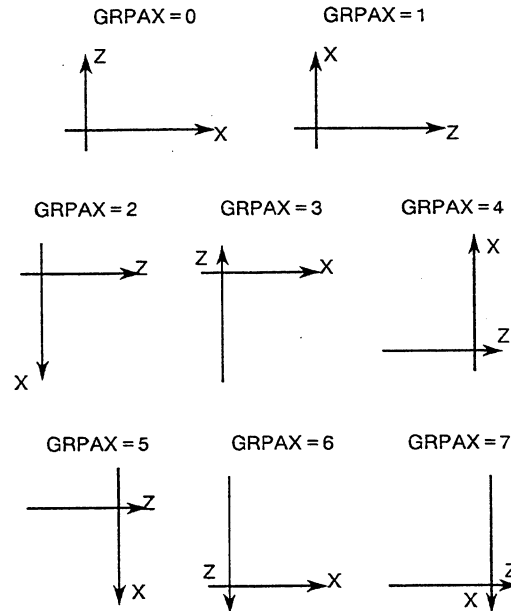
- MULHPG Multiplier n of the manual handle feed.
Setting value: 1 - 127
Multiplier n when selection signal MP2 for the manual hand feed move distance in on, set to 100 as a standard value.

0122
OFSNO

- OFSNO Setting of tool offset number in tool offset value direct input function B (at the setting of work coordinate system shift amount).
Setting value: 1 - 32

0123
GRPAX

GRPAX Graphic coordinate system setting in graphic function



(Nnote) The difference between GRPAX=0, 1, 2 and GRPAX=3, 4, 5 is the difference that the work coordinate system zero point is at chuck side or not.

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

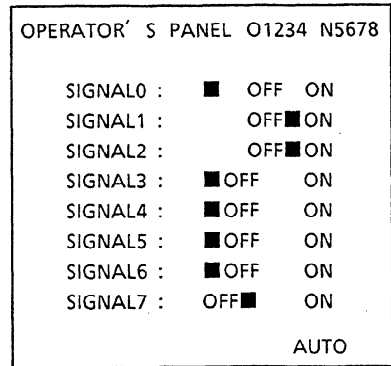
(Example) When setting ↑ to +X, ↓ to -X, → to +Z, ← to -Z, ↙ to +3 and ↗ to -3 set as follows.

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

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 0 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 corresponding 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		"	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
O	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		△	092	
3	051		¥	093	Yen symbol
4	052		□	094	Right square bracket
5	053		—	095	Underline

0204	CCLMP
------	-------

CCLMP M-code of C-axis clamp in the drilling cycle
Setting value : 00 to 99

0212	DFXM03
------	--------

DFXM03 For the hole machining canned cycle the spindle forward rotation M code setting value is 1~255. (If 0 is set then M03 is output.)

0213	DFXM04
------	--------

DFXM04 For the hole machining canned cycle the spindle reverse rotation M code setting value is 1~255. (If 0 is set then M04 is output.)

0219	MDCDNT
------	--------

MDCDNT 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.)

0220	UMGCD0
------	--------

⋮

0229	UMGCD9
------	--------

Set up to 10 G codes calling custom macro.

UMGCD0: G code calling custom macro body O9010

UMGCD1: G code calling custom macro body O9011

UMGCD2: G code calling custom macro body O9012

UMGCD3: G code calling custom macro body O9013

UMGCD4: G code calling custom macro body O9014

UMGCD5: G code calling custom macro body O9015

UMGCD6: G code calling custom macro body O9016

UMGCD7: G code calling custom macro body O9017

UMGCD8: G code calling custom macro body O9018

UMGCD9: G code calling custom macro body O9019

Setting value: 001 to 225

(With M00, no custom macro can be called.

Even when 0 is set, it is equivalent to no setting.)

0230	UMMCD4
------	--------

⋮

0239	UMMCD13
------	---------

Set up to 10 M codes calling custom macro.

UMMCD4: M code calling custom macro body O9020

UMMCD5: M code calling custom macro body O9021

UMMCD6: M code calling custom macro body O9022

UMMCD7: M code calling custom macro body O9023

UMMCD8: M code calling custom macro body O9024

UMMCD9: M code calling custom macro body O9025

UMMCD10: M code calling custom macro body O9026

UMMCD11: M code calling custom macro body O9027

UMMCD12: M code calling custom macro body O9028

UMMCD13: M code calling custom macro body O9029

Setting value: 006 to 255

(With M00, no custom macro can be called.

Even when 0 is set, it is equivalent to no setting.)

0240	UMMCD1
------	--------

0241	UMMCD2
------	--------

0242	UMMCD3
------	--------

Set up to 3 M codes calling custom macro.

- UMMCD1: M code calling custom macro body O9001
- UMMCD2: M code calling custom macro body O9002
- UMMCD3: M code calling custom macro body O9003

Setting value: 003 to 255
 (With M00, no custom macro can be called.
 Even when 0 is set, it is equivalent to no setting.)

0243	WAITM
------	-------

WAITM: Setting of the minimum value of 3-digit code which becomes a waiting M code (only OTT); Input the 3rd digit figure as a setting value. Up to 100 waiting M codes are available.

Example) When the setting value = 5, the waiting M codes are 500 to 599.

0246	MCALL
------	-------

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 M198.

Set value: 1 - 255

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

0250	BRATE2
------	--------

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

0251	BRATE3
------	--------

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

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

Setting No	Baud rate
1	50
2	100
3	110
4	150
5	200
6	300
7	600
8	1200
9	2400
10	4800
11	9600
12	19200

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

0269
SVAXX

0270
SVAXZ

0271
SVAX3

0272
SVAX4

0273
SVAX7

0274
SVAX8

- SVAXX Set the servo axis number to output the X-axis command.
- SVAXZ Set the servo axis number to output the Z-axis command.
- SVAX3 Set the servo axis number to output the 3rd 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.

0-TC or tool post 1 of 0-TTC

Setting value	Axis number	Connector number	
		A or B phase pulse coder	Serial pulse coder
1	1	M34, M35	M184, M185
2	2	M37, M38	M187, M188
3	3	M44, M45	M194, M195
4	4	M47, M48	M197, M198
5	7	M134, M135	M224, M225
6	8	M137, M138	M227, M228

Tool post 2 of 0-TTC

Setting value	Axis number	Connector number	
		A or B phase pulse coder	Serial pulse coder
1	1	M64, M65	M204, M205
2	2	M67, M68	M207, M208

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
- X axis : Servo axis No.1
- Z axis : Servo axis No.3
- 3rd 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 3.

	Set Value
0269	1
0270	3
0271	4

(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	PSELP3
------	--------

0280	PSELP4
------	--------

PSELP3, PSELP4:

Set the axis in the basic coordinate system for the 3rd axis and 4th axis.

Set value	Meaning
2	Y-axis of basic 3 axes (T-group)
5	Axis parallel to X-axis
6	Axis parallel to Y-axis
7	Axis parallel to Z-axis

0281	PSYNCZ + PSYNCX
------	-----------------

0282	PSYNC3 + PSYNC4
------	-----------------

PSYNCX, PSYNCZ, PSYNC3, PSYNC4:

Set the axes to be simultaneously controlled by the X, Z, 3rd and 4th axes, respectively.

Set value 0 - 3

0: Synchronized with X-axis.

1: Synchronized with Z-axis.

2: Synchronized with the 3rd axis.

3: Synchronized with the 4th axis.

Setting method

Tens: PSYNCZ,PSYNC4

Units: PSYNCX,PSYNC3

Example) When the 3rd axis and 4th axis are synchronized with Z and X axes, respectively:

Set value 10

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.)

0291	PLIID1
------	--------

0292	PLIID2
------	--------

PLIID1, PLIID2:

Set the control numbers of linear axis and rotary axis for polar coordinate interpolation.

PLIID1: Specifies the linear axis.

PLIID2: Specifies the rotary axis.

Set Value	Controlled axis
1	X
2	Z
3	C
4	Y

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.

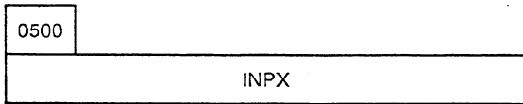
0 : The tool life is counted for each identical tool number.

(Example) When TLCSAM = 0

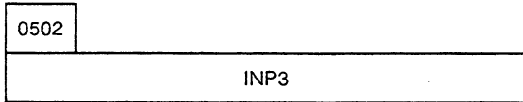
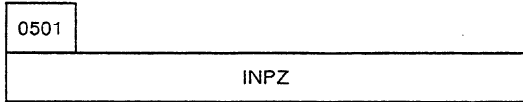
Tape format	Meaning
:	
P004L0500 ; T0101 ; T0105 ; T0108 ; T0206 ; T0203 ; T0202 ; T0209 ; T0304 ; T0309 ; P005L1200 ; T0405 ; :	<p>Tools having the same tool number in group 4 are used 500 times or for 500 minutes in total along the program steps group (1) to (3).</p> <p>(1) for 500 minutes in total along the program steps group (1) to (3).</p> <p>(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, 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.</p> <p>(3)</p>

(Example) When TLCSAM = 1

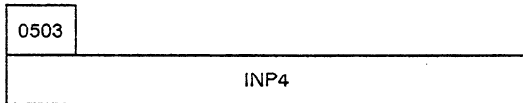
Tape format	Meaning
:	
P004L0500 ; T0101 ; T0105 ; T0108 ; T0206 ; T0203 ; T0202 ; T0209 ; T0304 ; T0309 ; P005L1200 ; T0405 ; :	<p>Each tool in group 4 is used 500 times or for 500 minutes. The tools are not regarded as the same tools.</p> <p>When the group is specified three times in a single process, 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.</p>



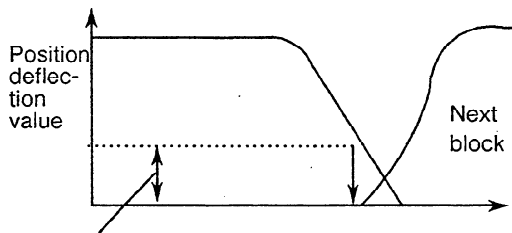
Remarks: Standard setting 20 (metric output)
12 (inch output)



INP3 In-position width for 3rd axis.
Setting range : 0 to 32767 (detection unit)

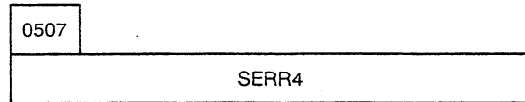
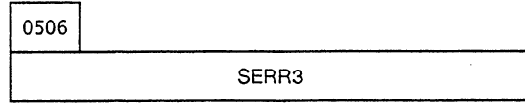
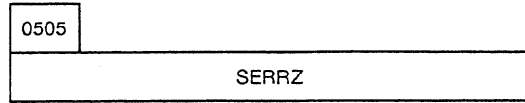
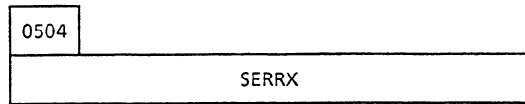


INPX, INPZ, INP3, INP4
In-position width for X, Z, 3rd and 4th axis, respectively.
Setting range: 0 to 32767 (detection unit)



In-position width

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.



SERRX, SERRZ, SERR3, SERR4

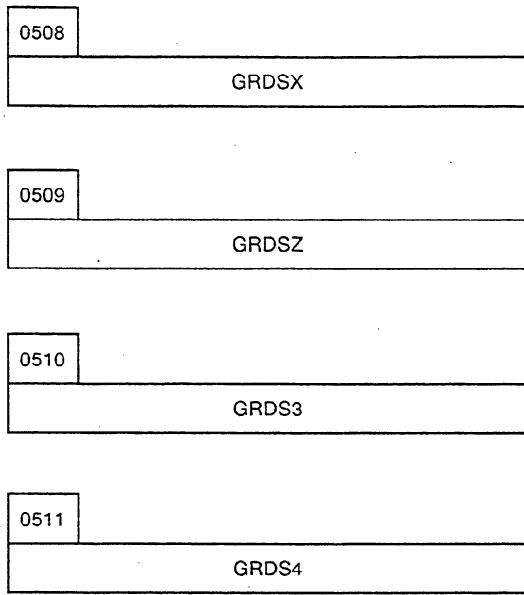
Limitation value of position deviation amount during movement for X, Z, 3rd and 4th axis, respectively.

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.



GRDSX, GRDSZ, GRDS3, GRDS4

Setting of grid shift amount of X, Z, 3rd and 4th axis, respectively.

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

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

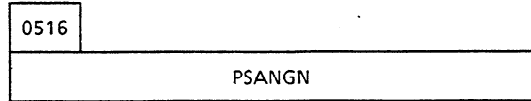
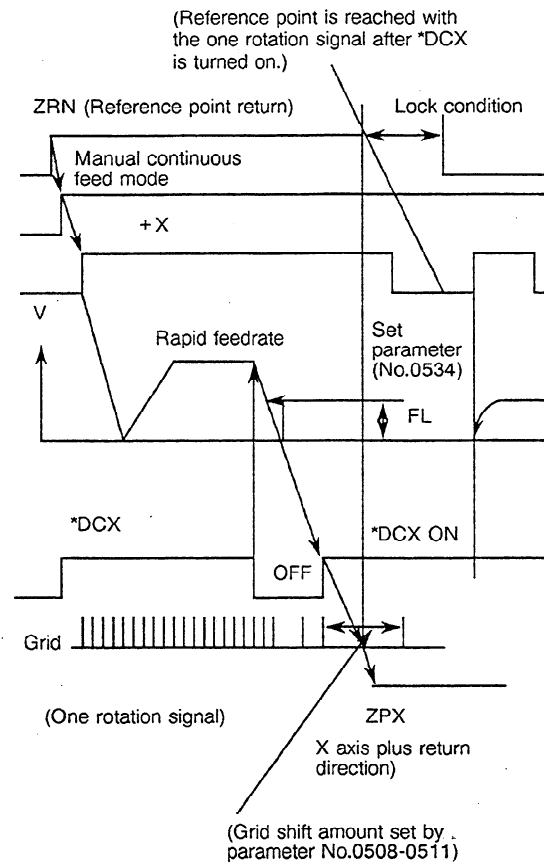
(1) Reference point return procedure (Grid method)

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)



S4/S5 digits control (Analog output)

PSANGN

Sets the data for adjusting the gain of constant surface speed control. (analog output)

Setting range: 700 to 1250

Standard setting value : 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 (10V) 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	RPDFZ
------	-------

0520	RPDF3
------	-------

0521	RPF4
------	------

RPDFX, RPDFZ, RPDF3, RPF4
 Rapid traverse rate of X, Z, 3rd 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 setting values.

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

0522	LINTX
------	-------

0523	LINTZ
------	-------

0524	LINT3
------	-------

0525	LINT4
------	-------

LINTX, LINTZ, LINT3, LINT4
 Time constant of linear acceleration/deceleration of X, Z, 3rd and 4th axes in turn during rapid traverse.
 Setting range: 8 to 4000 (unit: msec.)

0526	THRDT
------	-------

THRDT The time constant value of X axis in thread cutting cycle (G92).
 Setting range: 1 to 4000 (unit: msec.)
 Set the most suitable value to this parameter in combination with the parameter THDFL (parameter No. 0528).

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.

0528
THDFL

THDFL The lower limit value (FL) of X axis acceleration/deceleration in thread cutting cycle. (G92)
Setting range :
6 to 15000 unit: mm/min (mm output)
6 to 6000 unit: 0.1 inch/min (inch output)
Set the most suitable value to this parameter in consideration of the parameter No. 0526.

(Note 1) In increment system the unit is the same
Remarks: See parameter No. 0526.

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 1/10, the unit is the same.

0531
SPALW

SPALW Tolerance (q) at which the actual spindle speed is regarded to reach the command value in the spindle speed fluctuation detection.
Setting range: 1 to 100 (%)
(For constant surface speed control)

0532
SPLMT

SPLMT Spindle speed fluctuation (r) at which an alarm is indicated in the detection of spindle speed fluctuation.
Setting range: 1 to 100 (%)
(For constant surface speed control)

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 1/10, 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 1/10, the unit is the same.

0535	BKLX
------	------

0536	BKLZ
------	------

0537	BKL3
------	------

0538	BKL4
------	------

BLKX, BKLZ, BKL3, BLK4

Backlash amount of X, Z, 3rd and 4th axes, respectively.

Setting amount :

0 to 2550 unit: 0.001mm (mm output)

0 to 2550 unit: 0.0001inch (inch output)

In diameter programming, set the value of X axis in diameter value.

(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.

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.

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

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

The lower limit of the spindle motor speed

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

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

The lower limit of the spindle motor speed

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

- 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, GR10) are output for the specified S code, as shown in the Fig. above.

0539
SPDLC

SPDLC Sets the spindle speed offset compensation value, that is, compensation value of zero offset of spindle speed command voltage. (for constant surface speed control)
Setting range: 0 to +8191
(unit: VELO)

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

0540
GRMX1

0541
GRMX2

0542
GRMX3

0543
GRMX4

GRMX1 to 4
The spindle speed corresponding to gears 1 to 4 when the spindle speed command is 10V.(for constant surface speed control)
Setting range: 1 to 19999 (unit: rpm)

0546
DRFT3

DRFT3 Set a compensation value for drift generated in the Cs-axis servo loop.
Setting value 0 to ± 8191
Unit: VELO
The value of this parameter changes automatically during the automatic compensation.

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 1/10, the unit is the same.

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
BRATE0

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 / O is 1.)
Relation between the setting value and the baud rate is as follows:

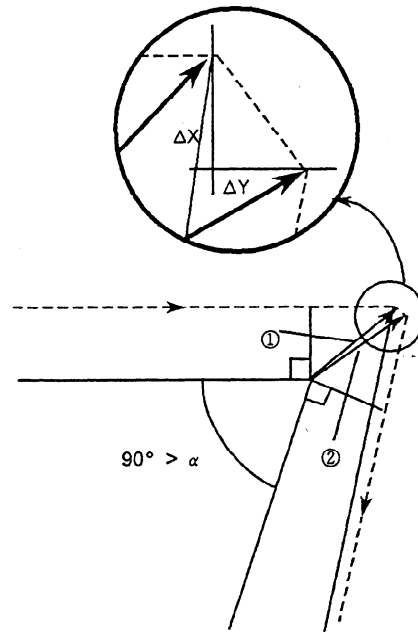
Setting value	Baud rate
1	50
2	100
3	110
4	150
5	200
6	300
7	600
8	1200
9	2400
10	4800
11	9600

0556
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.)

0557
CRCDL

CRCDL When tool moves along the outside of an acute angle close to 90° during tool nose radius compensation, limitations on ignoring a small movement amount.
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 1/10.



If both ΔX and ΔY are less than the set value, vector ② is ignored.

0558
ACALFL

ACALFL Feedrate during measuring in automatic tool compensation function (common for all axes).
Setting range:
0 to 15000 unit: mm/min (mm input)
0 to 6000 unit: 0.1 inch/min (inch input)
(Note) In increment system 1/10, the unit is the same.

0559 RPDJX

0582 SLPGM3

0560 RPDJZ

0583 SLPGM4

0561 RPDJ3

SLPGM 1 to 4

Servo loop gain multiplier of spindle for gears 1 to 4 in sequence.

Setting value = $2048 \times (E/L) \times \alpha \times 1000$

where: E = Voltage when spindle motor is rotating at 1000 rpm(V)

L = Angle per spindle motor rotation (normally 360)

a = Detecting unit (deg)

0562 RPDJ4

RPDJX, PDJZ, PFDJ3, RPDJ4

Rapid traverse rate in JOG mode for X, Z, 3rd and 4th axis in turn.

Setting range:

30 to 24000 unit: mm/min (mm output) 30 to 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.

0584 SLPGIN

SLPGIN Spindle loop gain

Setting value 1 to 9999 Unit 0.01 (1/sec)

0585 SRPDFL

SRPDFL Minimum speed of spindle rapid traverse override (Fo)

Setting value :

660 to 15000 Unit deg/min

0564 SPWDTH

SPWDTH Allowable fluctuation in rotation not causing an alarm in the spindle fluctuation detection function.

Set range: 0 - 32767 Unit:rpm

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

Setting value: 1 to 4095

0580 SLPGM1

0581 SLPGM2

0586
SZRNFL

SZRNFL SFL speed at spindle orientation Setting value :
660 to 15000 Unit deg/min

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

Setting value: 1 to 4095

0587
MORT

MORT Spindle orientation M-code
Setting value 06 to 97

0588
MRELS

MRELS Spindle call cancel M-code
Setting value 06 to 97

0589
MSINDX

MSINDX M-code initial value of M-code call.
Setting value 06 to 92

0590
MSDEG

MSDEG Base rotation angle of M-code call.
Setting value 1 to 60 Unit deg.

0591
PDWEL

PDWEL Dual time during specification unclamp of C-axis in hde machining cycle.
Setting value : 0 to 32767
Unit msec.

0593
STPEX

0594
STPEZ

0595
STPE3

0596
STPE4

STPEX, Z, 3, 4

Position error limit value during X-axis, Y-axis,
Z -axis,3rd axis and 4th axis stop in sequence
Setting value : 0 to 32767 Detecting unit

0597
G05NOM

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.

0598	PCHK
------	------

PCHK Minimum value of Program No. used in common in tool posts 1 and 2.
(only 0-TTC)

0600	PARTRQ
------	--------

PARTRQ Sets the number of machined parts required.
Setting value : 0 to 9999

0601	PEXPJX
------	--------

0602	PEXPJZ
------	--------

0603	PAXPJ3
------	--------

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	PFLJGZ
------	--------

0607	PFLJG3
------	--------

0608	PFLJG4
------	--------

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.

0609	INPDX
------	-------

0610	INPDZ
------	-------

0611	INPD3
------	-------

0612	INPD4
------	-------

INPDZ to INPD4

Sets the in - position width between a feed block and a feed block.

(Must not be used)

(Valid when parameter No. 45 CCINP = 1

0613	PSANG2
------	--------

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

PSANG2 S4/S5 digit control (analog output)
Set the data for gain adjustment of the 2nd spindle in the data analog output for gain adjustment of constant surface speed control (analog output).

Set range: 700 - 1250
Standard set value: 1000

(Note) Refer to the parameter No. 516.

0614	SPDLC2
------	--------

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

SPDLC2 Set the 2nd spindle speed offset compensation value, that is , the zero offset compensation value of spindle speed command voltage.

Set value: 0 - +8191 Unit:VELO

0615	G2MAX1
------	--------

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

0616	G2MAX2
------	--------

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

G2MAX1, 2 Speeds of the 2nd spindle corresponding to the gears 1 and 2 when the spindle speed command is 10V.

Set value: 1 - 1999 Unit: rpm.

0617	PSANG3
------	--------

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

PSANG3 S4/S5 digit control (analog output)
Set the data for gain adjustment of the 3rd spindle in the data analog output for gain adjustment of constant surface speed control (analog output).

Set range:700 - 1250
Standard set value: 1000

(Note) Refer to the parameter No. 516.

0618	SPDLC3
------	--------

SPDLC3 Set the 3rd spindle speed offset compensation value, that is the zero offset compensation value of spindle speed command voltage.

Set value: 0 - ±8191 Unit:VELO

0619	G3MAX1
------	--------

0620	G3MAX2
------	--------

G3MAX1, 2 Speeds of the 3rd spindle corresponding to the gears 1 and 2 when the spindle speed command is 10V.

Set value: 1 - 19999 Unit: rpm

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

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

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
PEFDTZ

0653
PEFDT3

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
PEAFLZ

0659
PEAFL3

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.

0667
POLCLP

POLCLP Set the upper limit speed of synchronous
axis.
Set value: 0 - 1.2 x 103/POLROT
(Example) When POLROT (PRM No. 778) is set to
8000, the set value is 0 - 15000rpm.
(Note) When the synchronous axis speed is clamped
by this parameter, the synchronism between
the spindle and the synchronous axis goes
out of order.

0668
POLSPD

POLSPD Display the synchronous axis speed. (This is
used as a diagnosis.) Unit:rpm

0669
JOGFPL

JOGFPL Set the jog feed rate when the synchronous axis rotary switch is set to the position 10.
Set value:1 - 2000 Unit:PSU/min

0670
RPDFLPL

RPDFLPL Set the minimum feed rate (Fo) for rapid traverse override of the synchronous axis.
Set value: 6 - 15000 Unit:PSU/min

0671
ZRNFLPL

ZRNFLPL Set the low feed rate (FL) at reference point return of the synchronous axis.
Set value: 6 - 15000 Unit:PSU/min

0700
LT1X1

0701
LT1Z1

0702
LT131

0703
LT141

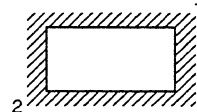
0704
LT1X2

0705
LT1Z2

0706
LT132

0707
LT142

LT1□□
nth top in square zone (see figure).
axis



Set stroke limit mentioned above.
Setting range : 0 to ±99999999 (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, overtravel 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.

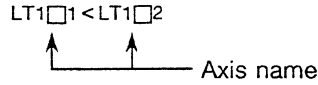
$$10 \times 1/5 = 2 \text{ mm}$$

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, overtravel 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.



Example) LT1Z1 = -1 and LT1Z2 = 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	PRSZ
------	------

0710	PRS3
------	------

0711	PRS4
------	------

PRSX, PRSZ, PRS3, PRS4

These set the coordinate values of the reference point of the X, Z, 3rd 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	SPTIME
------	--------

0713	PSGRDX
------	--------

0714	PSGRDZ
------	--------

SPTIME Time (P) when starting the spindle speed fluctuation after the commanded speed is not reached a certain time.

Setting range: 0 to 9999999 (unit : msec)

PSGRDX, PSGRDZ

Grid width of X and Z axes, respectively.

Setting range:

0 to 99999999

unit: 0.001 mm (mm output)

unit: 0.001 inch (inch output)

No position signal is output when the setting value is 0.

In order to output the position signal securely without any skip when each axis moves at the maximum setting value 24 m/min of the rapid traverse speed, the grid width must be set to be more than 6400.

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

0717	MRCCD
------	-------

MRCCD Depth of cut in multiple repetitive cycle G71, G72.

Setting range:

1 to 99999999 unit: 0.001 mm (mm input)

1 to 99999999 unit: 0.0001 inch (inch input)

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

0718
MRCDT

MRCDT Relief amount in multiple repetitive cycle G71, G72.
Setting range:
1 to 99999999 unit: 0.001 mm (metric input)
1 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0719
PESCX

0720
PES CZ

PESCX, PES CZ
Relief values in X and Z directions in multiple repetitive cycle G73, respectively.
Setting range:
1 to ± 99999999 unit: 0.001 mm (mm input)
1 to ± 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0721
PATIM

PATIM Number of divisions in multiple repetitive cycle G73.
Setting range: 1 to 99999999

0722
GROVE

GROVE Return amount in multiple repetitive cycle G74, G75.
Setting range:
0 to 99999999 unit: 0.001 mm (mm input)
0 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0723
THRPT

THRPT Number of repetitions of final finishing in multiple repetitive cycle G76.
Setting range: 1 to 99999999

0724
THANG

THANG Tool nose angle in multiple repetitive cycle G76.
Setting value : 0, 29, 30, 55, 60, 80

0725
THCLM

THCLM Minimum depth of cut in multiple repetitive cycle G76.
Setting range:
0 to 99999999 unit: 0.001 mm (mm input)
0 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0726
THDFN

THDFN Finishing allowance in multiple repetitive cycle G76..
Setting range:
0 to 99999999 unit: 0.001 mm (mm input)
0 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0728
WIMAX

WIMAX Sets the tolerance value of tool wear offset incremental input..
Setting range:
0 to 99999999 unit: 0.001 mm (mm input)
0 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0729
WOMAX

WOMAX Sets the maximum of the tool wear offset value.
Setting range:
1 to 99999999 unit: 0.001 mm (mm input)
1 to 99999999 unit: 0.0001 inch (inch input)
(Note) Unit becomes 1/10 in increment system 1/10.

0730
MIRSS

MIRSS Used for mirror image for opposite tool post.
This parameter sets the distance between the tool posts in the shifting of coordinate system.
Setting range:
1 to 99999999
unit: 0.001 mm (mm output)
unit: 0.0001 inch (inch output)
Sets with a radius value.
(Note) Unit becomes 1/10 in increment system 1/10.

0731
GANMAX

0732
GANMAZ

GANMAX, GANMAZ
The value of ϵ on the X and Z axes in the automatic tool compensation function, respectively
Setting range:
1 to 99999999 unit: 0.001 mm (mm output)
1 to 99999999 unit: 0.0001 inch (inch output)
The X axis value should be set with a radius value.
(Note) Unit becomes 1/10 in increment system 1/10.

0733
EPCX

0734
EPCZ

EPCX, EPCZ

The value of γ on the X and Z axes, in the automatic tool compensation function, respectively.

Setting range:

1 to 99999999 unit: 0.001 mm (mm output)
1 to 99999999 unit: 0.0001 inch (inch output)
The X axis value should be set with a radius value.

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

0735
REF2X

0736
REF2Z

0739
ABSXP

0740
ABSZP

ABSXP, ABSZP

Counter data at the reference point when the absolute pulse 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

 TLSXP

0747

 LT2X1

0744

 TLSXM

0748

 LT221

0745

 TLSZP

LT2X1-LT242

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.

0746

 TLSZM

0751

 LT2X2

Setting value: 0 to ± 99999999
 Unit: 0.001 mm (Metric output) to ± 99999999

0752

 LT2Z2

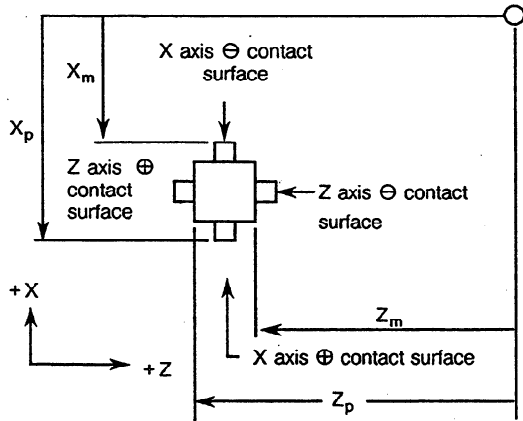
Unit: 0.0001 inch (Inch output)
 TLSXP X axis + distance to contact surface (X_p)
 TLSXM X axis - distance to contact surface (X_m)
 TLSZP Z axis + distance to contact surface (Z_p)
 TLSZM Z axis - distance to contact surface (Z_m)
 Unit becomes 1/10 in increment system 1/10
 Set the distance from the measurement standard point to each contact surface (with sign). For the diameter designated axis, set in diameter value.

LT2
 Apex No. of square area
 Represents the axis

Set the stroke limit represented above.
 Setting value: 0 to ± 99999999 Unit 0.001 mm (Metric output)
 0 to ± 99999999 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.



0756	PECINTX
------	---------

0757	PECINTZ
------	---------

0758	PECINT3
------	---------

0759	PECINT4
------	---------

PECINTX, PECINTZ, PECINT3, PECINT4:

Compensation intervals at pitch error compensation of each axis. Setting value:

When the radius is designated
 8000 - 99999999 (Metric output)
 4000 - 99999999 (Inch output)

However, set in diameter value for the diameter designated axis.

When the diameter is designated
 16000 - 99999999 (Metric output)
 8000 - 99999999 (Inch output)

0768	IDSTX
------	-------

0769	IDSTZ
------	-------

IDSTX Distance from the 1st tool head standard point to the 2nd tool head standard point on the X axis.
 Remarks only 0-TTC

IDSTZ: Distance from the 1st tool head standard point to the 2nd tool head standard point on the Z axis.

Setting value :
 0 to ± 99999999
 Unit: 0.001 mm (mm output)
 0.0001 inch (Inch output)

0778	POLROT
------	--------

ROLROT Set the move distance per rotation of the synchronous axis.
 Set value: 1 - 9999999

0779	PARTAL
------	--------

PARTAL: No. of machined parts in total
 Setting value : 0 to 99999999

0780	REF3X
------	-------

0781	REF3Y
------	-------

0782	REF33
------	-------

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	REF4Z
------	-------

0786	REF43
------	-------

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 ±99999999

Unit 0.0001 inch (Inch input)

0815	PRSTIX
------	--------

0816	PRSTIZ
------	--------

0817	PRSTI3
------	--------

0818	PRSTI4
------	--------

PRSTIX - PRSTI4

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

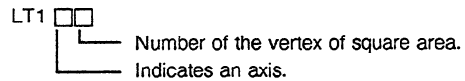
(Note) When the set unit is 1/10, the unit is 1/10.

0821	LT171
------	-------

0822	LT181
------	-------

0823	LT172
------	-------

0824	LT182
------	-------



Set the stroke limit of the 7th and 8th axes indicated by the above.

Set value: 0 - +99999999

Unit: 0.001mm (metric output)

Set value: 0 - +99999999

Unit: 0.0001inch (inch output)

Set by the distance from the reference point.

0825	PRS7
------	------

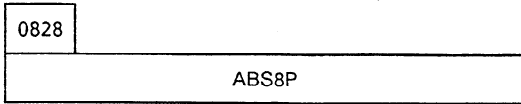
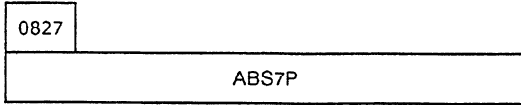
0826	PRS8
------	------

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

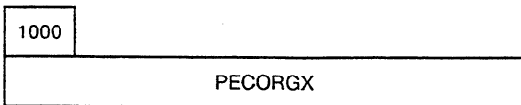
Unit: 0.001mm (metric output)

Unit: 0.0001 inch (inch output)

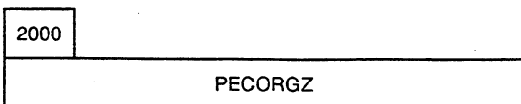
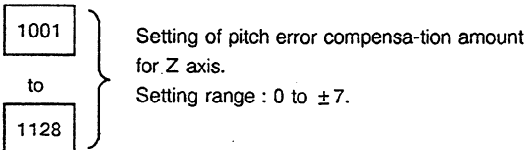


ABS7P, ABS8P

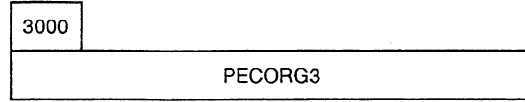
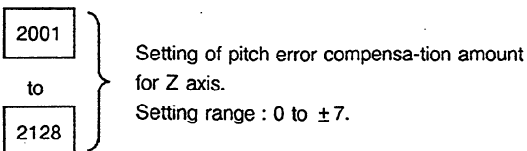
Counter data values at the reference point return position when the absolute pulse coder is used. This value is automatically set at the completion of manual reference point return, and unnecessary to set.



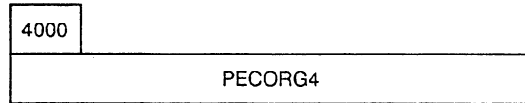
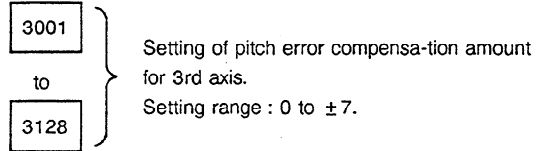
PECORGX X axis zero point of pitch error compensation.
Setting range : 0 to 127



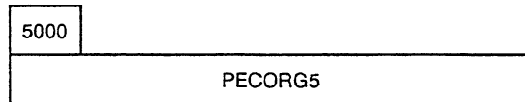
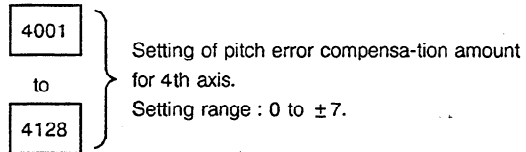
PECORGZ Z axis zero point of pitch error compensation.
Setting range : 0 to 127



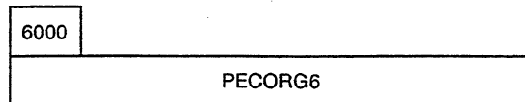
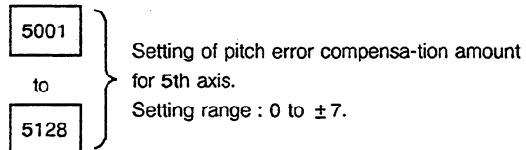
PECORG3 3rd axis zero point of pitch error compensation.
Setting range : 0 to 127



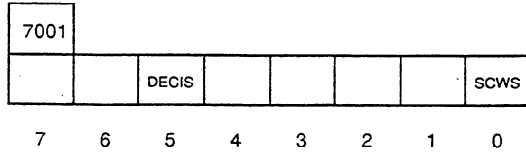
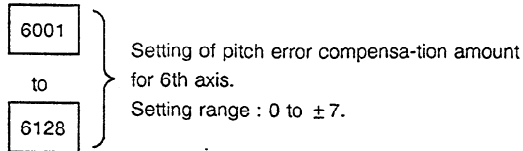
PECORG4 4th axis zero point of pitch error compensation.
Setting range : 0 to 127



PECORG5 5th axis zero point of pitch error compensation.
Setting range : 0 to ±127

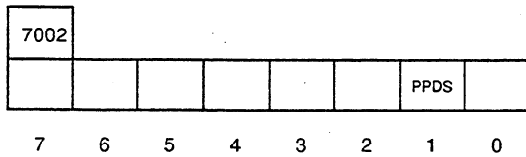


PECORG6 6th axis zero point of pitch error compensation.
Setting range : 0 to 127

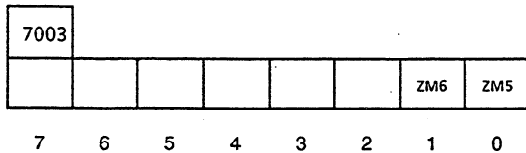


- DECIS** 1: Machine decelerates when deceleration signal is 1 in reference point return.
0: Machine decelerates when deceleration signal is 0 in reference point return.

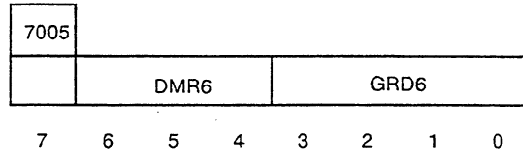
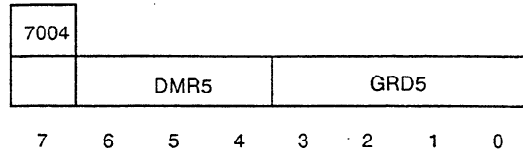
- SCWS** 1: Minimum command increment is the inch system (Machine inch system).
0: Minimum command increment is the metric system (Machine metric system).



- 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

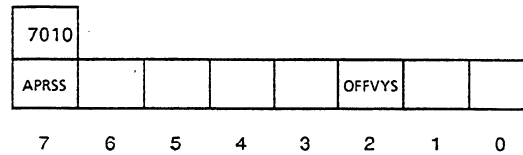


DMR5, DMR6

Detection multiplier for 5th and 6th axes, respectively.

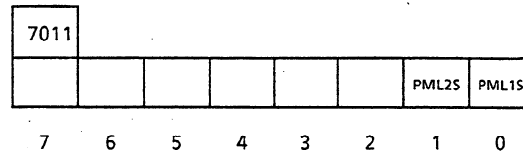
GRD5, GRD6

Reference counter capacity for 5th and 6th axes, respectively.



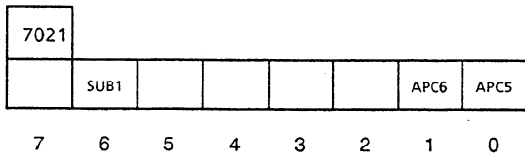
- APRSS** 1: Sets automatic coordinate system at reference point return.
0: Does not set automatic coordinate system at reference point return.

- OFFVYS** 1: Servo alarm does not occur even when VRDI is ON before outputting PRDY.
0: Servo alarm occurs when VRDY is ON before outputting PRDY.

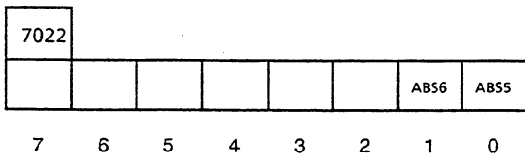


- PML1S, PML2S** : Pitch error compensation multiplier for pitch error compensation (common to axis 5 and axis 6)

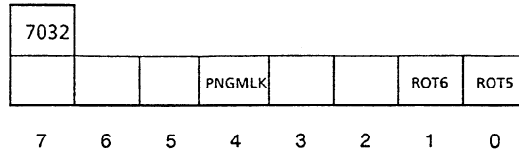
PML1S	PML2S	Multiplier
0	0	×1
0	1	×2
1	0	×4
1	1	×8



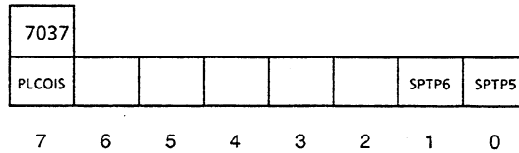
- APC5/APC6 1: When the absolute pulse coder detector is mounted for 5th/6th axes.
0: When the absolute pulse coder detector is not mounted for 5th/ 6th axes.
- SUB1 1: PMC axis control is the 5th axis.
0: PMC axis control is the 5th/6th axes.



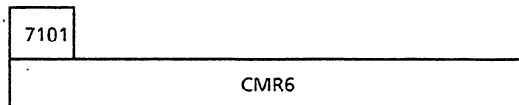
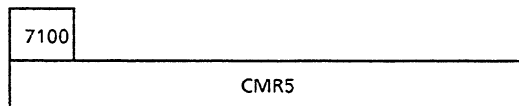
- ABS5, ABS6
1: Reference point position in absolute pulse coder is defined for 5th/6th axes.
0: Reference point position in absolute coder is not defined for 5th/6th axes.
(the signal becomes "1" automatically if the reference point return is performed by PMC axis control. Do not change setting by the 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.



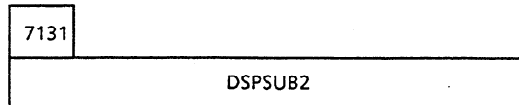
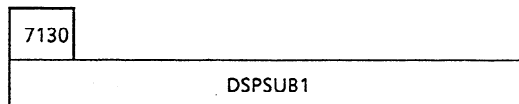
- PNGMLK 1: MLK signal is invalid for the 5th/6th axes.
0: MLK signal is valid for the 5th/6th axes.
- ROT5, 6 1: The 5th/6th axes is a rotary axis.
0: The 5th/6th axes is a linear axis.
- Remarks Both of T series and M series.



- PLCO1S 1: 0.1μ pulse-coder is used.
0: 0.1μ 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.



- CMR5, 6 Command multiplier for 5th/6th axes, respectively.



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 output).

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
------	--------

LPGINS Setting of position control loop gain (5th/6th axes in common).

7518	RPDF5
------	-------

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 cutting 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 (unit: 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 at stop, respectively.

7651
EFDT5

EFDT5 Cutting feed exponential acceleration/deceleration time constant for axis 5 and axis 6 in order
Setting value 0-4000
Unit: msec
However, when 0 is set the value becomes No.7529.

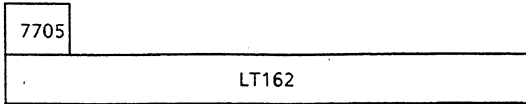
7657
EAFL5

EAFL5 Cutting feed exponential acceleration/deceleration lower Limit speed (FL) in order
Setting value : 0.6-15000
Unit : mm/min (mm output)
Setting value : 0.6-6000
Unit: 0.1 inch/min (inch output)
However, when 0 is set the value becomes No.7530.

7700
LT151

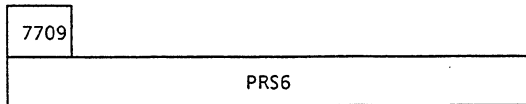
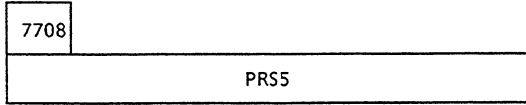
7701
LT161

7704
LT152

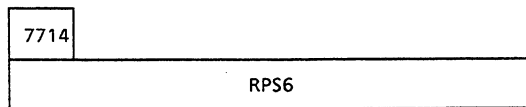
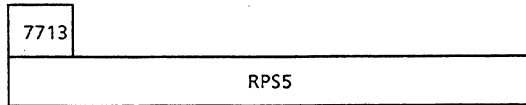


LT151, 161, 152, 162

Stored stroke limit of 5th and 6th axes.



PRS5, PRS6 Coordinate value of 5th and 6th axes reference point.



PECINT5,6 Compensation intervals at pitch error compensation of 5th/6th axes.

Setting value :

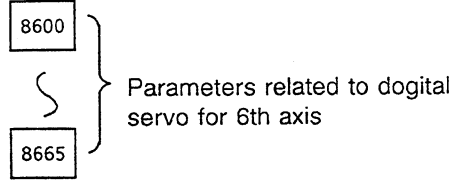
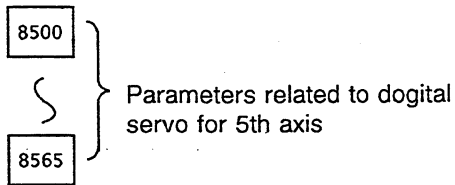
8000 to 99999999

unit 0.001 mm (metric output)

4000 to 99999999

unit 0.0001 inch (inch output)

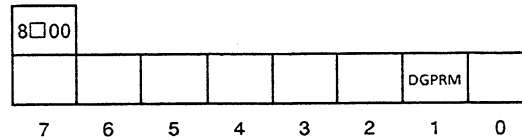
(Note) When 0 is set to this parameter, the compensation is not performed.



The parameters of each axis for the digital servo are as shown in the following:

8500	Parameter No.	Product	Axis
The 1st axis	8100~8165	0T/0G	X axis
		0M	X axis
The 2nd axis	8200~8265	0T/0G	Z axis
		0M	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

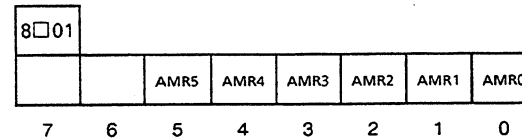
In the following, parameter numbers of each axis are to be indicated by*.



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".



AMRO~AMR5

Motor type	No. of pulse/pulse coder rotation (p/r)	AMR					
		5	4	3	2	1	0
2-0, 1-0, 0, 5,	2000	0	1	1	1	1	1
10, 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

8□02								
			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.

8□03								
	7	6	5	4	3	2	1	0

8□04								
	7	6	5	4	3	2	1	0

Remarks Both of T series and M series.
 (Note) When parameter No. 8 * 00 bit 1 (DGPRM) is set to 0, the standard values of these parameters are automatically 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
8□20	3	4	5	6	7

Parameter No.	Motor type				
	0	5	10	20M	20
8□20	8	9	10	11	12

Parameter No.	Motor type				
	30	30R			
8□20	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)
------	--------------------------------------

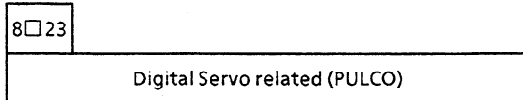
Parameter input

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.



Parameter input

Data type : Word axis type

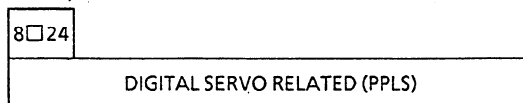
Data unit : PULSE/REV

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 0.1μ is to be used, set 1/10 data.

If this parameter is 0 or less, an alarm results.



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 feedback. Perform calculation supposing that there are Four pulses per pulse cycle of phases A and B. (Example, $2,000 \times 4 = 8,000$ for a pulse coder of 2,000 p/r.)

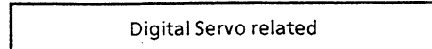
However, when a pulse coder of 0.1μ is to be used, set 1/10 data.

If this parameter is 0 or less, an alarm results.

8□40



8□65



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 necessary 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
8□40	241	460	669	322	469	828
8□41	-527	-1461	-2126	-1103	-1625	-2782
8□42	-1873	-2373	-2374	-2488	-2503	-2457
8□43	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
8□49	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
8□58	57	57	57	57	57	57
8□59	0	0	0	0	0	0
8□60	7282	7282	7282	7282	7282	7282
8□61	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
8□44	-1789	-3259	-4103	-2666	-2516	-3356
8□45	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
8□49	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
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	230	2330	2330	2330	2330	2330
8□58	57	57	57	57	57	57
8□59	0	0	0	0	0	0
8□60	7282	7282	7282	6918	6918	6554
8□61	32256	32256	32256	32256	32256	32256
8□62	32645	32464	32155	32509	32452	32419
8□63	1539	3796	7659	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 1/10.

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
○				10	2.0	0.08	140	790	30
				20	3.2	0.12	130	500	20
○	○			30	5.0	0.2	120	320	12
		○		40	7.9	0.3	110	200	8.0
○		○		50	12.6	0.5	100	126	5.0
	○	○		60	20	0.8	90	79	3.0
○	○	○		70	32	1.2	80	50	2.0
			○	80	50	2.0	70	32	1.2
○			○	90	79	3.0	60	20	0.8
	○		○	100	26	5.0	50	12.6	0.5
○	○		○	110	200	8.0	40	7.9	0.3
		○	○	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					○	○	○	○	0mm/min	0inch/min	0mm/min	0inch/min
1				○	○	○	○		10	0.4	25	1.0
2			○		○	○		○	14	0.5	35	1.4
3			○	○	○	○			20	0.8	49	2.0
4		○			○		○	○	27	1.1	68	2.7
5		○		○	○		○		37	1.5	95	3.7
6		○	○		○			○	52	2.0	132	5.2
7		○	○	○	○				72	3.0	183	7.2
8	○					○	○	○	100	4.0	250	10.0
9	○			○		○	○		140	5.0	350	14.0
10	○		○			○		○	200	8.0	490	20.0
11	○		○	○		○			270	11.0	680	27.0
12	○	○					○	○	370	15.0	950	37.0
13	○	○		○			○		520	20.0	1320	52.0
14	○	○	○					○	720	30.0	1830	72.0
15	○	○	○	○					1000	40.0	2500	100.0

Note 1) ○ 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					○	○	○	○	0deg/min
1				○	○	○	○		10
2			○		○	○		○	14
3			○	○	○	○			20
4		○			○		○	○	27
5		○		○	○		○		37
6		○	○		○			○	52
7		○	○	○	○				72
8	○					○	○	○	100
9	○			○		○	○		140
10	○		○			○		○	200
11	○		○	○		○			270
12	○	○					○	○	370
13	○	○		○			○		520
14	○	○	○					○	720
15	○	○	○	○					1000

Note 1) ○ 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
1				○	○	○	○		10
2			○		○	○		○	14
3			○	○	○	○			120
4		○			○		○	○	27
5		○		○	○		○		37
6		○	○		○			○	52
7		○	○	○	○				72
8	○					○	○	○	100
9	○			○		○	○		140
<u>10</u>	○		○			○		○	<u>200</u>
11	○		○	○		○			270
12	○	○					○	○	370
13	○	○		○			○		520
14	○	○	○					○	720
15	○	○	○	○					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 0-TC 0666-18/0-TTC 0680-16, 0681-16, 0682-16 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					RSASCI			

1 :
0 :

1 :
0 :

1 :
0 :

RSASCI 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.0008	EILK				LCD			

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

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 :

1 :
0 :

1 :
0 :

EILK 1 : Interlock for individual axis (ITX, ITZ, IT3, IT4) is valid.
0 : Interlock for all axes (STLK) is valid.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0012					RSASCI			

1 :
0 :

1 :
0 :

1 :
0 :

RSASCI 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. 0019				EAUNT				

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

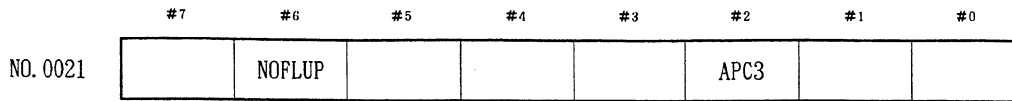
EAUNT 1 : Commands for a single linear PMC controlled axis are specified in output increments.
0 : Commands for a single linear PMC controlled axis are specified in input increments.

(Note) When EAUNT is set to 1, set the FL speed for reference position return, using parameter No. 0672.

1 :
0 :

1 :
0 :

1 :
0 :



(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

APC3 1 : Absolute pulse coder is used for 3rd axis.
0 : Incremental pulse coder is used for 3rd axis.

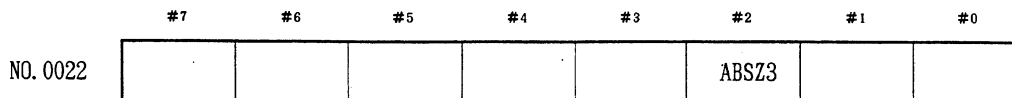
1 :
0 :

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 :



(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

ABSZ3 1 : Reference point of absolute pulse coder for 3rd axis is fixed.
0 : Reference point of absolute pulse coder for 3rd axis is not fixed.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0024							LII10	

1 :
0 :

LII10 1 : Input/output increment is 0.01mm/0.001inch.
0 : Input/output increment is 0.001mm/0.0001inch or 0.0001mm/0.00001inch.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0029					RGCTO			

1 :
0 :

1 :
0 :

1 :
0 :

RGCTO 1 : Time constants of pulling-up motion in rigid tapping are specified in parameter 419 to 422.
0 : Time constants of pulling-up motion in rigid tapping are specified in parameter 415 to 418.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

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

NO. 0039

GST1, GST2 : Available tool group of tool life management is specified.

GST2	GST1	tool group	tool amount
0	0	1 to 16	1 to 16
0	1	1 to 32	1 to 8
1	0	1 to 64	1 to 4
1	1	1 to 16	1 to 16

LCTM 1 : Tool life is managed based on time interval.
0 : Tool life is managed based on used times.

TLSK 1 : Tool skip of tool life management is performed based on the specified tool group number.
0 : Tool skip of tool life management is performed based on the current tool group number.

GRST 1 : Reset signal of tool life management clears count data for all tool groups.
0 : Reset signal of tool life management clears count data of the current tool group.

IGSK 1 : Tool skip signal of tool life management is valid only when tool life management is working.
1 : Tool skip signal of tool life management is valid always.

1 :
0 :

1 :
0 :

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

NO. 0040

1 :
0 :

1 :
0 :

MPAS 1 : Signal output when passing the specified distance is used.
0 : Signal output when passing the specified distance is not used.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0041		P6MI					THRDB	RGTPPE

RGTPPE When releasing rigid tapping mode.
 1 : rigid tapping signal (RG TAP) off is not checked.
 0 : rigid tapping signal (RG TAP) off is checked.

THRDB 1 : Threading control is type-B.
 0 : Threading control is type-A.
 (Note) When using PMC axis control together with threading, type-B is recommended.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0045					LSUP			

1 :
0 :

1 :
0 :

1 :
0 :

LSUP 1 : Linear acc/dec after interpolation is used.
 0 : Linear acc/dec after interpolation is not used.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0048	SFFDSP							

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

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. 0049								EVSF

EVSF 1 : SF signal is output when commanding 4-digit S-code.
0 : SF signal is not output when commanding 4-digit S-code.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO.0050				SMZCT			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 :

SMZCT 1 : Rapid traverse overlap is valid.
0 : Rapid traverse overlap is invalid.

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO.0055		DAT4MS	DAT1MS	DAT2MS				

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

DAT2MS, DAT1MS, DAT4MS : Interpolation interval of high speed machining cycle or high speed remote buffer-A is specified.

DAT4MS	DAT1MS	DAT2MS	Interpolation Interval
0	0	0	8 msec
0	0	1	2 msec
0	1	0	4 msec
0	1	1	1 msec
1	0	0	16 msec
1	1	1	0.5 msec

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0056								NCOND

NCOND When equipping tape storage memory 120/320m or back-ground edit.
 1 : condensing part program memory is not done automatically.
 (Condensing is done by pressing soft-key "CONDNS".)
 0 : condensing part program memory is done automatically by CNC reset after edit operation.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0057					MIC	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-TC.

- 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-TC.
- 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-TC.
- MIC 1 : The commanded motion value is multiplied with 10 if the value is without decimal point.
 0 : The commanded motion value is treated as usual.
- 1 :
 0 :
- 1 :
 0 :
- 1 :
 0 :
- 1 :
 0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0060		EXTSP	OPMNDP			LDDSPG	PCLDB	DADRDP

(Note) It is necessary to turn off CNC power after changing these parameters.

- DADRDP 1 : Addresses X, Y, G, F, 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 :
- 1 :
 0 :
- 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			

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

1 :
0 :

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.

1 :
0 :

1 :
0 :

AXPCF 1 : Axes movements by PMC axis control are not added in actual speed display.
0 : Axes movements by PMC axis control are added in actual speed display.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0063		VALPC		RGDOV				

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

RGDOV When using rigid tapping,
1 : override during pulling-up motion is valid.
0 : override during pulling-up motion is invalid.

(Note) Override value is specified in parameter 258.

1 :
0 :

VALPC When using rigid tapping,
1 : gear ratios are specified in parameter 427 to 434.
0 : gear ratio for 1st position coder is specified in parameter 003 and gear ratio for 2nd position coder is specified in parameter 064.

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 :

IOMDGN 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			G92ZAX		PSOT		CZRN	

1 :
0 :

CZRN When using Cs contouring control of serial interface spindle.
1 : G28 is necessary before first G00 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 :

G92ZAX 1 : Time constant and FL speed of Z-axis during threading are specified in parameter 627 and 628.
0 : Time constant and FL speed of Z-axis during threading are same as those during normal cutting.

1 :
0 :

1 :
0 :

	#7	#6	#5	#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-1) This parameter is valid only when parameter 029#6(DSPSUB) is set to "1".
(Note-2) Run hour and parts count are not displayed when setting this parameter.

NBD78 When using 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 :

ERVF1	ERVF2	Multiplier for feed per rev. by PMC axis control
0	0	× 1
1	1	
0	1	× 1 0
1	0	× 1 0 0

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0069		B3AX	BABS	BAX	PLG8	PLG7		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

1 :
0 :

PLG7 1 : Polygonal machining is performed with 7th axis.
 0 : Polygonal machining is not performed with 7th axis.

PLG8 1 : Polygonal machining is performed with 8th axis.
 0 : Polygonal machining is not performed with 8th axis.

BAX, BABS, B3AX : Command addresses of 3rd and 4th axis is specified as follows.

BABS	B3AX	B3AX	3rd axis		4th axis	
			ABS	INC	ABS	INC
0	0	0	C	H	Y	V
0	0	1	C	H	Y	B
1	0	1	C	H	B	V
0	1	1	C	B	Y	V
1	1	1	B	H	Y	V

INC : Incremental command
 ABS : Absolute command

(Note-1) These parameters must be set to "0" when using G-code system B or C.
 (Note-2) These parameters must be set to "0" when using 2nd auxiliary function.
 (Note-3) These parameter decide the command addresses of 3rd and 4th axis.
 Displayed addresses is specified in parameter 030#0,4 ADW30 ADW40.

1 :
 0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0070	ICR	PEXRD		DSTBGE	MSPDB		DAC2	DAC1

DAC1 1 : D/A converter channel-1 on Input/Output Interface board is used.
 0 : D/A converter channel-1 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 :

MSPDB 1 : Multi-spindle control is type-B.
 0 : Multi-spindle control is type-A.

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 ISO code.
 0 : EOB is punched out as "LF" "CR" "CR" when punching with ISO code.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0071	FSRSP	DPCRAM		SRL2SP	SSMPC	SRLMSP	HISSC	ISRLPC

(Note) It is necessary to turn off CNC power after changing these parameters.

- ISRLPC 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.
- HISSC 1 : Calculation interval of constant surface speed control is one fourth of usual interval.
0 : Calculation interval of constant surface speed control is as usual.
- SRLMSP When using multi-spindle control with serial interface spindles,
1 : 1st and 2nd spindles are with serial interface and 3rd spindle is with analog interface.
0 : 1st spindle is with serial interface and 2nd and 3rd spindles are with analog interface. (Input/Output interface board is necessary.)
- SSMPC When using multi-spindle control with serial interface spindles,
1 : position coder of 2nd spindle is connected to 2nd spindle amplifier.
0 : position coder of 2nd spindle is connected to M27 connector on memory PCB.
- SRL2SP 1 : Two serial interface spindles are connected serially.
0 : One serial interface spindle is connected.
- SPNSIO 1 : Old spindle control LSI (SIC1) is used.
0 : New spindle control LSI (SIC2) is used.
- 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-TF.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0072			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	#3	#2	#1	#0
NO. 0074	PLCREV				CRF4	CRF3	CRFZ	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.
- 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.
- CRF3 When the motion other than G28 is commanded for 3rd-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 :
- PLCREV 1 : Feedback pulse from position coder is considered as data with sign.
 0 : Feedback pulse from position coder is considered as data without sign.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0075	IONUL	CLCL			WNPT	INHND	STHRD	

- 1 :
 0 :
- STHRD 1 : Independent threading for each head is possible with one serial interface spindle on 0-TTC.
 0 : Independent threading for each head is impossible with one serial interface spindle on 0-TTC.
- INHND 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.
- WNPT 1 : Direction of imaginary tool nose is specified by wear offset number.
 0 : Direction of imaginary tool nose is specified by geometry offset number.
- 1 :
 0 :

1 :
0 :

CLCL 1 : Local coordinate (G52) is canceled after manual reference point return is performed.
0 : Local coordinate (G52) is not canceled after manual reference point return is performed.

IONUL 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.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0076	OTRFOM		PRWD	ADBLS	G84RGD	IOP	JZRN	

1 :
0 :

JZRN 1 : Dogless reference point return is effective. (*1)
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. 0673 to 0678. Enable the use of optional CMR by setting bit 7 (ACMR) of parameter No. 0035 to 1.

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.
(Note) This parameter is valid for stored stroke limit-1 and -2.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0077		HLKEY	MICPR	HDLPM		SGD		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
0 :

SGD 1 : Servo waveform display is valid.
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 :

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.

MICRF 1 : Command unit of feedrate is 0.001mm/min.
0 : Command unit of feedrate is 1mm/min.

HLKEY 1 : MDI key operation is treated as high priority.
0 : MDI key operation is treated as low priority.

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0078	EAXOVE	RDRNE		OVRIE	NOINWS	NOINMV	NOINOG	NOINOW

NOINOW 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.

NOINWZ 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 are effective for rapid traverse of PMC axis control.
0 : Dry-run signals are 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	#5	#4	#3	#2	#1	#0
NO. 0079	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.

- KEYOG 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 position 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. 0080	SP2NEG	SP1NEG			MORCM2	MORCM1		

(Note) It is necessary to turn off CNC power after changing these parameters.

1 :
 0 :

1 :
 0 :

- MORCM1 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 :
- SP1NEG 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	NRST	SPERR	SMR8	SMR7	SMR4	SMR3	SMRZ	SMRX

- SMRX 1 : X-axis motion is mirror-imaged during synchronous control.
 0 : X-axis motion is not mirror-imaged during synchronous control.
- SMRZ 1 : Z-axis motion is mirror-imaged during synchronous control.
 0 : Z-axis motion is not mirror-imaged during synchronous control.
- SMR3 1 : 3rd-axis motion is mirror-imaged during synchronous control.
 0 : 3rd-axis motion is not mirror-imaged during synchronous control.
- SMR4 1 : 4th-axis motion is mirror-imaged during synchronous control.
 0 : 4th-axis motion is not mirror-imaged during synchronous control.
- SMR7 1 : 7th-axis motion is mirror-imaged during synchronous control.
 0 : 7th-axis motion is not mirror-imaged during synchronous control.
- SMR8 1 : 8th-axis motion is mirror-imaged during synchronous control.
 0 : 8th-axis motion is not mirror-imaged during synchronous control.
 (Note) Above parameters are available only on 0-TTC.
- SPERR 1 : Acc/dec is considered for checking synchronous error of feed axes.
 (1 should be set when time constants are different between master axis and slaved axis.)
 0 : Acc/dec is not considered for checking synchronous error of feed axes.
 (Note) Same value should be set in this parameter on both head of 0-TTC.
- NRST 1 : Axes synchronous or mixture control is released by NC reset.
 0 : Axes synchronous or mixture control is not released by NC reset.
 (Note) Same value should be set in this parameter on both head of 0-TTC.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0381	IGNSIC		SER8	SER7	SER4	SER3	SERz	SERx

- SERX 1 : Synchronous error of X-axis is checked during synchronous control mode.
0 : Synchronous error of X-axis is not checked during synchronous control mode.
- SERZ 1 : Synchronous error of Z-axis is checked during synchronous control mode.
0 : Synchronous error of Z-axis is not checked during synchronous control mode.
- SER3 1 : Synchronous error of 3rd-axis is checked during synchronous control mode.
0 : Synchronous error of 3rd-axis is not checked during synchronous control mode.
- SER4 1 : Synchronous error of 4th-axis is checked during synchronous control mode.
0 : Synchronous error of 4th-axis is not checked during synchronous control mode.
- SER? 1 : Synchronous error of 7th-axis is checked during synchronous control mode.
0 : Synchronous error of 7th-axis is not checked during synchronous control mode.
- SER8 1 : Synchronous error of 8th-axis is checked during synchronous control mode.
0 : Synchronous error of 8th-axis is not checked during synchronous control mode.

(Note) Above parameters are available only on 0-TTC.

1 :
0 :

- IGNSIC 1 : Analog interface spindle is connected on head-2 although serial interface spindle is connected on head-1.
0 : Serial interface spindle is connected on head-2
(Note-1) This parameter should be set on head-2 of 0-TTC.
(Note-2)

	PRM No. 384#6 EFSS	
	0	1
PRM No. 381#7 IGNSIC	0 No spindle is used as a subspindle.	A serial spindle is used as a subspindle,
	1 An analog spindle is used as a subspindle.	Setting prohibited

	#7	#6	#5	#4	#3	#2	x1	#0
NO. 0382			PKU8	PKU7	PKU4	PKU3	PKUZ	PKUX

- PKUX 1 : Relative and absolute coordinate of X-axis are updated during parking in synchronous or mixture control.
0 : Relative and absolute coordinate of X-axis are not updated during parking in synchronous or mixture control.

- PKUZ 1 : Relative and absolute coordinate of Z-axis are updated during parking in synchronous or mixture control.
 0 : Relative and absolute coordinate of Z-axis are not updated during parking in synchronous or mixture control.
- PKU3 1 : Relative and absolute coordinate of 3rd-axis are updated during parking in synchronous or mixture control.
 0 : Relative and absolute coordinate of 3rd-axis are not updated during parking in synchronous or mixture control.
- PKU4 1 : Relative and absolute coordinate of 4th-axis are updated during parking in synchronous or mixture control.
 0 : Relative and absolute coordinate of 4th-axis are not updated during parking in synchronous or mixture control.
- PKU7 1 : Relative and absolute coordinate of 7th-axis are updated during parking in synchronous or mixture control.
 0 : Relative and absolute coordinate of 7th-axis are not updated during parking in synchronous or mixture control.
- PKU8 1 : Relative and absolute coordinate of 8th-axis are updated during parking in synchronous or mixture control.
 0 : Relative and absolute coordinate of 8th-axis are not updated during parking in synchronous or mixture control.

(Note) Above parameters are available only on 0-TTC.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0383	EFPA	EF34	MPM8	MPM7	MPM4	MPM3	MPMZ	MPMX

- MPMX 1 : Work coordinate of X-axis is set automatically when mixture control starts.
 0 : Work coordinate of X-axis is not set automatically when mixture control starts.
- MPMZ 1 : Work coordinate of Z-axis is set automatically when mixture control starts.
 0 : Work coordinate of Z-axis is not set automatically when mixture control starts.
- MPM3 1 : Work coordinate of 3rd-axis is set automatically when mixture control starts.
 0 : Work coordinate of 3rd-axis is not set automatically when mixture control starts.
- MPM4 1 : Work coordinate of 4th-axis is set automatically when mixture control starts.
 0 : Work coordinate of 4th-axis is not set automatically when mixture control starts.
- MPM7 1 : Work coordinate of 7th-axis is set automatically when mixture control starts.
 0 : Work coordinate of 7th-axis is not set automatically when mixture control starts.
- MPM8 1 : Work coordinate of 8th-axis is set automatically when mixture control starts.
 0 : Work coordinate of 8th-axis is not set automatically when mixture control starts.

(Note) Above parameters are available only on 0-TTC.

EF34 1 : Cf-axis control or Y-axis control is used even in head-2.
 0 : Cf-axis control and Y-axis control are not used in head-2
 (Note) This parameter is set in head-2 on 0-TTC.

EFPA 1 : PMC axis control is used in head-2.
 0 : PMC axis control is not used in head-2.
 (Note) This parameter is set in head-2 on 0-TTC.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0384	EFCS	EFSS	MPS8	MPS7	MPS4	MPs3	MPSZ	MPSX

MPSX 1 : Work coordinate of X-axis is set automatically after mixture control ends.
 0 : Work coordinate of X-axis is not set automatically after mixture control ends.

MPSZ 1 : Work coordinate of Z-axis is set automatically after mixture control ends.
 0 : Work coordinate of Z-axis is not set automatically after mixture control ends.

MPs3 1 : Work coordinate of 3rd-axis is set automatically after mixture control ends.
 0 : Work coordinate of 3rd-axis is not set automatically after mixture control ends.

MPs4 1 : Work coordinate of 4th-axis is set automatically after mixture control ends.
 0 : Work coordinate of 4th-axis is not set automatically after mixture control ends.

MPs7 1 : Work coordinate of 7th-axis is set automatically after mixture control ends.
 0 : Work coordinate of 7th-axis is not set automatically after mixture control ends.

MPS8 1 : Work coordinate of 8th-axis is set automatically after mixture control ends.
 0 : Work coordinate of 8th-axis is not set automatically after mixture control ends.

(Note) Above parameters are available only on 0-TTC.

EFSS 1 : Serial interface spindle is used in head-2
 0 : Serial interface spindle is not used in head-2
 (Note-1) This parameter is set in head-2 on 0-TTC.
 (Note-2)

		PRM No. 384#6 EFSS	
		0	1
PRM No. 381#7 IGNSIC	0	No spindle is used as a subspindle.	A serial spindle is used as a subspindle.
	1	An analog spindle is used as a subspindle.	Setting prohibited

BFCS 1 : Cs contouring control is used in head-2
 0 : Cs contouring control is not used in head-2
 (Note) This parameter is set in head-2 on 0-TTC.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0385	MEMEX	RTLIN	MCD8	MCD7	MCD4	MCD3	MCDZ	MCDX

MCDX 1 : X-axis motion is mirror-imaged during mixture control.
 0 : X-axis motion is not mirror-imaged during mixture control.

MCDZ 1 : Z-axis motion is mirror-imaged during mixture control.
 0 : Z-axis motion is not mirror-imaged during mixture control.

MCD3 1 : 3rd-axis motion is mirror-imaged during mixture control.
 0 : 3rd-axis motion is not mirror-imaged during mixture control.

MCD4 1 : 4th-axis motion is mirror-imaged during mixture control.
 0 : 4th-axis motion is not mirror-imaged during mixture control.

MCD7 1 : 7th-axis motion is mirror-imaged during mixture control.
 0 : 7th-axis motion is not mirror-imaged during mixture control.

MCD8 1 : 8th-axis motion is mirror-imaged during mixture control.
 0 : 8th-axis motion is not mirror-imaged during mixture control.

(Note) Above parameters are available only on 0-TTC.

RTLIN 1 : Reference point return of rotary axis is treated as linear axis.
 0 : Reference point return of rotary axis is treated as rotary axis.

MEMEX 1 : Tape storage memory 120/320m is available in head-2
 0 : Tape storage memory 120/320m is not available in head-2.

(Note) This parameter is set in head-2 on 0-TTC.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0386	HDPIGB4	HDPIGB3	HDPIGBZ	HDP IGBX	HDPNEG4	HDPNEG3	HDPNEGZ	HDPNEGX

HDPNEGX 1 : X-axis motion of handle feed is inverse direction of handle rotation.
 0 : X-axis motion of handle feed is same direction of handle rotation.

HDPNEGZ 1 : Z-axis motion of handle feed is inverse direction of handle rotation.
 0 : Z-axis motion of handle feed is same direction of handle rotation.

HDPNEG3 1 : 3rd-axis motion of handle feed is inverse direction of handle rotation.
 0 : 3rd-axis motion of handle feed is same direction of handle rotation.

HDPNEG4 1 : 4th-axis motion of handle feed is inverse direction of handle rotation.
 0 : 4th-axis motion of handle feed is same direction of handle rotation.

HDPIGBX 1 : Handle multiplier of both MP1 and MP2 on is effective for X-axis.
 0 : Handle multiplier of both MP1 and MP2 on is ineffective for X-axis.

HDPIGBZ 1 : Handle multiplier of both MP1 and MP2 on is effective for Z-axis.
 0 : Handle multiplier of both MP1 and MP2 on is ineffective for Z-axis.

HDPIGB3 1 : Handle multiplier of both MP1 and MP2 on is effective for 3rd-axis.
 0 : Handle multiplier of both MP1 and MP2 on is ineffective for 3rd-axis.

HDPIGB4 1 : Handle multiplier of both MP1 and MP2 on is effective for 4th-axis.
 0 : Handle multiplier of both MP1 and MP2 on is ineffective for 4th-axis.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0387	FEERPD							SQDNC

SQDNC 1 : Program restart is effective in not only memory operation but DNC operation.
 0 : Program restart is effective in 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	#4	#3	#2	#1	#0
NO. 0388	WKZSFT	WKZRST	I GNPS90		ROCNT	RODR	ROAXC	

1 :

0 :

ROAXC 1 : Roll-over of absolute coordinate for rotary axis is available.
 0 : Roll-over of absolute coordinate for rotary axis is not available.

RODR 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.

ROCNT 1 : Roll-over of relative coordinate for rotary axis is available.
 0 : Roll-over of relative coordinate for rotary axis is not available.

1 :

0 :

- IGNPS90 1 : Alarm 90 is invalid.
0 : Alarm 90 is valid.
- WKZRST 1 : Work coordinate is returned to G54 by NC reset.
0 : Work coordinate is not changed to G54 by NC reset.
- WKZSFT 1 : Work shift value and work zero offset value are treated as same values.
0 : Work shift value and work zero offset value are treated as different values .

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0389					TSKECR	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.
- TSKECR 1 : Servo lag is not followed up when torque limit signals turns on by using skip function with torque limit.
0 : Servo lag is followed up when torque limit signals turns on by using skip function with torque limit.

1 :
0 :

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0390	NODC3		NREQ8	NREQ7	NREQ4	NREQ3	NREQZ	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.
- 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 320 is displayed.

- NREQ3 When machine coordinate of 3rd-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 pulse 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 pulse 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-1 or -2.
 0 : DC3 is output when EOB is read in DNC operation with using reader/puncher interface channel-1 or -2.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0391	NOCLR	RS23BN	JZRN8	JZRN7	JZRN4	JZRN3	JZRNZ	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".
- 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".
- JZRN3 1 : Dogless reference point return of 3rd-axis is not available.
 0 : Dogless reference point return of 3rd-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.

NO CLR 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 character on M-NET is 8 bits.
0 : Bit length of a character on M-NET is 7 bits.

1 :
0 :

SRPE 1 : Parity check of a character on M-NET is done.
0 : Parity check of a character on M-NET is not done.

SREP 1 : Parity bit of a character on M-NET is even.
0 : Parity bit of a character 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.

	#7	#6	#5	#4	#3	x2	#1	#0
NO. 0393	DGNWEB	RADCHK	STOVO	CHKMRC	M3RQNG	WKNOMDI	MRCQSCH	

1 :
0 :

MRCQSCH When commanding multiple canned cycle,
1 : the existence of sequence No. specified by -address Q is checked before execution. (Alarm 63 appears.)
0 : the existence of sequence No. specified by address Q is not checked before execution.

WKNOMDI 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.

CHKMRC When commanding multiple turning cycle G71, G72,
1 : alarm 64 appears when programming pocket-type profile.
0 : no alarm appears when programming pocket-type profile.

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	POSILK	NOWOFS				TFHOVR	TLCSAM

TLCSAM When setting same tool with different offset Nos. in tool life management data,
 1: it is regarded as different tools.
 0: it is regarded as same tool.

TFHOVR 1: Rapid override is regarded as 100% during thread retract.
 0: Rapid override is same as usual during thread retract.

1:
 0:

1:
 0:

1:
 0:

NOWOFS 1: @ is displayed on offset No. which is selected by tool life management.
 0: No mark is displayed on offset No. which is selected by tool life management.

POSILK 1: Interlock (STLK etc) is valid in not only auto mode but also manual mode.
 0: Interlock (STLK etc) is valid in only auto mode.

CAKEY 1: One character cancel by "CAN" key is available in parameter/DGN and offset screen.
 0: One character cancel by "CAN" key is not available.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0395				ADDLA			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.

1:
 0:

1 :
0 :

ADDLA 1 : During tool nose radius compensation, if two blocks specifying no movement are specified consecutively, the offset vector is assumed to be the intersection vector.
0 : During tool nose radius compensation, if two blocks specifying no movement are specified consecutively, the offset vector is assumed to be the vector perpendicular to the movement performed in the previous block at the end point.

1 :
0 :

1 :
0 :

1 :
0 :

	#7	#6	#5	#4	#3	#2	x1	#0
NO. 0396	EORRE	HZRNOK			ERCODE	NCKER		BCC

BCC 1 : BCC is not checked. (BCC field can not be ignored.)
0 : BCC is checked.

1 :
0 :

NCKER 1 : The signal ER (RS-232-C)/TR (RS-422) is not checked.
0 : The signal ER (RS-232-C)/TR (RS-422) is checked.

ERCODE 1 : The error code is informed when negative response happens.
0 : The error code is not informed when negative response happens.

1 :
0 :

1 :
0 :

HZRNOK 1 : After the reference position is established, manual reference position return is performed at the rapid traverse rate.
0 : After the reference position is established, manual reference position return is performed based on the grid using the *DEC signal.

EORRE When detecting EOB or % during auto operation,
1 : CNC turns to reset status internally.
0 : alarm 008 appears.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0397	SERNAI	BOVR1	BOVR1	SPCCK	RGMFH	OVR225		SPLME

SPLME 1 : The unit of tolerance and fluctuation is 0.1% during spindle speed fluctuation detection.
 0 : The unit of tolerance and fluctuation is 1% during spindle speed fluctuation detection.

1 :
 0 :

OVR255 1 : Feedrate override is 1% unit.
 0 : Feedrate override is 10% unit.

RGMFH 1 : Feed-hold and single block are invalid during rigid tapping.
 0 : Feed-hold and single block are valid during rigid tapping.

SPCK 1 : Threading in balance cutting with serial interface spindle is used.
 0 : Threading in balance cutting with serial interface spindle is not used.

(Note) The same value is set in the parameter on both heads on 0-TTC.

BOVR1, BOVR2

Value		Function
BOVR2	BOVR1	
0	0	Over-ride signals are independent for each head during balance cutting.
0	1	Over-ride signals on head-1 are valid for both heads during balance cutting.
1	0	Over-ride signals on head-2 are valid for both heads during balance cutting.

(Note) The same value is set in the parameter on both heads on 0-TTC.

SERNAL 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	NOPCAL		EXOPE	ATREV	NORMAL	TYPE2	TYPE1	EADSL

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)

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.

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.

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.

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 :

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.

	#7	#6	#5	#4	#3	#2	#1	#0
NO. 0399	OUTZRN	FEDNUL	SIG	FUNO		PLAUT		NOPS41

NOPS41 1 : Interference check is not performed for tool nose radius compensation.
 0 : Interference check is performed for tool nose radius compensation.
 1 :
 0 :

PLAUT 1 : During polar coordinate interpolation, if the specified rotation axis **feedrate** exceeds the maximum cutting feedrate, the command is split.
 0 : During polar coordinate interpolation, if the specified rotation axis **feedrate** exceeds the maximum cutting feedrate, the command is output as is.
 1 :
 0 :

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.

SIG 1 : SIND signal is effective in rigid tapping mode.
 0 : SIND signal is ineffective in rigid tapping mode.

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.

NO. 0124	Order number of X-axis for positioning to restart point
NO. 0125	Order number of Z-axis for positioning to restart point
NO. 0126	Order number of 3rd-axis for positioning to restart point
NO. 0127	Order number of 4th-axis for positioning to restart point

Data type : byte
Data range : 1 to 4

Positioning orders of X, Z, 3rd and 4th-axis when moving to the restart point are specified in order.

NO. 0214	Backlash amount of spindle in rigid tapping for 1st gear
NO. 0215	Backlash amount of spindle in rigid tapping for 2nd gear
NO. 0216	Backlash amount of spindle in rigid tapping for 3rd gear
NO. 0217	Backlash amount of spindle in rigid tapping for 4th gear

Data type : byte
Data unit : detection unit of spindle
Data range : 0 to 127

Backlash amounts of spindle in rigid tapping for 1st, 2nd, 3rd and 4th gear are set in order.

NO. 0249	Ratio of spindle speed in synchronous control with two serial spindles
----------	--

Data type : byte
Data unit : time
Data range : 1 to 9

Multiplier of 2nd spindle speed for 1st spindle during spindle synchronous control with two serial interface spindles is set.

(Note) This parameter is valid only for 0-TTC.

NO. 0253

M-code for commanding rigid tapping

Data type : byte
Data range : 3 to 255

M-code for commanding rigid tapping is set. If 0 is set, it is regarded as M29.

(Note-1) M-codes which are already used such as M02 are not specified in this parameter.

(Note-2) It is necessary to specify this parameter when M-code for rigid tapping is not M29 although G84/G88 is regarded as rigid tapping.

NO. 0254

Override value for pulling-up motion of rigid tapping

Data type : byte
Data unit : 10%
Data range : 1 to 20

Override value for pulling-up motion of rigid tapping is specified. This parameter is valid when parameter 063#4 RGDOV is set to "1".

NO. 0255

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. 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 spindles is set.

NO. 0310

Axis No. for 1st position switch

}

NO. 0319

Axis No. for 10th position switch

Data Type : Byte
Setting Range : 0, 1, 2, 3, 4, 7, 8

Axis Nos. 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, Z-axis, 3rd-axis, 4th-axis, 7th-axis and 8th-axis respectively.

NO. 0320	Master axis No. for slaved X-axis
NO. 0321	Master axis No. for slaved Z-axis
NO. 0322	Master axis No. for slaved 3rd-axis
NO. 0323	Master axis No. for slaved 4th-axis

Data type : Byte
 Data range : 0 to 4 (200 to 204)

Master axis numbers for slaved X, Z, 3rd and 4th axis during synchronous control are set respectively. If synchronization is performed within head, the setting value must be added with 200. Setting value "0" indicates no synchronization.

Example-1) Synchronization between master Z1 and slaved 22

	Head-1	Head-2
No. 320	0	0
No. 321	0	2
No. 322	0	0
No. 323	0	0

Example-2) Synchronization between master Z1 and slaved Y1

	Head-1	Head-2
No. 320	0	0
No. 321	0	0
No. 322	0	0
No. 323	202	0

(Note) These parameters are valid only on 0-TTC.

NO. 0326	Axis No. on head-1 for X-axis on head-2 during mixture control
NO. 0327	Axis No. on head-1 for Z-axis on head-2 during mixture control
NO. 0328	Axis No. on head-1 for 3rd-axis on head-2 during mixture control
NO. 0329	Axis No. on head-1 for 4th-axis on head-2 during mixture control

Data type : Byte
 Data range : 0 to 4

Axis Nos. on head-1 corresponding to X, Z, 3rd and 4th-axis on head-2 during mixture control are set respectively.
 Setting value "0" indicates no mixture control for the axis.

Example-1) Mixture control between X1 and X2

	Head-1	Head-Z
No. 326	0	1
No. 327	0	0
No. 328	0	0
No. 329	0	0

Example-1) Mixture control between Y1 and X2

	Head-1	Head-2
No. 326	0	4
No. 327	0	0
No. 328	0	0
No. 329	0	0

(Note) These parameters are set on head-2 of 0-TTC.

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	Character code-1 of title at power-up
----------	---------------------------------------

NO. 0338	Character code-2 of title at power-up
----------	---------------------------------------

NO. 0339	Character code-3 of title at power-up
----------	---------------------------------------

NO. 0340	Character code-4 of title at power-up
----------	---------------------------------------

NO. 0341	Character code-5 of title at power-up
----------	---------------------------------------

NO. 0342	Character code-6 of title at power-up
----------	---------------------------------------

NO. 0343	Character code-7 of title at power-up
----------	---------------------------------------

NO. 0344	Character code-8 of title at power-up
----------	---------------------------------------

NO. 0345	Character code-9 of title at power-up
----------	---------------------------------------

NO. 0346	Character code-10 of title at power-up
----------	--

Data Type : Byte

The setting lo-characters are displayed on CRT at power-up instead of CNC software series/edition.

(Note-1) Setting value is same as software operator' s panel general purpose switch.

(Note-2) Available character is numerals, alphabets, minus, period and space.

(Note-3) When undefined characters 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

Station address of CNC is set when specifying multi-point connection 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	Z-axis
3	3rd-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	Character code-1 of title
NO. 0352	Character code-2 of title
NO. 0353	Character code-3 of title
NO. 0354	Character code-4 of title
NO. 0355	Character code-5 of title

Data Type : Byte

The setting 5-characters are displayed on screen instead of program number.

(Note) Setting value is same as software operator's panel general purpose switch.

NO. 0356	Character length of 1st line on "DISTANCE TO GO" display
NO. 0357	Character length of 2nd line on "DISTANCE TO GO" display
NO. 0358	Character length of 3rd line on "DISTANCE TO GO" display
NO. 0359	Character length of 4th line on "DISTANCE TO GO" display

Data Type : Byte
Data Range : 0 to 11

Character lengths of 1st, 2nd, 3rd and 4th line which is displayed instead of "DISTANCE TO GO" on program check screen are set respectively. The display characters should be set on R-data on PMC.

NO. 0360	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. 0361	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.0362

Station address of M-NET

Data Type : Byte
Data Range : 1 to 7

Station address of M-NET is set.

NO.0363

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.0365

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.0366

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. 0368

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. 0369

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. 0370

Maximum receiving charactor length after communication stop on DNC-2

Data Type : Byte
Setting Unit : charactor
Setting Range : 10 to 255
standard value : 255

Maximum receiving charactor length after communication stop on DNC2 is set.
"0" means the standard value.

NO. 0400

In-position width of rigid tapping axis

Data type : Word
Data unit : Detection unit
Data range : 1 to 32767
standard value : 20

In-position width of tapping axis (X or Z-axis) during rigid tapping is set.

NO. 0401

In-position width of spindle during rigid tapping

Data type : Word
Data unit : Detection unit
Data range : 1 to 32767
standard value : 20

In-position width of spindle during rigid tapping is set.

NO. 0402

Position deviation limit of rigid tapping axis

Data type : Word
 Data unit : Detection unit
 Data range : 1 to 32767

Position deviation limit of tapping axis (X or Z-axis) during rigid tapping is set.

(Note) When using high resolution detector, setting unit is multiplied with 10.

NO. 0403

Position deviation limit of spindle during rigid tapping

Data type : Word
 Data unit : Detection unit
 Data range : 1 to 32767

Position deviation limit of spindle during rigid tapping is set. The setting value is estimated by the following formula.

Formula = $S \times 360 / 60 \times 1 / G \times 1 / @ \times 100 \times 1.5$
 S . . . • Maximum spindle speed during rigid tapping
 (Parameter 0423 to 0426)
 G . . . • Position loop gain during rigid tapping
 (Parameter 0615)
 @ . . . • Detection unit
 (Parameter 0411)

Example)

S . . . • 3600

G . . . • 3000

@ . . . • 0.17578

(Gear ratio of spindle and position coder is 1:2)

Setting value = $(3600 \times 360) / 60 \times 1 / 3000$
 $\times 1 / 0.17578 \times 100 \times 1.5$
 = 6144

(Note) When using multiple gear stage, calculation should be done for each gear stage and the maximum value among them should be set.

NO. 0404

Position deviation limit of tapping axis in stop. state

Data type : Word
 Data unit : Detection unit.
 Data range : 1 to 32767
 Standard value : 500.

Position deviation limit of tapping axis (X or Z-axis) in stop state during rigid tapping is set.

NO.0405 Position deviation of spindle in stop state during rigid tapping

Data type : Word
Data unit : Detection unit
Data range : 1 to 32767
Standard value : 500

Position deviation limit of spindle in stop state during rigid tapping is set.

NO. 0406 Position loop gain during rigid tapping

Data type : Word
Data unit : 0.01 msec⁻¹
Data range : 1 to 9999

Position loop gain of tapping axis (X or Z-axis) and spindle during rigid tapping is set.

(Note) When setting different loop gain for each gear stage, set "0" in this parameter and set each position loop gain in parameter 407, 408, 409 and 410.

NO. 0407 Position loop gain during rigid tapping for 1st gear

NO. 0408 Position loop gain during rigid tapping for 2nd gear

NO. 0409 Position loop gain during rigid tapping for 3rd gear

NO. 0410 Position loop gain during rigid tapping for 4th gear

Data type : Word
Data unit : 0.01 msec⁻¹
Data range : 1 to 9999

Position loop gain of tapping axis (X or Z-axis) and spindle during rigid tapping for each gear is set.

NO. 0411 Loop gain multiplier of spindle during rigid tapping for 1st gear

NO. 0412 Loop gain multiplier of spindle during rigid tapping for 2nd gear

NO. 0413 Loop gain multiplier of spindle during rigid tapping for 3rd gear

NO. 0414 Loop gain multiplier of spindle during rigid tapping for 4th gear

Data type : Word
Data range : 1 to 32767

Loop gain multiplier of spindle during rigid tapping for each gear is set.
The setting value is calculated by the following formula.

$$\text{Formula} = 2048 \times E / L \times @ \times 1000$$

E . . . *voltage for specifying a speed of 1000rpm
L . . . spindle rotation angle per one spindle motor rotation
@ . . . detection unit

Example) E = 1.667 V (10V for speed 6000rpm)
L = 360°
@ = La / 4096
= 720° / 4096
= 0.17578”
Setting value = 2048 × 1.667 / 360
× 0.17578 × 1000
= 1667

NO. 0415 Acc/dec time constant during rigid tapping for 1st gear

Data type : Word
Data unit : 1 msec
Data range : 1 to 4000

Acc/dec time constant of tapping axis (X or Z-axis) and spindle during rigid tapping for 1st gear is set. The parameter indicates the required time from spindle speed 0 to parameter 423. Actual time constant is proportional to commanded spindle speed.

NO. 0416 Acc/dec time constant during rigid tapping for 2nd gear

Data type : Word
Data unit : 1 msec
Data range : 1 to 4000

Acc/dec time constant of tapping axis (X or Z-axis) and spindle during rigid tapping for 2nd gear is set. The parameter indicates the required time from spindle speed 0 to parameter 424. Actual time constant is proportional to commanded spindle speed.

NO. 0417 Acc/dec time constant during rigid tapping for 3rd gear

Data type : Word
Data unit : 1 msec
Data range : 1 to 4000

Acc/dec time constant of tapping axis (X or Z-axis) and spindle during rigid tapping for 3rd gear is set. The parameter indicates the required time from spindle speed 0 to parameter 425. Actual time constant is proportional to commanded spindle speed.

NO. 0418 | Acc/dec time constant during rigid tapping for 4th gear

Data type : Word
Data unit : 1 msec
Data range : 1 to 4000

Acc/dec time constant of tapping axis (X or Z-axis) and spindle during rigid tapping for 4th gear is set. The parameter indicates the required time from spindle speed 0 to parameter 426. Actual time constant is proportional to commanded spindle speed.

NO. 0419 | Time constant of rigid tapping during pulling-up motion for 1st gear

NO. 0420 | Time constant of rigid tapping during pulling-up motion for 2nd gear

NO. 0421 | Time constant of rigid tapping during pulling-up motion for 3rd gear

NO. 0422 | Time constant of rigid tapping during pulling-up motion for 4th gear

Data Type : Word
Data Unit : msec
Data Range : 0 to 4000

Acc/dec time constants of rigid tapping during pull-up motion for 1st, 2nd, 3rd and 4th gear are set respectively.
These parameters are valid when parameter 029#3 is set to "1".

NO. 0423 | Maximum spindle speed during rigid tapping for 1st gear

NO. 0424 | Maximum spindle speed during rigid tapping for 2nd gear

Nil. 0425 | Maximum spindle speed during rigid tapping for 3rd gear

NO. 0426 | Maximum spindle speed during rigid tapping for 4th gear

Data Type : Word
Data unit : 1 rpm
Data range : 0 to 7400 (gear ratio of spindle and position coder 1:1)
0 to 9999 (gear ratio of spindle and position coder 1:n)

Maximum spindle speeds during rigid tapping for 1st, 2nd, 3rd and 4th gear are set respectively.

NO. 0427	Number of 1st gear teeth of spindle side during rigid tapping
NO. 0428	Number of 2nd gear teeth of spindle side during rigid tapping
NO. 0429	Number of 3rd gear teeth of spindle side during rigid tapping
NO. 0430	Number of 4th gear teeth of spindle side during rigid tapping

Data Type : Word
 Data unit : teeth
 Data range : 0 to 32767

Numbers of teeth of spindle side gear during rigid tapping for 1st, 2nd, 3rd and 4th gear are set respectively.

(Note) These parameters are valid when parameter 06356 VALPC is set to "1".

NO. 0431	Number of 1st gear teeth of position coder side during rigid tapping
NO. 0432	Number of 2nd gear teeth of position coder side during rigid tapping
NO. 0433	Number of 3rd gear teeth of position coder side during rigid tapping
NO. 0434	Number of 4th gear teeth of position coder side during rigid tapping

Data Type : Word
 Data unit : t e e t h
 Data range : 0 to 32767

Numbers of teeth of position coder side gear during rigid tapping for 1st, 2nd, 3rd and 4th gear are set respectively.

(Note) These parameters are valid when parameter 063#6 VALPC is set to "1".

NO. 0435	Position deviation of spindle during rigid tapping
----------	--

Data Type : Word
 Data unit : Detection unit

Position deviation of spindle during rigid tapping is displayed.
 This parameter is used only for diagnosis.

NO. 0436

Position command of spindle during rigid tapping

Data Type : Word
Data unit : Detection unit

Position command of spindle during rigid tapping is displayed.
This parameter is used only for diagnosis.

NO. 0437

Momentary error difference between spindle and rigid tapping axis

Data Type : Word
Data unit : 1 %

Momentary error difference between spindle and tapping axis during rigid tapping is displayed.
This parameter is used only for diagnosis.

NO. 0438

Maximum error difference between spindle and rigid tapping axis

Data Type : Word
Data unit : 1 %

Maximum error difference between spindle and tapping axis during rigid tapping is displayed.
This parameter is used only for diagnosis.

NO. 0452

Absolute counter value of X-axis at reference point

NO. 0453

Absolute counter value of Z-axis at reference point

NO. 0454

Absolute counter value of 3rd-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. 0463

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. 0464

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. 0465

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. 0466

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. 0467

Time interval from "end of receive" to "start of send" on M-NET

Data Type : Word

Data Unit : 1 msec

Standard Value : 1

Interval timer from the end of receive to the start of send on M-NET is set.

NO. 0468

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	#1	#0
R 0500	H08	H07	H06	H05	H04	H03	H02	H01
R 0501					H12	H11	H10	H09

NO. 0469

Program No. of parameter for Power Mate

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.0474

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. 0475

Output destination address for CNC status signal for 0-TTC tool post 2
--

Data Type : Address
Data Range : 300 to 993

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 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.

(Note) This parameter is valid only for the 0-TTC. Set the parameter for tool post 1.

NO. 0476	Stored address of 1st line characters displayed on "DISTANCE TO GO"
NO. 0477	Stored address of 2nd line characters displayed on "DISTANCE TO GO"
NO. 0478	Stored address of 3rd line characters displayed on "DISTANCE TO GO"
NO. 0479	Stored address of 4th line characters displayed on "DISTANCE TO GO"

Data Type : Word
Data Range : 300 to 699

The stored addresses of 1st, 2nd 3rd and 4th line which is displayed instead of "DISTANCE TO GO" on program check screen are set.

NO. 0490	Maximum length of packet on DNC-2
----------	-----------------------------------

Data Type : Word
Data Unit : Characters
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. 0512	Position loop gain of X-axis
NO. 0513	Position loop gain of Z-axis
NO. 0514	Position loop gain of 3rd-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, Z, 3rd and 4th-axis are set in order.

(Note-1) These parameters are effective only when parameter 517 (position loop gain for a.11 axes) is set to "0".

(Note-2) It is necessary to turn off CNC power after changing these parameters.

NO. 0554	Program No. of/parameter for Power Mate
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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. 0555 Feedrate ratio at which the next block is started for block overlap

Data Unit : %
Data Range : 0 to 100

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:

$$\text{Current block feedrate at which next block is started} \\ = \text{Specified current block feedrate} \times \text{set value}/100$$

(Note) If the parameter is set to 100, the next block is started upon the start of deceleration for the current block.

NO. 0570 Capacity of reference counter for X-axis

NO. 0571 Capacity of reference counter for Z-axis

NO. 0572 Capacity of reference counter for 3rd-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, Z, 3rd, 4th, 7th and 8th-axis are set in order.

(Note-1) 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-31) 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. 0599 Number of T-code to ignore tool life management

Data Type : Word
 Data Range : 0 to 9999

Number of T-code to ignore tool life management is set.

NO. 0627 Time constant of Z-axis acc/dec in threading cycle

Data type : Word
 Data unit : msec
 Data range : 0 to 4000

Time constant of Z-axis exponential acc/dec in threading cycle is set.

NO. 0628 FL speed of Z-axis acc/dec in threading cycle

Data type : Word
 Data unit : 1mm/min, 0.1inch/min
 Data range : 6 to 1500 (metric input), 6 to 6000 (inch input)

FL speed of Z-axis exponential acc/dec in threading cycle is set.

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 &h-axis are set in order.

Note-1) These parameters are effective only when parameter 517 (position loop gain for all axes) is set to “0”.

Note-2) It is necessary to turn off CNC power after changing these parameters.

NO. 0635 Time constant of linear acc/dec after interpolation

Data Type : Word
 Data Unit : 1 msec
 Data Range : 8 to 1024

Time constant of linear acc/dec after interpolation during cutting is set. When “0” is set in the parameter, exponential acc/dec is applied.

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 control is set. When “0” is set, parameter 534 is used for FL speed of PMC axis control.

NO. 0673 Backlash compensation value for rapid traverse for X-axis

NO. 0674 Backlash compensation value for rapid traverse for Y-axis

NO. 0675 Backlash compensation value for rapid traverse for 3rd axis

NO. 0676 Backlash compensation value for rapid traverse for 4th axis

NO. 0677 Backlash compensation value for rapid traverse for 7th axis

NO. 0678 Backlash compensation value for rapid traverse for 8th 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

Data Range : 0 to 2550

The backlash compensation value for rapid traverse is set for each axis.

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 Limit of synchronous position error of slaved X-axis

NO. 0687 Limit of synchronous position error of slaved Z-axis

NO. 0688 Limit of synchronous position error of slaved 3rd-axis

NO. 0689 Limit of synchronous position error of slaved 4th-axis

NO. 0690 Limit of synchronous position error of slaved 7th-axis

NO. 0691 Limit of synchronous position error of slaved 8th-axis

Data Type : Word
Data Unit : Detection unit
Data Range : 0 to 32767

The limit of deviation of position error between master axis and each slaved axis is set in order.

(Note) These parameters are available only on 0-TTC.

NO. 0692 Deviation of synchronous position error of slaved X-axis

NO. 0693 Deviation of synchronous position error of slaved Z-axis

NO. 0694 Deviation of synchronous position error of slaved 3rd-axis

NO. 0695 Deviation of synchronous position error of slaved 4th-axis

NO. 0696	Deviation of synchronous position error of slaved 7th-axis
NO. 0697	Deviation of synchronous position error of slaved 8th-axis

Data Type : Word
 Data Unit : Detection unit

The deviation of synchronous position error between master axis and each slaved axis is displayed. (Only for diagnostic use>

(Note-1) These parameters are available only on 0-TTC.

(Note-2) The deviation is calculated as follows.

(Servo lag of the master axis) ± (Servo lag of the slaved axis)

↑ t is taken when mirror image is on.
 - is taken when mirror image is off.

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. 0737	2nd reference point of 3rd axis
----------	---------------------------------

NO. 0738	2nd reference point of 4th axis
----------	---------------------------------

Data type : 2 words
 Data unit : output increment
 Data range : 0 to ± 99999999

2nd reference point of 3rd and 4th axis are set in order.

NO. 0741 Counter value of absolute pulse coder for 3rd-axis at reference Point

NO. 0742 Counter value of absolute pulse coder for 4th-axis at reference point

Data type : 2 words

Counter values of absolute pulse coder for 3rd and 4th-axis at reference point are set automatically after manual reference point return is finished with using absolute pulse coder.

NO. 0749 Plus side of stored stroke limit-3 for 3rd axis

NO. 0750 Plus side of stored stroke limit-3 for 4th axis

NO. 0753 Minus side of stored stroke limit-3 for 3rd axis

NO. 0754 Minus side of stored stroke limit-3 for 4th axis

Data type : 2 words
Data unit : output increment
Data range : 0 to ±99999999

Plus side and minus side of stored stroke limit-3 for 3rd and 4th axis are set.

NO. 0760 Plus side of stored stroke limit-4 for X-axis

NO. 0761 Plus side of stored stroke limit-4 for Z-axis

NO. 0764 Minus side of stored stroke limit-4 for X-axis

NO. 0765 Minusside of stored stroke limit-4 for Z-axis.

Data type : 2 words
Data unit : output increment
Data range : 0 to ±99999999

Plus side and minus side of stored stroke limit-4 for X, Z, 3rd and 4th axis are set.

NO. 0770 Plus side of stored stroke limit-2 for X-axis

NO. 0771 Plus side of stored stroke limit-2 for Z-axis

NO. 0772	Plus side of stored stroke limit-2 for 3rd-axis
NO. 0773	Plus side of stored stroke limit-2 for 4th-axis
NO. 0774	Minus side of stored stroke limit-2 for X-axis
NO. 0775	Minus side of stored stroke limit-2 for Z-axis
NO. 0776	Minus side of stored stroke limit-2 for 3rd-axis
NO. 0777	Minus side of stored stroke limit-2 for 4th-axis

Data type : 2 words
 Data unit : output increment
 Data range : 0 to ± 99999999

Plus side and minus side of stored stroke limit-2 for X, Z, 3rd and 4th axis are set.

(Note-1) When signal G129#6 (EXLM1) is on, these parameters are referred as stored stroke limit instead of parameter 700 to 707.

(Note-2) These parameters are valid only when parameter 020#4 LM2 is set to "1".

NO. 0788	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. 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 lock 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 7'97 is set in this parameter.
The actual setting value is not displayed too.

NO. 0819

Auto-preset coordinate value of 7th-axis after reference point return

NO. 0820

Auto-preset coordinate value of 8th-axis after reference point return

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ± 99999999

Auto-preset coordinate values of 7th and 8th-axis after reference point return are set respectively.

(Note) These parameters are valid only when parameter 063#1 PRSTIN is set to "1" with inch input.

NO. 0840

Maximum coordinate value of 1st position switch

}

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

}

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

X-axis reference point on mixed work coordinate

NO. 0861	Z-axis reference point on mixtured work coordinate
NO. 0862	3rd-axis reference point on mixtured work coordinate
NO. 0863	4th-axis reference point on mixtured work coordinate
NO. 0864	7th-axis reference,point on mixtured work coordinate
NO. 0865	8th-axis reference point on mixtured work coordinate

Data type : 2 words
 Data Unit : Input increment
 Data Range : 0 to ± 99999999

Each axis reference point on mixtured work coordinate is set in order.

(Note) These parameters are available only on 0-TTC.

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 t 0 ± 99999999

7th and 8th-axis coordiante values on 2nd reference point are 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

7th and 8th-axis coordiante values on 3rd reference point are 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

7th and 8th-axis coordinate values on 4th reference point are 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. 0940

External work zero offset of X-axis

NO. 0941

External work zero offset of Z-axis

NO. 0942

External work zero offset of 3rd-axis

NO. 0943

External work zero offset of 4th-axis

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ±99999999

External work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0944

1st work zero offset value of X-axis (G54)

NO. 0945

1st work zero offset value of Z-axis (G54)

NO. 0946

1st work zero offset value of 3rd-axis (G54)

NO. 0947

1st work zero offset value of 4th-axis (G54)

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ±99999999

1st work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0948

2nd work zero offset value of X-axis (G55)

NO. 0949

2nd work zero offset value of Z-axis (G55)

NO. 0950

2nd work zero offset value of 3rd-axis (G55)

NO. 0951

2nd work zero offset value of 4th-axis (G55)

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ± 99999999

2nd work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0952

3rd work zero offset value of X-axis (G56)

NO. 0953

3rd work zero offset value of Z-axis (G56)

NO. 0954

3rd work zero offset value of 3rd-axis (G56)

NO. 0955

3rd work zero offset value of 4th-axis (G56)

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ± 99999999

3rd work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0956

4th work zero offset value of X-axis (G57)

NO. 0957

4th work zero offset value of Z-axis (G57)

NO. 0958

4th work zero offset value of 3rd-axis (G57)

NO. 0959

4th work zero offset value of 4th-axis (G57)

Data type : 2 words
Data Unit : Input increment
Data Range : 0 to ± 99999999

4th work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0960	5th work zero offset value of X-axis (G58)
NO. 0961	5th work zero offset value of Z-axis (G58)
NO. 0962	5th work zero offset value of 3rd-axis (G58)
NO. 0963	5th work zero offset value of 4th-axis (G58)

Data type : 2 words
 Data Unit : Input increment
 Data Range : 0 to ± 99999999

5th work zero offset values of X, Z, 3rd and 4th axis are set in order.

NO. 0964	6th work zero offset value of X-axis (G59)
NO. 0965	6th work zero offset value of Z-axis (G59)
NO. 0966	6th work zero offset value of 3rd-axis (G59)
NO. 0967	6th work zero offset value of 4th-axis (G59)

Data type : 2 words
 Data Unit : Input increment
 Data Range : 0 to ± 99999999

6th work zero offset values of X, Z, 3rd and 4th axis are set in order.

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
Rotation 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 [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001
Rotation axis [deg]	0.01	0.001	0.0001

Data Range : 0 to ± 999999999

These parameters display the machine position prior to power-off. They are used for self-diagnosis and need not be set.

NO. 6780

Position loop gain during Cs contouring control for 1st gear

NO. 6781

Position loop gain during Cs contouring control for 2nd gear

NO. 6782

Position loop gain during Cs contouring control for 3rd gear

NO. 6783

Position loop gain during Cs contouring control for 4th gear

Data type : Word
Data unit : 0.001 sec⁻¹
Data range : 1 to 9999

Position loop gain of X, Z, 3rd and 4th-axis during Cs contouring control for each gear are set.

(Note-1) It is necessary to turn off CNC power after changing these parameters.

NO. 6784 Position loop gain of X-axis during Cs contouring control for 1st gear

NO. 6785 Position loop gain of X-axis during Cs contouring control for 2nd gear

NO. 6786 Position loop gain of X-axis during Cs contouring control for 3rd gear

NO. 6787 Position loop gain of X-axis during Cs contouring control for 4th gear

Data type : Word
Data unit : 0.001 sec⁻¹
Data range : 1 to 9999

Position loop gain of X-axis during Cs contouring control for each gear are set.

(Note-1) These parameters are effective only when parameter 6780 to 6783 are set to "0".

(Note-2) It is necessary to turn off CNC power after changing these parameters.

NO. 6788 Position loop gain of Z-axis during Cs contouring control for 1st gear

NO. 6789 Position loop gain of Z-axis during Cs contouring control for 2nd gear

NO. 6790 Position loop gain of Z-axis during Cs contouring control for 3rd gear

NO. 6791 Position loop gain of Z-axis during Cs contouring control for 4th gear

Data type : Word
Data unit : 0.001 sec⁻¹
Data range : 1 to 9999

Position loop gain of Z-axis during Cs contouring control for each gear are set.

(Note-1) These parameters are effective only when parameter 6780 to 6783 are set to "0".

(Note-2) It is necessary to turn off CNC power after changing these parameters.

NO. 6796 Position loop gain of 4th-axis during Cs contouring control for 1st gear

- NO. 6797 Position loop gain of 4th-axis during Cs contouring control for 2nd gear
- NO. 6798 Position loop gain of 4th-axis during Cs contouring control for 3rd gear
- NO. 6799 Position loop gain of 4th-axis during Cs contouring control for 4th gear

Data type : Word
 Data unit : 0.001 sec⁻¹
 Data range : 1 to 9999

Position loop gain of 4th-axis during Cs contouring control for each gear are set.

(Note-1) These parameters are effective only when parameter 6780 to 6783 are set to "0".
 (Note-2) It is necessary to turn off CNC power after changing these parameters.

- 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
Rotation 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 Machine 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
Rotation axis [deg]	0.001	0.0001

Data Range : 0 to ±999999999

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 PARAMETER MANUAL (B-61400E)

Edition	Date	Contents	Edition	Date	Contents
03	Nov., '96	<ul style="list-style-type: none"> ● Correction of errors 			
02	Mar., '96	<ul style="list-style-type: none"> ● Addition of parameters for cutting feed and rapid traverse separate back lash compensation, etc. ● Correction of errors 			
01	Dec., '94				

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