



GE Fanuc Automation

Computer Numerical Control Products

Series 0-TD / 0-GCD

Parameter Manual

GFZ-62550EN/01

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PREFACE

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

Product name	Abbreviations	
FANUC Series 0-TD	0-TD	Series 0-D
FANUC Series 0-GCD	0-GCD	

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

Table 1 Manuals related to the FANUC Series 0-D

Manuals name	Specification number	
FANUC Series 0-TD/MD/GCD/GSD CONNECTION MANUAL (HARDWARE)	B-62543EN	
FANUC Series 0-TD/MD/GCD/GSD CONNECTION MANUAL (FUNCTION)	B-62543EN-1	
FANUC Series 0-TD/GCD OPERATOR'S MANUAL	B-62544EN	
FANUC Series 0-MD/GSD OPERATOR'S MANUAL	B-62574EN	
FANUC Series 0-TD/MD/GCD/GSD MAINTENANCE MANUAL	B-62545EN	
FANUC Series 0-TD/GCD PARAMETER MANUAL	B-62550EN	*
FANUC Series 0-MD/GSD PARAMETER MANUAL	B-62580EN	

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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
- (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 custom macros
- (17) Parameters related to run time/parts count display
- (18) Parameters related to manual handle feed
- (19) Parameters related to the software operator’s panel
- (20) Parameters related to PMC-based axis control
- (21) Parameters related to cylindrical grinding machines (0-GCD)
- (22) Parameters related to the PMC
- (23) Parameters related to the Cf-axis

NOTE

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.

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

No.	Symbol	Description
0002#0 0012#0	STP2 STP2	(I/O=0) The number of stop bits is 1/2. (I/O=1)
0002#2 0012#2	ASR33 ASR33	(I/O=0) FANUC PPR, etc./20-mA current interface (I/O=1)
0002#3 0012#3	RSASCI RSASCI	(I/O=0) ISO or EIA/ASCII is used as the input code. (I/O=1)
0002#7 0012#7	NFED NFED	(I/O=0) Line feed codes are output/not output before and after data output. (I/O=1)
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#6, #7	***, ***	(I/O=0,1) Input/output unit setting
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.
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.
0552 0553	----- -----	(I/O=0) Baud rate (I/O=1)

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

No.	Symbol	Description
0001#0	SCW	The metric/inch system is used for the least command increment (output unit) for linear axes.
0003#0 to #2	ZM※	(X to 3) The reference position return direction and initial direction are positive/negative.
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 0210	ADW30 -----	(3) Axis name (Display) (3) (Command)
0032#2	LIN3	The third axis is rotation axes/linear axes.
0032#7	ROT10	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.
0069#4	BAX	As a command address for the third axis, B is not used/used.
0069#5	※※※※	Incremental or absolute command address for the third axis
0074#0 to #2	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	RODRG	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 #2	JZRN※	The function for setting the reference position without dogs is enabled/disabled.
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 0271	-----	Servo axis number
0279	-----	Attributes of the third axis

(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 0710 0815 to 0817	----- -----	(X to 3) Reference position coordinates in automatic coordinate system setting (X to 3)
0735 to 0737	-----	(X to 3) Distance of the second reference position from the first reference position
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 (1/2)

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.
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.
0700 to 0702	-----	(X to 3) First stored stroke limit in the positive direction for each axis
0704 to 0706	-----	(X to 3) First stored stroke limit in the negative direction for each axis

(5) Parameters related to stroke limits (2/2)

No.	Symbol	Description
0770 to 0772	-----	Second stored stroke limit in the positive direction for each axis
0774 to 0776	-----	Second stored stroke limit in the negative direction for each axis

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

No.	Symbol	Description
0001#6	RDRN	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.
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.
0518 to 0520	-----	(X to 3) Rapid traverse rate for each axis
0527	-----	Maximum allowable cutting feedrate
0528	-----	FL feedrate for acceleration/deceleration along the X-axis in threading (G92)
0530	-----	(X to 3) FL feedrate for exponential acceleration/deceleration in cutting feed
0533	-----	(X to 3) F0 feedrate for rapid traverse override
0534	-----	(X to 3) FL feedrate for reference position return
0548	-----	FL feedrate for exponential acceleration/deceleration in manual feed
0559 to 0561	-----	Jog rapid traverse rate for each axis
0605 to 0607	-----	FL feedrate for exponential acceleration/deceleration in manual feed for each axis

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

No.	Symbol	Description
0628	-----	FL feedrate for acceleration/deceleration along the Z-axis in threading (G92)
0657 to 0659	-----	(X to 3) FL feedrate for exponential acceleration/deceleration in cutting feed for PMC axes

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

No.	Symbol	Description
0020#5	NCIPS	An in-position check is performed/is not performed.
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 0524	-----	(X to 3) Time constant for rapid traverse using linear acceleration/deceleration for each axis
0526	-----	Time constant for the X-axis in threading (G92)
0529	-----	Time constant for exponential acceleration/deceleration in cutting feed and manual feed
0555	-----	Feedrate ratio at which the next block is started for rapid traverse block overlap
0601 to 0603	-----	(X to 3) Time constant for exponential acceleration/deceleration in manual feed for each axis
0627	-----	Time constant for the Z-axis in threading (G92)
0651 to 0653	-----	(X to 3) Time constant for exponential acceleration/deceleration in cutting feed for PMC axes

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

No.	Symbol	Description
0004 to 0006 0570 to 0572	GRD* -----	(X to 3) Size of a reference counter for each axis (X to 3)
0004 to 0006	DMR*	(X to 3) Detection multiplication factor (DMR) for each axis
0010#2	OFFVY	If VRDY=1 is set before PRDY=1, an alarm is issued/is not issued.
0021#0 to #2	APC*	(X to 3) For each axis, an absolute-position detector is not used/used.
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 #2	ABS*	(X to 3) A reference position is not established/is already established with an absolute-position detector.
0035#7	ACMR	(X to 3) An arbitrary CMR is not used/is used.
0037#0 to #2	SPTP*	(X to 3) As a position detector, a separate pulse coder is not used/is used.
0037#7	PLC01	(X to 8) A high-resolution pulse coder is not used/is used.
0041#1	THRDB	The threading start type is type A/type B.
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 #3	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 0102	-----	(X to 3) Command multiplication factor (CMR) for each axis
0255	-----	Time interval for averaged current value display on the servo adjustment screen
0269 to 0271	-----	Servo axis number
0452 to 0454 0739 to 0741	----- -----	(X to 3 3RD WORD) Counter value at the APC reference position (X to 3 LOWER 2 WORD)
0500 to 0502	-----	(X to 3) In-position width for each axis
0504 to 0506	-----	(X to 3) Limit of position deviation during movement along each axis
0508 to 0510	-----	(X to 3) Grid shift for each axis
0512 to 0515 0517	----- -----	(X to 3) Position control loop gain for each axis (X to 3) Position control loop gain common to all axes
0535 to 0537	-----	(X to 3) Backlash compensation for each axis
0593 to 0595	-----	(X to 3) Limit of position deviation in the stop state for each axis
0673 to 0675	-----	(X to 3) 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	DECI	(X to 3) The deceleration signal for reference position return starts deceleration when this bit is set to 0/1.
0003#4	OVRI	(X to 3) The override signal and rapid traverse override signal increase speed when this bit is set to 0/1.
0008#7	EILK	The start lock signal is common to all axes/defined for each axis.
0009#0 to #2	TFIN	(X to 3) Acceptance time width for the M, S, or T function completion signal (G120#3 FIN)
0009#4 to #7	TMF	(X to 3) Time before the M, S, or T function code read signal is sent
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 signal are GX19#7/G16#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.
0252	-----	Reset signal extension time

(10) Parameters related to CRT/MDI, display, and editing (1/2)

No.	Symbol	Description
0001#1	PROD	Tool length compensation data is included/is not included in relative coordinate display.
0002#1 7002#1	PPD PPDS	Relative coordinates are not preset/are preset by coordinate system setting.
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.
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.
0029#0	DSP3	The current position of the third axis is not displayed/is displayed.
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 background edit function is provided, automatic memory compression is performed/is not performed.
0060#0	DADRDP	Addresses are not displayed/are displayed on the diagnostic screen.
0060#2	LDDSPG	Dynamic ladder display is not performed/is performed.
0060#5	OPMNDP	Operating monitor display is invalid/valid.
0060#6	EXTSP	The display and search operations are disabled/enabled for protected programs.

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

No.	Symbol	Description
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#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.
0076#2	IOP	NC program input and output operations can be stopped by resetting the NC/only by selecting the [STOP] soft key.
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.
0389#0	SRVSET	The servo setting screen is displayed/is not 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.
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.
0397#7	SERNAI	The details of alarm 409 are not displayed/are displayed.
0257 to 0263	-----	Tool post name (first to seventh characters) displayed on the screen
0337 to 0346	-----	Title character code
0351 to 0355	-----	NC name character code
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.
0036#1	GSP	The G code system is of type A/type B.
0036#5	GSPC	The G code system is of type 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.
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
0876	-----	Arc radius error limit

(12) Parameters related to pitch error compensation (1/2)

No.	Symbol	Description
0011#0, #1	PML※	(X to 3) Pitch error compensation magnification
0756 to 0758	-----	(X to 3) Compensation interval in pitch error compensation for each axis

(12) Parameters related to pitch error compensation (2/2)

No.	Symbol	Description
1000 to 3000	-----	Zero position for pitch error compensation for each axis
1001 to 3128	-----	Pitch error compensation for each axis

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

No.	Symbol	Description
0003#6, #7	PSG※	Gear ratio between the spindle and 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.
0049#0	EVSF	When an S code is specified, the S code and SF are not output/are output at all times.
0062#3	SPMRPM	The unit of parameter data for spindle speed control is 1/10 [RPM].
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#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	MORCM1	For the first spindle motor, the spindle orientation function with the stop position set externally is not used/is used.
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)
0516	-----	Data for gain adjustment in constant surface speed control (analog output)
0539	-----	Spindle speed offset value
0540 to 0543	-----	Speed when the spindle speed command voltage for each gear is 10 [V]
0551	-----	Minimum spindle speed in the constant surface speed control mode (G96)
0556	-----	Maximum spindle speed for the constant surface speed control option
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

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

No.	Symbol	Description
0619, 0620	-----	Speed when the third spindle speed command voltage for each gear is 10 [V]
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.
0075#3	WNPT	A virtual tool tip number for tool-tip radius compensation is specified using a geometric/wear compensation number.
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
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
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 custom macros (1/1)

No.	Symbol	Description
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.
0240 to 0242	-----	M code for calling subprograms O9001 to O9003

(17) 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

(18) Parameters related to manual handle feed (1/1)

No.	Symbol	Description
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.
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

(19) 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

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

No.	Symbol	Description
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 #2	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.
0350	-----	Axis for which a feedrate is specified in PMC axis control
0651 to 0653	-----	(X to 3) Time constant for exponential acceleration/deceleration during cutting feed for a PMC axis
0657 to 0669	-----	(X to 3) FL feedrate for exponential acceleration/deceleration during cutting feed for a PMC axis
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

(21) Parameters related to cylindrical grinding machines (0–GCD) (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.

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

No.	Symbol	Description
0024#0	IGNPMC	PMC-based control is enabled/disabled.
0028#1	PRCMMSG	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.
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

(23) 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].

2

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].

No. 0079#6 F0DIC	No. 0024#1 LI10	Input increment
0	0	IS-B
0	1	IS-A
1	0	IS-C
1	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 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.
- 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) RSASCII = 0
- 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).

- (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)
- (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.

4

DESCRIPTION OF PARAMETERS

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0001		RDRN	DECI	ORC	TOC	DCS	PROD	SCW

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.

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

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.

TOC 1 : Offset is cancelled by reset button.

0 : Offset it not cancelled by reset button.

ORC 1 : Offset value becomes a diameter designation.

0 : Offset value becomes a radius designation.

DECI 1 : Deceleration signal “1” in reference point return indicates deceleration.

0 : Decelerating signal “0” in reference point return indicates deceleration.

RDRN 1 : Dry run is effective for rapid traverse.

0 : Dry run is not effective for rapid traverse.

	#7	#6	#5	#4	#3	#2	#1	#0
0002	NFED	TJHD			RSASCI	ARS33	PPD	STP2

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.

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.

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

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".

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.

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.)

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0003	PSG2	PSG1		OVRI		ZM3	ZMZ	ZMX

ZMX, ZMZ, ZM3 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.

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.

PSG2, 1 Gear ratio of spindle and position coder.

Magni-fication	PSG2	PSG1
×1	0	0
×2	0	1
×4	1	0
×8	1	1

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

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0004			DMRX			GRDX		
	#7	#6	#5	#4	#3	#2	#1	#0
0005			DMRZ			GRDZ		
	#7	#6	#5	#4	#3	#2	#1	#0
0006			DMR3			GRD3		

GRDX to GRD3 Capacity of reference counter

Setting code				Capacity of reference counter	
				Except for 0.1 μ detector for Digital servo	0.1 μ detector for Digital servo
3	2	1	0		
0	0	0	0	1000	10000
0	0	0	1	2000	20000
0	0	1	0	3000	30000
0	0	1	1	4000	40000
0	1	0	0	5000	50000
0	1	0	1	6000	60000
0	1	1	0	7000	70000
0	1	1	1	8000	80000
1	0	0	0	9000	90000
1	0	0	1	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

DMRX to DMR3 Setting of detective multiplier

Setting code			Detective multiplier	
			Analog servo	Digital servo
6	5	4		
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

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0008	EILK	NOFC	ROVE	MFPR				

MFPR 1 : Manual synchronous feed is done.

0 : Manual synchronous feed is not done.

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

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

NOFC 1 : Offset counter input is not used.

0 : Offset counter input is used.

EILK 1 : Interlock for individual axis (ITX, ITZ, IT3) is valid.

0 : Interlock for all axes (STLK) is valid.

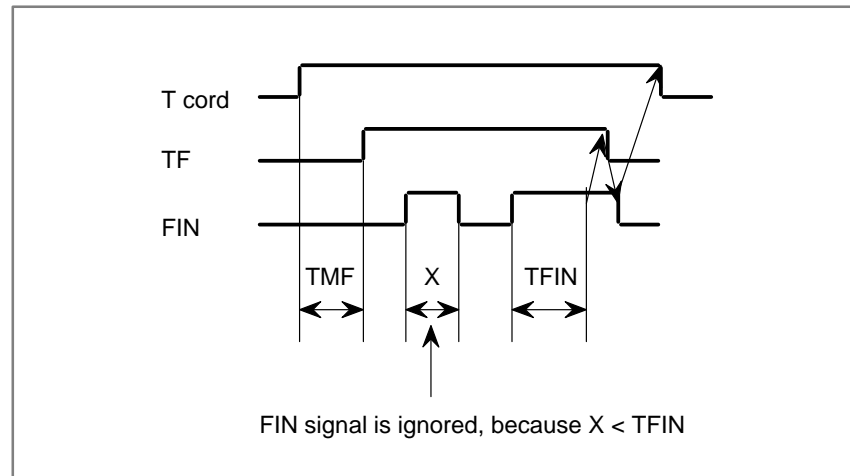
	#7	#6	#5	#4	#3	#2	#1	#0
0009	TMF				TFIN			

TFIN Time of reception width of FIN.

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

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

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



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

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

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 reference point return is conducted after turning the power on.

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).

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.

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.

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

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

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.

APRS 1 : Automatic coordinate system setting is conducted when manual reference point return is performed.

0 : Automatic coordinate system setting is not conducted.

	#7	#6	#5	#4	#3	#2	#1	#0
0011	MCINP	G01					PML2	PML1

PML1, 2 Pitch error compensation magnification.

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

PML2	PML1	Magnification
0	0	× 1
0	1	× 2
1	0	× 4
1	1	× 8

G01 1: G01 mode when power is on.

0: G00 mode when power is on.

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.

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

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.)

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.)

- 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".

- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0013	TCW	CWM	ORCW		GOFC	GMOFS	GOFU2	JHD

- JHD** 1 : The manual pulse generator is valid in JOG mode.
 0 : The manual pulse generator is invalid in JOG mode.
- 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.
- 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.
- 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
- ORCW** 1 : Minus output in orientation S analog output.
 0 : Plus output in orientation S analog output.
- 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

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

T2D 1: T code is specified in 2 – digit.

0: T code is specified in 4 – digit.

GMCL 1: Cancels the tool geometry offset vector by resetting.

0: Does not cancel the tool geometry offset vector by resetting .

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.

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 coordinate system is conducted by the T code block regardless of this parameter.)

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.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0015	CPRD	REP	PRWD	MORB	SKPF	COTZ	NWCH	CBLNK

CBLNK 1 : The cursor does not blink.

0 : The cursor blinks.

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.

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

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

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).

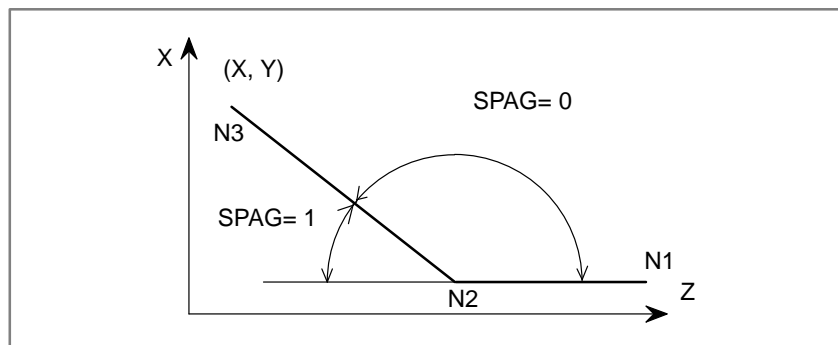
MORB 1 : The direct measured value input for tool offset and work coordinate system shift is performed by retracting both 2 axes after cutting and pushing the RECORD button.
(FANUC PMC–L/M is necessary for this function)

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

- PRWD** 1 : Rewind signal is output by portable tape reader.
 0 : Rewind signal is not output by portable tape reader.
- REP** 1 : When the program with same program number in the memory is registered through reader/puncher interface, the alarm does not occur and the registered program is replaced.
 0 : When the program with same program number in the memory is registered through reader/puncher interface, the alarm occurs.
- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0016	MDEC		SPAG		NPRD		RSTMB	RSTMA

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



- MDEC** 1 : M code is output in decode signal. (not available)
 0 : M code is output in BCD 2 digits.

	#7	#6	#5	#4	#3	#2	#1	#0
0017		OPG7	OPG6	OPG5	OPG4	OPG3	OPG2	OPG1

- 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.

- 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.
- 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.
- OPG4** 1 : Jog feed rate, override, and rapid traverse override switches are actuated with the software operator's panel.
0 : The above swicthes are 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.
- OPG6** 1 : Protect key is actuated with the software operator's panel.
0 : Protect key is not actuated with the software operator's panel.
- OPG7** 1 : Feed hold is effected with the software operator's panel.
0 : Feed hold is not effected with the software operator's panel.

	#7	#6	#5	#4	#3	#2	#1	#0
0018	EDITB	TVC						

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

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

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0019	DBCD	NEOP	M02NR			XRC		

- XRC** 1 : Radius designated for X axis
0 : Diameter designated for X axis
- M02NR** 1 : Return to the head of program after executing M02.
0 : Do not return to the head of program after executing M02.
- 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.
- DBCD** 1 : In the diagnosis display, the timer counter data is displayed in decimal.
0 : The diagnosis display is displayed in binary as usual.

	#7	#6	#5	#4	#3	#2	#1	#0
0020			NCIPS	LM2				

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.

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).

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0021		NOFLUP				APC3	APCZ	APCX

APCX, Z, 3 1 : Absolute pulse coder is used for each axis.

0 : Incremental pulse coder is used for each axis.

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.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0022						ABS3	ABSZ	ABSX

ABSX, Z, 3 1 : Reference point position in absolute pulse coder for each axis 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0023		DSPN		DITA	DCHI	DFRN	DGRM	DJPN

DJPN CRT screen is displayed in Japanese.

DGRM CRT screen is displayed in German.

DFRN CRT screen is displayed in French.

DCHI CRT screen is displayed in Chinese (Formosan).

DITA CRT screen is displayed in Italian

DSPN CRT screen is displayed in Spanish.

	#7	#6	#5	#4	#3	#2	#1	#0
0024	EDILK					SCTO	LII10	IGNPMC

- IGNPMC** 1 : Control by PMC is made ineffective. (Same as without PMC.)
 0 : Control by PMC is made effective.
- LII10** 1 : Input/output increment is 0.01mm/0.001inch.
 0 : Input/output increment is 0.001mm/0.0001inch or 0.0001mm/0.00001inch.
- SCTO** 1 : Spindle speed reach signal is checked.
 0 : Spindle speed reach signal is not checked.
- EDILK** 1 : Interlock signal per axis direction is valid.
 0 : Interlock signal per axis direction is invalid.

	#7	#6	#5	#4	#3	#2	#1	#0
0028	PNOSMP		RSFT	EXTS		DACTF	PRCMSG	PRCPOS

- PRCPOS** 1 : On the program check screen, the absolute coordinates are displayed.
 0 : The relative coordinates are displayed.
- PRCMSG** 1 : On the program check screen, a message from PMC is displayed. (not available)
 0 : The remaining motion is displayed.
- DACTF** 1 : Actual speed is displayed on the current position display screen and program check screen.
 0 : Not displayed.
- EXTS** 1 : External program number search is valid.
 0 : External program number search is invalid.
- 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.)
- 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.)

	#7	#6	#5	#4	#3	#2	#1	#0
0029				ADRC				DSP3

- DSP3** The current position of 3rd axis is displayed in sequence.
 1 : The present position is displayed.
 0 : The present position is not displayed.
- 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".)

	#7	#6	#5	#4	#3	#2	#1	#0
0030	G91							ADW30

ADW30 The name of 3rd axis is specified in sequence.

1 : The name is C axis.

0 : The name is B.

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

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

	#7	#6	#5	#4	#3	#2	#1	#0
0031	CNRST	ESFC	ADDCF					

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).

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.

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.

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

LIN3 Selection of linear/rotary axis for 3rd axis.

1 : Linear axis

0 : Rotary axis

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

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

EACSB 1 : PMC axis control is of the B specification.

0 : PMC axis control is of the A specification.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0033	P2S4	P2S3	P2S2	P2S1	P1S4	P1S3	P1S2	P1S1

P1S1 Specifies whether to enable the skip signal (X0008#7, SKIP) for G31 P1 in the multiple skip function.

1 : Enable

0 : Disable

P1S2 Specifies whether to enable the skip signal (X0008#2, SKIP2) for G31 P1 in the multiple skip function.

1 : Enable

0 : Disable

- P1S3** Specifies whether to enable the skip signal (X0008#3, SKIP3) for G31 P1 in the multiple skip function.
1 : Enable
0 : Disable
- P1S4** Specifies whether to enable the skip signal (X0008#4, SKIP4) for G31 P1 in the multiple skip function.
1 : Enable
0 : Disable
- P2S1** Specifies whether to enable the skip signal (X0008#7, SKIP) for G31 P2 in the multiple skip function.
1 : Enable
0 : Disable
- P2S2** Specifies whether to enable the skip signal (X0008#2, SKIP2) for G31 P2 in the multiple skip function.
1 : Enable
0 : Disable
- P2S3** Specifies whether to enable the skip signal (X0008#3, SKIP3) for G31 P2 in the multiple skip function.
1 : Enable
0 : Disable
- P2S4** Specifies whether to enable the skip signal (X0008#4, SKIP4) for G31 P2 in the multiple skip function.
1 : Enable
0 : Disable

	#7	#6	#5	#4	#3	#2	#1	#0
0034	P4S4	P4S3	P4S2	P4S1	P3S4	P3S3	P3S2	P3S1

- P3S1** Specifies whether to enable the skip signal (X0008#7, SKIP) for G31 P3 in the multiple skip function.
1 : Enable
0 : Disable
- P3S2** Specifies whether to enable the skip signal (X0008#2, SKIP2) for G31 P3 in the multiple skip function.
1 : Enable
0 : Disable
- P3S3** Specifies whether to enable the skip signal (X0008#3, SKIP3) for G31 P3 in the multiple skip function.
1 : Enable
0 : Disable
- P3S4** Specifies whether to enable the skip signal (X0008#4, SKIP4) for G31 P3 in the multiple skip function.
1 : Enable
0 : Disable
- P4S1** Specifies whether to enable the skip signal (X0008#7, SKIP) for G31 P4 in the multiple skip function.
1 : Enable
0 : Disable

P4S2 Specifies whether to enable the skip signal (X0008#2, SKIP2) for G31 P4 in the multiple skip function.

1 : Enable
0 : Disable

P4S3 Specifies whether to enable the skip signal (X0008#3, SKIP3) for G31 P4 in the multiple skip function.

1 : Enable
0 : Disable

P4S4 Specifies whether to enable the skip signal (X0008#4, SKIP4) for G31 P4 in the multiple skip function.

1 : Enable
0 : Disable

	#7	#6	#5	#4	#3	#2	#1	#0
0035	ACMR				DS4	DS3	DS2	DS1

DS1 Specifies whether to enable the skip signal (X0008#7, SKIP) of the dwell skip function for the 0-GCD.

1 : Enable
0 : Disable

DS2 Specifies whether to enable the skip signal (X0008#2, SKIP2) of the dwell skip function for the 0-GCD.

1 : Enable
0 : Disable

DS3 Specifies whether to enable the skip signal (X0008#3, SKIP3) of the dwell skip function for the 0-GCD.

1 : Enable
0 : Disable

DS4 Specifies whether to enable the skip signal (X0008#4, SKIP4) of the dwell skip function for the 0-GCD.

1 : Enable
0 : Disable

ACMR 1 : Optional CMR is used.

0 : Optional CMR is not used.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0036			GSPC	G98		ZRTM1	GSP	AGLST

AGLST Specifies whether to perform angular axis control in the 0-GCD.

1 : Perform
0 : Do not perform

NOTE

Bits 0 (AGLST), 2 (ZRTM1), and 4 (G98) of parameter No. 0036 are parameters dedicated to the 0-GCD.

GSP Specifies the G code system.

1 : Type B
0 : Type A

ZRTM1 Specifies whether to move the Z-axis during manual reference position return along the X-axis under angular axis control for the 0-GCD.

1 : Do not move the Z-axis.

0 : Move the Z-axis.

NOTE

Bits 0 (AGLST), 2 (ZRTM1), and 4 (G98) of parameter No. 0036 are parameters dedicated to the 0-GCD.

G98 Specifies the feed mode to be selected when the power to the 0-GCD is switched on.

1 : Feed per minute

0 : Feed per revolution

NOTE

Bits 0 (AGLST), 2 (ZRTM1), and 4 (G98) of parameter No. 0036 are parameters dedicated to the 0-GCD.

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

0 : Special G code system shall be A type.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0037	PLC01					SPTP3	SPTPZ	SPTPX

SPTPX to SPTP3 Types of position detector of the X, Z and to the 3rd 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.

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

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

NOTE

In case of the 0-GCD with 0.1μ pulse coder, set the parameters No.504 to 506 and No.508 to 510 in units of 1μ. (The set data is multiplied by ten within the CNC)

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0038	RSCMD1	DEVFL1						DEC34

DEC34 Changes deceleration signals for reference point return *DEC3 addresses

	DEC3=0	DEC3=1
*DEC3	X19.7	X16.7

RSCMD1, DEVFL1 Setting I/O device of reader/puncher interface channel 1.

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

	#7	#6	#5	#4	#3	#2	#1	#0
0040			TMCR	SORT	RWCNT	MPAS		NAMPR

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

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

MPAS 1 : Signal output when passing the specified distance is used.

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

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.

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

0 : Program library is displayed in normal specification.

TMCR 1 : T code calling subprogram O9000

0 : T code as a normal tool function

	#7	#6	#5	#4	#3	#2	#1	#0
0041					ROVC	ZPNJF	THRDB	

THRDB Type of thread cutting start

1 : B type

0 : A type

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.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0045	HSIF	CLER				RWDOUT	RAL	RDL

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.

- RAL** 1 : Registers only one program for reading through reader/puncher interface.
 0 : Registers all programs for reading through reader/puncher interface.
- RWDOUT** 1 : No signal is outputted in rewinding.
 0 : A signal is outputted in rewinding.
- 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.
- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0048	SFFDSP							

- 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
0049	FML10	NPRV	EFML10	S3JOG				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.
- 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.
- EFML10** 1 : The feedrate command (cutting feed) of PMC axis control is used by 10 times.
 0 : Standard specification.
- 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.
- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0050				SMZCT			NOFMK	

- NOFMK** 1 : Tape format check is not done during sequence No. search.
 0 : Tape format check is done during sequence No. search.
- SMZCT** 1 : Rapid traverse overlap is valid.
 0 : Rapid traverse overlap is invalid.

	#7	#6	#5	#4	#3	#2	#1	#0
0052						NODIC3		

NODIC3 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0056								NCOND

NCOND When 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0057					MIC			

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.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0060		EXTSP	OPMNDP			LDDSPG	PCLDB	DADRDP

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.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0061						EBC3	EBCZ	EBCX

EBCX – EBC3 1 : B is used for DI/DO of PMC axis control.

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

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0062		AXPCF			SPMRPM			

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.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0063			EAXOV				PRSTIN	MTDSPI

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

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

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.

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

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

	#7	#6	#5	#4	#3	#2	#1	#0
0064			NPA				ALLPRE	SETREL

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

0 : Preset is as usual.

ALLPRE 1 : Origin setting of relative coordinates is performed by numeric key.

0 : Origin setting of relative coordinates is performed by address key.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0065	M3B		G92ZAX		PSOT			

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.

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.

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

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

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0066	ERV2	ERV1			EPMSKP			

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.

ERV1, ERV2

ERV1	ERV2	Multiplier for feed per rev. by PMC axis control
0	0	× 1
1	1	
0	1	× 10
1	0	× 100

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0069		B3AX	BABS	BAX				

BAX 1 : B as command address of 3rd axis is used.
 0 : B as command address of 3rd axis is not used.

NOTE

This parameters must be set to “0” when using 2nd axiliary function. Set 0 to BAX.

BABS, B3AX Command addresses of 3rd and axis is specified as follows.

BABS	B3AX	3rd axis	
		ABS	INC
0	0	C	H
1	0	C	H
0	1	C	B
1	1	B	H

INC : Incremental command

ABS : Absolute command

NOTE

- 1 These parameters must be set to “0” when using G-code system B or C.
- 2 These parameter decide the command addresses of 3rd axis. Displayed addresses is specified in parameter 030#0, ADW30.

	#7	#6	#5	#4	#3	#2	#1	#0
0070	ICR	PEXRD		DSTBGE				

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.

- 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.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0071	FSRSP	DPCRAM		SRL2SP			HISSC	ISRLPC

- 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.
- SRL2SP** 1 : Two serial interface spindles are connected serially.
 0 : One serial interface spindle is connected.
- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
0074	PLCREV					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.
- 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
0075	IONUL	CLCL			WNPT			

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.

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
0076	OTRFOM			ADBLS		IOP	JZRN	

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 2 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.

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 0675.

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.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0077		HLKEY	MICRF	HDLPM				

- 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.

	#7	#6	#5	#4	#3	#2	#1	#0
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.
- NOINWS** 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”.

- 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
0079	MTCHK	FODIC		KEYPR	KEYWZ	KEYMV	KEYOG	KEYOW

KEYOW Specifies whether to inhibit changes to the tool wear offset amount from the MDI when KEY (G122#3) = 0.

1 : Inhibit

0 : Do not inhibit

KEYOG Specifies whether to inhibit changes to the tool geometry offset amount from the MDI when KEY (G122#3) = 0.

1 : Inhibit

0 : Do not inhibit

KEYMV Specifies whether to inhibit changes to the macro variable from the MDI when KEY (G122#3) = 0.

1 : Inhibit

0 : Do not inhibit

KEYWZ Specifies whether to inhibit changes to the workpiece reference position offset amount from the MDI when KEY (G122#3) = 0.

1 : Inhibit

0 : Do not inhibit

KEYPR Specifies whether to inhibit changes to the parameter from the MDI when KEY (G122#3) = 0.

1 : Inhibit

0 : Do not inhibit

NOTE

Be particularly careful when using this setting, because changing of the parameters may be disabled unless KEY (G122#3) = 1.

FODIC Specifies the units of the input/output data, as follows

1 : 0.0001 (mm), 0.0001 (degrees), or 0.00001 (inches). (IS–C)

0 : 0.001 (mm), 0.001 (degrees), or 0.0001 (inches). (IS–B)

MTCHK Specifies whether to check for deviation in the machine position when the power is switched off.

1 : Check

0 : Do not check

NOTE

This check is performed when the power is switched on. If a positional deviation is detected, an overtravel alarm 5*6 occurs (where * = axis number). The limits on the deviation are specified using parameter No.0988 to 0990.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0080						MORCM1		

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.

POWER OFF	
0100	CMRX
0101	CMRZ
0102	CMR3

CMRX, CMRZ, CMR3

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:

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

2) When a command multiply is 2 to 48 :

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

NOTE

- For (2) above, be sure to set a value such that the command multiply should be always an integer.
- Set the backlash compensation and pitch error compensation values with detection unit when an arbitrary command multiply is used.

0108	SPLOW
------	-------

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

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

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

0109	THDCH
------	-------

THDCH Width of chamfering for thread cutting cycle in G92.

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

0110	SCTTIM
------	--------

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

[Setting range] 0 to 255 (unit: msec)

0111	MBUF1
------	-------

0112	MBUF2
------	-------

MBUF1, 2 Up to two M codes which are not subjected to buffering for the next block can be set. When 03 is set, M03 is not subjected to buffering for the next block.

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.

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

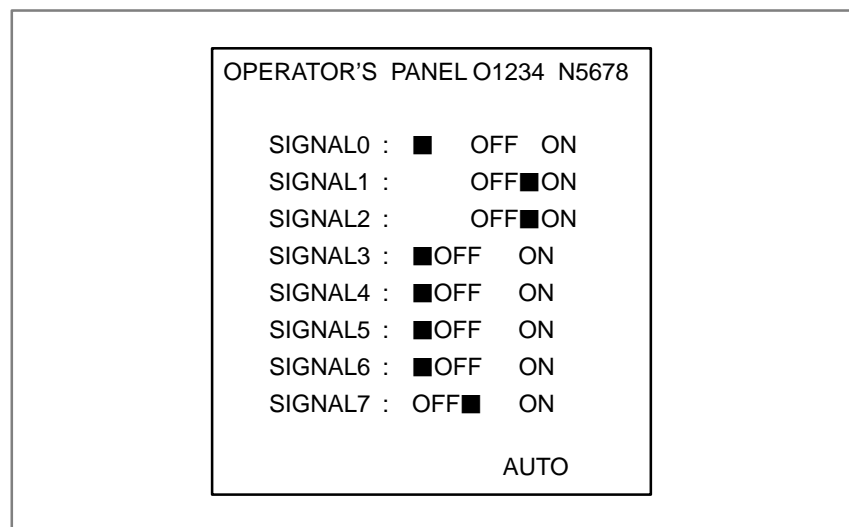
(Example)

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.



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



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

PRM. No.140

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

PRM. No.141

Code (073) corresponding to character “T” 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

0219	MDCNT
------	-------

MDCNT 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.)

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.)

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) × 16 msec

[Set value] 0 – 255

0255	Time interval of averaging servo current on servo tune screen
------	---

[Data type] Bit

[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.

$$\text{Time interval (msec)} = 64 \times 2^n$$

POWER OFF

0269	SVAXX
------	-------

0270	SVAXZ
------	-------

0271	SVAX3
------	-------

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.

[Setting value] 1 to 3.

Set Value	Axis Number
1	1 (M34,M35)
2	2 (M37,M38)
3	3 (M44,M45)

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.

0279

PSELP3

PSELP3 Set the axis in the basic coordinate system for the 3rd axis.

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

0337

Character code-1 of title at power-up

0338

Character code-2 of title at power-up

0339

Character code-3 of title at power-up

0340

Character code-4 of title at power-up

0341

Character code-5 of title at power-up

0342

Character code-6 of title at power-up

0343

Character code-7 of title at power-up

0344

Character code-8 of title at power-up

0345

Character code-9 of title at power-up

0346

Character code-10 of title at power-up

[Data type] Byte

The setting 10-characters are displayed on CRT at power-up instead of CNC software series/ edition.

NOTE

- 1 See Character-to-codes Correspondence Table for setting code.
- 2 Available character is numerals, alphabets, minus, period and space.
- 3 When undefined characters are specified, they are regarded as "space".

POWER OFF

0350

Axis No. for controlling continuous feed without position loop

[Data type] Byte**[Data range]** 0 to 3

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

0351

Character code-1 of title

0352

Character code-2 of title

0353

Character code-3 of title

0354

Character code-4 of title

0355

Character code-5 of title

[Data type] Byte

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

NOTE

See Connector-to-Codes Correspondence Table for setting code.

0356	Character length of 1st line on "DISTANCE TO GO" display
0357	Character length of 2nd line on "DISTANCE TO GO" display
0358	Character length of 3rd line on "DISTANCE TO GO" display
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.

	#7	#6	#5	#4	#3	#2	#1	#0
0385		RTLIN						

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0386		HDPNGB3	HDPNGBZ	HDPNGBX		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.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0387	EFERPD							

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
0388	WKZSFT	WKZRST	IGNPS90		ROCNT	RODR	ROAXC	

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.

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.

POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
0389					TSKECR	PRG8		SRVSET

SRVSET 1 : Servo tuning/setting screen is not displayed.

0 : Servo tuning/setting screen is displayed.

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0390	NODC3					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.

- 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
0391	NOCLR	RS23BN				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".

- RS23BN** 1 : DC code is not used for controlling reader/puncher interface.
 0 : DC code is used for controlling reader/puncher interface.

- NOCLR** 1 : Special G-codes are not cleared by reset operation.
 0 : All G-codes are cleared by reset operation.

NOTE

This parameter has meaning only when parameter 045#6 (CLER) is set to "1".

	#7	#6	#5	#4	#3	#2	#1	#0
0393	DGNWEB	RADCHK	STOV0	CHKMRC	M3RQNG	WKNOMDI	MRCQSCH	

- 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.
- STOV0** 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
0394	CAKEY	POSILK					TFHOVR	

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

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.

	#7	#6	#5	#4	#3	#2	#1	#0
0396	EORE					NCKER		

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.

EORE 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
0397	SERNAI					OVR255		

OVR255 1 : Feedrate override is 1% unit.

0 : Feedrate override is 10% unit.

SERNAI 1 : Details of serial interface spindle alarm 409 are displayed on alarm screen.

0 : Details of serial interface spindle alarm 409 are not displayed.

	#7	#6	#5	#4	#3	#2	#1	#0
0399	OUTZRN	FEDNUL		FUNO				

FUNO 1 : Absolute position is read from absolute pulse coder only after detection error appears.

0 : Absolute position is read from absolute pulse coder after servo alarm appears.

FEDNUL 1 : "NULL" code is output as feed data during meaning information.

0 : "SPACE" code is output as feed data during meaning information.

OUTZRN When reference point return is operated during feed-hold status,

1 : no alarm appears.

0 : alarm 91 appears.

POWER OFF

0452	Absolute counter value of X-axis at reference point
0453	Absolute counter value of Z-axis at reference point
0454	Absolute counter value of 3rd-axis at reference point

[Data type] Word

These parameters are set automatically when using absolute encoder with serial interface.

0476	Stored address of 1st line characters displayed on "DISTANCE TO GO"
0477	Stored address of 2nd line characters displayed on "DISTANCE TO GO"
0478	Stored address of 3rd line characters displayed on "DISTANCE TO GO"
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.

0500	INPX
0501	INPZ
0502	INP3

INPX, INPZ, INP3 In-position width for X, Z and 3rd axis, respectively.

[Setting range] 0 to 32767 (detection unit)

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

0504	SERRX
0505	SERRZ
0506	SERR3

SERRX, SERRZ, SERR3

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

POWER OFF

0508	GRDSX
0509	GRDSZ
0510	GRDS3

GRDSX, GRDSZ, GRDS3

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

[Setting range] 0 to ± 32767 (detect unit).

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

POWER OFF

0512	Position loop gain of X-axis
0513	Position loop gain of Z-axis
0514	Position loop gain of 3rd-axis

[Data type] Word**[Unit of data]** 0.01 /sec**[Data range]** 1 to 9999

Position loop gains of X, Z and 3rd-axis are set in order.

NOTE

These parameters are effective only when parameter 517 (position loop gain for all axes) is set to "0".

0516	PSANGN
------	--------

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.

POWER OFF

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

RPDFX, RPDFZ, RPDF3

Rapid traverse rate of X, Z and 3rd axes in turn.

[Data range]**[Data unit]**

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	30 to 24000	30 to 12000
Inch machine	0.1 [inch/min]	30 to 9600	30 to 4800
Rotation axis	1 [deg/min]	30 to 24000	30 to 12000

NOTE

Set "1" to the FML10 of parameter No.49 for the other setting values.

0522

LINTX

0523

LINTZ

0524

LINT3

LINTX, LINTZ, LINT3

Time constant of linear acceleration/deceleration of X, Z and 3rd 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)

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

NOTE

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

0528	THDFL
------	-------

THDFL The lower limit value (FL) of X axis acceleration/deceleration in thread cutting cycle. (G92)

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

Set the most suitable value to this parameter in consideration of the parameter No.0526.

NOTE

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.

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

0533

RPDFL

RPDFL The least speed of rapid traverse override (Fo)
(Common to all axes)

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

0534

ZRNFL

ZRNFL Low feed speed at reference point return (FL) (Common to all axes)

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

0535

BKLX

0536

BKLZ

0537

BKL3

BKLX, BKLZ, BKL3

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

[Data unit]

Setting unit	IS-A	IS-B	IS-C
Millimeter 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

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

NOTE

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

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)

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)

[Data range]

[Data unit]

	No. 0062#3 SMPRPM	
	0	1
Data unit	[RPM]	10 [RPM]
Data range	1 to 19999	1 to 9999
1 [deg/min]	30 to 24000	30 to 12000

NOTE

Switch the gear at using signals (G118#2 GR1 and G118#3 GR2).

G118		Gear number
#3 GR2	#2 GR1	
0	0	1
0	1	2
1	0	3
1	1	4

0548	JOGFL
------	-------

JOGFL

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

Specifies the FL feedrate used during manual-feed exponential acceleration/deceleration for all axes.

NOTE

The FL feedrate can be specified for each axis separately, using parameter No.0605 to 0608.

0550	SEQINC
------	--------

SEQINC Number increment value in automatic insertion of equence No.

[Setting range] 0 to 9999

NOTE

This parameter is enabled when setting parameter SEQ = 1.

0551	LOWSP
------	-------

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

[Data range]

[Data unit]

	No. 0062#3 SMP RPM	
	0	1
Data unit	[RPM]	10 [RPM]
Data range	1 to 19999	1 to 9999
1 [deg/min]	30 to 24000	30 to 12000

0552	BRATE0
------	--------

BRATE0 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

0555

Feedrate ratio at which the next block is started for block overlap

[Unit of data] %

[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:

$$\begin{aligned} &\text{Current block feedrate at which next block is started} \\ &= \text{Specified current block feedrate} \times \text{set value}/100 \end{aligned}$$

NOTE

If the parameter is set to 100, the next block is started upon the start of deceleration for the current block.

0556

SCLMP

SCLMP Upper limit of spindle speed (for constant surface speed control)

[Data range]

[Data unit]

	No. 0062#3 SMP RPM	
	0	1
Data unit	[RPM]	10 [RPM]
Data range	1 to 19999	1 to 9999
1 [deg/min]	30 to 24000	30 to 12000

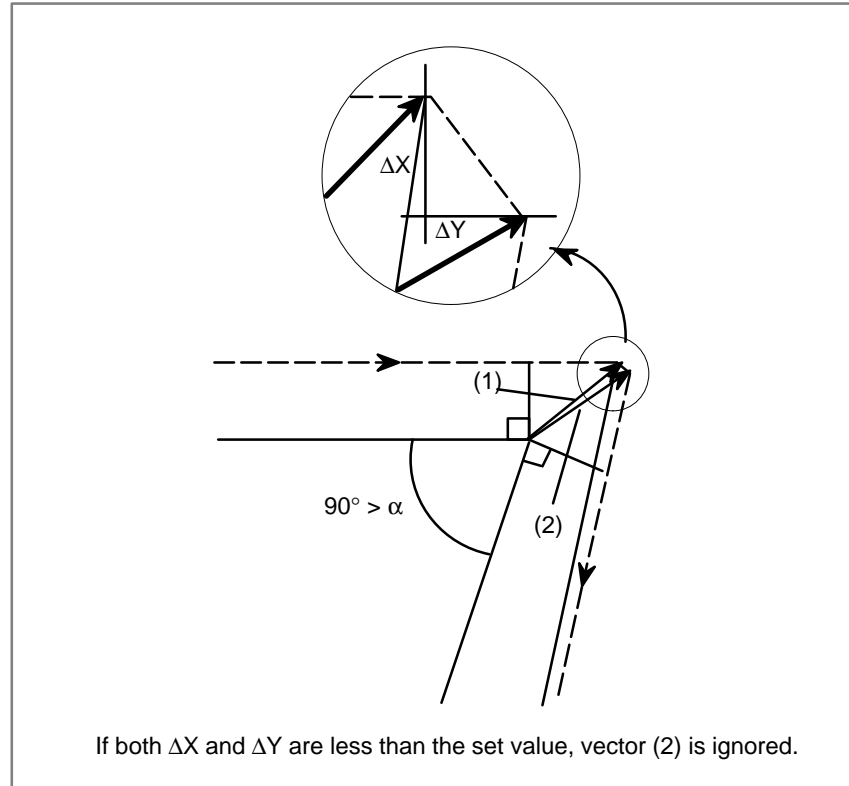
0557

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.

[Data unit]

Setting unit	IS-A	IS-B	IS-C
Millimeter 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



0559

RPDJX

0560

RPDJZ

0561

RPDJ3

RPDJX, RPDJZ, RPDJ3

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

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

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

NOTE

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

POWER OFF

0570	Capacity of reference counter for X-axis
0571	Capacity of reference counter for Z-axis
0572	Capacity of reference counter for 3rd-axis

[Data type] Word

[Data range] 0 to 32767

Capacities of reference counter for X, Z and 3rd-axis are set in order.

NOTE

- 1 The setting value is multiplied with 10 when using high resolution pulse coder.
- 2 Parameter 004 to 006 are valid when the these parameters are set to "0".
- 3 It is necessary to turn off CNC power after changing these parameters.

0593	STPEX
0594	STPEZ
0595	STPE3

STPEX, Z, 3 Position error limit value during X-axis, Z-axis, and 3rd axis stop in sequence

[Setting value] 0 to 32767

[Data unit] Detecting unit

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

PARTRQ Sets the number of machined parts required.

[Setting value] 0 to 9999

0601	PEXPJX
0602	PEXPJZ
0603	PEXPJ3

PEXPJX- PEXPJ3 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

PFLJGX–PFLJG3 Sets exponential acceleration/ deceleration rate sequentially in manual feed.

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS–A, IS–B	IS–C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

NOTE

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

POWER OFF

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

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.

POWER OFF

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

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

POWER OFF

0615	G2MAX1
0616	G2MAX2

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

	No. 0062#3 SMPRPM	
	0	1
[Data range]		
[Data unit]		
Data unit	[RPM]	10 [RPM]
Data range	1 to 19999	1 to 9999
1 [deg/min]	30 to 24000	30 to 12000

POWER OFF

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

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.

	No. 0062#3 SMPRPM	
	0	1
[Data range]		
[Data unit]		
Data unit	[RPM]	10 [RPM]
Data range	1 to 19999	1 to 9999
1 [deg/min]	30 to 24000	30 to 12000

0627	Time constant of Z-axis acc/dec in threading cycle
------	--

[Data type] Word

[Unit of data] msec

[Data range] 0 to 4000

Time constant of Z-axis exponential acc/dec in threading cycle is set.

0628	FL speed of Z-axis acc/dec in threading cycle
------	---

[Data type] Word

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800

FL speed of Z-axis exponential acc/dec in threading cycle is set.

0651	PEFDTX
------	--------

0652	PEFDTZ
------	--------

0653	PEFDT3
------	--------

PEFDTX – 3 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
------	--------

PEAFLX – 3 Lower limit speeds (FL) at exponential acceleration/deceleration of PMC axis cutting feed for each axis.

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

NOTE

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

0672

FL speed of reference point return by PMC axis control

[Data type] Word

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

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.

0673

Backlash compensation value for rapid traverse for X-axis

0674

Backlash compensation value for rapid traverse for Y-axis

0675

Backlash compensation value for rapid traverse for 3rd axis

[Data unit]

Increment unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to 2550

The backlash compensation value for rapid traverse is set for each axis.

0685

F0 speed of PMC axis control with using independent rapid override

[Data type] Word

[Data range]

[Data unit]

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

F0 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”.

0698

Maximum feedrate per revolution by PMC axis control

[Data type] Word**[Data range]****[Data unit]**

Setting unit	Data unit	Data range	
		IS-A, IS-B	IS-C
Millimeter machine	1 [mm/min]	6 to 15000	6 to 12000
Inch machine	0.1 [inch/min]	6 to 6000	6 to 4800
Rotation axis	1 [deg/min]	6 to 15000	6 to 12000

Maximum feedrate per revolution by PMC axis control is set.

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.

0700

LT1X1

0701

LT1Z1

0702

LT131

0704

LT1X2

0705

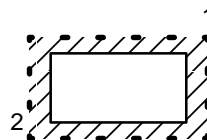
LT1Z2

0706

LT132

LT1□□

nth top in square zone (see figure).
axis



Set stroke limit mentioned above.

[Data unit]

Setting unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to ± 99999999

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.

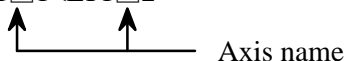
Example) Rapid traverse 10 m/min.

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

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.

LT1□1 < LT1□2



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.
- 2 These parameters cannot be set for the rotary axis.

0708	PRSX
0709	PRSZ
0710	PRS3

PRSX, PRSZ, PRS3 These set the coordinate values of the reference point of the X, Z and 3rd axes when automatic coordinate system setting is conducted, respectively.

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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

0717

MRCCD

MRCCD Depth of cut in multiple repetitive cycle G71, G72.**[Data unit]**

Setting unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to 99999999

0718

MRCDT

MRCDT Relief amount in multiple repetitive cycle G71, G72.**[Data unit]**

Setting unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 1 to 99999999

0719

PESCX

0720

PESCZ

PESCX, PESCZ Relief values in X and Z directions in multiple repetitive cycle G73, respectively.**[Data unit]**

Setting unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to ± 99999999

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.**[Data unit]**

Setting unit	IS-A	IS-B	IS-C
Millimeter machine [mm]	0.01	0.001	0.0001
Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to 99999999

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.

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter machine [mm]	0.01	0.001	0.0001
	Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to ± 99999999

0726	THDFN
------	-------

THDFN Finishing allowance in multiple repetitive cycle G76

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter machine [mm]	0.01	0.001	0.0001
	Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 0 to ± 99999999

0728	WIMAX
------	-------

WIMAX Sets the tolerance value of tool wear offset incremental input.

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter machine [mm]	0.01	0.001	0.0001
	Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 1 to 999999

0729	WOMAX
------	-------

WOMAX Sets the maximum of the tool wear offset value.

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter machine [mm]	0.01	0.001	0.0001
	Inch machine [inch]	0.001	0.0001	0.00001

[Data range] 1 to 99999999

0735	2nd reference point of X axis
------	-------------------------------

0736	2nd reference point of Z axis
------	-------------------------------

0737	2nd reference point of 3rd axis
------	---------------------------------

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

2nd reference point of 3rd and 4th axis are set in order.

POWER OFF

0739	Counter value of absolute pulse coder for X axis at reference point
0740	Counter value of absolute pulse coder for Z axis at reference point
0741	Counter value of absolute pulse coder for 3rd-axis at reference point

[Data type] 2 words

[Data unit] Detection unit

[Data range] -2147483648 to 2147483647 (only the lower 8 digits are displayed)

Counter values of absolute pulse coder for 3rd axis at reference point are set automatically after manual reference point return is finished with using absolute pulse coder.

POWER OFF

0756	PECINTX
0757	PECINTZ
0758	PECINT3

PECINTX, PECINTZ, PECINT3

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)

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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

0770	Plus side of stored stroke limit-2 for X-axis
0771	Plus side of stored stroke limit-2 for Z-axis
0772	Plus side of stored stroke limit-2 for 3rd-axis
0774	Minus side of stored stroke limit-2 for X-axis
0775	Minus side of stored stroke limit-2 for Z-axis
0776	Minus side of stored stroke limit-2 for 3rd-axis

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

Plus side and minus side of stored stroke limit-2 for X, Z and 3rd 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.
- 2 These parameters are valid only when parameter 020#4 LM2 is set to "1".

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

PARTAL No. of machined parts in total

[Setting value] 0 to 99999999

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.

0797	Lock for displaying part program No.9000 to 9999
------	--

[Data type] 2 words

[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.

0798	Key for displaying part program No.9000 to 9999
------	---

[Data type] 2 words

[Data range] 0 to 999999999

Parameter PRG9 can be turned to “0” if the same number as parameter 797 is set in this parameter.

The actual setting value is not displayed too.

0815	Auto-preset coordinate value of X-axis after reference point return
------	---

0816	Auto-preset coordinate value of Z-axis after reference point return
------	---

0817	Auto-preset coordinate value of 3rd-axis after reference point return
------	---

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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

Auto-preset coordinate values of X, Z and 3rd-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.

0876	Tolerance of circle radius between start point and end point
------	--

[Data type] 2 words

[Data unit] input increment

[Data range] 0 to 999999999

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.

0940	External work zero offset of X-axis
------	-------------------------------------

0941	External work zero offset of Z-axis
------	-------------------------------------

0942	External work zero offset of 3rd-axis
------	---------------------------------------

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 7999

External work zero offset values of X, Z and 3rd axis are set in order.

0944	1st work zero offset value of X-axis (G54)
0945	1st work zero offset value of Z-axis (G54)
0946	1st work zero offset value of 3rd-axis (G54)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

1st work zero offset values of X, Z and 3rd axis are set in order.

0948	2nd work zero offset value of X-axis (G55)
0949	2nd work zero offset value of Z-axis (G55)
0950	2nd work zero offset value of 3rd-axis (G55)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

2nd work zero offset values of X, Z and 3rd axis are set in order.

0952	3rd work zero offset value of X-axis (G56)
0953	3rd work zero offset value of Z-axis (G56)
0954	3rd work zero offset value of 3rd-axis (G56)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

3rd work zero offset values of X, Z, 3rd and 4th axis are set in order.

0956	4th work zero offset value of X-axis (G57)
0957	4th work zero offset value of Z-axis (G57)
0958	4th work zero offset value of 3rd-axis (G57)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

4th work zero offset values of X, Z and 3rd axis are set in order.

0960	5th work zero offset value of X-axis (G58)
0961	5th work zero offset value of Z-axis (G58)
0962	5th work zero offset value of 3rd-axis (G58)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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 ± 99999999

5th work zero offset values of X, Z and 3rd axis are set in order.

0964	6th work zero offset value of X-axis (G59)
0965	6th work zero offset value of Z-axis (G59)
0966	6th work zero offset value of 3rd-axis (G59)

[Data type] 2 words

[Data unit]	Setting unit	IS-A	IS-B	IS-C
	Millimeter 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

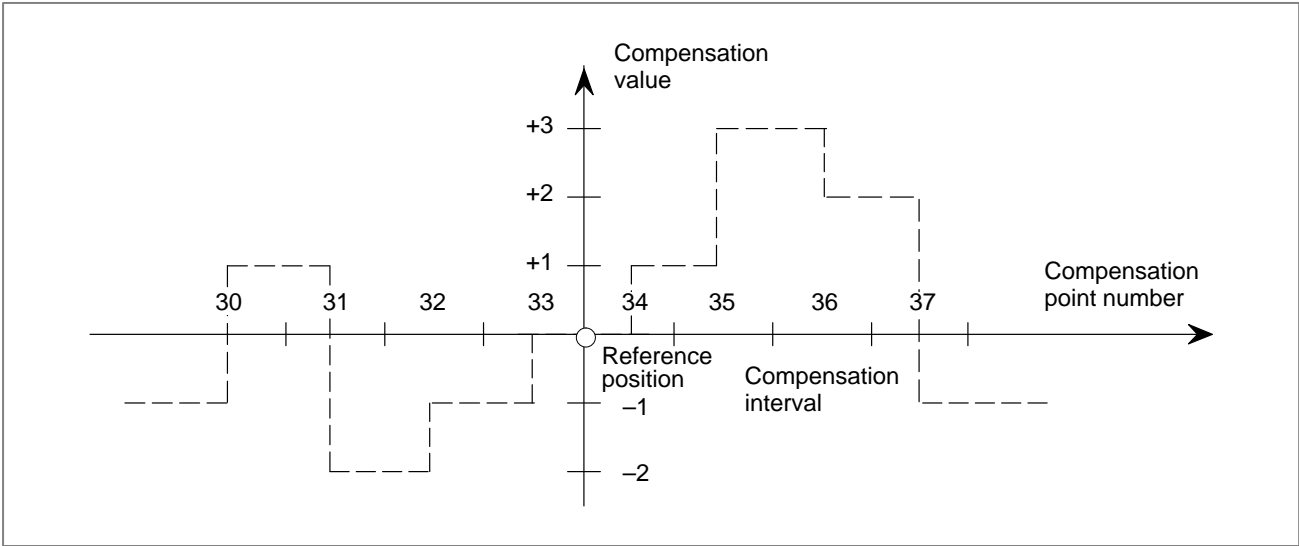
[Data range] 0 to ± 99999999

6th work zero offset values of X, Z and 3rd axis are set in order.

Setting pitch error compensation

Setting the pitch error compensation interval

Pitch error compensation points are located at equal intervals, specified for each axis. Pitch error compensation is performed at the midpoint of each compensation interval. (See the following figure.)



Compensation point number	30	31	32	33	34	35	36	37
Set compensation value	-2	+3	-1	-1	+1	+2	-1	-3

If the compensation interval is set to 0, pitch error compensation is not performed for that axis. The minimum interval between pitch error compensation points is limited to the following value:

Minimum pitch error compensation interval = Maximum rapid traverse rate/1875

Example:
When the maximum rapid traverse rate is 15000 mm/min, the minimum interval between pitch error compensation points is 8 mm.

0756	Compensation interval for X-axis pitch error compensation
0757	Compensation interval for Z-axis pitch error compensation
0758	Compensation interval for 3rd-axis pitch error compensation

[Data unit] Output units
[Data range] 8000 to 99999999 (metric output)
4000 to 99999999 (inch output)

[Description] These parameters are used to set the interval between pitch error compensation points for each axis.

Setting the pitch error compensation origin

Up to 128 pitch error compensation points can be set. Among them, specify the pitch error compensation point that corresponds to the reference position, as the pitch error compensation origin. In the following example, the pitch error compensation number corresponding to the reference position is set to 33:



1000

Pitch error compensation origin for the X-axis

to

3000

Pitch error compensation origin for the 3rd axis

[Data range] 0 to 128

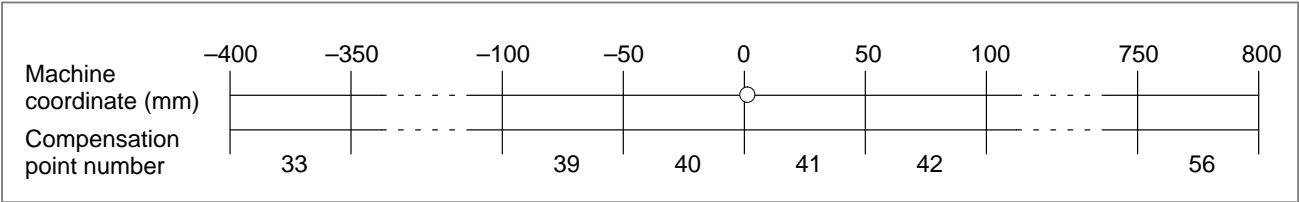
[Description] These parameters are used to set the number of the pitch error compensation origin for each axis.

Setting the pitch error compensation

Set the pitch error compensation for each compensation interval. The pitch error compensation can be set within a range of 0 to ±7. The actual compensation values are obtained by multiplying the set values by a magnification specified with a parameter.

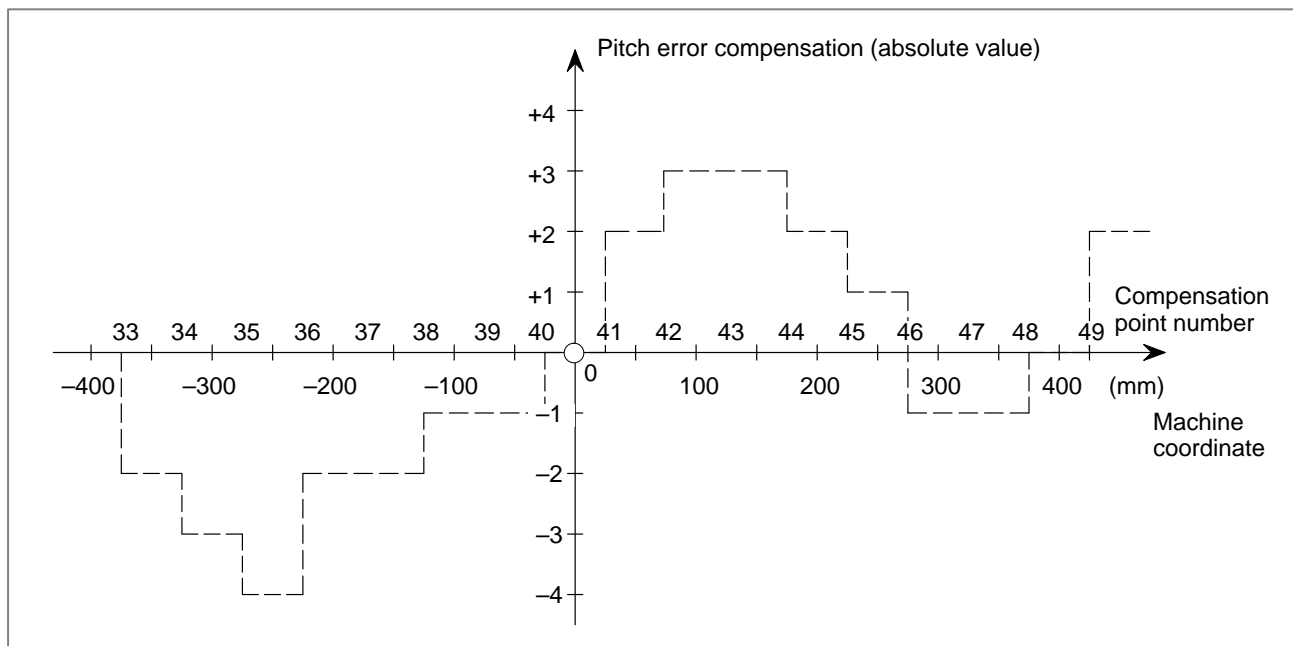
Example:

- Machine stroke : -400 mm to +800 mm
- Pitch error compensation origin : 40
- Pitch error compensation interval : 50 mm
- Farthest compensation number in the positive direction = (compensation origin number) + (positive stroke/compensation interval) = 40 + 800/50= 56
- Farthest compensation number in the negative direction = (compensation origin number) – (negative stroke/compensation interval) + 1 = 40 – 400/50 + 1 = 33



The compensation corresponding to each compensation point number is output at the midpoint of the corresponding interval. The following is an example:

Number	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
Compensation	+2	+1	+1	-2	0	-1	0	-1	+2	+1	0	-1	-1	-2	0	+1	+2



<input type="text" value="001"/>	Pitch error compensation value of No.0 of <input type="text"/> -th axis
to	
<input type="text" value="128"/>	Pitch error compensation value of No.127 of <input type="text"/> -th axis

[Data unit] No.0035#7 ACMR=0 Output unit × Command multiplication (CMR)
No.0035#7 ACMR=1 Detection unit

[Data range] 0 to ±7 (Detection unit × Compensation magnification)

[Description] Set the pitch error compensation value of No.0 to 127 of -th axis

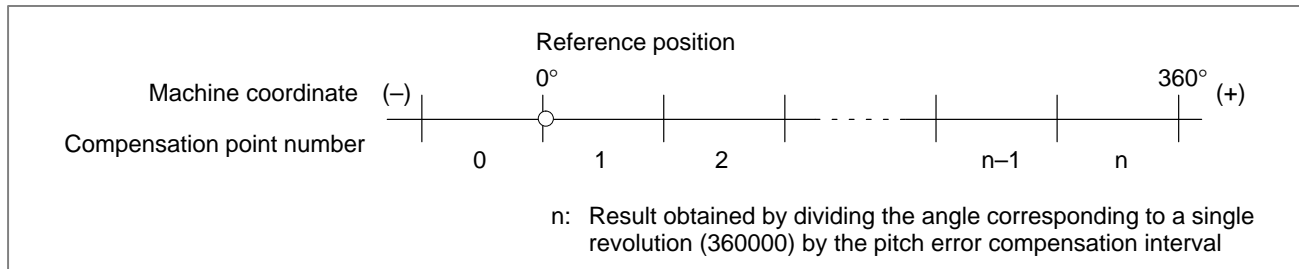
POWER OFF	#7	#6	#5	#4	#3	#2	#1	#0
<input type="text" value="0011"/>							PML2	PML1

PML1, PML2 Set the magnification of pitch error compensation as below table.

#1 PML2	#0 PML1	Magnification
0	0	×1
0	1	×2
1	0	×4
1	1	×8

Setting pitch error compensation for a rotation axis

For a rotation axis, pitch error compensation of rotation axis type is performed, such that any compensation points in the negative direction are ignored. The result obtained by adding one to the result of dividing the angle corresponding to a single revolution (360000) by the pitch error compensation interval is set as the number of compensation points for a rotation axis.



Set 0 as the pitch error compensation origin. Set an identical value for the pitch error compensation for both compensation points 0 and n.

Example:

When the pitch error compensation interval is set to 6°.

Parameter	Set value
Pitch error compensation origin	0
Pitch error compensation interval	6000

In this case, set compensation values as follows:

(□ indicates the axis number.)

Parameter (pitch error compensation value)	Set value of parameter
□001	Compensation value between -6° and 0° (Compensation value between 354° and 360°)
□002	Compensation value between 0° and 6°
□003	Compensation value between 6° and 12°
⋮	⋮
□060	Compensation value between 348° and 354°
□061	Compensation value between 354° and 360° (Compensation value between -6° and 0°)

NOTE

- 1 Set a compensation interval such that 360000 can be divided exactly by that value, without a remainder. Otherwise, compensation will not be performed normally.
- 2 The sum of the compensation values for a single revolution must be 0.

1000	Zero point of pitch error compensation of X axis
2000	Zero point of pitch error compensation of Z axis
3000	Zero point of pitch error compensation of third axis

[Data unit] Number

[Data range] 0 to 127

[Description] Set number of zero point of pitch error compensation for each axis.

1001	Pitch error compensation value of No.0 of X axis
to	
1128	Pitch error compensation value of No.127 of X axis
2001	Pitch error compensation value of No.0 of Z axis
to	
2128	Pitch error compensation value of No.127 of Z axis
3001	Pitch error compensation value of No.0 of 3rd axis
to	
3128	Pitch error compensation value of No.127 of 3rd axis

[Data unit] No.0035#7 ACMR=0 Output unit × Command multiplication (CMR)
No.0035#7 ACMR=1 Detection unit

[Data range] 0 to ±7

[Description] Set the pitch error compensation value of No.0 to 127 for each axis.

Parameters related to serial interface spindle

The following parameters are not described in detail. The standard settings listed in the tables need be modified for some machine systems.

Sub-spindle parameters when the spindle switching function is provided

First spindle	Second spindle	Description	Standard setting
6140	6320	Bit parameter	00000000
6141	6321	Bit parameter	00000001
6142	6322	Bit parameter	00000000
6143	6323	Bit parameter	00000000
6144	6324	Bit parameter	00000000
6145	6325	Bit parameter	00000000
6146	6326	Bit parameter	00000000
6147	6327	Bit parameter	00000000
6148	6328	Bit parameter	00000000
6149	6329	Bit parameter	00000000
6150	6330	Bit parameter	00000000
6151	6331	Bit parameter	Model-dependent
6152	6332	Bit parameter	Model-dependent
6153	6333	Bit parameter	Model-dependent
6154	6334	Bit parameter	00000000
6155	6335	Bit parameter	00000000
6156	6336	Bit parameter	00000000
6157	6337	Bit parameter	00000000
6158	6338	Bit parameter	00000000
6159	6339	Bit parameter	00000000
6160	6340	Maximum motor speed	Model-dependent
6161	6341	Speed arrival detection level	150
6162	6342	Speed detection level	30
6163	6343	Speed zero detection level	75
6164	6344	Torque limit value	50
6165	6345	Load detection level 1	83
6166	6346	Output limit pattern	0
6167	6347	Output limit value	100
6168	6348	Position coder method orientation stop position	0
6169	6349		0
6170	6350	Normal velocity loop proportional gain (HIGH)	10
6171	6351	Normal velocity loop proportional gain (LOW)	10
6172	6352	Velocity loop proportional gain during orientation (HIGH)	10
6173	6353	Velocity loop proportional gain during orientation (LOW)	10
6174	6354	Velocity loop proportional gain in servo mode (HIGH)	10
6175	6355	Velocity loop proportional gain in servo mode (LOW)	10
6176	6356	Normal velocity loop integral gain	10
6177	6357	Velocity loop integral gain during orientation	10
6178	6358	Velocity loop integral gain in servo mode	10
6179	6359		0

Sub-spindle parameters when the spindle switching function is provided

First spindle	Second spindle	Description	Standard setting
6180	6360	Gear ratio (HIGH)	100
6181	6361	Gear ratio (LOW)	100
6182	6362	Position gain during orientation (HIGH)	1000
6183	6363	Position gain during orientation (LOW)	1000
6184	6364	Position gain change ratio when orientation is completed	100
6185	6365	Position gain in servo mode (HIGH)	1000
6186	6366	Position gain in servo mode (LOW)	1000
6187	6367	Grid shift amount in servo mode	0
6188	6368		0
6189	6369		0
6190	6370	Orientation completion signal detection level	10
6191	6371	Motor velocity limit value during orientation	33
6192	6372	Orientation stop position shift amount	0
6193	6373	MS signal constant	—
6194	6374	MS signal gain adjustment	0
6195	6375	Regenerative power limit	Model-dependent
6196	6376	Delay time prior motor power shut-off	20
6197	6377	Acceleration/deceleration time setting	10
6198	6378		0
6199	6379		0
6200	6380	Motor voltage during normal rotation	Model-dependent
6201	6381	Motor voltage during orientation	Model-dependent
6202	6382	Motor voltage in servo mode	Model-dependent
6203	6383	Position gain change ratio when returning to the origin in the servo mode	100
6204	6384	Feed forward factor	0
6205	6385	Velocity loop feed forward factor	0
6206	6386		0
6207	6387		0
6208	6388		0
6209	6389		0
6210	6390		0
6211	6391		0
6212	6392		0
6213	6393		0
6214	6394		0
6215	6395		0
6216	6396		0
6217	6397		0
6218	6398		0
6219	6399		0
6220	6400	Base velocity of the motor output specification	Model-dependent
6221	6401	Limit value for the motor output specification	Model-dependent
6222	6402	Base speed	Model-dependent
6223	6403	Magnetic flux weakening start velocity	Model-dependent
6224	6404	Current loop proportional gain during normal operation	Model-dependent
6225	6405	Current loop integral gain during normal operation	Model-dependent
6226	6406	Zero point of current loop integral gain	Model-dependent
6227	6407	Current loop proportional gain velocity factor	Model-dependent
6228	6408	Current conversion constant	Model-dependent
6229	6409	Secondary current factor for exciting current	Model-dependent

Sub-spindle parameters when the spindle switching function is provided

First spindle	Second spindle	Description	Standard setting
6230	6410	Current expectation constant	Model-dependent
6231	6411	Slip constant	Model-dependent
6232	6412	High-speed rotation slip compensation constant	Model-dependent
6233	6413	Compensation constant of voltage applied to motor in the dead zone	Model-dependent
6234	6414	Electromotive force compensation constant	Model-dependent
6235	6415	Electromotive force phase compensation constant	Model-dependent
6236	6416	Electromotive force compensation velocity factor	Model-dependent
6237	6417	Time constant for changing the torque	5
6238	6418	Load meter displayed value for maximum output	Model-dependent
6239	6419	Maximum output zero point	Model-dependent
6240	6420	Secondary current factor during rigid tapping	Model-dependent
6241	6421	Constant for compensating for the phase of the electromotive force at deceleration	Model-dependent
6242	6422	Time constant of the speed detection filter	0
6243	6423		0
6244	6424	Time constant of voltage filter for electromotive force compensation	0
6245	6425		0
6246	6426		0
6247	6427		0

**Sub-spindle parameters for low-speed operation when the spindle switching function is provided
and the output switching function is provided for the sub-spindle**

First spindle	Second spindle	Description	Standard setting
6248	6428	Motor voltage during normal rotation	Model-dependent
6249	6429	Motor voltage in the servo mode	Model-dependent
6250	6430	Base speed of the motor output specifications	Model-dependent
6251	6431	Limit value for the motor output specifications	Model-dependent
6252	6432	Base speed	Model-dependent
6253	6433	Magnetic flux weakening start velocity	Model-dependent
6254	6434	Current loop proportional gain during normal operation	Model-dependent
6255	6435	Current loop integral gain during normal operation	Model-dependent
6256	6436	Zero point of the current loop integral gain	Model-dependent
6257	6437	Velocity factor of the current loop proportional gain	Model-dependent
6258	6438	Current conversion constant	Model-dependent
6259	6439	Secondary current factor for activating current	Model-dependent
6260	6440	Current expectation constant	Model-dependent
6261	6441	Slip constant	Model-dependent
6262	6442	High-speed rotation slip compensation constant	Model-dependent
6263	6443	Compensation constant for voltage applied to motor in the dead zone	Model-dependent
6264	6444	Electromotive force compensation constant	Model-dependent
6265	6445	Electromotive force phase compensation constant	Model-dependent
6266	6446	Velocity factor of the electromotive force compensation	Model-dependent
6267	6447	Time constant for changing the torque	Model-dependent
6268	6448	Maximum output zero point	Model-dependent
6269	6449	Secondary current factor during rigid tapping	Model-dependent
6270	6450	Voltage compensation factor during deceleration	Model-dependent
6271	6451	Regenerative power limit	Model-dependent
6272	6452	Time constant of voltage filter for electromotive force compensation	0
6273	6453	Motor model code	Model-dependent
6274	6454		0
6275	6455		0
6276	6456		0
6277	6457		0
6278	6458		0
6279	6459		0
6280	6460		0
6281	6461		0
6282	6462		0
6283	6463		0
6284	6464		0
6285	6465		0
6286	6466		0
6287	6467		0
6288	6468		0
6289	6469		0
6290	6470		0
6291	6471		0
6292	6472		0
6293	6473		0
6294	6474		0
6295	6475		0
6296	6476		0
6297	6477		0
6298	6478		0
6299	6479		0

**Sub-spindle parameters for low-speed operation when the spindle switching function is provided
and the output switching function is provided for the sub-spindle**

First spindle	Second spindle	Description	Standard setting
6300	6480		0
6301	6481		0
6302	6482		0
6303	6483		0
6304	6484		0
6305	6485		0
6306	6486		0
6307	6487		0
6308	6488		0
6309	6489		0
6310	6490	Overload current alarm detection level (for low speed characteristic) Overload current alarm detection time constant Overload current alarm detection level (for high speed characteristic) Compensation for current detection offset	0
6311	6491		0
6312	6492		Model-dependent
6313	6493		Model-dependent
6314	6494		Model-dependent
6315	6495		0

**Parameters for standard motors (parameters for high-speed operation
when the output switching function is provided)**

First spindle	Second spindle	Description	Standard setting
6500	6640	Bit parameter	00000000
6501	6641	Bit parameter	00000001
6502	6642	Bit parameter	00000000
6503	6643	Bit parameter	00000000
6504	6644	Bit parameter	00000000
6505	6645	Bit parameter	00000000
6506	6646	Bit parameter	00000000
6507	6647	Bit parameter	00000000
6508	6648	Bit parameter	00000000
6509	6649	Bit parameter	00000000
6510	6650	Bit parameter	00000000
6511	6651	Bit parameter	Model-dependent
6512	6652	Bit parameter	Model-dependent
6513	6653	Bit parameter	Model-dependent
6514	6654	Bit parameter	00000000
6515	6655	Bit parameter	00000000
6516	6656	Bit parameter	00000000
6517	6657	Bit parameter	00000000
6518	6658	Bit parameter	00000000
6519	6659	Bit parameter	00000000
6520	6660	Maximum motor speed	Model-dependent
6521	6661	Maximum speed when the Cs axis is controlled	100
6522	6662	Speed arrival detection level	150
6523	6663	Speed detection level	30
6524	6664	Speed zero detection level	75
6525	6665	Torque limit value	50
6526	6666	Load detection level 1	83
6527	6667	Load detection level 2	95
6528	6668	Output limit pattern	0
6529	6669	Output limit value	100
6530	6670	Soft start/stop time	0
6531	6671	Position coder method orientation stop position	0
6532	6672	Acc./dec. time constant when the spindle synchronization is controlled	0
6533	6673	Arrival level for the spindle synchronization speed	100
6534	6674	Shift amount when the spindle phase synchronization is controlled	0
6535	6675	Spindle phase synchronization compensation data	10
6536	6676	Feed forward factor	0
6537	6677	Velocity loop feed forward factor	0
6538	6678		0
6539	6679		0
6540	6680	Normal velocity loop proportional gain (HIGH)	10
6541	6681	Normal velocity loop proportional gain (LOW)	10
6542	6682	Velocity loop proportional gain during orientation (HIGH)	10
6543	6683	Velocity loop proportional gain during orientation (LOW)	10
6544	6684	Velocity loop proportional gain in servo mode (HIGH)	10
6545	6685	Velocity loop proportional gain in servo mode (LOW)	10
6546	6686	Velocity loop proportional gain when the Cs axis is controlled (HIGH)	30
6547	6687	Velocity loop proportional gain when the Cs axis is controlled (LOW)	30
6548	6688	Normal velocity loop integral gain (HIGH)	10
6549	6689	Normal velocity loop integral gain (LOW)	10

**Parameters for standard motors (parameters for high-speed operation
when the output switching function is provided)**

First spindle	Second spindle	Description	Standard setting
6550	6690	Velocity loop integral gain during orientation (HIGH)	10
6551	6691	Velocity loop integral gain during orientation (LOW)	10
6552	6692	Velocity loop integral gain in servo mode (HIGH)	10
6553	6693	Velocity loop integral gain in servo mode (LOW)	10
6554	6694	Velocity loop integral gain when the Cs axis is controlled (HIGH)	50
6555	6695	Velocity loop integral gain when the Cs axis is controlled (LOW)	50
6556	6696	Gear ratio (HIGH)	100
6557	6697	Gear ratio (MEDIUM HIGH)	100
6558	6698	Gear ratio (MEDIUM LOW)	100
6559	6699	Gear ratio (LOW)	100
6560	6700	Position gain during orientation (HIGH)	1000
6561	6701	Position gain during orientation (MEDIUM HIGH)	1000
6562	6702	Position gain during orientation (MEDIUM LOW)	1000
6563	6703	Position gain during orientation (LOW)	1000
6564	6704	Position gain change ratio when orientation is completed	100
6565	6705	Position gain in servo mode (HIGH)	1000
6566	6706	Position gain in servo mode (MEDIUM HIGH)	1000
6567	6707	Position gain in servo mode (MEDIUM LOW)	1000
6568	6708	Position gain in servo mode (LOW)	1000
6569	6709	Position gain when the Cs axis is controlled (HIGH)	3000
6570	6710	Position gain when the Cs axis is controlled (MEDIUM HIGH)	3000
6571	6711	Position gain when the Cs axis is controlled (MEDIUM LOW)	3000
6572	6712	Position gain when the Cs axis is controlled (LOW)	3000
6573	6713	Grid shift amount in servo mode	0
6574	6714	Reference position return speed in Cs contouring control mode or servo mode	0
6575	6715	Orientation completion signal detection level	10
6576	6716	Motor velocity limit value during orientation	33
6577	6717	Orientation stop position shift amount	0
6578	6718	MS signal constant	—
6579	6719	MS signal gain adjustment	0
6580	6720	Regenerative power limit	Model-dependent
6581	6721	Delay time prior motor power shut-off	20
6582	6722	Acceleration/deceleration time setting	10
6583	6723	Motor voltage during normal rotation	Model-dependent
6584	6724	Motor voltage during orientation	Model-dependent
6585	6725	Motor voltage in servo mode/synchronous control	Model-dependent
6586	6726	Motor voltage when the Cs axis is controlled	Model-dependent
6587	6727	Over-speed detection level	115
6588	6728	Excessive velocity deviation detection level when the motor is constrained	75
6589	6729	Excessive velocity deviation detection level when the motor is rotated	200
6590	6730	Overload detection level	90
6591	6731	Position gain change ratio when returning to the origin in the servo mode	100
6592	6732	Position gain change ratio when returning to the origin in Cs axis control	100
6593	6733	Acceleration presumed constant	0
6594	6734	Disturbance torque compensation constant	0
6595	6735	Speed meter output voltage adjustment value	0
6596	6736	Load meter output voltage adjustment value	0
6597	6737	Spindle velocity feedback gain	0
6598	6738	Maximum speed at which position coder signal can be detected	0
6599	6739	Delay time for energizing the motor	0

**Parameters for standard motors (parameters for high-speed operation
when the output switching function is provided)**

First spindle	Second spindle	Description	Standard setting
6600	6740	Base velocity of the motor output specification	Model-dependent
6601	6741	Limit value for the motor output specification	Model-dependent
6602	6742	Base speed	Model-dependent
6603	6743	Magnetic flux weakening start velocity	Model-dependent
6604	6744	Current loop proportional gain during normal operation	Model-dependent
6605	6745	Current loop proportional gain at the Cs contour control	Model-dependent
6606	6746	Current loop integral gain during normal operation	Model-dependent
6607	6747	Current loop integral gain at the Cs contour control	Model-dependent
6608	6748	Zero point of current loop integral gain	Model-dependent
6609	6749	Current loop proportional gain velocity factor	Model-dependent
6610	6750	Current conversion constant	Model-dependent
6611	6751	Secondary current factor for exciting current	Model-dependent
6612	6752	Current expectation constant	Model-dependent
6613	6753	Slip constant	Model-dependent
6614	6754	High-speed rotation slip compensation constant	Model-dependent
6615	6755	Compensation constant of voltage applied to motor in the dead zone	Model-dependent
6616	6756	Electromotive force compensation constant	Model-dependent
6617	6757	Electromotive force phase compensation constant	Model-dependent
6618	6758	Electromotive force compensation velocity factor	Model-dependent
6619	6759	Time constant of voltage filter for electromotive force compensation	0
6620	6760	Dead zone compensation data	Model-dependent
6621	6761	Time constant for changing the torque	5
6622	6762	Velocity filter	0
6623	6763	Overload detection time setting	30
6624	6764		0
6625	6765	Timer during automatic running	100
6626	6766	Velocity command during automatic running	1000
6627	6767	Load meter displayed value for maximum output	Model-dependent
6628	6768	Maximum output zero point	Model-dependent
6629	6769	Secondary current factor during rigid tapping	Model-dependent
6630	6770	Constant for compensating for the phase of the electromotive force at deceleration	Model-dependent
6631	6771	Time constant of the speed detection filter at the Cs contour control	0
6632	6772	Conversion constant of the phase-V current	0
6633	6773	Motor model code	Model-dependent
6634	6774		0
6635	6775	Grid shift amount when the C axis is controlled	0

Parameters for low-speed operation when the output switching function is provided

First spindle	Second spindle	Description	Standard setting
6900	6940	Motor voltage during normal rotation	Model-dependent
6901	6941	Motor voltage in the servo mode	Model-dependent
6902	6942	Base speed of the motor output specifications	Model-dependent
6903	6943	Limit value for the motor output specifications	Model-dependent
6904	6944	Base speed	Model-dependent
6905	6945	Magnetic flux weakening start velocity	Model-dependent
6906	6946	Current loop proportional gain during normal operation	Model-dependent
6907	6947	Current loop integral gain during normal operation	Model-dependent
6908	6948	Zero point of current loop integral gain	Model-dependent
6909	6949	Velocity factor of current loop proportional gain	Model-dependent
6910	6950	Current conversion constant	Model-dependent
6911	6951	Secondary current factor for excitation current	Model-dependent
6912	6952	Current expectation constant	Model-dependent
6913	6953	Slip constant	Model-dependent
6914	6954	Compensation constant for high-speed rotation slip	Model-dependent
6915	6955	Compensation constant for voltage applied to motor in the dead zone	Model-dependent
6916	6956	Electromotive force compensation constant	Model-dependent
6917	6957	Phase compensation constant for electromotive force	Model-dependent
6918	6958	Compensation velocity factor for electromotive force	Model-dependent
6919	6959		0
6920	6960		0
6921	6961	Time constant for changing the torque	Model-dependent
6922	6962	Maximum output zero point	Model-dependent
6923	6963	Secondary current factor in rigid tapping	Model-dependent
6924	6964	Hysteresis of the speed detection signal (SDT) output	0
6925	6965	Constant for compensating for the phase of the electromotive force at deceleration	Model-dependent
6926	6966	Velocity loop integral gain when the Cs axis is controlled (HIGH)	0
6927	6967	Velocity loop integral gain when the Cs axis is controlled (LOW)	0
6928	6968	Conversion constant of the phase-V current	0
6929	6969	Time constant of voltage filter for electromotive force compensation	0
6930	6970	Regenerative power limit	Model-dependent
6931	6971		0
6932	6972	Overload current alarm detection level (for low speed characteristic)	Model-dependent
6933	6973	Overload current alarm detection time constant	Model-dependent
6934	6974	Overload current alarm detection level (for high speed characteristic)	Model-dependent
6935	6975		—
6936	6976		0
6937	6977		0
6938	6978		0
6939	6979	Delay timer at ON of electromagnetic contactor in unit	0

Parameters related to servo

The following parameters are not explained in this manual:

No.	Contents							
	#7	#6	#5	#4	#3	#2	#1	#1
8□00 POWER OFF							DGPRM	HRPLC
8□01 POWER OFF	AMR7	AMR6	AMR5	AMR4	AMR3	AMR2	AMR1	AMR0
8□02 POWER OFF				0	1			
8□03 POWER OFF	VOFST	OVSCMP	BLENBL	IPSPRS	PIENBL	OBENBL	TGALRM	1
8□04 POWER OFF	DLY1	DLY0			TRW1	TRW0	TIB0	TIA0
8□05 POWER OFF		BRKCTL					FEEDFD	
8□06		DCBEMF		MODEL ACCFB		PKVER		FCBLCM
8□07								
8□08								
8□09	BLSTP	BLCUT				ADBLSH		
8□10					BLTEN			SPBIT
8□11	BLSTP		PGEXPD					
8□12			VCMD2	VCMD1			MSFEN	
8□13								
8□14								
8□15								
8□16								
8□17								
8□18								
8□19								
8□20 POWER OFF	Motor type							
8□21	Load inertia ratio (LDINT)							
8□22 POWER OFF	Direction of motor rotation (DIRCTL)							
8□23 POWER OFF	Number of velocity detection feedback pulses (PULCO)							
8□24 POWER OFF	Number of position detection feedback pulses (PPLS)							
8□25								
8□26								
8□27								
8□28								
8□29								
8□30								
8□31								

No.	Contents							
	#7	#6	#5	#4	#3	#2	#1	#1
8□32								
8□33								
8□34								
8□35								
8□36								
8□37								
8□38								
8□39								
8□40	POWER OFF	Current loop gain (PK1)						
8□41	POWER OFF	Current loop gain (PK2)						
8□42	POWER OFF	Current loop gain (PK3)						
8□43	Velocity (integral) loop gain (PK1V)							
8□44	Velocity (proportional) loop gain (PK2V)							
8□45	Incomplete integral coefficient (PK3V)							
8□46	Velocity loop gain (PK4V)							
8□47	Velocity control observer parameter (POA1)							
8□48	Improvement of velocity control backlash compensation (BLCMP)							
8□49	Maximum width of dual position feedback (DPFMAX)							
8□50	Velocity control observer parameter (POK1)							
8□51	Velocity control observer parameter (POK2)							
8□52								
8□53	Compensation for current non-operating area (PPMAX)							
8□54	Compensation for current non-operating area (PDDP)							
8□55	Compensation for current non-operating area (PHYST)							
8□56	Back electromotive force compensation (EMFCMP)							
8□57	Current phase control (PVPA)							
8□58	Current phase control (PALPH)							
8□59	Back electromotive force compensation (EMFBAS)							
8□60	POWER OFF	Torque limit (TQLIM)						
8□61	Back electromotive force compensation (EMFLMT)							
8□62	Overload protection coefficient (OVC1)							
8□63	Overload protection coefficient (OVC2)							
8□64	TG alarm level (TGALMLV)							
8□65	Overload protection coefficient (OVCLMT)							
8□66	PK2VAUX							
8□67	Torque command filter (TCFIL)							

No.	Contents							
	#7	#6	#5	#4	#3	#2	#1	#1
8□68	Feed-forward coefficient (FALPH)							
8□69	Feed-forward coefficient of velocity loop (VFFLT)							
8□70	Backlash compensation acceleration parameter (ERBLN)							
8□71	Backlash compensation acceleration parameter (PBLCT)							
8□72								
8□73								
8□74	Velocity-dependent current loop gain (AALPH)							
8□75								
8□76	1msec acceleration feedback gain (WKAC)							
8□77	Overshoot preventive counter (OSCTP)							
8□78	Numerator of dual position feedback conversion coefficient (PDPCH)							
8□79	Denominator of dual position feedback conversion coefficient (PDPCL)							
8□80	Time constant of dual position feedback (DPFTC)							
8□81	Zero width of dual position feedback (DPFZW)							
8□82	Backlash acceleration end amount (BLENDL)							
8□83	Brake control hold time of gravity axis (MOFCT)							
8□84 POWER OFF	Numerator of DMR when the flexibly feed gear is used (SDMR1)							
8□85 POWER OFF	Denominator of DMR when the flexibly feed gear is used (SDMR2)							
8□86	Rated current parameter (RTCURR)							
8□87	Torque offset of new type backlash acceleration (TCPRLD)							
8□88	Mechanical speed feedback gain (MCNFB)							
8□89	Base pulse in backlash acceleration (BLBSL)							
8□90								
8□91								
8□92								
8□93								
8□94								
8□95								
8□96								
8□97								
8□98	Phase progress compensation coefficient in deceleration (DEPVPL)							
8□99								

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