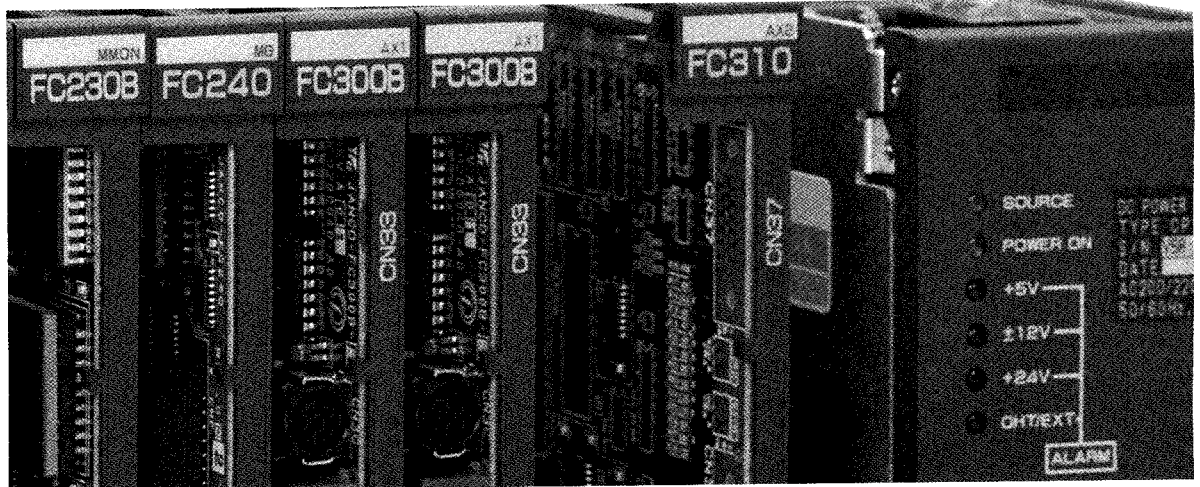


YASNAC i80M

CNC SYSTEM FOR MACHINING CENTERS

APPENDIX



Before initial operation read these instructions thoroughly, and retain for future reference



YASKAWA

This appendix is a supplement to the YASNAC i80M Instruction Manual, Connection Manual and Service Manual.

Detailed data necessary for supplementary explanations of the list of alarms, parameters and settings that appear in these manuals are included in this supplement.

Use this manual as supplementary data for those who are engaged in designing NC machine tools and in operation and maintenance of machines.

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1. ADDRESS CHARACTER

B: Basic
O : Option

Address	Meaning	i Classification
A	Rotating axis around the axis parallel to the X-axis	o
B	Rotating axis around the axis parallel to the Y-axis	o
c	Rotating axis around the axis parallel to the Z-axis	O
D	Tool radius offset number	B, O
E	Microprogram characters and canned cycle feed	o
F	Cutting feedrate	B
G	Set-up function	B, O
H	Tool offset number	B
I	X coordinate of circular center, radius when cutting circle	B, O
J	Y coordinate of circular center, cutting allowance when cutting circle	B, O
K	Z coordinate of circular center	B
L	Number of repetitions	B, O
M	Auxiliary function	B
N	Sequence number	B
o	Program number	B
P	Dwell time, specifications for G10 tool offset number Specification of program number at a subprogram, and sequence number	B o
Q	Depth of cut and amount of shift of canned cycle	o
R	Radius at point R of canned cycle Specifications for G10 tool offset amount	O, B
s	Spindle function	B
T	Tool function	B
u	Additional axis parallel to the X- axis	o
V	Additional axis parallel to the Y-axis	o
w	Additional axis parallel to the Z-axis and new initial point of canned cycle	o
x	X-axis coordinate value and dwell time	B
Y	Y- axis coordinate value	B
z	Z-axis coordinate value	B

2. FUNCTION CHARACTER

E 1A Code	ISO Code	Meaning	Remarks
Blank	Nul	Error in significant section of EIA and disregarded in ISO	
BS	BS	Disregard	
Tab	HT	Disregard	
CR	LF/NL	End of block (EOB)	
	CR	Disregard	
SP	SP	Space	
ER	%	Rewind stop	
UC		Up shift	
LC		Down shift	
2-4-5 Bit	(	Control out (Comments start)	EIA is a special code
2-4-7 Bit	)	Control in (Comments end)	
+	+	Disregard, microprogram operator	
	-	Minus sign, microprogram operator	
0 to 9	0 to 9	Numbers	
a to z	A to Z	Address code	
I	/	Optional block skip Microprogram character	
Del	DEL	Disregard (Including All Mark)	
•	.	Decimal point	
Parameter setting	#	Sharp (Variable)	EIA is a special code
*	*	Asterisk (Multiplication operator)	
=	=	Equal sign	
{	(	Large left parenthesis	
}	)	Large right parenthesis	
0		For microprogram comments	
\$	\$	For microprogram comments	
@	@	For microprogram comments	
?	?	For microprogram comments	
		For microprogram comments	

Note:

1. All codes other than the above in the significant information section become errors.
2. Information sandwiched between the control out and control in codes become meaningless.
3. Tape code (EIA/ISO) can be specified with setting #0004 DO.

3. TAPE CODE

EIA Data									Character		ISO Data								
8	7	6	5	4	0	3	2	1			8	7	6	5	4	0	3	2	1
		0			0				0			0	0		0				
					0			0	1		0		0	0		0		0	
					0		0		2		0		0	0		0		0	
			0		0		0	0	3				0	0		0		0	
					0	0			4		0		0	0		0	0		
			0		0	0		0	5				0	0		0	0	0	
			0		0	0	0		6				0	0		0	0	0	
					0	0	0	0	7		0		0	0		0	0	0	
					0				8		0		0	0	0	0			
			0	0	0			0	9			0	0	0	0			0	
	0	0			0			0	a	A		o			0			0	
	o	0			0		0		b	B		o			0		0		
	0	0	0		0		0	0	c	c	o	0			0		0	0	
	0	0			0	0			d	D		o			0	0			
	0	0	0		0	0		0	e	E	o	0			0	0			
	0	0	0		0	0	0		f	F	o	0			0	0	0		
	0	0			0	0	0	0	g	G		o			0	0	0	0	
	0	0		0	0				h	H		o			0	0			
	0	0	0	0	0			0	i	I	o	0			0	0		0	
	0		0		0	0		0	j	J	o	0			0	0		0	
	0		0		0	0		0	k	K		0			0	0		0	
	0		0		0	0		0	l	L		0			0	0		0	
	0		0		0	0		0	m	M		o			0	0	0	0	
	0				0	0		0	n	N		o			0	0	0	0	
	0				0	0	0		o	O	0	0			0	0	0	0	
	0		0		0	0	0	0	P	P		o		0					
	0		0	0	0				Q	Q	o	0		0				0	
	0		0	0	0			0	r	R	o	0		0		0		0	
		0	0		0		0		s	s		o		0		0	0	0	
		0			0		0	0	t	T	o	0		0		0	0		
		0	0		0	0			u	u		o		0		0	0	0	
		0			0	0		0	v	V		o		0		0	0	0	
		0			0	0	0		w	W	o	0		0		0	0	0	
		0	0		0	0	0	0	x	x	o	0		0	0				
		0	0	0	0				Y	Y		0		0	0	0		0	
		0	0	0	0			0	z	Z		0		0	0	0		0	
					o				Blank	NUL					o				
		0		0	0		0		BS		o			0	0				

3. TAPE CODE (Cent'd)

EIA Data									Character		ISO Data								
8	7	6	5	4	0	3	2	1			8	7	6	5	4	0	3	2	1
		0	0	0	0	0	0		Tab	HT					o	0			0
0					0				CR	LF/NL					o	0		0	
									-	CR	o				0	0	0		0
			0		0				SP		o		0			0			
				0	0		0	0	ER	%	o		0			0	0		0
	0	0	0	0	0	0			UC	-									
	o	0	0	0	0		0		LC	-									
			o	0			0		-	(			o		0	0			
	0			0			0		.	)	o		0		0	0			0
	0	0	0		0				+				o		0	0		0	0
	0				0				-				o		0	0	0		0
	0				0	0	0		0				0	0	0	0		0	
		0	0		0			0	/		o		0		0	0	0	0	0
	0	0	0	0	0	0	0	0	Del	DEL	o	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	All Mark		o	0	0	0	0	0	0	0	0
Note 2									#	o		0			0		0	0	
0			0	0	0				*	o		0		0	0		0		
0				0	0	0			-	0		0	0	0	0	0		0	
0		0	0		0				|	o	0			0	0	0		0	
0		0			0		0		|	0	0			0	0	0	0	0	
0			0		0	0			\$			0			0	0			
0				0	0	0	0	0	@	o	0				0				
0			o	0	0	0	0		?			o	0	0	0	0	0	0	
	0	0		0	0		0	0	.			0		0	0	0	0	0	
	0	0	0	0	0	0				0		0		0	0	0			
Set value for parameter #4108												o			0	0	0	0	
Set value for parameter #4109									.			0			0		0		
Set value for parameter #4144									<			0	0	0	0	0			
Set value for parameter #4145									>	0		0	0	0	0	0	0		
Set value for parameter #4146										o		0	0	0	0		0	0	

Note :

1. The EIA code of character '#-?' is generally not defined. The above codes used in this system as a temporary code.
2. The EIA code of character '#' can be specified with parameter #4100.

4. TAPE FORMAT

No.	Address	Output (mm)		Output (in.)		B : Basic o : Option
		Input (mm)	Input (in.)	Input (mm)	Input (in.)	
1	Program number	05		05		B
2	Sequence number	N5		N5		B
3	G Function	G3		G3		B
4	Coordinate word	Linear axis Rotating axis	a + 63 b + 63	a + 54 a + 63	a + 63 b + 63	B o
5	Feed per minute	F60	F41	F60	F51	B
6	Feed per minute multiplied by 1/10	F61	F42	F61	F52	B
9	S Function	S5		S5		B
10	T Function	T2		T2		B
		T4		T4		B
11	M Function	M3		M3		B
12	Tool offset number	H4 or D4		H4 or D2		B
13	B Function	B3		B3		o
14	Dwell	P63		P63		B
15	Program number specification	P5		P5		B
16	Sequence number specification	P5		P5		B
17	Number of repetitions	L9		L9		B

Note : "a±63" indicates $x + \frac{1}{10} \times \text{ADDRESS}$
 ↑
 Address representing coordinate

5. DATA SETTING RANGE

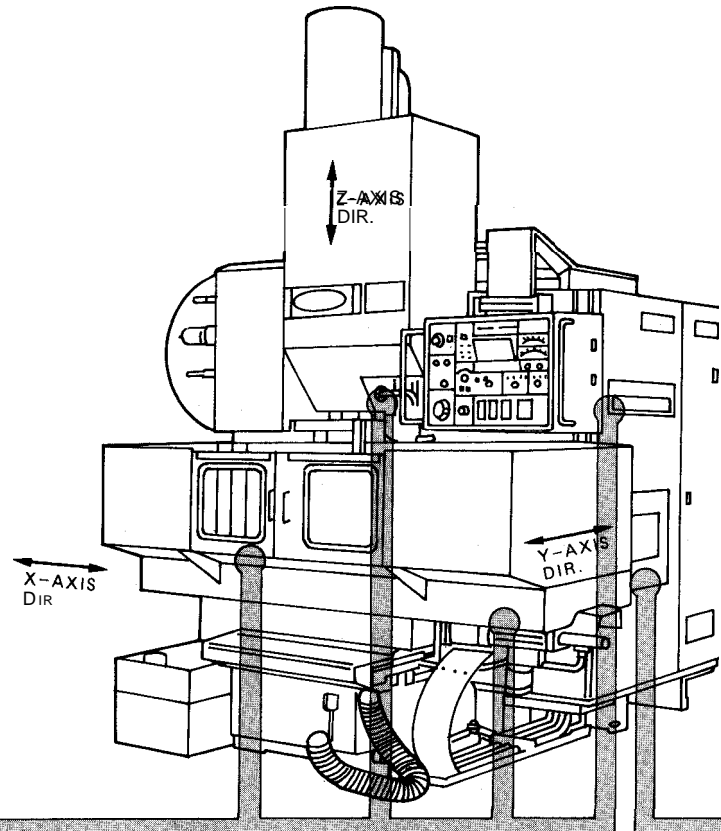
Item		Output for screw (mm)		Output for screw (in.)	
		Input (mm)	Input (in.)	Input (mm)	Input (in.)
Minimum input unit		0.001 or 0.01 mm	0.0001 or 0.001 in.	0.001 or 0.01 mm	0.0001 or 0.001 in.
Max, stroke (distance from reference point)		± 999999.999 mm		± 99999.9999 in.	
Amount of tool offset and tool radius		0 to ± 999.999 mm	0 to ± 99.9999 in.	0 to ± 999.999 mm	0 to ± 99.9999 in.
Minimum amount of step/handle feed		0.001 mm	0.0001 in.	0.001 mm	0.0001 in.
Area specifica- tion range of stored stroke limit	Program specification	0.001 mm	0.0001 in.	0.001 mm	0.0001 in.
	Parameter and setting	0.001 mm		0.0001 in	
Rapid traverse rate		1 to 240000 mm/min		0.1 to 24000.0 in. /rein	
Manual jog speed					
Speed of F.					
Upper limit of cutting feed		1 to 240000 mm/min		0.1 to 24000.0 in. /rein	
Dry run speed					
Stored pitch error compensation and setting range of stored stroke limit and No. 2-4 reference point		0 to ± 999999.999 mm		0 to 99999.9999 in.	
		(O : Reference point)			
Amount of backlash compensation		± 32767 pulse		± 32767 pulse	
Amount of stored pitch error compensation	Incremental setting	0 to ± 127 pulse		0 to *127 pulse	
	Absolute setting	0 to ± 32767 pulse		0 to ± 32767 pulse	
Amount of work coordinate system shift		0 to ± 9999.999 mm	0 to ± 999.9999 in.	0 to *9999.999 mm	0 to ± 999.9999 in.

Note : 1pulse= Minimum output unit.

6. COMMAND VALUE RANGE

No	Address		Output (mm)		Output (in.)	
			Input (mm)	Input (in.)	Input (mm)	Input (in.)
1	Program number	O	1 to 99999	1 to 99999	1 to 99999	1 to 99999
2	Sequence number	N	1 to 99999	1 to 99999	1 to 99999	1 to 99999
3	G Function	G	Oto999	o to 999	o to 999	o to 999
4	Coordinate word	Linear axis	± 999999.999 mm	± 39370.0787 in.	± 999999.999 mm	± 999999.999 in.
		Rotating axis	± 999999.999 deg	± 999999.999 deg	± 999999.999 deg	± 999999.999 deg
	Max. accumulated command value		± 999999.999 mm	± 999999.999 in.	± 999999.999 m m	± 999999.999 in.
5	Feed per minute	F	1 to 240000 mm/min	0.1 to 9448.87 in. /rein	1 to 609600 mm/min	0.1 to 24000.0 in. /rein
6	Feed per minute multiplied by 1/10	F	0.1 to 240000.0 mm/min	0.01 to 9448.81 in. /rein	0.1 to 609600.00 mm/min	0.01 to 24000.00 in. /rein
9	S Function	S5	o to 99999	0 to 99999	0 to 99999	0 to 99999
10	T Function	T2	Oto99	o to 99	o to 99	I o to 99
		T4	O to 9999	o to 9999	o to 9999	o to 9999
11	M Function	M	o to 999	0 to 999	0 to 999	0 to 999
12	Tool offset number	H	o to (1199)	o to (1199)	o to (1199)	o to (1199)
		D	o to (1199)	o to (1199)	o to (1199)	o to (1199)
13	B Function	B	o to 999	0 to 999	0 to 999	0 to 999
14	Dwell	P	o to 999999.999 s	o to 999999.999 s	o to 999999.999 s	o to 999999.999 s
15	Program number specification	P	1 to 99999	1 to 99999	1 to 99999	1 to 99999
16	Sequence number specification	P	1 to 99999	1 to 99999	1 to 99999	1 to 99999
17	Number of repetitions	L	1 to 999999999	1 to 999999999	1 to 999999999	1 to 999999999

(OUTLINE OF ALARM NO.)



NC-RELATED ALARM	SERVO-RELATED ALARM	SELF-DIAGNOSIS ALARM	MACHINE-RELATED ALARM
<ul style="list-style-type: none"> • #000 - #0499 Edit/operation-related error • #1000 - #1099 Program error • #9000 - #9049 	<ul style="list-style-type: none"> • #2000 - #2199 Machine-related error • #5000 - #5999 Sequence error 	<ul style="list-style-type: none"> • #3000 - #3299 Emergency stop for servo and spindle, CPU monitor 	<ul style="list-style-type: none"> • #8000 - #8049 Memory check error, watchdog timer error, off line error • BAT display
<p>(Example)</p> <p>#0012 ILLEGAL CHARACTER(TP) : There are unusable characters other than ISO/EIA code with PS-232C during tape operation.</p> <p>#1090 MEMORY ERROR (SET) : Setting area total check error</p> <p>#9010 TH ERROR : TH parity error during tape I/O collation</p>	<p>(Example)</p> <p>#2061 ZR AREA ERROR (x) : Reference point return area error (x)</p> <p>#2190 MACHINE UNREADY : Machine set-up not ready</p>	<p>(Example)</p> <p>#3041 PULSE EXCEED (X) : Error pulse exceed (X)</p> <p>#3270 POWER OFF ERROR (KEEP MEM) : Data error when the power is turned OFF (mainly system error)</p>	<p>(Example)</p> <p>#8000 ROM ERROR : ROM check error</p> <p>#8001 RAM ERROR : RAM check error</p>

Note : When an alarm occurs, the alarm number and message will be displayed on the lower left part of the CRT. Refer to the pertinent item in the Service Manual to cope with the situation when an alarm occurs.

7. ALARM

7.1 NUMBERING OF THE ALARM NUMBERS

Number	Details	stop	Output	Reset, method, remarks
0000 to 0049	Editing and operation-related errors that occur even in BG	Block stop	Input error alarm	Reset
0050 to 0099	Editing and operation-related errors that do not occur even in BG	Block stop	Input error alarm	Reset. However, power OFF with 0050 and 0051
0100 to 0499	Program error	Block stop	Input error alarm	Reset
1000 to 1099	Program error DNC, CMOS total etc.	Block stop	Input error alarm	Reset
2000 to 2199	Machine-related errors OT, reference point return, machine preparation complete in position, etc.	Coasting stop or immediate stop	Alarm	Reset after clearing cause. However, MRDY is automatic reset with first OFF- ON of power supply.
3000 to 3299	Servo, spindle axis related ESP, CPU mutual monitoring	Immediate stop , Servo off	Alarm	Reset after clearing cause. However, SV OFF automatically reset only with SV ON
5000 to 5999	PLC ladder message user-macro alarm message	Block stop	Alarm	Correct cause, then reset. Otherwise, just reset.
8000 to 8049	Memory check error Watchdog timer error Offline error	Immediate stop , Servo off	Alarm	Maintenance required Exclusive maintenance screen changeover of CPU and HALT
9000 to 9049	Errors that occur with BG operation (Basically same as 0000-0049)	Not stop	BG error output	Soft key Reset or just reset.
None (BAT display BAT. AXI!	Battery error Encoder alarm	Not stop	None	Replace battery
None Warning (message	When key operation error and editing error are lit.	Not stop	Warning	Next key operation

7.2 ALARM NUMBER TABLE

Alarm No.	Contents
#0000
#0001	.
#0002
#0003	
#0004	
#0005
#0006	
#0007
#0008	
#0009	

Alarm No.	Contents
#0010	THERROR (TP) TH parity error during tape operation.
#0011	TV ERROR (TP) TV parity error during tape operation.
#0012	ILLEGAL CHARACTER (TP) There are unusable characters other than ISO/EIA code with RS-232C during tape operation.
#0013	1 BLOCK LENGTH ERROR One block over capacity (128 characters) was detected during tape operation 1.
#0014	DATA SET READY DOWN Data set ready signal is not response in tape operation.
#0015	NUMERIC DATA OVERFLOW Input data digits overflow in tape operation (Beyond 9 characters).
#0016	RS-232C ERROR (CH SELECT) RS-232C interface transmission abnormal. Parity error occurs.
#0017	RS-232C ERROR (OVER RUN) RS-232C interface overrun error. (Improper protocol setting or transmission error).
#0018	RS-232C ERROR (CH SELECT) Error in selection of RS-232C interface circuit.
#0019	RS-232C ERROR (FRAMING) RS-232C interface framing error. (Improper stop-bit setting or transmission error).

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0020	RS-232C ERROR (API-1) Line specified is already open.
#0021	RS-232C ERROR (APL-2) Line specified is not open.
#0022	RS-232C ERROR (APL-3) Dual coil not being used in the correct combination.
#0023	RS-232C ERROR (APL-4) Transmission was not conducted during the specified time.
#0024	RS-232C ERROR (APL-5) Transmission or receiving start processing not conducted.
#0025	RS-232C ERROR (APL-6) Error in specified parameter.
#0026	
#0027	
#0028	
#0029	

Alarm No.	Contents
#0030
#0031	
#0032	
#0033	
#0034	
#0035
#0036	
#0037	
#0038	
#0039	

7.2 **ALARM NUMBER TABLE** (Cont' d)

Alarm No.	Contents
#0040	
#0041	
#0042
#0043	
#0044
#0045	
#0046
#0047
#0048	
#0049

Alarm No.	Contents
#0050	POWER OFF PRM SET A parameter was set that will not be effective unless power is turned off,
#0051	PROG GEN PRM SET A parameter was set that will not be effective unless a program area is generated.
#0052	
#0053	
#0054	
#0055	
#0056	
#0057	.....
#0058	
#0059	

7.2 ALARM NUMBER TABLE (Cont' d)

Alarm No.	Contents
#0060	
#0061	EXTERNAL (DATA) There is a data specification error with external data input.
#0062	EXTERNAL (NO PROG) Program specified with external work number search cannot be found.
#0063	
#0064	
#0065	.....
#0066	
#0067	
#0068	
#0069	

Alarm No.	Contents
#0070	
#0071	
#0072	
#0073	
#0074	
#0075	
#0076	
#0077	
#0078	
#0079	

7.2 ALARM NUMBER TABLE (Cent' d)

Alarm No.	Contents
#0080
#0081
#0082	
#0083
#0084
#0085
#0086	
#0087
#0088
#0089	

Alarm No.	Contents
#0090	
#0091	
#0092
#0093	
#0094	
#0095	
#0096
#0097	
#0098	
#0099

7.2 ALARM NUMBER TABLE (Cont'd)

Alarm No.	Contents
#0100	1 BLOCK DATA OVERFLOW Overflow of 1 block buffer capacity. (128 characters)
#01 01	ADDRESS/DATA MISUSE There are no data after the address, or command was for data without address.
#01 02	" _ ", " . " MISUSE Address/data not being used correctly.
#0103	UNUSABLE CHARACTER Command is for characters that cannot be used in the significant information section.
#01 04	NUMERIC DATA OVERFLOW Numeric value input data overflow. (characters being exceeded)
#01 05	UNUSABLE AXIS Command is for an undefined axis.
#0106	DOUBLE ADDRESS Command is over two times for the same address in one block.
#0107	" (", ") " ERROR Nest is " (". ") " is used without " (". There is no")- for "(".
#0108	
#0109	

Alarm No.	Contents
#0110	MULTIPLE M CODE Command is for multiple Mcodes although there is no one block multiple command option.
#0111	M CODE DIGITS OVER Number of M digit commands is excessive.
#0112	M91 FORMAT ERROR P is not specified in the M91 block.
#0113	INTERNAL M COMMAND ERROR There is error in internal M code command.
#0114	M90/M91 COMMAND ERROR Command M90 or M91 was used although it was unavailable.
#0115	M191 FORMAT ERROR Input command M191 contains an error.
#0116	M93 COMMAND ERROR Command M93 was used although it was unavailable. (Option is not set.)
#0117	.....
#0118	.....
#0119	.....

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0120	
#0121	
#0122	
#01 23	
#01 24	
#0125	<p>M, S, T CANNOT COMMAND Command was for M, S, T in a block in which M, S, T cannot be specified.</p>
#0126	<p>NO COMPLETION COMMAND There is no M02/30 completion command in memory operation.</p>
#0127	<p>MIRROR IMAGE, ERROR Command was for G in a mirror image in which a mirror image cannot be used, or a mirror image is ON in a mirror image prohibited mode.</p>
#0128	
#0129	

Alarm No.	Contents
#0130	<p data-bbox="421 289 624 319">MULTIPLE S CODE</p> <p data-bbox="421 342 1240 400">Command was for multiple S codes when there were no multiple S control options.</p>
#0131	<p data-bbox="421 449 740 478">S CODE DIGITS OVER</p> <p data-bbox="421 502 1047 532">Command of the number of S digits was excessive.</p>
#0132	
#0133	
#0134	
#01 35	
#0136	
#01 37	
#01 38	
#01 39	<p data-bbox="421 1736 447 1744">.....</p>

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0140	<p>T CODE DIGITS OVER</p> <p>The T digit commands are excessive.</p>
#0141	
#0142	
#0143	
#0144	<p>B CODE DIGITS OVER</p> <p>More digits than permitted were specified for Code B.</p>
#0145	
#0146	
#0147	
#0148	
#0149	

Alarm No.	Contents
#0150	MAX OFFSET NO. OVER Offset number is too large.
#0151	OFFSET NO. ERROR IN H/D ----- Offset number during H/D changeover is too large.
#0152	NO. H COMMAND No command for offset number H.
#0153	
#0154	
#0155	.....
#0156	
#0157	.....
#0158	
#0159	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0160	UNUSABLE G CODE Command is for an option commanding an unusable G code.
#0161	INMATCH G CODE Command is for a G code that cannot be used in combined form with the block.
#0162	LACK OF ADDRESS Required address specification is lacking.
#0163	
#0164	
#0165	
#0166	
#0167	
#0168	
#0169	

Alarm No.	Contents
#0170	UNUSABLE G CODE IN CYCLE Command was for a G code unusable in a canned cycle.
#0171	G70-G72 USED IN NON CANNED CYCLE G70-G72 was used in other than a canned cycle.
#0172	R-POINT IN BACK BORING Returns to R-point in G77 (back boring cycle).
#0173	
#0174	G73/G83 COMMAND ERROR (Q=I=0) There is no command for Q or I in G73/G83, or the command was for G73/G83 in the Q=I=0 state.
#0175	G70-G72 ADDRESS COMMAND ERROR Specified address for command G70, G71, or G72 is invalid.
#0176	
#0177	
#0178	
#0179	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0180	RADIUSCMP START UP ERROR Is in ARC mode with MOO, 01, 02, 30 and with no shift within 3 blocks during start up of tool radius compensation.
#0181	RADIUS CMP END ERROR Is in ARC mode at end of tool radius compensation.
#0182	UNUSABLE G COMMAND IN CMP MODE Command is for an unusable G code in tool radius compensation.
#0183	SURFACE UNMATCH IN CMP MODE Correction plane was changed over during tool radius compensation or command was for an arc other than the correction plane.
#0184	RADIUSCMP CAL ERROR Intersection cannot be obtained in tool radius compensation.
#0185	REVERSE COMMAND IN CMP MODE Command is for retrogression of tool radius compensation or a shape approaching this.
#0186	ILL MACRO COMMAND IN CMP MODE Command was for a system variable that could not be read during tool radius compensation.
#0187	CMP INTERFERENCE CHECK ALARM Interference check was started during tool radius compensation.
#0188	CMP INTERFERENCE CHECK ERROR Automatic interference correction is not being conducted during tool radius compensation.
#0189	CMP ABNORMAL ERROR Compensation mode abnormal or no output data during data output (logic error). * This alarm normally does not occur.

Alarm No.	Contents
#0190	<p>RADIUS 0 IN CIRCULAR</p> <p>Command is for a radius 0 circle in the arc command.</p>
#0191	<p>TOO MANY AXES IN CIRCULAR</p> <p>The command is for more than three axes in the arc. The command is for axes exceeding those helically possible.</p>
#0192	<p>CANNOT DECIDE CIRCULAR SURFACE</p> <p>Cannot decide plane from the assigned arc command. Command is for anarc with more than 4 axes.</p>
#0193	<p>RADIUS R COMMAND ERROR</p> <p>Unable to obtain the center from the R command.</p>
#0194	<p>OFFSET IN CIRCULAR MODE</p> <p>Command is for tool length offset and tool position offset in the circular mode.</p>
#0195	
#0196	
#0197	
#0198	
#0199	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0200	P NO. MAX OVER ING10 Number specifying P is too large in the offset program input.
#0201	G10 FORMAT ERROR The amount of offset is too great at the offset program input or there is an error in one of the program formats.
#0202	PNO. MAX OVER ING10 Q2 P is too large in G10 (I2 (work coordinate shift program input).
#0203	
#0204	.....
#0205	.....
#0206	
#0207	.....
#0208	.....
#0209	

Alarm No.	Contents
#021 0	CONSTANT DATA OUT OF RANGE Constant exceeds limit range in microprogram.
#021 1	UNMATCH G67 COMMAND Too many G67 cancel codes.
#021 2	MACRO FORMAT ERROR Error in format.
#021 3	UNDEFINED # NO. Value not defined as variable No. being used.
#021 4	ILL LEFT SIDE # NO. Variable of the assignment statement is a variable in which assignment is prohibited.
#021 5	[] LIMIT OVER Multiplicity of brackets exceeds the upper limit.
#021 6	MACRO CALL LIMIT OVER Multiplicity of macro call exceeds the upper limit,
#021 7	DO-END FORMAT ERROR DO-END do not correspond 1 to 1.
#021 8	[1 UNMATCH The number of brackets do not correspond correctly.
#021 9	DO-END NO. OUT OF RANGE DO not within the range of $1 \leq m \leq 3$ with m.

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0220	GOTO NO. FORMAT ERROR The n of GOTO n exceeds the command range or n cannot be found.
#0221	) DIVIDE IN MACRO Divided with 0 in macro.
#0222	ROOT VALUE NEGATIVE Negative number is in the root sign.
#0223	FLOATING DATA OUT OF RANGE Floating decimal point data exceed the permissible range.
#0224	G66-M99 PROG ERROR Axis move command sent by modal call (G66) during M99 return.
#0225	MACRO SYSTEM ERROR Overflow of operation stock.
#0226	ASIN, ACOS, LN, SORT ERROR Exceeded area with ASIN, ACOS, LN or SORT functions.
#0227	TRANSFORMATION DATA OVERFLOW Overflow occurred during integral conversion.
#0228	BCD INPUT DATA OVERFLOW Input data overflowing in BCD function.
#0229	BIN FORMAT ERROR Error in formatting with the BIN function.

Alarm No.	Contents
#0230	<p data-bbox="417 287 745 314">EXP OUTPUT DATA OVERFLOW</p> <p data-bbox="417 338 885 366">Overflow occurred with EXP function.</p>
#0231	
#0232	
#0233	
#0234	
#0235	
#0236	
#0237	
#0238	
#0239	

7.2 ALARM NUMBER TABLE (Cont'd)

Alarm No.	Contents
#0240	ZR UNREADY Reference point return of axes with G29 and G30 commands not complete.
#0241	ZR DISABLE Reference point return of axis with G28 command is invalid.
#0242	.....
#0243	
#0244	
#0245	
#0246	
#0247	.....
#0248	.....
#0249	

Alarm No.	Contents
#0250	UNUSABLE CODE IN SOLID TAP Command issued for code not usable with solid tap..
#0251	
#0252	
#0253	
#0254	
#0255	C- AXIS COMMAND FOR SPINDLE C-axis command was used for spindle in spindle control mode.
#0256	SPINDLE COMMAND FOR C-AXIS S command was used for spindle in C-axis control mode.
#0257	
#0258	
#0259	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0260	SUBPRO, MACRO CALLING ERROR There is no P or Q specification in the M98 block. There is no P specification in the G65/G66 and G25 blocks. Simultaneous command of G25 and M98/M99.
#0261	SUBPRO CALL LIMIT OVER Multiplicity of M98 SUBPRO and G25 calling exceeded the limit.
#0262	NO CALLED PROGRAM Program No. or sequence No. not found when calling program with M98, M99, G65, G66, G25, G, M or T.
#0263	SEARCH AFTER READ SUB/MACRO Tried to start after reading SUBPRO and MACRO CALL and executing ADDRESS SEARCH. .
#0264	PROGRAM COPY M99 USED M99 was used in program to be copied.
#0265	
#0266	.....
#0267	.....
#0268	
#0269	

Alarm No.	Contents
#0270	<p>CORNER OVERRIDE G CODE ERROR</p> <p>No I or J command. No command for both I and J. Command is for an axis other than the X—and Y—axes.</p>
#0271	<p>.....</p>
#0272	
#0273	<p>.....</p>
#0274	<p>.....</p>
#0275	<p>UNUSABLE G COMMAND DURING PROGRAM INTERRUPT</p> <p>.....</p> <p>Input command is unusable during program interrupt.</p>
#0276	
#0277	
#0278	
#0279	<p>.....</p>

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0280	UNUSABLE G CODE IN SCALING Command is for an unusable G code in the scaling mode.
#0281	SCALING FORMAT ERROR Error in G50 or G51 block format, or scaling factor is 0.
#0282	
#0283	.....
#0284	.....
#0285	COMBINATION FUNCTION ERROR Mirror image, scaling, and/or coordinate rotation functions are set or canceled in inappropriate order.
#0286	.....
#0287	.....
#0288	
#0289	

Alarm No.	Contents
#0290	<p>SEQ No. NOT FOUND AT PRN</p> <p>Sequence No. not found when restarting program.</p>
#029	<p>COORDINATE SHIFT AT PRN</p> <p>Operation changing the coordinate system was conducted when restarting the program (G50/G92, G54–G59 executed with MDI command, ORG operation)</p>
#0292	<p>4x-axis MOVED AT PRN</p> <p>4axis moved with intervention of MDI when restarting program.</p>
#0293	
#0294	
#0295	
#0296	
#0297	
#0298	
#0299	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0300	
#0301	LIFE CTRL NOT GROUPING No tool in specified tool group is registered.
#0302	LIFE CTRL (ALL SKIP) All tools unspecified tool group were skipped.
#0303	
#0304	
#0305	
#0306	
#0307	
#0308	
#0309	

Alarm No.	Contents
#0310	ROTATION G CODE MISUSE Command was for unusable G code in coordinate rotation mode, or was for G68 during radius offset.
#0311	ROTATION FORMAT ERROR Error in G68 or G69 command block format.
#0312	
#0313	.....
#0314	
#0315	.....
#0316	.....
#0317	.....
#0318	
#0319	.....

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0320	<p>WORK COORDINATE FORMAT ERROR Work coordinate not usable in G54—G59* work coordinate shift was selected, or command is for G54—G59 in the circle mode.</p>
#0321	<p>LOCAL COORDINATE FORMAT ERROR Local coordinate system set when work coordinate not in set state.</p>
#0322	<p>G53 ERROR G53 set under unusable G53 condition.</p>
#0323	
#0324	
#0325	<p>.....</p>
#0326	
#0327	<p>.....</p>
#0328	
#0329	

Alarm No.	Contents
#0330	
#0331	
#0332	
#0333	
#0334
#0335	
#0336
#0337
#0338
#0339

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0360	<p>D > R COMMAND IN G12/G13 Command was for radius R < correction D when cutting circle.</p>
#0361	<p>PLANE IN G12/G13 Command is for other than G17 plane when cutting circle.</p>
#0362	<p>FORMAT ERROR True circle cutting format error.</p>
#0363	
#0364	
#0365	<p>UNUSABLE G CODE IN G45-G48 Command was for unusable G when correcting with G45-G48.</p>
#0366	
#0367	
#0368	
#0369	

Alarm No.	Contents
#0370	F COMMAND= O F is lacking in the cutting command.
#0371	
#0372	.....
#0373	.....
#0374	.....
#0375	.....
#0376	
#0377	
#0378	
#0379	.....

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0380	AXIS CANNOT COMMAND (1) An axis command is in the G04, G20, G21 block.
#0381	AXIS CANNOT COMMAND (2) An axis command is in the G10, G22, G23 block.
#0382	S-OT COMMAND ERROR Several areas among 3rd to 5th areas were selected.
#0383	
#0384	
#0385	
#0386	.....
#0387	
#0388	.....
#0389	.....

Alarm No.	Contents
#0390	PROGRAM O NUMBER NOT FOUND Program to be executed was not found.
#0391	PROGRAM BEING READ Program to be executed was being loaded.
#0392	PROGRAM BEING EDITED Program to be executed was being edited.
#0393	SEQUENCE NUMBER NOT FOUND Specified sequence number was neither M980 command or G25.
#0394	
#0395	IMPOSSIBLE REQUEST DURING MEM/TAPE OPERAT 10N Change to memory/tape mode and cycle start was requested in tape/memory mode.
#0396	CANNOT RETURNIN TAPE/DIRECT An attempt to return to the main program was made by program interruption during TAPE/DIRECT operation.
#0397	INTERRUPT ACTION (TAPE/DIRECT) Interference was made so that re-execution would be impossible.
#0398	
#0399	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0400	) NUMBER FIGURE OVER) number with 5-digit or more is commanded.
#0401	↓ NUMBER FIGURE OVER ↓ number with 5-digit or more is commanded.
#0402	> NUMBER FIGURE OVER > number with 5-digit or more is commanded.
#0403	.....
#0404	
#0405	
#0406	
#0407	
#0408	
#0409	.....

Alarm No.	Contents
#041 0	
#041 1	ZR UNREADY (X) Reference point return incomplete. (X-axis)
#0412	ZR UNREADY (Y) Reference point return incomplete. (y-axis)
#0413	ZR UNREADY (Z) Reference point return incomplete. (z-axis)
#0414	ZR UNREADY (4) Reference point return incomplete. (4th-axis)
#0415	ZR UNREADY (5) Reference point return incomplete. (5th-axis)
#0416	
#041 7	
#0418	
#0419	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0420	
#0421	REFERENCE POINT RETURN ERROR (X) X-axis has not returned to reference point after command G27.
#0422	REFERENCE POINT RETURN ERROR (Y) Y-axis has not returned to reference point after command G27.
#0423	REFERENCE POINT RETURN ERROR (Z) Z-axis has not returned to reference point after command G27.
#0424	REFERENCE POINT RETURN ERROR (4) 4th axis has not returned to reference point after command G27.
#0425	REFERENCE POINT RETURN ERROR (5) 5th axis has not returned to reference point after command G27.
#0426	
#0427	
#0428	
#0429	

Alarm No.	Contents
#0430	
#0431	
#0432	
#0433	
#0434	
#0435	
#0436	
#0437	
#0438	
#0439	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#0490	
#0491	NO SKIP SIGNAL (1) RECEIVED Skip signal (1) not receivable in G31 block.
#0492	.....
#0493	
#0494	SKIP SIGNAL (1) DISABLE Disable of skip signal (1) when executing G31.
#0495	
#0496	.....
#0497	.....
#0498	
#0499	.....

Alarm No.	Contents
#1 000	DNC TIME OUT DNC timeout error.
#1001	DNC DR-LINE ERROR DNC DR line error.
#1 002	DNC PACKET LENGTH ERROR DNC packet length abnormal.
#1 003	DNC LSI ERROR DNC 8251 error.
#1 004	DNC CHECK SUM ERROR DNC Check sum error.
#1 005	DNC COMMAND ERROR DNC Command error.
#1 006	DNC HISPEED MODE ERROR DNC high speed cutting mode error.
#1 007	DNC COMMUN I CATION MODULE DIAGNOSIS ERROR DNC communication module diagnosis error.
#1 008	DNC CPU ERROR DNC CPU error.
#1 009	DNC 51 ERROR DNC 51 error.

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#1010	
#1011	
#1012	
#1013	
#1014	
#1015	
#1016	
#1017	
#1018	
#1019	

Alarm No.	Contents
#1 080	SEQUENCE ERROR O Sequence error O. Block stops.
#1081	
#1082	
#1 083	.....
#1 084	.....
#1 085	
#1086	.....
#1 087	
#1 088	
#1 089	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#1 090	MEMORY ERROR (SET) Setting area total check error.
#1091	MEMORY ERROR(PRM) Parameter area total check error.
#1 092	MEMORY ERROR (KEEP MEM) Keep memory area total check error.
#1 093	MEMORY ERROR(OFS) Offset and work coordinate shift area total check error.
#1 094	MEMORY ERROR (MACRO) Macro variable area total check error.
#1 095	MEMORY ERROR (PROGRAM) Processing program area total check error.
#1 096	MEMORY ERROR (TOOL LIFE) Tool life management area total check error.
#1 097	
#1 098	
#1 099	OVER TEMP Temperature in panel abnormal.

Alarm No.	Contents
#2000	
	OT (X)
#2001	Over - travel. (X - axis)
#2002	<small>of (y)</small> Over-travel. (Y - axis)
#2003	<small>of (z)</small> Over -travel. (Z - axis)
#2004	OT (4) Over- travel. (4th - axis)
#2005	OT (5) Over-travel. (5th-axis)
#2006	.....
#2007	.....
#2008	.....
#2009	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2010	
#201 1	S-0T1 (X) Stored stroke limit. First area. (X-axis)
#2012	S-0T1 (Y) Stored stroke limit, First area. (Y-axis)
#2013	S-0T1 (Z) Stored stroke limit. First area. (Z-axis)
#2014	S-0T1 (4) Stored stroke limit. First area. (4th-axis)
#201 5	S-0T1 (5) Stored stroke limit. First area. (5th-axis)
#2016	
#201 7	
#2018	
#2019	

Alarm No.	Contents
#2020	
#2021	S-0T2 (X) Stored stroke limit. Outside second area. (X-axis)
#2022	S-0T2 (Y) Stored stroke limit. Outside second area. (Y-axis)
#2023	S-0T2 (Z) Stored stroke limit. Outside second area. (Z-axis)
#2024	S-0T3 (X) Stored stroke limit. Outside third area. (X-axis)
#2025	S-0T3 (Y) Stored stroke limit. Outside third area. (Y-axis)
#2026	S-0T3 (Z) Stored stroke limit. Outside third area. (Z-axis)
#2027	S-0T4 (X) Stored stroke limit. Outside fourth area. (X-axis)
#2028	S-0T4 (Y) Stored stroke limit. Outside fourth area. (Y-axis)
#2029	S-0T4 (Z) Stored stroke limit. Outside fourth area. (Z-axis)

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2030	.....
#2031	S-0T5 (X) Stored stroke limit. Outside fifth area. (X-axis)
#2032	S-0T5 (Y) Stored stroke limit. Outside fifth area. (Y-axis)
#2033	S-0T5 (Z) Stored stroke limit. Outside fifth area. (Z-axis)
#2034	
#2035	.....
#2036	
#2037	.....
#2038	.....
#2039	

Alarm No.	Contents
#2040	S-OT2 (INSIDE) Stored stroke limit. Inside second area.
#2041	S-OT3 (INSIDE) Stored stroke limit. Inside third area.
#2042	S-OT4 (INSIDE) Stored stroke limit. Inside fourth area.
#2043	S-OT5 (INSIDE) Stored stroke limit. Inside fifth area.
#2044	.....
#2045	
#2046	
#2047	
#2048	.....
#2049	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2050	
#2051	
#2052	
#2053	
#2054	
#2055	
#2056	
#2057	
#2058	
#2059	

Alarm No.	Contents
#2060	ZR ERROR UNDER MANUAL SKIP MODE Reference point return (low-speed type) was executed during manual skip B (measuring).
#2061	ZR AREA ERROR (X) Reference point return area error. (X-axis)
#2062	ZR AREA ERROR (Y) Reference point return area error. (Y-axis)
#2063	ZR AREA ERROR (Z) Reference point return area error. (Z-axis)
#2064	ZR AREA ERROR (4) Reference point return area error. (4th-axis)
#2065	ZR AREA ERROR (5) Reference point return area error. (5th-axis)
#2066	
#2067	
#2068	
#2069	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2070	TOUCH AX NOT RET Measurement was made without retracting the contact axis after completion of measurement by manual skip (A/B).
#2071	ZR POSITION ERROR (X) Reference point return position error. (X-axis)
#2072	ZR POSITION ERROR (Y) Reference point return position error. (Y-axis)
#2073	ZR POSITION ERROR (Z) Reference point return position error. (Z-axis)
#2074	ZR POSITION ERROR (4) Reference point return position error. (4th-axis)
#2075	ZR POSITION ERROR (5) Reference point return position error. (5th-axis)
#2076	
#2077	
#2078	
#2079	

Alarm No.	Contents
#2080	
#2081	ZR DECLS ERROR (X) Deceleration LS goes OFF-ON again after going ON once at the reference return point. (X-axis)
#2082	ZR DECLS ERROR (Y) Deceleration LS goes OFF-ON again after going ON once at the reference return point. (Y-axis)
#2083	ZRDECLS ERROR (Z) Deceleration LS goes OFF-ON again after going ON once at the reference return point. (Z-axis)
#2084	ZR DECLS ERROR (4) Deceleration LS goes OFF-ON again after going ON once at the reference return point. (4th-axis)
#2085	ZR DECLS ERROR (5) Deceleration LS goes OFF-ON again after going ON once at the reference return point. (5th-axis)
#2086	
#2087	
#2088	
#2089	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2090	
#2091	ZR PRM ERROR (X) Parameter setting is such that Pull back operation is compulsory at the reference return point. (X-axis)
#2092	ZR PRM ERROR (Y) Parameter setting is such that Pull back operation is compulsory at the reference return point. (Y-axis)
#2093	ZR PRM ERROR (Z) Parameter setting is such that Pull back operation is compulsory at the reference return point. (Z-axis)
#2094	ZR PRM ERROR (4) Parameter setting is such that pull back operation is compulsory at the reference return point. (4th-axis)
#2095	ZR PRM ERROR (5) Parameter setting is such that Pull back operation is compulsory at the reference return point. (5th-axis)
#2096	
#2097	
#2098	
#2099	.....

Alarm No.	Contents
#21 00	
#2101	P-SET ERROR (X) P-SET error. (X-axis)
#21 02	P-SET ERROR (Y) P-SET error. (Y-axis)
#21 03	P-SET ERROR (Z) P-SET error. (Z-axis)
#21 04	P-SET ERROR (4) P-SET error. (4th-axis)
#2105	P-SET ERROR (5) P-SET error. (5th-axis)
#21 06	
#2107	
#2108	
#2109	

7.2 **ALARM NUMBER TABLE** (Cent'd)

Alarm No.	Contents
#21 10	
#21 11	
#21 12
#21 13	
#2114	
#2115	
#2116	
#2117	
#2118	
#21 19	

Alarm No.	Contents
#2131	<p>ABS0 POS CHECK ERROR (X)</p> <p>The difference between the positions when the power supply of the absolute position detecting function is turned on and when the power supply is turned off at the previous time is large.</p>
#2132	<p>ABS0 POS CHECK ERROR (Y)</p> <p>The difference between the positions when the power supply of the absolute position detecting function is turned on and when the power supply is turned off at the previous time is large.</p>
#21 33	<p>ABS0 POS CHECK ERROR (Z)</p> <p>The difference between the positions when the power supply of the absolute position detecting function is turned on and when the power supply is turned off at the previous time is large.</p>
#2134	<p>ABS0 POS CHECK ERROR (4)</p> <p>The difference between the positions when the power supply of the absolute position detecting function is turned on and when the power supply is turned off at the previous time is large.</p>
#21 35	<p>ABS0 POS CHECK ERROR (5)</p> <p>..... "....."....."....."....."</p> <p>The difference between the positions when the power supply of the absolute position detecting function is turned on and when the power supply is turned off at the previous time is large.</p>
#21 36	
#2137	
#2138	<p>.....</p>
#2139	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#2160	
#2161	DETACHED AXIS SERVO ON (X) Detachment input went on when servo was on. (X-axis)
#2162	DETACHED AXIS SERVO ON (Y) Detachment input went on when servo was on. (Y-axis)
#2163	DETACHED AXIS SERVO ON (Z) Detachment input went on when servo was on. (Z-axis)
#21 64	DETACHED AXIS SERVO ON (4) Detachment input went on when servo was on. (4th-axis)
#21 65	DETACHED AX 1 S SERVO ON (5) Detachment input went on when servo was on. (5th-axis)
#2166	
#2167	
#21 68	
#2169	

Alarm No.	Contents
#21 70	
#2171	AXIS DETACHED STATUS UNMATCH (X) Detachment input went off when X- axis was disconnected. (X-axis)
#21 72	AXIS DETACHED STATUS UNMATCH (Y) Detachment input went off when Y-axis was disconnected. (Y-axis)
#21 73	AXIS DETACHED STATUS UNMATCH (Z) Detachment input went off when Z- axis was disconnected. (Z-axis)
#2174	AXIS DETACHED STATUS UNMATCH (4) Detachment input went off when 4th axis was disconnected. (4th-axis)
#2175	AXIS DETACHED STATUS UNMATCH (5) Detachment input went off when 5th axis was disconnected. (5th-axis)
#2176	
#2177	
#21 78	
#21 79	

7.2 **ALARM NUMBER TABLE** [Cent'd)

Alarm No.	Contents
#2180	SEQUENCE ERROR 1 Sequence error 1. Coasting stop.
#2181	
#2182	
#2183	C—AXIS SWITCHING ERROR (CI) Request for switching changed during change to C-axis control mode.
#21 84	
#21 85	C-AXISSERVO OFF SWITCHING ERROR (CI) C-axis servo off request was issued while C-axis was changed after valid indexing of C—axis.
#2186	
#2187	C-AXISSWITCHING PROGRAM EXECUTION ERROR (CI) C-axis switching request was issued while program was executed.
#2188	
#2189	

Alarm No.	Contents
#2190	MACHINE UNREADY Machine not ready.
#2191	SOLID TAP SPINDLE LOOP-ON ERROR (1) ----- SLPC input went off during spindle position loop-on sequence of G93.
#2192	
#2193	.....
#2194	.....
#2195	.....
#2196	
#2197	.....
#2198	.....
#2199	.....

7.2 **ALARM NUMBER TABLE** (Cent'd)

Alarm No.	Contents
#3000	SERVO OFF Servo power not ready.
#3001	NC UNREADY NC not ready.
#3002	EMERGENCY STOP Emergency stop not ready.
#3003	
#3004	. . . . .
#3005	. . . . .
#3006	
#3007	
#3008	. . . . .
#3009	

Alarm No.	Contents
#3010	UNFINISHED PROG GEN Processing program memory not initialized.
#3011	UNSUITABLE PROG MEMORY Processing program expansion memory and memory when power is turned on do not match when initializing.
#3012	UNSUITABLE AXIS PRM Axis configuration parameter and physical shaft configuration do not match.
#301 3	
#301 4	
#3015	.....
#3016	.....
#301 7	.....
#3018	
#3019	

7.2 **ALARM NUMBER TABLE** (Cent'd)

Alarm No.	Contents
#3020	
#3021	
#3022	
#3023	
#3024	
#3025	
#3026	
#3027	
#3028	
#3029	

Alarm No.	Contents
#3030	
#3031
#3032
#3033
#3034	
#3035
#3036
#3037
#3038
#3039

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3040	
#3041	ERROR PULSE EXCEED (X) Error pulse excessive. (X-axis)
#3042	ERROR PULSE EXCEED (Y) Error pulse excessive. (Y-axis)
#3043	ERROR PULSE EXCEED (Z) Error pulse excessive. (Z-axis)
#3044	ERROR PULSE EXCEED (4) Error pulse excessive. (4th-axis)
#3045	ERROR PULSE EXCEED (5) Error pulse excessive. (5th-axis)
#3046	
#3047	
#3048	
#3049	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3060	OL (OTHER) Overload. Ceiling resistance.
#3061	OL (X) Overload. (X-axis)
#3062	OL (Y) Overload. (Y-axis)
#3063	OL (z) Overload. (Z-axis)
#3064	OL (4) Overload. (4th-axis)
#3065	OL (5) Overload. (5th-axis)
#3066	
#3067	.....
#3068	
#3069	

Alarm No.	Contents
#3070
#3071	
#3072	
#3073	
#3074
#3075
#3076	.
#3077	
#3078
#3079

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3080	
#3081	PG ERROR (X) PG open circuit. (X-axis)
#3082	PG ERROR (Y) PG open circuit. (Y-axis)
#3083	PG ERROR (Z) (1) PG open circuit. (Z-axis)
#3084	PG ERROR (4) PG open circuit. (4th-axis)
#3085	PG ERROR (5) PG open circuit. (5th-axis)
#3086	
#3087	
#3088	
#3089	

Alarm No.	Contents
#3090	
#3091	PG ERROR (S1) PG open circuit. (S1 -axis)
#3092	
#3093	
#3094	
#3095	
#3096	
#3097	
#3098	
#3099	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3100	
#3101	SERVO ALARM (X) Servopack alarm. (X-axis) See servo alarm screen for explanation.
#3102	SERVO ALARM (Y) Servopack alarm. (Y-axis) See servo alarm screen for explanation.
#31 03	SERVO ALARM (Z) Servopack alarm. (Z-axis) See servo alarm screen for explanation.
#31 04	SERVO ALARM (4) Servopack alarm. (4th-axis) See servo alarm screen for explanation.
#31 05	SERVO ALARM (5) Servopack alarm. (5th-axis) See servo alarm screen for explanation.
#31 06	
#31 07	.....
#3108	
#31 09	

Alarm No.	Contents
#31 10	.....
#31 11	SERVO COM. ALARM (X) Servo pack communication error. (X-axis)
#3112	SERVO COM. ALARM (Y) Servo pack communication error. (Y-axis)
#3113	SERVO COM. ALARM (Z) Servo pack communication error. (Z-axis)
#3114	SERVO COM. ALARM (4) Servo pack communication error. (4th-axis)
#31 15	SERVO COM. ALARM (5) Servo pack communication error. (5th-axis)
#3116	.....
#3117	.....
#3118	.....
#3119	.....

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3120	
#3121	OS (x) Overspeed. (X- axis)
#31 22	OS (Y) Overspeed. (Y-axis)
#31 23	OS (z) Overspeed. (Z-axis)
#31 24	OS (4) Overspeed. (4th-axis)
#31 25	OS (5) Overspeed. (5th-axis)
#31 26	
#31 27	
#31 28	
#31 29	

Alarm No.	Contents
#3130	
#3131	
#31 32	
#3133	<p style="text-align: center;">.</p>
#31 34	<p style="text-align: center;">.</p>
#3135	
#31 36	
#3137	
#3138	
#3139	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#31 40	.....
#3141	OVERRUN PREVENTION (X) Servo axis overrun detection. (X-axis)
#3142	OVERRUN PREVENTION (Y) Servo axis overrun detection. (Y-axis)
#3143	OVERRUN PREVENTION (Z) Servo axis overrun detection. (Z-axis)
#31 44	OVERRUN PREVENTION (4) Servo axis overrun detection. (4th-axis)
#3145	OVERRUN PREVENTION (5) Servo axis overrun detection. (5th-axis)
#3146	.....
#3147	
#3148	.....
#3149	.....

Alarm No.	Contents
#31 50	
#31 51	
#3152	
#3153	
#3154	
#3155	
#3156	
#31 57	
#31 58	
#3159	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3160	
#31 61	ABSO ERROR (X) Malfunction detection of absolute value encoder. (X-axis)
#31 62	ABSO ERROR (Y) Malfunction detection of absolute value encoder. (Y-axis)
#3163	ABSO ERROR (Z) Malfunction detection of absolute value encoder. (Z-axis)
#31 64	ABSO ERROR (4) Malfunction detection of absolute value encoder. (4th-axis)
#31 65	ABSO ERROR (5) Malfunction detection of absolute value encoder. (5th-axis)
#3166	. . . . .
#3167	. . . . .
#3168	. . . . .
#3169	. . . . .

Alarm No.	Contents
#3170	
#3171	ENCODER UNMATCH (X) Improper parameter setting of encoder type. (X-axis)
#3172	ENCODER UNMATCH (Y) Improper parameter setting of encoder type. (Y-axis)
#3173	ENCODER UNMATCH (Z) Improper parameter setting of encoder type. (Z-axis)
#31 74	ENCODER UNMATCH (4) Improper parameter setting of encoder type. (4th - axis)
#3175	ENCODER UNMATCH (5) Improper parameter setting of encoder type. (5th - axis)
#3176	
#3177	
#3178	
#31 79	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#31 80	
#3181	ABS POS ERROR (X) PG counter malfunction detection of absolute value encoder. (X-axis)
#3182	ABS POS ERROR (Y) PG counter malfunction detection of absolute value encoder. (Y-axis)
#3183	ABS POS ERROR (Z) PG counter malfunction detection of absolute value encoder. (Z-axis)
#3184	ABS POS ERROR (4) PG counter malfunction detection of absolute value encoder. (4th-axis)
#31 85	ABS POS ERROR (5) PG counter malfunction detection of absolute value encoder. (5th-axis)
#31 86	
#31 87	
#31 88	
#31 89	

Alarm No.	Contents
#3190
#3191
#31 92
#3193
#31 94
#3195	
#3196
#3197
#3198
#3199

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3200
#3201
#3202	
#3203
#3204
#3205
#3206	
#3207	
#3208	
#3209	

Alarm No.	Contents
#3220	
#3221	PG ERROR (EX. PG) (X)
#3222	PG ERROR (EX. PG) (Y)
#3223	PG ERROR (EX. PG) (Z)
#3224	PG ERROR (EX. PG) (4)
#3225	PG ERROR (EX. PG) (5)
#3226	PG ERROR (EX. PG) (6)
#3227	PG ERROR (EX. PG) (7)
#3228	PG ERROR (EX. PG) (8)
#3229	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3240	SEQUENCE ERROR 2 Sequence error 2. Servo off.
#3241	
#3242	
#3243	
#3244	
#3245	
#3246	
#3247	
#3248	
#3249	

Alarm No.	Contents
#3250	
#3251	
#3252	
#3253	
#3254	
#3255	
#3256	
#3257	
#3258	
#3259	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3260	SMON — INTEX SYNC ERROR SMON — INTEX synchronization error.
#3261	SMON — MMON SYNC ERROR SMON — MMON synchroni zati on error.
#3262	MMON — MG SYNC ERROR MMON — MG synchronization error.
#3263	MMON — PLC SYNC ERROR MMON — PLC synchronization error.
#3264	MG — AXI S SYNC ERROR MG — AXI S synchronization error.
#3265	ACGC SYNC ERROR ACGC synchronization error.
#3266	DNC SYNC ERROR DNC synchronization error.
#3267	
#3268	.....
#3269	

Alarm No.	Contents
#3270	<p>POWER OFF ERROR (KEEP MEM)</p> <p>Data error which is principally a system error when power is turned off.</p>
#3271	<p>POWER OFF ERROR (TOOL LIFE)</p> <p>Data error which is principally a system error when power is turned off.</p>
#3272	<p>POWER OFF ERROR (MACRO)</p> <p>Data error which is principally a system error when power is turned off.</p>
#3273	<p>POWER OFF ERROR (WORK MEM)</p> <p>Data error which is principally a system error when power is turned off.</p>
#3274	<p>POWER OFF ERROR (PROGRAM)</p> <p>Power off during editing breaks down the program. Error is released by power off/on operation after deleting the destructive program.</p>
#3275	<p>PROGRAM CHECK REQUIRED</p> <p>Program check is required after power on because of the power off during editing.</p>
#3276	
#3277	
#3278	
#3279	

7.2 ALARM NUMBER TABLE (Cont'd)

Alarm No.	Contents
#3280	
#3281	AXIS ERROR 1 AXIS error 1.
#3282	AXIS ERROR 2 AXIS error 2.
#3283	AXIS ERROR 3 AXIS error 3.
#3284	AXIS ERROR 4 AXIS error 4.
#3285	AXIS ERROR 5 AXIS error 5.
#3286	
#3287	
#3288	
#3289	

Alarm No.	Contents
#3290	
#3291	
#3292	
#3293	
#3294	
#3295	
#3296
#3297	
#3298	
#3299

7. 2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3300	
#3301	OVERCURRENT (X) Overcurrent occurred in servo pack main circuit. (X-axis)
#3302	OVERCURRENT (Y) Overcurrent occurred in servo pack main circuit. (Y-axis)
#3303	OVERCURRENT (Z) Overcurrent occurred in servo pack main circuit. (Z-axis)
#3304	OVERCURRENT (4) Overcurrent occurred in servo pack main circuit. (4th axis)
#3305	OVERCURRENT (5) Overcurrent occurred in servo pack main circuit. (5th axis)
#3306	
#3307	
#3308	
#3309	

Alarm No.	Contents
#331 0	
#331 1	MCCB TRIP (X) Servo pack MCCB was tripped. (X-axis)
#331 2	MCCB TRIP (Y) Servo pack MCCB was tripped. (Y-axis)
#331 3	MCCB TRIP (Z) Servo pack MCCB was tripped. (Z-axis)
#331 4	MCCB TRIP (4) Servo pack MCCB was tripped. (4th axis)
#331 5	MCCB TRIP (5) Servo pack MCCB was tripped. (5th axis)
#331 6	
#331 7	
#331 8	
#331 9	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3320	-
#3321	REGENERATIVE ERROR (X) Error occurred in servo pack regenerative resistor. (X-axis)
#3322	REGENERATIVE ERROR (Y) Error occurred in servo pack regenerative resistor. (Y-axis)
#3323	REGENERATIVE ERROR (Z) Error occurred in servo pack regenerative resistor. (Z-axis)
#3324	REGENERATIVE ERROR (4) Error occurred in servo pack regenerative resistor. (4th axis)
#3325	REGENERATIVE ERROR (5) Error occurred in servo pack regenerative resistor. (5th axis)
#3326	-
#3327	-
#3328	-
#3329	-

Alarm No.	Contents
#3330	
#3331	OVERVOLTAGE (X) Servo pack main circuit DC voltage is abnormally high. (X-axis)
#3332	OVERVOLTAGE (Y) Servo pack main circuit DC voltage is abnormally high. (Y-axis)
#3333	OVERVOLTAGE (Z) Servo pack main circuit DC voltage is abnormally high. (Z-axis)
#3334	OVERVOLTAGE (4) Servo pack main circuit DC voltage is abnormally high. (4th axis)
#3335	OVERVOLTAGE (5) Servo pack main circuit DC voltage is abnormally high. (5th axis)
#3336	
#3337	
#3338	
#3339	

7.2 ALARM NUMBER TABLE (Cont'd)

Alarm No.	Contents
#3340	
#3341	UNDervoltage (X) Servo pack main circuit DC voltage is abnormally low. (X-axis)
#3342	UNDervoltage (Y) Servo pack main circuit DC voltage is abnormally low. (Y-axis)
#3343	UNDervoltage (Z) Servo pack main circuit DC voltage is abnormally low. (Z-axis)
#3344	UNDervoltage (4) Servo pack main circuit DC voltage is abnormally low. (4th axis)
#3345	UNDervoltage (5) Servo pack main circuit DC voltage is abnormally low. (5th axis)
#3346	
#3347	
#3348	
#3349	

Alarm No.	Contents
#3350	
#3351	HEAT SINK OVERHEAT (X) servo pack heat sink was overheated. (X-axis)
#3352	HEAT SINK OVERHEAT (Y) Servo pack heat sink was overheated. (Y-axis)
#3353	HEAT SINK OVERHEAT (Z) Servo pack eat sink was overheated. (Z-axis)
#3354	HEAT SINK OVERHEAT (4) Servo pack heat sink was overheated. (4th axis)
#3355	HEAT SINK OVERHEAT (5) Servo pack heat sink was overheated. (5th axis)
#3356	
#3357	
#3358	
#3359	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#3360	
	CURRENT COMMAND CABLE BROKEN (X)
#3361	Break in current command cable between YASNAC and servo pack. (X-axis)
	CURRENT COMMAND CABLE BROKEN (Y)
#3362	Break in current command cable between YASNAC and servo pack. (Y-axis)
	CURRENT COMMAND CABLE BROKEN (Z)
#3363	Break in current command cable between YASNAC and servo pack. (Z-axis)
	CURRENT COMMAND CABLE BROKEN (4)
#3364	Break in current command cable between YASNAC and servo pack. (4th axis)
	CURRENT COMMAND CABLE BROKEN (5)
#3365	Break in current command cable between YASNAC and servo pack. (5th axis)
#3366	
#3367	
#3368	
#3369	

Alarm No.	Contents
#3370	.....
#3371	MISSING PHASE (X) ----- Any one of three phases of servo pack is open. (X-axis)
#3372	MISSING PHASE (Y) Any one of three phases of servo pack is open. (Y-axis)
#3373	MISSING PHASE (Z) Any one of three phases of servo pack is open. (Z- axis)
#3374	MISSING PHASE (4) Any one of three phases of servo pack is open. (4th axis)
#3375	MISSING PHASE (5) Any one of three phases of servo pack is open. (5th axis)
#3376	
#3377	.....
#3378	.....
#3379	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#8000	
#8001	
#8002	SYSTEM VERSION UNMATCH ROM version number of CPU is not match.
#8003	
#8004	
#8005	
#8006	
#8007	
#8008	
#8009	

Alarm No.	Contents
#9000
#9001	
#9002	
#9003
#9004	
#9005
#9006
#9007	
#9008	• • •
#9009

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#9010	TH ERROR TH Parity.
#9011	TV ERROR TV Parity.
#9012	ILLEGAL CHARACTER There are characters that cannot be used other than as ISO/EIA code with RS-232C.
#9013	1 BLOCK LENGTH ERROR One block over capacity (128 characters) was detected in RS-232C.
#9014	DATA SET READY DOWN No response from DATA SET READY signal in RS-232C.
#9015	NUMERIC DATA OVERFLOW Numerical value overflow of input data. (exceeds 9 characters)
#9016	RS-232C ERROR (SIGNAL LEVEL) RS-232C interface transmission abnormal.
#9017	RS-232C ERROR (OVER RUN) Over 10 characters read after RS-232C interface stop code OUT.
#9018	RS-232C ERROR (CH SELECT) Error in selection of RS-232C interface circuit.
#9019	RS-232C ERROR (FRAMING) Error in RS-232C interface framing. (Improper stop-bit setting or transmission error.)

Alarm No.	Contents
#9020	RS-232C ERROR (APL- 1) Specified line was already open.
#9021	RS-232C ERROR (APL- 2) Specified line is still not open.
#9022	RS-232C ERROR (APL-3) Correct combination of dual core is not being used.
#9023	RS-232C ERROR (APL-4) Transmission was not conducted during the specified time.
#9024	RS-232C ERROR (APL- 5) Sending or receiving start processing not conducted.
#9025	RS-232C ERROR (APL- 6) Error in specified parameter.
#9026	
#9027	
#9028	
#9029	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#9030	
#9031
#9032	
#9033	
#9034	
#9035
#9036	
#9037	
#9038
#9039	

Alarm No.	Contents
#9040	
#9041	
#9042	
#9043
#9044	
#9045	
#9046	
#9047	
#9048	
#9049	

7.2 ALARM NUMBER TABLE (Cent'd)

Alarm No.	Contents
#9050
#9051	
#9052
#9053	
#9054	
#9055
#9056
#9057
#9058
#9059	





8. G CODE

B : Basic
O : Option

G CODE	Group	Function	Classification
G00	01	Positioning (Rapid feed)	B
G01		Linear interpolation	B
G02		Circular interpolation CW, Helical interpolation CW	B, O
G03		Circular interpolation CCW, Helical interpolation CCW	B, O
G04	*	Dwell	B
G06		Error detect off positioning	B
G09		Exact step	B
G10		Tool offset amount Setting of work coordinate shift amount	B, O
G12		Circle cutting CW	o
G13		Circle cutting CCW	o
G17		XY plane specification	B
G18	02	ZX Plane specification	B
G19		YZ plane specification	B
G20		06	INCH input specification	B
G21	MM input specification		B
G22	04	Stroke limit ON	o
G23		Stroke limit OFF	o
G25	*	Program copy	o
G27		Reference point return check	B
G28		Reference point return	B
G29		Return from reference point	B
G30		Second, third and fourth reference point returns	B, O
G31		Skip function	o
G40	07	Tool radius offset cancel	o
G41		Tool radius offset, left	o
G42		Tool radius offset, right	o
G43	08	Tool length offset in + direction	B
G44		Tool length offset in - direction	B
G49		Tool length offset cancel	B
G45	*	Tool position offset extension	B
G46		Tool position offset reduction	B
G47		Tool position offset double extension	B
G48		Tool position offset double reduction	B
G50	15	Scaling OFF	o
G51		Scaling ON	o
G52	12	Return to reference coordinate system, local coordinate system	o
G53	*	Machine coordinate system specification	o
G54	12	Shift to Work Coordinate System 1	B
G55		Shift to Work Coordinate System 2	0
G56		Shift to Work Coordinate System 3	0
G57		Shift to Work Coordinate System 4	0
G58		Shift to Work Coordinate System 5	0
G59		Shift to Work Coordinate System 6	0

B : Basic
C : Option

G CODE	Group	Function	Classification
G60	01	Unidirectional positioning	o
G61	13	Exact Stop mode	B
G64		Exact Stop mode cancel	B
G65	*	Simple call of microprogram	o
G66	14	Microprogram modal call	o
G67		Microprogram modal call cancel	o
G68	18	Coordinate rotation ON	o
G69		Coordinate rotation OFF	o
G70	*	Bolt hole circle	O
G71		Arc	O
G72		Line at angle	O
G73	09	Canned Cycle 10	O
G74		Canned Cycle 11	O
G76		Canned Cycle 12	O
G77		Canned Cycle 13	O
G80		Canned Cycle cancel	O
G81		Canned Cycle 1, external operation function	O
G82		Canned Cycle 2	O
G83		Canned Cycle 3	O
G84		Canned Cycle 4	O
G85		Canned Cycle 5	O
G86		Canned Cycle 6	O
G87		Canned Cycle 7	O
G88		Canned Cycle 8	O
G89		Canned Cycle 9	O
G90	03	Absolute command	B
G91		Incremental command	B
G92	*	Coordinate system setting	B
G93	05	Solid Tap mode ON	O
G94	05	Solid Tap mode OFF	O
G98	10	Initial level return	O
G99		R Point level return	O
G106	*	Automatic corner override	O
G181	09	Fixed Cycle 14	O
G182		Fixed Cycle 15	O
G183		Fixed Cycle 16	O
G184		Fixed Cycle 17	O
G185		Fixed Cycle 18	O
G186		Fixed Cycle 19	O
G187		Fixed Cycle 20	O
G188		Fixed Cycle 21	O
G189		Fixed Cycle 22	O

- Note
1. The symbol  indicates code will be selected automatically when power is switched ON or when reset.
 2. The symbol  indicated code will be selected automatically when power is switched ON.
 3. If more than one  or  is listed for a single group, one of the codes marked as such is selected according to parameter setting.

9. PARAMETER

9.1 PARAMETER NUMBER LIST

No	Classification	Data type	Parameter No.	symbol	Valid with power off	Remarks
1	jetting-related	Bit	#0000 to #0099			
		Byte	#0100 to #0109			
		Word	#0400 to #0429	with		
		D Word	#0800 to #0939	with		
2	Axis system control-related Axis control Servo Spindle	Bit	#1000 to #1099		#1020 to #1099	
		Byte	#1100 to #1399		#1300 to #1399	
		Word	#1400 to #1799	with	#1600 to #1799	
		D Word	#1800 to #1859	with	#1820 to #1859	
3	Feed-related Speed, acceleration Screw/tap Handle	Bit	#2000 to #2019			
		Byte	#2100 to #2139			
		Word	#2400 to #2649		#2600 to #2649	
		D Word	#2800 to #2899		#2870 to #2899	
4	Human I/F communications-related Editing/tape input Display Communication/DNC	Bit	#3000 to #3009			
		Byte	#3100 to #3109			
		Word	#3400 to #3459	with		
		D Word	#3800 to #3859	with		
5	Program/Automatic operation-related Program /automatic operation Canned cycle Correction/coordinate system Home position return/macro	Bit	#4000 to #4039			
		Byte	#4100 to #4199			
		Word	#4400 to #4599	with		
		D Word	#4800 to #4899	with		
6	Input-output/Automatic support-related I/O PLC Skip TLM	Bit	#5000 to #5019		#5010 to #5019	
		Byte	#5100 to #5109			
		Word	#5400 to #5449	with		
		D Word	#5800 to #5809	with		
7	Machine support safety/maintenance-related Stroke check Pitch error	Bit	#6000 to #6009			
		Byte	#6100 to #6149			
		Word	#6400 to #6479	with	#6450 to #6479	
		D Word	#6800 to #6949	with		
8	PLC ladder, keep memory-related	Bit	#7000 to #7099			Byte also possible. Byte and word possible.
		Byte	#7100 to #7999			
9	Other	Bit	#8000 to #8009			
		Byte	#8100 to #8119			
		Word	#8400 to #8429	with		
		D Word	#8800 to #8829	with		
		Word	#9000 to #9511			

9.1 PARAMETER NUMBER LIST (Cent'd)

Parameter number Index (Alphabetical order)

The axes parameters below are represented by X-axis parameter numbers.

{A}

Absolute value encoder (X-axis).	#1044 (D4)
Accel/decel speed constant of regular cutting (X-axis to 5th axis).	#2501
Accel/decel speed constant when thread cutting/tapping (X-axis to 5th axis).	#2511
Addition of amount of work coordinate shift correction.	#0007 (D3)
Added axis be disregarded ?	#6000 (D6)
Accel/decel speed time constant (main axis).	#2471
Advance read stop M code.	#4400
Alarm occur if cycle starts without returning to reference point once after switching on the power.	#4018 (D0)
Alarm occur when starting, without resetting after program editing operation ?	#4001 (D7)
Amount of movement per motor revolution (X-axis to 5th axis).	#1821
Amount of override in G60(X-axis to 5th axis).	#4461
Amount of return with G73.	#0870
Amount of return with G83.	#0871
Amount of TLM bias.	#0806
Automatic axis naming system.	#1142
Automatic coordinate setting (X-axis to 5th axis).	#4006 (D0)
Automatic coordinate system setting value during inches input.	#4811
Automatic coordinate system setting value during millimeters input (X-axis to 5th axis).	#4801
Automatic handle offset possible, area.	#2003 (D1)
Automatic mode HANDLE OFFSET switch.	#0005 (D3)
Automatic series of all axes names.	#1169
Auxiliary function lock switch.	#0000 (D5)
Axis display name.	#1100
Axis removal specification (X-axis to 5th axis).	#6006 (D0)

{B}

Backlash sub offset.	#1701
Backlash offset. (X-axis to 5th axis)	#1551
Block delete switch.	#0000 (D3)
Buzzer sound (Operator panel).	#0007 (D7)

{C}

Call M code (1 to 24) of M code macro.	#4504
Call program No. (1 to 24) of G code macro.	#4840
Call program No. (1 to 24) of M code macro.	#4864
Call specification of B code macro (1 to 24).	#4890
Call specification (1 to 24) of T code macro (1 to 24).	#4889
Change point of correction amount.	#4013 (D2)
Changeover point of correction direction.	#4013 (D1)

{ C }

Check of speed matching signal(1st axis to 5th axis).	#1058 (D0)
Circle cutting speed in high speed section.	#2862
Clearing of program No. when switching on the power.	#3005 (D1)
Code conversion of ISO code during tape input.	#3005 (D5)
Coordinate value when SKIP signal operating (1st axis to 9th axis).	#0811
Corner block division.	#4013 (D5)
Correction startup and cancel operation.	#4013 (D0)
Count in parenthesis of TV check.	#0004 (D2)
Cutting feed linear accel/decel speed constant (X-axis to 5th axis).	#2581
Cutting accel/decel speed bias (X-axis to 5th axis).	#2821
Cycle start signal.	#5000 (D0)

{ D }

Data type of external data input.	#5001 (D0)
Delay time before checking spindle speed attainment signal (SAGR).	#1540
Detection of GOO error in solid tap.	#4015 (D5)
Direction of rotation of servo control system motor.	#1030 (D7)
Display lock switch.	#0000 (D6)
'Drift correction (X-axis).	#1045 (D6)
DRY RUN switch.	#0000 (D2)
Dry run during thread cutting.	#2000 (D1)
Dry run of rapid traverse command.	#2000 (D0)
Dual time of G76/G77.	#4017 (D3)

(E)

Edit, display and output of part program of program numbers 9000 to 9999.	#3004 (D0)
Editing inhibit switch.	#0000 (D7)
EF signal output with G81.	#4016 (D0)
Effective command system (1st axis to 5th axis).	#1004 (D0)
EOB code with CR during ISO code output.	#0004 (D6)
Error allowable range when specifying circular R.	#4820
Error cut during emergency stop input (X-axis).	#1044 (D2)
Error detect ON area (X-axis to 5th axis).	#1321
Error detect ON area during loop control.	#1331
Error detection at end of dwell execution.	#4015 (D3)
Executing stroke check first inhibited area? (X-axis to 5th axis).	#6002 (D0)
Expansion address P or J in work coordinate setting.	#4012 (D7)
External timer display.	#3001 (D0)

9.1 PARAMETER NUMBER LIST (Cent'd)

[F]

F1 digit speed(F1 to F9).	#0820
F1 digit switch.	#0005 (D6)
Feed during tape output.	#0004 (D4)
Feed override signal (Point A).	#2000 (D4)
Feedrate (O to 31)corresponding to the JOG feedrate selection switch position	#2400
Feedrate during skip function.	#2001 (D0)
Feedrate during skip function.	#2001 (D1)
Feedrate filter time constant (X-axis to 5th axis).	#2591
First step of rapid traverse accel/decel speed time constant. (X-axis to 5th axis).	#2461
Followup processing in servo OFF input (X-axis).	#1044 (D3)
Form correction coefficient (01 to 09, 11 to 19).	#1801
F speed unit setting with 1/10.	#2004 (D0)

(G]

G code default value (When switching on power or resetting).	#4000 (D0)
G code (1 to 24) macro call.	#4480
G45 to G48 correction No. command code.	#4011 (D1)
G60 unidirectional positioning direction (X-axis to 5th axis).	#4014 (D0)
G76/G77 dwell time.	#0400
Gear No. for spindle loop control.	#1260

[H]

Handle multiplying factor X 100 selection multiplying factor.	#2003 (D7)
Handle accel/decel speed constant (X-axis to 5th axis).	#2561
High speed/low speed changeover of automatic reference point return.	#4003 (D7)
High speed automatic start in high speed rewind.	#4008 (D7)
High speed mode operation address name (4th axis to 5th axis).	#1201
Hole pattern of EIA code used in user macro.	#4100

{ i }

In-position wait with the GOO and GO1 → GOO command.	#4015 (D4)
Input device specification.	#0010 (D0)
Input port specification.	#0009 (D0)
Input unit mm/inch.	#0007 (D0)
Intermediate pot display.	#3001 (D5)
Internal M code of initial state (When switching on power or resetting).	#4001 (D0)
Internal system number switch setting.	#0109
Internal toggle switch.	#5001 (D1)
Interruption check function (radius compensation).	#4013 (D3)
Is alarm to be set when executing move command other than G28 without conducting reference point return ?	#4004 (D0)
Is alarm to be set when cycle starts without reference point return?	#4001 (D6)
Is change of amount of work coordinate shift to be immediately valid?	#4012 (D0)

(J]

JOG feedrate parameter numerical value multiplying factor. #2432

[M)

M Code when outputting with G84.	#4016 (D2)
M05 output at the bottom of the hole of G74, G84.	#4016 (D3)
M05 output prior to M19 output with G76/G77.	#4017 (D1)
Machine lock switch.	#0000 (D1)
Macro interlock editing, display and output (O 8000 level)	#0020 (DO)
Macro interlock edit inhibit (O 8000 level).	#0021 (DO)
Macro interlock edit inhibit (O 9000 level).	#0022 (DO)
Make JOG speed of rotating axis 1/10 of linear axis?	#2000 (D7)
Make valid immediately when amount of offset changes?	#4010 (DO)
Manual 2nd reference point return switch.	#0005 (D1)
Manual absolute function (relative to increment commands).	#4011 (D7)
Manual absolute switch.	#0000 (D4)
Manual movement amount (Reset, reference point return, G92, key setup, etc.).	#4011 (D6)
Manual reference point return switch.	#0005 (DO)
Maximum cutting feedrate (rotation axis).	#2810
Maximum cutting feed speed (linear axis).	#2800
Maximum feedrate of F1digit(F1 to F9) command.	#2865
Maximum feedrate of handle linear spindle.	#2860
Maximum feedrate of the handle rotating spindle.	#2861
Maximum rotation relative to 10V spindle command.	#1415
Maximum spindle speed in spindle solid tap.	#1416
Measuring method of TLM.	#6008 (DO)
Minimum input X 10.	#1000 (DO)
Minute circular skip value.	#4450
Mirror image (X-axis to 5th axis).	#0002
Mirror image applied to intermediate point with G28 command during mirror image operation ?	#4001 (D2)
Motor revolutions during spindle GRS input.	#1413
Motor revolutions during spindle GSC input.	#1412
MST processing when changing mode.	#4009 (D7)
Multiple relative to spindle error area rapid traverse rate.	#1351
Multiplying factor of handle feed X 100.	#2459
Multiplying factor setting of feedback pulse (X-axis).	#1044 (DO)

9.1 PARAMETER NUMBER LIST (Cent'd)

{N}

Negative direction of external deceleration (X-axis to 5th axis).	#5004 (D0)
Number of high speed mode operation control axes.	#1200
Number of pulses per revolution of PG (X-axis to 5th axis).	#1831
Number of teeth of Gear A on the spindle side usable in solid tap.	#1841
Number of teeth of the intermediate gear of Gear B usable solid tap.	#1515
Number of teeth of the spindle intermediate gear of Gear A usable in solid tap.	#1511
Number of teeth on the motor side of Gear A usable in solid tap.	#1513
Number of teeth on the motor side of Gear B usable in solid tap.	#1514
Number of valid servo axes.	# 1300
Number of valid spindle axes.	#1301 (D0)
Number of teeth of the motor intermediate gear of Gear A usable in solid tap.	#1512
Numerical value of program number.	#3005 (D2)

{O}

Offset of automatic mode handle.	#2002 (D0)
One graduation feed speed change of F1 digit specified manual pulse generator.	#2111
Operating mode specification of high speed mode operation.	#4160
Operation expression of direct input operation of work piece measurement value.	#4010 (D2)
Optional stop switch.	#0001 (D0)
Output device specification.	#0010 (D4)
Output of leading O when high order variable of D'PRINT function is O.	#4009 (D2)
Output port specification.	#0009 (D4)

{P}

Peak value display of synchronous error of the spindle and Z-axis during solid tap.	#4015 (D6)
Pitch dwell time (Canned cycle G73).	#4017 (D4)
Pitch dwell time of G83.	#0401
Pitch error offset incremental/absolute.	#6001 (D0)
Pitch error offset interval (X-axis to 5th axis).	#6801
Pitch error offset multiplying factor (X-axis to 5th axis).	#6101
Pitch error end memory No. (X-axis to 5th axis).	#6411
Pitch error reference point memory No. (X-axis to 5th axis).	#6421
Pitch error start memory No. (X-axis to 5th axis).	#6401
Pitch error valid/invalid (X-axis to 5th axis).	#6000 (D0)
Playback switch.	#0005 (D5)
Position at which JOG feedrate parameter is increased 10 times.	#2433
Position at which JOG feedrate parameter value is reduced to 1/10.	#2434
Positioning operation of canned cycle (G00 or G01).	#4016 (D1)
Positive direction of external deceleration (X-axis to 5th axis).	#5002 (D0)
Preset of work coordinate shift (When power switched on).	#4001 (D3)
Preset of work coordinate shift (When reference point return is completed).	#4001 (D4)

[P]

Processing during interruption check (diameter correction).	#4013 (D4)
Processing interruption point return switch.	#0005 (D2)
Processing when O number already exists during tape load.	#3005 (D0)
Program end of end M code during tape load.	#3005 (D3)
Program restart approach speed.	#4015 (D7)
Program restart switch.	#0005 (D7)

(R)

Rapid feedrate of external deceleration.	#2444
Rapid traverse override rate (FO to F2).	#2447
Rapid traverse rate (X-axis to 5th axis).	#2801
Rapid traverse rate until completion of first reference point return after switching on the power.	#2000 (D6)
Reference point position (2nd to 4th).	#6811
Reference point return (X-axis to 5th axis).	#4022 (D0)
Reference point return approach speed (X-axis to 5th axis).	#2521
Reference point return creep speed (X-axis to 5th axis).	#2531
Reference point return direction (X-axis to 5th axis).	#4002
Reference point return travel distance (X-axis to 5th axis).	#4451
Reset operation of macro common variable #100 to #299.	#4009 (D1)
Reset output when emergency stop input is ON.	#5000 (D2)
Return to setup point.	#0005 (D4)
Rewind of NC program with a rewind signal.	#5000 (D1)
Rewind with M30 when RS232C YASNAC standard tape reader is connected	#4008 (D1)
RS232C general purpose input NC intrinsic data control (First).	#0012 (D7)
RS232C general purpose input control-code control (First).	#0012 (D0)
RS232C general purpose input bit length (First).	#0011 (D4)
RS232C general purpose input BPS setting (First).	#0011 (D0)
RS232C general purpose input DR line control (First).	#0012 (D2)
RS232C general purpose input parity bit (First).	#0011 (D5)
RS232C general purpose input RTS control (First).	#0012 (D1)
RS232C general purpose input stop bit (First).	#0011 (D3)
RS232 C general purpose output bit length (Second).	#0013 (D4)
RS232C general purpose output BPS setting (Second).	#0013 (D0)
RS232C general purpose output control-code control (Second).	#0014 (D0)
RS232C general purpose output DR line control (Second).	#0014 (D2)
RS232C general purpose output NC intrinsic data control (Second).	#0014 (D7)
RS232C general purpose output parity bit (Second).	#0013 (D5)
RS232C general purpose output RTS control (Second).	#0014 (D1)
RS232C general purpose output stop bit (Second).	#0013 (D3)

9.1 PARAMETER NUMBER LIST (Cent'd)

[S]

S code macro call specification (1 to 24)	#4888
S output symbol (M03/M04).	#1001 (D0)
Saving of D code when resetting.	#4010 (D6)
Saving of H code during reference point return when resetting.	#4010 (D7)
Scaling multiplying factor setting (numerator).	#0803
Scaling multiplying factor setting (denominator).	#0804
Segment type of high speed mode operation.	#4167
Sequence number setting of break point.	#0801
Servo control system linear axis/rotating axis (X-axis).	#1030 (D6)
Servo control system servo control (X-axis).	#1030 (D5)
Servo power ON.	#5012 (D0)
Servo spindle No. for solid tap.	#1241
Shift angle during G76 and G77 commands.	#0805
Shift speed of canned cycle G76 and G77.	#2864
Significant number of systems.	#1318
Single block in a user macro program.	#0007 (D1)
Single block switch.	#0000 (D0)
SKIP signal ON.	#0007 (D2)
SKIP signal polarity.	#5011 (D0)
SKIP signal valid/invalid.	#5010 (D0)
Slot spindle information (1st to 6th).	#1020 (D0)
Solid tap return speed multiplying factor.	#1252
Solid tap servo axis interrupt in-position width.	#1500
Solid tap synchronization correction parameter.	#1502
Specified section end code of operating mode of high speed mode operation.	#4164
Specified section start code of operating mode of high speed mode operation.	#4161
Speed during skip operation.	#2440
Speed in relation to cutting feed of external deceleration.	#2445
Spindle display name.	#1127
Spindle feed back pulse multiple setting.	#1053
Spindle gear range maximum rotations.	#1404
Spindle gear range minimum rotation clamp.	#1400
Spindle gear range motor maximum rotation clamp.	#1408
Spindle indexing confirmation timer.	#1220
Spindle indexing creep speed.	#2546
Spindle indexing during loop control.	#1053 (D2)
Spindle indexing start speed.	#2541
Spindle indexing stop confirmation rotations.	#1225

{ S }

Spindle matching check when changing from rapid feed to cutting feed.	#1000 (D7)
Spindle No. for solid tap.	#1240
Spindle output sequencer loop.	#1003 (D2)
Spindle override percentage.	#1000 (D6)
Spindle override when executing G84, G74 tap cycle.	#4017 (D2)
Spindle override 100% clamp when tapping.	#4017 (D2)
Spindle position loop gain.	#1417
Spindle rotation parameter multiple X 10.	#1002 (D0)
Spindle servo control system PG (main axis).	#1039 (D1)
Spindle servo control system servo control (main axis).	#1039 (D5)
SSTP polarity when spindle S command input-output is O.	#1000 (D5)
START LOCK switch.	#0001 (D1)
Stored stroke limit inhibited area.	#0831
Stored stroke limit inside/outside inhibited.	#0008 (D4)
Stored stroke limit minus (X-axis to 5th axis).	#6911
Stored stroke limit plus (X-axis to 5th axis).	#6901
Stored stroke limit switch axis No. (2nd to 5th).	#6111
Stored stroke limit valid/invalid. (2nd to 5th). ,	#0008 (D1)
Stroke monitor (X-axis).	#1044 (D5)
Symbol of incremental input of amount of work coordinate shift.	#4012 (D1)

{ T }

Tape code output (ISO/EIA).	#0004 (D0)
TG (X-axis).	#1044 (D7)
TH check during 1S0 code input.	#0004 (D3)
TH check during ISO code output.	#0004 (D5)
Threading cutting variable speed bias (X-axis to 5th axis).	#2831
Time from clearing of base block to release of brake when servo power is switched on.	#5400
Time from falling of emergency stop to base block OFF.	#5401
Time from sending M, S, T codes to sending of MF, SF, and TF .	#5410
Title display first line.	#3400
Title display multiplying factor.	#3420
Title display second line.	#3410
Title display start position.	#3421
TLM bottom level.	#0807
Tool pot display No..	#3422
TV Check.	#0004 (D1)
Types of rapid traverse overrides.	#2000 (D3)

{ U }

Universal position display by coordinate settings.	#3000 (D0)
Unslotted servo spindle (1st to 6th).	#1020 (D6)
Upper limit check of offset value.	#4010 (D3)

9.1 PARAMETER NUMBER LIST (Cont'd)

[V]

Value input to system variable #5001-when executing G31 Skip. #4009 (D0)

[W]

When stroke checking with rotating axis (X-axis to 5th axis). #6004 (D0)

Word display of tool pot. #3001 (D6)

Work coordinate shift (During reference point return when power is switched on). #4143

Write of keep memory word. #5001 (D7)

[Z]

Z-AXIS NEGLECT switch. #0001 (D2)

9.2 PARAMETER NUMBER TABLE

Parameter No.	NAME							
#0000	INHET	DLKT	AFLT	A8ST	BDTT	DRNT	MLKT	SBKT
(Bit No.	7	6	5	4	3	2	1	0)

- INHET** 0 : Edit inhibit switch OFF.
1: Edit inhibit switch ON.
- DLKT** 0 : Display lock switch OFF.
1: Display lock switch ON.
- AFLT** 0 : Auxiliary function lock switch OFF .
1: Auxiliary function lock switch ON.
- ABST** 0 : Manual absolute switch OFF.
1: Manual absolute switch ON.
- BDTT** 0 : Block delete switch OFF.
1: Block delete switch ON.
- DRNT** 0 : Dry run switch OFF.
1: Dry run switch ON.
- MLKT** 0 : Machine lock switch OFF.
1: Machine lock switch ON.
- SBKT** 0 : Single block switch OFF.
1: Single block switch ON.

Note Effective for #5001 D₁ =1.

Parameter No.	NAME							
#0001						ZNGT	STLKT	OPST
(Bit No.	7	6	5	4	3	2	1	0)

- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- ZNGT** 0 : Z-axis neglect switch OFF.
1 : Z-axis neglect switch ON.
- STLKT** 0 : Start lock switch OFF.
1 : Start lock switch ON.
- OPST** 0 : optional stop switch OFF.
1: optional stop switch ON.

Note Effective for #5001 D₁ =1.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0002				M15	M14	M1Z	M1Y	M1X
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

M15 O : Mirror image 5 external input.
1: Mirror image 5 ON.

M14 O : Mirror image 4 external input.
1: Mirror image 4 ON.

M1Z O : Mirror image Z external input.
1: Mirror image Z ON.

M1Y O : Mirror image Y external input.
1: Mirror image Y ON.

M1X O : Mirror image X external input.
1: Mirror image X ON.

Note Effective for #5001 D₁ = 1

Parameter No.	NAME							
#0003						DTCHS5	DTCHS4	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

DTCHS5 O : Uses external input for 5th axis detachment selection.
1: 5th axis detachment selection ON.

DTCHS4 O : Uses external input for 4th axis detachment selection.
1: 4th axis detachment selection ON.

0 :
 1 :

Note Effective for #5000 D₁ = 1

Parameter No.

NAME

#0004		ISOEOB	ISOPO	FEED	ISOPI	TVCNT	TVCHK	ISOEIA
(Bit No.	7	6	5	4	3	2	1	0)

I/O data
setting for
port 1

	0:	
	1:	
ISOEOB	0:	Outputs EOB as CR and LF when outputting ISO code.
	1:	Outputs EOB as LF when outputting ISO code.
ISOPO	0:	Adds TH check when outputting ISO code by YE tape reader.
	1:	TH check not added when outputting ISO code by YE tape reader.
FEED	0:	Feed not added when outputting tape.
	1:	Feed added when outputting tape.
ESOPi	0:	TH check executed when inputting ISO code.
	1:	TH check not executed when inputting ISO code.
TVCNT	0:	Items in parenthesis not counted in TV check.
	1:	Items in parenthesis counted in TV check.
TVCHK	0:	TV check not executed.
	1:	TV check executed.
ISOEIA	0:	Outputs tape code with ISO.
	1:	Outputs tape code with EIA.



When NC data specific control is not provided at I/O verification, the values of #0004 and #0006 are determined as the following bit values, disregarding the parameter values.

• NC data specific control parameter (1: Provided, 0: Not provided)

1st port input #0012 (d7); 2nd port input #0017 (d7)

1st port output #0014 (d7); 2nd port output #0019 (d7)

(1) Input #0004

(all) to (d3) =0

#0006

(2) output #0004

[{(a11), (d2), (d4), (d7)}=0, {(d5), (d6)}=1]

#0006

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0005	SPNT	FIT	PLBKT		HOFST	CPRNT	ZRN2T	ZRNT
(Bit No.	7	6	5	4	3	2	1	0)

SPNT 0 : Program restart switch OFF.
1 : Program restart switch ON.

FIT 0 : F1 digit switch OFF.
1 : F1 digit switch ON.

PLBKT 0 : Playback switch OFF.
1 : Playback switch ON.

0 :
1 :

HOFST 0 : Automatic mode handle offset switch OFF.
1 : Automatic mode handle offset switch ON.

CPRNT 0 : Machining interrupt point return switch OFF.
1 : Machining interrupt point return switch ON.

ZRN2T 0 : Manual 2nd reference point return switch OFF.
1 : Manual 2nd reference point return switch ON.

ZRNT 0 : Manual reference point return switch OFF.
1 : Manual reference point return switch ON.

Note Effective for #5000 D₁ = 1

Parameter No.	NAME							
#0006		ISOE0B2	ISOP02	FEED2	ISOP12	TVCNT2	TVCHK2	ISOE1A2
(Bit No.	7	6	5	4	3	2	1	0)

1/0 data
setting
for port

0 :
1 :

ISOE0B2 0 : Outputs EOB as CR and LF when outputting in ISO code.
1 : Outputs EOB as LF when outputting in ISO code.

ISOP02 0 : Adds TH check bit when outputting in ISO code.
1 : Adds no TH check bit when outputting in ISO code.

FEED2 0 : Feed not added when outputting tape.
1 : Feed added when outputting tape.

ISOP12 0 : TH check executed when inputting ISO code.
1 : TH check not executed when inputting ISO code.

TVCNT2 0 : Items in parentheses not counted in TV check.
1 : Items in parentheses counted in TV check.

TVCHK2 0 : TV check not executed.
1 : TV check executed.

ISOE1A2 0 : Outputs tape code in ISO.
1 : Outputs tape code in EIA.

Parameter No.

NAME

#0007	BUZON	PRMOOUT	TAPDSP	TLCNTE	WSTCHG	SKIPON	UMSBK	INCHMM
(Bit No.	7	6	5	4	3	2	1	0)

- BUZON** 0 : Does not emit sound from operator panel buzzer.
1: Emits sound from operator panel buzzer.
- PRMOOUT** 0 : Outputs data O when outputting parameters.
1 : Outputs data O when outputting parameters.
- TAPDSP** 0 : Data not displayed on screen at tape I/O collation.
1: Data displayed on screen at tape I/O collation.
- TLCNTE** 0 : Life management executed at T command.
1: Life management not executed at T command.
- WSTCHG** 0 : Work coordinate shift correction amount not added.
1: Work coordinate shift correction amount added.
- SKIPON** 0 : Alarm occurs if skip signal does not go ON until end of skip function block movement.
1: No Alarm if skip signal does not go ON until end of skip function block movement.
- UMSBK** 0 : Operation command and control command in the user macro program do not stop in a single block.
1: operation command and control command in the user macro program stop in a single block .
- INCHMM** 0 : Changes input unit to millimeters.
1: Changes input unit to inches.



Reset is required.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0008	SLT5I0	SLT4I0	SLT3I0	SLT2I0	SLT5	SLT4	SLT3	SLT2
(Bit No.	7	6	5	4	3	2	1	0)

- SLT5I0** 0 : Internal inhibit of 5th stored stroke limit.
 1 : External inhibit of 5th stored stroke limit.
- SLT4I0** 0 : Internal inhibit of 4th stored stroke limit.
 1 : External inhibit of 4th stored stroke limit.
- SLT3I0** 0 : Internal inhibit of 3th stored stroke limit.
 1 : External inhibit of 3th stored stroke limit.
- SLT2I0** 0 : Internal inhibit of 2th stored stroke limit.
 1 : External inhibit of 2th stored stroke limit.
- SLT5** 0 : Invalidates 5th stored stroke limit.
 1 : Validates 5th stored stroke limit.
- SLT4** 0 : Invalidates 4th stored stroke limit.
 1 : Validates 4th stored stroke limit.
- SLT3** 0 : Invalidates 3rd stored stroke limit.
 1 : Validates 3rd stored stroke limit.
- SLT2** 0 : Invalidates 2nd stored stroke limit.
 1 : Validates 2nd stored stroke limit.

Parameter No.	NAME							
#0009	TLNUM2	TLNUM1		OUTPORT				INPORT
(Bit No.	7	6	5	4	3	2	1	0)

- | | D7 | D6 | Group | Tool |
|------------------------|----|----|-------|------|
| Number of Tool Control | 0 | 0 | 128 | 2 |
| | 0 | 1 | 64 | 4 |
| Groups and Tools | 1 | 0 | 32 | 8 |
| | 1 | 1 | 16 | 16 |
- TLNUM2** 0 :
 1 :
- TLNUM1** 0 :
 1 :
- [] 0 :
 1 :
- OUTPORT** 0 : Specifies 1st port (FC200) as the output port.
 1 : Specifies 2nd port (FC903) as the output port.
- [] 0 :
 1 :
- [] 0 :
 1 :
- [] 0 :
 1 :
- INPORT** 0 : Specifies 1st port (FC200) as the Input port.
 1 : Specifies 2nd port (FC903) as the Input port.

Parameter No.	NAME							
#0010	ODEV3	ODEV2	ODEV1	ODEV0	IDEV3	IDEV2	IDEV1	IDEV0
(Bit No.	7	6	5	4	3	2	1	0)

Equipment allocation for port 1

ODEV3								
ODEV2								
ODEV1								
ODEV0								
IDEV3								
IDEV2								
IDEV1								
IDEV0								

	D7	D6	D5	D4	
output device specification	0	0	0	0	RESERVE
	0	0	0	1	YE Tape puncher
	0	0	1	0	General purpose RS-232C
	:	:	:	:	Unused
	1	1	1	1	

	D3	D2	D1	D0	
Input device specification	0	0	0	0	RESERVE 1
	0	0	0	1	YE Tape reader
	0	0	1	0	General purpose RS-232C
	:	:	:	:	Unused
	1	1	1	1	

Parameter No.	NAME							
#0011		IRSPB1	IRSPB0	IRSBL	IRSSTB	IRSBPS2	IRSBPS1	IRSBPS0
(Bit No.	7	6	5	4	3	2	1	0)

General-purpose input format for port 1

	0:							
	1:							
IRSPB1	} Parity bit							
IRSPB0								
IRSBL		0:	Sets bit length to 7 bits.					
		1:	Sets bit length to 8 bits.					
IRSSTB		0:	Uses 1 bit for stop bit.					
		1:	Uses 2 bit for stop bit.					
IRSBPS2	} BPS setting							
IRSBPS1								
IRSBPS0								

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0012	IRSNC					IRSDR	IRSRTS	IRSDCC
(Bit No	7	6	5	4	3	2	1	0)

First port

General-purpose input control for port 1	IRSNC	0: Does not conduct intrinsic control of NC data. 1: Conducts intrinsic control of NC data.
		0: 1:
		0: 1:
		0: 1:
		0: 1:
	IRSDR	0: Does not check DR line. 1: Checks DR line.
	IRSRTS	0: Not control RTS. 1: Controls RTS.
IRSDCC	0: Not control control code with RS-232C. 1: Controls control code with RS-232C.	

Parameter No.	NAME							
#0013		ORSPB1	ORSPB0	ORSBL	ORSSTB	ORSBPS2	ORSBPS1	ORSBPS0
(Bit No.	7	6	5	4	3	2	1	0)

Second port

General-purpose output format for port 1		0: 1:																																					
	ORSPB1	<table border="1"> <thead> <tr> <th></th> <th>D6</th> <th>D5</th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="3">Parity bit</td> <td>0</td> <td>0</td> <td>No parity check</td> </tr> <tr> <td>0</td> <td>1</td> <td>Even number check</td> </tr> <tr> <td>1</td> <td>0</td> <td>Odd number check</td> </tr> </tbody> </table>		D6	D5		Parity bit	0	0	No parity check	0	1	Even number check	1	0	Odd number check																							
			D6	D5																																			
	Parity bit	0	0	No parity check																																			
		0	1	Even number check																																			
		1	0	Odd number check																																			
	ORSPB0																																						
ORSBL	0: Sets bit length to 7 bits. 1: Sets bit length to 8 bits.																																						
ORSSTB	0: Sets stop bit as 1 bit. 1: Sets stop bit as 2 bits.																																						
ORSBPS2	<table border="1"> <thead> <tr> <th></th> <th>D2</th> <th>D1</th> <th>D0</th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="6">BPS setting</td> <td>0</td> <td>0</td> <td>0</td> <td>100</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>110</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>300</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>600</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>1200</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>2400</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>4800</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>9600</td> </tr> </tbody> </table>		D2	D1	D0		BPS setting	0	0	0	100	0	0	1	110	0	1	0	300	0	1	1	600	1	0	0	1200	1	0	1	2400	1	1	0	4800	1	1	1	9600
		D2	D1	D0																																			
BPS setting		0	0	0	100																																		
		0	0	1	110																																		
		0	1	0	300																																		
		0	1	1	600																																		
	1	0	0	1200																																			
	1	0	1	2400																																			
1	1	0	4800																																				
1	1	1	9600																																				
ORSBPS1																																							
ORSBPS0																																							

Parameter No.	NAME							
#0014	ORSNCC					ORSIDR	ORSRTS	ORSDCC
(Bit No.	7	6	5	4	3	2	1	0)

General-purpose output control for port 1

ORSNCC	0: Does not conduct characteristic control of NC data. 1: Conducts characteristic control of NC data.
	0: 1:
	0: 1:
	0: 1:
	0: 1:
ORSIDR	0: DR line check not executed. 1: DR line check executed.
ORSRTS	0: Does not conduct RTS control. 1: Controls RTS.
ORSDCC	0: Does not control control code with RS-232C. 1: Controls control code with RS-232C.

Parameter No.	NAME							
#0015	ODEV32	ODEV22	ODEV12	ODEV02	IDEV32	IDEV22	IDEV12	IDEV02
(Bit No.	7	6	5	4	3	2	1	0)

Equipment allocation for port 2

ODEV32	output equipment	D7	D6	D5	D4	
ODEV22		0	0	0	0	RESERVE
ODEV12		0	0	0	1	YE tape puncher
ODEV02		0	0	1	0	General-purpose interface RS-232C
IDEV32		0	0	1	1	Not used
IDEV22		⋮	⋮	⋮	⋮	
IDEV12	1	1	1	1		
IDEV02	Input equipment	D3	D2	D1	D0	
IDEV32		0	0	0	0	RESERVE 1
IDEV22		0	0	0	1	YE tape reader
IDEV12		0	0	1	0	General-purpose interface RS-232C
IDEV02		0	0	1	1	Not used
		⋮	⋮	⋮	⋮	
	1	1	1	1		

9.2 PARAMETER NUMBER TABLE (Cent'd)

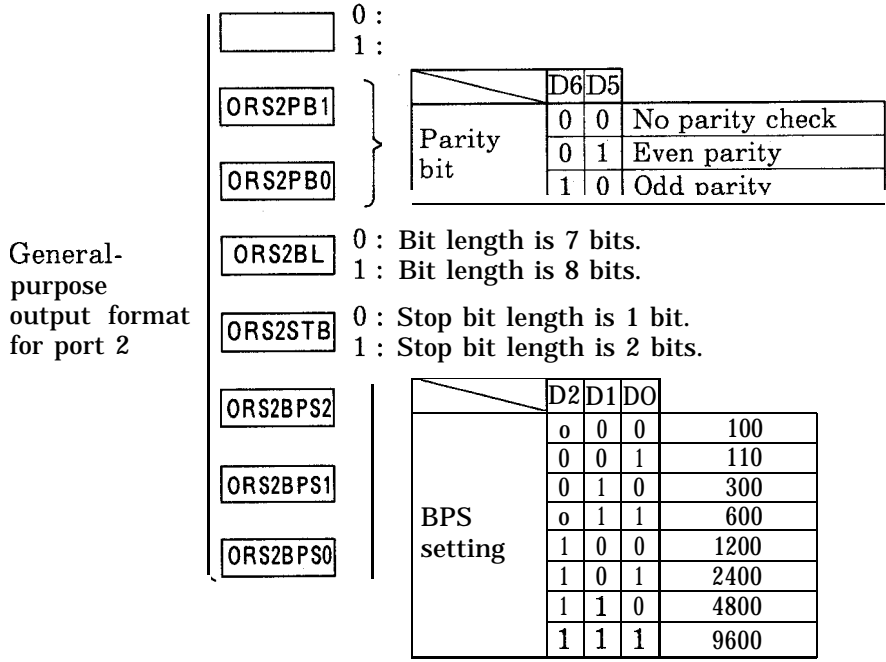
Parameter No.	NAME							
#0016		IRS2PB1	IRS2PB0	IRS2BL	IRS2STB	IRS2BPS2	IRS2BPS1	IRS2BPS0
(Bit No.	7	6	5	4	3	2	1	0)

General-purpose input format for port 2	<input type="checkbox"/> 0 : <input type="checkbox"/> 1 :								
	<input type="checkbox"/> IRS2PB1	} Parity bit		D6	D5				
	<input type="checkbox"/> IRS2PB0		o	0	No parity check				
			o	1	Even parity				
	<input type="checkbox"/> IRS2BL		1	0	Odd parity				
	<input type="checkbox"/> IRS2STB	0 :	Bit length is 7 bits.						
		1 :	Bit length is 8 bits.						
	<input type="checkbox"/> IRS2BPS2	<input type="checkbox"/> IRS2BPS1	<input type="checkbox"/> IRS2BPS0	} BPS setting		D2	D1	D0	
					o	0	0	100	
					0	0	1	110	
			0		1	0	300		
			o		1	1	600		
			1		0	0	1200		
			1		0	1	2400		
			1		1	0	4800		
			1	1	1	9600			

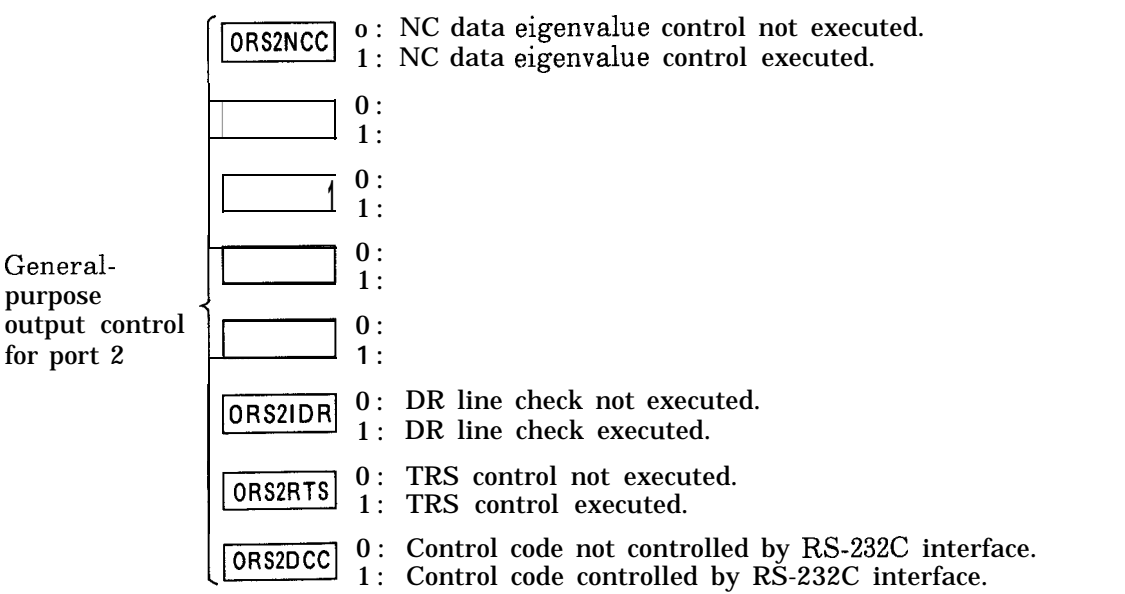
Parameter No.	NAME							
#0017	IRS2NC					IRS2DR	IRS2RTS	IRS2DCC
(Bit No.	7	6	5	4	3	2	1	0)

General-purpose input control for port 2	<input type="checkbox"/> IRS2NC	0 :	NC data eigenvalue control not executed.						
		1 :	NC data eigenvalue control executed.						
	<input type="checkbox"/>	0 :							
		1 :							
	<input type="checkbox"/>	0 :							
		1 :							
	<input type="checkbox"/> IRS2DR	0 :	DR line check not executed.						
		1 :	DR line check executed.						
	<input type="checkbox"/> IRS2RTS	0 :	TRS control not executed.						
		1 :	TRS control executed.						
<input type="checkbox"/> IRS2DCC	0 :	Control code not controlled by RS-232C interface.							
	1 :	Control code controlled by RS-232C interface.							

Parameter No.	NAME							
#0018		ORS2PB1	ORS2PB0	ORS2BL	ORS2STB	ORS2BPS2	ORS2BPS1	ORS2BPS0
(Bit No.	7	6	5	4	3	2	1	0)



Parameter No.	NAME							
#0019	ORS2NCC					ORS2IDR	ORS2RTS	ORS2DCC
(Bit No.	7	6	5	4	3	2	1	0)



Parameter No.

NAME

#0022				Unusable	Unusable	Unusable	Unusable	u M09000E
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

Unusable 0 : Used by the system. Must be set to 0.
1 :

Unusable 0 : Used by the system. Must be set to 0.
1 :

Unusable 0 : Used by the system. Must be set to 0.
1 :

Unusable 0 : Used by the system. Must be set to 0.
1 :

U M09000E 0 : Editing operations from 09000 to 09999 are available.
1 : Editing operations from 09000 to 09999 are inhibited.

Parameter No.

NAME

#0023								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0024								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

Parameter No.

NAME

#0030	NCDEV	COMDEV	COMDR					
(Bit No.	7	6	5	4	3	2	1	0)

NCDEV 0 : Assigns printer for NC equipment tape operation device.
1 : Assigns communication module for NC equipment tape operation device.

COMDEV 0 : Assigns RS-232C for communication module.
1 : Assigns RS-422 for communication module.

COMDR 0 :
1 : Monitors DR signal by communication module.

0 :
1 :

0 :
1 :

0 :
1 :

0 :
1 :

0 :
1 :

Parameter No.

NAME

#0031		COMPBI	COMPB0	COMBL	COMSTB	COMBPS2	COMBPS1	COMBPS0
(Bit No.	7	6	5	4	3	2	1	0)

0 :
1 :

} Parity bit	COMPBI	D6	D5	
	COMPB0	0	0	No parity check
		0	1	Even parity
	1	0	Odd parity	

COMBL 0 : Bit length is 7 bits.
1 : Bit length is 8 bits.

COMSTB 0 : Stop bit length is 1 bit.
1 : Stop bit length is 2 bits.

} BPS setting	COMBPS2	D2	D1	D0	
	COMBPS1	0	0	0	1200
		0	0	1	2400
		0	1	0	4800
		0	1	1	9600
COMBPS0	1	0	0	19200	

Communication module RS-232C format

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#0032		COMPB1	COMPB0	COMBL	COMSTB	COMBPS2	COMBPS1	COMBPS0
(Bit No.	7	6	5	4	3	2	1	0)

Communication module RS-422 format

	0 :							
	1 :							
COMPB1	}			D6	D5			
COMPB0		Parity bit	0	0	No parity check			
			0	1	Even parity			
	1		0	Odd parity				
COMBL	0	Bit length is 7 bits.						
	1	Bit length is 8 bits.						
COMSTB	0	Stop bit length is 1 bit.						
	1	Stop bit length is 2 bits.						
COMBPS2	}				D2	D1	D0	
		BPS setting	0	0	0	1200		
			0	0	1	2400		
COMBPS1			0	1	0	4800		
			0	1	1	9600		
COMBPS0	1		0	0	19200			

Parameter No.	
#0033	

Parameter No.

#0100	
#0101	
#0102	
#0103	
	Time-out setting for DNC operation protocol 2 Set value 1 represents 1 second. Range : 0 to 15
#0104	
	Time until alarm 9023 (APL4 error) occurs Setting : 1= 1s, 0= 480ms, 255 = waiting infinitely. Setting range :0 to 255
#0105	
#0106	
#0107	
	Manual skip measurement point monitor Setting range :0 to 6 Note This parameter is for monitoring a value, not for setting.
#0108	
#0109	

Setting of the internal system number switch : "0", "1"
Setting range : 0, 1

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

#0400	
	G76, G77 dwell time hole opening canned cycle Setting : 1 = 1 ms Setting range : 0 to 32767
#0401	
	G73, G83 pitch dwell time Setting : 1 = 1 ms Setting range : 0 to 32767
#0402	
#0403	
#0404	
#0405	
#0406	
#0407	
#0408	
#0409	

Parameter No.

#0420	Point 1
#0421	Point 2
#0422	Point 3
#0423	Point 4
#0424	Point 5
#0425	Point 6

Manual skip contact direction monitor

Range : Varies according to bit data as follows :

NAME							
					Z+	Y+	x +
7	6	5	4	3	2	1	0
					Z-	Y-	x -
15	14	13	12	11	10	9	8

Note This parameter is for monitoring a value, not for setting.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

#0800	
#0801	
	Sequence No. setting 1 of brake point Setting range : 1 to 99999
#0802	
	Sequence No. setting 2 of brake point Setting range : 1 to 99999
#0803	
	Multiplying factor setting (numerator) of scaling Multiplying factor = #0803 / #0804 Setting range : 1 to 99999
#0804	
	Multiplying factor setting (denominator) of scaling Multiplying factor = #0803 / #0804 Setting range : 1 to 99999
#0805	
#0806	
	Amount of tool length measuring bias Setting : 1=0.001 mm or 0.001 inch Setting range : 0 to ± 999999999
#0807	
	Tool length measurement bottom level Setting : 1 = 0.001 mm or 0.0001 inch Setting range : 0 to ± 999999999
#0808	
#0809	
#0810	

Parameter No.

#0811	X-axis
-------	--------

#0812	Y-axis
-------	--------

#0813	Z-axis
-------	--------

#0814	4th axis
-------	----------

#0815	5th axis
-------	----------

Coordinate value when skip signal is operating
 Setting : 1 = Minimum input unit
 Setting range : 0 to *999999999

#0816	
-------	--

#0817	
-------	--

#0818	
-------	--

#0819	
-------	--

#0820	F1
-------	----

#0821	F2
-------	----

#0822	F3
-------	----

#0823	F4
-------	----

#0824	F5
-------	----

#0825	F6
-------	----

#0826	F7
-------	----

#0827	F8
-------	----

#0828	F9
-------	----

Speed when F 1 digit command
 Setting : When millimeter retrieval 1 = 0.1 mm/min.
 When inch retrieval 1 = 0.01 in./min.
 Setting range : 0 to 2400000

#0829	
-------	--

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

#0830		
#0831	X-axis,max.	Storke limit inhibit area (#0831 to #0854). Setting : 1 = Minimum detecting unit Setting range :0 to &999999999
#0832	Y-axis,max.	
#0833	Z-axis,max.	
#0834	X-axis,min.		2nd inhibit area
#0835	Y-axis, min.	
#0836	Z-axis,min.	
#0837	X-axis, max.	3rd inhibit area
#0838	Y-axis, max.	
#0839	Z-axis,max.	
#0840	X-axis,min.	4th inhibit area
#0841	Y-axis,min.	
#0842	Z-axis,min.	
#0843	X-axis,max.	
#0844	Y-axis,max.	
#0845	Z-axis,max.	
#0846	X-axis,min.	
#0847	Y-axis,min.	
#0848	Z-axis,min.	

parameter No.

#0849 X-axis,max.

#0850 Y-axis,max.

#0851 Z-axis,max.

#0852 X-axis,min.

#0853 Y-axis,min.

#0854 Z-axis, min.

5th inhibit area

#0855

#0856

#0857

#0858

#0859

#0860

#0861

#0862

#0863

#0864

#0865

m

m

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#0868	
#0869	
#0870	
	Return amount of G73 Setting : 1 = 0.001 mm or 1 = 0.0001 inch Setting range : 0 to 999999999
#0871	
	Return amount of G83 Setting : 1 = 0.001 mm or 1 = 0.0001 inch Setting range : 0 to 999999999
#0872	
#0873	
	Return amount of G184/G174 Setting : 1=0.001 mm or 0.0001 inch Setting range :0 to 999999999
#0874	
#0875	
#0876	
#0877	
#0878	
#0879	

Parameter No.

#0920	Point 1 X-axis	1
#0921	Point 1 Y-axis	1
#0922	Point 1 Z-axis	1
#0923	Point 2 X-axis	1
#0924	Point 2 Y-axis	1
#0925	Point 2 Z-axis	1
#0926	Point 3 X-axis	1
#0927	Point 3 Y-axis	1
#0928	Point 3 Z-axis	1
#0929	Point 4 X-axis	1

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

#0930	Point4 Y-axis
#0931	Point 4 Z-axis
#0932	Point5 X-axis
#0933	Point5 Y-axis
#0934	Point 5 Z-axis
#0935	Point6 X-axis
#0936	Point 6 Y-axis
#0937	Point 6 Z-axis

Manual skip position data monitor

Range : 0 to *999999999

Set value 1 represents 0.001 mm or 0.0001 inch.



This parameter is for monitoring a value, not for setting.

Parameter No.

NAME

#1000	SAGRCH		SSTPAB	SACTSW		SREVMD		10IN
(Bit No.	7	6	5	4	3	2	1	0)

SAGRCH 0: SAGR not checked when changing from rapid traverse to cutting feed.
 1: SAGR checked when changing from rapid traverse to cutting feed.

0:
 1:

SSTPAB 0: Outputs O with SSTP "O" spindle S command O input.
 1: Outputs O with SSTP "1" spindle S command O input.

SACTSW 0: Displays value calculated from command S for spindle actual r/rein indication.
 1: Displays feedback from spindle motor for spindle actual r/rein indication.

0:
 1:

SREVMD 0: Applies no override to spindle r/rein output.
 1: Applies override to spindle r/rein output.

0:
 1:

10IN 0: Sets input to minimum input unit.
 1: Sets input to 10 times the minimum input unit.

Parameter No.

NAME

#1001							S1DAS1	S1DAS2
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

S1DAS1 }
S1DAS2 }

m

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1002								GPRM1
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

GPRM1 0 : Multiplying factor (X 1) of spindle revolutions parameter.

1: Multiplying factor (X 10) of spindle revolutions parameter.

Note

This parameter determines the unit increment for the following parameters : #1400 to #1411, #1415, and #1416.

Parameter No.	NAME							
#1003						SILDA		
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

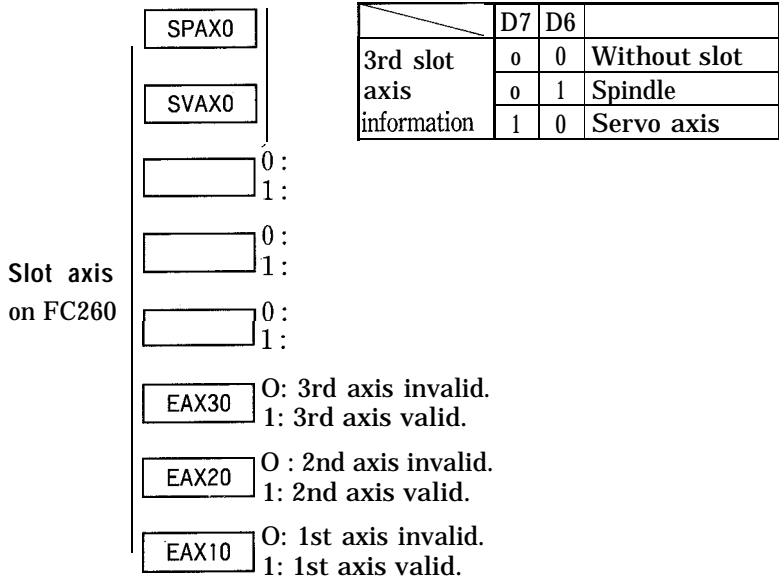
0:
 1:

SILDA 0 :: With spindle D/A sequencer loop.
1 : Without spindle D/A sequencer loop.

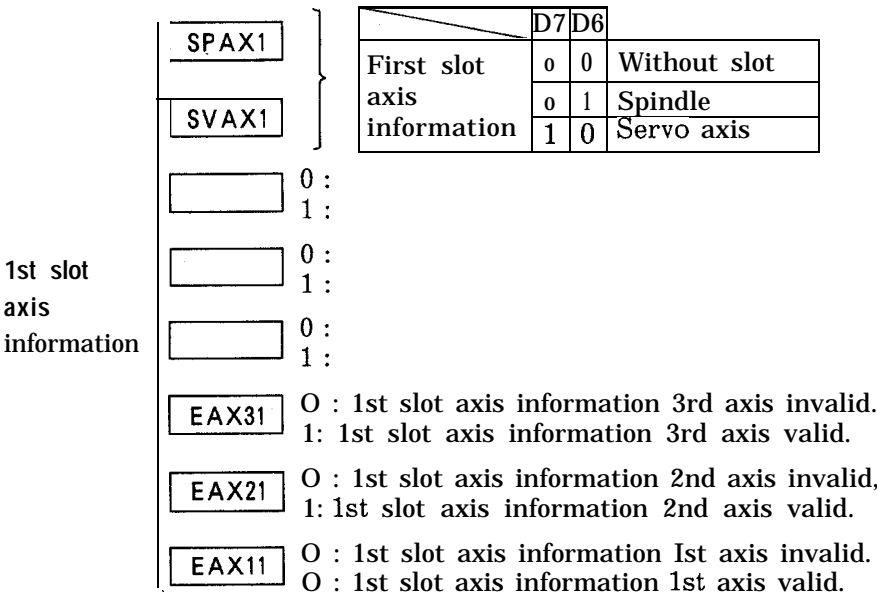
0:
 1:

0:
 1:

Parameter No.	NAME							
#1019	SPAX0	SVAX0				EAX30	EAX20	EAX10
(Bit No.	7	6	5	4	3	2	1	0



Parameter No.	NAME							
#1020	SPAX1	SVAX1				EAX31	EAX21	EAX11
(Bit No.	7	6	5	4	3	2	1	0



9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1021	SPAX2	SVAX2				EAX32	EAX22	EAX12
(Bit No.	7	6	5	4	3	2	1	0)

SPAX2	D7		D6	
	0	0	Without slot	
SVAX2	0	1	Spindle	
	1	0	Servo axis	
2nd slot axis information	0 :			
	1 :			
	0 :			
	1 :			
EAX32	0 : 2nd slot axis information 3rd axis invalid. 1 : 2nd slot axis information 3rd axis valid.			
EAX22	0 : 2nd slot axis information 2nd axis invalid. 1 : 2nd slot axis information 2nd axis valid.			
EAX12	0 : 2nd slot axis information 1st axis invalid. 1 : 2nd slot axis information 1st axis valid.			

Parameter No.	NAME							
#1022	SPAX3	SVAX3				EAX33	EAX23	EAX13
(Bit No.	7	6	5	4	3	2	1	0)

SPAX3	D7		D6	
	0	0	Without slot	
SVAX3	0	1	Spindle	
	1	0	Servo axis	
3rd slot axis information	0 :			
	1 :			
	0 :			
	1 :			
EAX33	0 : 3rd slot axis information 3rd axis invalid. 1 : 3rd slot axis information 3rd axis valid.			
EAX23	0 : 3rd slot axis information 2nd axis invalid. 1 : 3rd slot axis information 2nd axis valid.			
EAX13	0 : 3rd slot axis information 1st axis invalid. 1 : 3rd slot axis information 1st axis valid.			

Parameter No.	NAME							
#1023	SPAX4	SVAX4				EAX34	EAX24	EAX14
(Bit No.	7	6	5	4	3	2	1	0)

4th slot axis information	SPAX4	1		D7	D6	
			0	0	Without slot	
			0	1	Spindle	
			1	0	Servo axis	

0:
1:

0:
1:

0:
1:

EAX34 0 : 4th slot axis information 3rd axis invalid.
1: 4th slot axis information 3rd axis valid.

EAX24 0 : 4th slot axis information 2nd axis invalid.
1: 4th slot axis information 2nd axis valid.

EAX14 0 : 4th slot axis information 1st axis invalid.
1: 4th slot axis information 1st axis valid.

Parameter No.	NAME
#1024	
#1025	
#1026	
#1027	
#1028	
#1029	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1030	1LIRT		1EPGR		IEPG	IAPRM	IVCNT	
(Bit No.	7	6	5	4	3	2	1	0)

- 1ROT** 0 : X-axis servo-controlled motor revolution direction NORMAL.
1 : X-axis servo-controlled motor revolution direction REVERSE.
- 1LIRT** 0 : Uses linear axis as X-axis servo control.
1 : Uses rotating axis as X-axis servo control.
- 0 :
1 :
- 1EPGR** 0 : X-axis separate type PG reverse connection is disabled.
1 : X-axis separate type PG reverse connection is enabled.
- 0 :
1 :
- 1EPG** 0 : X-axis separate type PG is disabled.
1 : X-axis separate type PG is enabled.
- 1APRM** 0 : Speed loop auto setting is disabled.
1 : Speed loop auto setting is enabled.
- 1VCNT** 0 : PI speed loop control method is used.
1 : 1P speed loop control method is used.

Parameter No	NAME							
#1031	2LIRT		2EPGR		2EPG	2APRM	2VCNT	
(Bit No.	7	6	5	4	3	2	1	0)

- 2ROT** 0 : Y-axis servo control form motor revolution direction NORMAL.
1 : Y-axis servo control form motor revolution direction REVERSE.
- 2LIRT** 0 : Uses linear axis as Y-axis servo control.
1 : Uses rotating axis for Y-axis servo control.
- 0 :
1 :
- 2EPGR** 0 : Y-axis separate type PG reverse connection is disabled.
1 : Y-axis separate type PG reverse connection is enabled.
- 0 :
1 :
- 2EPG** 0 : Y-axis separate type PG is disabled,
1 : Y-axis separate type PG is enabled.
- 2APRM** 0 : Speed loop auto setting is disabled.
1 : Speed loop auto setting is enabled.
- 2VCNT** 0 : PI speed loop control method is used.
1 : 1P speed loop control method is used.

Parameter No.

NAME

#1032	3ROT	3LIRT		3EPGR		3EPG	3APRM	3VCNT
(Bit No.	7	6	5	4	3	2	1	0)

- 3ROT** 0 : Z-axis servo control form motor operating direction NORMAL.
1 : Z-axis servo control form motor operating direction REVERSE .
- 3LIRT** 0 : Uses linear axis for Z-axis servo control.
1 : Uses rotating axis for Z-axis servo control.
- 0 :
1 :
- 3EPGR** 0 : Z-axis separate type PG reverse connection is disabled.
1 : Z-axis separate type PG reverse connection is enabled.
- 0 :
1 :
- 3EPG** 0 : Z-axis separate type PG is disabled.
1 : Z-axis separate type PG is enabled.
- 3APRM** 0 : Speed loop auto setting is disabled,
1 : Speed loop auto setting is enabled.
- 3VCNT** 0 : PI speed loop control method is used.
1 : 1P speed loop control method is used.

Parameter No.

NAME

#1033	4ROT	4LIRT	4CAX	4EPGR		4EPG	4APRM	4VCNT
(Bit No.	7	6	5	4	3	2	1	0)

- 4ROT** 0 : 4th axis servo control form motor operating direction NORMAL.
1 : 4th axis servo control form motor operating direction REVERSE.
- 4LIRT** 0 : Uses linear axis as 4th axis servo control.
1 : Uses rotating axis as 4th axis servo control.
- 4CAX** 0 : Uses 4th axis for servo axis.
1 : Uses 4th axis for spindle-united C-axis.
- m** “ 4th axis separate type PG reverse connection is disabled.
1 : 4th axis separate type PG reverse connection is enabled.
- 0 :
1 :
- 4EPG** 0 : 4th axis separate type PG is disabled.
1 : 4th axis separate type PG is enabled:
- 4APRM** 0 : Speed loop auto setting is disabled.
1 : Speed loop auto setting is enabled.
- 4VCNT** 0 : PI speed loop control method is used.
1 : 1P speed loop control method is used.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1034	5ROT	5LIRT	5CAX	5EPGR		5EPG	5APRM	5VCNT
(Bit No.	7	6	5	4	3	2	1	0)

- 5ROT** 0 : 5th axis servo control form motor operating direction NORMAL.
1 : 5th axis servo control form motor operating direction REVERSE.
- 5LIRT** 0 : Uses linear axis as 5th axis servo control form.
1 : Uses rotating axis as 5th axis servo control form.
- 5CAX** 0 : Uses 5th axis for servo axis.
1 : Uses 5th axis for spindle-uniited C-axis.
- 5EPGR** 0 : 5th axis separate type PG reverse connection is disabled.
1 : 5th axis separate type PG reverse connection is enabled.
- 0 :
1 :
- 5EPG** 0 : 5th axis separate type PG is disabled.
1 : 5th axis separate type PG is enabled.
- 5APRM** 0 : Speed loop auto setting is disabled.
1 : Speed loop auto setting is enabled.
- 5VCNT** 0 : PI speed loop control method is used.
1 : 1P speed loop control method is used.

Parameter No.	NAME
#1035	
#1036	
#1037	
#1038	

Parameter No.	NAME							
#1039	S1ROT		S1DSB			S1PGB	S1PGA	
(Bit No.	7	6	5	4	3	2	1	0)

- S1ROT 0: Uses normal spindle.
1: Uses spindle combined with C-axis.
- 0:
1:
- S1DSB 0: Conducts spindle servo control of spindle servo control form.
1: Does not conduct spindle servo control of spindle servo control form.
- 0:
1:
- 0:
1:
- S1PGB }

		D2	D1	
Spindle servo control form	0	0		Without spindle PG
	0	1		With PG on spindle side
	1	0		With PG on motor side
- S1PGA }
- 0:
1:

Parameter No.	NAME
#1040	
m	
m	
#1043	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1044		FORAX1		ABS1	SOFF1	ERCU1	EXABS1	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

FORAX1 0 : X-axis rotating axis infinite length control not available.
1 : X-axis rotating axis infinite length control available.

0 :
 1 :

ABS1 0 : X-axis absolute encoder not provided.
1 : X-axis absolute encoder provided.

SOFF1 0 : No followup processing during servo-off input.
1 : Conducts followup processing during servo-off input.

ERCU1 0 : No error cutting during emergency stop input.
1 : Conducts error cutting during emergency stop input.

EXABS1 0 : Motor PG absolute encoder.
1 : Separately-mounted PG absolute encoder.

0 :
 1 :

Parameter No.	NAME							
#1045		FORAX2		ABS2	SOFF2	ERCU2	EXABS2	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

FORAX2 0 : Y-axis rotating axis infinite length control not available.
1 : Y-axis rotating axis infinite length control available.

0 :
 1 :

ABS2 0 : Y-axis absolute encoder not provided.
1 : Y-axis absolute encoder provided.

SOFF2 0 : No followup processing during servo-off input.
1 : Conducts followup processing during servo-off input.

ERCU2 0 : No error cutting during emergency stop input.
1 : Conducts error cutting during emergency stop input.

EXABS2 0 : Motor PG absolute encoder.
1 : Separately-mounted PG absolute encoder.

0 :
 1 :

Parameter No.

NAME

#1046		FORAX3		ABS3	SOFF3	ERCU3	EXABS3	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

FORAX3 0 : Z-axis rotating axis infinite length control not available.
1 : Z-axis rotating axis infinite length control available.

0 :
 1 :

ABS3 0 : Z-axis absolute encoder not provided.
1 : Z-axis absolute encoder provided.

SOFF3 0 : No followup processing during servo-off input.
1 : Conducts followup processing during servo-off input.

ERCU3 0 : No error cutting during emergency stop input.
1 : Conducts error cutting during emergency stop input.

EXABS3 0 : Motor PG absolute encoder.
1 : Separate-mounted absolute encoder.

0 :
 1 :

Parameter No.

NAME

#1047		FORAX4		ABS4	SOFF4	ERCU4	EXABS4	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

FORAX4 0 : 4th axis rotating axis infinite length control not available.
1 : 4th axis rotating axis infinite length control available.

0 :
 1 :

ABS4 0 : 4th axis absolute encoder not provided.
1 : 4th axis absolute encoder provided.

SOFF4 0 : No followup processing during servo-off input.
1 : Conducts followup processing during servo-off input.

ERCU4 0 : No error cutting when emergency stop input.
1 : Conducts error cutting when emergency stop input.

EXABS4 0 : Motor PG absolute encoder.
1 : Separate-mounted absolute encoder.

0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#1048		FORAX5		ABS5	SOFF5	ERCU5	EXABS5	
(Bit No.	7	6	5	4	3	2	1	0)

 0 :
 1 :

FORAX5 0 : 5th axis rotating axis infinite length control not available.
 1: 5th axis rotating axis infinite length control available.

 0 :
 1 :

ABS5 0 : 5th axis absolute encoder not provided.
 1: 5th axis absolute encoder provided.

SOFF5 0 : No followup processing during servo-off input.
 1: Conducts followup processing during servo-off input.

ERCU5 0 : No error cutting during emergency stop input.
 1 : Conducts error cutting when emergency stop is input.

EXABS5 0 : Motor PG absolute encoder.
 1 : Separately-mounted PG absolute encoder.

 0 :
 1 :

Parameter No.

#1049	
-------	--

#1050	
-------	--

#1051	
-------	--

#1052	
-------	--

Parameter No.	NAME							
#1053					CINDXC1	LINDXS1	MULS1B	MULS1A
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

CINDXC1 0: C-axis indexing conducted at C-axis change.
1: C-axis indexing not conducted at C-axis change.

LINDXS1 0: Spindle indexing not conducted during spindle loop control.
1: Spindle indexing conducted during spindle loop control.

MULS1B			D1	D0
	Spindle feedback pulse multiplying factor setting	0	0	x 1
		0	1	x 2
		1	0	x 4
1		1	x 8	

MULS1A

Parameter No.	NAME
m	
#1055	
#1056	
#1057	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

#1058	
#1059	
#1060	

Parameter No.	NAME
#1061	X-axis
#1062	Y-axis
#1063	Z-axis
#1064	4th axis
#1065	5th axis

Servo axis motor type
Setting:

M Series	
Model	Parameter Value
M-03B	10
M-06B	11
M-09B	12
M-12B	13
M-20B I	14
M-30B	15
M-44B	16
R Series	
Model	Parameter Value
R-03C	33
R-05C	34
R-07C	35
S Series	
Model	Parameter Value
S-02A	20
S-03A	21
S-05A	22
S-08A	23
S-15A	24
S-30A	25

F Series	
Model	Parameter Value
F-02C	1
F-03C	2
F-05C	3
F-09C	4
F-13C	5
F-20C	6
F-30C	7
F-44C	8
G Series	
Model	Parameter Value
G-02A	40
G-03A	41
G-05A I	42
G-09A I	43
G-13A	44
G-20A	45
G-30A	46
G-44A	47

9.2 PARAMETER NUMBER TABLE (Cent'd)

Special Motor	
Model	Parameter Value
S-07HS	251
D-09HS11	252
S-10HS	253
F-20HS11	254
F-09FX	255

D Series	
Model	Parameter Value
D-05E	50
D-10E	51
D-15E	52
D-22E	53
D-37E	54

Parameter No.

NAME

#1070								
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:

0:

0:

0:

0:

Parameter No.	NAME
#1071	X-axis
#1072	Y-axis
#1073	Z-axis
#1074	4th axis
#1075	5th axis

		Type	Parameter Value
		Encoder type Setting:	Linear Scale	0
15-bit ABS	1		
15-bit ABS (for Rotation Axis)	2		
17-bit ABS	3		
8,192 pulse new INC	11		
25,000 pulse new INC	18		
30,000 pulse new INC	19		
For C-Axis (360,000 Pulses)	23		

#1081	X-axis
#1082	Y-axis
#1083	Z-axis
#1084	4th axis
#1085	5th axis

		Type	Parameter Value
		External encoder type Setting:	Linear Scale	0
15-bit ABS	1		
15-bit ABS (for Rotation Axis)	2		
17-bit ABS	3		
8,192 pulse new INC	11		
25,000 pulse new INC	18		
30,000 pulse new INC	19		
For C-Axis (360,000 Pulses)	23		

#1091	Spindle
-------	---------

		Type	Parameter Value
		Spindle encoder type Setting:	1024 Pulse INC (for Spindle)	21

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1100	
to	to
#1114	

Set the axes display name by converting ASCII code to decimal notation.

X-axis : #1100 to #1102 Set as X : 880000

Y-axis : #1103 to #1105 Set as Y : 890000

Z-axis : #1106 to #1108 Set as Z : 900000

Set any of the following.

4th axis : #1109 to #1111

5th axis : #1112 to #1114 }

Set any of the following.

U : 85 00 00

V : 860000

W : 870000

A : 650000

B : 660000

C : 670000




Set servo axis automatic system axes name for #1149 to #1156.

#1115	
#1116	
#1117	
#1118	
#1119	
#1120	
#1121	
#1122	
#1123	
#1124	
#1125	

Parameter No.	NAME
#1126	
#1127	
#1128	
#1129	

Set spindle display name by converting ASCII code to decimal notation.
Set as follows : #1127 83
#1128 00
#1129 00

 Note Set spindle automatic system axes name for #1169 to #1171.

#1140	
#1141	
#1142	
to	to
#1156	

Set automatic system axes names in ASCII code.
X-axis : #1142 to #1144 Set as X : 880000
Y-axis : #1145 to #1147 Set as Y : 890000
Z-axis : #1148 to #1150 Set as Z : 900000

Set any of the following.

4th axis: #1151 to #1153

5th axis: #1154 to #1156 }

Set any of the following.

U: 850000


V: 860000

W: 870000

A: 650000

B: 660000

C: 670000

 Note Set servo axis indication name for #1100 to #1114.

#1157	
#1158	
#1159	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1169	
#1170	
#1171	
Set the automatic system spindle name by converting ASCII code to decimal notation. #1169 83 #117000 #1171 00	
Note Set spindle indication name for #1127 to #1129.	
#1172	
#1173	
#1174	
#1175	
#1176	
#1177	
#1178	
#1179	
#1180	
#1181	
#1182	
#1183	

Parameter No.

NAME

#1184	
#1185	
#1186	
#1187	
#1188	
#1189	
#1190	
#1191	
#1192	
#1193	
#1194	
#1195	
#1196	
#1197	
#1198	
#1199	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1200	 Number of control axes during high speed mode operation. Setting : 3 = 3 axes, 4 = 4 axes, 5 = 5 axes Setting range : 3 to 5
#1201	Additional 4th axis
#1202	Additional 5th axis
#1203	
#1204	
#1205	
#1206	
#1207	
#1208	
#1209	
#1210	
#1211	
#1212	
#1213	
#1214	
#1215	

Input the address name of the axes added during high speed mode operation by converting ASCII code to decimal notation.
Set any one of the following.

- U: 850000
- V: 860000
- W: 870000
- A: 650000
- B: 660000
- C: 670000

Parameter No,

NAME

#1216	
-------	--

#1217	
-------	--

#1218	
-------	--

#1219	
-------	--

#1220	
-------	--

Spindle index confirmation timer.
Setting : 1 = 4 m s
Setting range : 1 to 225

#1221	
-------	--

#1222	
-------	--

#1223	
-------	--

m	
---	--

#1225	
-------	--

Spindle indexing stop confirmation revolutions.
Setting : 1=1 rpm
Setting range : 1 to 255

#1226	
-------	--

Spindle indexing stop confirmation revolution at selection of spindle gear B-axis.
Setting : 1 = 1 rpm
Setting range : 1 to 255

#1227	
-------	--

#1228	
-------	--

#1229	
-------	--

#1230	
-------	--

#1231	
-------	--

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1232	
#1233	
#1234	
#1235	
#1236	
#1237	
#1238	
m	
#1240	
	Spindle for solid tap. Setting range : 1
m	
	Servo axis for solid tap. Setting : 1 = X-axis 2 = Y-axis 3 = Z-axis 4 = 4th axis 5 = 5th axis Setting range : 1 to 5
#1242	
m	
#1244	
#1245	
#1246	

Parameter No.

NAME

#1247	
-------	--

#1248	
-------	--

#1249	
-------	--

#1250	
-------	--

m	
----------	--

#1252	
-------	--

Solid tap return speed multiplying factor.
Setting : 1 = 0.1 time
Setting range : 1 to 255

#1253	
-------	--

#1254	
-------	--

#1255	
-------	--

#1256	
-------	--

#1257	
-------	--

#1258	
-------	--

#1259	
-------	--

#1260	
-------	--

Spindle loop control gear A.
Setting range : 0 to 4

#1261	
-------	--

Spindle loop control gear B.
Setting range :0 to 4

#1262	
-------	--

#1263	
-------	--

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1264	
#1265	
#1266	
#1267	
#1268	
#1269	
#1300	
#1301	
#1302	
#1303	
#1304	
#1305	
#1306	
#1307	
#1308	

Parameter No.

NAME

#1309	
#1310	
#1311	
#1312	
#1313	
#1314	
#1315	
#1316	
#1317	
#1318	
	To use the system, always set "1".
#1319	
	To use the system, always set "1".
#1320	
#1321	X-axis
#1322	Y-axis
#1323	Z-axis
#1324	4th axis
#1325	5th axis

Error detect-ON area.
Setting : 1 = Minimum detecting unit
Setting range : 0 to 255

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1326	
#1327	
#1328	
#1329	
#1330	
#1331	<p>Error detect-ON area during spindle loop control. Setting : 1 = Minimum detecting unit Setting range : 0 to 255</p>
#1332	<p>Error detect-ON area during spindle loop control at spindle gear B selected. Setting : 1= Minimum detecting unit Setting range :0 to 255</p>
#1333	
#1334	
#1335	
#1336	
#1337	
#1338	
#1339	

Parameter No.

NAME

#1340	
#1341	
#1342	
m	
#1344	
#1345	
#1346	
#1347	
#1348	
#1349	
#1350	
#1351	
	Multiplying factor relative to spindle servo area rapid traverse rate. Setting : 1 = 1 % Setting range : 0 to 200
#1352	
#1353	
#1354	
#1355	
#1356	
#1357	

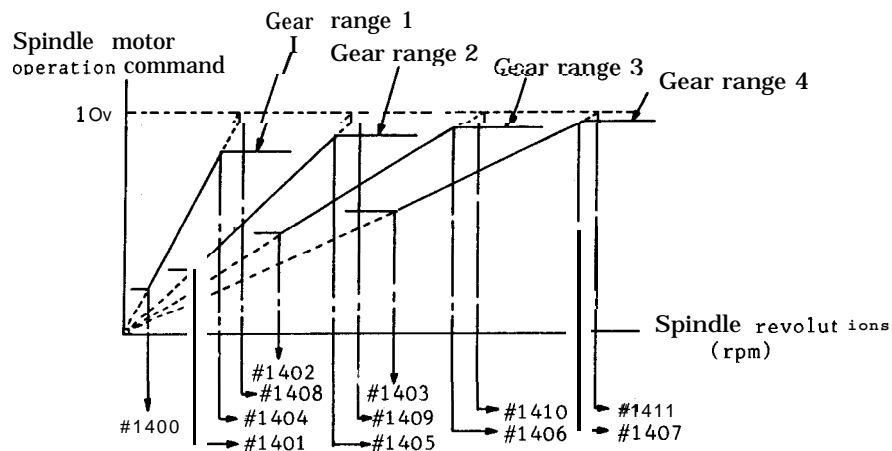
9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1358	
m	
#1400	Gear range 1
m	Gear range 2
#1402	Gear range 3
m	Gear range 4
#1404	Gear range 1
#1405	Gear range 2
#1406	Gear range 3
#1407	Gear range 4
#1408	Gear range 1
#1409	Gear range 2
#1410	Gear range 3
#1411	Gear range 4

Minimum spindle revolutions clamp,
Setting : 1 = 1 rpm/10 rpm (Determined by #1002 DO)
Setting range : 0 to 30000

Maximum spindle revolutions clamp.
Setting : 1 = 1 rpm/10 rpm (Determined by #1002 DO)
Setting range : 0 to 30000

Maximum spindle motor revolutions.
Setting : 1 = 1 rpm/10 rpm (Determined by #1002 DO)
Setting range : 0 to 30000



Parameter No.	NAME
m	SOR
	Spindle motor r/rein at spindle orientation (SOR) input Setting : 1 = 1 r/rein Setting range : 0 to 32767
#1413	GRO
	Motor revolutions when spindle (GRO) is input. Setting : 1 = 10/32767 V Setting range : 0 to 32767
#1414	
	Spindle indexing origin position. Setting : 360/4096 deg Setting range : 0 to 4096
#1415	
	Revolutions with 10V solid tap command. Setting : 1 = 1 rpm or 10 rpm (Determined by #1002 DO) Setting range : 0 to 32767
#1416	
	Maximum revolutions of solid tap spindle. Setting : 1 = 1 rpm or 10 rpm (Determined by #1002 DO) Setting range : 0 to 32767
#1417	
	Solid tap spindle position loop gain. Setting : 1 = 0.001 [S ⁻¹] Setting range : 0 to 32767
#1418	
#1419	
#1435	
	Revolutions in solid tap command 10V when spindle gear B is selected. Setting : 1=1 rpm or 10 rpm (depending on setting of #1002 DO) Setting range :0 to 32767
#1436	
	Maximum revolutions of solid tap spindle when spindle gear B is selected. Setting :1 = 1 rpm or 10 rpm (depending on setting of #1002 DO) Setting range :0 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1437	<p>Spindle loop gain of solid tap when spindle gear B is selected. Setting : 1=0.01 [S⁻¹] Setting range :0 to 32737</p>
#1500	<p>Solid tap servo shaft retraction in-position width. Setting : 1 = Minimum command unit Setting range : 0 to 32767</p>
#1501	
#1502	<p>Feedback side K1</p> <p>Solid tap servo shaft synchronous correction parameter (K1). Setting range : -32767 to 32767</p>
#1503	<p>Reference side K2</p> <p>Solid tap servo shaft synchronous correction parameter (K2). Setting range : -32767 to 32767</p>
#1504	
#1505	
#1506	
#1507	
#1508	
#1509	
#1510	<p>Number of teeth of gear A on the spindle side for spindle loop control during solid tap. Setting : 1 = 1 tooth Setting range : 0 to 32767</p>

Parameter No.

NAME

m

Number of teeth of the spindle intermediate gear of gear A used for spindle loop control during solid tap.

Setting : 1 = 1 tooth

Setting range : 0 to 32767

Note Number of teeth on the motor side if there is no intermediate gear.

#1512

Number of teeth of the intermediate gear of gear A used for spindle loop control during solid tap.

Setting : 1 = 1 tooth

Setting range : 0 to 32767

Note Will be 0 when there is no intermediate gear.

#1513

Number of teeth on the motor side of gear A used for spindle loop control during solid tap.

Setting : 1 = 1 tooth

Setting range : 0 to 32767

Note Will be 0 when there is no intermediate gear.

#1514

Number of teeth of gear B on the spindle side for spindle loop control during solid tap.

Setting : 1=1 tooth

Setting range :0 to 32767

#1515

Number of teeth of the spindle intermediate gear of gear B used for spindle loop control during solid tap.

Setting : 1=1 tooth

Setting range :0 to 32767

Note Number of teeth on the motor side if there is no intermediate gear.

#1516

Number of teeth of the intermediate gear of gear B used for spindle loop control during solid tap.

Setting : 1=1 tooth

Setting range :0 to 32767

Note Will be 0 when there is no intermediate gear.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1517	<p>Number of teeth on the motor side of gear B used for spindle loop control during solid tap. Setting : 1=1 tooth Setting range :0 to 32767</p> <p><i>Note</i> Will be 0 when there is no intermediate gear.</p>
#1518	
#1519	
#1540	<p>Delay time when checking spindle speed attainment signal (SAGR). Setting : 1 = 1 ms Setting range : 0 to 32767</p>
#1541	
#1542	
#1543	
#1544	
#1545	
#1546	
#1547	
#1548	
#1549	
#1550	
#1551	X axis
#1552	Y-axis

Parameter No.	NAME
#1553	Z-axis
#1554	4th axis
#1555	5th axis
	Backlash offset amount Setting : 1 = 1 μ m Setting range : 0 to 32767
#1556	
#1557	
#1558	
m	
#1580	X-axis position loop gain (K_P) Setting : 1 = 0.01 (1/s) Setting range : 1 to 20000
#1581	X-axis speed loop gain (K_V) Setting : 1 = 0.1 (1/s) Setting range : 1 to 32767
#1582	X-axis speed loop integral time constant (T_i) Setting : 1 = 0.1 ms Setting range : 1 to 32767
#1583	
#1584	X-axis speed FF gain (K_{vff}) Setting : 1 = 1% Setting range : 1 to 100
#1585	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME																																																															
#1586	X-axis axial torsion filter time constant (T.)																																																															
	Setting : 1 = 0.01 ms Setting range : 1 to 32767																																																															
#1587																																																																
#1588																																																																
#1589	Scale factor for X-axis monitor board signal selection																																																															
	Setting : See the following table. Setting range : 1 to 32767																																																															
Table CH1 (D/A1) and CH2 (D/A2) Output Signal Selection and Output Scale Factor																																																																
	<table border="1"> <thead> <tr> <th>Value of #1589</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> <th>1024</th> <th>1025</th> <th>1026</th> <th>1027</th> </tr> </thead> <tbody> <tr> <td>CH1 Output (D/A1)</td> <td colspan="4">Torque instruction</td> <td colspan="4">Motor r/rein.</td> </tr> <tr> <td>Signal Name</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Scale Factor</td> <td>1</td> <td>2</td> <td>4</td> <td>8</td> <td>1</td> <td>2</td> <td>4</td> <td>8</td> </tr> <tr> <td>CH2 Output (D/A2)</td> <td colspan="8">Speed instruction</td> </tr> <tr> <td>Signal Name</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Scale Factor</td> <td>1</td> <td>2</td> <td>4</td> <td>8</td> <td>1</td> <td>2</td> <td>4</td> <td>8</td> </tr> </tbody> </table>	Value of #1589	0	1	2	3	1024	1025	1026	1027	CH1 Output (D/A1)	Torque instruction				Motor r/rein.				Signal Name									Scale Factor	1	2	4	8	1	2	4	8	CH2 Output (D/A2)	Speed instruction								Signal Name									Scale Factor	1	2	4	8	1	2	4	8
Value of #1589	0	1	2	3	1024	1025	1026	1027																																																								
CH1 Output (D/A1)	Torque instruction				Motor r/rein.																																																											
Signal Name																																																																
Scale Factor	1	2	4	8	1	2	4	8																																																								
CH2 Output (D/A2)	Speed instruction																																																															
Signal Name																																																																
Scale Factor	1	2	4	8	1	2	4	8																																																								
#1590	Y-axis position loop gain (K_p)																																																															
	setting : 1 = 0.01 (1/S) Setting range : 1 to 20000																																																															
#1591	Y-axis speed loop gain (K,)																																																															
	Setting : 1 = 0.1 (1/s) Setting range : 1 to 32767																																																															
#1592	Y-axis speed loop integral time constant (T_i)																																																															
	Setting : 1 = 0.01 ms Setting range : 1 to 32767																																																															
#1593																																																																

Parameter No.

NAME

#1594	Y-axis speed FF gain (K_{vff})
-------	------------------------------------

Setting: 1 = 1%
 Setting range : 1 to 100

#1595	
-------	--

#1596	Y-axis axial torsion filter time constant (T_n)
-------	---

Setting : 1 = 0.01 ms
 Setting range : 1 to 32767

#1597	
-------	--

#1598	
-------	--

#1599	Scale factor for Y-axis monitor board signal selection
-------	--

Setting : See the following table.
 Setting range : 1 to 32767

Table CH1 (D/A1) and CH2 (D/A2) Output Signal Selection and Output Scale Factor

Value of. #1599	0	1	2	3	1024	1025	1026	1027	
CH1 Output (D/A1)	Signal Name	Torque instruction				Motor r/rein.			
	Scale Factor	1	2	4	8	1	2	4	8
CH2 Output (D/A2)	Signal Name	Speed instruction							
	Scale Factor	1	2	4	8	1	2	4	8

#1600	Z-axis position loop gain (K_p)
-------	-------------------------------------

Setting : 1 = 0.01 (1/S)
 Setting range : 1 to 20000

#1601	Z-axis speed loop gain (K_v)
-------	----------------------------------

Setting : 1 = 0.1 (1/s)
 Setting range : 1 to 32767

#1602	Z-axis speed loop integral time constant (T_i)
-------	--

Setting : 1 = 0.01 ms
 Setting range : 1 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1603	
#1604	Z-axis speed FF gain (K_{vff}) Setting : 1 = 1% Setting range : 1 to 100
#1605	
#1606	Z-axis axial torsion filter time constant (T_n) Setting : 1 = 0.01 ms Setting range : 1 to 32767
#1607	
#1608	
#1609	Scale factor for Z-axis monitor board signal selection Setting : See the following table. Setting range : 1 to 32767

Table CH1 (D/A1) and CH2 (D/A2) Output Signal Selection and Output Scale Factor

Value of #1609		0	1	2	3	1024	1025	1026	1027
CH1 Output (D/A1)	Signal Name	Torque instruction				Motor r/rein.			
	Scale Factor	1	2	4	8	1	2	4	8
CH2 Output (D/A2)	Signal Name	Speed instruction							
	Scale Factor	1	2	4	8	1	2	4	8

Parameter No.	NAME
#1610	4th axis position loop gain(K_p) Setting : 1 = 0.01 (1/s) Setting range : 1 to 20000
#1611	4th axis speed loop gain (K_v) Setting : 1 = 0.1 (1/s) Setting range : 1 to 32767
#1612	4th axis speed loop. integral time constant (T_i) Setting : 1 = 0.01 ms Setting range : 1 to 32767
#1613	
#1614	4th axis speed FF gain (K_{vff}) Setting : 1 = 1% Setting range : 1 to 100
#1615	
#1616	4th axis axial torsion filter time constant(T_n) Setting : 1 = 0.01 ms Setting range : 1 to 32767
#1617	
#1618	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

NAME

#1619	Scale factor for 4th axis monitor board signal selection
-------	--

Setting : See the following table.

Setting range : 1 to 32767

Table CH1 (D/A1) and CH2 (D/A2) Output Signal Selection and Output Scale Factor

Value of #1619		0	1	2	3	1024	1025	1026	1027
CH1 Output (D/A1)	Signal Name	Torque instruction				Motor r/rein.			
	Scale Factor	1	2	4	8	1	2	4	8
CH2 Output (D/A2)	Signal Name	Speed instruction							
	Scale Factor	1	2	4	8	1	2	4	8

#1620	5th axis position loop gain (K_p)
-------	---------------------------------------

Setting : 1 = 0.01 (1/s)

Setting range : 1 to 20000

m

5th axis speed loop gain (K_v)

Setting : 1 = 0.1 (1/s)

Setting range : 1 to 32767

#1622	5th axis speed loopP integral time constant (T_i)
-------	---

Setting : 1 = 0.01 ms

Setting range : 1 to 32767

#1623	
-------	--

#1624	5th axis speed FF gain ($K_{v\,fff}$)
-------	---

Setting : 1 = 1%

Setting range : 1 to 100

#1625	
-------	--

#1626	5th axis axial torsion filter time constant (T_n)
-------	---

Setting : 1 = 0.01 ms

Setting range : 1 to 32767

Parameter No.	NAME
#1627	
#1628	
#1629	Scale factor for 5th axis monitor board signal selection

Setting : See the following table.

Setting range : 1 to 32767

Table CH1 (D/A1) and CH2 (D/A2) Output Signal Selection and Output Scale Factor

Value of #1629		0	1	2	3	1024	1025	1026	1027
CH1 Output (D/A1)	Signal Name	Torque instruction				Motor r/rein.			
	Scale Factor	1	2	4	8	1	2	4	8
CH2 output (D/A2)	Signal Name	Speed instruction							
	Scale Factor	1	2	4	8	1	2	4	8

#1670	
-------	--

#1671	X-axis
-------	--------

#1672	Y-axis
-------	--------

#1673	Z-axis
-------	--------

#1674	4th axis
-------	----------

#1675	5th axis
-------	----------

Torque limit value (+)
 Setting : 1 = 1%
 Setting range : 1 to 32767

9 2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1680	
#1681	X-axis
#1682	Y-axis
#1683	Z-axis
#1684	4th axis
#1685	5th axis
#1690	
#1700	
#1701	X-axis
#1702	Y-axis
#1703	Z-axis
#1704	4th axis
#1705	5th axis

Torque limit value (-)
 Setting : 1 = 1%
 Setting range : -32767 to -1

Backlash offset
 Setting : 1 = 1 pulse (Minimum detecting unit)
 Setting range : 1 to 32767

Note Minimum detection unit = L/PG
 Where,
 L = Displacement per rotation of F motor
 (determined by #1821 and after)
 PG = Number of pulses per rotation of PG
 (determined by #1071 and after)

Parameter No.

NAME

m

#1711	X-axis
#1712	Y-axis
#1713	Z-axis
#1714	4th axis
#1715	5th axis

Backlash time constant
Setting : 1 = 0.01 ms
Setting range : 1 to 32767

#1720	
#1721	
#1722	
#1723	
#1724	
#1725	
#1730	
#1731	
#1732	
#1733	
#1734	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1735	
#1736	
#1737	
#1738	
#1739	
#1800	
#1801	X-axis form compensation coefficient 1
m	Y-axis form compensation coefficient
#1803	Z-axis form compensation coefficient
#1804	4th axis form compensation coefficient
#1805	5th axis form compensation coefficient
	Form compensation coefficient. Setting : 1=0.001 time Setting range : 0 to 32767 Correction constant of followup error relative to servo axis command.
#1806	
#1807	
#1808	
m	
#1810	

Parameter No.

NAME

m

#1812

#1813

m

#1815

#1816

#1817

#1818

#1819

#1820

#1821

X-axis

#1822

Y-axis

#1823

Z-axis

#1824

4th axis

#1825

5th axis

Amount of movement per motor revolution.
Setting : 1 = Minimum detecting unit or 0.001 deg
Setting range : 0 to 999999999

#1826

#1827

#1828

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#1829	
#1830	
#1831	X-axis
#1832	Y-axis
#1833	Z-axis
#1834	4th axis
#1835	5th axis
#1836	
#1837	
#1838	
#1839	
#1840	
#1841	X-axis
m	Y-axis
#1843	Z-axis
#1844	4th axis

Load inertia ($GD^2/4$)
 Setting : 1 = 0.01 kg·cm²
 Setting range : 0 to 32767

Parameter No.	NAME
#1845	5th axis
	Linear scale minimum detection unit (for linear scale type external PG) Setting : 1 = 0.001 μ m (0.000001 deg) Setting range : 0 to 999999999 Number of pulses generated by external PG per motor rotation (for rotary encoder type external PG) Setting : 1 = 1 pulse Setting range : 0 to 999999999
#1846	
#1847	
#1848	
#1849	
#1850	
#1851	
#1852	
#1853	
#1854	
#1855	
#1856	
#1857	
#1858	
#1859	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#2000	ROTJOG	ZRNRPD		FOVAB	PRDOV		SCRDRN	RPDDRN
(Bit No.	7	6	5	4	3	2	1	0)

ROTJOG 0 : Jog speed of rotating shaft is not made 1/10 of linear axis.
1 : Jog speed of rotating shaft is made 1/10 of linear axis.

ZRNRPD 0 : Uses rapid feed until completion of reference point return after power is switched on.
1 : Uses jog until completion of reference point return after power is switched on.

0 :
 1 :

FOVAB 0 : Feed override signal is valid at "1" (NC contact).
1 : Feed override signal is valid at "0" (NC contact).

PRDOV 0 : Sets rapid feed override to the 4 steps of FO, 25, 50 and 100%.
1 : Sets rapid feed override to the 6 steps of FO, F1, F2, 25, 50, 100%.

0 :
 1 :

0 : Dry run is valid during tapping.
 1 : Dry run is invalid during tapping.

RPDDRN 0 : Makes dry run invalid in rapid feed command.
1 : Makes dry run valid in rapid feed command.

Parameter No.	NAME							
#2001								SKPFEO
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

SKPFE0 0 : Feeding speed complies with F code when a skip function.

1: Sets feeding speed to parameter speed when a skip function.

Parameter No.	NAME							
#2002				HOF5	HOF4	HOF3	HOF2	HOF1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

HOF5 0 : Invalidates 5th axis Auto mode handle offset.
1 : Validates 5th axis Auto mode handle offset.

HOF4 0 : Invalidates 4th axis Auto mode handle offset.
1 : Validates 4th axis Auto mode handle offset.

HOF3 0 : Invalidates Z-axis Auto mode handle offset.
1 : Validates Z-axis Auto mode handle offset.

HOF2 0 : Invalidates Y-axis Auto mode handle offset.
1 : Validates Y-axis Auto mode handle offset.

HOF1 0 : Invalidates X-axis Auto mode handle offset.
1 : Validates X-axis Auto mode handle offset.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#2003	HPMUL						HOFSMV	
(Bit No.	7	6	5	4	3	2	1	0)

HPMUL 0 : Sets multiplying factor to 100 when selecting handle multiplying factor of 100.

1 : Uses multiplying factor set by the parameter when selecting a handle multiplying factor of 100 (#2459).

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

HOFSMV 0 : Enables Auto mode handle offset other than when executing a rapid feed command.

1 : Enables Auto mode handle offset only during interpolation.

0 :
 1 :

Parameter No.	NAME							
#2004								FFEED
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

FFEED 0: Feedrate will be F5 at mm/min when 0.001m input and F4. 1 at inch/rein when 0.0001 in input.

1: Feedrate will be F5. 1 at mm/min when 0.001m input and F4. 2 at inch/rein when 0.0001 in input.

Parameter No.

NAME

#2005								
-------	--	--	--	--	--	--	--	--

(Bit No. 7 6 5 4 3 2 1 0)

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2100	
#2101	
#2102	
#2103	
#2104	
#2105	
#2106	
#2107	
#2108	
#2109	
#2110	

Parameter No.

AME

#2111	F1 at I-digit specification
#2112	F2 at I-digit specification
#2113	F3 at I-digit specification
#2114	F4 at I-digit specification
#2115	F5 at I-digit specification
#2116	F6 at I-digit specification
#2117	F7 at I-digit specification
#2118	F8 at I-digit specification
#2119	F9 at I-digit specification

Change in traverse speed when the manual pulse generator is turned one graduation under I-digit specification.
 Setting : 1 = 0.1 mm/rein/pulse
 Setting range : 0 to 255

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2400	Jog feedrate of switch position 0
#2401	Jog feedrate of switch position 1
#2402	Jog feedrate of switch position 2
#2403	Jog feed rate of switch position 3
#2404	Jog feed rate of switch position 4
#2405	Jog feedrate of switch position 5
#2406	Jogfeedrate of switch position 6
#2407	Jog feedrate of switch position 7
#2408	Jog feedrate of switch position 8
#2409	Jog feedrate of switch position 9
#2410	Jog feedrate of switch position 10
#2411	Jog faedrate of switch position 11
#2412	Jog feedrate of switch position 12
#2413	Jog feedrate of switch position 13
#2414	Jog feedrate of switch position 14
#2415	Jog feedrate of switch position 15
#2416	Jog feed rate of switch position 16
#2417	Jog feedrate of switch position 17

Parameter No.	NAME
#2418	Jog feedrate of switch position 18
#2419	Jog feed rate of switch position 19
#2420	Jog feedrate of switch position 20
#2421	Jog feed rate of switch position 21
#2422	Jog feedrate of switch position 22
#2423	Jog feed rate of switch position 23
#2424	Jog feedrate of switch position 24
#2425	Jog feedrate of switch position 25
#2426	Jog feedrate of switch position 26
#2427	Jog feedrate of switch position 27
#2428	Jog feedrate of switch position 28
#2429	Jog feedrate of switch position 29
#2430	Jog feedrate of switch position 30
#2431	Jog feedrate of switch position 31

Feedrate corresponding to the jog feedrate selection switch position.
 Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or 1 °1 deg/min
 Setting range : 0 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Setting example

Switch position	Parameter		Manual continuous feedrate (mm/min)			
	No.	Set value	#2432 = 0 #2433 = 0 #2434 = 0	#2432 = 0 #2433 = 0 #2434 = 10	#2432 = 10 #2433 = 25 #2434 = 0	#2432 = 10 #2433 = 25 #2434 = 10
0	#2400	0	0	0	0	0
1	#2401	1	1	0.1	1	0.1
2	#2402	2	2	0.2	2	0.2
3	#2403	4	4	0.4	4	0.4
4	#2404	6	6	0.6	6	0.6
5	#2405	8	8	0.8	8	0.8
6	#2406	10	10	1.0	10	1.0
7	#2407	12	12	1.2	12	1.2
8	#2408	15	15	1.5	15	1.5
9	#2409	20	20	2.0	20	2.0
10	#2410	25	25	25	25	25
11	#2411	30	30	30	30	30
12	#2412	40	40	40	40	40
13	#2413	50	50	50	50	50
14	#2414	60	60	60	60	60
15	#2415	80	80	80	80	80
16	#2416	100	100	100	100	100
17	#2417	120	120	120	120	120
18	#2418	150	150	150	150	150
19	#2419	200	200	200	200	200
20	#2420	250	250	250	250	250
21	#2421	300	300	300	300	300
22	#2422	400	400	400	400	400
23	#2423	500	500	500	500	500
24	#2424	600	600	600	600	600
25	#2425	800	800	800	8000	8000
26	#2426	1000	1000	1000	10000	10000
27	#2427	1200	1200	1200	12000	12000
28	#2428	1500	1500	1500	15000	15000
29	#2429	2000	2000	2000	20000	20000
30	#2430	2500	2500	2500	25000	25000
31	#2431	3000	3000	3000	30000	30000

Standard
setting

Special setting

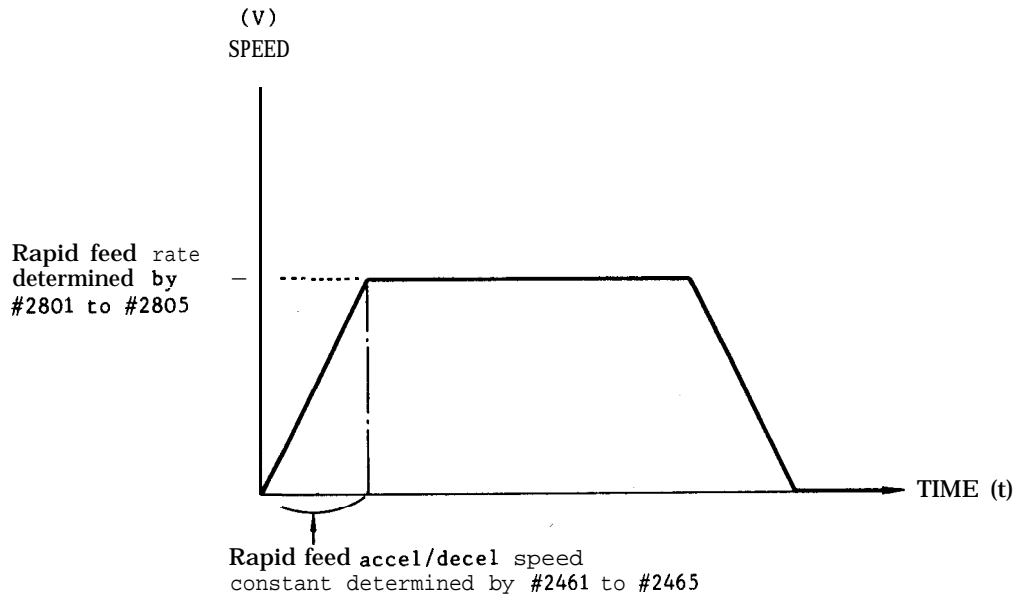
Parameter No.	NAME
#2432	
	Sets numerical value of jog feedrate parameter to $\times 10$ and $\times 100$. Setting : 1 = 1 multiplying Setting range : 1, 10, 100
#2433	
	Specifies switch position from which to multiply under #2432 $\neq 0$. Setting range : 0 to 31
#2434	
	Position specification to multiply the jog feedrate parameter numerical value by 1/10. If #2433 and #2434 are set simultaneously, #2434 has a priority. Setting range : 0 to 31
#2440	
	Speed during execution of skip. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or 1 = 0.001 deg/min Setting range : 0 to 32767
#2441	
#2442	
#2443	
#2444	
	Speed in relation to rapid traverse external deceleration. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or 1 = 0,001 deg/min Setting range : 0 to 32767
#2445	
	Speed in relation to external deceleration of feedrate. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or 1 = 0.001 deg/min Setting range : 0 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2446	
<u>m</u>	FO speed
	Rapid traverse rate override At #2000 D3 = 0 Setting : 1= 1mm/min, 1=0.1 in/rein or 1= deg/min Setting range :0 to 32767 At #2000 D3 = 1 Setting : 1= 1% Setting range :0 to 100
#2448	F1 speed
#2449	F2 speed
	} Rapid traverse rate override. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or 1 = 0.001 deg/min Setting range : 0 to 32767
#2450	
#2451	
#2452	
#2453	
#2454	
#2455	
#2456	
#2457	
#2458	
#2459	
	Multiplying factor of 100 times handle feed. Setting : 1 = X 1 Setting range : 0 to 32767

Parameter No,	NAME
#2460	
#2461	X-axis
#2462	Y-axis
#2463	Z-axis
#2464	4th axis
#2465	5th axis

Accel/decel speed constant for 1st stage rapid feed.
 Setting: 1=1ms Multiples of 4
 Setting range: 4t032767



9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2470	
#2471	Spindle Spindle accel/decel speed time constant. Setting : 1 = 1 ms Multiples of 4 Setting range : 4 to 32767
#2472	Spindle accel/decel speed time constant when spindle gear B is selected. Setting : 1= 1ms Multiples of 4 Setting range :4 to 32767
#2476	
#2477	
#2478	
#2479	
#2480	
#2481	
#2482	
#2483	
#2484	
#2485	

Parameter No.

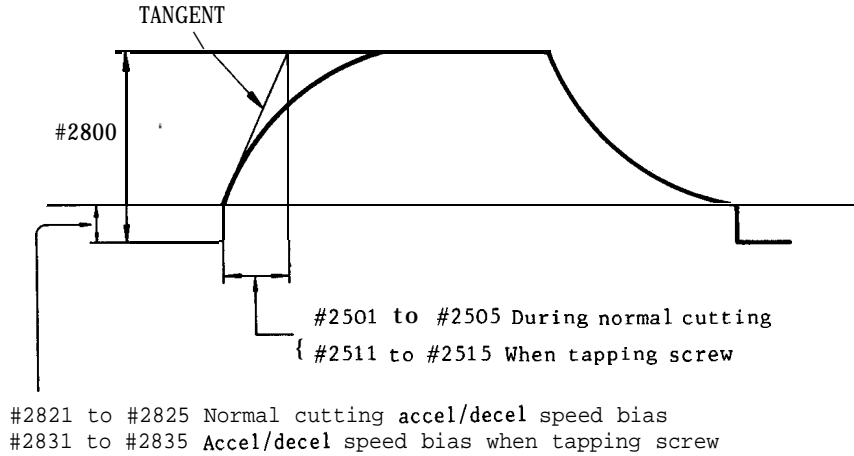
NAME

#2490	
#2491	
#2492	
#2493	
#2494	
#2495	
#2496	
#2497	
#2498	
#2499	
#2500	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2501	X-axis
m	Y-axis
	Z-axis
#2503	4th axis
#2504	5th axis
#2505	

Accel/decel speed constant for normal cutting.
 Setting : 1 = 1 ms
 Setting range : 0 to 32767



Parameter No.

NAME

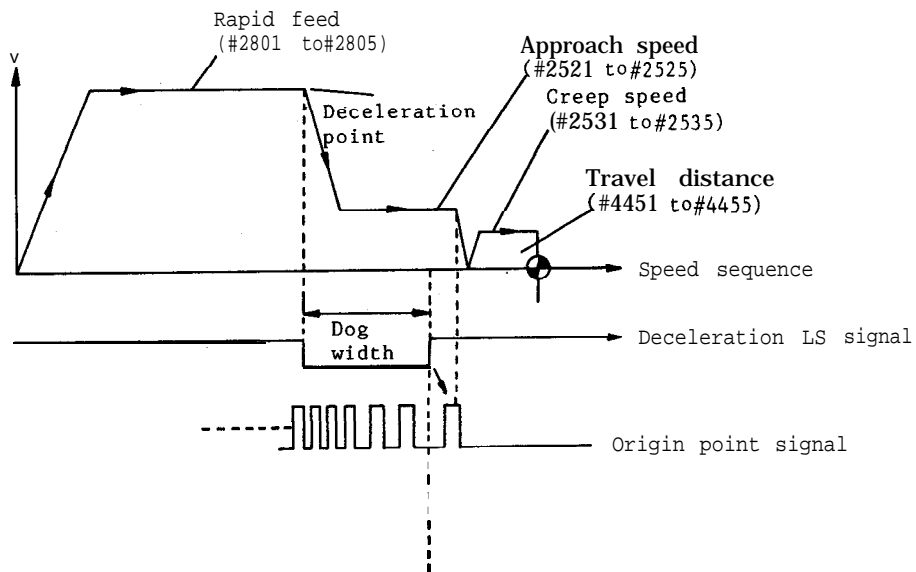
Parameter No.	NAME
#2510	
#2511	X-axis
#2512	Y-axis
#2513	Z-axis
#2514	4th axis
#2515	5th axis

Accel/decel speed time constant when cutting thread and tapping.
Setting : 1 = 1 ms
Setting range : 0 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2520	
#2521	X-axis
#2522	Y-axis
#2523	Z-axis
#2524	4th axis
#2525	5th axis

Reference point return approach speed.
 Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or
 1 = 0.001 deg/min
 Setting range : 0 to 32767



- Reference point return direction: #4002 D0toD4
 Reference point return valid/invalid: #4022 D0toD5

Parameter No

NAME

#2530	
-------	--

#2531	X-axis
-------	--------

#2532	Y-axis
-------	--------

#2533	Z-axis
-------	--------

#2534	4th axis
-------	----------

#2535	5th axis
-------	----------

Reference point return creep speed.
 Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or
 1 = 1 deg/min.
 Setting range : 0 to 32767

#2540	
-------	--

#2541	
-------	--

Spindle index starting speed.
 Setting : 1 = 1 rpm
 Setting range : 1 to 32767

#2542	
-------	--

Spindle index starting speed when spindle gear B is selected.
 Setting : 1=1 rpm
 Setting range :1 to 32767

#2546	
-------	--

Spindle index creeping speed.
 Setting : 1 = 1 rpm
 Setting range : 1 to 32767

#2547	
-------	--

Spindle index creeping speed when spindle gear B is selected.
 Setting : 1=1 rpm
 Setting range :1 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2551	
#2552	
#2553	
#2554	
#2555	
#2556	
#2557	
#2558	
#2559	
#2560	
#2561	X-axis
#2562	Y-axis
#2563	Z-axis
#2564	4th axis
#2565	5th axis

Handle accel/decel speed constant.
 Setting : 1 = 1 ms Multiples of 4
 Setting range : 4 to 32767

Parameter No.

NAME

#2570	
#2571	
#2572	
#2573	
#2574	
#2575	
#2576	
#2577	
#2578	
#2579	
#2580	
	Cutting feed acceleration Setting : 1 = 0.001 m/s ² Multiples of 4 Setting range :125 to 32767
#2581	X-axis Cutting feed accel/decel S-curve degree Setting range : 1 to 6
#2582	
#2583	
#2584	
#2585	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#2590	
#2591	X-axis
#2592	Y-axis
#2593	Z-axis
#2594	4th axis
#2595	5th axis
	Rapid traverse accel/decel S-curve degree Setting range : 0 to 20
#2800	
	Cutting feed maximum speed. (Linear axis) Setting : 1 = 1 mm/min or 1 =0.1 in./min Setting range : 0 to 240000
#2801	X-axis
#2802	Y-axis
#2803	Z-axis
#2804	4th axis
#2805	5th axis
	Rapid traverse rate. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein or 1 = 1 deg/min Setting range : 0 to 240000

Parameter No.	NAME
#2810	Maximum cutting feed speed (rotation axis) Setting : 1 = 1 deg/min. Setting range : 0 to 240000
#2811	
#2812	
#2813	
#2814	
#2815	
#2820	
#2821	X-axis
#2822	Y-axis
#2823	Z-axis
#2824	4th axis
#2825	5th axis

Cutting feed accel/decel speed bias.
Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or
1 = 1 deg/min
Setting range : 0 to 240000

9.2 PARAMETER NUMBER TABLE (Cont'd)

Parameter No.	NAME
#2830	
#2831	X-axis
#2832	Y-axis
#2833	Z-axis
#2834	4th axis
#2835	5th axis
	<p>Accel/decel speed bias when tapping. Setting : 1 = 1 mm/min, 1 = 0.1 in. /rein, or. 1 = 1 deg/min Setting range :0 to 240000</p>
#2860	
	<p>Maximum feed speed of handle linear axis. Setting : 1 = 1 mm/min or 1 = 0.1 in./min Setting range : 0 to 240000</p>
#2861	
	<p>Maximum feeding speed of handle rotating axis. Setting : 1 = 1 deg/min Setting range : 0 to 240000</p>
#2862	
	<p>Speed in circle cutting high speed section. Setting : 1 = 1 mm/min or 1 = 0.1 in. /rein Setting range : 0 to 240000</p>
#2863	
	<p>Lag pulses cramping value for handle. Setting : 1 = 1 pulse Setting range : 0 to 240000</p> <p>Note Clamping process is not executed when "O" is set.</p>
#2864	
	<p>Shift speed of canned cycle G76 and G77. Setting : 1 = 1 mm/min or 1 = 0.1 in. /rein Setting range : 0 to 240000</p>

Parameter No.

NAME

#2865	
	Maximum feedrate of F1 digit (F1-F4) command. Setting : 1 = 1 mm/min, 1 = 0.1 in. /mm, or 1 = 1 deg/min Setting range : 0 to 240000
#2866	
	Maximum feedrate of F1 digit (F5-F9) command. Setting : 1 = 1 mm/min, 1 = 0.1 in. /mm, or 1 = 1 deg/min Setting range : 0 to 240000
#2867	
#2868	
#2869	
#2870	
#2871	
#2872	
#2873	
#2874	
#2875	
#2876	
#2877	
#2878	
#2879	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#3000			POSCHG3	POSCHG2	POSCHG1	ZOFSNEG		
(Bit No.	7	6	5	4	3	2	1	0)

<input type="checkbox"/>	0 :
<input type="checkbox"/>	1 :

<input type="checkbox"/>	0 :
<input type="checkbox"/>	1 :

<input type="checkbox"/> POSCHG3	0 :	Workpiece coordinate system is used to display positions on program check screen.
	1 :	Mechanical coordinate system is used to display positions on program check screen.

<input type="checkbox"/> POSCHG2	0 :	Workpiece coordinate system is used to display positions on offset screen.
	1 :	Mechanical coordinate system is used to display positions on offset screen.

<input type="checkbox"/> POSCHG1	0 :	Mechanical coordinate system is used to display positions on workpiece shift screen and displacement screen.
	1 :	Workpiece coordinate system is used to display positions on workpiece shift screen and displacement screen.

<input type="checkbox"/> ZOFSNEG	0 :	Offset value is added at Z-axis current position display.
	1 :	Offset value is not added at Z-axis current position display.

<input type="checkbox"/>	0 :
<input type="checkbox"/>	1 :

<input type="checkbox"/>	0 :
<input type="checkbox"/>	1 :

Parameter No.

NAME

#3001	STPDSPW	TPDSPW	MPTDSP	TM06			SETUP	ETMDSP
(Bit No.	7	6	5	4	3	2	1	0)

- STPDSPW** 0 : Subtool word display is ineffective.
1 : Subtool word display is effective.
- TPDSPW** 0 : Word display of tool pot invalid.
1 : Word display of tool pot valid.
- MPTDSP** 0 : Intermediate pot display on ATC screen is ineffective.
1 : Intermediate pot display on ATC screen is effective.
- TM06** 0 : If T command and M06 command are in the same block, T command takes precedence.
1 : If T command and M06 command are in the same block, M06 command takes precedence.
- 0 :
 1 :
- 0 :
 1 :
- SETUP** 0 : Setup menu screen is effective.
1 : Setup menu screen is ineffective.
- 0 : External timer display invalid.
1 : External timer display valid.

Parameter No.

NAME

#3002	SRCH2	SRCH1	ABSINC2	ABSINC1	INPSEL	MDISTR1	MDIRST	MDIKEP
(Bit No.	7	6	5	4	3	2	1	0)

- SRCH2** 0 : Operation process address search is made by binary.
1 : Operation process address search is made by character.
- SRCH1** 0 : Editing process address search is made by binary.
1 : Editing process address search is made by character.
- 0 **ABSINC2** 1 : Offset display input is fixed to absolute input.
1 : Offset display input is fixed to incremental input.
- 0 **ABSINC1** 1 : Work shift display input is fixed to absolute input.
1 : Work shift display input is fixed to incremental input.
- INPSEL** 0 : Work shift/offset display is switched by soft keys.
1 : Work shift/offset display is switched by #3000(D4·D5).
- 0 **MDISTR1** 1 : MDI operation starts from current cursor position.
1 : MDI operation starts from beginning of MDI program.
- MDIRST** 0 : Panel reset and external reset clears MDI buffer.
1 : Panel reset or external reset does not clear MDI buffer.
- MDIKEP** 0 : If M02 or M30 is specified, MDI buffer is cleared when MDI operation is completed.
1 : If M02 or M30 is specified, MDI buffer is not cleared when MDI operation is completed.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#3003		ATCOSP	RUNSEL	EDPWOF	INTDSP3	INTDSP2	DSPSEL1	DSPSELO
(Bit No.	7	6	5	4	3	2	1	0)

0 :
1 :

ATCOSP 0 : ATC display setting is made by byte +byte.
1 : ATC display setting is made by word.

RUNSEL 0 : Does not display spindle tool and next tool in operation process program display.
1 : Displays spindle tool and next tool in operation process program display.

EDPWOF 0 : Can reset an alarm confirmation requested program.
1 : Resets an alarm confirmation requested program after troubleshooting.

INTDSP3 0 : Input setting at power ON is to be absolute input.
1 : Input setting at power ON is to be incremental input.

m " / Preparation process display at power ON is to be work coordinate system job.
1 : Preparation process display at power ON is to be tool job.

	D1	D0	
DSPSEL1 DSPSELO	0	0	4-position screen
	0	1	Program check screen
	1	0	Editing screen
	1	1	4-position screen

Parameter No.

NAME

#3004		EDTLOCK2					Unusable	U M09000
(Bit No.	7	6	5	4	3	2	1	0)

0 :

1 :

EDTLOCK2

0 : Enables work coordinate system, work shift value or offset to be changed.

1 : Disables work coordinate system, work shift value or offset to be changed.

0 :

1 :

0 :

1 :

0 :

1 :

0 :

1 :

Unusable

0 : Used by the system. Must be set to 0.

1 :

UM09000

0 : Edit, display and punchout possible of program numbers 09000 to 09999.

1 : Edit, display and punchout inhibit of program numbers 09000 to 09999.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#3005	ONOALT		CLNO	ONNOCHG	M02M99	PRGNO	PONON	MERSIN
(Bit No.	7	6	5	4	3	2	1	0)

- ONOALT** 0 : Does not change registered O-number when O-number in the program is changed in editing display.
1 : Changes registered O-number when O-number in the program is changed in editing display.
- CLNO** 0 : Code “.” of 1S0 codes not converted to “O” during tape input.
1 : Code “.” of 1S0 codes converted to “O” during tape input.
- ONNOCHG** 0 : No automatic edit for O number when program' rename, copy and store are executed.
1 : Edits automatically for O number when program rename, copy and store are executed.
- M02M99** 0 : Does not consider completed M code (M02,M30,M*99) as program end when loading tape.
1 : Considers completed M code (M02,M03,M*99) as program end when loading tape.
- PRGNO** 0 : Considers program No. as a numerical value following o.
1 : Considers program No. as the numerical value following O or N.
- PONON** 0 : Clears program number after power is switched on.
1 : Does not clear program number after power is switched on.
- MERSIN** 0 : Warning issued if there is already a O when loading a tape.
1 : Erases program and writes if there is already a O when loading a tape.



- 1.If NC data peculiar control is not provided at I/O verification, #3005 DO and D2 to D5 are all treated as “O” disregarding parameter values.
- 2.NC data peculiar control parameter (I: Provided, O: Not provided)
1st port input #0012 D7 1st part output #0014 D7
2nd port input #0017 D7 2nd port output #0019 D7

Parameter No.

NAME

#3006	COMPRT3	COMPRT2	COMPRT1	CARA	DNCBUF2	DNCBUF1	COMERR	NCDEV
(Bit No.	7	6	5	4	3	2	1	0)

COMPRT3 COMPRT2 COMPRT1		D7	D6	D5	
	Communication	0	0	0	Protocol 1
	Module	0	0	1	Protocol 2
	Protocol	0	1	1	Protocol 3

CARA 0 : Control character not sent
1 : Control character sent

DNCBUF2 DNCBUF1		D3	D2	
	DNC Operation	0	0	2048 bytes
	Start Buffer	0	1	128 bytes
	Capacity	1	0	256 bytes

COMERR 0 : NC alarm occurs at communication module error.
1 : NC alarm does not occur at communication module error.

NCDEV 0 : Tape operation device is selected by input from I/O port.
1 : Tape operation device is selected by setting.

Parameter No.

NAME

#3007	COMBUF	COMERR						
(Bit No.	7	6	5	4	3	2	1	0)

COMBUF 0 : Communication module does not buffer 150 bytes of DAT binary data after WAT command.
1 : Communication module buffers 150 bytes of DAT binary data after WAT command.

COMERR 0 : As usual.
1 : Only TIME OUT ERROR is not output at #3006 D1 = 1.

0 :
1 :

0 :
1 :

0 :
1 :

0 :
1 :

0 :
1 :

0 :
1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#3008							Unusable	Unusable
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0: For system use.
 1: Always set 0.

0: For system use.
 1: Always set 0.

Parameter No.	NAME
#3106	
#3107	
#3108	

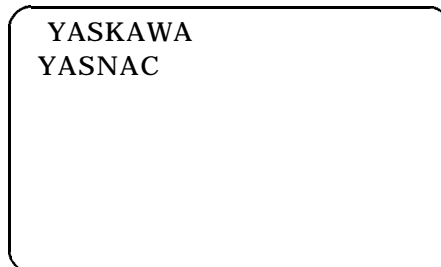
DNC high-speed cutting data start character specification
Setting : ASCII code character can be set for each
parameter #3106, #3107, and #3108.

Parameter No.	NAME
#3400	
#3401	
#3402	
#3403	
#3404	
#3405	
#3406	
#3407	
#3408	
#3409	

First title display line when power is switched on.

Setting : Convert ASCII code to decimal from first character and set.

Setting example : YASKAWA : Y#3400 = 89 YASNAC : Y#3410 = 89
 A#3401 = 65 A#3411 = 65
 S #3402 = 85 S #3412 = 85
 K#3403 = 75 N#3413 = 78
 A#3404 = 65 A#3414 = 65
 W#3405 = 87 C#3415 = 67
 A#3406 = 65 #3416 = 00
 #3407 = 00 #3418 = 00
 #3408 = 00 #3419 = 00
 #3409 = 00



CRT DISPLAY

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#3410	
#3411	
#3412	
#3413	
#3414	
#3415	
#3416	
#3417	
#3418	
#3419	
#3420	

Set second line of title display by the same procedure as in #3400 to #3409 when switching on power.

Place the multiplying factor of the first line in the first digit (Range 1 to 3).
 Place the multiplying factor of the 2nd line in the second digit (Range 1 to 3).
 Uses hexadecimal for the 2 digit value and sets this value after converting to decimal value.
 (Setting example) Set 12 H = 18 when the first line is x 2 and the second line is x 1.

Parameter No.

NAME

#3421

Title display.
Place the first line starting position in the 1st and 2nd digits
(Range 1 to 39).
Place the second line starting position in the 3rd and 4th digits
(Range 1 to 39).
Uses hexadecimal for the 2 digit value and sets this value after
converting to decimal value.
(Setting example) Setting example of 10th character on the first
line and the 12th character on the second line.
Set OCOAH = 3082

#3422

Tool pot display start No.
Setting : Keep memory number
Setting range : 7000 to 7999

#3423

Tool pot display end No.
Setting : Keep memory number
Setting range : 7000 to 7999

#3424

ATC display magazine tool number
Setting : Keep memory number
Setting range : 7000 to 7999

#3425

ATC display spindle tool number
Setting : Keep memory number
Setting range : 7000 to 7999

#3426

ATC display weight pot tool number
Setting : Keep memory number
Setting range : 7000 to 7999

#3427

Subtool pot display start number
Setting : Keep memory number
Setting range : 7000 to 7999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#3428	Subtool pot display end number Setting : Keep memory number Setting range : 7000 to 7999
#3429	
#3430	
#3431	
#3432	
#3433	
#3434	
#3435	
#3436	
#3437	
#3438	
#3439	
#3440	Communication module RDI command PLC keep memory number Setting : Keep memory number Setting range : 7000 to 7999
#3441	Communication module SDO command PLC keep memory number Setting : Keep memory number Setting range : 7000 to 7999

Parameter No.	NAME
#3442	<p>Spindle forward run M-code No. for drawing Setting range :0 to 999</p>
#3443	<p>Spindle reverse run M-code No. for drawing Setting range :0 to 999</p>
#3444	<p>Spindle stop M – code No. for drawing Setting range :0 to 999</p>
#3445	<p>Spindle constant position stop M – code No. for drawing Setting range :0 to 999</p>
#3446	<p>Tool replacement M – code No. for drawing Setting range :0 to 999</p>
#3447	<p>Constant ON M – code No. for drawing Setting range :0 to 999</p>
F	<p>Constant OFF M – code No. for drawing Setting range :0 to 999</p>
#3449	<p>Average time required for M – code command for drawing Setting :1 = lms Setting range :0 to 65535</p>
#3450	<p>Average time required for S – code command for drawing Setting :1 = lms Setting range :0 to 65535</p>
#3451	<p>Average time required for T– code command for drawing Setting :1 = lms Setting range :0 to 65535</p>

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#3460	
#3461	
#3820	
#3821	
#3822	
#3823	
#3824	
#3825	
#3826	
#3827	
m	
#3829	
#3830	0
#3831	0
	Always set 0 to use the system.
#3832	0
#3833	0
	Always set 0 to use the system.
#3834	0

Parameter No.	NAME
#3835	0
	Always set 0 to use the system.
#3836	0
#3837	0
	Always set 0 to use the system.
#3838	0
#3839	0
	Always set 0 to use the system.
#3840	0
#3841	0
	Always set 0 to use the system.
#3842	0
#3843	0
	Always set 0 to use the system.
#3844	0
#3845	0
	Always set 0 to use the system.
#3846	0
#3847	0
	Always set 0 to use the system.
#3848	0
#3849	0
	Always set 0 to use the system.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#3850	0
#3851	0
	Always set 0 to use the system.
#3852	0
#3853	0
	Always set 0 to use the system.
#3854	
#3855	
#3856	
#3857	
#3858	
#3859	

Parameter No.

NAME

#4000		RSTG03	RSTG02	POG08B	POG08A	PONG04	PONG03	RSTG01
(Bit No.	7	6	5	4	3	2	1	0)

0 :
1 :

RSTG03 0 : Sets the G code of the 03 group in accordance with #4000 D1 when resetting.

1 : Sets the G code of the 03 group as the G code of the command immediately prior when resetting.

RSTG02 0 : Sets the G code of the 02 group as G17 when resetting.

1 : Sets the G code of the 02 group as the G code of the command immediately prior when resetting.

POG08B 0 :
1 :

} G code of the 08 group when power is switched on.

D4	D3	
0	00	G49
0	11	G43
1	0	G44

POG08A 0 :
1 :

PONG04 0 : Sets G code of 04 group as G98 when power is switched on.
1 : Sets G code of 04 group as G99 when power is switched on.

PONG03 0 : Sets G code of 03 group as G90 when power is switched on.
1 : Sets G code of 03 group as G91 when power is switched on.

RSTG01 0 : Sets G code of 01 group as GOO when power is switched on and when resetting.
1 : Sets G code of 01 group as GO1 when power is switched on and when resetting.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4001	EDTSTLK	ZRNILK		ZRNG54	PONG54	MIRG28	PONM97	PONM95
(Bit No.	7	6	5	4	3	2	1	0)

- EDTSTLK** 0 : Displays alarm when execution of program is started after editing without resetting.
1 : No alarm when execution of program is started after editing without resetting.
- ZRNILK** 0 : Whether an alarm (0411 to 0415) occurs depends on #4018 DO to D4 when cycle is started without conducting all axes reference point return after turning on power.
1: Alarm not displayed when cycle is started without conducting all axes reference point return after turning on power
- 0 :
 1 :
- ZRNG54** 0 : Does not preset work coordinate system shift when ZRN complete.
1 : Presets work coordinate system shift when ZRN complete.
(G54 to G59 specified reference parameter is #4143)
- PONG54** 0 : Does not preset work coordinate system shift when power is turned on.
1 : Presets work coordinate system shift after power is turned on.
(G54 to G59 specification is #4143)
- MIRG28** 0 : Sets mirror image at the intermediate point of G28 when M95 when power is turned on and when resetting.
1 : Mirror image not set at the intermediate point of G28 when M95 when power is turned on and when resetting.
- PONM97** 0 : Initializes M96 (around circle) when power is turned on and when resetting.
1 : Initializes M97 (linear) when power is turned on and when resetting.
- PONM95** 0 : Initializes M94 (mirror image on) when power is turned on and when resetting.
1 : Initializes M95 (mirror image off) when power is turned on and when resetting.

Parameter No.

NAME

#4002				ZRDR5	ZRDR4	ZRDR3	ZRDR2	ZRDR1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

ZRDR5 0 : 5th axis reference point return direction plus .
1 : 5th axis reference point return direction minus.

ZRDR4 0 : 4th axis reference point return direction plus .
1 : 4th axis reference point return direction minus.

ZRDR3 0 : Z-axis reference point return direction plus .
1 : Z-axis reference point return direction minus .

ZRDR2 0 : Y-axis reference point return direction plus .
1 : Y-axis reference point return direction minus.

ZRDR1 0 : X-axis reference point return direction plus .
1 : X-axis reference point return direction minus.

Parameter No.

NAME

#4003	AZRNHS	MZRNHS						
(Bit No.	7	6	5	4	3	2	1	0)

AZRNHS 0 : Sets auto reference point return to high speed form
after the second time the power is turned on.
1: Sets auto reference point return to low speed form
after the second time the power is turned on.

MZRNHS 0 : Sets manual reference point return to high speed form
after the second time the power is turned on.
1: Sets manual reference point return to low speed form
after the second time the power is turned on.

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME									
#4004				MVILK5	MVILK4	MVILK3	MVILK2	MVILK1		
(Bit No,	7	6	5	4	3	2	1	0)	

0 :
 1 :

0 :
 1 :

0 :
 1 :

MVILK5 0 : Alarm not set when move command other than G28 is executed without once conducting manual or auto reference point return after turning on the 5th axis power supply.

1: Alarm set when move command other than G28 is executed without once conducting manual or auto reference point return after turning on the 5th axis power supply.

MVILK4 0 : Alarm not set when a move command other than G28 is executed without once conducting manual or auto reference point return after the 4th axis power is turned on.

1 : Alarm set when a move command other than G28 is executed without once conducting manual or auto reference point return after the 4th axis power supply is turned on.

MVILK3 0 : Alarm not set when a move command other than G28 is executed without once conducting manual or auto reference point return after turning on the Z-axis power supply.

1: Alarm set if a move command other than G28 is executed without once conducting manual or auto reference point return after turning on the Z-axis power supply.

MVILK2 0 : Alarm not set if a move command other than G28 is executed without once conducting manual or automatic reference point return after turning on the Y-axis power supply.

1: Alarm set if a move command other than G28 is executed without once conducting manual and auto reference point return after turning on the Y-axis power supply.

MVILK1 0 : Alarm not set when a move command other than G28 without once conducting manual or auto referent pent return after turning on the X-axis power supply.

1: Set alarm when a move command other than G28 is executed without once conducting manual or auto reference point return after turning on the X-axis power supply.

Parameter No.

NAME

#4005								
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4006				AUTSUP5	AUTSUP4	AUTSUP3	AUTSUP2	AUTSUP1
(Bif No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

AUTSUP5 0 : Invalidates 5th axis auto coordinate system setting.

1 : Validates 5th axis auto coordinate system setting.

AUTSUP4 0 : Invalidates 4th axis auto coordinate system setting.

1 : Validates 4th axis auto coordinate system setting.

AUTSUP3 0 : Invalidates Z-axis auto coordinate system setting.

1 : Validates Z-axis auto coordinate system setting.

AUTSUP2 0 : Invalidates Y-axis auto coordinate system setting.

1 : Validates Y-axis auto coordinate system setting.

AUTSUP1 0 : Invalidates X-axis auto coordinate system setting.

1 : Validates X-axis auto coordinate system setting.

Reference parameter
Auto coordinate mm system set value #4801 to #4805
Auto coordinate inch system set value #4811 to #4815

Parameter No.

NAME

#4007								
-------	--	--	--	--	--	--	--	--

(Bit No. 7 6 5 4 3 2 1 0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4008	|| S || |					M30RWD2	M30RWD1	RSTRWD
(Bit No.	7	6	5	4	3	2	1	0)

HSRWD 0 : Auto start not at high speed when a high speed rewind.
1 : High speed auto start when a high speed rewind.

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

M30RWD2 0 : Does not rewind at M30 when a second RS-232C YASNAC standard tape reader is connected.
1 : Rewinds at M30 when a second RS-232C YASNAC standard tape reader is connected.

M30RWD1 0 : Does not rewind at M30 when the first RS-232C YASNAC standard tape reader is connected.
1 : Rewinds at M30 when the first RS-232C YASNAC standard tape reader is connected.

RSTRWD 0 : Return execution pointer to beginning of program when resetting externally or from panel.
1 : Do not return execution pointer to beginning of program when resetting externally or from panel.

Parameter No.

NAME

#4009	MCHMST					DPRINT	CVSAVE	G31SKP
(Bit No.	7	6	5	4	3	2	1	0)

MCHMST

0 : MST is forced to end without FHLT lighting when changing to MANUAL mode during auto operation.

1: FHLT lights and MST is saved when changing to MANUAL mode during auto operation.

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

DPRINT

0 : Space is output for the leading O when the high order variable of the DPRINT function is a O.

1: Space is not output for the leading O when the high order variable of the DPRINT function is a O.

CVSAVE

0 : Microprogram common variables #100 to #299 become <blanks> with reset operation.

1: Microprogram common variables #100 to #299 do not become <blanks> with reset operation.

G31SKP

0 : Inputs current value in system variable #5061 to #5065 when executing G31 skip.

1 : Does not input command value in system variable #5061 to #5065 when executing G31 skip.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4010	HSAVE	DSAVE						TLCC
(Bit No.	7	6	5	4	3	2	1	0)

- HSAVE** 0 : Sets reset, reference point return and H code to 00.
1 : Saves reset, reference point return and H code.
- DSAVE** 0 : Sets D code to 00 when resetting.
1 : Saves D code when resetting.
- 0 :
1 :
- 0 :
1 :
- 0 :
1 :
- 0 :
1 :
- 0 :
1 :
- TLCC** 0 : The block to be read next becomes valid when the offset value changes.
1 : The H (D) code to be read next becomes valid when the offset value changes.

Note 1: When #4011 (D1) = 1

0 : When there is an offset with G45 to G48, this is cancelled with reset of G28/G30/G92.

1 : When there is an offset with G45 to G48, this is not cancelled with reset of G28/G30/G92.

Note 2: When #4011(D1) = 0

0: When there is an offset with G45 to G48, this is cancelled with reset of G28/G30/G92.

1: When there is an offset with G45 to G48, this is not cancelled with reset of G28/G30/G92.

Parameter No.

NAME

#4011	MABIN				MANINC	MANAXS	G45HD	
(Bit No.	7	6	5	4	3	2	1	0)

- MABIN** 0 : Manual absolute function not disregarded relative to incremental commands.
1 : Disregards manual absolute function relative to incremental commands.
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- MANINC** 0 : Manual absolute valid when there is an axis command in a block in which no incremental amount is generated.
1 : Manual absolute invalid when there is an axis command in a block in which no incremental amount is generated.
- MANAXS** 0 : Manual absolute valid when there is no axis command in a block in which incremental amount is generated.
1 : Manual absolute invalid when there is no axis command in a block in which incremental amount is generated.
- G45HD** 0 : G45 to G48 offset number command is possible with D code only.
1 : G45 to G48 offset number command is possible with H code only.
- 0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4012	G54PJ	CMPCX3					WSTSGN	WSTQIK
(Bit No.	7	6	5	4	3	2	1	0)

- G54PJ** 0 : Sets "J" as the work coordinate system setting expansion address.
 1 : Sets "P" as the work coordinate system setting expansion address.
- CMPCX3** 0 : Tool radius offset C startup cancel specification I.
 1 : Tool radius offset C startup cancel specification X3.
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- WSTSGN** 0 : Inverts incremental input code to work coordinate system shift amount.
 1 : Does not invert incremental input code to work coordinate system shift amount.
- WSTQIK** 0 : Becomes valid from the next command when the amount of work coordinate system shift is changed.
 1 : Becomes valid from the next block when the amount of work coordinate system shift is changed.

Parameter No.	NAME							
#4013				NKCHK	KCHK	CMPCOFS	CMPCDIR	CMPCAB
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

NKCHK 0 : Corrects automatically with interference check.
1 : Sets alarm with interference check.

KCHK 0 : Without interference check function .
1 : With interference check function.

CMPCOFS 0 : Change in amount of compensation is valid at the terminal point.
1 : Change in amount of compensation is valid at the starting point.

CMPCDIR 0 : Changes direction of compensation (G41/G42) at intersections.
1 : Changes direction of compensation (G41/G42) at the start and end.

CMPCAB 0 : Uses B type compensation method for startup and cancel operations.
1 : Uses A type compensation method for startup and cancel operations.

Parameter No.

NAME

#4016					CANTP2	CANTP1	CANG00	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

CANTP2 0 : Reverses spindle without outputting M05 at the bottom of the hole in canned cycles G74 and G84.
1: Reverses spindle by outputting M05 at the bottom of the hole in canned cycles G74 and G84.

CANTP1 0 : Sets M output in canned cycles G74 and G84 as inversion of M code prior to the canned cycle.
1: Sets M output in canned cycles G74 and G84 as G74 : M03 and G84 : M04.

CANG00 0 : Sets GOO as the positioning operation of the canned cycle.
1: Sets positioning operation of the canned cycle to the currently selected 01 group code (GOO or G01).

0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4017				PITDWL	G76DWL	TPOVR	G76M05	
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

PITDWL 0 : Pitch dwell time #401 invalid.
 1 : Pitch dwell time #401 valid.

G76DWL 0 : G76/G77 dwell time #400 invalid.
 1 : G76/G77 dwell time #400 valid.

TPOVR 0 : Spindle override during execution of G74 and G84 tab
 cycle is fixed during initial read.
 1 : Spindle override during execution of G74 and G84 tab
 cycle is 100% fixed.

G76M05 0 : Does not output M05 before outputting M19 with G76/G77.
 1 : Outputs M05 before outputting M19 with G76/G77.

0 :
 1 :

Parameter No.

NAME

#4018				ZRNILK5	ZRNILK4	ZRNILK3	ZRNILK2	ZRNILK1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

ZRNILK5 0 : Alarm (0415) not set when cycle is started without once conducting manual or auto reference point return after switching on the 5th axis power supply.

1 : Sets alarm (0415) when cycle is started without once conducting manual or auto reference point return after switching on the 5th axis power supply.

ZRNILK4 0 : Alarm (0414) not set when cycle is started without once conducting manual or auto reference point return after switching on the 4th axis power supply.

1 : Sets alarm (0414) when cycle is started without once conducting manual or auto reference point return after switching on the 4th axis power supply.

ZRNILK3 0 : Alarm (0413) not set when cycle is started without once conducting manual or auto reference point return after switching on the Z-axis power supply.

1 : Sets alarm (0413) when cycle is started without once conducting manual or auto reference point return after switching on the Z-axis power supply.

ZRNILK2 0 : Alarm (0412) not set when cycle is started without once conducting manual or, auto reference point return after switching on the Y-axis power supply.

1 : Sets alarm (0412) when cycle is started without once conducting manual or auto reference point return after switching on the Y-axis power supply.

ZRNILK1 0 : Alarm (0411) not set when cycle is started without once conducting manual or auto reference point return after switching on the X-axis power supply

1 : Sets alarm (0411) when cycle is started without once conducting manual or auto reference point return after switching on the X-axis power supply.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME								
#4019									
(Bit No.	7	6	5	4	3	2	1	0)	

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

Parameter No.

NAME

#4020	SMCRO	MMCRO	MPRM	BMCRSBK		Unusable	Unusable	Unusable
(Bit No.	7	6	5	4	3	2	1	0)

- SMCRO** 0 : When multiple S is commanded to the same block in S code macro, the 2nd S command and beyond becomes normal S code.
 1 : When multiple S is commanded to the same block in S code macro, the 2nd S command and beyond becomes argument.
- MMCRO** 0 : When multiple M is commanded to the same block in M code macro, the 2nd M command and beyond becomes normal M code.
 1 : When multiple M is commanded to the same block in M code macro, the 2nd M command and beyond becomes argument.
- MPRM** 0 : No argument is specified in M code macro program.
 1 : Argument is specified in M code macro program.
- BMCRSBK** 0 : Validates single-block switch at execution of B macro.
 1 : Invalidates single-block switch at execution of B macro.
- 0 :
 1 :
- Unusable** 0 : Always set 0 to use system.
 1 :
- Unusable** 0 : Always set 0 to use system.
 1 :
- Unusable** 0 : Always set 0 to use system.
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4021								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

Parameter No.	NAME							
#4022				ZRNE5	ZRNE4	ZRNE3	ZRNE2	ZRNE1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

ZRNE5 0 : 5th axis reference point return invalid (Alarm 241 occurs).
1 : 5th axis reference point return valid.

ZRNE4 0 : 4th axis reference point return invalid (Alarm 241 occurs).
1 : 4th axis reference point return valid.

ZRNE3 0 : Z-axis reference point return invalid (Alarm 241 occurs).
1 : Z-axis reference point return valid.

ZRNE2 0 : Y-axis reference point return invalid (Alarm 241 occurs).
1 : Y-axis reference point return valid.

ZRNE1 0 : X-axis reference point return invalid (Alarm 241 occurs).
1 : X-axis reference point return valid.

Parameter No.	NAME							
#4023								
(Bit No.	7	6	5	4	3	2	1	0)

- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :

Parameter No.	NAME							
#4024				PLBK5	PLBK4	PLBK3	PLBK2	PLBK1
(Bit No.	7	6	5	4	3	2	1	0)

- 0 :
 1 :
- 0 :
 1 :
- 0 :
 1 :
- PLBK5** 0 : 5th axis playback write-in invalid.
1 : 5th axis playback write-in valid.
- PLBK4** 0 : 4th axis playback write-in invalid.
1 : 4th axis playback write-in valid.
- PLBK3** 0 : Z-axis playback write-in invalid.
1 : Z-axis playback write-in valid.
- PLBK2** 0 : Y-axis playback write-in invalid.
1 : Y-axis playback write-in valid.
- PLBK1** 0 : X-axis playback write-in invalid.
1 : X-axis playback write-in valid.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#4025	PLBKT	PLBKS	PLBKF					
(Bit No.	7	6	5	4	3	2	1	0)

PLBKT 0: Playback T write-in invalid.
1 : Playback T write-in valid.

PLBKS 0 : Playback S write-in invalid.
1: Playback S write-in valid.

PLBKF 0 : Playback F write-in invalid.
1: Playback F write-in valid.

0:
1:

0:
1:

0:
1:

0:
1:

0:
1:

Parameter No.	NAME
#4026	

#4027	
-------	--

#4028	
-------	--

Parameter No.	NAME							
#4029							TLSKP	OFSHD
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

TLSKP 0: Makes currently selected tool group in the skipped state by tool life control.

1: Makes specified tool group in the skipped state by tool life control.

OFSHD 0: Use offset memory for H/D in common,
1: Use offset memory for H/D separately.

Parameter No.	NAME
#4030	
#4031	
#4032	
#4033	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME-
#4100	EIA code punch pattern #
#4101	EIA code punch pattern [
#4102	EIA code punch pattern]
#4103	EIA code punch pattern *
#4104	EIA code punch pattern =
#4105	EIA code punch pattern (
#4106	EIA code punch pattern)
m	EIA code punch pattern ,
#4108	EIA code punch pattern '
#4109	EIA oode punch pattern "
	Hole pattern of special character EIAused inuser macro. Setting: Considers hole pattern in binary andconverts thisto decimal value.
#4110	<p>Tool life management group command T-number offset. Setting : T command value-#4110 x 1000 = tool life management group Example : When 1 is set for #4110, TIOO1 to T1015 are used as tool life management T commands. Setting range : 0 to 9</p>
#4111	
#4112	
#4113	
#4114	

Parameter No.

NAME

#4115	
#4116	
#4117	
#4118	
#4119	
#4120	
#4121	
#4122	
#4123	
#4124	
#4125	
#4126	
#4127	
#4128	
#4129	
#4130	
#4131	
#4132	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4133	
#4134	
#4135	
#4136	
#4137	
#4138	
#4139	
#4140	
#4141	
#4142	
#4143	<p>Coordinate system specification when conducting work coordinate system shifts during reference point return when power is switched on. Setting range : 54 to 59</p>
#4144	E 1A code punch pattern <
#4145	EIA code punch pattern >
#4146	EIA code punch pattern ;
	<p>EIA code punch for special characters used in macro program Setting : Decimal value converted from binary value represented by punch pattern</p>
#4147	
#4148	

Parameter No.	NAME
#4149	
#4150	
#4151	
#4152	
#4153	
#4154	
#4155	
#4156	
#4157	
#4158	
#4159	
#4160	

Specification of high speed operating mode.

Setting : 0: Unconverted
1 : Conversion in specified sections
2: Automatic conversion

Setting range : 1 to 2

#4161	High speed conversion start command code (input with ASCII) when the operating mode of high speed mode operation is converted for specified sections. (Example) HON #4161 72 #4162 79 #4163 78
#4162	
#4163	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
<u>m</u>	High speed conversion end command code (input with ASCII) when the operating mode of high speed mode operation is converted for specified sections. (Example) HOF #4164 72 #4165 79 #4166 70
#4165	
#4166	
#4167	Segment type of high speed mode operation Setting : 1 1ms 2 2ms 4 4ms Setting range : 4
#4168	
#4169	
#4170	
#4171	
#4172	
#4173	
#4174	
#4175	
#4176	
#4177	
#4178	

Parameter No.

NAME

#4179	
#4180	
#4181	
#4182	
#4183	
#4184	
#4185	
#4186	
#4187	
#4188	
#4189	
#4190	
#4191	
#4192	
#4193	
#4194	
#4195	
#4196	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4197	
#4198	
#4199	
#4400	(1)
#4401	(2)
#4402	(3)
#4403	(4)
#4404	(5)
#4405	")
#4406	(7)
#4407	(8)
#4408	")
#4409	(10)
#4410	
#4411	
#4412	
#4413	
#4414	

Advance read stop M code.
Setting range : 0 to 999

Parameter No.	NAME
#4415	
#4416	
#4417	
#4418	
#4419	
#4420	
#4421	
#4422	
#4423	
#4424	
#4425	
#4426	
#4427	
#4428	
#4429	
#4430	
#4431	
#4432	
#4433	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4434	
#4435	
#4436	
#4437	
#4438	
#4439	
#4440	
#4441	
#4442	
#4443	
#4444	
#4445	
#4446	
<u>m</u>	
#4448	
#4449	
#4450	

Minute circular skip value of nose R and diameter compensation.
 Setting : 1 = Minimum input unit.
 Setting range : 0 to 32767

Parameter No.

NAME

#4451	X-axis
#4452	Y-axis
#4453	Z-axis
#4454	4th axis
#4455	5th axis

Reference point return travel distance.
 Setting : 1 = 0.001 mm, 0.0001 in or 0.001 deg
 Setting range : 0 to 32767

#4460	
-------	--

#4461	X-axis
#4462	Y-axis
#4463	Z-axis
#4464	4th axis
#4465	5th axis

Override at G60.
 Setting : 1 = 0.001.mm, 0.0001 in or 0.001 deg
 Setting range : 0 to 32767

#4470	
-------	--

#4471	
-------	--

#4472	
-------	--

#4473	
-------	--

#4474	
-------	--

#4475	
-------	--

9.2 PARAMETER NUMBER TABLE (Cent'dJ

Parameter No.	NAME
#4480 (1)	G code macro call. Setting range : 1 to 999
#4481 (2)	
#4482 (3)	
#4483 (4)	
#4484 (5)	
#4485 (6)	
#4486 (7)	
#4487 (8)	
#4488 (9)	
#4489 (10)	

Parameter	No.
#4490	(11)
#4491	(12)
#4492	(13)
#4493	(14) I
#4494	(15)
#4495	I (16)
#4496	(17)
#4497	(18)
#4498	(19)
#4499	(20)
#4500	(21)
#4501	(22)
#4502	(23)
#4503	(24)

NAME

G code macro call.
Setting range : 1 to 999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

NAME

#4504	(1)
#4505	(2)
#4506	(3)
#4507	(4)
#4508	(5)
#4509	(6)
#4510	(7)
#4511	(8)
m	(9)
#4513	(10)
#4514	(11)
#4515	(12)
#4516	(13)
#4517	(14)
#4518	(15)
#4519	(16)

M code macro call.
Setting range : 1 to 999

Parameter No.

NAME

#4520 (17)

#4521 (18)

#4522 (19)

#4523 (20)

#4524 (21)

#4525 (22)

#4526 (23)

#4527 (24)

M code macro call.
Setting range : 1 to 999

#4528

#4529

#4530

#4531

#4532

#4533

#4534

#4535

#4536

#4537

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4538	
#4539	
#4551	X-axis
#4552	Y-axis
#4553	Z-axis
#4554	4th axis
#4555	5th axis
Reference point return phase C shift amount Setting 1 = 0.001 mm, 0.000 in or 0.001 deg Setting range : -32767 to 32767	
#4800	
#4801	X-axis
#4802	Y-axis
#4803	Z-axis
#4804	4th axis
#4805	5th axis
Automatic coordinate system setting value when inputting in mm. Setting : 1 = Minimum input unit of millimeter system Setting range : 0 to *999999999	
#4810	
#4811	X-axis
#4812	Y-axis
#4813	Z-axis
#4814	4th axis
#4815	5th axis
Automatic coordinate system setting value when inputting in inch. Setting : 1 = Minimum input unit of inch system Setting : 0 to *999999999	

Parameter No.

NAME

#4820	
	Allowable range in circular setting. Setting : 1 = Minimum input unit Setting range : 0 to \pm 999999999
#4821	
#4822	
#4823	
#4824	
#4825	
#4830	
#4831	
#4832	
#4833	
#4834	
#4835	
#4836	
#4837	
#4838	
#4839	

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.

NAME

#4840	(1)
#4841	(2)
#4842	(3)
#4843	(4)
#4844	(5)
#4845	(6)
#4846	(7)
#4847	(8)
#4848	(9)
#4849	(10)

G code macro call program No.
Setting range : 1 to 99999

Parameter No.

NAME

#4850	(11)
#4851	(12)
#4852	(13)
#4853	(14)
#4854	(15)
#4855	(16)
#4856	(17)
#4857	(18)
#4858	(19)
#4859	(20)
#4860	(21)
#4861	(22)
#4862	(23)
#4863	(24)

G code macro call program No.
Setting range : 1 to 99999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4864	(1)
#4865	(2)
#4866	(3)
#4867	(4)
#4868	(5)
#4869	(6)
#4870	(7)
#4871	(8)
#4872	(9)
#4873	(10)
#4874	(11)
#4875	(12)
#4876	(13)
#4877	(14)
#4878	(15)
#4879	(16)

M code macro call program No.
Setting range : 1 to 99999

Parameter No.

NAME

#4880	(17)
#4881	(18)
#4882	(19)
#4883	(20)
#4884	(21)
#4885	(22)
#4886	(23)
#4887	(24)

M code macro call program No.
Setting range : 1 to 99999

#4888	
-------	--

S code macro call specification.
Setting range : 0 or called program number

#4889	
-------	--

T code macro call specification.
Setting range : 0 or called program number

#4890	
-------	--

B code macro call specification.
Setting range : 0 or called program number

#4891	
-------	--

#4892	
-------	--

#4893	
-------	--

#4894	
-------	--

#4895	
-------	--

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#4896	
#4897	
#4898	
#4899	

Parameter No.	NAME							
#5000						ESPRST	RWDOUT	STUD
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

ESPRST 0 : RST output not set to ON when ESP input is ON.
1 : Sets RST to ON when ESP input is ON.

RWDOUT 0 : Outputs rewind when setting NC program to rewind by means of reset and rewind signals.
1 : Outputs rewind when setting NC program to rewind by means of reset and rewind signals.

STUD 0 : Cycle start is valid when the cycle start signal changes from "0" to "1".
1 : Cycle start is valid when the cycle start signal changes from "1" to "0".

Parameter No.	NAME							
#5001								EXDBND
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

EXDBND 0 : Sets data type of external data input as BIN.
1 : Sets data type of external data input as BCD.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#5002								
(Bit No.	7	6	5	4	3	2	1	0)

- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:

Parameter No.	NAME							
#5003								
(Bit No.	7	6	5	4	3	2	1	0)

- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:
- 0:
 1:

Parameter No.

NAME

#5004								
(Bit No.	7	6	5	4	3	2	1	0)

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

Parameter No.

NAME

#5005								
(Bit No.	7	6	5	4	3	2	1	0)

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

	0:
	1:

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#5006	
#5007	
#5008	
#5009	

Parameter No.	NAME																
#5010	<table border="1"> <tr> <td>SKIPSEL</td> <td>FC230</td> <td>DINMON</td> <td></td> <td></td> <td></td> <td></td> <td>SKIPPE1</td> </tr> <tr> <td>(Bit No. 7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0)</td> </tr> </table>	SKIPSEL	FC230	DINMON					SKIPPE1	(Bit No. 7	6	5	4	3	2	1	0)
SKIPSEL	FC230	DINMON					SKIPPE1										
(Bit No. 7	6	5	4	3	2	1	0)										

SKIPSEL 0: Enable manual skip function.
1: Enable skip B function.

FC230 0: Uses FC230B for motion monitor module.
1: Uses FC230 for motion monitor module.

DINMON 0: Turns on the sensor by changing direction monitor from "0" to "1".
1: Turns on the sensor by changing direction monitor from "1" to "0".

0:
1:

0:
1:

0:
1:

0:
1:

SKIPPE1 0: 1st skip signal invalid.
1: 1st skip signal valid.

Parameter No.	NAME							
#5011								SKIPD1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

SKIPD1 0 : 1 st skip signal valid when changed from " 1" to "0".
1 : 1 st skip signal valid when changed from "0" to "1".

Parameter No.	NAME							
#5012								ESVON
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

ESVON 0 : Servo power goes on when the POWER INPUT button is pressed.
1 : Servo power is turned on by an external input.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#5013						OFSSEL		OFSXY
(Bit No.	7	6	5	4	3	2	1	0)

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

OFSSEL 0: Validates TLM when both offset printer and TLM are effective.
1: Validates offset printer when both offset printer and TLM are effective.

0:
 1:

OFSXY 0: Tool measurement at X-axis direction in offset presetter.
1: Tool measurement at Y-axis direction in offset presetter.

Parameter No.	NAME
#5014	
#5015	
#5016	
#5017	
#5018	
#5019	

Parameter No.

NAME

#5400		
		Time from base block cancellation to brake release after servo power is turned on. Setting : 1 = 1 ms Setting range : 0 to 32767
#5401	X-axis	Time from falling of ESP to OFF of base block. Setting : 1 = 1 ms Setting range : 0 to 32767
#5402	Y-axis	
#5403	Z-axis	
#5404	4th axis	
#5405	5th axis	
#5410		Time from sending of M, S, T code to sending of MF, SF and TF. Setting : 1 = 1 ms (Input multiple of 4) Setting range : 0 to 32767
#5411		
#5412		
#5413		
#5414		
#5415		
#5416		
#5417		
#5418		
#5419		

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#5420	<div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Software switch input keep memory starting No. Setting range :7000 to 7999</p>
#5421	<div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Software switch output keep memory starting No. Setting range :7000 to 7999</p>
#5422	<div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Program restart switch keep memory No. Setting range :7000 to 7999</p>
#5423	<div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Manual skip signal keep memory No. Setting range :7000 to 7999</p>

Parameter No.	NAME							
#6000				PIT5	PIT4	PITZ	PITY	PITX
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

PIT5 0 : Pitch error invalid (5th axis).
1: Pitch error valid (5th axis).

PIT4 0 : Pitch error, invalid (4th axis).
1: Pitch error valid (4th axis).

PITZ 0 : Pitch error invalid (Z-axis).
1: Pitch error valid (Z-axis).

PITY 0 : Pitch error invalid (Y-axis).
1: Pitch error valid (Y-axis).

PITX 0 : Pitch error invalid (X-axis).
1: Pitch error valid (X-axis).

Parameter No.	NAME							
#6001								PERIAB
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

PERIAB 0 : Incremental setting of pitch error offset amount.
1: Absolute setting of pitch error offset amount.

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#6002				STL5	ST L4	STL3	STL2	STL1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

STL5 0 : Checks 5th-axis 1st inhibit area stored stroke limit.
1: 5th-axis 1st inhibit area stored stroke limit not checked.

STL4 0 : Checks 4th axis 1st inhibit area stored stroke limit.
1: 4th axis 1st inhibit area stored stroke limit not checked.

STL3 0 : Checks Z-axis 1st inhibit area stored stroke limit.
1: Z-axis 1st inhibit area stored stroke limit not checked.

STL2 0 : Checks Y-axis 1st inhibit area stored stroke limit.
1: Y-axis 1st inhibit area stored stroke limit not checked.

STL1 0 : Checks X-axis 1st inhibit area stored stroke limit.
1: X-axis 1st inhibit area stored stroke limit not checked.

Parameter No.	NAME							
#6003								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

Parameter No.

NAME

#6004				RSTL5	RSTL4	RSTL3	RSTL2	RSTL1
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

RSTL5 0 : No stroke check when 5th axis rotating.
1 : Stroke checked when 5th axis rotating.

RSTL4 0 : No stroke check when 4th axis rotating.
1 : Stroke checked when 4th axis rotating.

RSTL3 0 : No stroke check when Z-axis rotating.
1 : Stroke checked when Z-axis rotating.

RSTL2 0 : No stroke check when Y-axis rotating.
1 : Stroke checked when Y-axis rotating.

RSTL1 0 : No stroke check when X-axis rotating.
1 : Stroke checked when X-axis rotating.

Parameter No.

NAME

#6005								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

0 :
 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#6006				DTCH5	DTCH4	DTCHZ	DTCHY	DTCHX
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

DTCH5 O : OFF when 5th axis detached.
1: ON when 5th axis detached.

DTCH4 O : OFF when 4th axis detached.
1: ON when 4th axis detached.

DTCHZ O : OFF when Z-axis detached.
1: ON when Z-axis detached.

DTCHY O : OFF when Y-axis detached.
1: ON when Y-axis detached.

DTCHX O : OFF when X-axis detached.
1: ON when X-axis detached.

Parameter No.	NAME							
#6007								
(Bit No.	7	6	5	4	3	2	1	0)

0 :
 1 :

0 :
 1 :

0 :
 1 :

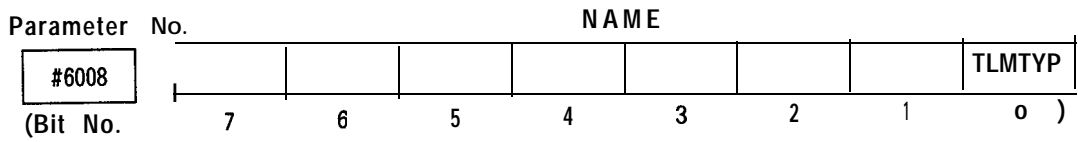
0 :
 1 :

0 :
 1 :

0 :
 1 :

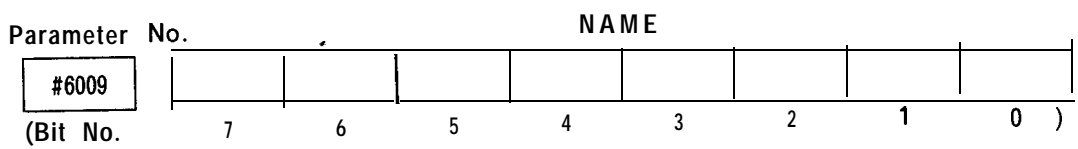
0 :
 1 :

0 :
 1 :



- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :

TLMTYP 0 : TLM measurement considered measurement of amount of movement.
 1 : TLM measurement considered measurement of residual amount.



- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :
- 0 :
- 1 :

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#6100	
#6101	X-axis
#6102	Y-axis
#6103	Z-axis
#6104	4th axis
#6105	5th axis
#6110	
#6111	(1)
#6112	(2)
#6113	(3)
#6114	(1)
#6115	(2)
<u>m</u>	(3)
#6117	(1)
#6118	(2)
#6119	(3)

<p>Pitch error offset multiplying factor. Setting range : 0 to 3</p>	<p>2nd stroke limit check axis No. Setting range : 0 to 3</p> <p style="text-align: right;">1 = X-axis 2 = Y-axis 3 = Z-axis</p>
<p>3rd stroke limit check axis No. Setting range : 0 to 3</p> <p style="text-align: right;">1 = X-axis 2 = Y-axis 3 = Z-axis</p>	<p>4th stroke limit check axis No. Setting range : 0 to 3</p> <p style="text-align: right;">1 = X-axis 2 = Y-axis 3 = Z-axis</p>

Parameter No.

NAME

#6120	(1)	} 5th stroke limit check axis No. 1 = X-axis Setting range : 0 to 3 2 = Y-axis 3 = Z-axis
#6121	(2)	
#6122	(3)	
#6123		
#6124		
#6125		
#6126		
#6127		
#6128		
#6129		
#6130		
#6131		
#6132		
#6133		
#6134		
#6135		
#6136		
#6137		

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#6138	
#6139	
#6400	
#6401	X-axis
#6402	Y-axis
#6403	Z-axis
m	4th axis
#6405	5th axis

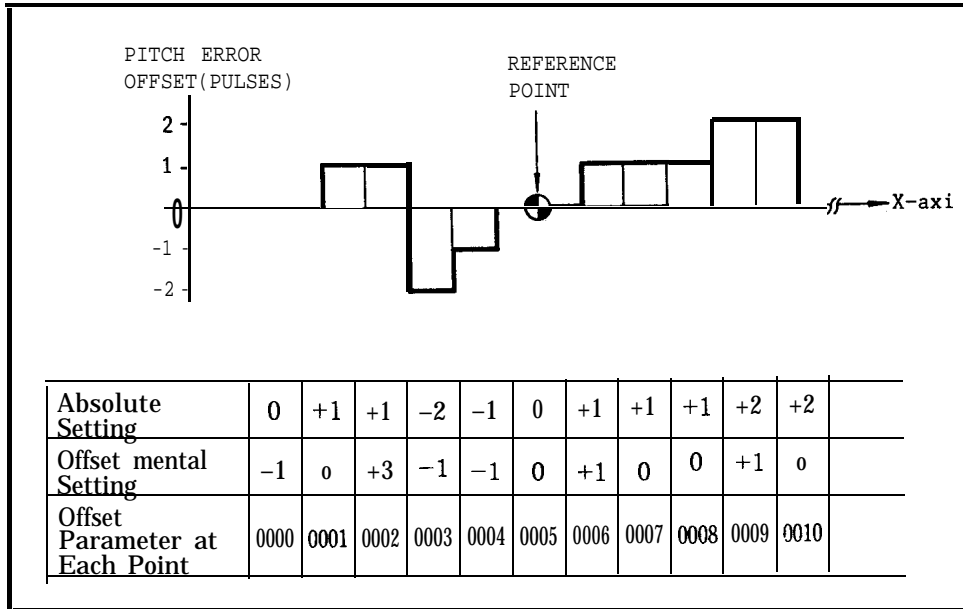
Pitch error start memory No.

Setting example of pitch error start memory No.

No.	Item	Axis	Parameter #	Details, remarks
①	Pitch error offset	x to β	#6000 DO to #6000 D4	"0" = Invalid "1" = Valid
②	Intercal of offset	x to β	#6801 to #6805	Over 10000 "1" = 1 Pulse
③	ABS/INC	/	#6001 DO	"0" = Incremental setting "1" = Absolute setting
④	Origin point No. of offset	x to β	#6421 to #6425	-
⑤	Max. point of offset	x to β	#6411 to #6415	
⑥	Min. point of offset	x to β	#6401 to #6405	
⑦		x to β	P0000 to P1151	) to ± 127 "1" = 1 Pulse
⑧	Scale of offset	x to β	#6101 to #6105	) to 3 "1" = Tool life scale

(Setting example)

A write example of pitch error offset in the X-axis is shown below.



Example of Writing to X-axis

9.2 PARAMETER NUMBER TABLE (Cent'd)

When conditions are as follows in the diagram, the parameters will be set as shown below.

Conditions

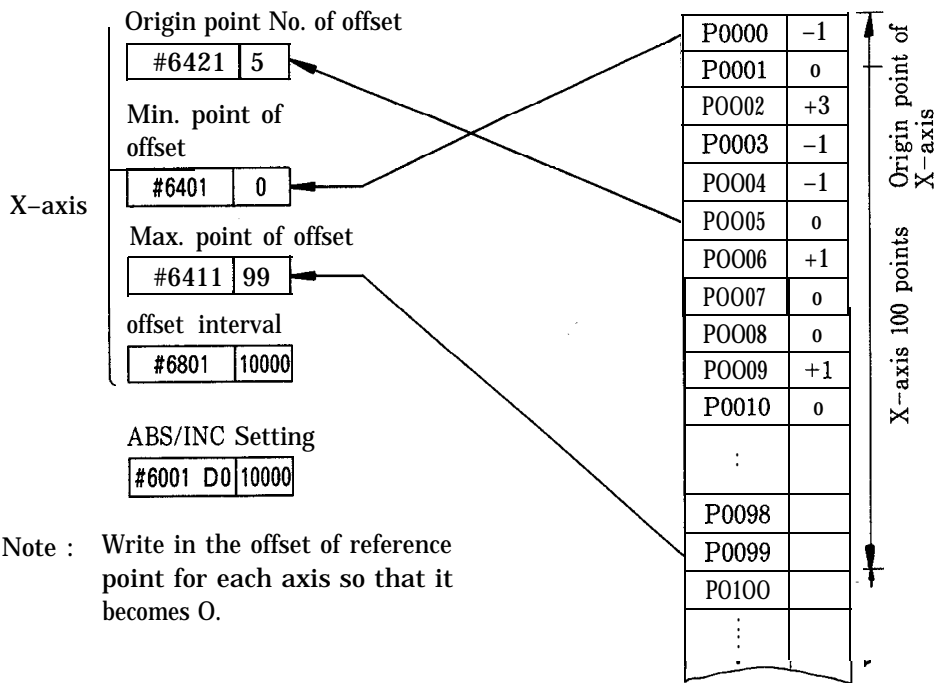
Offset interval : 10000 pulse

ABC/INC : Incremental

Offset points of X-axis : 100 points

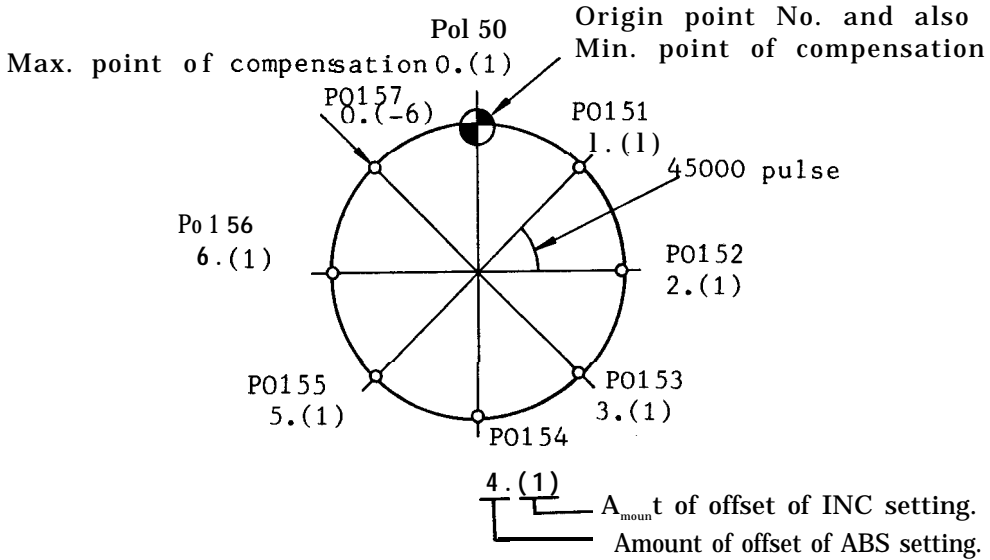
< Parameter setting >

Offset amount parameter of each point



< Pitch error setting example of rotating axis >

When the offset interval is 45000 pulses (each rotation divided into 8 parts) as shown in the diagram, each parameter is set as follows.



		Offset amount parameter of each point		
		Parameter	ABS setting	INC setting
4th axis of rotating axes	Origin point No. offset	P0150	0	0
	Min. point of offset	P0151	1	1
	Max. point of offset	P0152	2	1
		P0153	3	1
		P0154	4	1
		P0155	5	1
		P0156	6	1
	Interval of offset	P0157	0	-6

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#6410	
#6411	X-axis
#6412	Y-axis
#6413	Z-axis
#6414	4th axis
#6415	5th axis
	Pitch error end memory No.
#6420	
#6421	X-axis
#6422	Y-axis
#6423	Z-axis
#6424	4th axis
#6425	5th axis
	Reference point memory No. with pitch error offset.
#6430	
#6431	
#6432	
#6433	
#6434	

Parameter No.

NAME

#6435	
#6436	
#6437	
#6438	
#6439	
#6440	
#6441	
#6442	
m	
#6444	
#6445	
#6800	
#6801	X-axis
#6802	Y-axis
#6803	Z-axis
#6804	4th axis
#6805	5th axis

Pitch error offset interval.
Setting : 1 = 0.001 mm, 0.0001 in. or 0.001 deg
Setting range : 0 to 999999999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME	
#6810		
#6811	X-axis	<p>2nd reference point position. Setting : 1 = 0.001 mm, 0.0001 in. or 0.001 deg Setting range : 0 to ± 999999999</p>
#6812	Y-axis	
#6813	Z-axis	
#6814	4th axis	
#6815	5th axis	
#6820		
m	X-axis	<p>3rd reference point position. Setting : 1 = 0.001 mm, 0.0001 in. or 0.001 deg Setting range : 0 to *999999999</p>
#6822	Y-axis	
#6823	Z-axis	
#6824	4th axis	
#6825	5th axis	
#6830		
#6831	X-axis	<p>4th reference point position. Setting : 1 = 0.001 mm, 0.0001 in. or 0.001 deg Setting range : 0 to *999999999</p>
#6832	Y-axis	
#6833	Z-axis	
#6834	4th axis	
#6835	5th axis	

Parameter No.

NAME

#6840

Length direction reference value Xo in offset presetter measurement.

Setting : 1 = 0.001mm or 0.0001 in.

Setting range : 0 to ± 999999999

#6841

Radius direction reference value Zo in offset presetter measurement.

Setting : 1 = 0.001 mm or 0.0001 in.

Setting range : 0 to ± 999999999

#6842

Hz+

#6843

Hz-

#6844

Dx+

#6845

Dx-

#6846

Z-

Probe radius for work presetter measurement.

Setting : 1 = 0.001 mm or 0.0001 in.

Setting range : 0 to *999999999

#6847

Work setter measurement possible retraction amount.

Setting : 1 = 0.001 mm or 0.0001 in.

Setting range : 0 to ± 999999999

#6848

Work setter measurement separation amount.

Setting : 1 = 0.001 mm or 0.0001 in.

Setting range : 0 to ± 999999999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#6861	X-axis
#6862	Y-axis
#6863	Z-axis
#6864	4th axis
#6865	5th axis
	Pitch error offset stroke (maximum) Setting : 1 = 0.001 mm or 0.001 deg Setting range : 0 to *999999999
#6871	X-axis
#6872	Y-axis
#6873	Z-axis
#6874	4th axis
#6875	5th axis
	Pitch error offset stroke (minimum) Setting : 1 = 0.001 mm or 0.001 deg Setting range : 0 to *999999999
#6881	X-axis
#6882	Y-axis
#6883	Z-axis
#6884	4th axis
#6885	5th axis
	Pitch error offset reference position Setting : 1 = 0.001 mm or 0.001 deg Setting range : 0 to *999999999

Parameter No.	NAME
#6900	
#6901	X-axis
#6902	Y-axis
#6903	Z-axis
#6904	4th axis
#6905	5th axis
#6910	
#6911	X-axis
#6912	Y-axis
#6913	Z-axis
#6914	4th axis
#6915	5th axis

Stroke limit plus.
Setting: 1 = 0.001 mm, 0.0001 in. or 0.001 deg
Setting range : 0 to ± 999999999

Stroke limit minus.
Setting : 1 = 0.001 mm, 0.0001 in. or 0.001 deg
Setting range : 0 to ± 999999999

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME							
#8000	ZRNST8	ZRNST7	ZRNST6	ZRNST5	ZRNST4	ZRNSTZ	ZRNSTY	ZRNSTX
(Bit No.	7	6	5	4	3	2	1	0)

Reference
point setting
completed axes

ZRNST8	0: Absolute position detecting function 8th axis reference point not completed. 1: Absolute position detecting function 8th axis reference point completed.
ZRNST7	0: Absolute position detecting function 7th axis reference point not completed. 1: Absolute position detecting function 7th axis reference point completed.
ZRNST6	0: Absolute position detecting function 6th axis reference point not completed. 1: Absolute position detecting function 6th axis reference point completed.
ZRNST5	0: Absolute position detecting function 5th axis reference point not completed. 1: Absolute position detecting function 5th axis reference point completed.
ZRNST4	0: Absolute position detecting function 4th axis reference point not completed. 1: Absolute position detecting function 4th axis reference point completed.
ZRNSTZ	0: Absolute position detecting function Z-axis reference point not completed. 1: Absolute position detecting function Z-axis reference point completed.
ZRNSTY	0: Absolute position detecting function Y-axis reference point not completed. 1: Absolute position detecting function Y-axis reference point completed.
ZRNSTX	0: Absolute position detecting function X-axis reference point not completed. 1: Absolute position detecting function X-axis reference point completed.

Parameter No.	NAME							
#8001	POSER8	POSER7	POSER6	POSER5	POSER4	POSERZ	POSERY	POSERX
(Bit No.	7	6	5	4	3	2	1	0)

Position
shifted
status

	0: Absolute position detecting function 8th axis reference point setting not provided. 1: Absolute position detecting function 8th axis reference point setting provided.
POSER7	0: Absolute position detecting function 7th axis reference point setting not provided. 1: Absolute position detecting function 7th axis reference point setting provided.
POSER6	0: Absolute position detecting function 6th axis reference point setting not provided. 1: Absolute position detecting function 6th axis reference point setting provided.
POSER5	0: Absolute position detecting function 5th axis reference point setting not provided. 1: Absolute position detecting function 5th axis reference point setting provided.
POSER4	0: Absolute position detecting function 4th axis reference point setting not provided. 1: Absolute position detecting function 4th axis reference point setting provided.
POSERZ	0: Absolute position detecting function Z-axis reference point setting not provided. 1: Absolute position detecting function Z-axis reference point setting provided.
POSERY	0: Absolute position detecting function Y-axis reference point setting not provided. 1: Absolute position detecting function Y-axis reference point setting provided.
POSERX	0: Absolute position detecting function X-axis reference point setting not provided. 1: Absolute position detecting function X-axis reference point setting provided.

Parameter No.

NAME

#8002							ZRSET1	ZRSET0
(Bit No.	7	6	5	4	3	2	1	0

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

0:
 1:

ZRSET1	0: 1:	Absolute position detecting function reference point setting method	D1 D0		
			00	Manual low-speed type reference point return method	
			01	Floating machine reference point manual setting method	
			10	Machine reference position fixed reference point setting method	
ZRSET0	0: 1:		1	1	Automatic reference point setting method

#8003

#8400

#8401

#8402

#8403

#8404

#8405

Reference point shift fine adjusting amount
Setting : 1=0.001 mm or 0.001 deg
Setting range : - 32768 to 32767

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#8406	
#8407	
#8408	
#8409	
#8410	
#8411	X-axis
#8412	Y-axis
#8413	Z-axis
#8414	4th axis
#8415	5th axis
#8416	
#8417	
#8418	
#8419	
#8420	
#8421	
#8422	
#8423	
#8424	

Position shift limiting value at power ON
 Setting : 1=0.001 mm or 0.001 deg
 Setting range :0 to 32767

Parameter No.	NAME
#8425	
#8426	
#8427	
#8428	
#8429	
#8430	
#8431	X-axis
#8432	Y-axis
#8433	Z-axis
#8434	4th axis
#8435	5th axis
#8436	
#8437	
#8438	
#8439	
#8440	

Current loop cut-off frequency offset value
 Setting : 1=1 Hz
 Setting range : - 500 to +500

9.2 PARAMETER NUMBER TABLE (Cent'd)

Parameter No.	NAME
#8441	X-axis
#8442	Y-axis
#8443	Z-axis
#8444	4th axis
#8445	5th axis
#8446	
#8447	
#8448	
#8449	
#8450	
#8451	X-axis
#8452	Y-axis
#8453	Z-axis
#8454	4th axis
#8455	5th axis
#8456	
#8457	
#8458	
#8459	

Phase U current offset value
Setting range : - 500 to +500

Phase V current offset value
Setting range : - 500 to +500

Parameter No.	NAME
#8461	X-axis
#8462	Y-axis
#8463	Z-axis
#8464	4th axis
#8465	5th axis

Servopack format parameter
Setting range : 0 to 7

Note Set "O" when analog AMP is used.

#8800	
-------	--

m	X-axis
	Y-axis
	Z-axis
	4th axis
	5th axis

Machine position at power OFF
Setting : 1=0.001 mm or 0.001 deg
Setting range :0 to *999999999

#8806	
#8807	
#8808	
#8809	
#8810	

9.2 PARAMETER NUMBER TABLE (Cont'd)

Parameter No.	NAME
#8811	X-axis
#8812	Y-axis
#8813	Z-axis
#8814	4th axis
#8815	5th axis
#8816	
#8817	
#8818	
#8819	
#8820	
#8821	X-axis
#8822	Y-axis
#8823	Z-axis
#8824	4th axis
#8825	5th axis
#8826	
#8827	
#8828	
#8829	

Offset value at reference point setting
 Setting : 1=1 pulse
 Setting range :0 to ±999999999

Reference point shift value
 Setting : 1=0.001 mm or 0.001 deg
 Setting range :0 to ±999999999

10. STANDARD INPUT/OUTPUT DIAGNOSIS

10.1 STANDARD INPUT/OUTPUT DIAGNOSIS NUMBER LIST

A list of standard I/O diagnosis numbers and I/O signal names is shown below.

D7 D6 D5 D4 D3 D2 D1 DO

Display method : 0 0 0 0 1 1 1 1

L Contact is open. | Contact is closed.

Diagnosis No.	Details
#3000 to #3009	Input signal PLC → NC
#3010 to #3019	Input signal from strong electric sequence. (PLC)
#3020 to #3029	Input signal from strong electric sequence.
#3030 to #3039	Input signal from strong electric sequence.
#3040 to #3049	Input signal from strong electric sequence.
#3070 to #3079	Input signal from strong electric sequence. (X-axis to 5th axis servo axes control 1/2)
#3080 to #3089	Input signal from strong electric sequence. (X-axis to 5th axis servo axes control 2/2)
#3110 to #3119	Input signal from strong electric sequence. (Spindle control)
#3500 to #3505	Output signal to strong electric sequence. (PLC)
#3514 to #3519	Output signal to strong electric sequence.
#3520 to #3529	Output signal to strong electric sequence.
#3530 to #3539	Output signal to strong electric sequence.
#3540 to #3543	Output signal to strong electric sequence.
#3610 to #3619	Output signal to strong electric sequence. (X-axis to 5th axis servo axes control 1/3)
#3630 to #3639	Output signal to strong electric sequence. (X-axis to 5th axis servo axes control 2/3)
#3640 to #3643	Output signal to strong electric sequence. (X-axis to 5th axis servo axes control 3/3)
#3650 to #3659	Output signal to strong electric sequence. Spindle control signal
#3990 to #3999	Exclusive PLC use. Constant

10.2 INPUT SIGNAL PLC→NC

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)	
#3000	EDT	MEM	MDI	TP	STP	H	JOG	RT
Operating mode								
, 3001								
#3002	MP4	MP2	MP1	JV16	JV8	JV4	JV2	JV1
-Manual pulse multiplying factor specification				Jog speed specification				
#3003		ROV4	ROV2	ROV1			*Sp	ST
Rapid traverse override				Stop/Start				
#3004					STLK	ERS	MRD	
					Start interlock	External reset	Machine set-up complete	
#3005	ERR2	ERR1	ERRO				EXTC	SVON
Servo OFF	Deceleration stop	Block stop				Time count	External power ON	
External error detected								
#3006	AFL	MLK		DRN	PRST	DLK	ABS	SBK
Auxiliary function lock	Machine lock	Dry run		Program restart	Display lock	Manual absolute	Single block	
#3007		F1	RET	TLM1	EXTCLR	EDT LK	ZRN2	ZRN
	F1 digit selection	Tool length measurement	External current value clear	External Edit lock	2nd reference point return	Reference point return		

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)	
#3008	PLY BAK	EWS	CTASK	BTASK		CPRN	HOFS	
	Play- back	External write-in signal	C task start	B task start		Proces- sing inter- ruption point return	Auto mode handle offset	
#3009	SPST	MSKP	MSI					
	Touch sensor signal	Manual skip mode	Manual centering mode	← Measuring function-				
#3010								
#3011	FSED CLR	FSED CH	FSEDME M	FSED M	ECLM	EOUT	EVER EIN	
	FS auto editing ~-External edit operation							
#3012	TLCTN	TLSKP	TLRST					
	Tool life management J							
#3013								
#3014								
#3015								
#3016							COM 1	
	Computer communication							
#3017	DSPP3	DSPP2	DSPP1	DSPPO	DSPJ 3	DSPJ2	DSPJ 1 DSPJ 0	
	Screen selection (process number)				Screen selection (job number)			

~ E . t e r n s .] screen change _____

10.2 INPUT SIGNAL PLC→ NC (Cent'd)

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3018				DSPCHG	DSPF3	DSPF2	DSPF1	DSPF0
				Screen change strobe	Screen selection (function number)			
				External screen change				
#3019								
#3020								
#3021								
#3022								
#3023								
#3024								
#3025	TGN7	TGN6	TGN5	TGN4	TGN3	TGN2	TGN1	TGN0
	Tool group No.							
#3026								
#3027								
#3028								

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3029								
#3030	ED7	ED6	ED5	ED4	ED3	ED2	ED1	ED0
	External data input							
#3031	ED15	ED14	ED13	ED12	ED11	ED10	ED9	ED8
	External data input							
#3032	ED23	ED22	ED21	ED20	ED19	ED18	ED17	ED16
	External data input							
#3033	ED31	ED30	ED29	ED28	ED27	ED26	ED25	ED24
	External data input							
#3034	EDC1	EDAS2	EDAS1	EDAS0	EDCD	EDSC	EDSB	EDSA
	External data input							
#3035								
#3036					PINT			
	Program interrupt							
#3037	1HP7	1HP6	1HP5	1HP4	1HP3	1HP2	1HP1	1HP0
	1st manual pulse input							
#3038	2HP7	2HP6	2HP5	2HP4	2HP3	2HP2	2HP1	2HP0
	2nd manual pulse input							
#3039	3HP7	3HP6	3HP5	3HP4	3HP3	3HP2	3HP1	3HP0
	3rd manual pulse input							

10.2 INPUT SIGNAL PLC→NC (Cent'd)

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3040	OVC	OPT	BDT	OV16	OV8	OV4	OV2	OV1
	Over-ride cancel	Op-tional stop	Block delete	Cutting feed override				
#3041					FIN	RWDH	RWD	EOP
					MT function finished	High speed rewind	Rewind	End of program
#3042	BDT9	BDT8	BDT7	BDT6	BDT5	BDT4	BDT3	BDT2
	Block delete							
#3043								
#3044								
#3045								
#3046	UI7	UI6	UI5	UI4	UI3	UI2	UI1	UI0
	Microprogram input							
#3047	UI15	UI14	UI13	UI12	UI11	UI10	UI9	UI8
	Microprogram input							
#3048	UI23	UI22	UI21	UI20	UI19	UI18	UI17	UI16
	Microprogram input							
#3049	UI31	UI30	UI29	UI28	UI27	UI26	UI25	UI24
	Microprogram input							

X-axis to 5th axis servo axes control 1/2

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	D0)
#3070				H5	H4	HZ	HY	HX
└── Manual handle axis selection ──┘								
#3071				+5	+4	+Z	+Y	+X
└── Manual feed axial direction selection ──┘								
#3072				-5	-4	-z	-Y	-x
└── Manual feed axial direction selection ──┘								
#3073				*DC5	*DC4	*DCZ	*DCY	*DCX
└── Reference point return deceleration LS ──┘								
#3074				*+0T5	*+0T4	*+0TZ	*+0TY	*+0TX
└── Overtravel LS ──┘								
#3075				*-0T5	*-0T4	*-0TZ	*-0TY	*-0TX
└── Overtravel LS ──┘								
#3076								
#3077								
#3078				*IT5	*IT4	*ITZ	*ITY	*ITX
└── Axis interlock ──┘								
#3079				*SV OF5	*SV OF4	*SV OFZ	*SV OFY	*SV OFX
└── Servo OFF on each axis ──┘								

10.2 INPUT SIGNAL PLC→NC (Cent'd)

X-axis to 5th axis servo axes control 2/2

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)
#3080			2H5	2H4	2HZ	2HY	2HX
└────────── 2nd manual handle axis selection ─────────┘							
#3081			3H5	3H4	3HZ	3HY	3HX
└────────── 3rd manual handle axis selection ─────────┘							
#3082			M15	M14	M1Z	M1Y	M1X
└────────── Mirror image specification ─────────┘							
#3083			DTCH5	DTCH4			
└────────── Axis detach- ment speci- fication ─────────┘							
#3084			AMLK5	AMLK4	AMLKZ	AMLKY	AMLKX
└────────── Machine lock by axis ─────────┘							
#3085							
#3086							
#3087							
#3088							
#3089							

Spindle control

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)	
#3110	GRO	SOR	SSTP	SINV	GR4	GR3	GR2	GR1
	Gear shift	Constant spindle speed	S command output stop	S command output inversion	Spindle gear range			
#3111	SFIN	SAGR		SPE	SPD	SPC	SPB	SPA
	S function finished	Spindle speed matches		Spindle override				
#3112	SDI7	SDI6	SDI5	SDI4	SDI3	SDI2	SDI1	SDI0
	S command binary							
#3113	SDI15	SDI14	SDI13	SDI12	SDI11	SDI10	SDI9	SDI8
	S command binary							
#3114	SDI23	SDI22	SDI21	SDI20	SDI19	SDI18	SDI17	SDI16
	S command binary							
#3115	STGR3	STGR2	STGR1					
	Solid type spindle gear selection							
#3116						CSVONS	SPMODES	CAXREQ
						Spindle servo on	Spindle control mode	C-axis change request
#3117				SLPC	SIDX CUT	SIDX 1	SIDX INC	SIDX
			Spindle position loop mode	Spindle indexing				
#3118	SID7	SID6	SID5	SID4	SID3	SID2	SID1	SID0
	Spindle indexing							
#3119					SID11	SID10	SID9	SID8
					Spindle indexing			

10.3 OUTPUT SIGNAL NC* PLC

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	DO)
#3500		BGEDES	WARN S	IERS	*ESP S	RSTS	ALMS
		BG edit error output	Warning output	Input error output	output during emergency stop	output during reset	output during alarm
#3501				LSK	EDTS	AUTO	MAN
				output during label skip	Output during edit operation	Automatic mode selection	Manual mode selection output
#3502	ONPB	OHT	TO	*BALM	SSW3	SSW2	Ssw1 Sswo
	NC control monitor output				System No. SW monitor output		
#3503		PWLOST	ESP	SVALM		*BK	SVON S
		Power lost output	Emergency stop output	Servo alarm output		Brake ON monitor output	Servo ON monitor output
#3504		ES END	ER END	PRST S		FSED MC	FSED CE FSED S
	External data input function complete output		Output during program restart		FS automatic monitor output		
#3505							TLMO
							Tool length measurement mode output
#3506				SSWS3	SSWS2	SSWS1	SSWS0
	System No. setting monitor output						

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3507	MSKPO	EXCLFN						
	Manual skip mode	External Current value clear						
#3508	TLCHA	TLCHB						
	Tool replacement signal	New tool selection signal						
#3509								
#3510								
#3511								
#3512								
#3513								
#3514		HOUT3	HOUT2	HOUT1		HIN3	HIN2	HIN1
	Direct processing signal monitor output							
#3515	SETS AFL	SETS MLK		SETS DRN	SETS PRST	SETS DLK	SETS ABS	SETS SBK
	Internal toggle switch monitor output							
#3516	SETS SRN	SETS F1				SETS EDLK	SETS ZRN2	SETS ZRN
	Internal toggle switch monitor output							
#3517	SETS PLBK	SETS STLK	SETS ZNG			SETS CPRN	SETS HOF5	
	Internal toggle switch monitor output							

10.3 OUTPUT SIGNAL PLC→NC (Cent'd)

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)
#3518			SETS MI5	SETS M14	SETS MIZ	SETS MIY	SETS MIX
└ Internal toggle switch monitor output							
#3519							
#3520	MA7	MA6	MA5	MA4	MA3	MA2	MA1
└ M code output							
#3521	M03R	M02R	MOIR	MOOR		MA9	MA8
└ M decode output				└ M code output			
#3522							
#3523							
#3524							
#3525							
#3526							
#3527							
#3528							

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3529								
#3530	T7	T6	T5	T4	T3	T2	T1	T0
	T code output							
#3531	T15	T14	T13	T12	T11	T10	T9	T8
	T code output							
#3532					T19	T18	T17	T16
	T code output							
#3533	B7	B6	B5	B4	B3	B2	B1	B0
	B code output							
#3534	B15	B14	B13	B12	B11	B10	B9	B8
	B code output							
#3535	TF		BF					MF
	M, B, T codes sampling output							
#3536								
#3537	THC	RWDS	OP	DEN	RPD S	FEED S	SPL	STL
	During tap During rewind When moving complete Feed R state complete R state F state During pause During start							
	Operating state monitor output							
#3538					SETS OPT	SETS BD	G93M	M04S
	Internal toggle switch monitor output G93M During M04							

10.3 OUTPUT SIGNAL NC → PLC (Cent'd)

Diagnosis No.	(D7	D6	D5	D4	D3	D2	D1	D0)
#3539						TAP	G84S	G80S
'Canned cycle operating state monitor output								
#3540	U07	U06	U05	u04	u03	u02	U01	U00
Microprogram output signal								
#3541	U015	U014	U013	U012	U011	U010	U09	U08
Microprogram output signal								
#3542	U023	U022	U021	U020	U019	U018	U017	U016
Microprogram output signal								
#3543	U031	U030	U029	U028	U027	U026	U025	U024
Microprogram output signal								
#3544		POSX	UVX	OVX	RGX	MCBX	OCX	ABSX
X-axis IAMP alarm								
#3545	O-PHX	O IREFX	O F X			OHX		
X-axis IAMP alarm								
#3546		POSY	UVY	OVY	RGY	MCBY	OCY	ABSY
Y-axis IAMP alarm								
#3547	O-PHY	O IREFY	O F Y			OHY		
Y-axis IAMP alarm								
#3548		POSZ	UVZ	OVZ	RGZ	MCBZ	Ocz	ABSZ
Z-axis IAMP alarm								
#3549	O-PHZ	O IREFZ	OFZ			OHZ		
Z-axis IAMP alarm								

X-axis to 5th axis servo axes control 1/3

Diagnosis No.	(D7)	D6	D5	D4	D3	D2	D1	(D0)
#3610						*OLX	FUX	SRDX
Servo unit monitor output								
#3611						*OLY	FUY	SRDY
Servo unit monitor output								
#3612						*OLZ	FUZ	SRDZ
Servo unit monitor output								
#3613						*OL4	FU4	SRD4
Servo unit monitor output								
#3614						*OL5	FU5	SRD5
Servo unit monitor output								
#3615				FUP5	FUP4	FUPZ	FUPY	FUPX
Followup monitor output								
#3616				PSET5	PSET4	PSETZ	PSETY	PSETX
In-position state monitor output								
#3617				DTCH5S	DTCH4S			
Output during axis detachment								
#3618				AMLK5S	AMLK4S	AMLKZS	AMLKYS	AMLKXS
Output during machine lock by axis								
#3619								
#3629				ABSER5	ABSER4	ABSERZ	ABSERY	ABSERX
Absolute position detection error output								

10.3 OUTPUT SIGNAL NC →PLC (Cent'd)

X-axis to 5th axis servo axes control 2/3

Diagnosis No.	(D7	D6	D5	D4	D3	D2	D1	D0)
#3630				ZP5	ZP4	ZPZ	ZPY	ZPX
				Ist reference point position monitor output				
#3631				2ZP5	2ZP4	2ZPZ	2ZPY	2ZPX
				2nd reference point position monitor output				
#3632				3ZP5	3ZP4	3ZPZ	3ZPY	3ZPX
				3rd reference point position monitor output				
#3633				4ZP5	4ZP4	4ZPZ	4ZPY	4ZPX
				4th reference point position monitor output				
#3634								
#3635								
#3636								
#3637								
#3638								
#3639								

X-axis to 5th axis servo axes control 3/3

Diagnosis No.	(D7	D6	D5	D4	D3	D2	D1	D0)
#3640								
#3641								
#3642								
#3643								
#3644								
#3645								
#3646								
#3647								
#3648								
#3649								

10.3 OUTPUT SIGNAL NC+ PLC (Cent'd)

Spindle control signal

Diagnosis No. (D7	D6	D5	D4	D3	D2	D1	D0)	
#3650	GR4S	GR3S	GR2S	GR1S	GRSS	GRCS	G96S SINVA	
┌----- Gear range state output ─┐				Output	output	output	output	
				during	during	during	during	
				GRS	GRC	G96	S bina-	
				control	control	control	ry in-	
							version	
#3651	SF			0s	SLPS	SIDX0	SIDXA	
S com-				Spindle	Spindle	┌Spindle index ─┐		
mand				orien-	posi-	monitor output		
sam-				tation	tion			
pling					loop			
output					monitor			
					output			
#3652						AXMODES	CAXS	
						Axis	Mode	
						control	changing	
						mode		
#3653					Pcs	PBS	PAS	
					┌ PG signal monitor			
					output			
#3654	SD07	SD06	SD05	DS04	SD03	SD02	SD01	SD00
┌----- S specified binary output -----┐								
#3655	SD015	SD014	SD013	SD012	SD011	SD010	SD09	SD08
┌----- S specified binary output -----┐								
#3656	SD023	SD022	SD021	SD020	SD019	SD018	SD017	SD016
┌----- S specified binary output -----┐								
#3657	SARM7	SARM6	SARM5	SARM4	SARM3	SARM2	SARM1	SARMO
┌----- Spindle speed monitor output -----┐								
#3658	SARM15	SARM14	SARM13	SARM12	SARM11	SARM10	SARM9	sARM8
┌----- Spindle speed monitor output -----┐								

Diagnosis No.	D7	D6	D5	D4	D3	D2	D1	D0
#3659	SARM23	SARM22	SARM21	SARM20	SARM19	SARM18	SARM17	SARM16
Spindle speed monitor output								
#3740	LD1-7	LD1-6	LD1-5	LD1-4	LD1-3	LD1-2	LD1-1	LD1-0
X-axis load data (L)								
#3741	LD1-15	LD1-14	LD1-13	LD1-12	LD1-11	LD1-10	LD1-9	LD1-8
X-axis load data (H)								
#3742	LD2-7	LD2-6	LD2-5	LD2-4	LD2-3	LD2-2	LD2-1	LD2-0
Y-axis load data (L)								
#3743	LD2-15	LD2-14	LD2-13	LD2-12	LD2-11	LD2-10	LD2-9	LD2-8
Y-axis load data (H)								
#3744	LD3-7	LD3-6	LD3-5	LD3-4	LD3-3	LD3-2	LD3-1	LD3-0
Z-axis load data (L)								
#3745	LD3-15	LD3-14	LD3-13	LD3-12	LD3-11	LD3-10	LD3-9	LD3-8
Z-axis load data (H)								
#3746	LD4-7	LD4-6	LD4-5	LD4-4	LD4-3	LD4-2	LD4-1	LD4-0
4th axis load data (L)								
#3747	LD4-15	LD4-14	LD4-13	LD4-12	LD4-11	LD4-10	LD4-9	LD4-8
4th axis load data (H)								
#3748	LD5-7	LD5-6	LD5-5	LD5-4	LD5-3	LD5-2	LD5-1	LD5-0
5th axis load data (L)								
#3749	LD5-15	LD5-14	LD5-13	LD5-12	LD5-11	LD5-10	LD5-9	LD5-8
5th axis load data (H)								

10.3 OUTPUT SIGNAL NC → PLC (Cent'd)

Constant	(D7	D6	D5	D4	D3	D2	D1	D0)
#3990								
#3991								
#3992								
#3993								
#3994								
#3995								
#3996	0	0	0	0	0	0	0	0
	Constant							
#3997	0	0	0	0	0	0	0	0
	Constant							
#3998	0	0	0	0	0	0	0	0
	Constant							
#3999	0	0	0	0	0	0	0	1
	Constant							

YASNAC i80M

CNC SYSTEM FOR MACHINING CENTERS

APPENDI X

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