

ROTARY TABLE CONTROLLER

(SPC-A, SPC-B, SPC-C)



NS SYSTEM Co., Ltd.

() . 942-6 4 (:442-070)
 Homepage : www.nssystem.co.kr TEL: 031-235-7492~6 FAX: 031-235-7497

2005 06 01

1 .	1
1-1.	1
1-2.	2
2 .	3
2-1.	3
2-2.	3
3 .	4
3-1.	4
3-2.	5
3-3. TABLE	6
3-4. POWER	6
3-5. MPG	6
4 .	7
5 .	8
5-1.	8
5-2.	8
5-3.	10
5-3-1.	10
5-3-2.	11
5-4.	11
5-5.	12
5-5-1.	12
5-5-2.	12
6 .	14
6-1.	14
6-2.	14
6-3.	15
5-4.	16
7 .	22
7-1.	22
7-2.	22
7-3.	24

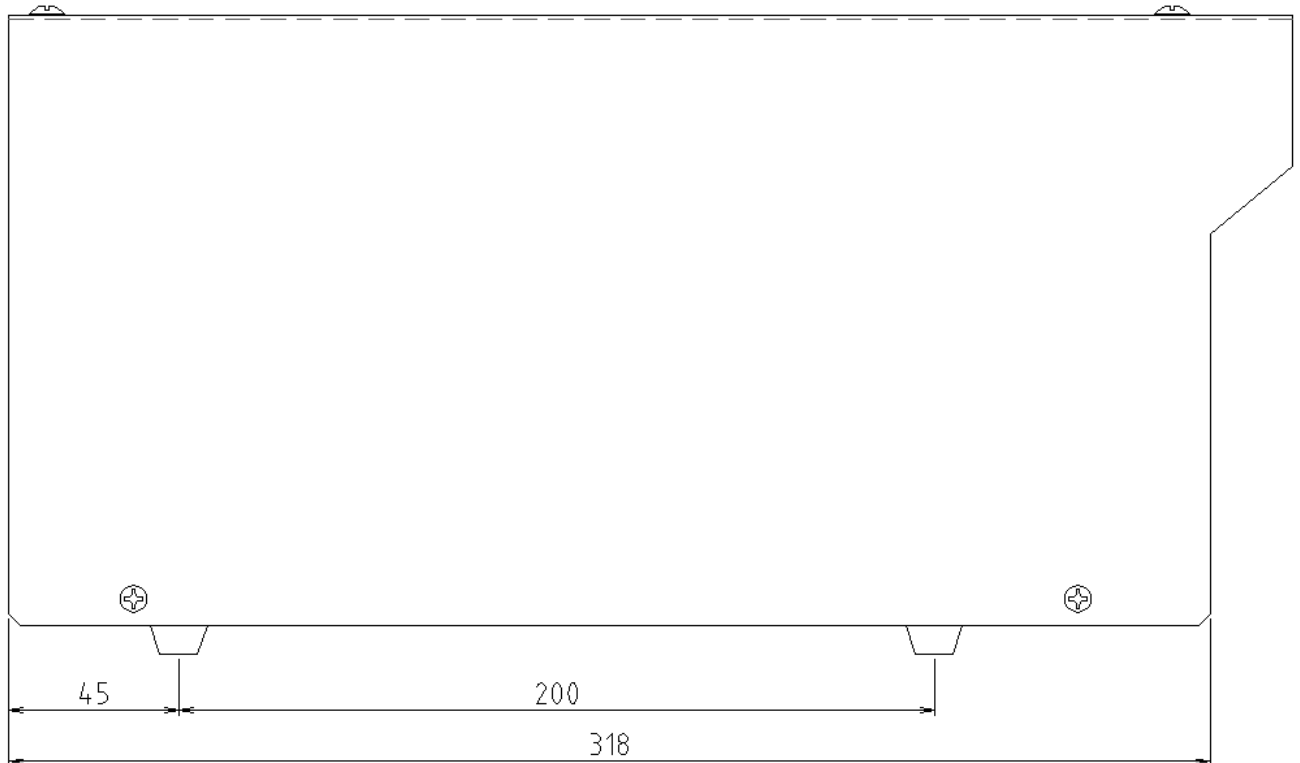
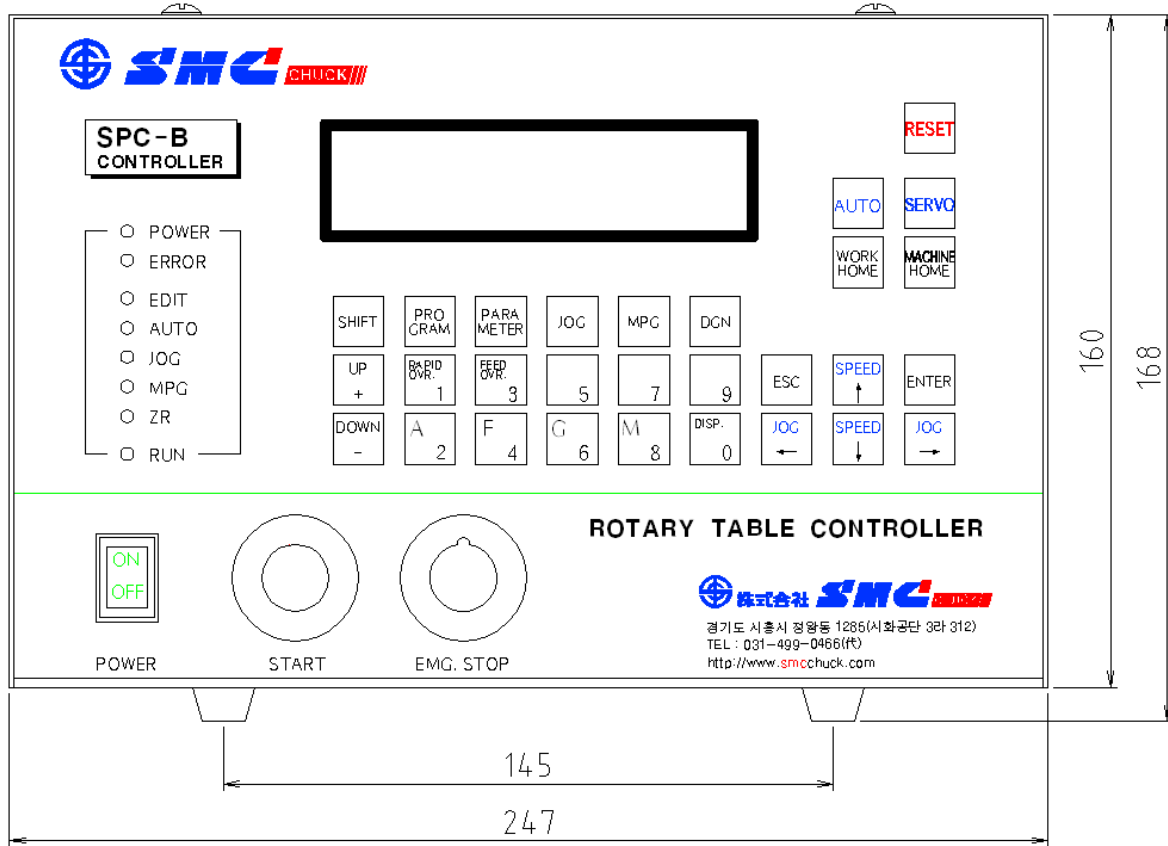
8 .		36
8-1.		36
8-2.		36
8-3.		36
8-4.		36
8-5.		37
8-6.		37
8-7.		37
8-8.		37
9 .		38
9-1.		38
9-2.		38
9-3.		38
9-4.		38
9-5.		39
9-6.		40
10 .		41
10-1.		41
10-2. MPG		41
11 .		42
11-1.		42
11-2.		42
11-3.		42
11-4.	KEY	43
11-5.	LED	43
11-6. MPG		43
12 .		44
14-1.	()	44
14-2.	()	45
13 .		51
14 .		53
14-1.		53
14-2.		53

1 .

1-1.

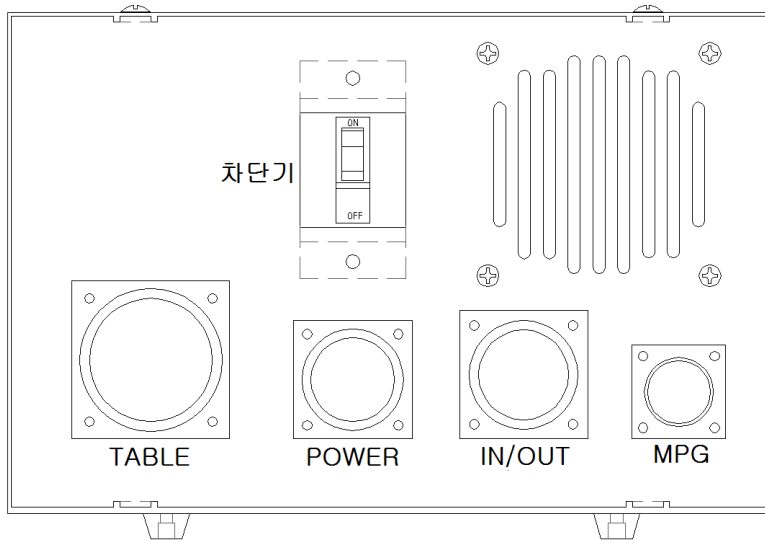
		SPC-A	SPC-B	SPC-C
		3 AC 220 [V] +10~-15%, 50/60[Hz]±5%		
	[kVA]	3.0	4.5	6.0
		3 AC		
	[rms A]	17.0	28.0	37.0
	[rpm]	: Incremental (5000CT) , Line		
		3000	3000	3000
		90:1	180:1	360:1
		0.001 [deg]	0.001 [deg]	0.001 [deg]
		600~12000 [deg/min]	300~6000 [deg/min]	150~3000 [deg/min]
		12~12000 [deg/min]	12~6000 [deg/min]	12~3000 [deg/min]
		±999 [turn]	±500 [turn]	±250 [turn]
		±999.999 [deg]	±999.999 [deg]	±999.999 [deg]
		, (),		
		(MDI)		
	()	100		
		96		
		(MDI)	(BCD, M)	
/		14 ,		
		8 ,		
		A00(), A01(), A02(), A72() A73()		
		G30(CW), G31(CCW), G32()		
		G34(CW), G35(CCW)		
		G81()		
		G04(), G08(가), G50(), G51() G70(), G53(), G54() G61(), G62() G55(), G56(CW), G57(CCW) G59(), G60() G78(CW), G79(CCW)		
		M20,M21,M22,M23(LOOP), M30() M40(), M42(), M50(), M99()		
		F00(). F01()		
	/	M10(), M11(), M12(ON), M13(OFF) M14(ON), M15(OFF) M16(ON), M17(OFF)		
	/	M60(ON), M61(OFF) M52(ON), M53(OFF),		
		, , , , A/D , , , ,		
		, , , , ,		
()		, , , , MPG		
		0~55		
		80% ()		
		DC 500[V], 10[M]		

1-2.



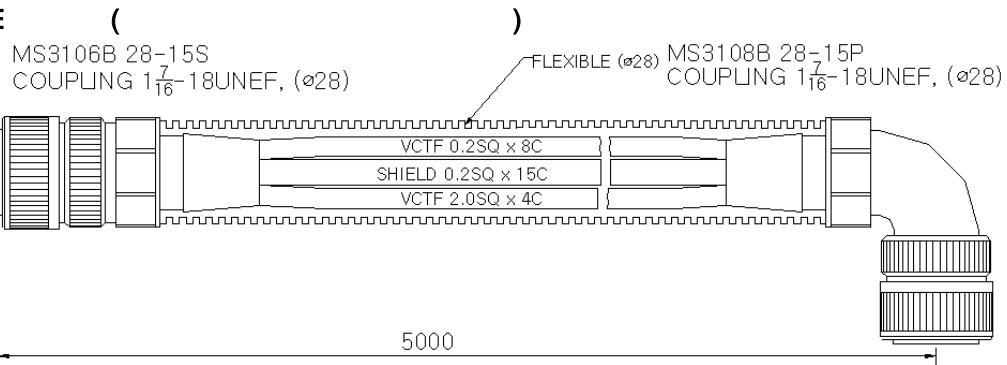
2 .

2-1.

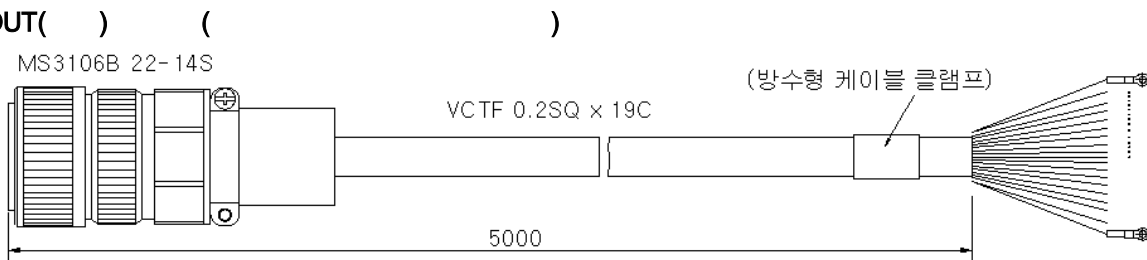


2-2.

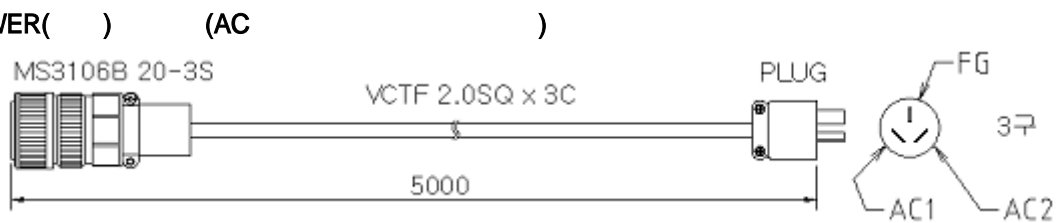
TABLE



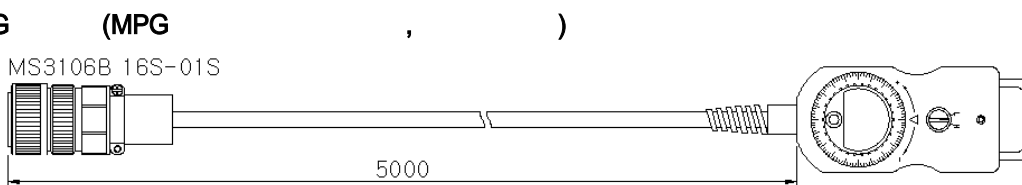
IN/OUT



POWER

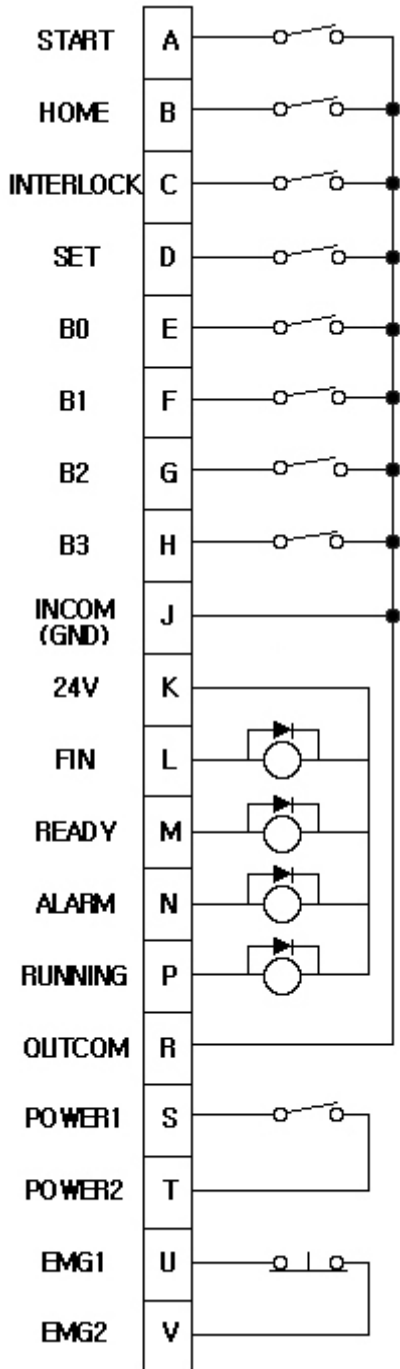


MPG

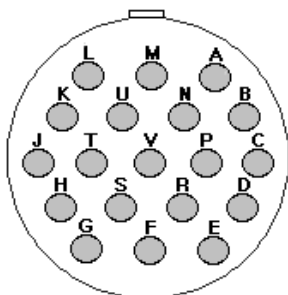


3 .

3-1.

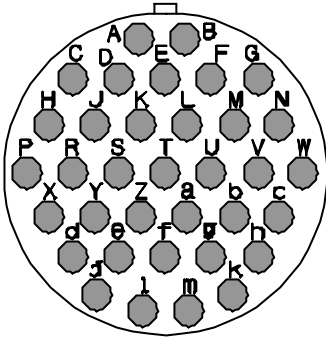


(MS3102A22 - 14P)



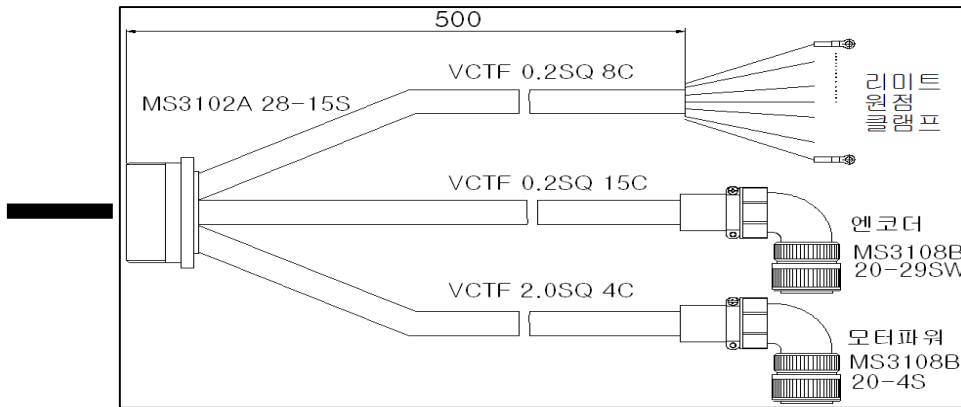
	START	A	IN5	ON	
	HOME	B	IN6	ON	
	INT	C	IN7	ON: OFF:	
	SET	D	IN8	ON (가)	
0	B0	E	IN9	()	0
1	B1	F	IN10	()	1
2	B2	G	IN11	()	2
3	B3	H	IN12	()	3
	GND	J		(24V)	
24V	24V	K		: 24V 24가 24V	
	FIN	L	OUT0	SETUP-21 "FINTM" ON	
	READY	M	OUT1	() ON	
	ALARM	N	OUT2	() SETUP-30 "ALMLG" 가 0: A (() ON) 1: B (() OFF)	
	RUN	P	OUT3	ON	
	OUTCOM	R		(24V) (24V)	
1	PWR1	S		()	1/2 PWR1/2
2	PWR2	T			가
1	EMG1	U		()	1/2
2	EMG2	V			EMG1/2

3-3. TABLE()
(MS3102 28-15P)



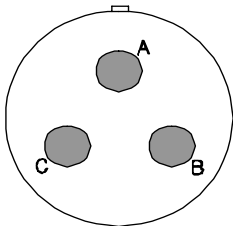
A	ENCODER A	N	ENCODER 5V	b	HOME
B	ENCODER /A	P	ENCODER 0V	c	Not Connect
C	ENCODER B	R	ENCODER SHIELD	d	Not Connect
D	ENCODER /B	S	Not Connect	e	Not Connect
E	ENCODER Z	T	Not Connect	f	CLAMP -R
F	ENCODER /Z	U	Not Connect	g	CLAMP -S
G	ENCODER U	V	Not Connect	h	Not Connect
H	ENCODER /U	W	Not Connect	j	MOTOR U
J	ENCODER V	X	INCOM(24V GND)	k	MOTOR V
K	ENCODER /V	Y	CLAMP	l	MOTOR W
L	ENCODER W	Z	UNCLAMP	m	MOTOR FG
M	ENCODER /W	a	INCOM(24V GND)		

()



INCOM	24V GND
CLS	CLAMP
ULS	UNCLAMP
INCOM	24V GND
HS	HOME
CR	CLAMP -R
CS	CLAMP -S

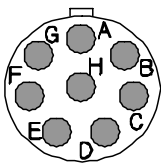
3-4. POWER()



(MS3102 20-3P)

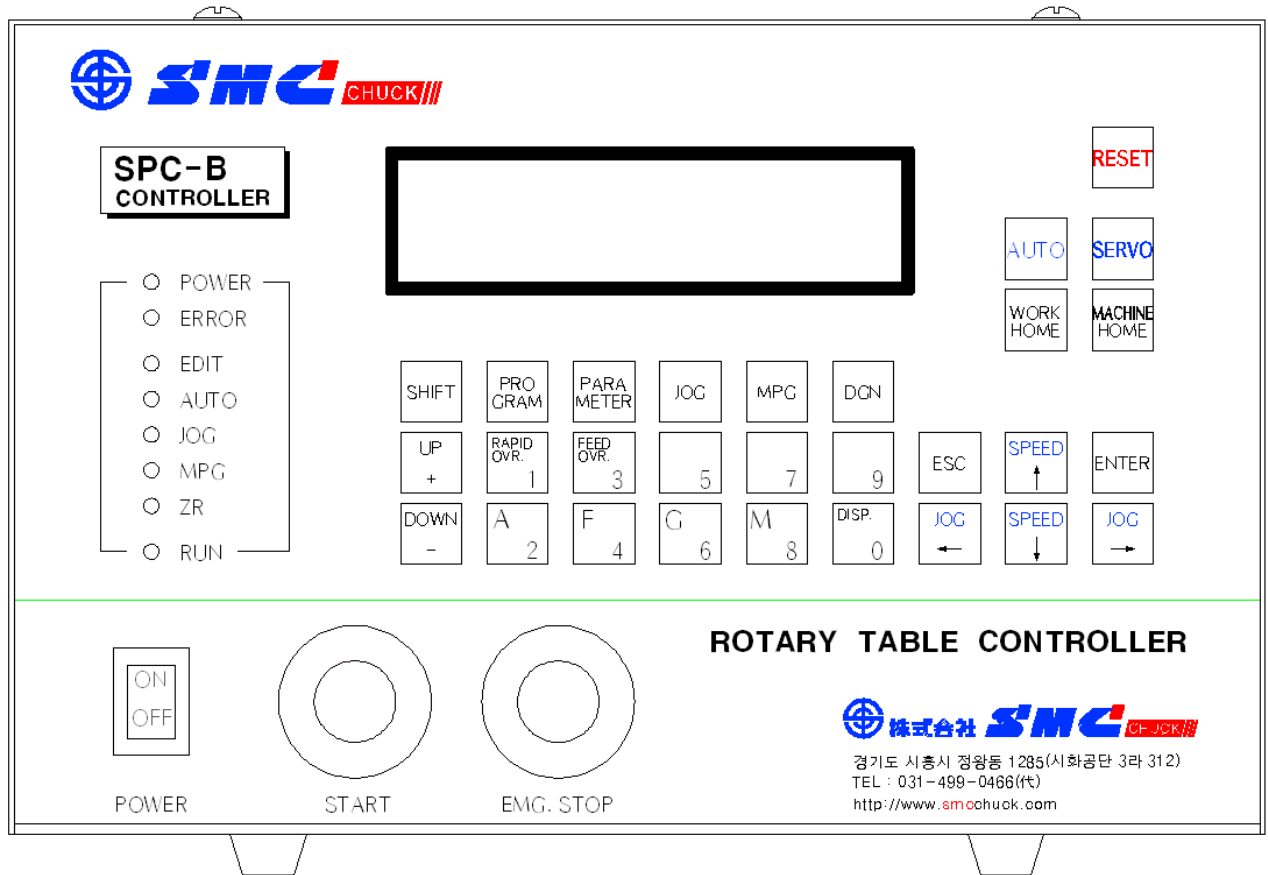
A	FG ()
B	AC1 (220V)
C	AC2 (220V)

3-5. MPG



(MS3102 16S-01P)

A	MPG A	
B	MPG /A	
C	MPG B	
D	MPG /B	
E	MPG	OFF: LOW SPEED
F	MPG /	ON : HIGH SPEED
G	5V	
H	0V	



RESET		+	"+" , (가)
PROGRAM		SHIFT + +	1 (INS)
PARAMETER	WORK HOME	-	"-" , ()
SHIFT+PARAMETER		SHIFT + -	1 (DEL)
JOG		SHIFT	
MPG	MPG		, CW
DGN	(DIAGNOSIS)		, (BACK)
1	"1" ,	SHIFT +	, CCW
2	"2" ,		()
SHIFT+2	A-	AUTO	
3	"3" ,	STOP	
4	"4" ,	SHIFT + STOP	
SHIFT+4	F-	ESC	
5	"5" ,	MACHINE HOME	
6	"6" ,	WORK HOME	()
SHIFT+6	G-	ENTER	
7	"7" ,	SHIFT + ENTER	(CANCEL)
8	"8" ,	POWER	ON/OFF
SHIFT+8	M-	START	
9	"9" ,	EMG. STOP	
0	"0" ,		

5 .

5-1.

: (POWER1-POWER2)가 (ON) "POWER"
 " " .
 :
 "POWER" 가 " " (POWER1-POWER2)
 (ON) .
 " 0" , "POWER" LED가
 "READY" ON .

5-2.

"0"

A. 0

ANGLE: +000.000 °
 CH: [00] HOME: NO

ANGLE	(999.999 deg)	+999.999~ -999.999 [deg]
	(999.999 deg)	+999.999~ -999.999 [Ts]
CH	()	
HOME	NO: , OK:	

B. 1

ANGLE: +000.000 °
 R : 05000 F: 01000

() ()

ANGLE	"0"	"0"
R	()	() : deg/min
F	()	() : deg/min

C. 2

S: O H: X I: X P: O
 0: X 1: X 2: X 3: X

(ON:O, OFF:X)			
S	(START)	0	B0
H	(HOME)	1	B1
I		2	B2
P	SET	3	B3

D.

3

START: X HOME: O
 CLAMP: O UNCLP: X

	(ON:O, OFF:X)
START	(START)
HOME	(HOME)
CLAMP	(CLAMP)
UNCLP	(UNCLAMP)

E.

4

S: +0000 E: +00000
 AL: 000% I L: 000%

S		0.2	RPM
E		"+"	
AL		가 15%	가 100%
IL		15 가 70%	0.2 가 100%
		가	가 0.2

5-3-2.

A. 가 ("ZR" LED가) "AUTO"
 "START" ON 1
 8

B. (MACHINE HOME)
 "HOME" ON 가
 가 "ZR" LED가
 9

C. (SET) (B0,B1,B2,B3)
 5-5

5-4.

"PARAMETER"

CH: 0 0	WORK HOME
[+ 0 0 0 . 0 0 0]	

1. "ENTER" 가
2. "+", "-" (_)
3. 가 (0~9) (_)
4. "ENTER" 가
0.001 [deg]
5. (,)
6. "SHIFT + BACK", "ENTER" 가 "ESC"

SETUP - 12 "HWORK"

SETUP - 12 "HWORK"	0	"0"
	1	

5-5.

5-5-1.

가 (0~99) “ ”

100 (00~99) 96

“+” 가 “1” 가

“99” “0”

“-” 가 “1”

“0” “99”

OFF

5-5-2.

(SET) (B0,B1,B2,B3) (0~99)

“ ”

100 (00~99) 96

SETUP-00 "PTYPE"

0	BCD
1	M

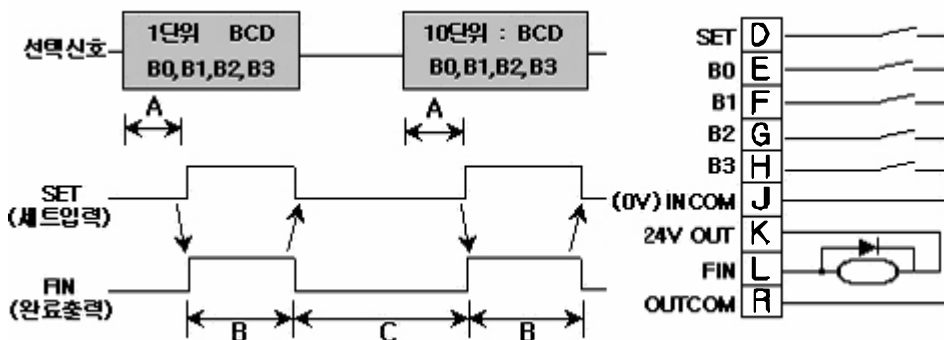
A. BCD(0~9)

(B0,B1,B2,B3) BCD

BCD “9” “9”

BCD	0	1	2	3	4	5	6	7	8	9
B0	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
B1	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
B2	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF
B3	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

- 1 BCD --> A (20msec) --> SET ON
2. FIN() ON --> B (SETUP-21) --> FIN() OFF --> SET OFF
3. C (SETUP-21) (10) --> “CHANNEL SET ERR ” 가
4. 10 BCD --> A (20msec) --> SET ON
5. FIN() ON --> B (SETUP-21) --> FIN() OFF --> SET OFF

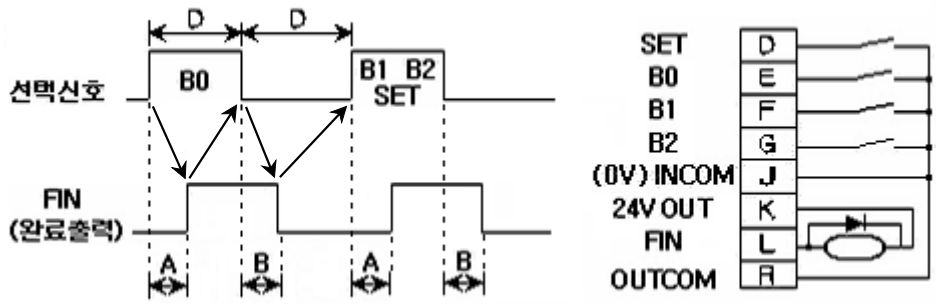


B. M

(B0=0, B1=1, B2=10) 가
 (B0), (B1,B2), (SET) 가 D(Max 1) 가
 "CHANNEL SET ERR " 가

	(SET)
B0	"0"
B1	"1" 가
B2	"10" 가

- B0("0") ON --> A (20msec) --> FIN() ON --> B0("0") OFF --> B (20msec) --> FIN() OFF
- B1 B2(가) ON --> A (20msec) --> FIN() ON --> B1 B2 (가) OFF --> B (20msec) --> FIN() OFF
- 가 2
- SET() ON --> A (20msec) --> FIN() ON --> SET() ON --> B (20msec) --> FIN() OFF



6 .

6-1.

가 (PARAMETER) SPC-A/B/C
가 SETUP (: SETUP)

6-2.

“SHIFT+PARAMETER”
"EDIT" LED가 ON 가

YES:	ENTER	KEY		
NO:	ESC	KEY		

"ESC"

"ENTER"

(PASS-WORD)

PASSWORD :	_	_	_	_

(4)가

“*” 가

가

00 - PTYPE - +000000	
01 - GEAR - +000000	< >

: (00~63)
:
:
:

6-3.

A.

(,) ()가
가 1 “ ” , 가 2 “ ”

6	3	-	P	W	O	R	D	-	+	0	0	0	4	6	6
<	<	E	N	D		O	F		F	I	L	E	>	>	

< >

B.

(,) ()

C.

() (+ , -) 가
(6) (DATA) “ENTER” 가
가 “ENTER” ()
“SHIFT + ” (,)
“SHIFT + ENTER”

D.

“ESC”
가 OFF

01	GEAR	<p>*</p> <table border="1"> <tr> <td>0</td> <td>90:1</td> </tr> <tr> <td>1</td> <td>180:1</td> </tr> <tr> <td>2</td> <td>360:1</td> </tr> </table> <p>가</p> <table border="1"> <tr> <td></td> <td>90:1</td> <td>180:1</td> <td>360:1</td> </tr> <tr> <td>(deg/min)</td> <td>12000</td> <td>6000</td> <td>3000</td> </tr> <tr> <td>(turn)</td> <td>999</td> <td>500</td> <td>250</td> </tr> </table>	0	90:1	1	180:1	2	360:1		90:1	180:1	360:1	(deg/min)	12000	6000	3000	(turn)	999	500	250	0	2
0	90:1																					
1	180:1																					
2	360:1																					
	90:1	180:1	360:1																			
(deg/min)	12000	6000	3000																			
(turn)	999	500	250																			
02	MTDIR	<p>*</p> <p>(CW)</p> <p>"1"</p> <table border="1"> <tr> <td>0</td> <td>(CW)</td> </tr> <tr> <td>1</td> <td>(CCW)</td> </tr> </table>	0	(CW)	1	(CCW)	0	1														
0	(CW)																					
1	(CCW)																					
03	SONTM	<p>* ON</p> <p>(UNCLAMP)</p> <p>msec</p> <p>(UNCLAMP)</p> <p>가</p> <p>가</p> <p>SERVO ON</p> <p>가</p> <p>SERVO ON</p>	5	200																		
04	SOFTM	<p>* OFF</p> <p>(CLAMP)</p> <p>msec</p> <p>(CLAMP)</p> <p>가</p> <p>가</p> <p>SERVO OFF 가</p> <p>가</p> <p>SERVO ON</p>	5	200																		

05	RPSPD	<p>* (RAPID) (RAPID POSITIONING) (deg/min)</p> <p>(F01) 가</p> <p>SETUP - 00</p> <table border="1"> <tr> <td>SETUP - 00</td> <td>0 (90:1)</td> <td>1 (180:1)</td> <td>2 (360:1)</td> </tr> <tr> <td>(deg/min)</td> <td>12000</td> <td>6000</td> <td>3000</td> </tr> </table>	SETUP - 00	0 (90:1)	1 (180:1)	2 (360:1)	(deg/min)	12000	6000	3000	600 300 150	12000 6000 3000
SETUP - 00	0 (90:1)	1 (180:1)	2 (360:1)									
(deg/min)	12000	6000	3000									
06	BSACC	<p>* 가</p> <p>가 (G08) 가</p> <p>가</p> <p>0.01</p>	0	50								
07	MANSP	<p>* RPM</p>	10	3000								
08	JOGSP	<p>* RPM</p>	10	3000								
09	MACCT	<p>* 가</p> <p>가</p> <p>0.01</p>	0	50								
10	FDSPD	<p>* (FEED) (FEED) (deg/min)</p> <p>(F00) 가</p> <p>SETUP - 00</p> <table border="1"> <tr> <td>SETUP - 00</td> <td>0 (90:1)</td> <td>1 (180:1)</td> <td>2 (360:1)</td> </tr> <tr> <td>(deg/min)</td> <td>12000</td> <td>6000</td> <td>3000</td> </tr> </table>	SETUP - 00	0 (90:1)	1 (180:1)	2 (360:1)	(deg/min)	12000	6000	3000	12	12000 6000 3000
SETUP - 00	0 (90:1)	1 (180:1)	2 (360:1)									
(deg/min)	12000	6000	3000									
11	HTIME	<p>* 0.1 가</p> <p>“HOME TIME OVER “ 가 가 “0”</p>	0	250								

12	HWORK	<p>* (WORK)</p> <p>“0”</p> <table border="1"> <tr> <td>0</td> <td>“0”</td> </tr> <tr> <td>1</td> <td></td> </tr> </table>	0	“0”	1		0	1
0	“0”							
1								
13	HSLOG	<p>*</p> <table border="1"> <tr> <td>0</td> <td>ON (A)</td> </tr> <tr> <td>1</td> <td>OFF (B)</td> </tr> </table>	0	ON (A)	1	OFF (B)	0	1
0	ON (A)							
1	OFF (B)							
14	HMZPH	<p>* Z</p> <table border="1"> <tr> <td>0</td> <td>Z</td> </tr> <tr> <td>1</td> <td>Z</td> </tr> </table> <p>Z Z</p> <p>A/S 가</p> <p>Z (가 OFF)</p>	0	Z	1	Z	0	1
0	Z							
1	Z							
15	HMSPD	<p>* 가</p> <p>RPM OFFSET(+)</p> <p>:</p> <p>가</p>	10	3000				
16	HMCSF	<p>* OFF</p> <p>RPM</p>	10	300				
17	HMACC	<p>* 가</p> <p>가</p> <p>0.01</p> <p>:</p> <p>가</p>	0	50				
18	HMDIR	<p>*</p> <table border="1"> <tr> <td>0</td> <td>CW</td> </tr> <tr> <td>1</td> <td>CCW</td> </tr> </table>	0	CW	1	CCW	0	1
0	CW							
1	CCW							
19	HMOFF	<p>* OFFSET</p> <p>Z OFFSET</p> <p>0.001 [deg]</p> <p>“+” CW “-” CCW</p> <p>OFFSET “0”</p> <p>SETUP-15 “HMSPD”</p> <p>가 SETUP-17 “HMACC”</p>	-359999	+359999				

20	CHSER	<p>* BCD (SETUP-00 =0) 1 10</p> <p>1 10</p> <p>“CHANNEL SET ERR “ 가 msec</p>	200	500															
21	FINTM	<p>* (FIN)</p> <p>ON</p> <p>OFF</p> <p>msec</p>	10	300															
22	MPGDR	<p>* MPG</p> <p>MPG MPG</p> <p>MPG</p> <table border="1"> <tr> <td>0</td> <td>MPG CW</td> <td>CW</td> </tr> <tr> <td>1</td> <td>MPG CW</td> <td>CCW</td> </tr> </table>	0	MPG CW	CW	1	MPG CW	CCW	0	1									
0	MPG CW	CW																	
1	MPG CW	CCW																	
23	MLOW	<p>* MPG</p> <p>MPG</p>	1	100															
24	MHIGH	<p>* MPG</p> <p>MPG</p>	10	1000															
25	MPACC	<p>* MPG 가</p> <p>MPG 가</p> <p>0.01</p>	0	50															
26	MANDR	<p>* 가</p> <table border="1"> <tr> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> </table>	0		1		0	1											
0																			
1																			
27	SEGDP	<p>* 7-SEGMENT</p> <p>7 가</p> <table border="1"> <tr> <td>0</td> <td></td> <td>: RPM</td> </tr> <tr> <td>1</td> <td></td> <td>: PULSE</td> </tr> <tr> <td>2</td> <td>15</td> <td>: %</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>: %</td> </tr> <tr> <td>4</td> <td></td> <td>: 1 %</td> </tr> </table>	0		: RPM	1		: PULSE	2	15	: %	3	0.2	: %	4		: 1 %	0	4
0		: RPM																	
1		: PULSE																	
2	15	: %																	
3	0.2	: %																	
4		: 1 %																	

28	RS232	<p>* ID</p> <p>(ID)</p> <p>“0”</p> <table border="1"> <tr> <td>0</td> <td></td> </tr> <tr> <td>1 ~ 255</td> <td>가 (ID)</td> </tr> </table>	0		1 ~ 255	가 (ID)	0	255						
0														
1 ~ 255	가 (ID)													
29	BRATE	<p>* RS232C</p> <table border="1"> <tr> <td>0</td> <td>1200 BPS</td> </tr> <tr> <td>1</td> <td>2400 BPS</td> </tr> <tr> <td>2</td> <td>4800 BPS</td> </tr> <tr> <td>3</td> <td>9600 BPS</td> </tr> <tr> <td>4</td> <td>19200 BPS</td> </tr> </table>	0	1200 BPS	1	2400 BPS	2	4800 BPS	3	9600 BPS	4	19200 BPS	0	4
0	1200 BPS													
1	2400 BPS													
2	4800 BPS													
3	9600 BPS													
4	19200 BPS													
30	ALMLG	<p>* (ALARM)</p> <p>(2)</p> <table border="1"> <tr> <td>0</td> <td>A (ON)</td> </tr> <tr> <td>1</td> <td>B (OFF)</td> </tr> </table>	0	A (ON)	1	B (OFF)	0	1						
0	A (ON)													
1	B (OFF)													
31	LSCHK	<p>* msec</p> <p>(CLAMP), (UNCLAMP)</p> <p>가 가 가 가</p>	10	3000										
32	BSDIM	<p>* (G51), (G50)</p> <table border="1"> <tr> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>()</td> </tr> </table>	0		1	()	0	1						
0														
1	()													
33	CTYPE	<p>* ON</p> <p>OFF</p> <table border="1"> <tr> <td>0</td> <td>ON</td> </tr> <tr> <td>1</td> <td>OFF</td> </tr> </table>	0	ON	1	OFF	0	1						
0	ON													
1	OFF													
33 ~ 62	XXXXXX	<p>* (PASS-WORD)</p> <p>4</p> <p>가</p>	0	1										
63	PWORD	<p>* (PASS-WORD)</p> <p>4</p> <p>가</p>	0	9999										

7 . (PROGRAM MODE)

7-1.

“PROGRAM” 가 .

00 - 00 - A00 + 999999
 00 - 01 - G81 + 000010 < >

A B C D E

A		(00~99)
B		(00~95)
C		(A/G/M/F-)
D		
E		DATA (가)

7-2.

A.

(,) ()가
 가 1 “ ” , 가 2 “ ”

00 - 95 - M30
 <<END OF FILE>> < >

B.

(,) 2
 가 가

C.

“SHIFT + ENTER”

D.

가
 (,)

E. (CODE)

()

F.

가 “SHIFT + ENTER”
 가

G.

() (+ , -) 가
 (6) (DATA) “ENTER”
 가
 “ENTER”

H.

(,)

“SHIFT + ”

I.

가

“SHIFT + ENTER”

가

J. (INSERT)

“SHIFT + UP”

“M99”가

“M99”

가

K. (DELETE)

()

“SHIFT + DOWN”

L. (PROGRAM COPY)

“SHIFT + ”

T	A	R	G	E	T		P	R	O	G	:	[0	0]
Y	E	S	=	E	N	T	E	R	,	N	O	=	E	S	C

()

2

“02”

T	A	R	G	E	T		P	R	O	G	:	[0	2]
Y	E	S	=	E	N	T	E	R	,	N	O	=	E	S	C

“ENTER”

“ESC”

M. (PROGRAM ALL CLEAR)

“SHIFT + ”

P	R	O	G		A	L	L		C	L	E	A	R	?	
Y	E	S	=	E	N	T	E	R	,	N	O	=	E	S	C

“ENTER”

(“M99”)

“ESC”

N.

“M99”()

2

O.

“ESC”

7-3.

(CODE)

		<p>* 1. 0.001 [deg] 2. "G50" 가, "G51" 가 SETUP - 32 "BSDIM" 3. (=CW) 가 4. 5. (F00) SETUP - 10 "FDSPD" 6. 가 가 (G08) SETUP - 06 "BSACC" SETUP 7. G50, G51, F00, G08 8. (200%)가 가 100% 1/2</p>																																
A00		<p>1. (AUTO) () () 2. ON () 3. 4. OFF () 5. ON --> OFF</p>	-999999	+999999																														
		[1]																																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>00</td><td>00</td><td>G50</td><td></td><td></td></tr> <tr><td>00</td><td>01</td><td>F00</td><td>+500</td><td>=500 deg/min</td></tr> <tr><td>00</td><td>02</td><td>A00</td><td>+180000</td><td>CW 180.000 deg</td></tr> <tr><td>00</td><td>03</td><td>G81</td><td>10</td><td>0.1</td></tr> <tr><td>00</td><td>04</td><td>A00</td><td>-180000</td><td>CCW 180.000 deg</td></tr> <tr><td>00</td><td>05</td><td>M30</td><td></td><td></td></tr> </table>	00	00	G50			00	01	F00	+500	=500 deg/min	00	02	A00	+180000	CW 180.000 deg	00	03	G81	10	0.1	00	04	A00	-180000	CCW 180.000 deg	00	05	M30				
00	00	G50																																
00	01	F00	+500	=500 deg/min																														
00	02	A00	+180000	CW 180.000 deg																														
00	03	G81	10	0.1																														
00	04	A00	-180000	CCW 180.000 deg																														
00	05	M30																																
		[2]																																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>00</td><td>00</td><td>G51</td><td></td><td></td></tr> <tr><td>00</td><td>01</td><td>F00</td><td>+500</td><td>=500 deg/min</td></tr> <tr><td>00</td><td>02</td><td>A00</td><td>+180000</td><td>180.000 deg</td></tr> <tr><td>00</td><td>03</td><td>G81</td><td>10</td><td>0.1</td></tr> <tr><td>00</td><td>04</td><td>A00</td><td>0</td><td>가</td></tr> <tr><td>00</td><td>05</td><td>M30</td><td></td><td></td></tr> </table>	00	00	G51			00	01	F00	+500	=500 deg/min	00	02	A00	+180000	180.000 deg	00	03	G81	10	0.1	00	04	A00	0	가	00	05	M30				
00	00	G51																																
00	01	F00	+500	=500 deg/min																														
00	02	A00	+180000	180.000 deg																														
00	03	G81	10	0.1																														
00	04	A00	0	가																														
00	05	M30																																

- *
 - 1. 0.001 [deg]
 - 2. "G50" 가, "G51" 가
SETUP-32 "BSDIM"
 - 3. (+=CW)
가
 - 4.
 - 5. (F01)
SETUP-05 "RPSPD"
 - 6. 가 가 (G08)
SETUP-06 "BSACC"
SETUP
 - 7. G50, G51, F01, G08
 - 8. (200%)가 가
100% 1/2

A01

- 1. (AUTO) ()
()
- 2. ON
()
- 3.
- 4. OFF
()
- 5. ON --> OFF

-999999 +999999

[1]

00	00	G50		
00	01	F01	+2000	=2000 deg/min
00	02	A01	+180000	CW 180.000 deg
00	03	G81	10	0.1
00	04	A01	-180000	CCW 180.000 deg
00	05	M30		

[2]

00	00	G51		
00	01	F01	+2000	=2000 deg/min
00	02	A01	+180000	180.000 deg
00	03	G81	10	0.1
00	04	A01	0	가
00	05	M30		

* CW
SETUP

CW

SETUP

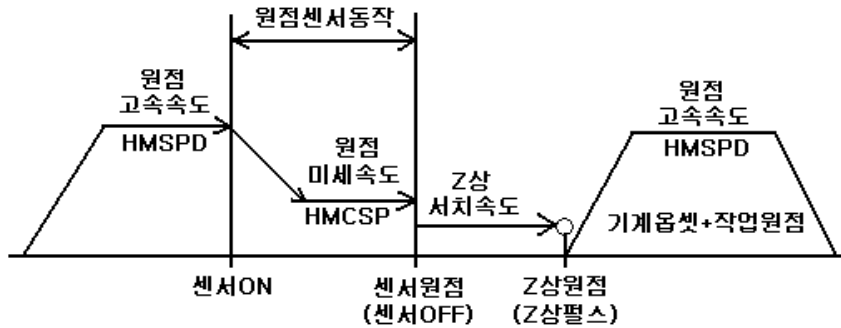
SETUP		
11	HTIME	
13	HSLOG	
14	HMZPH	Z
15	HMSPD	
16	HMCSP	
17	HMACC	가
19	HMOFF	OFFSET

1. (AUTO) ()
()
2. ON
()
3. CW -->
4. OFF
()
5. ON --> OFF
()

G30

DATA

DATA



[]

00	00	G50		
00	01	F01	+2000	=2000 deg/min
00	02	A01	+180000	CW 180.000 deg
00	03	G81	10	0.1
00	04	G30		CW
00	05	M30		

G31

* CCW
SETUP

CCW

"G30"

DATA

DATA

G32

*
SETUP

가

"G30"

DATA

DATA

		<p>* CW</p> <p>1. (AUTO) () ON CW OFF</p> <p>2. /</p> <p>3. (F01) SETUP-05 "RSPD"</p> <p>4. 가 가 (G08) SETUP-06 "BSACC" SETUP</p> <p>5. F01, G08</p> <p>6. (200%)가 가</p> <p>7. 100% 1/2 가 999.999 [deg] 0.001 [turn]</p>																											
G34		<p>1. (AUTO) () ()</p> <p>2. ON ()</p> <p>3.</p> <p>4. (AUTO) () ON OFF 5</p> <p>5. OFF ()</p> <p>6. ON --> OFF</p> <p>[]</p> <table border="1"> <tr> <td>00</td> <td>00</td> <td>G50</td> <td></td> <td></td> </tr> <tr> <td>00</td> <td>01</td> <td>F01</td> <td>2000</td> <td>=2000 deg/min</td> </tr> <tr> <td>00</td> <td>02</td> <td>G34</td> <td></td> <td>ON CW OFF</td> </tr> <tr> <td>00</td> <td>03</td> <td>G32</td> <td></td> <td></td> </tr> <tr> <td>00</td> <td>04</td> <td>M30</td> <td></td> <td></td> </tr> </table>	00	00	G50			00	01	F01	2000	=2000 deg/min	00	02	G34		ON CW OFF	00	03	G32			00	04	M30			DATA	DATA
00	00	G50																											
00	01	F01	2000	=2000 deg/min																									
00	02	G34		ON CW OFF																									
00	03	G32																											
00	04	M30																											
G35		<p>* CCW</p> <p>(AUTO) () ON CCW OFF "G34"</p>	DATA	DATA																									
G81		<p>* ()</p> <p>0.01</p>	1	3000																									

G61	* () (AUTO)	DATA	DATA		
G62	*) () (AUTO) 가	DATA	DATA		
G55	* (G56:CW , G57:CCW)	DATA	DATA		
G56	* CW CW 가 가 CCW 가 "CCW ROTATION ERR "	DATA	DATA		
G57	* CCW CCW 가 가 CW 가 "CW ROTATION ERR "	DATA	DATA		
G59	* CW/CCW	DATA	DATA		
G60	* CW/CCW "G60" "G78" "G79" "+S/W LIMIT ERROR" "-S/W LIMIT ERROR" 가	DATA	DATA		
G78	* CW CW 0.001 [deg]		1	359999	
G79	* CCW CCW CCW 0.001 [deg]		-1	-359999	

M42	* (RETURN) (M42) M40 "M40" "M42" "SUB-RETURN ERROR" 가	DATA	DATA		
M50	* (JUMP)	0	95		
M30	* "M30" "M30" 95 "STEP OVER ALARM "	DATA	DATA		
M99	* 가	DATA	DATA		
M60	* ON ON "OUT RANGE OVER "가	0	7		
[]					
00 03 M60 7 "7" ON					
M61	* OFF OFF "OUT RANGE OVER "가 "M60"	0	7		
M52	* ON ON OFF "INPUT RANGE OVER"가 "STEP RANGE OVER "가 [] X100 + (00~13)X100 + (00 ~ 95)	0	1395		
[]					
00 03 M52 706 "7" ON 6					
M53	* OFF OFF ON "INPUT RANGE OVER"가 "STEP RANGE OVER "가 "M52"	0	1395		

M10	*	(CLAMP)		DATA	DATA
M11	*	(UNCLAMP)		DATA	DATA
M12	*	(FIN) ON ON		DATA	DATA
M13	*	(FIN) OFF OFF		DATA	DATA
M14	*	ON ON ON		DATA	DATA
M15	*	OFF OFF OFF		DATA	DATA
M16	*	ON ON ON		DATA	DATA
M17	*	OFF OFF OFF		DATA	DATA

8 .

8-1.

가 ("ZR" LED가) "AUTO"
 "AUTO" LED가 (RUNNING) ON ..
 "START" ON 1
 1 () "RUN" LED 가
 1 () FIN() ON

8-2.

가 ("ZR" LED가) "START"
 (RUNNING) ON ..
 "START" 1
 1 () "RUN" LED 가
 1 () FIN() ON

8-3.

- (AUTO) ()
()
- ON
- ()
- OFF
- ON --> OFF

8-4.

A, (RAPID OVERRIDE)
 , "RAPID OVR." (F01) 가
 "ESC"
 RAPID OVERRIDE 가

```
[ R A P I D O V E R R I D E ]
0 5 0 . 0 % - > 0 1 5 0 0 ° / m
```

"+"	10°/min	가
SHIFT+ "+"	50°/min	가
"-"	10°/min	
SHIFT+ "-"	50°/min	

B, FEED OVERRIDE.
 , "FEED OVR." (F00) 가
 "ESC"
 FEED OVERRIDE 가

```
[ F E E D O V E R R I D E ]
0 5 0 . 0 % - > 0 1 5 0 0 ° / m
```

"+"	10°/min	가
SHIFT+ "+"	50°/min	가
"-"	10°/min	
SHIFT+ "-"	50°/min	

8-5.

A. (STOP) "STOP" , "START"

B. (INTERLOCK) ON , OFF

8-6.

(M30)

8-7.

"RESET" " " " " 가
"EMERGENCY STOP "

8-8.

A.

"G56" CW 가
CCW 가 "CCW ROTATION ERR " 가

"G57" CCW 가
CW 가 "CW ROTATION ERR " 가

B.

"G60" CW/CCW
"G60" "G78" "G79"
"+S/W LIMIT ERROR" "-S/W LIMIT ERROR" 가

9 .

9-1.

“MACHINE HOME” 가
 “HOME” ON 가
 가 “ZR” LED 가
 “0”

A	N	G	L	E	:	+	0	0	0	.	0	0	0	°
M	/	C		H	O	M	E		R	E	T	U	R	N

9-2.

“WORK HOME” 가
 가 “ZR” LED 가

A	N	G	L	E	:	+	0	0	0	.	0	0	0	°	
W	O	R	K		H	O	M	E		R	E	T	U	R	N

SETUP-12 "HWORK"

SETUP-12 "HWORK"	0	“0”
	1	

9-3.

“STOP” 가 “HOME”

A	N	G	L	E	:	+	0	0	0	.	0	0	0	°
M	/	C		H	O	M	E		S	T	O	P		

A	N	G	L	E	:	+	0	0	0	.	0	0	0	°
W	O	R	K		H	O	M	E		S	T	O	P	

9-4.

A.

가
 가
 가

B.

()
 (: ,) ON/OFF
 () ON/OFF
 10msec

9-6.

11	HTIME	<p>* 0.1 가 "HOME OVER TIME" 가 "0"</p>				
12	HWORK	<p>* (WORK)</p> <table border="1"> <tr> <td>0</td> <td>"0"</td> </tr> <tr> <td>1</td> <td></td> </tr> </table>	0	"0"	1	
0	"0"					
1						
13	HSLOG	<p>* ON (A) OFF (B)</p> <table border="1"> <tr> <td>0</td> <td>ON (A)</td> </tr> <tr> <td>1</td> <td>OFF (B)</td> </tr> </table>	0	ON (A)	1	OFF (B)
0	ON (A)					
1	OFF (B)					
14	HMZPH	<p>* Z Z Z Z A/S 가 Z (가 OFF)</p> <table border="1"> <tr> <td>0</td> <td>Z</td> </tr> <tr> <td>1</td> <td>Z</td> </tr> </table>	0	Z	1	Z
0	Z					
1	Z					
15	HMSPD	<p>* 가 RPM OFFSET(+)</p>				
16	HMCSP	<p>* OFF RPM</p>				
17	HMACC	<p>* 가 가 0.01</p>				
18	HMDIR	<p>* CW CCW</p> <table border="1"> <tr> <td>0</td> <td>CW</td> </tr> <tr> <td>1</td> <td>CCW</td> </tr> </table>	0	CW	1	CCW
0	CW					
1	CCW					
19	HMOFF	<p>* OFFSET Z OFFSET " +" CW , "-" CCW OFFSET "0" SETUP - 15 "HMSPD", 가 OFFSET SETUP - 17 "HMACC"</p>				

10 .

10-1.

“JOG”

가

“JOG” LED 가

```

ANGLE: +000.000°
HIGH <--MOVE-->
    
```

	“ ”	(HIGH)
	“ ”	(JOG)
CW(+)	“ ”	CW(+)
CCW(-)	“ ”	CCW(-)
	“ESC”	

SETUP

07	MANSP		RPM
08	JOGSP		RPM
09	MACCT	가	0.01
26	MANDR		가
		0	
		1	

10-2. MPG

“MPG”

가

“MPG” LED 가

MPG

```

ANGLE: +000.000°
HIGH <--MOVE-->
    
```

	"HIGH"	(HIGH)
	"LOW"	(JOG)
CW(+)	CW(+)	
CCW(-)	CCW(-)	
	“ESC”	

MPG

SETUP

22	MPGDR	MPG	MPG
23	MLOW	MPG	
24	MHIGH	MPG	
25	MPACC	MPG	가 0.01

11 .

11-1.

“DGN”

가
OFF

2	=	I	N	P	U	T	,	4	=	O	U	T			
6	=	S	W	,	8	=	L	E	D	,	0	=	M	P	G

2 : , 4 : , 6 : KEY , 8 : LED , 0 : MPG

11-2.

“2” 가

I	N	#	:	0				0	1	2	3	4	5	6	7
O	=	O	N					O	X	O	X	O	X	O	X

ON/OFF (ON=O, OFF=X)

- IN#() : “2” 가
IN#0 : 0~7
IN#1 : 8~15, (IN13,14,15)
- :
가 “0” 0 ~ 7
가 “1” 8 ~ 15
- ON/OFF : ON/OFF
ON : “O” OFF : “X”

“ESC”

11-3.

“4” 가

O	U	T	P	U	T	:	0	1	2	3	4	5	6	7
O	=	O	N				X	O	X	O	X	O	X	O

ON/OFF (ON=O, OFF=X)

- :
- ON/OFF : ON/OFF
ON : “O” OFF : “X”
- : “ , ” ()
“ + ” 가 ON
“ - ” 가 OFF

“ESC”

11-4. KEY

“6” 가

P	R	E	S	S	A	N	Y	K	E	Y		
K	E	Y	G	O	O	D	!					9

1. "PRESS ANY KEY"가 KEY KEY
2. KEY가 , "KEY GOOD!" KEY
3. , 가

“ESC”

11-5. LED

“8” LED 가

LED#:				0	1	2	3	4	5	6	7	LED
O=ON				X	O	X	O	X	O	X	O	LED ON/OFF (ON=O, OFF=X)

1. LED : LED (0=RUN~7=POWER)
2. ON/OFF : ON/OFF
ON : “O” OFF : “X”
3. : “ , ” ()
“+” LED가 ON
“-” LED가 OFF

“ESC”

11-6. MPG

“0” MPG 가

O	P	T	I	O	N	A	L	M	P	G		
E	N	C	:	+	0	0	0	0	0	0		MPG

1. MPG , MPG MPG , /
2. MPG , , 가

“ESC”

11-7.

“ESC”

OFF

12 .



()

- ()

“RESET“

-

(0)

12-1. ()

A.

“SYSTEM ERROR“

가

S	Y	S	T	E	M	E	R	R	O	R	:	0	0
O	V	E	R	S	P	E	E	D	A	L	A	R	M

B.

가

가

E	R	R	O	R	:	0	0	C	0	0	-	S	2	2
I	N	P	U	T	R	A	N	G	E	O	V	E	R	

(C), (S)

12-2. ()

A. ()

00	PANEL KEY ALARM	
	: RESET	
	1. H/W	
	2.	
01	ENCODER ALARM	
	1.	
	2.	
	3. H/W	
02	OVER LOAD ALARM	
	: (SVPAR-11 "OLTIM") 가	
	1. 가	
	2.	
	3. H/W 가	
03	OVER SPEED ALARM	
	: (SVPAR-08 "MAXSP") 1 가	
	1. 가	
	2.	
		가
04	MEMORY ALARM	
	(EEP-ROM)	
05	DEVIATION ALARM	
	: 가 가 (SVPAR-06 "DEVER")	
	1. 가	가
	2. (SVPAR-07 "TRQLT")가	
	3. (SVPAR-01 "POSPG")	
	4.	
	5. 가	
6.		
06		
07		

08		
09	HOME OVER TIME	
	1.	(SETUP - 11 "HTIME")
	2.	가
	3.	
	4.	(SETUP - 13 "HSLOG")
	6.	
10	STEP OVER ALARM	
		: 가 (95) M30
11	OVER VOLTAGE ALM	
		: DC-LINK (400V/450V)
	1.	OFF 220V 30%
	2.	,
	3.	,
12	OVER CURRENT ALM	
		: DC-LINK 가
	1.	,
	2.	
	3.	
	4.	, H/W
13	LOW VOLTAGE ALM	
		: DC-LINK (200V)
	1.	.
	2.	
	3.	
	4.	
14	U-PH ADC. ALARM	
		U U 가 .
15	V-PH ADC. ALARM	
		V V 가 .

16	OVER REG. ALARM	
	1.	,
	2.	,
	3.	
	4.	
	5.	
17	DIV. DATA ALARM	
18	MUL. DATA ALARM	
19	EMERGENCY STOP	
	1.	RESET
	2.	
20		
21	CHANNEL SET ERR	
	1.	(SETUP20-CHSER)
	2. MCT	SET, B0~B3
22	+S/W LIMIT ERROR	
	+	
	+	G78,G79
23	-S/W LIMIT ERROR	
	-	
	-	G78,G79
24	CLAMP L-SW ERROR	
	1.	(SETUP31-LSCHK)
	2.	가

25	UNCLAMP L-SW ERR	
	1. ,	(SETUP31-LSCHK)
	2. 가	
26	UN/CLAMP BOTH ON	
	/	
27	/ 가	
28		
29		
30		

B. ()

00	(M20-M21) LOOP I	
	M20-M21	
	M20	M21
01	(M22-M23) LOOP J	
	M22-M23	
	M22	M23
02	ANGLE DIV. LOW 2	
	A02	
	가 "0"	"1" A02
03	HOME OVER TIME	
	1.	(SETUP-11 "HTIME")
	2.	가
	3.	
	4.	
04	STEP RANGE OVER	
	가 95	가 95
05	SUB-CALL OVER 3	
	3	3
06	TURN DATA OVER	
	G73	
	가	(SETUP01-"GEAR")
07	SUB-RETURN ERROR	
	M40-M42	
	(M40)	M42
08	(G72-A72) ERROR	
	G72-A72	
	"A72"가	"G72"
09	OUT RANGE OVER	
	가	
	가	
	M60,M61	가 0-7
10	CCW ROTATION ERR	
	G56(CW) , CCW
11	CW ROTATION ERR	
	G57(CCW) , CW
12	SPEED TOO HIGH	
	F00, F01	
	가	(SETUP01-"GEAR") , F00 F01

13 ~ 19		
20	SYNTAX ERROR	
21	가	.

13 .

A.

IN0	9	* 0 /	
IN1	18	* 1 /	
IN2	8	* 2 /	
IN3	26	* 3 /	
IN4	17	* 4 /	
IN5	7	* 5 /	
IN6	25	* 6 /	
IN7	16	* 7 / ()	
IN8	6	* 8 / SET SET	
IN9	24	* 9 / 0 0	
IN10	15	* 10 / 1 1	
IN11	5	* 11 / 2 2	
IN12	23	* 12 / 3 3	
IN13	14	* 13 /	
+24V	4	* +24V +24V COMMON	

B.

OUT0	3	* 0 / (FIN) (FIN)	
OUT1	21	* 1 / (READY) (READY)	
OUT2	12	* 2 / (ALARM) (ALARM)	
OUT3	2	* 3 / (RUNNING) (RUNNING)	
OUT4	20	* 4 / (CLAMP), (UNCLAMP) (CLAMP), (UNCLAMP)	
OUT5	11	* 5 /	
OUT6	1	* 6 /	
OUT7	19	* 7 /	
OUT COM	10	* COMMON COMMON	
NC	13	*	
NC	22	*	



14 .

10 가 , 가 , 가 ()

14-1.

1. 가 (1)
2. 가
3. 가
4. 가

	1	DC 500[V], 10[M]
	5000	
	5	

14-2.

5 2

		5
		3
		2
		2
		20000 ~ 30000
		20000 ~ 30000
		5000

15 . (SERVO PARAMETER MODE)

15-1.

가 (PARAMETER) SPC-A/B/C
가 (: SVPAR)

15-2.

“SHIFT+ ”
"EDIT" LED가 ON 가

YES:	ENTER	KEY		
NO:	ESC	KEY		

"ESC"

"ENTER"

(PASS-WORD)

PASSWORD	:	_	_	_	_				

(4)가 가
가 “*” 가

00	-	AUTO	T	-	+	0	0	0	0	0	0	0	
01	-	POSP	G	-	+	0	0	0	1	0	0	<	>

: (00~15)
:
:
:

15-3.

15-4.

00	GAINS	* (SVPAR - 01,02,03) (SVPAR - 12,13,14) "0" 가 "1" (SVPAR - 12,13,14)		0	1				
		<table border="1"> <tr> <td>0</td> <td>(SVPAR - 01,02,03)</td> </tr> <tr> <td>1</td> <td>(SVPAR - 12,13,14)</td> </tr> </table>		0	(SVPAR - 01,02,03)	1	(SVPAR - 12,13,14)		
0	(SVPAR - 01,02,03)								
1	(SVPAR - 12,13,14)								
01	POSPG	* (P GAIN) SVPAR-00 "AUTOT" 가 "0" 가 15		1	9999				
02	SPDPG	* (P GAIN) SVPAR-00 "AUTOT" 가 "0" 가 15		1	9999				
03	SPDIG	* (I GAIN) SVPAR-00 "AUTOT" 가 "0" (SVPAR-05 "SPDIC" = 1)가 15		1	9999				
04	POSFG	* 가		0	1000				

05	SPDIC	<p>* 가 "1" 가</p> <p>ON LOCK</p> <table border="1"> <tr> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> </table>	0		1		0	1
0								
1								
06	DEVER	<p>* 10PULSE 가 가 (-)가 "DEVIATION ALARM " 1. 가 2. 가 3. 가 4. 가</p>	1000	9999				
07	TRQLT	<p>* 100 100% 가 가</p>	10	300				
08	MAXSP	<p>* RPM 가 1 "OVER SPEED ALARM"</p>	10	1500 ~ 5000				

09	REGTM	<p>* 가 가</p> <p>OPTION</p> <p>[]</p> <table border="1"> <tr> <td>0</td> <td>0.25</td> </tr> <tr> <td>1</td> <td>0.50</td> </tr> <tr> <td>2</td> <td>0.75</td> </tr> <tr> <td>3</td> <td>1.00</td> </tr> </table> <p>: "OVER REG. ALARM " 가</p> <p>: 가</p>	0	0.25	1	0.50	2	0.75	3	1.00	0	3
0	0.25											
1	0.50											
2	0.75											
3	1.00											
10	BRKTM	<p>* mSec SERVO ON 가 가</p> <p>SERVO ON 가 가</p> <p>: 가 가</p> <p>SERVO ON 가 가</p>	10	500								
11	OLTIM	<p>* SVPAR-07 "TRQLT" 가 "OVER LOAD ALARM " 가 가</p> <p>가 가</p> <p>가 가</p> <p>가 가</p>	5	30								

12	APOSP	* SVPAR-00 "AUTOT" 가 "1" 가 15	(P GAIN)	1 9999
13	ASPDP	* SVPAR-00 "AUTOT" 가 "1" 가 15	(P GAIN)	1 9999
14	ASPDI	* SVPAR-00 "AUTOT" 가 "1" (SVPAR-05 "SPDIC" = 1)가 15	(I GAIN)	1 9999
15	INERT	* 15	SVPAR-12,13,14 %	100 5000

