

VF/HS/HL-Series

THIS VERSION IS FOR THE USE WITH BLACK AND WHITE PRINTERS

**MAGNETEK & MITSUBISHI  
SP DRIVE PROGRAMMING**



*Haas Automation*  
Training



Procedure

# Magnetek (503)

## Spindle Drive Programming

The Digital Operator keypad enables the GPD 503 to be operated in either the Drive mode or the Program mode. The program mode enables the operator to enter information into the GPD 503's memory to configure the GPD 503 to the application. This is the mode we'll be using in this procedure.

### Change Display With DSPL Key:

Apply power *The Drive Lamp is on.*

- Press <**PRGM/DRIVE**> *The drive lamp turns off. Display changes to first Frequency Reference Memory Setting constant number. An-01 (See Procedure For Changing Parameters to change parameters)*
- Press <**DSPL**> *Display changes to first Run Operative Setting constant number. Bn-01 (See Procedure For Changing Parameters to change parameters)*
- Press <**DSPL**> *Display changes to first System constant number. Sn-01 (See Procedure For Changing Parameters to change parameters)*
- Press <**DSPL**> *Display changes to first Control constant number. Cn-01 (See Procedure For Changing Parameters to change parameters)*
- After all programming is complete, Press <**PRGM/DRIVE**> *Returns GPD 503 to the Drive Mode.*

### Procedure for Changing Parameters:

- Press <^> or <v> as necessary to scroll. *Display scrolls up or down by 1 each time these keys are pressed.*
- Press <**DATA/ENTER**> *Display shows the current value.*
- Press <>> *Blinking part of the display shifts left.*
- Press <^> and/or <v> *Value blinking increases or decreases when these keys are pressed.*
- Press <**DATA/ENTER**> *Display lights steady for a short time, then "End" is displayed for approx. 1 sec. Then parameter is displayed again, with one digit blinking.*
- **NOTE:** If the parameter being entered is not within an acceptable range for the selected constant, the fault indicator "Err" will appear instead of "End". The new parameter was not written into EPROM memory. The display will again show the value currently stored in memory.
- Press <**DSPL**> *Display returns to the beginning of cycle. (See Change Display With DSPL Key).*

## Magnetek Spindle Drive Parameter List (503):

Copy Unit:			A:SEL-1	A:SEL-2	A:SEL-3	B:SEL-1	A:SEL-3			B:SEL-2			B:SEL-3
Haas Model	VF-1	VF-0, 1, 2	VF-0	VF-1, 2, 3*	VF-3, 4	VF-1, 2, 3, 4	VF-0	VF-0	HS-1	HS-1	HL-1	HL-1h	
Max RPM:	5000	7500	7500	7500	7500	10k	12k	7500	10k	3500	5000		
Motor Hp:	5/7.5	5/7.5	7.5/10	7.5/10	10/15	7.5/10	7.5/10	10/15	10/15	10/15	10/15		
Drive Model	DS307	DS307	DS308	DS308	DS309	DS309	DS308	DS308	DS309	DS309	DS309	DS309	
Parameter													
An-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
An-09	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	
Bn-01	1.00	1.80	2.00	2.00	2.00	3.00	2.00	2.00	2.00	3.00	5.00	7.00	
Bn-02	1.00	1.80	2.00	2.00	2.00	3.00	2.00	2.00	2.00	3.00	6.00	9.00	
Bn-03	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
Bn-04	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
Bn-05	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Bn-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bn-07	1.00	1.50	1.00	1.00	1.50	1.50	1.00	1.00	1.50	1.50	1.50	1.50	
Bn-08	0.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	
Bn-09	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	
Bn-10	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Bn-11	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Bn-12	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Sn-01	4	4	5	5	6	6	5	5	6	6	6	6	
Sn-02	F	F	F	F	F	F	F	F	F	F	F	F	
Sn-03	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-04	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-05	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Sn-06	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-07	0111	0111	0111	0111	0111	0111	0111	0111	0111	0111	0111	0111	
Sn-08	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-09	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-10	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	
Sn-11	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-12	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
Sn-13	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-14	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-15	03	03	03	03	03	03	03	03	03	03	03	03	
Sn-16	04	04	04	04	04	04	04	04	04	04	04	04	
Sn-17	06	06	06	06	06	06	06	06	06	06	06	06	
Sn-18	08	08	08	08	08	08	08	08	08	08	08	08	
Sn-19	00	00	00	00	00	00	00	00	00	00	00	00	
Sn-20	00	00	00	00	00	00	00	00	00	00	00	00	
Sn-21	01	01	01	01	01	01	01	01	01	01	01	01	
Sn-22	02	02	02	02	02	02	02	02	02	02	02	02	
Sn-23	00	00	00	00	00	00	00	00	00	00	00	00	
Sn-24	00	00	00	00	00	00	00	00	00	00	00	00	
Sn-25	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-26	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
Sn-27	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	
Sn-28	0100	0100	0100	0100	0100	0100	0100	0100	0100	0100	0100	0100	
Cn-01	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	
Cn-02	168.00	252.00	252.00	202.00	202.00	268.00	168.00	202.00	253.00	166.00	253.00	253.00	
Cn-03	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	
Cn-04	66.00	70.00	70.00	70.00	70.00	150.00	70.00	70.00	70.00	70.00	70.00	70.00	
Cn-05	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	
Cn-06	110.00	110.00	130.00	110.00	110.00	52.00	130.00	125.00	130.00	130.00	110.00	110.00	
Cn-07	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Cn-08	8.00	8.00	6.00	6.00	6.00	6.00	6.00	7.00	6.00	6.00	6.00	8.00	

## Magnetek Spindle Drive Parameter List (503):

Copy Unit:			A:SEL-1	A:SEL-2	A:SEL-3	B:SEL-1	A:SEL-3			B:SEL-2		
Haas Model	VF-1	VF-0, 1, 2	VF-0	VF-1, 2, 3*	VF-3, 4	VF-1, 2, 3, 4	VF-0	VF-0	HS-1	HS-1	HL-1	HL-1h
Max RPM:	5000	7500	7500	7500	7500	10k	10k	12k	7500	10k	3500	5000
Motor Hp:	5/7.5	5/7.5	7.5/10	7.5/10	10/15	7.5/10	7.5/10	7.5/10	10/15	10/15	10/15	10/15
Drive Model	DS307	DS307	DS308	DS308	DS309	DS309	DS308	DS308	DS309	DS309	DS309	DS309
Parameter												
Cn-09	17.10	17.10	25.60	25.60	34.00	34.00	25.60	25.60	34.00	34.00	34.00	34.00
Cn-10	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	0.50	0.50
Cn-11	50.00	50.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	40.00	40.00
Cn-12	0.50	0.50	0.50	0.50	0.40	0.40	0.50	0.50	0.40	0.40	0.40	0.40
Cn-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-14	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cn-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Cn-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-22	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Cn-23	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Cn-24	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Cn-25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cn-26	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Cn-27	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Cn-28	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00
Cn-29	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	50.00	70.00	70.00	70.00
Cn-30	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00	170.00
Cn-31	0.434	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.241
Cn-32	172.00	262.00	262.00	262.00	262.00	262.00	262.00	262.00	262.00	262.00	262.00	262.00
Cn-33	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Cn-34	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Cn-35	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Cn-36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Cn-37	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Cn-38	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Cn-39	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Cn-40	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Cn-41	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cn-42	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30


# Magnetek (G515)

## Spindle Drive Programming


Once the drive is powered up:

- Press <MENU>
- Press <^> until you reach PROGRAMMING, then Press <DATA/ENTER>
- Browse the parameter list using the <^> <v>. Change the necessary parameters to match the following list.
- **NOTE:** The parameters are set-up in branches. A, B, C, etc. Scroll/Browse to the different branches using the <^> <v>. When you get to a branch where you want to make a change, you can enter the branch by pressing <ENTER>. Now that you are in the branch you can scroll/browse through the branch by using the <^> <v>. When you get to a parameter you want to change, enter the new value, then arrow to the next parameter in the branch you want to change. Continue until all the parameters in that branch that needed to be modified are changed. You can exit the branch by pressing <ESC>. Continue until all the necessary parameters have been modified as per the following list:


### Magnetek Spindle Drive Parameter List (G515):

File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
A1-00	0	0	0	0	0	0	0	0	default	language select
A1-01	4	4	4	4	4	4	4	4	default	parameter access level
A1-02	2	2	2	2	2	2	2	2	default	control method sel
A1-03	0	0	0	0	0	0	0	0	default	initialize parameters
A1-04	0	0	0	0	0	0	0	0	default	password
A2-01	0	0	0	0	0	0	0	0	default	user parameter 1
A2-02	0	0	0	0	0	0	0	0	default	user parameter 2
A2-03	0	0	0	0	0	0	0	0	default	user parameter 3
A2-04	0	0	0	0	0	0	0	0	default	user parameter 4
A2-05	0	0	0	0	0	0	0	0	default	user parameter 5
A2-06	0	0	0	0	0	0	0	0	default	user parameter 6
A2-07	0	0	0	0	0	0	0	0	default	user parameter 7
A2-08	0	0	0	0	0	0	0	0	default	user parameter 8
A2-09	0	0	0	0	0	0	0	0	default	user parameter 9
A2-10	0	0	0	0	0	0	0	0	default	user parameter 10
A2-11	0	0	0	0	0	0	0	0	default	user parameter 11
A2-12	0	0	0	0	0	0	0	0	default	user parameter 12
A2-13	0	0	0	0	0	0	0	0	default	user parameter 13
A2-14	0	0	0	0	0	0	0	0	default	user parameter 14
A2-15	0	0	0	0	0	0	0	0	default	user parameter 15
A2-16	0	0	0	0	0	0	0	0	default	user parameter 16
A2-17	0	0	0	0	0	0	0	0	default	user parameter 17
A2-18	0	0	0	0	0	0	0	0	default	user parameter 18
A2-19	0	0	0	0	0	0	0	0	default	user parameter 19
A2-20	0	0	0	0	0	0	0	0	default	user parameter 20
A2-21	0	0	0	0	0	0	0	0	default	user parameter 21
A2-22	0	0	0	0	0	0	0	0	default	user parameter 22
A2-23	0	0	0	0	0	0	0	0	default	user parameter 23
A2-24	0	0	0	0	0	0	0	0	default	user parameter 24
A2-25	0	0	0	0	0	0	0	0	default	user parameter 25
A2-26	0	0	0	0	0	0	0	0	default	user parameter 26
A2-27	0	0	0	0	0	0	0	0	default	user parameter 27
A2-28	0	0	0	0	0	0	0	0	default	user parameter 28
A2-29	0	0	0	0	0	0	0	0	default	user parameter 29
A2-30	0	0	0	0	0	0	0	0	default	user parameter 30
A2-31	0	0	0	0	0	0	0	0	default	user parameter 31
A2-32	0	0	0	0	0	0	0	0	default	user parameter 32

## Magnetek Spindle Drive Parameter List (G515):


File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
B1-01	1	1	1	1	1	1	1	1	default	reference sel
B1-02	1	1	1	1	1	1	1	1	default	operation method sel
B1-03	0	0	0	0	0	0	0	0	default	stopping method sel
B1-04	0	0	0	0	0	0	0	0	default	reverse operation prohibit
B1-05	0	0	0	0	0	0	0	0	default	zero speed operation
B1-06	1	1	1	1	1	1	1	1	0	cntl input scan rate
B1-07	0	0	0	0	0	0	0	0	default	local/remote run sel
B2-01	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	5	DC inj brk start freq
B2-02	50	50	50	50	50	50	50	50	default	DC inj brk current
B2-03	0	0	0	0	0	0	0	0	default	DC inj brk time at start
B2-04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	DC inj brk time at stop
B3-01	0	0	0	0	0	0	0	0	default	speed search sel
B3-02	100	100	100	100	100	100	100	100	default	speed search current
B3-03	2	2	2	2	2	2	2	2	default	speed search dec time
B4-01	0	0	0	0	0	0	0	0	default	time function ON delay time
B4-02	0	0	0	0	0	0	0	0	default	time function OFF delay time
B5-01	0	0	0	0	0	0	0	0	default	PID cntl mode
B5-02	1	1	1	1	1	1	1	1	default	PID proportional gain
B5-03	1	1	1	1	1	1	1	1	default	PID integral time
B5-04	100	100	100	100	100	100	100	100	default	PID integral limit
B5-05	0	0	0	0	0	0	0	0	default	PID differential time
B5-06	100	100	100	100	100	100	100	100	default	PID output limit
B5-07	0	0	0	0	0	0	0	0	default	PID offset adjustment
B5-08	0	0	0	0	0	0	0	0	default	PID delay time
B6-01	0	0	0	0	0	0	0	0	default	dwll freq @ start
B6-02	0	0	0	0	0	0	0	0	default	dwll freq @ start
B6-03	0	0	0	0	0	0	0	0	default	dwll freq @ start
B6-04	0	0	0	0	0	0	0	0	default	dwll freq @ start
B7-01	0	0	0	0	0	0	0	0	default	droop cntl gain
B7-02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	default	droop cntl delay time
B8-01	80	80	80	80	80	80	80	80	default	energy saving gain
B8-02	0	0	0	0	0	0	0	0	default	energy saving delay time
B9-01	5	5	5	5	5	5	5	5	50	zero servo gain
B9-02	10	10	10	10	10	10	10	10	50	zero servo count

## Magnetek Spindle Drive Parameter List (G515):


File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
C1-01	2.5	2.5	2.5	3.5	2.5	2.5	3.5	2.5	3	accel time 1
C1-02	2.5	2.5	2.5	3.5	2.5	2.5	3.5	2.5	4	decel time 1
C1-03	10	10	10	10	10	10	10	10	default	accel time 2
C1-04	10	10	10	10	10	10	10	10	default	decel time 2
C1-05	10	10	10	10	10	10	10	10	default	accel time 3
C1-06	10	10	10	10	10	10	10	10	default	decel time 3
C1-07	10	10	10	10	10	10	10	10	2	accel time 4
C1-08	10	10	10	10	10	10	10	10	2	decel time 4
C1-09	10	10	10	10	10	10	10	10	default	fast stop delay time
C1-10	1	1	1	1	1	1	1	1	0.01	acc/dec time units
C1-11	0	0	0	0	0	0	0	0	60	acc/dec time sw freq
C2-01	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	S curve @ acc start
C2-02	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	S curve @ acc end
C2-03	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	S curve @ dec start
C2-04	0	0	0	0	0	0	0	0	default	S curve @ dec end
C3-01	1	1	1	1	1	1	1	1	default	slip comp gain
C3-02	200	200	200	200	200	200	200	200	default	slip comp delay time
C3-03	100	100	100	100	100	100	100	100	default	slip comp limit
C3-04	0	0	0	0	0	0	0	0	default	slip comp during regen
C4-01	1	1	1	1	1	1	1	1	default	torque comp gain
C4-02	20	20	20	20	20	20	20	20	default	torque comp time
C5-01	20	20	20	20	20	20	20	20	60	ASR proportional gain 1
C5-02	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	ASR integral time 1
C5-03	20	20	20	20	20	20	20	20	default	ASR proportional gain 2
C5-04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	ASR integral time 2
C5-05	0	0	0	0	0	0	0	0	default	ASR integral limit
C5-06	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	default	ASR delay time
C5-07	0	0	0	0	0	0	0	0	1.5	ASR gain sw freq
C6-01	15	15	15	15	15	15	15	15	default	carrier freq up limit
C6-02	15	15	15	15	15	15	15	15	default	carrier freq low limit
C6-03	0	0	0	0	0	0	0	0	default	carrier freq proportional gain
C7-01	1	1	1	1	1	1	1	1	default	hunt prevention set
C7-02	1	1	1	1	1	1	1	1	default	hunt prevention gain
C8-08	1	1	1	1	1	1	1	1	default	AFR gain
C8-30	0	0	0	0	0	0	0	0	default	carrier in tune




## Magnetek Spindle Drive Parameter List (G515):

File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
D1-01	0	0	0	0	0	0	0	0	default	ref1
D1-02	0	0	0	0	0	0	0	0	default	ref2
D1-03	0	0	0	0	0	0	0	0	default	ref3
D1-04	0	0	0	0	0	0	0	0	default	ref4
D1-05	0	0	0	0	0	0	0	0	default	ref5
D1-06	0	0	0	0	0	0	0	0	default	ref6
D1-07	0	0	0	0	0	0	0	0	default	ref7
D1-08	0	0	0	0	0	0	0	0	default	ref8
D1-09	6	6	6	6	6	6	6	6	default	jog freq ref
D2-01	100	100	100	100	100	100	100	100	default	ref upper limit
D2-02	0	0	0	0	0	0	0	0	default	ref low limit
D3-01	0	0	0	0	0	0	0	0	default	cirt freq rejection 1
D3-02	0	0	0	0	0	0	0	0	default	cirt freq rejection 2
D3-03	0	0	0	0	0	0	0	0	default	cirt freq rejection 3
D3-04	0	1	1	1	1	1	1	1	default	cirt req reject width
D4-01	0	0	0	0	0	0	0	0	default	freq ref hold
D4-02	10	10	10	10	10	10	10	10	default	speed limit
D5-01	0	0	0	0	0	0	0	0	default	torque cntl sel
D5-02	0	0	0	0	0	0	0	0	default	torque ref filter
D5-03	1	1	1	1	1	1	1	1	default	speed limit sel
D5-04	0	0	0	0	0	0	0	0	default	speed limit value
D5-05	10	10	10	10	10	10	10	10	default	speed limit bias
D5-06	0	0	0	0	0	0	0	0	default	ref hold time
E1-01	230	230	230	230	230	230	230	230	default	input voltage
E1-02	0	0	0	0	0	0	0	0	1	motor sel
E1-03	F	F	F	F	F	F	F	F	default	v/f sel
E1-04	168	252	253	168	202	253	168	202	166.7	max freq
E1-05	230	230	230	230	230	230	230	230	default	max voltage
E1-06	69	69	69	69	69	69	69	69	70	base freq
E1-07	3	3	3	3	3	3	3	3	default	mid freq A
E1-08	12.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	default	mid volt A
E1-09	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	default	min freq
E1-10	6	2	2	2	2	2	2	2	default	min volt
E1-11	0	0	0	0	0	0	0	0	default	mid freq B
E1-12	0	0	0	0	0	0	0	0	default	mid volt B
E1-13	230	230	230	230	230	230	230	230	default	base voltage
E2-01	17.1	33	33	33	33	33	33	33	58	motor rated FLA
E2-02	1.5	1.32	1.32	1.32	1.32	0.81	0.81	0.81	0.65	motor rated slip
E2-03	5.31	12.35	12.35	12.35	12.35	13.27	13.27	13.27	24	no-load current
E2-04	4	4	4	4	4	4	4	4	default	# of poles
E2-05	0.434	0.384	0.384	0.384	0.384	0.227	0.227	0.227	0.161	terminal resistance
E2-06	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	default	leakage inductance
E2-07	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.38	saturation comp 1
E2-08	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.58	saturation comp 2
E2-09	0	0	0	0	0	0	0	0	default	mechanical loss


## Magnetek Spindle Drive Parameter List (G515):

File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
F1-01	1024	1024	1024	1024	1024	1024	1024	1024	2000	encoder pulses/rev
F1-02	1	1	1	1	1	1	1	1	default	encoder feedback loss sel
F1-03	1	1	1	1	1	1	1	1	default	encoder over speed sel
F1-04	3	3	3	3	3	3	3	3	default	encoder deviation sel
F1-05	0	0	0	0	0	0	0	0	default	encoder rotation sel
F1-06	1	1	1	1	1	1	1	1	default	encoder output ratio
F1-07	1	1	1	1	1	1	1	1	default	encoder ramp P1/1 sel
F1-08	115	115	115	115	115	115	115	115	default	encoder over speed level
F1-09	0	0	0	0	0	0	0	0	2	encoder over speed time
F1-10	10	10	10	10	10	10	10	10	50	encoder deviate level
F1-11	5	5	5	5	5	5	5	5	default	encoder deviate time
F1-12	0	0	0	0	0	0	0	0	default	encoder # gear teeth 1
F1-13	0	0	0	0	0	0	0	0	default	encoder # gear teeth 2
F1-14	20	20	20	20	20	20	20	20	default	encoder open ckt detect time
F2-01	0	0	0	0	0	0	0	0	default	AI-14 bi/uni polar input sel
F3-01	0	0	0	0	0	0	0	0	default	DI input
F4-01	2	2	2	2	2	2	2	2	default	AO ch1 sel
F4-02	1	1	1	1	1	1	1	1	default	AO ch1 gain
F4-03	3	3	3	3	3	3	3	3	default	AO ch2 sel
F4-04	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	default	AO ch2 gain
F5-01	0	0	0	0	0	0	0	0	default	DO-02 ch1 sel
F5-02	1	1	1	1	1	1	1	1	default	DO-02 ch2 sel
F6-01	0	0	0	0	0	0	0	0	default	DO-08 sel
F7-01	1	1	1	1	1	1	1	1	default	PO-36F sel

### Magnetek Spindle Drive Parameter List (G515):

File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
H1-01	25	25	25	25	25	25	25	25	72	term 3 sel, (Mot OH/N.C.)
H1-02	14	20	20	20	20	20	20	20	default	term 4 sel, (Reset input)
H1-03	3	3	3	3	3	3	3	3	default	term 5 sel
H1-04	4	4	4	4	4	4	4	4	default	term 6 sel
H1-05	6	6	6	6	6	6	6	6	default	term 7 sel
H1-06	8	8	8	8	8	8	8	8	default	term 8 sel
H2-01	0	0	0	0	0	0	0	0	33	term 9 & 10 sel
H2-02	1	1	1	1	1	1	1	1	default	term 25 & 26 sel
H2-03	2	2	2	2	2	2	2	2	default	term 26 & 27 sel
H3-01	0	0	0	0	0	0	0	0	default	term 13 signal
H3-02	100	100	100	100	100	100	100	100	default	term 13 gain
H3-03	0	0	0	0	0	0	0	0	default	term 13 bias
H3-04	0	0	0	0	0	0	0	0	default	term 16 signal
H3-05	0	0	0	0	0	0	0	0	default	term 16 sel
H3-06	100	100	100	100	100	100	100	100	default	term 16 gain
H3-07	0	0	0	0	0	0	0	0	default	term 16 bias
H3-08	2	2	2	2	2	2	2	2	default	term 14 signal
H3-09	1F	1F	1F	1F	1F	1F	1F	1F	default	term 14 sel
H3-10	100	100	100	100	100	100	100	100	default	term 14 gain
H3-11	0	0	0	0	0	0	0	0	default	term 14 bias
H3-12	0	0	0	0	0	0	0	0	default	filter average time
H4-01	3	3	3	3	3	3	3	3	3	term 21 sel
H4-02	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	term 21 gain
H4-03	0	0	0	0	0	0	0	0	default	term 21 bias
H4-04	3	3	3	3	3	3	3	3	default	term 23 sel
H4-05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	default	term 23 gain
H4-06	0	0	0	0	0	0	0	0	default	term 23 bias
H4-07	0	0	0	0	0	0	0	0	default	AO level sel
H5-01	1F	1F	1F	1F	1F	1F	1F	1F	default	serial comm address
H5-02	3	3	3	3	3	3	3	3	default	serial baud rate
H5-03	0	0	0	0	0	0	0	0	default	serial parity sel
H5-04	3	3	3	3	3	3	3	3	default	serial fault sel
H5-05	1	1	1	1	1	1	1	1	default	comm error (CE) detect

## Magnetek Spindle Drive Parameter List (G515):

File Name:	-	-	LG5-VF0	LG5-VF0k	LG5-VF16	BG5-VF0	BG5-VF0k	BF5-VF16	GPD515	
Motor Mfg	Lincoln Toshiba	Lincoln Toshiba	Lincoln	Lincoln	Lincoln	Baldor	Baldor	Baldor	Lincoln	
Haas Model	VF-1,2	VF-1,2	VF-0	VF-0	VF-1-6 HS-X	VF-0	VF-0	VF-1-6 HS-X	50 Taper	
Max RPM:	5000	7500	7500	10k	7500	7500	10k	7500		
Motor Hp:	5	5/7.5	10/15	10/15	10/15	10/15	10/15	10/15		
Parameter	default = use default value									Description
L1-01	1	1	1	1	1	1	1	1	default	MOL fault sel
L1-02	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	default	MOL time const
L2-01	0	0	0	0	0	0	0	0	default	power loss sel
L2-02	2	2	2	2	2	2	2	2	default	power loss ridethru time
L2-03	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	default	power loss baseblock time
L2-04	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	default	power loss v/f ramp time
L2-05	190	190	190	190	190	190	190	190	default	PUV det level
L2-06	0	0	0	0	0	0	0	0	default	KEB freq
L3-01	1	1	1	1	1	1	1	1	default	stall prevent accel sel
L3-02	170	195	195	195	195	160	160	160	default	stall prev accel (<base)
L3-03	70	100	100	100	100	65	65	65	default	stall prev accel (>base)
L3-04	0	0	0	0	0	0	0	0	default	stall prevent decel sel
L3-05	1	1	1	1	1	1	1	1	default	stall prevent run sel
L3-06	170	190	190	190	190	160	160	160	default	stall prevent run level
L4-01	0	0	0	0	0	0	0	0	default	speed agree level
L4-02	2	2	2	2	2	2	2	2	default	speed agree width
L4-03	0	0	0	0	0	0	0	0	default	speed agree level +/-
L4-04	2	2	2	2	2	2	2	2	default	speed agree with +/-
L4-05	0	0	0	0	0	0	0	0	default	ref loss sel
L5-01	0	0	0	0	0	0	0	0	default	# of restarts
L5-02	0	0	0	0	0	0	0	0	default	restart sel
L6-01	0	0	0	0	0	0	0	0	default	torque det 1 sel
L6-02	150	150	150	150	150	150	150	150	default	torque det 1 level
L6-03	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	default	torque det 1 time
L6-04	0	0	0	0	0	0	0	0	default	torque det 2 sel
L6-05	150	150	150	150	150	150	150	150	default	torque det 2level
L6-06	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	default	torque det 2 time
L7-01	200	200	200	200	200	200	200	200	300	torque limit fwd
L7-02	200	200	200	200	200	200	200	200	300	torque limit rev
L7-03	200	200	200	200	200	200	200	200	300	torque limit fwd regen
L7-04	200	200	200	200	200	200	200	200	300	torque limit rev regen
L8-01	3	3	3	3	3	3	3	3	default	DB resistor prot
L8-02	95	95	95	95	95	95	95	95	default	overheat pre-alarm level
L8-03	3	3	3	3	3	3	3	3	default	overheat pre-alarm sel
L8-05	0	0	0	0	0	0	0	0	default	phase loss in sel
L8-07	1	1	1	1	1	1	1	1	default	phase loss out sel
O1-01	6	6	6	6	6	6	6	6	default	user monitor sel
O1-02	2	2	2	2	2	2	2	2	default	power on monitor
O1-03	0	0	0	0	0	0	0	0	default	display scaling
O1-04	0	0	0	0	0	0	0	0	default	display units
O1-05	0	0	0	0	0	0	0	0	default	address display
O2-01	1	1	1	1	1	1	1	1	default	local/remote key
O2-02	1	1	1	1	1	1	1	1	default	operator stop key
O2-03	0	0	0	0	0	0	0	0	default	user defaults
O1-05	0	0	0	0	0	0	0	0	default	operator M.O.P.
O2-06	1	1	1	1	1	1	1	1	default	operator detection
O2-07	0	0	0	0	0	0	0	0	default	elapsed time set
O2-08	0	0	0	0	0	0	0	0	default	elapsed time run
O2-09	1	1	1	1	1	1	1	1	default	init mode sel

# Mitsubishi A200E

## Spindle Drive Programming

The Mitsubishi A200E spindle drive uses many parameters. Using the Parameter Unit (PU) **Part # 94-5001**, the required parameters can be selected and their values set and/or changed in accordance with the following parameter list.

Once the drive is powered up, make sure the spindle drive parameters are initialized by performing the following:

- Plug the PU into the front of the spindle drive
- Press <PU OP> *The frequency setting screen is displayed*
- Press <SET> *The spindle drive is placed in the parameter setting mode*
- Type 77 *The screen for parameter 77 is displayed*
- Press <READ> *The current value for parameter 77 is displayed*
- Type 701 *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*
- Type 96 then ➤ Press <READ> *The current value for parameter 96 is displayed*
- Type 9 *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*
- Type 40 then ➤ Press <READ> *The current value for parameter 40 is displayed*
- Type 1238 *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*
- Type 22 then ➤ Press <READ> *The current value for parameter 22 is displayed*
- Type 3 *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*
- Type 77 then ➤ Press <READ> *The current value for parameter 77 is displayed*
- Type 2 *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*

The drive is now initialized with default parameters.

To customize the drive perform the following:

- Press <PU OP> *The frequency setting screen is displayed*
- Press <SET> *The spindle drive is placed in the parameter setting mode*
- Type 0 *The screen for parameter 0 is displayed*
- Press <READ> *The current value for parameter 0 is displayed*  
If the value is correct Press <SHIFT> to go to the next parameter  
If the value is incorrect do the next step.
- Type (The correct value as listed on the following parameter list) *The new set value is shown on the display*
- Press <WRITE> *The new value is stored into memory*
- **NOTE:** You can step through the parameters by pressing <SHIFT>. You can jump to a parameter by performing the following: Press <SET>, Type the parameter you want to go to, Press <READ> to read the current value. Verify all the parameters are correct and make necessary changes in accordance with the following parameter list.

# Mitsubishi A200E Spindle Drive Parameter List (VF/HS)

Haas Model	VF-12HT				Hi Torq VF/HS grb	VF-0		No grb		DESCRIPTION
	VF-0	VF-12	VF-346	VF-12346		VF-0	VF-0	HS-1- HS-X	HS-1	
Max RPM:	7500	7500	7500	10k	10k	10k	10k	7500	10k	
Motor Hp:	7.5/10	7.5/10	10/15	7.5 Δ	10 Δ	10 Δ	7.5/10	10/15	10/15	
Drive Hp	7.5	7.5	10	10	15	15	7.5	10	10	
Parameter	3/96	3/96	3/96	7/96	12/96	9/96	3/96	3/96	3/96	date of last change
0	3.2	3.2	3.2	2.5	1.5	2.5	3.2	3.2	3.2	torque boost, (manual)
1	253	202	202	268	268	168	168	253	168	max frequency
2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	min frequency
3	69	69	69	110	115	110	69	69	69	v/f base frequency
4	60	60	60	60	60	60	60	60	60	multi-speed setting: 1 <sup>st</sup> , (low spd)
5	30	30	30	30	30	30	30	30	30	multi-speed setting: 2 <sup>nd</sup> , (med spd)
6	10	10	10	10	10	10	10	10	10	multi-speed setting: 3 <sup>rd</sup> , (hi spd)
7	2	2	2	3	3	3	2	2	3	acceleration time, sec
8	2	2	2	3	3	3	2	2	3	deceleration time, sec
9	24	24	33	33	45	45	24	33	33	motor current 100%, amps
10	1	1	1	1	1	1	1	1	1	DC dynamic brake op frequency
11	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	DC dynamic brake brake time
12	3	3	3	3	3	3	3	3	3	DC dynamic brake brake voltage
13	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	minimum frequency
14	0	0	0	0	0	0	0	0	0	applied load pattern selection
15	5	5	5	5	5	5	5	5	5	jog frequency
16	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	jog accel/decel time
17	1	1	1	1	1	1	1	1	1	external thermal relay input
18	253	202	202	268	268	168	168	253	168	maximum frequency limit
19	230	230	230	230	230	230	230	230	230	base frequency voltage
20	253	202	202	268	268	168	168	253	168	accel/decel reference frequency
21	0	0	0	0	0	0	0	0	0	accel/decel time increment
22	170	170	170	150	150	150	170	170	170	stall prevention level
23	80	80	80	80	80	80	80	80	80	stall prevention op level at 2x spd
24	9999	9999	9999	9999	9999	9999	9999	9999	9999	multi-speed setting: 4 <sup>th</sup>
25	9999	9999	9999	9999	9999	9999	9999	9999	9999	multi-speed setting: 5 <sup>th</sup>
26	9999	9999	9999	9999	9999	9999	9999	9999	9999	multi-speed setting: 6 <sup>th</sup>
27	9999	9999	9999	9999	9999	9999	9999	9999	9999	multi-speed setting: 7 <sup>th</sup>
28	0	0	0	0	0	0	0	0	0	multi-speed input compensation
29	0	0	0	0	0	0	0	0	0	accel/decel pattern selection
30	1	1	1	1	1	1	1	1	1	regen brake op factor selection
31	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 1A
32	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 1B
33	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 2A
34	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 2B
35	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 3A
36	9999	9999	9999	9999	9999	9999	9999	9999	9999	frequency jump 3B
37	4	4	4	4	4	4	4	4	4	speed indication
38	50	50	50	50	50	50	50	50	50	auto torque boost
39	23.4	23.4	30	30	30	30	30	30	30	auto torque boost op start current
40	1238	1238	1238	1238	1238	1238	1238	1238	1238	output terminal assignment
41	5	5	5	5	5	5	5	5	5	up-to-frequency sensitivity
42	6	6	6	6	6	6	6	6	6	output frequency detection
43	9999	9999	9999	9999	9999	9999	9999	9999	9999	output freq detect at rev rotation
44	5	5	5	5	5	5	5	5	5	second accel/decel time
45	9999	9999	9999	9999	9999	9999	9999	9999	9999	second decel time
46	9999	9999	9999	9999	9999	9999	9999	9999	9999	second torque boost
47	9999	9999	9999	9999	9999	9999	9999	9999	9999	second v/f base frequency
48	150	150	150	150	150	150	150	150	150	2 <sup>nd</sup> stall prevent op level, (current)
49	0	0	0	0	0	0	0	0	0	2 <sup>nd</sup> stall prevent op level, (freq)
50	30	30	30	30	30	30	30	30	30	2 <sup>nd</sup> output frequency detection
51	1	1	1	1	1	1	1	1	1	inverter LED display data selection
52	0	0	0	0	0	0	0	0	0	PU main display data selection
53	10	10	10	10	10	10	10	10	10	PU level display data selection
54	102	102	102	102	102	102	102	102	102	FM terminal function selection
55	60	60	60	60	60	60	60	60	60	frequency monitoring reference
56	96	96	132	132	180	180	96	132	132	current monitoring reference

# Mitsubishi A200E Spindle Drive Parameter List (VF/HS)

Haas Model	VF-12HT								DESCRIPTION	
	VF-0	VF-12	HSgrb VF-346	VF-12346	Hi Torq VF/HS grb	VF-0	VF-0	No grb HS-1- HS-X		No grb HS-1
Max RPM:	7500	7500	7500	10k	10k	10k	10k	7500	10k	
Motor Hp:	7.5/10	7.5/10	10/15	7.5 Δ	10 Δ	10 Δ	7.5/10	10/15	10/15	
Drive Hp	7.5	7.5	10	10	15	15	7.5	10	10	
Parameter	-----	-----	-----	-----	-----	-----	-----	-----	-----	
57	9999	9999	9999	9999	9999	9999	9999	9999	9999	restart coasting time
58	1	1	1	1	1	1	1	1	1	restart rise time
59	0	0	0	0	0	0	0	0	0	remote setting function selection
60	0	0	0	0	0	0	0	0	0	intelligent mode selection
65	0	0	0	0	0	0	0	0	0	retry selection
66	70	70	70	150	150	150	70	70	70	stall prev op reduction start frequency
67	0	0	0	0	0	0	0	0	0	number of retries at alarm occur
68	0	0	0	0	0	0	0	0	0	retry waiting time
69	0	0	0	0	0	0	0	0	0	retry count display erasure
70	30	30	30	30	0	0	30	30	30	special regen brake op factor
71	2	2	2	2	2	2	2	2	2	applied motor
72	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	PWM frequency selection
73	1	1	1	1	1	1	1	1	1	0 to 5v or 0 to 10v selection
74	1	1	1	1	1	1	1	1	1	input filter time constant
75	0	0	0	0	0	0	0	0	0	reset selection
76	0	0	0	0	0	0	0	0	0	alarm code output selection
77	2	2	2	2	2	2	2	2	2	parameter write disable selection
78	0	0	0	0	0	0	0	0	0	rev rotation prevention selection
79	0	0	0	0	0	0	0	0	0	op mode selection
80	9999	9999	9999	9999	9999	9999	9999	9999	9999	motor capacity
81	9999	9999	9999	9999	9999	9999	9999	9999	9999	number of motor poles
95	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	mfg setting
96	0	0	0	0	0	0	0	0	0	auto tune
100	2	2	2	2	2	2	2	2	2	v/f 1 hz
101	11.3	11.3	11.3	6.3	5	6.3	11.3	11.3	11.3	v/f 1 volts
102	5	5	5	10	10	10	5	5	5	v/f 2 hz
103	19.2	19.2	19.2	15.6	15.6	15.6	19.2	19.2	19.2	v/f 2 volts
104	10	10	10	30	30	30	10	10	10	v/f 3 hz
105	34.9	34.9	34.9	45	45	45	34.9	34.9	34.9	v/f 3 volts
106	30	30	30	50	50	50	30	30	30	v/f 4 hz
107	100.7	100.7	100.7	73	73	73	100.7	100.7	90	v/f 4 volts
108	50	50	50	80	80	80	50	50	50	v/f 5 hz
109	166.9	166.9	145	120	120	120	166.9	166.9	145	v/f 5 volts
114	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	in position zone
134	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	relay output selection
135	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter output selection
136	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter offset
137	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter gain
145	0	0	0	0	0	0	0	0	0	sw option
147	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
148	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
149	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
155	0	0	0	0	0	0	0	0	0	(undefined)
156	4	4	4	0	0	0	4	4	4	(undefined)
157	0	0	0	0	0	0	0	0	0	(undefined)
158	9999	9999	9999	9999	9999	9999	9999	9999	9999	(undefined)
159	0	0	0	0	0	0	0	0	0	(undefined)
901		load	meter	calibration						AM terminal position calibration
902	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	frequency setting voltage bias
903	253hz @100%	202hz @100%	202hz @100%	268hz @100%	268hz @100%	168hz @100%	168hz @100%	253hz @100%	168hz @100%	frequency setting voltage gain
904/905	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	frequency setting current bias/gain

## Mitsubishi A200E Spindle Drive Parameter List (HL)

Haas Model	HL-1	HL-1h	HL-1h	HL-1h	HL-4 w/grb	HL-4	DESCRIPTION
Max RPM:	3750	5k 2:3	5k 2:3	5k 5:6	3400	3400	
Motor Hp:	10/15	10/15	7.5 Δ	10/15	20/30	20/30	
Drive Hp	10	10	10	10	20	20	
Parameter	3/96	3/96	9/96	3/96	3/96	3/96	date of last change
0	3.2	3.2	2.5	3.2	2	2	torque boost, (manual)
1	253	253	253	202	191	230	max frequency
2	0.5	0.5	0.5	0.5	0.5	0.5	min frequency
3	69	69	110	69	69	69	v/f base frequency
4	60	60	60	60	60	60	multi-speed setting: 1 <sup>st</sup> , (low spd)
5	30	30	30	30	30	30	multi-speed setting: 2 <sup>nd</sup> , (med spd)
6	10	10	10	10	10	10	multi-speed setting: 3 <sup>rd</sup> , (hi spd)
7	3	5	9	5	5	5	acceleration time, sec
8	3	6	11	6	5	5	deceleration time, sec
9	33	33	33	33	66	66	motor current 100%, amps
10	1	1	1	1	4	4	DC dynamic brake op frequency
11	0.1	0.1	0.1	0.1	0.5	0.5	DC dynamic brake brake time
12	3	3	3	3	3	3	DC dynamic brake brake voltage
13	0.5	0.5	0.5	0.5	0.5	0.5	minimum frequency
14	0	0	0	0	0	0	applied load pattern selection
15	5	5	5	5	5	5	jog frequency
16	0.5	0.5	0.5	0.5	0.5	0.5	jog accel/decel time
17	1	1	1	1	1	1	external thermal relay input
18	253	253	253	202	191	230	maximum frequency limit
19	230	230	230	230	230	230	base frequency voltage
20	253	253	253	202	191	230	accel/decel reference frequency
21	0	0	0	0	0	0	accel/decel time increment
22	170	170	150	170	160	160	stall prevention level
23	175	175	175	175	60	60	stall prevention op level at 2x spd
24	9999	9999	9999	9999	9999	9999	multi-speed setting: 4 <sup>th</sup>
25	9999	9999	9999	9999	9999	9999	multi-speed setting: 5 <sup>th</sup>
26	9999	9999	9999	9999	9999	9999	multi-speed setting: 6 <sup>th</sup>
27	9999	9999	9999	9999	9999	9999	multi-speed setting: 7 <sup>th</sup>
28	0	0	0	0	0	0	multi-speed input compensation
29	0	0	0	0	0	0	accel/decel pattern selection
30	1	1	1	1	1	1	regen brake op factor selection
31	9999	9999	9999	9999	9999	9999	frequency jump 1A
32	9999	9999	9999	9999	9999	9999	frequency jump 1B
33	9999	9999	9999	9999	9999	9999	frequency jump 2A
34	9999	9999	9999	9999	9999	9999	frequency jump 2B
35	9999	9999	9999	9999	9999	9999	frequency jump 3A
36	9999	9999	9999	9999	9999	9999	frequency jump 3B
37	4	4	4	4	4	4	speed indication
38	50	50	50	50	50	50	auto torque boost
39	30	30	30	30	42	42	auto torque boost op start current
40	1238	1238	1238	1238	1238	1238	output terminal assignment
41	5	5	5	5	5	5	up-to-frequency sensitivity
42	6	6	6	6	6	6	output frequency detection
43	9999	9999	9999	9999	9999	9999	output freq detect at rev rotation
44	5	5	5	5	10	10	second accel/decel time
45	9999	9999	9999	9999	9999	9999	second decel time
46	9999	9999	9999	9999	9999	9999	second torque boost
47	9999	9999	9999	9999	9999	9999	second v/f base frequency
48	150	150	150	150	150	150	2 <sup>nd</sup> stall prevent op level, (current)
49	0	0	0	0	0	0	2 <sup>nd</sup> stall prevent op level, (freq)
50	30	30	30	30	30	30	2 <sup>nd</sup> output frequency detection
51	1	1	1	1	1	1	inverter LED display data selection
52	0	0	0	0	0	0	PU main display data selection
53	10	10	10	10	10	10	PU level display data selection
54	102	102	102	102	102	102	FM terminal function selection
55	60	60	60	60	60	60	frequency monitoring reference
56	132	132	132	132	264	264	current monitoring reference



## Mitsubishi A200E Spindle Drive Parameter List (HL)

Haas Model	HL-1	HL-1h	HL-1h	HL-1h	HL-4 w/grb	HL-4	DESCRIPTION
Max RPM:	3750	5k 2:3	5k 2:3	5k 5:6	3400	3400	
Motor Hp:	10/15	10/15	7.5 Δ	10/15	20/30	20/30	
Drive Hp	10	10	10	10	20	20	
Parameter	-----	-----	-----	-----	-----	-----	
57	9999	9999	9999	9999	9999	9999	restart coasting time
58	1	1	1	1	1	1	restart rise time
59	0	0	0	0	0	0	remote setting function selection
60	0	0	0	0	0	0	intelligent mode selection
65	0	0	0	0	0	0	retry selection
66	70	70	150	70	70	70	stall prev op reduction start frequency
67	0	0	0	0	0	0	number of retries at alarm occur
68	0	0	0	0	0	0	retry waiting time
69	0	0	0	0	0	0	retry count display erasure
70	30	30	30	30	0	0	special regen brake op factor
71	2	2	2	2	2	2	applied motor
72	14.5	14.5	14.5	14.5	14.5	14.5	PWM frequency selection
73	1	1	1	1	1	1	0 to 5v or 0 to 10v selection
74	1	1	1	1	1	1	input filter time constant
75	0	0	0	0	0	0	reset selection
76	0	0	0	0	0	0	alarm code output selection
77	2	2	2	2	2	2	parameter write disable selection
78	0	0	0	0	0	0	rev rotation prevention selection
79	0	0	0	0	0	0	op mode selection
80	9999	9999	9999	9999	9999	9999	motor capacity
81	9999	9999	9999	9999	9999	9999	number of motor poles
95	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	mfg setting
96	0	0	0	0	0	0	auto tune
100	2	2	2	2	2	2	v/f 1 hz
101	11.3	11.3	11.3	11.3	6.3	6.3	v/f 1 volts
102	5	5	10	5	5	5	v/f 2 hz
103	19.2	19.2	15.6	19.2	19.2	19.2	v/f 2 volts
104	10	10	30	10	10	10	v/f 3 hz
105	34.9	34.9	45	34.9	34.9	34.9	v/f 3 volts
106	30	30	50	30	30	30	v/f 4 hz
107	100.7	100.7	73	100.7	100.7	100.7	v/f 4 volts
108	50	50	80	50	50	50	v/f 5 hz
109	166.9	166.9	120	166.9	166.9	166.9	v/f 5 volts
114	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	in position zone
134	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	relay output selection
135	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter output selection
136	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter offset
137	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	analog meter gain
145	0	0	0	0	0	0	sw option
147	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
148	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
149	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	sw option
155	0	0	0	0	0	0	(undefined)
156	0	0	0	0	0	0	(undefined)
157	0	0	0	0	0	0	(undefined)
158	9999	9999	9999	9999	9999	9999	(undefined)
159	0	0	0	0	0	0	(undefined)
901		load	meter	calibration			AM terminal position calibration
902	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	0hz @0%	frequency setting voltage bias
903	253hz @100%	253hz @100%	253hz @100%	202hz @100%	191hz @100%	230hz @100%	frequency setting voltage gain
904/905	n/a	n/a	n/a	n/a	n/a	n/a	frequency setting current bias/gain



**ED# 1019**

Mitsubishi 20 HP A500 Spindle Drive Parameters

73	1	1	1	1	1	1	1	0-5V or 0-10V Selection
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Revised Sept 20, 2000//BW

Mach Model:	VF-x/HS-1	VF-0	HL-1/2	HL-2BB	HL-4 grb	HL-4 no grb	
SP Max RPM:	10k	10k	5000	3400	3400	3400	
SP Motor Hp:	10 Delta	10 Delta	10 Delta	20/30	20/30	20/30	Function/Description

Parameter#								
74	1	1	1	1	1	1	1	Input Filter Time Constant
75	0	0	0	0	0	0	0	Reset Selection
76	0	0	0	0	0	0	0	Alarm Op
77	2	2	2	2	2	2	2	Parameter Write Disable
78	0	0	0	0	0	0	0	Rev Rotation Prev Selection
79	0	0	0	0	0	0	0	Op Mode Select
80	9999	9999	9999	9999	9999	9999	9999	Motor kW Rating
81	9999	9999	9999	9999	9999	9999	9999	Motor Number of Poles
82 to 94								Parameters not used in V/F mode
95	0	0	0	0	0	0	0	Advanced Mode
96	0	0	0	0	0	0	0	Auto Tune
100	2	2	2	4	4	4	4	Voltage/Frequency point 1: Hz
101	5.3	6.3	5.3	13.5	13.5	13.5	13.5	Voltage/Frequency point 1: Volts
102	10	10	10	7	7	7	7	Voltage/Frequency point 2: Hz
103	15.6	15.6	16	23	23	23	23	Voltage/Frequency point 2: Volts
104	30	30	30	10	10	10	10	Voltage/Frequency point 3: Hz
105	45	45	57	34.9	34.9	34.9	34.9	Voltage/Frequency point 3: Volts
106	50	50	50	30	30	30	30	Voltage/Frequency point 4: Hz
107	73	73	100.7	100.7	100.7	100.7	100.7	Voltage/Frequency point 4: Volts
108	80	80	80	50	50	50	50	Voltage/Frequency point 5: Hz
109	120	120	130	166.9	166.9	166.9	166.9	Voltage/Frequency point 5: Volts
110 to 113	9999	9999	9999	9999	9999	9999	9999	Third Functions (not used)
114	150	150	150	150	150	150	150	Third Stall Prevention Op Current
115	0	0	0	0	0	0	0	Third Stall Prevention Op Freq
116	9999	9999	9999	9999	9999	9999	9999	Third Stall Prevention Freq Detect
117	0	0	0	0	0	0	0	Station Number
118	192	192	192	192	192	192	192	Communication Speed
119	1	1	1	1	1	1	1	Stop Bit Length
120	2	2	2	2	2	2	2	Parity Check
121	1	1	1	1	1	1	1	Number of Comm Retries
122	0	0	0	0	0	0	0	Comm Check Time Interval
123	9999	9999	9999	9999	9999	9999	9999	Wait Time Setting
124	1	1	1	1	1	1	1	CR/LF Presense
128	10	10	10	10	10	10	10	PID Action Selection
129	100	100	100	100	100	100	100	PID Proportional Band
130	1	1	1	1	1	1	1	PID Integral Time
131	9999	9999	9999	9999	9999	9999	9999	Upper Limit
132	9999	9999	9999	9999	9999	9999	9999	Lower Limit
133	0	0	0	0	0	0	0	Action Set Point for PU
134	9999	9999	9999	9999	9999	9999	9999	PID Differential Time
135	0	0	0	0	0	0	0	PSU Switch Over (not used)
136	1	1	1	1	1	1	1	PSU Switch Over (not used)
137	0.5	0.5	0.5	0.5	0.5	0.5	0.5	PSU Switch Over (not used)
138	0	0	0	0	0	0	0	PSU Switch Over (not used)
139	9999	9999	9999	9999	9999	9999	9999	PSU Switch Over (not used)
144	4	4	4	4	4	4	4	Display Language
145	1	1	1	1	1	1	1	??????????????
148	150	150	150	150	150	150	150	Stall Prevention at 0V Input
149	200	200	200	200	200	200	200	Stall Prevention at 10V Input
150	150	150	150	150	150	150	150	Output Current Detect Level
151	0	0	0	0	0	0	0	Output Current Detect Period
152	5	5	5	5	5	5	5	Zero Current Detection Level
153	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Zero Current Detection Period
154	1	1	1	1	1	1	1	VReduction During Stall Prevention
155	0	0	0	0	0	0	0	RT Activated Condition

## ED# 1019

### Mitsubishi 20 HP A500 Spindle Drive Parameters

Mach Model:	VF-x/HS-1	VF-0	HL-1/2	HL-2BB	HL-4 grb	HL-4 no grb	Revised Sept 20, 2000//BW
SP Max RPM:	10k	10k	5000	3400	3400	3400	
SP Motor Hp:	10 Delta	10 Delta	10 Delta	20/30	20/30	20/30	Function/Description

Parameter#							
156	0	0	0	0	0	0	Stall Prevention Op Select
157	0	0	0	0	0	0	OL Signal Wait Time
158	17	17	17	17	17	17	AM Terminal Function Select
160	0	0	0	0	0	0	User Group Read Selection (not used)
162	0	0	0	0	0	0	Auto-Restart after Power Fail
163	0	0	0	0	0	0	First Cushion Time for Restart
164	0	0	0	0	0	0	First Cushion Voltage for Restart
165	150	150	150	150	150	150	Restart Stall Prevention OP Level
168	7391	7391	7391	7391	7391	7391	MFG Setting
169	4	4	4	4	4	4	
170	0	0	0	0	0	0	
171	0	0	0	0	0	0	
173	0	0	0	0	0	0	User Group 1 Registration
174	0	0	0	0	0	0	Group 1 Deletion
175	0	0	0	0	0	0	User Group 2 Registration
176	0	0	0	0	0	0	Group 2 Deletion
180	0	0	0	0	0	0	RL Terminal Function
181	1	1	1	1	1	1	RM Terminal Function
182	2	2	2	2	2	2	RH Terminal Function
183	3	3	3	3	3	3	RT Terminal Function
184	4	4	4	4	4	4	AU Terminal Function
185	7	7	7	7	7	7	JOG Terminal Function Select
186	6	6	6	6	6	6	CS Terminal Function
190	0	0	0	0	0	0	RUN Terminal Function
191	1	1	1	1	1	1	SU Terminal Function
192	2	2	2	2	2	2	IPF Terminal Function
193	3	3	3	3	3	3	OL Terminal Function
194	100	100	100	100	100	100	FU Terminal Function Select
195	99	99	99	99	99	99	Activates ABC contacts on Fault
199	0	0	0	0	0	0	Users Initial Value Setting
232 to 239	9999	9999	9999	9999	9999	9999	Program Set 1-2-3 (not used)
240	1	1	1	1	1	1	Soft PWM Setting
244	0	0	0	0	0	0	Cooling Fan Op Select
250	9999	9999	9999	9999	9999	9999	Stop Selection
251	1	1	1	1	1	1	Output Phase Error Protection Select
252	50	50	50	50	50	50	Override Bias
253	150	150	150	150	150	150	Override Gain
261	1	1	1	1	1	1	Power Fail Stop Select
262	3	3	3	3	3	3	Subtracted Frequency at Decel Start
263	60	60	60	60	60	60	Subtraction Starting Frequency
264	6	6	6	6	6	6	Power Fail Decel Time 1
265	9999	9999	9999	9999	9999	9999	Power Fail Decel Time 2
266	60	60	60	60	60	60	Power Fail Decel Time Switch Over F

## ED# 1019

### Mitsubishi 20 HP A500 Spindle Drive Parameters

Mach Model:	VF-x/HS-1	VF-0	HL-1/2	HL-2BB	HL-4 grb	HL-4 no grb	Revised Sept 20, 2000//BW
SP Max RPM:	10k	10k	5000	3400	3400	3400	
SP Motor Hp:	10 Delta	10 Delta	10 Delta	20/30	20/30	20/30	Function/Description

Parameter#							
270	0	0	0	0	0	0	Stop on Contact . . .
271	50	50	50	50	50	50	Hi-Speed Setting Max Current
272	100	100	100	100	100	100	Mid-Speed Minimum Current
273	9999	9999	9999	9999	9999	9999	Current Averaging Range
274	16	16	16	16	16	16	Current Avg Filter Time Constant
285	9999	9999	9999	9999	9999	9999	Overspeed Detect Frequency
286	0	0	0	0	0	0	Droop Gain
287	0.3	0.3	0.3	0.3	0.3	0.3	Droop Filter Constant
900	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	FM Terminal Calibration
901	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	AM Terminal Calibration
902	0Hz @ 0%	0Hz @ 0%	0Hz @ 0%	0Hz @ 0%	0Hz @ 0%	0Hz @ 0%	External Voltage Bias
903	268Hz @ 100%	168Hz @ 100%	268Hz @ 100%	230Hz @ 100%	191Hz @ 100%	230Hz @ 100%	External Voltage Gain
904	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	Frequency Setting Current Bias
905	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	Frequency Setting Current Gain
990	1	1	1	1	1	1	Beeper on
991	53	53	53	53	53	53	