APPENDIX A

SYSTEM STATUS/ERROR MESSAGES

A.1 SYSTEM ERROR MESSAGES

System error messages (ERROR LED in status column ON) will be displayed on the screen as a 4 character number written in the hexadecimal notation. The top line of the screen exhibits a data block number, spindle speed and feedrate information. The block shown or the block following will contain the error.

The second line shows the message "ERROR" followed by a 4 character Hex number. This number, from left to right, corresponds to 4 possible error/status sets, labeled 1 through 4, each containing 4 possible error messages (see Table A-1). Consult the list of error combinations (Table A-2) to determine the error(s) which apply.

Table A-2 shows the conversion of the Hex notation to the corresponding 4 bit binary nibble. Each bit, from right to left, denotes increasing powers of the base 2 (binary system), the numbers 1, 2, 4, and 8 represent the decimal equivalent of each of those bits. Each appearance of "1" under any of these decimal values corresponds to the appropriate messages listed within the set, see Table A-1.

Example:

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|N 0 9 T 0 3          S 4 0 0   F 3 0 . 0|
|E R R O R :   C 0 4 2                     |
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C 0 4 2

C = Set 1, 0 = Set 2, 4 = Set 3, 2 = Set 4

(See Table A-1)

Table A-1: Error Message Sets

SET NO.	BIT VALUE	ERROR MESSAGE	ACTION
1	1	Front Panel not sending valid key values	B
	2	Internal Communications Error	C,B
	4	Drive fault	C,B
	8	Electronics faults	C
2	1	ROM failure	B
	2	RAM failure	A,B(1)
	4	Tool Table Check sum error	A(1),B
	8	Part Program Checksum error	A(1),B
3	1	Commanded move would exceed machine limits	A
	2	EAF SOFT (communications) error	C
	4	Communications error	A
	8	System fatal error	C
4	1	Programming error found by Parser	A
	2	Cutter Compensation error #1 - no intersection found	A
	4	Cutter Compensation error #2 conflict deciding which intersection applies	A
	8	Spindle not enabled for a non G0 move	A

* A = Operator/Programmer repairable
B = Maintenance/Field Rep. repairable
C = Activate reset, if same message persists, go to B
(1) May be caused by a dead battery on power up

Table A-2: Error Combinations - Hex To Binary

HEX NO. SYMBOL	EQUIVALENT 4-BIT BINARY CODE CORRESPONDING DECIMAL VALUE 8	4	2	1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

The first number, Hex C, refers to Set 1 (Table A-1). In Table A-2, C represents the combination of error messages listed under decimal 4 and 8. From Table A-1, Section 1, you may read the errors referred to as: Drive Fault - check FMDC LEDs (4), and Electronics Fault (8). The next number, 0, signifies no errors in Set 2. Hex 4 translates to the message, under 4 in Set 3: Communications Error; while Hex 2 (last number) represents: Cutter Compensation Error #1 - No Intersection Found (under decimal 2).

It may be useful to present the translation of the message by another approach:

1. From the 4 character error word, determine which set (or sets) is referenced in Table A-1. From left to right, the first number targets Set 1 in the table, the second number Set 2, and so forth.

2. Look in Table A-2 to determine which of the Set(s) of 4 possible messages are referenced. This table is used for all 4 characters in the error number.

   Each of the 4 vertical columns (to the right of the Hex character) will contain a "0" or a "1", and are headed by the numbers 1, 2, 4, and 8. Only the columns with a "1" are recognized.

3. The referenced column in Table A-2 (1, 2, 4 or 8) refers to the same number in the applicable set in Table A-1. Read the message(s) opposite the appropriate number(s) as the those applying to that Hex character in the error message.

4. Go to the next Hex character, if other than zero, and follow the same procedure.

Errors may be cleared using the following methods:

1. Press the RESET PROGRAM key. This should clear most errors.

2. Press AXIS DRIVE ENABLE and home the machine.

If it is a Tool Table or Part Program Check Sum error, it will be necessary to clear the table or the program and reenter the data.