CHAPTER 8

OPTIONAL EQUIPMENT

8.1 OPTIONAL EQUIPMENT

The following is a list of optional equipment available for the R2E3 Series I CNC system:

1. Paper Tape Reader, enclosure and data cable
2. EZ-FILE~ - Floppy Disk Storage
3. #30 Quick Change Tool Kit
4. I-4 Indexer
5. Coolant System - Mist and/or Flood
6. EZ-CAM~

8.2 PAPER TAPE READER

The paper tape reader is a device for loading part programs and is a portable unit that can be transported from one machine to another, if desired. The R2E3 Series I CNC is equipped with an MS type connector for the paper tape reader cable.

8.3 EZ-FILE~ MASS STORAGE DEVICE

The Bridgeport EZ-FILE~ is a floppy disk base device providing easy and fast part program storage. The storage medium is a 5 1/4 floppy diskette with a atorage capacity of 400K bytes (3200 feet of tape) and up to 77 part programs. These floppy diskettes are also compatible with Bridgeport's interactive graphics part programming system EZ-CAM~.

Communications and control of the EZ-FILE~ is primarily through the R2E3 system. All part programs can be saved and retreaved via their individual 5 digit numeric name. A special communications link is also provided for the execution of part programs that are too long to reside in the Control's memory.

8.4 #30 QUICK CHANGE TOOL KIT

This option contains a Bridgeport #30 Quick Change basic tooling package composed of collets and corresponding tool holders, a locking fixture for assembly of cutters in the holders, and appropriate wrenches. The kit contains:

1. End Mill holders
2. Shell Mill adapter
3. Tenthset boring head with adapter
4. Boring Cutter (carbide tipped)
5. Drill and End Mill chucks
6. Standard Collets
7. 300 Series Collets
8. Drill and End Mill extension chuck

8.5 I-4 INDEXER

This option permits miscellaneous function M51 (Index Table) to be programmed in conjunction with the use of a suitable Indexing Table which inhibits data transfer and prevents machine movement while the indexing operation is taking place (Erickson 450 or 600 Indexer with oil tight limit switches LS-1 and LS-2).

Plug receptacle for the Index Table option is the top right space on the Tape Reader/Remote Serial Interface panel (next to the 15 pin paper tape plug).

8.5.1 Physical Description

The package resembles the pneumatic brake manifold and incorporates the same cover, mounting plate dimensions, mounting bracket, and hardware. The mounting plate uses a single solenoid valve. Main air is supplied to the index control by a "tee" located in the main air line. A 7.5" hose is available to continue the main air to the brake manifold.

8.6 COOLANT SYSTEM - MIST AND/OR FLOOD

With the Auxiliary Control Group option, the coolant will be turned ON/OFF with the spindle. Separate coolant switches are provided.

All coolant systems must be ordered as Coolant Kits and as Nozzle Assemblies, either separate or installed. The pump units are designated as 115/1/50 or 115/1/60 units and all heads will have one flood nozzle.

8.7 EZ-CAM~

The EZ-CAM~ (Computer Aided Manufacturing) is a desk top computer with interactive graphics and part programming capability. This option permits the operator to accomplish the following:

1. Reproduce a part graphically on the CRT from an engineering drawing.

2. Program the part through an interactive menu format.

3. Display the shape and tool path to "prove" the program before committing it to production.

4. Load the generated programs, through EZ-LINK~, Paper Tape, or EZ-FILE~ directly into the CNC milling machines.

G193		PECK	Deep hold drilling cycle
G197		CHIPBK	Chip breaking cycle
	X	START PT	Start point
	Y	START PT	Start point
	Z	START PT	Start point
	X	DIM	Dimension
	Y	DIM	Dimension
	Z	DIM	Dimension
	Z	1ST PECK	First peck
	Z	PECK	Peck
	P	# HOLES X	Number of holes on X axis
	P	# HOLES Y	Number of holes on Y axis
	F	FEED	Feedrate

7.3 MDI STORE

In MDI STORE, the program blocks are entered with the same "menu" format and executed as with MDI. The completed blocks are stored at the end of the text buffer.

When MDI STORE is pressed the screen will show:

```
-----------------------------------------------------
|0 0    D E F              :                        |
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
|E X E C                   P R G M    #             |
-----------------------------------------------------
```

After the part program number is entered, the operator may enter tool parameters for the program. The following screen is displayed:

```
-----------------------------------------------------
|0 0    D E F              T                        |
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
|E N T                     T O O L                  |
-----------------------------------------------------
```

When the tool number has been entered, the operator will be prompted for the TLO, DIA, and the spindle speed. EXECUTE will cause the tool data to be stored in the part program buffer after the part program.

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