



CURE-TROL VI

<p>BESSER</p> <p>CURE-TROL VI</p> <p>-----</p> <p>START UP</p>										<table border="1"><tr><td>PF1</td><td>A</td><td>7</td><td>8</td><td>9</td><td></td></tr><tr><td>PF2</td><td>B</td><td>4</td><td>5</td><td>6</td><td></td></tr><tr><td>PF3</td><td>C</td><td>1</td><td>2</td><td>3</td><td></td></tr><tr><td>PF4</td><td>D</td><td>0</td><td></td><td></td><td></td></tr><tr><td>PF5</td><td>E</td><td>ESC</td><td>↑</td><td></td><td></td></tr><tr><td>PF6</td><td>F</td><td>←</td><td></td><td>→</td><td></td></tr><tr><td></td><td></td><td>DELETE</td><td>↓</td><td></td><td></td></tr><tr><td></td><td></td><td>BACK SPACE</td><td>ENTER</td><td></td><td></td></tr></table>						PF1	A	7	8	9		PF2	B	4	5	6		PF3	C	1	2	3		PF4	D	0				PF5	E	ESC	↑			PF6	F	←		→				DELETE	↓					BACK SPACE	ENTER		
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F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
F11	F12	F13	F14	F15	F16	F17	F18	F19	F20

466375F9802US • Maintenance/Operation Manual

DECEMBER 1998 US\$250

BESSER

COMPANY NAME:

SERIAL NUMBER:

ASSEMBLY NUMBER:

WIRING DIAGRAM NUMBER:

















INSTALLATION DRAWING NUMBER:

SAFETY BULLETIN

This notice is issued to advise you that some previously accepted shop practices may not be keeping up with changing Federal and State Safety and Health Standards. Your current shop practices may not emphasize the need for proper precautions to insure safe operation and use of machines, tools, automatic loaders and allied equipment and/or warn against the use of certain solvents or other cleaning substances that are now considered unsafe or prohibited by law. Since many of your shop practices may not reflect current safety practices and procedures, particularly with regard to the safe operation of equipment, it is important that you review your practices to ensure compliance with Federal and State Safety and Health Standards.

IMPORTANT

The operation of any machine or power-operated device can be extremely hazardous unless proper safety precautions are strictly observed. Observe the following safety precautions:

-  Always be sure proper guarding is in place for all pinch, catch, shear, crush and nip points.
-  Always make sure that all personnel are clear of the equipment before starting it.
-  Always be sure the equipment is properly grounded.
-  Always turn the main electrical panel off and lock it out in accordance with published lockout/tagout procedures prior to making adjustments, repairs, and maintenance.
-  Always wear appropriate protective equipment like safety glasses, safety shoes, hearing protection and hard hats.
-  Always keep chemical and flammable material away from electrical or operating equipment.
-  Always maintain a safe work area that is free from slipping and tripping hazards.
-  Always be sure appropriate safety devices are used when providing maintenance and repairs to all equipment.
-  Never exceed the rated capacity of a machine or tool.
-  Never modify machinery in any way without prior written approval of the Besser Engineering Department.
-  Never operate equipment unless proper maintenance has been regularly performed.
-  Never operate any equipment if unusual or excessive noise or vibration occurs.
-  Never operate any equipment while any part of the body is in the proximity of potentially hazardous areas.
-  Never use any toxic flammable substance as a solvent cleaner.
-  Never allow the operation or repair of equipment by untrained personnel.
-  Never climb or stand on equipment when it is operational.

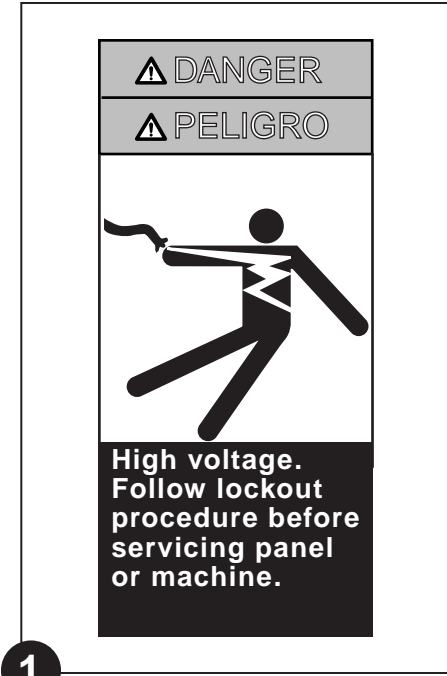
It is important that you review Federal and State Safety and Health Standards on a continual basis. All shop supervisors, maintenance personnel, machine operators, tool operators, and any other person involved in the setup, operation, maintenance, repair or adjustment of Besser-built equipment should read and understand this bulletin and Federal and State Safety and Health Standards on which this bulletin is based.

SAFETY SIGNS

Sign	Description	Required
1	All Panels	1
2	Mixer	4
3	Concrete Products Machine.....	1
	Depalleter	2
4	Mixer	2
5	Skiploader	4
6	Skiploader/Mixer Platforms	8
7	Skiploader/Mixer Platforms	8
8	Vertical: Pallet Transport System	2
	Horizontal: LSC-40A/LSC-100	6
	Pallet Transport System	4
9	Besser-Matic	4
10	Besser-Matic	4
11	Skiploader	4
12	All Panels	1
13	Overhead Block Transfer	4
14	Concrete Products Machine.....	1
15	Concrete Products Machine.....	2
16	Conveyors	12
17	Cuber	8
18	Cuber	3
	Block Turnovers.....	2
	Slat Conveyors.....	2

**To order safety decals, contact your local Besser representative
or the Besser Central Order Department.**

Thank you!



1
Large 113236F0409
 High Voltage
 Width 4 1/2 inch
 Height 9 5/8 inch
Small 113236F0204
 High Voltage
 Width 2 inch
 Height 4 1/8 inch



2
113237F0410
 Mixer Blade Hazard
 Width 4 1/2 inch
 Height 10 1/4 inch



3
113240F0307
 Crush Hazard
 Width 3 1/2 inch
 Height 7 1/2 inch



4
114692F1006
 Nip Points
 Width 5 3/4 inch
 Height 9 1/2 inch



5
114688F0906
 Crush Hazard
 Width 6 1/4 inch
 Height 9 1/2 inch



6
114689F0804
 Fall Hazard
 Width 4 1/2 inch
 Height 7 3/4 inch



7

114690F0805
Falling Objects
Width 4 3/4 inch
Height 8 inch



8

Vertical: 113245F0704
Crush Hazard
Width 4 1/8 inch
Height 7 inch
Horizontal: 113245F1005
Crush Hazard
Width 10 inch
Height 5 3/4 inch



9

113242F0409
Crush Hazard
Width 4 1/2 inch
Height 9 5/8 inch



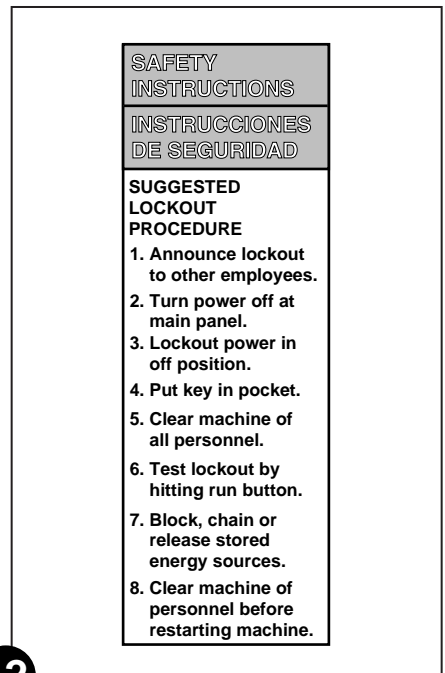
10

113243F0410
Falling Objects
Width 4 1/2 inch
Height 10 inch



11

114691F1006
Shear and Fall Hazards
Width 5 3/4 inch
Height 9 3/4 inch



12

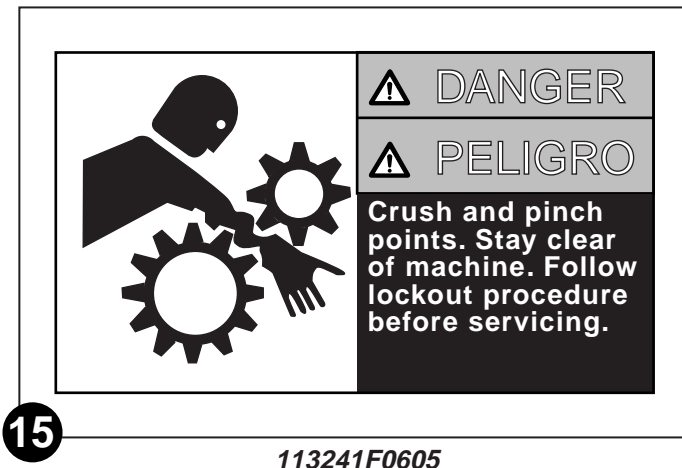
113249F0410
Safety Instructions Decal –
Suggested Lockout Procedure
Width 4 inch
Height 10 inch



113238F1005
Crush Hazard
Width 10 inch
Height 5 3/4 inch



113239F0604
Crush Hazard
Width 6 5/8 inch
Height 4 inch



113241F0605
Crush and Pinch Points
Width 6 5/8 inch
Height 4 inch



113246F0704
Nip Hazard
Width 7 inch
Height 4 1/2 inch



113427F1006
Crush Hazard
Width 10 inch
Height 6 inch



113250F1006
Crush and Pinch Hazard
Width 10 inch
Height 6 inch

CURE-TROL VI SPECIFICATIONS

OPERATING CONDITIONS:

Besser machinery and equipment is designed to comply with the essential health and safety regulations (EHSR) that apply to directives which are applicable to an industrial environment.

Buyer shall utilize this equipment in a manner consistent with its design and only in an industrial environment.

OPERATING RANGES:

Here are the normal operating ranges for machine sensors (limit, proximity) and control devices contained within the control panels.

Ambient operating temperature range:

32° to 131°F [0° to 55°C]

Humidity range:

5 to 95% (non-condensing)

Line voltage:

85 to 132 volts – AC 50/60 Hz

Preset	1 3/4 hours	2 1/2 hours
Steam Cycle	2 hours to 165°F.	3 hours to 185°F.
Hold	30 minutes (@165°F. but exotherm brings up to 174°F.)	30 minutes (@170°F. but exotherm brings up to approximately 185°F.)
Soak	4 1/2 hours	4 1/2 hours
Exhaust		
Total Cycle Times	9 hours	10 3/4 hours

Temperature in degrees or tenths of degrees Celsius or Fahrenheit.

Table A Typical Curing Cycles by Besser Cure-Trol

SECTION 1

CURE-TROL VI


1.1 CURE-TROL VI

This control panel package consists of an Allen-Bradley SLC 5/03 central processor unit and a Xycom 2005 work station with 9 inch monochrome CRT display. The most up-to-date programmable controls combined with a user-friendly operator interface including built in "help" screens makes for a system that is easy to program and flexible for various curing requirements. The con-

troller may be programmed to allow controlled steam during the preset cycle. Steam may be injected and controlled to more than one kiln at a time. Each kiln may be run at a different rate of rise plus a different end temperature. Controller and set points are fully digital. Boiler shut down and blow down contacts are provided. Units are factory calibrated and require no field service installation supervision.

1.2 TERMS AND DEFINITIONS

TERM	DEFINITION
Actual Temperature	The actual temperature in the kiln.
Boiler Off	The boiler enable interlock is turned off.
Boiler Ready	The boiler interlock is on and boiler has had sufficient time to reach operating temperature.
Boiler Warming Up	The enable interlock is enabled but boiler has not had sufficient time to reach operating temperature.
Completed	The curing cycle is complete and the kiln is not active.
Exhaust	The interval in the curing cycle where the hot moist air is removed from the kilns, allowing the block to dry. Blinking "Exhausting" indicates that the kiln is active and on the exhaust cycle.
Hold	The interval in the curing cycle which keeps the block at high temperatures. A normal setting would be 1/2 – 1 hour. Blinking "Holding" indicates the kiln is active and on the hold cycle.
Hysteresis	The number of degrees the temperature must exceed or drop below the target temperature before the steam is turned on or turned off. A normal setting would be 3° – 5°F (1° – 3°C).
Max Kiln Dev (Alarm)	The maximum kiln temperature deviation from target before sounding alarm. A normal setting is 6° – 10°F (3° – 5°C).
Maximum Kiln Temperature	The maximum kiln temperature before alarming. A normal setting is 10° – 15°F (5° – 8°C) above the highest expected temperature.
Mist	Moisture applied to concrete while curing.
Mist Off Time	Amount of time the mist is off during the on/off pulsing.
Mist On Time	Amount of time the mist is on during the on/off pulsing.

TERM	DEFINITION
No Faults Are Detected	All kilns are operating normally. A fault message displays on the screen if a fault is detected.
Preset	Point in the curing cycle when the concrete units get an initial set before they are subjected to high steam at high temperatures. A normal setting is 1 1/2 – 2 hours. Blinking “Preset” indicates the kiln is active and on the preset cycle.
Ramp	Interval in the curing cycle of accelerated steam and temperature rise. A normal setting is 1 1/2 – 2 hours. Blinking “Ramping” indicates the kiln is active and on the ramp cycle.
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> CAUTION: Do not exceed 1°F temperature rise per minute.</div>	
Time Remaining	Time remaining in that step of the curing cycle.
Set Point (SP)	Temperature at which a cycle begins or ends.
Soak	Interval in the cycle that keeps the block in the high temperatures and damp atmosphere for a few hours in order to enhance the curing. Normally the kiln doors are not opened and steam is not applied. A normal setting is 7 – 10 hours. Blinking “Soaking” indicates the kiln is active and on the soak cycle.
Target Temperature	The temperature the kiln is attempting to obtain.
Total Mist Time	Total amount of time for misting before completion.

1.3 FUNCTION KEYS

Numerous function keys guide you through the Cure-Trol VI. The up, down, left and right arrows allow movement of the cursor. Use the left arrow to go back and type over mistakes. When the cursor highlights the correct selection, press the enter key to accept the selection.

The **F1** key through the **F10** key modify set points and timers in order to program the kiln curing to the desired curing cycle conditions.

The **F11** key through the **F20** key starts the corresponding kiln curing cycle.

- **Home** disables alarm.
- **Page up** displays information on the next 10 kilns.
- **Page down** displays information on the previous 10 kilns.
- **F1** exits to Main Menu screen.
- **F2** allows modification of kiln curing times and temperature.
- **F3** starts the kiln curing cycle.
- **F4** increments the curing cycle to the next step.
- **F5** allows adjustment of the time remaining in the step.
- **F6** toggles the steam selection on and off.
- **F7** accesses the mist selection. See Section 1.5 for misting options.

- **F8** displays the Manual screen.
- **F9** displays the Data Table Display screen.
- **F10** displays the help menu.

For advanced troubleshooting, use the Date Table Display screen.

1.4 SET POINTS (SP)

A set point (SP) is a temperature at which a cycle begins or ends. The first set point signals the cycle to begin, and the second set point signals the cycle to stop. It is necessary to establish the set points for the following cycles:

- Ramp
- Hold
- Soak
- Exhaust
- Mist (See Section 1.5)
- Mist Off Time (See Section 1.5)
- Mist On Time (See Section 1.5)
- Total Mist Time (See Section 1.5)
- Hysteresis

See Figure 1.1.

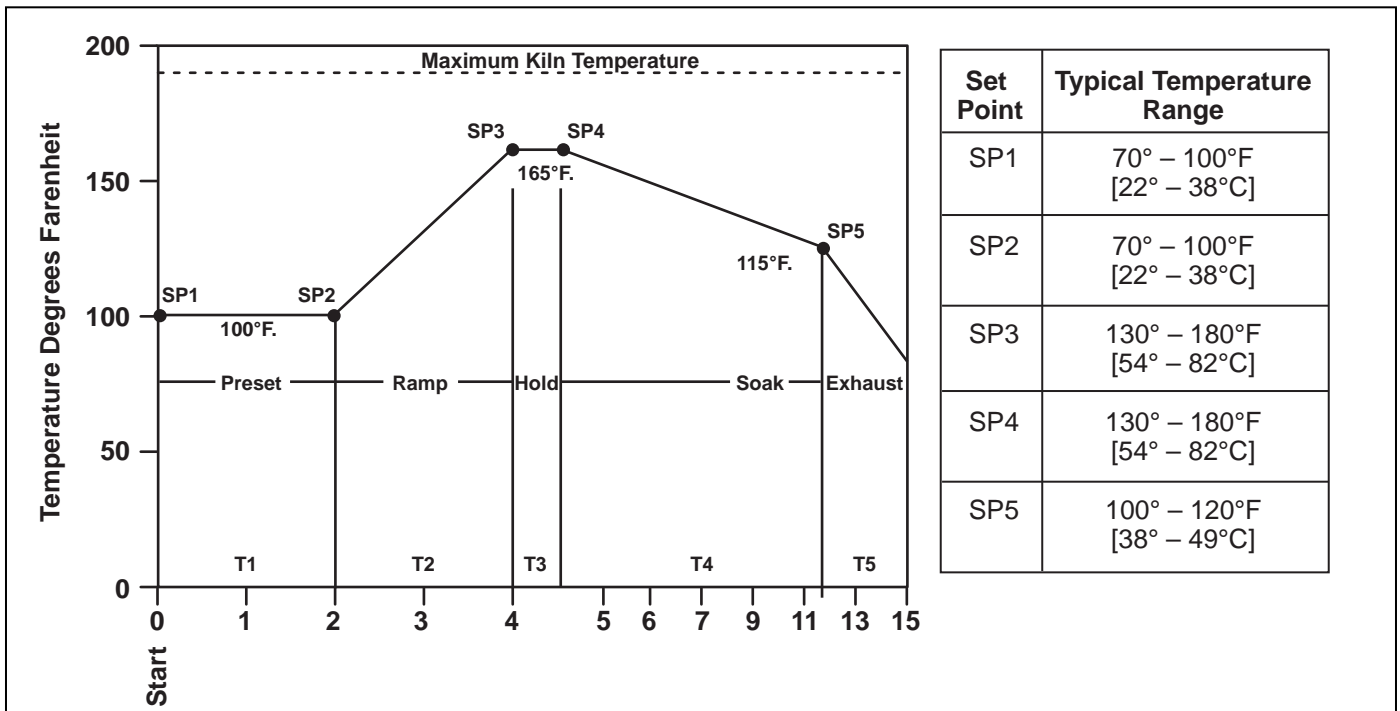


Figure 1.1 Cure-Trol VI Profile

1.5 MIST SELECTIONS

Pressing the **F7** key accesses the mist selection. Pressing the **F7** key repeatedly scrolls through the following options:

Message	Mist Start	Mist Stop
Mist Off	N/A	N/A
Mist On SP1/SP2	SP1	SP2
Mist On SP1/ Sp3	SP1	SP3
Mist On SP1/SP4	SP1	SP4
Mist On SP1/Tim	SP1	Total Mist Time
Mist On SP2/SP3	SP2	SP3
Mist On Sp2/SP4	SP2	SP4
Mist On SP2/Tim	SP2	Total Mist Time

Table 1.1 Mist Selections