

GSI / Top Dry

2002 Service School Manual



a division of
THE GSI GROUP



PNEG-1263

Contents

Safety Pages.....	4
Product Updates.....	5
Software Revisions.....	10
Technical Data.....	17
Software Diagnostics.....	21
Warranty.....	27

Roof Damage Warning and Disclaimer



GSI DOES NOT WARRANT ANY ROOF DAMAGE CAUSED BY EXCESSIVE VACUUM OR INTERNAL PRESSURE FROM FANS OR OTHER AIR MOVING SYSTEMS. ADEQUATE VENTILATION AND/OR "MAKEUP AIR" DEVICES SHOULD BE PROVIDED FOR ALL POWERED AIR HANDLING SYSTEMS. GSI DOES NOT RECOMMEND THE USE OF DOWNWARD FLOW SYSTEMS (SUCTION). SEVERE ROOF DAMAGE CAN RESULT FROM ANY BLOCKAGE OF AIR PASSAGES. RUNNING FANS DURING HIGH HUMIDITY/COLD WEATHER CONDITIONS CAN CAUSE AIR EXHAUST OR INTAKE PORTS TO FREEZE.

Operating Instructions

The principal concern of the GSI Group, Inc. ("GSI") is your safety and the safety of others associated with grain handling equipment. This manual is written to help you understand safe operating procedures, and some of the problems that may be encountered by the operator or other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment, or who are in the fan area. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

Safety Alert Symbol

The symbol shown is used to call your attention to instructions concerning your personal safety. Watch for this symbol; it points out important safety precautions. It means "ATTENTION", "WARNING", "CAUTION", and "DANGER". Read the message and be cautious to the possibility of personal injury or death.



WARNING! BE ALERT!

Personnel operating or working around electric fans should read this manual. This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Grain Systems, Inc. recommends contacting your local power company, and having a representative survey your installation so the wiring is compatible with their system, and adequate power is supplied to your unit.

Safety decals should be read and understood by all people in the grain handling area. The rotating blade, fire warning decals and voltage danger decal must be displayed on the fan can. The bottom right decal should be present on the inside bin door cover of the two ring door, 24" porthole door cover and the roof manway cover.

If a decal is damaged or is missing contact:

Grain Systems, Inc.
1004 E. Illinois St.
Assumption, IL 62510
217-226-4421

A free replacement will be sent to you.



! WARNING

Stay clear of rotating blade. Blade could start automatically. Can cause serious injury. Disconnect power before servicing.

DC-1225



! WARNING

Flame and pressure beyond door. Do not operate with service door removed. Keep head and hands clear. Can cause serious injury.

DC-1227

! DANGER!



High voltage. Will cause serious injury or death. Lockout power before servicing.

DC 1224

! DANGER!



Automatic equipment can start at anytime. Do not enter until fuel is shut off and electrical power is locked in off position. Failure to do so will result in serious injury or death.

DC-573

**READ THESE INSTRUCTIONS
BEFORE OPERATION AND SERVICE
SAVE FOR FUTURE REFERENCE**

1. Read and understand the operating manual before trying to operate the dryer.
2. Power supply should be OFF for service of electrical components. Use CAUTION in checking voltage or other procedures requiring power to be ON.
3. Check for gas leaks at all gas pipe connections. If any leaks are detected, do not operate the dryer. Shut down and repair before further operation.
4. Never attempt to operate the dryer by jumping or otherwise bypassing any safety devices on the unit.
5. Set pressure regulator to avoid excessive gas pressure applied to burner during ignition and when burner is in operation. Do not exceed maximum recommended drying temperature.
6. Keep the dryer clean. Do not allow fine material to accumulate in the plenum or drying chamber.
7. Use CAUTION in working around high speed fans, gas burners, augers and auxiliary conveyors which START AUTOMATICALLY.
8. Do not operate in any area where combustible material will be drawn into the fan.
9. Before attempting to remove and reinstall any propellor, make certain to read the recommended procedure listed within the servicing section of the manual.
10. Clean grain is easier to dry. Fine material increases resistance to airflow and requires removal of extra moisture.

This product is intended for the use of grain handling only. Any other use is considered a misuse of the product.

Some edges of the product components can be sharp. It is recommended that each component of this product be examined to determine if there are any safety considerations to be taken. Any and all necessary personal protective equipment should be worn at all times when handling, assembling, installing and operation of the product and/or components.

Guards are removed for illustration purpose only. All guards must be

**Use Caution in the
Operation of this
Equipment**

The design and manufacture of this dryer is directed toward operator safety. However, the very nature of a grain dryer having a gas burner, high voltage electrical equipment and high speed rotating parts, does present a hazard to personnel, which can not be completely safeguarded against, without interfering with efficient operation and reasonable access to components.

Use extreme caution in working around high speed fans, gas-fired heaters, augers and auxiliary conveyors, which may start without warning when the dryer is operating on automatic control.

**KEEP THE DRYER CLEAN
DO NOT ALLOW FINE
MATERIAL TO ACCUMULATE
IN THE PLENUM CHAMBER
OR SURROUNDING THE OUT-
SIDE OF THE DRYER**

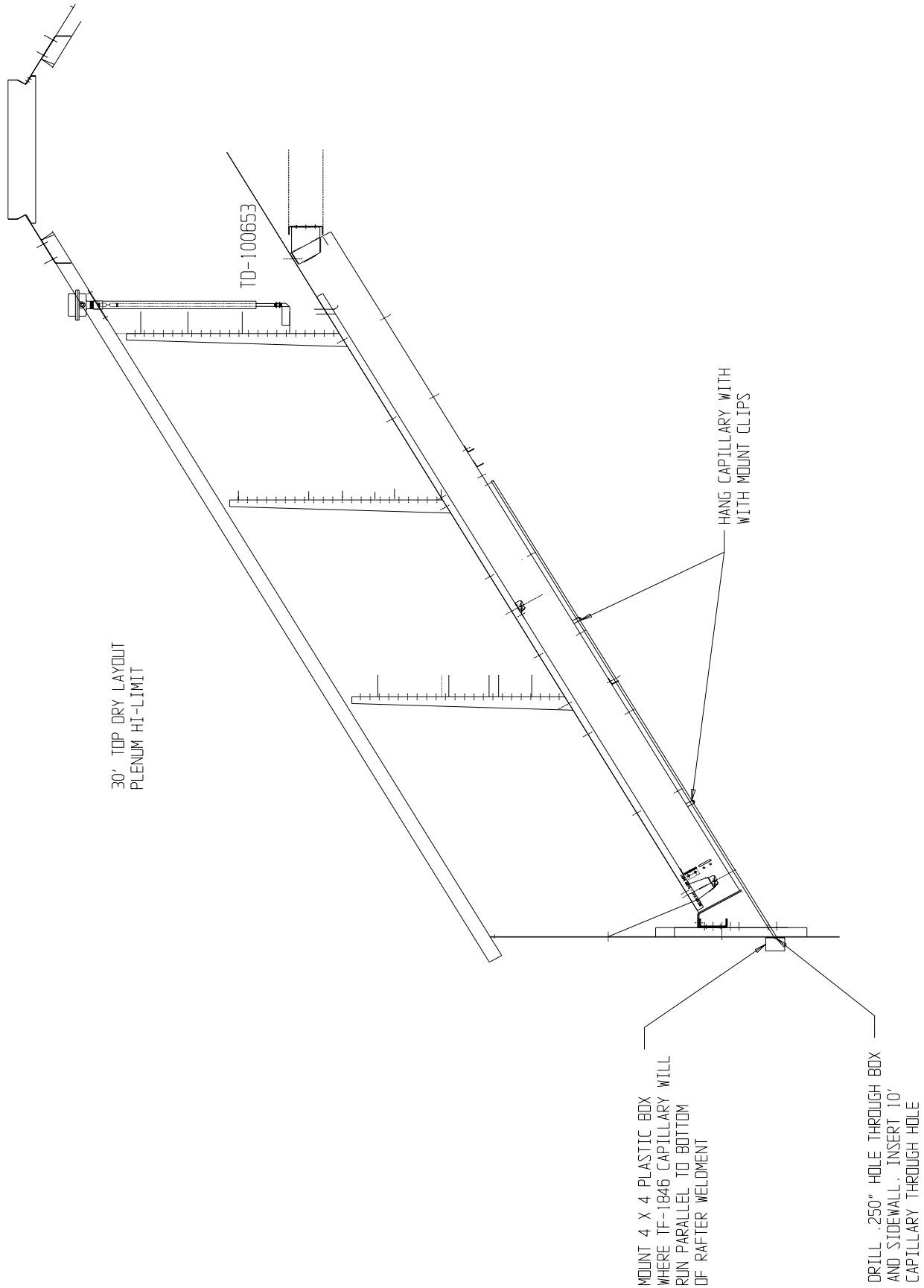
Continued safe, dependable operation of automatic equipment depends, to a great degree, upon the owner. For a safe and dependable drying system, follow the recommendations within this manual, and make it a practice to regularly inspect the operation of the unit for any developing problems or unsafe conditions. Take special note of the safety precautions listed above before attempting to operate the dryer.

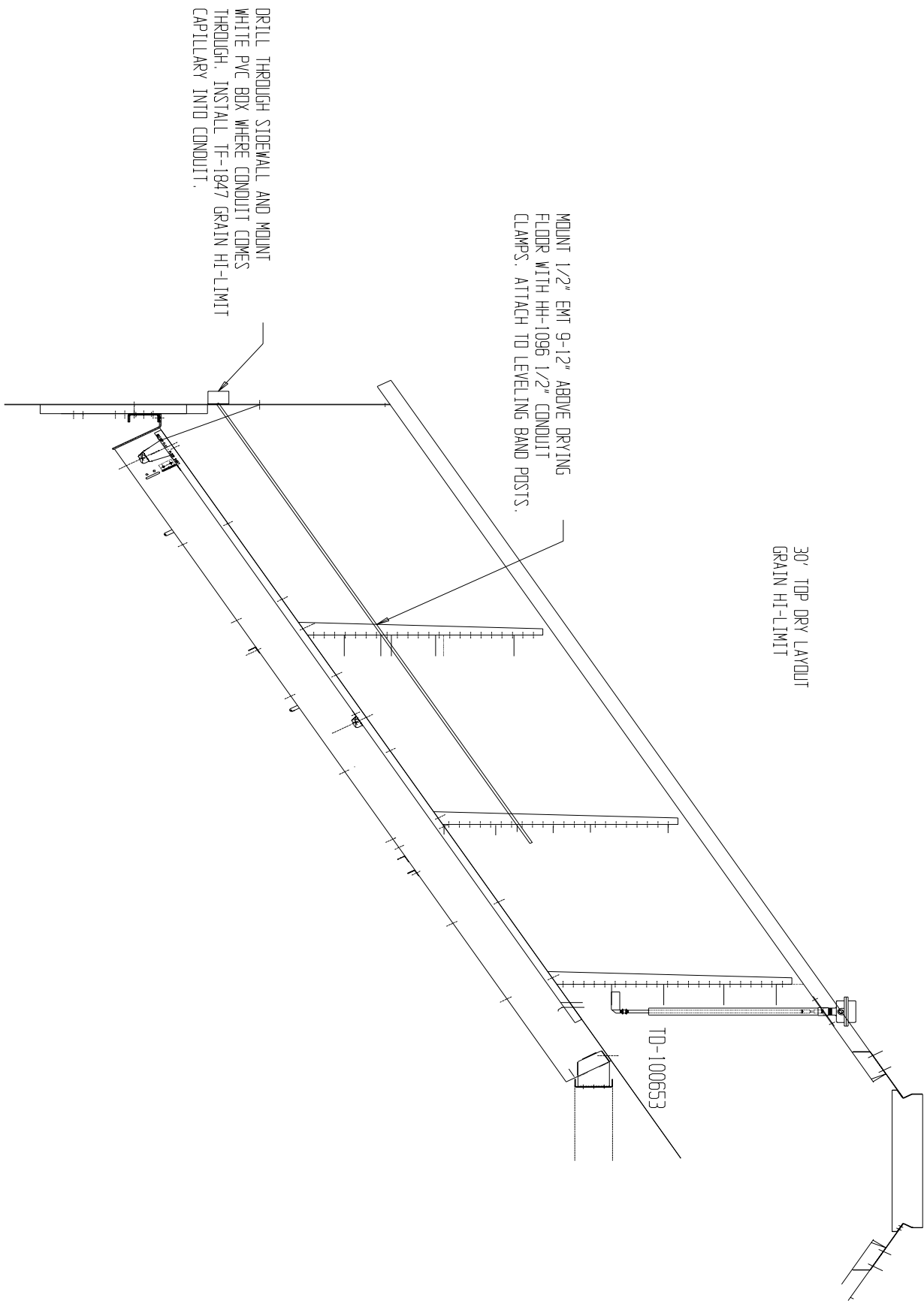
GSI / Top Dry

Product Updates

- * **Duct Work - See PNEG-1089**
- * **15HP 1PH Baldor Single Rotation Motor**
- * **Plenum Hi-Limit \ Grain Hi-Limit**







Network Autoflow Display Board Software Revisions

VERSION: 2.13

- 1) Added software for Watchdog

VERSION: 2.12

RELEASE DATE: Sept 7, 2001

HEATER VERS – 1.09 IO VERS – 1.07

- 1) Increased the speed at which a "BIN HI OVERFLOW" warning is given which also brings up the correct warning on 2 wire installs. We started using

3 wires with version 1.02 January of 1998

- 2) When cool down mode is entered, the fans will not start unless in the "AUTO" or "ON" position. This includes the drying fans and the aeration fan.

VERSION: 2.11

RELEASE DATE: October 27, 2000

- 1) Burner differential would not stay at 1 deg F when the dryer was turn off, using 2.10, now it does.

- 2) When grain reaches the Storage Chamber Rotary Switch, the dryer will enter a "Cool Down Mode". The fan will run and cool the grain for 10 minutes before

shutting down due to a Storage Chamber Full error.

- 3) When grain falls away from the Wet Supply Rotary Switch, the dryer will enter a "Cool Down Mode" after the fill system shut off. The fan will run and

cool the grain for 10 minutes before shutting down due to a No Wet Supply error.

- 4) When the Dry & Hold switch is placed in the "On" position the dryer will enter a "Cool Down Mode" for 20 minutes before stopping. This only happens at the end of the dry cycle.

- 5) Corrected a problem with the Fans Off Delay. If there is time on this delay, the fans and heaters will shut off during the unload cycle, after the unload cycle

is complete the delay counts down. The fans and heaters will not start again until the delay has reached zero.

- 6) Corrected a problem with the Time Until Load Off percentage set in the set-up mode. Now, in Auto batch only, the Fill Systems will shut off if grain has not reached the dry chamber high level rotary switch within the set percentage of the dry timer is completed. Example: 1 hr dry time, 50% Time Until Load off.

The fill systems will shut off regardless of rotary switch status after 30min has expired.

- 7) Corrected a problem with the Refill Delay. Now, in Auto batch Only. The Refill Delay begins to count down after the unload cycle is completed. If grain

has not reached the drying chamber low level rotary switch before this delay reaches zero, a dry chamber empty error is given.

VERSION: 2.10

RELEASE DATE: Sept 11, 2000

- 1) Changed the Minimum Burner Differential to 1 Deg Fahrenheit

- 2) Fixed the problem where the burner was not shutting off when the Dry & Hold switch was placed in the "On" position, the Dry Cycle was complete, and the

Dryer was in the Cool Cycle. Now, when the Dry & Hold switch is placed in the "On" position, and the Dry Cycle is complete, the dryer will shut the burner off and will cool for the amount of time on the Cool Timer before stopping.

- 3) Fixed a problem where the dryer was not shutting down with an "Out of Grain" error when the Wet Supply Rotary Switch was exposed. Now when the Wet

Supply Rotary Switch is exposed, the Fill #1, and Fill #2 delay will count down and shut off Fill System #1 & #2, then the dryer will shut down with an "Out

of Grain" error. If there is still grain against the Low Level Rotary Switch, the dryer can be restarted by pressing the Stop switch to clear the error, turning

the Load Auger switch to the "Off" position, and pressing the Start switch. When the Start switch is pressed the screen will say "Press <Enter> to Dry

Remaining Grain". If the <enter> button is pressed the dryer will restart. NOTE: If the Load Auger switch is left in the "Auto" position an "Out of Grain"

error will be given on startup.

VERSION: 2.09

RELEASE DATE: May 15, 2000

- 1.) Selection screen for On-Off burner. This cannot be used in conjunction with diesel burner.

NOTE: Must change heater software also. Use following version number or higher: Heater ==> 1.09

VERSION: 2.08

RELEASE DATE: May 12, 2000

- 1.) Changed the burner differential setup screen to correctly display Celsius temperatures.

- 2.) Now only a year above 2000 may be entered upon setting the date.

- 3.) Burner differential is now greater than 1 and less than 10 degrees.

VERSION: 2.07

RELEASE DATE: April 25, 2000

- 1.) Changed the checksum method for the network to help insure data integrity.

- 2.) Force aeration fan to start before drying fans start, unless aeration switch is in off position.

- 3.) Load systems cannot start for five seconds after start of system.

VERSION: 2.03 RELEASE DATE: October 27, 1999

***** NOTE: This software originated from 1.06 and is intended to fix version 2.00.*****

- 1) Added diesel option which if selected pulses the igniter relay on for about 1/2second after power to burner is on.
- 2) Took out option for modem string until it is needed.
- 3) Added safeties for thermistor shorts and opens.
- 4) By holding in on the HELP switch while turning on power you may check for proper wiring of the control panel switches and for correct operation of keypad.
- 5) Made hour meter active. Reset it by holding in on the HOURS key while turning on the power. Press HOURS key to view.
- 6) Moisture control light flashes in temp hold mode.
- 7) Added software to indicate to the user that the DUMP switch is not in the AUTO position.
- 8) If the DRY & HOLD switch is in the ON position the dryer now goes through the cool cycle before shutting down. The cool timer is displayed while this is happening. (Changed to a set 20 minutes in 2.11)
- 9) Changed software so the dryer won't shutdown while changing model number on the dryer.
- 10) The user can no longer go into EXTENDED SETUP while the dryer is running.
- 11) The warning of BIN HIGH PRESSURE LIMIT is now active high - in other words it must get 12VDC on pin J2-20 in order to give a shutdown.

VERSION: 2.02 RELEASE DATE: October 7, 1999

- 1) Changed the "Batch percentage off" selection screen to a screen which allows you to enter a time (just like any other timer) at which the dryer will shut off loading in the DRY TIME. The timer is called the BATCH FILL TIME.

VERSION: 2.01 RELEASE DATE: October 4, 1999

- 1) Attempted to fix the problem of grain setpoint changing by itself.
- 2) Fixed problem of batch dryer always shutting down with a "DRYING CHAMBER EMPTY" warning. A delay called the "REFILL TIMER" allows the dryer to fill back up.

VERSION: 2.00 RELEASE DATE: January 6, 1999

- 1) Fixed hour timer so dryer will now show running time of dryer.
- 2) Changed the way the dryer shut down when using the dry and hold switch, now it will cool the grain using the cool timer before it shuts down to prevent heat buildup of grain past the grain temp set points thereby causing a shutdown condition. Works in Autoflow and AutoBatch modes.
- 3) Fixed the clock to properly roll over in the year 2000.
- 4) Added a user batch count and user timer independent from the Total batch and Total time allowing monitoring of different users drying grain or different fields for comparison of drying time.
- 5) Added a test procedure for the keypad. Turning all of the control switches to the right (on position) and holding in the stop switch while turning on the control power activates it. User can now test each individual keypad switch for malfunction or stuck keys. (Taken out in 2.03)
- 6) Added control switch testing by pressing and hold the plenum and grain switches in while turning on the control power. This will allow the user to test for failed switches or computer failure to detect switch position changes. (Changed in 2.03 to turn power on with Help key depressed)
- 7) Removed garbage displayed when user selected to view total running time and total batches.
- 8) Added a check to make sure the dump switch is always in the Auto position. Otherwise if left in manual close will cause the dryer never to dump.
- 9) Fixed several bugs that were reported to use by users and dealers.
- 10) I added the ability to reset the Total Dryer running time by pressing the HOUR and RESET button together and turn on the dryer.
- 11) Removed watchdog option in Extended setup mode since watchdog has not been implemented yet.
- 12) Changed the wording to some of the error messages concerning the rotary switches to help eliminate some confusion of which switch was at fault.
- 13) Moisture control light will now flash to give a visual indication that the dryer is in temperature hold.

VERSION: 1.06 RELEASE DATE: November, 98

- 1.) Fixed dryer so the grain hi limit occurs at 20 F above the grain temp setpoint.
- 2.) Made timeout on the open/close of the actuator 20 seconds instead of 15 seconds. This extra time was added to compensate for the weaker batteries taking longer to close the chutes.

VERSION: 1.05 RELEASE DATE: September, 98

- 1.) Made the out of grain timer active.

VERSION: 1.04 RELEASE DATE: July, 98

- 1.) The application of 12v to terminal number j1-20 will shutdown the dryer and give an indication that the bin is full due to the high level of static pressure within. "BIN AIR PRESSURE LIM" will be displayed on screen's top line until the user corrects the problem. (Originally looked for lack of 12v, fixed in 2.00)
- 2.) Corrected the hour meter problem.
- 3.) Changed how the dry timer is displayed: Now when the dry timer goes to zero it will begin counting upward at the user set time as long as the dryer remains in temp hold.

VERSION: 1.03 RELEASE DATE: March, 98

- 1.) Added software to allow the aeration fan to continue running even if there was a dryer shutdown. The aeration fan BYPASS mode must be selected under setup.

VERSION: 1.02 RELEASE DATE: Jan, 98

- 1.) The Bin high limit rotary switch is monitored in both states to insure that a switch failure has not taken place. If both switches are in the same state a switch failure is reported.

VERSION: 1.01 RELEASE DATE: NO OFFICIAL DATE ASSIGNED

- 1.) Added burner differential adjustment to be set at master under extended setup.
- 2.) Gary Woodruff's software for holding the fans off during a portion of the dry cycle. This is adjusted under delays.
- 3.) Attempted to make the dryer dry remaining grain when a wet supply empty error takes place.
- 4.) Added software to display a negative incrementing counter, where the dry timer used to be, during temp hold. (Changed in 1.04)

VERSION: 1.00

RELEASE DATE: SEPTEMBER 16, 1997

- 1.) We changed resistor number 107 on the display board from 10K to 3.0K to allow the contrast to work without resetting the computer.
- 2.) Put in a contrast adjustment for the display. While turning the control power on, hold in on the screens key, and this will enter the contrast adjustment mode. Now use the UP/DOWN arrow keys to adjust. If the screen is solid black press the down arrow key, if nothing appears on the screen press the up arrow keys. NOTE: You cannot hold in on the UP/DOWN arrow keys to adjust, you must continue to press and then release them or nothing will happen.
- 3.) Put Software in for 3rd Fan and Heater.

VERSION: 0.05

RELEASE DATE: 1996

This was the first version released for customer operation. This particular version could only control 2 Fan and Heaters

NOTE: remember to always do a hard reboot after installing new software to the display board or the IO board. Shut off all gas valves when installing new software in all burners.

Series 2000 Autoflow Heater Software Changes

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.10
DATE CHANGED: MAY 15, 2000
RELEASE DATE: MAY 15, 2000

- 1.) Added software for watchdog.

NOTE: This must be used with display version 2.13.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.09
DATE CHANGED: MAY 15, 2000
RELEASE DATE: MAY 15, 2000

- 1.) Provided On-Off burner option.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.08
DATE CHANGED: MAY 12, 2000
RELEASE DATE: MAY 12, 2000

- 1.) Fixed software to correctly display celsius temperatures.
- 2.) Increased the hysteresis of the air switch to avoid unnecessary shutdowns.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.07
DATE CHANGED: APRIL 25, 2000
RELEASE DATE: APRIL 25, 2000

- 1.) Changed the way the check sum works.
- 2.) No longer allow the grain temp setpoint to be changed here.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.06
DATE CHANGED: MARCH 30, 2000
RELEASE DATE: MARCH 30, 2000

- 1.) Made airswitch active for all fans/heaters.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.05
DATE CHANGED: DECEMBER,1999
RELEASE DATE: DECEMBER,1999

- 1.) Made a selection for diesel burner. Ignition relay
 is pulsed on after burner starts to reset diesel module.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.04
RELEASE DATE: September, 1998

- 1.) Changed software so the ignitor comes on when the burner
 initially attempts to light and then it goes off about
 five seconds later and we try to sense flame then.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.03
RELEASE DATE: Jan, 1998

- 1.) Fixed software so that if slave loses contact with
 master everything shuts down accordingly.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.02
RELEASE DATE: DECEMBER 17, 1997

- 1.) The master now sends the plenum temperature differential
 to the fan/heaters as a byte on the network.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.01
RELEASE DATE: DECEMBER 1997

- 1.) Changed software so plenum temperature decides which temperature
 scale the heater software is on. This fixes a problem of the
 plenum temperature going to 86F and stopping.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 1.00
RELEASE DATE: OCTOBER 20, 1997

1.) When the three fan autoflow was introduced some of the rural drying centers were having problems dealing with copious amounts of initation current. The other problem complicating this precarious situation is that all fans must start simultaneously in order to prevent the last fan from rotating backwards. In order to deal in the most efficient manner with both of the above stated problems we implemented a soft start scenario which provides a 66% reduction in startup current.

SOFTWARE: SERIES 2000 AUTOFLOW HEATER BOARD
VERSION: 0.05
RELEASE DATE: 1996

THIS WAS THE FIRST VERSION RELEASED FOR CUSTOMER OPERATION.

NOTE: remember to always do a hard reboot after installing new software to the display board or the IO board. Shut off all gas valves when installing new software in all burners.

Current Top Dry Software

Top Dry Series 2000 Autoflow-

Display Computer Board – Version 2.13

Heater Computer Board – Version 1.10

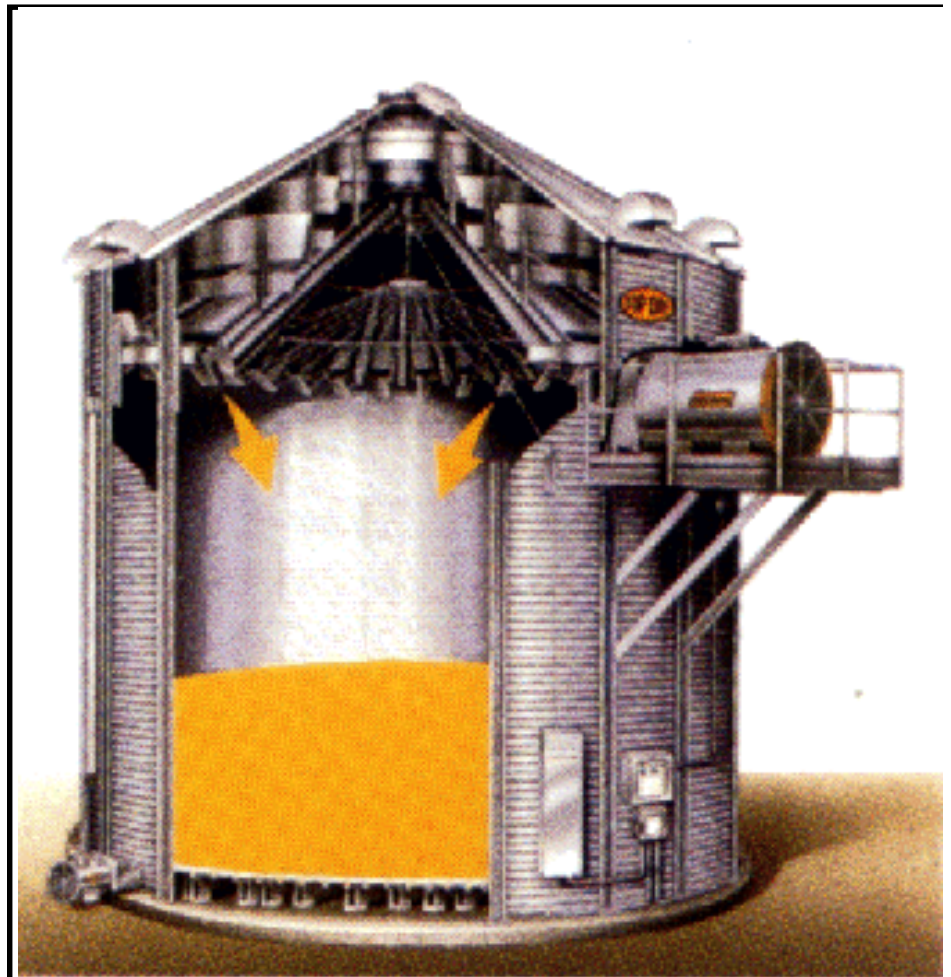
Input / Output Board – Version 1.07

Top Dry Series 2000 Batch Heater-

Series 2000 Batch – version .30

GSI / Top Dry Technical data

- * **Top Dry Sidewall Gauges**
- * **Top Dry Stiffener Gauges**
- * **Fan Blade Data**



NOMINAL DIA. OF SIDEWALL (Ft)	NUMBER OF RINGS OF SIDEWALL	Sidewall Base Ring	Sidewall Ring #2	Sidewall Ring #3	Sidewall Ring #4	Sidewall Ring #5	Sidewall Ring #6	Sidewall Ring #7	Sidewall Ring #8	Sidewall Ring #9	Sidewall Ring #10	Sidewall Ring #11
18	5	20ga	20ga	20ga	20ga	20ga						
18	6	20ga	20ga	20ga	20ga	20ga	20ga					
18	7	20ga	20ga	20ga	20ga	20ga	20ga	20ga				
21	5	20ga	20ga	20ga	20ga	20ga						
21	6	20ga	20ga	20ga	20ga	20ga	20ga					
21	7	20ga	20ga	20ga	20ga	20ga	20ga	20ga				
21	8	18ga	20ga	20ga	20ga	20ga	20ga	20ga	20ga			
24	5	20ga	20ga	20ga	20ga	20ga						
24	6	20ga	20ga	20ga	20ga	20ga	20ga					
24	7	18ga	20ga	20ga	20ga	20ga	20ga	20ga				
24	8	18ga	18ga	20ga	20ga	20ga	20ga	20ga	20ga			
24	9	17ga	18ga	18ga	20ga	20ga	20ga	20ga	20ga	20ga		
24	10	17ga	17ga	18ga	18ga	18ga	20ga	20ga	20ga	20ga	20ga	
27	5	18ga	18ga	18ga	20ga	20ga						
27	6	18ga	18ga	18ga	18ga	20ga	20ga					
27	7	18ga	18ga	18ga	18ga	18ga	20ga	20ga				
27	8	17ga	18ga	18ga	18ga	18ga	18ga	20ga	20ga			
27	9	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga	20ga		
27	10	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga	20ga	
30	5	18ga	18ga	18ga	18ga	20ga						
30	6	18ga	18ga	18ga	18ga	18ga	20ga					
30	7	17ga	18ga	18ga	18ga	18ga	18ga	20ga				
30	8	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga			
30	9	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga		
30	10	16ga	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga	
30	11	16ga	17ga	17ga	17ga	17ga	18ga	18ga	18ga	18ga	18ga	20ga
36	5	17ga	18ga	18ga	18ga	20ga						
36	6	17ga	18ga	18ga	18ga	18ga	20ga					
36	7	16ga	17ga	18ga	18ga	18ga	18ga	20ga				
36	8	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga			
36	9	16ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga		
36	10	15ga	16ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga	
36	11	14ga	15ga	15ga	16ga	16ga	17ga	18ga	18ga	18ga	18ga	20ga

Top Dry Sidewall Gauges

NOMINAL DIA. OF SIDEWALL (Ft)	NUMBER OF RINGS OF SIDEWALL	Stiffener Base Ring	Stiffener Ring #2	Stiffener Ring #3	Stiffener Ring #4	Stiffener Ring #5	Stiffener Ring #6	Stiffener Ring #7	Stiffener Ring #8	Stiffener Ring #9	Stiffener Ring #10	Stiffener Ring #11
18	5	14ga	16ga	16ga	16ga							
18	6	14ga	16ga	16ga	16ga	16ga						
18	7	12ga	14ga	16ga	16ga	16ga						
21	5	14ga	16ga	16ga	16ga							
21	6	14ga	16ga	16ga	16ga	16ga						
21	7	12ga	14ga	16ga	16ga	16ga						
21	8	12ga	14ga	16ga	16ga	16ga						
24	5	14ga	16ga	16ga	16ga							
24	6	12ga	14ga	16ga	16ga	16ga						
24	7	12ga	14ga	16ga	16ga	16ga						
24	8	12ga	14ga	12ga	16ga	16ga						
24	9	10ga	12ga	12ga	14ga	14ga	16ga					
24	10	8ga	10ga	12ga	14ga	16ga	16ga					
27	5	14ga	16ga	16ga	16ga							
27	6	12ga	14ga	16ga	16ga							
27	7	12ga	14ga	16ga	16ga	16ga						
27	8	12ga	12ga	14ga	16ga	16ga						
27	9	10ga	12ga	14ga	16ga	16ga	16ga					
27	10	8ga	10ga	12ga	14ga	16ga	16ga					
30	5	12ga	14ga	16ga	16ga							
30	6	12ga	14ga	16ga	16ga							
30	7	12ga	12ga	14ga	16ga	16ga						
30	8	10ga	12ga	14ga	16ga	16ga						
30	9	10ga	12ga	12ga	14ga	16ga	16ga					
30	10	8ga	10ga	12ga	14ga	16ga	16ga					
30	11	8ga	10ga	12ga	12ga	14ga	16ga	16ga				
36	5	12ga	14ga	16ga	16ga							
36	6	12ga	12ga	14ga	16ga							
36	7	10ga	12ga	14ga	14ga	16ga						
36	8	10ga	12ga	12ga	14ga	16ga						
36	9	8ga	10ga	12ga	14ga	14ga	16ga					
36	10	8ga	10ga	12ga	12ga	14ga	16ga					
36	11	8ga	8ga	10ga	12ga	14ga	14ga	16ga				

Top Dry Stiffener Gauges

GSI / Top Dry

Software Diagnostics

- * **Series 2000 Batch Fan & Heater**
- * **Series 2000 Autoflow Display**
- * **Series 2000 Autoflow Fan & Heater**



Series 2000 Batch Fan / Heater**Initializing the Novram**

- | | |
|--|--|
| <ul style="list-style-type: none">• Turn the Control Power “off”.• Hold down the Program Temperature switch.• Turn the Control Power switch “on” with the Program Temperature switch held down.• Press the Increase switch until 7 is on the display. | <ul style="list-style-type: none">• Press the Program Temperature switch again.• You have two seconds to depress the Increase or Decrease switches at the same time.• The NOVRAM has been initialized. |
|--|--|

NOTE: The computer has now been cleared of all memory, including the type of dryer it is and all Set-up variables.

Series 2000 Batch Fan / Heater

Programming Set-up Variables

- | | |
|--|--|
| <ul style="list-style-type: none"> • Turn the Control Power “off“ • Turn the Control Power switch “on“ with the Program Temperature switch held down. • Press the Increase switch until 3 is on the display. • Press the Program Temperature switch again. • C or no C will be displayed. • Use the Increase or Decrease switch to toggle between C or no C.
 C - Hi-Lo cycling heater
 no C - On/Off cycling heater • When the correct selection is on the screen press the Program Temperature switch again. • H or no H will be displayed. • Use the Increase or Decrease switch to toggle between H or no H.
 H - Humidity sensor present
 no H - No humidity sensor present • When the correct selection is on the screen press the Program Temperature switch again. | <ul style="list-style-type: none"> • F or C will be displayed. • Use the Increase or Decrease switch to toggle between F or C.
 F - Temperatures displayed in Fahrenheit.
 C - Temperatures displayed in Celsius. • When the correct selection is on the screen press the Program Temperature switch again. • L or no L will be displayed. • Use the Increase or Decrease switch to toggle between L or no L.
 L - The dryer will advance to the Cool cycle when the Dry timer has reached zero and the Grain temperature set point has been met.
 no L - The dryer will advance to the Cool cycle when either the Dry timer has reached zero or the Grain temperature set point has been met. • When the correct selection is on the screen press the Program Temperature switch again. |
|--|--|

Series 2000 Batch Fan / Heater

CAUTION: DO NOT ATTEMPT BELOW PROCEDURE WITH GAS LINE CONNECTED.

Diagnostic Mode

- | | |
|--|--|
| <ul style="list-style-type: none">• Turn the Control Power “off”.• Hold down the Program Temperature switch.• Turn the Control Power switch “on” with the Program Temperature switch held down.• Press the Increase switch until 8 is on the display.• Press the Program Temperature switch again. | <ul style="list-style-type: none">• Press the Program Dry time switch to engage the Fan starter-Fan will be displayed.• Press the Increase switch to make the ignitor spark-IN will be displayed.• Press the Program Temperature switch to open the LP and Main Solenoid- LP will be displayed.• Press the Start switch to open the Cycle solenoid -CS will be displayed.• Turn the control power “off” to exit the Diagnostic mode. |
|--|--|

Series 2000 Autoflow Display

Keypad Test

- Turn the Control Power “off”.
- Turn the Control Power switch “on” with the Help Switch pressed.
- The Keypad Switches can now be tested.

Control Switch Tests

- Turn the Control Power “off”.
- Turn the Control Power switch “on” with the Plenum and Grain Switches pressed.
- The Control Switches can now be tested.

Series 2000 Autoflow Fan / Heater

CAUTION: DO NOT ATTEMPT BELOW PROCEDURE WITH GAS LINE CONNECTED.

Diagnostic Mode

- Turn the Control Power “off”.
 - Hold down the Program Temperature switch.
 - Turn the Control Power switch “on” with the Program Temperature switch held down.
 - Press the Program Dry time switch to engage the Fan Starter.
 - Press the Program Temperature switch to start the Ignitor.
- Press the Hours x 1000 switch to open the Solenoid.
 - Turn the control power “off” to exit the Diagnostic mode.

THE GSI GROUP, INC. ("GSI") WARRANTS ALL PRODUCTS MANUFACTURED BY GSI TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF TWELVE MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER OF SUCH PRODUCTS. GSI'S ONLY OBLIGATION IS, AND PURCHASER'S SOLE REMEDY SHALL BE FOR GSI, TO REPAIR OR REPLACE, AT GSI'S OPTION AND EXPENSE, PRODUCTS THAT, IN GSI'S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM GSI'S FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF GSI SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE ABOVE STATED EXPRESS LIMITED WARRANTIES, GSI MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (i) PRODUCT MANUFACTURED OR SOLD BY GSI OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCT OR PRODUCTS.

IN NO EVENT SHALL GSI BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE LIMITED TO THAT STATED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. GSI SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIVE OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF GSI.

GSI ASSUMES NO RESPONSIBILITY FOR FIELD MODIFICATIONS OR ERECTION DEFECTS WHICH CREATE STRUCTURAL OR STORAGE QUALITY PROBLEMS. MODIFICATIONS TO THE PRODUCT NOT SPECIFICALLY COVERED BY THE CONTENTS OF THIS MANUAL WILL NULLIFY ANY PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE.

THE FOREGOING WARRANTY SHALL NOT COVER PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION OR ACCIDENT. THIS WARRANTY COVERS ONLY PRODUCTS MANUFACTURED BY GSI. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. GSI RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION



a division of

THE GSI GROUP



June 18th, 2002