03 Series ELECTRONIC DIGITAL METER Owner's Manual





To the owner...

Congratulations on receiving your GPI Electronic Digital Meter. We are pleased to provide you with a meter designed to give you maximum reliability and efficiency.

Our business is the design manufacture, and marketing of liquid handling, agricultural, and recreational products. We succeed because we provide customers with innovative, reliable, safe, timely, and competitively-priced products. We pride ourselves in conducting our business with integrity and professionalism.

We are proud to provide you with a quality product and the support you need to obtain years of safe, dependable service.

Jhanst Natter

President Great Plains Industries, Inc.

GENERAL INFORMATION

This manual will assist you in operating and maintaining your 03 Series meter. Differences in models are detailed in the Specifications Section of this manual. Please take a few moments to read through this manual before installing or operating your meter. If you need assistance, contact the dealer from whom you purchased your meter.

If You Measure in Litres

This manual commonly refers to "gallons." Depending on the model of 03 Series Meter, "gallons" or "GL" will represent US gallons. Your meter is factory calibrated in gallons (GL) and litres (LT) or Imperial gallons (IGL) and litres (LT). Consider all references to "gallons" apply equally to US gallons, Imperial gallons and litres.

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This symbol is used throughout the manual to call your attention to safety messages.



Warnings alert you to the potential for personal injury.

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Cautions call your attention to practices or procedures which may damage your equipment.

Notes give information that can improve efficiency of operations.

It is your responsibility to make sure that all operators have access to adequate instructions about safe operating and maintenance procedures.

Read Me!

For your safety, review the major warnings and cautions below before operating your meter.

WARNING

The apparatus enclosure may contain aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.

WARNING

Part of the enclosure is constructed from plastic. To prevent the risk of electrostatic sparking the plastic surface should only be cleaned with a damp cloth.

1. This meter is approved to handle only fluids that are compatible with the meter's housing material.

When metering flammable liquids, observe precautions against fire or explosion. Do not meter in the pressence of any source of ignition including running or hot engines, lighted cigarettes, or gas or electric heaters.

If handling hazardous liquids, always follow the manufacturer's safety precautions. Wear protective clothing such as goggles, gloves and respirators as instructed.

- 2. Always dispose of used cleaning solvents in a safe manner according to the solvent manufacturer's instructions.
- 3. During meter removal, liquid may spill. Follow the liquid manufacturer's safety precautions to clean up minor spills.

- 4. Do not blow compressed air through the meter.
- 5. Do not submerge the meter.
- 6. Do not allow liquids to dry inside the meter.
- 7. Do not use a wrench to install plastic meters. Hand tighten only.
- 8. For best results, always verify calibration before use.

INTRODUCTION

Your Electronic Digital Meter is designed for measuring liquids. The meter translates pulse data from the turbine into calibrated flow units shown on the meter's readout. Field replaceable batteries provide power.

All meters are tested and factory calibrated before shipping.

This manual refers to three families of meters: Low Flow, one inch, and two inch. To further identify your particular model, refer to the Specifications Section at the end of this manual.

BEFORE INSTALLATION

Upon receipt, examine your meter for visible damage. Remove protective plugs and caps for a thorough inspection. If any items are damaged or missing, contact your distributor.

Make sure the meter model meets your specific needs. Refer to the Specifications Section and confirm the following:

- 1. Your flowrate is within the limits of your model.
- 2. Your liquid is compatible with your meter's material.
- Your system's pressure does not exceed the meter's maximum pressure rating.

Quick Start

If your installation is relatively simple and you have installed our Electronic Digital Meter (EDM) meters before, you may use this section to quickly install and operate your meter. This section is especially helpful to those measuring thin viscosity fluids dispensed through a hose and nozzle.

If you complete this section and encounter difficulties, please refer to other sections, as necessary.

NOTE: To accommodate different installations, the faceplate can be rotated 180 degrees. To do this, remove the four corner screws from the face of the meter and lift the computer assembly from the turbine. Rotate the computer assembly 180 degrees. Place on the turbine ensuring the seal is fully seated. Secure the four screws.

Connections

 To protect against leakage, make sure all threads are sealed with two or three turns of thread tape or a sealing compound compatible with the liquid being metered. (Figure 1)



Figure 1

Make sure the thread tape or sealing compound does not interfere with flow.

2. Make sure the arrow on the outlet is pointing in the direction of the flow. (Figure 2)



3. Tighten the meter onto the fittings. Use a wrench only on metal meters. Hand tighten plastic meters.

Using a wrench on plastic meters could damage the meter.

Verify Meter Accuracy

Before using, you should check the meter's accuracy and verify calibration.

- 1. Make sure there is no air in the system by starting the flow until it runs steadily. Then, stop the flow using a valve or nozzle.
- 2. If desired, hold down DISPLAY for 3 seconds to zero the meter's Batch Total. When zeros appear, release the button.
- 3. Verify meter accuracy before use. To do this, measure a known quantity of liquid into a calibration container and compare the volume measured against the readout. If necessary, field calibrate the meter. Refer to the Calibration Section.

- To ensure accurate measurement, remove all air from the system before use. To purge the system of air:
 - a. Open the discharge valve or nozzle and allow fluid to completely fill the system. Make sure the stream is full and steady and no air is present.
 - b. Close the discharge valve or nozzle. Leave the system on.
 - c. Start normal operations. If necessary, zero the Batch Total.

Using the Meter

The meter turns on automatically when fluid flow starts and, to conserve power, turns off automatically shortly after flow stops.

The meter can also be turned on manually by pressing and releasing the DISPLAY button.

To determine the exact volume measured with each use, use the Batch Total function. You can zero the Batch Total before measuring and monitor volume as it flows through the meter, just like the gas pump at the service station as you fill up your tank.

To zero the Batch Total, make sure the meter is on. Hold down the DISPLAY button for 3 seconds until zeros appear. Release the button, start the flow, and watch the volume on the readout.

When display becomes dim, faded or the low battery message appears (see below), the batteries need to be replaced. Reference the Maintenance Section for details.



INSTALLATION

Review the Before Installation and Quick Start Sections. Also consider the following recommendations, especially if you are installing your meter in a piping system. These suggestions will help maximize performance of your meter.

The meter can be mounted either vertically or horizontally. It should be field calibrated in the same orientation in which it is mounted.

Avoid installing the meter in electrically "noisy" environments. If installed within 6 inches (15.2 cm) of large motors, relays, vehicle ignition systems, or transformers, the meter's accuracy can be adversely affected.

To avoid pulsation or swirl, use the following recommendations.

For Low Flow or one inch meters, install with

- 20 inches (51 cm) of straight pipe upstream and
- 5 inches (13 cm) of straight pipe downstream.

For two inch meters, install with

- 40 inches (102 cm) of straight pipe upstream and
- 10 inches (26 cm) of straight pipe downstream.

Flow straightening vanes installed upstream from the meter can reduce the upstream pipe length.

Flow control valves upstream from the meter and within the straight pipe distances given earlier can adversely effect meter accuracy. This is especially true when measuring liquids with low vapor pressures such as fuels, oils and solvents.

If cavitation effects meter accuracy, a flow control valve on the downstream side of the meter can provide a back pressure of 5 to 50 PSI (0.3 to 3.4 bar) to minimize the problem. Foreign material in liquid can clog the meter's rotor. If the problem affects meter accuracy or material coats the rotor, install screens to filter the incoming flow.

- For Low Flow meters use a 25 micron or .005 inch screen, 55 mesh.
- For one inch or two inch meters use a 500 micron or .018 inch screen, 28 mesh.

For maximum accuracy, the velocity profile of the flow entering the meter must be uniform throughout the cross section of the pipe.

Make sure there are no leaks in the connections. To seal leaks, remove and inspect the meter and replace the thread tape or sealant. Refer to the Troubleshooting Section.

OPERATION

Computer Display

All operations are reflected in the LCD readout. The large center digits indicate amounts, where smaller words or "icons" located above and below indicate specific information regarding totals, flow, calibration and units of measure.

Activate the Meter

Computer is on continuously and always ready to perform. The computer is powered by field replaceable batteries. When display becomes dim, faded or the low battery message appears (see below), the batteries need to be replaced. Reference the Maintenance Section for details.



Batch and Cumulative Totals

The computer maintains two totals. The Cumulative Total provides continuous measurement and cannot be manually reset. The Batch Total can be reset to measure flow during a single use. The Cumulative Total is labeled TOTAL 1, Batch Total is labeled TOTAL 2 BATCH.

When the Cumulative Total reaches a display reading of 999,999 the computer will highlight an X10 icon. This indicates to the operator that a zero must be added to the 6 digits shown. When the nextrollover occurs, the computer will highlight an X100 icon. This indicates to the operator that two zeros must be added to the 6 digits shown.

Press the DISPLAY button briefly to switch between the TOTAL 1 and TOTAL 2 BATCH. Press DISPLAY briefly to display the TOTAL 2 BATCH. Hold the DISPLAY button for 3 seconds to reset the Batch Total to zero.

When fluid is flowing through the meter, a small propeller icon is highlighted.

Factory and Field Calibration

All calibration information is visible to the user as icons on the top line of the display, above the numeric digits.

All units are configured with a "factory" calibration. Both gallons and litres are available ("GL" or "LT" will be displayed). While holding the CALIBRATE button, briefly press DISPLAY to toggle between gallons and litres. This factory calibration (indicated with FAC) is permanently programmed into the computer and is not user adjustable. NOTE: Your computer may have other units of measure programmed into it. If so, holding the CALI-BRATE button and momentarily pressing the DISPLAY button will toggle through all factory set units. Other possible units are: IGL (Imperial gallon), QT (quart), CF (cubic feet), CM (cubic meter), BL (42 gal. barrel), CC (cubic centimeter) or OZ (ounce).

Switching between different units will not corrupt the Total's contents. For example, in GL mode, the computer totalizes 10.00 gallons, if the user switches to LT mode, the display will read 37.85 litres (the same volume, different unit).

The "field" calibration may be set by the user, and can be changed or modified at any time using the calibration procedure described in the Calibration Section. Totals derived from the field calibration are invoked when the FAC icon is no longer visible on the top line of the display.

CALIBRATION

Verify Accuracy Before Beginning Field Calibration

For the most accurate results, dispense at a flowrate which best simulates your actual operating conditions. Avoid "dribbling" more fluid or repeatedly starting and stopping the flow. This can result in less accurate calibrations.

Make sure you meet the meter's minimum flowrate requirements:

Low Flow meter:

0.3 GPM (1.1 LPM or 0.25 IGPM)

- 1 inch meter: 3.0 GPM (11 LPM or 2.5 IGPM)
- 2 inch meter: 30 GPM (113 LPM or 25 IGPM)

The use of a uniformly dependable, accurate calibration container is recommended for the most accurate results. For best results, the meter should be installed and purged of air before field calibration.

Due to high flowrate, it is strongly recommended that calibration of two inch meters be completed with a combination of volume and weight using fine resolution scales.

Field Calibration with Computer Display

Field Calibration and Factory Calibration are defined in the Operation Section. Factory calibration settings are programmed into each computer during manufacturing, using stoddard test solvent at 70° F (21° C). Settings are correct for light liquids such as water, gasoline or diesel. Readings using the Factory Calibration (FAC) may not be accurate in some situations, for example, "heavy" liquids such as motor oil under extreme temperature conditions, non-standard plumbing configurations or with fluids other than those mentioned above.

For improved accuracy under such conditions, the computer allows for "field" calibration, that is, user entry of custom calibration parameters. A "single point" calibration may yield acceptable accuracy when used in a non-standard application.

Field Calibration Procedures (Dispense/ Display Method)

 To field calibrate, press and hold CALIBRATE and DISPLAY buttons for about 3 seconds until you see FLdCAL. Release both buttons and you will see dd000.0. You are now in the field calibration mode.

- Dispense a known amount of fluid at a flowrate representative of the application. Any amount between .1 and 999.9 units can be used. Display will count up while fluid is flowing through the meter.
- 3. The DISPLAY button can then be pushed to select the digit location and the CALIBRATE button can be pushed to scroll the desired value at the blinking position. Edit the amount shown with the value that was dispensed above. Values from 000.1 to 999.9 can be entered.
- When satisfied with the value, press both CALIBRATE and DISPLAY buttons simultaneously. CALEnd will be displayed and unit will go back to normal operation, less the FAC (factory calibration) icon.
- The meter will now be operating with a custom calibration number unique to the above dispense procedure. No unit of measure (gallon, litre, etc.) icon will be highlighted.
- NOTE: To return to factory calibration (FAC), press and hold both CALI-BRATION and DISPLAY buttons for about 3 seconds, until FAcCAL is displayed. Then release buttons. Unit should return to normal operation and FAC icon is visible.
- NOTE: If the field calibration mode is entered and NO field is dispensed, then upon leaving, the computer will use data from the last successful field calibration.

MAINTENANCE

During daily use, these meters are virtually maintenance-free.

When not in use, rinse and clean and keep free of liquids to protect internal components. If liquids have dried and caked on the rotor, refer to the Cleaning instructions.

Battery Replacement

The computer display is powered by two lithium batteries which may be replaced while the meter is installed. Battery life is 5 years.

If the display becomes dim, blank or the low battery message appears (see below), replace the batteries as follows:



When batteries are removed or lose power, the Batch and Cumulative Totals and the Factory and Field Calibrations are retained. They are saved in the meter's computer and are available after new batteries are installed. You do not need to repeat Field Calibration.

Check the batteries and terminals at least every year to ensure proper operation. It is strongly recommended that terminals be cleaned annually.

NOTE: Batteries can be replaced without removing meter from the hose or pipe.

To replace batteries or clean terminals:

- Remove the corner screws from the face of the meter and lift the computer assembly from the turbine.
- 2. Remove the batteries. (Figure 3)



- 3. If necessary, clean any corrosion from the battery terminals.
- Place the batteries in position, with the positive posts in the correct position. (Figure 4)



When the batteries are installed correctly, the computer powers on automatically. Check the readout to make sure normal meter functions have resumed before assembling again.

5. Place the computer assembly on the turbine. Make sure the seal is fully seated to avoid moisture damage. Secure with the four screws.

To Remove

A WARNING

During meter removal, liquid may spill. Follow the liquid manufacturer's safety precuations for clean up of minor spills.

- 1. Ensure all liquid is drained from the meter. This could include draining the hose, meter, nozzle or pipe.
- Wear protective clothing as necessary, loosen both ends of the meter. Use a wrench only on the meter's flat metal surfaces.

Using a wrench on plastic meters could damage the meter.

 If the meter is not immediately installed again, cap the hose end or pipe to prevent spills.

To Clean

During use, the meter should be kept full of liquid to ensure that drying does not occur inside the meter. If drying or caking should occur, the rotor will stick or drag, affecting accuracy. In this circumstance, cleaning is required.

To determine if the rotor is stuck or dragging, gently blow air through the meter and listen for the quiet whir of the rotor.

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Never blow compressed air through the meter. It could damage the rotor.

To clean a stuck or dragging rotor, follow the procedures below.

- Remove the meter from the hose or pipe following the directions above.
- 2. Apply a penetrating lubricant such as WD-40[®] or a recommended cleaning solvent on the turbine's rotor, shaft and bearings. Allow it to soak for 10 to 15 minutes.

Do not submerge the meter.

- Carefully remove residue from the rotor using a soft brush or small probe such as a screwdriver. Be careful not to damage the rotor and support.
- 4. When the rotor turns freely, install it again following the Installation instructions provided in this manual.

To Store

After thoroughly cleaning the meter, store it in a dry location.

WARNING

Follow the liquid manufacturer's instructions for the disposal of contaminated cleaning solvents.

TROUBLESHOOTING

SYMPTOM		PROBABLE CAUSE		CORRECTIVE ACTION	
A.	METER IS NOT ACCURATE	1.	Field Calibration not performed properly	Field calibrate again or select Factory Calibration.	
		2.	Factory Calibration not suitable for liquid being measured	Perform a Field Calibration according to Calibration Section.	
		3.	Meter operated below minimum flowrate	Increase flowrate. See Specifica- tions Section.	
		4.	Meter partially clog- ged with dried liquid	Remove meter. Clean carefully with WD-40 [®] or similar penetrating lubricant. Make sure rotor spins freely.	
		5.	Turbine bearings partially clogged with dried liquid	Remove meter. Lubricate bearings with WD-40 [®] or similar penetrating lubricant through small holes in tur- bine supports. Make sure rotor spins freely.	
		6.	Teflon [®] tape or other material wrapped around rotor	Remove meter. Clear material from rotor. Make sure rotor spins freely.	
		7.	Installed too close to fittings	Install correctly. See Installation Section.	
		8.	Installed too close to motors or electrically "noisy" environment	Install correctly. See Installation Section.	
В.	READOUT FADED, BLANK OR LOW BATTERY MESSAGE APPEARS	1.	Batteries weak, dead or not connected	Remove computer and replace bat- teries. Install computer again, making sure that the seal seats evenly around the computer and turbine housing.	
		2.	Computer defective	Contact the factory.	
C.	NORMAL FLOWRATE BUT METER DOES NOT COUNT (Meter comes on when DIS- PLAY button pushed.)	1.	Field Calibration not performed correctly	Field calibrate again or select Factory Calibration.	
		2.	Rotor stuck or damaged	Remove meter. Lubricate turbine bearings with WD-40 [®] or similar pene- trating lubricant through small holes in turbine supports. Make sure rotor spins freely. If rotor cannot be loosened, contact the factory.	
		3.	Teflon [®] tape or other material wrapped around rotor	Remove meter. Clear material from rotor. Make sure rotor spins freely.	
		4.	Computer defective	Contact the factory.	

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION	
D. REDUCED FLOWRATE & METER DOES NOT COUNT (Meter comes on when DIS- PLAY button pushed.)	 Meter clogged with dried liquids 	Remove meter. Clean carefully with WD-40 [®] or similar penetrating lubricant. Make sure rotor spins freely.	
E. CANNOT GET METER INTO FIELD CALI- BRATION	1. Wrong button sequence	Hold down CALIBRATE and DISPLAY for 3 seconds. Proceed with calibra- tion according to the Calibration Section.	
	2. Computer circuit board defective	Replace computer. Contact the factory.	
F. METER CONNEC- TIONS LEAK	 Meter installed with- out thread sealant 	Remove meter. Wrap male connec- tions with 3 to 4 wraps of thread tape or compatible sealing compound. Install again.	
	 Connecting threads damaged 	Remove meter and inspect threads. Replace damaged connections. If meter threads are damaged, contact the factory.	
	3. Meter housing	Inspect housing for cracks. If cracks present, contact the factory.	

SPECIFICATIONS

The following specifications apply to all models and materials.

Power Source:

Two lithium batteries provide approximately 5 years of use.

Operating Temperature:

0° to +140° F (-18° C to +60° C) (For temperatures up to 250° F, contact factory)

Storage Temperature:

-40° F to +158° F (-40° C to +70° C)

Accuracy:

Low Flow models: Factory Calibration: N/A* Field Calibration: ±1.5% of reading (Low Flow meters must be field calibrated) <u>One inch and two inch models</u>: Factory Calibration: ±1.5% of reading Field Calibration: ±1.0% of reading

Filter Screens:

Low Flow models: Use a 25 micron or .005 inch screen, 55 mesh.

One inch and two inch models: Use a 500 micron or .018 inch screen, 28 mesh.

Wetted Materials:

Rotor & Supports: Nylon Signal Generators: Ferrite Shaft: Tungsten Carbide Journal Bearings: Ceramic Retaining Rings: Stainless Steel Housing: Nylon or Aluminum

Turbine Housing/ Rotor Support Materials:

Nylon Housing / Nylon Aluminum Housing / Nylon

The following specifications are dependent upon housing materials.

Pressure Rating:

Aluminum: 300 PSIG (20.7 bar) Nylon: 150 PSIG (10.3 bar)

Recommended Chemicals:

Aluminum Models:

Are recommended for use with petroleum products, and should not be used with water. Please verify chemical compatibility with all wetted parts.

Nylon Models:

Are recommended for use with water or non-aggressive chemicals.

* Accuracy can vary up to ±5% depending on installation and fluid type. Field calibration is recommended for best accuracy.

	Low Flow Model	1 Inch Model	2 Inch Model
Units	US gallons, Imperial gallons & Litres	US gallons, Imperial gallons & Litres	US gallons, Imperial gallons & Litres
Flow Range	0.3 - 3 GPM 0.25 - 25 IGPM 1 - 11 LPM	3 - 50 GPM 2.5 - 42 IGPM 11 - 190 LPM	30 - 300 GPM 25 - 250 IGPM 114 - 1,135 LPM
Threads	NPT	NPT	NPT
Inlet and Outlet	1 inch	1 inch	2 inch
Internal Diameter	1/4 inch	1 inch	2 inch
Design Type	Paddlewheel	Turbine	Turbine
Minimum Readout Total	.01	.01	0.1
Maximum Readout Total	999,999 x 100	999,999 x 100	999,999 x 100
Pressure Drop at Maximum Flowrate	2 PSIG @ 3 GPM .14 bar @ 10 LPM	5 PSIG @ 50 GPM .35 bar @ 190 LPM	7 PSIG @ 300 GPM .48 bar @ 1,000 LPM
Dimension - Length - Height - Width	4 in. (10.2 cm) 2.5 in. (6.4 cm) 2 in. (5.1 cm)	4 in. (10.2 cm) 2.5 in. (6.4 cm) 2 in. (5.1 cm)	6 in. (15.2 cm) 4.25 in. (10.8 cm) 3 in. (7.6 cm)

PARTS

Replacement Kits & Accessories

Replacement Kits are available for turbine assemblies and computer assemblies. Individual components within these assemblies, such as rotors, signal generators, and buttons are not available. The factory will determine the exact Turbine Assembly or Computer Assembly you need based on your model and serial number.

Other replacement kits and accessories can be ordered with the part numbers below.

Part No.	Description
113520-1	Battery Replacement Kit
901002-52	Seal
116000-1	Large (5 gallon) Calibration Container
116004-5	Small (5 quart) Calibration Container
	(Note: Calibration contain- ers are for use with water based fluids. Do not use with fuel products.)

SERVICE

For warranty consideration, parts, or other servicing information, please contact your local distributor. If you need further assistance, call the GPI Customer Service Department in Wichita, Kansas, during normal business hours.

1-800-835-0113

To obtain prompt, efficient service, always be prepared with the following information:

- 1. The model number of your meter.
- 2. The serial number of your meter.
- 3. Specific information about part numbers and descriptions.

For warranty work always be prepared with your original sales slip or other evidence of purchase date.

Returning Parts

Please contact the factory before returning any parts. It may be possible to diagnose the trouble and identify needed parts in a telephone call or letter. GPI can also inform you of any special handling requirements you will need to follow covering the transportation and handling of equipment which has been used to transfer hazardous or flammable liquids.

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Do not return meters without specific authority from the GPI Customer Service Department. Due to strict regulations governing transportation, handling, and disposal of hazardous or flammable liquids, GPI will not accept meters for rework unless they are completely free of liquid residue.

Meters not flushed before shipment can be refused and returned to the sender.

Declaration of Conformity

Manufacturer's Name: Manufacturer's Address: Great Plains Industries, Inc. 5252 East 36th Street North Wichita, KS USA 67220-3205

Declares, that the product:

Product Name: Model Numbers: Electronic Digital Meter 03**** A1******** A2******* G2*******

Model numbers include all combinations of an alpha-numeric series as illustrated above.

Conform to the following Standards:

EMC:

EN 50081-1 (Reference EN 55022) EN 50082-1

Energy - Limited Apparatus: EN 50021 I.P. Code: BS EN 60529

Supplementary Information:

"The products comply with the requirements of the EMC Directive 89/336/EEC and the ATEX Directive 94/9/EC (ANNEX VIII)."

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature:

Full Name: Position:

Place:

hanst Natter

Mr. Grant Nutter President Great Plains Industries, Inc. Wichita, KS USA May 2003

Limited Warranty Policy

Great Plains Industries, Inc. 5252 E. 36th Street North, Wichita, KS USA 67220-3205, hereby provides a limited warranty against defects in material and workmanship on all products manufactured by Great Plains Industries, Inc. This product includes a 1 year warranty from date of purchase as evidenced by the original sales receipt. A 30 month warranty from product date of manufacture will apply in cases where the original sales receipt is not available. Reference product labeling for the warranty expiration date based on 30 months from date of manufacturer's sole obligation under the foregoing warranties will be limited to either, at Manufacturer's option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer's exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer. The warranty shall extend to the purchase of this product and to any person to whom such product is transferred during the warranty period.

This warranty shall not apply if:

- A. the product has been altered or modified outside the warrantor's duly appointed representative;
- B. the product has been subjected to neglect, misuse, abuse or damage or has been installed or operated other than in accordance with the manufacturer's operating instructions.

To make a claim against this warranty, contact the GPI Customer Service Department at 316-686-7361 or 800-835-0113. Or by mail at:

Great Plains Industries, Inc. 5252 E. 36th St. North Wichita, KS, USA 67220-3205

GPI will step you through a product troubleshooting process to determine appropriate corrective actions.

GREAT PLAINS INDUSTRIES, INC., EXCLUDES LIABILITY UNDER THIS WARRANTY FOR DIRECT, INDIRECT, INCIDENTAL AND CONSEQUENTIAL DAMAGES INCURRED IN THE USE OR LOSS OF USE OF THE PRODUCT WARRANTED HEREUNDER.

The company herewith expressly disclaims any warranty of merchantability or fitness for any particular purpose other than for which it was designed.

This warranty gives you specific rights and you may also have other rights which vary from U.S. state to U.S. state.

Note: In compliance with MAGNUSON MOSS CONSUMER WARRANTY ACT – Part 702 (governs the resale availability of the warranty terms).







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