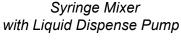
Syringe Mixer

User Guide

for use with Syringe Mixer Models 22110464-10, 22110464-30, 22110464-50

The Syringe Mixer, secured to the top of a material syringe, keeps the dispense material within the pump syringe continually mixed to prevent material separation in 10 cc, 30 cc, or 50 cc syringe. The mixing element is disposable and easily replaced.

Syringe Mixer with PCD4 H Pump

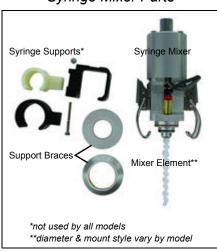




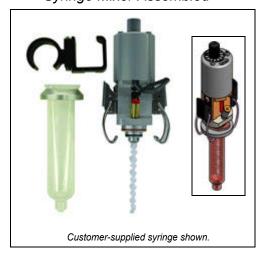


Part Identification

Syringe Mixer Parts



Syringe Mixer Assembled



Safety Notes

NOTE: The Syringe Mixer should be used only for the specified purpose and should be operated only by trained personnel. Before use, the operating instructions, including all safety information and labels, should be read for proper operation.

- · Replace or repair worn or damaged parts immediately.
- The Syringe Mixer should not be modified. Use only original parts or guarantee will be voided.
- Never exceed the specified operating pressure.
- Only use materials and solvents compatible with the wetted parts of the Syringe Mixer.

Installation & Set Up

A material syringe may be installed on the pump prior to installing the Syringe Mixer in the material syringe, however, the recommended installation order that follows helps prevent the various cables and hoses from becoming twisted.

To install the Syringe Mixer on a pump, proceed in this order:

- 1. Install Pump on Dispenser (pg 2).
- 2. <u>Install Material Syringe on Pump</u> (pg 2)
- 3. <u>Install Syringe Mixer in Syringe</u> (pg 3).
- 4. Connect Syringe Mixer to Dispenser (pg 4)
- 5. Syringe Mixer Set Up (pg 4).

Install Pump on Dispenser

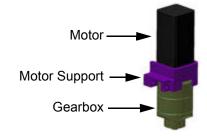
- 1. Install a pump in the appropriate pump mount station on dispense system.
- 2. Connect the pump hose(s) and cable(s) to the dispense system.

Install Material Syringe on Pump

Models 22110464-10, 22110464-30

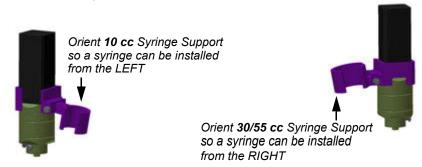
- 1. Install the Syringe Support on the pump:
 - a. With the Motor Support [Item 14 on <u>22110464-10 10/30/55 cc, 183 RPM</u> (pg 10)] correctly oriented (see Figure 1), slide it onto the Motor until it snaps into place around the Motor.

Figure 1: Motor Support Correctly Oriented



- b. Slide the Motor Support down onto the Gearbox as far as it will easily slide.
- c. Select the Syringe Support [Items 15 or17 on 22110464-10 10/30/55 cc, 183 RPM (pg 10)] sized for the Syringe to be used.
- d. With the Syringe Support correctly oriented (see Figure 2), secure the Syringe Support to the Motor Support with provided screw and nut.

Figure 2: Orientation of Syringe Support by Size

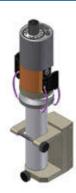


- 2. Install a Syringe on the pump:
 - a. Select the Support Brace [Items 12 or 13 on 22110464-10 10/30/55 cc, 183 RPM (pg 10)] sized for the Syringe to be used.
 - b. Orient the recessed surface of the Support Brace to face the same direction as the Syringe tip and then twist the Support Brace onto the Syringe until the Support Brace is snug against the lip of the Syringe.
 - c. Slide the Syringe down through the Syringe Support and then twist the Syringe onto the pump luer adapter.

NOTE: As needed, the angle of the Syringe can be adjusted slightly by sliding the Syringe Support Assembly up/down the pump motor.

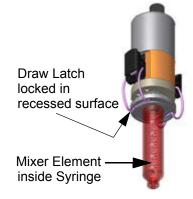
Model 22110464-50

- Select the Support Brace [Items 7 on <u>22110464-50 10/30/55 cc, 180 RPM, for Liquid Dispense</u> (pg 12)].
- 2. Orient the recessed surface of the Support Brace to face the same direction as the Syringe tip and then twist the Support Brace onto the Syringe until the Support Brace is snug against the lip of the Syringe.
- 3. Slide the Syringe down through the Syringe Support and then twist the Syringe onto the pump luer adapter.



Install Syringe Mixer in Syringe

- 1. Insert a Mixer Element in the Syringe Mixer. For details, refer to Replace Mixer Element (pg 6).
- 2. Seat the Syringe Mixer in the Syringe.
- Secure the Syringe Mixer to the Syringe with the two (2)
 Draw Latches. The Draw Latch arms should clamp into
 the recessed surface of the Support Brace as the Draw
 Latches are tightened to secure the Syringe Mixer to the
 Syringe.



Connect Syringe Mixer to Dispenser

DS Series

To connect the Syringe Mixer to a DS Series dispense system:

Plug the air hose and power cable into the appropriate receptacle (as identified by the interconnect legend) on the interconnect panel.

Old Style Dispense System

- 1. Plug the air hose into the AIR PRES 1 (or AIR PRES 2) receptacle on the power/air distribution panel.
- 2. Plug the power cable into the N1 (or N2) power receptacle on the power/air distribution panel.

MAX Series

To connect the Syringe Mixer to a MAX Series dispense system:

Plug the air hose and power cable into the appropriate receptacle (as identified by the interconnect legend) on the interconnect panel.

Old Style Dispense System

- 1. Plug the air hose into the AIR PRES 1 (or AIR PRES 2) receptacle on the power/air distribution panel.
- 2. Plug the power cable into the N1 (or N2) power receptacle on the power/air distribution panel.

Catalina Series

To connect the Syringe Mixer to a Catalina Series dispense system, connect the air hose into "Syringe Air Pressure" hose or receptacle and the power cable into the "Syringe Mixer" connection or receptacle.

Island Series

To connect the Syringe Mixer to an Island Series dispense system, connect both the air hose and power cable into the appropriate outlets on the interface panel (located on the right-hand side of the gantry).

Syringe Mixer Set Up

The only set up required for the Syringe Mixer after it has been installed on a PCD4 H pump on the dispenser, is to verify the syringe mixer Speed Control is set to desired speed. Refer to Adjusting Speed (pg 5).

Adjusting Speed

The speed at which the mixing element rotates can be adjusted from zero to the maximum RPM using the Speed Control knob. Refer to <u>Specifications</u> (pg 9) for speed/RPM specification.



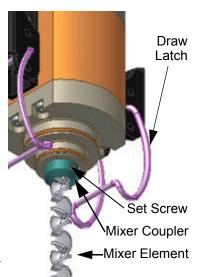
Preventive Maintenance

- Replace Mixer Element (pg 6)
- Clean Syringe Mixer (pg 7)
- <u>Clean/Lubricate/Replace O-Rings</u> (pg 8)

Replace Mixer Element

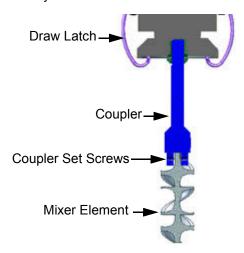
Models 22110464-10 and 22110464-30

- 1. Disconnect the Syringe Mixer cables from the dispense system.
- 2. Remove the Syringe Mixer from the pump by releasing the two (2) Syringe Mixer Draw Latches and pulling the Syringe Mixer out of the syringe.
- 3. Loosen the two opposing set screws in the Mixer Coupler.
- 4. Pull the Mixer Element away from the Mixer Coupler and dispose of the Mixer Element.
- 5. Prepare a new Mixer Element according to the syringe size to be used with the Syringe Mixer; measure and break a full length (55 cc) Mixing Element to the proper length for the desired syringe size. For details, refer to 10/4038 Mixer Element Lengths (pg 13).
- 6. Insert the new Mixer Element into the Mixer Coupler and secure in place by tightening the two (2) opposing Set Screws in the Mixer Coupler until the Set Screws are flush with or slightly below the Mixer Coupler surface.
- 7. To return the Syringe Mixer to production, Install Syringe Mixer in Syringe (pg 3) and then Connect Syringe Mixer to Dispenser (pg 4).



Model 22110464-50

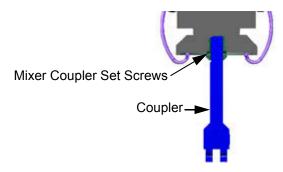
- 1. Disconnect the Syringe Mixer cables from the dispense system.
- 2. Remove the Syringe Mixer from the pump by releasing the two (2) Syringe Mixer Draw Latches and pulling the Syringe Mixer out of the syringe.
- 3. Loosen the two opposing Coupler set screws.
- 4. Pull the Mixer Element away from the Coupler and dispose of the Mixer Element.
- Insert a new Mixer Element [22121654 Mixer Element, 3 Lengths Per Unit (pg 14)] into the Coupler and secure in place by tightening the two opposing set screws until flush with or slightly below the Coupler surface.
- 6. To return the Syringe Mixer to production, Install
 Syringe Mixer in Syringe (pg 3) and then Connect
 Syringe Mixer to Dispenser (pg 4).



Clean Syringe Mixer

To thoroughly clean the Syringe Mixer, access and clean both the Mixer Coupler and the Air Fitting:

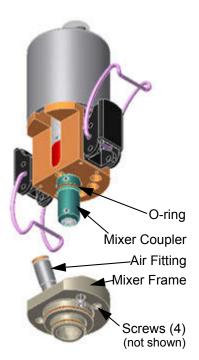
- Remove the Syringe Mixer from the dispense system and pump mount and then remove the Mixer Element from the Syringe Mixer per the <u>Replace Mixer Element</u> (pg 6) instructions.
- 2. For model 22110464-50 only: Separate the Coupler from the Syringe Mixer by loosening the two opposing Mixer Coupler Set Screws.



- 3. Remove the Mixer Frame to access the Mixer Coupler:
 - a. Remove the four (4) Screws from the Mixer Frame and set aside both the Mixer Frame and Screws.
 - b. Slide the Mixer Frame off over the Mixer Coupler and set aside.
- 4. Clean the Mixer Coupler with a solvent appropriate for the syringe material being removed/cleaned.
- 5. Replace the Mixer Coupler O-ring and apply a thin film of recommended lubricant [see part number in Spare Parts (pg 8)] to the O-ring.
- 6. Unscrew the Air Fitting from the Mixer Frame. Clean both the Air Fitting and its corresponding air passage in the Mixer Frame with pressurized air.

CAUTION: Do not use sharp objects to clean the air hole in the Mixer Frame.

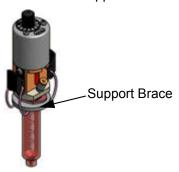
- 7. Reassemble the Syringe Mixer:
 - a. Slide the Mixer Frame over the Mixer Coupler and secure in place with four (4) Screws.
 - b. Insert a new Mixer Element by following <u>Step 5</u> through <u>Step 7</u> of <u>Replace Mixer Element</u> (pg 6).

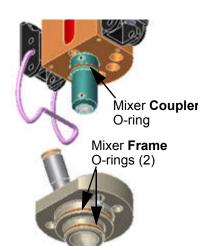


Clean/Lubricate/Replace O-Rings

Inspect all O-rings monthly or as needed to prevent performance issues:

- Perform <u>Clean Syringe Mixer</u> (pg 7) to access these Orings:
 - Mixer Coupler O-ring
 - Mixer Frame O-rings (2)
- 2. Locate the O-ring in each Support Brace [Items 12 or 13 on 22110464-10 10/30/55 cc, 183 RPM (pg 10)]:
 - 10 cc Support Brace
 - 30/55 cc Support Brace





- 3. Replace the Mixer **Coupler** O-ring or inspect and clean with isopropyl alcohol. Then apply a thin film of recommended lubricant [see part number in <u>Spare Parts</u> (pg 8)].
- 4. Replace both Mixer **Frame** O-rings or inspect and clean with isopropyl alcohol.

Spare Parts

Description	Qty	Part No.	Model 22110464-10	Model 22110464-30	Model 22110464-50
Mixer Element	10	22121599*	Х	N/A	N/A
	10	22121577*	N/A	Х	N/A
	10	10/4038	N/A	N/A	Х
O-ring, FKM,.547 I.D.	5	2575-0004	Х	Х	N/A
O-ring, Silicone,.370 I.D.	5	2575-0026	Х	Х	Х
O-ring, Silicone,.820 I.D.	5	2575-0008	Х	Х	Х
O-ring, Silicone, 1.000 I.D.	5	2575-0009	Х	Х	Х
O-ring, Silicone,.730 I.D.	5	2575-0010	Х	Х	N/A
Teflon Gel Lubricant, 0.5 oz w/MSDS sheet	1	10/4150	Х	X	Х
Support Brace for 10 cc syringe	1	22121634	Х	Х	N/A
Support Brace for 30/55 cc syringe	1	22121635	Х	Х	Х

^{*} Order the part number specified above for cut-to-length mixer elements or order part number 10/4038 and cut each mixer element to length per instructions: Replace Mixer Element (pg 6).

Specifications

Material syringe capacity 10 cc, 30 cc, and 55 cc

Material viscosity range 0-15,000 cps

Operating medium Dry, clean compressed air, oil-free, filtered air (40 µm)

Operating pressure 0 to 80 PSI (0 to 5.5171 bar)

Speed

Model 22110464-10 . . . 0 to 183 RPM at 24V Model 22110464-30 . . . 0 to 40 RPM at 24V Model 22110464-50 . . . 0 to 183 RPM at 24V

Environment temp. range -5° C to +40° C (23° F to 104° F)

Seal material

(model dependent) . . . Silicone, Viton, FKM

(high temperature & corrosion resistant)

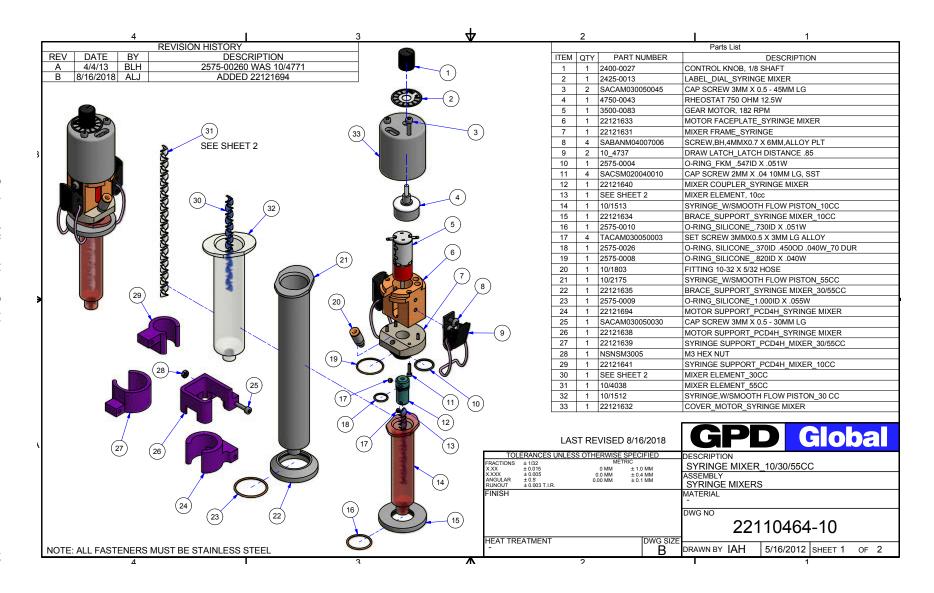
Wetted part (mixer element) . . Acetal (Delrin)

Compatibility Fits most pumps. Contact GPD Global for details.

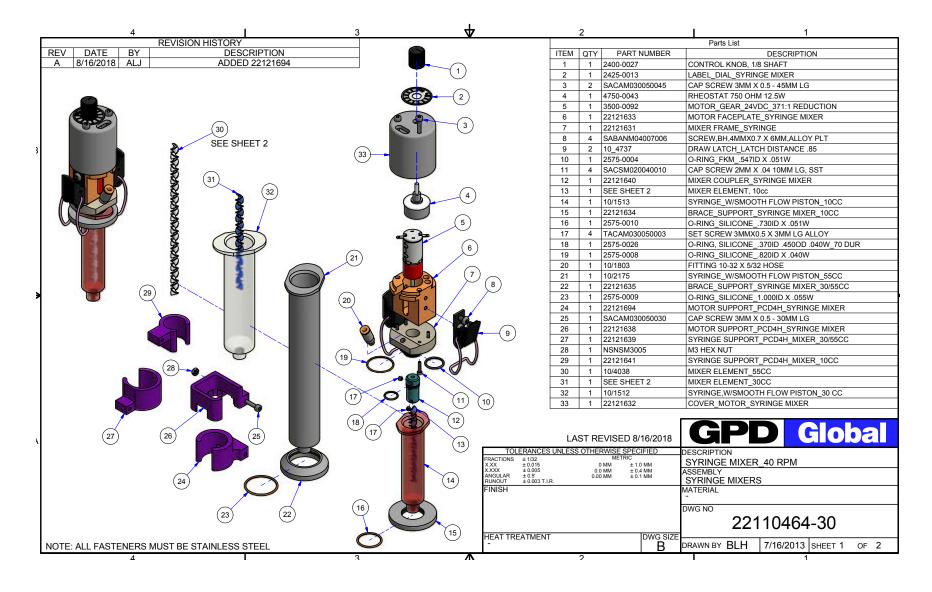
Drawings

- 22110464-10 10/30/55 cc, 183 RPM (pg 10)
- <u>22110464-30 10/30/55 cc, 40 RPM</u> (pg 11)
- 22110464-50 10/30/55 cc, 180 RPM, for Liquid Dispense (pg 12)
- 10/4038 Mixer Element Lengths (pg 13)
- <u>22121654 Mixer Element, 3 Lengths Per Unit</u> (pg 14)

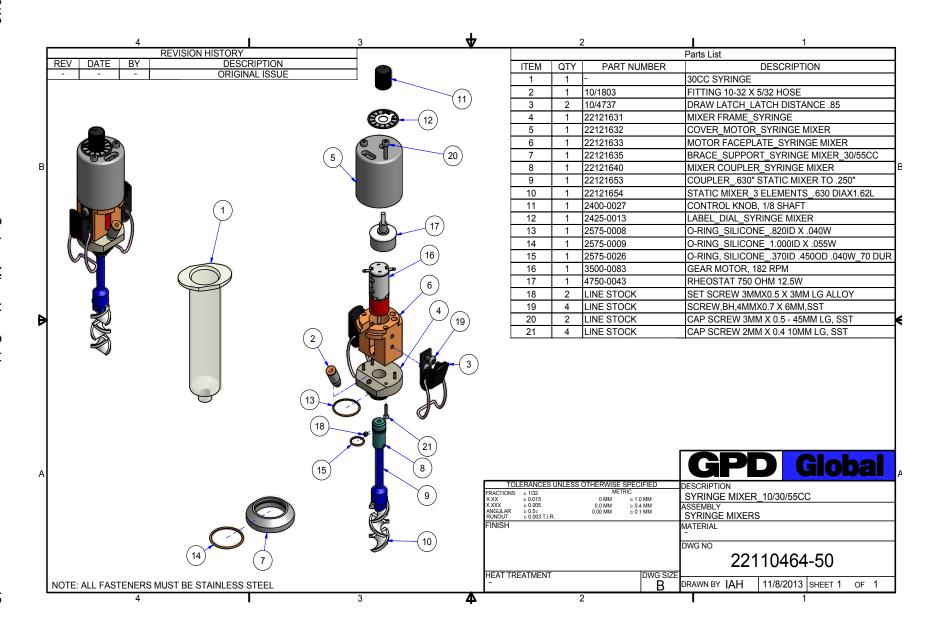
22110464-10 - 10/30/55 cc, 183 RPM



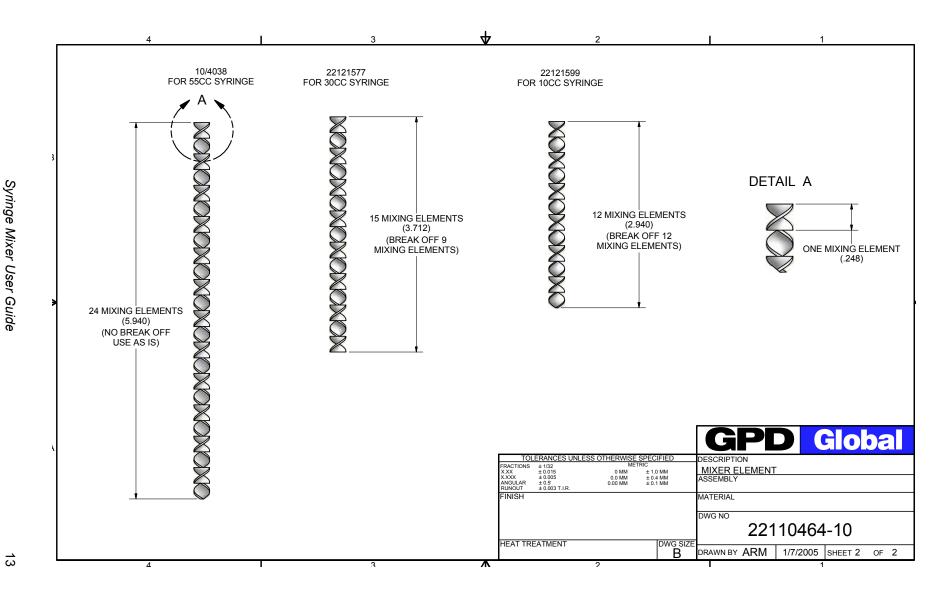
22110464-30 - 10/30/55 cc, 40 RPM



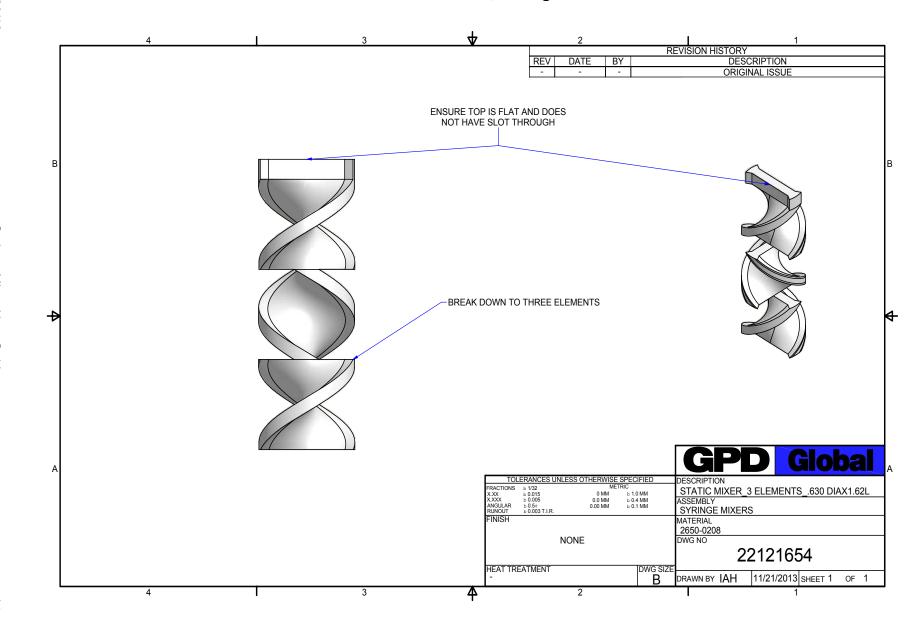
22110464-50 - 10/30/55 cc, 180 RPM, for Liquid Dispense



10/4038 - Mixer Element Lengths



22121654 - Mixer Element, 3 Lengths Per Unit



Warranty

General Warranty. Subject to the remedy limitation and procedures set forth in the Section "Warranty Procedures and Remedy Limitations," GPD Global warrants that the system will conform to the written description and specifications furnished to Buyer in GPD Global's proposal and specified in the Buyer's purchase order, and that it will be free from defects in materials and workmanship for a period of one (1) year. GPD Global will repair, or, at its option, replace any part which proves defective in the sole judgment of GPD Global within one (1) year of date of shipment/invoice. Separate manufacturers' warranties may apply to components or subassemblies purchased from others and incorporated into the system. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Limitations. GPD Global reserves the right to refuse warranty replacement, where, in the sole opinion of GPD Global the defect is due to the use of incompatible materials or other damages from the result of improper use or neglect.

This warranty does not apply if the GPD Global product has been damaged by accident, abuse, or has been modified without the written permission of GPD Global.

Items considered replaceable or rendered unusable under normal wear and tear are not covered under the terms of this warranty. Such items include fuses, lights, filters, belts, etc.

Warranty Procedures and Remedy Limitations. The sole and exclusive remedy of the buyer in the event that the system or any components of the system do not conform to the express warranties stated in the Section "Warranties" shall be the replacement of the component or part. If on-site labor of GPD Global personnel is required to replace the nonwarranted defective component, GPD Global reserves the right to invoice the Buyer for component cost, personnel compensation, travel expenses and all subsistence costs. GPD Global's liability for a software error will be limited to the cost of correcting the software error and the replacement of any system components damaged as a result of the software error. In no event and under no circumstances shall GPD Global be liable for any incidental or consequential damages; its liability is limited to the cost of the defective part or parts, regardless of the legal theory of any such claim. As to any part claimed to be defective within one (1) year of date of shipment/invoice, Buyer will order a replacement part which will be invoiced in ordinary fashion. If the replaced part is returned to GPD Global by Buyer and found by GPD Global in its sole judgment to be defective, GPD Global will issue to Buyer a credit in the amount of the price of the replacement part. GPD Global's acceptance of any parts so shipped to it shall not be deemed an admission that such parts are defective.

Specifications, descriptions, and all information contained in this manual are subject to change and/or correction without notice.

Although reasonable care has been exercised in the preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.