Blendorama Series | End User Guide

Getting Started

Maintenance and Care

Troubleshooting

Warranty

Fluid Management®
Your customers have a vision, you want to make it happen, and Fluid Management can give you the answer. Fluid Management is a global leader in dispensing and mixing equipment used in the paint industry, as well as, specialized equipment for the food and beverage, chemical, health and beauty, and home improvement industries. Located in the suburbs of Chicago, Illinois, Fluid Management is a United States owned and operated company with historical roots to the paint industry dating back to 1927. In 1996, IDEX Corporation purchased Fluid Management giving the organization the financial wherewithal and global footprint of a large organization while still maintaining its deep values and history.

As industry leaders, Fluid Management provides trend-setting creativity in the design, products, and services it offers. United with FMDirect, our nationwide service team, we provide after-sales support around the clock—when you need them. Being factory-direct employees, FMDirect technicians are experts on Fluid Management equipment and understand customer needs from start to finish.

The combination of leading edge technology, excellent service and support, and a company prepared for the future’s ever-changing business environment makes Fluid Management an ideal partner to assist in providing solutions to your business needs. Thank you for putting your trust in Fluid Management products and making us part of your customer’s vision.
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**Fluid Management**
1023 Wheeling Road
Wheeling, Illinois 60090-5776 USA
800-462-2466
http://www.fluidman.com

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Once your Blendorama Dispenser is installed, what’s next? In this guide, you’ll find more information to help you get the most from your new Fluid Management Blendorama Dispenser.
How to Use this Guide

This guide is organized into ten sections. Each section provides detailed information on Blendorama Series Dispenser topics and provides a basic reference that can be used to help you with specific issues.

**Important:** Carefully read all the installation instructions and the safety information before you first use your Blendorama Dispenser.

This guide provides instructions for safely and easily installing your Blendorama Series Dispenser when it arrives. This publication also includes operational instructions, daily and maintenance procedures, basic troubleshooting suggestions, customer service, and warranty information.

If you are an experienced user, you may already know enough to get started. Make sure you look over the information in *Getting to Know Your Blendorama Series Dispenser* to find out about the features of this Blendorama Series Dispenser.

If you have internet access, the most current information for your Blendorama Series Dispenser is available from the worldwide web at

http://www.fluidman.com

For Your Safety

Customer safety is important. Our products are designed to be safe and effective. However, dispensers are electrical equipment. The Blendorama Series Dispenser is safe and reliable—designed to bring many years of operation. There are precautions you can take to avoid damage to the equipment or bodily injury before operating. By carefully following the instructions in this document and the warning and maintenance labels on the machine, you can help protect yourself from hazards and create a safer work environment.

Equipment can become damaged due to misuse or neglect. Some product damage is serious enough that the product should not be used again until it has been inspected and, if necessary, repaired by a Fluid Management authorized service technician. As with any electronic device, pay close attention to the dispenser when it is turned on. On very rare occasions, you might notice an odor or see a puff of smoke or sparks vent from your machine, or you might hear sounds like popping, cracking or hissing. These conditions might merely mean that an internal electronic component has failed in a safe and controlled manner. However, it may indicate a potential safety issue. **DO NOT** take risks or attempt to diagnose the situation yourself. Contact Fluid Management at 1-800-462-2466 for assistance.
Important Safety Information

Information and Instruction Labels

You should become familiar with the information labels affixed to the machine, as well as the warnings, cautions, and notes which appear throughout this guide. Read all the warning labels on the exterior and interior of the dispenser. If the labels become damaged or unreadable, you may purchase replacements from Fluid Management Customer Service.

Safety Notice Information

The two main notices used in this Guide and on the Blendorama Series Dispensers are Warning and Caution. A Warning notice tells you about a hazard that could cause serious injury to you or extensive damage to the equipment. This information is featured in the beginning of the guide to emphasize safety.

When you see a Warning notice in this guide, read it carefully before continuing with the operation of the machine. Take all necessary precautions to avoid potential injury.

A Caution notice tells you about a danger that could cause injury to you or minor damage to the dispenser. When you see a Caution notice in this guide, read it carefully and be sure you understand it before continuing.

General Safety Information

DO NOT attempt to service a product yourself unless instructed to do so by Fluid Management Customer Service. Use only a Fluid Management Authorized Service Technician to repair your equipment. Please note that some parts can be upgraded or replaced by the customer. Fluid Management identifies those parts as such and provides documentation with instructions when it is appropriate for customers to replace those parts. You must closely follow all instructions when performing such replacements. ALWAYS make sure that the power is turned off and that the machine is unplugged before you attempt the replacement. If you have any questions or concerns, contact Fluid Management Customer Service.
Important Safety Information

Grounding

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape for the electric current. This product is equipped with a cord that has a grounding wire and an appropriate grounding plug. The plug must be inserted into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Danger

Improper installation of the grounding plug can result in a risk of electric shock. If repair or replacement of the cord or plug is necessary, DO NOT connect the grounding wire to either flat blade terminal. The insulation wire with green or green and yellow stripes on the outer surface is the grounding wire. Check with a qualified electrician if the grounding instructions are not completely understood, or if in doubt about whether the product is properly grounded. DO NOT modify the plug provided. If it will not fit into the outlet, have the proper outlet installed by a qualified electrician.

Communications Regulation Information

Safety and Regulatory Compliance Information
See the affixed labeling on the machine. ETL Listed, conforms to UL STD 1450. Certified to CAN/CSA STD C22.2 NO. 68. (120 volt model only.)

Warnings

This machine draws 3 amps at 120 ± 10% VAC.
This machine draws 1.5 amps at 220/230 ±10% VAC.
DO NOT modify the provided plug.
Improper use of grounding plug can result in risk of electric shock.
Hazardous moving parts.
Keep fingers and other body parts away.

Cautions

Check with a qualified electrician or service person if grounding instructions are not completely understood or if in doubt as to whether product is properly grounded.
DO NOT use an adapter or extension cord with this product.
This unit must be plugged into a dedicated electrical line.
To reduce risk of electric shock or injury, use indoors only.
Never force a connector into a port. If the connector and port do not join with reasonable ease, they probably do not match.
Make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.
Getting to Know Your Blendorama Dispenser

Technical Specifications

Blendorama Model 25 PD

11-12 Canisters
- Height: 54” (137 cm)
- Diameter: 30” (76 cm)

14-16 Canisters
- Height: 54” (137 cm)
- Diameter: 32” (81 cm)

Maximum power:
- 110 volts, 3.0 Amps +/- 10%, 60 Hz
- 220 volts, 1.5 Amps +/- 10%, 50 Hz

Blendorama Model 53 PD

9-12 Canisters
- Height: 54” (137 cm)
- Diameter: 30” (76 cm)

14-16 Canisters
- Height: 54” (137 cm)
- Diameter: 32” (81 cm)

Maximum power:
- 110 volts, 3.0 Amps +/- 10%, 60 Hz
- 220 volts, 1.5 Amps +/- 10%, 50 Hz

Environmental Conditions

- Operating temperature: between 50°F (10°C) and 104°F (40°C)
- Relative humidity: between 5% and 85% without condensation

Highlights

- Delivers the ideal balance of performance and reliability in all sizes of applications
- Sniffback™ feature, nozzle-closing device, and electric agitation make the Blendorama Series suitable when using waterborne colorants
- Dual-piston configurations with high resolution gauges for greater accuracy

Features

- Lock-in gauges, dual pistons, RTFE seals and nozzle closers provide accuracy and dispense flexibility
- Closed nozzle tip designed to sweep close and seal pump to prevent drying
- New stand design makes small footprint
These tips will help improve the operation of your Blendorama Series Dispenser:

- Keep this end-user guide, Allen key, valve sleeve wrench, and spare parts in a convenient place.
- Follow the preventative maintenance procedures in this guide.
- Keep the machine clean and display advertising promoting good housekeeping.
- DO NOT use the piston or valve assembly of each pump as a handle to rotate the turntable.
- DO NOT attempt to replace a faulty valve plate, the whole valve assembly must be replaced.

**Warnings**

ALWAYS shut off the power and unplug your machine from the AC power outlet before servicing.

This unit must be plugged into a dedicated electrical line. This includes: 15 Amp line for 120 Volt equipment

The surface the dispenser sits on must be strong enough to support its weight when completely filled.
Getting Started
Installation

Unpacking and Set up
Follow the steps on the next three pages to set up your Blendorama Dispenser.

1. Make sure these items are available before installing
   Blendorama Series Dispenser
   Surge protector (recommended, not included)

2. Tools needed for installation
   Allen key
   Adjustable wrench
   Scissors or diagonal cutters
   Phillips-head screwdriver

3. Unpack the machine while still on the shipping skid
   a. Remove the interior packaging materials
   b. While unpacking, inspect the machine for any damage that may have occurred during shipping.

   If any damage is found, notify the carrier immediately. Arrange for inspection in order to claim recovery. Claims for damage must be made by the consignee (YOU). The carrier assumes full responsibility upon acceptance of the shipment and will not entertain any claims by the consignor.

   Verify the contents against the packing slip. Note if any items are missing or damaged. Call Fluid Management Customer Service at 1-800-462-2466 if any items are missing.

Warnings
Verify that your dispenser is firmly positioned on the surface it will sit on.

This machine is not explosion proof and must not be used in a flammable atmosphere or with flammable materials.

Protect the cords and any surge protectors from liquids. Liquids can cause gradual corrosion of the power cord which can result in overheating.

To reduce the risk of electric shock or injury, use indoors only.

Cautions
DO NOT operate the dispenser until it is in a permanent location.

ALWAYS route power cords so they will not be walked on, tripped over, or pinched by objects.

Avoid using extension cords with unit.
For Exterior Perimeter Canisters

4 Select a canister assembly

5 Place the canister
   a. Fit the canister screws into the outer ring of the keyhold slots on the turntable.
   b. Push firmly into position (see page 13-15 for proper layouts).

6 Fix the canister into position
   a. Locate the 2 guide holes directly below each canister and fasten the Phillips-head screws located in the canister.
   b. Make sure the canister is firmly secured.

7 Repeat steps for all other canisters
For Interior Canisters

4 Place the canister
   a. Firmly push the canister and connecting tube into the remote bracket and pump assembly.

5 Attach assembly to the turntable
   a. Fit Phillips-head screws located in the canister into the inner ring location keyholes.
   b. Fit the remote bracket into the 4 slots simultaneously and push firmly into position.

Note: If the bracket face is not firm against the turntable edge, then the extension tube is not correctly fitted.

6 Secure inner ring canister assembly
   a. Tighten the washer-collar, self-tapping screw (provided).

7 Repeat steps for all other canisters
8 Lock the turntable in place
   a. Rotate the turntable until it engages into a locked position.
   b. Use the detent (or knob) lever to disengage and rotate the turntable.
   c. Leave the turntable in locked position.

Note: It is important that the colorant is stirred to ensure continuous smooth operation of the machine. If left unstirred for extended periods, colorant can become thick and difficult to stir which can ultimately damage the machine.

9 Power up
   a. Plug the power cord into the proper electrical circuit (see Technical Specifications and Warnings for details).
   b. Turn power switch (located at the back of the machine) to the ON position. The stirring process will begin.
Recommended Turntable Canister Layout
Model 25 PD

11-canister format

12-canister format

14-canister format

16-canister format
Recommended Turntable Canister Layout
Model 53 PD

- 9-canister with 4-dual canisters format
- 10-canister with 2-dual canisters format
- 12-canister format
- 12-canister with 3-dual canisters format
Recommended Turntable Canister Layout
Model 53 PD  (continued)

14-canister format

16-canister format

16-canister with 4-dual canisters format
1 Prepare the dispenser

a. Make sure the machine’s agitation is switched off at the wall socket.

b. Stir each can of colorant thoroughly with a flat bottomed paddle or palette knife.

c. Make sure that the machine is adequately supported and clear of obstructions.

d. Remove the lids from all canisters.
Basic Operation
First time operation (continued)

e. Pour the contents of each colorant can into the correct canister. Discard the colorant can and replace the canister lid.

2 Purge the pumps

a. Set the gauge of each pump to its halfway point by operating the spring loaded button then lifting the gauge by its handle.

b. Without operating the valve lever lift the pump handle to its maximum travel (this draws the colorant into the canister).

c. Discharge the colorant back into the canister by depressing the pump handle fully. Repeat this process 30 times.
3  **Purge the valve**

a. Lift the pump handle to its maximum travel.

b. Place a container under the dispensing nozzle.

c. Hold the valve lever open by pulling the spring loaded nozzle lever forward its full travel.

d. Push the pump handle down fully to dispense colorant into the container.
Basic Operation
First time operation (continued)

e. Release the nozzle lever.

f. Repeat this process until the colorant emerges as a steady stream.

4 Check the effectiveness of the purge

a. Open the nozzle lever without operating the pump. A small drop of colorant will appear at the nozzle.

b. Release the valve lever slowly and the drop will withdraw into the nozzle.

Repeat this process 10 times. If the drop of colorant at the nozzle grows appreciably with each opening of the nozzle lever and/or it drops from the nozzle into the container, then air is still in the system and steps 2 and 3 should be repeated.

c. Repeat this process for all canisters.
Basic Operation
General use of the dispenser

1 Select the color, base and can size
   a. Identify the color you wish to supply either by name or number
   b. Look up the tint formula and note the tint base required
   c. Identify the quantity required (can size)

2 Position the can
   a. Place the can on the appropriate can shelf.
   b. Adjust the height of the upper can shelf, if necessary.

3 Bring canister to the correct position
   a. Depress and hold the detent lever (or knob) to release the turntable.
   b. Rotate the turntable so that the pump of the appropriate canister is directly over the can. If the detent lever (or knob) is released it will lock the canister into the correct position. You may need to move the turntable slightly from side to side to allow the locking pin to locate the locking hole.
4 Set the gauges

a. According to the setting required, operate the spring loaded button to release the gauge. The red knob is for the red gauge and the black knob is for the black gauge.

b. With the appropriate button operated, lift the gauge to the reading required.

c. The correct gauge setting is shown when the figure selected is fully exposed above the red handle and the gauge release button clicks firmly into place.

5 Charge the pump

a. With the gauges correctly set, slowly and gently lift the red pump handle until both red and black handles are against the appropriate gauge knobs.

b. Continue to hold this for a few seconds to ensure the pump is correctly filled with colorant.
Basic Operation
General use of the dispenser  (continued)

6 Discharge the pump

a. While still holding the pump handle in the raised position, pull the spring-loaded valve lever (at the base of the pump) forward its full travel

b. Holding the valve lever fully forward, press the red handle down with a smooth and steady stroke until the red handle is fully depressed.

c. Ensure that both the red and black handles are fully depressed against the end cap. All the colorant has now be discharged and the valve lever can be released.

d. Repeat the charging and discharging process for each colorant specified in the formula.
Maintenance, Care, and Use

Daily maintenance

a. Clean the machine, refill canisters and check for blockages.

b. Wipe down stand, canisters and pumps with a moistened cloth.

c. Check nozzle outlets for dried colorants.

d. If dried colorant is found to be blocking the nozzle, open the valve to remove and replace the nozzle. Ensure the O-ring is retained. Clean the nozzle using warm soapy water.

e. Refit the nozzle and dispense a small amount of colorant.
Weekly maintenance

a. Examine the machine for loose canisters and cylinder caps. Tighten if necessary.

b. Examine gauges for damaged graduated scales or worn holes. Replace if necessary.

c. Raise the pump handle to its maximum extension and examine the pump shafts for signs of colorant. This indicates that the piston seal will need replacement.
a. Inspect the function of the valve and the canister for leaks.

b. Make sure the machine is disconnected from the power source.

c. Remove canister from turntable and drain colorant into a clean container.

d. Remove stirrer paddle from canister and wash the canister, lid, and stirrer paddle.

e. If required, tighten or replace the valve insert sleeve (with the wrench supplied). Take care not to over tighten or sleeve with crack.
f. Replace O-ring seal.

g. Reassemble and refit canister to turntable.

h. Return colorant to dispenser and prepare the pump for operation.

Caution
Moving parts can cause injury. Always turn off power before accessing moving parts.
Before replacing the labels, calibrate the plungers as per the calibration instructions. Also make sure that the replacement label is the correct one - check the part numbers.

a. Remove both black and red gauges.

b. Peel the labels off both the red and black gauges. Remove all traces of adhesive (use a solvent if necessary). Wipe dry.

c. Replace both gauges and set to the zero (fully down) position. The locking pin at the rear of the pump should be engaged in the first of the small holes.

d. Mark a line on the black gauge, level with the top of the red handle. Use a fine felt tip pen or pencil (or scratch with a sharp object).

e. Remove the gauge from the pump and peel off the adhesive backing.
f. Carefully place the "0" line (the line below the numeral) of the label on the marked line of the gauge.

g. Once in position, press the label firmly onto the gauge, ensuring it adheres to the gauge along its full length with no creases or bubbles (use a clean cloth to apply if necessary).

h. Using a sharp knife or blade cut any excess label off the end of the gauge that may overlap the black plastic handle.

i. Refit the gauge to the plunger. Repeat steps (d) through (h) for the inner (red) gauge label.
General Maintenance
Gauge label replacement - Model 53 PD

Before replacing the labels, calibrate the plungers as per the calibration instructions. Also make sure that the replacement label is the correct one - check the part numbers.

a. Remove both black and red gauges.

b. Peel the labels off both the red and black gauges. Remove all traces of adhesive (use a solvent if necessary). Wipe dry.

c. Replace both gauges and set to the fully down position. Lift the black (outer) gauge and engage the locking pin in the 2nd hole from the top.

d. Mark a line on the black gauge, level with the top of the red handle. Use a fine felt tip pen or pencil (or scratch with a sharp object), then remove the black gauge from the pump.
e. Peel the adhesive backing off the black label.

f. Carefully place the first line of the label (the line below the first numeral) on the marked line of the gauge.

g. Once in position, press the label firmly onto the gauge, ensuring it adheres to the gauge along its full length with no creases or bubbles (use a clean cloth to apply if necessary).

h. Refit the black (outer) gauge to the plunger and remove the red (inner) gauge from the pump.

i. Peel the adhesive backing off the remaining red label.
j. Align the end of the label up against the bottom edge of the gauge knob (the label is cut to size before leaving the factory).

k. Once in position, press the label firmly onto the gauge, ensuring it adheres to the gauge along its full length with no creases or bubbles (use a clean cloth to apply if necessary).

l. Refit the red gauge to the plunger.
General Maintenance
Piston seals replacement - Model 25 PD

1 Replacement of the inner piston
   a. Loosen both grubscrews in the cylinder of the end cap (use Allen key) and remove the plunger assembly from the cylinder. Remove the gauges from the plunger assembly, then withdraw the inner plunger assembly from the hollow outer plunger shaft. Clean all colorant from both plunger assemblies.

   b. Using two pairs of pliers, grip the inner end of the piston with one and the piston shaft with the other. Unscrew the piston (using a little heat if difficult) and discard.

   c. Apply Loctite 262 to the internal thread of the piston shaft, then screw the new piston assembly in fully. Slide sleeve up onto the shaft, tighten the piston with pliers and replace the sleeve over the piston.

2 Replacement of Outer Piston
   a. Using two wrenches, carefully undo the lower piston nut. Discard the piston, but retain the nut.

   b. Remove the new piston from retainer and fit to the shaft curved end face up (see picture). Replace the front nut using a small drop of Loctite 262 on thread. Tighten the nut only until the piston can no longer be rotated by hand.
**General Maintenance**

**Piston seals replacement - Model 25 PD (continued)**

3. **Returning plungers into cylinders**

   a. After lightly oiling the top inside edge of the cylinder, position the plunger assembly on the cylinder with one hand. With the palm of the other hand, firmly push the plunger down fully.

   b. Tighten end cap assembly onto cylinder assembly using Allen key.

   c. Remove the sleeve from the inner piston and discard. Lightly oil the inside edge of the hollow outer piston shaft and then gently ease the piston inside. Refit the gauges.
General Maintenance
Piston seal replacement - Model 53 PD

1 Replacement of the inner piston

a. Undo the knurled nut holding the cylinder end cap and remove the plunger assembly from the cylinder. Remove both gauges from the plunger assembly, withdraw the inner plunger assembly from the hollow outer plunger shaft and clean all colorant from both plunger assemblies.

b. Using two pairs of pliers, grip the inner end of the piston with one and the piston shaft with the other. Unscrew the piston (using a little heat if difficult) and discard.

c. Apply Loctite 262 to the internal thread of the piston shaft, then screw the new piston assembly in fully. Slide sleeve up onto the shaft, tighten the piston with pliers and replace the sleeve over the piston.

2 Replacement of the outer piston

a. Remove nut holding existing piston seal, then remove seal. Fit new piston seal with retainer to the shaft. Replace front nut using a drop of Loctite on thread. Tighten nut only until the piston seal can no longer be rotated by hand.

b. Lightly oil the top inside edge of cylinder and position the tool containing the plunger assembly on its rim. Gently push the outer piston into the cylinder, then remove the screw from the tool and remove it from the out piston shaft.

c. Refit the end cap onto the top of the cylinder and tighten the knurled nut. Remove sleeve from the inner piston and discard. Lightly oil top inside edge of hollow outer piston shaft, gently ease piston inside. Refit all gauges. Ensure black pin on RHS when tightened.
1 **Outer pump calibration**

Recalibration of the pump is necessary if either of the original gauges have been replaced by another (for any reason). It is not required if only a gauge scale detail (Label) has been replaced. When recalibrating the pump, please leave the pump/canister fixed in place on the machine.

Tools required: 1 x Allen (hex) key 3/32" A/F

a. To calibrate the outer plunger, remove the inner (red) gauge and inner (red) plunger and set the outer (black) gauge to the zero position.

b. Using the Allen key, undo both calibration grub screws until free movement can be felt between the outer (black) plunger handle and the outer (black) gauge knob.

c. Carefully wind one grub screw down until only slight movement is felt between the outer pump handle and the gauge knob. Then wind the other grub screw down until no free movement can be felt, being careful not to over-adjust.
2 Inner pump calibration

a. To calibrate the inner (red) plunger, refit the inner (red) gauge and plunger removed in step (1). Set the inner (red) gauge to zero.

b. Using the Allen key, undo the calibration grub screw in the red pump handle until free movement can be felt in the handle. Carefully wind the grub screw back down until no free movement can be felt between the red pump handle and the red gauge knob. Be careful not to over-adjust.

c. The pump is now calibrated.
General Maintenance
Pump calibration - Model 53 PD

1 **Outer pump calibration**
Recalibration of the pump is necessary if either of the original gauges have been replaced by another (for any reason). It is not required if only a gauge scale detail (Label) has been replaced. When recalibrating the pump, please leave the pump/canister fixed in place on the machine.

Tools required: 1 x Allen (hex) key 3/32” A/F

a. Calibrate the outer pump first by removing the inner pump (red) gauge and lifting the red pump handle approximately 4” or 100mm. Lock the black outer pump gauge into the top hole (zero position).

b. Using the Allen key, undo the calibration grubscrew until free movement can be felt between the outer pump (black) handle and the outer gauge knob.

c. Carefully wind the grubscrew down until no free movement is felt between the outer pump handle and the gauge knob, being careful not to over-adjust. When correctly adjusted there should be a slight binding felt on the black gauge locking pin (as the locking pin shaft enters the hole in the gauge).

2 **Inner pump calibration**

a. Calibrate the inner pump by lowering red pump handle fully, then refitting the inner (red) gauge and setting it to zero.

b. Undo the calibration grubscrew in the red pump handle until the handle has movement.

c. Carefully wind the grubscrew down until no free movement is felt between the red pump handle and the red gauge knob, being careful not to over-adjust. When correctly adjusted there should be a slight binding felt on the red gauge locking pin (as the locking pin shaft enters the hole in the gauge).
Most of the problems listed in this section can be prevented by daily cleaning and by purging the nozzle. See the Maintenance, Care and Use section in this manual for instructions.

Use the chart below to locate the problem and perform the recommended actions in the last column.

Contact Fluid Management Customer Service if you are unable to find a resolution.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorant intermittently spurts from the nozzle during discharge</td>
<td>Air bubbles in the colorant</td>
<td>Operate the pump several times without opening the valve to drive the air back into the canister. Then allow the colorant to sit for several minutes to allow the bubbles to escape.</td>
</tr>
<tr>
<td>A drop of colorant falls from the nozzle when the valve is opened even when the pump is not operated</td>
<td>Air is trapped in the cylinder assembly</td>
<td>Operate the pump several times without opening the valve to drive the air back into the canister. Then allow the colorant to sit for several minutes to allow the bubbles to escape.</td>
</tr>
<tr>
<td>The end cap twists or lifts during operation</td>
<td>End-cap grub-screws are loose</td>
<td>Lightly tighten the 2 grub-screws in the end-cap (for 53 Series tighten the end-cap sleeve) until the end cap can no longer be twisted by hand.</td>
</tr>
<tr>
<td>Canister is loose on turntable</td>
<td>Loose fixing screws</td>
<td>Tighten fixing screws with a Phillips head screwdriver.</td>
</tr>
<tr>
<td>Colorant appears on the piston shaft, piston and/or gauges</td>
<td>Worn seals</td>
<td>Replace seals.</td>
</tr>
<tr>
<td>Colorant does not dispense easily</td>
<td>Nozzle blocked</td>
<td>Remove nozzle and clean in warm soapy water.</td>
</tr>
<tr>
<td>Colorant still does not dispense easily</td>
<td>High viscosity of colorant</td>
<td>Increase the size of the nozzle.</td>
</tr>
<tr>
<td>Colorant has hardened in the canister and piston assembly</td>
<td></td>
<td>Canister and pump should be removed, emptied, stripped and cleaned thoroughly. Replenish only with new colorant.</td>
</tr>
<tr>
<td>Agitation is not occurring</td>
<td>No power to the dispenser</td>
<td>Check that the unit is connected and that there is power to the outlet.</td>
</tr>
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