

Pneumatic and Electric Agitator Kits

3A1936D

EN

For agitation of material in carbon or stainless steel day tanks.

To be used only with HFR™ for NVH foam systems.

For professional use only.

Not approved for use in explosive atmosphere or hazardous locations.

100 psi (0.7 MPa, 7.0 bar) Maximum Working Pressure

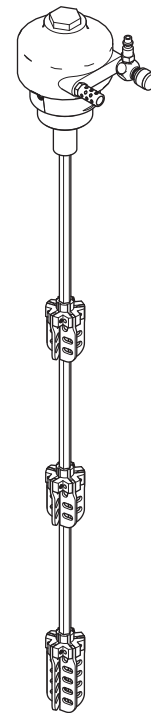
100 psi (0.7 MPa, 7.0 bar) Maximum Inlet Air Pressure



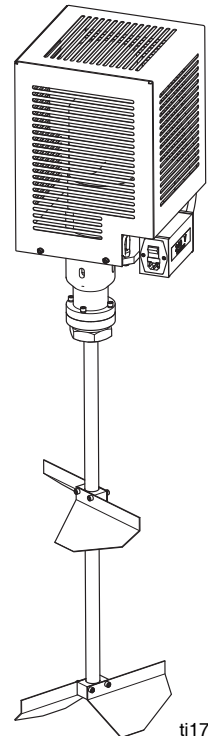
Important Safety Instructions

Read all warnings and instructions in this manual and the system manuals. Save these instructions.

See page 3 for model information.



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Related Manuals

Component manuals listed below are in English. Manuals are available at www.graco.com.

Manual No.	Description
3A0395	Stainless Steel Tank Stands Instructions-Parts
3A1299	Carbon Steel Tank Stands Instructions-Parts
3A1315	Agitator Speed Control
3A1961	HFR for NVH Foams Installation-Setup
313873	VRM™ Operation
313874	VRM Repair-Parts
313997	HFR Operation
313998	HFR Repair-Parts

Models

Part	Pneumatic Agitator	Electric Agitator	Carbon Steel Tank	Stainless Steel Tank
24G389	✓		✓	
24K348	✓			✓
24K343		✓		✓

Accessories

Constant Agitator Speed Control, 24G621

This accessory is for pneumatic agitators only. It enables the agitator to maintain a constant speed regardless of changing fluid viscosity.

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 WARNING	
	ELECTRIC SHOCK HAZARD This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. • Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment. • Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
	TOXIC FLUID OR FUMES HAZARD Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed. • Read MSDSs to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines. • Always wear chemically impermeable gloves when spraying, dispensing, or cleaning equipment.
	PERSONAL PROTECTIVE EQUIPMENT You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to: • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately**. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

Important Two-Component Material Information

Isocyanate Conditions

						
Spraying or dispensing materials containing isocyanates creates potentially harmful mists, vapors, and atomized particulates. Read material manufacturer's warnings and material MSDS to know specific hazards and precautions related to isocyanates. Prevent inhalation of isocyanate mists, vapors, and atomized particulates by providing sufficient ventilation in the work area. If sufficient ventilation is not available, a supplied-air respirator is required for everyone in the work area. To prevent contact with isocyanates, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons, and goggles, is also required for everyone in the work area.						

Material Self-ignition

						
Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and material MSDS.						

Keep Components A and B Separate

						
Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination: • Never interchange component A and component B wetted parts. • Never use solvent on one side if it has been contaminated from the other side.						

Moisture Sensitivity of Isocyanates

Isocyanates (ISO) are catalysts used in two component coatings. ISO will react with moisture (such as humidity) to form small, hard, abrasive crystals, which become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity. If used, this partially cured ISO will reduce performance and the life of all wetted parts.

NOTE: NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

To prevent exposing ISO to moisture:

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

Foam Resins with 245 fa Blowing Agents

Some foam blowing agents will froth at temperatures above 90°F (33°C) when not under pressure, especially if agitated. To reduce frothing, minimize preheating in a circulation system.

Changing Materials

Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.

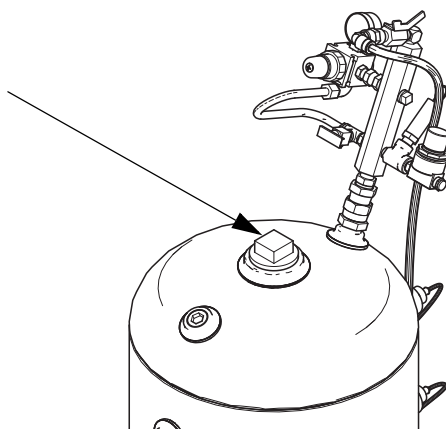
- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- Most materials use ISO on the A side, but some use ISO on the B side.
- Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.

Installation

Pneumatic Agitator on a Carbon Steel Tank



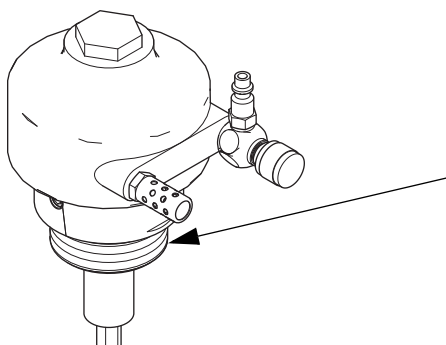
1. Depressurize the tank. See **Pressure Relief Procedure** on page 15.
2. Use a wrench to remove the plug from the top of the tank.



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FIG. 1: Carbon Steel Tank Plug

3. Apply thread sealant and PTFE tape to the male threads of the agitator assembly.

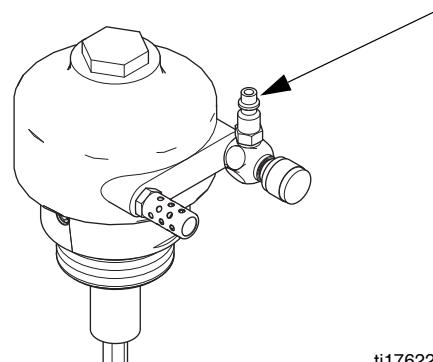


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FIG. 2: Pneumatic Agitator Male Threads

4. Mount the agitator assembly on the tank in the location where the plug was removed in step 2.

5. Connect a pressurized air supply to the agitator air fitting.



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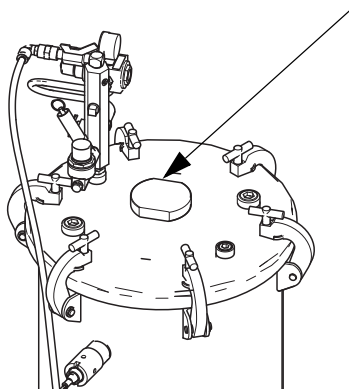
FIG. 3: Pneumatic Agitator Air Fitting

6. Close the pressure relief valve on the tank and connect the air supply to the water separator.
7. Pressurize the tank by opening the incoming air supply valve.
8. Check for air leaks. Tighten connections as required.

Pneumatic Agitator on a Stainless Steel Tank



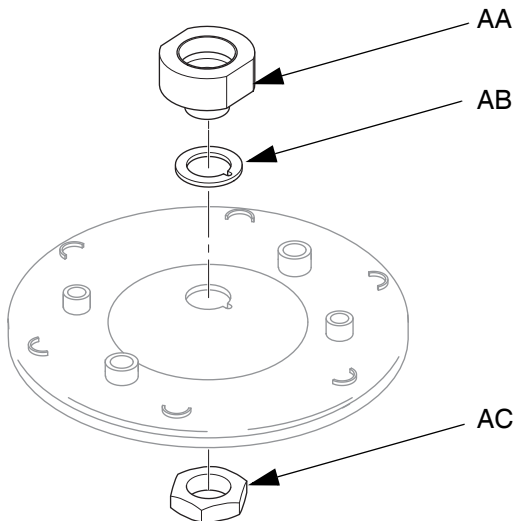
1. Depressurize the tank. See **Pressure Relief Procedure** on page 15.
2. Loosen the tank lid clamps and remove the tank lid.
3. Use a wrench to remove the plug from the top of the tank.



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FIG. 4: Stainless Steel Tank Plug

4. Assemble the adapter (AA), gasket (AB), and retaining nut (AC) as shown. Ensure the retaining nut (AC) is tightened to prevent air leaks.

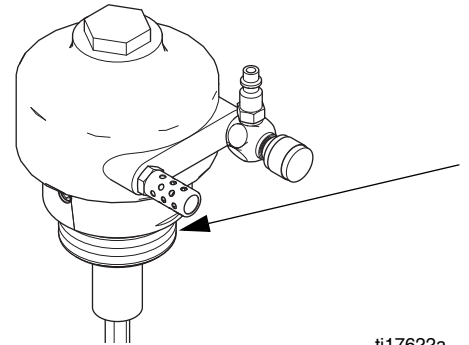


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FIG. 5: Stainless Steel Tank Lid Assembly

5. Place the tank lid back on the tank and tighten all tank lid clamps.

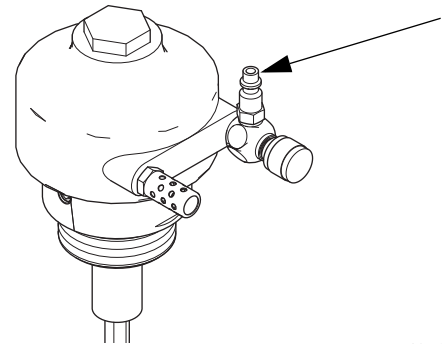
6. Apply thread sealant and PTFE tape to the male threads of the agitator assembly.



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FIG. 6: Pneumatic Agitator Male Threads

7. Mount the agitator assembly on the tank in the location where the adapter fitting was assembled in step 4.
8. Connect a pressurized air supply to the agitator air fitting.



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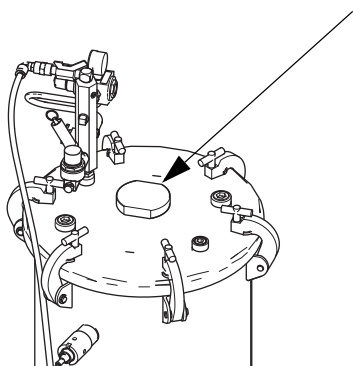
FIG. 7: Pneumatic Agitator Air Fitting

9. Close the pressure relief valve on the tank and connect the air supply to the water separator.
10. Pressurize the tank by opening the incoming air supply valve.
11. Check for air leaks. Tighten connections as required.

Electric Agitator on a Stainless Steel Tank



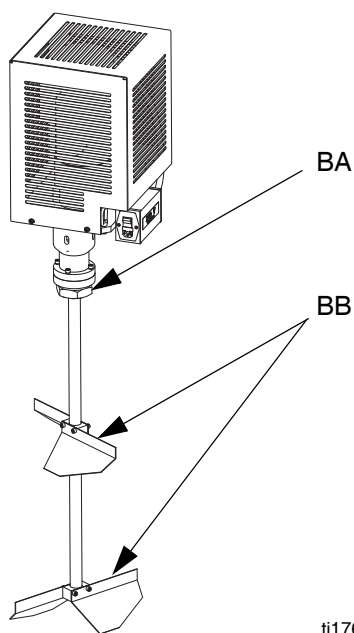
1. Depressurize the tank. See **Pressure Relief Procedure** on page 15.
2. Loosen the tank lid clamps and remove the tank lid.
3. Use a wrench to remove the plug from the top of the tank.



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FIG. 8: Stainless Steel Tank Plug

4. Remove the blade assemblies (BB) from the shaft and remove the retaining nut (BA) from the adapter.



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FIG. 9: Electric Agitator Assembly

5. Mount the agitator assembly on the tank lid in the location where the plug was removed in step 3. Tighten the retaining nut (BA) to prevent air leaks after assembly.
6. Mount the blade assemblies that were removed in step 4 back onto the shaft.



EQUIPMENT MISUSE HAZARD

The agitator should never be moved or lifted by one person. To prevent equipment damage or personal injury, engage an adequate number of personnel or use a hoist when moving and installing the agitator. See **Technical Data** on page 23 for specific weight.

7. Place the tank lid back on the tank and tighten all tank lid clamps.

NOTICE

To avoid damage to the level sensors, install the tank lid with the agitator furthest away from the sensors as it is being lowered into the tank.

8. Install the electric panel. See **Electric Panel** on page 11.
9. Close the pressure relief valve on the tank and connect the air supply to the water separator.
10. Pressurize the tank by opening the incoming air supply valve.
11. Check for air leaks. Tighten connections as required.

Grounding

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Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

Improper installation of the grounding plug increases the risk of electric shock. Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician. Only connect the product to an outlet having the same configuration as the plug. Do not use an adapter with this product.

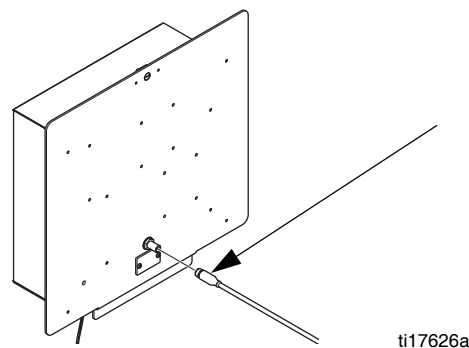
Electrical agitators are grounded to the customer provided line cable through two power cords. The first power cord connects the HFR distribution box to the electrical panel located underneath the tank stand. The second power cord connects from the panel to the agitator.

Electric Panel

This panel is only for electric agitator installations.



1. Turn off the main power.
2. Disconnect the CAN cable from the panel located on the tank stand.



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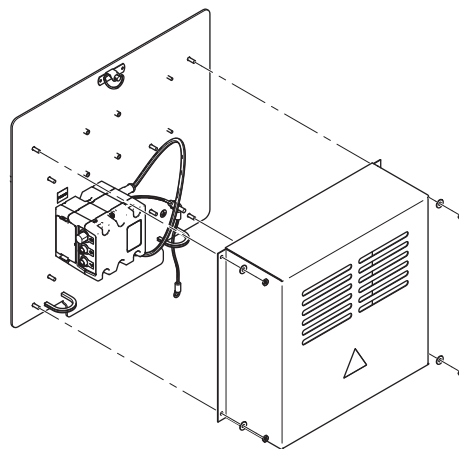
FIG. 10: CAN Cable Connection

3. Remove the panel assembly and place it on the floor near the tank stand.

NOTICE

To avoid damage to the electric components mounted on the panel, do not use excessive force when removing the panel from the tank stand.

4. Remove the cover from the electric panel.



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FIG. 11: Electric Panel Cover

5. Mark each cable that is connected to the Fluid Control Module (FCM) with the port number it is connected to. Disconnect all cables from the FCM.

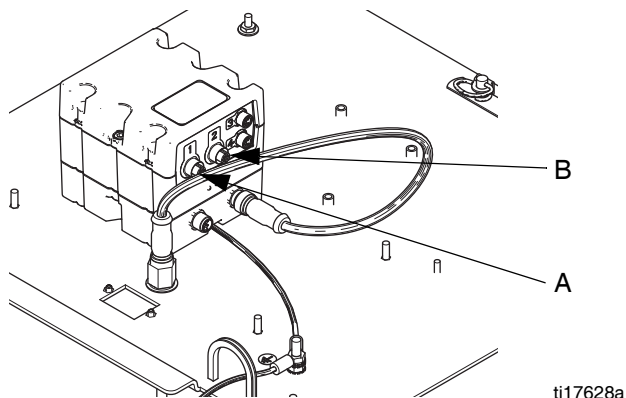


FIG. 12: FCM Connections

Ref.	Port Label	Connection Purpose
A	Port 1	Level Sensor
B	Port 2	Transfer Pumps (if installed)

6. Remove the cover from the electric panel included in the kit. Connect all cables that were disconnected in step 5 to the FCM on the new panel.
7. Route the agitator power cord through the tank stand opening.

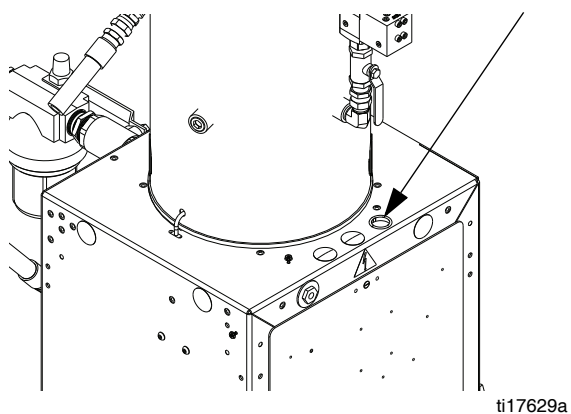


FIG. 13: Power Cord Routing

8. Plug the agitator power cord into the socket found on the agitator power box.

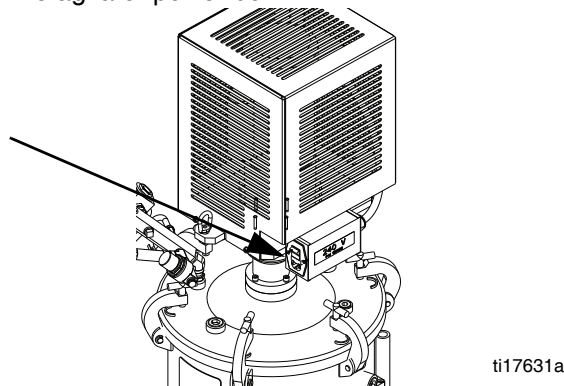


FIG. 14: Electric Agitator Socket

9. Ensure that the agitator power cord breaker on the panel is switched to the "ON" position. Replace the cover that was removed in step 6 on the panel.

NOTICE

To avoid damage to the power cord, ensure that the cord will not be pinched or damaged when replacing the cover. Ensure all routings of the power cord will not be damaged during normal operation of the unit.

10. Mount and secure the kit panel assembly onto the tank stand.
11. Connect the CAN cable that was disconnected in step 2 to the panel.
12. Connect the power cord from the power distribution box socket to the socket located on the panel. Ensure the "Tank" breaker in the main distribution box is switched to the "ON" position.

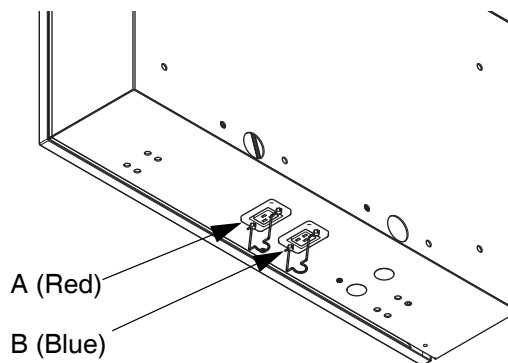


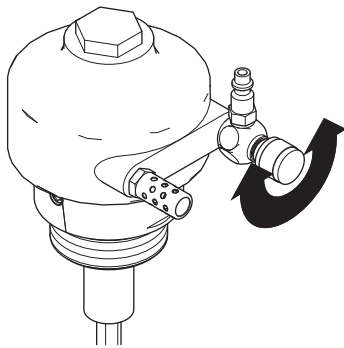
FIG. 15: Main Distribution Box Socket

Setup

Pneumatic Agitator Speed Adjustment

Adjust the needle valve to the desired speed.

- To increase the rotational speed of the agitator, rotate the needle valve counter-clockwise.
- To decrease the rotational speed of the agitator, rotate the needle valve clockwise.



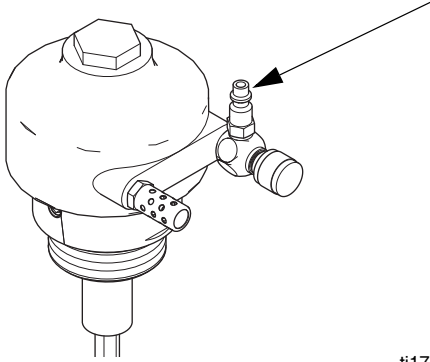
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FIG. 16: Needle Valve Adjustment

Startup

Pneumatic Agitators

1. Connect a pressurized air supply to the agitator motor fitting.



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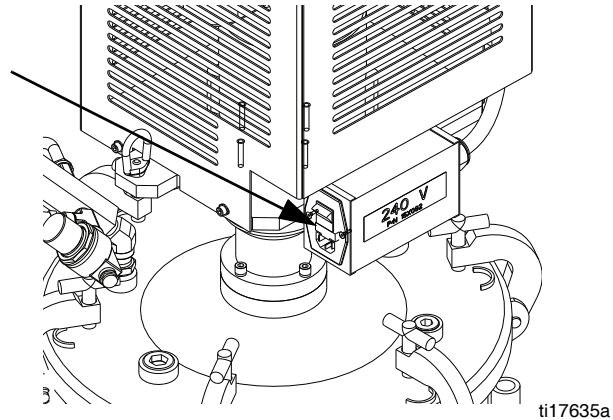
FIG. 17: Needle Valve

2. Adjust the needle valve to the desired speed. See **Pneumatic Agitator Speed Adjustment** on page 13.

Electric Agitators



To turn on the motor, flip the agitator switch to the “I” position.



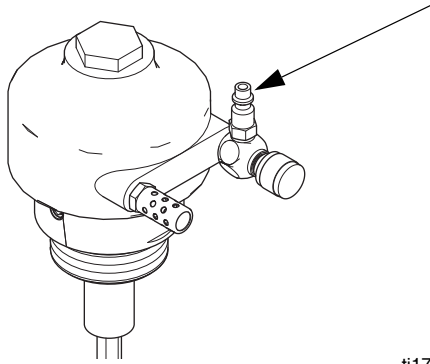
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FIG. 18: Electric Agitator Switch

Shutdown

Pneumatic Agitators

Disconnect the pressurized air supply from the agitator motor fitting.



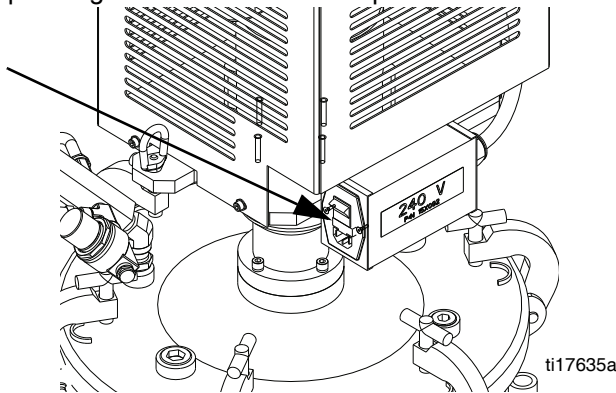
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FIG. 19: Needle Valve

Electric Agitators



Flip the agitator switch to the "O" position.



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FIG. 20: Electric Agitator Switch

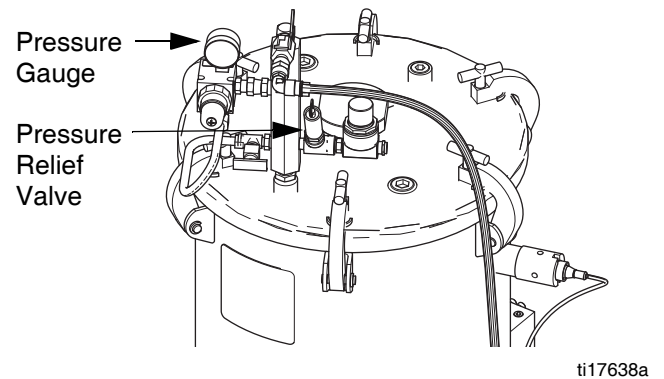
Pressure Relief Procedure



NOTICE

Relieving air pressure in the machine means that the supplied dry air will be replaced by moist air. To avoid material decomposition, do not leave the machine exposed to moist air for more than 30 minutes. If the machine must be left without air pressure for more than 30 minutes, the day tanks must first be emptied and thoroughly flushed.

1. Turn off the system main power.
2. Close the day tank incoming air supply valve.
3. Disconnect the pressurized air supply hose from the water separator.
4. Open the pressure relief valve on top of each day tank to bleed air pressure from system.



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FIG. 21: Tank Pressure Relief

5. Look at the pressure gauges to ensure there is no air pressure in the tanks.

Maintenance

The pneumatic motor will require periodic lubrication, flushing, and general cleaning. Refer to the pneumatic motor manual for more details.

Repair

Replace Agitator Fuse



1. Turn off system main power.
2. Slide open the fuse drawer.
3. Remove the old fuse and replace with the new fuse (Graco P/N: 115142).

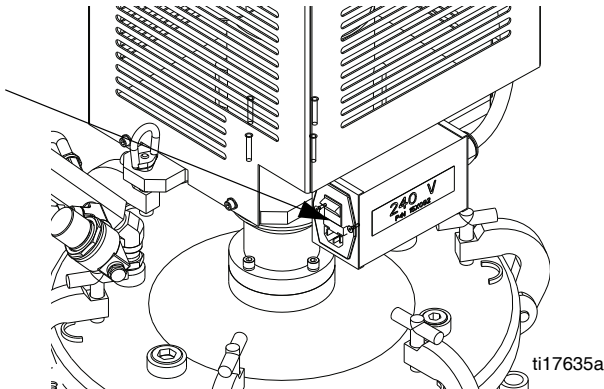


FIG. 22: Electric Fuse Compartment

Troubleshooting



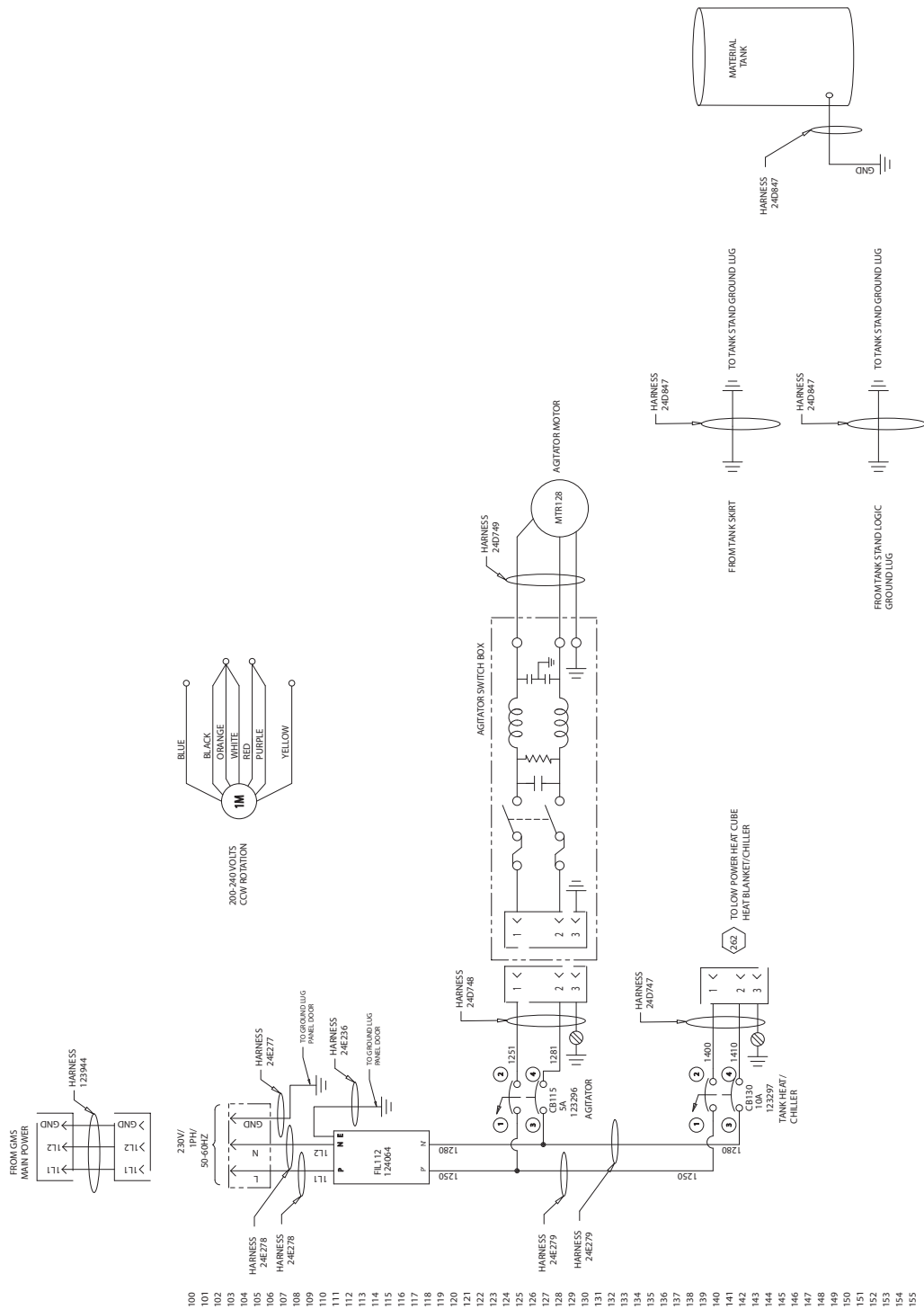
Pneumatic Agitation

Problem	Cause	Solution
Agitator motor is not turning.	No pressurized air supply.	Ensure there is a pressurized air supply connected to the agitator motor fitting.
	Closed needle valve.	Rotate the needle valve counter-clockwise
	Overdue maintenance.	Perform maintenance as detailed in pneumatic motor manual.
	Bad motor.	Replace motor.

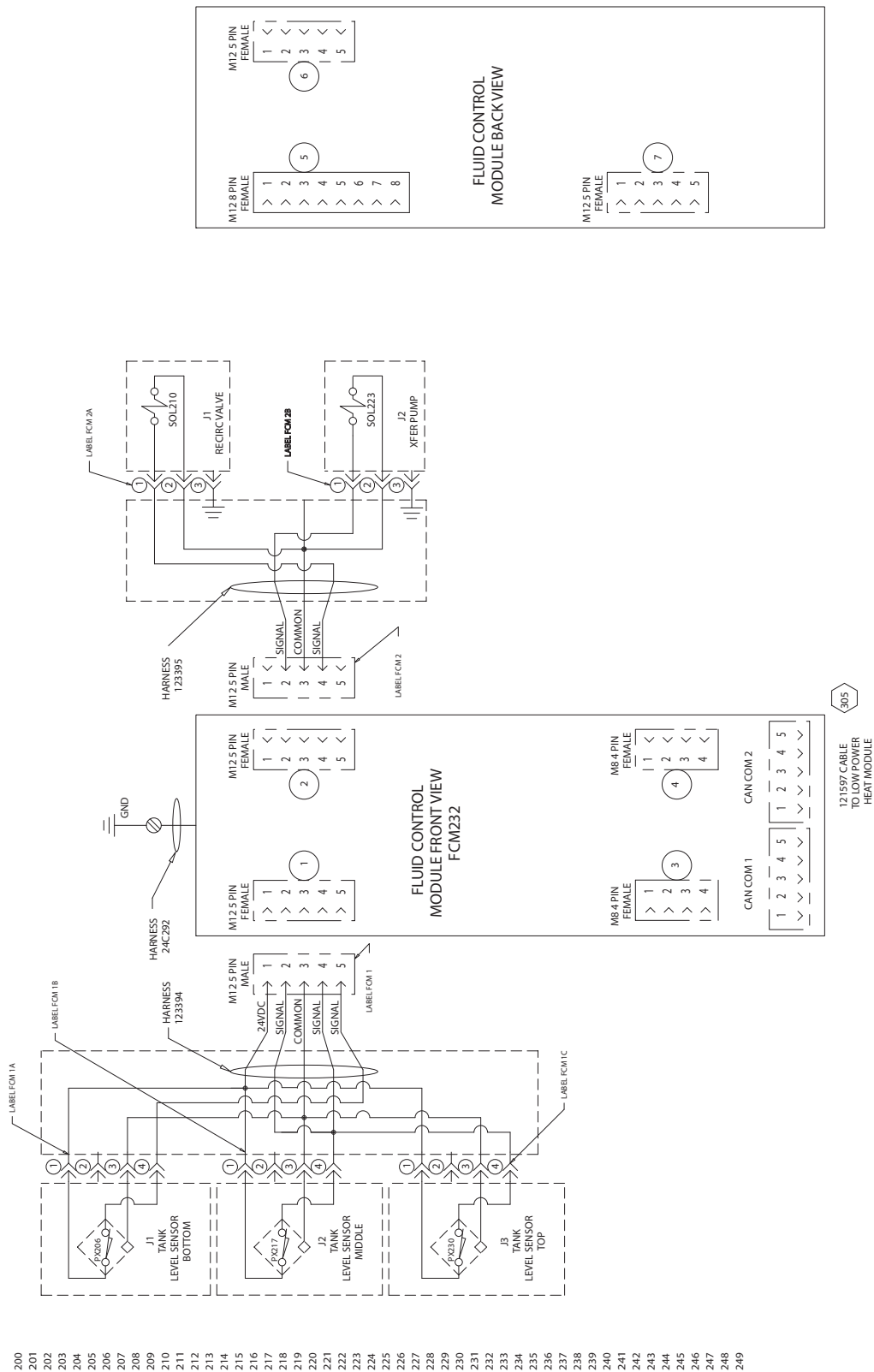
Electric Agitation

Problem	Cause	Solution
Agitator motor is not turning.	Intermittent electric connections.	Ensure the system main power is ON.
		Ensure all electric connections to the motor are secure. See electrical schematic in either the HFR or VRM Repair-Parts manual.
	Broken fuse.	Replace fuse at agitator switch.
	Tripped circuit breaker.	Check if motor circuit breaker in base cube has tripped. See electrical schematic in either HFR or VRM Repair-Parts manual.
		Check if tank stand circuit breaker in power distribution module has tripped. See electrical schematic in either HFR or VRM Repair-Parts manual.
	Bad motor.	Replace motor.

Electrical Schematics

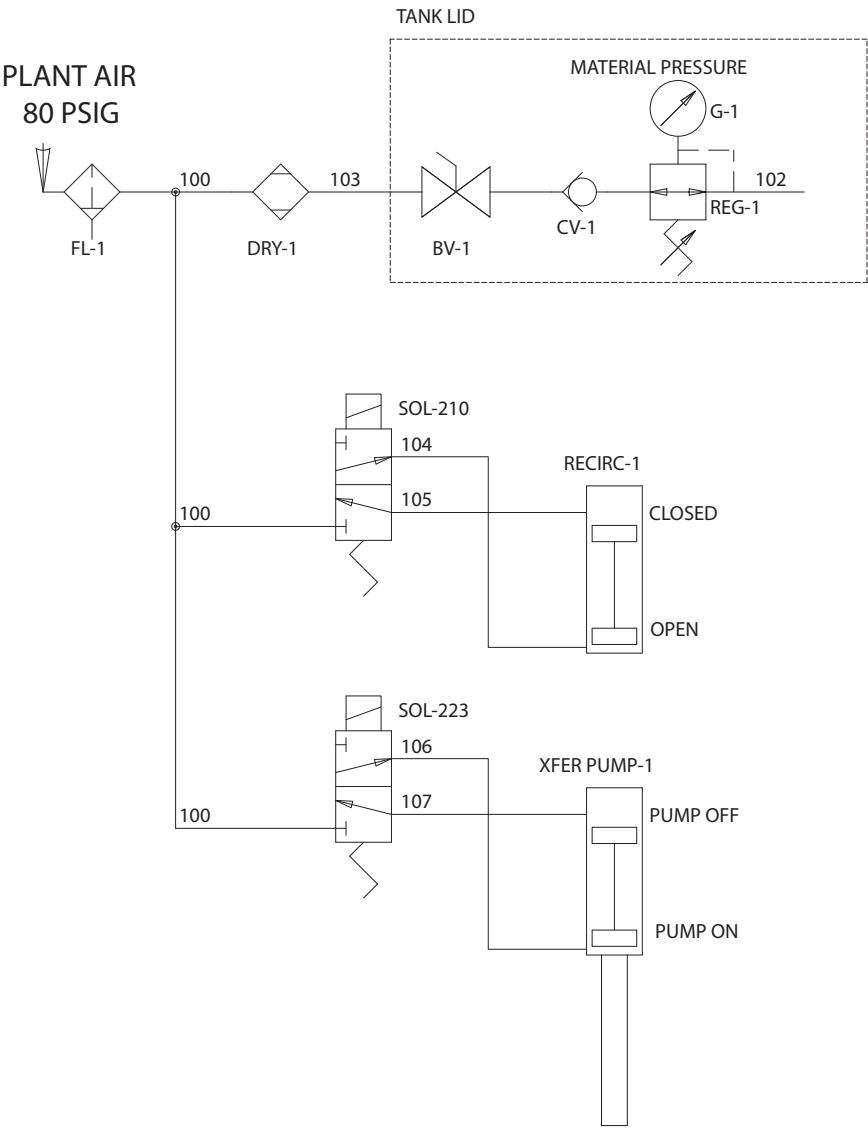


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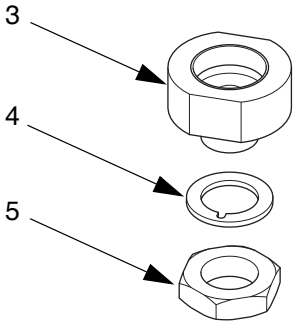
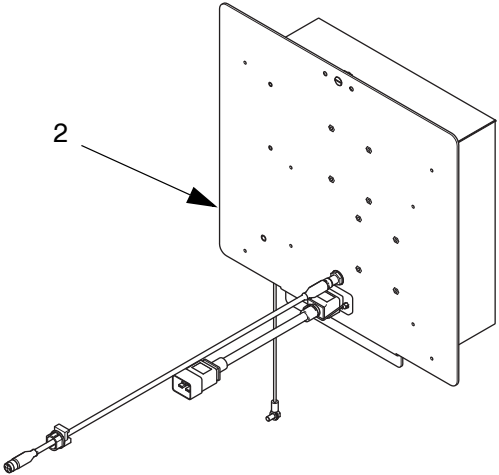
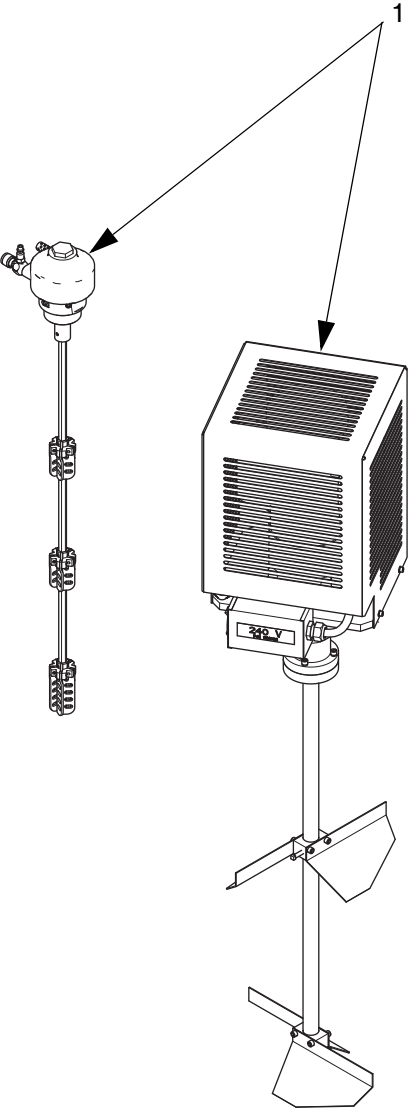
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Parts

Agitator Kits



Agitator Kit Parts

The following table list the part numbers and quantities by kit assembly.

Ref. No.	Part No.	Description	Kit Assembly and Quantity			
			24G389	24K348	24K342	24K343
1	◆24G389	Pneumatic Agitator, for use with Carbon Steel and Stainless Steel Tanks	1	1		
	◆24B969	Electric Agitator, for use with Stainless Steel Tanks				1
2	◆24C307	Electric Panel			1	1
3	16K241	Adapter		1		
4	15Y363	Seal		1		
5	15Y355	Retaining Nut		1		
▲	125008	LABEL, earth ground	1	1	1	1
▲	15X092	LABEL, 240 Volts	1	1	1	1
▲	196548	LABEL, shock	1	1	1	1

◆ For additional parts breakdown, refer to the carbon and stainless steel tank stand manuals referenced on page 3.

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

Technical Data

Pneumatic Agitator

Maximum Air Inlet Working Pressure	100 psi (0.7 MPa, 7 bar)
†Sound Pressure	75.74 dB
†Sound Power	82.32 dB
Weight: Pneumatic Agitator	15 lb (6.8 kg)
Air Consumption @ 400 rpm with 100 psi (0.7 MPa, 7.0 bar) Air Inlet Pressure.	22 scfm (0.62 m ³ /min.)
Wetted Parts.	Stainless Steel

† Sound power is measured per ISO 9614-2 at 3.3 ft
(1 m) from the equipment.

Electrical Agitator

Line Voltage Requirements	230 Vac
Amperage.	15 A
†Sound Pressure	72.33 dB
†Sound Power	64.84 dB
Weight: Electrical Agitator	80 lb (36.3 kg)
Wetted Parts.	Stainless Steel

† Sound power is measured per ISO 9614-2 at 3.3 ft
(1 m) from the equipment.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

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Graco Information

Sealant and Adhesive Dispensing Equipment

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor, go to www.graco.com and select "Where to Buy" in the top blue bar, or call to find the nearest distributor.

If calling from the US: 800-746-1334

If calling from outside the US: 0-1-330-966-3000

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A1936

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