Instructions - Parts

Level Detection Module and Drum Feed Kit

3A2806C
EN

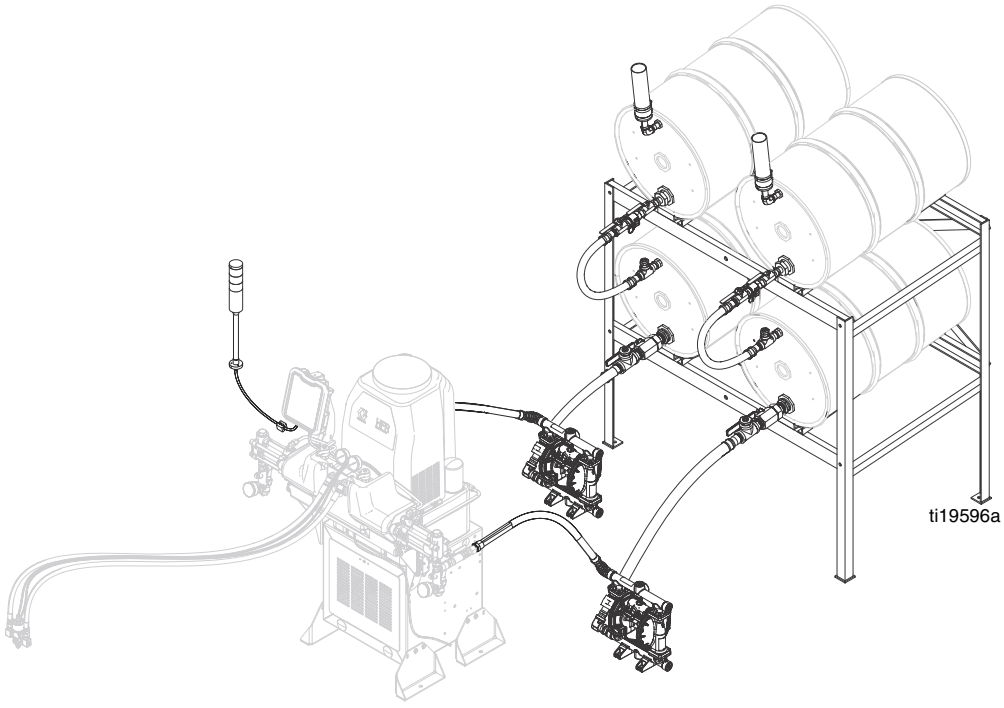
Installation kit to provide low level sensors in both chemical sides of an HFRL or HFRS plural-component proportioner being fed from 55 gallon (208 liter) drums. Not for use with standard configured HFR units. For professional use only.

Not approved for use in explosive atmospheres or hazardous locations.

Important Safety Instructions
Read all warnings and instructions in the HFRL and HFRS Setup-Operations manual. Save all instructions.

See page 3 for model information.

125 psi (0.86 MPa, 8.6 bar) Maximum Fluid Working Pressure
125 psi (0.86 MPa, 8.6 bar) Maximum Air Input Pressure



Contents

Related Manuals

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

Manual No.	Description
3A2175	HFRL and HFRS, Setup-Operations
3A2176	HFRL and HFRS, Repair-Parts
312877	Husky 1050 Air-Operated Diaphragm Pump, Operation
3A0235	Feed Supply Kits, Instructions-Parts
406987	GCA CAN Cables, Reference (Extension Cables)

Models

NOTE: Not for use with standard HFR units.

Part	Description
24N816	**KIT, low level, stack light, HFRL (Required):** - (2) low level sensors - (1) sensor per chemical side - (1) control panel for level sensors - (1) indicator stack light
24N767	**Carbon steel drum feed kit with Husky pump (Optional):** - Kit is to add a drum feed to (1) chemical side
01/0955/25	**4 Drum rack (Optional)**

Component Identification

Complete Feed System

Figure Shown With:
(1) Level Kit
(2) Drum Feed Kit Options
(1) 4 Drum Rack Option

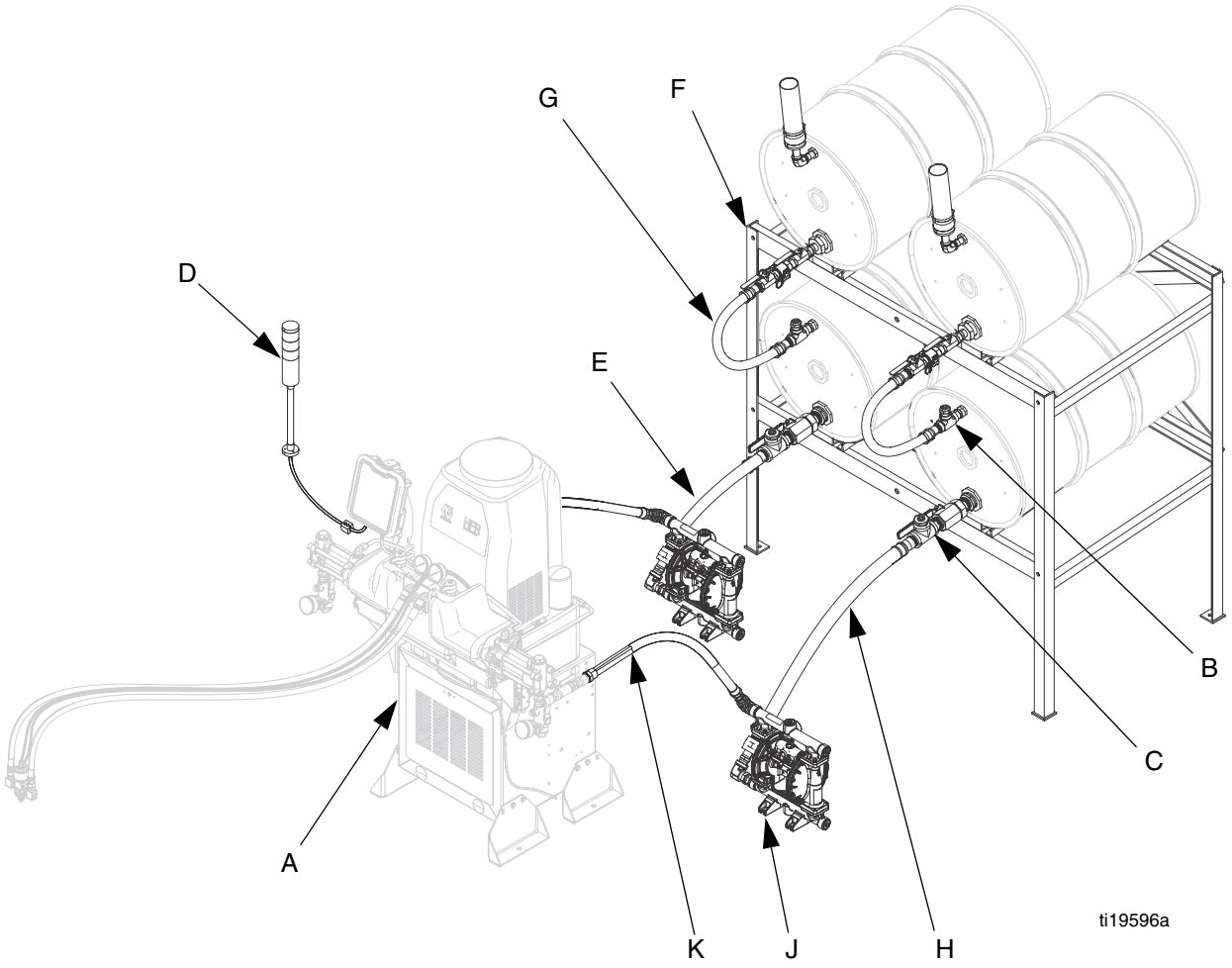


FIG. 1: Component Identification - Feed System

Key:

A Auxiliary Control Panel (Mounted in Machine Base) Refer to FIG. 2
B Level Sensor - Low Level Indication
C Level Sensor - Empty Indication
D Indicator Stack Light
E Drum Feed / Pump Kit for One Chemical (Optional)
F 4 Drum Rack (Optional)
G Upper to Lower Drum Feed Hose
H Drum to Pump Feed Hose, 6 ft (1.8 m)
J Husky Pump
K HFR Supply Hose

Electrical Panel Components

The electrical panel will be located on the inside of the HFRL stand enclosure, and includes two fluid control modules.

Software is loaded on Fluid Control Modules (FCM). Program token 16G584 is also provided.

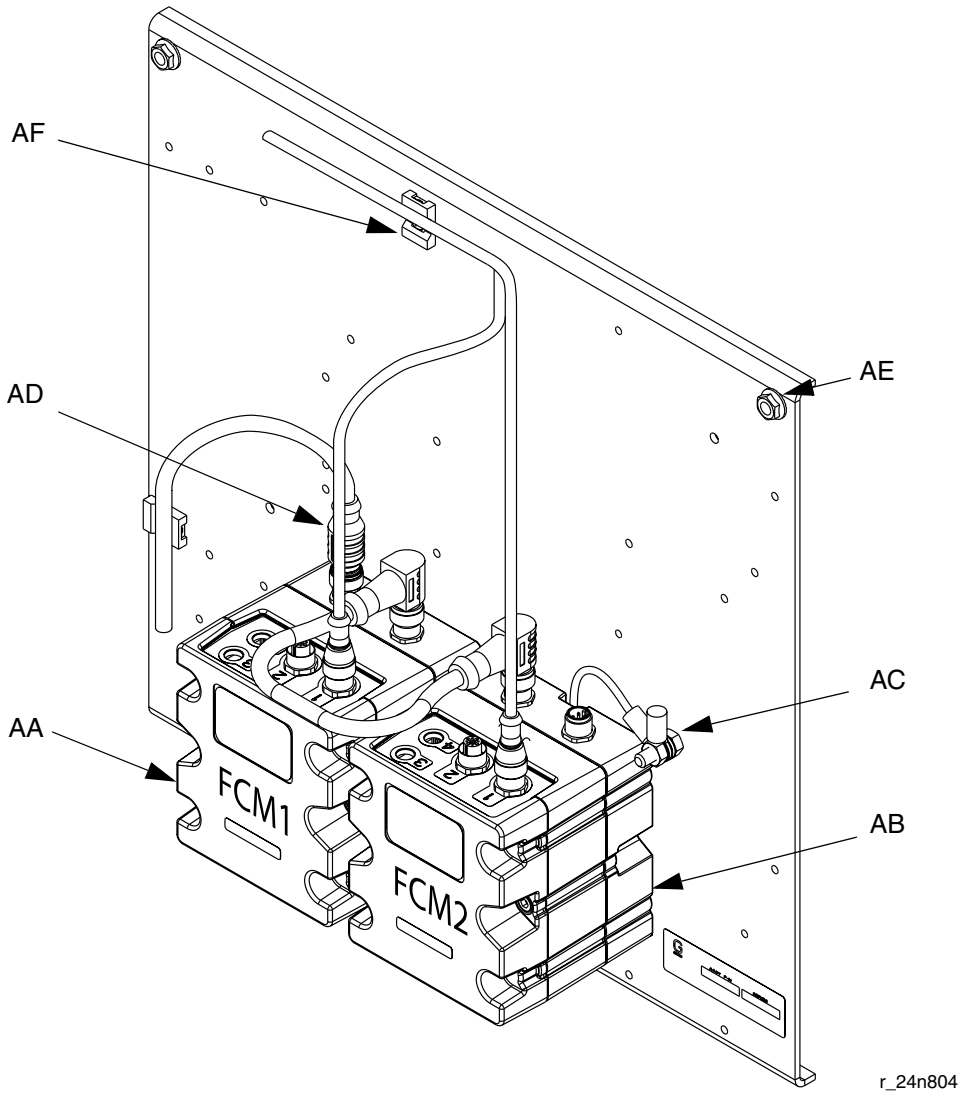


FIG. 2: Component Identification - Electrical Panel

Key:

AA Fluid Control Module - A (Red) Tank
AB Fluid Control Module - B (Blue) Tank
AC Ground Cable
AD CAN Cable
AE Flanged Hex Nuts (3x)
AF Wire Tie Anchor

Fluid Control Module (FCM)

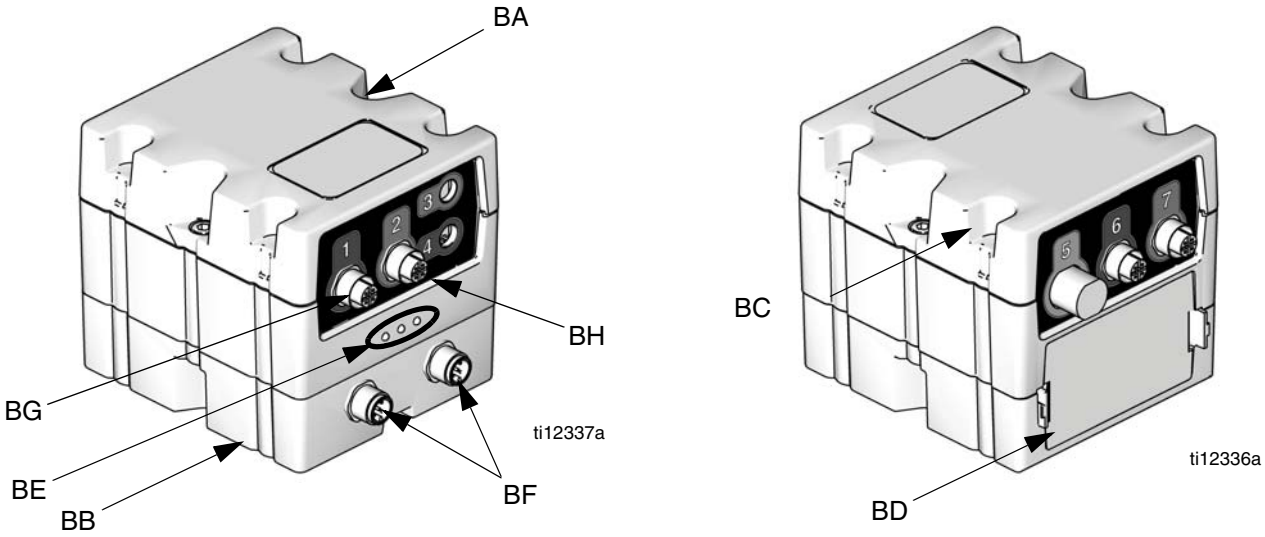


FIG. 3: Component Identification - FCM

Key:
BA Fluid Control Module (FCM)
BB Base
BC Module Connection Screws
BD Access Cover
BE Module Status LEDs
BF CAN Connectors
BG Level Sensor Input
BH Fill Solenoid Signal

Adjust Rotary Switch

The rotary switch setting indicates which zone the fluid control module will control in the system. The FCM uses a 16-position rotary switch to make selections.

Set the rotary switch to the specific selection according to the settings listed in the following table.

Setting	Zone
0 through 2	Not Used
3	B (Blue) Tank Level
4	A (Red) Tank Level
5 through F	Not Used

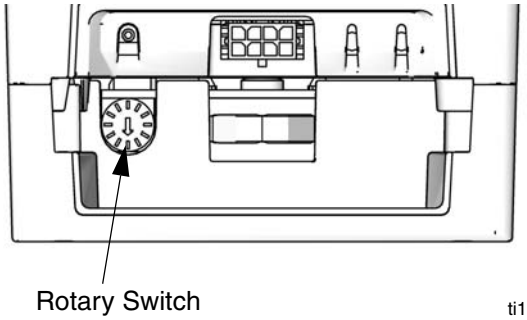


FIG. 4: Adjust Rotary Switch

Light Tower

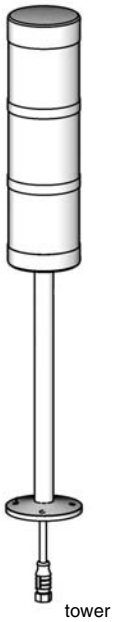


FIG. 5: Component Identification - Light Tower

Signal	Description
Green on only	System is powered up and there are no error conditions present
Yellow on	An advisory exists
Yellow flashing	Material is at a low level condition
Red flashing	A deviation exists
Red on	The system is shut down due to an alarm occurring.

Errors include advisories, deviations, or alarms, so green will only be on when none of these occur. A yellow light can be on at the same time as red (flashing or solid on) when an advisory exists at the same time as a deviation or alarm.

Messaging will be viewable on the ADM to determine the specific error code.

Grounding

The equipment must be grounded. 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.

Pump: follow instructions in separate feed pump manual, supplied.

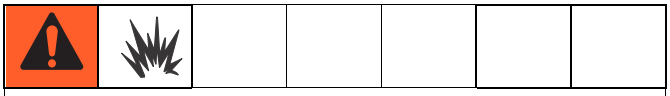
HFR: see operation manual.

Fluid supply container: follow local code.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun or dispense valve firmly to the side of a grounded metal pail, then trigger the gun or valve.

Flush Pumps Before Using



Flush equipment only in a well-ventilated area. Do not spray flammable fluids.

NOTICE

Diaphragm pumps are factory tested with water. Thoroughly flush pumps before using to prevent moisture contamination when pumping moisture sensitive materials.

Installation

Install 4 Drum Rack (Optional)

NOTICE

To avoid machine damage or personal injury, anchor the rack to the floor with (4) 1/2” bolts (provided by customer) and verify all bolt assemblies are tightened before loading the drums onto the rack.

Refer to **4 Drum Rack, 01/0955/25 (Optional)** on page 30 for visual clarity.

Position Drums

Place component A (red) and component B (blue) drums as desired. Air hose connecting feed pumps is 15 ft (4.57 m) long.

Fluid hose connecting feed pumps to systems are 10 ft (3.05 m) long.

Install Drum Feed Kit

NOTICE

To avoid machine damage or personal injury, do not supply pressure to drums.

1. Complete **Setup** instructions in the pump manual before installing in drum feed kit.

NOTICE

To avoid improper operation, the diaphragm pump must be floor mounted.

2. If applicable, locate drum rack to allow access for top drum change.
3. Dry fit all hose and fitting components to ensure components are located properly and will reach the HFRL. Refer to FIG. 1, page 4.

NOTE: Drum to pump feed hose length can be reduced if necessary. Refer to FIG. 1, page 4, item H.

4. Tighten all connections.

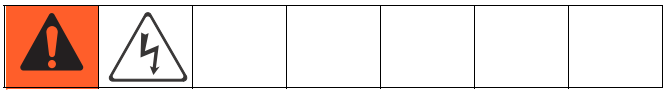
Connect Feed Pump

1. Supply clean, dry, filtered air to feed pumps.

NOTE: Air supply components are not included.

2. Refer to Husky 1050 Air-Operated Diaphragm Pump, Operation manual for instructions.

Install Electrical Panel



1. Perform HFR shutdown procedure. See HFRL operation manual for detailed instructions.
2. Disconnect the power supply to the machine.
3. Turn the disconnect switch on the rear base cover of the machine to the “OFF” position
4. Remove the cover to allow access into the base cube.
5. Install the pre-assembled panel on the left side of the cube, directly opposite of the main control panel. Note the locations of the 3 studs; One in each top corner, and one in the bottom center.
    a. Orient the panel so the mounting holes match the stud locations of the cube.
    b. Insert the panel into the base cube.
    c. Orient the top of the panel such that the studs in the cube wall extend through the holes in the top corners of the panel.
    d. Fasten the panel to the studs with the (3) flanged hex nuts provided. Tighten the nuts.
6. Connect the cable (labeled 121002) extending from the panel to the yellow cable splitter located on the lower left side of the main machine control panel.
    a. Remove the two screws to free the splitter from the panel.
    b. Insert the cable end into the open port on the splitter and tighten. Note that the plug is keyed and only fits in the splitter in one orientation.
    c. Reattach the splitter to the panel.
7. If there is no available connection on the splitter, an alternate CAN connection will need to be used. The alternate location may require a different gendered cord (122487 is provided for this purpose). Consult the system manual in finding an alternate connection location.
8. Remove one of the hole plugs located on the top of the base cube directly over the disconnect panel that was just removed.

NOTE: There are three holes on the top edge of the base cube. The plug can be easily pushed out from inside the cube.

9. Replace the removed plug with the provided plastic edge bushing
    a. The bushing will snap into place by aligning the smaller diameter end of the bushing on top of the hole and pressing the bushing down through the hole from outside the cube.
10. Insert the male ends of the sensor cords labeled FCM1A and FCM2B through the bushing and into the base cube.
11. Connect the cord labeled FCM1A to port “1” (Refer to FIG. 2, page 5) on the FCM labeled FCM1.
12. Connect the cord labeled FCM2B to port “1” (Refer to FIG. 2, page 5) on the FCM labeled FCM2.
13. Attached the wire anchor to the inside face of the base by inserting the provided screw through the anchor and the weld nut indicated in FIG. 6. Secure in place by tightening the hex nut on the screw from the outside of the base.
14. Secure the cords to the panel and the base cube by using wire ties (not provided) and the installed plastic anchors.

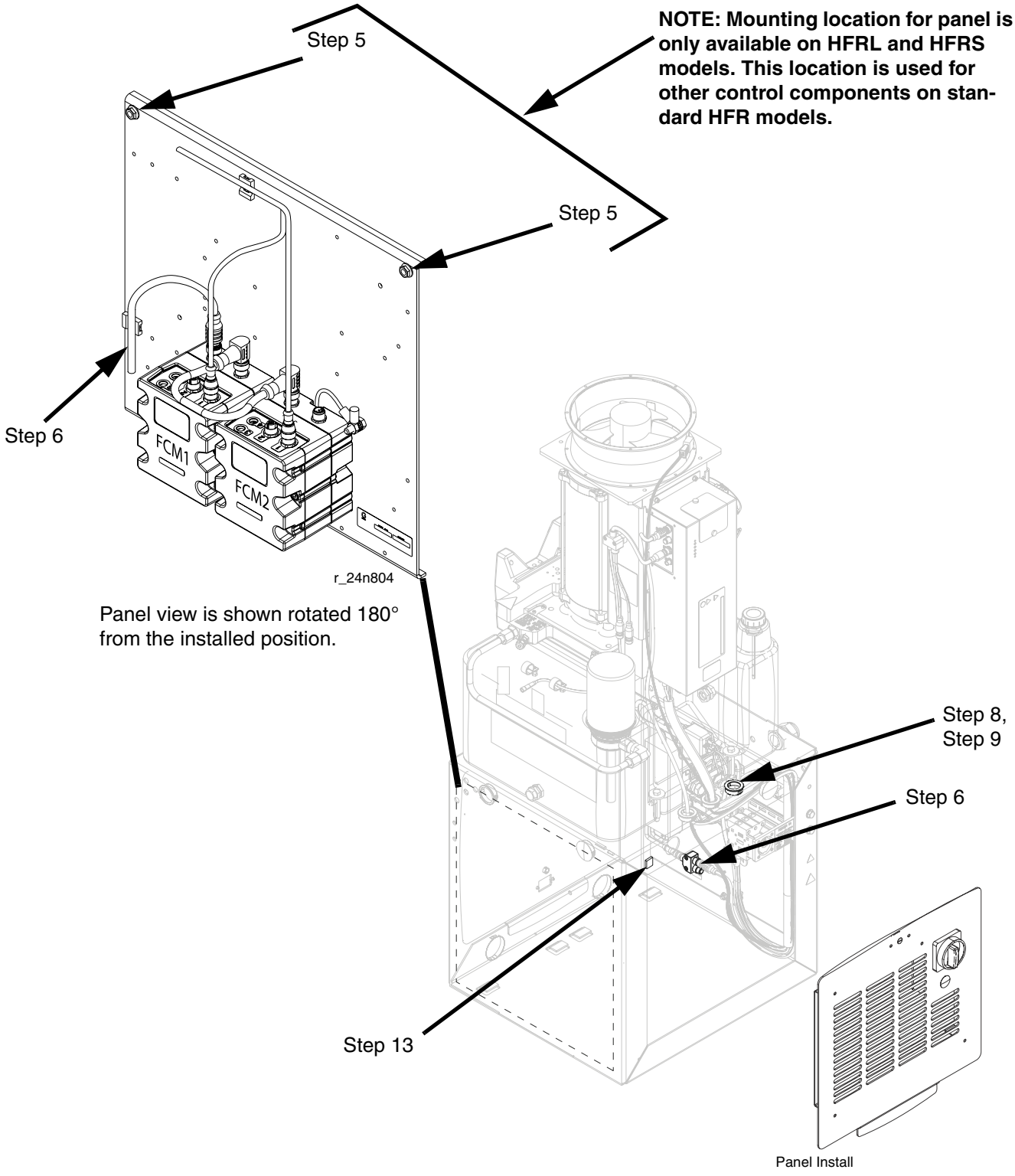


FIG. 6: Install Electrical Panel

Install Level Sensors

NOTE: Lower drum hardware must be installed in an empty drum and then installed on the lower drum rack. The drum can then be filled from the cascade feed hose from a full upper drum.

NOTE: There are two possible locations for the low level sensor, depending on desired function. Install both sensors in the same location on each chemical side.

- **Low Level Indication:** Located in the upper to lower drum feed hose
- **Empty Indication:** Located in the drum to pump feed hose.

NOTICE

Do avoid machine damage, install one sensor on each chemical side only.

1. Turn main power off.
2. Drain drums below the lowest level sensor well.

NOTE: For proper level sensor function, the tip of the level sensor well must protrude at least 1/8 in. into the tank.

3. Route the level sensor wire through the corresponding well nut (CC). See FIG. 7 for level sensor assembly view.

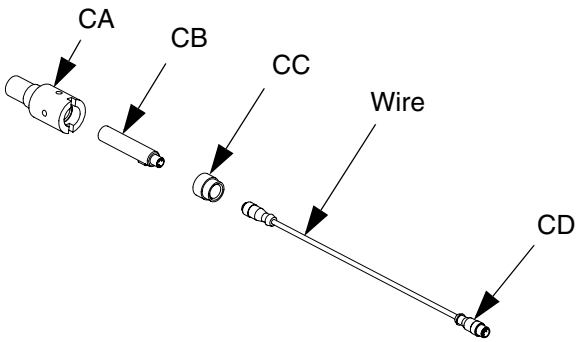


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FIG. 7: Level Sensor Assembly

4. Measure the length of the level sensor well housing, and then measure the depth of the hole in the fitting where the well is inserted. Note these measurements as they will be need later.
5. Being careful to not cross-threads, thread assembled level sensor (CB) into well housing until it bottoms out against the bottom of the well. The bottom of the level sensor will be slightly visible through the bottom of the well.

NOTE: In the following step, do not allow PTFE paste or tape to cover the tip of the level sensor well. If paste comes in contact with the tip of the level sensor well, thoroughly wipe it clean.

6. Apply PTFE paste and PTFE tape to the male threads of the level sensor well housing.
7. Being careful to not cross-threads, thread the level sensor well (CA) into the corresponding drum feed port and lightly tighten with a crescent wrench.

NOTICE

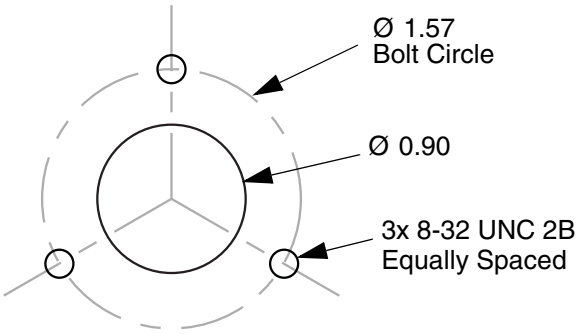
Do not pressurize tank with level sensor removed from sensor well. Doing so will rupture the level sensor well.

8. The protrusion length must be at least 1/8 in. (3.2 mm). If not, remove the level sensor well and restart at step 4.
9. Rotate level sensor such that the cord is pointing vertical and the sensing face is pointing down.
10. Plug the sensor connector (CD) into the level sensors.
    a. Route the sensor wires from the control panel through the bushing that was installed with the level sensor panel (steps 8 and 9).
11. Plug the sensor connector into the connector on the FCM.
12. Calibrate the sensor. See **Calibrate Barrel Style Level Sensors**, page 14.

Install Light Tower

NOTE: Install the light tower in a suitable location for clear viewing.

1. Create the hole pattern below to match the light tower base.



Mount Pattern

2. Use the provided screws to attach the light tower to the mounting bracket.
3. Route the light tower cord as needed towards the ADM.

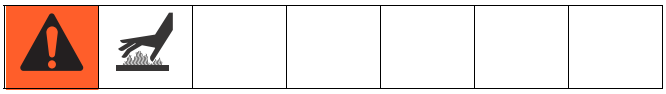
NOTICE
To prevent damage to the cord, ensure it will not be pinched during normal machine operation after routing.

4. Connect the cable to the port labeled “1” on the base of the ADM. Refer to FIG. 1, page 4.

NOTE: A 5 m (16 ft) cable is provided with the level control kit. If extension cables are necessary, refer to GCA CAN Cables - Reference manual.

Setup

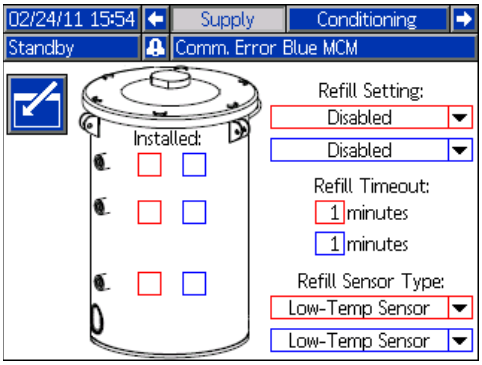
Calibrate Barrel Style Level Sensors



1. Locate the calibration button on the sensor (11) closest to the electrical connector through one of the four holes of the sensor well housing (CA).
2. If the calibration button cannot be seen through one of the four holes in the sensor well, rotate the sensor.
   a. Loosen the sensor well nut (CC).
   b. Rotate sensor until the calibration button can be seen through one of the four holes in the sensor well housing.
   c. Tighten sensor well nut.
   d. Press and hold the button down with the ball end of an allen wrench for two seconds. The light will flash slowly and then go out.
3. Test for proper sensor function.
   a. Loosen the sensor well nut.
   b. Back the sensor out of the well. The sensor should sense the housing wall.

Set the ADM to Recognize the Feed System Kit

1. Navigate to the ADM Supply Screen.



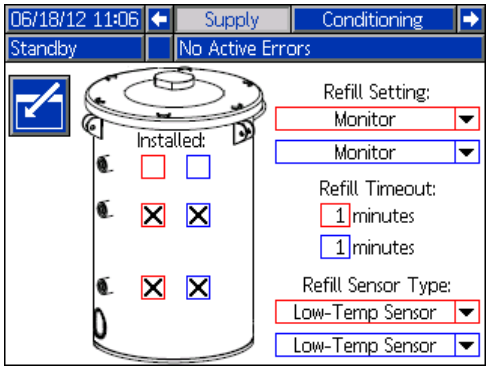
2. Press  .
3. For the appropriate chemical side, select “**Monitor**” within the Refill Setting selection box.

NOTE: Select “**Disabled**” if the level system is not being used.

Set the ADM to Recognize which Level Sensors are to Operate

NOTE: Two sensors must be selected for each material with a level sensor, regardless if there is only one low level sensor installed.

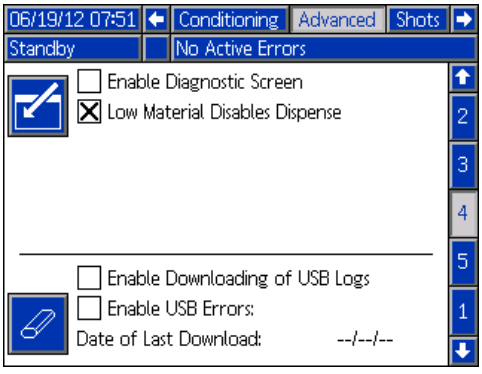
1. Remain within the ADM Refill Screen.



2. For the appropriate chemical side, select and check the middle sensor**.**
3. For the appropriate chemical side, select and check the bottom sensor**.**
4. Press  .

Set the Level Sensors Output Function

1. Navigate to the ADM Advanced Screen 4.



2. Press  .
3. If it is desired to stop dispensing when a low level is sensed, select and check “**Low Material Disables Dispense”.**

NOTE: Setting this option initiates a deviation condition and disables the machine from operation when there is a low level condition. When a low level is sensed, the machine will not cycle until the sensor see material. A pop-up screen on the ADM alerts the operator of the specific level condition.

4. If it is not desired to stop dispense, verify **Low Material Disables Dispense”** is unchecked.

NOTE: This option is the default setting of the system and is set as a deviation condition. When a deviation is issued, the machine will continue to cycle and will not be affected by the deviation.

NOTE: A low level condition generates a pop-up message on the ADM that can only be cleared by the operator. If the “**Low Material Disables Dispense**” option is selected, dispensing can resume with a remote start signal when material is replenished and the sensor sees material. It is not necessary to clear the ADM to initiate a start unless the ADM is used as the start device.

5. Press  .

Startup

1. See **Load fluid with feed pumps** in HFR operation manual.
2. Open feed pump air regulator.
3. Open feed pump bleed-type master air valve.
4. Adjust air to feed pump with needle valve.

NOTE:

- Cold, viscous material may be difficult to prime. Use needle valve to reduce air flow to motor.
- Do not plug or shut off pump fluid outlet when priming. Fluid must be free to flow through pump to prime.
- To increase pump flow rate and reduce icing, remove pump muffler. This will increase exhaust noise.

5. Never let pump run when drum is empty. A dry pump can accelerate and damage itself. If pump is running too fast, stop it immediately. Check and refill fluid supply, or flush with compatible solvent. Always prime entire system to remove any air. Do not let material harden in pump.

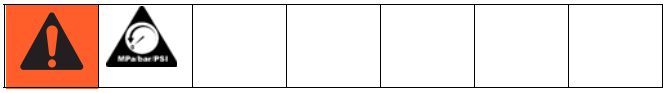
Shutdown

See **Shutdown** in system operation manual. Close feed pump bleed-type master air valve.

Pressure Relief Procedure

1. If the optional drum feed kit is being used, remove the air pressure from the Husky pump.
2. See **Pressure Relief Procedure** in system operation manual.

Maintenance



Drum Feed Kit - Air Dryer

Replace silica gel units when the desiccant color or moisture indicator has changed color from Blue (meaning dry) to Pink (meaning wet).

There is a sight window on the side of the canister to allow viewing of the desiccant color.

1. Loosen the clamp ring and remove the desiccant canister from the rubber housing.
2. Apply tape over the both ends of the canister.
3. Discard used canister.
4. Remove sticky tabs from the ends of the new canister to allow airflow.
5. Install canister into the rubber housing to allow viewing of the sight window.

NOTE: Make sure the arrows found on the canister point into the rubber housing.

6. Tighten the clamp ring.

Drum Feed Kit, Pump

NOTE: See supplied pump manual for maintenance, repair, and parts information.

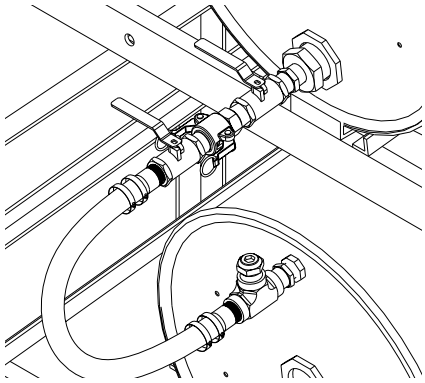
Tighten pump clamps and external fasteners periodically. See pump manual.

Drum Feed Kit, Changing Top Drums

NOTICE

To prevent cross-contamination of fluid when changing drums, complete changing one component before changing second component.

1. See **Shutdown**, page 16.
2. Close ball valves on top drum outlet assembly.

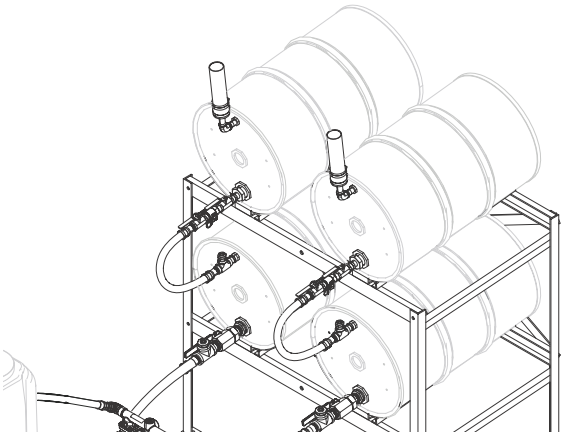


closed_ballvalves

3. Place a container underneath the CAM lock fitting to catch chemicals.
4. Disconnect the CAM lock fitting from the system.
5. Remove the empty drum from the rack (if applicable) and place it vertically on the floor.
6. Remove the air dryer assembly ball valve assembly from the empty drum.
7. Inspect and clean the threads of the full drum and removed fitting assemblies.
8. Apply thread sealant to threads of the removed assemblies.
9. Install the ball valve assembly.
10. Install dryer assembly.

NOTE: To prevent contamination of the desiccant in the dryer canister caused by sloshing material, it is recommended that the tape is temporarily placed over the air inlet on the dryer canister. The tape should be removed after the drum is installed.

11. Place drum on top rack and orient it so that the air dryer assembly is on top and outlet is on the bottom.



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12. Perform **Drum Feed Kit - Air Dryer**, page 16, as required.
13. Connect CAM lock fittings from lower drum securely to ball valve assembly on upper drum and lock in place.

NOTE: CAM levers on either side of female CAM receptacle should be perpendicular to the receptacle to mate and parallel to body to lock.

14. Open both ball valves on top drum outlet assembly to fill bottom the drum.

See **Load fluid with feed pumps** in GMS operation manual.

Install Upgrade Tokens

NOTE: The Motor Control Module, Fluid Control Module, and Temperature Control Module connection to the system is temporarily disabled during the installation of upgrade tokens.

To install software upgrades:

1. Use correct software token stated in the table. See Graco Control Architecture™ Module Programming manual for instructions.

NOTE: Upgrade all modules in the system to the software version on the token, even if you are replacing only one or two modules. Different software versions may not be compatible.

All data in the module (System Settings, USB Logs, Recipes, Maintenance Counters) may be reset to factory default settings. Download all settings and user preferences to a USB before the upgrade, for ease of restoring them following the upgrade.

See manuals for locations of specific GCA components.

The software version history for each system can be viewed in the technical support section at www.graco.com.

Token	Application
16H821	**HFR**: - Advanced Display Module - Motor Control Module - High Power Temperature Control Module - Fluid Control Module (AC Power Pack) - Discrete Gateway Module - Communication Gateway Module
16G584	**Tank Stand:** - Fluid Control Module - Low Power Temperature Control Module
16G407	**Ratio Monitoring (Flow Meters)**: - Fluid Control Module

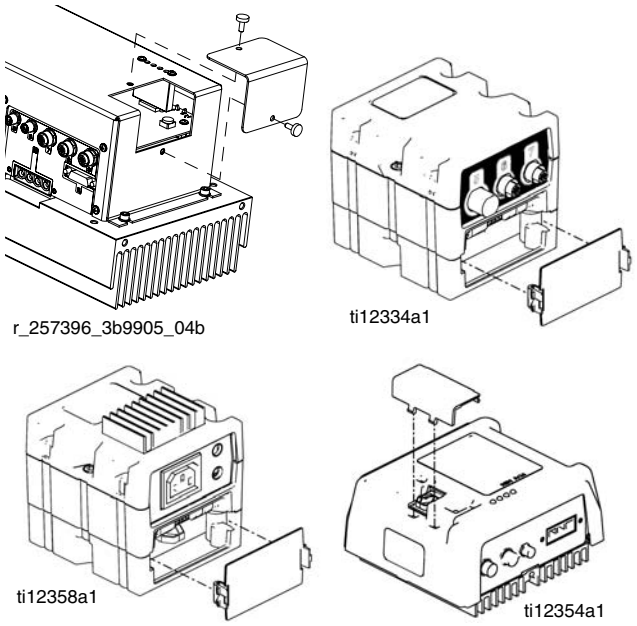

FIG. 8: Remove Access Cover

Troubleshooting

Problem	Cause	Solution
Level sensor is not sensing material when material is present.	Level sensors out of calibration.	Calibrate level sensor. Replace level sensor.
	Intermittent electrical connections.	Ensure the system main power is ON. Ensure all electrical connections to the level sensor are secure. See electrical schematic in either the HFR or VRM Repair-Parts manual.
	FCM errors.	Check FCM. A red LED indicates a problem with the module. See electrical schematic in either the HFR or VRM Repair-Parts manual. Replace FCM.
Level sensor is sensing material when material is not present.	Level sensors out of calibration.	Calibrate level sensor. Replace level sensor.
	Level sensors blocked inside reservoir.	Check inside reservoir to ensure there is nothing blocking the level sensor.
	Intermittent electrical connections.	Ensure the system main power is ON. Ensure all electrical connections to the level sensor are secure. See electrical schematic in either the HFR Repair-Parts manual.
	FCM errors.	Check FCM circuit breaker in base cube to see if it has tripped. See electrical schematic in either the HFR or VRM Repair-Parts manual. Check FCM. A red LED indicates a problem with the module. See electrical schematic in either the HFR or VRM Repair-Parts manual. Replace FCM.

Repair

Level Sensor and Well

NOTE: For proper level sensor function, the tip of the level sensor well must protrude at least 1/8 in. into the reservoir.

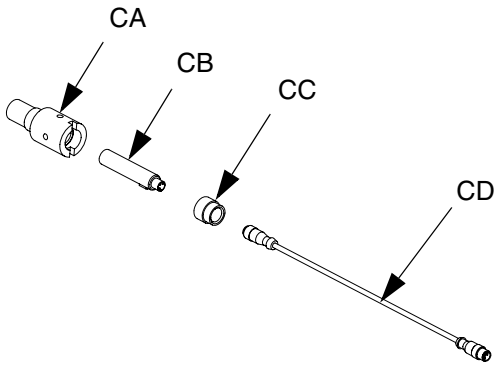

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FIG. 9: Level Sensor Assembly

1. Turn main power off.
2. Close ball valves on the drum outlets.
3. Drain drums to below level sensor well.
4. Unscrew level sensor harness cable (CD) from level sensor well housing (CA).
5. Use a crescent wrench to remove level sensor well housing from tank (C).
6. Remove the old level sensor (CB) from well housing.
7. Measure the length of the level sensor well housing, and then measure the depth of the hole in the fitting where the well is inserted. Note these measurements as they will be needed later.
8. Being careful to not cross-threads, thread assembled level sensor (CB) into well housing until it bottoms out against the bottom of the well. The bottom of the level sensor will be slightly visible through the bottom of the well.

NOTE: In the following step, do not allow PTFE paste or tape to cover the tip of the level sensor well. If paste comes in contact with the tip of the level sensor well, thoroughly wipe it clean.

9. Apply PTFE paste and PTFE tape to the male threads of the level sensor well housing.
10. Being careful to not cross-threads, thread the level sensor well into the tank (C) and lightly tighten with a crescent wrench.
11. Measure the amount of the level sensor well housing that is visible beyond the day tank hole, then perform the following equation:

    P = L1 - (L2 + L3)

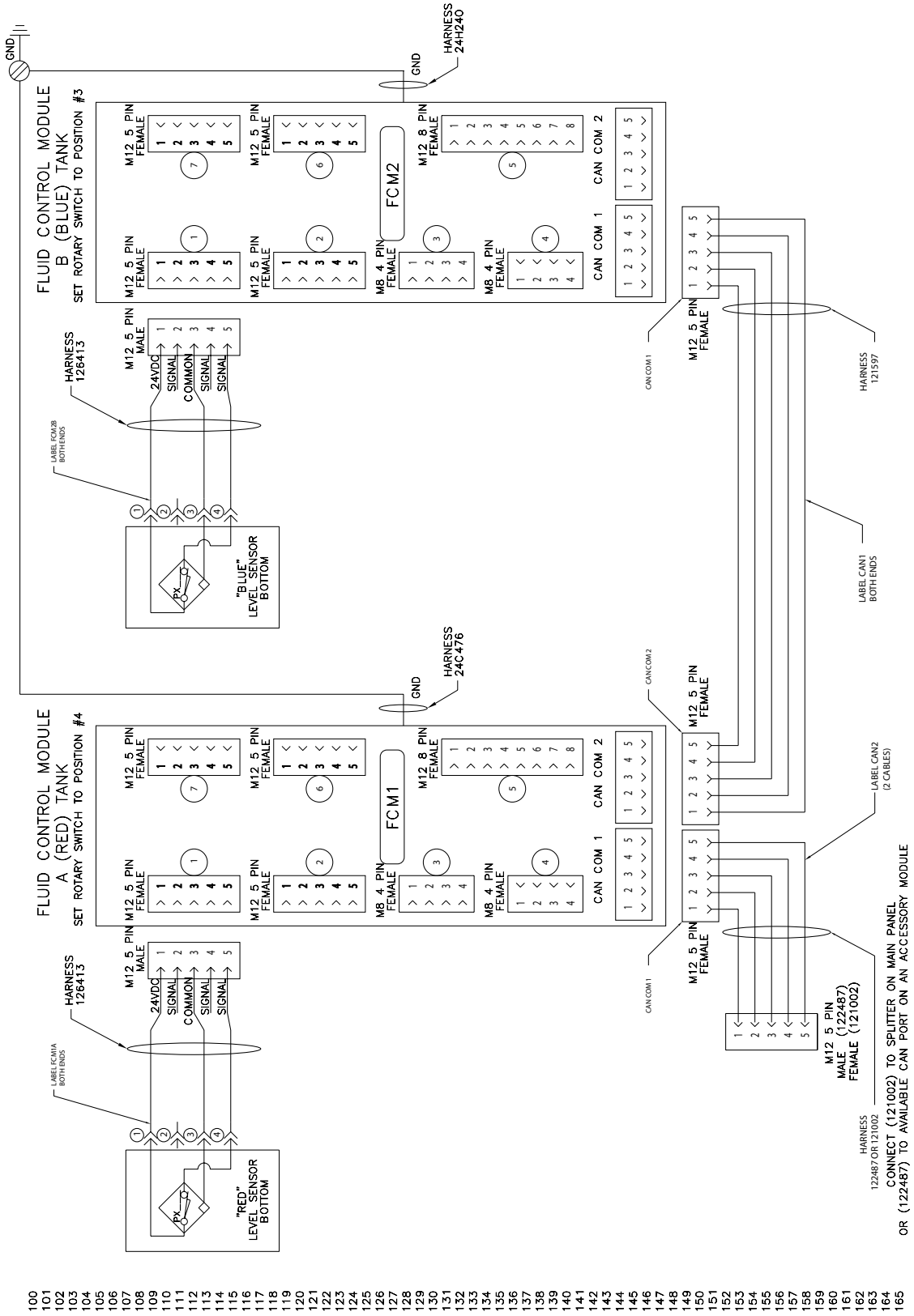
    P = Protrusion length (inside of day tank)
    L1 = Length of level sensor well (A10)
    L2 = Visible length of level sensor well
    L3 = Length of well threads in fitting

12. The protrusion length must be at least 1/8 in. (3.2 mm). If not, remove the level sensor well and restart at step 7.

NOTICE

Level sensor must be oriented with the sensing face pointing down. Alternate orientations could result in material pooling on the sensor face, resulting in a false reading.

Electrical Schematics

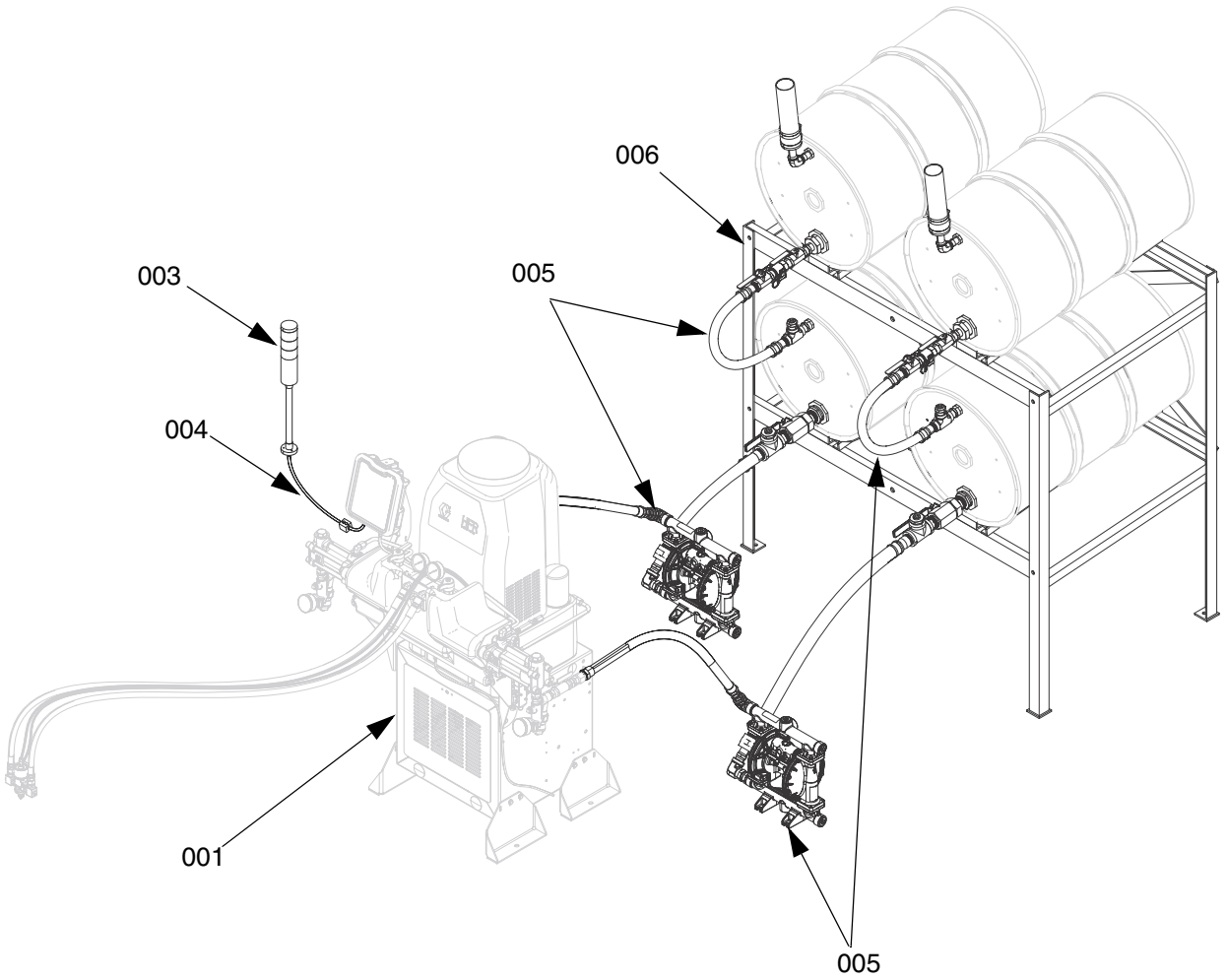


ti16632b

FIG. 10: Drum Feed Kit 24N813

Parts

Drum Feed System, 24N816

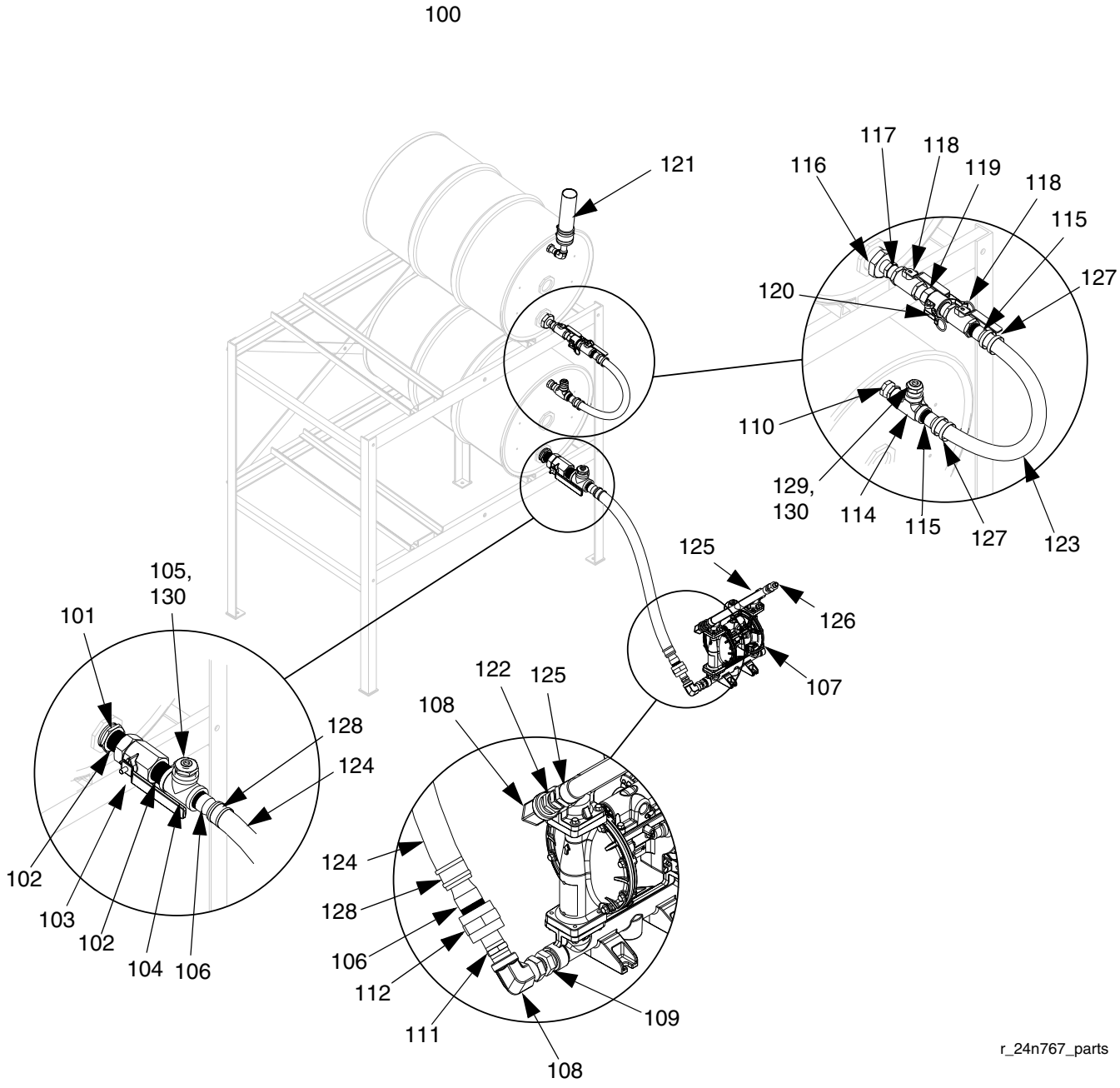


Ref	Part	Description	Quantity
001	24N804	PANEL, assy, fluid control, HFRL (Inside Enclosure - Refer to FIG. 2, page 5)	1
003	255468	KIT, acc., light tower, TC ram	1
004	124003	CABLE, CAN, male-female, 5.0m	1
005*	24N767	KIT, drum feed, carbon (Optional)	1
006*	01/0955/25	RACK, 4 drum (Optional)	1

* *Items are optional. Shown for clarity.*

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

Drum Feed Kit, 24N767

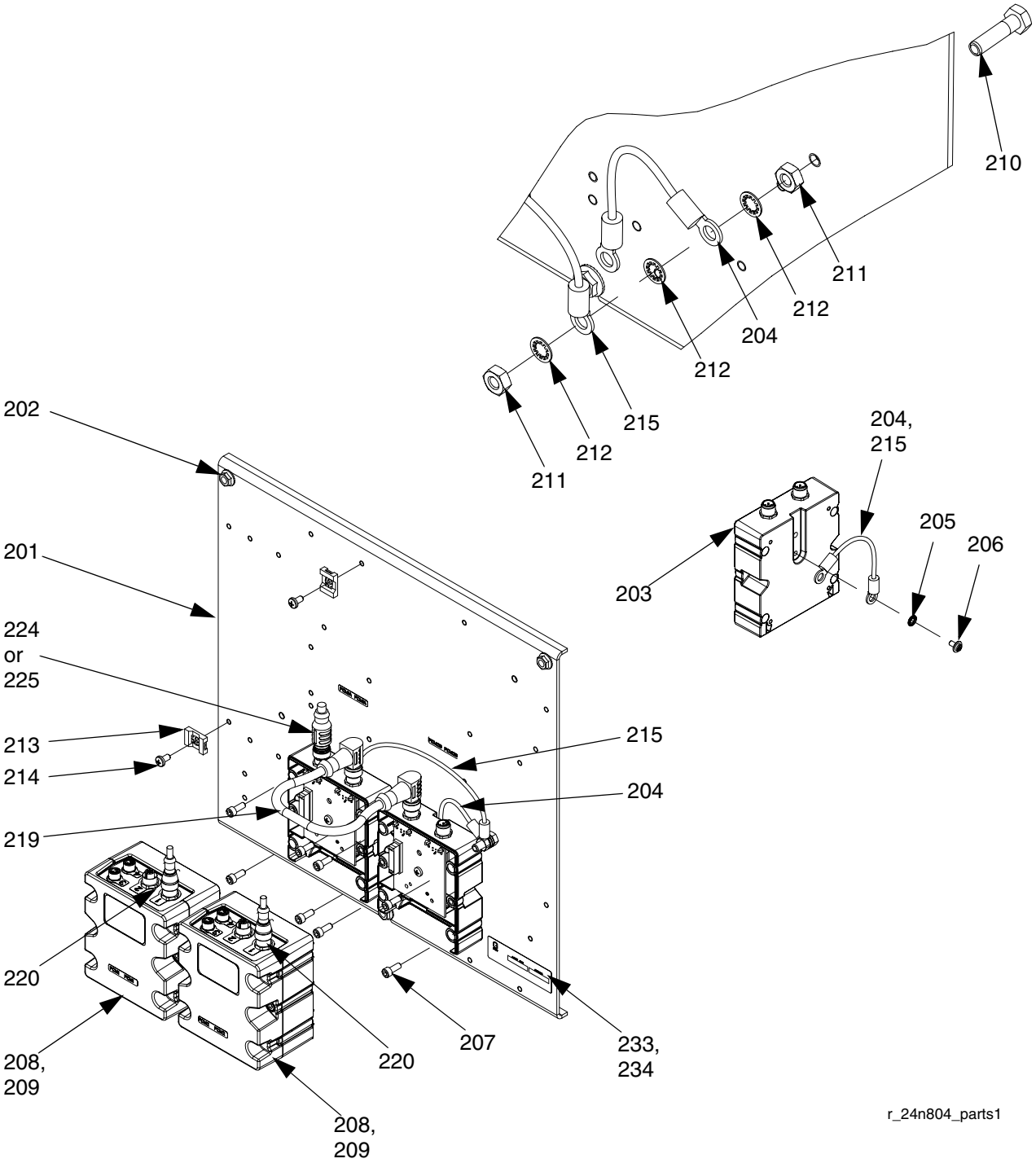


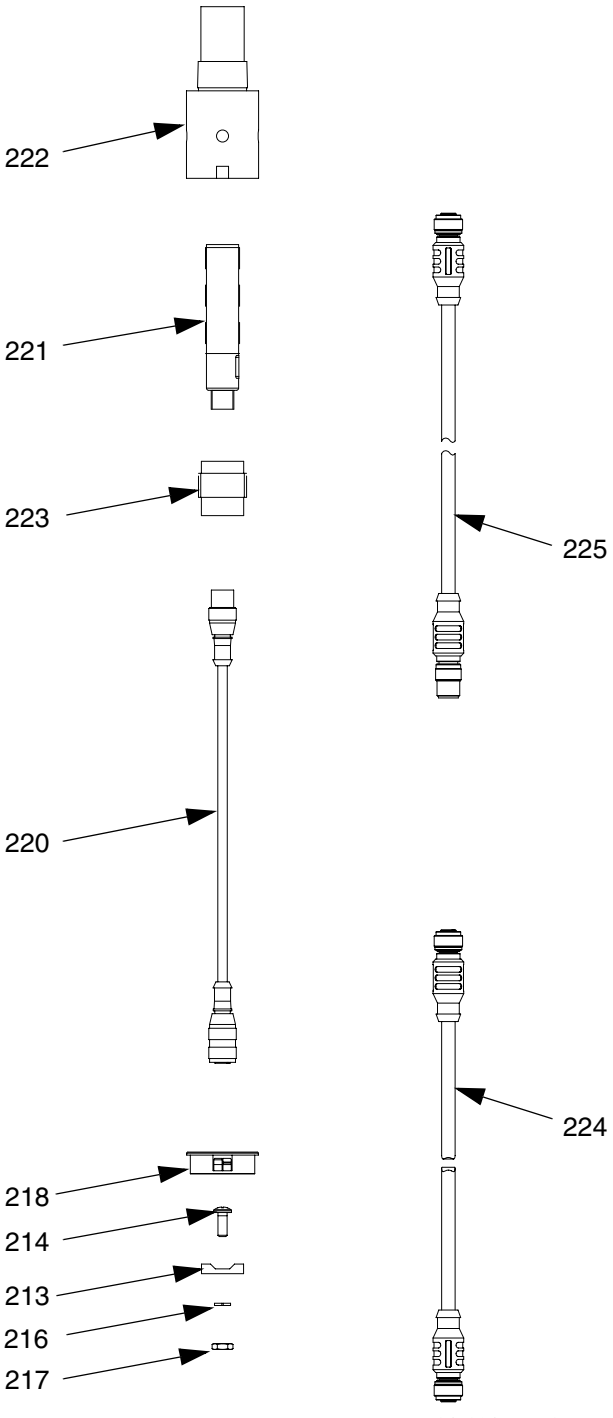
Ref	Part	Description	Quantity
101	109505	BUSHING	1
102	108209	NIPPLE, pipe close	2
103	94/0906-R2/99	VALVE, ball, 2w, 1-1/2npt, f, 1500ps	1
104	121443	FITTING, tee, 1 1/2npt	1
105	94/1045-M/99	BUSHING, 1.5nptx3/4npt, mf, ms, prox	1
106	94/0910/98	FITTING, barb, 1-1/2x1-1/2npt, m, ss	2
107	647673	PUMP, 1050a, ss/ss/pt/a	1
108	94/0398/99	FITTING, elbw, strt, 90, 1npt, mf, ms, 2	2
109	160022	FITTING, union, adapter	1
110	94/0758/99	FITTING, npl, hex, 1"x3/4npt, mm, ms, 2k	1
111	94/0433/99	FITTING, nipple, hex, 1npt, mm, 4.5k	1
112	123250	FITTING, coupling, 1.5nptx1npt, cs	1
114	123890	FITTING, tee, 1nptx1nptx1nptf, fff, c	1
115	94/0909/99	FITTING, nipple, barb, 1"x1"npt, m, ms	2
116	94/0459/99	BUSHING, 2nptx1npt, mf, blk, 150#	1
117	94/0456/99	FITTING, nipple, 1npt, mm, blk, sch40	1
118	94/0904-R2/99	VALVE, bal, 2w, 1"npt, f, 2000psi, ms	2
119	94/0912/99	FITTING, qd, 1"npt, m, cam, dfk, ms	1
120	94/0915/99	FITTING, qd, 1"npt, f, cam, dfk, ms	1
121	247616	DRYER, desiccant, option	1
122	94/0550/99	SWIVEL, 3/4npsx1npt, fm, ms, 4k	1
123	61/0055/88	HOSE, hose, chem, pe, 1", 200psi	6
124	61/0056/88	HOSE, chem, pe, 1-1/2	6
125	217382	HOSE, coupled, 10 ft	1
126	104969	BUSHING, reducing	1
127	94/0451-2/99	CLAMP, hose, 1-3/4"-3/4", ms	4
128	94/0414/99	CLAMP, hose, 2-1/4"-1-5/16", ms	4
129	94/0397-M/99	BUSHING, 1nptx3/4npt, mf, ms, prox	1
130*	102726	PLUG, pipe headles	2

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

* *Either the upper or lower plug can be removed and replaced with a level sensor assembly.*
- Only one sensor per chemical side can be used
- Both material sides should utilize the same (upper or lower) sensor position.

Electric Panel, 24N804



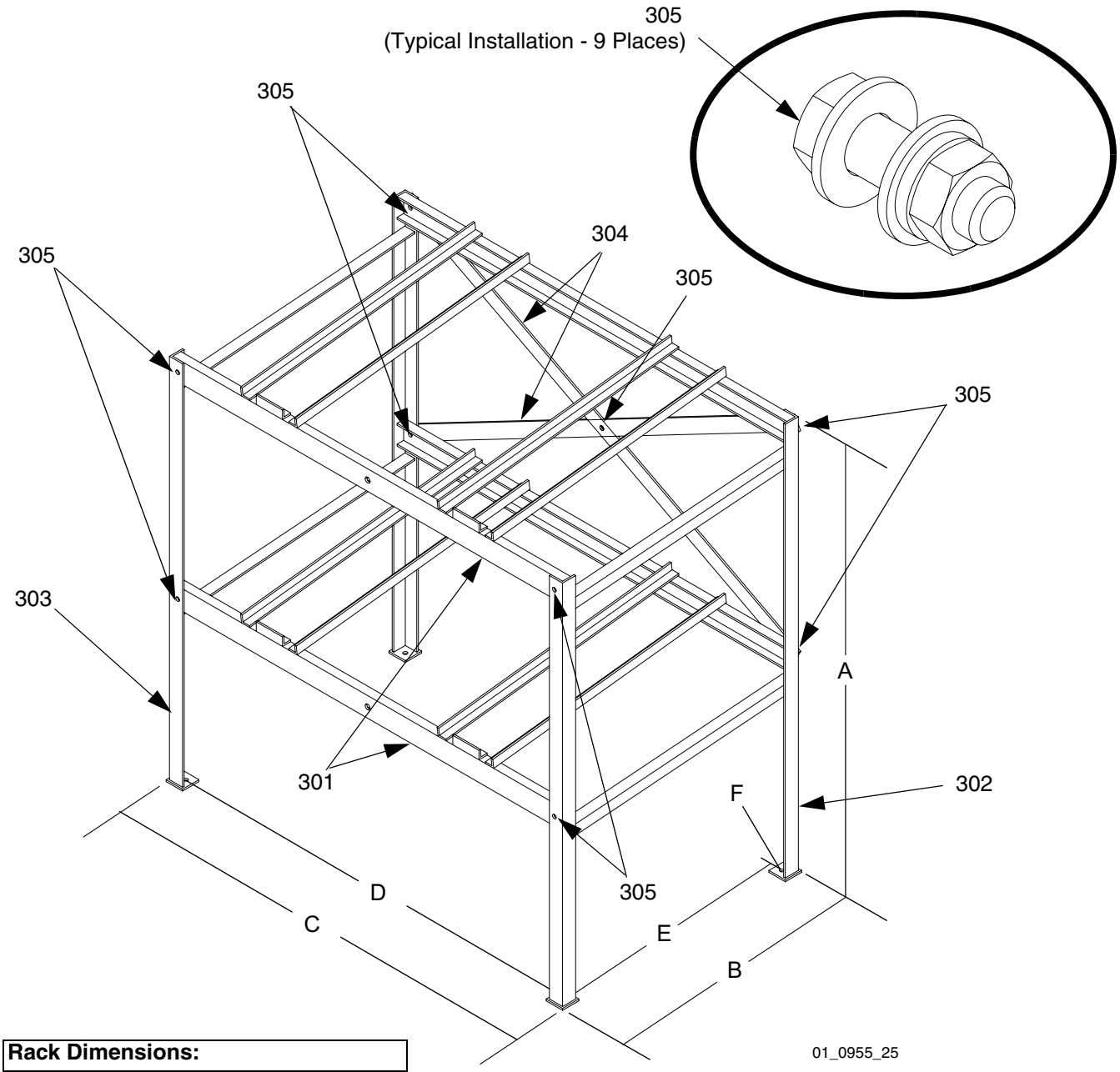


r_24n804_parts2

Ref	Part	Description	Quantity
201	15Y917	PANEL, electric, heat	1
202	115942	NUT, hex, flange head	3
203	289697	MODULE, GCA, cube, base	2
204	24C476	HARNESS, wire, ground, term	1
205	102063	WASHER, lock, ext	2
206	114993	SCREW, mach, pan wash hd	2
207	102598	SCREW, cap, socket head	8
208	289696	MODULE, GCA, cube, FCM	2
209	277674	ENCLOSURE, cube door	2
210	100021	SCREW, cap hex hd	1
211	100015	NUT, hex mscr	2
212	100028	WASHER, lock	3
213	123452	HOLDER, anchor, wire tie, nylon	3
214	116610	SCREW, mach, phil, pan, #10	3
215	24H240	HARNESS, wire, ground, term, 9"	1
216	100020	WASHER, lock	1
217	100166	NUT, full hex	1
218	123679	BUSHING, wire protector, 1 3/8 od	1
219	121597	CABLE, CAN, 90 female/90 female	1
220	126413	HARNESS, m12xm12, 5px4p, mxf, 10m	2
221	121511	SENSOR, capacitive, 18mm, qck disc	2
222	16A511	HOUSING, well, prox, efector	2
223	15U978	CAP, well, prox, PR70	2
224	121002	CABLE, CAN, female / female 1.5m	1
225	122487	CABLE, CAN, male-female, 1.5m	1
226 ▲	16D656	LABEL, identification, electronics	1
227	070408	SEALANT, pipe, sst	1
228	16H821	TOKEN, GCA, upgrade, ADM32	1
229	16E530	SOFTWARE, GCA, tank stand	1
230	24N813	CONTROL, panel, HFRL, low levels	1
233 ▲	15A721	LABEL, designation	1

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

4 Drum Rack, 01/0955/25 (Optional)



Rack Dimensions:	
A (Height):	60-1/2 in. (154 cm)
B (Length):	36-1/2 in. (93 cm)
C (Width):	60-1/2 in. (154 cm)
Anchor Locations:	
D (Width):	57-1/2 in. (146 cm)
E (Length):	33-1/2 in. (85 cm)
F (Diameter):	Ø 0.56 in. (1.4 cm)

NOTICE

To avoid machine damage or personal injury, anchor the rack to the floor with (4) 1/2” bolts (provided by customer) and verify all bolt assemblies are tightened before loading the drums onto the rack.

Ref	Part	Description	Quantity
301	01/0955-A/99	SHELF, rack, 4 drum	2
302	01/0955-B/99	SUPPORT, shelf, rack, 2/4 drum, right	1
303	01/0955-C/99	SUPPORT, shelf, rack, 2/4 drum, left	1
304	01/0955-D/99	STRAP, stabilizer, rack, 4 drum	2
305	01/0955/50	RACK, 2/4 drum, seal, hardware	1

Appendix A - ADM Setup Screens Overview

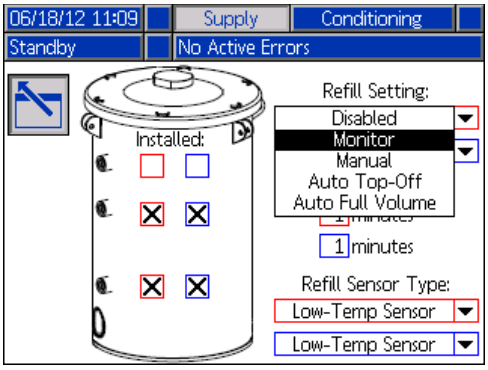
For other screen not mentioned, refer to the HFRL and HFRS, Setup-Operations manual.

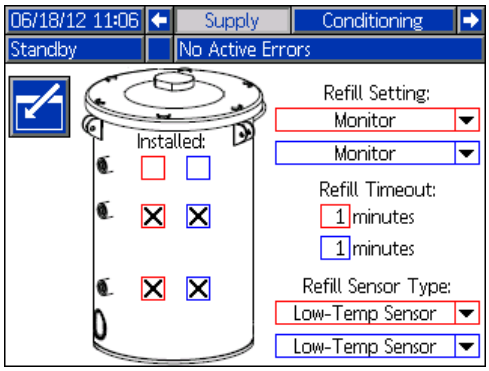
Supply Screen

This screen allows the user to specify the operating parameters for off-board, integrated tanks and indicate which positions have level sensors installed.

Activate at least 2 level sensors for each reservoir or the level sensor functions will be disabled.

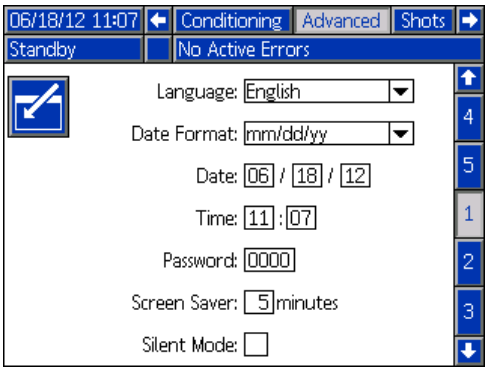
For a single low sensor in each drum feed, configure as shown below. (Activate mid and low sensors, and set refill setting to monitor).





Advanced Screen 1

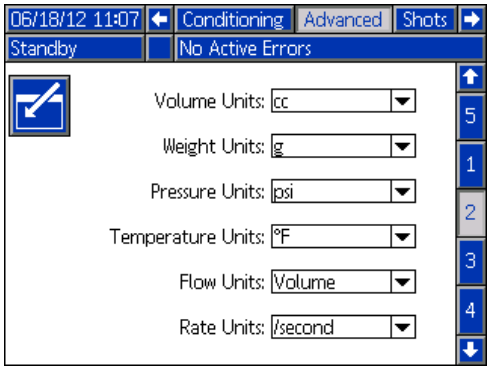
This screen allows the user to set the language, date format, current date, time, setup screens password, screen saver delay, and turn on or off silent mode.



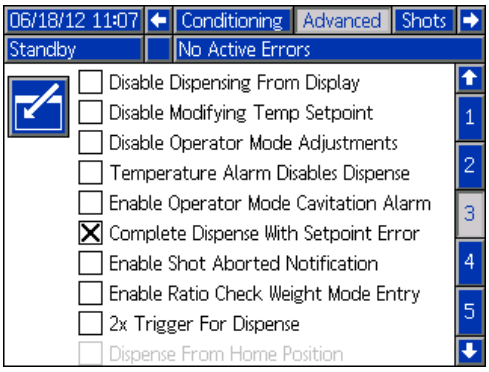
- **Time:** formatted in 24 hour time.
- **Password:** Enables the setup screens to be password protected. Entering “0000” disables the feature.
- **Screen Saver:** Enter the amount of time until the backlight turns off. Entering “0” leave it constantly on.
- **Silent Mode:** Check this box to turn off the buzzer for key presses.

Advanced Screen 2

This screen allows the user to set the units of measure.



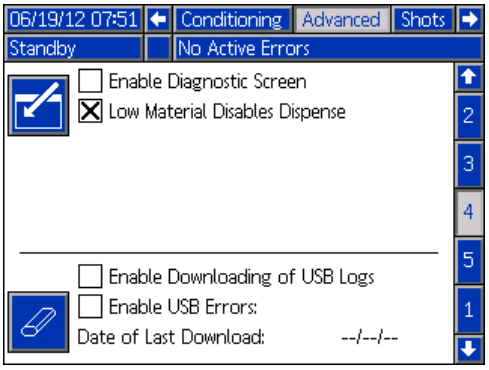
Advanced Screen 3



This screen allows the user to control the availability of some key system features.

- **Disable Dispensing From Display:** Check this box to disable dispensing from the ADM. A footswitch, dispense valve trigger, or other external signal will be the only way to initiate a dispense.
- **Disable Modifying Temp Setpoint:** Check this box to disable modifying temperature setpoints from the Run screens. This is only applicable if temperature control items are installed and enabled.
- **Disable Operator Mode Adjustments:** When this box is checked, the user will not be able to adjust the dispense settings in Operator Mode.
- **Temperature Alarm Disables Dispense:** When this box is checked, the system will reject dispense requests when any enabled heat/chiller zones are below/above their setpoint.
- **Enable Operator Mode Cavitation Alarm:** Check this box to enable cavitation alarms in Operator Mode. Clear this box to disable cavitation alarms in Operator Mode.
- **Complete Dispense with Setpoint Error:** When this box is checked, the shot will continue dispensing even if the system never reaches the desired setpoint.
- **Enable Shot Aborted Notification:** When this box is checked, a pop-up notification will be displayed when a shot is aborted.
- **2x Trigger For Dispense:** When this box is checked, the machine will require a double trigger pull to initiate dispensing in shot or sequence mode.
- **Dispense from Home Position:** When this box is checked, the machine will be required to reach a defined home position before dispensing in shot or sequence mode.

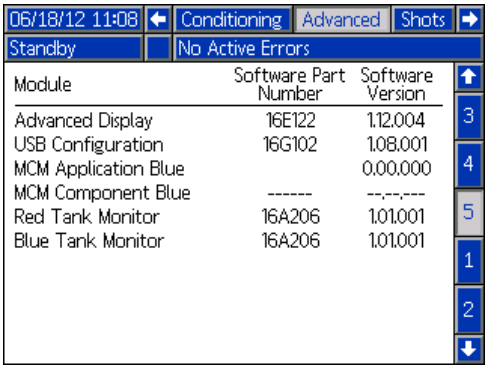
Advanced Screen 4



This screen is for enabling the optional ADM screens, enabling USB log downloading, and erasing USB logs.

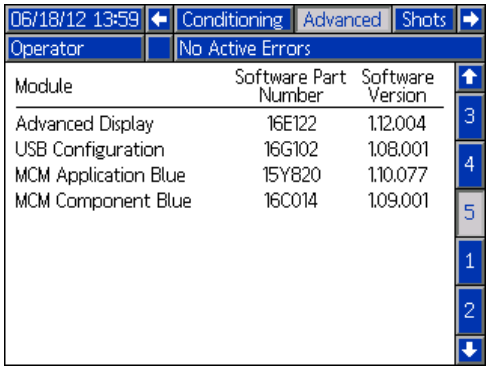
To enable the machine to automatically stop dispensing when a reservoir is low: place an “X” beside the “Low Material Disables Dispense” check box. When this feature is active, the machine will not cycle unless material is present in the monitored reservoirs.

Advanced Screen 5



This screen displays software information.

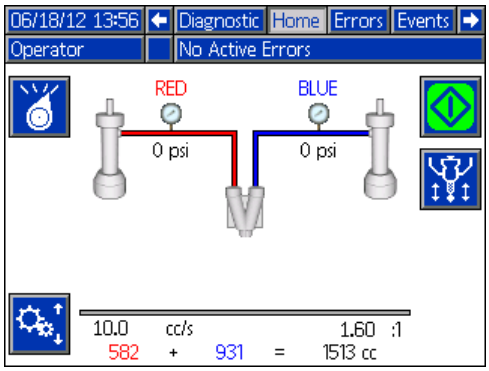
If the level controls are present but not active, the tank monitor program will not appear in the advanced 5 screen as shown below.



Appendix B - ADM Run Screens Overview

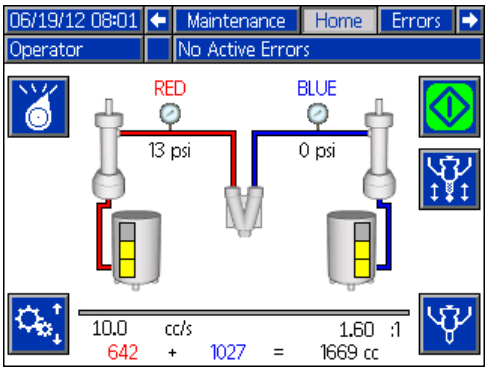
For other screen not mentioned, refer to the HFRL and HFRS, Setup-Operations manual.

Home Screen, Refill Disabled



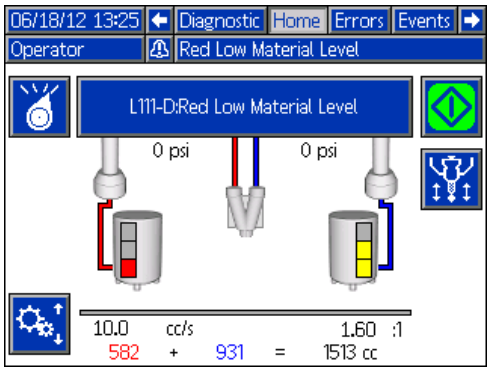
If refill is Disabled, the home screen will not show a graphic display of the reservoirs.

Home Screen, Refill Enabled



When the level sensors are active and both reservoirs have material, the display looks as above. The stack light will illuminate a solid green (Unless another error is present).

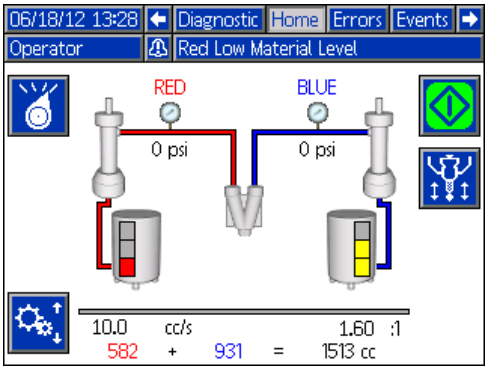
Home Screen, Low Level - A (Red) Side



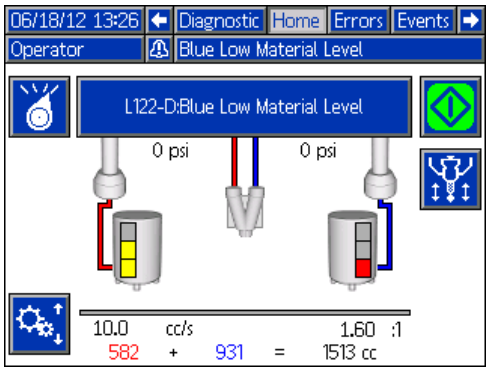
When a low level on the RED side is sensed, the pop up error code appears and the active error display reads “Red Low Material Level”. The light stack will flash yellow, and the audible alarm will sound. When this error occurs, the machine will continue to dispense when a start is initiated, unless the “Low Material Disables Dispense” flag is set.

Refer to **Advanced Screen 3** to configure the machine to stop dispensing when a low level sensor is triggered.

When the level condition is acknowledged by the operator (by hitting the enter key), but not cleared; the audible alarm will stop, and the pop up window will disappear. The active error display will still indicate a low level condition, and the stack light will continue to flash yellow, unless the low level condition has been corrected.



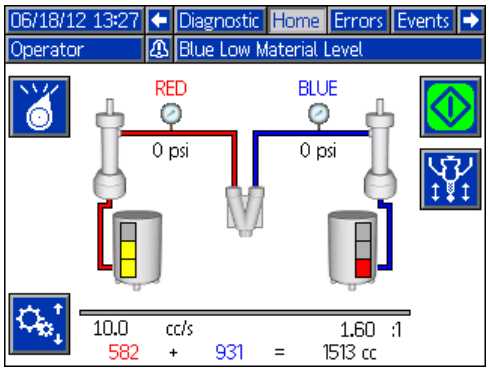
Home Screen, Low Level - B (Blue) Side



When a low level on the BLUE side is sensed, the pop up error code appears and the active error display reads “Red Low Material Level”. The light stack will flash yellow, and the audible alarm will sound. When this error occurs, the machine will continue to dispense when a start is initiated, unless the “Low Material Disables Dispense” flag is set.

Refer to **Advanced Screen 3** to configure the machine to stop dispensing when a low level sensor is triggered.

When the level condition is acknowledged by the operator (by hitting the enter key), but not cleared; the audible alarm will stop, and the pop up window will disappear. The active error display will still indicate a low level condition, and the stack light will continue to flash yellow, unless the low level condition has been corrected.



Technical Data

Level Detection Module and Drum Feed Kit		
	US	**Metric**
Maximum fluid working pressure	125 psi	0.86 MPa, 8.6 bar
Maximum air input pressure	125 psi	0.86 MPa, 8.6 bar
Noise (dBa)		
Maximum sound pressure	†◆	
Maximum sound power	†◆	
Inlet/Outlet Sizes ◆		
Air inlet size	1/2 NPTF	
Materials of Construction		
Wetted materials	Carbon steel, PTFE, Stainless Steel, PE, Aluminum, Nylon	
Weight		
24N816	16 lb	7.3 kg
24N767 (Optional)	69 lb	31 kg
01/0955/25 (Optional)	209 lb	95 kg
Notes		
† *For additional technical data regarding the* HFRL and HFRS systems, refer to manual.		
◆*For additional technical data regarding the* Husky 1050 Air-Operated Diaphragm Pump, refer to manual.		

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