

Pressure Monitor Kit

3A1331L

EN

Monitors pressure to provide ratio assurance on plural-component sprayers. For professional use only.

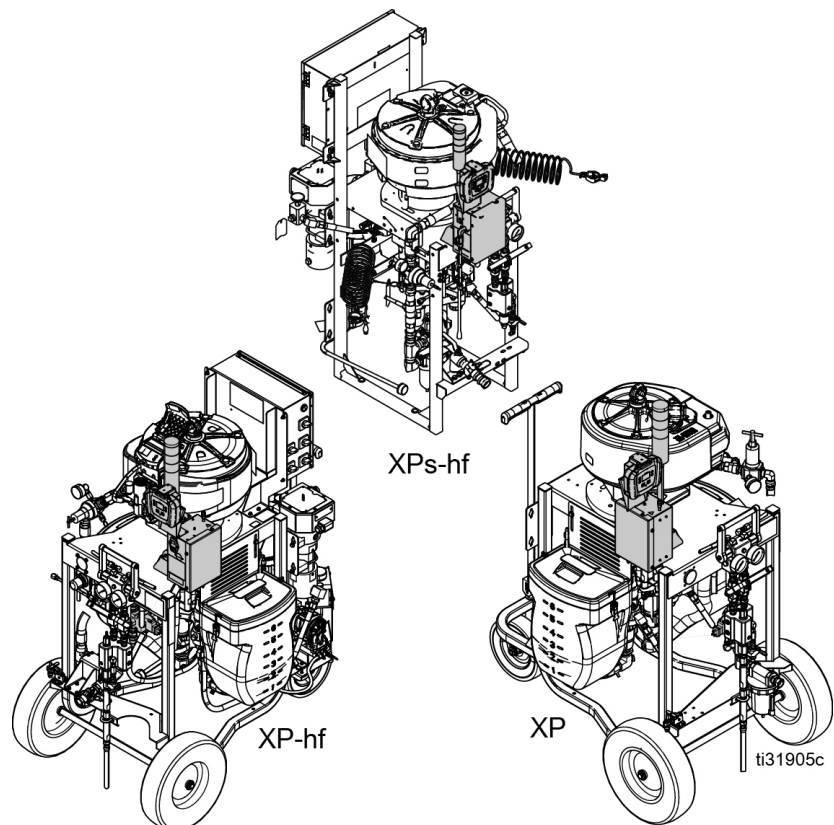
Not approved for use in explosive atmospheres locations.

See page 2 for kit numbers and descriptions.



Important Safety Instructions

Read all warnings and instructions in this manual and the XP or XP-hf operation manual before using the equipment.
Save these instructions.



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Kit Contents

Kits for XP Proportioner	
262940	Line Power Pressure Monitor Kit
262942	Air Turbine Power Pressure Monitor Kit

Kits for XP-hf and XPs-hf Proportioner	
26C008	Line Power Pressure Monitor Kit
26C009	Air Turbine Power Pressure Monitor Kit

Overview

The purpose of the pressure monitor kit is to shutdown the sprayer if abnormal pressure conditions are detected to prevent spraying material that is not mixed on ratio.

Two pressure transducers are added to read the A and B fluid pressures in the outlet manifold and send the readings back to the Local Control Module (LCM).

The control watches the difference between the A and B pressures. The control will alarm if the pressures split because of a plug, leak, or running out of fluid.

When an alarm indicates that the sprayer may be off ratio, the air solenoid shuts off the air supply to the proportioner motor. The light tower will indicate an alarm has occurred, and the alarm code will be on the LCM display. For more information see **Advisories and Alarms**, page 12.

The following alarms can occur:

- Differential Pressure (B>A)
- Differential Pressure (A>B)
- Pressure A High
- Pressure B High
- Air Solenoid Disconnected
- Pressure A Solenoid Disconnected
- Pressure B Solenoid Disconnected

Operating Window

Below Minimum Spray Pressure

The air motor is allowed to automatically operate in Circulation Mode with a yellow light anytime the fluid pressures are below the minimum spray pressure. This allows for loading the system and circulating the fluids without alarms or shutdowns.

Above Minimum Spray Pressure

When the control sees the fluid pressures above the minimum spray pressure for 3-30 seconds, and the pressures are balanced within the pre-set limits, it will automatically start the monitor mode, and the green light on the light tower will change to solid on. If the control does not see balanced pressures within 30 seconds of going above the minimum spray pressure, it will alarm and shut off the air motor. The default minimum spray pressure is 2200 psi (14 MPa, 138 bar). Enter Setup Mode to change the minimum spray pressure as necessary.

Maximum Spray Pressure

The control will alarm and shutdown if it sees either A or B above the maximum working pressure of 7250 psi (50 MPa, 500 bar). Enter Setup Mode to reduce the maximum allowable pressure set point.

Component Identification

Line Power Kits

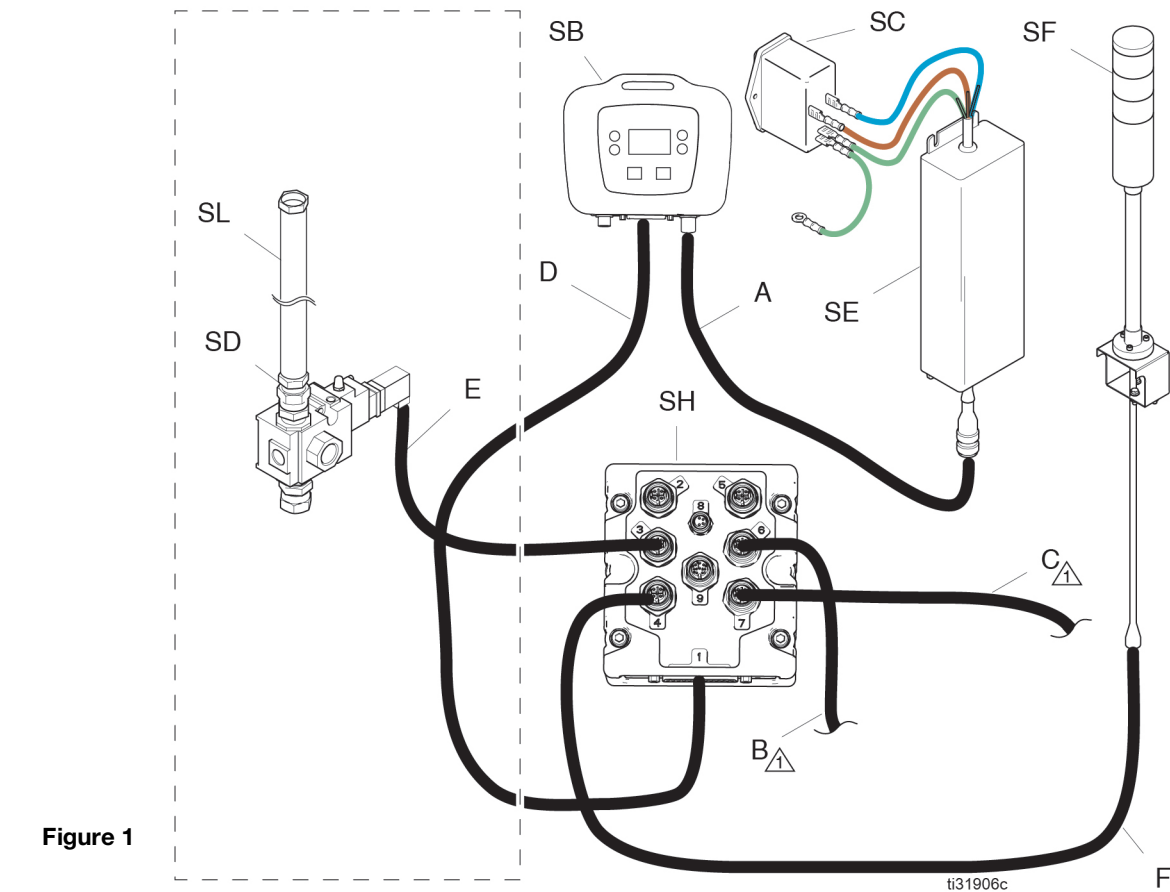


Table 1 Cable Identification Table

Ref.	Cable	Identification Label
A	Power Supply	CAN
B	A Pressure Transducer	6 - Blue
C	B Pressure Transducer	7 - Red
D	LCM Cable	1 - Blue
E	Solenoid Cable	3 - Red
F	Light Tower Cable	4 - Green

Table 2 System Component Identification Table

Ref.	Cable
SB	Local Control Module (LCM)
SC	Power Entry Fuses and Switch
SD	Motor Air Solenoid Valve, 24 Volt
SE	Power Supply, 24 Volt
SF	Light Tower, 24 Volt
SH	Breakout Module
SL	Motor Air Hose

Air Turbine Kits

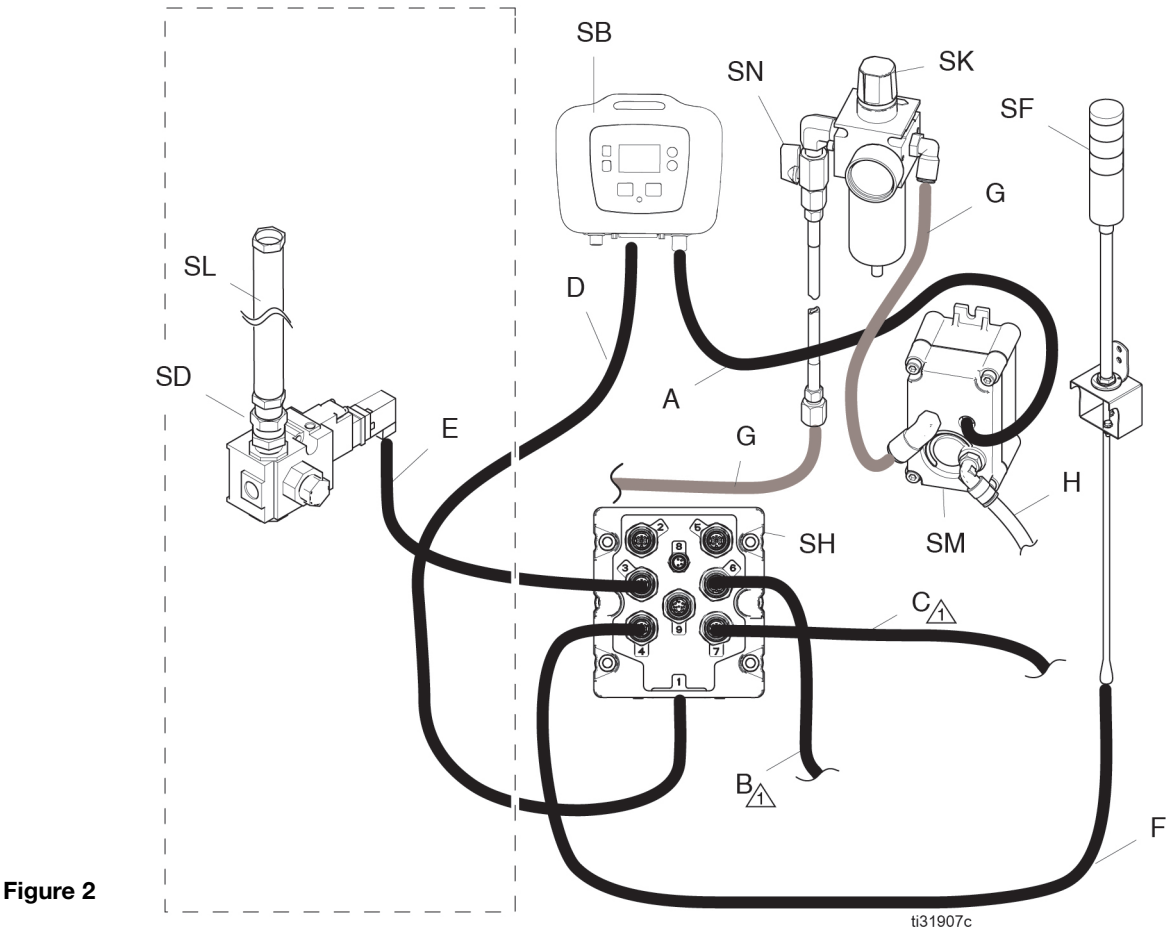


Table 3 Cable Identification Table

Ref.	Cable	Identification Label
A	Power Supply	CAN
B	A Pressure Transducer	6 - Blue
C	B Pressure Transducer	7 - Red
D	LCM Cable	1 - Blue
E	Solenoid Cable	3 - Red
F	Light Tower	4 - Green
G	Air Tubing	- -
H	Air Exhaust	- -

Table 2 System Component Identification Table





Ref.	Cable
SB	Local Control Module (LCM)
SD	Motor Air Solenoid Valve, 12 Volt
SF	Light Tower, 12 Volt
SH	Breakout Module
SK	Turbine Air Regulator
SL	Motor Air Hose
SM	Air Powered Alternator, 12 Volt
SN	Alternator Power Shutoff Valve

User Interface



Figure 3







Table 5 LCM Button Functions

Button	Function
Mode 	Select between Run and Setup Modes.
Spray 	Start and stop the air motor. The motor will stay on indefinitely if pressures are below minimum spray pressure. Monitor mode will start within 30 seconds if the pressures are above the minimum spray pressure and no errors exist. All errors are ignored for 30 seconds. Default is 2000 psi (138 MPa, 1380 bar).
Arrows Up/Down 	Navigate up or down within a screen or to a new screen.
Soft Keys 	Soft keys activate the mode or action represented by the icon next to each soft key. See Table 2 for soft key icons and actions.
	Top Soft Key: Edit data, accept edited data, or move right within a number field.
	Bottom Soft Key: Enter a screen, exit a screen, or cancel edited data.

NOTICE

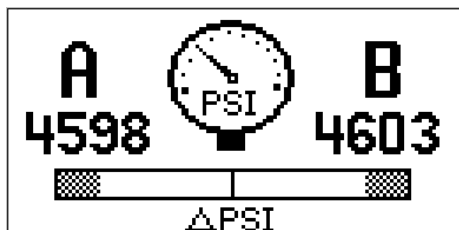
To prevent damage to soft key buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

Table 6 Display Soft Key Icons

Icon	Function
Enter Screen 	In screens that have editable fields, press to access the fields and make changes.
Exit Screen 	In screens that have editable fields, press to exit edit move.
Enter 	In screens that have editable fields, press to make data selections or to enter changes.
Right 	In screens that have editable fields, press to move to the right while in a field.
Cancel 	Cancel a selection or edited data. Returns to the original data.
Clear Error Log 	Clear the entire error log.

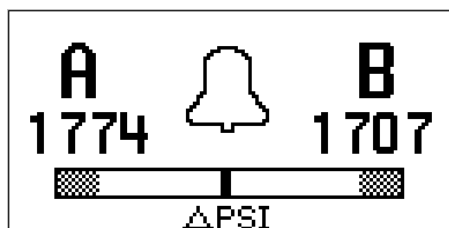
Display Components

The following tables identify components shown on the spray active mode active, circulation mode active, alarm active, and deviation active run screens. For more information, see **Run Mode Details**, page 27.



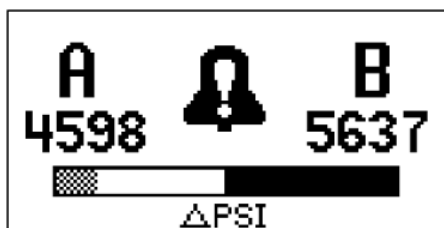
Spray Mode Active Screen

Figure 4



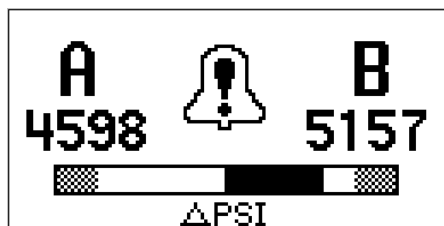
Circulation Mode Active Screen

Figure 5



Alarm Active Screen


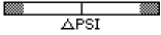




Figure 6







Deviation Active Screen

Figure 7



Table 7 Display Components

Icon	Function
	Actual spray pressures.
	Differential pressure alarm bar graph.
	Selected pressure units. Indicates that you are in spray mode.
	Indicates that you are in circulation mode.
	Indicates that there is an active alarm.
	Indicates that there is an active deviation.

Installation

				
<p>Shutdown the XP, XP-hf or XPs-hf Proportioner before installing your pressure monitor kit. Follow the Shutdown and Pressure Relief Procedure in the operation manual. All electrical wiring must be one a qualified electrician and comply with all local codes and regulation.</p>				

Location

				
<p>These pressure monitoring kits are not approved for use in hazardous atmosphere locations.</p> <p>Installing this kit on an XP or an XP-hf Proportioner that is EX approved, voids the approval. The EX mark should be removed from the machine ID plate when this kit is installed.</p>				

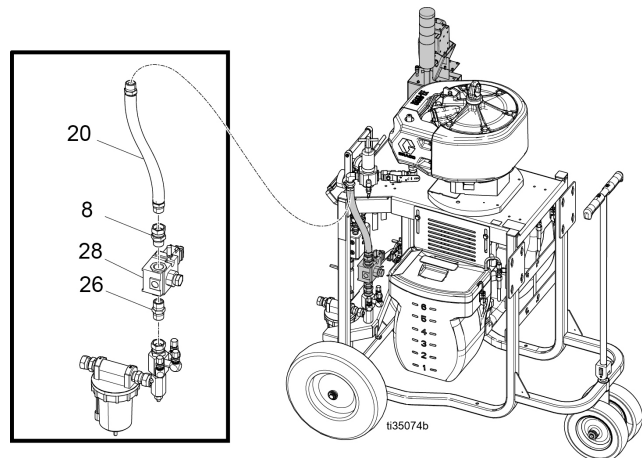
NOTICE

Do not store an XP, XP-hf or XPs-hf Proportioner with a pressure monitor kit outside in the rain. Use protective bag 16J717 to prevent damage to the electronic components when used outside.

Install Air Solenoid (XP Sprayers)

1. Disconnect the upper swivel and remove the motor air line.
2. Disconnect the air line from lower controls section.

NOTE: On early XP sprayers, to remove the existing air hose, it may be necessary to remove the air filter assembly from the XP and put it in a vice. New model XP sprayers have a swivel fitting.



3. For the turbine powered kit (262942), remove a plug from the XP Air Manifold and install the Turbine Air Hose (SR).

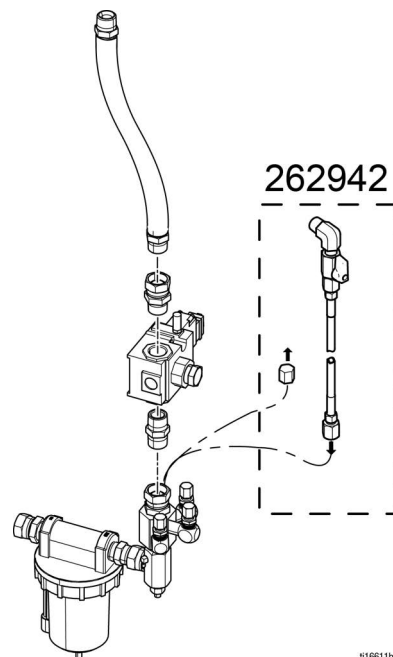


Figure 8

4. Connect the air solenoid valve (SD) and new air hose (SL) between pipe swivel fittings.

NOTE: Install swivel fitting (SP) on early model XPs (swivel is shipped loose in kit).

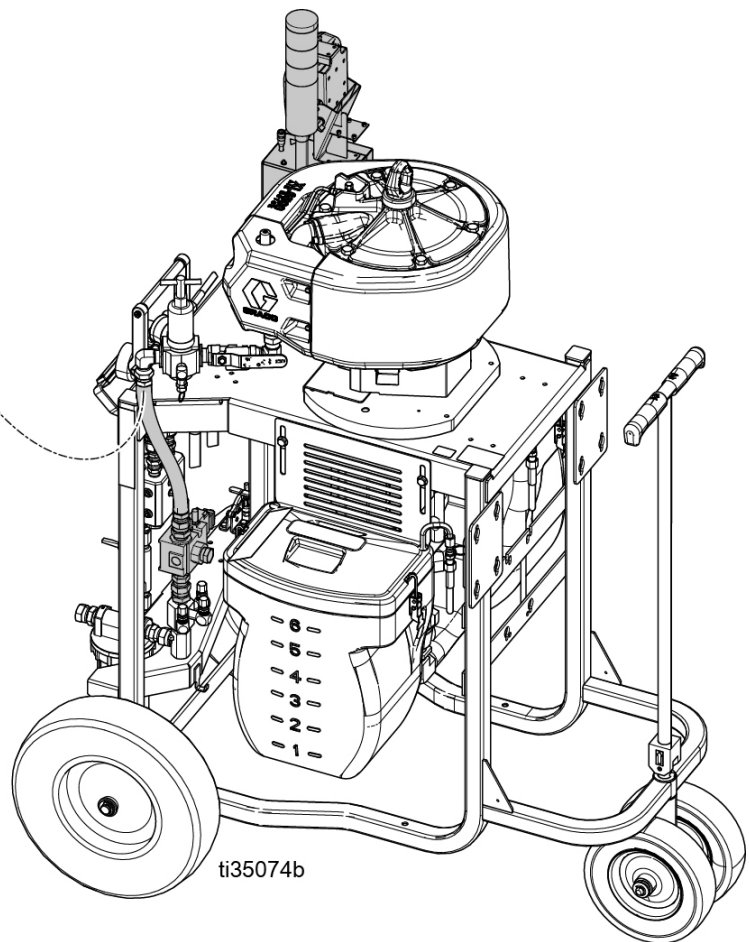
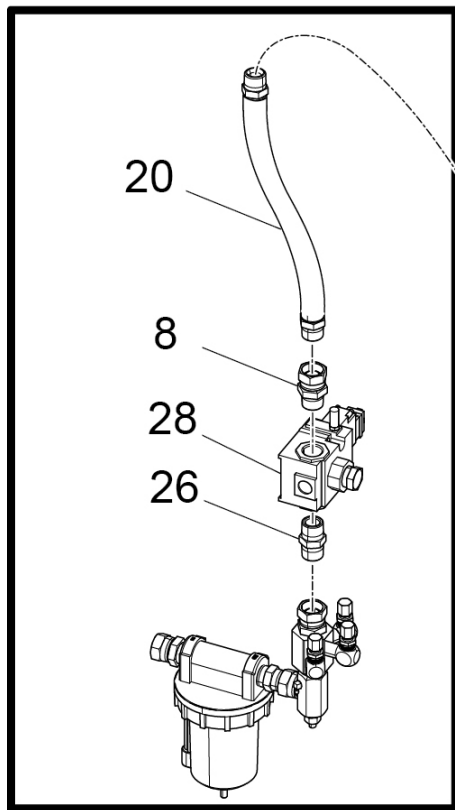
Install Air Solenoid on XP-hf (cart) Proportioners

1. Disconnect the upper swivel and remove the Air Motor Hose.
2. Disconnect the lower swivel and remove Hose.

NOTE: On early XP-hf cart units, it may be necessary to remove the air filter assembly from the XP-hf cart and put it into a vice. Newer models have a swivel fitting.

3. For the turbine power kit (26C009) remove a plug from the XP-hf Air Manifold and install the Turbine Air Hose (SR).
4. Connect the solenoid valve (SD) and the new air hose (SL) between swivel fittings. Ensure that the connector of the solenoid cable (E) is toward the back and facing down.

NOTE: Install swivel fitting (SP) on early model XP-hf cart units (swivel fitting is shipped loose in the kit).



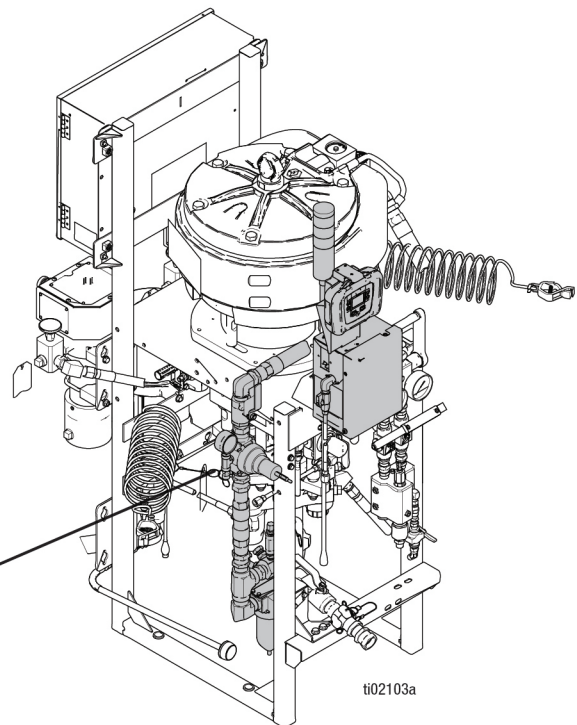
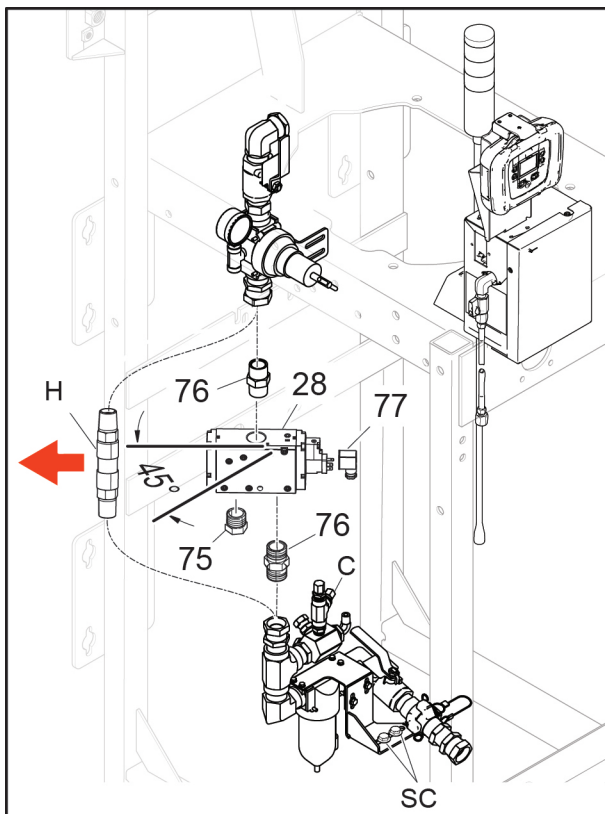
Install Air Solenoid on XPs-hf (skid) Proportioners

1. Loosen filter bracket screws (SC).
2. Disconnect air tubing (H) between the filter and the regulator assemblies.
3. Remove the air line and replace with the air hose provided in the pressure monitor kit along with the nipple fitting and swivels.

4. Connect the solenoid assembly to the pipe swivels.

NOTE: Ensure that the solenoid electrical connector is toward the back and facing down.

5. Adjust the filter assembly position and re-tighten the screws.
6. For the air turbine power kit, remove cap (C) and install air hose (42) for air supply.
7. Connect solenoid cable (77) to the solenoid.

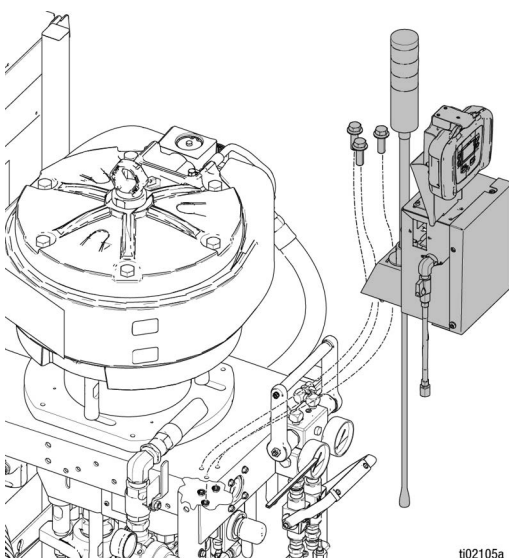


Install Electronics Box and LCM

1. Use three screws (61) and three nuts (62) to mount the box bracket to the cart (as shown in the figure below).

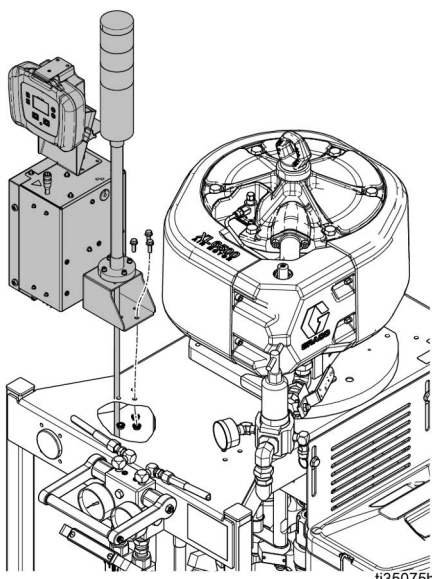
NOTE: Nuts are not used on newer carts with nuts crimped onto the cart plate.

2. For line power kits, install the appropriate power supply cord(s). US, European, and Australian/Asia cord adapters are supplied. See **Technical Data**, page 30.



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XP-hf Cart Installation - Series A and B



ti35075b

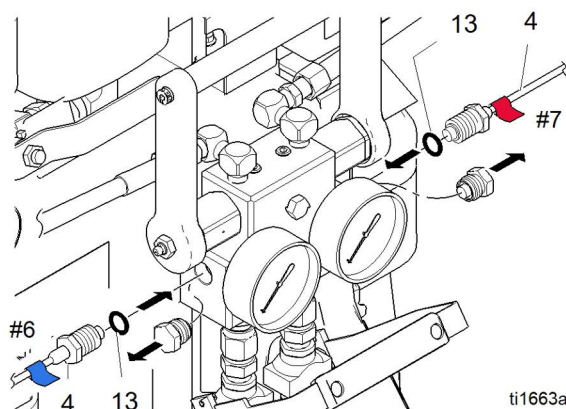
XPCart Installation - Series C

Install Pressure Transducers

1. Remove plugs from the circulation fluid manifold.

NOTE: Keep the plugs to reuse if you ever remove the pressure monitor kit.

2. Connect pressure transducer (4), with blue #6 label, with black o-ring (13) to the A side of the circulation manifold. Connect pressure transducer (4), with red #7 label, with black o-ring (13) to the B side of the circulation manifold. Tighten to 40-50 ft-lb. (54-67 N•m) before applying fluid pressure.



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Route Air Hoses and Cables

Secure air hose and cable connections.

Use tie wraps provided to secure hose and cables. For air turbine kits, route exhaust hose (41) down cart leg and secure.

Air Turbine Kits:

Secure solenoid cable (F) to air hoses with tie wrap. Route exhaust hose (J) down the inside of the cart leg and secure with tie wrap.

Line Power Kits:

Route solenoid cable (F) behind the air hose and secure with tie wrap.


Startup

- 1. Refer to the XP Sprayer or XP-hf Proportioner Operation manual for sprayer startup instructions.


NOTE: The pressure monitor kit does not change the operation procedures in the XP Sprayer or XP-hf Proportioner Operation manual.

- 2. Turn on power.
 - a. For Line Power Kits: Turn on power switch (9) located on the electronics box.
 - b. For Air Turbine Kits: Open ball valve (22) located outside of the electronics box.


NOTE: The air pressure regulator should be set at 22 +/- psi (0.15 +/- 0.03 MPa, 1.5 +/- 1.3 MPa).

- 3. Wait for the power up screen to complete. The Circulation Mode screen will display. The light tower will briefly flash green, yellow, and red to verify the lights before staying on yellow. Wait for the run screen to appear.
- 4. Set system parameters before spraying. These can be changed as necessary. Press  to enter Setup Mode. For more information and default settings, see **26C009 Alternator Pressure Monitor Kit Parts List**, page 23.
- 5. In Circulation Mode, all alarms are disabled except for the air solenoid detection, pressure sensor failure, and high pressure alarms.

NOTE: In Manual Bypass Mode you can still spray when one pressure transducer fails, but the control no longer monitors the pressures and will not shut off the sprayer. This is for temporary use only to complete the job.

- a. To enter Manual Bypass Mode, set the maximum spray pressure equal to the maximum spray pressure on setup screen 2. In Manual Bypass Mode, the system can never get into Spray Mode. The event code EVC1 is displayed on the information screen and logged in the error log. The yellow light is always on and all alarms are ignored.
 - b. To exit Manual Bypass Mode, set the minimum spray pressure and maximum spray pressures to different spray pressures. Event code EVC0 will log in the error log when Bypass Mode is disabled.
- 6. Press  to start the air motor. The red LED will turn on and the motor will start. Only spray when the green light on the light tower is on. For more information about the LCM run screens, see **Run Mode Details**, page 27.

Shutdown



- 1. Press  The red LED will turn off and the motor will stop.
- 2. Turn off the power switch or ball valve on the outside of the electronics box.

Advisories and Alarms

Clear Alarms

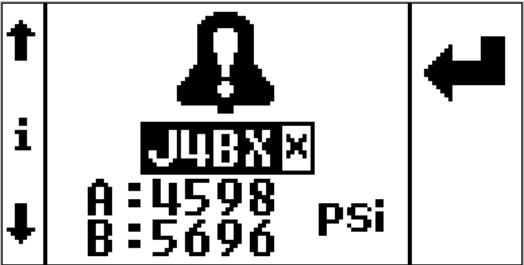
For more information about the alarms, see **Information Screen**, page 28.

To clear an error:

- 1. Press  to clear the alarm.
- 2. Press  to restart the air motor.

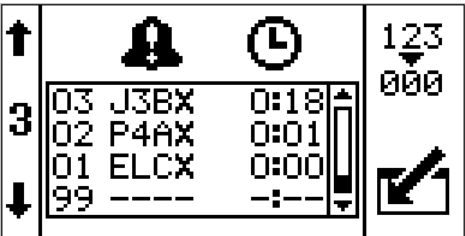
View Current Alarms

From the Run screen, press   to navigate to the information screen. The information screen displays current alarms or advisories.








View Error Log



Setup Screen 3 is the error log screen. It displays the most recent error on the top of the list with the past three errors below it. This screen displays a list of advisory or alarm error codes and the time the error occurred since the kit was powered on.







Error Codes

Code	Icon	Code Name	Light Tower Code	Cause	Solution
Alarms					
J4AX		Differential Pressure (A>B)	Red Solid	Ran out of B side material.	Refill hopper or change drum.
				Cavitating B side pump.	Warm material or add feed pressure.
				B material leaking.	Follow pump troubleshooting in XP70 Sprayer manual.
				No mix manifold B side restriction.	Add restriction to B side on mix manifold to balance pressures.
				A side hose is too small.	Change to larger hose size.
				Improper configuration.	Adjust setpoints on setup screens. See Setup Mode Details , page 24.
J4BX		Differential Pressure (B>A)	Red Solid	Ran out of A side material.	Refill hopper or change drum.
				Cavitating A side pump.	Warm material or add feed pressure.
				A material leaking.	Follow pump troubleshooting in XP70 Sprayer manual.
				No mix manifold A side restriction.	Add restriction to A side on mix manifold to balance pressures.
				B side hose is too small.	Change to larger hose size.
				Improper configuration.	Adjust setpoints on setup screens. See Setup Mode Details , page 24.
P6AX		Pressure A Disconnected	Red Solid	Broken cable	Replace transducer.
				Disconnected cable	Connect cable.
P6BX		Pressure B Disconnected	Red Solid	Broken cable	Replace transducer.
				Disconnected cable	Connect cable.
WJPX		Air Solenoid Disconnected	Red Solid	Broken cable	Replace transducer.
				Disconnected cable	Connect cable.
				Damaged solenoid	Replace solenoid

Error Codes

Code	Icon	Code Name	Light Tower Code	Cause	Solution
P4AX		Pressure A High	Red Solid	A pressure exceeded maximum working pressure set point.	Reduce air pressure to motor or adjust setpoint.
P4BX		Pressure B High	Red Solid	A pressure exceeded maximum working pressure set point.	Reduce air pressure to motor or adjust setpoint.
					Open downstream valve
				Blockage in B line downstream	Reduce downstream restriction.
					Clean mix manifold.

* Remote mix manifold applications only.

Code	Icon	Code Name	Light Tower Code	Cause	Solution
Deviations					
J3AX		Differential Pressure (A>B)	Yellow Flashing	Ran out of B side material.	Refill hopper or change drum.
				Cavitating B side pump.	Warm material or add feed pressure.
				B material leaking.	Follow pump troubleshooting in XP70 sprayer manual.
				No mix manifold B side restriction.	Add restriction to B side on mix manifold to balance pressures.
				A side hose is too small.	Change to larger hose size.
J3BX		Differential Pressure (B>A)	Yellow Flashing	Ran out of A side material.	Refill hopper or change drum.
				Cavitating A side pump.	Warm material or add feed pressure.
				A material leaking.	Follow pump troubleshooting in XP70 sprayer manual.
				No mix manifold A side restriction.	Add restriction to GB side on mix manifold.
				* B side hose is too small.	Change to larger hose size.
				* No B side offset in control setup.	Add B side offset in setup screen.
Events and Advisories					
EERX		Under Minimum Spray Pressure, Circulation, Loading	Yellow	Under minimum spray pressure.	Normal for circulation mode.
EVC0		Manual Bypass Mode Enabled and Logged. Minimum Pressure = Maximum Pressure	Yellow	Manual Bypass Mode	Reset minimum spray pressure and maximum spray pressure in Setup Mode.
EVC1		Manual Bypass Mode Disabled and Logged		Event log only	
ELCX		Control Power Up Timer set to zero in Log		Event log only	

* Remote mix manifold applications only.

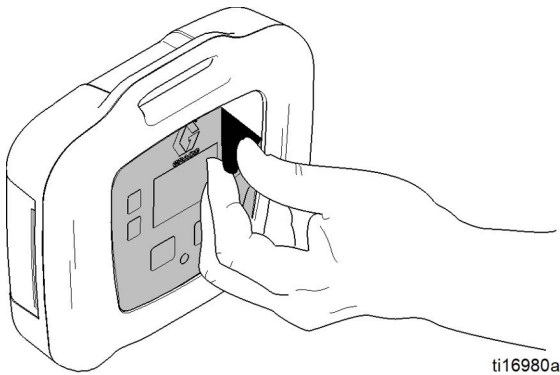
Repair

For system specific repair procedures, refer to your system Instructions-Parts manual.

Replace LCM Tear Off Sheet

The LCM is supplied with 10 protective tear off sheets that prevent spray material from covering the LCM display.

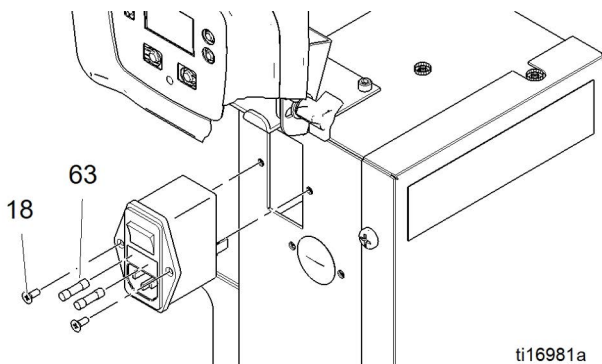
1. Peel away the dirty protective sheet.
2. Install a new protective sheet (68) on the LCM display.



Replace Switch Fuses

For 262940 only.

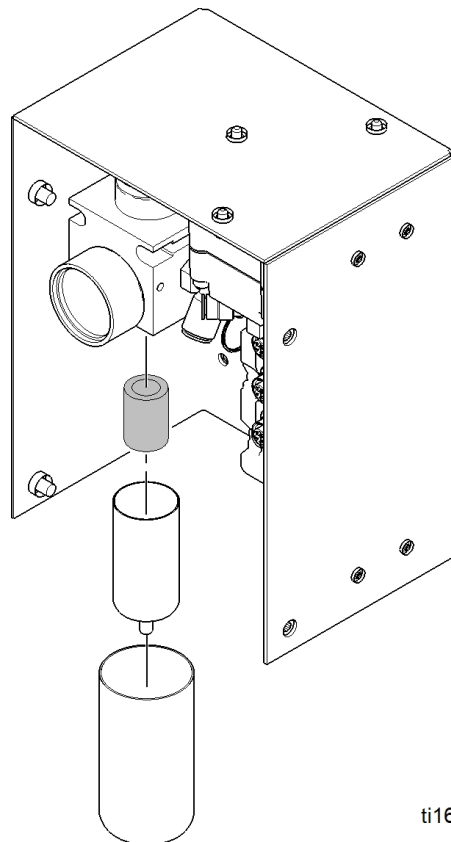
1. Remove power inlet cord (55 or 57).
2. Pry off small plastic cover above cord inlet.
3. Pull fuses (63) out of power switch. Replace and reassemble.



Replace Filter Element

There is a 5 micron air filter used with the regulator on the Air Turbine Power Kit. Check the filter monthly and replace element as needed.

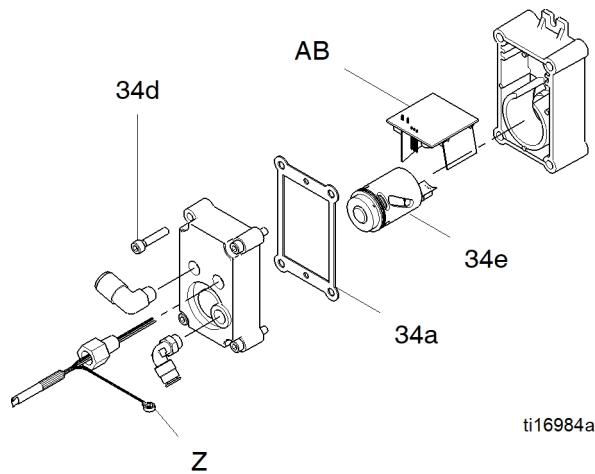
1. Close main air shutoff valve on air supply line and on unit. Depressurize air line.
2. Remove box cover (30).
3. Press silver tab in, twist bowl to the left, and pull down off of the regulator.
4. Remove and replace element.
5. Screw filter bowl on securely until the tab clicks.



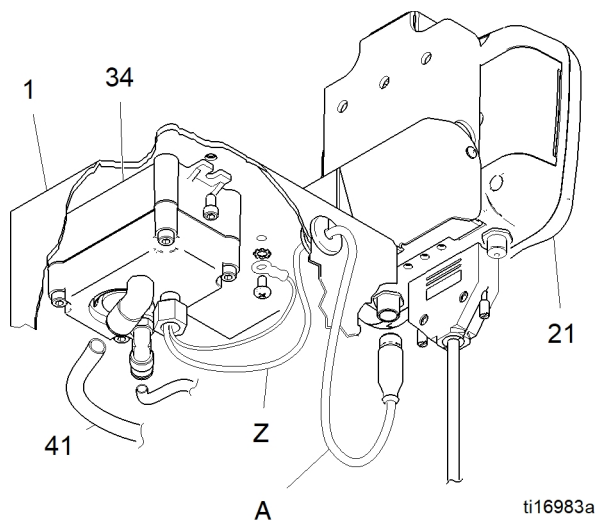
Replace Alternator or Turbine Cartridge

For Air Turbine Power Kits Only.

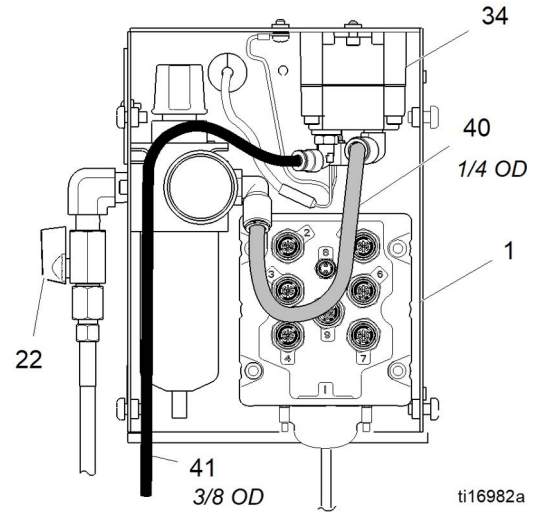
Turbine alternator cartridge (34e) can be replaced in alternator (34).



1. Turn off air supply.
2. Close ball valve (22). See **Parts**, page 18.
3. Remove box cover (30).
4. Disconnect the alternator power supply cable (A) from the LCM (21). Disconnect ground wire (Z).



5. Disconnect air tube (40) from the alternator (34).



6. Remove two screws (15) to remove alternator from the box (1).
7. Remove four screws (34d) to separate alternator housings.
8. Disconnect turbine cartridge (34e) ribbon connector from board (AB).
9. Replace gasket (34a) if damaged. Place between housings before securing with screws (34d).
10. Reassemble.

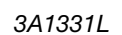
NOTE

- Lightly lubricate o-ring before installing turbine in housing.
 - Align ribbon connector and firmly press the cartridge into the top housing.
 - Connect turbine 3-pin connector on main circuit board.
 - Torque housing screws evenly to 18 in-lb. (2 N•m).
 - Reassemble into control box (1).
11. Verify turbine air pressure is set to 18 +/- 5 psi (0.12 +/- 0.03 MPa, 1.2 +/- 0.3 bar).

NOTICE

To avoid damage to the alternator, do not set the regulator air pressure higher than 27 psi (0.19 MPa, 1.9 bar).

26C008 Line Power Pressure Monitor Kit



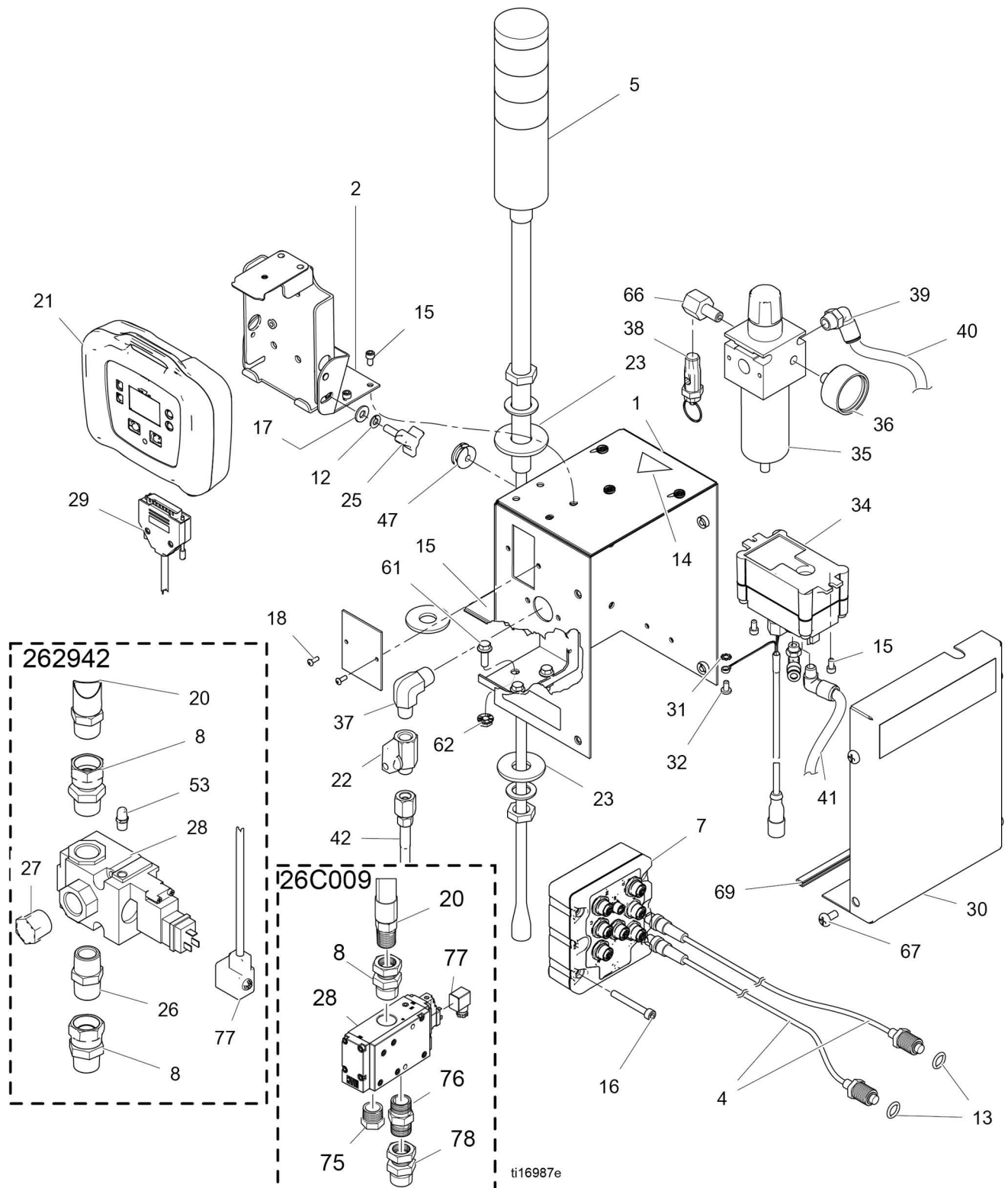
262940 Line Power Pressure Monitor Kit Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	26C342	BOX, weldment assembly	1	32	108865	SCREW, cap	1
2	26C340	BRACKET, top mount	1	47	16H323	GROMMET, one slit	1
3	15M293	POWER SUPPLY	1	53	120206	MUFFLER	1
4	15M669	SENSOR, pressure	2	55	116281	CORD SET, IEC320(M-F), 6 ft. (1.8 m)	1
5	15X472	LIGHT TOWER, m12	1	56	195551	RETAINER, plug	1
7	258999	MODULE, LCM, breakout	1	57	245202	CORD, power, USA	1
8	157785	FITTING, swivel, 3/4 in. npt	2	58	242001	CORD, power, Europe	1
9	121254	SWITCH, power, 120V	1	59	242005	CORD, power, Aus	1
11	102410	SCREW, cap	4	61	113796	SCREW, flanged	3
12	100016	WASHER, lock	1	62	115942	NUT, hex	3
13	121399	O-RING 012, solvent resistant	2	63	121261	FUSE (not shown)	2
14▲	189930	LABEL, caution	1	65	114606	PLUG, hole	1
15	104371	SCREW, cap	9	67	113783	SCREW, 1/4-20, pn hd	4
16	104472	WASHER, lock	4	68	16H378	SHIELD, membrane, LCM (pack of 10)	1
17	110755	WASHER, flat	1	69	114225	TRIM, edge protection; 0.6 ft. (0.18 m)	1
18	---	SCREW, countersunk, 6-32 x 0.38	2	70	16J685	LABEL, error codes	1
20	110047	HOSE, 3/4 in. npt	1	71	16J722	LABEL, error codes (all languages)	1
25	121253	KNOB, display adjustment	1	77	131181	CABLE, GCA solenoid	1
21†	24H286	MODULE, LCM; <i>includes 21a</i>	1	▲ Replacement Danger and Warning labels, tags, and cards are available with no cost. † Replacement electronic components do not have Pressure Monitor specific software installed. Therefore, use software upgrade token (21a) to install software before use.			
21a	16G728	TOKEN, PM software; not shown	1				
25	121253	KNOB, display	1				
26	119992	NIPPLE, 3/4 in. npt	1				
27	111530	MUFFLER, 3/4 in. npt	1				
28	16G901	VALVE, 24 VDC, 3/4 in. npt	1				
29	15T859	CABLE, 10 ft. (3 m)	1				
30	24H298	COVER, box	1				
31	102063	WASHER, lock	1				

26C008 Line Power Pressure Monitor Kit Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	26C342	BOX, weldment assembly	1	32	108865	SCREW, cap	1
2	26C340	BRACKET, top mount	1	47	16H323	GROMMET, one slit	1
3	15M293	POWER SUPPLY	1	55	116281	CORD SET, IEC320(M-F), 6 ft. (1.8 m)	1
4	15M669	SENSOR, pressure	2	56	195551	RETAINER, plug	1
5	15X472	LIGHT TOWER, m12	1	57	245202	CORD, power, USA	1
7	258999	MODULE, LCM, breakout	1	58	242001	CORD, power, Europe	1
8	160022	FITTING, swivel, 1 in. npt	2	59	242005	CORD, power, Aus	1
9	121254	SWITCH, power, 120V	1	61	113796	SCREW, flanged	3
11	102410	SCREW, cap	4	62	115942	NUT, hex	3
12	100016	WASHER, lock	1	63	121261	FUSE (not shown)	2
13	121399	O-RING 012, solvent resistant	2	65	114606	PLUG, hole	1
14▲	189930	LABEL, caution	1	67	113783	SCREW, 1/4-20, pn hd	4
15	104371	SCREW, cap	9	68	16H378	SHIELD, membrane, LCM (pack of 10)	1
16	104472	WASHER, lock	4	69	114225	TRIM, edge protection; 0.6 ft. (0.18 m)	1
17	110755	WASHER, flat	1	70	16J685	LABEL, error codes	1
18	---	SCREW, countersunk, 6-32 x 0.38	2	71	16J722	LABEL, error codes (all languages)	1
20	278770	HOSE, 1 in. npt	1	77	131181	CABLE, GCA solenoid	1
25	121253	KNOB, display adjustment	1	▲ Replacement Danger and Warning labels, tags, and cards are available with no cost. † Replacement electronic components do not have Pressure Monitor specific software installed. Therefore, use software upgrade token (21a) to install software before use.			
21†	24H286	MODULE, LCM; <i>includes 21a</i>	1				
21a	16G728	TOKEN, PM software; not shown	1				
25	121253	KNOB, display	1				
26	17G388	NIPPLE, 1 in. npt	1				
27	17S718	MUFFLER, 1 in. npt	1				
28	17S716	VALVE, 24 VDC, 1 in. npt	1				
29	15T859	CABLE, 10 ft. (3 m)	1				
30	24H298	COVER, box	1				
31	102063	WASHER, lock	1				

262942 Alternator Pressure Monitor Kit
26C009 Alternator Pressure Monitor Kit



262942 Alternator Pressure Monitor Kit Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	26C342	BOX, assembly	1	35a	15D909	ELEMENT, filter, 5 micron	1
2	26C340	BRACKET, top mount	1	36	113911	GAUGE, pressure, air	1
4	15M669	SENSOR, pressure	2	37	121858	ELBOW, male, swivel	1
5	16H600	LIGHT TOWER, M12	1	38	15W017	VALVE, safety, regulator	1
7	258999	MODULE, LCM	1	39	114153	ELBOW, male, swivel	1
8	157785	FITTING, swivel, 3/4 in. npt	2	40	054175	TUBE, 1/4 in.	1
12	100016	WASHER, lock	1	41	C12508	TUBING, nylon, 3/8 in.	1
13	121399	O-RING, solvent resistant	2	42	248208	HOSE, coupled, 6 ft. (1.8 m)	1
14▲	189930	LABEL, caution	1	47	16H323	GROMMET, one slit	1
15	104371	SCREW, cap	9	53	120206	MUFFLER	1
16	104472	WASHER, lock	4	55	116281	CORD, power, IEC	1
17	110755	WASHER, plain	1	56	195551	RETAINER, plug	1
18	---	SCREW, cap, hex, button hd., 6-32 x 0.375	2	57	245202	CORD, power, USA	1
20	110047	HOSE, 3/4 in. npt	1	58	242001	CORD, power, Europe	1
21†	24H286	MODULE, LCM; <i>includes 21a</i>	1	59	242005	CORD, power, Aus	1
21a	16G728	TOKEN, PM software; not shown	1	61	113796	SCREW, flanged	3
22	15B565	VALVE, ball	1	62	115942	NUT, hex	3
23	114314	WASHER, plain	2	66	158962	ELBOW, st	1
25	121253	KNOB, display	1	67	113783	SCREW, 1/4-20	4
26	119992	NIPPLE, 3/4 in. npt	1	68	16H378	SHIELD, membrane, LCM (pack of 10)	1
27	111530	MUFFLER, 3/4 in. npt	1	69	114225	TRIM, edge protection	1
28	16H550	VALVE, 12 VDC, internal pilot	1	70	16J685	LABEL, error codes	1
29	15T859	CABLE, 10 ft. (3 m)	1	71	16J722	LABEL, error codes (all languages)	1
30	24H298	COVER, box	1				
31	C38163	WASHER, lock	1				
32	103833	SCREW, cap	1				
34	262579	MODULE, alternator	1				
34a	193154	GASKET, alternator	1				
34e	257147	CARTRIDGE, alternator	1				
35	119644	FILTER, regulator	1				

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

† Replacement electronic components do not have Pressure Monitor specific software installed. Therefore, use software upgrade token (21a) to install software before use.

26C009 Alternator Pressure Monitor Kit Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	26C342	BOX, assembly	1	35a	15D909	ELEMENT, filter, 5 micron	1
2	26C340	BRACKET, top mount	1	36	113911	GAUGE, pressure, air	1
4	15M669	SENSOR, pressure	2	37	121858	ELBOW, male, swivel	1
5	16H600	LIGHT TOWER, M12	1	38	15W017	VALVE, safety, regulator	1
7	258999	MODULE, LCM	1	39	114153	ELBOW, male, swivel	1
8	160022	FITTING, swivel, 1 in. npt	2	40	054175	TUBE, 1/4 in.	1
12	100016	WASHER, lock	1	41	C12508	TUBING, nylon, 3/8 in.	1
13	121399	O-RING, solvent resistant	2	42	248208	HOSE, coupled, 6 ft. (1.8 m)	1
14▲	189930	LABEL, caution	1	47	16H323	GROMMET, one slit	1
15	104371	SCREW, cap	9	55	116281	CORD, power, IEC	1
16	104472	WASHER, lock	4	56	195551	RETAINER, plug	1
17	110755	WASHER, plain	1	57	245202	CORD, power, USA	1
18	---	SCREW, cap, hex, button hd., 6-32 x 0.375	2	58	242001	CORD, power, Europe	1
				59	242005	CORD, power, Aus	1
20	278770	HOSE, 1 in. npt	1	61	113796	SCREW, flanged	3
21†	24H286	MODULE, LCM; <i>includes 21a</i>	1	62	115942	NUT, hex	3
21a	16G728	TOKEN, PM software; not shown	1	66	158962	ELBOW, st	1
22	15B565	VALVE, ball	1	67	113783	SCREW, 1/4-20	4
23	114314	WASHER, plain	2	68	16H378	SHIELD, membrane, LCM (pack of 10)	1
25	121253	KNOB, display	1	69	114225	TRIM, edge protection	1
26	17G388	NIPPLE, 1 in. npt	1	70	16J685	LABEL, error codes	1
27	17S718	MUFFLER, 1 in. npt	1	71	16J722	LABEL, error codes (all languages)	1
28	17E519	VALVE, 3-way, 12 VDC	1				
29	15T859	CABLE, 10 ft. (3 m)	1				
30	24H298	COVER, box	1				
31	C38163	WASHER, lock	1				
32	103833	SCREW, cap	1				
34	262579	MODULE, alternator	1				
34a	193154	GASKET, alternator	1				
34e	257147	CARTRIDGE, alternator	1				
35	119644	FILTER, regulator	1				

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

† Replacement electronic components do not have Pressure Monitor specific software installed. Therefore, use software upgrade token (21a) to install software before use.

Appendix A - User Interface Display

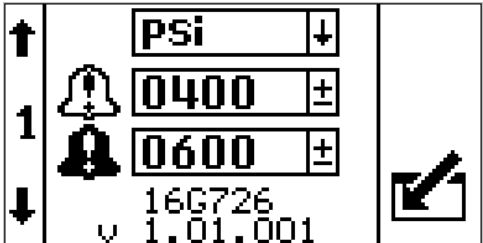
Setup Mode Details



Setup mode screens enable user to view or modify system configuration data. User can set:

- Units of Pressure
- Differential pressure warning value
- Differential pressure alarm value
- High pressure limit value
- Minimum spray pressure value
- Normal B pressure offset value

Setup Screen 1

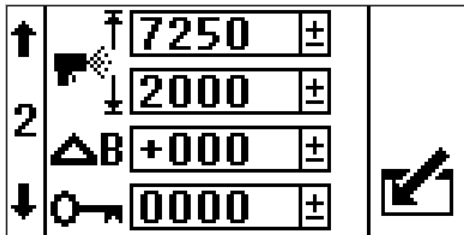
Setup screen 1 enables users to set units of measurement that will display on other screens, differential warning and differential alarm. Additionally, this screen displays the software number and version. Refer to the following table for more information.



Icon	Function
	<p>Warning Pressure</p> <p>Adjust the differential pressure deviation setpoint. The yellow light on the light tower will be flashing.</p> <p><i>Default: 400 psi</i></p> <p><i>Range: 0-2,000 psi</i></p>
	<p>Alarm Pressure</p> <p>Adjust the differential pressure alarm setpoint. The red light on the light tower will be solid on.</p> <p>This is the main setting that determines ho far apart your A and B pressures can be before shitting down the machine. If the machine shuts down too easily, increase this to a higher setpoint.</p> <p><i>Default: 600 psi</i></p> <p><i>Range: 0-2,000 psi</i></p>

Setup Screen 2

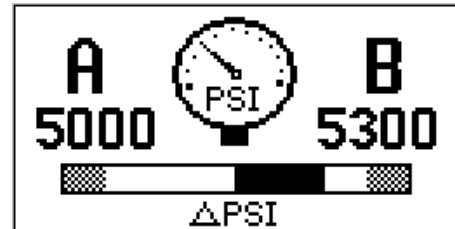
Setup screen 2 enables users to set the high spray pressure alarm limit value, minimum spray pressure value and B pressure offset. Refer to the following table for more information.



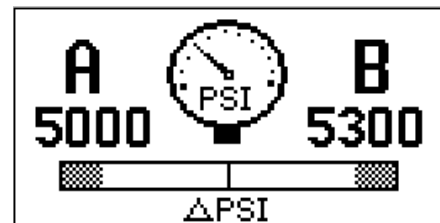
Icon	Function
	<p>High Pressure Limit</p> <p>Adjust the high pressure limit.</p> <p><i>Default: 7,250 psi (14 MPa, 138 bar)</i></p> <p><i>Range: 0-7,250 psi (50 MPa, 500 bar) maximum</i></p>
	<p>Minimum Spray Pressure Limit</p> <p>Adjust the lower spray pressure limit.</p> <p><i>Default: 2,000 psi (14 MPa, 138 bar)</i></p> <p><i>Range: 0-7,250 psi (50 MPa, 500 bar) maximum</i></p>
	<p>Password</p> <p>The setup screens can be protected by a password to restrict their accessibility. To set the password see, Set Password, page 26.</p>
	<p>B Side Pressure Offset</p> <p><i>Default: 0 psi</i></p> <p><i>Range: -999 to 999 psi</i></p> <p>Only used for remote mix manifold applications where there is a normal difference in pressure between A and B.</p> <p>Remote mix manifold applications should first be balanced with proper hose sizing and adjusting the mix manifold B restricter. See the system operation manual.</p> <p>Use if your differential alarm bar graph on the spray screen is off to one side under normal spray conditions.</p> <p>See, B Side Pressure Offset Example, page 25.</p>

B Side Pressure Offset Example

In normal spray conditions, the B pressure is 300 psi above the A pressure. The bar graph is offset to one side.



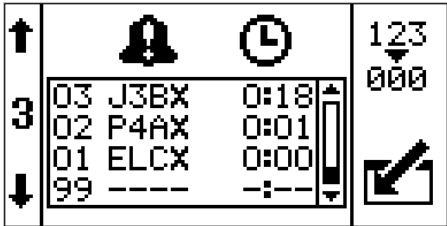
Enter a B offset pressure of +300 psi. Now the bar graph is centered.



The differential pressure alarm now sees no differential when the B pressure is 300 psi higher than the A pressure. If the B pressure was normally 300 psi lower than the A pressure, you would enter -300 psi to balance the offset.

Setup Screen 3

Setup screen 3 enables users to scroll through all errors and clear the entire error log. The error log will display the most recent error on the top of the list. Refer to the following table for more information.

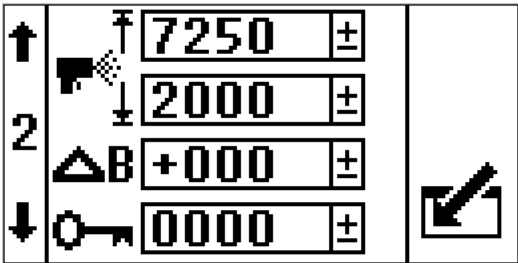


Icon	Function
	Error Number The first column lists the error number. Once the system has more than the maximum errors allowed, then the oldest error will be over-written. <i>Maximum: 99</i>
	Error Code The second column lists the error codes. See, Error Codes , page 13. <i>Maximum: 99</i>
	Time The third column shows the time that the error occurred since the unit was last powered on. The time will always start at 0:00 when the system is powered up. This time will be logged as code ELCX. <i>Format: Hours: Minutes</i> <i>Maximum: 999: 59</i>
	Reset Press the reset icon to clear the entire error log.

Set Password

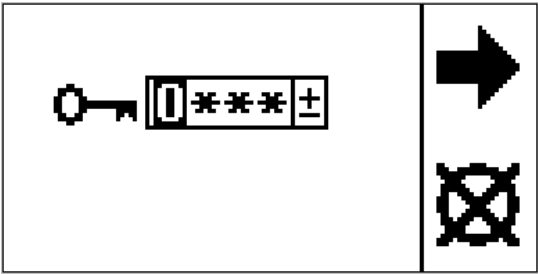
NOTE: When the password is “0000,” the setup screens can be accessed without entering a password.

- 1. Navigate to setup screen 2.



- 2. Press to access fields to make changes.
- 3. Press to navigate to the password field.
Press to edit data.
- 4. Press and to increment or decrement to the desired digits of the password.
- 5. Press to accept the password or press to cancel.
- 6. Press to exit edit mode.

NOTE: The password screen is shown when the setup screens are accessed and the password function has been enabled by changing the 0000 password.



If you set and forget the password, please contact Graco Technical Assistance for a default password.

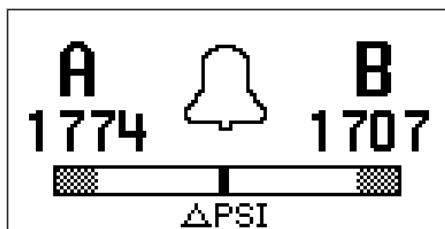
Run Mode Details


There are four Run Screens; Circulation Mode, Active, Spray Mode Active, Alarm Active, and Deviation Active.

Circulation Mode Active

This is the run screen that appears after the power up screen. A and B pressure are shown. The bar across the bottom indicates the magnitude of the differential pressure with respect to the alarm setpoint. In Circulation Mode, all alarms are disabled except for the Air Solenoid Detection High Pressure A, and High Pressure B alarms.

If the user needs to spray with one of the above errors active, set the Lower Spray Pressure Limit equal to the High Pressure Alarm Limit to enter Manual Bypass Mode. Only use Manual Bypass Mode for emergency operation to finish the job. The control no longer monitors the pressures and will not shut off the sprayer.

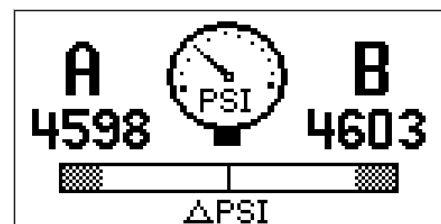



Icon	System Status
	<p>Indicates that you are in Circulation Mode and the fluid pressure is below the Lower Spray Pressure Limit.</p> <p>All alarms are disabled except for air Solenoid Detection, High Pressure A, and High Pressure B alarms. The yellow light on the light tower will be solid on.</p> <p>This screen will also be used when in Manual Bypass Mode.</p> <p>Note: all alarms and deviations are ignored in Bypass Mode. You will be allowed to spray bad material. The yellow light will be solid on.</p>

Spray Mode Active

This is the run screen that appears during spray mode. A and B pressure are shown. The bar across the bottom indicates the magnitude of the differential pressure with respect to the alarm setpoint.

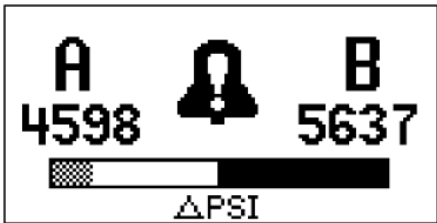
When the pressure first gets above the lower spray pressure limit, the user has 30 seconds to balance the system differential pressure so it is less than the differential pressure deviation and alarm limits. Then the system will automatically go into Spray mode and start monitoring all alarms and deviations.



Icon	System Status
	<p>Indicates that you are in Spray Mode, at least one of the pumps has pressure greater than the lower spray pressure limit, and the differential pressure is less than the differential pressure deviation setpoint.</p> <p>The green light on the light tower will be solid on.</p>

Alarm Active

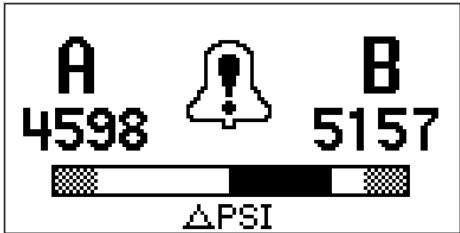
This is the run screen that appears during an active alarm. A and B pressure are shown. The bar across the bottom indicates the magnitude of the differential pressure with respect to the alarm setpoint. Refer to the following table for more information.



Icon	System Status
	Indicates that there is an active alarm. The red light on the light tower will be solid on and the system is disabled.

Deviation Active

This is the run screen that appears during an active deviation. A and B pressure are shown. The bar across the bottom indicates the magnitude of the differential pressure with respect to the alarm setpoint. Refer to the following table for more information.



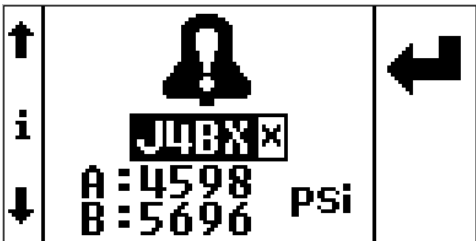
Icon	System Status
	Indicates that there is an active deviation. The yellow light on the light tower will be flashing. The air to the motor is on. Once the deviation condition no longer exists it automatically generates the Spray Mode Active Run Screen.

Information Screen

The information screen is only available when an alarm, deviation, or advisory is active. It shows the active alarm code and the A and B pressure conditions at the time of the alarm, if applicable.

If the alarm condition occurs while on the run screen the information screen is automatically generated.

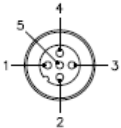
The red light on the light tower will be solid on. Refer to the following table for more information.

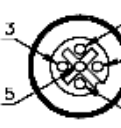


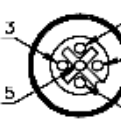
Icon	System Status
	Indicates that there is an active alarm. The red light on the light tower will be solid on and the system is disabled.
	Indicates that there is an active deviation. The yellow light on the light tower will be flashing.
	Indicates that there is an active advisory. The yellow light on the light tower will be solid on.
	Active Alarm Code See, Error Codes , page 13.

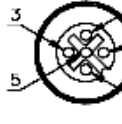
Appendix B - Breakout Module Connections

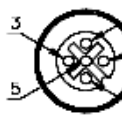
The following provides descriptions and pins of all connectors used on the breakout module. These can be used if the components are being wired directly to the breakout modules.

LCM Power Cable 1 - Blue	Pin Description	Pin Number
M12 Connector, 5 pin, Female, A code	Shield	1
Phoenix Contact Part Number 1694224	Power (12V or 24V)	2
	Ground	3
	CAN +	4
	CAN -	5

Solenoid Air Connector 3 - Red	Pin Description	Pin Number
M12 Connector, 5 pin, Female, A code	Solenoid Air Digital Output	4
Phoenix Contact Part Number 1542761	Not Used	2
	Not Used	1
	Digital Output Ground	3
	Not Used	5

Light Tower Connector 4 - Green	Pin Description	Pin Number
M12 Connector, 5 pin, Female, A code	Lamp1 Green Digital Output	4
Phoenix Contact Part Number 1542761	Lamp 2 Yellow Digital Output	2
	Not Used	1
	Digital Output Ground	3
	Lamp 3 Red Digital Output	5

A Pressure Transducer 6 - Blue	Pin Description	Pin Number
M12 Connector, 5 pin, Female, B code	Pressure Differential Analog Output +	4
Phoenix Contact Part Number 1543650	Pressure Differential Analog Input -	2
	Pressure Power (5 volt)	1
	Pressure Ground	3
	Shield Analog	5

A Pressure Transducer 7 - Red	Pin Description	Pin Number
M12 Connector, 5 pin, Female, B code	Pressure Differential Analog Output +	4
Phoenix Contact Part Number 1543650	Pressure Differential Analog Input -	2
	Pressure Power (5 volt)	1
	Pressure Ground	3
	Shield Analog	5

Accessories

16G410 Pressure Transducer Tee Adapter

For using the pressure transducers on systems other than an XP Sprayer or an XP-hf Proportioner.

303 stainless steel, 7250 psi (50 MPa, 500 bar), 1/4 npt (f) x 3/8 npt (f); 11/16-24 transducer mount on branch of tee.

16J717, Protective Bag

If the pressure monitor kit will be outside in the rain, use the protective bag to prevent damage to the electronic components used with the pressure monitor kit.

Technical Data

Pressure Transducer	
Fluid pressure range:	50-7250 psi (3-500 bar)
Power requirements for model 262940 or 26C008	
Voltage	90-260 VAC
Frequency	50-60 Hz
Phase	1
Amps	1
Compressed air requirements for model 262942 or 26C009	
Minimum air supply pressure	40 psi (2.75 bar)
Maximum air supply pressure	150 psi (10.3 bar)
Air consumption	6 scfm
Turbine air pressure set point (pre-set inside box)	25 psi (1.72 bar)
Certification	CE*

* When an Electrostatic Discharge (ESD) is applied to the display, the screen might clear. Turn the power supply off and on, or turn the turbine off and on to reset.

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.

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Graco Information

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