Automatic Hopper/Feeder for Piston Pump Units

Customer Product Manual
Part 104485H
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NORDSON CORPORATION • DULUTH, GEORGIA • USA
www.nordson.com

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Notice

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Section 1
Safety

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.

WARNING: Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.

WARNING: Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

CAUTION: (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.

Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer's product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility's engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.

User Qualifications

Equipment owners are responsible for ensuring that users:

- receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- are familiar with the equipment owner's safety and accident prevention policies and procedures
- receive, equipment- and task-specific training from another qualified individual

  NOTE: Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- possess industry- and trade-specific skills and a level of experience appropriate to their job function
- are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities

Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to *Safety Labels and Tags* at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.

Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used and that the processing characteristics of the material will not create a hazardous environment. Refer to the Material Safety Data Sheet (MSDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to *Equipment Safety Information* or the material manufacturer's instructions and MSDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new factory-authorized refurbished or replacement parts.
- Read and comply with the manufacturer's instructions and the MSDS supplied with equipment cleaning compounds.

  NOTE: MSDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.

- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable MSDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.

Equipment Safety Information

This equipment safety information is applicable to the following types of Nordson equipment:

- hot melt and cold adhesive application equipment and all related accessories
- pattern controllers, timers, detection and verification systems, and all other optional process control devices

Equipment Shutdown

To safely complete many of the procedures described in this document, the equipment must first be shut down. The level of shut down required varies by the type of equipment in use and the procedure being completed. If required, shut down instructions are specified at the start of the procedure. The levels of shut down are:

Relieving System Hydraulic Pressure

Completely relieve system hydraulic pressure before breaking any hydraulic connection or seal. Refer to the melter-specific product manual for instructions on relieving system hydraulic pressure.

De-energizing the System

Isolate the system (melter, hoses, guns, and optional devices) from all power sources before accessing any unprotected high-voltage wiring or connection point.

1. Turn off the equipment and all auxiliary devices connected to the equipment (system).
2. To prevent the equipment from being accidentally energized, lock and tag the disconnect switch(es) or circuit breaker(s) that provide input electrical power to the equipment and optional devices.

   NOTE: Government regulations and industry standards dictate specific requirements for the isolation of hazardous energy sources. Refer to the appropriate regulation or standard.

Disabling the Guns

All electrical or mechanical devices that provide an activation signal to the guns, gun solenoid valve(s), or the melter pump must be disabled before work can be performed on or around a gun that is connected to a pressurized system.

1. Turn off or disconnect the gun triggering device (pattern controller, timer, PLC, etc.).
2. Disconnect the input signal wiring to the gun solenoid valve(s).
3. Reduce the air pressure to the gun solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the gun.

General Safety Warnings and Cautions

Table 1-1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1-1 as follows:

HM = Hot melt (melters, hoses, guns, etc.)

PC = Process control

CA = Cold adhesive (dispensing pumps, pressurized container, and guns)

Table 1-1 General Safety Warnings and Cautions

Equipment Type	Warning or Caution
HM	**WARNING:** Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material's MSDS. Ensure that the material's processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with MSDS requirements can cause personal injury, including death.
HM	**WARNING:** Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and guns contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.
HM, CA	**WARNING:** System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.
HM	**WARNING:** Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.

Continued...

General Safety Warnings and Cautions *(contd)*

Table 1-1 General Safety Warnings and Cautions *(contd)*

Equipment Type	Warning or Caution
HM, PC	**WARNING:** Equipment starts automatically! Remote triggering devices are used to control automatic hot melt guns. Before working on or near an operating gun, disable the gun's triggering device and remove the air supply to the gun's solenoid valve(s). Failure to disable the gun's triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.
HM, CA, PC	**WARNING:** Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.
HM. CA, PC	**WARNING:** Risk of fire or explosion! Nordson adhesive equipment is not rated for use in explosive environments and should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the MSDS for the adhesive to determine its processing characteristics and limitations. The use of incompatible solvent-based adhesives or the improper processing of solvent-based adhesives can result in personal injury, including death.
HM, CA, PC	**WARNING:** Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage the equipment.

Continued...

Table 1-1 General Safety Warnings and Cautions *(contd)*

Equipment Type	Warning or Caution
HM	 **CAUTION:** Hot surfaces! Avoid contact with the hot metal surfaces of guns, hoses, and certain components of the melter. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.
HM	**CAUTION:** Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment's ability to process PUR, contact your Nordson representative for assistance.
HM, CA	**CAUTION:** Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer's instructions and the MSDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.
HM	**CAUTION:** Nordson hot melt equipment is factory tested with Nordson Type R fluid that contains polyester adipate plasticizer. Certain hot melt materials can react with Type R fluid and form a solid gum that can clog the equipment. Before using the equipment, confirm that the hot melt is compatible with Type R fluid.

Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.
- Never point a dispensing handgun at yourself or others.
- Suspend dispensing handguns by their proper suspension point.

First Aid

If molten hot melt comes in contact with your skin:

1. Do NOT attempt to remove the molten hot melt from your skin.
2. Immediately soak the affected area in clean, cold water until the hot melt a has cooled.
3. Do NOT attempt to remove the solidified hot melt from your skin.
4. In case of severe burns, treat for shock.
5. Seek expert medical attention immediately. Give the MSDS for the hot melt to the medical personnel providing treatment.

Safety Labels and Tags

Figure1-1 illustrates the location of the product safety labels and tags affixed to the equipment. Table 1-2 provides an illustration of the hazard identification symbols that appear on each safety label and tag, the meaning of the symbol, or the exact wording of any safety message.

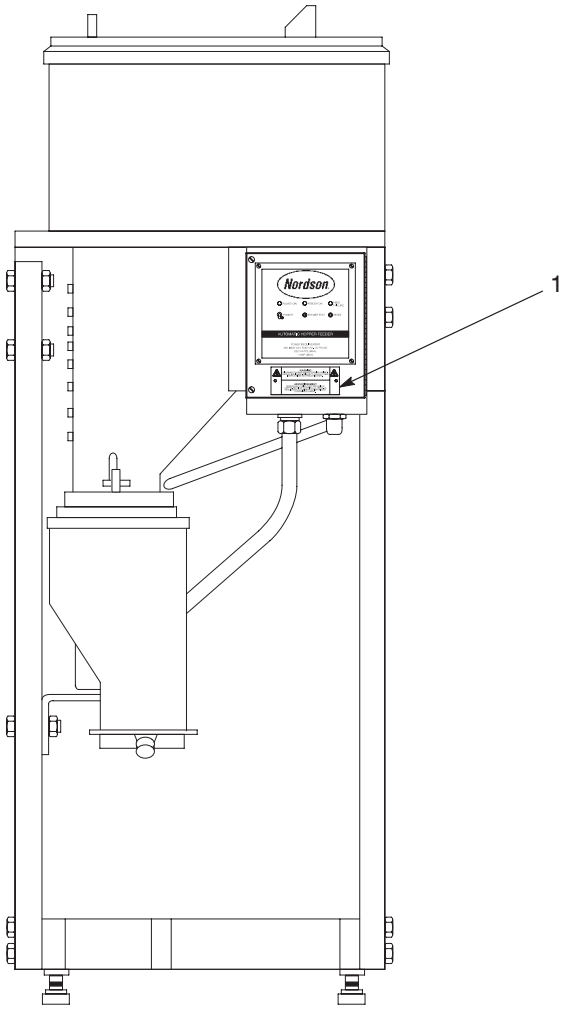


Figure 1-1 Safety labels and tags

Table 1-2 Safety Labels and Tags

Item	Part	Description
1.	271880	**WARNING: Disconnect power before opening cabinet. Ground equipment. Failure to follow these instructions may result in death.**

Section 2
Description

Introduction

This section contains a brief description of the Nordson automatic hopper/feeder and how it operates. Specifications and measurements for the hopper/feeder are also included in this section.

Equipment Description

The Nordson automatic hopper/feeder is an accessory assembly that maintains the adhesive level in hot melt units. The hopper/feeder receives a signal from a level control sensor that causes the chute to vibrate and refill the tank with fresh adhesive: pillows, chiclets, slats, pellets, or granules.

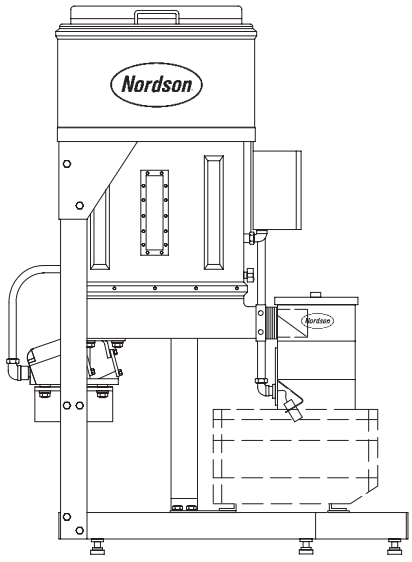


Figure 2-1 Automatic hopper/feeder

Equipment Description *(contd)*

The hopper/feeder provides the following advantages:

- reduces the time spent manually refilling the tank
- maintains a full tank of adhesive with less operator attendance
- stores adhesive and frees equipment for other tasks
- prevents thermal shock caused by refilling a tank that has run low
- reduces contamination that causes nozzle clogging
- allows access to the applicator for servicing without removing the hopper/feeder

Theory of Operation

The adhesive is loaded through a hinged lid at the top of the hopper. From the hopper, the adhesive is deposited into a PTFE coated chute. A gate located between the chute and hopper/feeder hood is used to adjust the adhesive flow rate. The operator is able to monitor the level of adhesive in the hopper/feeder through a window in the hopper wall.

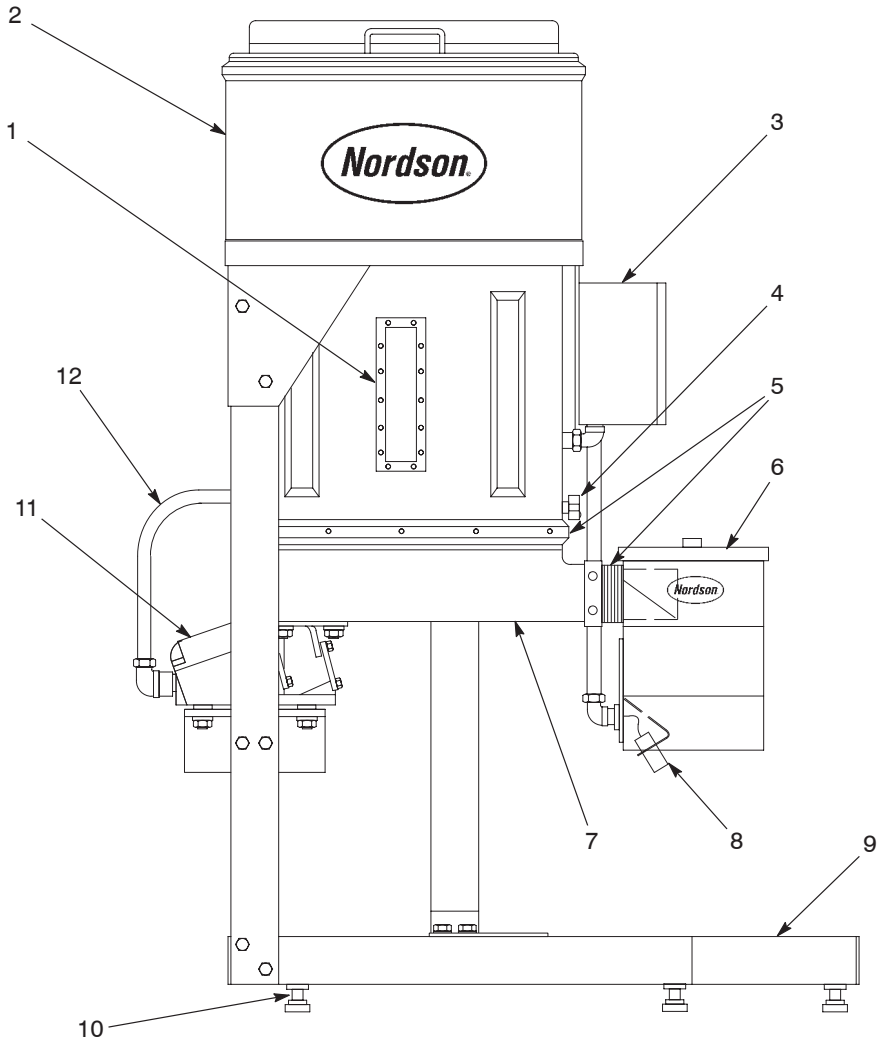


Figure 2-2 Automatic hopper/feeder (side view)

1. Hopper window
2. Hopper with lid
3. Electrical control box
4. Flow control knob
5. Bellows
6. Hood with lid
7. Chute
8. Level control sensor probe
9. Frame
10. Adjustable leg
11. Vibrator
12. Flexible conduit

Theory of Operation *(contd)*

A level control sensor mounted in the hood indicates when the adhesive has reached a preset low level. The control energizes a vibrator that causes the adhesive to flow from the hopper/feeder into the applicator tank. When the adhesive reaches a preset high level in the tank, the level control sensor de-energizes the vibrator. An excess demand alarm activates if the vibrator remains on for an excess amount of time. The operator can set this time and make adjustments to the vibration magnitude and level control sensitivity in the electrical control box. This box is located on the hopper front panel above the hood.

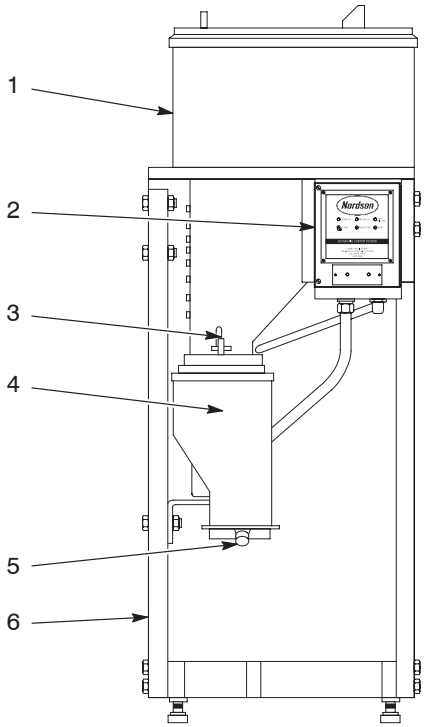


Figure 2-3 Automatic hopper feeder (front view)

1. Hopper with lid
2. Electrical control box
3. Flow control gate knob
4. Hood with lid
5. Level control sensor probe
6. Frame

Specifications

CAUTION: Do NOT use pressure sensitive adhesive or highly volatile adhesive. Use dry adhesive only. Pressure sensitive materials will stick in hopper. And, highly volatile adhesives will cause adhesive bridging at the base of the hopper.

Heading	
Hopper capacity	Approximately 56.7 kg (125 lbs) of dry adhesive
Hopper volume	0.161 m^3 (5.7 ft^3)
Adhesive forms:	
Pillows	38^2 x 13 mm (1.5^2 x 0.5 in)
Chiclets	13^2 x 3 mm (0.5^2 x 0.13 in)
Slats	38^2 x 3 mm (1.5^2 x 0.13 in)
Pellets/Granules	
Input power	200–230 VAC, $^1/_3$, 50/60 Hz
Vibrator	230 VAC, 1 A, 50/60 Hz
Weight	80.3 kg (177 lbs) without unit
Dimensions:	
Height	1.6 m (5.3 ft)
Width	1.0 m (3.5 ft)
Depth	57.2 cm (22.5 in)

Section 3
Installation

WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Introduction

This section contains the unpacking, safety, and installation procedures necessary to install the hopper/feeder on the following adhesive units:

- Series 2300 and FM-130 units
- Series 3400, 3500, and 3700 piston pump units
- ProBlue P10 units

Unpacking the Equipment

No special instructions are necessary to unpack the hopper/feeder. Normal care should be taken so the equipment is not damaged during unpacking.

Inspecting the Equipment

After unpacking your hopper/feeder unit, make the following inspections:

- Inspect all surface for evidence of dents, scratches, corrosion, and other damage. If any damage is found, contact your Nordson service representative immediately.
- Inspect the control unit and ensure that the electrical connections are tight.
- Inspect all fasteners and mechanical connections for tightness.
- Compare the contents of the containers you received from Nordson to the bill of materials to verify that all necessary materials are included.

Mechanical Installation

Select the appropriate installation procedure based on your type of unit.

Series 2300/FM-130 Units

Use the following procedure to install the hopper/feeder on a Series 2300 or FM-130 unit.

1. Position the hopper/feeder where the control unit, hopper lid and unit are accessible.
2. Install the mounting bracket from the ship-with kit to the hopper/feeder frame using three screws, washers, and lock washers.

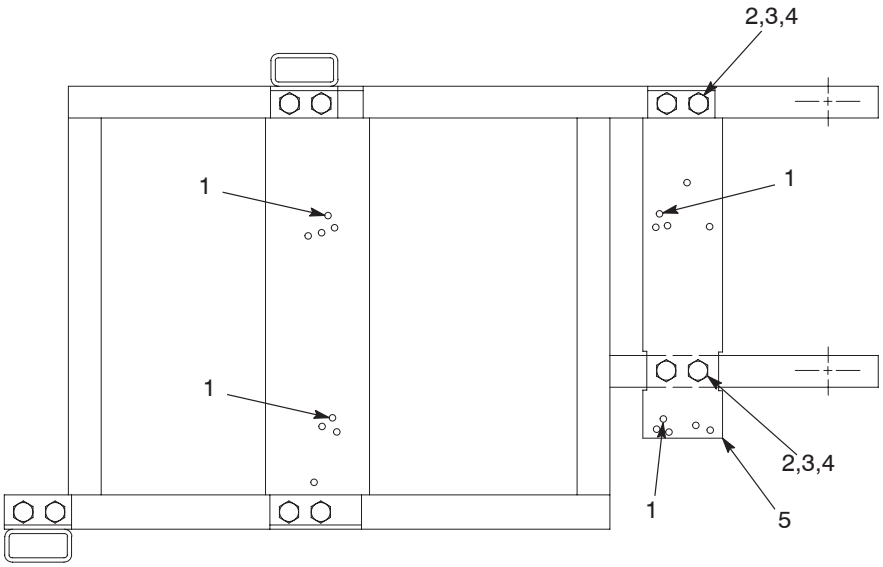


Figure 3-1 Series 2300/FM-130 mounting bracket bolt pattern

1. Series 2300/FM-130 bolt holes
2. Hex head screw
3. Flat washer
4. Split lock washer
5. Mounting bracket

3. Unscrew and remove the hinged lid pins that secure the unit lid of the tank enclosure then, remove the lid assembly. For the FM-130 unit, remove the lid support screw before removing the lid assembly.

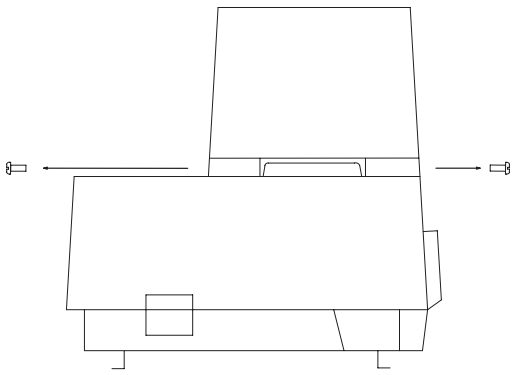


Figure 3-2 Series 2300/FM-130 unit lid pins

See Figure -3-3.

4. Place the hood assembly adapter on the unit where the lid assembly was secured. The hood assembly adapter is included in your ship-with kit.
5. Ensure the grommet is in place in the bottom of the adapter. Position the adapter where the tank lid was secured.
6. Secure the adapter to the tank enclosure with five flat washers and five hex-head screws.
7. Align the mounting/hood gasket and hood with the eight studs in the adapter.
8. Position the unit with the hood assembly adapter on the mounting brackets and align with the bolt holes. The unit hose manifold and connections should face away from the hopper/feeder. The back of the hopper/feeder should be under the chute. See Figure 2-1.
9. Use four lock washers, cap screws, and nuts from the ship-with kit to secure the unit to the mounting brackets. Do not tighten in this step.
10. Secure the hood to the adapter using the eight flat washers, lock washers, and hex cap nuts. Tighten the hex cap nuts.
11. Tighten the four screws, lock washers, and nuts used to install the unit to the mounting brackets in step 9.
12. Continue to the electrical installation procedures.

Series 2300/FM-130 Units *(contd)*

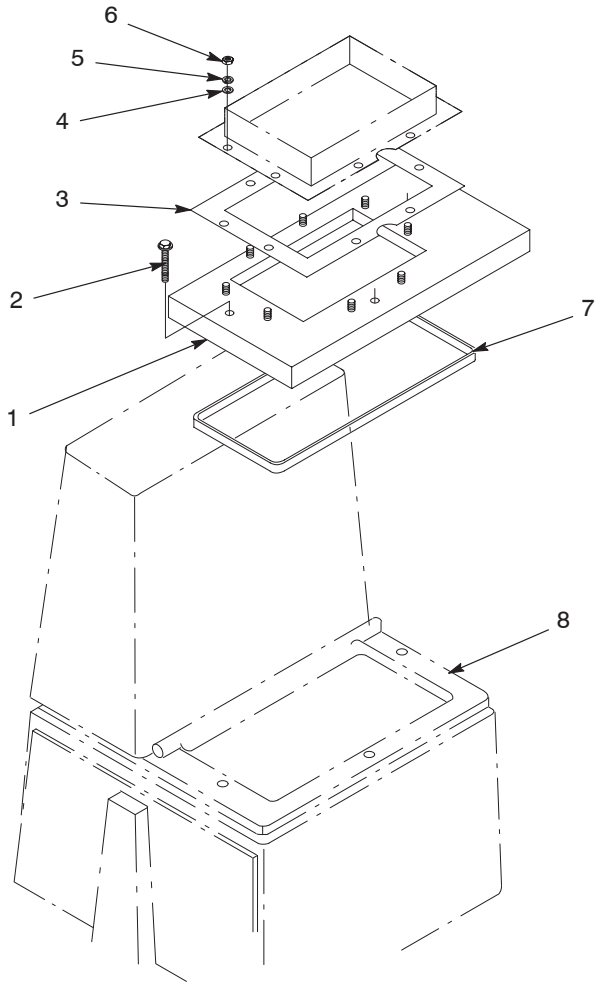


Figure 3-3 Series 2300/FM-130 hood assembly

1. Series 2300/FM-130 hood assembly adapter
2. Hex head screw and flat washer
3. Mounting/hood gasket
4. Flat washer
5. Split lock washer
6. Hex nut cap
7. Grommet
8. Series 2300/FM-130 unit

Series 3400, 3500, and 3700 Units

Use the following procedure to install the hopper/feeder on Series 3400, 3500, and 3700 piston pump units.

1. Position the hopper/feeder where the control unit, hopper lid, and unit are accessible.
2. Install the mounting bracket from the ship-with kit on the hopper/feeder frame using four screws, washers, and lock washers for 3400 and 3500 units and two screws, washers, and lock washers for 3700 units.
3. Remove the tank lid assembly. Refer to the unit manual for instructions.
4. Install the hood assembly adapter in place of the lid assembly using the following steps:
   a. Install the right and left hand brackets using the four pan head screws removed in step 3. Each bracket is stamped with an *R* for right or *L* for left.
   b. Ensure that the tank cover gasket is in place in the bottom of the hood support mounting.
   c. Place the hood support mounting on the right and left bracket studs. Secure it with the four flat washers, lock washers, and hex nuts.
   d. Place the mounting/hood gasket, mount support cover, second mounting/hood gasket, and hood (attached to the hopper/feeder) on the hood support mounting.

Series 3400, 3500, and 3700 Units *(contd)*

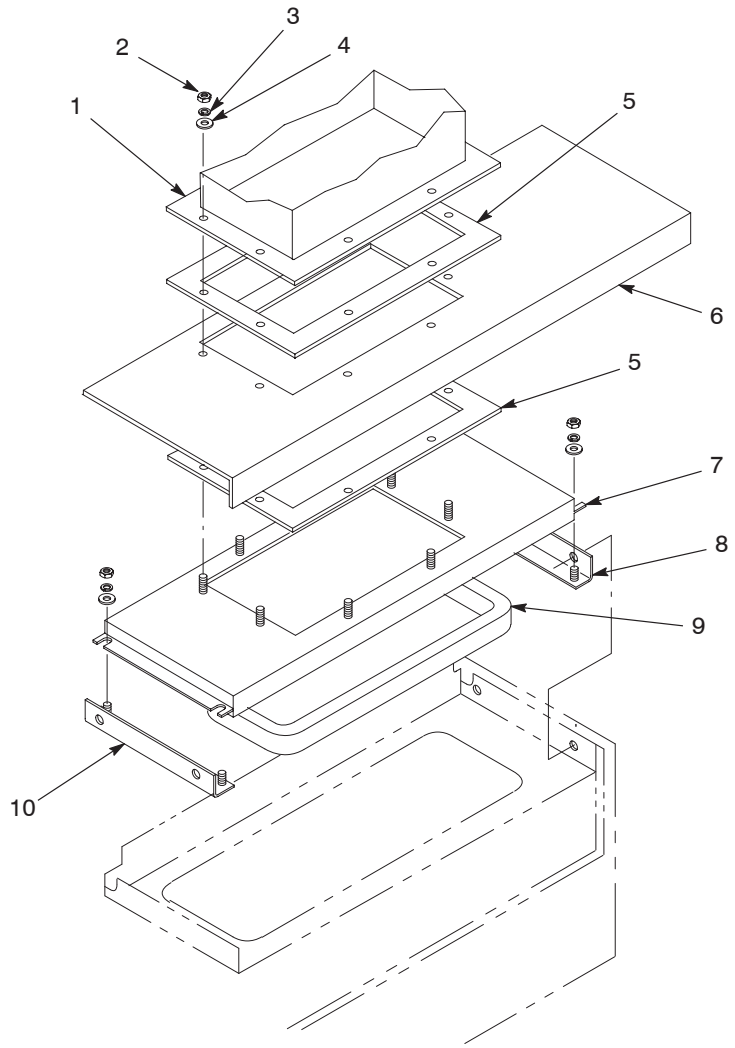


Figure 3-4 Series 3400, 3500, and 3700 hood assembly

1. Hood
2. Hex nut cap
3. Split lock washer
4. Flat washer
5. Mounting/hood gasket
6. Mount support cover
7. Hood support mounting
8. Right hand bracket
9. Tank cover gasket
10. Left hand bracket

5. Position the unit on the mounting bracket and align the bolt holes. The unit hose manifold and connections should face away from the hopper/feeder. The back of the unit should be under the hopper/feeder chute. See Figure 3-5 for Series 3400 and 3500 units or Figure 3-6 for Series 3700 units.

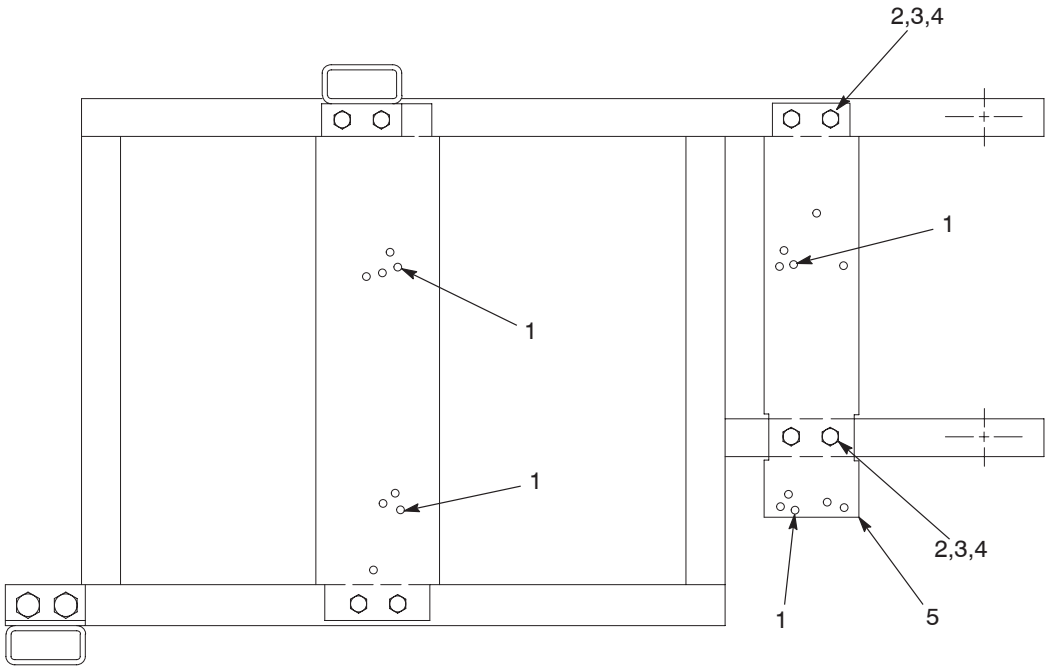


Figure 3-5 Series 3400 and 3500 mounting bracket bolt pattern

1. Series 3400 and 3500 bolt holes
2. Hex head screw
3. Flat washer
4. Split lock washer
5. Mounting bracket

Series 3400, 3500, and 3700 Units *(contd)*

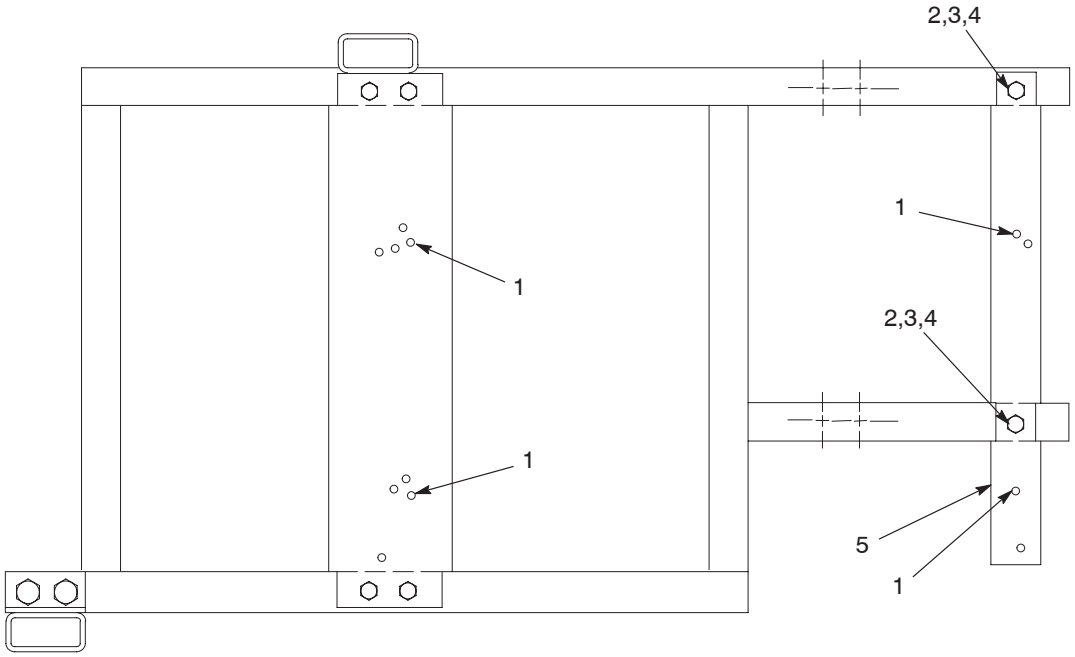


Figure 3-6 Series 3700 mounting bracket bolt pattern

1. Series 3700 bolt holes
2. Hex head screw
3. Flat washer
4. Split lock washer
5. Mounting bracket

6. Use the four cap screws, lock washers, and nuts from the ship-with kit to secure the unit to the mounting bracket. Do not tighten.
7. Secure the gaskets, mount support cover, and hood to the hood support mounting with the eight flat washers, lock washers, and hex cap nuts.
8. Tighten the hex cap nuts.

CAUTION: Ensure gaskets are not kinked or torn. Damaged gaskets can cause improper seals.

ProBlue P10 Units

Use the following procedure to install the hopper/feeder on ProBlue P10 units.

1. Position the hopper/feeder where the control unit, hopper lid, and unit are accessible.
2. See Figure 3-7. Remove the following components from the P10 unit:
   - lid assembly (1) (part 1025579)
   - tank cover (2) (part 1018190)
   - level switch assembly (3) (part 1028570)
   - pump inlet screen (4) (part 1017892)

   NOTE: Refer to the ProBlue P10 product manual for instructions on removing components from the P10 unit.

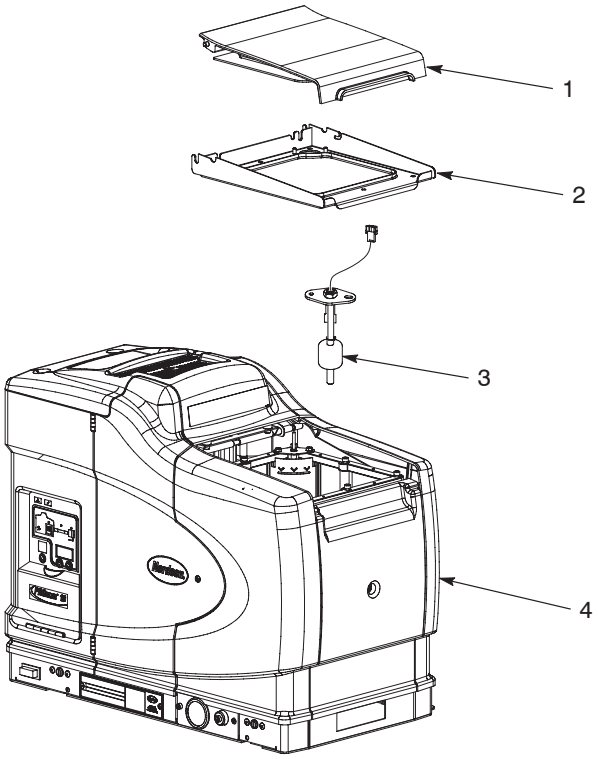


Figure 3-7 Removing the P10 lid, tank cover, level switch, and pump inlet screen

1. Lid assembly
2. Tank cover
3. Level switch
4. Pump inlet screen

ProBlue P10 Units *(contd)*

See Figure 3-8.

3. Install the hood mounting plate (3) on the P10 unit (4).
4. Remove the P10 sub-unit base (5) from the P10 unit. Refer to the melter manual as needed.
5. Install the P10 sub-unit base (5) on the hopper/feeder base plate (8) using the M8 x 12 screws (6).
6. Attach the leveler foot (9) to the hopper/feeder base plate (8).
7. Reinstall the P10 sub-unit base (5) on the P10 unit. Refer to the melter manual as needed.
8. Remove the sensor panel assembly (part 120832) from the hopper/feeder hood (1).

   NOTE: See Figure 8-5 in Section 8, *Parts*, for an illustration of the sensor panel assembly.

9. Slide and align the P10 unit, the hopper/feeder base plate (8), the hood mounting plate (3), and the mounting plate/hood gasket (2) under the hopper/feeder hood assembly (1).

CAUTION: Ensure that the gasket is not kinked or torn. A damaged gasket can cause an improper seal.

10. Using the M5 screws and washers (11, 12, 13), secure the hopper/feeder hood assembly to the top of the P10 unit.
11. Reinstall the sensor panel assembly on the hopper/feeder hood assembly.
12. Using the three M8 x 30 screws (7), secure the P10 unit and base assembly to the hopper/feeder frame (10).

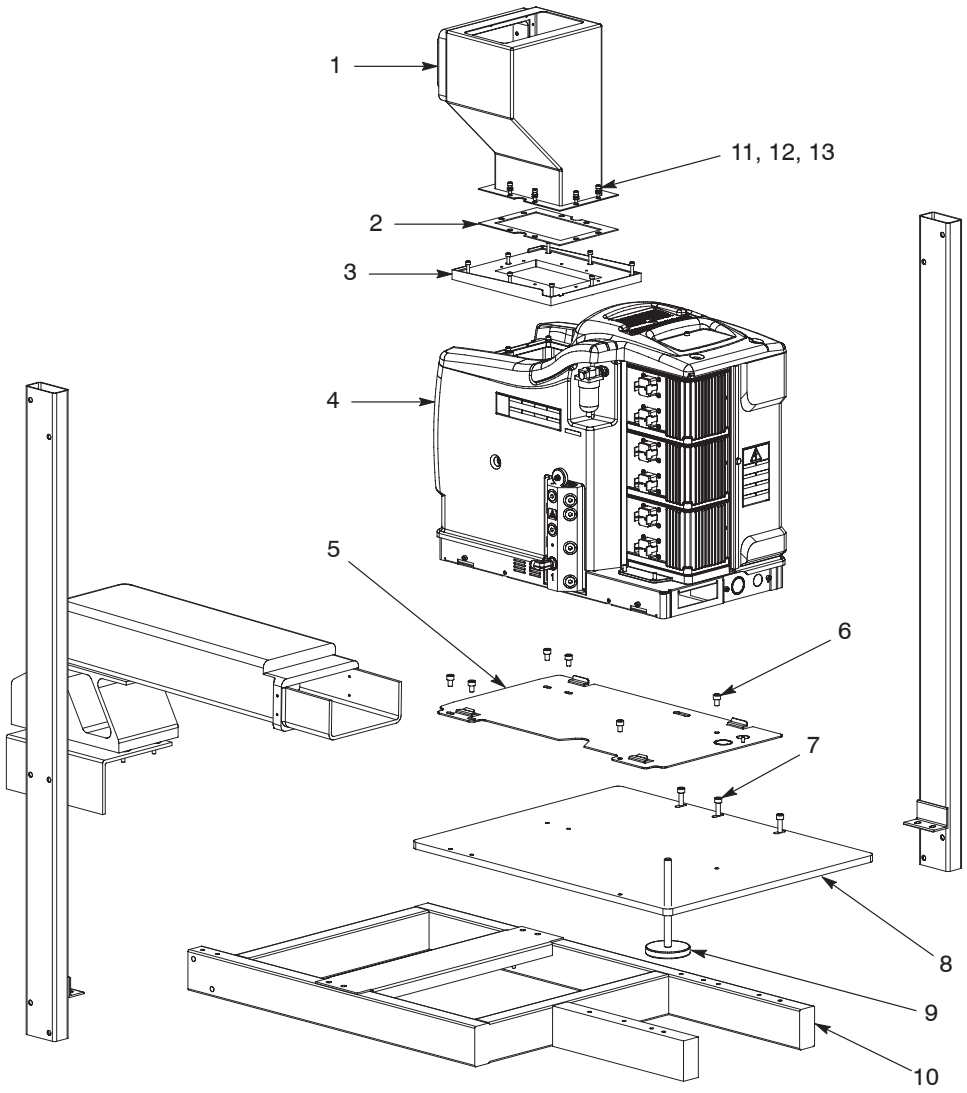


Figure 3-8 Installing the automatic hopper/feeder on a P10 unit

1. Hopper/feeder hood assembly
2. Mounting plate/hood gasket
3. Hood mounting plate
4. P10 unit
5. P10 sub-unit base
6. M8 x 12 screw
7. M8 x 30 screw
8. Hopper/feeder base plate
9. Leveler foot
10. Hopper/feeder frame
11. M5 x 16 screw
12. M5 external lock washer
13. M5 oversized flat washer

Electrical Installation

Complete all connections in the following procedures before you activate your power supply.

Input Power

Use the following procedure to connect input power.

CAUTION: Do not wire hopper/feeder to the unit incoming power supply or the temperature standby controllers.

1. Loosen the captive screws that secure the electrical control box, and open the control box.

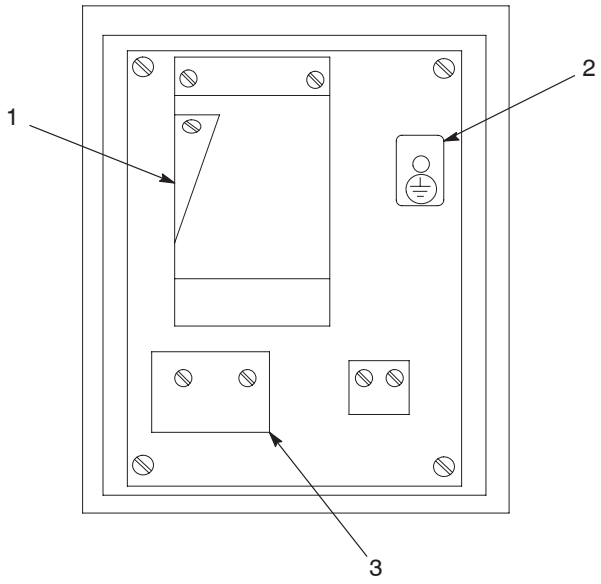


Figure 3-9 Hopper/feeder electrical control box interior

1. Level control unit
2. Ground stud assembly
3. Terminal block 1 (TB1)

2. Remove the knockout plug from the bottom panel of the control box.
3. Fasten an 1-inch conduit fitting (customer supplied) to that access hole to provide strain relief for the service line.
4. Install a disconnect switch with a lockout in the hopper/feeder power supply line.
5. Route the service line through the strain relief fitting and access hole.
6. Connect a one or three phase electrical power supply to terminal L1 and L2 (and L3 with a three phase electrical power supply) on the main terminal block (TB1). Required primary service is 1 to 2 A.
7. Complete other wiring connections appropriate for your application and accessories (encoder, triggering device) as necessary. Refer to your unit manual.
8. Ensure that the ground wire attached to the input terminal (TB1) is secured to a reliable earth ground.

Excess Demand Alarm

The excess demand alarm is used to activate a warning device such as a horn, bell, buzzer, or light when the hopper/feeder vibrator remains on past a preset length of time. You can set this time elapse period by following the *Adjusting the Excess Demand Alarm* procedure in Section 4. This alarm does not disable the unit. Shutdown at alarm requires an external relay.

Output is 115 VAC/1 A and 230 VAC/0.5 A through a dry, open contact closure.

Use the following procedure to connect an external alarm:

1. Turn the unit and hopper/feeder off.
2. Loosen the captive screws that secure the electrical control box and open the control box.
3. Connect a pair of leads from the alarm device to terminals 1 and 2 on TB2 inside the electrical control box.
4. Route the alarm leads through the control box access hole.
5. Close the electrical control box and tighten the captive screws.

Section 4
Operation

WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Introduction

This section contains the procedures necessary to operate the hopper/feeder with your hot melt unit. All operator controls and indicators are located on the electrical control box front panel. To obtain optimum adhesive flow from the hopper/feeder, you can make the following adjustments to:

- the flow control gate
- the vibration magnitude
- the level sensitivity
- the excess alarm demand

Initial Startup

Use the following procedure to prepare the hopper/feeder for initial operation.

1. Turn power on to the unit.

CAUTION: Do not use pressure sensitive materials in the hopper/feeder. Pressure sensitive materials will stick to the hopper walls. Use dry adhesive only.

2. Fill the hopper with dry adhesive.
3. Turn the hopper/feeder power on using the toggle switch. The POWER ON indicator LED will light.

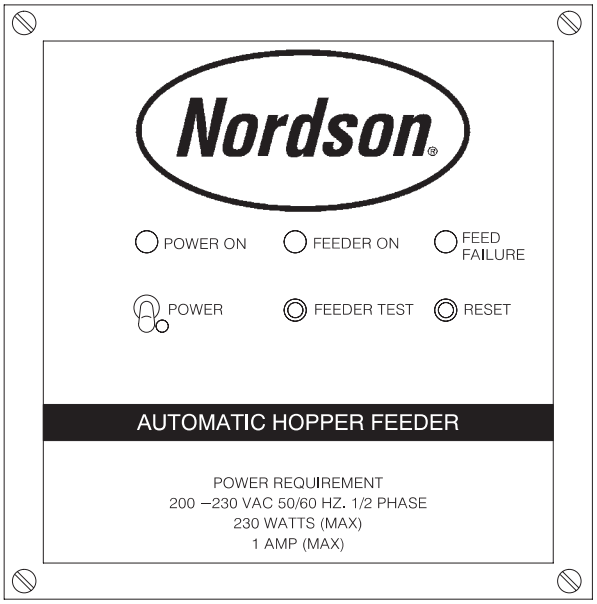


Figure 4-1 Electrical control box front panel

Adjusting the Flow Rate

The flow control gate determines the adhesive flow rate from the hopper/feeder through the chute and into the unit tank. The flow control factory setting is set at the lowest position (slowest flow rate). In this position, dry adhesive can feed from the chute into the hood and unit tank.

If you need to adjust the flow rate, use the following procedure:

1. Remove the hopper/feeder hood lid.
2. Press and hold the FEEDER TEST button to activate the vibrator, then observe the flow of dry adhesive from the chute into the hood and unit tank. Dry adhesive should sprinkle not pour from the chute.
3. Release the FEEDER TEST button. If adjustment is required, loosen the flow control gate knob.

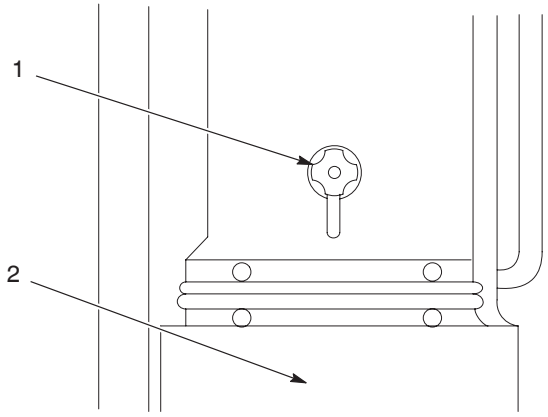


Figure 4-2 Flow control gate

1. Flow control knob
2. Hood

4. Raise and lower the knob (with the gate attached) and press the FEEDER TEST button to feed adhesive from the chute. Observe the flow rate through the top of the hopper/feeder hood. Move the gate up to increase flow and down to decrease flow.
5. Tighten the flow control gate knob when the desired flow rate is achieved.
6. Continue to the next procedure, *Adjusting the Vibration Magnitude.*

Adjusting the Vibration Magnitude

The vibration magnitude setting is based on the size of the adhesive forms used in the hopper/feeder. Generally, larger adhesive forms with a slower flow rate require an increased vibration magnitude. Smaller adhesive forms with a faster flow rate require a decreased vibration magnitude.

Use the following procedure to adjust the vibration magnitude:

1. Remove the hopper/feeder hood lid.
2. Press and hold the Feeder Test button to activate the vibrator, then observe the flow of dry adhesive from the chute into the hood and unit tank. Dry adhesive should sprinkle not pour from the chute.
3. Release the FEEDER TEST button. If adjustment is required, continue to step 4.

WARNING: Disconnect equipment from the line voltage.

4. Disconnect and lockout external power to the unit.
5. Open the electrical control box and locate the vibration magnitude potentiometer R26.

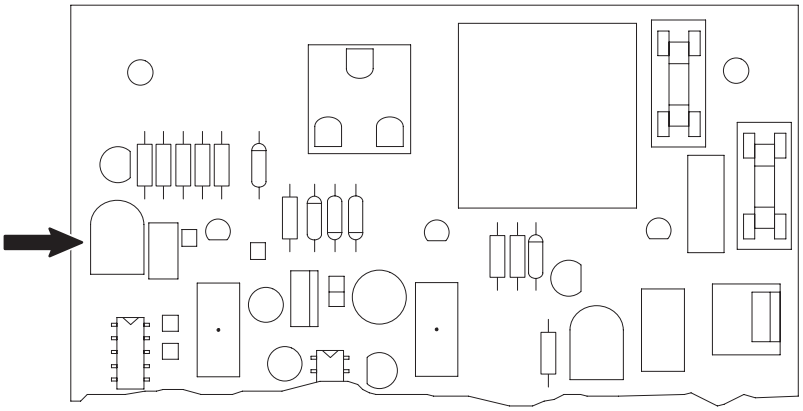


Figure 4-3 Location of potentiometer R26

6. Use a small screwdriver to turn the potentiometer R26 clockwise to increase the vibration or counterclockwise to decrease the vibration.
7. Close the electrical control box. Retighten the captive screws that secure the control box.
8. Apply power to the unit and repeat step 2. Repeat this procedure until the desired flow rate is achieved.
9. Continue to the following procedure.

Adjusting the Level Control Sensitivity

The level control sensor indicates when the adhesive reaches a preset low level. If the level control sensor is properly adjusted, the hopper/feeder fill sequence begins and remains on until the adhesive level is within 2.54 cm (1 in.) of the sensor.

Use the following procedure to set the desired low level.

1. Press and hold the FEEDER TEST button to activate the vibrator, then observe the flow of dry adhesive from the chute into the hood and unit tank. Dry adhesive should sprinkle not pour from the chute.
2. Release the FEEDER RESET button when the level of dry adhesive is 2.54 cm (1 in.) below the sensor probe.

   NOTE: The sensor probe is not damaged by contact with the dry adhesive.

WARNING: Disconnect equipment from the line voltage.

3. Disconnect and lockout power to the unit.
4. Loosen the captive screws that secure the electrical control box, and open the control box.
5. Locate the level control potentiometer and red indicator LED on the lower panel of the level control unit inside the electrical control box.

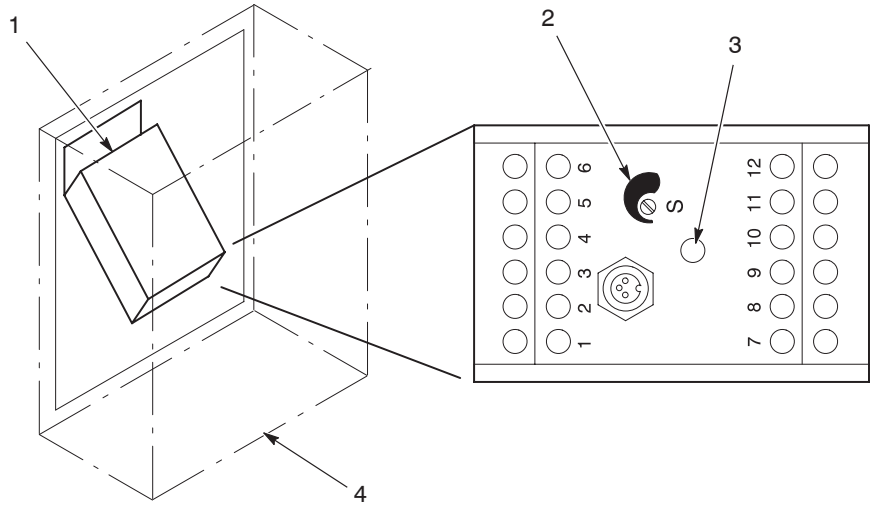


Figure 4-4 Level control sensitivity location

1. Level control unit
2. Level control potentiometer
3. Red LED
4. Electrical control box

Adjusting the Level Control Sensitivity *(contd)*

CAUTION: Do not touch the sensor cable inside the control unit. Touching the cable may activate the vibrator.

6. Use a small screwdriver to locate the sensitivity scale mid-range by turning the level control potentiometer at least 15 turns in one direction, and 7 to 8 turns in the opposite direction. Clockwise adjustment (max) increases probe sensitivity and lowers the adhesive fill level in the hood. Counterclockwise adjustment (min) decreases probe sensitivity and raises the adhesive fill level in the hood.
7. If the desired adhesive fill level is near the max or min limits, complete the following steps:
   a. Remove the sensor plate.
   b. Adjust the position of the sensor in its bracket (see Figure 4-5).
   c. Replace the sensor plate.

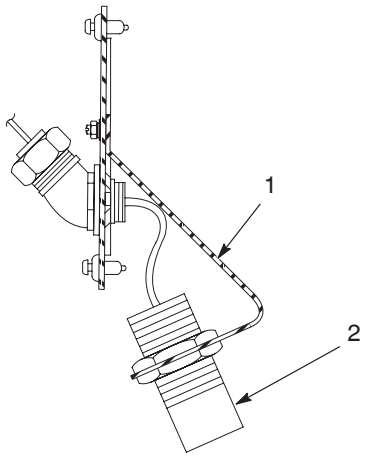


Figure 4-5 Sensor panel assembly

1. Bracket
2. Sensor

8. Close the electrical control box and tighten the captive screws.
9. Apply power to the unit. The red indicator LED on the level control panel will go ON; the yellow FEEDER ON indicator LED located on the front panel of the electrical control box will go OFF. If the yellow light does not turn off, repeat this procedure.
10. Reinstall the hopper/feeder hood lid.

Adjusting the Excess Demand Alarm

The excess demand alarm activates if the vibrator remains on for an excess amount of time. Usually, if the vibrator remains active for more than a ten seconds, the hopper/feeder is out of adhesive or the adhesive is clogged in the chute. This alarm alerts the operator when adhesive is not flowing from the hopper/feeder.

Use the following procedure to set the time elapse before the alarm will activate. Complete this procedure BEFORE you add adhesive to the hopper/feeder unit.

WARNING: Disconnect equipment from the line voltage.

1. Disconnect and lockout power to the unit.
2. Open the electrical control box and locate the excess demand alarm potentiometer R20 on the inside panel.

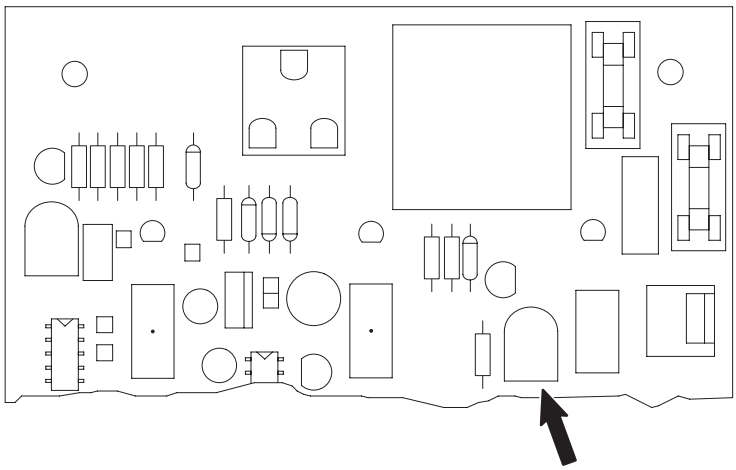


Figure 4-6 Location of potentiometer R20

3. Use a small screwdriver to the turn the potentiometer R20. The time elapse ranges from 90 seconds (full counterclockwise rotation) to 166 seconds (full clockwise rotation).
4. Close the electrical control box, and secure the captive screws.
5. Apply power to the unit. Check for the desired time period before the alarm activates. When the FEEDER ON time exceeds the preset time elapse, the FEED FAILURE indicator LED should light and the external alarm should activate.
6. Repeat this procedure until you reach the desired time period.

Section 5
Maintenance

WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Introduction

This section describes the maintenance procedures for the hopper/feeder:

- material changeover
- cleaning the level control sensor

Daily Maintenance

Perform the following steps daily to ensure optimal performance from your hopper/feeder.

1. Ensure that the hopper/feeder is clean at all times. Do not allow adhesive to spill, overfill, or leak.
2. Keep the loading lid closed and the adhesive supply free of dust and other contaminants during operation. Contaminants may effect hopper/feeder operation and may clog the gun nozzle.
3. Inspect the hopper/feeder periodically for loose electrical and mechanical connections.

Material Changeover

To change to an adhesive type that is not compatible with the adhesive currently in use, select one the following changeover procedures.

Method A

If you do not need to salvage the dry adhesive remaining in the hopper/feeder, use this procedure.

1. Place an heatproof container under the unit drain valve.
2. Open the drain valve with the unit at setpoint temperature and the hopper/feeder power on. The hopper/feeder will cycle on to exhaust the supply of adhesive.

Method B

Use method B or C to change materials and salvage the adhesive supply in the hopper/feeder.

1. Switch the unit and hopper/feeder power OFF.
2. Disconnect the hopper/feeder bellows from the chute.

   NOTE: There may be spillage from the chute and the bellows during this step.

3. Remove the unit from the hopper/feeder mounting brackets.
4. Place a container large enough to hold the remaining dry adhesive from the hopper/feeder at the end of the chute.
5. Switch the hopper/feeder power on using the toggle switch on the electrical control box front panel. The POWER ON indicator LED will light.
6. Press and hold the FEEDER TEST button to activate the hopper/feeder until the supply of dry adhesive is exhausted.
7. Reinstall the unit onto the hopper/feeder mounting brackets.
8. Reconnect the bellows to the chute.
9. Fill with fresh adhesive and resume operation.

Method C

Use the following method for material changeover to salvage the remaining adhesive in the hopper/feeder.

1. Switch the unit power OFF and allow the adhesive in the unit to solidify and cool.
2. Remove the lid from the hopper/feeder hood.
3. Press the FEEDER TEST button to activate the hopper/feeder vibrator.
4. Scoop the adhesive out the hood top opening while the hopper/feeder fills the tank and hood with dry adhesive.
5. Reinstall the hood lid and switch the power OFF when the supply of dry adhesive in the hopper/feeder is exhausted. The POWER ON indicator LED will be off.
6. Bring the unit up to setpoint temperature.
7. Place a heatproof container large enough to hold the adhesive from the tank under the manifold drain valve.
8. Switch the unit pump on and drain the adhesive into the container until the tank is empty.
9. Switch the unit pump off, and close the drain valve and remove the container with the collected adhesive.
10. Reinstall the lid on the hopper/feeder hood.
11. Fill with fresh adhesive and resume operation.

Cleaning the Level Control Sensor

Use the following procedure to clean the Level Control Sensor. This procedure should be performed when the hopper/feeder does not cycle on at the preset adhesive fill level.

1. Switch the hopper/feeder power off using the toggle switch on the electrical control box front panel. The POWER ON indicator LED will be off.
2. Remove the lid from the hopper/feeder hood.
3. Place a heatproof container large enough to hold the adhesive from the unit tank under the manifold drain valve.
4. Bring the unit up to setpoint temperature.
5. Switch the unit pump ON and drain the adhesive into the container until the tank is empty.
6. After the tank is empty, switch the pump off.
7. Close the drain valve and remove the container with the collected adhesive.
8. Remove the four captive screws that secure the sensor panel assembly to the hopper/feeder hood.

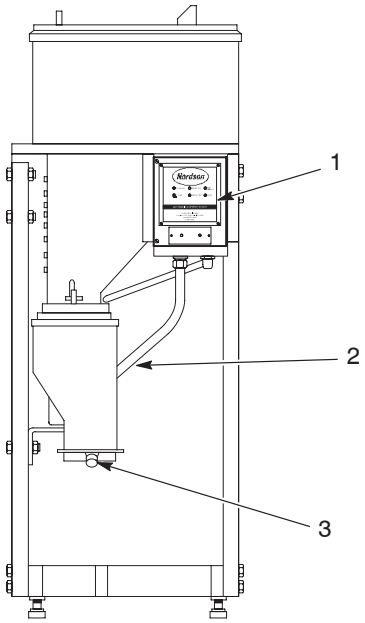


Figure 5-1 Sensor probe location

1. Electrical control box
2. Hopper/feeder hood
3. Level control sensor probe

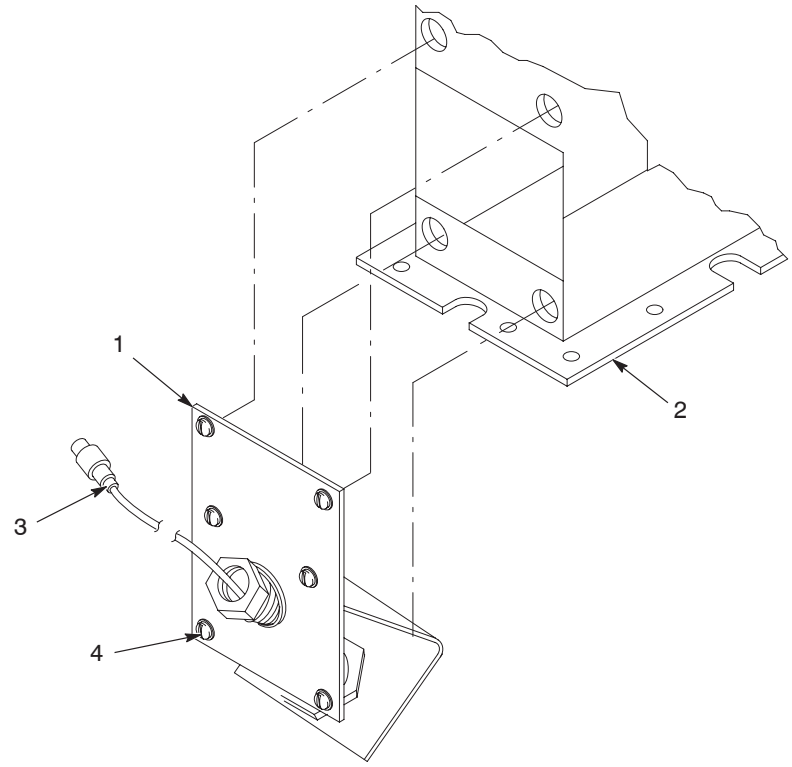


Figure 5-2 Sensor probe assembly

1. Sensor panel
2. Hood
3. Sensor assembly
4. Captive screw

9. Carefully remove the sensor panel assembly from the hopper/feeder hood.
10. Use a lint-free cloth moistened with Nordson Type R fluid to wipe the level control sensor probe free of any debris.
11. Secure the sensor panel assembly to the hopper/feeder hood using the captive screws in the panel assembly.
12. Reconnect the flexible conduit fitting to sensor panel assembly.
13. Resume operation.

Section 6
Troubleshooting

WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Introduction

This section describes problems that can occur during the operation of hopper/feeder units, their probable causes, and corrective action for each probable cause. If you cannot solve the problem with the information given here, contact your local Nordson representative for help. The following diagnostic procedures and the hopper/feeder wiring schematic are included in this section:

- checking the vibrator voltage
- checking the vibrator air gap

Troubleshooting Table

Problem	Possible Cause	Corrective Action
1. Feeder ON indicator LED does not work	No input power	Ensure that input power to hopper/feeder measures 230 VAC between TB1-1 and TB1-2. If the input power supply is correct, replace the control board. Refer to Section 7.
2. Unit tank does not fill when hopper/feeder is OFF	Level control sensitivity not adjusted correctly	Adjust level control sensitivity as instructed Section 4.
	Circuit board failure	Check the continuity between wire 5 and 6 in the electrical control box. If continuity is correct, replace the printed control board. Refer to Section 7.
	Defective wires	Check the continuity between TB2-3 and TB2-4. If the continuity is incorrect, replace wires 5 and 6.
	Loose terminal block connections	Check the continuity between 5A and 6A. If there is no continuity, inspect TB2 for loose connections and tighten.
	Vibrator failure	Check vibrator voltage as instructed in this section. If the vibrator is inoperable, contact your Nordson representative.
3. Unit tank does not fill and the hopper/feeder vibrator is ON	Adhesive level is low	Check adhesive supply in hopper. Add adhesive as needed.
	Adhesive is bridging	Check adhesive for bridging. Increase the vibration magnitude if bridging occurs. Refer to Section 4.
	Adhesive is sticking	Check adhesive for sticking. If sticking occurs, clean the chute and increase vibration magnitude. Refer to Section 4.
	Flow control gate is too close	Check the position of the flow control gate. If the gate is too close, adjust the flow control gate as instructed in Section 4.

Continued...

Problem	Possible Cause	Corrective Action
3. Unit tank does not fill and the hopper/feeder vibrator is ON *(contd)*	Vibration magnitude setting is inaccurate	Check the maximum setting of the vibrator magnitude. If the maximum setting is not sufficient for the adhesive, adjust the vibrator air gap as instructed in this section.
	Incorrect vibrator air gap	Check the vibrator air gap setting is accurate. If the setting is incorrect, adjust the vibrator air gap as instructed in this section.

Checking the Vibrator Voltage

Use the following procedure to determine whether the circuit board or the vibrator needs replacement.

WARNING: Disconnect equipment from the line voltage.

1. Disconnect and lock out external power to the unit.
2. Loosen the captive screws that secure the electrical control box, and then open the control box.
3. Attach a digital voltmeter to leads TB2-3 and TB2-4. Refer to the wiring diagram in this section for the location of TB2.
4. Apply 230 VAC, single phase, input power to the hopper/feeder unit.
5. Use a small screwdriver with an insulated handle to turn potentiometer R26 fully clockwise.
6. Remove the hopper/feeder hood lid and manually fill the unit tank with dry adhesive until the level is within 2.54 cm (1 in.) of the hopper/feeder sensor probe.
7. Turn the hopper/feeder ON using the toggle switch on the front panel of the electrical control box. The POWER ON indicator LED will light.
8. Press and hold the FEEDER TEST button to activate the vibrator, and then measure the voltage at TB2-3 and TB2-4. Voltage should approximately measure your line voltage.

Checking the Vibrator Voltage *(contd)*

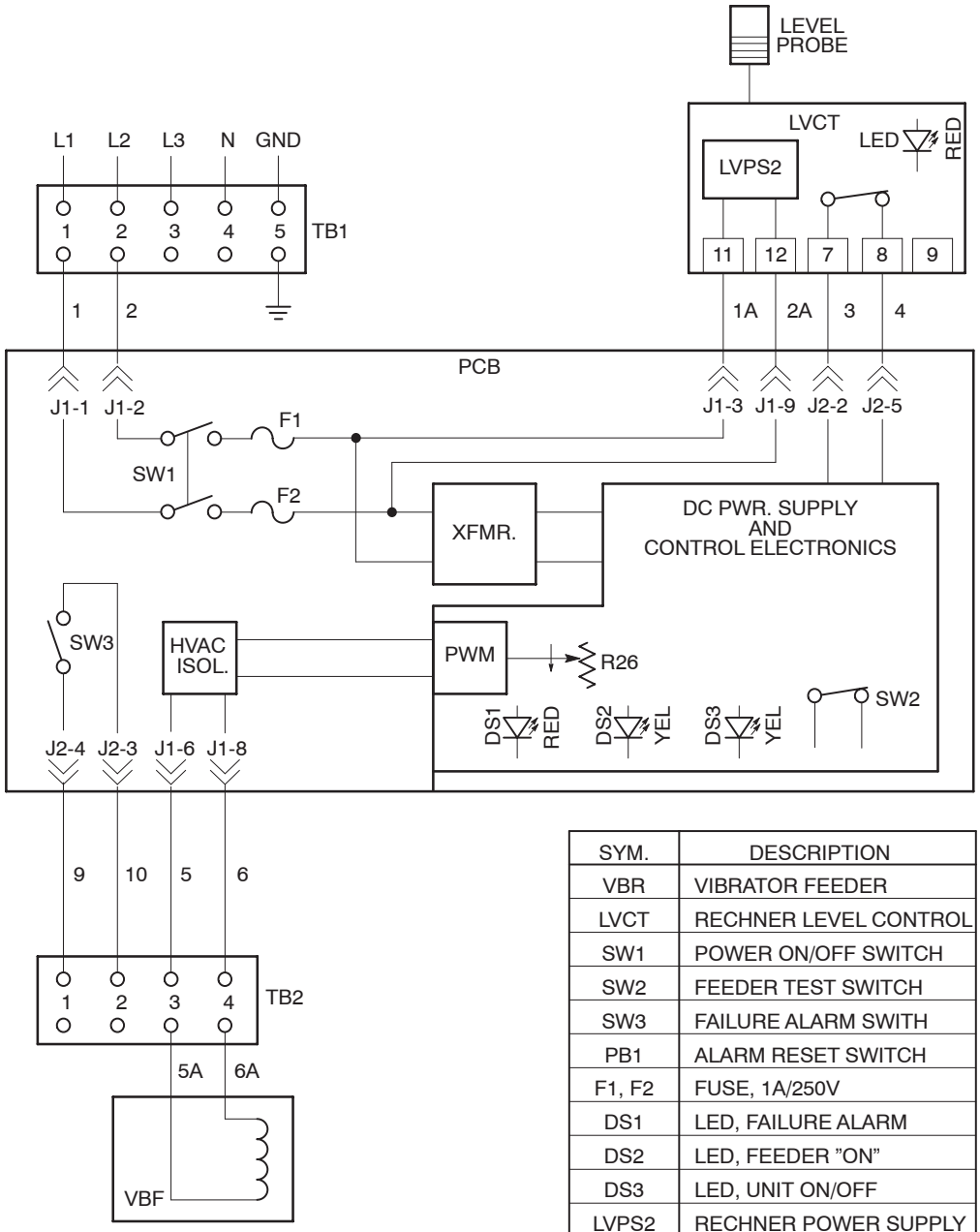
9. Release the FEEDER TEST button, and turn the hopper/feeder off.
10. Remove input power to the unit.
11. Remove the voltmeter leads from the electrical control box, and close the electrical control box. Tighten the two captive screws.
12. Replace the hopper/feeder hood lid.
13. Contact your Nordson representative, if the vibrator voltage is not approximate to your line voltage. You may need a replacement circuit board or vibrator. Resume operation if the vibrator voltage equals your line voltage .

Checking the Vibrator Air Gap

Use the following procedure to determine and adjust the vibrator air gap.

WARNING: Disconnect equipment from the line voltage.

1. Disconnect and lock out external power to the unit.
2. Remove the four cap screws that secure the vibrator cover and remove the cover.
3. Insert a Feeler gauge between the magnet assembly and the vibrator plate. Build up the appropriate thickness with the Feeler gauge to measure the distance between the center of the magnet assembly and vibrator plate.
4. If the air gap is not between 0.216 and 0.229 cm (0.085 to 0.090 inches), loosen the four cap screws that secure the magnet assembly and shift the assembly slightly back or forth.
5. Tighten the four cap screws once the air gap is between 0.216 and 0.229 cm (0.085 and 0.090 inches).
6. Replace the vibrator cover and reinstall the cover cap screws.
7. Resume operation.



SYM.	DESCRIPTION
VBR	VIBRATOR FEEDER
LVCT	RECHNER LEVEL CONTROL
SW1	POWER ON/OFF SWITCH
SW2	FEEDER TEST SWITCH
SW3	FAILURE ALARM SWITH
PB1	ALARM RESET SWITCH
F1, F2	FUSE, 1A/250V
DS1	LED, FAILURE ALARM
DS2	LED, FEEDER ”ON”
DS3	LED, UNIT ON/OFF
LVPS2	RECHNER POWER SUPPLY
XFMR	TRANSFORMER
TB1	TERMINAL BLOCK, 5 POS.
TB2	TERMINAL BLOCK, 4 POS.
PCB	PRINTED CIRCUIT BOARD

Figure 6-1 Hopper/feeder wiring schematic

Section 7
Repair

WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Introduction

This section contains information for the repair and replacement of hopper/feeder components. The procedures in this section describe how to replace the following hopper/feeder equipment:

- vibrator
- sensor panel
- printed circuit board

Replacing the Vibrator

Use the following procedure to replace the hopper/feeder vibrator.

1. Disconnect and lock out input electrical power to the unit.
2. Open the hopper/feeder electrical control box and disconnect the following wires from TB-2:

Wire	Terminal
5A	4
6A	3

Replacing the Vibrator *(contd)*

3. Remove the split lockwashers and hex nuts that secure the vibrator assembly to the hopper/feeder chute. If necessary use the following procedure to complete this step:
   a. Hold the flat head screws that protrude through the bottom of the chute stationary.
   b. Detach the hood form the hopper/feeder bellows.
   c. Remove the unit (with the hood attached) from hopper/feeder frame.
   d. Raise the flow control gate to its uppermost position and reach into the chute with a flat head screwdriver to remove the lockwashers and hexhead nuts.

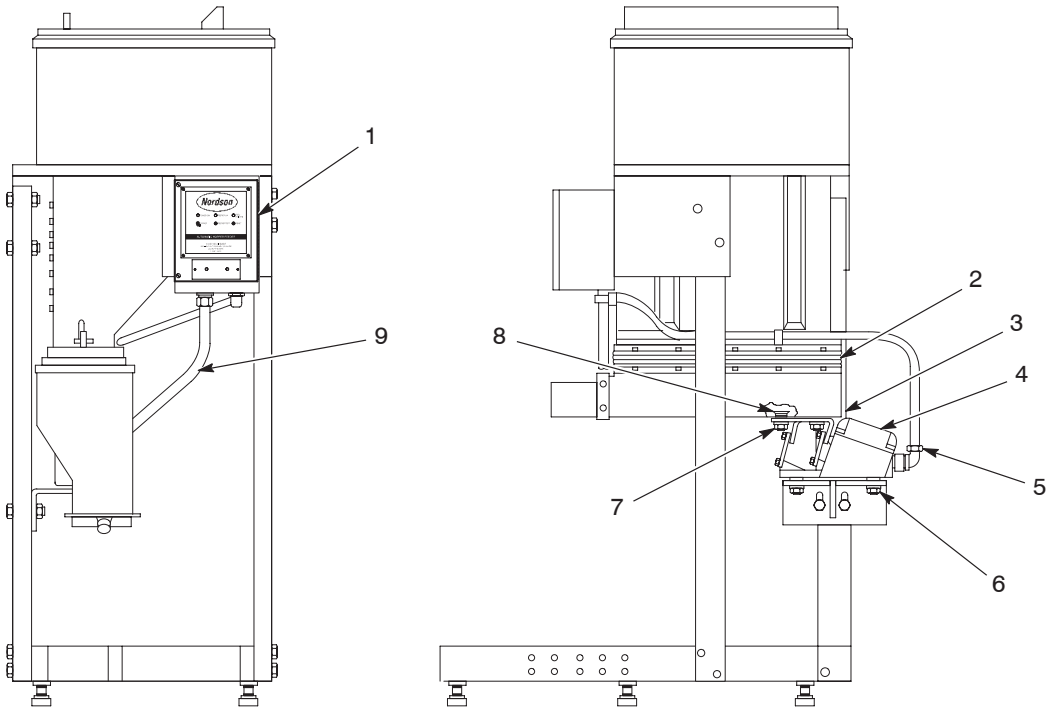


Figure 7-1 Location of the vibrator

1. Electrical control box
2. Bellows
3. Chute
4. Vibrator
5. Flexible conduit fitting
6. Hex nuts
7. Split lockwashers
8. Flat head screws
9. Flexible conduit

4. Remove the hex nuts and split lockwashers that secure the vibrator to the vibrator support.
5. Disconnect the flexible conduit fitting from the elbow at the rear of the vibrator.
6. Remove the vibrator assembly from the hopper/feeder then, pull the vibrator leads through the flexible conduit.
7. Secure the new vibrator to the vibrator support using the hex nuts and split lockwashers removed in step 4.
8. Thread the new vibrator leads through the flexible conduit and into the electrical control box.
9. Reconnect the following wires on TB2:

Wire	Terminal
5A	4
6A	3

10. Reconnect the flexible conduit fitting to the elbow at the rear of the vibrator.
11. Secure the vibrator assembly to the hopper/feeder chute using the split lockwashers and hex nuts removed in step 3.
12. Resume operation.

Replacing the Sensor Panel

Use the following procedure to replace the sensor panel.

WARNING: Disconnect equipment from the line voltage.

1. Disconnect and lock out input electrical power to the unit.
2. Open the hopper/feeder electrical control box and disconnect the single sensor assembly lead from its connection in the control box.
3. Remove the four captive screws that secure the sensory panel assembly to the hopper/feeder hood.

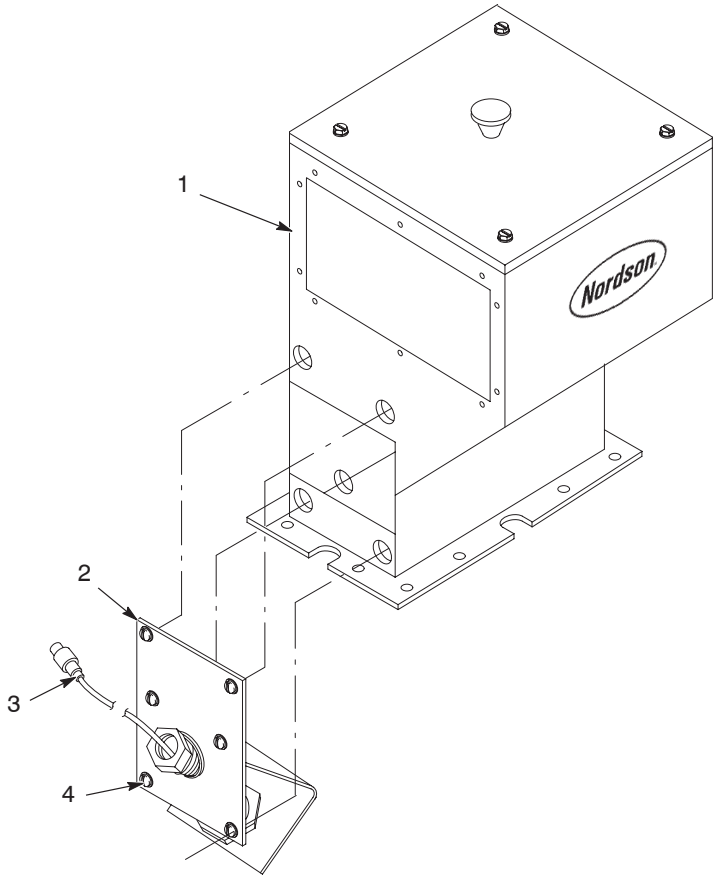


Figure 7-2 Sensor panel assembly

1. Hood
2. Panel assembly
3. Sensor assembly
4. Captive screws

4. Remove the sensor panel from the hopper/feeder hood, then pull the sensor lead through the flexible conduit.
5. Secure the new sensor panel assembly to the hopper/feeder hood using the captive screws in the panel assembly.
6. Thread the sensor lead through the flexible conduit and into the electrical control box.
7. Connect the lead to its connection in the control box.
8. Reconnect the flexible conduit fitting to the sensor panel assembly.

Replacing the Printed Circuit Board

Use the following procedure to replace the printed circuit board.

WARNING: Disconnect equipment from the line voltage.

1. Disconnect and lock out input electrical power to the unit.
2. Loosen the captive screws that close the electrical control box, then open the control box cover.

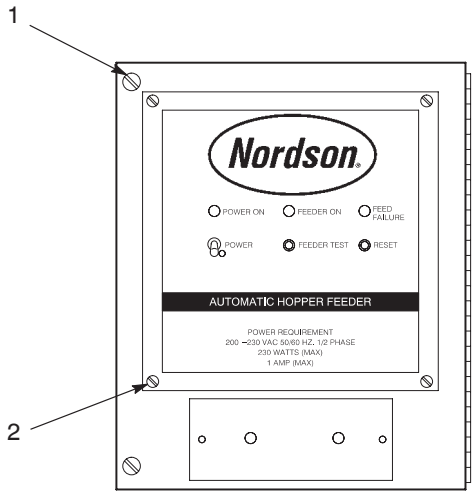


Figure 7-3 Printed circuit board

1. Captive screws
2. Flat head screws

3. Unplug the wiring harness socket from connector J2 on the printed circuit board mounted in the electrical control box.
4. Remove the hex nuts, split lockwashers, and flat head screws that secure the circuit board.
5. Remove the circuit board from the control box door.
6. Position the new circuit board in place, then secure it with the hex nut screws removed in step 4.
7. Plug the wiring harness socket to connector J2 on the new printed circuit board.
8. Close the electrical control box, then tighten the two captive screws in the box cover.
9. Resume operation.

Section 8
Parts

Using the Illustrated Parts Lists

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use these five-column parts lists, and the accompanying illustrations, to describe and locate parts correctly. The following chart provides guidance for reading the parts lists.

The number in the *Item* column corresponds to the circled item number in the parts list illustration. A dash in this column indicates that the item is an assembly.

The number in the *Part* column is the Nordson part number you can use to order the part. A series of dashes indicates that the part is not saleable. In this case, you must order either the assembly in which the part is used or a service kit that includes the part.

The *Description* column describes the part and sometimes includes dimensions or specifications.

The *Note* column contains letters that refer to notes at the bottom of the parts list. These notes provide important information about the part.

The *Quantity* column tells you how many of the part is used to manufacture the assembly shown in the parts list illustration. A dash or AR in this column indicates that the amount of the item required in the assembly is not quantifiable.

Item	Part	Description	Quantity	Note
—	0000000	Assembly A	—	
1	000000	• Part of assembly A	2	A
2	- - - - - -	• • Part of item 1	1	
3	0000000	• • • Part of item 2	AR	
NS	000000	• • • • Part of item 3	2	

NOTE A: Important information about item 1

AR: As Required

NS: Not Shown

Hopper/Feeder Unit Parts

See Figures 8-1 and 8-2.

Item	Part	Description	Quantity	Note
—	121626	Assembly, hopper/feeder, 2300, FM-130, 3000	–	
—	1057532	Assembly, hopper/feeder, P10	–	
01	100733	• Hopper assembly	1	A
02	984703	• Nut, hex, M6, steel	4	
03	983409	• Washer, lock, split, M6	4	
04	804137	• Connector, 90-degree, elbow, $^1/_2$ conduit	1	
05	815394	• Plate, retaining, 2.00 in. long	2	
06	100611	• Bellows, hood	1	
07	118245	• Hood assembly	1	A
08	816367	• Screw, hex, cap, M4 x 7-6g x 12	8	
09	983112	• Washer, flat, 0.188 x 0.625 x 0.053	8	
10	815392	• Plate, retaining, 5.90 in. long	2	
11	985112	• Rivet, pop, $^3/_{32}$ x 0.250 in.	2	
12	- - - - - -	• Tag, information, stamping	–	
13	120832	• Panel assembly, sensor	1	
14	120965	• Frame assembly, 2300, FM-130, 3000	1	A
NS	1057533	• Frame assembly, P10	1	A
15	815335	• Chute, machined	1	
16	815396	• Plate, retaining, 3.90 in.	2	
17	815395	• Plate, retaining, 8.92 in.	2	
18	815393	• Plate, retaining, 5.76 in.	4	
19	101651	• Electrical control box assembly	1	A
20	101306	• Conduit, flex, electric, 28.00 in.	1	
21	939122	• Seal, conduit fitting, $^1/_2$ in.	3	
22	- - - - - -	• Connector, straight, $^1/_2$ in.	2	
23	816626	• Closure, heat shield assembly	1	
24	815391	• Plate, retaining, 19.40 in.	4	
25	983404	• Washer, lock, split, M8	4	
26	984707	• Nut, hex, M8	4	
27	815918	• Screw, flat, M8 X 1.25, 30 long	4	
28	815835	• Strap, pipe $^1/_2$ in.	2	
29	100609	• Bellows, chute	1	
30	815323	• Vibrator, hopper/feeder	1	
31	- - - - - -	• Conduit, flex, electric, 51.00 in.	1	
32	984130	• Nut, hex, heavy, $^1/_4$-20	4	
33	983140	• Washer, lock, split, $^1/_4$ in.	4	
NS	1057816	• Adapter assembly, P10	1	A, B

NOTE A: Refer to separate parts list.

B: This assembly is present only on ProBlue P10 units.

NS: Not Shown

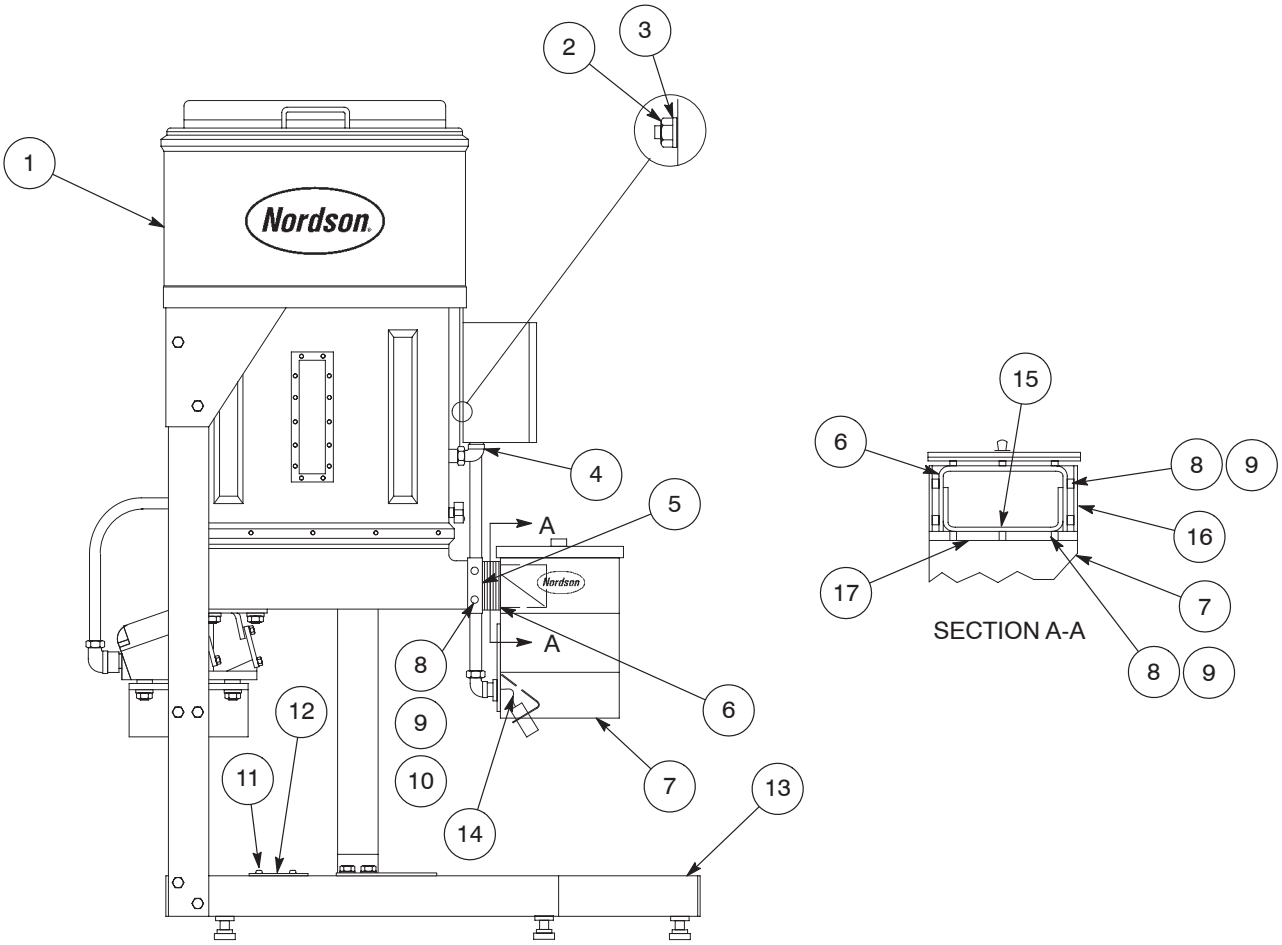


Figure 8-1 Hopper/feeder assembly parts (side view)

Hopper/Feeder Unit Parts *(contd)*

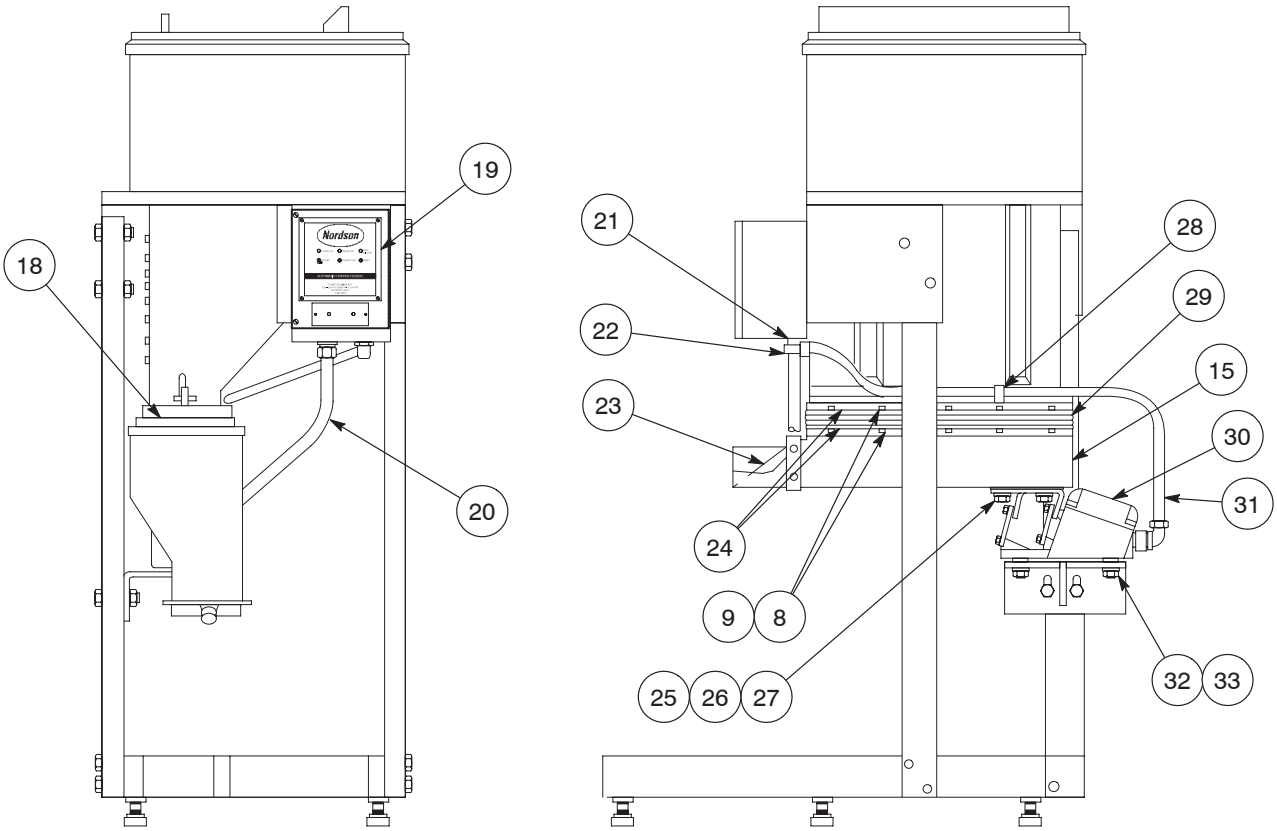


Figure 8-2 Hopper/feeder assembly parts (front and side view)

ProBlue P10 Adapter Assembly Parts

See Figure 8-3.

Item	Part	Description	Quantity	Note
—	1057816	Adapter assembly, P10	—	
1	1054005	• Plate, hood mounting	1	
2	982029	• Screw, socket, M5 x 30	8	
3	118199	• Gasket, mounting/hood	1	
4	982166	• Screw, socket, M5 x 16	8	
5	983422	• Washer, lock, external, M5	8	
6	983418	• Washer, flat, oversized, M5	8	

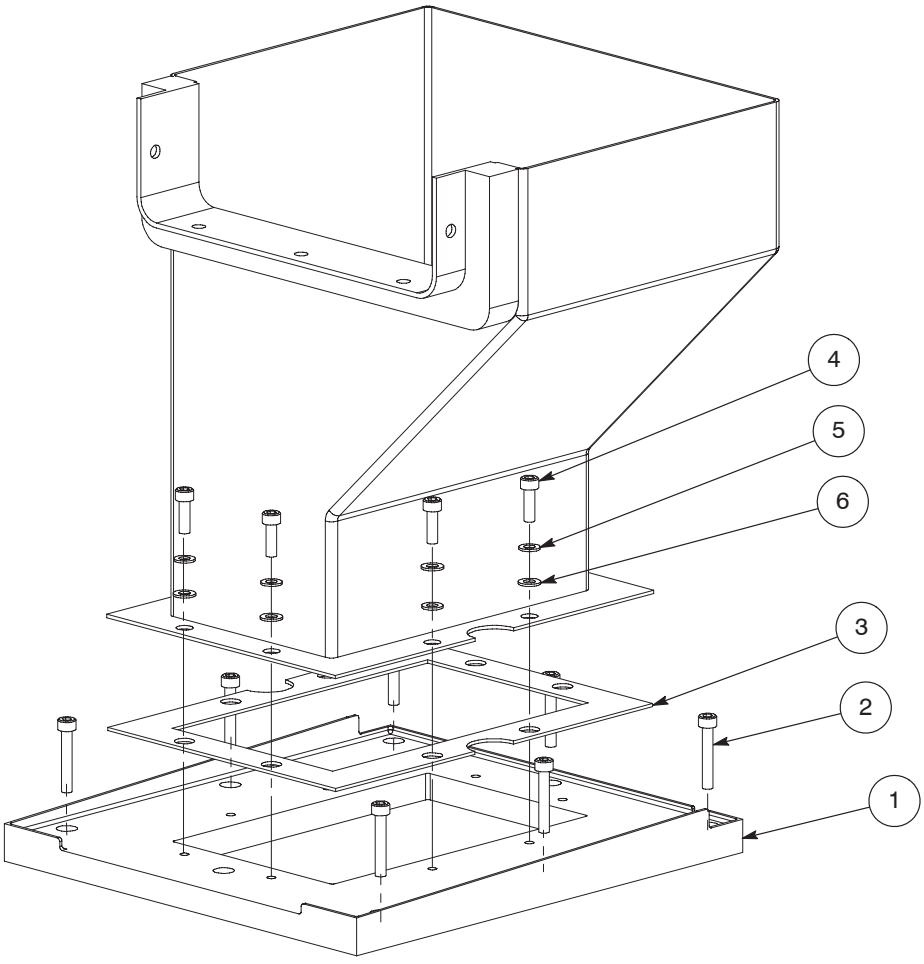


Figure 8-3 ProBlue P10 adapter assembly parts

Electrical Control Box Assembly Parts

See Figure 8-4.

Item	Part	Description	Quantity	Note
—	101651	Electrical control box assembly	—	
01	101878	• Board	1	
02	101140	• Enclosure, electrical	1	
03	- - - - - -	• Tag, warning, disconnect power	1	
04	101307	• Gasket, electrical enclosure	1	
06	272131	• Stud, ground, with accessories	2	
07	105379	• Mounting, plate, electric, painted	1	
08	933214	• Terminal, female, insulated, 16–14	1	
09	982242	• Screw, chez, slotted, M2 x 12	2	
–	815803	• Harness, wire	1	
10	816607	• Strip, marker, 4-station	1	
11	933297	• Strip, marker, 5-station	1	
12	982124	• Screw, pan, slotted, M4 x 20	4	
13	815743	• Bracket, level control	1	
14	816587	• Controller, Rechner	1	
15	983403	• Washer, lock, split, M4	4	
16	984715	• Nut, hex, M4	2	
17	982005	• Screw, chez, slotted, M4 x 10	2	
18	242837	• Mount, cable strap	1	
20	984101	• Nut, hex, machine, 6-32	4	
21	981031	• Screw, flat, 6-32 x 0.375, slotted	4	
22	983102	• Washer, lock, split, #6	4	
23	984120	• Nut, hex, machine, 10-32	1	
24	985101	• Rivet, pop, $^{3}/_{32}$ x 0.125, aluminum	2	

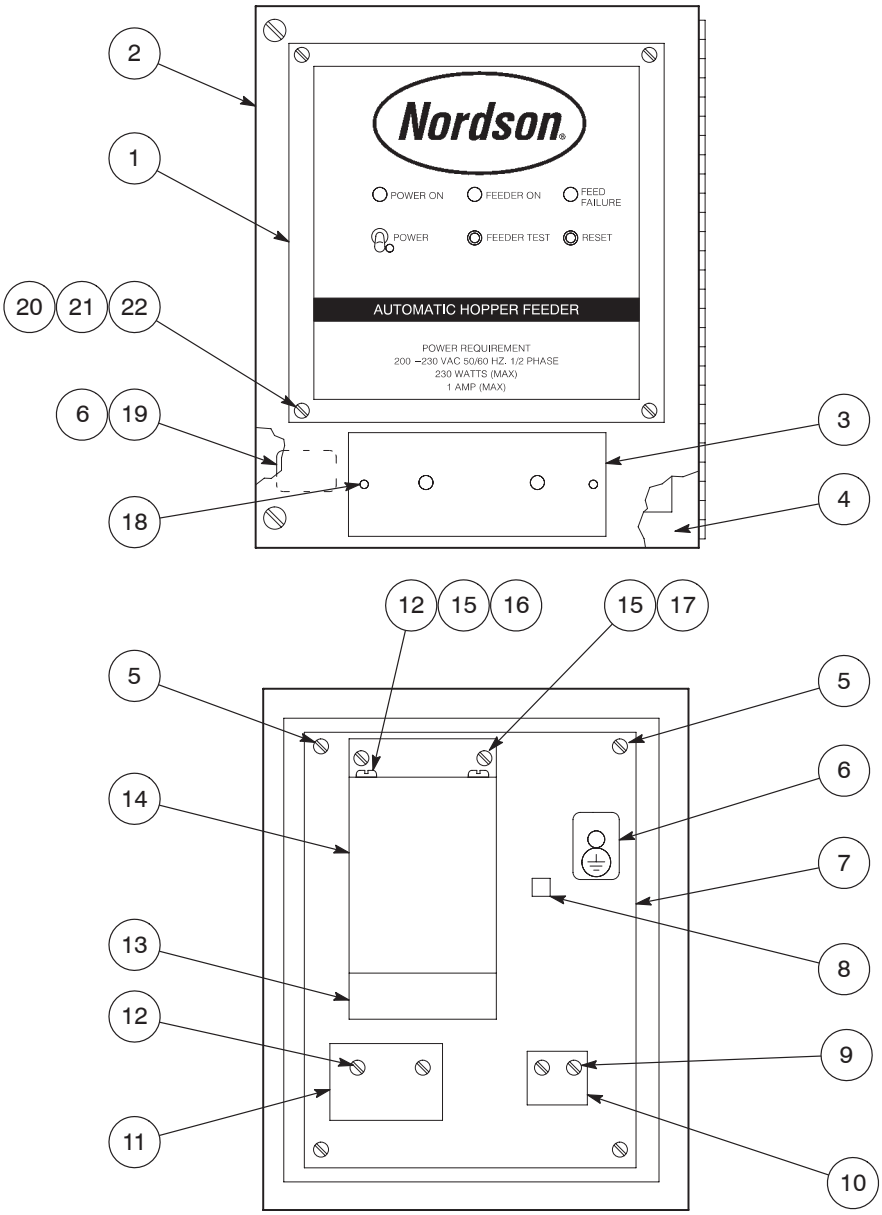


Figure 8-4 Electrical control box assembly parts

Hood Assembly Parts

See Figure 8-5.

Item	Part	Description	Quantity	Note
—	118245	Hood assembly	—	
01	118136	• Hood, weldment	1	
02	981856	• Nut, special	8	
03	118244	• Lid assembly, hood	1	
04	101741	• Receptacle, $^1/_4$-turn, sealed	8	
05	101739	• Spacer, conical, $^1/_2$ in.	2	
06	984529	• Nut, spring, push-on, 0.125	3	
07	940060	• O-ring, Viton, 0.125 x 0.250 x 0.063	3	
08	275075	• Nameplate, oval	1	
09	120832	• Panel assembly, sensor	1	

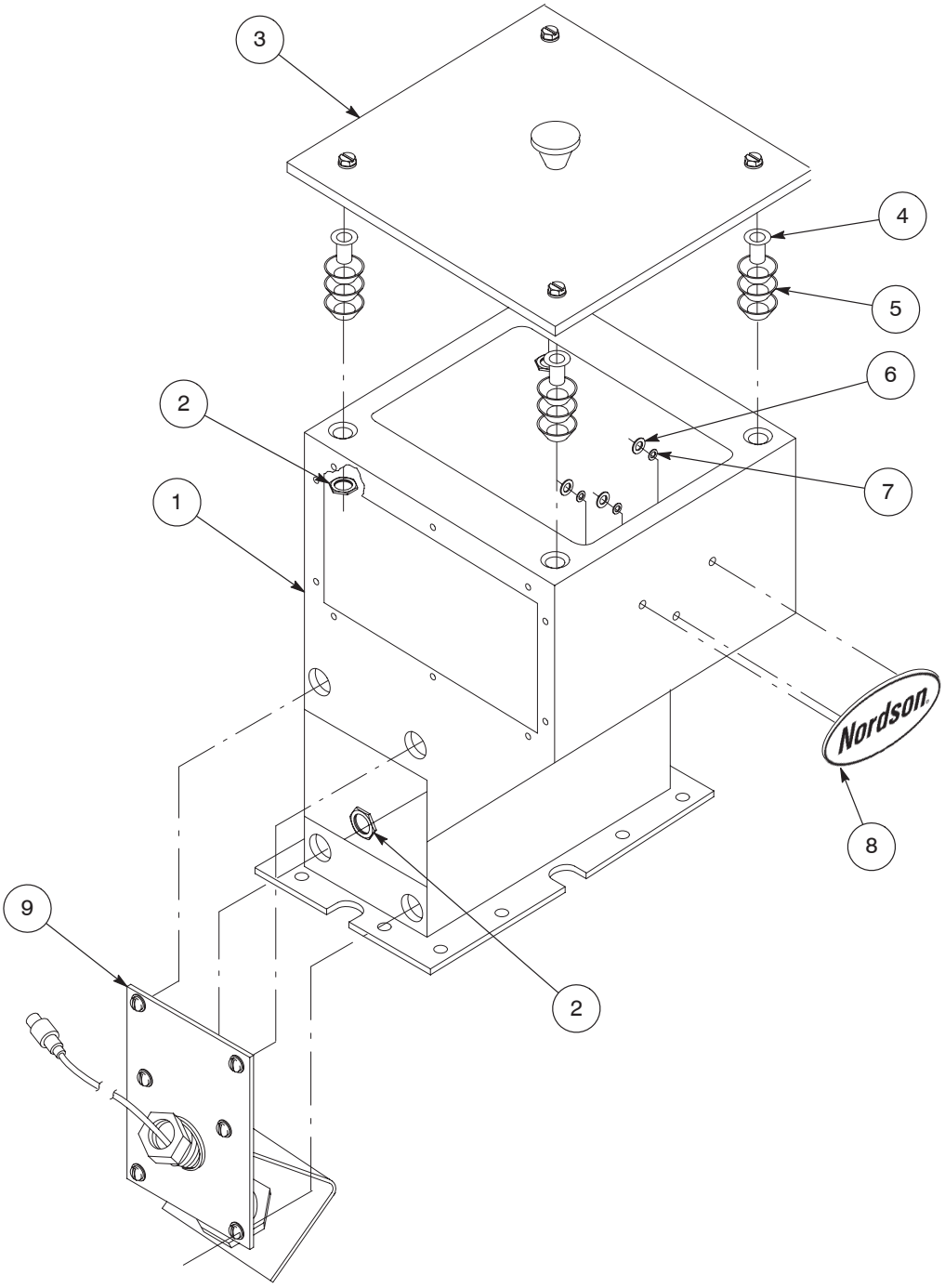


Figure 8-5 Hood assembly parts

Frame Assembly Parts

The frame assembly of automatic hopper/feeder units for Series 2300, FM-130, and Series 3000 units differs from the frame assembly of ProBlue P10 units. Be sure to refer to the correct parts list.

Series 2300, FM-130, and Series 3000 Units

See Figure 8-6.

Item	Part	Description	Quantity	Note
—	120965	Frame assembly, 2300, FM-130, 3000	—	
01	983417	• Washer, flat, oversized, M8	6	
02	983404	• Washer, lock, split, M8	4	
03	984224	• Nut, hex, M8	0	
04	982107	• Screw, hex, cap, M8 x 70	6	
05	123812	• Support, frame	1	
06	123811	• Leg, frame	1	
07	123809	• Support, vibrator	1	
08	982252	• Screw, hex, cap, M8 x 16	6	
09	120946	• Mount, support, plate	1	
10	123808	• Base, frame	1	
11	123810	• Leg, frame, vibrator	1	
12	816063	• Plug, rectangular, 1.5 x 3 x 11 gauge	5	
13	982101	• Screw, hex, cap, M8 x 90	4	
14	815386	• Leveler	4	

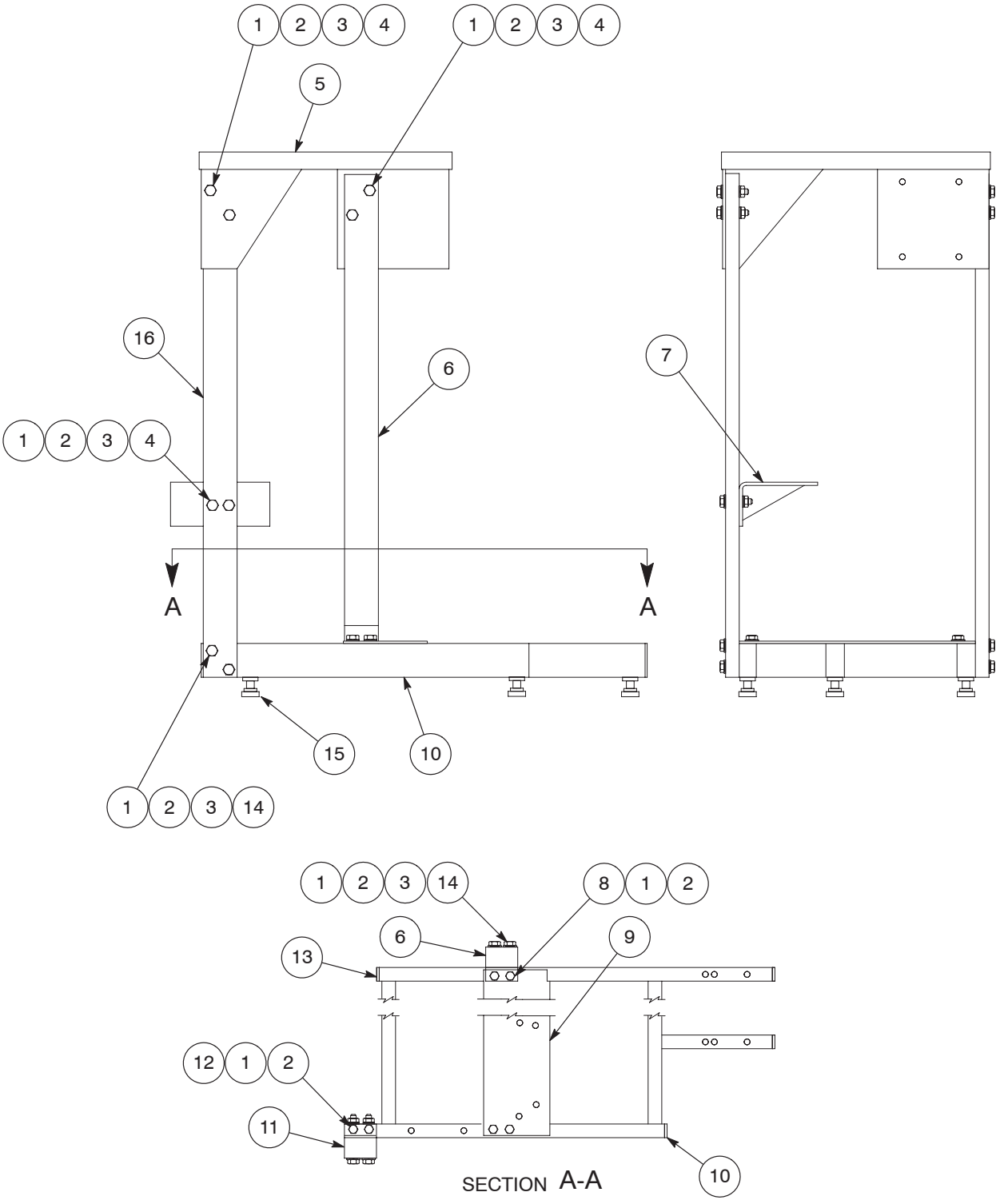


Figure 8-6 Frame assembly parts for Series 2300, FM-130, and Series 3000 units

ProBlue P10 Units

See Figure 8-7.

Item	Part	Description	Quantity	Note
—	1057533	Frame assembly, P10	—	
01	983417	• Washer, flat, oversized, M8	6	
02	983404	• Washer, lock, split, M8	4	
03	984224	• Nut, hex, M8	0	
04	982107	• Screw, hex, cap, M8 x 70	6	
05	982101	• Screw, hex, cap, M8 x 90	4	
06	123808	• Base, frame	1	
07	815386	• Leveler	4	
08	1054191	• Leg, frame	1	
09	123809	• Support, vibrator	1	
10	123812	• Support, frame	1	
11	1054190	• Leg, frame, vibrator	1	
12	982252	• Screw, hex, cap, M8 x 16	6	
13	120946	• Mount, support, plate	1	
14	816063	• Plug, rectangular, 1.5 x 3 x 11 gauge	5	
15	1054092	• Plate, base	1	
16	1051114	• Screw, hex, cap, M8 x 12	6	
17	981528	• Screw, socket, M8 x 30	3	
18	—	• Item no. not used	—	
19	1054899	• Foot, leveler, $^1/_2$-13 x 7 in. overall	1	

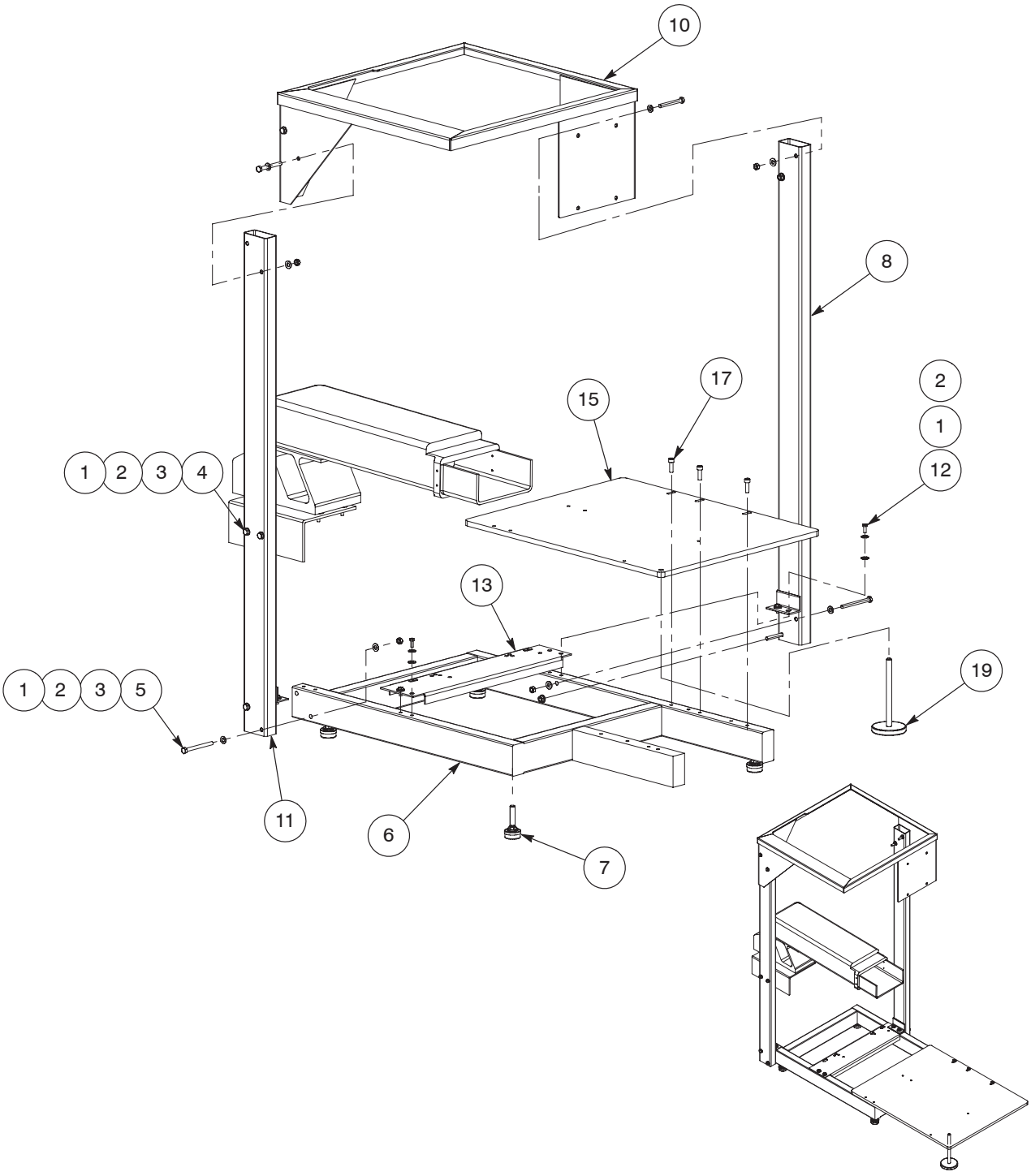


Figure 8-7 Frame assembly parts for ProBlue P10 units

Hopper Assembly Parts

See Figure 8

Item	Part	Description	Quantity	Note
—	100733	Hopper assembly	—	
01	100538	• Hopper/lid assembly	1	
- - - - - -	982300	• • Screw, pan, slotted, M4 x 30	6	
- - - - - -	983402	• • Washer, flat, M4	6	
- - - - - -	983403	• • Washer, lock, split, M4	6	
- - - - - -	984720	• • Nut, hex, M4, with Nylok	6	
- - - - - -	816381	• • Stiffener, lid	2	
- - - - - -	815919	• • Rivet, pop, $^1/_8$ in. D	12	
02	981131	• Screw, hex, 10-32 x 0.625	2	
03	983123	• Washer, flat, 0.219 x 0.50 x 0.049 in.	2	
04	985124	• Rivet, pop, $^1/_8$ x 0.50 in.	4	
05	815921	• Gasket	1	
06	815922	• Window	1	
07	815923	• Plate, back-up	1	
08	816612	• Gate, flow, restrictor	1	
09	815910	• Knob	1	
10	100929	• Handle	1	
11	—	• Item no. not used	—	
12	983527	• Washer, flat, 0.344 x 1.125 x 0.063 in.	1	
13–17	—	• Item nos. not used	—	
18	109535	• Plate, front, window, painted	1	
19	600065	• Decal, Nordson	1	

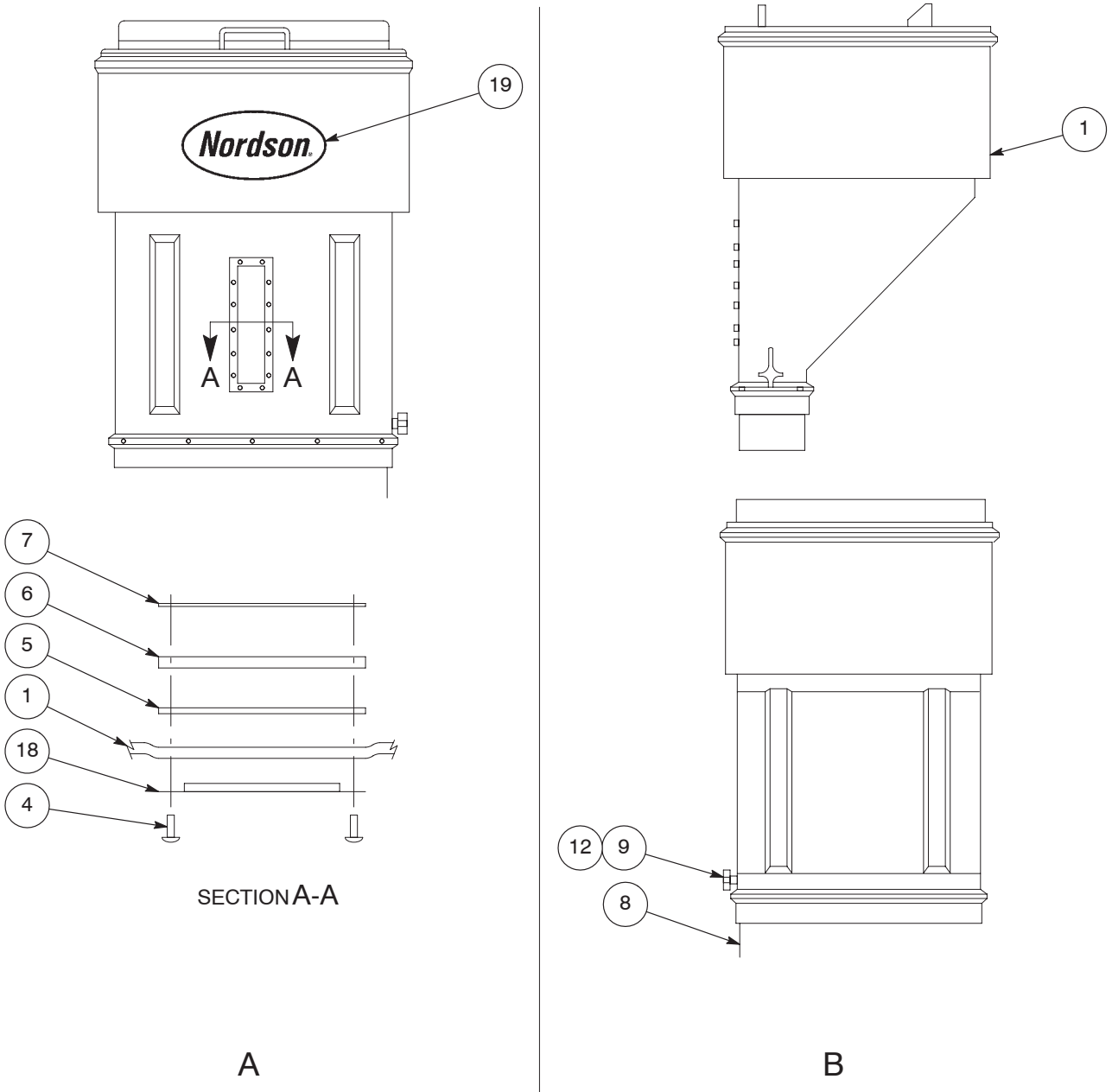


Figure 8-8 Hopper assembly parts

A. Front view

B. Side view

Ship-With Kit Parts

The ship-with kit varies depending on the type of unit onto which the automatic hopper/feeder is installed. Be sure to refer to the correct parts list.

Series 2300 and FM-130 Units

See Figure 8-9.

Item	Part	Description	Quantity	Note
—	121688	Kit, ship-with, hopper/feeder, 2300, FM-130	—	
- - - - - -	124435	• Adapter, hood, assembly, 2300, FM130	1	
01	984723	• • Nut, hex ,cap. M5 x 0.8	8	
02	983401	• • Washer, lock, split, M5	8	
03	983408	• • Washer, flat, narrow, M5	11	
04	118199	• • Gasket, mounting/hood	1	
05	982298	• • Screw, hex, M5 x 45	3	
06	124522	• • Adapter, 2300, hopper/feeder	1	
07	101855	• • Grommet, 0.44 x 26.47, tank	1	
- - - - - -	101742	• Screw, captive, $^1/_4$-turn, 0.12–0.149	4	
- - - - - -	120825	• Mounting bracket, 22, 23, 34, 35	1	
- - - - - -	982252	• Screw, hex, cap, M8 x 16	4	
- - - - - -	983404	• Washer, lock, split, M8	8	
- - - - - -	983417	• Washer, flat, oversized, M8	4	
- - - - - -	983404	• Washer, lock, split, M8	4	

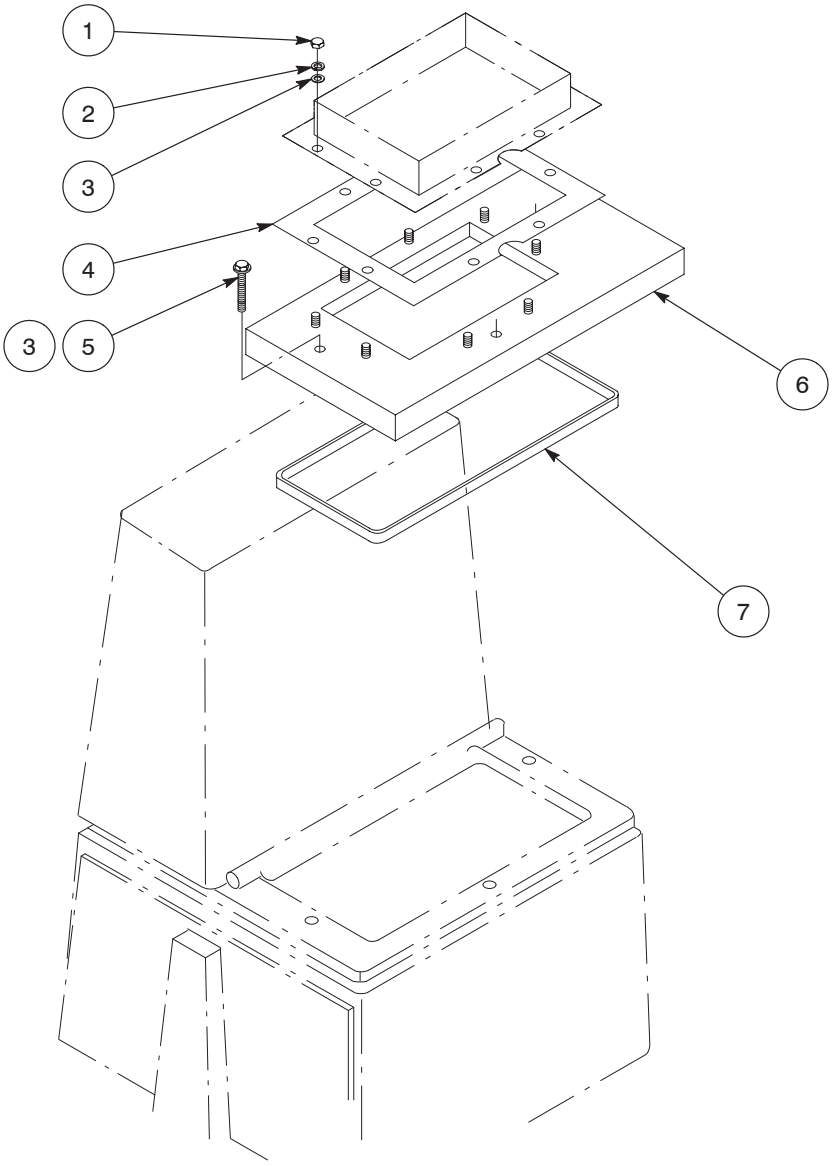


Figure 8-9 Ship-with kit parts for Series 2300/FM-130 units

Series 3000 and ProBlue P10 Units

See Figure 8-10.

Item	Part	Description	Quantity	Note
—	118250	Kit, ship-with, hopper/feeder, Series 3400	—	
—	116066	Kit, ship-with, hopper/feeder, Series 3500	—	
—	121687	Kit, ship-with, hopper/feeder, Series 3700, ProBlue P10	—	
—	118249	• Mounting assembly, hood support, 3400	1	
—	116064	• Mounting assembly, hood support, 3500	1	
—	124447	• Mounting assembly, hood support, 3700, P10	1	
01	118160	• • Mounting, hood support, 3400	1	
NS	116065	• • Mounting, hood support, 3500	1	
NS	121042	• • Mounting, hood support, 3700, P10	1	
02	184464	• • Bracket, right-hand, mount support		
03	130078	• • Gasket, mounting, 3400	1	
NS	130077	• • Gasket, mounting, 3500	1	
NS	130079	• • Gasket, mounting, 3700, P10	1	
04	184463	• • Bracket, left-hand, mount support	1	
05	983418	• • Washer, flat, oversized	12	
06	983401	• • Washer, lock, M5	12	
07	984706	• • Nut, hex, M5	4	
08	984723	• • Nut, hex, cap, M5	8	
09	118199	• • Gasket, mounting/hood	2	
10	118209	• • Cover, mount support, 3400	1	
NS	118210	• • Cover, mount support, 3500	1	
NS	124448	• • Cover, mount support, 3700, P10	1	
NS	982090	• Screw, hex, cap, M6 x 25	4	
NS	983409	• Washer, lock, split, M6	4	
NS	984703	• Nut, hex, M6	4	
NS	101742	• Screw, captive, $^1/_4$-turn, .12–0.149	4	
NS	120825	• Mounting bracket, 22, 23, 34, 35	1	
NS	982252	• Screw, hex, cap, M8 x 16	4	
NS	983417	• Washer, flat, oversized, M8, 3400, 3500	4	
NS	983417	• Washer, flat, oversized, M8, 3700, P10	2	
NS	983404	• Washer, lock, split, M8, 3400, 3500	4	
NS	983404	• Washer, lock, split, M8, 3700, P10	2	

NS: Not Shown

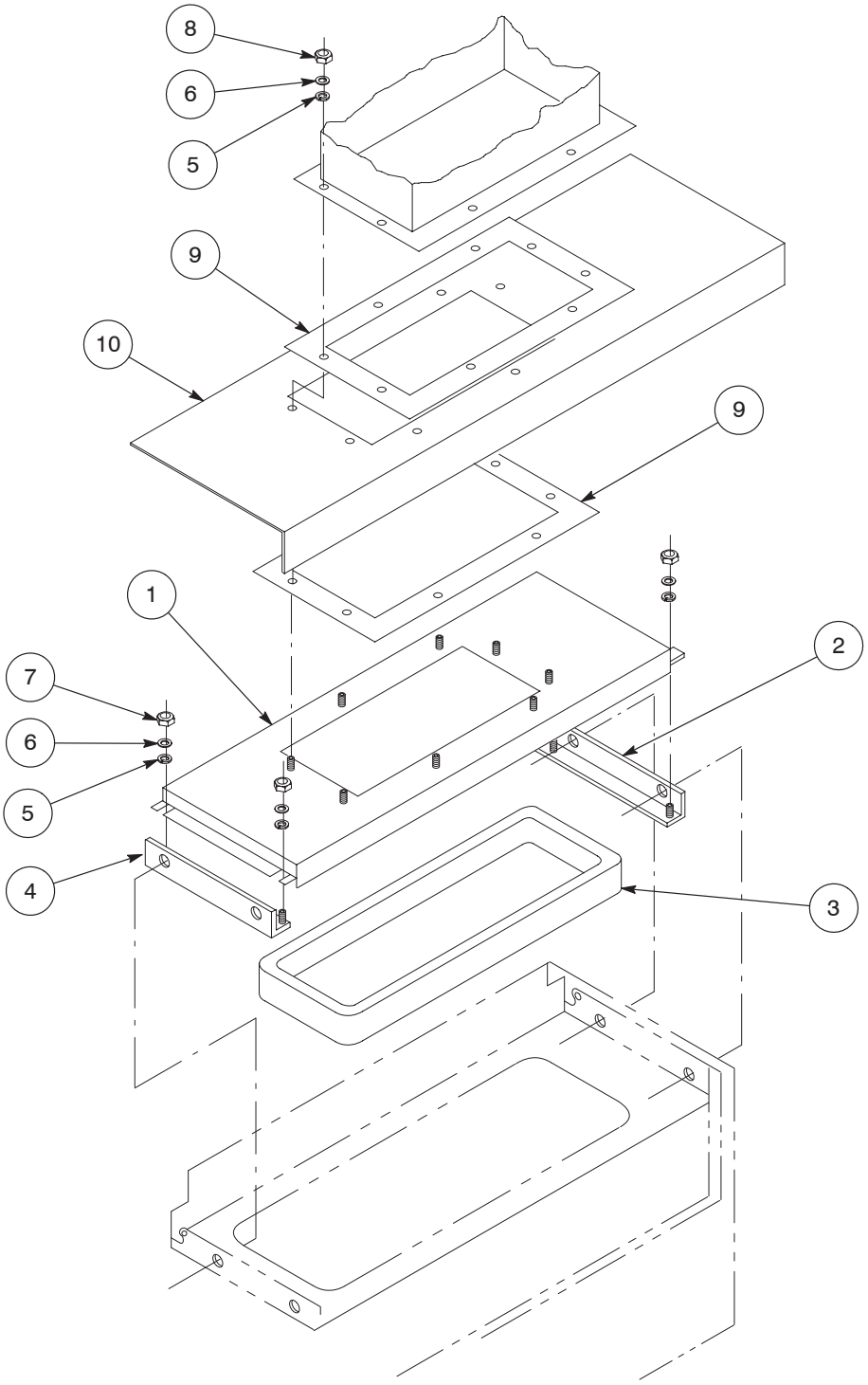


Figure 8-10 Ship-with kit parts for Series 3400, 3500, 3700 and ProBlue P10 units