FLO-LINE® PRIMER
FLP-28/200 &
FLP-28/258

Issued 16 Jun 09 Rev 30 Oct 14

Maintenance & Operation Manual

DISCLAIMER

Derrick Corporation has taken care to ensure that all of its maintenance and operation manuals are accurate. However, we offer no guarantees or warranties in this regard. Our manuals are provided only as a guide to assist with the maintenance and operation. Derrick Corporation takes no responsibility for any losses, damage, or injuries that may occur as a result of using any of our manuals.

It is ultimately the operator's responsibility to ensure that the operation, repair, and maintenance of equipment complies with all applicable national and local regulations, including safety regulations.

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UNIT NUMBER IS KEY TO DERRICK SERVICE

All inquiries to Derrick must include the equipment unit number. The stainless steel unit number tag attached to each piece of Derrick equipment is your key to efficient service and support.

Typical Derrick Unit Number

This unique number gives vital information to Service personnel who use it to identify the correct parts when filling orders, provide accurate responses to service questions, track documentation, and trace the equipment's history or configuration. In short, the **unit number provides the critical information needed to ensure that Derrick customers receive the best possible service**.

The unit number consists of a two-character alphabetic prefix that identifies the equipment type and a series of numeric characters that signify the sequence of the machine's manufacture. For example, unit number MA000001 would be the first screening machine manufactured by Derrick. Alphabetic prefixes currently in use are:

MA - Screening Machine	AD - Desilter and Desander
DG - Degasser	AG - Mud Agitator
CF - Centrifuge	SF - Screen Frame

To ensure that it will remain intact over many years of rigorous service, the heavy-gage tag is riveted to a structural member such as the shaker support structure. It is not to be confused with any other identifier on the machine such as a vibrator motor serial number.

For convenient availability, the unit number is also recorded in the Operation and Maintenance manual shipped with the equipment. When contacting Derrick for any equipment question or need, always have the unit number in your possession. It's the best way to get the most efficient service from our dedicated Service and Engineering personnel.

ABOUT THIS ELECTRONIC MANUAL

In this electronic manual, all sections and paragraphs listed in the CONTENTS are hyperlinked to the corresponding text. Simply click on the green-underlined item to retrieve the information instantly.

To view any hyperlinked text:

1. **Display the CONTENTS page, move the cursor to the desired paragraph or section title, and click on the item.**
2. **When finished viewing the text, press Alt + left arrow key to return to the CONTENTS page. If desired to review the same information a second time, press Alt + right arrow.**

To print all or any part of the manual:

Blank pages are included to facilitate accurate two-sided printing of the entire manual on a standard office printer. To print any individual section or series of pages, simply enter the PDF page number range at the top of the screen (not the page number at the bottom of each page).

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PRIMER

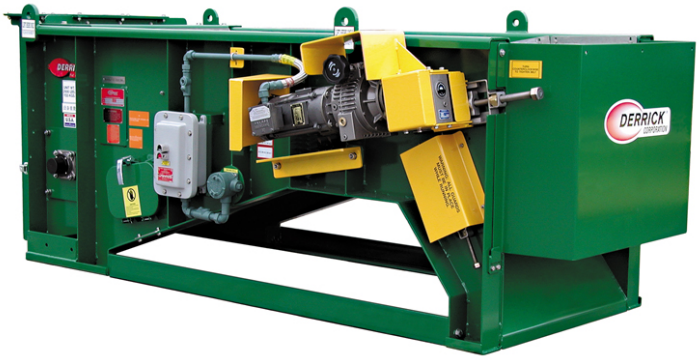
OVERVIEW

This manual provides installation, operation, and maintenance instructions for the Derrick FLP-28/200 and FLP-28/258 Flo-Line Primers (Figure 1-1). The manual is divided into several sections to assist the user in readily accessing the information.

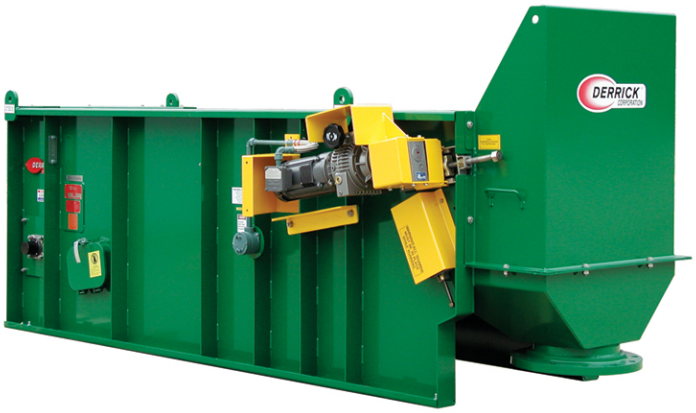
The Primer utilizes a screen belt conveyor to separate hydrated clays (gumbo) and large drilled cuttings from drilling fluid. The FLP-28/200 belt is 28” wide by 200” long, and the FLP-28/258 belt is 28” wide by 258” long.

Personnel responsible for transporting, installing, operating, adjusting, or maintaining this equipment should be required to read and understand the information and instructions in this manual. One copy of this manual should be available and accessible at the equipment location.

For maximum safety and performance, no additions and/or changes may be made to the equipment without the explicit written permission of Derrick Corporation. Genuine Derrick repair/replacement parts are required.



FLP-28/200



FLP-28-258

Figure 1-1. Derrick Flo-Line Primers

SAFETY

Section 2 of this manual contains relevant safety information for both operation and maintenance of this equipment. Be sure to read and understand this information.

DO NOT operate the equipment if defective or faulty mechanical or electrical components are detected.

SOUND EMISSION

Hearing protection is recommended when working on or near the Primer. Based on measurements taken for technically comparable machinery, the Primer emits the following airborne sound level:

A-Weighted Machine Surface-Averaged Sound Pressure Level at 1m - 79.5 dBA

EQUIPMENT USE

The Primer is designed exclusively for removal of large solids from drilling fluid. Derrick Corporation does not authorize any other use of this equipment. Intended usage of the equipment includes compliance with the operating, maintenance, and safety procedures included in this manual.

For maximum safety and performance, no additions and/or changes may be made to the equipment without the explicit written permission of Derrick Corporation. Genuine Derrick repair/replacement parts are required.

OPERATION

The primer utilizes a mesh conveyor belt to separate hydrated clays (gumbo) and large drilled cuttings from drilling fluid. The conveyor belt transports the solids from the rear feed connection to the front of the unit where they fall into a waste pit. Liquid and small particles fall through the belt mesh and are returned to the discharge connection at the rear of the machine. The Flo-Line Primer utilizes an electric motor driven variable-speed gearbox, which allows ample adjustment for changing loads.

ORIENTATION

Throughout this manual, references to front, rear, left, and right are based on viewing the Primer from the feed end and looking toward the discharge end.

PRODUCT SUPPORT

Derrick offers 24-hour-per-day, 7-day-per-week product support. Product support includes screen replacement / ordering information and repair / replacement parts and service for the entire product line. Refer to the following table for the parts / service center nearest you.

PARTS SALES & SERVICE LOCATIONS
Colorado
Grand Junction - 970.241.2417
Louisiana
Broussard - 877.635.3354
New York - Corporate Headquarters
Buffalo - 716.683.9010
Oklahoma
Oklahoma City - 405.208.4070

PARTS SALES & SERVICE LOCATIONS
Texas
Houston (Oilfield Headquarters) - 866.DERRICK (337.7425) • 281.590.3003
North Texas (Bridgeport) - 405.208.4070
South Texas (Corpus Christi) - 361.299.6080
West Texas (Midland) - 405.397.4089
East Texas, Arkansas, and Louisiana - 281.546.1166
Wyoming
Casper - 307.265.0445
North Dakota
Williston - 701.572.0722

SECTION 2 - SAFETY

PRIMER

INTRODUCTION

This section contains a summary of WARNINGS used in this manual and a list of material safety data sheets (MSDSs) applicable to the equipment. The Flo-Line Primer has been designed to perform the stated functions safely.

WARNINGS

All persons responsible for operation and maintenance of this equipment must read and understand all safety information in this manual prior to operating and/or maintaining the equipment. The safety warnings listed below are included in applicable procedures throughout this manual.

Sound

	**WARNING! TO PROTECT AGAINST HEARING LOSS, HEARING PROTECTION SHOULD BE WORN AT ALL TIMES WHEN WORKING ON OR NEAR DERRICK MACHINES.**

Electrical Hazards

	**WARNING! TO AVOID SERIOUS PERSONAL INJURY BE SURE EQUIPMENT IS LOCKED OUT, TAGGED OUT, AND DE-ENERGIZED PRIOR TO PERFORMING MAINTENANCE AND/OR ADJUSTMENTS.**
	**WARNING! MOTOR MUST BE OPERATED AT THE DESIGNATED SUPPLY VOLTAGE.**
	**WARNING! HIGH VOLTAGE MAY BE PRESENT. BE SURE FUSED DISCONNECT SUPPLYING ELECTRICAL POWER TO THIS EQUIPMENT IS OPEN. LOCK OUT AND TAG OUT POWER SUPPLY TO PREVENT ACCIDENTAL APPLICATION OF POWER WHILE MAINTENANCE AND/OR ADJUSTMENTS ARE IN PROGRESS.**
	**WARNING! ELECTRICAL CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. FAILURE TO COMPLY MAY RESULT IN AN UNSAFE CONDITION THAT COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT. ENSURE THAT ALL ELECTRICAL AND CONDUIT CONNECTIONS ARE SECURE.**

Equipment Handling

	**WARNING! USE SPREADER BARS TO PREVENT DAMAGE WHEN LIFTING THE EQUIPMENT.**
	**WARNING! TO ENSURE PROPER BALANCE AND ORIENTATION WHEN UNIT IS RAISED AND PREVENT DAMAGE TO COMPONENTS, ATTACH LIFTING SLINGS ONLY TO LABELLED LIFTING POINTS. DO NOT ATTEMPT LIFTING BY ATTACHMENT TO ANY OTHER LOCATION.**
	**WARNING! BE SURE THAT HANDLING DEVICES HAVE SUFFICIENT LIFTING CAPACITY TO SAFELY HANDLE THE WEIGHT OF THE EQUIPMENT.**
	**WARNING! WHEN USING AN OVERHEAD LIFTING DEVICE, USE ALL FOUR LIFT POINTS PROVIDED. DO NOT ATTEMPT TO LIFT MACHINE USING ANY OTHER ATTACHMENT MEANS.**

Operation

	**WARNING! ALL OPERATING AND MAINTENANCE PERSONNEL MUST READ AND UNDERSTAND ALL SAFETY INFORMATION IN THIS MANUAL BEFORE WORKING WITH THE EQUIPMENT.**

Maintenance

	**WARNING! HIGH VOLTAGE MAY BE PRESENT. ALWAYS OPEN FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THE EQUIPMENT, AND LOCK OUT AND TAG OUT POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE AND/OR ADJUSTMENTS OF EQUIPMENT.**

MATERIAL SAFETY DATA SHEETS (MSDSs)

Material Safety Data Sheets (MSDSs) advise personnel of the properties and any possible hazards associated with these materials. Emergency first aid procedures, special precautions, emergency telephone number, and other relevant data are contained in the MSDSs. These documents are prepared by the product manufacturers, which have sole responsibility for accuracy of the information.

The MSDSs listed below apply to products used in the manufacture of the Derrick equipment. Where shown, dates are current as of the publication date of this manual. The latest MSDSs may be obtained from the product manufacturer.

MATERIAL DESCRIPTION - WHERE USED	MSDS NO. / DATE
Paints and Coatings	
PPG Dimetcote 302H Green 302F0250 Resin - Top Coat	*1302H-5A* / 04-11-10
PPG Dimetcote 302H Clear 302G0910 Cure - Top Coat	*1302H-B* / 01-21-10
PPG PSX 700 Neutral Tint Resin - Undercoat	*PX700T3* / 02-28-08
PPG PSX 700FD Cure - Undercoat	*PX700FD-B* / 01-11-07
Lubricants and Sealants	
Exxon Mobil SHC 634 - Geardrive	Mobil SHC 634 / 01-13-09
Chevron Dura-Lith Grease EP NLGI 2 - Rear Roller Bearings	*7683 / 12-19-02*
Loctite 76764 Anti-Seize Lubricant - Fasteners	*76764* / 05-27-09

SECTION 3 - INSTALLATION

PRIMER

GENERAL

This section describes the recommended installation procedure for the Flo-Line Primer. Instructions include site preparation, equipment leveling, feed and discharge connections, and electrical connections.

SAFETY

Read and understand **ALL** safety information presented in this manual **before** installing and operating this equipment. Refer to Section 2 for a summary of Warnings affecting installation, operation, and maintenance of this equipment.

Before beginning the installation, review the information presented under Equipment Handling later in this section. Pay particular attention to the information concerning “lift points” and the use of spreader bars before lifting or moving the equipment.

Failure to observe proper equipment handling procedures may result in serious personal injury or death and/or damage to the equipment.

WARNING! BE SURE THAT HANDLING DEVICES HAVE SUFFICIENT LIFTING CAPACITY TO SAFELY HANDLE THE WEIGHT OF THE EQUIPMENT.

WARNING! TO ENSURE PROPER BALANCE AND ORIENTATION WHEN UNIT IS RAISED AND PREVENT DAMAGE TO COMPONENTS, ATTACH LIFTING SLINGS ONLY TO LABELLED LIFTING POINTS. DO NOT ATTEMPT LIFTING BY ATTACHMENT TO ANY OTHER LOCATION.

INSTALLATION SEQUENCE

Following is the sequence of steps for installing the Flo-Line Primer. The sequence may vary depending on the user’s facilities and previous experience with this type of equipment.

1. Read and understand all safety information in Section 2 before installing and operating this equipment.
2. Position and level equipment at installation site.
3. Connect feed and discharge lines.
4. Connect electric power.
5. Install conveyor belt, if not already installed.
6. Refer to Section 4 for startup and operating instructions.

EQUIPMENT STORAGE

If equipment is not being installed immediately, it should be stored in a dry environment (50 percent relative humidity or less). A dry environment will ensure that the machine remains in the same condition as when it was received.

If unit is stored outdoors, use a UV-resistant tarp, or UV-resistant shrink wrap. Install vents when using shrink wrap. Seal the Maintenance and Operating manual in plastic and attach to unit.

SITE PREPARATION AND CLEARANCE REQUIREMENTS

Prior to placement of equipment, verify that electricity and water are available at the installation site and that feed and discharge lines are provided. Also ensure that clearances around the equipment are adequate and the discharge is higher than the weir height of the Flo-Line Cleaner. Prepare the installation site as follows:

1. Confirm adequate clearance for changing screen belt. Figure 3-1 shows minimum required clearances on all sides of machine(s). If operating cartridge will be removed, allow at least 9' (2743mm) in front of discharge end to accept the separated cartridge following removal.
2. Verify that access doors can be opened for inspection, adjustment, and maintenance.
3. Check that feed and discharge lines are properly sized for the equipment (refer to general assembly drawing in Section 8 for inlet and outlet sizes.
4. Verify that available electric power supply at the site agrees with electric power requirements of the equipment.

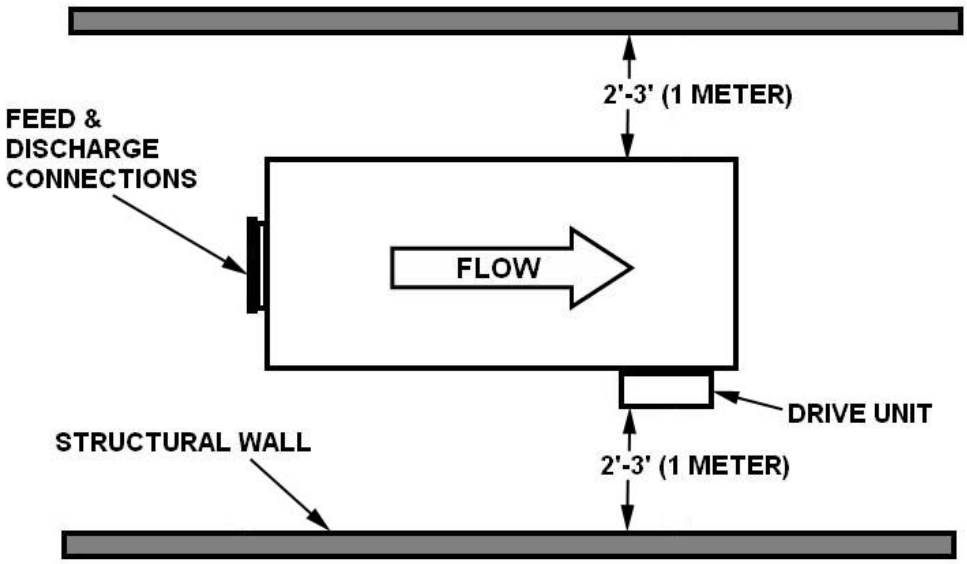


Figure 3-1. Flo-Line Primer Clearances

EQUIPMENT HANDLING

Four lifting lugs (Figure 3-2) are provided for attachment of an overhead lifting device. Lift points are labeled **"LIFT HERE ONLY"**. **Do Not** attempt to lift equipment by attaching any lifting devices to non-designated portions of the unit. Use of spreader bars is recommended.

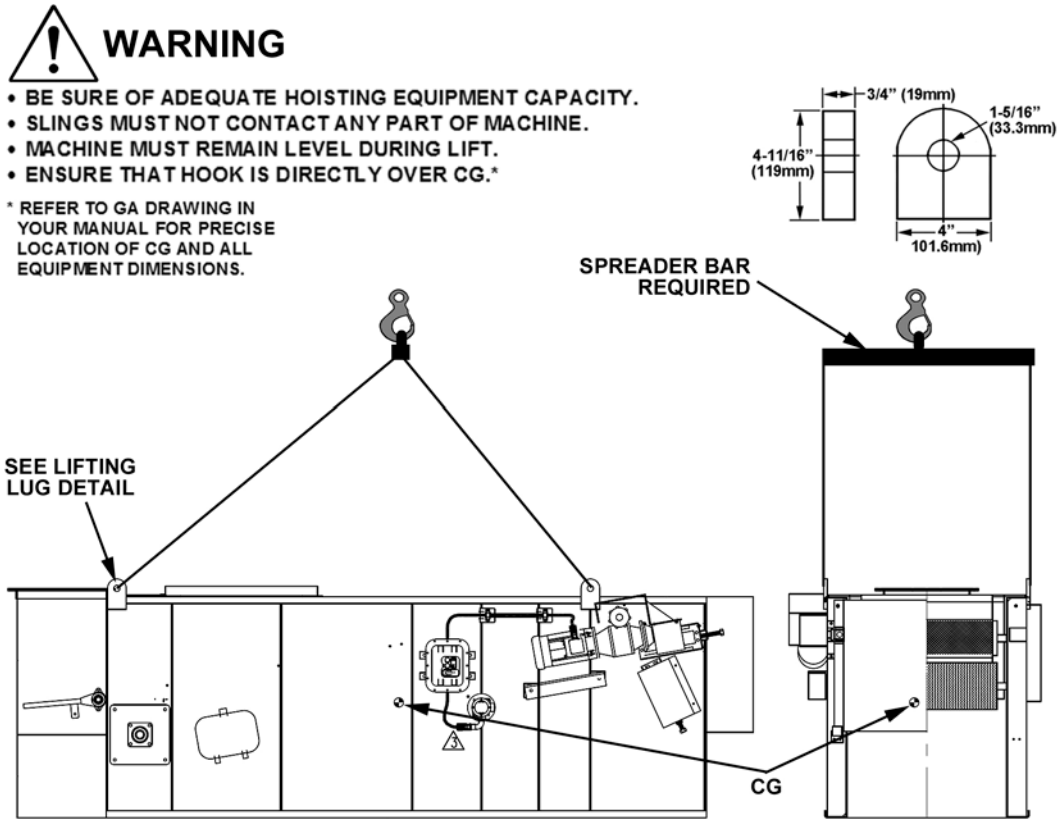


Figure 3-2. Lifting Arrangement

EQUIPMENT POSITIONING AND LEVELING

After positioning, the Flo-Line Primer must be leveled in both directions (Figure 3-3) to provide even distribution of the process material across the belt. A 4-foot level is recommended. Non-compressible shims should be used as required to level the machine.

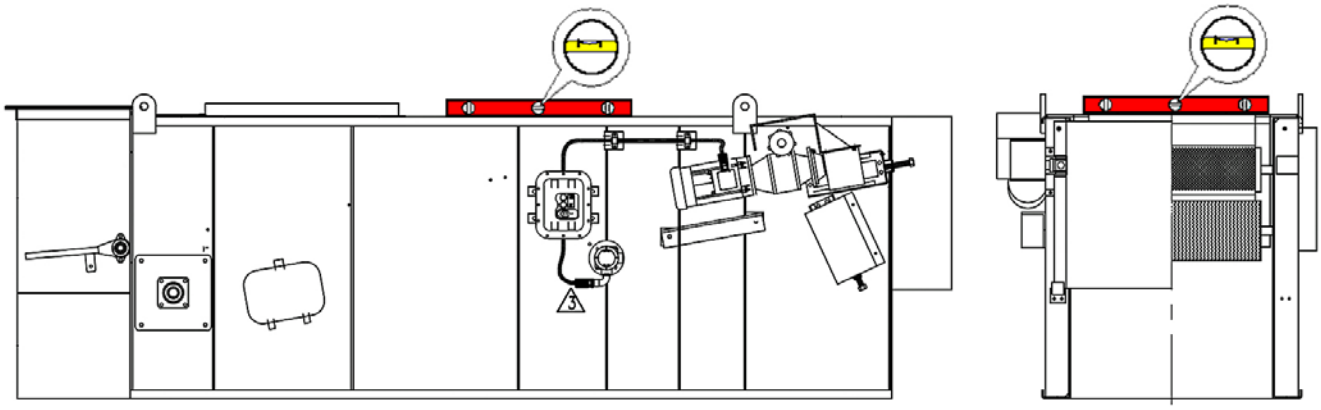


Figure 3-3. Equipment Leveling

INLET AND OUTLET CONNECTIONS

If the Primer does not have factory-installed flanges, customer-supplied flanges must be installed on the feeder to accept the inlet and outlet lines. Pipe targets are printed on the outside of the feeder to indicate the proper locations and corresponding sizes of the inlet and outlet lines. The maximum inlet and outlet pipe diameter is 16” (406mm) as marked on the rear of the feeder. Cut out circles to receive customer-supplied flanges to accept the inlet and outlet lines.

Connect the feed line to the feeder inlet and an outlet line to the rear bypass outlet of the Primer feeder. The outlet should be connected to the feeder connection of the Flo-Line Cleaner. For proper feeding, the Primer outlet should be higher than the weir height of the Flo-Line Cleaner.

ELECTRIC POWER CONNECTIONS

	**WARNING! DRIVE UNIT MOTOR MUST BE OPERATED AT THE DESIGNATED SUPPLY VOLTAGE.**
	**WARNING! HIGH VOLTAGE MAY BE PRESENT. BE SURE FUSED DISCONNECT SUPPLYING ELECTRICAL POWER TO THIS EQUIPMENT IS OPEN. LOCK OUT AND TAG OUT POWER SUPPLY TO PREVENT ACCIDENTAL APPLICATION OF POWER WHILE MAKING ELECTRICAL CONNECTIONS.**
	**WARNING! ELECTRICAL CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. FAILURE TO COMPLY MAY RESULT IN AN UNSAFE CONDITION THAT COULD INJURE PERSONNEL OR DAMAGE EQUIPMENT. ENSURE THAT ALL ELECTRICAL AND CONDUIT CONNECTIONS ARE SECURE.**

A fused disconnect primary power supply is required for this equipment. The fused disconnect and interconnecting wiring to the equipment must be suitably sized and in accordance with National Electrical Code (NEC) standards and all other applicable state and local codes as well as the following additional requirements:

1. The fused disconnect device shall have sufficient interrupting capacity to clear the maximum fault current capability of the power supply system.
2. The GROUND connection in the power supply junction box must be connected to a known ground.

Connect three-phase power leads to corresponding terminals in junction box below electrical control panel as shown in Figure 3-4.Also connect a ground lead to external grounding lug on hopper. Refer to the schematic diagram in Section 8 for additional assistance in connecting power to the Primer. If a manual starter is installed, the STOP button may be used to reset the motor overload protection.

After completing connections, apply power to Primer, and start machine while observing direction of belt travel. If belt travels in reverse direction, shut down, lock out, and tag out electric power. Reverse L1 and L3 in junction box. The drive unit motor requires three-phase electric power. The motor is not dual wound and must be operated at the designated supply voltage.

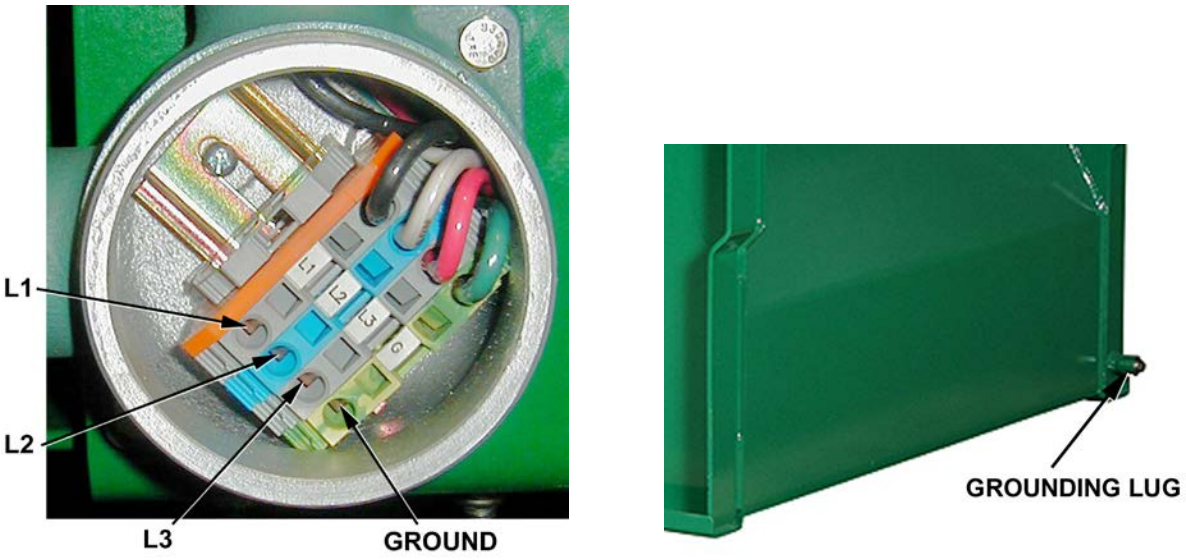


Figure 3-4. Three-Phase Electric Power Connections

CONVEYOR BELT INSTALLATION

The Primer is usually shipped with the conveyor belt installed. If the Primer is received without the belt installed, refer to Section 5 for the conveyor belt installation procedure. Before beginning the belt installation, remove all packing and shipping materials from the machine.

DRIVE UNIT GEARBOX OIL LEVEL

Verify that oil level in the gearbox is correct in accordance with lubrication instructions in Section 5. Replenish with approved lubricant.

STARTUP

Refer to Section 4 for initial startup and operating procedures.

SECTION 4 - OPERATING INSTRUCTIONS

PRIMER

GENERAL

This section includes initial and normal startup shutdown procedures for the Primer, as well as emergency shutdown.

OPERATING SAFETY

	**WARNING! TO AVOID SERIOUS PERSONAL INJURY BE SURE THAT ALL GUARDS ARE IN PLACE, AND KEEP HANDS AND FEET CLEAR OF MOVING PARTS.**
	**WARNING! BE SURE ALL PERSONNEL ARE CLEAR OF EQUIPMENT BEFORE STARTING.**
	**WARNING! ALL OPERATING AND MAINTENANCE PERSONNEL MUST READ AND UNDERSTAND ALL SAFETY INFORMATION IN THIS MANUAL BEFORE WORKING WITH THE EQUIPMENT.**

INITIAL STARTUP

Perform the Initial Startup procedure when the machine is being started for the first time or when the equipment has been removed from service for an extended period.

Before beginning the procedure, verify the following:

1. All shipping materials, tools, and documents have been removed and there are no obstructions to operation.
2. All personnel are clear of equipment.

INITIAL STARTUP PROCEDURE	
Step	**Procedure**
1	Confirm that all operators and maintenance personnel have read and understand all operating and safety information in Section 2.
2	Verify that equipment has been installed properly.
3	Check that services and utilities are available at the installation site.
4	Check that connections are secure at the feeder(s) and discharge flanges.
5	Start machine in accordance with Normal Startup procedure below.

NORMAL STARTUP

The following procedure shall be performed at each machine startup:

NORMAL STARTUP PROCEDURE	
Step	**Procedure**
1	Verify that all personnel are clear of Primer before applying electric power.
2	Apply electric power, and press START button to turn on machine.
3	Introduce feed while observing operation.
4	Adjust conveyor belt speed based on observation of solids separation in the preceding step. Proper speed will prevent excessive pooling of liquid on conveyor belt. Increase speed if liquid builds up at the rear of the belt.

NORMAL SHUTDOWN

The normal shutdown procedure is to be used for controlled stopping of operation. Normal shutdown is performed for routine activities such as cleaning, lubrication, inspection, adjustment, or conveyor belt replacement.

NORMAL SHUTDOWN PROCEDURE	
Step	**Procedure**
1	Divert or stop flow of material to feed connection.
2	Allow all solids to fall from end of conveyor belt and all liquid and undersize particles to return to discharge.
3	Wash off all process material from conveyor belt.
4	Turn off power switch, and open fused disconnect supplying electric power to the drive motor.

EMERGENCY SHUTDOWN

To immediately stop the Primer in case of danger to personnel or other emergency, shut down electric power at the supply source.

SECTION 5 - MAINTENANCE

PRIMER

GENERAL

Proper maintenance will ensure maximum life and trouble-free operation. While the maintenance schedule presented in this section is not rigid, modifications should be based on experience with operating the equipment at your facilities. A maintenance log should be kept to help establish a routine maintenance schedule, as well as to monitor and adjust the schedule as necessary throughout the equipment's life. When establishing a maintenance schedule, consider duty cycle, ambient temperature, and operating environment. Routine maintenance consists of overall inspection and cleaning. Following are the recommended routine maintenance procedures.

ROUTINE MAINTENANCE	
Action	**Frequency**
Check integrity of feed and discharge connections, and tighten as required.	Each shift
Check for proper belt tension, and adjust as required.	Each shift
Using a water hose, clean buildup of process material from interior walls and inclined floor. Excess buildup of process material in the unit interior reduces Primer efficiency.	Weekly
Check interior of bypass feeder for buildup of process material or other obstructions. Blockage can cause uneven distribution of feed material to the conveyor belt and reduce efficiency.	Weekly

LUBRICATION

Lubrication intervals and approved products are shown in the lubrication chart below. However, the intervals may be varied depending on duty cycle and environmental conditions. A logbook should be kept to determine if a schedule change is required based on operating experience.

LUBRICATION SCHEDULE			
Action	**Product**	**Qty**	**Frequency**
Lubricate conveyor belt takeup jackscrews	NLGI #2 Grease	As required	Every 6 weeks
Purge rear roller bearings	NLGI #2 Grease	As required	Every 3-6 Months
Change gear drive oil	Mobil SHC 634	15 oz	After initial 250 hours; then every 6 months

CONVEYOR BELT INSPECTION

Perform routine inspection of the conveyor belt in accordance with the following table. The intervals listed are guidelines. Inspections may be required more frequently, based on operating experience and maintenance records. Refer to the appropriate procedures to correct any defects discovered during inspection.

CONVEYOR BELT INSPECTION	
Action	**Frequency**
Inspect conveyor belt for obvious signs of wear, damage, or insufficient tension. A damaged belt should be replaced immediately. If tension appears incorrect, adjust as required.	Each shift
While observing belt travel, check for free rotation of brush roller idler. A worn bearing may cause roller to bind, producing excessive belt wear.	Each shift
Inspect front and rear rollers and seals for deterioration or damage. Replace worn or damaged component(s).	Weekly
Check that brush roller contacts screen belt evenly across belt and adjust as required. Inspect brush for obvious wear or damage, and replace if bristles are obviously damaged or missing.	Weekly
Inspect brush roller drive belt for damage, wear, or deterioration.	Weekly
Perform drive unit motor maintenance in accordance with manufacturer's recommendations.	See Section 7

CONVEYOR BELT REPLACEMENT

The conveyor belt should be replaced when obvious damage or excessive wear has been revealed during inspection. The various belt mesh options available for FLP-28/200 and FLP-28/258 are listed under *Recommended Spare Parts* later in this section.

1. Shut down, lock out, and tag out electric power to the Primer.

WARNING! HIGH VOLTAGE MAY BE PRESENT. ALWAYS OPEN FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THE EQUIPMENT, AND LOCK OUT AND TAG OUT POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE AND/OR ADJUSTMENTS OF EQUIPMENT.

2. Open all access doors at feed end of machine (Figure 5-1).
3. Release all belt tension by backing off front roller takeups on both sides.

Figure 5-1. Conveyor Belt Access and Takeup Adjuster

4. With belt joint near feed end, remove connecting rod from belt ends, align ends of old and new belts, and insert rod through end of old belt and end of new belt to connect belts together.
5. Pull on free end of old belt to draw new belt into place, while fully removing old belt from machine.
6. Remove and discard old connecting rod from belt ends, and discard old belt.
7. Align edges of new belt at joint, and insert new connecting rod to secure ends of belt together.

WARNING! EDGES AT JOINT MUST BE FLUSH. MISALIGNMENT WILL CAUSE TRACKING ERROR.

8. Tension belt by tightening takeups equally on both sides of machine until belt can be deflected only 1/16” to 1/8” when pressed just behind the front roller.
9. Close and latch all access doors.
10. Apply electric power, and start machine while being prepared to shut down power immediately if severe tracking error occurs.
11. Fine adjust front roller takeups as required to cause belt to track properly Increase tension on the side toward which the belt drifts.
12. Adjust roller brush takeups as required to ensure proper sweeping of belt (Figure 5-2). When properly adjusted, the brush roller will contact the screen belt uniformly across its width. Uneven contact may cause the belt to drift to one side.
13. Operate Primer for about 10 minutes while monitoring screen belt to ensure that tracking remains true.

Figure 5-2. Roller Brush Adjustment

GEARDRIVE REPLACEMENT

The geardrive consists of a variable-speed drive, speed reducer, and drive motor. The following procedure describe replacement of the entire unit; however, the motor may be replaced separately (see *Drive Motor Replacement*, below).

Removal

1. Shut down, lock out, and tag out electric power to the Primer.

WARNING! HIGH VOLTAGE MAY BE PRESENT. ALWAYS OPEN FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THE EQUIPMENT, AND LOCK OUT AND TAG OUT POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE AND/OR ADJUSTMENTS OF EQUIPMENT.

2. Remove cover from electrical junction box, and tag and disconnect all electrical leads from splice connectors inside junction box (Figure 5-3). Unscrew cable gland, and withdraw power cable from junction box.

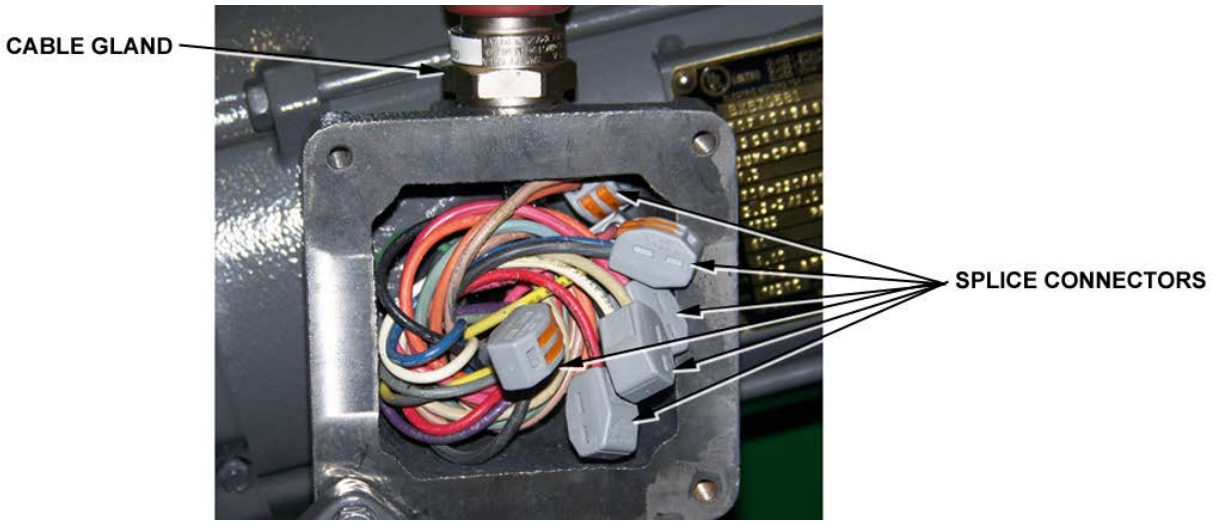


Figure 5-3. Motor Electrical Connections

3. Remove two bolts securing cover guard to gearbox (Figure 5-4), and remove cover guard.
4. Remove remaining two bolts securing motor guard and top bracket to gearbox, and remove motor guard and top bracket.
5. Loosen setscrew in outer collar, and slide collar off drive sprocket shaft.
6. Loosen setscrew(s) securing hollow output shaft of gearbox to drive sprocket shaft.
7. Attach a hoist and sling capable of supporting at least 200lbs (91kg) to motor and geardrive assembly, and operate hoist to support geardrive weight.
8. While geardrive and motor assembly are supported by hoist, slide motor and geardrive assembly from drive sprocket shaft, leaving inner collar in place.

Note! Inner collar should be left in place to ensure correct positioning of geardrive on sprocket shaft during installation.

9. Remove four bolts securing bottom bracket to gearbox, and remove bracket.

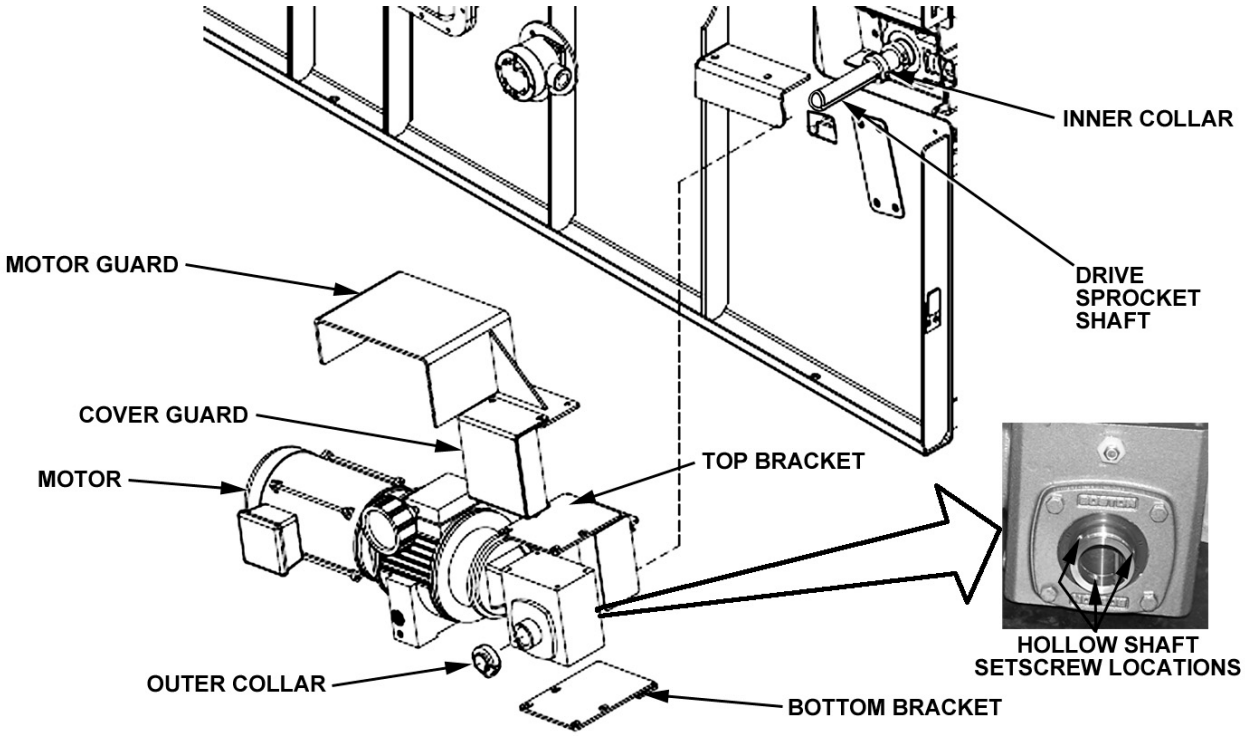


Figure 5-4. Geardrive Assembly Exploded View

Installation

1. Position bottom bracket on gearbox, and secure with four bolts.
2. If inner collar was removed from drive sprocket shaft, install collar at approximate location where previously installed.
3. Align key in drive sprocket shaft with keyway in gearbox hollow output shaft, and hoist geardrive and motor assembly and slide fully onto sprocket shaft until it contacts inner collar.
4. With gearbox contacting inner collar, check that just enough shaft projects beyond outside surface of gearbox to install outer collar. If adjustment is required, loosen setscrew and adjust collar position.
5. Slide gearbox against inner collar, and then install outer collar and tighten setscrew.
6. Tighten gearbox hollow output shaft setscrew(s) to secure shaft to drive sprocket shaft.
7. Position motor guard on gearbox, and secure with two bolts.
8. Place cover guard on gearbox, and secure with two bolts.
9. Lower hoist and remove sling from geardrive and motor assembly.
10. Connect electrical leads in accordance with tags attached during removal.

DRIVE MOTOR REPLACEMENT

1. Shut down, lock out, and tag out electric power to the Primer.

WARNING! HIGH VOLTAGE MAY BE PRESENT. ALWAYS OPEN FUSED DISCONNECT SUPPLYING ELECTRIC POWER TO THE EQUIPMENT, AND LOCK OUT AND TAG OUT POWER SUPPLY BEFORE PERFORMING ANY MAINTENANCE AND/OR ADJUSTMENTS OF EQUIPMENT.

2. Remove cover from electrical junction box, and tag and disconnect electrical leads from junction box connectors (Figure 5-3). Withdraw power cable from junction box.

DRIVE MOTOR REPLACEMENT (CONT'D)

3. Remove two lower bolts securing motor to gearbox speed control (Figure 5-5).
4. While supporting motor, remove two upper bolts securing motor to gearbox speed control, and carefully slide out and remove motor.
5. Installation is the reverse of removal.

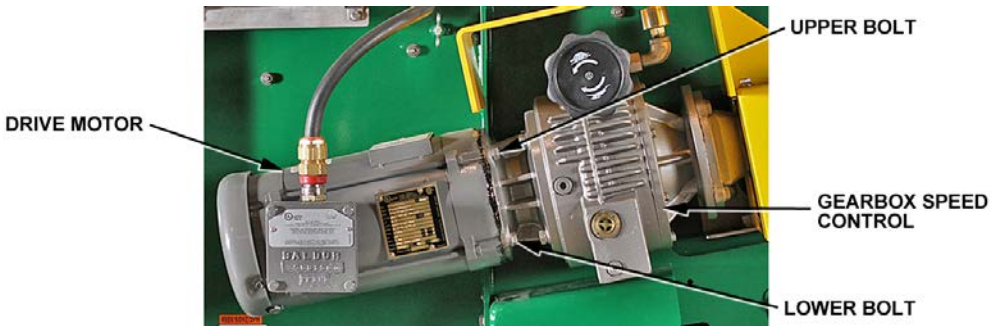


Figure 5-5. Drive Motor Installation

RECOMMENDED SPARE PARTS

Damaged parts should be replaced as soon as possible to prevent further damage to equipment. Refer to the general arrangement drawing and accompanying parts list in Section 8 for Derrick parts information. The recommended spare parts required to support a single FLP28/200 or FLP28/258 Primer for two years are listed in the following table. This list includes the components most susceptible to wear; however, all potential part replacements cannot be predicted. The complete spare parts inventory should be based on the user's experience with similar equipment.

RECOMMENDED SPARE PARTS - FLP28/200 AND FLP28/258 PRIMER				
Part No.	**Description**	**Consumable**	**2-Yr Qty**	**Equipment**
1432708A	Feeder Curtain	Yes	1	28/200
1432708B	Feeder Curtain	Yes	1	28/258
G0001809	Take-Up Frame Bearing, 1"	No	2	28/200 & 28/258
G0001808	Take-Up Frame Bearing, 1-1/2"	No	2	28/200 & 28/258
G0001810	Flange Bearing, 1-1/2"	No	2	28/200 & 28/258
G0003121	Locking Collar, 1-7/16"	No	2	28/200 & 28/258
PP1462	Brush Sprocket W/Bushing	No	1	28/200 & 28/258
PP1463	Brush Sprocket W/Bushing	No	1	28/200 & 28/258
PP1464	Idler Sprocket	No	1	28/200 & 28/258
G0001576	Belt Tensioner	No	1	28/200 & 28/258
G0003248	Bearing Shield	No	2	28/200 & 28/258
PP1465	Brush Belt	Yes	1	28/200
G0003096	Bypass Shaft Seal	Yes	2	28/200
See List	Conveyor Belt	Yes	2	28/200
G0001819	Gasket, Inspection Door	Yes	4	28/200 & 28/258
G0001821	Breather	No	1	28/200 & 28/258
G0003256	Feeder Brush, 2" X 16"	Yes	2	28/200 & 28/258

RECOMMENDED SPARE PARTS - FLP28/200 AND FLP28/258 PRIMER (CONT'D)				
Part No.	**Description**	**Consumable**	**2-Yr Qty**	**Equipment**
G0003257	Feeder Brush, 1.5" X 33"	Yes	1	28/200 & 28/258
G0002033	Belt Brush, 1" X 33"	Yes	1	28/200
G0002034	Belt Brush, 1" X 39	Yes	2	28/200
G0002034	Belt Brush, 1" X 39"	Yes	4	28/258
G0003259	Bypass Brush, 1.5" X 17.25"	Yes	1	28/200
G0003260	Bypass Brush, 1" X 17.25"	Yes	1	28/200
G0001995	Shaft Seal Brush X 10	Yes	8	28/200 & 28/258
PP1494	Wear Strip Clamp	Yes	30	28/200
PP1494	Wear Strip Clamp	Yes	27	28/258
G0001996	Wear Strip, 7.25"	Yes	4	28/200
G0001996	Wear Strip, 7.25"	Yes	6	28/258
G0001997	Wear Strip, 9.25"	Yes	4	28/200
G0004680	Wear Strip, 16.875"	Yes	4	28/200
G0001999	Wear Strip, 20.50"	Yes	4	28/200
G0004681	Wear Strip, 28.125"	Yes	4	28/200
G0002001	Wear Strip, 31.75"	Yes	4	28/200
G0002002	Wear Strip, 40.25"	Yes	4	28/200
G0003177	Wear Strip, 35.25"	Yes	6	28/258
G0003176	Wear Strip, 29.5"	Yes	6	28/258
G0003175	Wear Strip, 27"	Yes	6	28/258
G0003174	Wear Strip, 26"	Yes	3	28/258
G0003173	Wear Strip, 19"	Yes	6	28/258
G0003172	Wear Strip, 16.25"	Yes	6	28/258
G0003171	Wear Strip, 8.5"	Yes	6	28/258
PP1278	Hinge Pin	No	1	28/200
G0003245	Roller Shaft Seal	Yes	2	28/200 & 28/258
G0002291	Spring Clip, Wear Strip	Yes	30	28/200
G0002291	Spring Clip, Wear Strip	Yes	63	28/258
15553-03	Roller Assembly Left and Right	No	2	28/200
CCC-HB-040N30	Brush Replacement Kit	Yes	1	28/200 & 28/258
G0003580	Geardrive Assembly	No	1	NA
G0003278	Motor, Drive, RH (F1 Junction Box)	No	1	NA
G0003277	Motor, Drive, LH (F2 Junction Box)	No	1	NA
See List	Conveyor Belt	Yes	2	28/200 & 28/258

Conveyor Belt Part Numbers

FLP-28/200

Part No.	Description
G0002004	28” x 200” x 5 Mesh
G0001913	28” x 200” x 10 Mesh
G0003139	28” x 200” x 18 Mesh
G0001915	28” x 200” x 20 Mesh
G0002062	28” x 200” x 30 Mesh
G0003143	28” x 200” x 37 Mesh
G0004630	28” x 200” x 40 Mesh

FLP-28/258

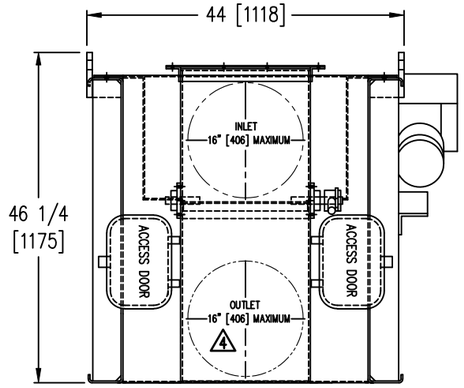
PP1107	28” x 258” x 5 Mesh
PP1104	28” x 258” x 10 Mesh
G0003140	28” x 258” x 18 Mesh
PP1105	28” x 258” x 20 Mesh
G0003144	28” x 258” x 37 Mesh
P1396	28” x 258” x 50 Mesh

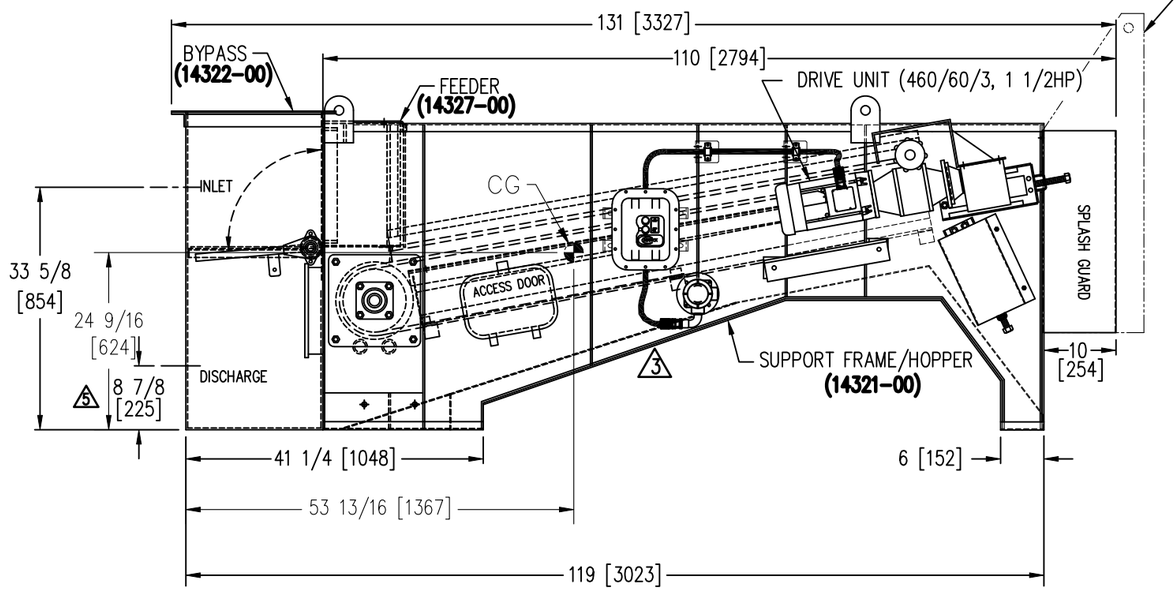
SECTION 8 - REFERENCE DRAWINGS

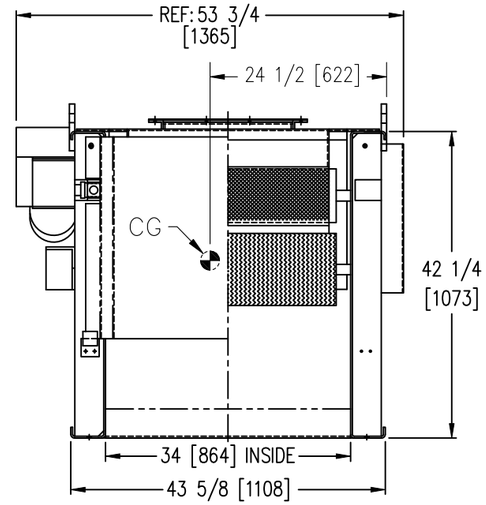
PRIMER

This section contains Derrick engineering drawings for your equipment. These drawings are included to provide assistance in troubleshooting, repair, and parts ordering.

Number	Title
14000-05	General Arrangement, Flo-Line Primer FLP-28/200 (460Vac, 60Hz)
14000-08	General Arrangement, Flo-Line Primer FLP-28/200 (380Vac, 50Hz)
14400-00	General Arrangement, Flo-Line Primer FLP-28/258
14290-00-006	Parts List, Flo-Line Primer FLP-28/200 (460Vac, 60Hz)
14290-00-009	Parts List, Flo-Line Primer FLP-28/200 (380Vac, 50Hz)
14410-00	Parts List, Flo-Line Primer FLP-28/258
14336-00-007	Electrical Parts List, Flo-Line Primer and Flo-Line Primer II, Manual Starter
13108-00	Wiring Schematic, Flo-Line Primer
PE-S-014-10	Thermal Unit Selection Table







1 NOTE:
FOR ALTERNATE SPLASH GUARD:
ADD 3 7/8 [98] TO OVERALL LENGTH
ADD 11 1/2 [292] TO OVERALL HEIGHT
2

RECOMMENDED MAINTENANCE AND ACCESS SPACE–
FRONT– 2–3 FEET [1 METER]
SIDES– 2–3 FEET [1 METER]
REAR– 2–3 FEET [1 METER]

APPROX WT– 2600 LBS [1179 KGS]

OVERALL DIM ± 1/4 [6]
DIMENSIONS IN [] = METRIC

TAG
DATE: _____
EQUIPMENT NO. _____
DERRICK MODEL NO. FLP-28/200
DERRICK DRAWING NO. 14000-05
PARTS LIST NO. 14290-00-006
PURCHASE ORDER NO. _____

EB	DEPT.
H	1bc, 2bc, 4a

REV	CHANGE	CKD	DATE
5	8 7/8 [225] WAS 7 1/4 [184].	CCS	10/2/06
4	16" MAX OUTLET WAS 12" MAX OUTLET PER HOUSTON REQUEST.	CCS	4/26/06
3	UPDATED VIEW OF STARTER BOX AND ELECTRICAL ASSY	EJR JHM	3/17/04
2	11 1/2 [292] WAS 15 1/4 [387]	WS	9/19/02
1	ADDED ALTERNATE SPLASH GUARD AND NOTE	WS	9/3/02

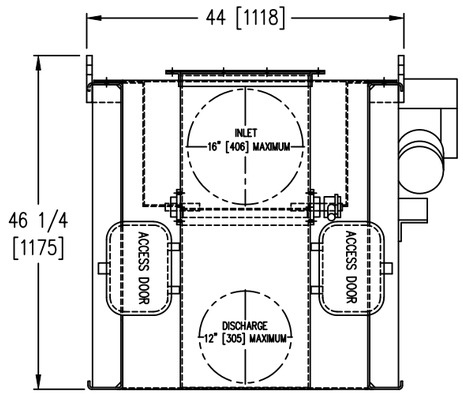
TITLE: GENERAL ARRANGEMENT
FLO-LINE PRIMER (FLP-28/200)

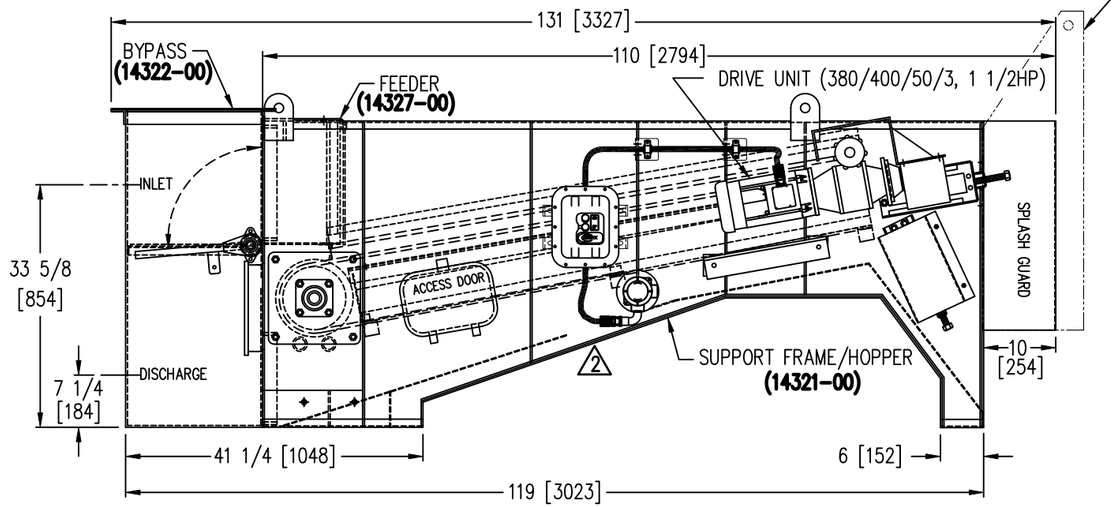
DWN GAK | CKD | DATE 9/12/00 | SCALE 1"=20" | REV 5

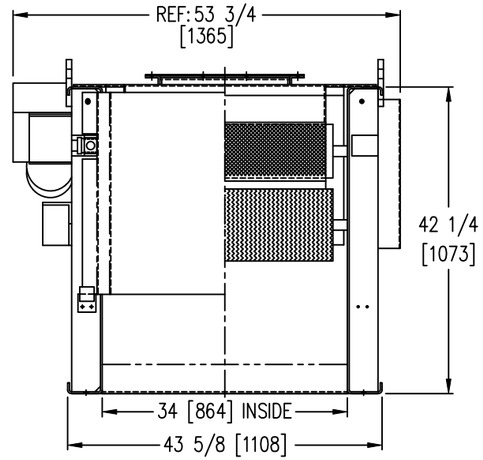
SHEET SIZE B | Y | F C | DWN | CKD

DRAWING NO. 14000-05

DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.







RECOMMENDED MAINTENANCE AND ACCESS SPACE–
FRONT– 2–3 FEET [1 METER]
SIDES– 2–3 FEET [1 METER]
REAR– 2–3 FEET [1 METER]

TAG
DATE: _____
EQUIPMENT NO. _____
DERRICK MODEL NO. FLP–28/200
DERRICK DRAWING NO. **14000–08**
PARTS LIST NO. **14290–00–009**
PURCHASE ORDER NO. _____

APPROX WT– 2600 LBS [1179 KGS]

OVERALL DIM ± 1/4 [6]
DIMENSIONS IN [] = METRIC

1
NOTE:
FOR ALTERNATE SPLASH GUARD:
ADD 3 7/8 [98] TO OVERALL LENGTH
ADD 11 1/2 [292] TO OVERALL HEIGHT

EB	DEPT.
H	1abc, 2bce, 4a

REV	CHANGE	CKD	DATE
2	UPDATED VIEW OF STARTER BOX AND ELECTRICAL ASSY	EJR / JHM	3/17/04
1	ADDED ALTERNATE SPLASH GUARD AND NOTE	WS	9/17/02

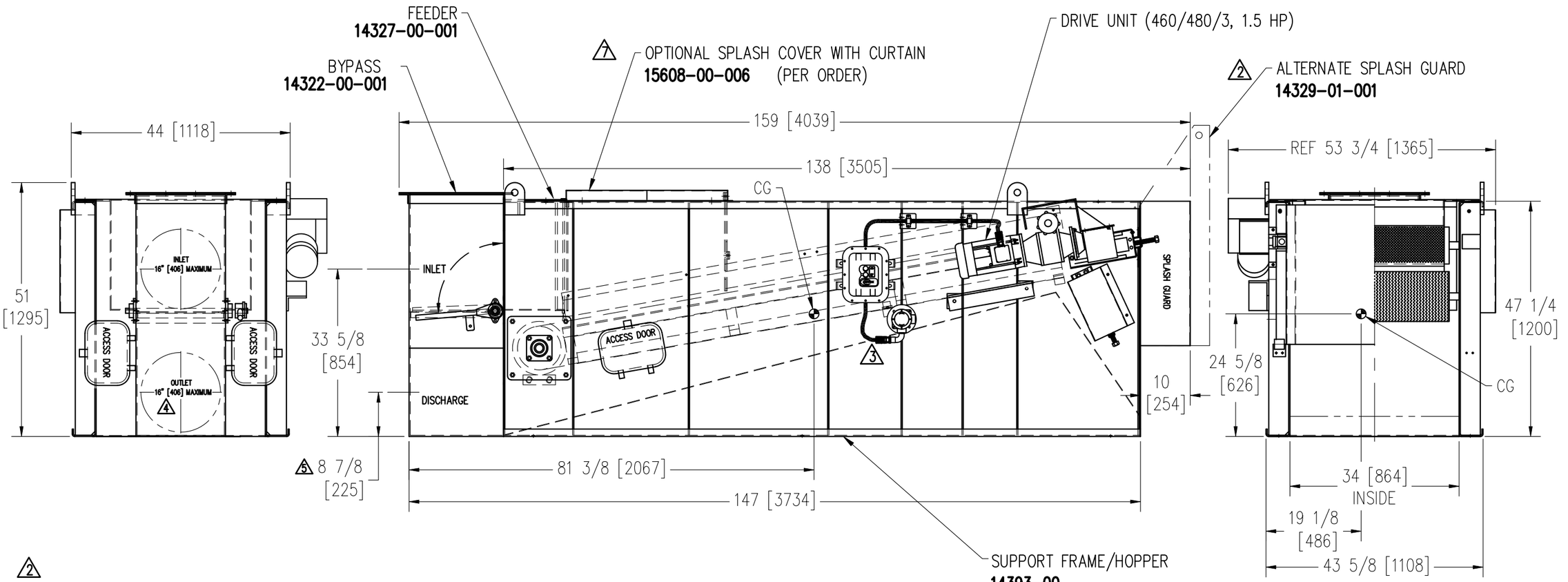
TITLE: GENERAL ARRANGEMENT
FLO–LINE PRIMER (FLP–28/200) 380/400/50/3

DWN GAK | CKD | DATE 9/12/00 | SCALE 1"=20" | REV 2

SHEET SIZE B | F C Y | DWN WS 3/15/01 | CKD NVB 3/19/01

DRAWING NO. 14000–08

DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.



2

NOTE:
FOR ALTERNATE SPLASH GUARD:
ADD 3 7/8 [98] TO OVERALL LENGTH
ADD 11 1/2 [292] TO OVERALL HEIGHT

DIMENSIONS IN [ ] = METRIC

OVERALL DIMENSIONS ±1/4 [6] UON

RECOMMENDED MAINTENANCE AND ACCESS SPACE–

FRONT–	2-3 FEET	[610-914]
SIDES–	2-3 FEET	[610-914]
REAR–	2-3 FEET	[610-914]

APPROX WT 3100 LBS [1406 KGS]

TAG

DATE: _____
EQUIPMENT NO. _____
DERRICK MODEL NO. FLP-28/258
DERRICK DRAWING NO. 14400-00
PARTS LIST NO. 14410-00
PURCHASE ORDER NO. _____

REV	CHANGE	CKD	DATE
7	ADDED OPTIONAL SPLASH COVER WITH CURTAIN.	JMB WS	2/16/12
6	ADDED CENTER OF GRAVITY.	CCS	10/14/08
5	8 7/8 [225] WAS 7 1/4 [184].	CCS	10/2/06
4	16" MAX OUTLET WAS 12" MAX OUTLET PER HOUSTON REQUEST.	CCS	4/26/06
3	UPDATED VIEW OF STARTER BOX AND ELECTRICAL ASSY	EJR JHM	3/17/04
2	ADDED ALTERNATE OVERSIZED SPLASH GUARD OPTION WITH NOTE	WS	9/19/02
1	UPDATED UNIT TO CURRENT MANUFACTURING STANDARDS	EJR RM	8/15/02

TITLE: GENERAL ARRANGEMENT
FLO-LINE PRIMER (FLP-28/258)

DWN GAK | CKD | DATE 8/24/99 | SCALE 1:20 | REV 7

SHEET SIZE B | F C | DWN | CKD

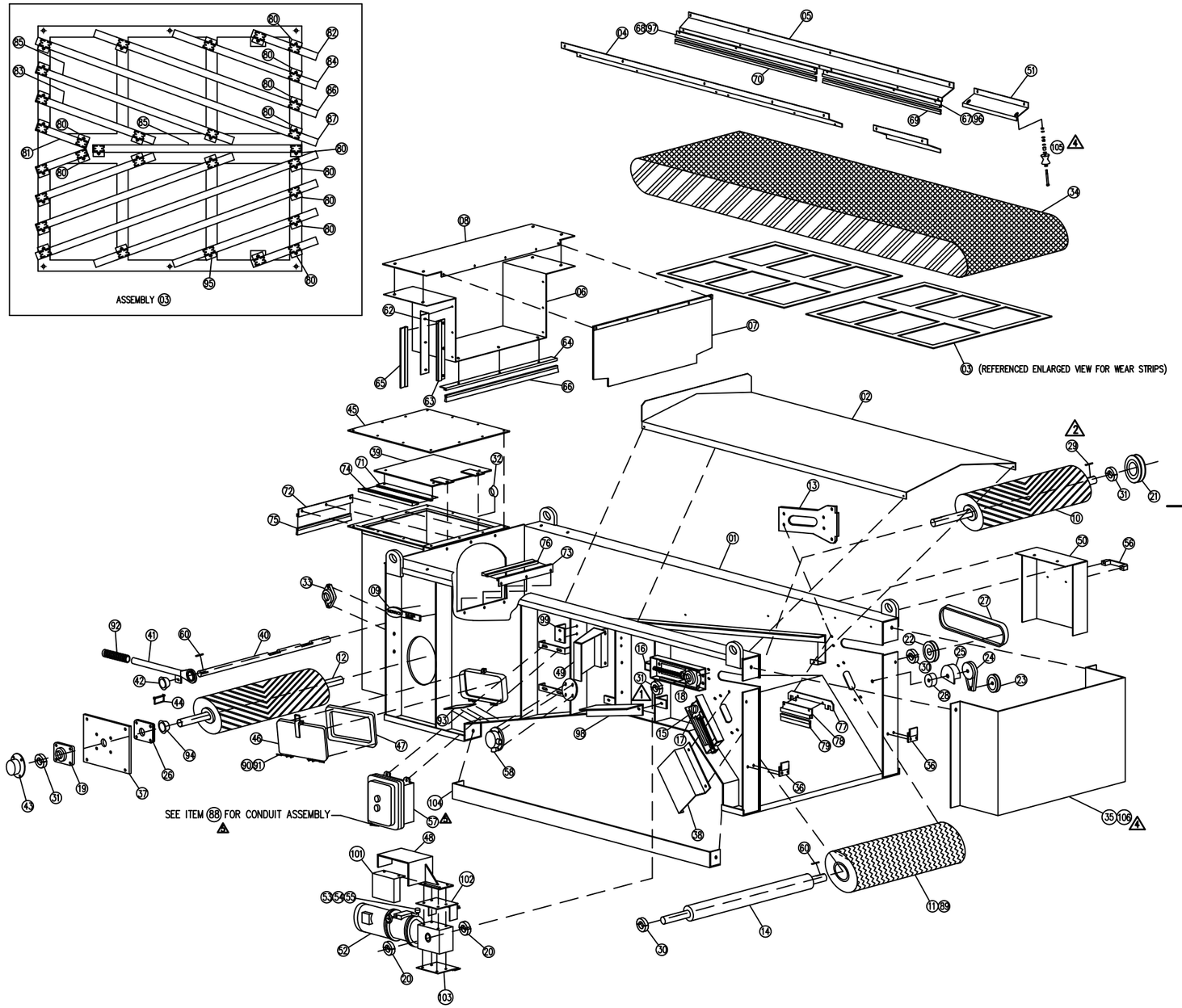
DRAWING NO. 14400-00

DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.

LO,WE, SH,PC,MAN

** = NOT REQUIRED ON CASCADE UNITS
* = RECOMMENDED SPARE PARTS FOR ONE YEAR

	QTY	ITEM	PART NUMBER	DESCRIPTION
4	1	106	14329-01-001	ALTERNATE OVERSIZED SPLASH GUARD (NOT SHOWN)
4 *	2	105	**15553-03**	ROLLER ASSEMBLY (LH & RH)
2 **	2	104	**14295-01**	SPACER ANGLE
	1	103	**14731-03**	BOTTOM BRACKET
	1	102	**14731-02**	TOP BRACKET
	1	101	**14731-01**	COVER GUARD
		100		
3	2	99	**14735-01**	CORD CLAMP BRACKET
	1	98	**14733-02**	MOTOR SUPPORT ANGLE
2	1	97	**1435707A**	BELT BRUSH EXTRUSION (RH) X 39
	1	96	**1435706A**	BELT BRUSH EXTRUSION (RH) X 33
4 1 2 3 *	30	95	G0002291	SPRING CLIP (ONE PIECE)
*	2	94	G0003245	ROLLER SHAFT SEAL
	1	93	**12708-00**	UNIT TAG
	1	92	G0001826	HANDLE GRIP
	8	91	G0001827	COTTER PIN
*	1	90	PP1278	HINGE PIN
	1	89	CCC-HB-040N30	BRUSH REPLACEMENT KIT (NOT SHOWN)
3	1	88	**14338-01-007**	ELECTRICAL ASSEMBLY
*	4	87	G0002002	WEAR STRIP X 40 1/4
*	4	86	G0002001	WEAR STRIP X 31 3/4
4 *	6	85	G0004681	WEAR STRIP X 28 1/8
*	4	84	G0001999	WEAR STRIP X 20 1/2
4 *	4	83	G0004680	WEAR STRIP X 16 7/8
4 *	4	82	G0001997	WEAR STRIP X 9 1/4
*	4	81	G0001996	WEAR STRIP X 7 1/4
4 1 2 *	30	80	PP1494	WEAR STRIP CLAMP (TWO PIECE)
*	8	79	G0001995	SHAFT SEAL BRUSH X 10
	8	78	**1435705A**	SHAFT SEAL EXTRUSION X 10
	8	77	**1433701A**	SHAFT SEAL BRACKET
*	1	76	G0003260	BYPASS BRUSH X 17 1/4-1"
*	1	75	G0003259	BYPASS BRUSH X 17 1/4-1 1/2"
	2	74	G0003258	BYPASS PLATE BRUSH X 15-1"
	2	73	**1435710A**	BYPASS BRUSH EXTRUSION X 17 1/4
	2	72	**1435709A**	BYPASS BRUSH EXTRUSION X 17 1/4
	2	71	**1435708A**	BYPASS BRUSH EXTRUSION X 15
1 *	2	70	G0002034	BELT BRUSH X 39 -1"
1 *	2	69	G0002033	BELT BRUSH X 33 - 1"
	1	68	**1435702A**	BELT BRUSH EXTRUSION (LH) X 39
	1	67	**1435701A**	BELT BRUSH EXTRUSION (LH) X 33
*	1	66	G0003257	FEEDER BRUSH X 33-1 1/2"
*	2	65	G0003256	FEEDER BRUSH X 16-2"
	1	64	**1435704A**	FEEDER BRUSH EXTRUSION
	2	63	**1435703A**	FEEDER BRUSH EXTRUSION
	2	62	**1432705A**	FEEDER BRUSH BRACKET
	4	61	PP1545	ROLLER BUSHING
	3	60	G0002035	KEYSTOCK-1/4"
3		59		
	1	58	CRH-LAWJB01	JUNCTION BOX
3	1	57	G0004231	STARTER BOX
	1	56	PP1322	HANDLE
	1	55	G0001822	BREATHER ELBOW
	1	54	G0001823	BREATHER ADAPTER
*	1	53	G0001821	BREATHER
	1	52	G0003580	GEAR DRIVE ASSEMBLY
3	2	51	**1433203A**	ROLLER BRACKET
	1	50	**14186018**	BELT GUARD
	1	49	**14207-03-004**	MOTOR SPLASH GUARD
	1	48	**14207-01-004**	MOTOR GUARD
*	4	47	G0001819	INSPECTION DOOR GASKET
	4	46	G0001719	INSPECTION DOOR
3	1	45	G0003700	BYPASS COVER
	1	44	G0001825	HANDLE LOCK PIN W/LANYARD
	2	43	**1451701A**	BEARING CAP
	1	42	G0001818	HANDLE BUSHING
	1	41	**1433401A**	BYPASS HANDLE
	1	40	**1433105A**	BYPASS SHAFT
	1	39	**1433101A**	BYPASS PLATE
	1	38	**14638-01**	TAKE UP FRAME GUARD
	2	37	**1433201A**	REAR ROLLER ACCESS PLATE
	2	36	**1432205A**	SPLASH GUARD MOUNTING CLIP
	1	35	**1432201A**	SPLASH GUARD
*	1	34	PER SPECIFICATION	CONVEYOR BELT (REFERENCE MANUAL)
	2	33	G0001811	1" FLANGE BEARING
*	2	32	G0003096	BYPASS SHAFT SEAL
	4	31	G0001824	LOCKING COLLAR-1 1/2"
	2	30	PP1319	LOCKING COLLAR-1"
3	1	29	G0003773	KEYSTOCK - 3/8"
3	1	28	**1425405A**	SPACER
*	1	27	PP1465	BRUSH BELT
*	2	26	G0003248	BEARING SHIELD
	1	25	**1425501A**	TENSIONER GUARD
*	1	24	G0001576	BELT TENSIONER
*	1	23	PP1464	IDLER SPROCKET
*	1	22	PP1463	BRUSH SPROCKET
*	1	21	PP1462	BRUSH SPROCKET w/BUSHING
*	2	20	G0003121	LOCKING COLLAR - 1 7/16"
*	2	19	G0001810	1 1/2" FLANGE BEARING
*	2	18	G0001808	1 1/2" TAKE-UP FRAME BEARING
*	2	17	G0001809	1" TAKE-UP FRAME BEARING
	2	16	**1429801A**	TAKE-UP FRAME ASSEMBLY-1 1/2"
	2	15	**1429501A**	TAKE-UP FRAME ASSEMBLY-1"
	1	14	**1432502A**	BRUSH ROLLER SHAFT
3	2	13	**16484-01**	SIDE PLATE COVER
3	1	12	G0007380	REAR ROLLER ASSEMBLY
	1	11	CCC-HS040N30	BRUSH ROLLER
3	1	10	G0007379	FRONT ROLLER ASSEMBLY
	1	09	G0001902	NAMEPLATE
	1	08	**1432708A**	FEEDER TOP
*	1	07	**1432708A**	FEEDER CURTAIN
	1	06	**1432705A**	FEEDER TRAY
	1	05	**1433202A**	BRUSH SEAL BRACKET (LH)
	1	04	**1433201A**	BRUSH SEAL BRACKET(RH)
	2	03	**1432801A**	SUPPORT BED
	1	02	**1432801A**	DEFLECTOR PAN
	1	01	**1432101A**	SUPPORT/HOPPER FRAME



GEN ARR 14000-05

REV	CHANGE	CKD	DATE
7	ITEM 10 WAS 1422201A; ITEM 12 WAS 14325-01-001; ITEM 13 WAS 1432503A; ITEM 59 WAS G0002036.	CCS	04/26/06
6	ITEM 28: 1425405A WAS 1425404A	JVL WAS	01/07/05
5	ITEM 57 G0004231 WAS G0001778, ITEM 88 14336-01-007 WAS 14336-01-002, ITEM 99 QTY 2 WAS 1, REMOVED ITEM 100	EJR	3/18/04
4	ADDED ITEM 105 ROLLER ASSEMBLY, AND ROLLER BRACKET WAS ROLLER GUARD, ITEM 80 QTY WAS 34, ITEM 95 QTY WAS 54, ITEM 81 QTY WAS 10, ITEM 85 WAS G0002000 & QTY WAS 4, ITEM 83 WAS G0001998, ADDED ALTERNATE SPLASH GUARD ITEM 106	EJR WS	10/17/03
3	CORRECTED QTY OF ITEM 95 (WAS QTY 64)	WS	2/9/01
2	ITEM 29 WAS PP1471 (NOW INCLUDED IN ITEM 21 (PP1462)), ADDED NEW ITEM 29 & 104, ITEM 80 WAS QTY 30, ITEM 95 QTY WAS 68, ITEM 96 WAS 1435701A & 97 WAS 1435702A	WS	12/19/00
1	ITEM 95 QUANTITY WAS 70; ITEM 80 QUANTITY WAS 18; ITEM 69 & 70 WERE 1 1/2"; ADDED NEW OF ITEM 31. ITEM 45 WAS 1432210A.	CCS	11/10/00

E,B	DEPT.
H	1abc, 2bce, 4a

TITLE: PARTS LIST
FLO-LINE PRIMER (FLP-28/200)

DWN GAK | DATE 9/14/00 | SCALE NTS | REV 7
CKD | DATE
SHEET SIZE C | Y | DWN
F C | CKD
DRAWING NO. 14290-00-006

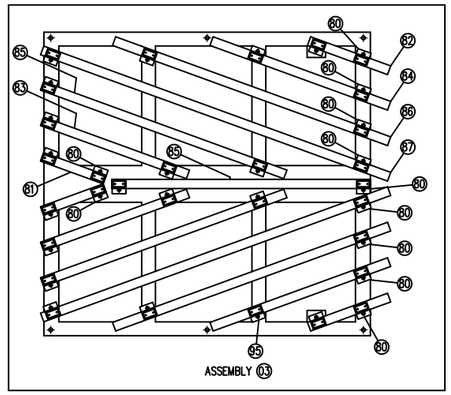
DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.

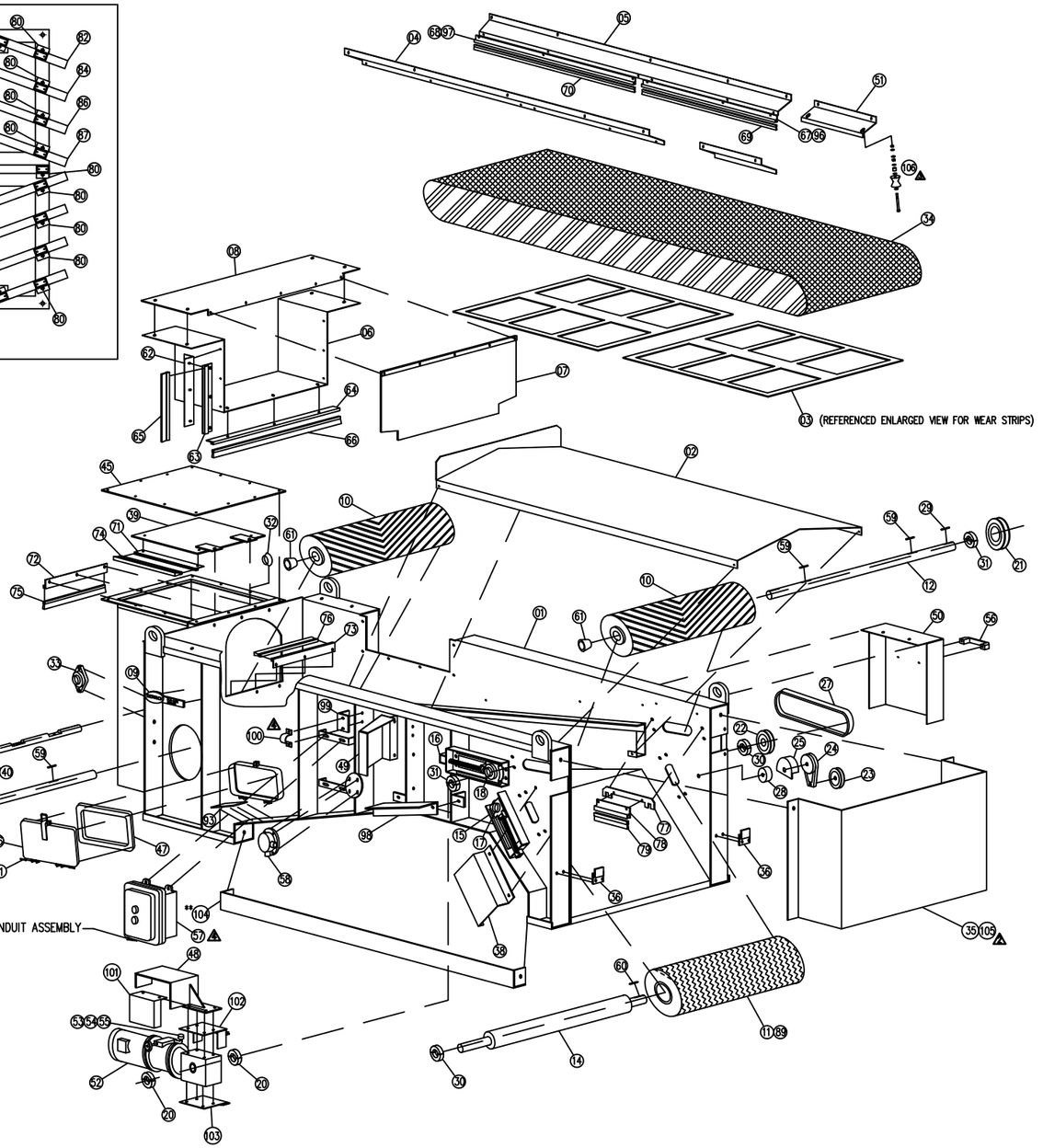
MAJOR

QTY	ITEM	PART NUMBER	DESCRIPTION
1	106	15553-03	ROLLER ASSEMBLY (LH & RH)
1	105	14320-01-001	ALTERNATE OVERSIZED SPLASH GUARD (NOT SHOWN)
2	104	14595-01	SPACER ANGLE
1	103	14751-03	BOTTOM BRACKET
1	102	14751-02	TOP BRACKET
1	101	14751-01	COVER GUARD
2	100	G0004632	CORD CLAMP
2	99	14738-01	CORD CLAMP BRACKET
1	98	14733-02	MOTOR SUPPORT ANGLE
1	97	1435707A	BELT BRUSH EXTRUSION (RH) X 39
1	96	1435706A	BELT BRUSH EXTRUSION (RH) X 33
30	95	G0002291	SPRING CLIP (ONE PIECE)
2	94	G0003245	ROLLER SHAFT SEAL
1	93	12708-00	UNIT TAG
1	92	G0001826	HANDLE GRIP
8	91	G0001827	COTTER PIN
1	90	PP1278	HINGE PIN
1	89	CCC-HB-040N30	BRUSH REPLACEMENT KIT (NOT SHOWN)
1	88	14336-01-007	ELECTRICAL ASSEMBLY
4	87	G0002002	WEAR STRIP X 40 1/4
4	86	G0002001	WEAR STRIP X 31 3/4
6	85	G0004681	WEAR STRIP X 28 1/8
4	84	G0001999	WEAR STRIP X 20 1/2
4	83	G0004680	WEAR STRIP X 16 7/8
4	82	G0001997	WEAR STRIP X 9 1/4
4	81	G0001996	WEAR STRIP X 7 1/4
30	80	PP1494	WEAR STRIP CLAMP (TWO PIECE)
8	79	G0001995	SHAFT SEAL BRUSH X 10
8	78	1435705A	SHAFT SEAL EXTRUSION X 10
8	77	1433701A	SHAFT SEAL BRACKET
1	76	G0003260	BYPASS BRUSH X 17 1/4-1"
1	75	G0003259	BYPASS BRUSH X 17 1/4-1 1/2"
2	74	G0003258	BYPASS PLATE BRUSH X 15-1"
2	73	1435710A	BYPASS BRUSH EXTRUSION X 17 1/4
2	72	1435709A	BYPASS BRUSH EXTRUSION X 17 1/4
2	71	1435708A	BYPASS BRUSH EXTRUSION X 15
2	70	G0002034	BELT BRUSH X 39 -1"
2	69	G0002033	BELT BRUSH X 33 - 1"
1	68	1435702A	BELT BRUSH EXTRUSION (LH) X 39
1	67	1435701A	BELT BRUSH EXTRUSION (LH) X 33
1	66	G0003257	FEEDER BRUSH X 33-1 1/2"
2	65	G0003256	FEEDER BRUSH X 16-2"
1	64	1435704A	FEEDER BRUSH EXTRUSION
2	63	1435703A	FEEDER BRUSH EXTRUSION
2	62	1432705A	FEEDER BRUSH BRACKET
4	61	PP1545	ROLLER BUSHING
3	60	G0002035	KEYSTOCK-1/4"
4	59	G0002036	KEYSTOCK-3/8"
1	58	CRH-LAWJB01	JUNCTION BOX
1	57	G0004231	STARTER BOX
1	56	PP1322	HANDLE
1	55	G0001822	BREATHER ELBOW
1	54	G0001823	BREATHER ADAPTER
1	53	G0001821	BREATHER
1	52	G0003817	GEAR DRIVE ASSEMBLY
2	51	1433203A	ROLLER BRACKET
1	50	14186018	BELT GUARD
1	49	14207-03-004	MOTOR SPLASH GUARD
1	48	14207-01-004	MOTOR GUARD
4	47	G0001819	INSPECTION DOOR GASKET
4	46	G0001719	INSPECTION DOOR
1	45	G0003700	BYPASS COVER
1	44	G0001825	HANDLE LOCK PIN W/LANYARD
2	43	1451701A	BEARING CAP
1	42	G0001818	HANDLE BUSHING
1	41	1433401A	BYPASS HANDLE
1	40	1433105A	BYPASS SHAFT
1	39	1433101A	BYPASS PLATE
1	38	14638-01	TAKE UP FRAME GUARD
2	37	1433301A	REAR ROLLER ACCESS PLATE
2	36	1432203A	SPLASH GUARD MOUNTING CLIP
1	35	1432201A	SPLASH GUARD
1	34	PER SPECIFICATION	CONVEYOR BELT (REFERENCE MANUAL)
2	33	G0001811	1" FLANGE BEARING
2	32	G0003096	BYPASS SHAFT SEAL
4	31	G0001824	LOCKING COLLAR-1 1/2"
2	30	PP1319	LOCKING COLLAR-1"
1	29	G0003773	KEYSTOCK - 3/8"
1	28	1425404A	SPACER
1	27	PP1465	BRUSH BELT
2	26	G0003248	BEARING SHIELD
1	25	1425501A	TENSIONER GUARD
1	24	G0001576	BELT TENSIONER
1	23	PP1464	IDLER SPROCKET
1	22	PP1463	BRUSH SPROCKET
1	21	PP1462	BRUSH SPROCKET w/BUSHING
2	20	G0003121	LOCKING COLLAR - 1 7/16"
2	19	G0001810	1 1/2" FLANGE BEARING
2	18	G0001808	1 1/2" TAKE-UP FRAME BEARING
2	17	G0001809	1" TAKE-UP FRAME BEARING
2	16	1426601A	TAKE-UP FRAME ASSEMBLY-1 1/2"
2	15	1426501A	TAKE-UP FRAME ASSEMBLY-1"
1	14	1432502A	BRUSH ROLLER SHAFT
1	13	1432503A	REAR ROLLER SHAFT
1	12	14325-01-001	FRONT ROLLER SHAFT
1	11	CCC-HS040N30	BRUSH ROLLER
2	10	1422201A	FRONT & REAR ROLLER ASSEMBLY
1	09	G0001902	NAMEPLATE
1	08	1432709A	FEEDER TOP
1	07	1432708A	FEEDER CURTAIN
1	06	1432705A	FEEDER TRAY
1	05	1433202A	BRUSH SEAL BRACKET (LH)
1	04	1433201A	BRUSH SEAL BRACKET(RH)
2	03	1432901A	SUPPORT BED
1	02	1432801A	DEFLECTOR PAN
1	01	1432101A	SUPPORT/HOPPER FRAME

* = RECOMMENDED SPARE PARTS FOR ONE YEAR

⚠** = NOT REQUIRED ON CASCADE 2000 UNITS





EB	DEPT.
H	1abc, 2bce, 4a

GEN ARR 14000-08

REV	CHANGE	CKD	DATE
3	ADDED ITEM 106, ITEM 80 QTY WAS 34, ITEM 81 QTY WAS 10, ITEM 83 WAS G0001998, ITEM 85 WAS G0002000 & QTY WAS 4, ITEM 95 QTY WAS 54	WS	10/20/03
2	ADDED ALTERNATE SPLASH GUARD ITEM 105 AS OPTION	WS	9/17/02
1	ADDED NOTE	WS	6/22/01
4	ITEM 57 G0004231 WAS G0001776, ITEM 88 14336-01-007 WAS 14336-01-002 & DESCR. CHANGED, ITEM 99 QTY 2 WAS 1, ITEM 100 QTY 2 WAS 1 & PART # WAS U-BOLT-407	EJR	3/18/04

TITLE: PARTS LIST
FLO-LINE PRIMER (FLP-28/200)

DWN GAK CKD | DATE 9/14/00 | SCALE NTS | REV 4

SHEET SIZE C | Y | F C | DWN WS 3/15/01 | CKD NVB 3/19/01

DRAWING NO. 14290-00-009

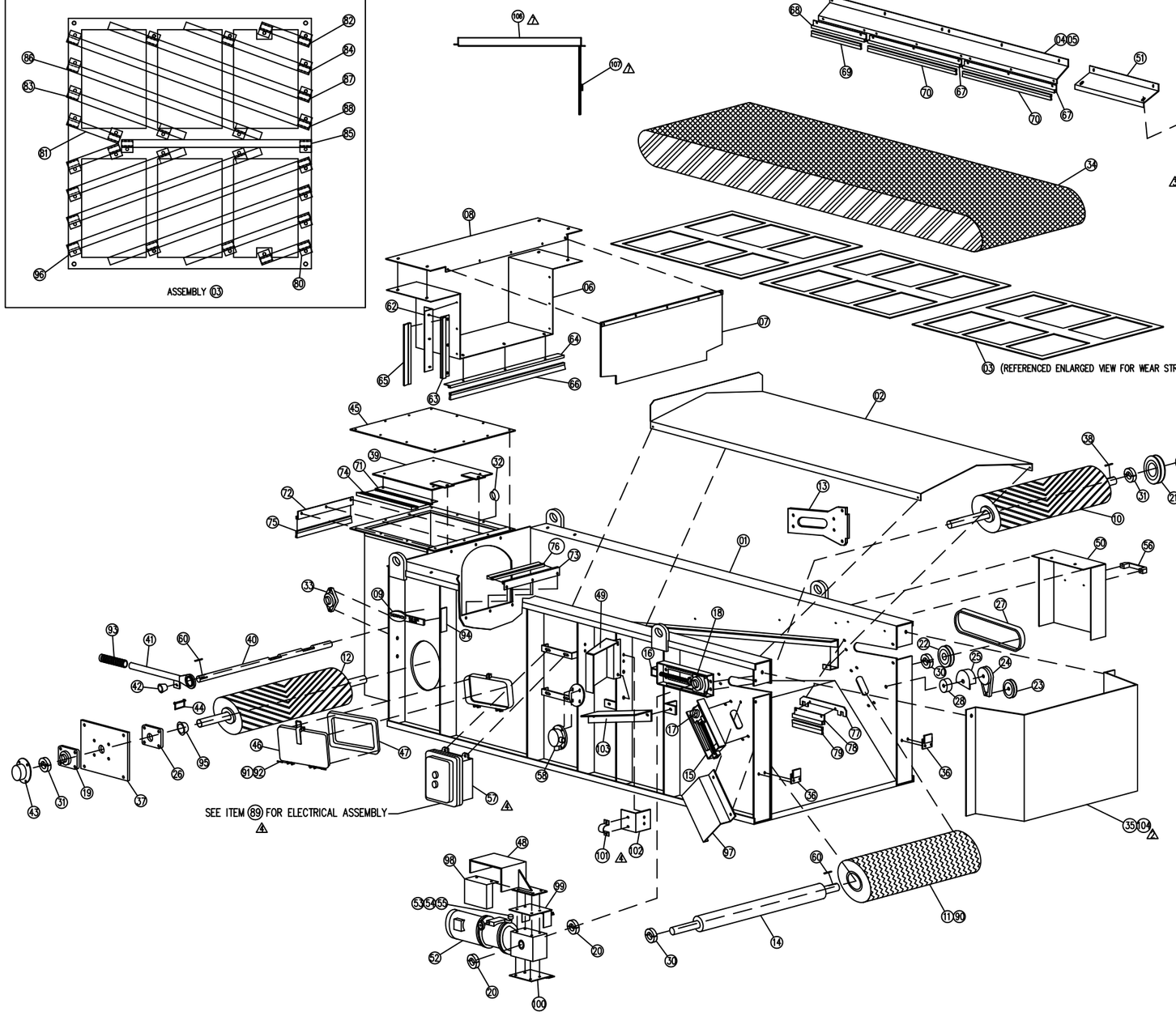
DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.

MAJOR

∗= RECOMMENDED SPARE PARTS FOR ONE YEAR

⚠	1	107	**15606-02-006**	SPLASH CURTAIN ASSEMBLY (OPTIONAL PER ORDER)
⚠	1	106	**15606-01-006**	SPLASH HOOD ASSEMBLY (OPTIONAL PER ORDER)
⚠⚠ ∗	2	105	**15553-12**	ROLLER ASSEMBLY (LH & RH)
⚠	1	104	**14329-01-001**	ALTERNATE OVERSIZED SPLASH GUARD (NOT SHOWN)
	1	103	**14733-02**	MOTOR SUPPORT ANGLE
⚠	2	102	**14735-01**	CORD CLAMP BRACKET
⚠	2	101	G0004632	CORD CLAMP
	1	100	**14731-03**	BOTTOM BRACKET
	1	99	**14731-02**	TOP BRACKET
	1	98	**14731-01**	COVER GUARD
	1	97	**14636-01**	TAKE UP FRAME GUARD
⚠ ∗	45	96	G0002291	SPRING CLIP
∗	2	95	G0003245	ROLLER SHAFT SEAL
	1	94	**1270600A**	UNIT TAG
	1	93	G0001826	HANDLE GRIP
	8	92	G0001827	COTTER PIN
	8	91	PP1278	HINGE PIN
∗	1	90	CCC-HB-040N30	BRUSH REPLACEMENT KIT (NOT SHOWN)
⚠	1	89	**14336-01-007**	ELECTRICAL ASSEMBLY
∗	6	88	G0003177	WEAR STRIP X 35 1/4
∗	6	87	G0003176	WEAR STRIP X 29 1/2
∗	6	86	G0003175	WEAR STRIP X 27
∗	3	85	G0003174	WEAR STRIP X 26
∗	6	84	G0003173	WEAR STRIP X 19
∗	6	83	G0003172	WEAR STRIP X 16 1/4
∗	6	82	G0003171	WEAR STRIP X 8 1/2
∗	6	81	G0001996	WEAR STRIP X 7 1/4
⚠ ∗	45	80	PP1494	WEAR STRIP CLAMP
∗	8	79	G0001995	SHAFT SEAL BRUSH X 10
	8	78	**1435705A**	SHAFT SEAL EXTRUSION X 10
	8	77	**1433701A**	SHAFT SEAL BRACKET
∗	1	76	G0003260	BYPASS BRUSH X 17 1/4-1"
∗	1	75	G0003259	BYPASS BRUSH X 17 1/4-1 1/2"
	2	74	G0003258	BYPASS PLATE BRUSH X 15-1"
	2	73	**1435710A**	BYPASS BRUSH EXTRUSION X 17 1/4
	2	72	**1435709A**	BYPASS BRUSH EXTRUSION X 17 1/4
	2	71	**1435708A**	BYPASS BRUSH EXTRUSION X 15
∗	4	70	G0002034	BELT BRUSH X 39 -1"
∗	2	69	G0003982	BELT BRUSH X 23 1/2-1"
	2	68	**1435702B**	BELT BRUSH EXTRUSION
	4	67	**1435701B**	BELT BRUSH EXTRUSION
∗	1	66	G0003257	FEEDER BRUSH X 33-1 1/2"
∗	2	65	G0003256	FEEDER BRUSH X 16-2"
	1	64	**14357004A**	FEEDER BRUSH EXTRUSION
	2	63	**14357013A**	FEEDER BRUSH EXTRUSION
	2	62	**14327058**	FEEDER BRUSH BRACKET
	4	61	PP1545	ROLLER BUSHING
	3	60	G0002035	KEYSTOCK-1/4"
⚠		59		
	1	58	CRH-LAWJB01	JUNCTION BOX
⚠	1	57	G0004231	STARTER BOX
	1	56	PP1322	HANDLE
	1	55	G0001822	BREATHER ELBOW
	1	54	G0001823	BREATHER ADAPTER
∗	1	53	G0001821	BREATHER
	1	52	G0003580	GEAR DRIVE ASSEMBLY
⚠⚠	2	51	**14332038**	ROLLER BRACKET
	1	50	**14186018**	BELT GUARD
⚠	1	49	**14207-03-004**	MOTOR SPLASH GUARD
⚠	1	48	**14207-01-004**	MOTOR GUARD
∗	4	47	G0001819	INSPECTION DOOR GASKET
	4	46	G0001719	INSPECTION DOOR
	1	45	G0003700	BYPASS COVER
	1	44	G0001825	HANDLE LOCK PIN W/LANYARD
	2	43	**1451701A**	BEARING CAP
	1	42	G0001818	HANDLE BUSHING
	1	41	**14334101A**	BYPASS HANDLE
	1	40	**14331105A**	BYPASS SHAFT
	1	39	**14331101A**	BYPASS PLATE
∗	1	38	G0003773	KEYSTOCK-3/8"
	2	37	**14332201A**	REAR ROLLER ACCESS PLATE
	2	36	**14329003A**	SPLASH GUARD MOUNTING CLIP
	1	35	**14329001A**	SPLASH GUARD
∗	1	34	PER SPECIFICATION	CONVEYOR BELT (REFERENCE MANUAL)
	2	33	G0001811	1" FLANGE BEARING
∗	2	32	G0003096	BYPASS SHAFT SEAL
	4	31	G0001824	LOCKING COLLAR-1 1/2"
	2	30	PP1319	LOCKING COLLAR-1"
	1	29	PP1471	1 1/2 " QD BUSHING
	1	28	**1425405A**	SPACER
∗	1	27	PP1465	BRUSH BELT
∗	2	26	G0003248	BEARING SHIELD
	1	25	**1425501A**	TENSIONER GUARD
∗	1	24	G0001576	BELT TENSIONER
∗	1	23	PP1464	IDLER SPROCKET
∗	1	22	PP1463	BRUSH SPROCKET
∗	1	21	PP1462	BRUSH SPROCKET
∗	1	20	G0003121	LOCKING COLLAR - 1 7/16"
∗	2	19	G0001810	1 1/2" FLANGE BEARING
∗	2	18	G0001808	1 1/2" TAKE-UP FRAME BEARING
∗	2	17	G0001809	1" TAKE-UP FRAME BEARING
	2	16	**1429001A**	TAKE-UP FRAME ASSEMBLY-1 1/2"
	2	15	**1429001A**	TAKE-UP FRAME ASSEMBLY-1"
	1	14	**1432502A**	BRUSH ROLLER SHAFT
⚠	2	13	**16464-01**	SIDE PLATE COVER
⚠	1	12	G0007380	REAR ROLLER ASSEMBLY
	1	11	CCC-HS040N30	BRUSH ROLLER
⚠	1	10	G0007379	FRONT ROLLER ASSEMBLY
	2	09	**10460-00-FLP**	NAMEPLATE
	1	08	**14327098**	FEEDER TOP
∗	1	07	**14327088**	FEEDER CURTAIN
	1	06	**14327038**	FEEDER TRAY
	1	05	**14332028**	BRUSH SEAL BRACKET (LH)
	1	04	**14332018**	BRUSH SEAL BRACKET(RH)
	3	03	**14329148**	SUPPORT BED
	1	02	**14329018**	DEFLECTOR PAN
	1	01	**14363-01**	SUPPORT/HOPPER FRAME
QTY	ITEM		PART NUMBER	DESCRIPTION

ASSEMBLY (03)



REF: GEN ARR 14400-00

REV	CHANGE	CKD	DATE
7	ADDED ITEMS 106 AND 107	MB WS	2/16/12
6	QUANTITY WAS 27 ON ITEM 80; QUANTITY WAS 63 ON ITEM 96.	CCS	9/29/06
5	ITEM 10 WAS 1422201A; ITEM 12 WAS 14325-01-001; ITEM 13 WAS 1432503A; ITEM 59 WAS G0002036.	CCS	4/27/06
4	ITEM 57 WAS G0001776, ITEM 89 WAS 14336-01-002, ITEM 99 QTY 2 WAS 1, ITEM 100 QTY 2 WAS 1 & P/N WAS U-BOLT-407, ITEM 51 WAS 1433203A, ITEM 105 WAS 15553-03	EJR WS	3/18/04
3	ADDED ITEM 105 ROLLER ASSEMBLY, ROLLER BRACKET WAS ROLLER GUARD	EJR WS	5/16/03
2	ADDED ITEM 104 AS OPTION, CORRECTED PART #'S FOR ITEMS 48 & 49	WS	9/18/02
1	UPDATED UNIT TO CURRENT MANUFACTURING STANDARDS	EJR	8/14/02

TITLE: PARTS LIST
FLO-LINE PRIMER (FLP-28/258)

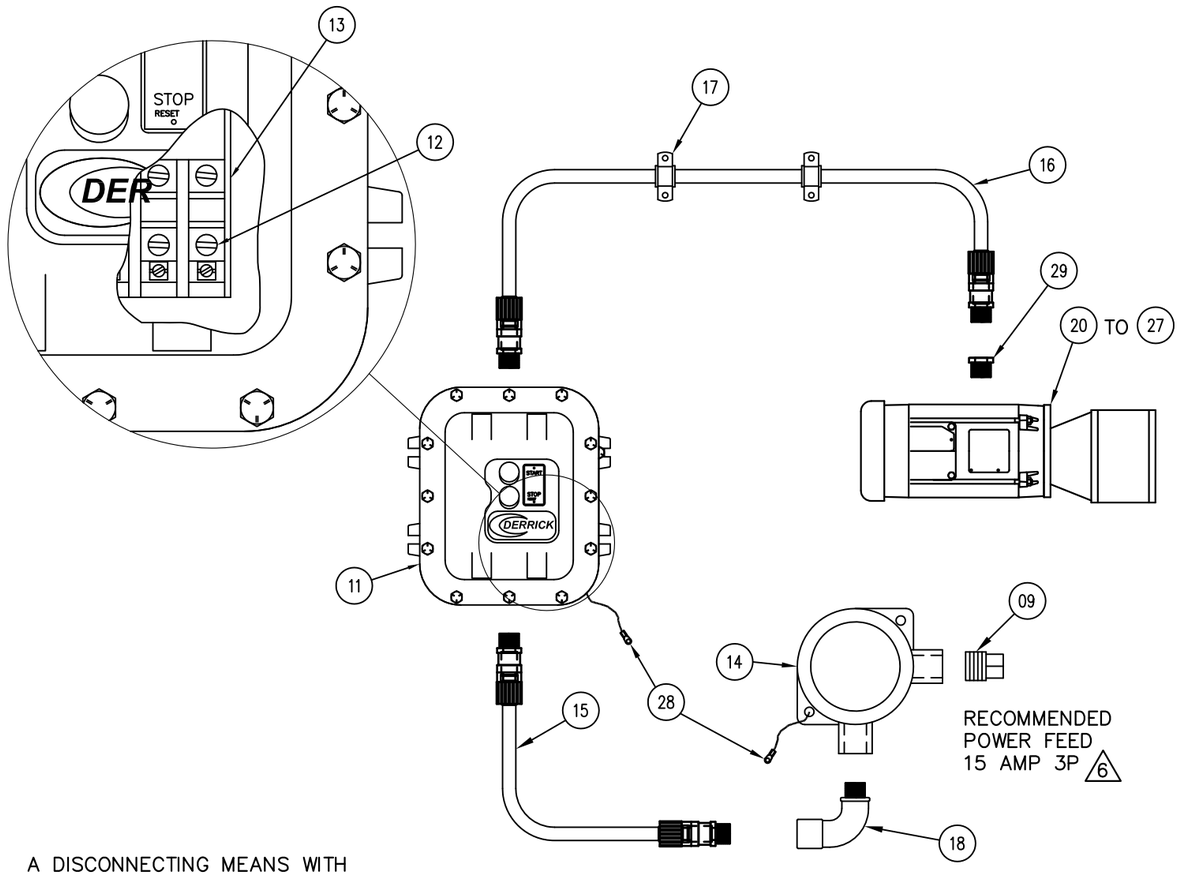
DWN GAK | CKD | DATE 8/22/00 | SCALE NONE | REV 7

SHEET SIZE C | Y | DWN | F C | CKD

DRAWING NO. 14410-00

DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.

LO.WE.SH.UR.MAN.PC



A DISCONNECTING MEANS WITH SHORT CIRCUIT AND GROUND FAULT PROTECTION AS REQUIRED BY NEC CODES AND SIMILAR INTERNATIONAL CODES IS NOT INCLUDED AND MUST BE PROVIDED AND INSTALLED BY OTHERS 6

NOTE: SELECT MOTOR OVERLOAD FROM PE-S-014.DOC

STANDARD

6	1	1	1	1	1	1	1	1	29	CRH-RE32	REDUCER 1" NPT TO 3/4" NPT
6	2	2	2	2	2	2	2	2	28	16538-26	GROUND WIRE 11", PANEL TO FRAME
5	1								27	G0004304	575/600V MOTOR/GEARBOX ASSEMBLY LH
		1							26	G0003815	460/480V MOTOR/GEARBOX ASSEMBLY LH
			1						25	PENDING	440V MOTOR/GEARBOX ASSEMBLY LH
				1					24	G0003819	380/400V MOTOR/GEARBOX ASSEMBLY LH
					1				23	G0003902	575/600V MOTOR/GEARBOX ASSEMBLY RH
						1			22	G0003580	460/480V MOTOR/GEARBOX ASSEMBLY RH
							1		21	G0004068	440V MOTOR/GEARBOX ASSEMBLY RH
								1	20	G0003643	380/400V MOTOR/GEARBOX ASSEMBLY RH
5									19	NOT USED	
	1	1	1	1	1	1	1	1	18	CRH-EL-296	90° ELBOW 3/4
	2	2	2	2	2	2	2	2	17	G0004632	CORD CLAMP ASSY (PRIMER II USES ONE)
	1	1	1	1	1	1	1	1	16	15688-01-003	CORD ASSY,ELECT- 10GA-4C, 45"/72"
	1	1	1	1	1	1	1	1	15	15688-01-004	CORD ASSY,ELECT- 10GA-4C, 15"/40"
	1	1	1	1	1	1	1	1	14	CRH-LAWJB01	JUNCTION BOX WITH TERMINAL BLOCK
	*	*	*	*	*	*	*	*	13	SQD-2510-MC03	MANUAL STARTER (REPLACEMENT ONLY)
	3	3	3	3	3	3	3	3	12	REF: PE-S-014.DOC	THERMAL UNITS
	1	1	1	1	1	1	1	1	11	G0004231	MANUAL STARTER, NEMA 4, 7 & 9
2									10	NOT USED	
	1	1	1	1	1	1	1	1	09	SHPP-75	SQ HD PIPE PLUG 3/4 IN
	X								08	14336-08-007	575/600V ASSEMBLY COMPLETE LEFT HAND
		X							07	14336-07-007	460/480V ASSEMBLY COMPLETE LEFT HAND
			X						06	14336-06-007	440V ASSEMBLY COMPLETE LEFT HAND
				X					05	14336-05-007	380/400V ASSEMBLY COMPLETE LEFT HAND
					X				04	14336-04-007	575/600V ASSEMBLY COMPLETE RIGHT HAND
						X			03	14336-03-007	460/480V ASSEMBLY COMPLETE RIGHT HAND
							X		02	14336-02-007	440V ASSEMBLY COMPLETE RIGHT HAND
								X	01	14336-01-007	380/400V ASSEMBLY COMPLETE RIGHT HAND
QTY									ITEM	PART NUMBER	DESCRIPTION

REF GA 14000-05
REF GA 14400-00
REF GA 16982-00-007
REF WS 13108-00
REF WS 13108-00-001
REF WS 13108-00-008

REV	CHANGE	CKD	DATE
6	REMOVE ITEM 19 (WAS G0008592), ADD NEC TO TITLE BLOCK, ADD NOTES ADD ITEMS 28 & 29, ADD PC TO DIST	JWC RDH	11/04/14
5	ADDED ITEMS 19 TO 27. ADDED MOTOR VIEW REMOVE UNUSED COLUMNS, CHANGE ITEM 13 TO * FOR REPLACEMENT ONLY	JWC MC	08/22/13
4	ADD WS REF 13108-00-008 AND GA REF 16982-00-007	JWC JFS	08/03/11
3	DELETE ITEMS 12 TO 21 NOW SHOWN ON GA PARTS LIST (WAS MOUNTING HARDWARE).	JWC JFS	02/18/09
2	DELETE ITEM 03 NO LONGER USED (WAS CRH-ECD15), ADDED PRIMER II AND MANUAL STARTER TO TITLE BLOCK, CHANGED QUANTITY OF ITEM 14 (WAS 1)	JWC JFS	02/09/09
1	ADDED ASSEMBLY PART NUMBERS TO ITEMS 12, 13 & 14 IN BOM, REVISED VIEW TO CALL OUT HARDWARE ASSEMBLYS, HARDWARE WAS CALLED OUT INDIVIDUALLY.	MCR SDB	5/6/04

TITLE: ELECTRICAL PARTS LIST FLO-LINE PRIMER AND FLO-LINE PRIMER II W/MANUAL STARTER NEC

DWN GAK | CKD | DATE 9/19/00 | SCALE NONE | REV 6

SHEET SIZE B | F C Y

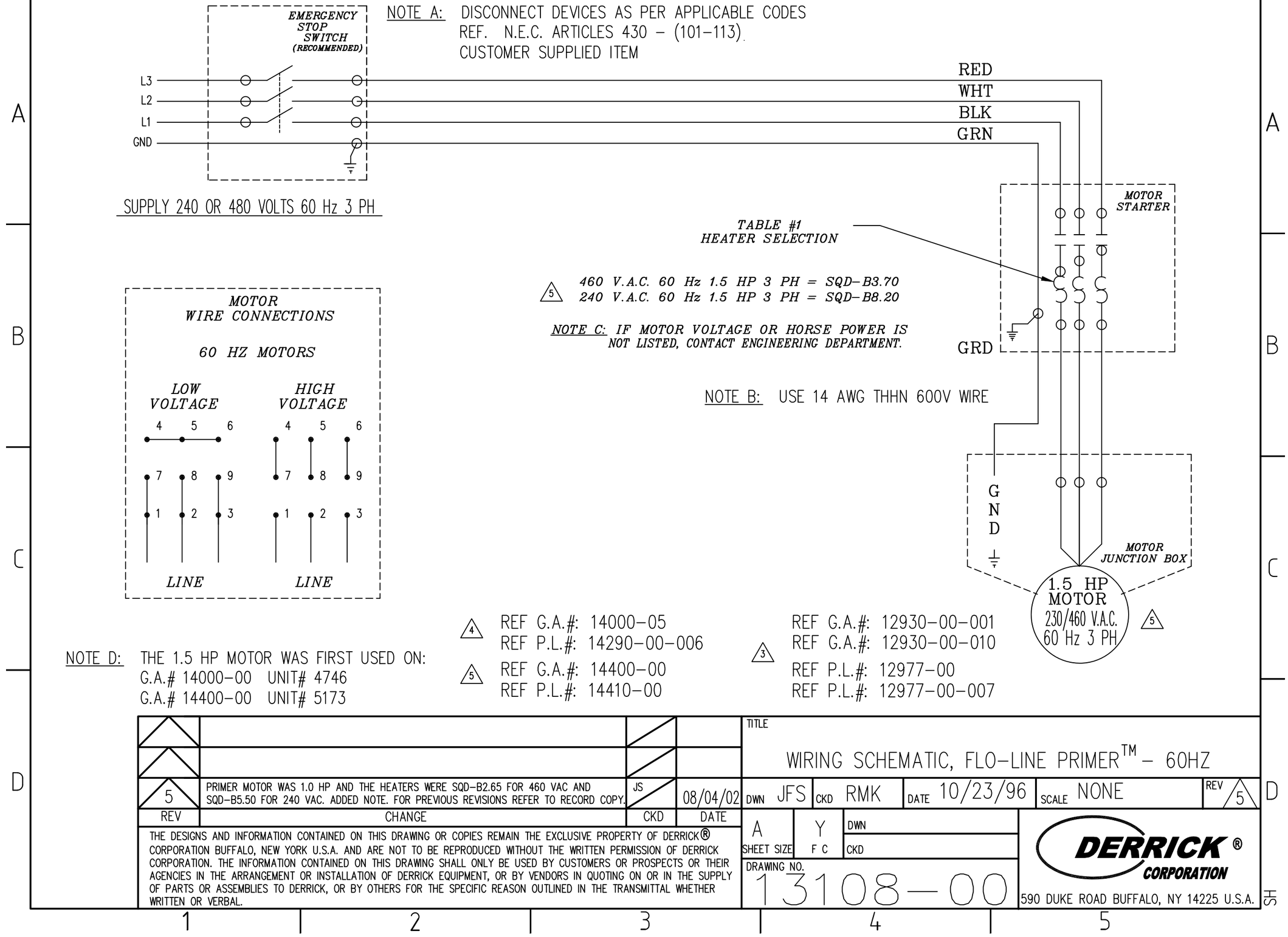
DWN EJR 3/15/04

CKD SB 5/5/04

DRAWING NO. 14336-00-007

DERRICK® CORPORATION
590 DUKE ROAD BUFFALO, NY 14225 U.S.A.

SH,MAN,PC



SECTION 9 - INSTALLATION AND MAINTENANCE LOG

PRIMER

PURPOSE

This section should be used by operating and maintenance personnel to record historical information gathered during the installation and operation of the Derrick equipment. If properly kept, the log will be useful for altering maintenance intervals and intercepting trends that may indicate the need for changing operating procedures. Each entry in the log should be dated for future reference and tracking. If required, additional pages may be added to the log by copying a blank page or simply inserting ruled paper at the rear of the section.

Installation and Maintenance Notes:

CERTIFICATE OF ORIGIN

Equipment:	Primers
Model:	FLP-28/200, FLP-28/258, Primer II
Characteristics:	0-600VAC, 50/60Hz, 3PH

Derrick Corporation acknowledges that the above set-forth product is manufactured in the United States of America as of the date of this certificate. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.

Date: 29-December-2011

Signature: Jennifer J. Polanowski
Derrick Corporation

Document No.: PE-S-008-08-00

CERTIFICATE OF QUALITY

Equipment:	Primers
Model:	FLP-28/200, FLP-28/258, Primer II
Characteristics:	0-600VAC, 50/60Hz, 3PH

Derrick Corporation acknowledges that the above set-forth product conformed to the requirements for the applicable purchase order at the time of its original shipment by Derrick Corporation in that all construction materials and components were new and unused, were manufactured for this product, and that it was free of any known defects as to their design, material and workmanship. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.

Jennifer J. Polanowski

Date: 29-December-2011

Signature: Jennifer J. Polanowski
Derrick Corporation

SHIPPING FINAL INSPECTION AND RUN TEST CERTIFICATE

Equipment:	Primers
Model:	FLP-28/200, FLP-28/258, Primer II
Characteristics:	0-600VAC, 50/60Hz, 3PH

The product listed above was inspected and found to be in conformance with Derrick Corporation's internal coating, run test, and assembly inspection documents that were required for the type of equipment manufactured in accordance with the Derrick quality system. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the referenced product.

Jennifer J. Polanowski

Date: 29-December-2011

Signature: Jennifer J. Polanowski
Derrick Corporation

DERRICK® CORPORATION

Doc # PE-S-036-02-06
Date: 20-January-2011

CERTIFICATE OF CONFORMANCE

Equipment:	Mining & Oilfield equipment manufactured specifically for Hazardous Location Areas including but not limited to: Flo-Line® Cleaners, Flo-Line® Primers, Agitators, Vacu-Flo™ Degassers, DE-1000™ Centrifuges, Centrifugal Pumps, Flo-Line Scalpers™ etc.
Name and Address of Manufacturer:	Derrick Corporation 590 Duke Road Buffalo, NY 14225
Rating and Principle Characteristics:	0-600 VAC, 50/60Hz, 3PH
Model / Type Ref:	Various
Additional Information:	None

This product was found to be in conformance with:

U.L. listed for hazardous locations Class I, Division 1, Groups C & D, which is similar to equipment marked as II 2G Ex d IIB T3 for Zone 1 areas. Assembled in accordance with National Electrical Code (NEC) – articles 500 thru 506 (hazardous locations) where applicable.

Additionally:

Derrick Corporation certifies that the above-listed equipment for the referenced order conformed to the requirements of the specified order at the time of its original shipment by Derrick Corporation in that: all construction materials and components were new and unused, manufactured for this equipment, and that the goods were free of any known defects as to their design, material and workmanship. This certificate is governed by the applicable purchase order terms in effect at the time of Derrick Corporation's original shipment of the above-listed equipment.

Signature: For Thomas Silvestrini