UF-3000 Series Conveyors

Operation Guide, Version 1A

Setup, Operation and Parts Manual for UF-3060

Advanced Poly-Packaging, Inc.

1331 Emmitt Road • Akron, OH 44306 • 1-800-754-4403 • fax 330-785-4010 • www.advancedpoly.com

Acknowledgments

Written By: Charles Tolbert and David Kolinski-Schultz
Reviewed By: Stuart Baker

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1.1 Welcome

Thank you for upgrading your packaging facility with an Ultra-Feed 3000 Series Conveyor from Advanced Poly-Packaging, Inc. Our equipment, materials and services are designed to take your packaging needs to the next level. We know you will be satisfied with the durability, functionality and performance of the UF-3060 in your facility.

1.2 Overview

By eliminating the need to physically handle product, infeed conveyors maintain a rapid flow from one piece of equipment to another, reduce labor costs and increase overall productivity. In some circumstances (i.e. assorted product kits, multiple counts), an infeed conveyor is the only way to maintain accuracy and reliability. With the UF-3060 Conveyor, production will be increased with the added functionality of conveyor hoppers and loaders.

1.3 Standard Features

The UF-3060 is a highly versatile infeed conveyor with capabilities well beyond those of most other conveyors. This is due to a highly sophisticated hopper system that vibrates to move product to the conveyor. The UF-3060 comes standard with the following features:

Stainless Steel Hopper: The standard stainless-steel hopper holds up to 6 cubic feet of product and is connected to a vibrator to move parts toward the conveyor.

Adjustable Conveyor Speed: The conveyor speed is adjustable to vary the volume of product fed.

Auxiliary Cable: The UF-3060 has an auxiliary cable to connect to upstream equipment (Advanced Poly equipment or other third-party equipment). If feeding Advanced Poly equipment such as models UC-2400, UCS-2400, US-9000 or other models, the auxiliary cable will come with the correct connectors for that specific model. If the UF-3060 is feeding other third-party equipment, an open-ended cable will be provided, and along with the schematic, the unit can be signaled to start/stop as required.

Chip Pan: Removable oil and chip pan in the bottom for good housekeeping.

Maintenance: All sealed bearings and adjustments are external for easier maintenance.

Buckets: 1/8” thick steel, 3/8” diameter steel pivot shafts. Enclosed steel buckets to prevent parts from riding along guides and eliminating galling and jamming

Configurations: This conveyor is available in different configurations to accommodate product and production. Larger or smaller hoppers, discharge heights ranging from 37” to 139”, three different discharge chutes, 120volt or 240volt 50/60hz, elevating mechanisms either buckets or magnets.

1.4 Options and Accessories

Several auxiliary options can be added to the UF-3060 Conveyor for special purpose packaging. The following options and accessories can be purchased from Advanced Poly-Packaging, Inc:

Part Sensors: There are a variety of infrared and visible light sensors available to meet your specific packaging needs.

Special Funnels: Special funneling from the conveyor to the bagger or other auxiliary equipment can be fabricated by APPI, including accumulating funnels.

Footswitch: A standard footswitch may be used to operate the UF-3060 Conveyor independently or in conjunction with other equipment.

Open Ended Cable: The UF-3060 Conveyor is provided with an open-ended cable so that it can be tied into existing machinery.

Secondary Auxiliary Cables: The UF-3060 Conveyor has the ability to control an unlimited number of counters or other similar equipment with the use of these cables. This completes the loop between the bagger, Conveyor and other auxiliary equipment.

Parts Washer: Used in conjunction with the loader to minimize material handling in the final product.

Dual Discharge: Feed the same parts off the same conveyor to two different operations.

Casters: Robust caster base frame to quickly and easily move the conveyor from one part of the facility to another. This option adds 7" to the unloading height.

Hopper Size: Various hopper sizes are available ranging from 3-14cuft.

Other options may have been added since the date this list was printed. Please call for additional or custom options pricing.

1.5 System Integration

The UF-3060 Infeed Conveyor is specifically designed to directly integrate with the T-1000 Advanced Poly-Bagger and other Advanced Poly-Packaging baggers. As an OEM for numerous equipment manufacturers of infeed systems, APPI offers the best available packaging system with the UF-3060 Infeed Conveyor as an integral packaging component. However, APPI cannot be responsible for the successful integration of third party equipment, unless approved and integrated by APPI.

FREE CONSULTATION AND PRODUCT EVALUATION: We invite you to call to discuss your packaging requirements and our free product packaging analysis.

1.6 Using This Manual

The following manual conventions are frequently used to assist in understanding important information, to alert the operator of potentially dangerous or damaging practices and to describe the normal functions of the UF-3060 Infeed Conveyor.

- Text: Normal text.
- *Italics:* Used for emphasis.
- **BOLDFACE:** Used to identify heading names and touch screen buttons.
- ***CAUTION:*** Warning messages. To avoid physical harm, damage to equipment or damage to the product, be sure to read these messages carefully.
- *Note:* Identifies important information.

1.7 Contact Information

To better serve your bagging needs, call **(330) 785-4000** or toll free **1-(800) 754-4403** for convenient service solutions, Monday through Thursday, 9:00 AM to 5:30 PM EST, or Friday 9:00 AM to 5:00 PM EST. For technical assistance with current machinery, ask for **Service**. To order spare parts for your system, ask for **Parts**. To order auxiliary equipment for your current system, ask for **Machine Sales**. To place an order for bags, ask for **Bag Sales**.

You may also contact any of these departments by email:

Reach Service at Service@advancedpoly.com

Reach Parts at Parts@advancedpoly.com

Reach Machine Sales at MachineSales@advancedpoly.com

Reach Bag Sales at Bagsales@advancedpoly.com

For general inquires: Sales@advancedpoly.com

Or visit us online at www.advancedpoly.com

In order to provide the best service possible, please have model and serial number ready.

1.8 Warranty Registration

This section must be completed and returned to Advanced Poly Packaging, Inc. to register the UF-3060 for Warranty Protection.

UF-3060 Series Conveyor Serial Number:

_____

(Serial Number located on the back panel)

Company Name and Address	Contact Name(s) / Title(s) / Phone Number
_____	_____
_____	_____
_____	_____

Please email, fax or mail this page to:

Service Manager
Advanced Poly-Packaging, Inc.
1331 Emmitt Road
Akron, OH 44306
USA

Fax # (USA) 330-785-4010

Email the information to: service@advancedpoly.com

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Chapter 2: Getting Started

Chapter Summary
Safety, Risks
Installation Procedures
Power Requirements
Assembly Instructions
Auxiliary Port Connections
Main Power
Conveyor Parts Identification
Overview
Chip Pan
Loading
PLC Control of Conveyor

2.1 Chapter Summary

This chapter describes procedures to receive and set up the UF-3060 Infeed Conveyor, including uncrating instructions, environmental, air and power requirements, assembly instructions and height adjustments. Additionally, this chapter describes safety precautions, how to power on the UF-3060 Infeed Conveyor, and how to integrate the UF-3060 Infeed Conveyor into your current machinery.

2.2 Safety, Risks

Many safety features have been included in the mechanical, electronic and pneumatic systems of this machine. Despite these safety precautions, operators may receive lacerations, minor burns, or crushed or broken bone injuries if they come in contact with moving components. Improper use, improper adjustments and neglect of preventative maintenance may result in serious personal injury. No special personal protective equipment is required to operate the equipment, but eye protection, gloves or other protection should be worn, depending on the characteristics of the product being packaged and the method of loading product.

Please carefully read the following precautions to operate the equipment properly and avoid injury:

- ***CAUTION: Initial setup of the machine must be performed by specialized personnel. Qualified service engineers should uncrate the equipment, assemble the equipment (if required), test and connect power sources, test the equipment for proper operation and otherwise set up the equipment for use.***

- ***CAUTION: Do not attempt to adjust the height. Attempting to make a height adjustment could cause the machine to drop suddenly, causing severe injury.***

- ***CAUTION: To avoid injury, do not operate the equipment if funnels, guards, covers or other access panels have been removed. If any of these safety measures have been removed or modified or if any openings have been increased, the operator will have access to moving components and extreme temperature areas that can cause crush, cut or burn injuries to hands or fingers.***

- ***CAUTION: To avoid injury, do not reach under the equipment, guards or elsewhere under the machine. Do not place hands or fingers in the seal area or near the seal bar, heater bar, load shelf or other moving components.***

- ***CAUTION: Do not remove or loosen fasteners on the frame. If loosened, the equipment may drop suddenly, causing injury or damage to the machine.***

- ***CAUTION: To avoid injury, avoid coming in contact with pinch points including rollers, automatic funnel doors or other moving components.***

- ***CAUTION: To avoid injury, avoid contact with roller "fingers" as they may be sharp.***

- ***CAUTION: Exercise care when adjusting or relocating the touch screen. Movement of the touch screen could cause unexpected movement of the machine and injury to the operator.***

- ***CAUTION: If control or air pressure settings are set too high, higher noise levels may result from increased part on part contact or part on machinery contact. Limit these settings and add guards or covers to reduce airborne noise.***

- ***CAUTION: Exercise extreme care when clearing jams, replacing materials, changing controls or mechanical settings, and cleaning internal parts. Be sure to de-energize energy sources prior to removing guarding. Failure to do so may result in unexpected movement or flying objects, which could cause crush, cut or eye injuries.***

- ***CAUTION: Maintenance must be performed by specialized personnel. Qualified service engineers must remove guards or covers to gain access to electrical or mechanical areas.***

- ***CAUTION: Maintenance must be performed regularly to ensure that the machine is operating properly and to protect against injury. Routine maintenance includes: periodic inspections, the replacement of worn or damaged components, the tightening of loose bolts or components, and regular cleaning and adjustments. Contact APPI and/or service centers for service support if there is not sufficient maintenance staff at your facility to perform regular maintenance.***

- ***CAUTION: When conveyor is operating, it will produce load noises as it picks up and dumps product.***

- ***CAUTION: Never reverse the buckets when the hopper is full of product.***

2.3 Installation Procedures

The UF-3060 Infeed Conveyor is transported on a palette and is completely assembled prior to shipment. Once it has been detached from the palette, it is easily moveable via lift points on the base by a fork lift. Before maneuvering the UF-3060 Infeed Conveyor, make sure the locking bolts are fully retracted. Position it relative to the T-1000 in order to easily attach auxiliary cables and allow for easy access to the operator panel and emergency stop button (E-STOP). When the UF-3060 Infeed Conveyor is in its final position, ensure the locking bolts are lowered and secured to prevent movement of the conveyor.

CAUTION: Due to excessive vibrations and weight of the conveyor, it is recommended that the conveyor be bolted to the floor.

Operating Environment: The UF-3060 Infeed Conveyor should be placed in an area free of excessive heat, moisture, dirt and dust. Operating room temperature should range from 40° to 120° Fahrenheit (4.45°C to 48.89°C) at 25% to 85% relative humidity with no condensation.

2.4 Power Requirements

Provisions must be made for a 110-120V configuration. The max power consumption for the UF-3060 Infeed Conveyor is 15A / 1800W maximum when fully loaded.

CAUTION: A qualified electrician should ensure the UF-3060 Infeed Conveyor power outlet is properly grounded, voltages are as required and amperage capacity is sufficient.

Note: Although the UF-3060 Infeed Conveyor has been designed with sufficient noise filtering, it is not recommended to run it on the same circuit with presses, mills and other large industrial equipment.

2.5 Assembly Instructions

Choose an operating location considering traffic flow, availability of supplies, product to be packaged, take away location and control panel accessibility.

2.6 Auxiliary Port Connections

There are four auxiliary connections located on the back panel of the UF-3060 Infeed Conveyor. They have been provided to accommodate a variety of different configuration possibilities. Below is a chart of the most popular equipment hookups.

Equipment Type	Ports Used	Cable Type
T-1000 Advanced Poly-Bagger™	Bagger 1	Single, closed loop
All other bagging equipment	Bagger 1, Bagger 2	Dual, closed loop
APPI UC-2400 Ultra Count™	Counter 2	Single, terminating
All other counting equipment	Counter 1, Counter 2	Dual, closed loop

Note: For further details on connecting non-APPI equipment, please contact APPI service technicians for assistance in system integration.

2.7 Main Power

The Main Power and Control Switches to control the UF-3060 settings are located along the mast of the conveyor. See Figure 2- 1,

Main Power (AC Power Switch): Press the switch to the ON position so that the red Main Power light is illuminated.

Conveyor Speed: Control the speed of the infeed conveyor by turning knob right to increase speed, left to decrease.

Note: Adjust the conveyor speed so that the conveyor is not overloaded.

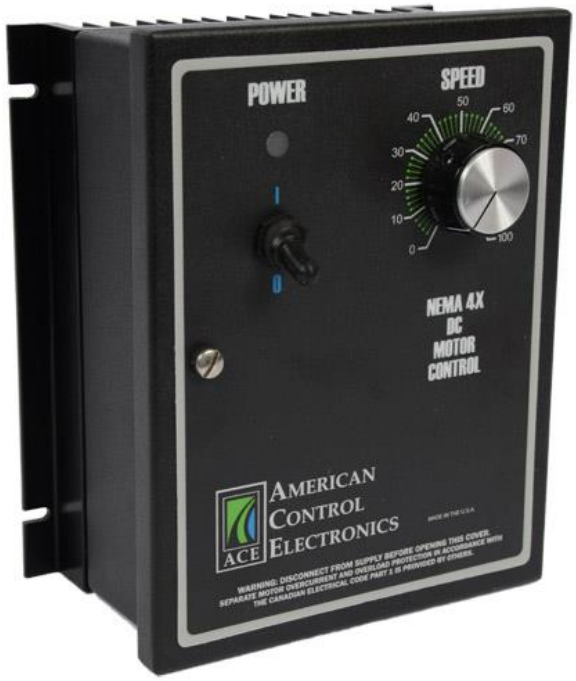
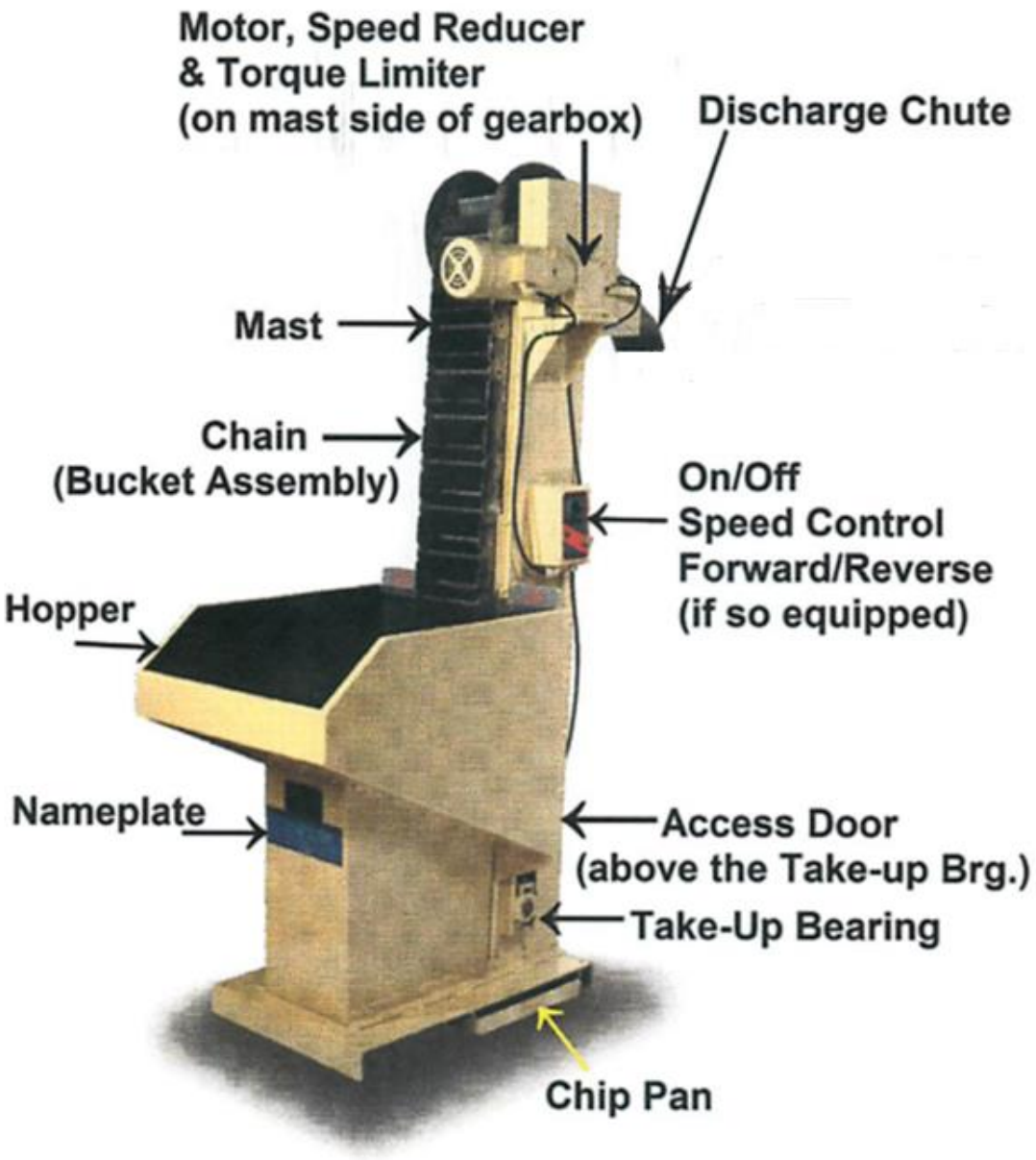


Figure 2- 1

2.8 Conveyor Parts Identification



Use this chart to help identify components on the conveyor throughout this chapter.

Figure 2- 2

2.9 Overview

To start the conveyor, simply turn it on by using the black toggle switch on the control box, an indicator light will illuminate if power is connected. Use the dial knob to increase the desired speed, but be careful not to over load the buckets. If the conveyor is running normally, then proceed to fill the hopper with product. If the conveyor is not running normally, then adjustments need to be made.

2.10 Chip Pan

Depending on the environment, it is possible for debris to get into the hopper with the product. Alternately, breakable product could produce fragments while being processed. These broken pieces can cause excessive wear, and possibly damage components on the conveyor and other pieces of equipment. A “Chip Pan” is located under the bucket conveyor. This pan catches small, loose pieces. It is important to check this regularly. Small pieces of product, and possibly pieces of the conveyor, may end up in this pan.

2.11 Loading

Load the hopper from the back, and never over fill the hopper. When loading, do not dump a large quantity of product into the hopper. Instead, feed the product into the hopper in small quantities to reduce sudden pressure against the bucket chain. The hopper is structurally solid to handle the weight of its volume capacity. The design is such that the buckets scoop product and can handle whatever weight of the product that fills the buckets.

2.12 PLC Control of Conveyor

Every device that is involved in a sequence of operations in the system is under direct control of the PLC.

The Counting Funnel (CF-10) counts the parts that are transferred by the Conveyor (one part per cleat). Conveyor runs continuously dropping parts through the open accumulator until final count is done. At that time, the Accumulator is closed while the bag is sealed and next bag is open. The Conveyor continues running the next batch of parts into closed Accumulator.

Conveyor Speed is controlled by the PLC by means of the Analog Output:

Card	Address	Description
PLC Exp2	WY4	Analog Output – UF5k: Conveyor Speed

Conveyor controls are located on the **Counting Funnel (CF-10) Screen.** See Figure 2- 3.

- Infeed ON/OFF
- Conveyor Speed Setting

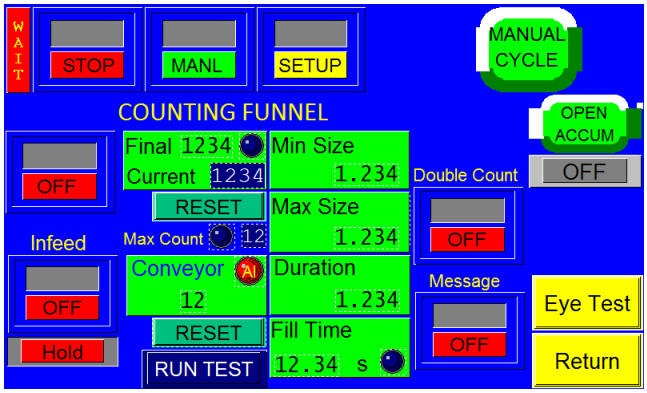


Figure 2- 3

Chapter 3: Maintenance and Troubleshooting

Chain Adjustments
Conveyor Lubrication
Gear Reducer Lubricant Recommendations
Electrical Schematic

3.1 Chain Adjustments

The bucket assembly (chain) tension can be adjusted using the Take-Up Bearing. The bucket assembly is designed to run best with a loose fit, approximately 1”-2” give from the mast. If the chain is adjusted too tightly, it may result in damage to the conveyor. If the chain is adjusted to be too loose, it will result in the buckets slipping when loaded with product.

A torque limiter is mounted on the gearbox side of the mast and under the chain cover. The torque limiter should only need adjustment when normal operation, with no product loaded, causes the buckets to slip. The torque limiter is factory set to 15 ft.-lbs.

CAUTION: Increasing the torque limit may cause damage to the drive assembly and motor.

3.2 Conveyor Lubrication

The Flange Bearings and Take-Up Bearings need to be lubricated every 50 hours or once a week with a grease meeting NLGI #2 standards. The gearbox fluid level should be checked weekly by looking at the glass viewing hole, and replaced every 2500 hours, or every 6 months. Use only worm gear oil in worm gear reducers. See Figure 3- 1**Error! Reference source not found.** for Lubrication Points.

Note: 90-weight an EP oils are not recommended.

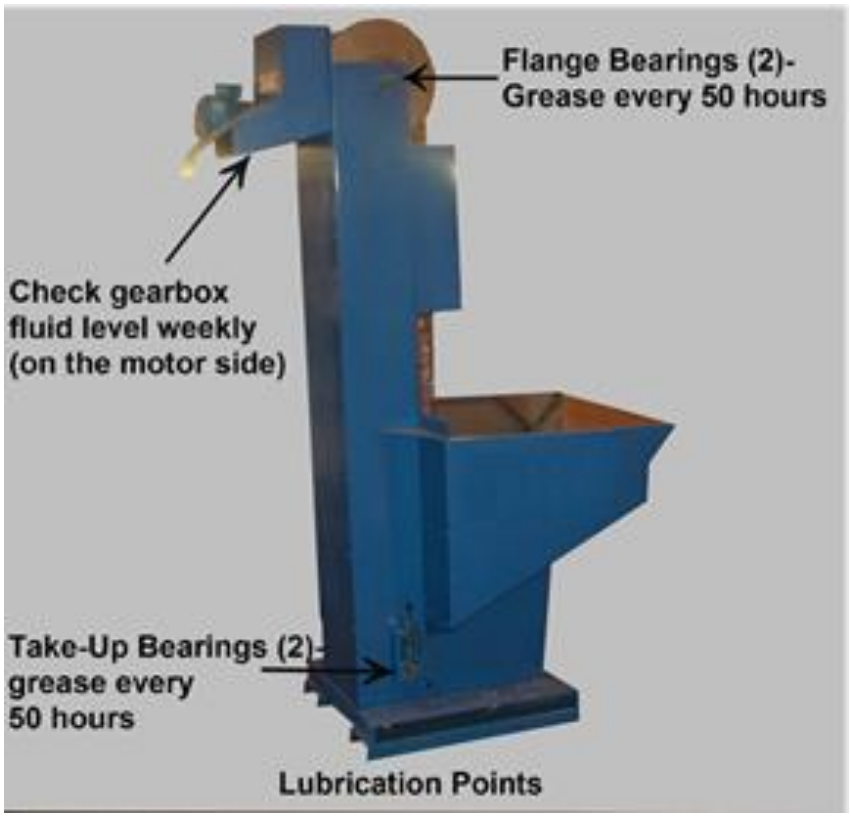


Figure 3- 1

3.3 Gear Reducer Lubricant Recommendations

Viscosity Range MM/S at 40° C ISO Grade	**Ambient Temp 15 to 60° F 414-506 460**	**Ambient Temp 50 to 125° F 612-748 680**
Oil Company Name	**AGMA #7C**	**AGMA #8C**
Amoco Oil Co.	Amoco Worm Gear Oil	Amoco Cylinder Gear Oil
Atlantic Richfield (Arco)		Modoc 175
Chevron Oil Co.	Cylinder Oil 460X	Cylinder Oil 680X
Conoco Oil Co.	Inca Oil	
Exxon Oil Co.	Cylesstic TK460	Cylesstic TK6800
Fiske Brothers	SPO 277	SPO 288
Gulf Oil Co.	Senate 460	Senate 680
Gulf-Canada	Senate 460	Senate 680
Keystone-Penwalt	Keygear K-600	
Mobil Oil Co.	Mobil 600W Cylinder Oil	Mobil 600W Supper Cylinder Oil
Pennzoil	Pennzoil Cylinder Oil #8	Pennzoil Cylinder Oil #6
Phillips Petroleum Co.	Hector 460S	Hector 630S
Shell Oil Co.	Valvata Oil J460	Valvata Oil J680
Texaco Inc.	Vanguard 460	Honor 680
Union Oil Co. of Calif.	Steaval B110	Steaval B165

3.4 Electrical Schematic

The UF-3060 is controlled externally by the Bagger PLC. An Electrical Schematic has been provided to assist in connecting the UF-3060 Infeed Conveyor to the Bagger or additional equipment. See Figure 3- 2.

Electrical Schematic

Figure 3-2

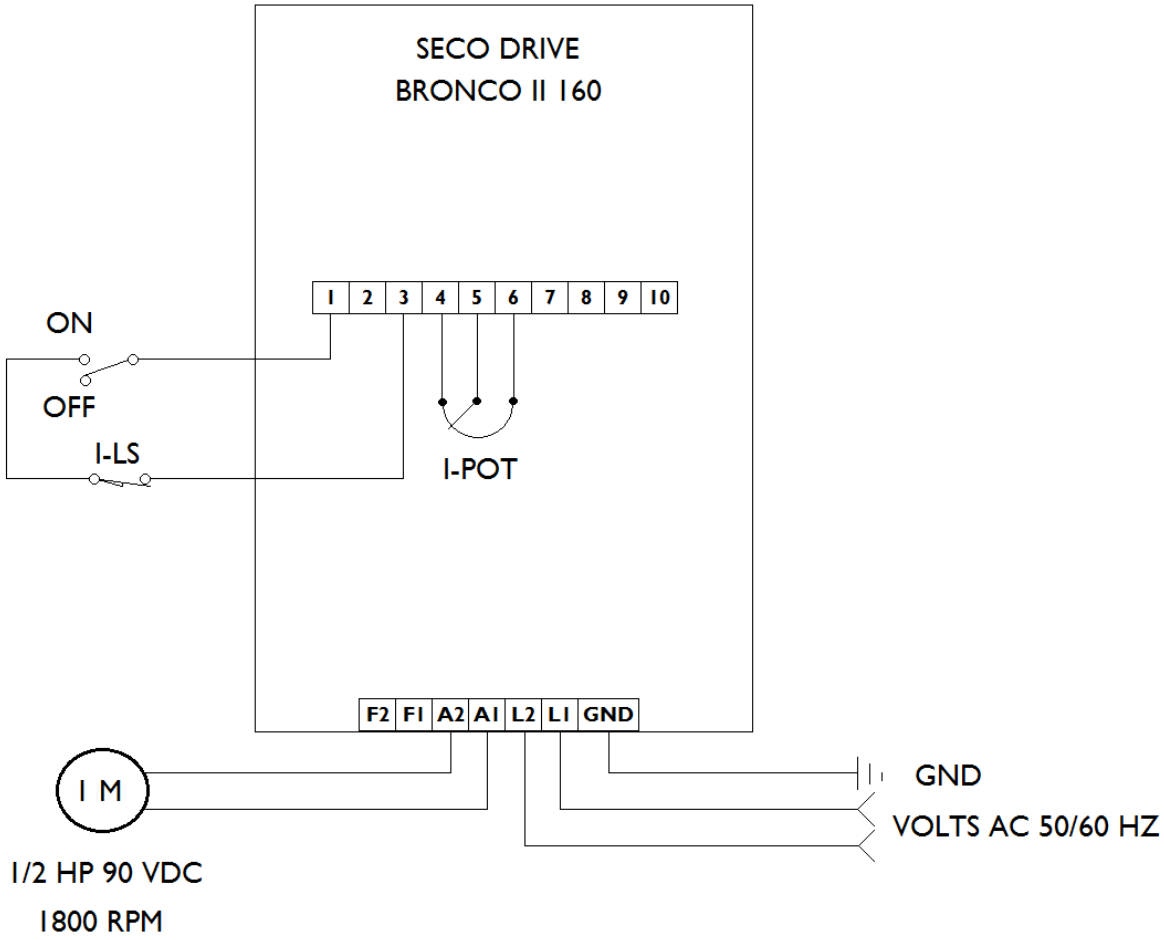


Figure 3- 2

Chapter 4: Configuration and Parts

Conveyor Configuration
Replacement Parts Listing
Notes

4.1 Conveyor Configuration

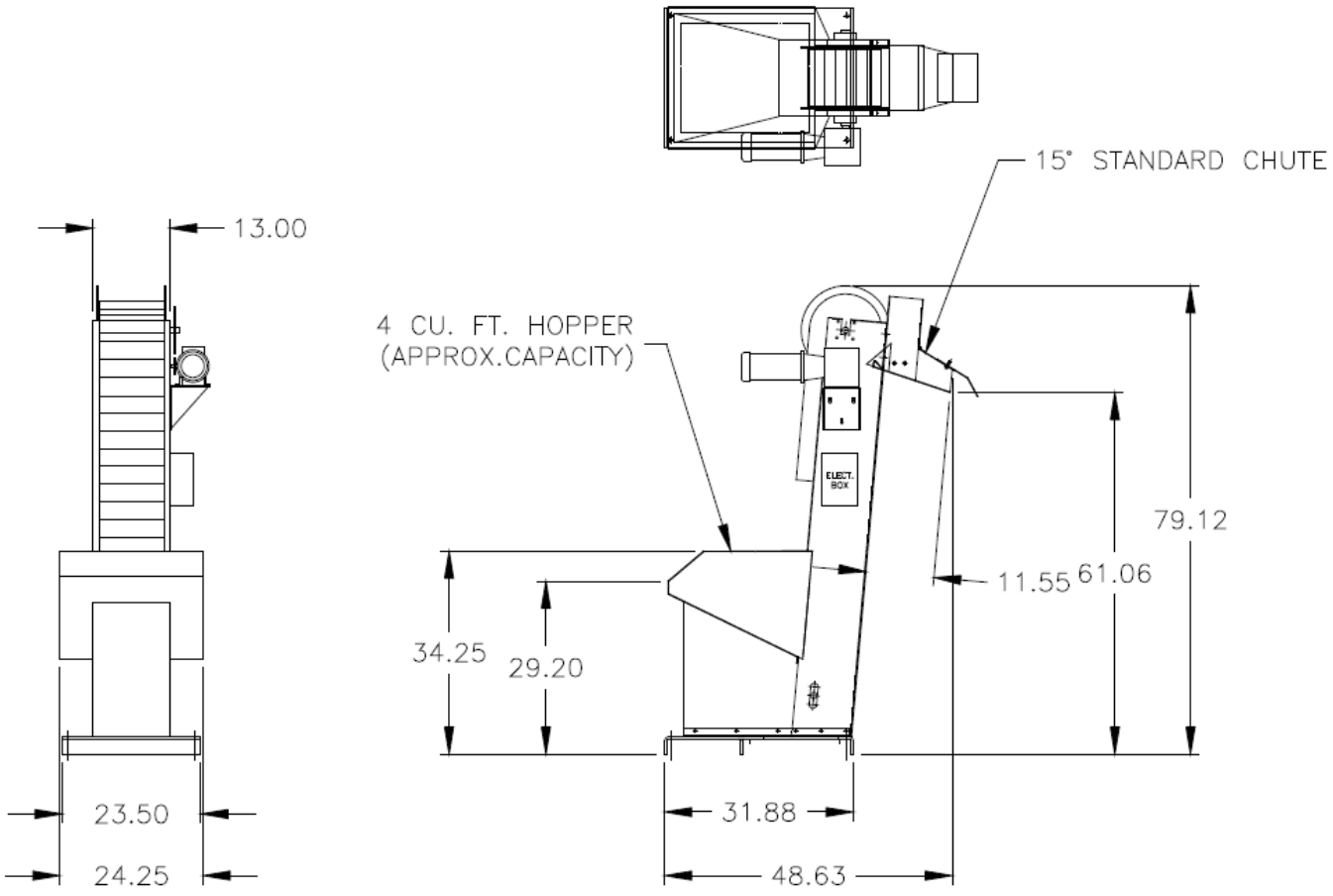


Figure 4- 1

4.2 Replacement Parts Listing

UF-3060

Use this parts list with the following drawings (See Figure 4- 2 to Figure 4- 5) to assist in identifying replacements parts.

Item No.	Qty.	Part No.	Description
1	1	VP-WAR-550406	L.H. Hopper Gusset
2	1	VP-WAR-550935	Parts Slide L.H.
3	1	VP-WAR-550407	R.H. Hopper Gusset
4	1	VP-WAR-550934	Parts Slide R.H.
5	2	VP-WAR-300194	Flange BRG
6	2	VP-WAR-655028	Upper Sprocket Spacer
7	2	VP-WAR-601638	Upper Sprocket Assembly
8	1	VP-WAR-550398	Cover, L.H. Side Rail
9	2	VP-WAR-600514	Take-Up FRM
10	2	VP-WAR-300200	Take-Up BRG
11	1	VP-WAR-6061640	Lower Sprocket
12	1	VP-WAR-601494	Chain Guard Support
13	1	VP-WAR-601493	Chain Guard Assembly
14	1	VP-WAR-300195	Sprocket
15	1	VP-WAR-301323	Torque Limiter
16	1	VP-WAR-451657	Motor
17	1	VP-WAR-300201	Sprocket
18	1	VP-WAR-601492	Motor Support Assembly
19	1	VP-WAR-550402	Hopper Guide L.H.
20	1	VP-WAR-550403	Hopper Guide R.H.
21	1	VP-WAR-550397	Door, Hopper Support
22	1	VP-WAR-600115	Chip Pan
23	1	VP-WAR-600243	Base Plate
24	1	VP-WAR-600116	Standard Discharge Chute
25	1	VP-WAR-550409	Discharge Nozzle Deflector
26	1	VP-WAR-550415	Hopper Support

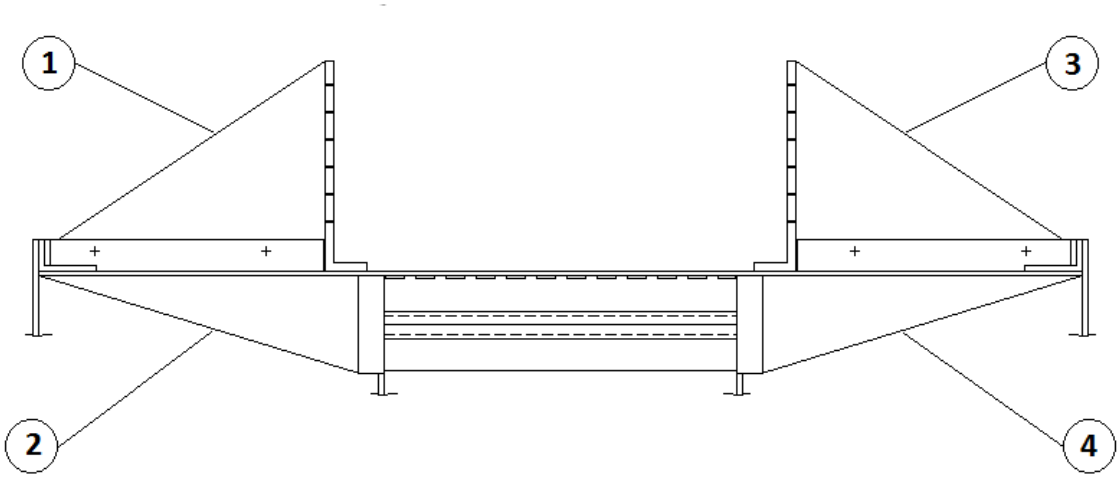


Figure 4- 2

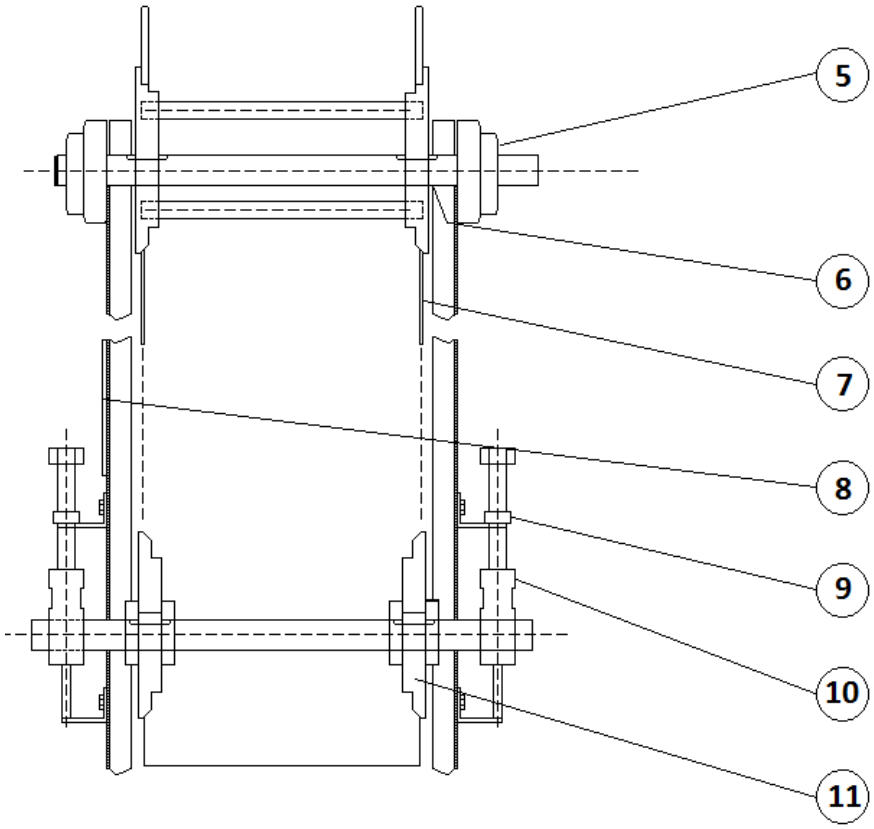


Figure 4- 3

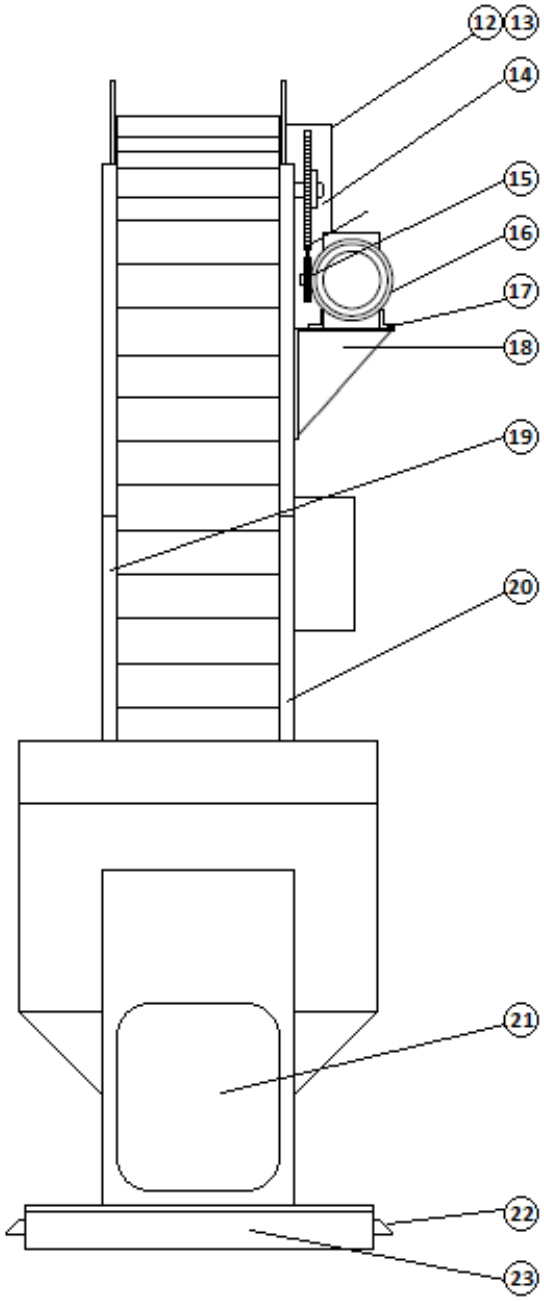


Figure 4- 4

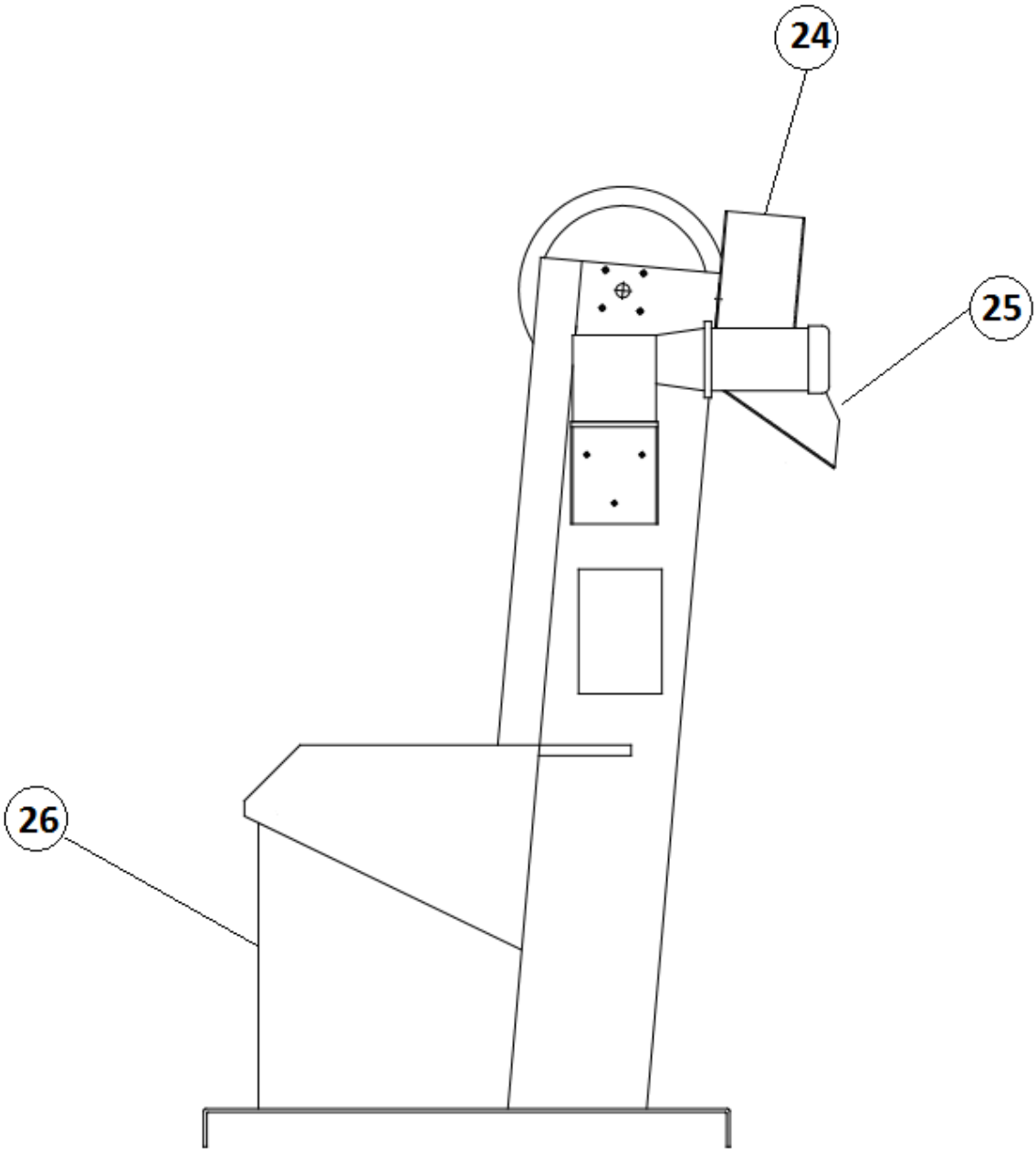


Figure 4- 5

4.3 Notes

Date	Note