UF-3040 Vibratory Conveyor System

Operation / Parts Guide Version 1

Advanced Poly-Packaging, Inc.

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

Acknowledgments

Written by: Annie Braddock

Reviewed by: Stuart Baker

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Limited Warranty and Disclaimer

Warranty period is 12 months or 1,000,000 cycles whichever comes first. The warranty commences on the date of delivery of the equipment to the Purchaser. APPI warrants to the Purchaser that the equipment is free from defects in workmanship or material under normal use and service. During the warranty period, APPI agrees to repair or replace, at its sole option, without charge to Purchaser, any defective component part of the equipment. To obtain service, Purchaser must return the equipment or component to APPI or an authorized APPI distributor or service representative in an adequate container for shipping. Any shipping charges, insurance, or other fees must be paid by Purchaser and all risk for the equipment shall remain with Purchaser until such time as APPI takes receipt of the equipment. Upon receipt, APPI, the authorized distributor or service representative will promptly repair or replace the defective component and then return the equipment or component to Purchaser, shipping charges, insurance and additional fees prepaid. APPI may use reconditioned or like new parts or units, at its sole option, when repairing any component or equipment. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include a dated proof of delivery. In any event, APPI's liability for defective components or equipment is limited to repairing or replacing the components. This warranty is contingent upon proper use of the equipment by Purchaser and does not cover: expendable component parts such as conveyor belt, drive belt, drive chains, bearings, rollers, bushings, and the like; or if damage is due to accident, unusual physical, electrical or electromechanical stress, neglect, misuse, failure of electric power, water damage (from airlines), improper environmental conditions, transportation, tampering with or altering of the equipment, packaging of corrosive or contaminating products or other products damaging to components, and equipment or components not owned or in the possession of original Purchaser. APPI will not be liable for loss of production, profits, lost savings, special, incidental, consequential, indirect or other similar damages arising from breach of warranty, breach of contract, negligence, or their legal action even if APPI or its agent has been advised of the possibility of such damages or for any claim brought against the Purchaser by another party. This warranty allocates risks of equipment failure between Purchaser and APPI. APPI's pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors and dealers of APPI are not authorized to make modifications to this warranty, or additional warranties binding on APPI. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by APPI and should not be relied upon. Warranty on equipment is considered void when outstanding balances become delinquent (over 30 days late - 60 days after ship date). Equipment Integration to other Equipment: APPI assumes no responsibility for the integration of its products to other products or within a system unless APPI performs the integration, testing and provides the results of the tests to the purchaser in writing. Furthermore, APPI assumes no responsibility for bag sizing whether suggested or recommended

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Contact Information

To better serve your packaging 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.

1.1 Welcome

Now that you have decided to upgrade your packaging facilities with the Ultra-Feed 3040 Vibratory Conveyor from Advanced Poly-Packaging, Inc., we thank you for selecting our equipment, materials and service. We know you will be satisfied with the durability, functionality and performance of the UF-3040.

1.2 Overview

By eliminating the need to physically handle product, hopper / infeed conveyors maintain a continuous flow from bulk to production/processing equipment which reduces labor costs and increases overall productivity. In some circumstances this system may improve the accuracy and reliability of production/processing equipment.

1.3 Capabilities and Performance

The UF-3040 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.

Standard Features

The UF-3040 comes standard with the following features:

Vibratory Stainless Steel Hopper: The stainless steel hopper holds up to 13 cubic feet of product and is connected to a vibrator to move parts to the conveyor.

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

Auxiliary Cable: The UF-3040 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 UC-3040 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.

1.4 System Integration

The UF-3040 is specifically designed to directly integrate with Advanced Poly counters and scales. As an OEM for numerous equipment manufacturers of infeed systems, APPI offers the best available packaging system with the UF-3040 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.

1.5 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-3040 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.

1.6 Contact Information

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Or visit us online at www.advancedpoly.com

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

1.7 Warranty Registration

This section must be completed and returned to Advanced Poly Packaging, Inc. to register the UF-3040 for Warranty Protection.

UF-3040 Serial Number:

_____

(Serial Number located on the back panel)

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

Please mail, fax or email 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

Chapter 2: Getting Started

Chapter Summary
Safety, Risks
Installation Procedures
Power Requirements
Assembly Instructions
Auxiliary Port Connections
Main Power

2.1 Chapter Summary

This chapter describes procedures to receive and set up the UF-3040, including uncrating instructions, environmental and power requirements, assembly instructions and height adjustments. Additionally, this chapter describes safety precautions, and how to power on the UF-3040.

2.2 Safety, Risks

Many safety features have been included in the mechanical and electronic 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 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 without assistance and without supporting the weight of the machine. Attempting to make a height adjustment without assistance could cause the machine to drop suddenly, causing severe injury.

- ***CAUTION:*** Ensure that any height adjustments allow for sufficient movement of the operator. Improper height adjustments could negatively affect operator movement, causing strain, added stress, discomfort and fatigue.

- ***CAUTION:*** To avoid injury, do not operate the equipment if 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 high 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 near the drive motor, drive belt, drive chain, conveyor belt or other moving components.

- ***CAUTION:*** Do not remove or loosen fasteners on the frame or conveyor legs. 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, belts or other moving components.

- ***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 or opening electrical panels. Failure to do so may result in electrical shock, 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, tension adjustments and lubrication. Contact APPI and/or service centers for service support if there is not sufficient maintenance staff at your facility to perform regular maintenance.

2.3 Installation Procedures

The UF-3040 is transported on two palettes, one for the Hopper and one for the Conveyor. Once each component has been detached from the palette, use a tow motor to easily move into desired location. Ensure the feet are at the same height on the Hopper and Conveyor to prevent binding. Position UF-3040 discharge relative to equipment being fed. When the UF-3040 is in its final position, ensure Hopper and Conveyor are attached, see 2.5 Assembly Instructions.

CAUTION: Prevent the vibratory pan from touching the conveyor system by adjusting the height of the hopper and conveyor and the angle of the conveyor.

Operating Environment: The UF-3040 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 power consumption for the UF-3040 is 0.75A / 180W maximum.

CAUTION: A qualified electrician should ensure the UF-3040 power outlet is properly grounded, voltages are as required and amperage capacity is sufficient.

NOTE: Although the UF-3040 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 and bulk product and control panel accessibility.

Connect Conveyor Frame to Hopper Frame By attaching Conveyor Frame Bracket to Hopper Frame Bar and securing with a 5/16 18 x 2” Socket Head Cap Screw (SHCS), 5/16 Flat Washer, 5/16 Lock Washer, and 5/16 nut on each side.

2.6 Auxiliary Port Connections

If connecting to APP equipment, refer to the manual of the associated model for connections. If connecting to a third party system, see chapter 3 for a detailed Schematic.

NOTE: For further details on connecting non-APP equipment, please contact our Service Department for assistance with system integration.

2.7 Main Power and Control Switches

The Main Power and Control Switches to control the UF-3040 settings are located along the right side of the electrical box. 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.

Setup / Auto: Switch between Setup and Auto Mode. In Setup Mode both conveyor and hopper run continuously. In Auto Mode a contact closure input is required to start the system.

Note: If Setup / Auto switch is in "Setup" and no movement occurs, adjust the Hopper Control and Conveyor Speed Knobs.

Hopper Control: In Setup Mode, control hopper vibratory level by turning knob right to increase vibration rate, or left to decrease.

Conveyor Speed: In Setup Mode, control speed of conveyor by turning knob right to increase speed, left to decrease.

Adjust the hopper and conveyor so that the conveyor is not overloaded.

Figure 2-1

Chapter 3: Maintenance and Troubleshooting

Conveyor Belt Tension Adjustment

Conveyor Tracking and Side-Rail Alignment

Belt Cleaning

Conveyor Lubrication

Electrical Schematic

CAUTION: To avoid physical harm, do not remove the control panel while the conveyor is plugged into a power source.

3.1 Conveyor Belt Tension Adjustment

- On tension end of the conveyor, identified with a label **(**Figure 3-1**,** item 1**)**, adjust head plate assembly **(**Figure 3-1**,** item 2): On both sides of conveyor, loosen fastening screws **(**Figure 3-1**,** item 3) and rotate pinion gear **(**Figure 3-1**,** item 4) to adjust head plate assembly.
- Adjust head plate assembly so end of conveyor frame aligns with or between the head plate tensioning marks **(**Figure 3-2**,** item 1 & 2). Replace belt if proper tensioning cannot be obtained while aligning the end of the conveyor frame with or between the tensioning marks.

NOTE: On pinion gear, do not exceed a torque of 25 in-lb. (2.8 Nm) for 2 – 12¨ (44 – 305 mm) wide conveyors and 50 in-lb. (4.5 Nm) for an 18 – 24¨ (457 – 610 mm) wide conveyor. Over tensioning the conveyor belt could cause excessive pulley bearing load and early failure.

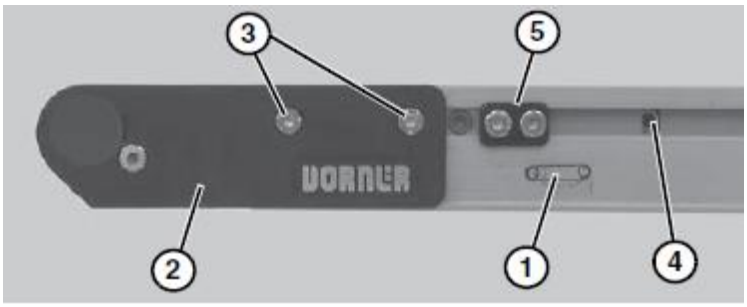


Figure 3-1

Figure 3-2

- After adjusting proper tensioning, tighten fastening screws **(**Figure 3-1, item 3**)** on both sides of conveyor to 60 in-lb. (7 Nm).
- If equipped with cam tracking assemblies **(**Figure 3-1, item 5), position against head plates and adjust belt tracking. Refer to “Tracking and Side-Rail Alignment”.

3.2 Conveyor Tracking and Side-Rail Alignment

Non-V-guided belt conveyors are equipped with belt tracking cam assemblies (Figure 3-3, item 1) for belt tracking adjustment.

When adjusting belt tracking, always adjust the discharge end of the conveyor first. To adjust belt tracking:

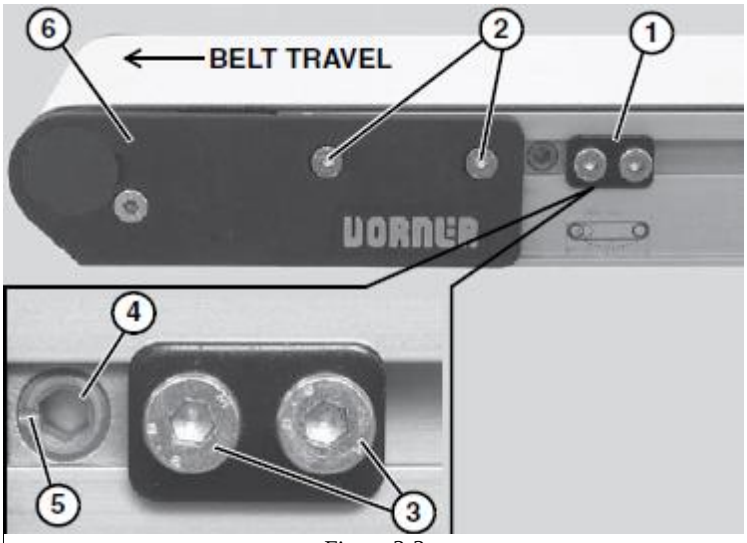


Figure 3-3

- Ensure head plate fastening screws (Figure 3-3, item 2) on both sides of conveyor are tightened.
- On both sides of conveyor, loosen two (2) cam fastening screws (Figure 3-3, item 3). Adjust cams (Figure 3-3, item 4) until indicator slots (Figure 29, item 5) are horizontal and facing end of conveyor. Then slide cam assemblies against head plates (Figure 3-3, item 6) and re-tighten cam fastening screws (Figure 29, item 3) to 60 in-lb. (7 Nm).
- On the side toward which the belt is tracking, loosen head plate fastening screws (Figure 3-3, item 2).
- With the conveyor running, use a 5 mm hex-key wrench to rotate the tracking cam (Figure 3-3, item 4) in small increments until the belt tracks in the center of the conveyor. Then while holding the cam in position, re-tighten the head plate fastening screws Figure 3-3, item 2) with a 4 mm hex-key wrench to 60 in-lb. (7 Nm).

3.3 Belt Cleaning

Mild soap and water may be used to clean the conveyor belt. Do not soak the belt.

Do not use belt cleaners that contain alcohol, acetone, Methyl Ethyl Ketone (MEK) or other harsh chemicals.

3.4 Conveyor Lubrication

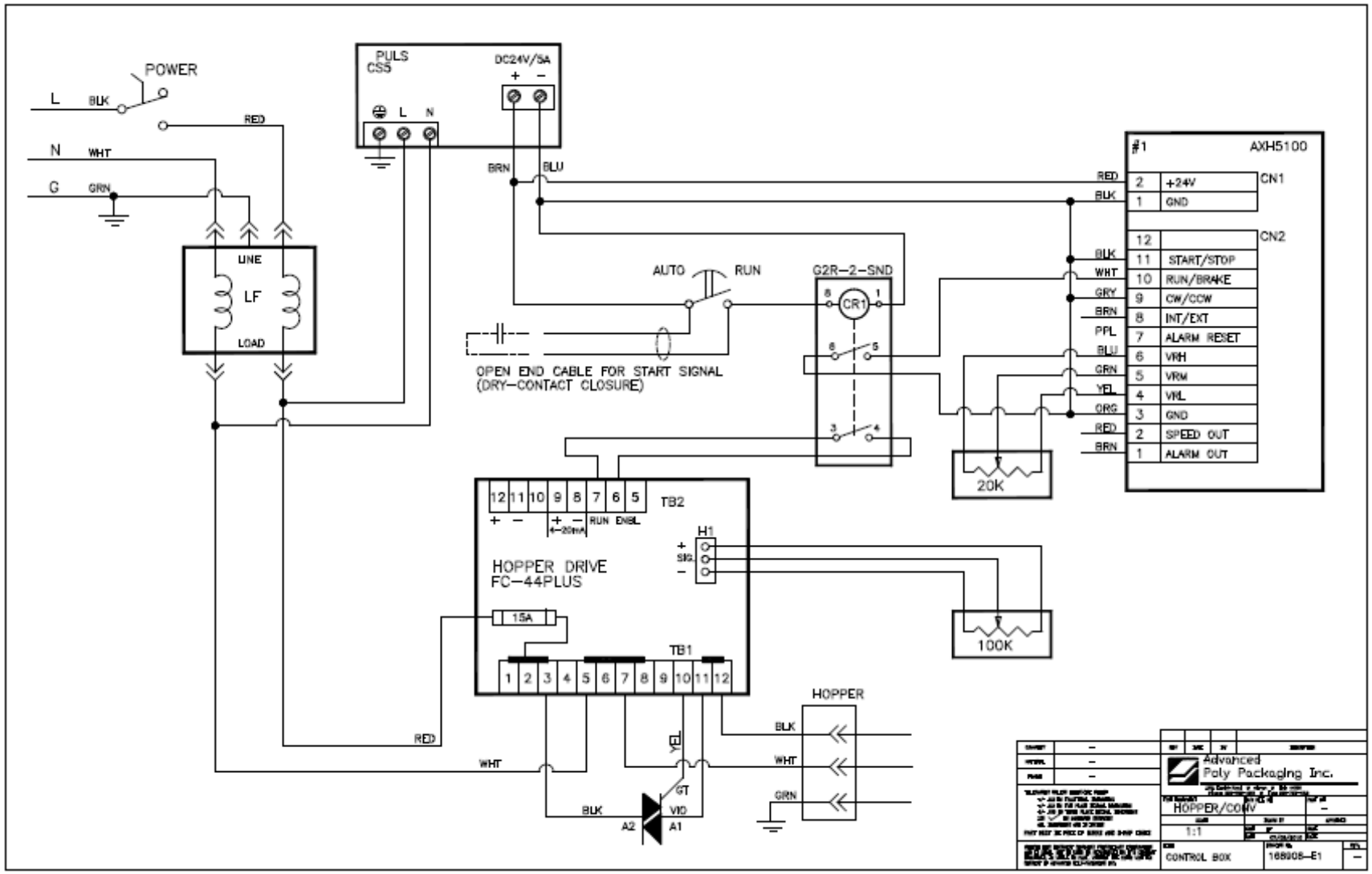
No lubrication is required. Replace bearings if worn.

3.5 Electrical Schematic

An Electrical drawing has been provided to assist in connecting the UF-3040 Vibratory Conveyor to additional equipment. See Dwg# 168908-E1.

Control Box

168908-E1



Chapter 4: Parts

System Layout
Hopper
Conveyor

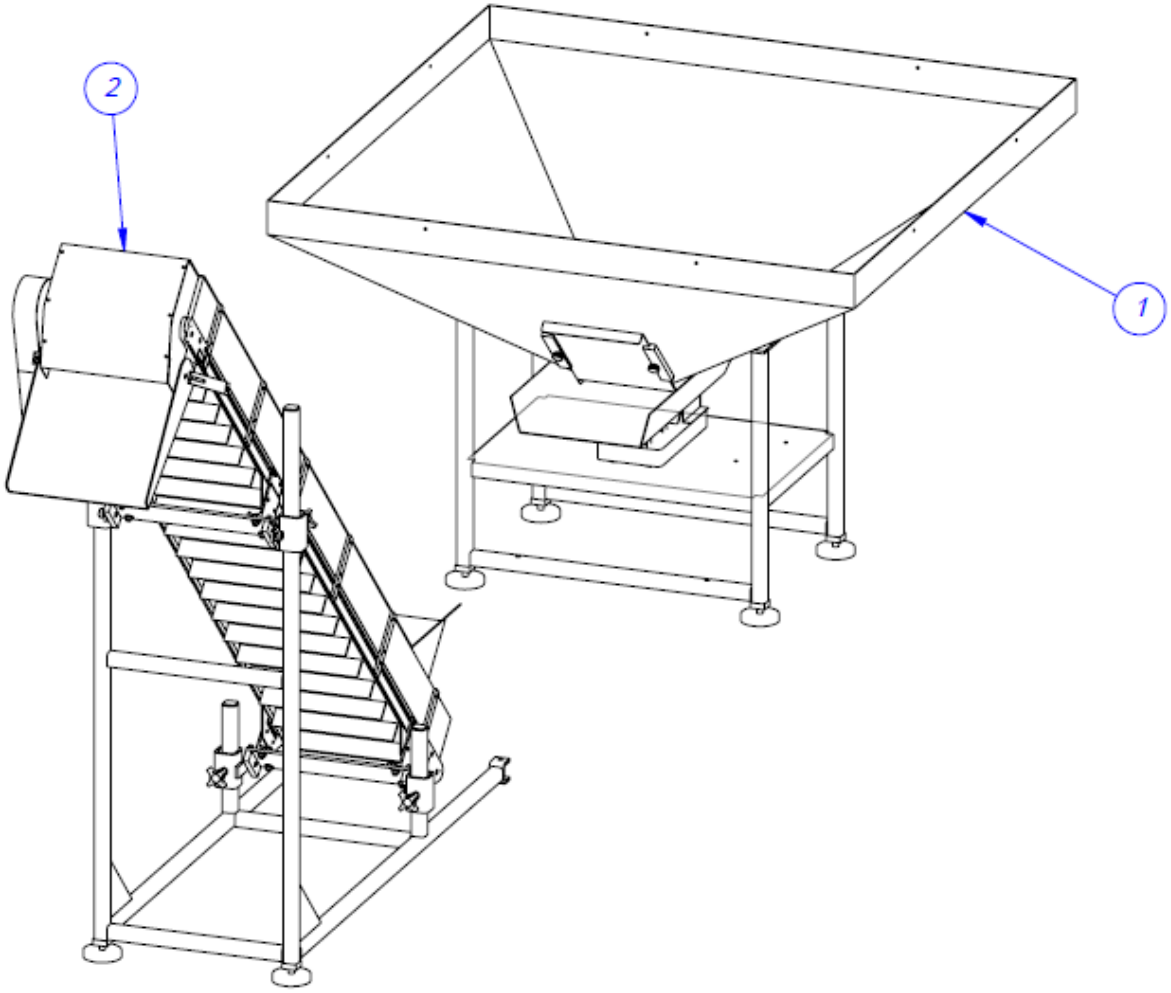
4.1 UF-3040 System Layout

T-UF3040

ITEM NO.	QTY.	Part No	DESCRIPTION
1	1	TA-UF3200	UF-3040 HOPPER
2	1	TA-UF3300	UF-3040 CONVEYOR

UF-3040 System Layout

T-UF3040



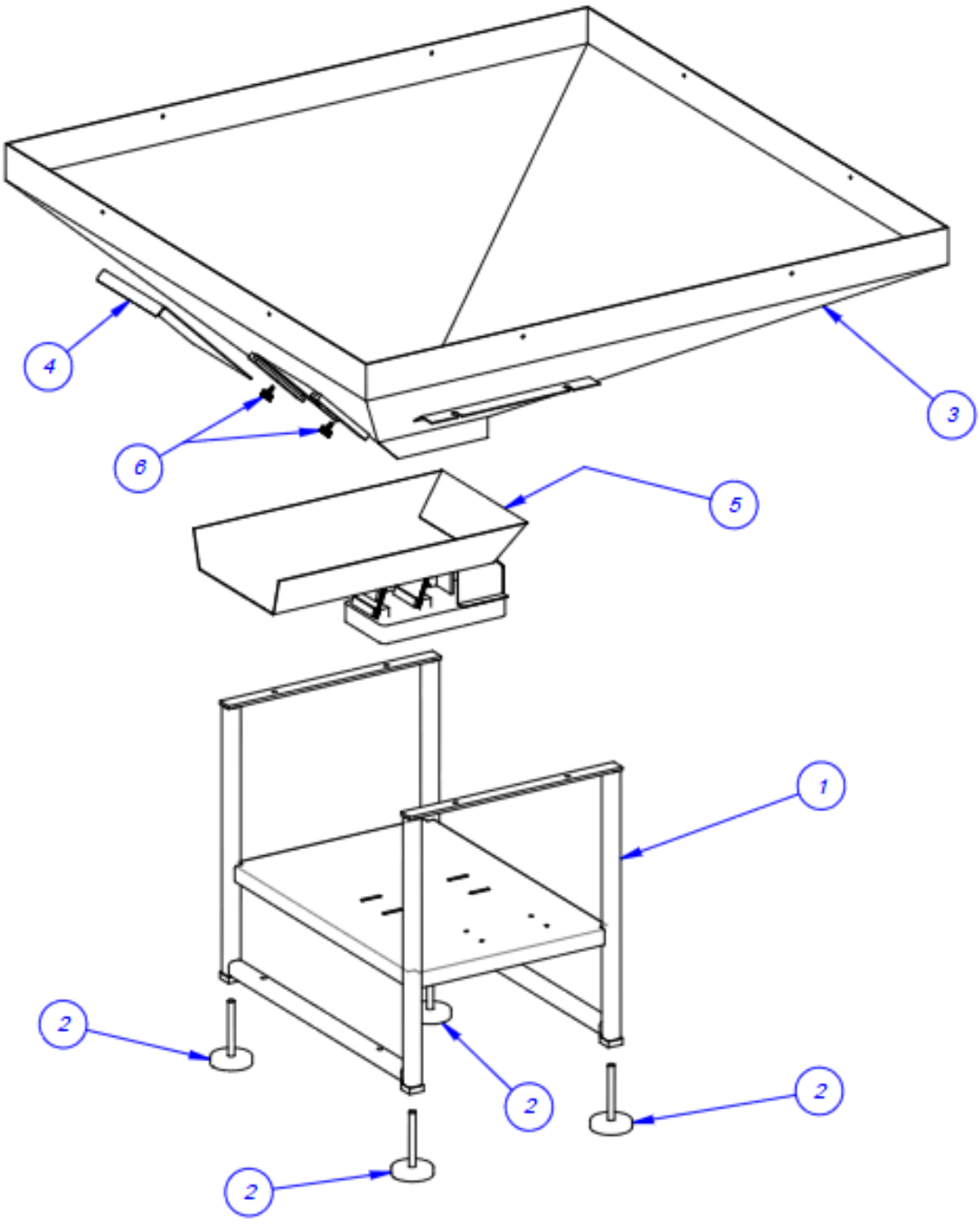
4.2 Hopper Assembly

T-UF3200

ITEM NO.	QTY.	Part No	DESCRIPTION
1	1	TP-UF3201	HOPPER FRAME
2	4	TP-110764	LEVELING MOUNT WITH POLYPRO
3	1	TP-UF3202	UF-3040 HOPPER
4	1	TP-UF3203	HOPPER GATE
5	1	VP-HOM-RDL-620	VIBRATORY DRIVE ASSEMBLY
6	2	TP-109155	10-32 x 1/2" THREADED STEEL STUD, 7/8" DIAMETER

Hopper Assembly

TA-UF3200



4.3 Hopper Driver Cut Sheet

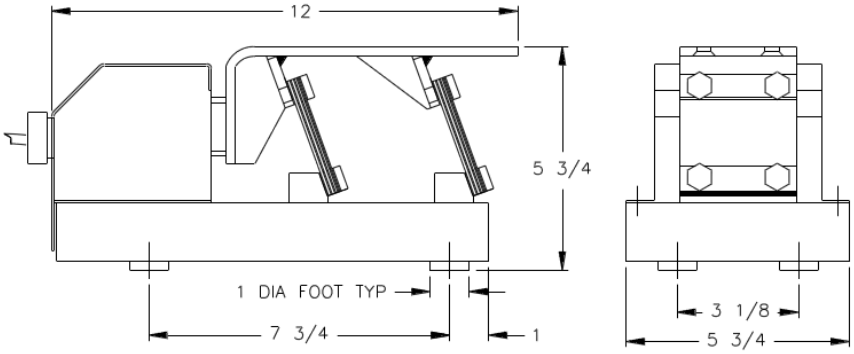
PART NO: VP-HOM-RDL-620

OPTIONS:

- BASE AND MOUNTING BRACKET AVAILABLE IN STAINLESS STEEL
- CONTROL WITH 0-10V AND 0-20MA INPUTS
- STANDARD OR CUSTOM TROUGHS MOUNTED AND TUNED PRIOR TO SHIPMENT
- CAN BE USED IN TANDEM FOR CONVEYOR APPLICATIONS OR WHEN HIGHER FEEDRATES ARE REQUIRED

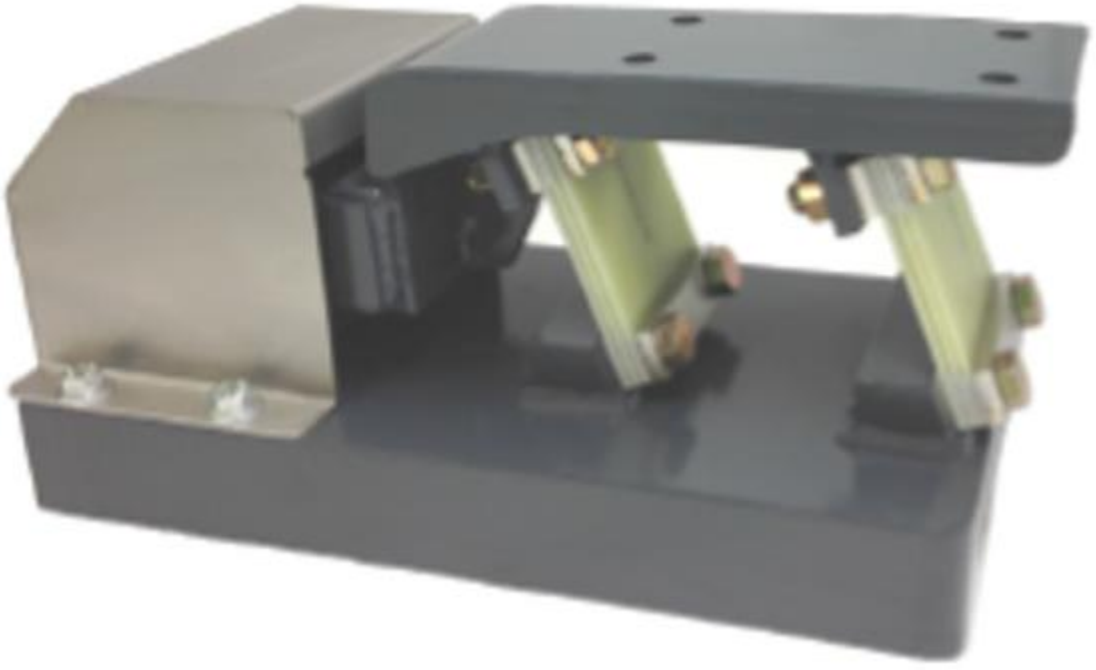
RDL-620:

- TROUGH (MAX*):
  - WEIGHT: 20 LB
  - LENGTH: 36 IN.
  - WIDTH: 12 IN.



▲ STROKE AND FEED RATE ARE DEPENDENT ON TROUGH SIZE AND BULK MATERIAL PROPERTIES. PLEASE CONTACT APPI FOR DETAILS.

* PLEASE CONTACT APPI TO DISCUSS APPLICATIONS REQUIRING TROUGHS EXCEEDING LISTED PARAMETERS.



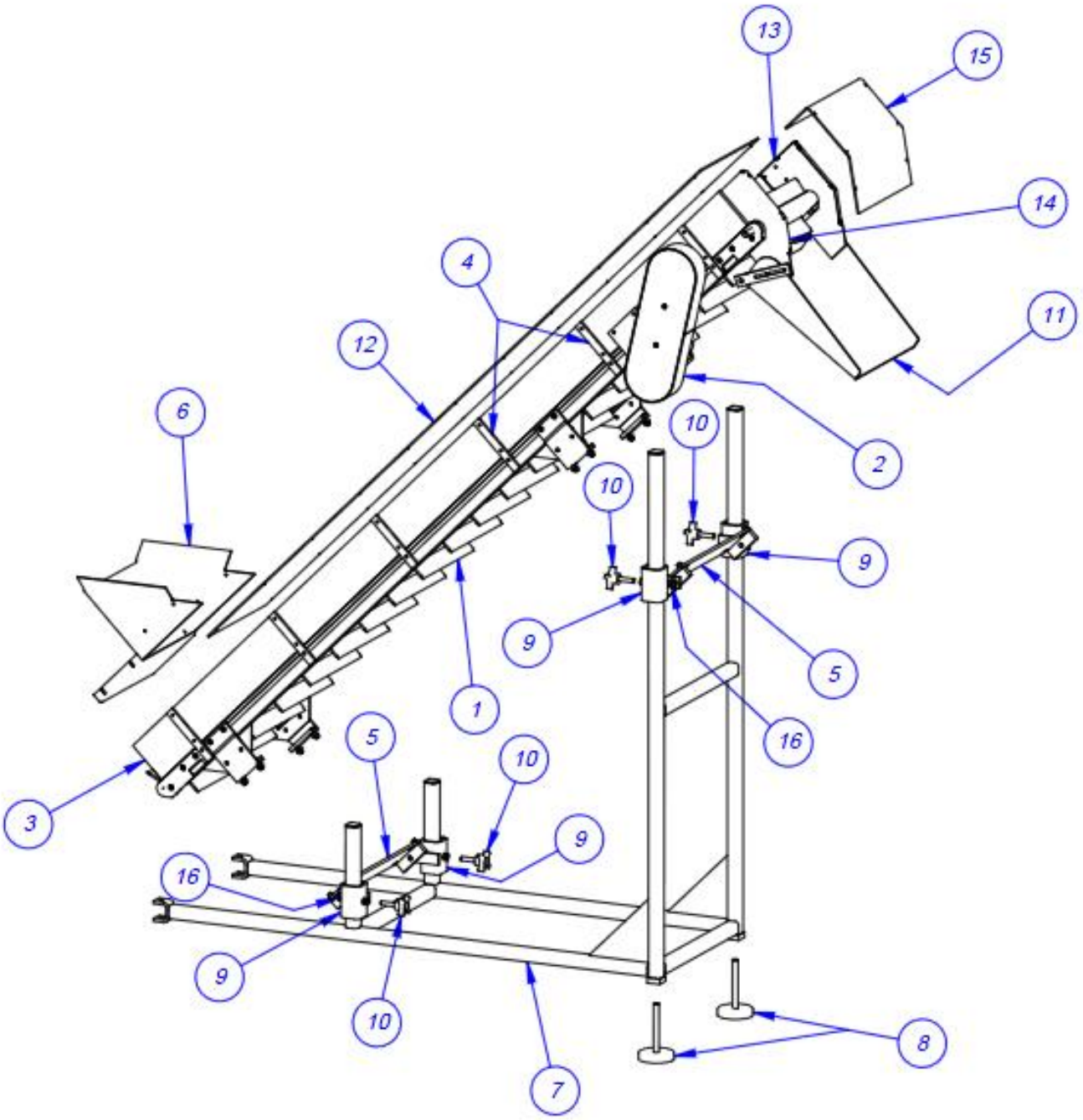
4.4 Conveyor Assembly

TA-UF3300

ITEM NO.	QTY.	Part No	DESCRIPTION
1	1	V-DOR-2200	DORNER, 2200 12" WIDE, 7' LONG, 1.5" CLEATS ON 4" CENTERS
2	1	TA-T3-2000	2200 SERIES DRIVE ASSEMBLY SHAFT D
3	2	TP-UF3303	DORNER SIDE RAIL
4	12	TP-UF3304	CONVEYOR SIDE RAIL MOUNT
5	2	SEE DWG	CONVEYOR MOUNT
6	1	SEE DWG	INFEED CHUTE
7	1	TP-UF3301	CONVEYOR SUPPORT FRAME
8	2	TP-110764	LEVELING MOUNT WITH POLYPRO
9	4	TP-UF3302	CONVEYOR SLIDE BLOCK
10	4	TP-109160	THREADED STUD KNOB, 3/8-16 x 1.50, 2"DIA, KNOB
11	1	SEE DWG	UF-3040 CONVEYOR DISCHARGE CHUTE
12	1	TP-UF3309	LEXAN CONVEYOR TOP
13	1	TP-UF3313	DISCHARGE CHUTE SIDE (LEFT)
14	1	TP-UF3314	DISCHARGE CHUTE SIDE (RIGHT)
15	1	TP-UF3315	LEXAN DISCHARGE CHUTE TOP
16	4	TP-103350	SCREW,SHOULDER ½”D X ½”L X 3/8-16

UF-3040 Conveyor Parts Diagram

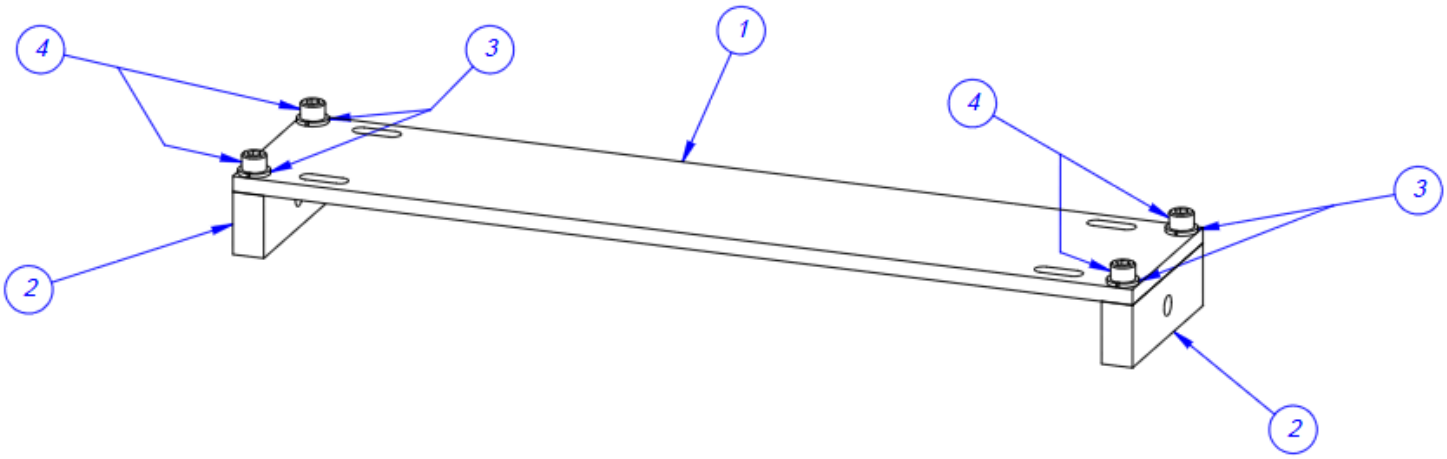
TA-UF3300



4.4a Conveyor Mount Subassembly

Subassembly to TA-UF3300

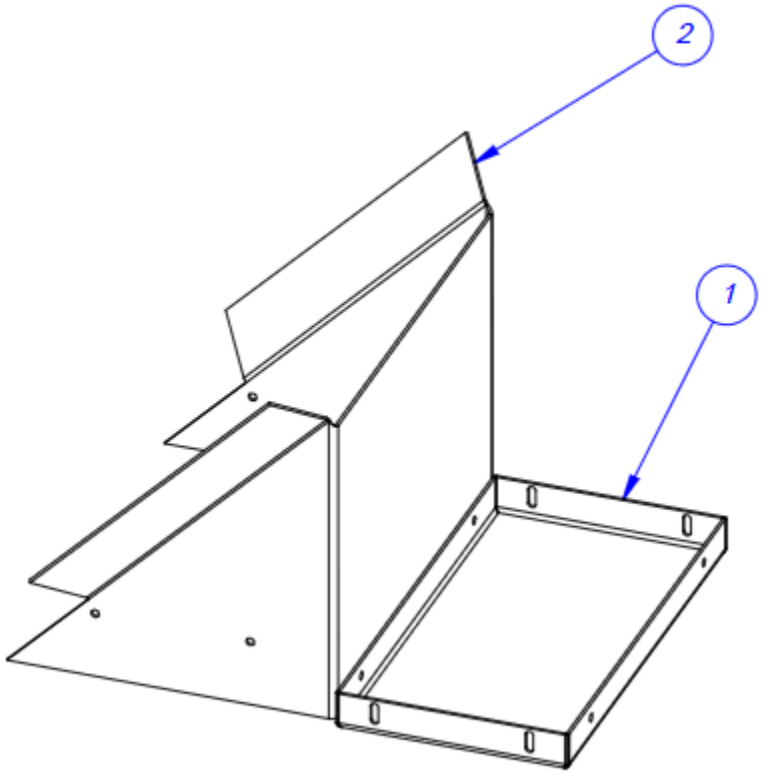
ITEM NO.	QTY.	Part No	DESCRIPTION
1	1	TP-UF3305	CONVEYOR MOUNT BAR
2	2	TP-UF3306	CONVEYOR MOUNT BLCOK
3	4	TP-102155	Washer, 1/4 LOCK
4	4	TP-103138	Screw, SHCS 1/4-20 x 5/8



4.4b Infeed Chute Subassembly

Subassembly to TA-UF3300

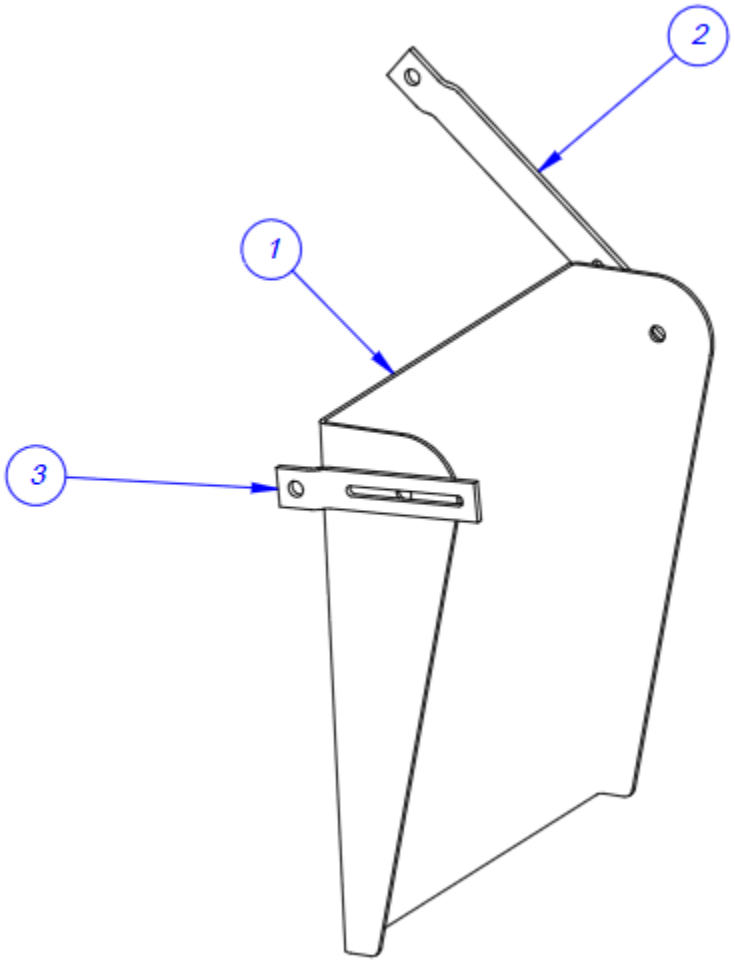
ITEM NO.	QTY.	PART NO	DESCRIPTION
1	1	TP-UF3307	CONVEYOR PRODUCT STOP
2	1	TP-UF3308	CONVEYOR INFEED CHUTE



4.4c Discharge Chute Subassembly

Subassembly to TA-UF3300

ITEM NO.	QTY.	PART NO	DESCRIPTION
1	1	TP-UF3310	CONVEYOR DISCHARGE CHUTE
2	1	TP-UF3311	DISCHARGE BRACE (LONG)
3	1	TP-UF3312	DISCHARGE BRACE (SHORT)



4.5 Brushless DC Motor Systems Cut Sheet

Model No: AXH Series AXHM5100KC-GFH

Gearheads Provide High Torque

AXH geared type motors come pre-assembled with a gearhead. These gearheads provide torque up to 17.7 lb.-in (2N·m) for the 15 W motors and up to 141 lb.-in (16N·m) with the 50 W motors.

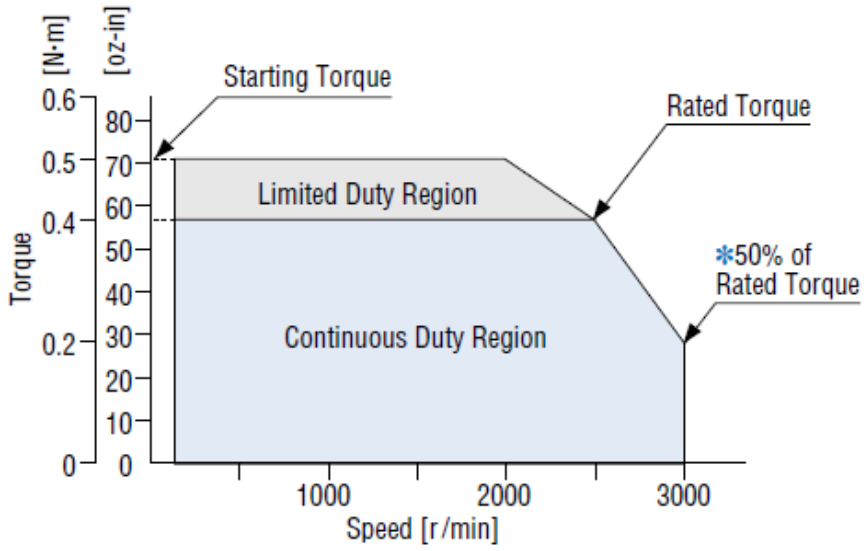
Safety Standards and CE Marking

Standards		Certification Body	Standards File No.	CE Marking
AXH015 type **AXH230** type **AXH450** type	UL1950	UL	E208200	EMC Directives
	CSA C22.2 No.950			
AXH5100 type	UL60950	UL	E208200	
	CSA C22.2 No.60950			

Speed — Torque Characteristics

- For the geared type and combination type, the values are for the motor alone.
- Enter the gear ratio in the box (□) within the model name.

AXH5100KC-□/AXH5100KC-A



* Values for 24 VDC with no extension cable

● Motor/Gearhead

AXH5100KC-□ (Combination Type)

Motor: AXHM5100KC-GFH

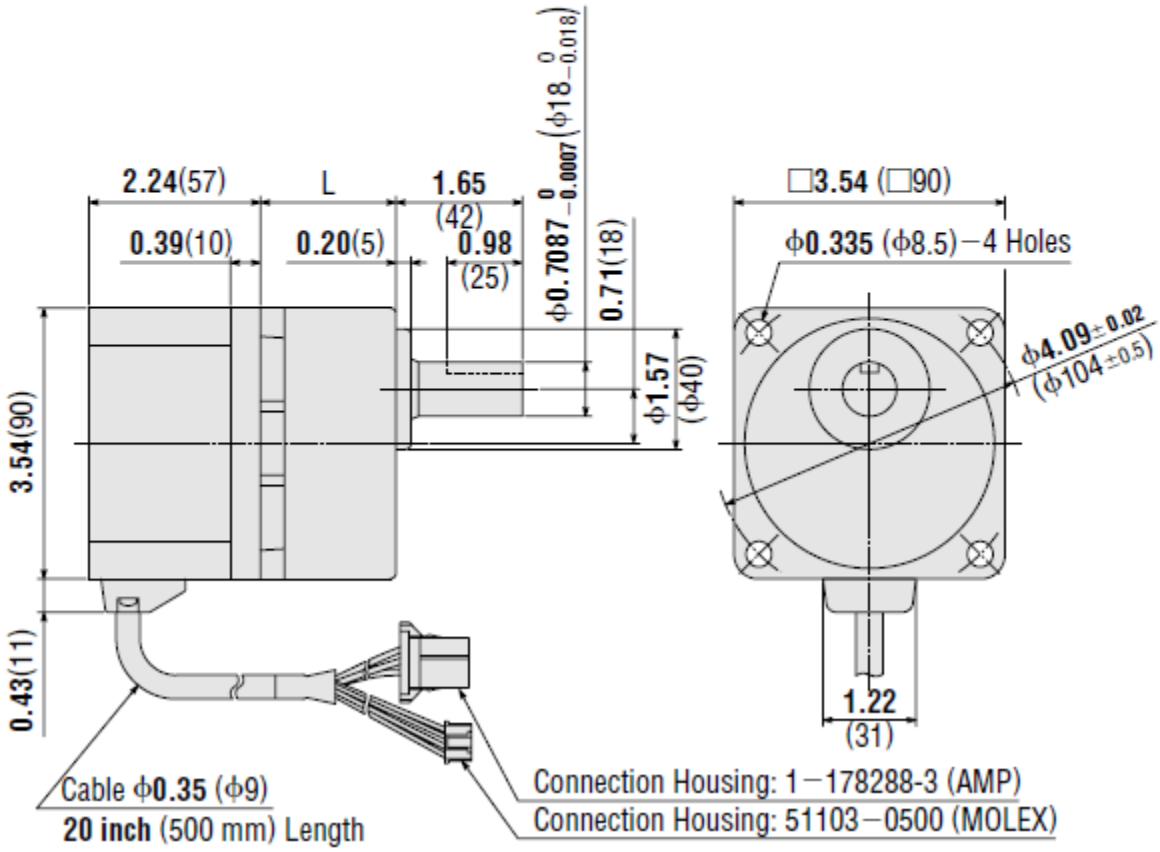
Gearhead: GFH5G□

Weight (including gearhead): 6.4 lb. (2.9 kg)

DXF A401AU (GFH5G5~20)

A401BU (GFH5G30~100)

A401CU (GFH5G200)



■ List of Motor and Driver Combinations

● Geared Type/Combination Type

Output Power	Model	Motor Model	Gearhead Model	Driver Model
1/50 HP 15 W	**AXH015K-□**	AXHM015K-□*	—	AXHD15K
1/25 HP 30 W	**AXH230KC-□**	AXHM230KC-GFH	GFH2G□	AXHD30K
1/15 HP 50 W	**AXH450KC-□**	AXHM450KC-GFH	GFH4G□	AXHD50K
1/8 HP 100 W	**AXH5100KC-□**	AXHM5100KC-GFH	GFH5G□	AXHD100K

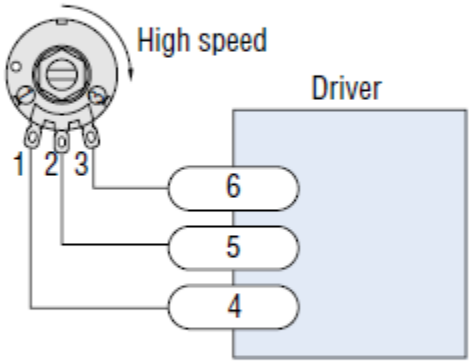
● Enter the gear ratio in the box (□) with in the model name.

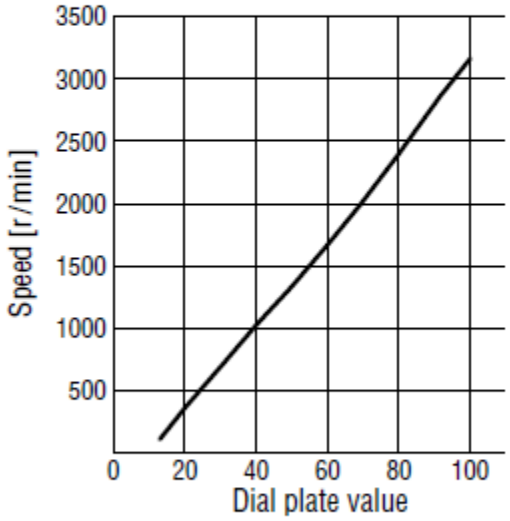
* Geared Motor Model

◆ Speed Control by External Potentiometer

When separating the motor speed setting from the driver, connect the optional external potentiometer as follows.

External speed potentiometer
PAVR-20KZ (Sold separately)





External Potentiometer Scale—Speed Characteristics (Representative Values)

4.6 NOTES

DATE	NOTE