Automatic

ATG10000 PTO

Portable Roller Mill

Operator, Parts & Installation Manual

Introduction

Congratulations! You are now the owner/operator of America's finest roller mill. Please take a few minutes to be sure that you understand the maintenance and operation of this roller mill. Read this operator's manual carefully: you'll get better results and have fewer problems.

After your roller mill has been in operation for a few hours, check for loose bolts, setscrews, belts, etc. All are tight when the roller mill leaves the factory; however, after a break-in period, some items may require additional tightening. Like any other machine, your Automatic roller mill requires proper care and intelligence in operation. Misuse and neglect will only cause unnecessary expense and dissatisfaction.

This manual is written as a guide for owners and operators of the Automatic ATG10000 PTO model roller mill. Read it carefully and follow the suggestions made. Keep this manual in a convenient place for quick, easy reference, and use it whenever questions arise.

Fill in the following information now for future reference and convenience. Always give this information to your dealer when ordering new parts. If at any time it becomes necessary for you to write directly to Automatic Equipment Manufacturing Company for additional information, give the model and serial number of your machine, and as much descriptive information as possible. It will enable us to more thoroughly and quickly expedite your order.

Model No. _____ Serial No._____

Date of Purchase _____

Name and Address of Dealer _____

_____

Dealer/Operator Pre-Use Inspection Checklist

Although everything is in working order when the roller mill leaves the factory, some components may get out of adjustment in transit. The following inspection must be made prior to operation. Check each item listed and make adjustments if necessary. Refer to the corresponding sections of the manual to determine the correct settings for individual items.

- Check all belts for proper tension and alignment.
- Check to make sure the set screws in all pulleys and bearings are tight.
- Check all grease line connections and lines for damage during shipment.
- Make a general check for bolts that may have vibrated loose during shipment.
- Check greased bearings for proper lubrication.
- Check to make sure all shields and guards are in place.
- After operating the roller mill for the first few times, go through this checklist again. Some bolts, setscrews and belts may require additional adjustment during this break-in period.

Safety

DO NOT OPERATE OR USE THIS EQUIPMENT UNTIL THE FOLLOWING OPERATING AND SAFETY INSTRUCTIONS HAVE BEEN READ AND UNDERSTOOD. FAILURE TO UNDERSTAND AND PRACTICE GOOD SAFETY PROCEDURES COULD RESULT IN PERSONAL INJURY OR DEATH.

All farm machinery is inherently dangerous to children and to persons unfamiliar with its general operation. Children should not be permitted in areas where machinery of this nature is operating.

Since mills contain numerous moving parts, some of which may not always be visible to the operator, they can be extremely dangerous. Steps should be taken to assure the safety of the operator, and any other people in the area. Automatic Equipment strongly recommends that no person be permitted to operate this mill without a thorough understanding of how the machine works and the precautions to be observed.

The operator of this machine should be a responsible adult who is familiar with farm machinery, and trained in its operation. **REMEMBER!** Your best insurance against accidents is a careful and responsible operator. A careless operator is a liability to himself and those who work with him.

Because of the dry, highly flammable material associated with this machine, **FIRE FIGHTING EQUIPMENT SHOULD BE READILY AVAILABLE DURING THE OPERATION OF THIS MACHINE.**

Before operating this equipment, be sure to read and understand this operator's manual. If there is any portion of the manual, or any phase of the roller mill's operation you do not understand, be sure to contact your local Automatic dealer or Automatic Equipment, Pender, Nebraska. 402-385-3051.

⚠ SAFETY PRECAUTIONS - TRANSPORTATION

WHENEVER THE ROLLER MILL IS TO BE TRANSPORTED ON A PUBLIC THOROUGHFARE PLEASE OBSERVE THESE INSTRUCTIONS

1. Check clearances carefully before towing the roller mill over/under bridges and into buildings.
2. Always place the machine in the transport position.
3. For daytime and nighttime, accessory lighting and reflective devices should be used for adequate warning to operators of other vehicles.
4. Drive at a reasonable speed to maintain complete control of the machine at all times.
5. When transporting on the highway, it is recommended that a safety chain be used with the tractor and roller mill.

⚠ SAFETY PRECAUTIONS - BEFORE OPERATION

1. Keep the mill in good repair. Good maintenance is your responsibility. A poorly maintained machine is an invitation for trouble. Always use proper tools when servicing your mill.
2. **DO NOT** start, operate, or attempt repair work on the mill until you carefully read and thoroughly understand this operator's manual.
3. Be sure all shields are in place and all bolts are tight throughout the mill.
4. Be sure the rolls and drive belts are properly adjusted and in good condition. (See Operation Section)
5. Be sure there are no tools or other foreign objects lying on or in the machine.

Safety

⚠ SAFETY PRECAUTIONS - DURING OPERATION

1. **DO NOT** wear loose-fitting clothing that may catch in moving parts.
2. Children should not be permitted in areas where machinery of this nature is operating.
3. **DO NOT** operate this machine until you are sure everyone is clear of the area.
4. **NEVER** leave the mill running unattended.
5. Always keep hands, feet, and clothing away from moving parts.

6. ⚠ **DANGER** Keep hands and feet out of the hopper when machine is in operation. Never remove safety grates, or use your hands or feet to dislodge any obstruction from the mill. Never try to push or force feed grain or snow that may be bridged or laying in the hopper.
7. **NEVER** sit or stand on the mill while it is in operation.
8. **NEVER** adjust or service the unit while it is in operation.
9. **NEVER** open shields, mill access doors or clean out doors while the mill is in operation.
10. ⚠ **DANGER** Avoid contact between the discharge conveyor and overhead electrical lines. Failure to heed warnings will result in serious personal injury or death.
11. Hydraulic fluid can cause serious burns. Hydraulic fluid escaping under pressure can have enough force to penetrate the skin and may also infect a minor cut or opening in the skin. If injured by escaping fluid, see a doctor at once. Make sure all connections are tight and that hoses are in good condition.

⚠ SAFETY PRECAUTIONS - SERVICE AND REPAIR

1. **SAFETY SHUTDOWN PROCEDURE:** Working on the mill when it is operating is expressly prohibited. Never clean, adjust, lubricate, or otherwise service this machine until the following steps have been taken.

   A. Disengage the power source.

   B. Lock all switches.

   C. Wait until all mechanical motion has stopped on the mill.

   Only when these precautions have been taken, should you proceed in the adjustment or servicing of the mill. Failure to follow the above procedure could lead to death or serious personal injury.

2. Keep the mill in good repair. Good maintenance is your responsibility. A poorly maintained machine is an invitation for trouble. Always use proper tools when servicing machine, making certain that they are removed from the unit when services or repairs have been completed.
3. All mills are equipped with shielding to protect the operator from injury. **For purposes of clarity only,** some illustrations in this manual may show the mill with the shields removed or missing. Although shields may be opened or removed for servicing and repair of the mill, they **MUST** always be closed or replaced before operation resumes.

Roller Mill Maintenance & Operation

Automatic Grain roller mills are manufactured from the best materials and workmanship available - each has been tested and properly adjusted at the factory before shipping. Simple adjustments and minimum maintenance have been emphasized. Reasonable care and operation will assure many years of trouble-free service.

- BE SURE roller mill is mounted on a firm base. The machine should be level while operating so the grain will flow evenly across the rolls. This will eliminate unnecessary strain on roll bearings and shafts, and also do a better job of rolling.

- IT IS IMPORTANT that all units be checked after the first few hours of service to insure that all set screws, lock collars, and other hardware has remained secure. This operation should be performed periodically as part of general maintenance on your roller mill.

- ROLLER TENSION SPRINGS on floating roll are set at the factory to maintain just the right amount of pressure. **NEVER** readjust compression spring tension. These springs prevent stoppage, allowing foreign objects such as nails, bolts, etc. to pass between rolls. On all of our mills, magnets are available and recommended, as they separate pieces of iron and steel from the feed. Saving the life of just one animal will pay for several magnet installations.

Your roller mill is designed to eliminate complicated adjustments. There are only two (2) major points of adjustment for any small grain or shelled corn - roller spacing and hopper control gate.

- HOPPER GATE CONTROL. Your roller mill will not start with grain between rolls. Always start roller and bring rolls to full RPM before opening feed gate. Make sure feed gate in hopper is closed before putting grain in hopper. If grain is released to rolls before they are turning, grain will pile up and it will be necessary to clean out between rolls and run remaining kernels through by hand before starting.

- ROLLER SPACING. This depends upon the type of grain to be rolled. Different grain varies in size, shape, toughness and moisture content. This is also true of the same kind of grain from different localities. For this reason, it is impossible for us to tell you how to set the rolls. Do not over-roll hard or dry grains, as this will cause dusting. Remember, proper adjustment keeps dust at a minimum, even when rolling the driest grain.

The closest roll setting is preset at the factory and as a rule and should not require additional adjustment. However, for certain types or conditions of rolling, some “fine tuning” may be required.

IMPORTANT - Check to make sure the roll teeth do not come in contact with each other by turning the mill by hand after each adjustment.

- DON’T OVERCROWD THE ROLLS - keep a ribbon of grain going between the rolls, and you’ll do a better job of rolling. This is especially true of oats and barley. It is not necessary to completely flatten the kernel. The grain becomes easy to digest when the hard coat or hull is broken open, exposing the nutrients to the digestive juices.

- ON PTO UNITS - Grade 5 shear bolts should be used at all times in the shear plate of the PTO assembly. PTO Cross bearings should be greased daily. Telescoping sections of the PTO should be greased yearly.

- ALWAYS - ease the PTO in slowly with tractor idling, then increase RPM gradually to full throttle, 900 to 1,000 RPM. Always maintain full tractor throttle and PTO speed while operating mill. **NEVER OPERATE WITH PTO SPEED IN EXCESS OF 1,000 RPM**

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- TRACTOR HITCH - The hitch of the roller mill is designed to attach to any SAE-ASAE standardized tractor draw bar. Adjust the draw bar so that it is 13” - 20” above the ground. Extend or shorten the tractor draw bar so that the horizontal distance from the end of the tractor power take-off shaft to the center of the hitch pin hole is 16” for 1,000 RPM. Lock the draw bar in its crossbar, parallel with the center line of the tractor. Place locking pins on each side of the draw bar. If the tractor has an offset draw bar, the offset should be down for PTO work.

NEVER ATTEMPT TO LUBRICATE, ADJUST OR OTHERWISE SERVICE THIS MACHINE UNTIL THE PTO HAS BEEN DISENGAGED, THE TRACTOR ENGINE HAS BEEN TURNED OFF AND ALL MOTION HAS BEEN STOPPED. LISTEN, AS WELL AS LOOK, FOR MOTION BEFORE PROCEEDING

THE TRACTOR HITCH POINT MUST BE PROPERLY ADJUSTED. AN IMPROPERLY LOCATED HITCH POINT MAY CAUSE DAMAGE TO THE POWER TAKE-OFF WHICH MAY LEAD TO PERSONAL INJURY.

- BEARINGS - All pillow block and cast flange bearings are sealed and as a general rule, require no lubrication. However, the bearing manufacturer does furnish grease zerks and recommends the bearings be re-greased before one-third (1/3) of the bearings’ calculated life elapses. Usually just a pump or two of grease per bearing before start up each harvest or after the unit has not been used for a month or more will be sufficient.

IMPORTANT - DO NOT OVER GREASE. Over greasing can cause damage to the bearing seal.

- WHEEL BEARINGS - Trailer wheel bearings should be cleaned and repacked with grease on a yearly basis.
- PTO Cross bearings should be greased daily. Telescoping sections of the PTO should be greased yearly.

WARNINGS

- HYDRAULIC SYSTEM - The hydraulic flow control valve is assembled at the factory for an Open Center hydraulic system. Before connecting the tractor to the hydraulic auger, check with your tractor dealer or in your tractor manual to make sure your hydraulic system is compatible.
- HYDRAULICS - The motors on the mill have a speed limitation of 16 gpm. Going above that flow rating by bypassing the flow controller on the mill could damage or destroy the motor’s geroler.

IMPORTANT: FAILURE TO MATCH HYDRAULIC SYSTEMS COULD DAMAGE YOUR TRACTOR!

- BELT TENSION
  Drive Belt
  New Belt - - - After 15 minutes of running
  First 4 Hours of Service - - - Every Hour
  After first 4 hours - - - Every 8 hours service

  Roll Drive Belts are tensioned properly when they can be depressed 3/8 inch, in the middle of the longest span, using a force of 7 pounds.

  Auger Base Drive Belts are tensioned properly when they can be depressed 1/4 inch, in the middle of the longest span, using a force of 7 pounds.

Operation Instructions

Start-Up Instructions for Tractor Hydraulics

1. Attach the tractor to the mill and lock the hitch pin.
2. Attach the PTO to the tractor.
3. Attach the hydraulic lines to the tractor.
4. Start the tractor hydraulics
5. Adjust the ball valve to the appropriate position for open or closed system hydraulics.
6. Unfold and adjust the discharge conveyor placement as desired using the appropriate lever.
7. Engage the PTO and slowly accelerate. Do not exceed 1000 RPM at the PTO.
8. Adjust the flow controller for the conveyor.
9. Start filling the hoppers with grain from the source.
10. Once grain can be seen through the windows of the hopper, slowly open the hopper gates one at a time till desired flow is acquired.
11. Make adjustments to the intake flow using the hopper intake gate switches.
    a. HOPPER GATE ADJUSTMENT - Open the hopper gate gradually. Adjust until the maximum flow of grain, that the tractor can handle, is reached. If it becomes necessary to stop the machine at any time before the hopper is empty, be sure to close the hopper gate before shutting off the power.
12. Check the particle size of the end product to ensure product quality. Adjust the roll spacing to create the desired particle size.
    a. ROLLER SPACING ADJUSTMENT - Slowly adjust the cam adjust lever on the driver's side of the mill basic. The farther up the lever is the finer the end particle size and the farther down the lever is the coarser the end particle size.

Shut Down Instructions for Tractor Hydraulics

1. Stop the flow of grain from the source.
2. Empty the hopper.
3. Shut the hopper intake gate.
    a. The mill will **NOT** start with grain in the rolls so make sure the hopper intake gate is shut completely to avoid excess grain getting in between the rolls.
4. Shut off the PTO.
5. Shut off the flow controller.
    a. The valve control lever will be upright when in the off position.
7. Return the discharge conveyor to the stored position using the appropriate levers.
8. Shut off the tractor hydraulics.
9. Unhook hydraulics, PTO, and mill from the tractor if needed.

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Start-Up Instructions for Self-Contained Hydraulics

1. Attach the tractor to the mill and lock the hitch pin.
2. Attach the PTO to the tractor.
3. Engage the PTO and slowly accelerate. Do not exceed 1000 RPM at the PTO.
4. Unfold and adjust the discharge conveyor placement as desired using the appropriate lever.
5. Adjust the flow controller for the conveyor.
6. Start filling the hoppers with grain from the source.
7. Once grain can be seen through the windows of the hopper slowly open the hopper gates one at a time till desired flow is acquired.
8. Make adjustments to the intake flow using the hopper intake gate switches.
    a. HOPPER GATE ADJUSTMENT - Open the hopper gate gradually. Adjust until the maximum flow of grain, that the tractor can handle, is reached. If it becomes necessary to stop the machine at any time before the hopper is empty, be sure to close the hopper gate before shutting off the power.
9. Check the particle size of the end product to ensure product quality. Adjust the roll spacing to create the desired particle size.
    a. ROLLER SPACING ADJUSTMENT - Slowly adjust the cam adjust lever on the driver's side of the mill basic. The farther up the lever is the finer the end particle size and the farther down the lever is the coarser the end particle size.

Shut Down Instructions for Self-Contained Hydraulics

1. Stop the flow of grain from the source.
2. Empty the hopper.
3. Shut the hopper intake gate.
    a. The mill will **NOT** start with grain in the rolls so make sure the hopper intake gate is shut completely to avoid excess grain getting in between the rolls.
4. Shut off the flow controller.
    a. The valve control lever will be upright when in the off position.
5. Return the discharge conveyor to the stored position using the appropriate levers.
6. Shut off the PTO.
7. Unhook PTO and mill from the tractor if needed.

Replacement Parts

When ordering parts for your mill, please state your needs with the following information:

MODEL NO.	SERIAL NO.	PART NO.	DESCRIPTION
ATG10000 PTO	000000	101-8821	Lower Shield Mount

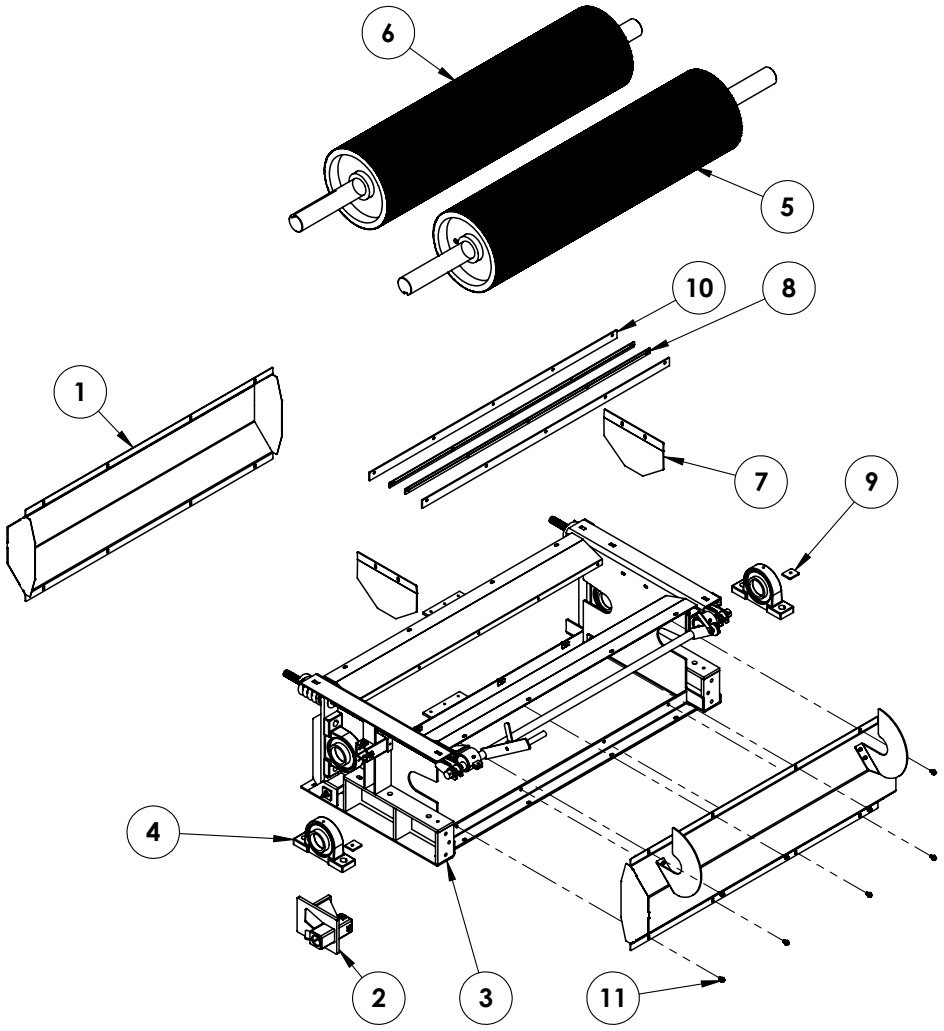
When you order in this way, you can be certain the correct part will be delivered in the shortest time possible.

IMPORTANT: Use only genuine factory replacement parts on your mill. Do not substitute homemade or non-typical parts. If a bolt is lost or in need of replacement, for your safety and the preservation of your mill, be sure to use a replacement bolt of the same grade (Usually Grade 5).

Repair parts can be ordered through your nearest dealer. If there is no dealer in your area, call Automatic Equipment Manufacturing at (402) 385-3051.

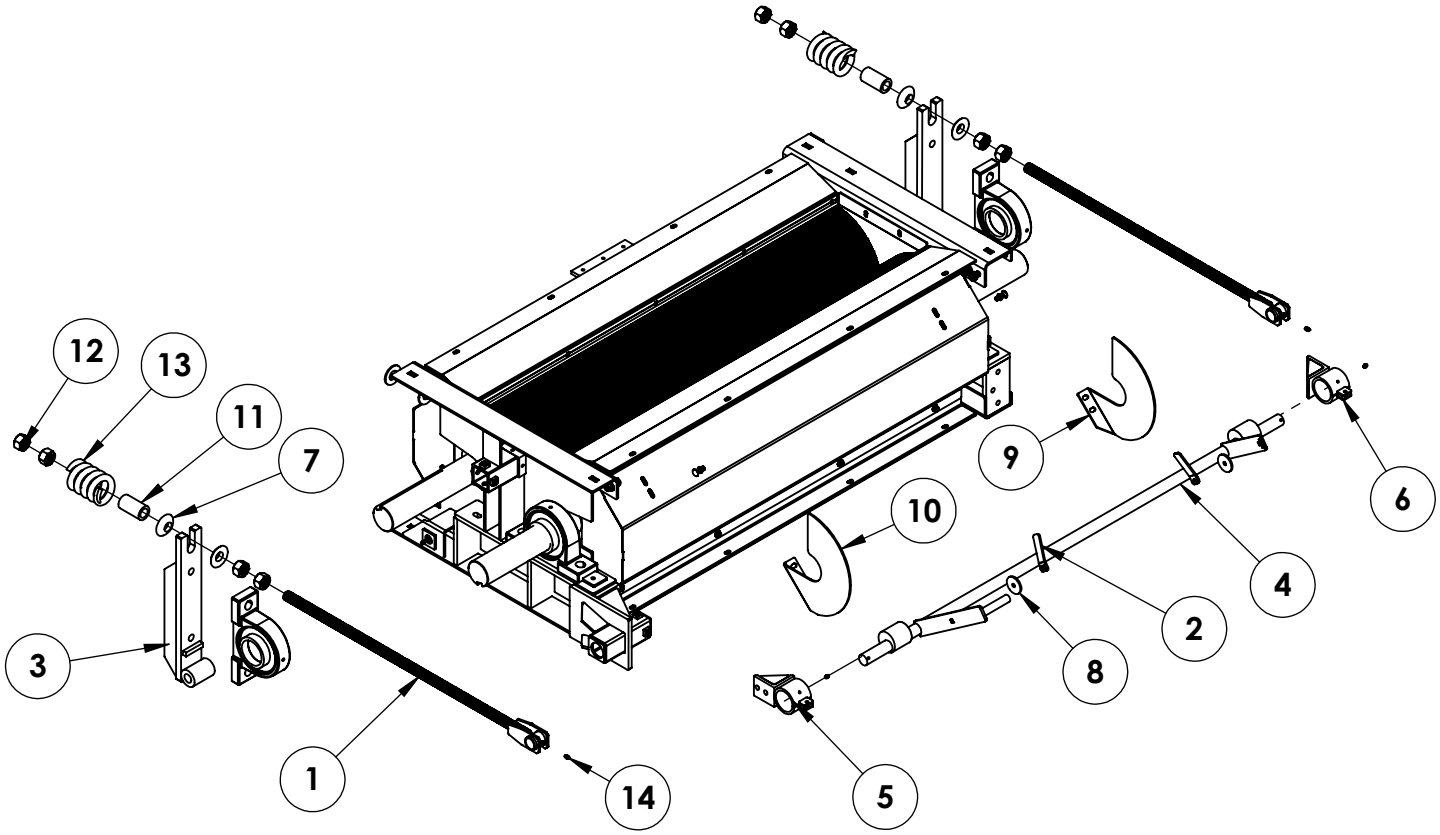
Parts Index

Basic Assembly



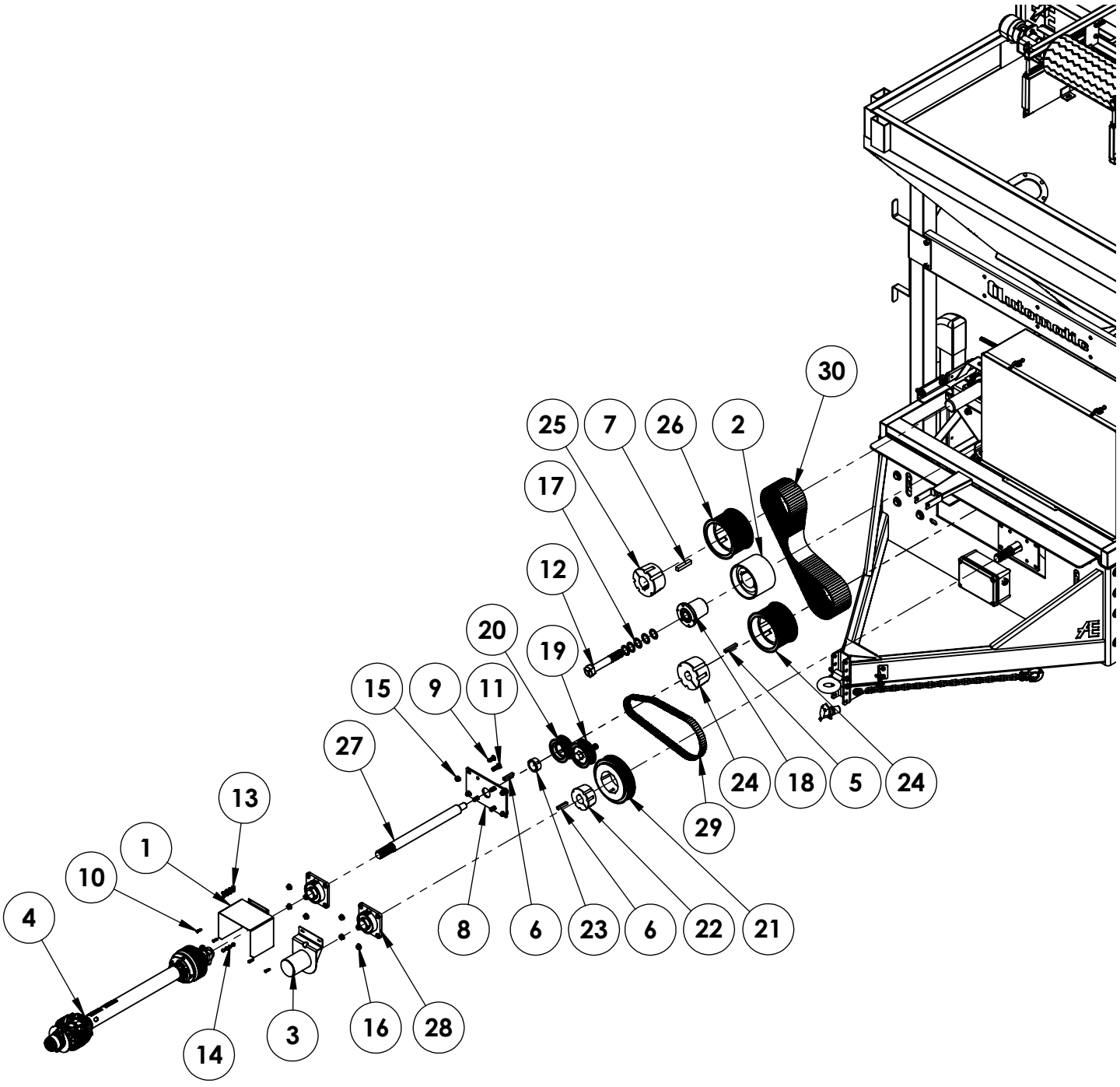
Item No.	Part No.	Description	Qty.
1	61-5630	Mill Basic Roll Cover	2
2	61-6860	Mill Idler Bracket	1
3	61-7560	Mill Basic Frame	1
4	209-0104	2-15/16” Pillow Block Bearing	4
5	71-0703	Mill Drive Roll, 4 Cut	1
	71-0710	Mill Drive Roll, 6.5 Cut	1
	71-0712	Mill Drive Roll, 8 Cut	1
	71-0713	Mill Drive Roll, 10 Cut	1
	71-0714	Mill Drive Roll, 12 Cut	1
	71-0715	Mill Drive Roll, 14 Cut	1
6	71-0704	Mill Idler Roll, 4 Cut	1
	71-0711	Mill Idler Roll, 6.5 Cut	1
	71-0716	Mill Idler Roll, 8 Cut	1
	71-0717	Mill Idler Roll, 10 Cut	1
	71-0718	Mill Idler Roll, 12 Cut	1
	71-0719	Mill Idler Roll, 14 Cut	1
7	101-6195	Wear Plate	2
8	102-6123	Baffle Support Flat	2
9	102-6150	Bearing Stop	2
10	150-0051	Roll Baffle Belting	2
11	201-1031	5/16”-18 x 5/8” Whiz Flange Bolt, Grade 5, FT, ZP	16

Basic Roll Adjustment Assembly



Item No.	Part No.	Description	Qty.
1	61-4550	Cam Adjust Arm	2
2	61-4554	Cam Adjust Handle	2
3	61-5631	Basic Bearing Support Pivot	2
4	61-5670	Cam Adjust	1
5	61-5702	Front Cam Adjust Journal	1
6	61-5703	Rear Cam Adjust Journal	1
7	100-1267	Cam Adjust Rocker	4
8	101-5296	Hopper Gate Lock	2
9	101-5350	Right Adjustment Plate	1
10	101-5351	Left Adjustment Plate	1
11	107-2457	Spring Spacer Tube	2
12	202-0081	1”-8 Hex Nut, Grade 8	8
13	222-0048	3” x 4-7/8” Compression Spring	2
14	224-0425	1/4”-28 Straight Self Tapping Zerk	4

Input Drive Assembly



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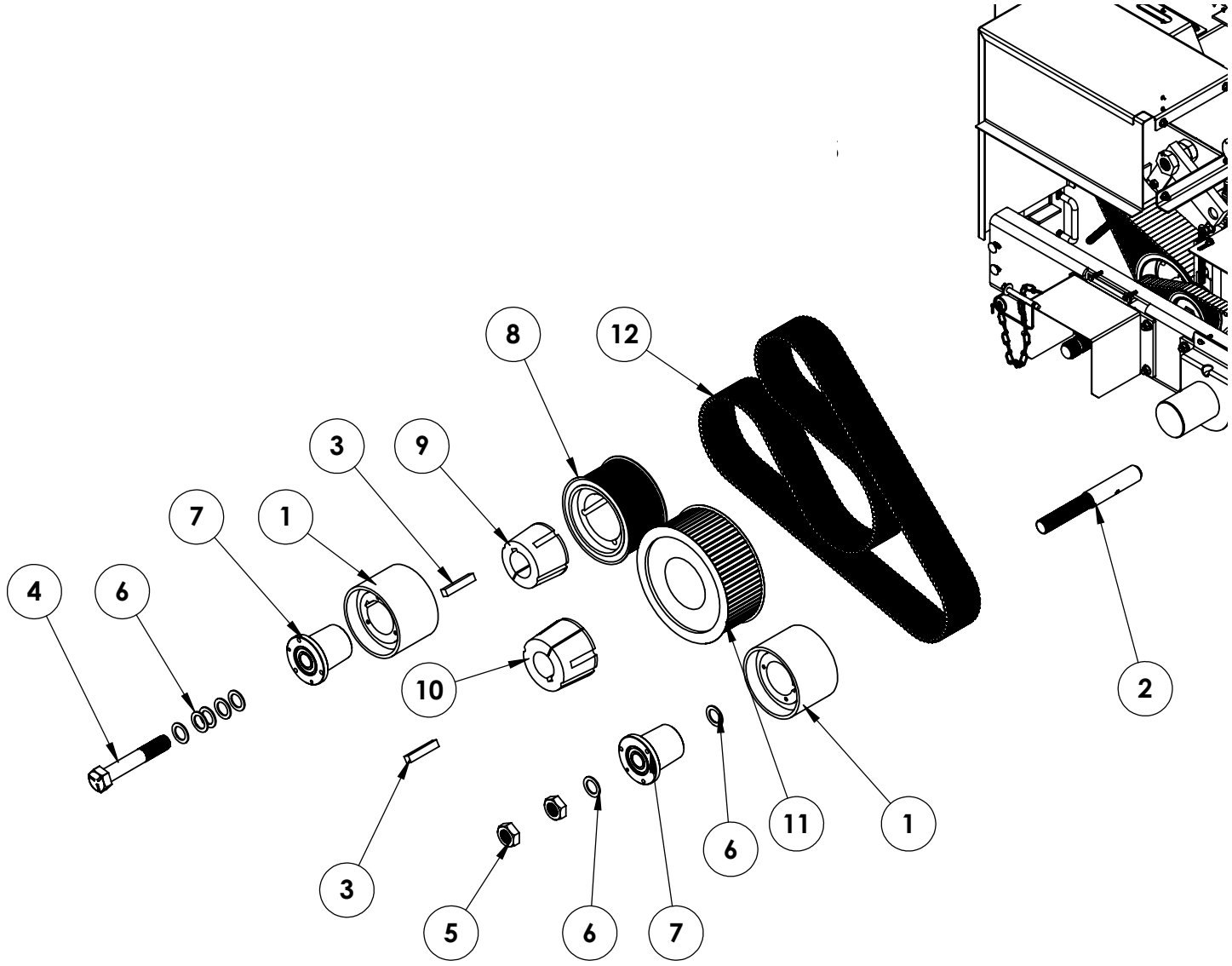
Input Drive Assembly Continued

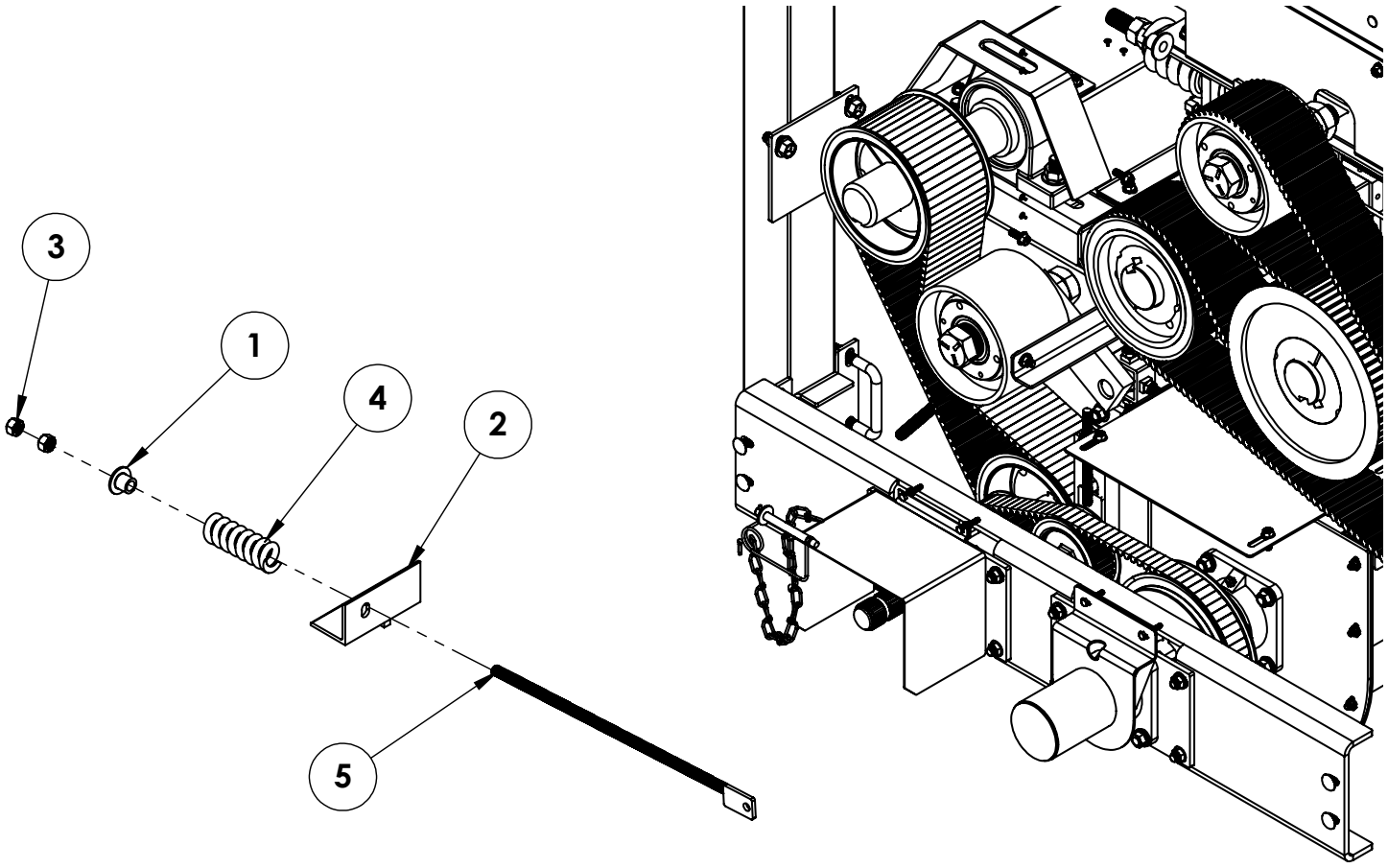
Item No.	Part No.	Description	Qty.
1	61-1543	Front Chain Drive Shield	1
2	61-4837	Idler Roll	5
3	61-8089	Auger Shaft Cover	1
4	83-1197	PTO Kit, 55 Series, Plastic Guard	1
	93-0615	PTO Kit, 55 Series, Plastic Guard	1
5	100-0574	1/2” x 3-1/2” Keystock	1
6	100-0653	1/2” x 1/2” x 2-3/4” Key	2
7	100-1062	3/4” x 3/4” x 4” Key	1
8	101-9995	Front Auger Bearing Plate	2
9	201-0012	1/2”-13 x 1-1/2” Carriage Bolt, Grade 5, ZP	8
10	201-0071	1/4”-20 x 1” Hex Head Bolt, Grade 5, ZP	4
11	201-0286	5/8”-11 x 1-3/4” Hex Head Bolt, Grade 5, ZP	8
12	201-0364	1-1/2”-6 x 9” Hex Head Bolt, Grade 5	3
13	201-0443	3/8”-16 x 1” Hex Head Bolt, Grade 5, ZP	4
14	201-0050	3/8”-16 Hex Lock Nut, Center Dimple	4
15	202-0072	1/2”-13 Hex Flange Whiz Lock Nut, ZP	8
16	202-0073	5/8”-11 Whiz Flange Lock Nut, ZP	8
17	203-0082	10 GA x 2-1/4” x 1-1/2” Plain Finish Machined Bushing	5
18	205-0223	Special IDR2 1-1/2” Idler Bushing	1
19	205-0327	14M-30S-37 Idler Sprocket w/ Shaft	1
20	205-0351	14M x 28S-37 Polychain Sprocket	1
21	205-0377	14M x 56S37-3525 Synchronous Sprocket	1
22	205-0397	2” 3525 Taper-Lock Bushing	1
23	205-0404	2” 2012 Taper-Lock Bushing	1
24	205-0405	2” 4535 Taper-Lock Bushing	1
25	205-0406	2-15/16”M 4535 Taper-Lock Bushing	1
26	205-0407	14MX-50S-125 4535 Polychain Sprocket Bushing	2
27	207-1152	Main Drive Shaft	1
28	209-0173	2.00” Cast 4 Hole Bearing	2
29	251-0164	14MGT-1400-37 Polychain Belt	1
30	251-0194	14MGT-1960-125 Polychain Belt	1

Gearing Pulleys



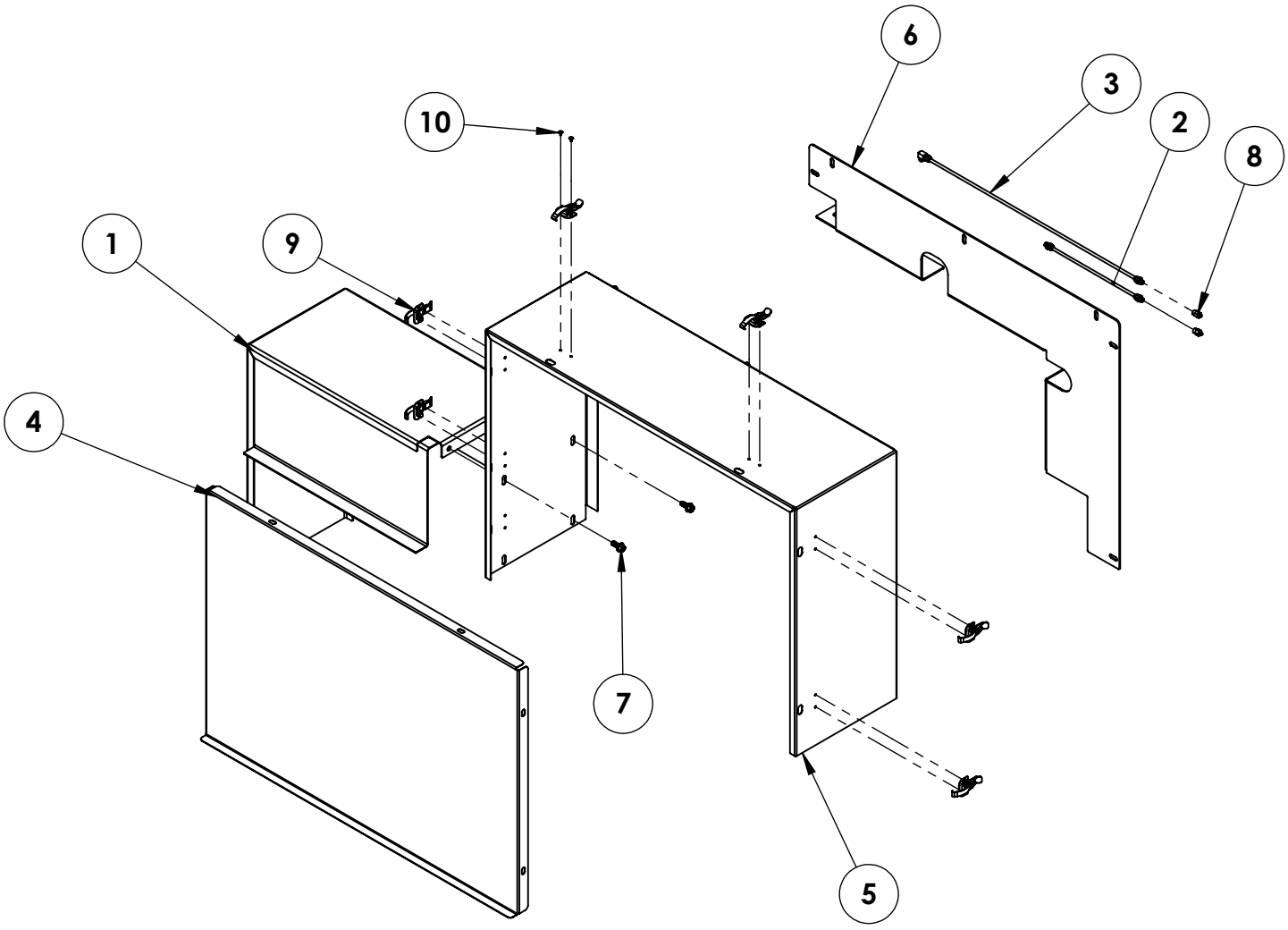
Item No.	Part No.	Description	Qtys. Per Basic
1	61-4837	Idler Roll	2
2	61-6862	Idler Support Shaft	1
3	100-1062	3/4” x 3/4” x 4” Key	2
4	201-0364	1-1/2”-6 x 9” Hex Head Bolt, Grade 5	1
5	202-0104	1-1/2”-6 Hex Jam Nut	2
6	203-0082	10 Gage x 2-1/4” OD x 1-1/2” ID Machine Bushing	7
7	205-0223	Idler Bushing	2
8	205-0297	Cog Belt Sprocket, P52	1
9	205-0332	4040 Bushing, x 2-15/16”	1
10	205-0344	2-15/16” PN 4545 x 2-15/16” Bushing, Use w/205-0343	1
11	205-0393	Sychronous Sprocket, 4545 1.38 Ratio	1
	205-0375	Sychronous Sprocket, 1.5 Ratio	1
12	251-0160	Cog Belt	1

Tensioner Assembly



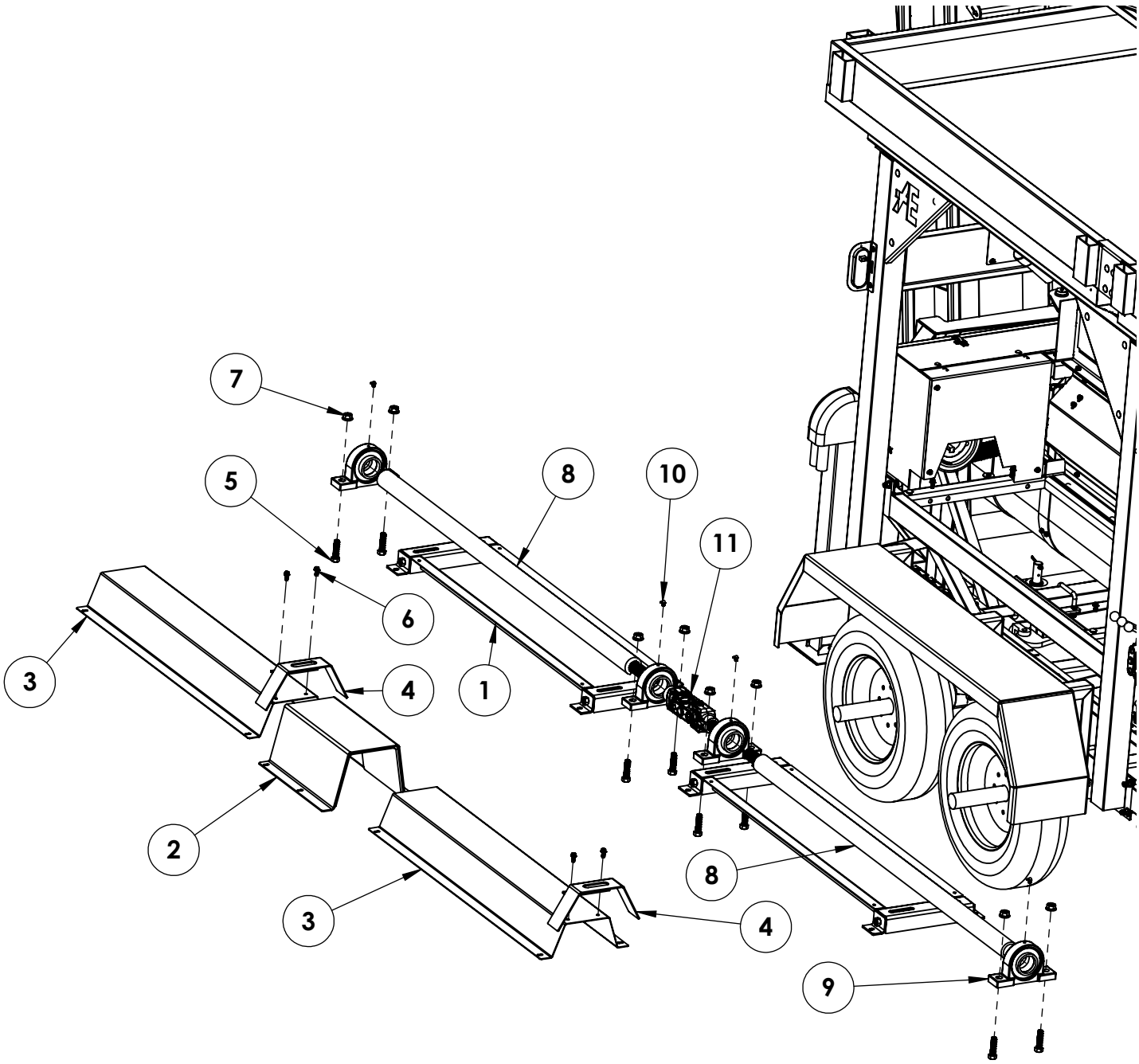
Item No.	Part No.	Description	Qtys. Per Basic
1	61-1968	Spring Center	1
2	61-5742	Spring Tightener Bracket	1
3	202-0006	5/8”-11 Hex Nut	2
4	222-0078	Mill Compression Spring	1
5	227-0134	Idler Tension Rod	1

Gearing Shields



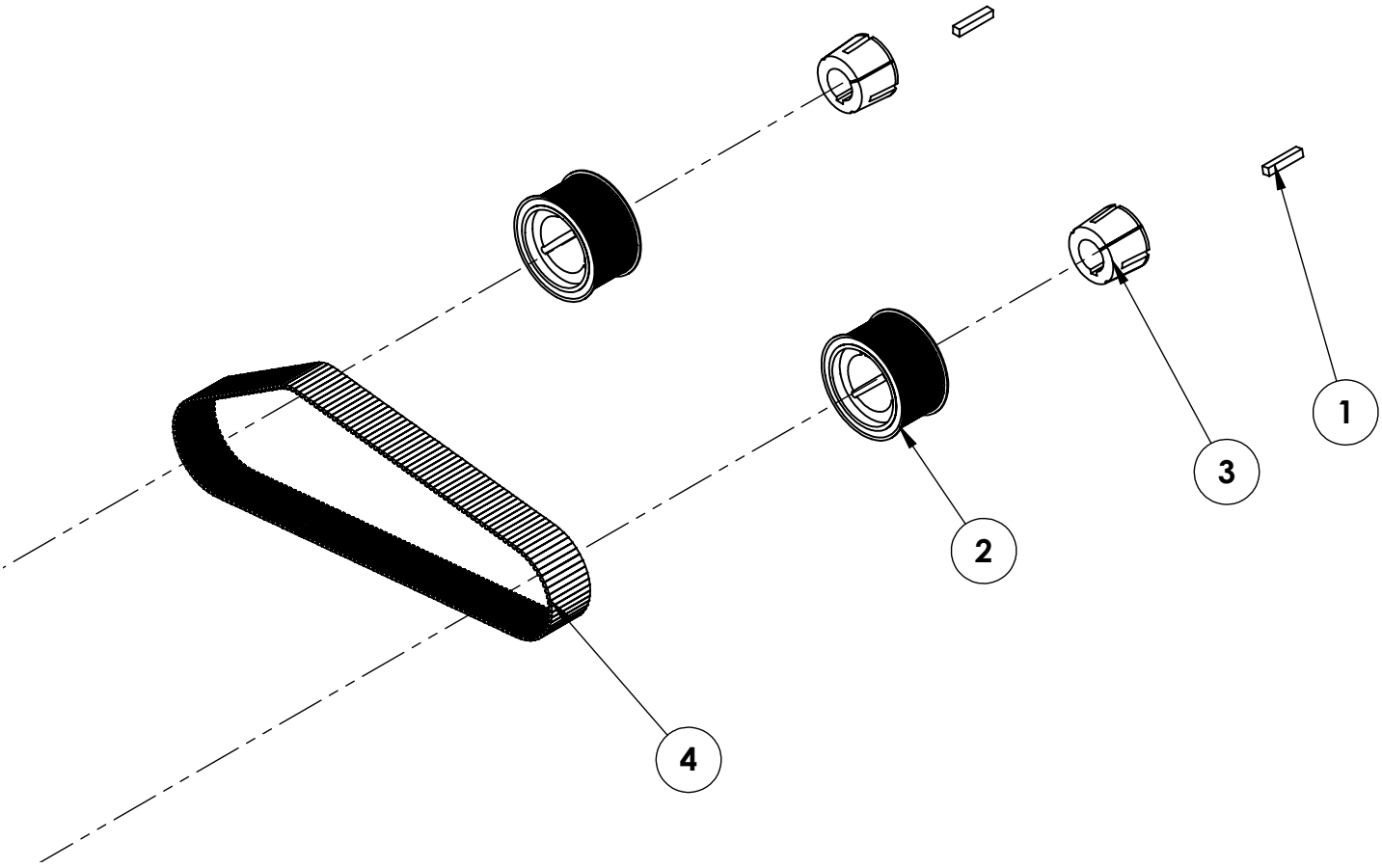
Item No.	Part No.	Description	Qtys. Per Basic
1	61-8088	Side Drive Shield	1
2	62-4083	12” Grease Line	1
3	62-4084	22” Grease Line	1
4	101-8813	Gearing Shield Door	2
5	101-8814	Gearing Shield	2
6	101-8815	Gearing Shield Rear	2
7	201-1010	3/8”-16 x 1” Whiz Flange Bolt	2
8	224-0468	1/8” Female NPT Grease Zerk	1
9	229-0132	Tension Latch	6
10	229-0988	3/16” x 1/16”-1/8” SB6-2 Pop Rivet	12

Drive Components



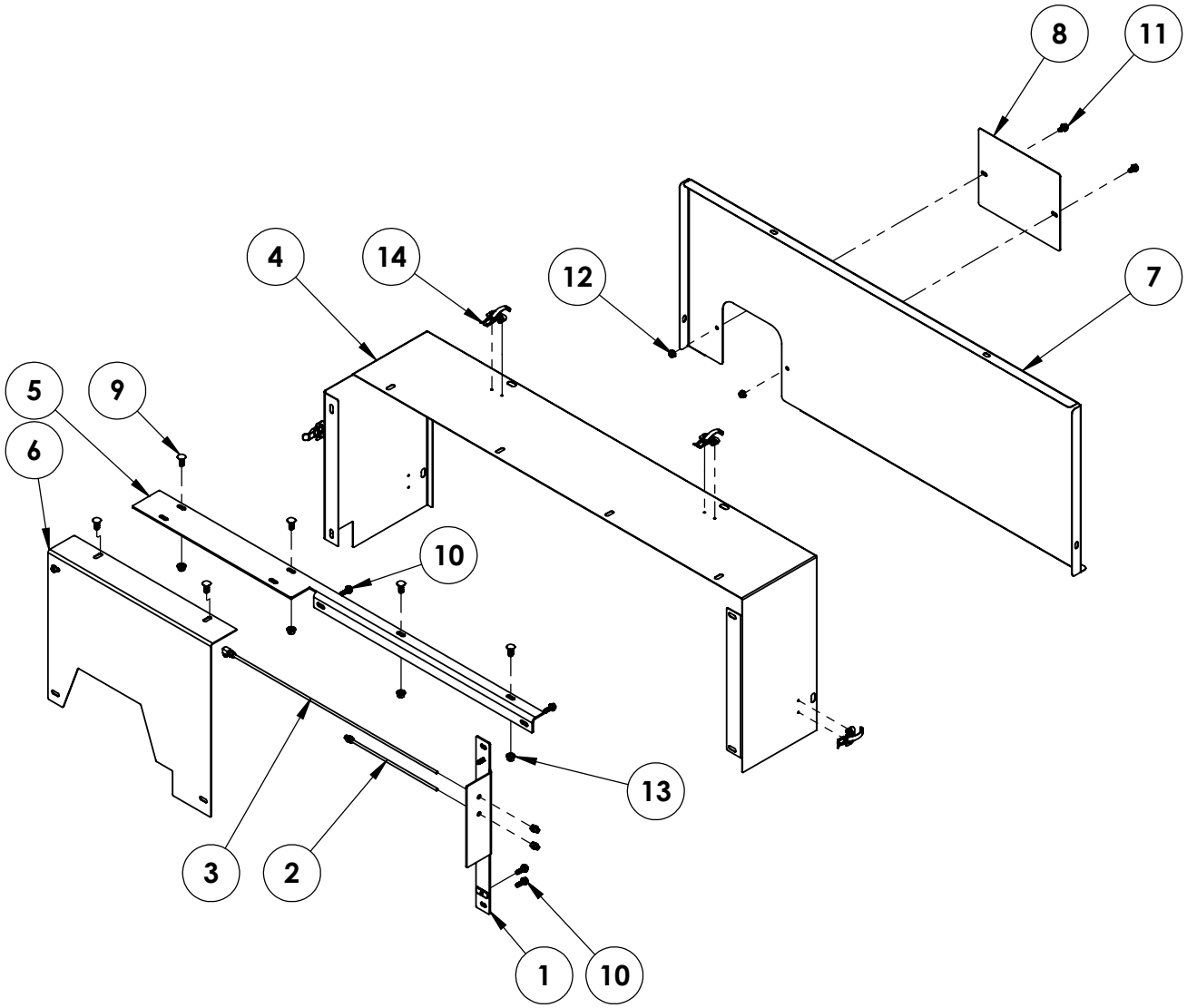
Item No.	Part No.	Description	Qtys. Per Basic
1	61-8102	Tensioner Bearing	2
2	61-8109	Short Drive Shaft Shield	1
3	61-8115	Drive Shaft Shield	2
4	101-10049	Drive Bearing Cover Plate	2
5	201-0382	3/4”-10 x 3” Hex Head Bolt, Grade 8	8
6	201-1010	3/8”-16 x 1” Whiz Flange Bolt	4
7	202-0074	3/4”-10 Flange Whiz Lock Nut	8
8	207-1156	Spined Main Drive Shaft	2
9	209-0104	2-15/16” Pillow Block Bearing	4
10	224-0313	1/8” x 90° Grease Zerk	4
11	229-1111	1-3/4”-20 Spline Double U Joint	1

Drive Pulleys



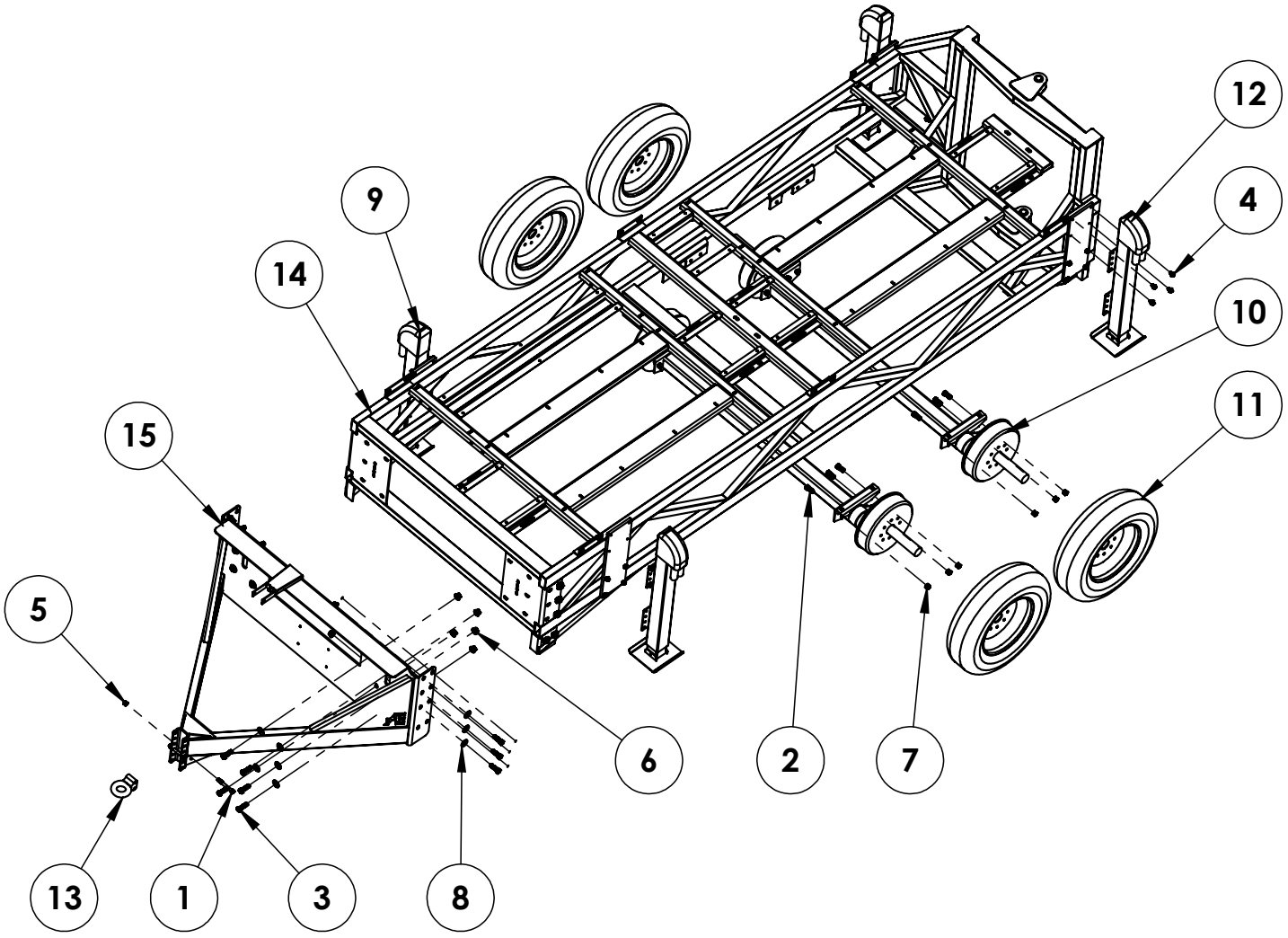
Item No.	Part No.	Description	Qtys. Per Basic
1	100-1062	3/4” x 3/4” x 4” Key	2
2	205-0297	Cog Belt Sprocket	2
3	205-0332	2-15/16” 4040 Bushing	2
4	251-0192	Synchronous Belt	1

Drive Shields



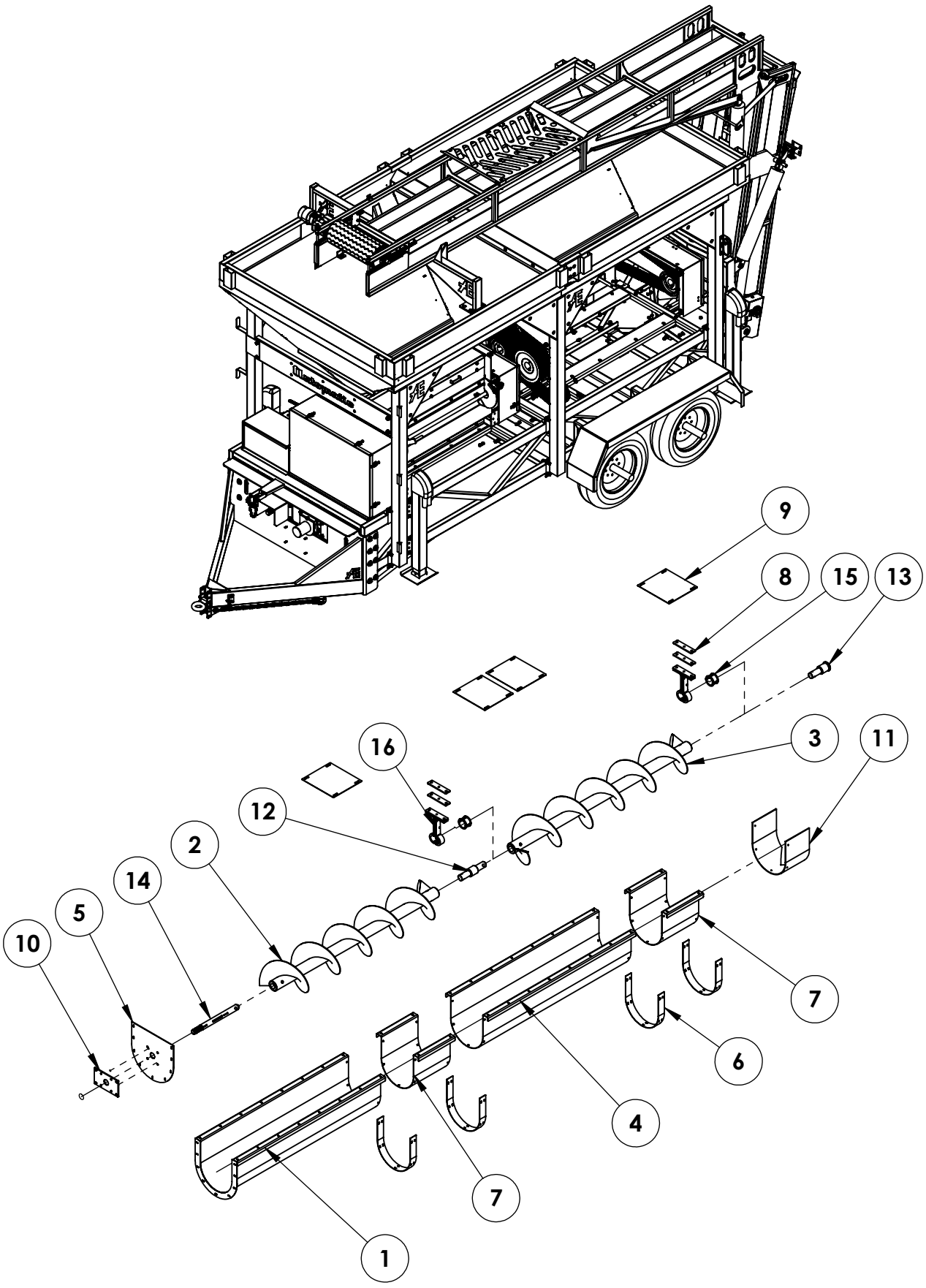
Item No.	Part No.	Description	Qtys. Per Basic
1	61-8022	Rear Grease Bank	1
2	62-4083	12” Grease Line	1
3	62-4084	22” Grease Line	1
4	101-9998	Drive Shield	1
5	101-9999	Upper Mount Drive Shield	1
6	101-10000	Rear Drive Shield	1
7	101-10001	Drive Shield Door	1
8	101-10135	Rear Shield Cut Out Cover	1
9	201-0034	3/8”-16 x 1” Carriage Bolt, Grade 5, ZP	6
10	201-1015	5/16”-18 x 1” Whiz Flange Bolt	4
11	201-1031	5/16”-18 x 5/8” Whiz Flange Bolt, Grade 5, FT, ZP	2
12	202-0070	5/16”-18 Whiz Flange Lock Nut, ZP	2
13	202-0071	3/8”-16 Hex Flange Whiz Lock Nut, ZP	6
14	229-0132	Tension Latch	4

Trailer Frame Assembly



Item No.	Part No.	Description	Qty.
1	201-0075	5/8”-11 x 5” Hex Head Bolt, Grade 5, ZP	2
2	201-0514	3/4”-10 x 1-3/4” Hex Head Bolt, Grade 5	12
3	201-0535	3/4”-10 x 2-1/2” Hex Head Bolt, Grade 5, ZP	26
4	201-1023	1/2”-13 x 3/4” Whiz Flange Bolt	32
5	202-0064	5/8”-11 Hex Nylon Insert Lock Nut, ZP	2
6	202-0074	3/4”-10 Flange Whiz Lock Nut	26
7	202-0107	3-4”-10 Hex Nylon Insert Lock Nut, ZP	12
8	203-0007	3/4” Flat Washer, ZP	26
9	229-0982	12K Electric Square Jack, 24” Lift	2
10	229-0986	10K Torflex Axle	2
11	229-1050	Wheel	4
12	229-1091	12K Electric Square Jack, 24” Lift without Remote	2
13	229-1109	3” Eye Diameter Adjustable Tow Ring	1
14	299-0754	Trailer Frame	1
15	299-0756	Tongue	1

Discharge Auger Assembly

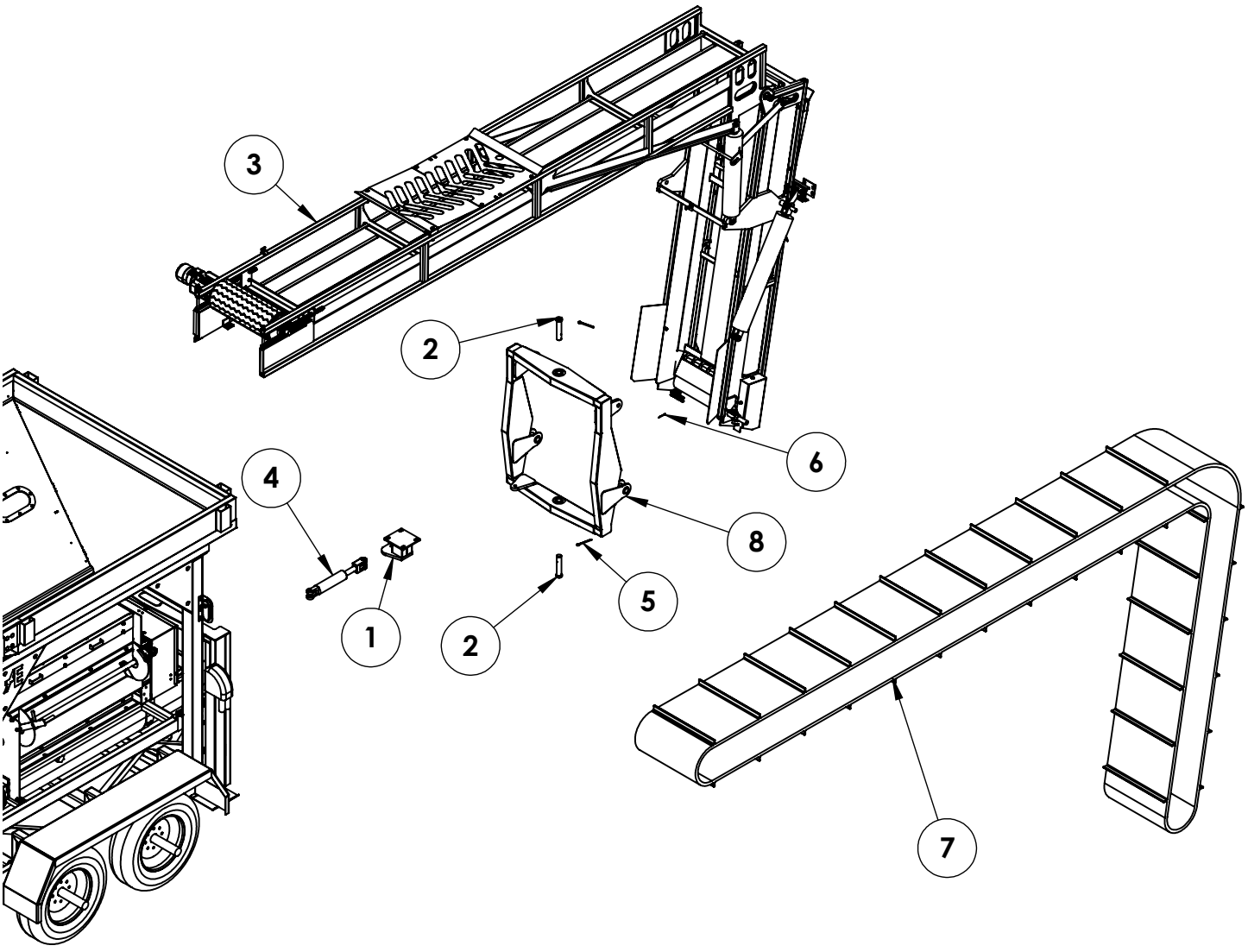


Continued on page 22

Discharge Auger Assembly Continued

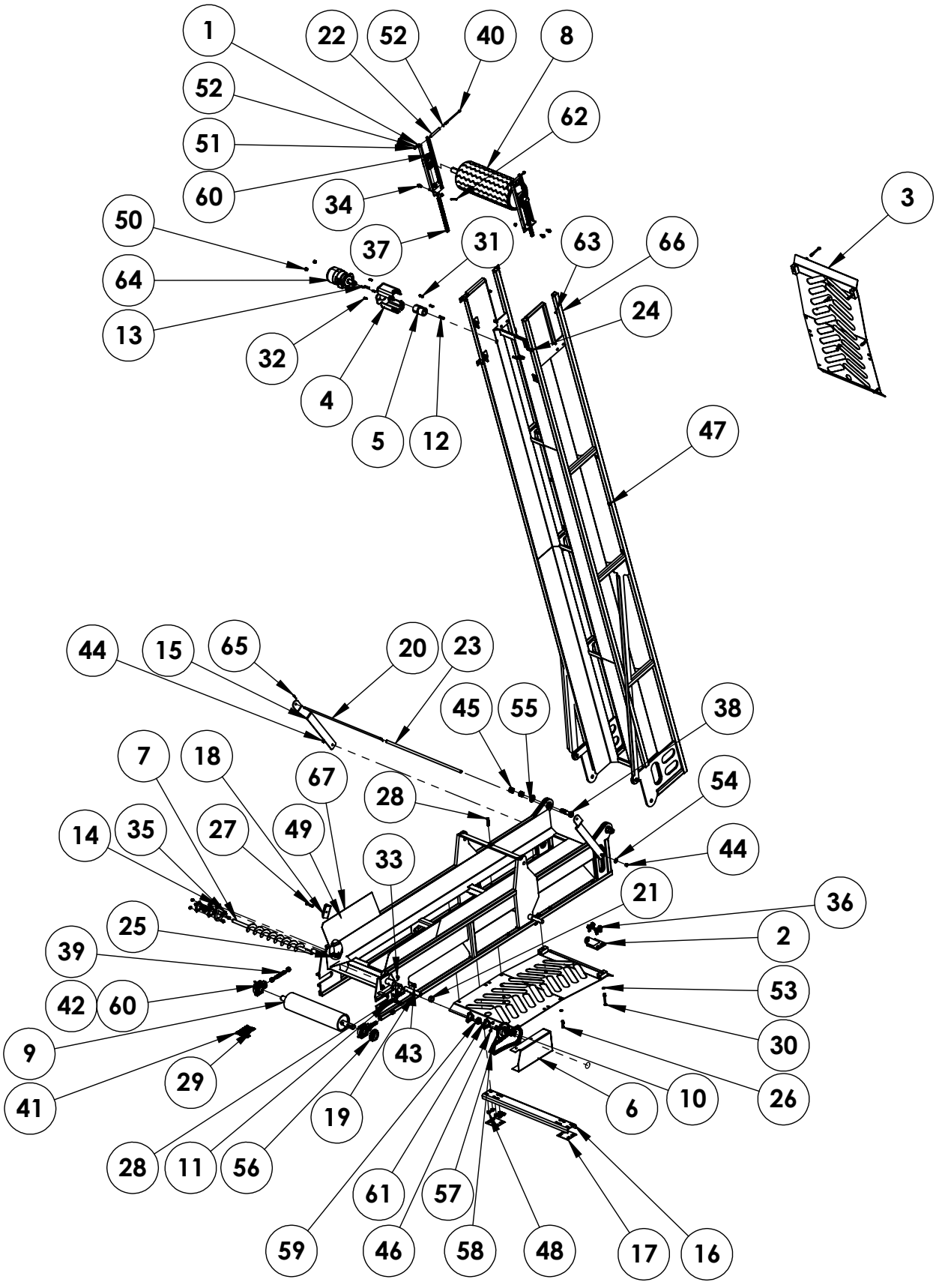
Item No.	Part No.	Description	Qty.
1	61-7483	Front Auger Trough	1
2	61-7505	16” Discharge Auger x 82-15/16”	1
3	61-7506	16” Discharge Auger x 90-3/8”	1
4	101-8680	Auger Trough, Long	1
5	101-8681	Auger Trough Cover, Front	1
6	101-8682	Auger Trough Connector	4
7	101-8683	Auger Trough, Short	2
8	101-8684	Hanger Bearing Shim	4
9	101-9727	Auger Trough Cover	4
10	101-9995	Front Auger Bearing	2
11	150-0088	Auger to Conveyor Transfer Belting	1
12	207-1061	Auger Connector Shaft	1
13	207-1062	Auger End Connector Shaft	1
14	207-1141	2” Auger Input Connector	1
15	209-0169	220 Hanger Bearing x 3”	2
16	229-0985	Shaft Hanger Bearing x 3”	2

Discharge Conveyor #1



Item No.	Part No.	Description	Qty.
1	61-7596	Conveyor Cylinder Mount, Bolt On	1
2	62-4078	Conveyor Pivot Pin	2
3	62-4201	24” Hydraulic Drive Folding Conveyor	1
4	227-0150	2-3/4” Bore x 8” Stroke, 17”-25” Cylinder	1
5	229-0933	1/4” Dia x 3-1/2” Cotter Pin, ZP	2
6	229-1006	5/32” x 2” Cotter Pin	3
7	251-0182	24” x 51.5’ 2 Ply Cross Cleat x BB Belt	1
8	229-0755	Conveyor Mount	1

Discharge Conveyor #2



Continued on pages 25 & 26

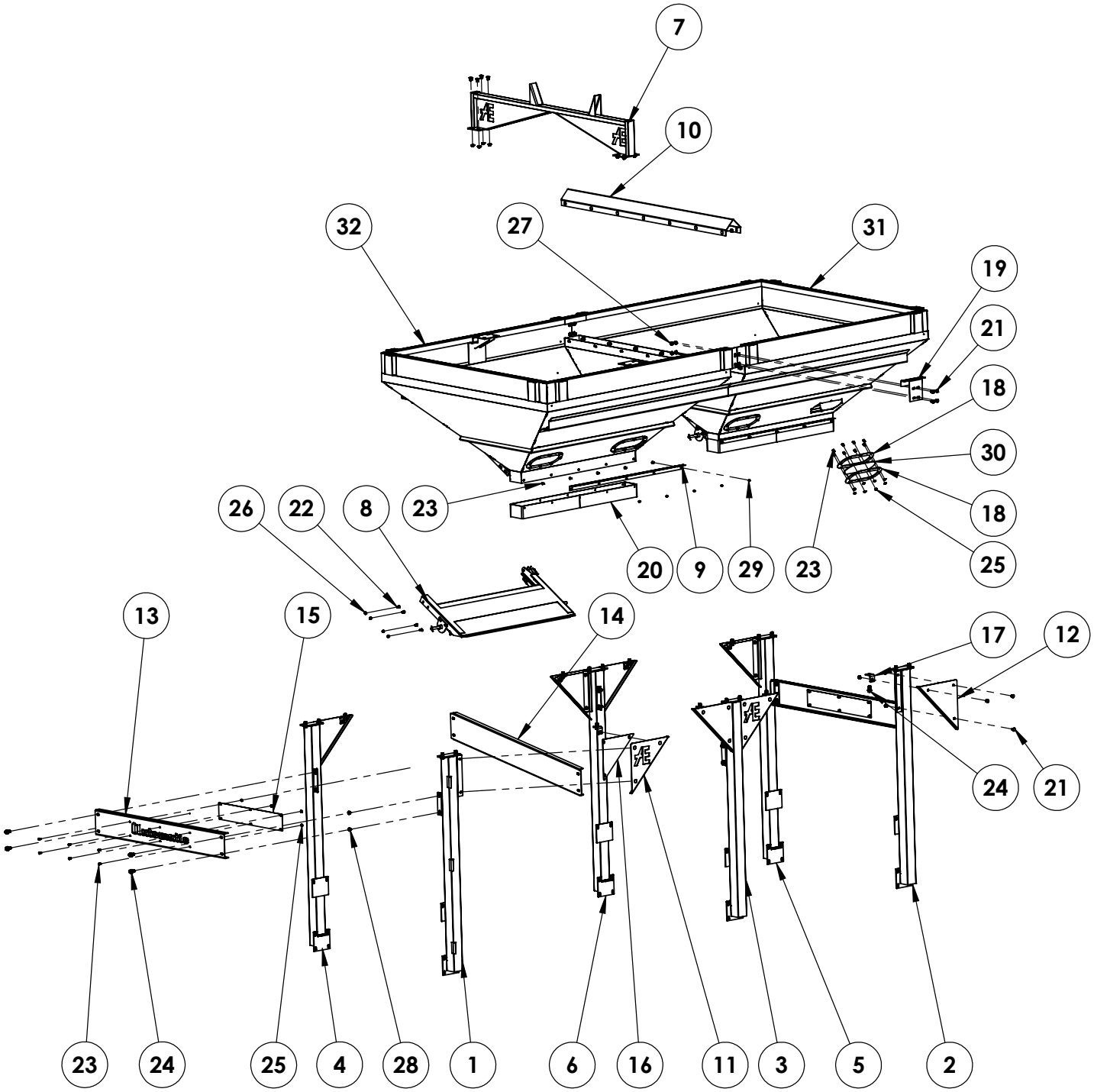
Discharge Conveyor #2 Continued

Item No.	Part No.	Description	Qty.
1	61-7922	Upper Take Up Bearing Bracket	2
2	61-7926	Lift Cylinder Upper Mounting Bracket	2
3	61-7939	24” Conveyer Belt Guide	2
4	61-8093	Conveyor Hydraulics Motor Mount	1
5	61-8107	1-1/4” to 1-7/16” Shaft Coupler	1
6	61-8172	Conveyer Clean Out Auger Shield	1
7	61-8173	24” Conveyor Auger, 34-3/4” Left Hand	1
8	62-4159	24” Folding Conveyor Head Pulley	1
9	62-4160	24” Folding Conveyor Tail Pulley	1
10	100-0059	1/4” x 1/4” x 1-1/2” Key	1
11	100-0205	3/8” x 3/8” x 1-1/2” Key	1
12	100-0224	3/8” x 3/8” x 2” Key	2
13	100-0545	1/4” x 1/4” x 2” Key	1
14	101-9655	Scraper Auger Bearing Mount Bracket Plate	1
15	101-9665	Belt Support Rod Mounting Bracket Plate	2
16	101-9687	Lower Section, Upper Cylinder Mount Plate	1
17	101-9714	Lift Cylinder Mounting Spacer Plate	2
18	101-10048	Dual 3/4” Bulkhead Mounting Plate	1
19	104-1009	1.188” DIA x 7” Rod	2
20	104-1020	1/2” x 34-1/4” Round with Holes	1
21	107-3884	1.75 OD x 1.25 ID x .75 LG Tube	1
22	107-3885	5/8” OD x .12 W x 4.328” Tube	2
23	107-3905	3/4” OD x .532” ID x 32-3/4” DOM Tube	1
24	201-0068	1/2”-13 x 1-3/4” Hex Head Bolt, Grade 5, ZP	2
25	201-0121	5/16”-18 x 1” Carriage Bolt, Grade 5, ZP	2
26	201-0332	3/8”-16 x 2-1/4” Hex Head Bolt, Grade 5, ZP	8
27	201-0336	3/8”-16 x 2-1/2” Hex Head Bolt, Grade 5, ZP	1
28	201-0414	5/16”-18 x 2-1/2” Hex Head Bolt, Grade 5, ZP	3
29	201-0460	5/16”-18 x 3” Hex Head Bolt, Grade 5	4
30	201-0618	3/8”-16 x 4” Hex Head Bolt, Grade 5	4
31	201-0699	1/4”-20 x 1/2” Knurled Set Screw, ZP	8
32	201-0846	1/4”-20 Socket Head Cap Screw	4
33	201-0927	1/4”-20 x 5/8” Serrated Cap Screw	4
34	201-1010	3/8”-16 x 1” Whiz Flange Bolt	4
35	201-1043	5/16”-18 x 1” Whiz Flange Bolt, Grade 5, FT, ZP	3

Discharge Conveyor #2 Continued

Item No.	Part No.	Description	Qty.
36	201-1049	1/2”-13 x 1-1/2” Whiz Flange Bolt, Grade 5, ZP	8
37	201-1053	3/4”-10 x 14” Rod, FT	2
38	201-1054	1”-8 x 4” Hex Head Bolt, Grade 5, ZP	2
39	201-1055	3/4”-10 4-1/2” Rod, FT	2
40	201-1059	5/16”-18 x 7” Hex Head Bolt, Grade 5, ZP	2
41	201-1104	5/16”-18 x 4-1/2” Hex Head Bolt, Grade 5, ZP	2
42	202-0007	3/4”-10 Hex Nut, ZP	8
43	202-0015	5/16”-18 Hex Center Dimple Lock Nut, ZP	2
44	202-0016	1/2”-13 Hex Center Dimple Lock Nut	2
45	202-0022	1”-8 Hex Nut	4
46	202-0070	5/16”-18 Whiz Flange Lock Nut, ZP	8
47	202-0071	3/8”-16 Hex Flange Whiz Lock Nut, ZP	16
48	202-0072	1/2”-13 Hex Whiz Flange Lock Nut	12
49	202-0090	3/8”-16 Hex Nylon Insert Lock Nut, ZP	1
50	202-0094	1/2”-13 Hex Nylon Insert Lock Nut, ZP	2
51	202-0097	5/16”-18 Hex Nylon Insert Lock Nut, ZP	2
52	203-0002	5/16” Flat Washer, ZP	4
53	203-0003	3/8” Flat Washer, ZP	12
54	203-0005	1/2” Flat Washer	2
55	203-0017	1” Flat Washer	4
56	204-0209	#50 x 17 Tooth, 1-7/16” Bore Sprocket	1
57	204-0210	#50 x 26 Tooth, 1” Bore Sprocket	1
58	206-0019	#50 x 49 Pitch Chain + Convenience Link + Offset Link	1
59	209-0032	1” Flangette Bearing Insert	2
60	209-0172	1-7/16” Take Up Bearing	4
61	211-0023	1” Flangette Housing	4
62	220-0005	1/4” x 1-3/4” Spring Pin	4
63	224-0752	M10 x 1.0mm Thread Straight Grease Zerk	4
64	227-0149	2 Parker Bolt, Hydraulic Motor	1
65	229-0038	3/16” x 1-1/2” Cotter Pin	2
66	299-0750	Upper Section Conveyor	1
67	299-0751	Lower Section Conveyor	1

Hopper Assembly

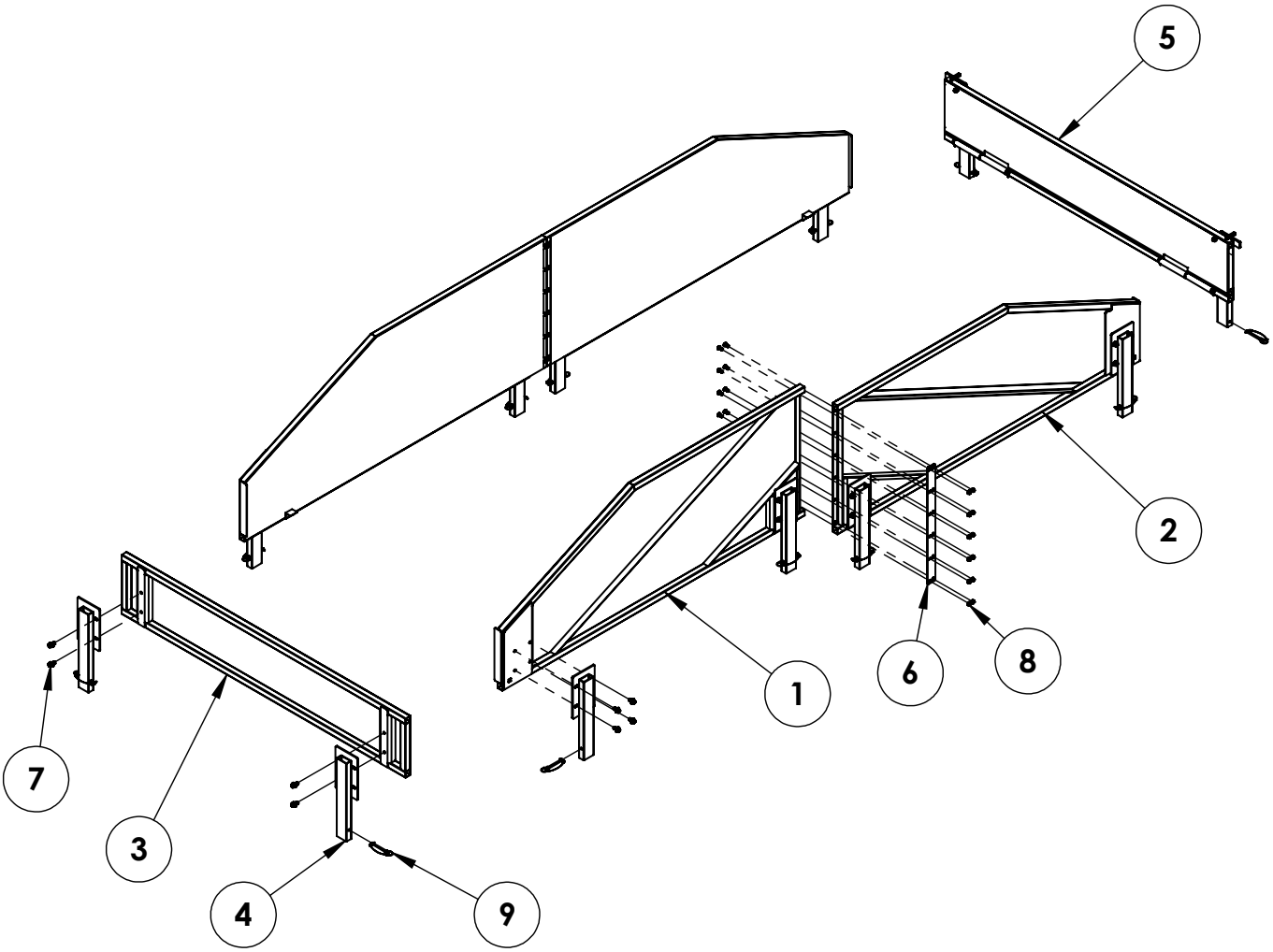


Continued on page 28

Hopper Assembly Continued

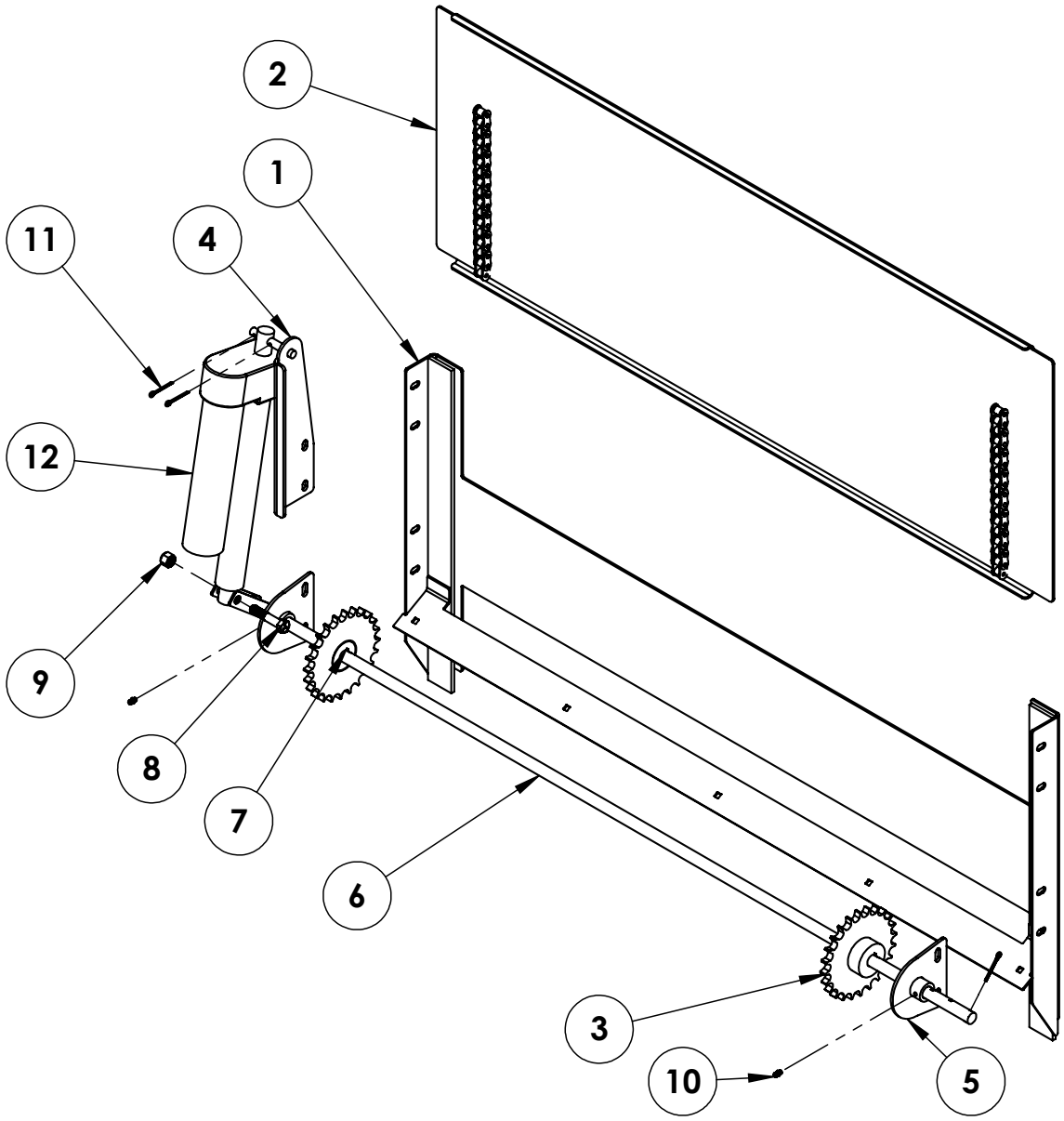
Item No.	Part No.	Description	Qty.
1	61-7615	Hooper Leg w/ Panel Pivots	1
2	61-7616	DS Back Hopper Leg	1
3	61-7618	DS Hopper Leg w/ Low Mount	1
4	61-7619	PS Front Hooper Leg	1
5	61-7620	PS Back Hopper Leg	1
6	61-7621	PS Hopper Leg w/ High Mount	1
7	61-7700	24” Conveyor Cradle	1
8	62-4191	Hopper Gate Assembly, 12V Actuator	2
9	101-8764	Long Belting Holder	4
10	101-8771	Hopper Separator	1
11	101-8797	Hopper Leg Gusset w/ Logo	4
12	101-8798	Hopper Leg Gusset	4
13	101-8822	Hopper Front/Rear Stabilizer	2
14	101-8823	Hopper Middle Angled Stabilizer	1
15	101-9034	Automatic Logo Backer	2
16	101-9035	AE Logo Backer	4
17	101-9045	Gusset Attachment	8
18	101-9456	Hopper Window Mount	16
19	101-9457	Outer Hopper Connector	2
20	150-0085	Long Dust Shield	2
21	201-0024	1/2”-13 x 1” Carriage Bolt, Grade 5	54
22	201-0034	3/8”-16 x 1” Carriage Bolt, Grade 5, ZP	16
23	201-0119	5/6”-18 x 3/4” Carriage Bolt, Grade 5, ZP	96
24	201-1022	5/8”-11 x 1-1/2” Whiz Flange Bolt	32
25	202-0070	5/16”-18 Hex Flange Whiz Lock Nut, ZP	76
26	202-0071	3/8”-16 Hex Flange Whiz Lock Nut, ZP	16
27	202-0072	1/2”-13 Hex Flange Whiz Lock Nut, ZP	54
28	202-0073	5/8”-11 Whiz Flange Lock Nut, ZP	12
29	202-0097	5/16”-18 Hex Nylon Insert Lock Nut, ZP	20
30	290-0595	1/4” x 6” x 13-1/2” Polycarbonate Oval, Clear	8
31	299-0705	Hopper Assembly, Rear	1
32	299-0708	Double Hopper Assembly, Front	1

Hopper Extension



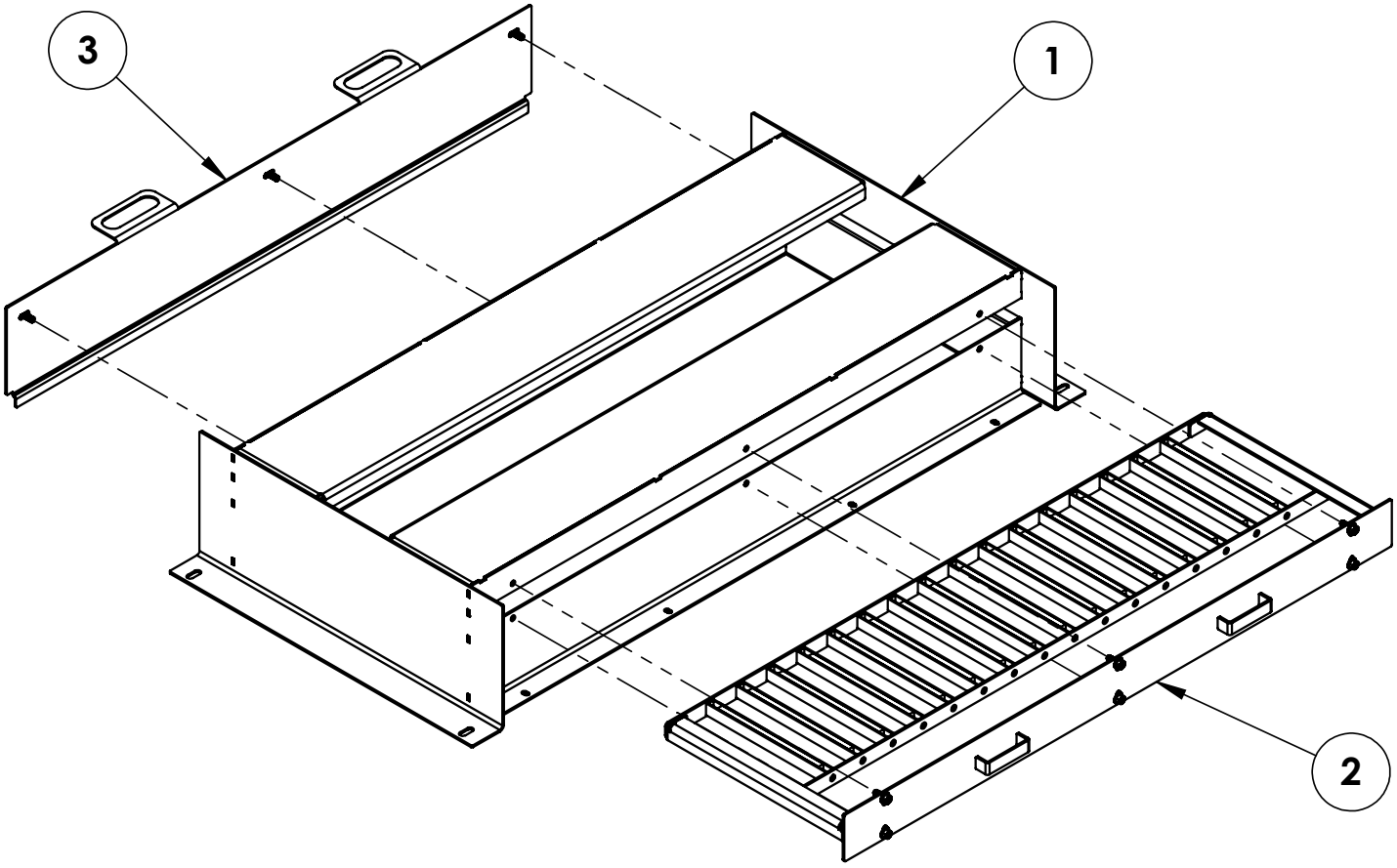
Item No.	Part No.	Description	Qty.
1	61-8196	Side 1	2
2	61-8197	Side 2	2
3	61-8198	Front	1
4	61-8201	Stake Mount	10
5	62-4241	Rear Assembly	1
6	101-10242	Middle Connector Plate	2
7	201-1014	1/2”-13 x 1” Whiz Flange Bolt	36
8	202-0071	3/8”-16 Hex Flange Whiz Lock Nut, ZP	24
9	229-0998	3/8” x 4” Pin with Tether and Cotter Pin	12

Gate Assembly



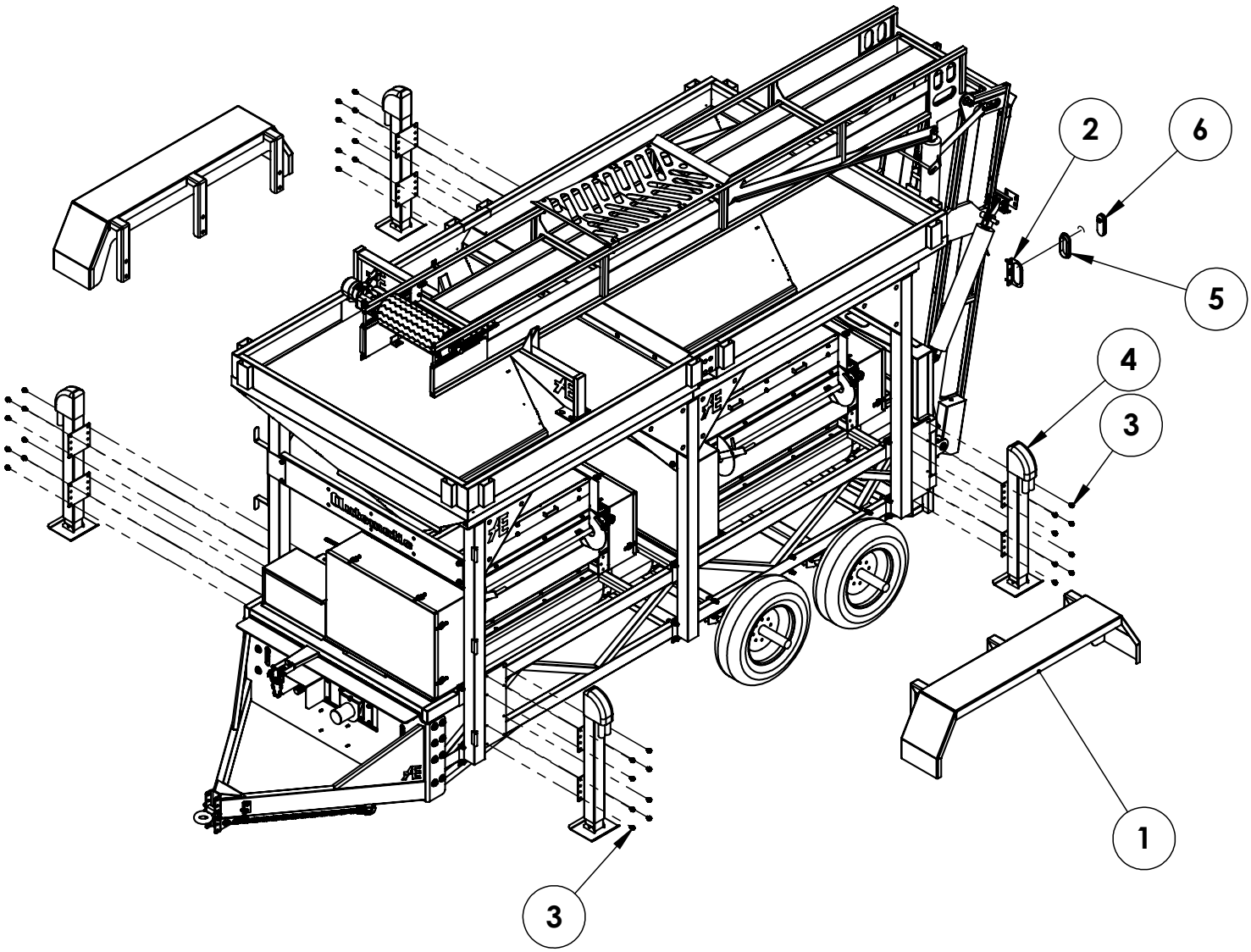
Item No.	Part No.	Description	Qty.
1	61-7543	Gate Base	1
2	61-7544	Gate	1
3	61-7545	Gate Sprocket	2
4	61-7546	Actuator Holder	1
5	61-7547	Gate Rod Holder	2
6	61-7549	Gate Pivot Rod	1
7	102-7671	3/16” x 1-3/8” Keystock	2
8	201-0153	1/2”-13 x 2-1/2” Hex Head Bolt, Grade 5, ZP	1
9	202-0094	1/2”-13 Hex Nylon Insert Lock Nut, ZP	1
10	224-0425	1/4”-28 Straight Zerk	2
11	229-0156	1/8” x 1-1/2” Cotter Pin	3
12	294-1133	6 Inch Stroke Linear Actuator, 12V	1

Magnetic Grate Assembly



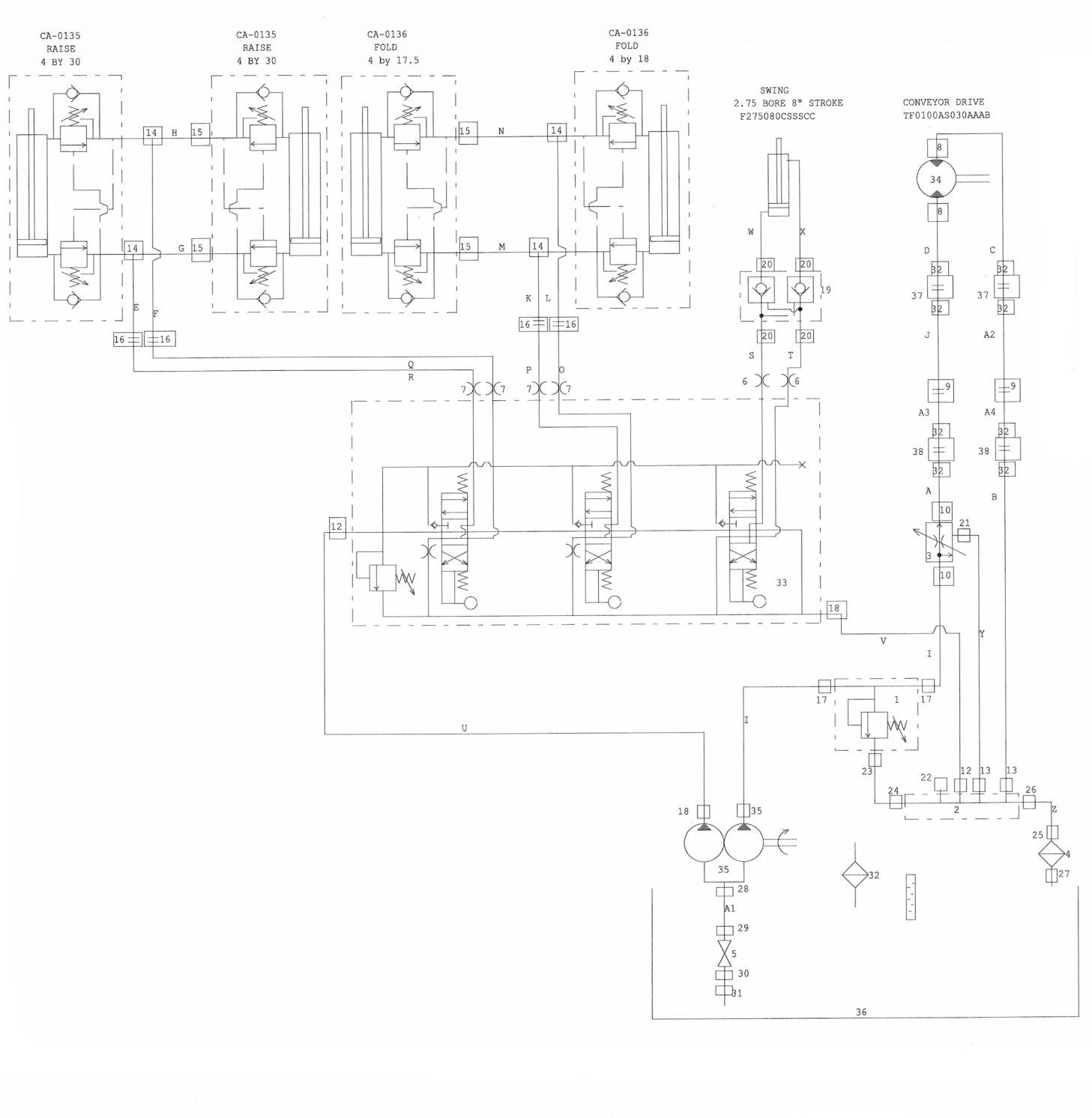
Item No.	Part No.	Description	Qty.
1	61-7518	Grate Base	1
2	61-7891	Grate	1
3	101-8900	Clean Out Door	1

Fenders/Jacks/Lights



Item No.	Part No.	Description	Qty.
1	61-7695	Fender	2
2	101-9186	6-1/2” Oval Tail Light Mount	2
3	201-1023	1/2”-13 x 3/4” Whiz Flange Bolt	32
4	229-0982	12K Square Electrical Jack, 24 Inch Lift	4
5	250-0281	6-1/2” Oval Grommet Light Mount	2
6	294-1096	Tail Light, 10 Red Lens Diodes, Oval, Recessed Mount	2

Self Contained Hydraulic Assembly

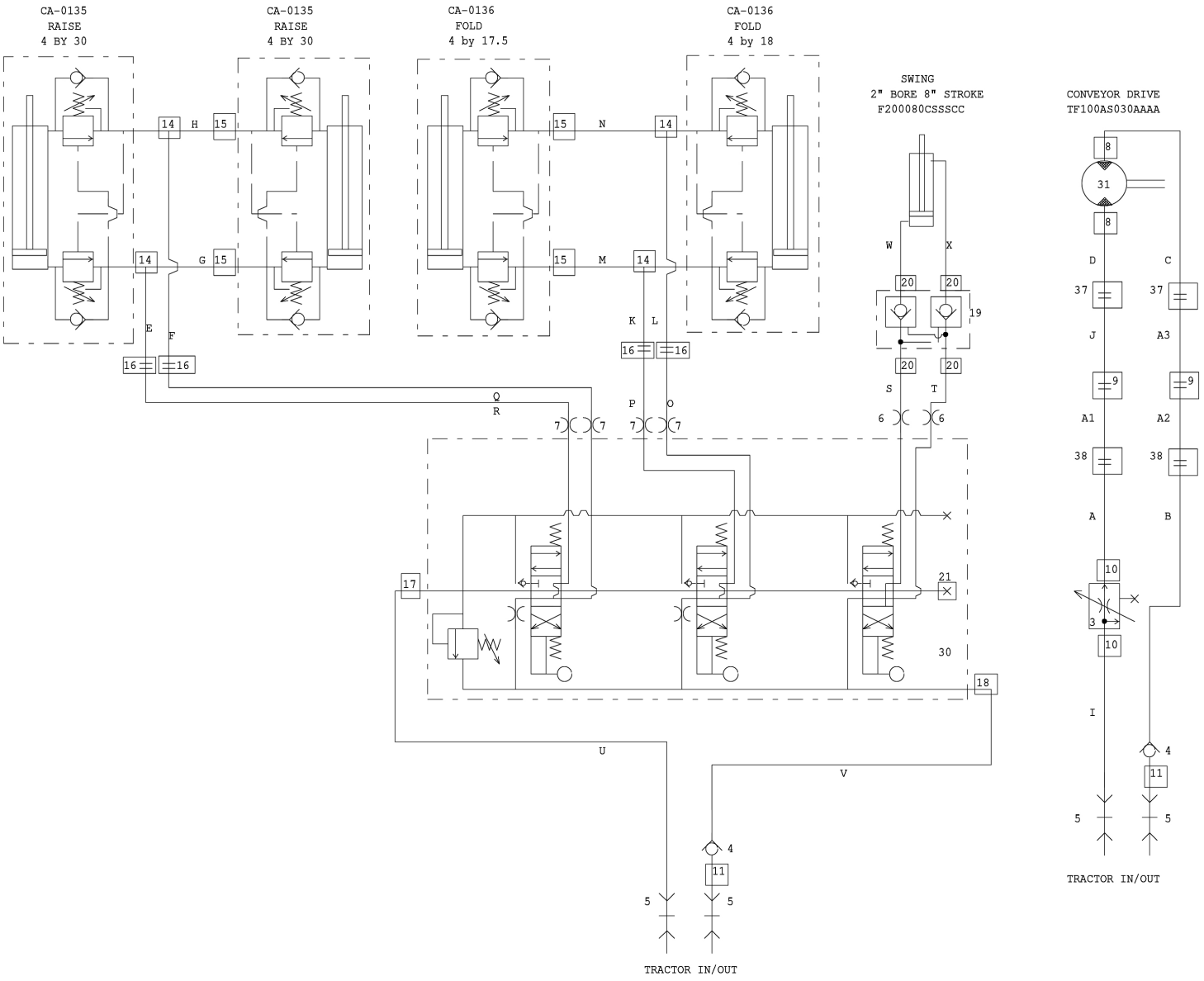


Continued on page 34

Self Contained Hydraulic Assembly Continued

Item No.	Part No.	Description	Qty.
A, A3, A4	253-0399	46” JIC Straight to Straight Hydraulic Hose	3
B	253-0400	20” JIC Straight to 90° Hydraulic Hose	1
C - D	253-0401	28.5” JIC Straight to Straight Hydraulic Hose	2
E	253-0359	40” JIC Straight to Straight Hydraulic Hose	1
F	253-0360	38” JIC Straight to Straight Hydraulic Hose	1
G - H	253-0361	68” JIC Straight to Straight Hydraulic Hose	2
I	253-0402	39” JIC Straight to 90° Hydraulic Hose	1
J & A2	253-0403	132” JIC Straight to Straight Hydraulic Hose	2
K	253-0362	61” JIC Straight to Straight Hydraulic Hose	1
L	253-0363	60” JIC Straight to Straight Hydraulic Hose	1
M - N	253-0364	68”-0° JIC Short 90° to Short 90° Hydraulic Hose	2
O & Q	253-0365	183” JIC Straight to Long 90° Hydraulic Hose	2
P & R	253-0366	183” JIC Straight to Short 90° Hydraulic Hose	2
S	253-0367	104” JIC Straight to Long 90° Hydraulic Hose	1
T	253-0368	104” JIC Straight to Short 90° Hydraulic Hose	1
U	253-0404	77” JIC Straight to 90° Hydraulic Hose	1
V	253-0380	43” JIC Straight to Straight Hydraulic Hose	1
W -X	253-0371	36” JIC Straight to Short 90° Hydraulic Hose	2
Y	253-0405	23” JIC Straight to Straight Hydraulic Hose	1
Z	253-0384	45” JIC Straight to Straight Hydraulic Hose	1
A1	253-0385	22” Long GMV Return Line and Suction Hose	1
1	224-0808	Inline Relief Valve, SAE #12 Ports	1
2	224-0830	4 Port, -16, -12 O-Ring Manifold	1
3	229-1069	3000 PSI, 30 GPM Flow Control Valve	1
4	224-0831	Spin On Filter Assembly	1
5	229-1133	1-1/2” NPT Ball Valve	1
6	229-1060	3/4”-16 Male JIC to 7/8”-14 Male O-Ring Orifice Fitting	2
7	229-1117	3/4”-16 Male JIC to 7/8”-14 Male O-Ring Orifice Fitting	4
8	224-0773	6400-12-10 Adapter	2
9	224-0778	2700LN-12-12 Bulkhead Union Adapter	2
10	224-0774	2501-12-12 Adapter	2
12	224-0728	3-4”-16 Male JIC to 1-1/16”-12 Male O-Ring Adapter	2
13	224-0769	6801-12-12 Adapter	2
14	224-0798	6804-06-08-06 Tee	4
15	224-0776	6400-06-08 Adapter	4
16	224-0777	2700-06-06 Bulkhead Union Adapter	4
17	224-0768	6400-12-12 Adapter	2
18	224-0729	3/4”-16 Male JIC to 1-1/16”-12 Male O-Ring Adapter	2
19	224-0793	PO Check Valve	1
20	224-0792	6400-6-6 Adapter	4
21	224-0821	1-1/16” Male JIC to 3/4”-14 Male x 45° Elbow Adapter	1
22	224-0767	6408-12 Adapter	1
23	224-0822	1-1/16”-12 Male O-Ring to 1-1/16”-12 Male O-Ring	1
24	224-0823	1-5/16”-12 Male O-Ring to 1-1/16”-12 Female O-Ring	1
25	224-0824	1-5/16” Male JIC to 1-1/4” NPT Male Pipe Adapter	1
26	224-0825	1-5/16”-12 Male JIC to 1-5/16”-12 O-Ring, 90° Adapter	1
27	224-0334	1-1/4” NPT Close Nipple	1
28	224-0826	G-22 Coupling, 1-1/2” Hose ID Adapter	1
28A	224-0827	1-1/2” Split Flange	1
29	224-0828	1-1/2” Beaded Stem to 1-1/2”-11 1/2” Male Adapter	1
30	224-0493	1-1/2” NPT Close Nipple	1
31	224-0657	2” - 1-1/2” NPT Hex Reducer Bushing	1
35	224-0845	1-1/16”-12 Male JIC to 1-5/8”-12 Male O-Ring Adapter	1
N/A	224-0842(Not Shown)	Breather Cap, 1” NPT.	1
N/A	225-0069(Not Shown)	1/2” Hose Clamp	2
N/A	225-0075(Not Shown)	2” T-Bolt Clamp	2
N/A	229-1116(Not Shown)	3/4” OD Dual Hose Weld On Clamp	5
N/A	229-1119(Not Shown)	1/2” Clamp Insert	2
N/A	229-1120(Not Shown)	Cylinder Pivot Pin	2

Tractor Hook-Up Hydraulic Assembly



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Tractor Hook-Up Hydraulic Assembly Continued

Item No.	Part No.	Description	Qty.
A	253-0406	60” JIC Straight to Straight Hydraulic Hose	1
B	253-0407	261” JIC Straight to Straight Hydraulic Hose	1
C - D	253-0401	28.5” JIC Straight to Straight Hydraulic Hose	2
E	253-0359	40” JIC Straight to Straight Hydraulic Hose	1
F	253-0360	38” JIC Straight to Straight Hydraulic Hose	1
G - H	253-0361	68” JIC Straight to Straight Hydraulic Hose	2
I	253-0358	219” JIC Straight to Straight Hydraulic Hose	1
J & A3	253-0408	132” JIC Straight to Straight Hydraulic Hose	2
K	253-0362	61” JIC Straight to Straight Hydraulic Hose	1
L	253-0363	60” JIC Straight to Straight Hydraulic Hose	1
M - N	253-0364	68”-0° JIC Short 90° to Short 90° Hydraulic Hose	2
O & Q	253-0365	183” JIC Straight to Long 90° Hydraulic Hose	2
P & R	253-0366	183” JIC Straight to Short 90° Hydraulic Hose	2
S	253-0367	104” JIC Straight to Long 90° Hydraulic Hose	1
T	253-0368	104” JIC Straight to Short 90° Hydraulic Hose	1
U	253-0369	207” JIC Straight to Straight Hydraulic Hose	1
V	253-0370	219” JIC Straight to Straight Hydraulic Hose	1
W -X	253-0371	36” JIC Straight to Short 90° Hydraulic Hose	2
A1	253-0409	46” JIC Straight to Straight Hydraulic Hose	1
3	229-1069	3000 PSI, 30 GPM Flow Control Valve	1
4	224-0782	Check Valve	2
5	224-0799	Quick Disconnect, NV12NPTM	4
6	229-1060	3/4”-16 Male JIC to 7/8”-14 Male O-Ring Orifice Fitting	2
7	229-1117	3/4”-16 Male JIC to 7/8”-14 Male O-Ring Orifice Fitting	4
8	224-0773	6400-12-10 Adapter	2
9	224-0778	2700LN-12-12 Bulkhead Union Adapter	2
10	224-0774	2501-12-12 Adapter	2
11	224-0738	3/4”-14 Male Pipe to 1/2”-14 Male Pipe Straight Adapter	2
14	224-0798	6804-06-08-06 Tee	4
15	224-0776	6400-06-08 Adapter	4
16	224-0777	2700-06-06 Bulkhead Union Adapter	4
17	224-0728	3/4”-16 Male JIC to 1-1/16”-12 Male O-Ring Adapter	1
18	224-0729	3/4”-16 Male JIC to 1-1/16”-12 Male O-Ring, 90° Elbow Adptr.	1
19	224-0793	PO Check Valve	1
20	224-0792	6400-6-6 Adapter	4
21	229-1118	Closed Center Plug Prince Valve	1
N/A	225-0069(Not Shown)	1/2” Hose Clamp	2
N/A	229-1115(Not Shown)	3/8” OD Dual Hose, Weld-On Clamp	4
N/A	229-1116(Not Shown)	3/4” OD Dual Hose Weld On Clamp	5
N/A	229-1119(Not Shown)	1/2” Clamp Insert	2
N/A	229-1120(Not Shown)	Cylinder Pivot Pin	2

Troubleshooting

This section is a condensed chart to help you remedy problems if unsatisfactory operation occurs. If you are unable to determine and correct the trouble, consult your authorized dealer.

TROUBLE	CAUSE	REMEDY
Shearing Bolt in PTO	1. Starting mill with grain between rolls.	Always run mill a short time to clean out mill. Close grain control gate above rolls before stopping mill.
	2. Low RPM.	Maintain 900 to 1,000 RPM at all times. PTO will easily shear under load below this speed.
	3. Overload on mills.	Running damp, high moisture grain can cause “sticking to the rolls”, and cause an abnormal power requirement on new mills. There sometimes can be sticking of dry grain to new rolls, particularly on oats and barley. This condition should not continue after 2,000 - 3,000 bushels of grain have been run.
	4. Opening grain control gate too fast and too far open.	Always open gate slowly and open only as far as necessary to keep rolls “hungry”. Don’t over fee rolls and cause an excess building up of grain in roll pocket between rolls.
Excessive Roll Wear	1. Overfeeding with excess grain continually sliding off top of rolls creates friction and excessive roll wear.	Keep rolls “hungry”. Adjust control gate to feed in only amount of grain rolls will take away. Usually overfeeding is not the cause for roll wear on deep-grooved rollers.
	2. Crushing abrasive materials other than grain.	Mills are designed to be used only on grain or similar textured materials.
	3. Foreign matter, such as metal, going between rolls.	We recommend a magnetic trap to remove steel or iron from the grain.
	4. Gravel in grain.	Sand and small gravel is difficult to remove from grain because of similar sizes as grain. Larger gravel and small rocks can be removed by screening with wire hardware cloth on frame mounted in hopper.
Heating of PTO	1. Extreme angle of operation.	Do not operate over 15° out of line.
	2. Failure to grease.	Manufacturer recommends greasing.
Excess Vibration	1. Overextended PTO	Shorten distance between the mill and tractor.
	2. Extreme angle of PTO	Do not operate over 15° out of line.
	3. Uneven flow of grain into mill.	Eliminate “surging of grain” into mill as much as possible.
	4. Excess RPM	Recommend operation 900 to 1,000 RPM.
Whole Grain Coming Through Mill	1. Improper setting of rolls.	Rolls should be set closer together to crimp all grain being processed.
	2. Over feeding.	Grain control gate opened so wide rolls will not take all grain and builds up above rolls. This can cause some whole grain to go over top and not between rolls.
	3. Uneven size kernels.	This could be reason for a few small, poorly developed whole kernels going through mill. It is better to not set mill to crack these if in doing so you would “over-roll” the majority of the kernels.

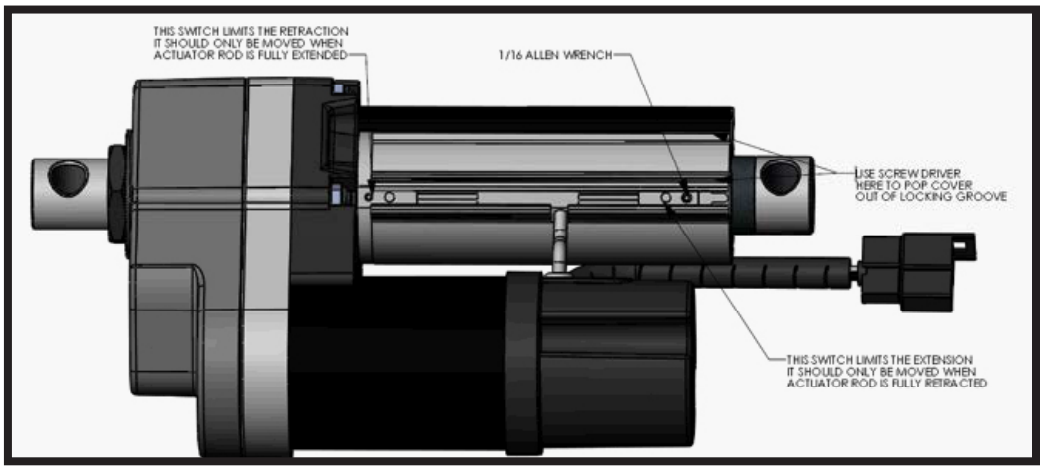
Troubleshooting cont'd

Mill is Hard to Start	1. Grain between rolls.	When grain is between rolls, separate rolls to allow grain to fall through or turn rolls backwards and scoop out grain by hand. The best remedy is to make a practice of closing gate before stopping mill so no grain is left between rolls.
Grain too Fine or Dusting of Grain	1. Over rolling.	Open control gate to allow more grain to feed into rollers or readjust spacing of rolls.
	2. Rolling mixed grain.	If mixed grains of different sizes are run together, to crack or crimp the small grain, the rolls "over roll" or pulverize larger kernels in mixed grain. As a general rule, all grains should be rolled separately and then mixed after rolling.
	3. Failure to reset rolls for different varieties of grain.	Always reset rolls every time a different grain is to be processed.
	4. Very dry grain, particularly when hard.	Open rolls wider than normal to eliminate over-rolling. On extreme cases, grain can be tempered by sprinkling a small amount of water over grain to be rolled and let stand 8 to 12 hours. This is generally done in small holding bin or wagon. The amount of moisture used depends on dryness of grain.
Belt Breakage or Slippage	1. Overloading roller mill.	Decrease load on roller mill by reducing intake rate.
	2. Belts too loose or too tight.	Tighten as per recommendation.
	3. Using new belts and old belts together.	Always replace with a complete, new matched set.

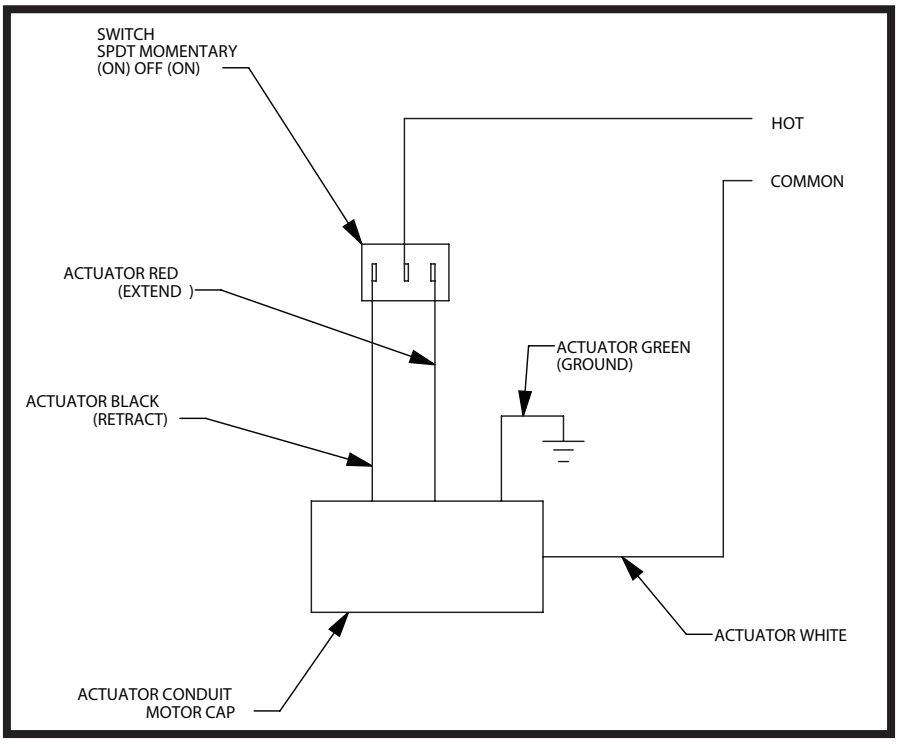
Linear Actuator Adjustment

The external limit switch allows for setting the end of travel stop position for the both the extend and retract of the extension tube.

To access the limit switches use a thin flat head screwdriver to remove the end cap from the side cover. Slide the cover off of the unit to expose the limit switches.



When the actuator leaves the manufacturing plant, the switches are set at the maximum stroke for that unit. Care should be taken so that the switch is not moved past the point where the extension tube can travel. If this happens, the actuator will continue to drive causing excess wear on the clutch assembly. Wiring for the EP limit switch design is the same as for internal limit switches.



Linear Actuator Troubleshooting

Unit will not extend or retract (power concerns)

Unit Overloaded

A. Inspection Method: Use voltmeter to confirm that power is reaching the motor lead wires.

B. Open/Blown Fuse: Confirm that the fuse installed is sized properly for the application. Current draw information for each motor is included with the data for each model of actuator.

C. Switch Failure: If power reaches the switch, but not the actuator, the switch has failed and must be replaced.

D. Switch Wiring: Confirm that the wiring at the switch is accurate per the wiring diagram provided with each model of actuator. Re-wire as needed.

E. Wiring Failure: Inspect for cut or broken wires between the power source and the switch and between the switch and the actuator. Replace wires as needed.

Motor Failure Inspection

Use ohmmeter to check resistance of the coil.

Thermal Overload Open

If the actuator has been run at a duty cycle greater than 25% or the unit has been overloaded, the thermal overload in the motor may have opened to protect the motor.

Allow sufficient time for the motor to cool which will allow the overload to reset. Confirm the application to ensure that the unit is not overloaded and that it is not running at greater than 25% duty cycle.

Insufficient Current

Power may be reaching the motor, but with insufficient current to provide full load moving capacity. Use an amp meter to confirm that sufficient current is reaching the actuator. Use the load/current charts in the catalog to confirm current requirements based on the unit loading.

Unit will not extend or retract (mechanical issues)

Unit Overloaded

Inspect to confirm that the load applied does not exceed the rating for the actuator. Reduce load as needed, or replace actuator with a unit with sufficient capacity for the load applied.

Unit will not extend/retract or stops in mid stroke

Overloading Clutch Slipping

When a unit is overloaded in a sufficient amount, the clutch will slip. This will generate a ratcheting noise within the unit. Load has exceeded the capacity of the unit. Reduce the load to fall within unit specifications; or, replace the actuator with a unit with sufficient capacity to move the load. If the unit has seen many slip occurrences, the clutch may be worn out.

Insufficient Current

Insufficient current is reaching the unit to provide full load capability. Use the load/current draw charts provided for each unit to confirm current requirements and adjust power source accordingly.

Unit stops at mid stroke or exceeds stroke length

The limit switches have been improperly set. Review the limit switch adjustment process and correct so that the unit travel is set properly.

Motor hums, but does not move the load AC actuators

Inspect to confirm that the load applied does not exceed the rating for the actuator. Reduce load as needed, or replace actuator with a unit with sufficient capacity for the load applied.

Warranty

TO BE VALID, THE WARRANTY CARD MUST BE COMPLETED IN ITS ENTIRETY BY AN AUTHORIZED DISTRIBUTOR OR DEALER AND SENT TO AUTOMATIC EQUIPMENT MANUFACTURING COMPANY, P.O. BOX 430, PENDER, NEBRASKA 68047. FAILURE TO DO SO WILL VOID THIS WARRANTY.

The manufacturer warrants all AUTOMATIC roller mills to be free from defects in material and workmanship under the normal use and service for which the machine was intended.

ONE YEAR WARRANTY - At any time within one (1) year from date of delivery to the original purchaser, the manufacturer will furnish replacement parts or repair material for any portion of the roller mill found to be defective. Such replacement part or repair material shall be furnished without cost to the owner or the user through an authorized dealer, or F.O.B. factory at manufacturer's option. Automatic liability under this warranty must be for part or parts but not for such labor charges involved for removing and replacing defective parts. The warranty repair period for equipment used for commercial or rental purposes is limited to thirty days. All rolls are guaranteed for life against breakage.

This warranty does not apply to any part of an Automatic roller mill which has been subject to misuse, neglect, alteration, accident, or damage caused by fire, flood, or other damage beyond control of the manufacturer. IN NO EVENT SHALL THE OWNER BE ENTITLED TO RECOVER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE OR COST OF RENTAL OR REPLACEMENT EQUIPMENT. No responsibility is assumed for delays or failure caused by strikes, Government regulations, or other circumstances beyond the control of the manufacturer or authorized dealer or distributor. Further, tires and tubes are warranted directly by the respective manufacturer only and not by Automatic Equipment Manufacturing Company.

Automatic Equipment Manufacturing Company assumes no liability for damages that might be inflicted on the operator, spectator or general public who might be in the general area while the machine is in operation, or for any cause whatsoever.

Removal of original serial number voids this warranty in its entirety..

It is a continuing policy of Automatic Equipment Manufacturing Company to make improvements. The company reserves the right to make these improvements without incurring any obligation to add them to machines already in the field. Many years of research combined with experience gained through close contact with operators have been drawn upon in designing your mill.

Automatic

Please visit us at www.automaticag.com for our complete line of agricultural equipment.