Silo-Matic

GEMINI RING DRIVE

OPERATING INSTRUCTIONS & PARTS MANUAL

Valesco Manufacturing, Inc.
9875 N 600 E
Roachdale, IN 46172
(765)522-2740

REVISION 2-2008

LIMITED WARRANTY

Valesco Mfg., Inc. (Silo-Matic) warrants new equipment of its manufacture to be free of defects in materials and workmanship under normal use and service.

This warranty applies only to the original purchaser of the equipment.

Under no circumstances will Silo-Matic be responsible for labor charges associated with product warranty.

Silo-Matic will not be liable for any direct, incidental or consequential damages arising in connection with any use, inability to use, misuse or misapplication of this equipment.

Warranty Period
Silo-Matic will repair or replace, at its option, without charge any parts of the equipment found by Silo-Matic to be defective within (1) one year from sale or installation.

Owner's Obligation
To be covered by warranty, all new equipment must be properly registered with Silo-Matic within 30 days of original purchase date of sale. (A warranty registration card is provided in the Owner's Manual for each machine.)

It is the responsibility of the owner, at owner's expense, to transport the equipment to the place of business of an authorized Silo-Matic dealer or to alternately reimburse the dealer for any travel or transportation expense involved in fulfilling this warranty.

Exceptions
Electronic Scales, submersible pumps, tires, electrical components and motors are warranted by the respective manufacturer and not Silo-Matic. Due to uncontrollable conditions, auger knives and liners are not covered under this warranty.

Conditions that Void Warranty
This limited warranty shall not apply to equipment which:

*Has had unauthorized repair or modification, gearboxes that have had the covers removed.

*Has been subject to misuse, negligent handling, unproper adjustment, accident, fire damage, or other acts of God.

*Has had repair or replacement parts not manufactured, supplied or authorized by Silo-Matic.

THIS IS THE ONLY WARRANTY MADE BY SILO-MATIC AS TO THE EQUIPMENT. THIS WARRANTY IS IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTIES, EXPRESSED OR IMPLIED.

Supercedes previous subject matter
June 1, 1997

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INTRODUCTION

The Gemini Ring Drive Silo Unloader, manufactured by Valesco Manufacturing, Inc., incorporates many features for safety, easy assembly and quick changeover from unloading to raising after the silo has been emptied. The Gemini Ring Drive is available in sizes from 12'-24'. A 26" rotor is standard on all sizes to provide increased performance.

The instructions in this manual provide procedures for assembly and installation of the suspension, winch and unloader. It also contains information on safety suggestions, operation and repair parts.

A safety precaution section is included in this manual and safety precautions are stated throughout the manual. It is your responsibility to carefully read and understand these safety messages.

This SAFETY ALERT SYMBOL indicates important safety messages. When you see this symbol, be alert to the possibility of PERSONAL INJURY or even DEATH.

Throughout this manual reference is made to front and rear, right and left. When related to rotation, front means leading in the direction of rotation and rear is trailing. The unloader travels counter clockwise around the silo. When not related to rotation, front means closest to the silo wall and rear is inward toward the silo center. Right and left is related to as viewed from the center of the silo and sighting along the augers toward the wall.

Some Common abbreviations used in this manual are as follows:

Assy	Assembly	LW	Lockwasher
Brkt.	Bracket	RH	Right Hand
Crg	Carriage	LH	Left Hand
Chl	Channel	Weld	Weldment
Frt.	Front	SS	Stainless Steel
Ang	Angle		

Read the instructions carefully to insure the best operation of you new Silo-Matic unloader. If you have any questions contact your dealer or the factory at the address that follows. For information concerning other dependable labor saving Silo-Matic equipment and customized feeding systems, see your nearest Silo-Matic Dealer or write to:

Valesco Manufacturing, Inc.
7857 N 1100 E
Loogootee, IN 47553
(812) 636-6001
www.silo-matic.com

Rev.3 -2008

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EXPLANATION OF SAFETY ALERT, WARNINGS AND DANGERS WITH SILO UNLOADERS

Throughout this manual and on the silo unloader there are symbols used to show important safety messages. Please read these and understand their contents. Failure to follow these safety instructions could lead to Personal Injury, Death or severe damage to the silo unloader.

This SAFETY ALERT SYMBOL is found throughout this manual and indicates important safety messages. When you see this symbol, be alert to the possibility of PERSONAL INJURY or even DEATH.

DANGER : Indicates an imminently hazardous situation that if not avoided will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation that if not avoided, could result in death or serious injury and alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that if not avoided, may result in minor or moderate injury and alert against unsafe practices.

There are inherent hazards associated with silo unloading equipment. Proper caution will result in safe operation. Carefully read and understand the following safety suggestions. Become familiar with hazards of silo gas and exercise extreme caution whenever there is danger of exposure to this gas. Read "SILO GAS IS DEADLY" which is included in this manual.

This equipment can be hazardous in the hands of an unfamiliar, untrained, or careless operator. For your safety you must not operate, service, inspect, or otherwise handle this equipment unless you have read the owner's manual and have been properly trained in its intended usage.

1. Do not operate this machinery until all shields and guards are in place.

2. Never attempt to clean, adjust or lubricate machine while it is in motion.

3. Stop machine and lockout power source before adjusting and servicing. Keep hands, feet, and clothing away from moving parts.

4. Make certain everyone is clear of equipment before applying power.

5. Disconnect power before resetting motor overload.

6. Do not allow children to operate machine.

7. Require all personnel who will operate this machinery or perform service to read and understand the safe operating practices and safety precautions in this manual.

8. When going into the silo to make adjustments or change doors, turn the key switch to "OFF", remove the key and take it with you in the silo to prevent accidental starting of the unloader by someone else.

9. Never stand under a suspended silo unloader.

10. Never use a suspended silo unloader as a substitute for a scaffold.

11. Never go into a silo to work on a moving silo unloader.

12. Do not allow anyone in the silo when the unloader is being raised to the silo top or is being lowered from the top.

⚠ DANGER
SILO GAS IS DEADLY

Silage fermentation produces several kinds of gas, including carbon dioxide and nitric oxide which in turn produces nitrogen dioxide. Carbon dioxide is non-poisonous, although it can cause suffocation. Nitrogen Dioxide (NO_2) is poisonous. It kills and injures people as well as livestock. Nitrogen Dioxide is a hazard on the farm because:

1. Exposure can be fatal.
2. Formation of Nitrogen Dioxide from Nitric Oxide may occur whenever silage is made.

WHAT IS THIS GAS?

The lethal gas is yellowish-brown and smells like some laundry bleaches. After more oxidation, it forms Nitric Oxide which then forms highly-corrosive Nitric acid when combined with water. Since oxidation may occur in the body, Nitrogen Dioxide can produce permanent lung damage.

WHERE DOES IT HIDE?

Since Nitrogen Dioxide is heavier than air, it remains beneath the air mass over the silage. It layers on top of the silage below the upper edge of the top door or settles down through the chute.
It may also seep through the drain at the base of the silo. It often concentrates in the silo in the silo room and moves into the barn. It will leave a yellow stain on silage, wood or other materials it contacts.

HOW TO MINIMIZE THE DANGER

While Growing the Crop:

1. Apply adequate Nitrogen, but don't over do. As a guide, corn needs 1.2 pounds of Nitrogen per bushel yield. Oats and/or sudangrass used for silage should have no more than 75 pounds of Nitrogen available for each harvest. Since this includes both Nitrogen in the soil and that applied, follow the recommendations on soil analysis reports.

2. After a drought rapid nitrate uptake occurs in plants following rain. So, harvest the crop before fall rains, or wait at least five days after a rain.

3. Plants damaged by hail or frost should be harvested immediately before they take up nitrates.

4. To reduce the amount of Nitrate going into silage, cut higher than normally (10-12.") Most nitrates are in the lower stalk.

While Filling the Silo:

1. Be on the alert for bleach-like odors and/or yellowish-brown fumes in or near the silo. Small amounts of the gas may not be visible or easily detected by smell, but are still dangerous. (Greatest danger is 12 to 60 hours after filling the silo.)

2. If you must enter the silo, run the silage blower for 15 to 20 minutes if the silo is full, longer if the silo is partially full. Never enter the silo alone during the danger period.

3. Remove upper chute doors down to settled silage allowing gases to escape through the chute and not collect in the silo. Be sure to run a blower and ventilate the chute well with fans.

4. Ventilate the silo room adequately for at least two weeks after filling. Open the windows and outside door of the silo room and use fans.

5. Keep the door between the silo room and barn closed to prevent Nitrogen Dioxide gas from killing livestock.

If you experience the slightest throat irritation or cough in the silo, get into fresh air quickly and stay away from the silo area as long as gas may be present. (If exposed to silo gas, call your doctor as soon as possible.)

REMOTE SAFETY SWITCH INSTRUCTIONS

ATTENTION: Your Silo-Matic unloader is equipped with a remote safety switch. For your protection, do not operate or permit anyone to operate the unloader without reading and understanding the following instructions. Failure to do so may lead to serious injury and/or death.

To operate the unloader, First make sure the unloader is free and clear of obstructions and that no one is in the silo or chute.

Turn the KEY SWITCH (1) clockwise to MOTOR. Push ON/OFF Switch (2) to ON.

To stop unloader, push ON/OFF Switch (2) to OFF. Turn Key Switch (1) to OFF and remove the key.

WARNING! Before entering the silo to inspect or service the unloader, make sure the KEY SWITCH (1) is turned OFF. Take the key out of the switch and take it with you in the silo. Do Not Return the key to the KEY SWITCH until:

1. All Shields are back in place
2. The Machine is free and clear of obstructions.
3. No one is in the silo or silo chute.

To operate the remote Jog switch:
Make sure all shields are in place. Make sure the machine is free and clear of obstructions. Make sure no one is in the silo or silo-chute. Turn the KEY SWITCH (1) Counter-clockwise to REMOTE. Remove the key and take the key with you.

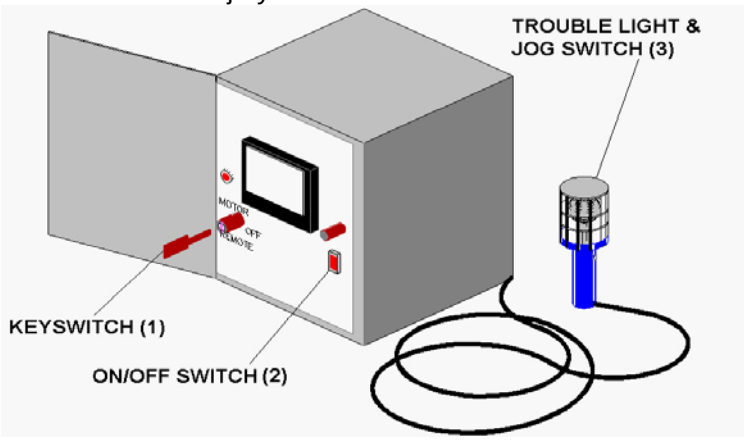
Take the Trouble Light/Jog Switch (3) with you in the silo.

Before operating the remote jog switch:
Be aware that you Silo-Matic silo unloader will rotate counter-clockwise (looking down from the top of the silo.) Position yourself away from the front of the augers so that you will not get caught in any part of the machine.

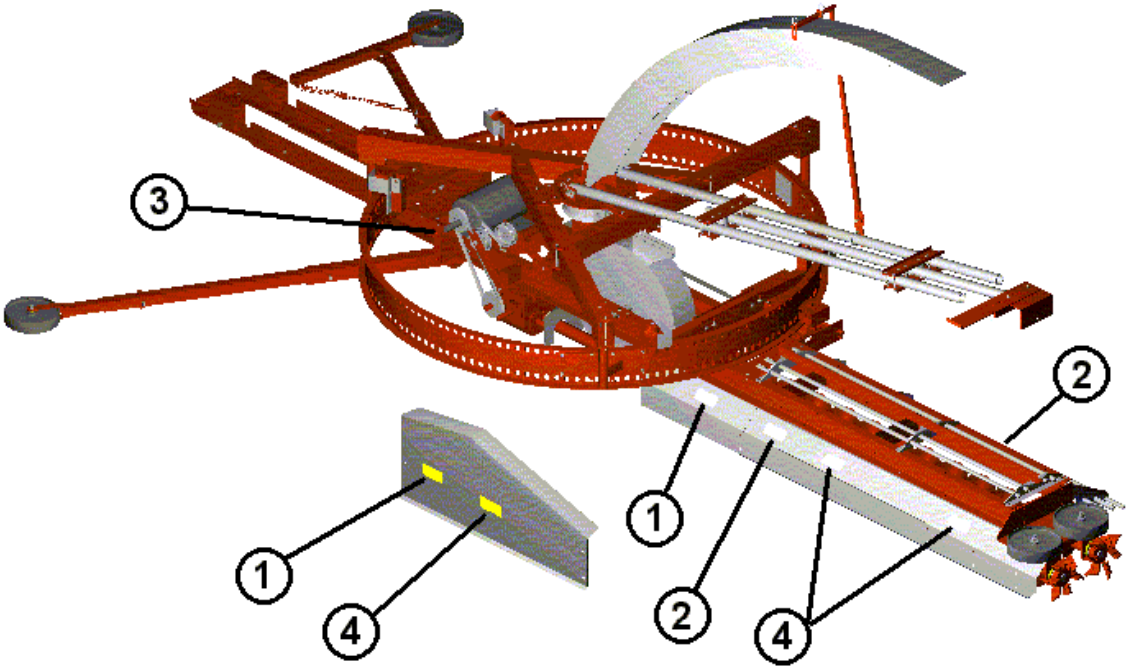
Do not push the SAFETY REMOTE JOG SWITCH button (3) on the trouble light until:
1. All shields are back in place
2. The machine is free and clear of obstructions.
3. You or any one else can not get caught in the operating machine.

Remember that the Jog switch is not for operating the unloader for long periods of time.

Do not step on or ride the machine while running the silo unloader.
Failure to do so could lead to injury and/or death!



PLACEMENT OF SAFETY STICKERS



① S0934

⚠ CAUTION

1. KEEP ALL SHIELDS IN PLACE.
2. DISCONNECT POWER SOURCE TO ADJUST OR SERVICE.
3. MAKE CERTAIN EVERYONE IS CLEAR OF EQUIPMENT BEFORE APPLYING POWER.
4. DISCONNECT POWER BEFORE RESETTING MOTOR OVERLOAD.
5. KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER DRIVEN PARTS IN MOTION.

FAILURE TO HEED MAY RESULT IN PERSONAL INJURY

S934

② S0933

KEEP OFF

③ S1035

⚠ WARNING

YOU ARE EXPOSED TO MOVING PARTS THAT CAN CRUSH AND DISMEMBER.

SHIELD IS OFF

DO NOT OPERATE WITHOUT SHIELD IN PLACE.

FAILURE TO HEED MAY RESULT IN PERSONAL INJURY OR DEATH.

④ S0935

⚠ WARNING

KEEP HANDS AND FEET AWAY FROM MOVING PARTS.

S935

GEMINI RING DRIVE OPERATING INSTRUCTIONS

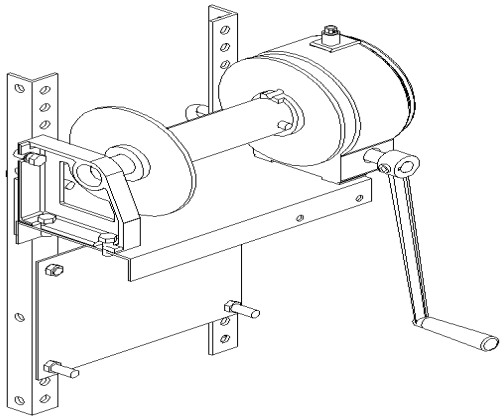
OPERATE THE WINCH
The silo unloader is raised and lowered by the winch. Winches are either manual requiring cranking; or are electric and operated by an electric motor. Crank the manual winch clockwise to raise the unloader.

Approximately 5 cranks equal 1" of cable travel.

To speed the unloader raising process, an electric drill adapter can be used in place of the crank. It is recommended that a 3/4" drill be used for raising.

⚠ CAUTION: BE AWARE THAT WITH USING A HIGH SPEED DRILL, THE LARGER THE WRAP ON THE DRUM BECOMES THE GREATER THE LOAD ON THE WINCH BECOMES. THEREFORE AS THE UNLOADER NEARS THE TOP, CHECK THE GEARCASE AND IF IT BECOMES TOO HOT TO TOUCH (120 DEG. F) STOP OPERATION UNTIL IT COOLS DOWN.

The first layer of cable must be wound making sure all cable layers are wrapped evenly and tight.

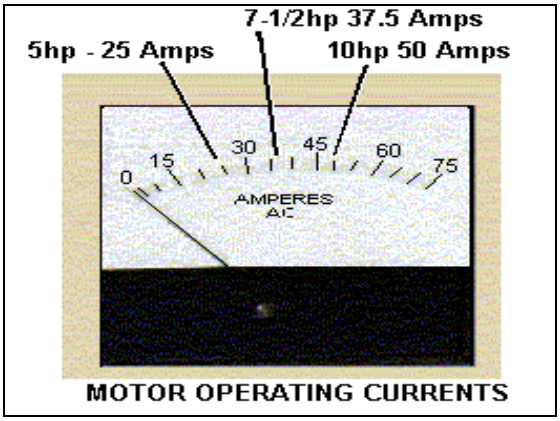


IMPORTANT: Check oil level at oil level plug before raising. Otherwise check (4) times annually. An optional electric winch attachment enables remote controlled lowering and raising of the unloader at low speed.

OPERATING THE UNLOADER
Position the Torque Arm on the lower silo door sill opening. Put the gooseneck in position. When starting in any silo for the first time, the surface should be reasonably level. Allow the unloader to level off high spots before operating at full load.

Lower the unloader slowly until the silage flow is constant and the Ammeter "reading" becomes steady for about 3 minutes (one complete unloader revolution).

If using an electric winch, it is best to use a "count" or time system to regulate the winch. The ammeter should be referred to when setting the unloader cutting depth for proper performance of the unloader and to maintain a uniform unloading rate.



MOTOR OPERATING CURRENTS

The ammeter is provided to help the operator prevent overloading the unloader motor and to aid in maintaining a uniform unloading rate. For maximum motor life, the ammeter reading should not exceed the total full load amperage rate of the motor, shown on the motor name plate.

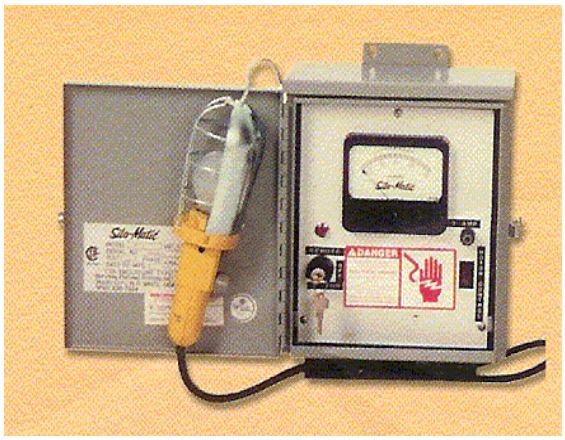
The ammeter reading will normally fluctuate during operation and the average reading should be "read". For more exact amperage check the name plate on the specific motor installed.

Turn the unloader on and let the winch down one or two turns LESS than the number of turns it was raised at the end of the previous unloading. Usually the silage surface will "raise" between feedings.

When the amperage drops and silage flow lessens, lower the unloader. Experience will tell you about how often and how much lowering is required. Lowering rates should remain constant from one feeding to the next unless freezing weather or change in stored material occurs.

After unloading, raise the machine about 15 turns of the winch, or sufficiently high to lift it off the silage surface. Allow the machine to run a couple seconds to completely clear itself of silage and then turn the switch off. When the silo is empty, clear all silage accumulation off the machine and raise it off the silo floor.

OPERATING THE REMOTE SAFETY SWITCH
Your Silo-Matic silo unloader is equipped with a Remote Safety Switch. For your protection, Do not operate or permit anyone to operate the unloader without reading and understanding the REMOTE SAFETY SWITCH instructions found in the safety section of this manual.



REMOTE SAFETY SWITCH

⚠ WARNING: BEFORE ENTERING THE SILO FOR SERVICE OR MAINTENANCE PURPOSES FOLLOW THESE STEPS FOR YOUR PROTECTION.

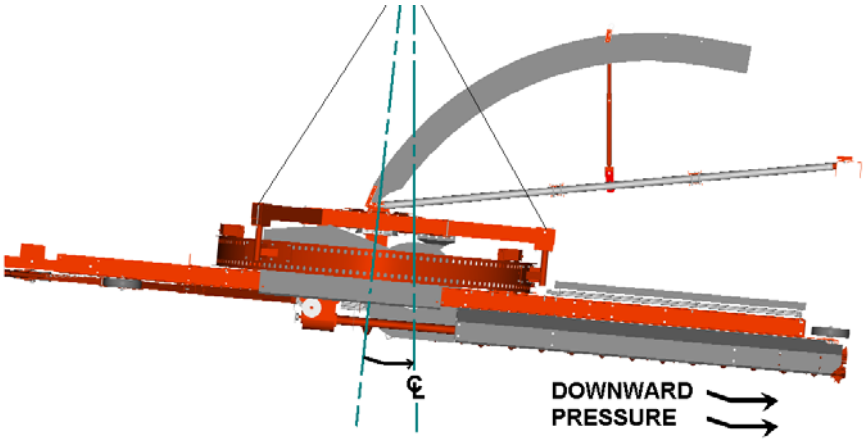
Make sure the KEY SWITCH is turned OFF. Take the key out of the switch and take it with you in the silo. Do not return the key to the KEY SWITCH until:

1. All shields are back in place.
2. The machine is free and clear of obstructions.
3. No one is in the silo or silo chute.

⚠ FAILURE TO HEED MAY RESULT IN SERIOUS INJURY OR DEATH.

DOWN PRESSURE

Down pressure is a function of the suspension cable rather than the counterweights. The unloader is designed with the distance from the center to the outer end being greater than the radius of the silo resulting in constant outward pressure maintained against the wall.



The center of the silo unloader is greater than the center of the silo diameter so downward pressure is exerted towards the silo wall.

As the silage level moves downward, the angle of the cable from the tripod to the unloader will become more vertical and the silage level will be less coned. If the silage is frozen on one side of the silo and soft at the opposite side and if the balance is correctly set, a proportional amount of down pressure will be exerted on the two different areas, heavier on the high side and lighter on the low side.

BALANCE

The balance of the unloader is the most important operating consideration. When the unloader is properly balanced the surface of the silage will be slightly coned. The counter-weights should be positioned on the extension rails and tie angle for proper balance and must be adjusted to compensate for variations of silage conditions, from soft unfrozen to hard-packed frozen or combinations.

NOTE: Silos and silage conditions vary greatly so no set rule can be made for counterweight adjustment and balance. The main concern should be to position weights so the rotor shaft is parallel to the silage surface during operation. See Trouble Shooting Chart for remedies to particular balancing problems.

IMPORTANT: Care must be taken to remove the counterweights from over the augers when unfrozen or soft conditions are encountered. An extremely uneven surface and severe coning can be the result if this precaution is not taken.

CHANGE SILO DOORS

IMPORTANT: Be sure there is enough slack in the power cord for the unloader to reach the next door change.

1. Move the gooseneck down one door after every removal of 36" (typical of door and sill depth) of silage.

2. Disconnect power plug at transition and unhook power cord hanger from gooseneck and rehook in silo chute. Open or remove next silo door and move the torque arm down to this door frame. Rehook the power cord onto the gooseneck.

SETTING ROTOR BLADES FOR SWINGING OR FIXED BLADE MODE

The rotor blades can either be fixed as shipped from the factory or allowed to swing by removing the bolts securing the pawls to the rotor hub.

When maximum distance for throwing forage is required, keep them fixed. If gumming or cold weather starting is a problem, then allow them to swing. There may be conditions of forage where trial and error will be required to determine proper mode for best performance.

APPLICATION OF AUGER KNIVES
More knives are required at the wall end where frozen conditions occur. Space knives increasing further apart from the outer end toward the rotor.

DO NOT INSTALL KNIVES IN A STRAIGHT LINE, OR ROUGH OPERATION WILL RESULT!
Do not install knives past forward edge of rotor.

SPECIAL KNIVING CONSIDERATIONS: FOR HAYLAGE OR HARD-PACKED/FROZEN SILAGE:
More knives are required if wads of silage form or if augers can not loosen hard-packed silage.
If frozen conditions exist, use knives on the augers for the same distance that frost extends in from wall.

PREPARE THE UNLOADER TO RAISE

1. Disconnect power cord. Unhook the gooseneck at the base from the transition. Release with release pin from transition.

2. Remove gooseneck from the upper support by removing hairpin and sliding off. Store the gooseneck on the bumper pipe assembly at the front of the augers.

3. Fold the gooseneck support back along the torque arm. Unhook the torque arm from the door sill and lower to rest on the drive ring.

4. Telescope the guide wheel extension all the way in. Unhook the tension wheel spring and telescope the extension all the way in.

5. Fold rear counterweight angles upward toward the motor.

6. Without unhooking any cables, take the clevis joining the (3) hanger cables and lower it between the triangle formed around the transition by the tri arms until it can be hooked to the hanger pin located on the rotor housing cover weldment.

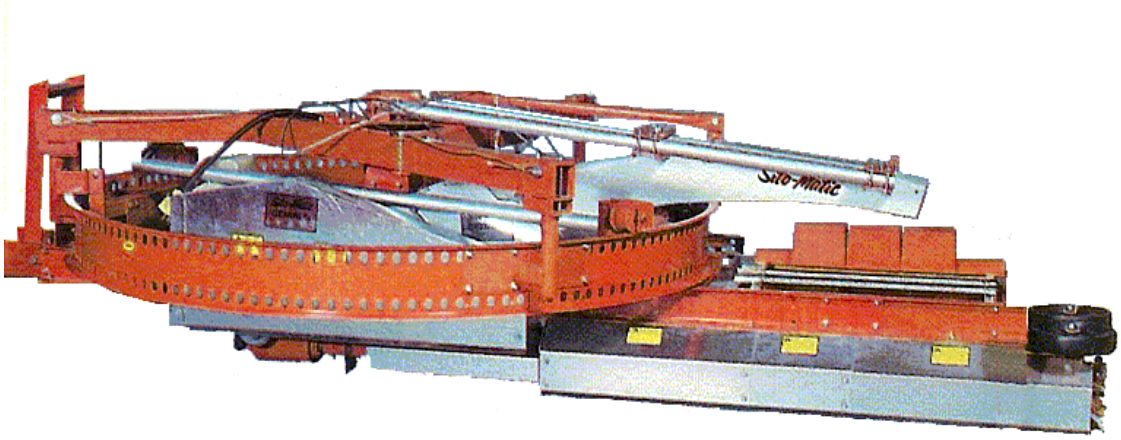
7. Lift the unloader free of the surface. Position counterweights to obtain necessary level balance.

8. Check that all components are secured to machine.

⚠WARNING: CHECK THAT ALL CABLE CONNECTIONS ARE SECURE AND THAT THE CABLE IS IN A SAFE SERVICEABLE CONDITION. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

9. Lower a rope down from the top of the silo down the inside, tie the outer end of unloader. Use this rope if necessary to keep unloader from rotating during raising and twisting the cable.

⚠ WARNING: LEAVE A MINIMUM OF 36" DISTANCE BETWEEN THE UNLOADER AND THE PEAK OF THE TRIPOD WHEN FULLY RAISED. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



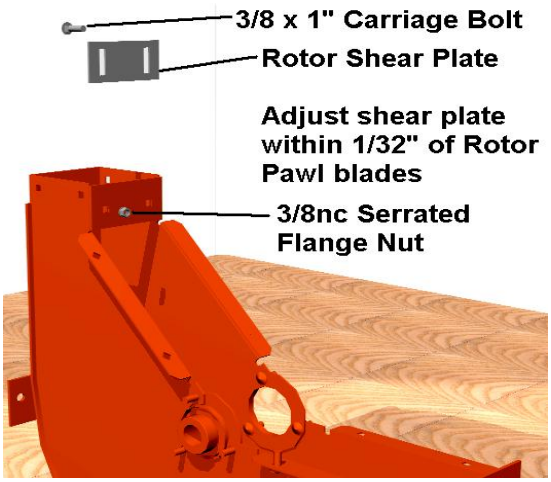
ADJUSTMENTS

⚠ WARNING: NEVER ATTEMPT TO CLEAN, ADJUST OR LUBRICATE MACHINE WHILE IT IS IN MOTION. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

ADJUST ROTOR CUTOFF PLATE AND BLADES

Remove the rotor housing cover and adjust each rotor blade to within 1/32" of the housing rim sheet.

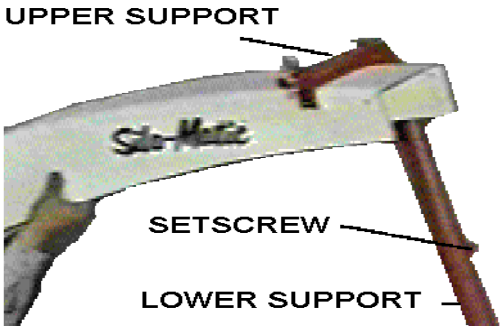
Before adjusting the cutoff plate, adjust the plates as described. The cutoff plate is adjusted by loosening the whiz nuts and moving the edge of the plate to within 1/32" of the rotor blades.



ADJUST SHEAR PLATE

ADJUST THE GOOSENECK

When the gooseneck is lowered to the next open silo door, the height of the gooseneck should be adjusted by telescoping the upper and lower support so the material flow off the gooseneck just clears the upper door sill.



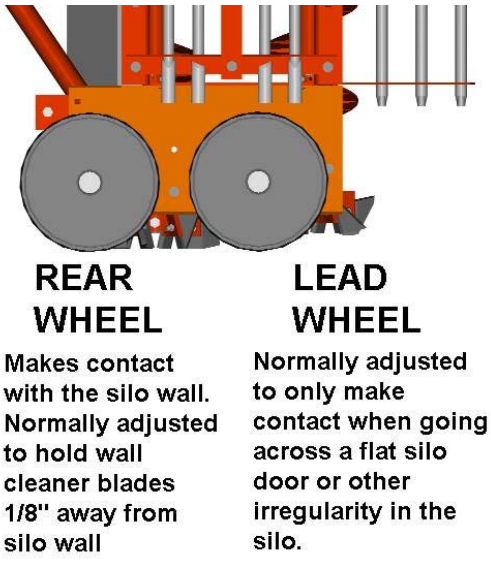
ADJUST GOOSENECK

ADJUST WALL WHEELS

The Wall Wheels are adjusted by loosening the 5/8" Hex Nut on the Wheel Bolt enough so the serrated Washer will slide on the support bracket.

Adjust the Trailing Wheel to hold the Wall Cleaner Blades 1/2" to 1/4" from the silo wall during non-frozen conditions.

When freezing begins, move the Trailing Wheel back so the Wall cleaner Blades are 1/4" to 1/8" away from the wall.



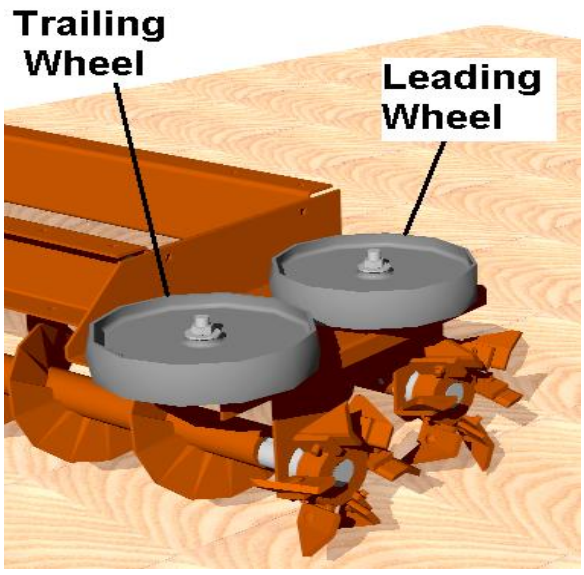
ADJUST WALL WHEELS

After the Trailing Wheel is adjusted, the Leading Wheel should be adjusted so it only makes contact when going across a flat silo door or other irregularity in the silo. Typically this wheel will be about 1/2" off the wall.

During operation if the Wall Cleaners interfere with the silo doors then the Leading Wheel must be moved closer to the wall until Cleaners clear the doors.

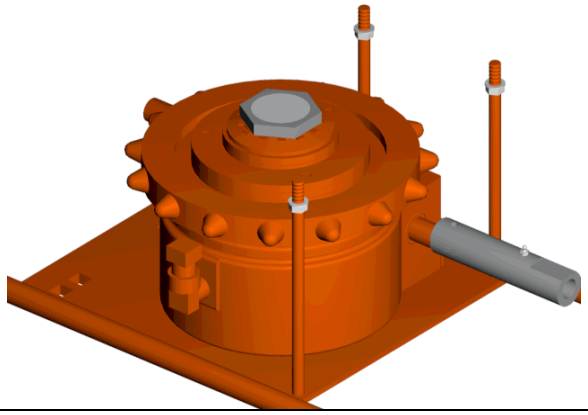
During freezing weather if frozen silage begins to build up at the edges of the doors or on the doors then it is likely that the Leading Wheel is too close to the wall and should be moved back.

NOTE: Adjust the Leading Wheel after adjusting the Trailing Wheel.



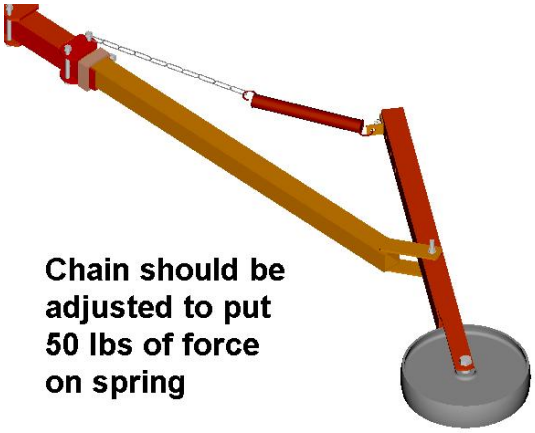
ADJUSTING THE SLIP CLUTCH

The ring drive slip clutch is factory adjusted. This setting should not be changed unless the machine will not rotate and no other reason can be found to be the cause. To adjust slip clutch: BE SURE TO BEND DOWN THE TAB ON THE STAR-LOCK WASHER AND TIGHTEN ADJUSTER NUT ½ TURN.



ADJUST TENSION & SPREADER WHEELS

Telescope the tension wheel extension into the tension arm so the tension wheel can pivot without hitting the silo wall at the end where the spring attaches. Set in position with set bolt. Hook chain from spring so it stretches spring with about 50 lbs. of force. Set the spreader wheel so it just touches the silo wall when the unloader is hanging freely from the cable.



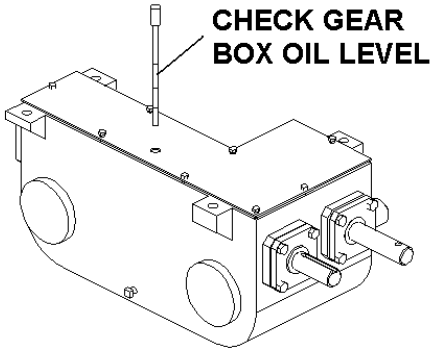
ADJUST TENSION ARM

LUBRICATION

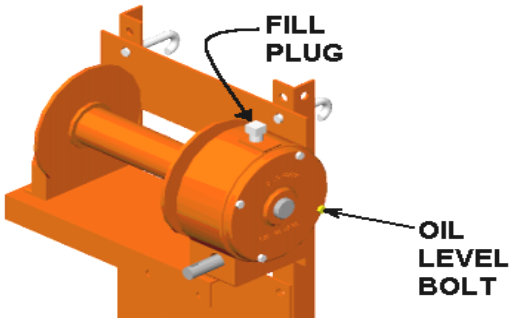
WARNING: NEVER ATTEMPT TO CLEAN, ADJUST OR LUBRICATE MACHINE WHILE IT IS IN MOTION. FAILURE TO HEED MAY RESULT IN PERSONAL INJURY OR DEATH.

MAIN AUGER GEARBOX
Before operating the unloader for the first time, be sure to lubricate all grease fittings and fill the gearbox with motor oil as specified below.

The oil level of the auger gearbox is checked by oil level stick. Use 10W-40 motor oil for summer and winter operations under normal conditions. NEVER use kerosene or distillate to thin oil. The gear housing should be flushed out and fresh oil put in at the end of each season.

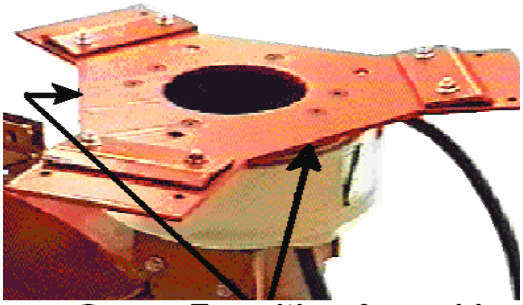


WINCH GEARBOX
Check four times annually and prior to raising unloader, oil level in winch gearbox. Fill to level plug. Use No. 90 gear oil (WINCH ONLY).



Annually pour motor oil on the suspension cable when it is wrapped on the winch drum. Lubricate the pulleys and wall roller of the tripod whenever the silo is full and the tripod can be reached.

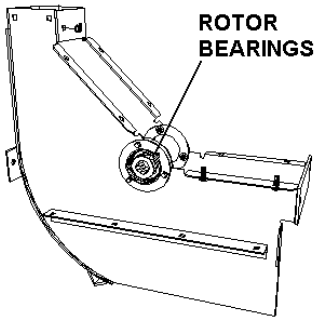
Grease the unloader about (4) times per season and when the unloading season is completed and the unloader will sit unused for a period of time. This will purge contaminants and moisture from bearings.


Grease Transition Assembly
(2) Places

Grease:
a) line shaft slide sleeve

b) transition assembly (2) places--1or 2 strokes only in each fitting. NOTE: When greasing transition, take load off the cable.

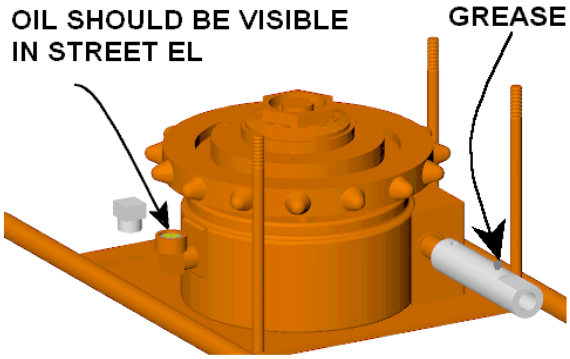
c) rotor bearings



Lubricate the rotor pawls with oil annually.

RING DRIVE GEARBOX
Maintain oil level with 10W-30 or 10W-40 Motor oil so it is visible in the street el.

Some oil leakage around seal is normal but if it becomes excessive, repair.



RING DRIVE GEARBOX

TROUBLE SHOOTING

WARNING: NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST MACHINE WHILE IT IS IN MOTION. FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

TROUBLE	POSSIBLE CAUSE/REMEDY
Motor hums or does not Start	Check fuses. Check & reset motor thermal protector. Check for loose electrical connections. Check for low voltage. Check unloader for jammed or frozen material.
Unloader rotates unevenly	Wall cleaners dull or installed incorrectly on augers. Knives installed on incorrect augers. Knives installed in a straight row on augers. Too many knives on front auger. See installation instructions. Silo not round or tripod not centered.
Silage build-up on walls	Wall cleaners dull or installed on incorrect augers. Wall wheels not adjusted. Counter weights not adjusted for proper cone. See adjustments, operation & installation instructions. Silo excessively out of round.
Silage build-up at edges or on doors	Wall wheels incorrectly adjusted. Silo out of round or tripod not installed on center.
Silage falls short at Gooseneck	Belts loose or in poor condition. Feeding too heavy, motor loses speed. Poorly cut or ensiled forage. Set rotor blades in fixed mode.
Plugging at rotor throat	Feeding to heavy. Motor losing speed. Belts loose or in poor condition. Poorly cut or ensiled forage. Change the current mode of the rotor blades.
Motor fails to reach full RPM	Defective motor. Motor improperly wired.
Loss of capacity	Belts loose or in poor condition. Low voltage. Knives turned wrong on augers or spaced in straight rows. Poorly cut or ensiled forage. Motor incorrectly wired. Bolts loose at transition to rotor throat connection (forage catches on loose bolt heads in throat).
Fuses burn out or circuit breakers kick off excessively	Feeding too heavy. Low voltage. Motor incorrectly wired.
Slip clutch slipping	Silo undersized. Feeding too heavy for conditions. Wall cleaners dull. Knives turned wrong, or too many on rear auger. Counter weights not adjusted properly.
Feeds unevenly at rotor intake	Matted haylage. Knives installed incorrectly on augers. Too many knives on front auger.
Silage surface too low or Too high in center	Feeding too heavy. Poorly cut or ensiled forage. Counter weights not adjusted correctly for conditions.

GEMINI RING DRIVE INSTALLATION INSTRUCTIONS

UNLOADER SUSPENSION

TRIPOD

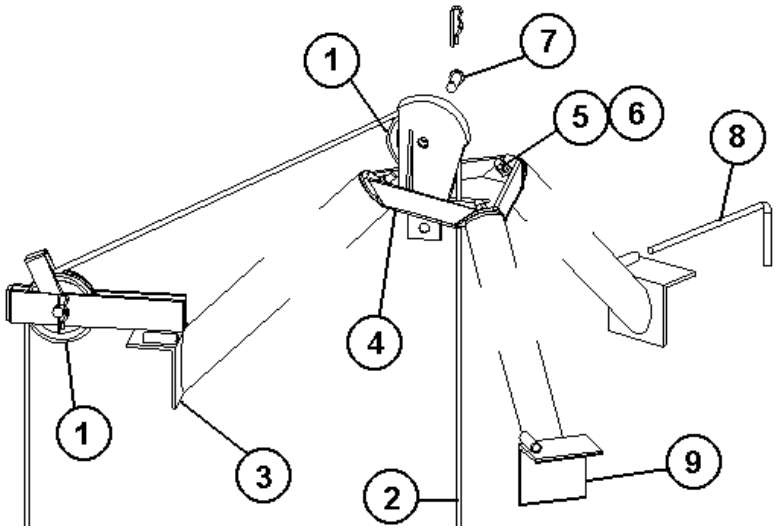
1. Hoist the components to the top of the silo and assemble the pulleys (1) and the cable (2) in the cable leg (3) as shown in the following figure.

2. Assemble the tripod in the silo with the top plate (4), 1/2" hex nuts (5) and jam nuts (6).

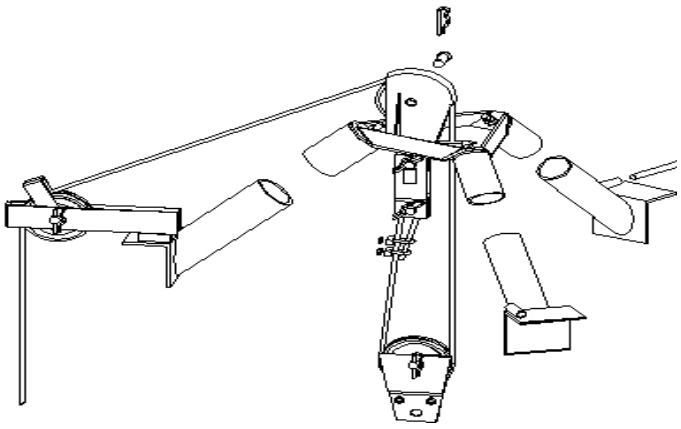
3. Install safety hooks (8) in sleeves on the tripod feet (9) from the outside before raising tripod into place. NOTE: Choose a convenient location for mounting the winch on the silo wall before installing the cable leg (3) of the tripod on the silo wall. Cable leg and winch must be in line.

4. Install tripod with cable leg (8) in line with winch. Cable leg receives greater pressure than the other two legs and requires a good support. Set all 3 legs on full length staves at about 1/3 points around the silo rim. NOTE: Cable must hang in center of silo.

5. Locate tripod legs properly against the inside of the staves and bend inward protruding end of safety hooks (8) down to secure each leg to the stave.



DOUBLE CABLE (OPTIONAL)
The double cable hanger bracket, pulley equipment and hookup for same is in the following figure.



WINCH

1. Attach winch angles to winch assembly with two 1/2" x 1" HHCS, nuts and lockwashers at the bottom and with two hook bolts at the top of vertical mounting plates on rear of winch.

2. Attach name plate to winch angles with four 1/2" x 1" HHCS, nuts and lockwashers.

3. If necessary, loosen two silo hoops enough to insert four hook bolts.

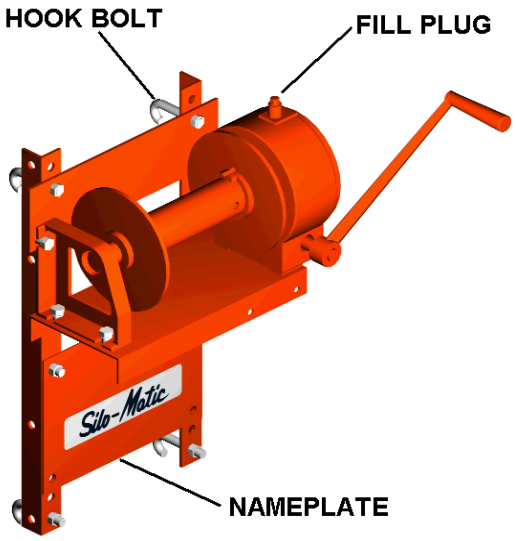
4. Attach winch assembly to silo hoops with hook bolts in the holes matching the silo hoop spacing. Hooks can be turned up or down as required.

NOTE: Make sure center of winch is located directly under pulley on tripod leg. Tighten all bolts securely.

5. A socket head capscrew located between the gearbox and right hand winch drum flange is provided to secure the end of the suspension cable. Loosen setscrew and thread cable end through hole in winch flange, then tighten setscrew to clamp cable end securely.

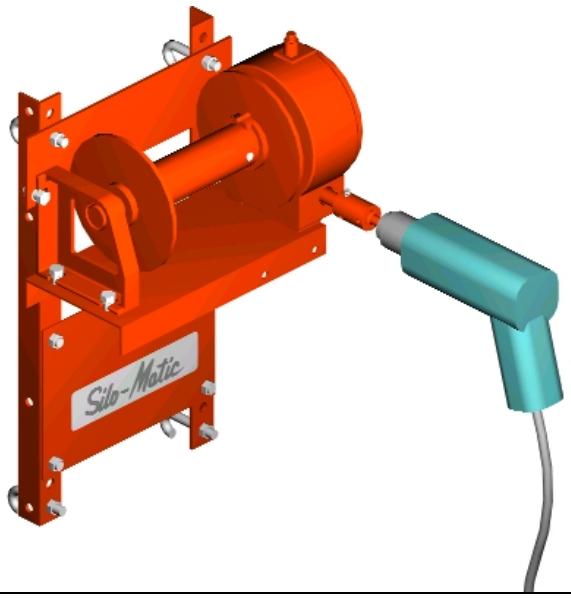
CAUTION: THE FIRST LAYER OF CABLE MUST BE WOUND MAKING SURE ALL CABLE LAYERS ARE WRAPPED EVENLY AND TIGHTLY.

6. Check oil level in winch gear housing at oil level plug. If necessary add No. 90 all-purpose gear lube oil until oil flows from oil level hole. Replace plugs making sure vent in filler plug is open.



ELECTRIC DRILL ADAPTER (OPTIONAL)

To speed the unloader raising process, an electric drill adapter can be used in place of the handle used for manual operation. It is recommended that a 3/4" drill be used to raise larger unloaders.



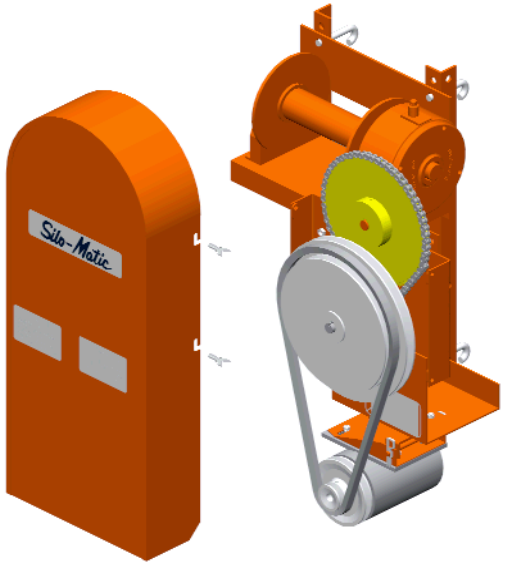
TWO SPEED POWER ATTACHMENT (OPTIONAL)

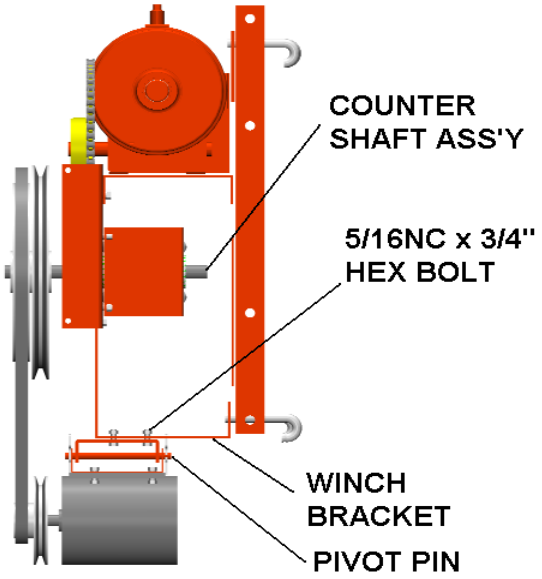
The following figure shows the optional 2-speed power attachment completely assembled on the winch.

1.) To install the unit, first bolt the mounting plate to the winch base with two 3/8" x 3/4" HHCS, Nuts & Lockwashers.

2.) Attach the counter shaft assembly to the mounting plate with four 5/16" x 3/4" Carriage bolts, nuts & lockwashers. Make sure notch in the front flange of the countershaft assembly is facing down.

3.) Attach bracket to mounting plate with four 5/16" x 3/4" HHCS, Nuts & Lockwashers.





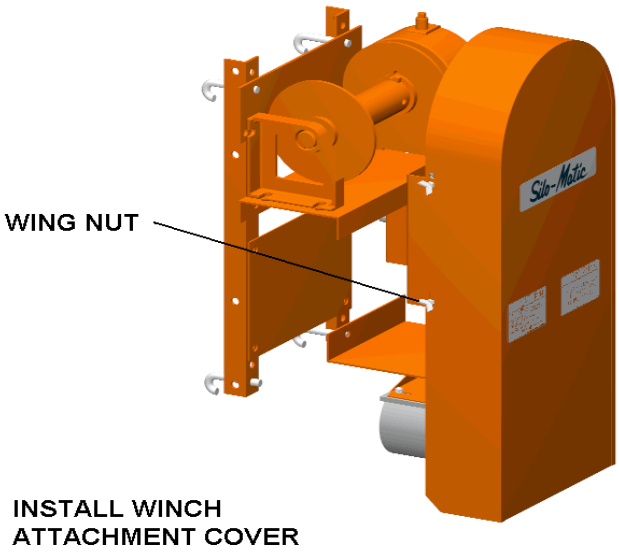
4.) Attach motor support bracket to bracket with two 5/16" x 3/4" HHCS, Nuts & Lockwashers.

5.) Attach the motor mount plate to the motor with four 5/16" x 3/4" HHCS, flat washers, lockwashers & Nuts. Tighten securely.

6.) Assemble the motor and mount plate assembly onto the motor support bracket with pin and (2) 1/8" x 1" cotter pins.

7.) Place the large diameter sprocket on the winch stub shaft with the hub in. Position the sprocket so that the face of the sprocket is flush with the end of the shaft. Tighten setscrew. Position the countershaft sheaves and motor sheaves as shown on figure. Install V-belt (outer sheaves for feeding, inner sheaves for raising).

8.) Fasten shield to winch assembly with wing bolts as shown on the figure at right.



ASSEMBLE TRI-ARMS AND DRIVE RING

Assembly of these items is explained and illustrated at this point. It is convenient to assemble the arms and rings now and hoist them up and out of the way until the rest of the unloader is assembled. You may elect to complete this assembly after the rest of the unloader is assembled but it will be less convenient since you will be working around the rest of the machine.

⚠CAUTION: IF YOU WORK UNDER THE ASSEMBLED ARMS AND RING YOU MUST OBSERVE PRECAUTIONS INCLUDING THE FOLLOWING:

-Before raising assembly be sure all connections and bolted joints are tight.

-Be sure (2) cable clamps are installed on each cable connection and that they are installed properly with the U-bolt part of the clamp around the unloaded cable leg and are tight.

-Cable is securely connected and wound on the winch spool.

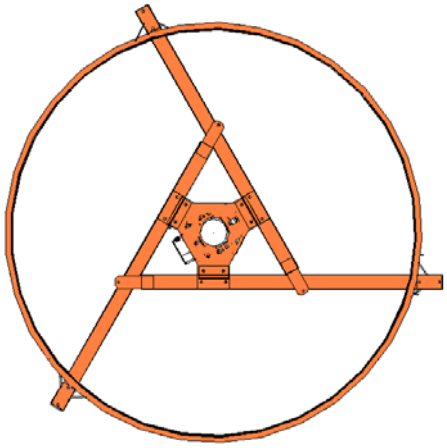
-Winch is securely mounted to the silo.

-Wear hard hats when working around equipment as approved by construction industry.

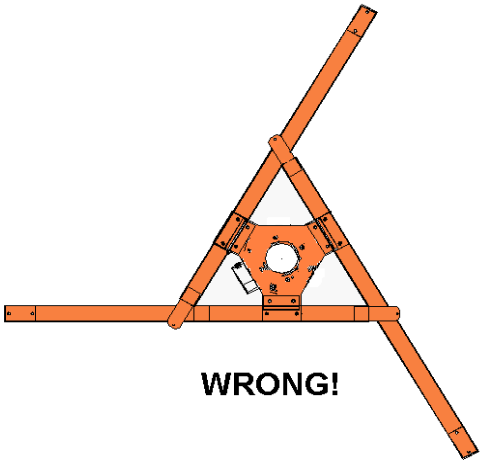
NOTE: From this point on, assemble as instructed, but do not tighten bolts until indicated to do so.

1. Lay the (3) drive ring segments in a circle and join the ends together with a ring connector weldment on the outside and a stiffener plate on the inside. There are (4) rows of bolt holes punched in the ring. Assemble using the first and third row of the holes from the top edge of the rings. Insert carriage bolts from inside the rings.

Note: If assembling the (3) tri-arms separate from the drive rings, it is possible to assemble them incorrectly such that they will not match the angle of the ring connectors. The arms must angle forward in the same direction the unloader will rotate and as shown on the following illustration.



CORRECT

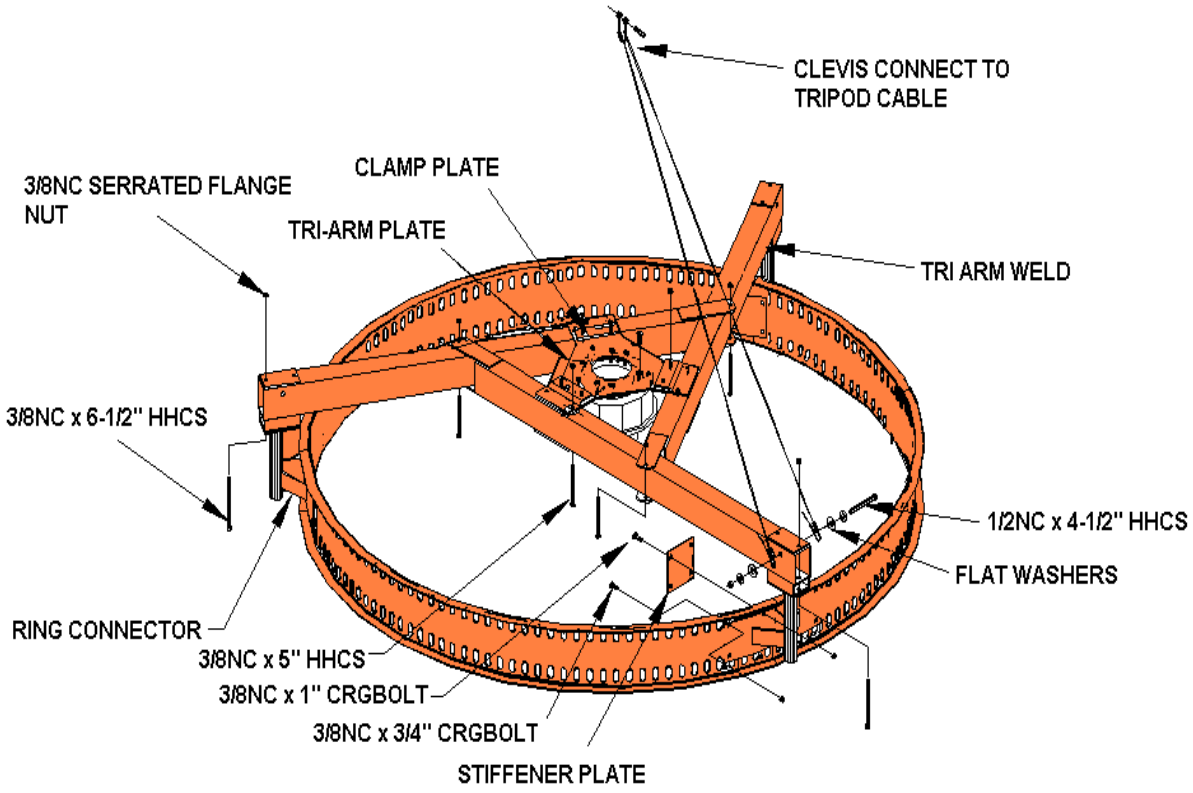


WRONG!

2. Bolt a tri-arm to the top of each ring connector. Arms installed with the 1-1/2" welded spacer at the ends down.

3. Lap the welded plates on the inner end of each arm over the next arm and secure with 3/8" x 6-1/2" HHCS and Whiz Nuts.

4. Connect the swaged loop at both ends of the cable hangers to the ends of each arm using bolts, double flat washers and lock nuts as shown. (one loop on each side of the arm.) Connect the clevis on the tripod cable to these cable hangers or slings.



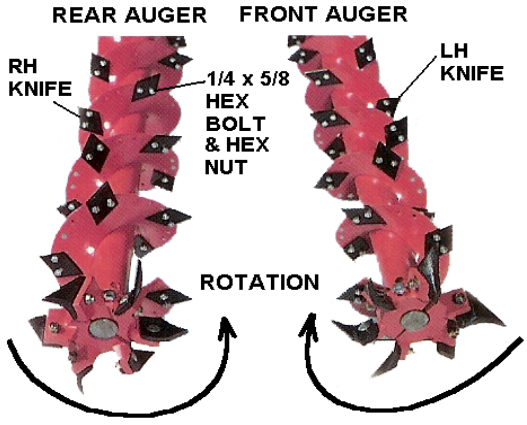
5. Position the transition assembly inside the triangle formed by the tri-arms. Bolt one corner of the transition top plate to an arm. Bolt the other two corners to the other arms using a drift punch to line up the holes. It may be necessary to bump the arms in or out where they overlap each other to get correct positioning. Note: Position the transition assembly so that the power cord plug will be convenient to hook to the power cord that will be routed from the silo chute and along the gooseneck. Now, Tighten all bolts on the assembly & attach the (3) clamps to the top plate.

INSTALL AUGER KNIVES

Install the auger knives on the front and rear augers as shown. NOTE: Different knives are used on the two augers! Select the knives so that the beveled edge will lead in the direction of the auger rotation. Knives go on the side opposite of feed or on the wall side of the flighting. Bolt heads go on the flighting side.

NOTE: DO NOT INSTALL KNIVES IN A STRAIGHT LINE!

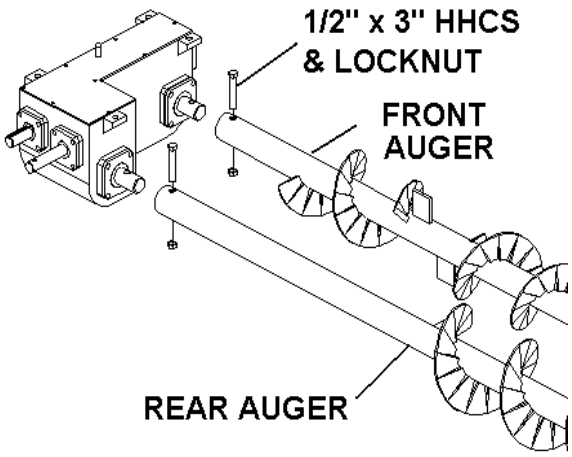
NOTE: The front auger is the one with a short section of reverse flighting, The rear auger is the one on which flighting does not extend all the way to the end.



ASSEMBLE GEARBOX & OUTER END

1. Attach the front and rear augers to the appropriate output shafts of the auger gearbox. If the gearbox is placed on a silo door at the silo center it will steady it during the remaining assembly steps.

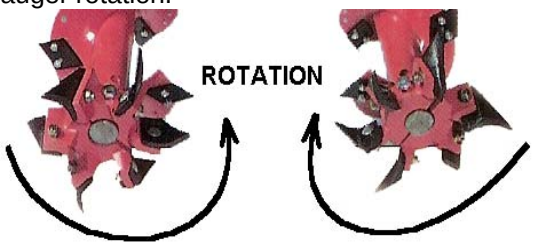
2. Assemble a wall cleaner shaft to the end of each auger (short end of shaft out).



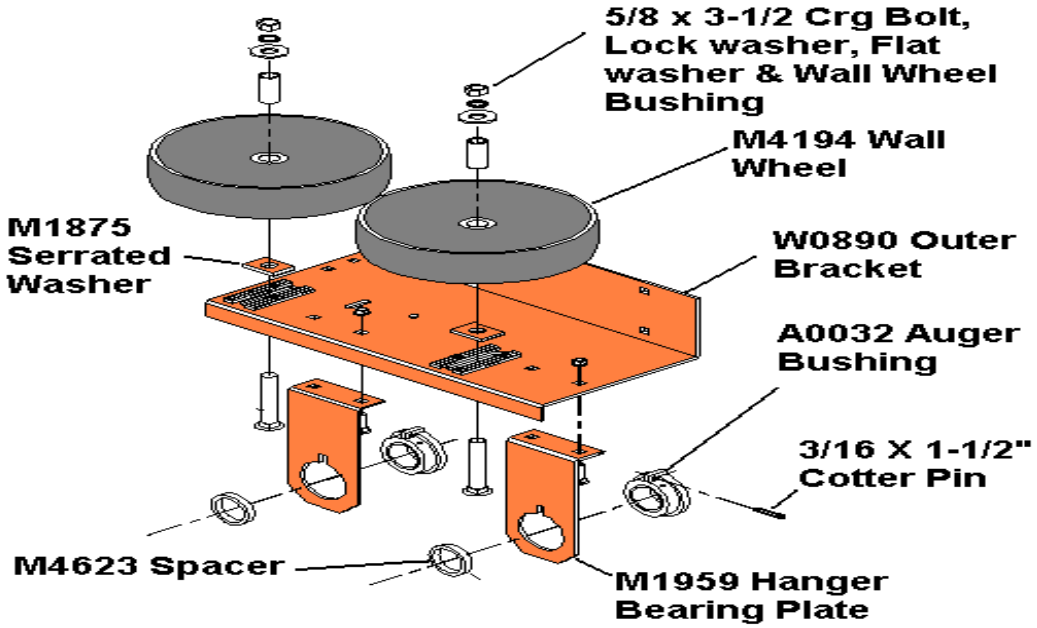
3. Assemble an auger bearing to both bearing plates inserting bearing from the auger side. The flange on bearing plates face the augers. Secure with cotter pin. Slide each of the bearing plate assemblies onto the auger shafts and then bolt the outer bracket to these plates.

4. Assemble the two wall wheels with serrated washer & wall wheel bushing as shown on the figure below.

5. Slide a wall cleaner spacer onto each wall cleaner shaft (see following fig.) and install the front & rear wall cleaners. NOTE:Wall Cleaners are installed correctly when beveled edge of cutter blades lead in direction of auger rotation.



BEVELED EDGE OF WALL CLEANER CUTTER SHOULD LEAD IN DIRECTION OF AUGER ROTATION WHEN INSTALLED CORRECTLY.



INSTALL FRAME & BUMPER GUARD

1. Bolt a channel extension to the rear and front main frame channels. The bent legs on the spacer nearest the silo wall must point toward the auger gearbox. The spacer directly ahead of where the rotor will be assembled must point away from the rotor. Bolt the rotor housing mount bracket, which has a different hole and/or slot pattern than the other spacers, directly behind where the rotor will mount and with the legs pointing away from the rotor.

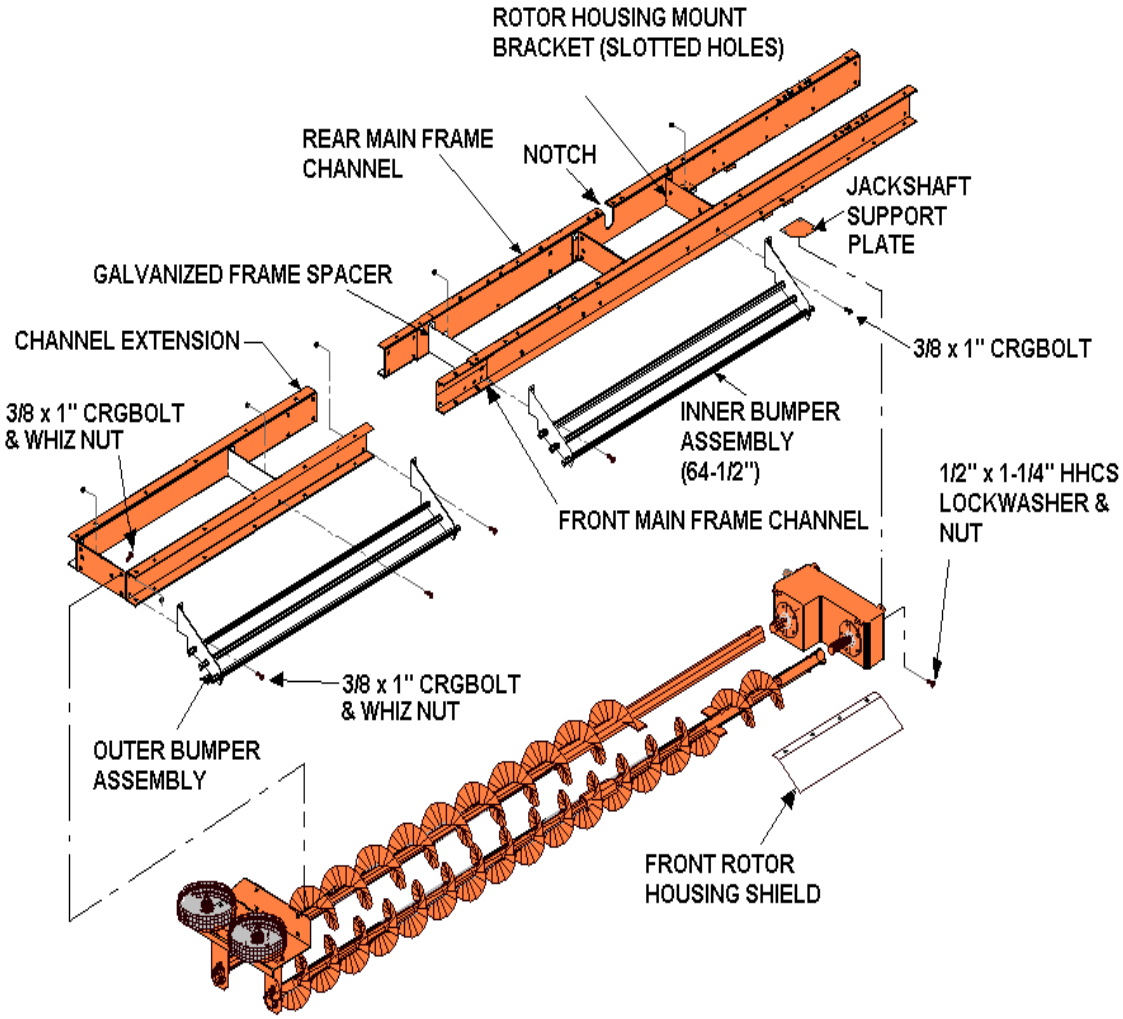
NOTE: The rotor housing is mounted off center, being closer to the rear (notched) channel. Do not tighten any bolts until after the rotor is installed.

NOTE: Install bumper supports to the front channel.

Some of these supports join to the front channel with bolts used to assemble the frame spacers and rotor housing mount bracket.

2. Slide the deflector over the two augers, ahead of the gearbox. Offset in deflector points from gearbox. Lay the front rotor housing shield over the front auger.

3. Position the assembled frame over the augers. Be sure that the deflector mounting flange is on the opposite side of the rotor mounting bracket from the rotor. Join the outer frame spacer to the outer wall wheel bracket. Bolt the auger gearbox to the lower flange of the frame channels under the (4) gearbox spacers. NOTE: Install the jackshaft support plate with the gearbox mounting as shown.



INSTALL ROTOR ASSEMBLY AND AUGER SHIELDS

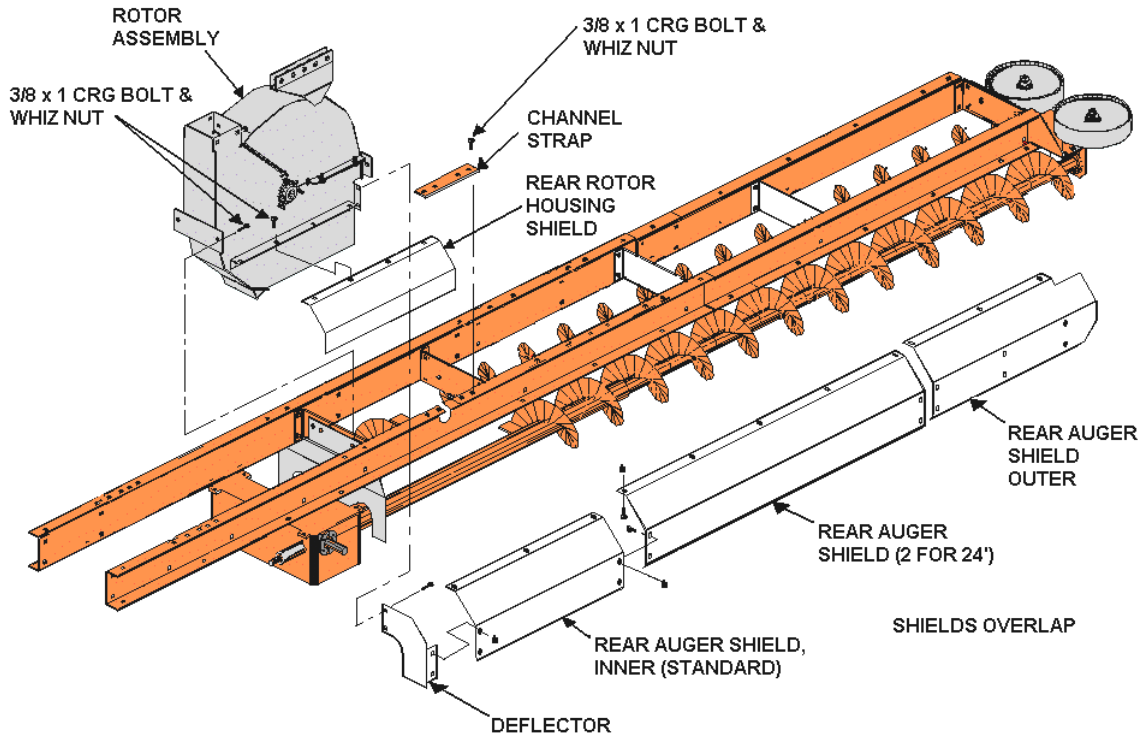
1. Lower the rotor assembly between the frame spacer and rotor mounting brackets. Bolt the assembly at the front to the frame spacer at the rear to the rotor mounting bracket. Be sure to bolt the deflector on the outside of the rotor mounting bracket when attaching the rotor.

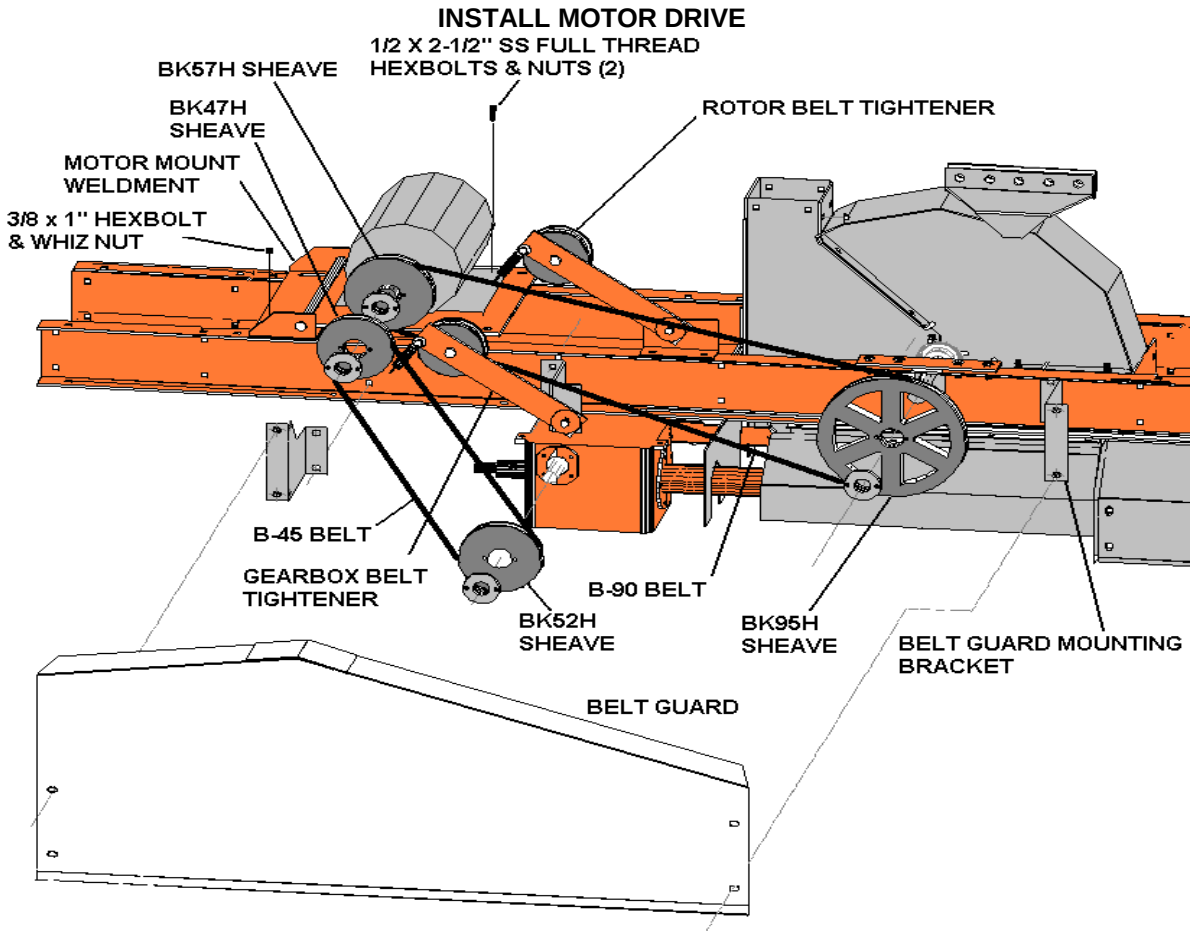
2. Bolt the front rotor housing shield to the lower side of the attachment angle on the rotor housing. Assemble the rear rotor housing shield to the angle on the opposite side of the housing before installing the augers.

3. Bolt the channel strap over the notch in the rear frame channel. Tighten all bolts on unloader assembly. NOTE: The following installation for auger shields is illustrated and explained here, however, for convenience it is recommended that the suspension be connected and the unit be slightly raised first.

4. Bolt the auger deflector to the flange on the rotor housing and to the inner rear auger shield.

5. Starting at the outer end, bolt the rear auger shields to the lower flange of the rear frame channel. The outer shield is notched. Overlap each section over the outside of the last section as illustrated.





1. Bolt the motor mount weldment across the top of the frame channels. Thread a 1/2" x 2-1/2" full thread stainless bolt with (2) stainless nuts into the jamnut at the forward corners of this weldment. NOTE: There is (3) bolt down locations in the frame channels to accommodate various motor frame sizes. Normally use the center hole.

2. Bolt the rotor belt tightener assembly to the top flange of the rear frame channel.

3. Bolt the gearbox belt tightener assembly to web of the rear frame channel.

4. To the motor shaft assemble first a BK57H sheave and then a BK47H using taper hubs and keys. The inner sheave will drive the rotor and should align with the rotor belt tightener pulley. Likewise, the outer sheave drives the gearbox and should align with the pulley of that tightener.

5. Bolt (2) belt guard brackets to the rear frame channel.

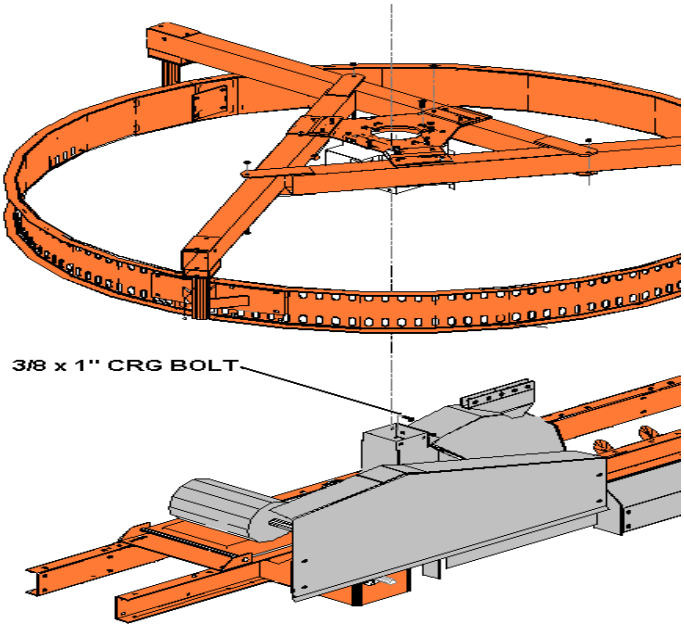
6. Install a BK95H sheave on the rotor shaft with a taper hub and align it with the inside sheave on the motor. Likewise install a BK52H sheave on the gearbox shaft and align it with the outer sheave on the motor. Install a B-90 belt on the rotor drive and a B-45 belt on the gearbox drive. Position the appropriate tightener pulleys on the top side of each belt. Tension the rotor tightener spring by hooking it to an unused hole in the motor plate on the motor mount weldment. Hook the gearbox tightener spring to the lower hole of the rear belt guard mounting bracket.

7. Bolt the belt guard to the mounting brackets.

CONNECT TRANSITION TO ROTOR

1. Lower the (3) tri-arms and drive ring sub-assembly down to the main unloader assembly.

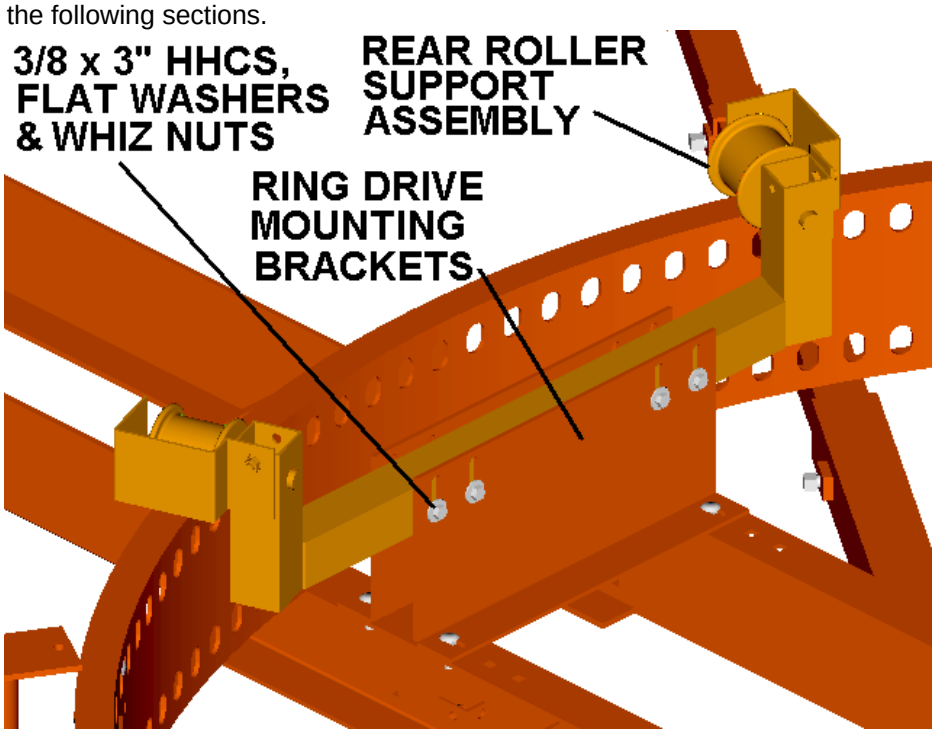
2. Lower the transistion assembly over the throat of the rotor housing. Bolt together with (4) 3/8 x 1" carriage bolts and whiz nuts with bolts inserted from inside.



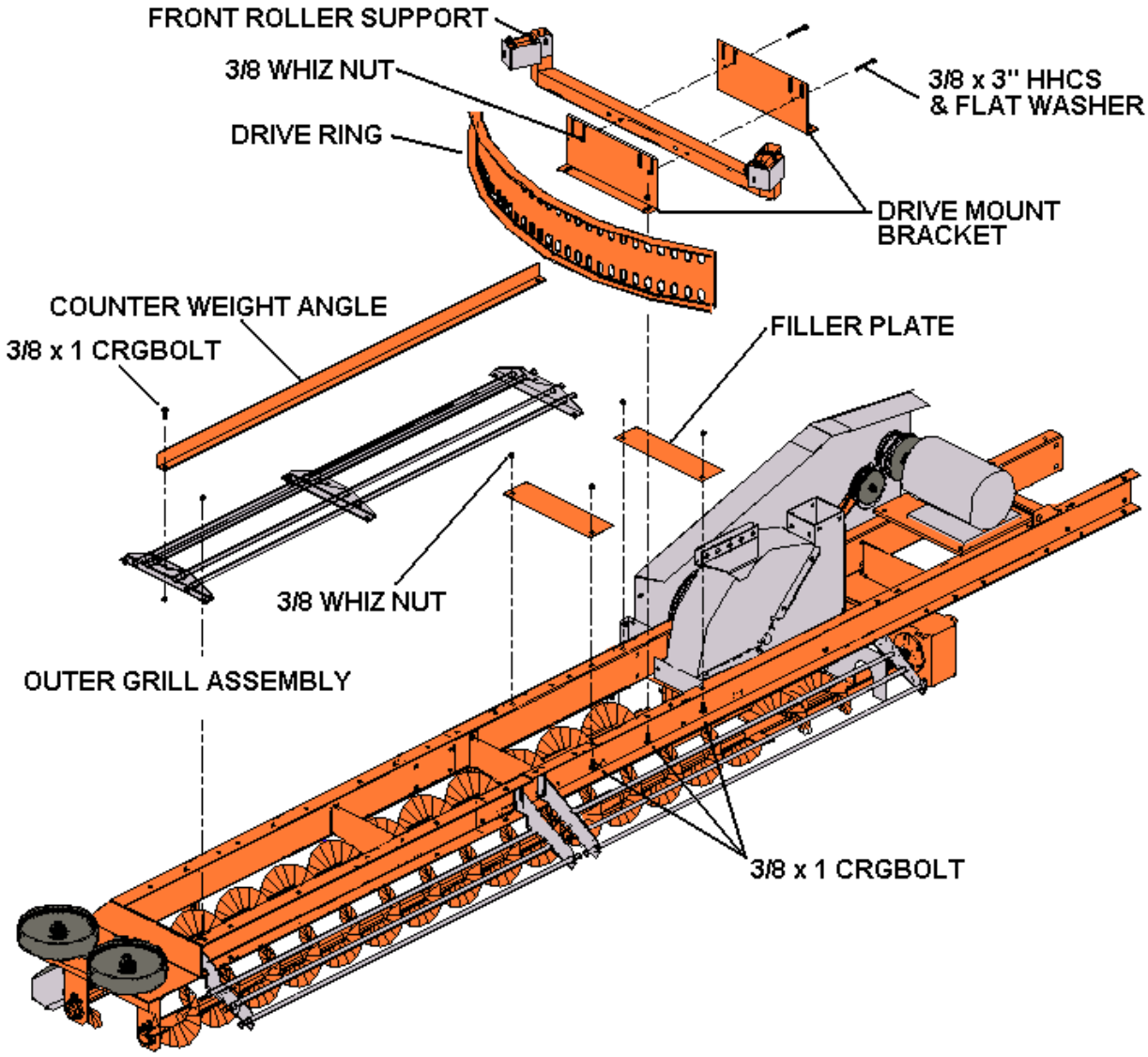
INSTALL REAR ROLLER SUPPORT

1.) The rear roller support assembly is about 26-1/2" long making it shorter than the front support assembly. (The front roller support measures approximately 38.") Loosely bolt this support between two ring drive mount brackets. The short legs on these brackets face away from the motor as shown. Bolt the sub-assembly across the top of the rear frame channels where the rollers will fit to the top flange of the drive ring.

2). Snug all bolts but do not tighten. Adjustments must be made after the ring drive is installed and as explained in the following sections.



INSTALL FRONT ROLLER SUPPORT & GRILL COVER



1). The front roller support assembly is longer than the rear assembly, measuring about 38" in length. Loosely bolt this assembly between two ring drive mount brackets with the short legs of these brackets facing away from each other and as illustrated. Bolt this sub assembly across the frame channels where the rollers will match with and fit on the top flange of the drive ring.

2). Snug all bolts but do not tighten.

3). Adjustments must be made after the installation of the ring drive and as explained in the next section.

4). Bolt a filler plate across the top of the frame channels, one ahead and one behind the roller support assembly, to fill the space over the auger.

5). Bolt grill assembly across the frame as illustrated

6). Across the tops of the grill supports bolt a counterweight angle.

ADJUSTMENT OF ROLLER SUPPORTS

1). Adjust the front roller support weldment up or down between the support mounting plates to align the drive sprocket teeth in the middle of the drive ring drive holes. This adjustment is satisfactory when the top edges of the mounting plates are flush with top edge of the weldment. It is also necessary to slightly raise the unloader so it is just supported by the cable and so the augers are hanging free and level. If the adjustment is not correct, it may be necessary to lower the machine to take off weight and readjust. Once the teeth properly align with the ring, tighten the joint between the weldment and mounting brackets.

2). Bolt the snubber roll assembly to the gear box mounting plate using the set of holes in the mounting plate closest to the edge. Adjust the roll in the slots to follow the contour of the ring and to keep the drive teeth closest to the edge. Mount the roll shield to the snubber assembly with 3/8" x 3/4" Carriage Bolts and whiz nuts.

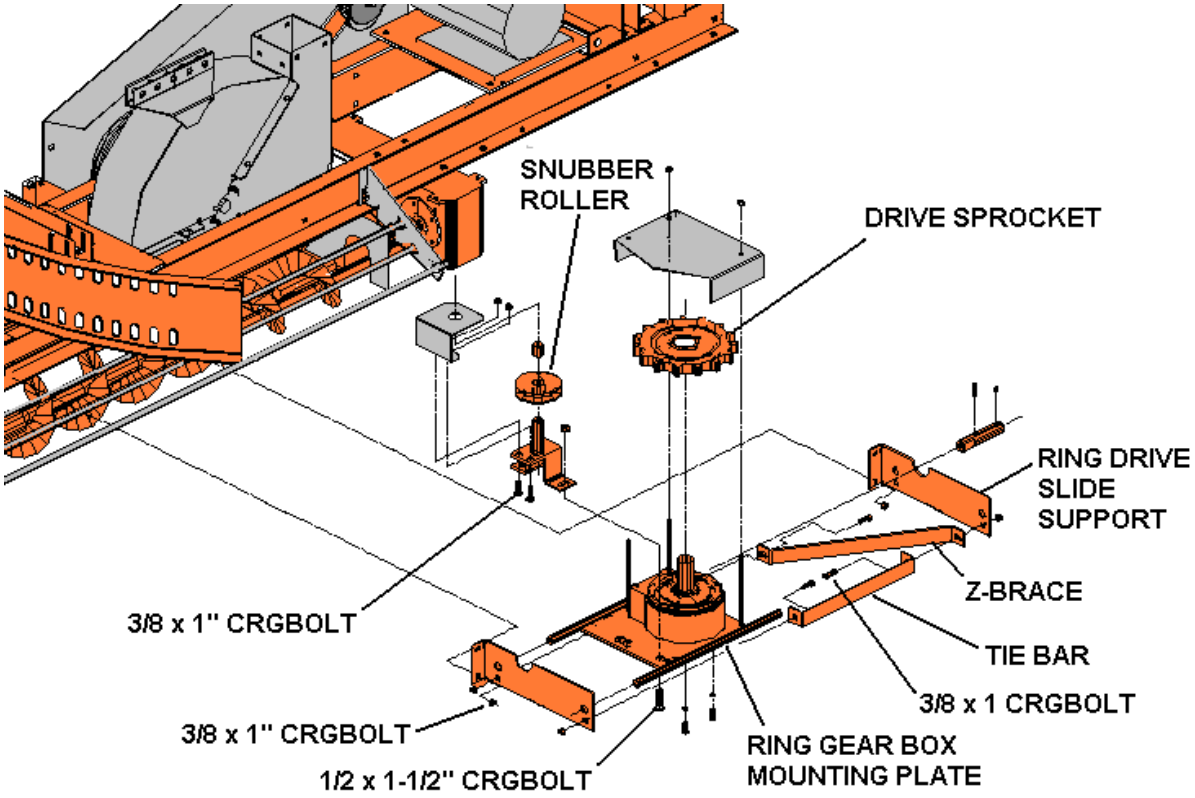
3). Likewise make the same adjustment at the rear support assembly such that the frame is level.

4). Lower the machine just enough to take most of the weight off the suspension. Now tap the roller assembly mounting brackets in or out along the frame channels so the rollers match the drive ring flange and so the assemblies are perpendicular to the frame. Tighten.

ASSEMBLE & INSTALL RING DRIVE

1. Slide a ring drive slide support onto each side of the ring gear box mounting plate. Bolt the Z-brace and tie bar between the slide supports to form an assembly. IMPORTANT: Note that the tie bar must bolt between the supports and that the Z-brace bolts inside the tie bar as illustrated. Correct assembly is required for proper spacing of the assembly.

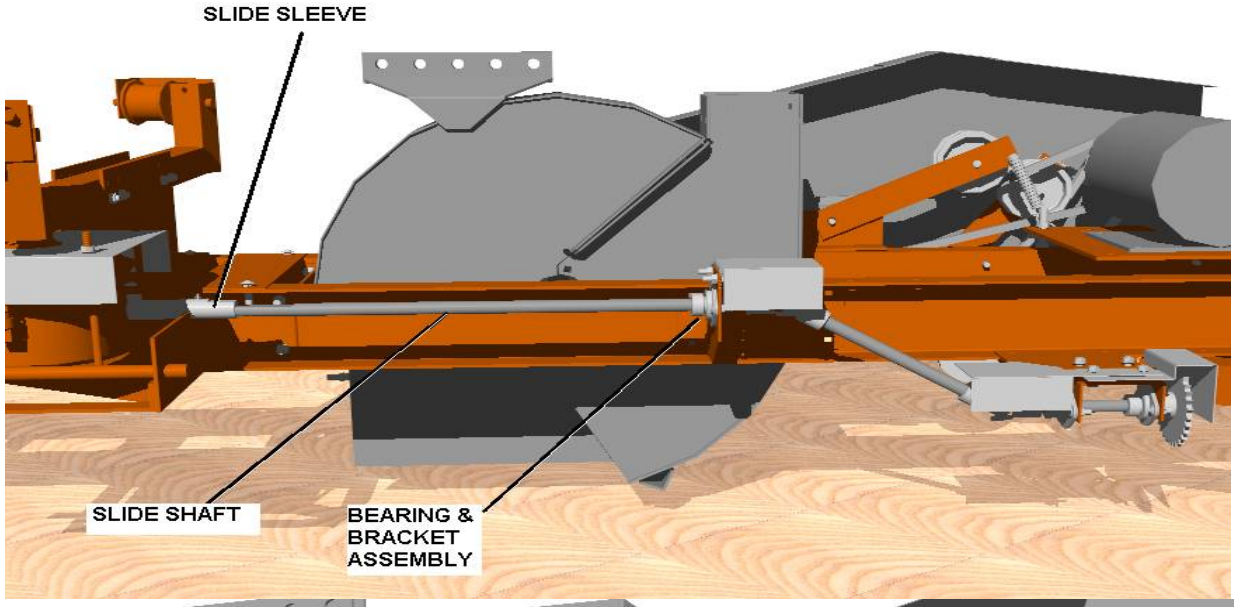
2. Bolt this assembly to the left frame channel where the drive ring sprocket will mesh with the drive ring.

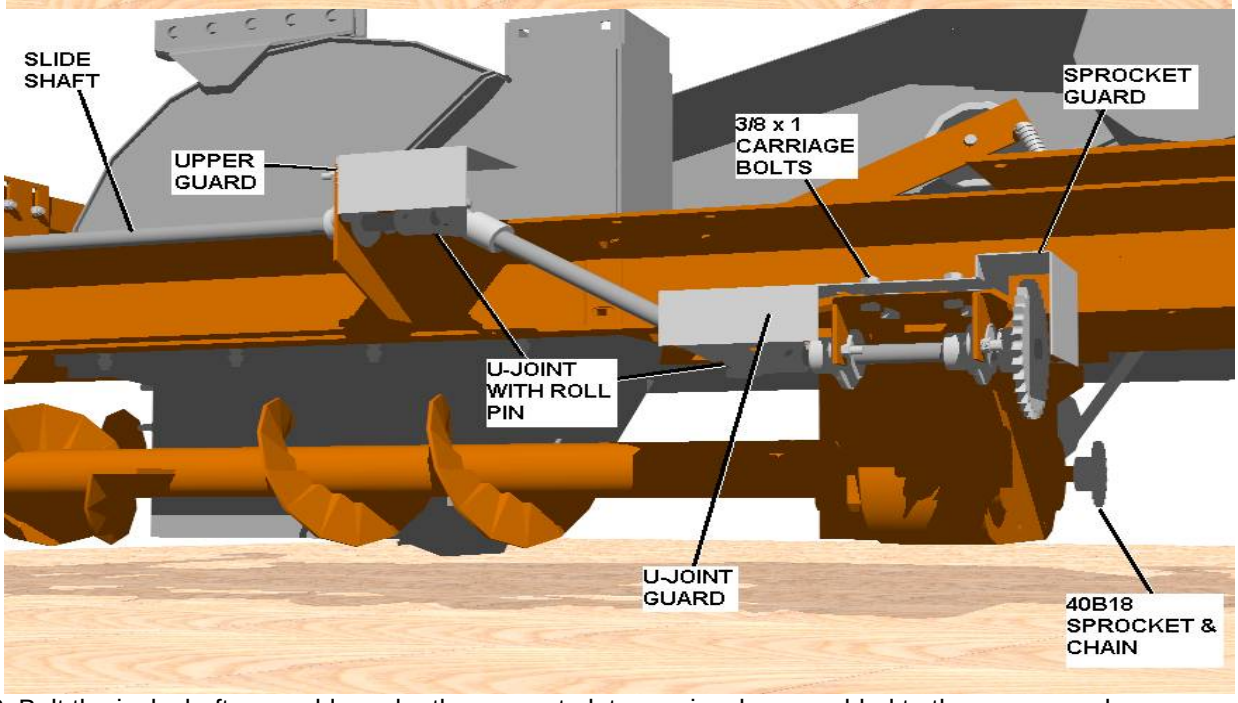


ASSEMBLE & INSTALL LINE SHAFT

1. Slide the end of the line shaft with the machined flat into the coupler on the ring gear box input shaft. Slide the bearing and bracket assembly onto the other end of the shaft and bolt the bracket to the frame channel at the holes slightly behind the rotor bearing.

2. Bolt the (2) shields onto the jack shaft assembly as illustrated. Slide the U-joint onto the end of the line shaft and secure with a roll pin.





3. Bolt the jack shaft assembly under the support plate previously assembled to the auger gearbox mounting bolts. NOTE: It may be necessary to slide the line shaft back and forth in its bearing to align the jack shaft assembly. Once the jack shaft is bolted in place, tighten the bearing on the line shaft.
Install a chain sprocket to the output shaft on the back side of the auger gearbox. Align this sprocket with the sprocket on the jack shaft assembly. Connect the sprockets with #40 roller chain.

ASSEMBLE SPREADER & TENSION WHEELS

1. Bolt guide plates to the top and bottom sides of the spreader arm near the inner end.

2. Slide a lock collar onto the 12" long square reducer sleeve and set it about 1-1/2" from the outer end. Slide the reducer into the spreader arm. Slide the spreader arm extension with wall wheel into the sleeve/spreader arm.

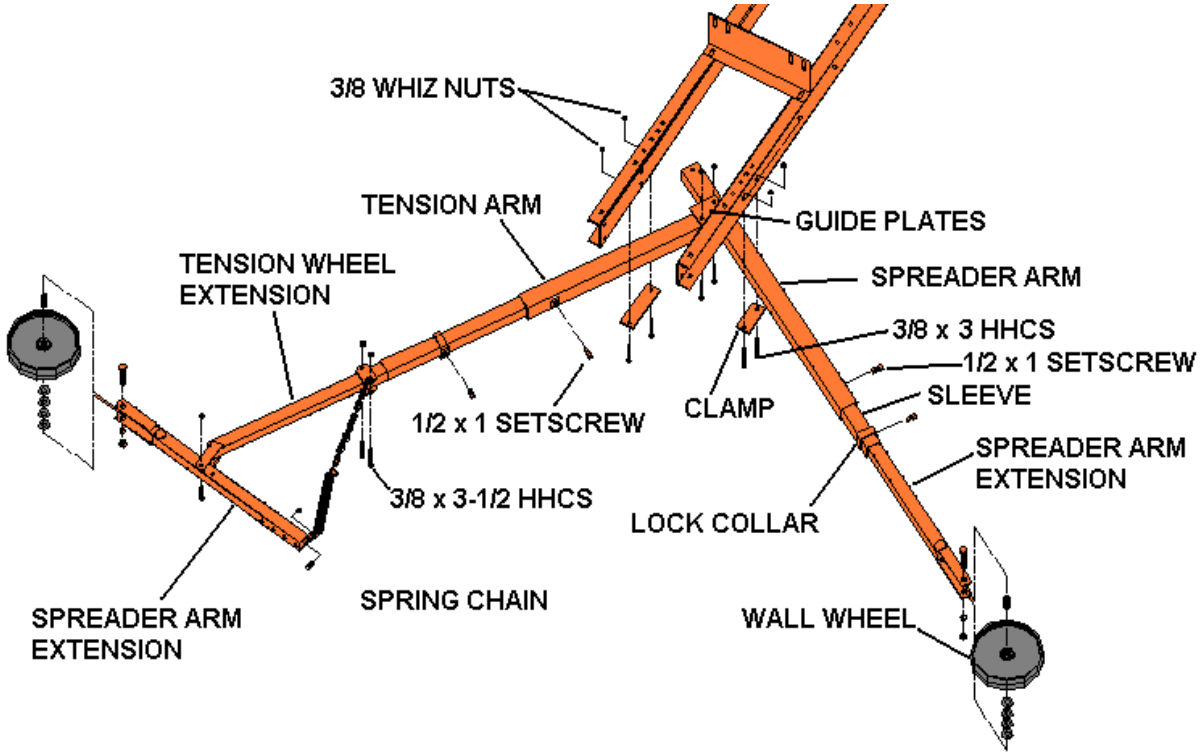
3. Bolt the inner end of the spreader arm assembly under the LH frame channel and clamp the arm under the RH frame with the clamp strap as illustrated.

4. Slide a lock collar onto the 12" long square reducer sleeve and set it about 1-1/2" from the outer end. Slide the reducer into the tension arm. Slide the tension wheel extension into the sleeve/tension arm.

5. If the spring anchor angle is not factory assembled to the end of the spreader arm extension to be used on the tension arm then do so with 3/8" x 1" HHCS and whiz nut. Assemble this spreader arm extension to the tension wheel extension with 3/8" x 3" HHCS and whiz nut.

6. Insert the inner end of the tension arm between the guide plates on the spreader arm and clamp the tension arm under the LH Frame channel with clamp strap.

7. Hook one end of spring to spring anchor and chain to opposite end. For final adjustment stretch the spring and bolt the chain to unused hole in frame channel.



ASSEMBLE TORQUE ARM AND GOOSENECK

1. If the torque arm plate is not assembled to the top plate of the transition then do so now by assembling under clamps. Install with the open side of the (3) sided box facing directly toward the silo chute.

2. Hook the door clamp of the torque arm assembly over a silo door sill. Connect the opposite end of the assembly to the brackets on the transition torque arm plate with "L" Pins. Insert hairpins through the retaining angle and "L" pin to secure.

3. To each side of the base on the gooseneck attach a pivot bracket using (2) 5/16" x 3/4" Truss head Screws and lock washers with hex nuts. (Larger hole in brackets is at bottom end).

4. Slide the pivot brackets on the gooseneck base over the ferrules on the back of the transition hanger plate and secure with the spring release pins.

5. Bolt the support adapter to the end of the gooseneck at either set of holes with (2) 5/16" x 3/4" Truss Head screws, Lock washers and Hex nuts.

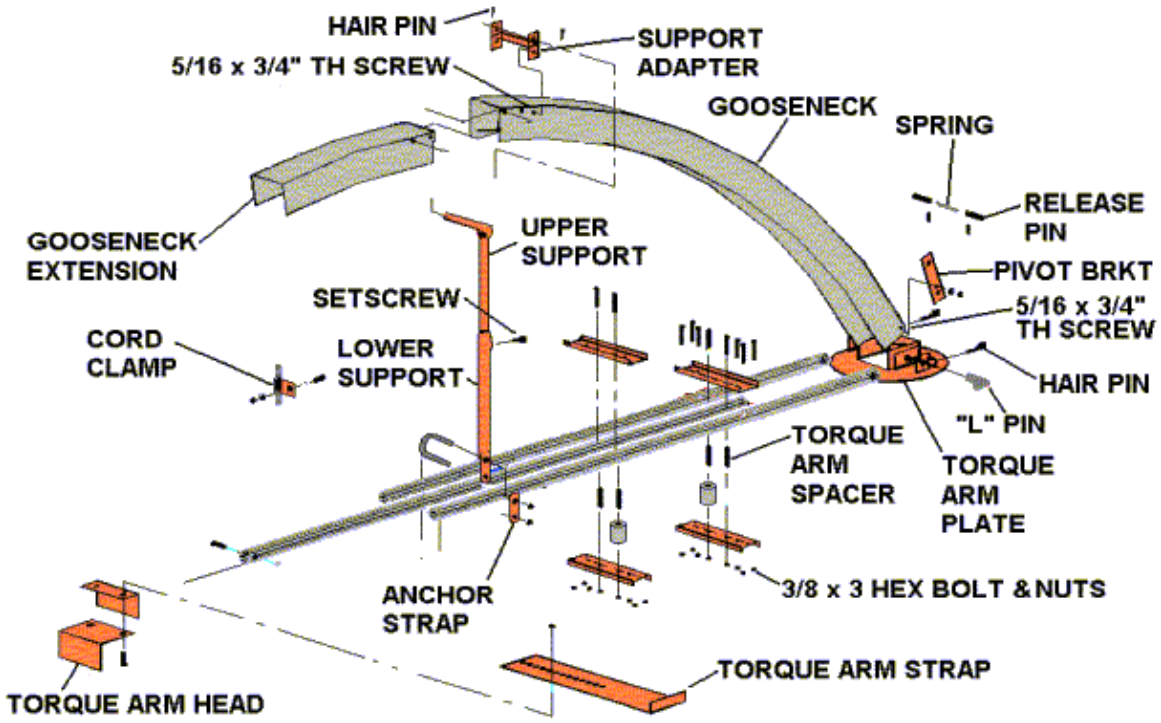
NOTE: For sizes 20 ft. and larger assemble a gooseneck extension at this connection using (4) 5/16"x 3/4" Truss Head screws, etc.

6. Insert the upper support through the holes on the support adapter and secure with hairpin.

7. Telescope lower support over the upper support. Bolt the flattened (lower) end of the lower support to the anchor strap (attached to LH Torque Arm Tube with U-Bolt) using (1) 1/2" x 1-1/4" hex bolt and hex lock nut.

8. Clamp the (2) halves of the power cord clamp around the power cord using a 5/16" x 1-1/4" Carriage Bolt, flat washer and wing nut. Bolt the large "S" hook to this same bolt. Locate the clamp on the power cord so that when the "S" hook is hooked to the top of the upper gooseneck support, the end of the power cord will reach to the plug connector at the transition.

9. Install a female connector plug to the end of the main power cord. Be sure to connect green conductor to the ground terminal in the connector.



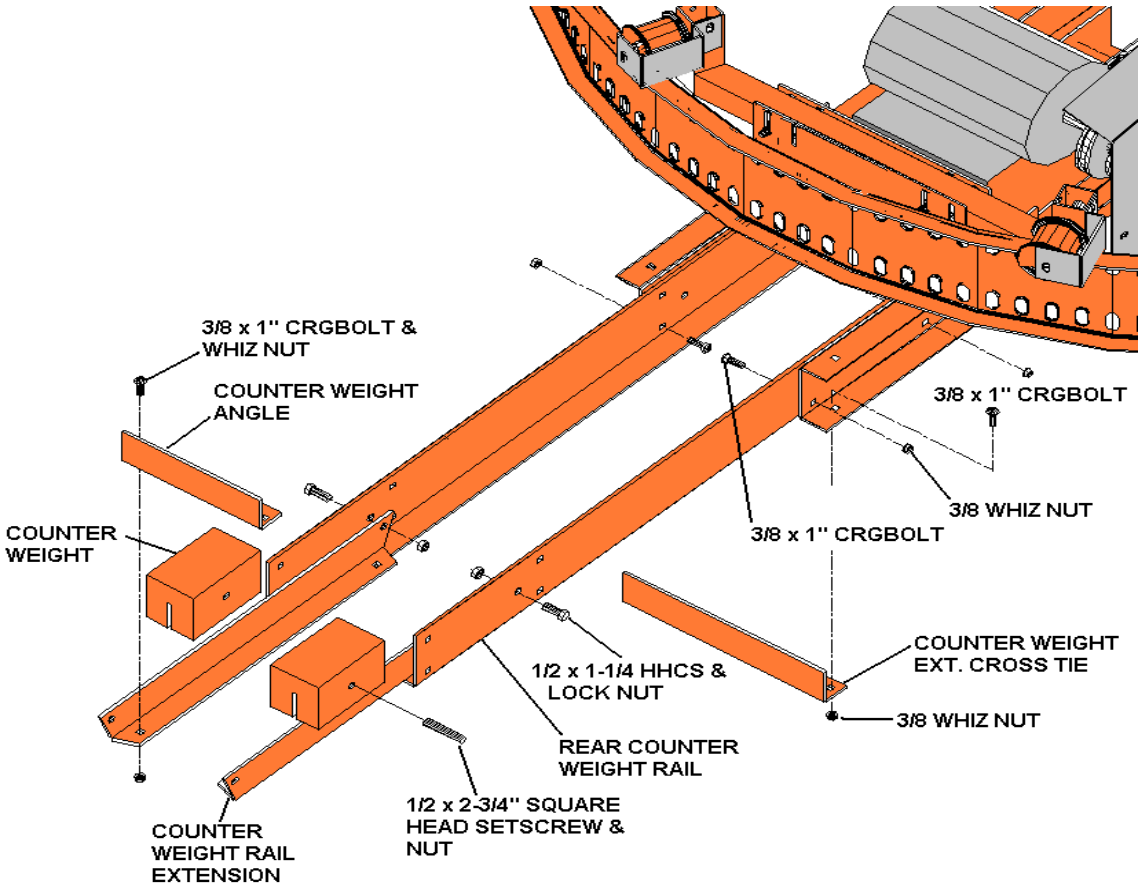
INSTALL COUNTER WEIGHTS

1. Bolt the rear counter weight rails to the frame channels. Bolt the counter weight extension cross tie across the bottom of the frame channels.

2. Hinge a counter weight rail extension to each rail with a 1/2" x 1-1/4" HHCS and lock nut.

3. Join the ends of the rail extensions together with the counter weight tie angle.

4. Counter weights slide on the rail extensions as required, and are secured by a set screw.



REPAIR PARTS

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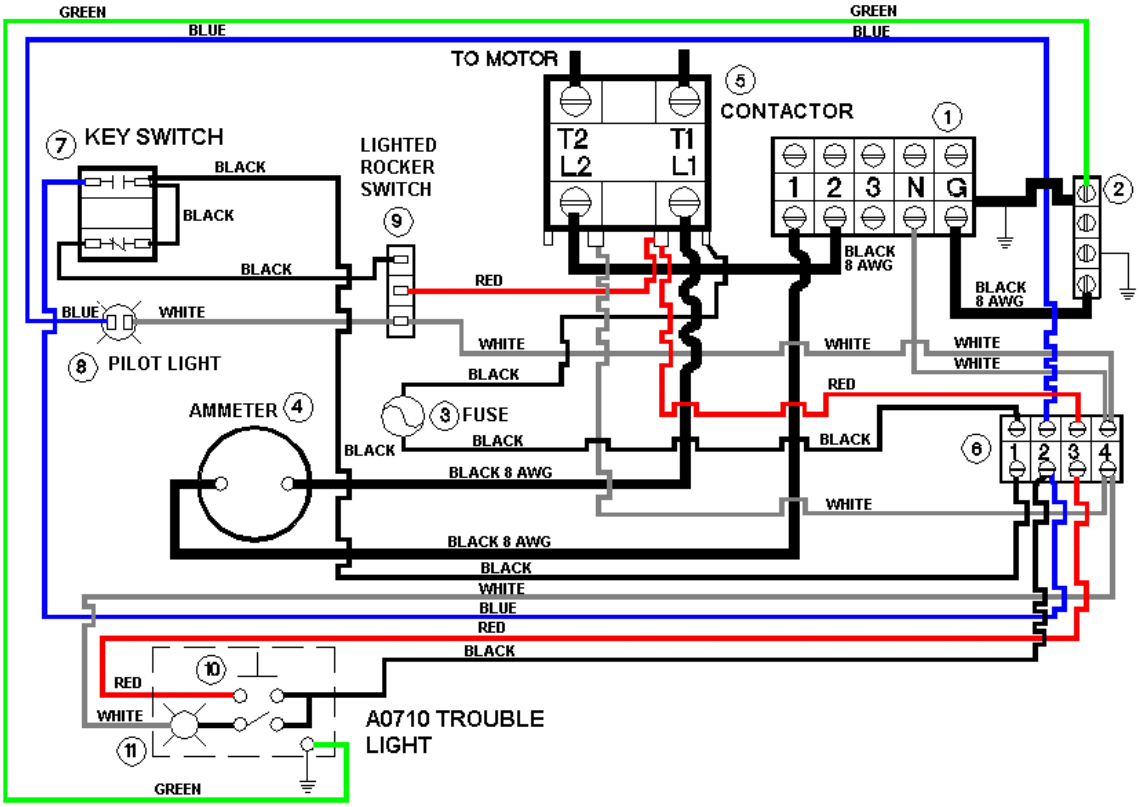
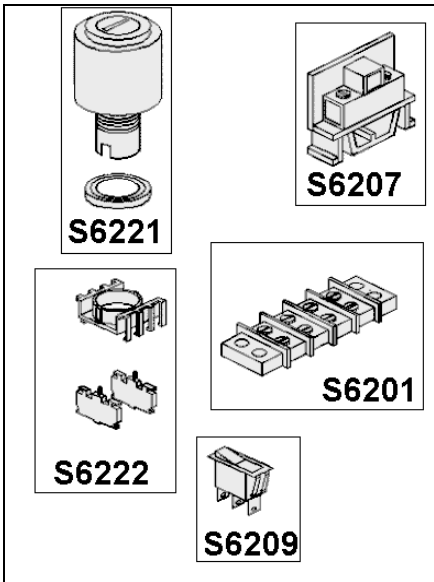
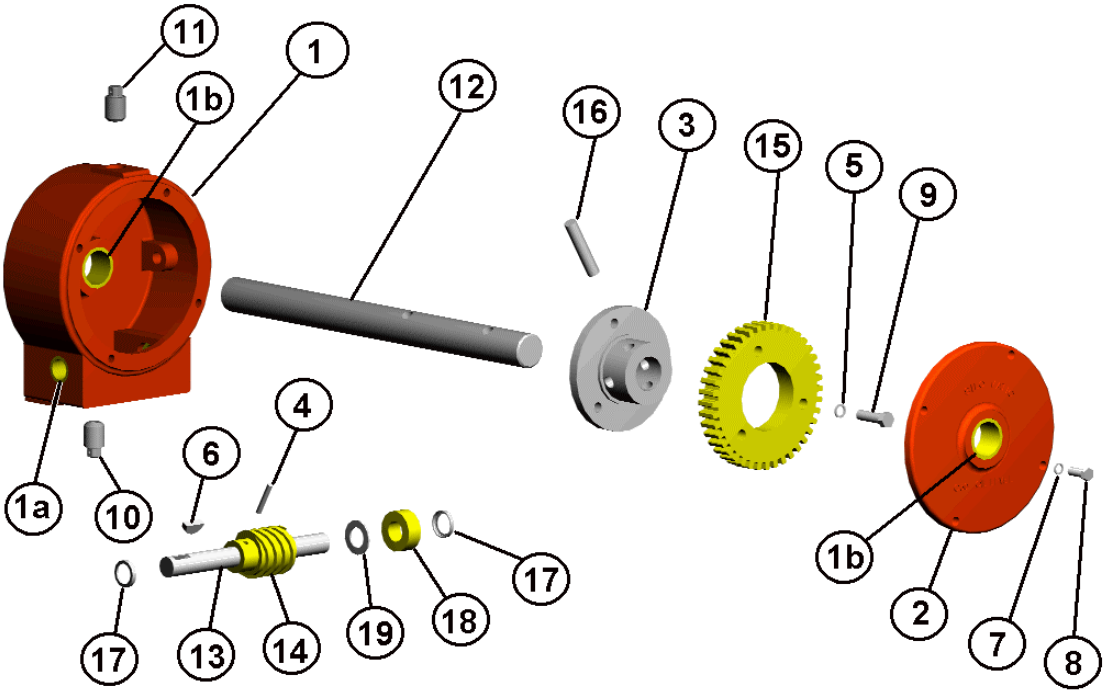
WIRING DIAGRAM FOR CONTROL BOX\SAFETY SWITCH





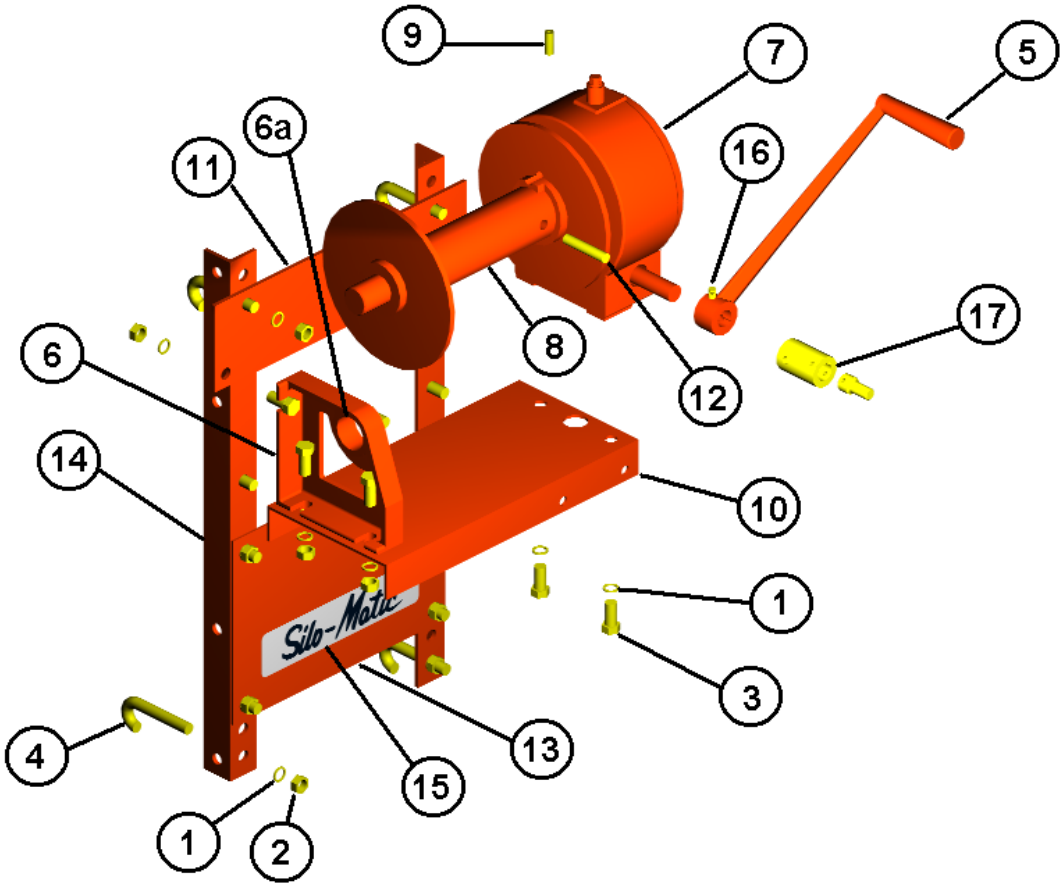
ITEM	DESCRIPTION	PART #
1	Terminal Block #1	(5) S6207, (2) S6214, (1) S6215
2	Ground Bar	S0477
3	Fuse Holder	S0454
4	Ammeter	S0398
5	Contactor- 3 Phase Contactor- 1 Phase	S6201-02 S6201-01
6	Terminal Block #2	S1029
7	Keyed Switch	S6221
8	Pilot Light	S0397
9	Switch/Pilot Light	S6209
10	Momentary Switch Weatherproof Cover Guard	S6203 S6204 S6210
11	Trouble Light Handle Trouble Light Guard Enclosure	S6202 S6216 S6200

Silo-Matic A0156 WINCH GEARBOX ASSEMBLY



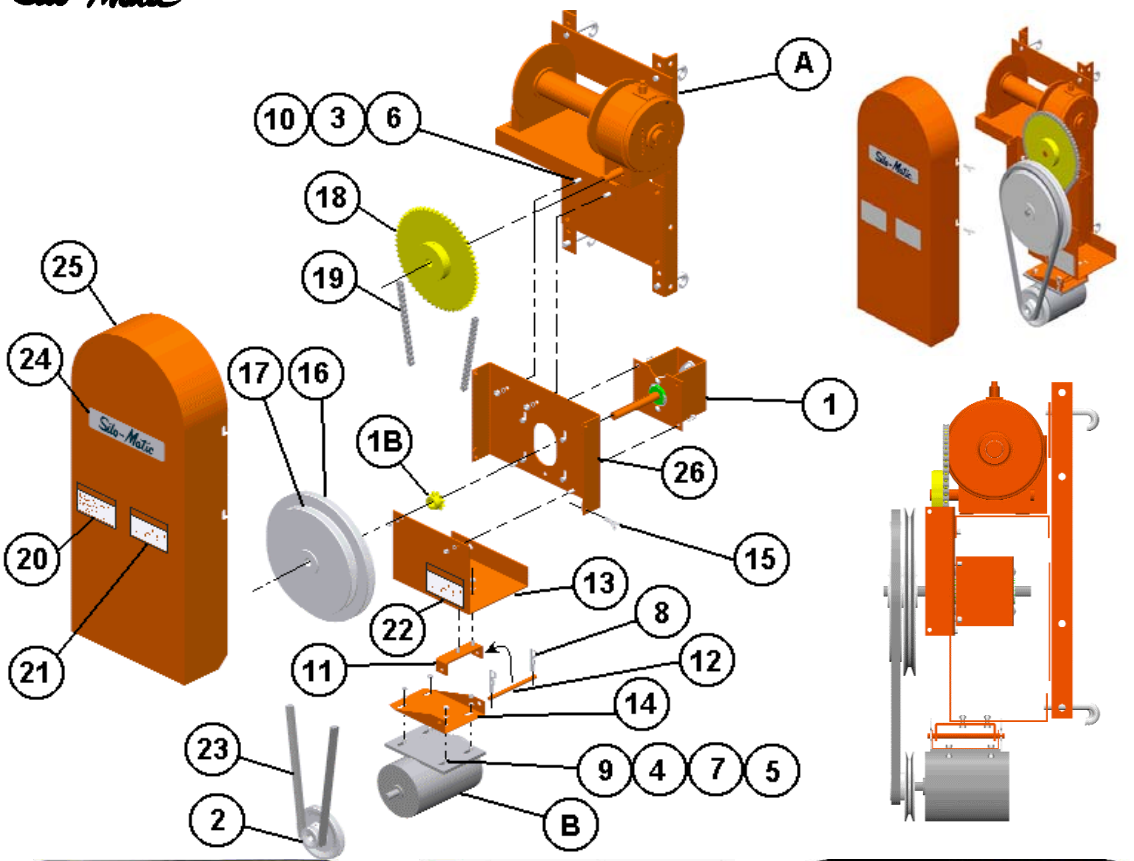
PC#	PART #	DESCRIPTION	QTY.
1	A0165	Gear Housing & Bushing	1
1A	S0225	Sleeve, .752 x 1.0025 x .750	2
1B	S0034	Bushing, 1.252 x 1.502 x 1"	2
2	A0166	Winch Housing Cover & Bushing	1
3	C0053	Worm Gear Hub-Oil Bath Winch	1
4	G273336	Spring Pin, 3/16" x 1-1/4"	1
5	G103321	Washer, Lock 3/8" ZP	3
6	G106751	Woodruff Key, #9 (3/16 x 3/4)	1
7	G120214	Washer, Lock 5/16" ZP	4
8	G180077	HHCS 5/16nc x 3/4 G5 ZP	4
9	G180124	HHCS 3/8nc x 1 1/4" G5 ZP	3
10	G444588	Plug, Pipe, Square 1/2" NPT	1
11	M0320	Vented Pipe Plug, 1/2"	1
12	M0394	Spool Shaft-Oil Bath Winch	1
13	M0397	Worm Shaft-Oil Bath Winch	1
14	S0076	Worm, RH, Single Thread	1
15	S0077	Worm Gear, RH Single Thread Winch	1
16	S0214	Spring Pin, 7/16 x 2 1/4	1
17	S0226	Seal, 3/4" Grease-Input	2
18	S0603	Bearing, Thrust 3/4"	1
19	S0059	Machinery Bushing	AR

1335X OIL BATH WINCH ASSEMBLY



PC#	PART#	DESCRIPTION	QTY.
1	G103323	Washer, Lock 1/2" ZP	6
2	G120378	Nut, 1/2NC Hex ZP	10
3	G180173	HHCS 1/2NC x 1" G5 ZP	6
4	M0081	Bolt, "J" (Winch Mounting)	4
5	A0051	Crank	1
6	A0155	Winch End Bearing Assembly	1
6A	S0034	Bushing, 1-1/4 x 1-1/2 x 1"	1
7	A0156	Winch Gear Box-Oil Bath	1
8	C0051	Winch Spool-Oil Bath Winch	1
9	G102597	Setscrew, 3/8NC x 1" Socket	1
10	M0387	Main Support Channel-Oil Winch	1
11	M0388	Back Plate-Oil Bath Winch	1
12	S0214	Spring Pin, 7/16" x 2 1/4	1
13	M0324	Winch Plate, Tie	1
14	M0386	Vertical Angle-Oil Bath Winch	2
15	S1195	Decal, Silo-Matic (3.25 x 11.5)	1
16	G102581	Setscrew, 5/16NC x 3/8" Socket	1
17	A0167	Electric Drill Adapter	1

Silo-Matic 1356X TWO-SPEED POWER WINCH ATTACHMENT



S0934 #20

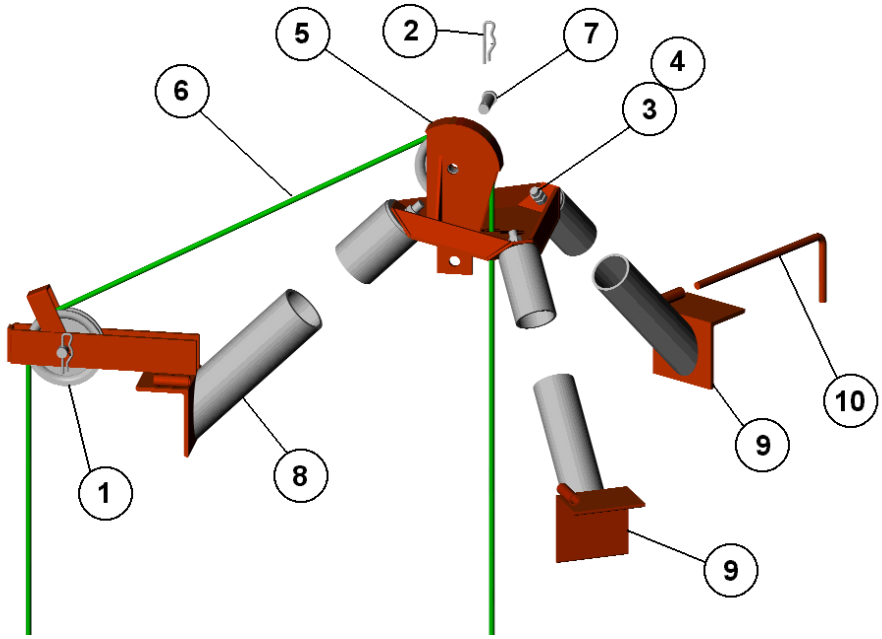
S0935 #21

S1035 #22

PC	PART#	DESCRIPTION	QT
1	A0160	Jackshaft Assembly	1
1B	S0219	40B10 Sprocket, 3/4" Bore	1
2	C0054	Sheave, 2 Groove	1
3	G103321	Washer, Lock 3/8" ZP	2
4	G120214	Washer, 5/16" Lock	12
5	G120376	Nut, 5/16NC Hex	12
6	G120377	Nut, 3/8NC Hex ZP	2
7	G120393	Washer, 5/16" Flat	8
8	G137185	Cotter Pin, 1/8" x 1"	2
9	G180077	Bolt, 5/16NC x 3/4" Hex	8
10	G180120	HHCS 3/8NC x 3/4" G5 ZP	2
11	M1979	Motor Support Bracket	1
12	M1980	Motor Bracket Pin	1
13	M1981	Bracket, 2 Speed Drive	1
14	M1982	Motor Mount Plate	1

PC	PART#	DESCRIPTION	QT
15	S0108	Thumb Screw, 1/4NC x 3/4"	4
16	S0215	Sheave, 12" OD 3/4" Bore	1
17	S0216	Sheave, 10" OD 3/4" Bore	1
18	S0222	40B60 Sprocket, Bore	1
19	S0223	#40 Roller Chain	1
20	S0934	Decal: "Caution Keep"	1
21	S0935	Decal, Keep Hands ...	1
22	S1035	Decal: Shield Is Off	1
23	S1064	Belt	1
24	S1195	Decal, Silo-Matic	1
25	W0237	Drive Shield W/Decals	1
26	W0238	Mounting Plate	1
A	1335X	Winch Gearbox (Ref.)	
B		Electric Motor (Ref.)	

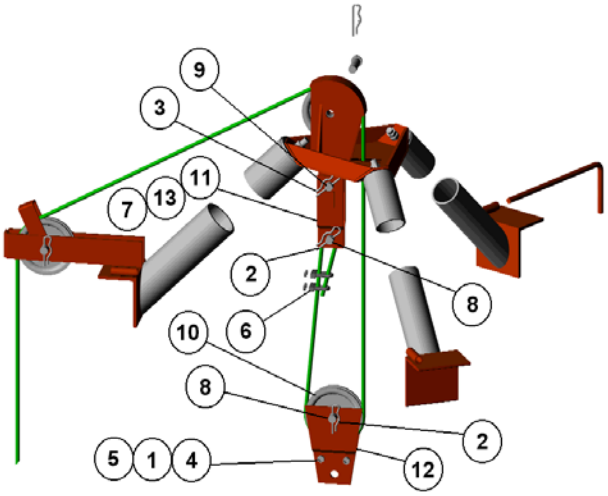
Silo-Matic TRIPOD & CABLE



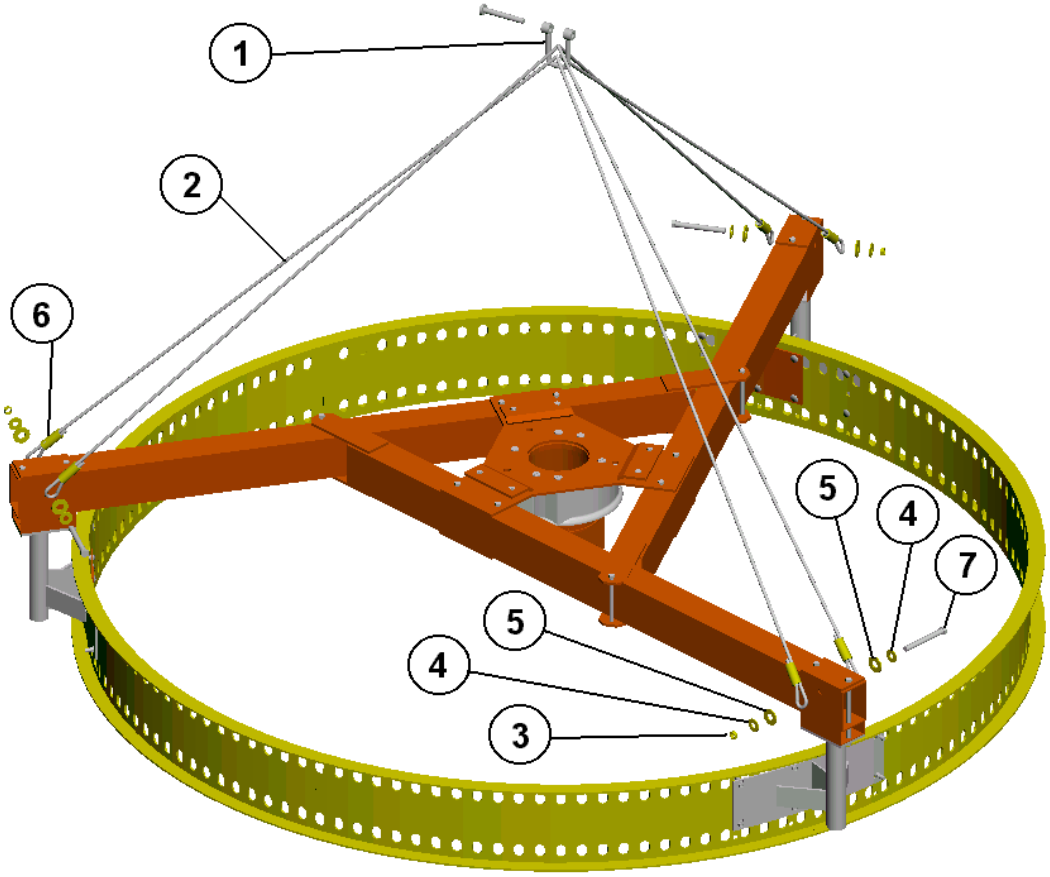
PC#	PART #	DESCRIPTION	QTY
1	A0168	Cable Pulley	2
2	G103397	Cotter Pin, 5/32" x 1-1/4"	2
3	G120238	1/2nc Hex Jam Nut	3
4	G120378	1/2nc Hex Nut	3
5	W0977	Top Plate Weldment	1
6	RM30030	5/16" Aircraft Cable (Per Foot)	AR
7	S1267	Pin, 5/8 x 1-3/4"	2
8	W0979-XX	Tripod Leg, Cable (XX = Size)	1
9	W0978-XX	Tripod Leg, Plain (XX= Size)	2
10	M0096	Safety Hook	3

OPTIONAL DOUBLE CABLE SUSPENSION

PC	PART #	DESCRIPTION	QT
1	G103321	3/8" Lock Washer	2
2	G103397	Cotter Pin, 5/32" x 1-1/4"	2
3	G103409	Cotter Pin, 3/16" x 1-1/2"	1
4	G120377	3/8NC Hex Nut	2
5	G180120	HHCS 3/8NC x 3/4" G5	2
6	S0031	Cable Clamp	AR
7	S0166	Cable Thimble, 1/4"	1
8	S0484	Pin 5/8"x 1-1/4"	2
9	S1061	Clevis Pin, 5/8 x 2"	1
10	A0168	Cable Pulley	1
11	M0358	Side Plate, Double Cable	1
12	M0370	Clevis Plate	2
13	W0681	Side Plate With Tab	1



Silo-Matic GEMINI RING DRIVE CABLE SUSPENSION



PC	PART#	DESCRIPTION	QT
1	S0803	Shackle, 1/2 Galvanized, 2 Ton	1
2	A0603	Cable Assembly	3
3	G9416450	Nut, 1/2NC Hex Centerlock	3
4	G120396	Washer, 1/2" Flat USS ZP	6
5	G130999	Washer, Flat 5/8" USS ZP	6
6	S0856	Sleeve, 1/4" Copper Oval	2
7	G111300	HHCS 1/2NC x 4 1/2" G8	3

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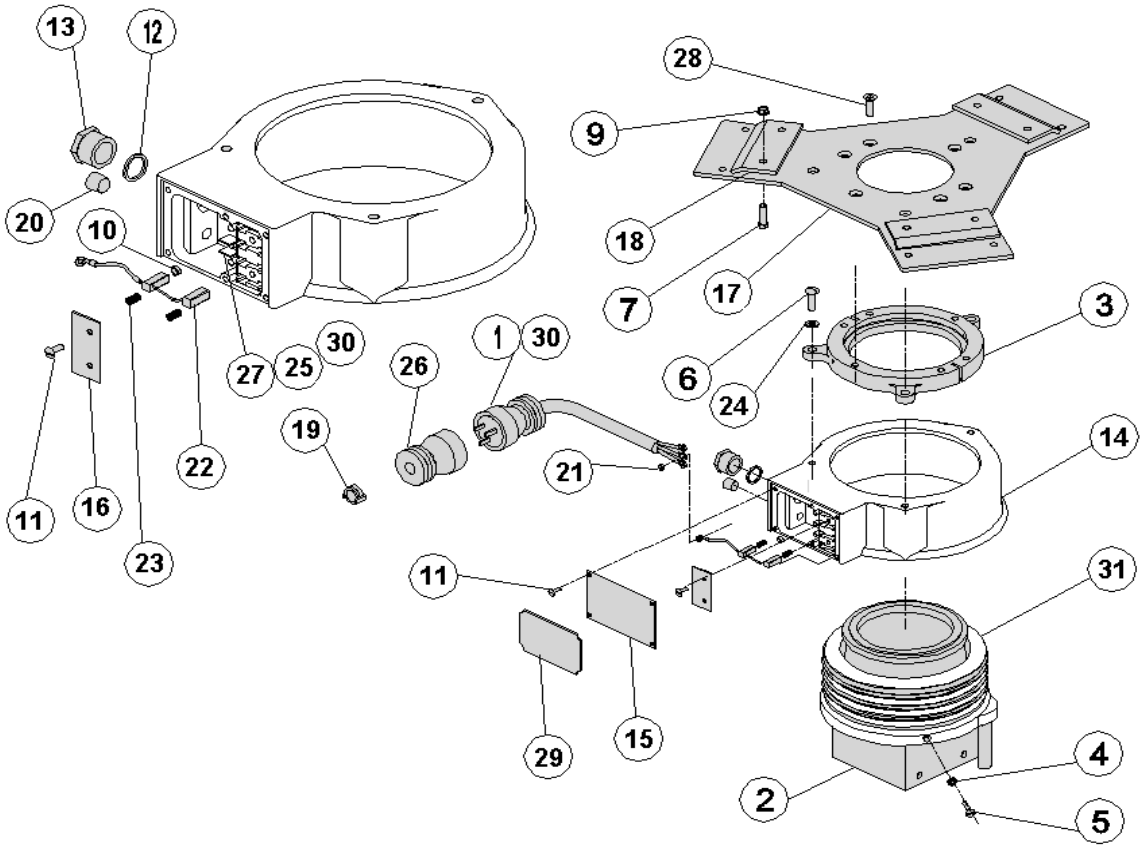
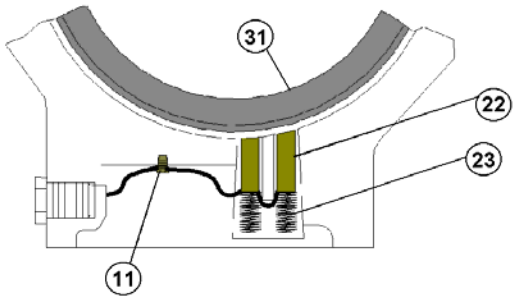
A0584 TRANSITION 1 PHASE + A0585 TRANSITION 3 PHASE



Note:The collector ring for single phase has 3 rings and the collector ring for 3 Phase has 4 copper rings. The Second ring from the bottom is internally grounded and marked "G." Green is the grounded connector throughout the unloader circuit.

PC	PART #	DESCRIPTION	QT
1	A0713	Power Cord Assembly, 1ph	1
2	C0010	Lower Transition	1
3	C0012	Support Ring	1
4	G120423	Washer, 1/4" Internal	6
5	G132281	Machscrew 1/4NC x 1-1/4"	3
6	G133167	Machscrew,3/8NC x 1 1/4	3
7	G180124	HHCS 3/8nc x 1 1/4" G5	6
8	G271291	Grease Fitting, 1/4-28	2
9	G9411507	Nut, 3/8nc Serrated Flange	6
10	G422976	Nut, 1/4nc Hex Jam Brass	3
11	G488325	#10-24 x 5/8 PAN PHIL	6
12	M0254	Rubber Washer 29/32"	1
13	M0255	Aluminum Bushing, 1.25"	1
14	M0336	Outer Collector Ring	1
15	M0351	Terminal Cover	1
16	M0352	Brush Cover	1
17	M4246	Tri Arm Plate	1
18	M4285	Clamp Plate, Torque Arm	3
19	S0052	Romex Connector, 1"	1
20	S0088	#8 Cap-Plug	1
21	S0137	Wire Nut, Blue	1



PC	PART #	DESCRIPTION	QT
22	S0160	Dual Brush	3
23	S0180	Spring, #39	6
24	S0327	Washer, Rubber	3
25	S0388	Wire Connector, Insulated	2
26	S0469	Connector Female 50A	1
27	S0576	Insulator Strip	1
28	S0654	Socket Capscrew 3/8nc x 1	6
29	S1188	Unloader Serial# Decal	1
30	S1204	Decal, Tag Green Ground	1
31	W0090-C	Inner Collector 1 Phase	1
	W0090-D	Inner Collector 3 Phase	1

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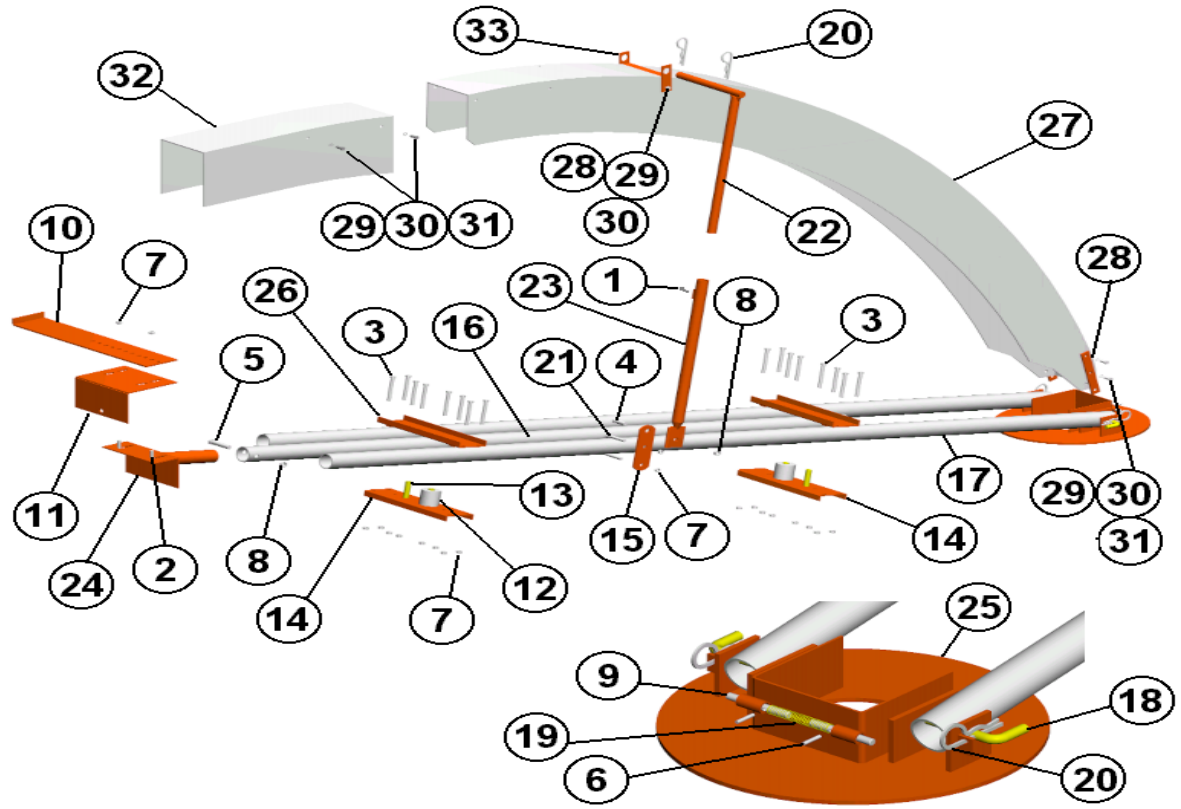
GOOSENECK & TORQUE ARM



PC	PART#	DESCRIPTION	QT		PC	PART#	DESCRIPTION	QT
1	G102894	SetScrew 3/8nc x 3/4" Square	1		17	M4348	Torque Arm Pipe, 20' 102"	2
2	G120915	Carriage Bolt, 3/8NC x 1" ZP	2		17	M4349	Pipe, Torque Arm, 22' 114"	2
3	G122207	HHCS 3/8NC x 3" G2 ZP	16		17	M4350	Pipe, Torque Arm, 24' 102"	2
4	G180175	HHCS 1/2NC x 1 1/4" G5	1		18	M4393	Pin, Torque Arm Pivot	2
5	G180185	HHCS 1/2NC x 2 1/2" G5	1		19	S0411	Spring, #316 Stainless	1
6	G273336	Pin, Spring 3/16 x 1 1/4"	2		20	S0415	Hitch Pin Clip #8	4
7	G9411507	Nut, 3/8NC Serrated Flange	20		21	S0647	U Bolt 3/8 x 2 x 2 5/8"	1
8	G9416450	Nut, 1/2NC Hex Centerlock	2		22	W0265	Upper Support	1
9	M1848	Gooseneck Release Pin	2		23	W0267	Adj. Support	1
10	M2269	Strap, Torque Arm Extension	1		24	W0809	Adj. Head Torque Arm	1
11	M4211	Adj. Torque Arm Head	1		25	W0815	Plate, Torque Arm	1
12	M4221	Torque Arm Roller	2		26	W0854	Upper Torque Arm Bracket	2
13	M4222	Torque Arm Spacer	4		27	M0462	Gooseneck Long 16-24'	1
14	M4223	Torque Arm Bracket	2		28	M1863	Gooseneck Pivot Bracket	2
15	M4286	Bracket, Gooseneck Support	1		29	G125655	Machine Screw 5/16NC x 3/4"	10
16a	M4345-14	66" Center Pipe for 14-16'	1		30	G120214	Washer, Lock 5/16" ZP	13
16b	M4346	78" Center Pipe for 18-24'	1		31	G120376	Nut, 5/16NC Hex ZP	13
17	M4345-14	Torque Arm Pipe, 14' 66"	2		32	M0492-36	Gooseneck Extension 36"	1
17	M4346	Torque Arm Pipe, 16' 78"	2		33	W0264	Support Adapter	1
17	M4347	Torque Arm Pipe, 18' 90"	2					

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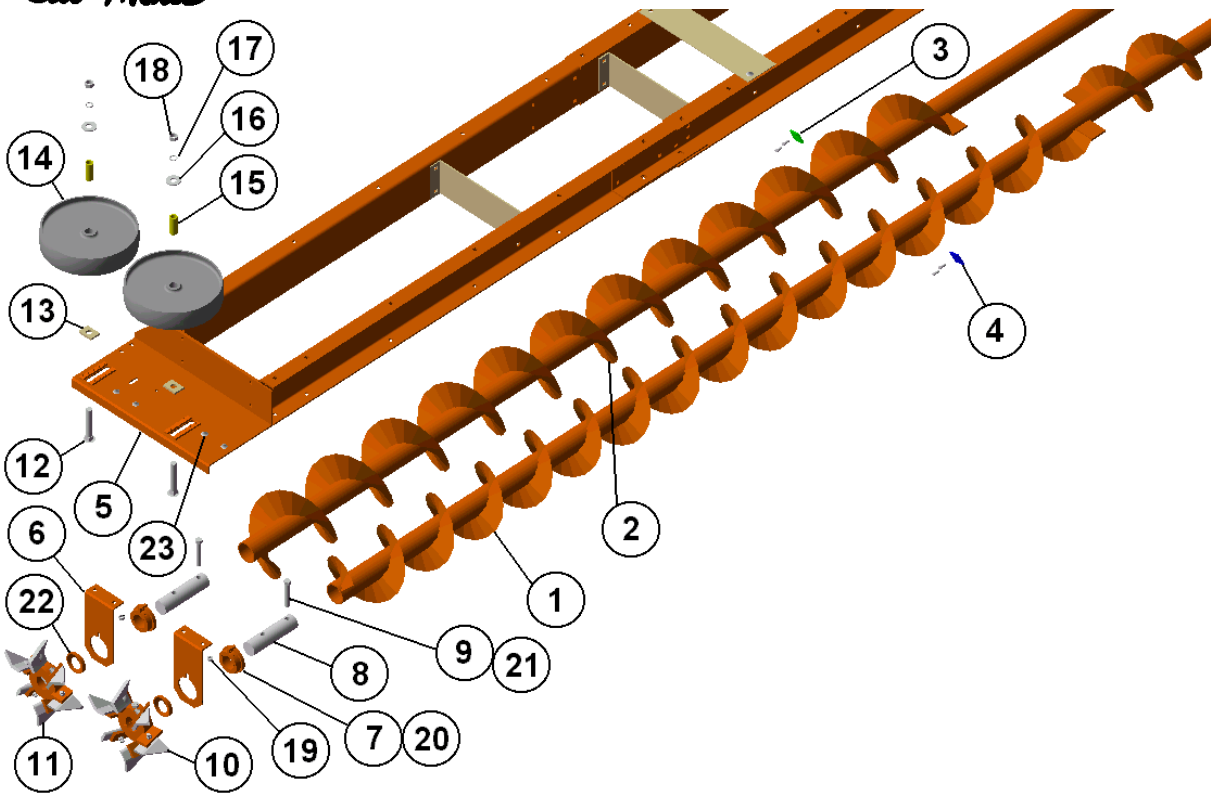
AUGERS, WALL CLEANERS & OUTER END

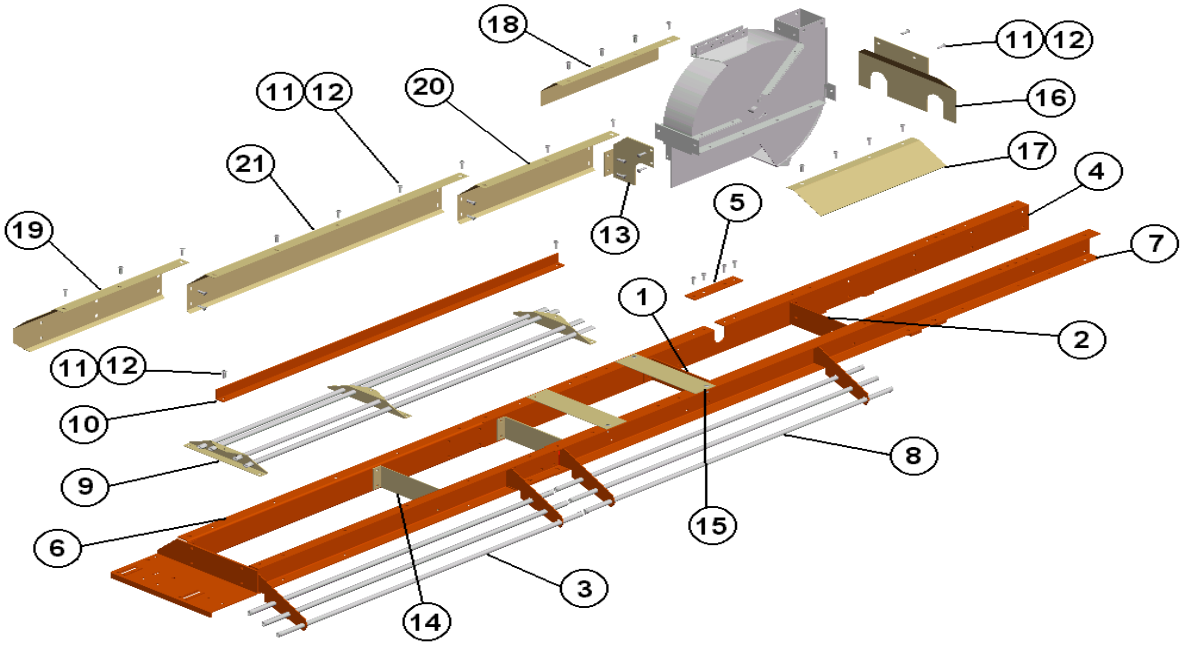


PC	PART #	DESCRIPTION	QT
1	W0883	12' Front Auger 84-3/8"	1
	W0884	14' Front Auger 96-3/8"	
	W0885	16' Front Auger, 108-3/8"	
	W0886	18' Front Auger 120-3/8"	
	W0887	20' Front Auger 132-3/8"	
	W0888	22' Front Auger 144-3/8"	
	W0889	24' Front Auger 156-3/8"	
2	W0876	12' Rear Auger 81-7/8"	1
	W0877	14' Rear Auger 93-7/8"	
	W0878	16' Rear Auger 105-7/8	
	W0879	18' Rear Auger 117-7/8"	
	W0880	20' Rear Auger 129-7/8"	
	W0881	22' Rear Auger 141-7/8"	
	W0882	24' Rear Auger 153-7/8"	
3	1007R	RH Auger Knive Kit (50 Each)	1
4	1007R-LH	LH Auger Knive Kit (50 Each)	1
5	W0890	Outer Bracket	1
6	M4540	Bearing Plate	2
7	A0032	Auger Bearing With Oilite	2
8	M4623	Wall Cleaner Shaft	2

PC	PART #	DESCRIPTION	QT
9	G180190	1/2NC x 3" Hex Bolt Gr. 5	2
10	A0594	Wall Cleaner Lead	1
11	A0556	Wall Cleaner Rear	1
12	G126849	Carriage Bolt, 5/8NC x 3-1/2"	2
13	M1875	Serrated Washer	2
14	M4194	Wall Wheel	2
15	M0078	Bushing, Wall Wheel	2
16	G130999	Washer, 5/8" Flat	6
17	G121574	Washer, 5/8" Lock	2
18	G124589	Nut, 5/8NC Hex	2
19	G9411507	3/8NC Serrated Flange Nut	4
20	G103409	Cotter Pin 3/16" x 1-1/2"	2
21	G9416450	1/2NC Hex Locknut	2
22	M4622	Spacer, Wall Cleaner	2
23	G120915	3/8NC x 1" Carriage Bolt	4

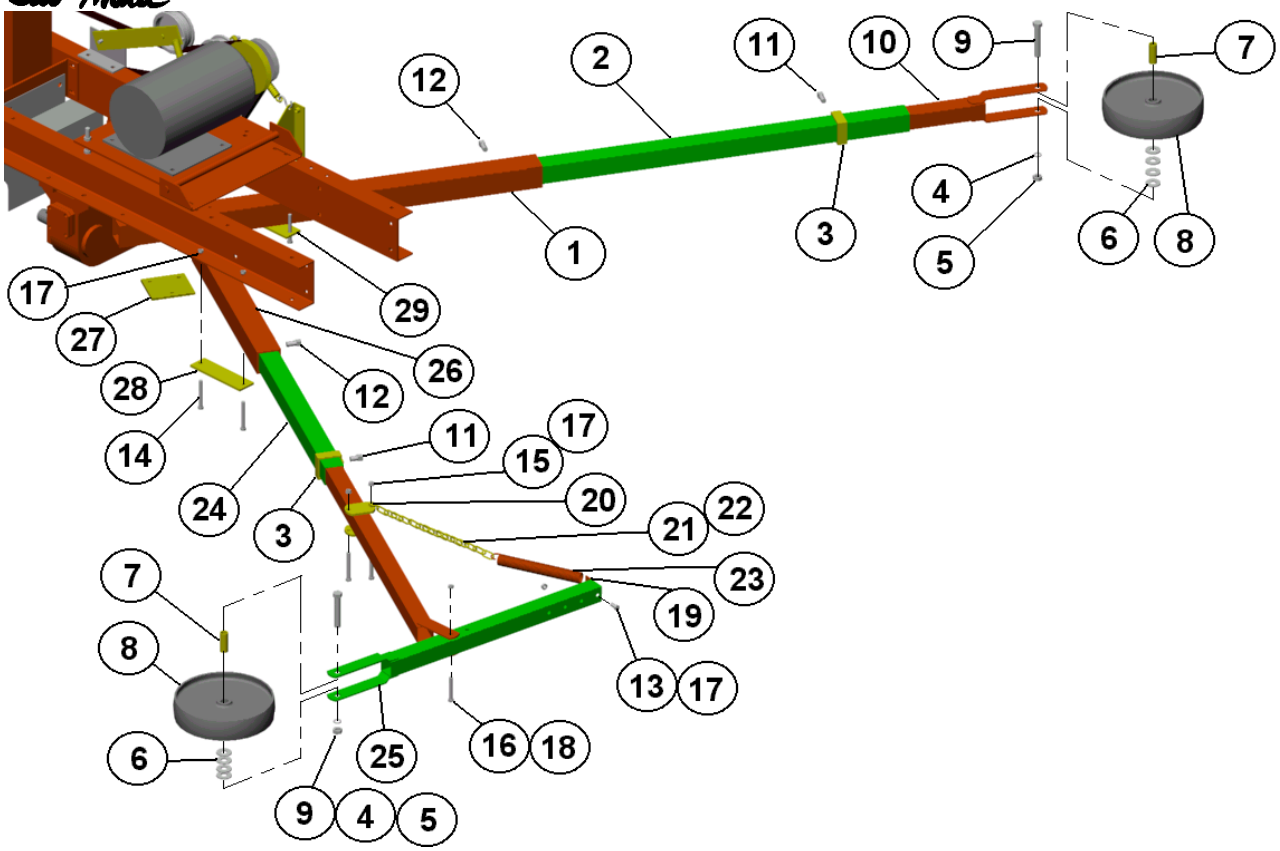
1010R WALL CLEANER KNIVE KIT W/ BOLTS (REQUIRES 2)

Silo-Matic GEMINI RING DRIVE FRAME AND COVERS



PC	PART #	DESCRIPTION	QT	PC	PART #	DESCRIPTION	QT
1	M4544	Frame Spacer	2	10	M4573	12' Counter Wt Angle 18.5"	1
2	M4543	Rotor Hsng Mounting Brkt.	1		M4574	14' Counter Wt Angle 30.5"	
3	A0630	12' Outer Bumper Ass'y	1		M4575	16' Counter Wt Angle 42.5"	
	A0667	14' Outer Bumper Ass'y			M4576	18' Counter Wt Angle 54.5"	
	A0668	16' Outer Bumper Ass'y			M4577	20' Counter Wt Angle 66.5"	
	A0669	18' Outer Bumper Ass'y			M4578	22' Counter Wt Angle 78.5"	
	A0670	20' Outer Bumper Ass'y			M4579	24' Counter Wt Angle 90.5"	
	A0671	22' Outer Bumper Ass'y		11	G120915	3/8NC x 1" Carriage Bolt	AR
	A0672	24' Outer Bumper Ass'y		12	G9411507	3/8NC Serrated Flange Nut	AR
4	W0872	Rear Main Frame Channel	1	13	M4555	Auger Deflector	1
5	M4537	Channel Strap	1	14	M4787	Frame Spacer, Galvanized	2
6	M4529	12' Channel Ext. 9.5"	2	15	M4666	Filler Plate	2
	M4530	14' Channel Ext. 21.5"		16	M4541	Deflector	1
	M4531	16' Channel Ext. 33.5"		17	M4644	Front Rotor Housing Shield	1
	M4532	18' Channel Ext. 45.5"		18	M4643	Rear Rotor Housing Shield	1
	M4533	20' Channel Ext. 57.5"		19	M4549	Outer Rear Shield	1
	M4534	22' Channel Ext. 69.5"		20	M4550	Standard Rear Shield	1
	M4535	24' Channel Ext. 81.5"		21	M4551	14' Rear Aug. Shield, 12"	1
7	W0871	Front Main Frame Channel	1		M4552	16' Rear Aug. Shield, 24"	1
8	A0631	Inner Bumper Ass'y 59.75"	1		M4553	18' Rear Aug. Shield, 36"	1
9	A0629	12' Outergrill Pipe 19.5"	1		M4554	20' Rear Aug. Shield, 48"	1
	A0661	14' Outergrill Pipe 31.5			M4552	22' Rear Aug. Shield, 24"	1
	A0662	16' Outergrill Pipe 43.5"			M4553	22' Rear Aug. Shield, 36'	1
	A0663	18' Outergrill Pipe 55.5"			M4553	24' Rear Aug. Shield, 36"	2
	A0664	20' Outergrill Pipe 67.5"					
	A0665	22' Outergrill Pipe 79.5"					
	A0666	24' Outergrill Pipe 91.5"					

TENSION AND SPREADER WHEEL ASSEMBLIES



PC	PART #	DESCRIPTION	QT
1	W0911	Spreader Arm Weld	1
2	M4868	12'-16' Guide Arm 12/14"	1
	M4722	18'-20' Guide Arm 48"	
	M4723	22'-24' Guide Arm 72"	
3	W0807	Lock Collar	2
4	G121574	Washer, 5/8" Lock ZP	2
5	G124589	Nut 5/8NC Hex ZP	2
6	G130999	Washer, Flat 5/8" ZP	8
7	M0078	Bushing, Wall Wheel	2
8	M4194	Wall Wheel	2
9	G428709	HHCS 5/8NC x 3-1/2" G2	2
10	W0813	Ext. Spreader Arm 36"	1
11	G112994	Setscrew, 1/2NC x 3/4"	2
12	G110450	Setscrew, 1/2NC x 1"	2
13	G122119	HHCS 3/8NC x 3/4" G2	1
14	G122207	HHCS 3/8NC x 3" G2 ZP	8
15	G125973	HHCS 3/8NC x 3-1/2" G2	1

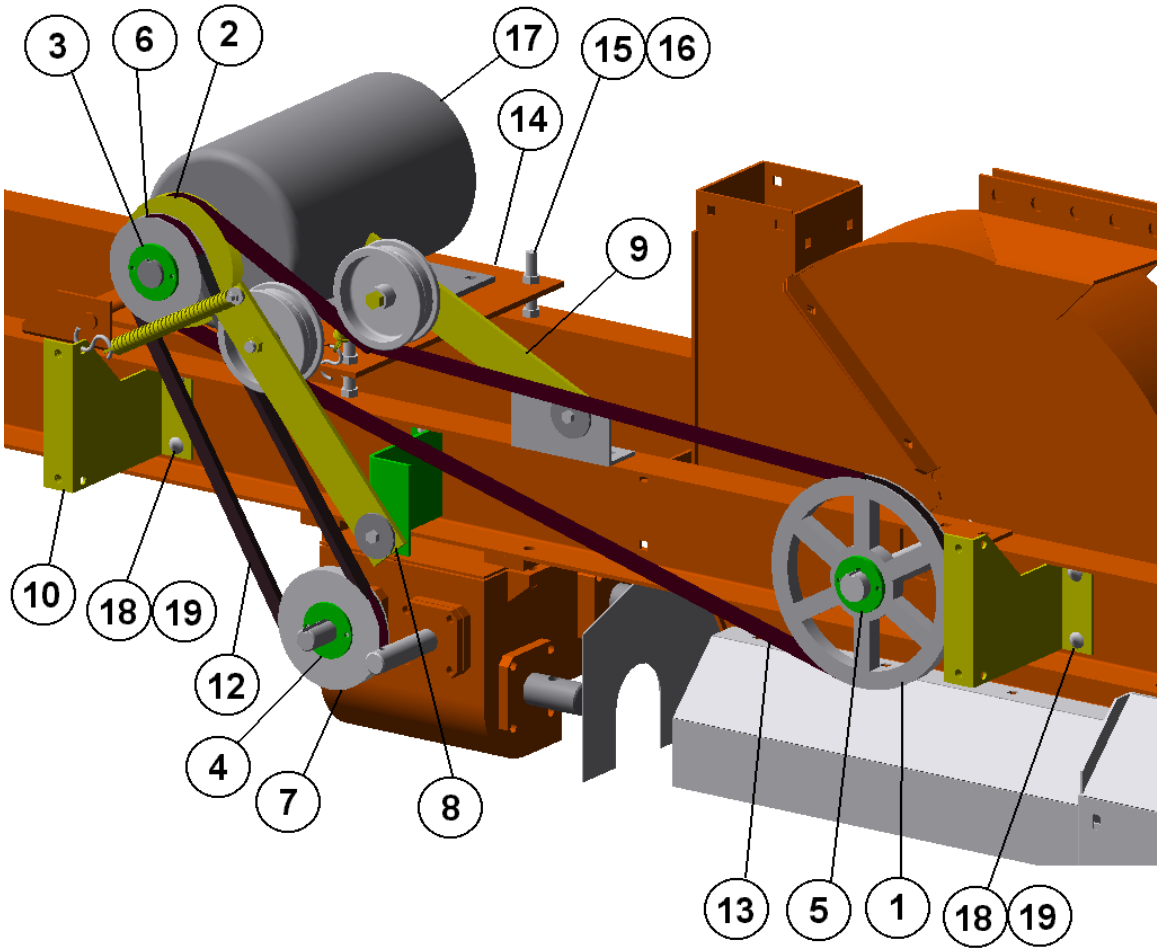
PC	PART #	DESCRIPTION	QT
16	G180134	HHCS 3/8NC x 2-1/2" G5 ZP	1
17	G9411507	HHCS 3/8NC x 3/4" G2 ZP	12
18	G9414201	3/8NC Centerlock Hexnut	1
19	M4216	Spring Angle	1
20	M4284	Clamp Plate, Spreader Arm	2
21	M4473	Tension Wheel Chain 21"	1
22	S0089	S-Hook #105	1
23	S0649	Extension Spring	1
24	W0812	Tension Wheel Ext. Arm	1
25	W0814	Tension Wheel Pivot Arm	1
26	W0910	Tension Arm Weldment	1
27	M4715	Tension Arm Connector	2
28	M4717	Clamp Plate Rear	1
29	M4716	Clamp Plate Front	1

A0606 Spreader Arm Assembly 12-16'
A0674 Spreader Arm Assembly 18-20'
A0675 Spreader Arm Assembly 22-24'

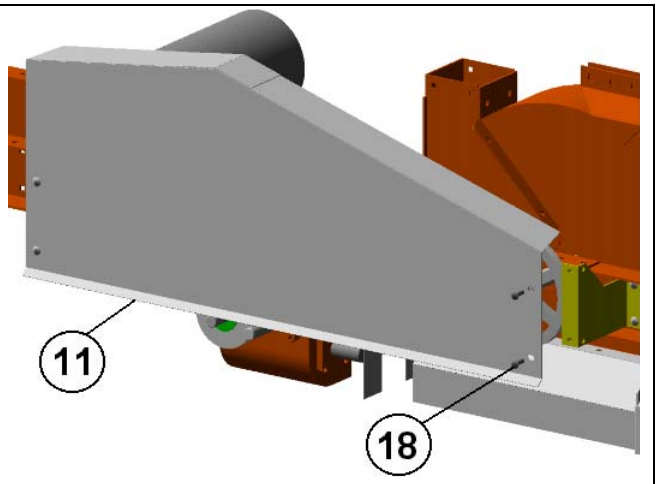
A0607 Tension Arm Assembly 12-16'
A0676 Tension Arm Assembly 18-20'
A0677 Tension Arm Assembly 22-24'

Silo-Matic

GEMINI MOTOR DRIVE

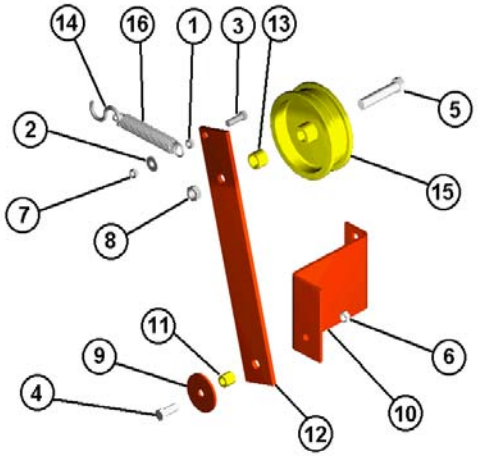


PC	PART#	DESCRIPTION	QT
1	S0281	Sheave BK95H	1
2	S0894	Sheave BK57H	1
3	S0263	Taper Hub (Specify Bore)	2
4	S0263-2	Taper Hub 1" Bore	1
5	S0263-4	Taper Hub 1-1/4" Bore	1
6	S0795	Sheave, BK47H	1
7	S0465	Sheave, BK52H	1
8	A0600	Gearbox Belt Tightener	1
9	A0601	Rotor Belt Tightener	1
10	A0595	Mounting Bracket, Belt Guard	2
11	W0900	Belt Guard	1
12	S1026	Belt, B-45	1
13	S0286	Belt, B-90	1
14	W0874	Motor Mount Weldment	1
15	S0804	1/2NC x 2.50 Full Thread Bolt	2
16	G120378	1/2NC Hex Nut	4
17		Motor, 5 Hp - 7.5 Hp	1
18	G120915	3/8NC x 1" Carriage Bolt	8
19	G9411507	3/8NC Serrated Flange Nut	8



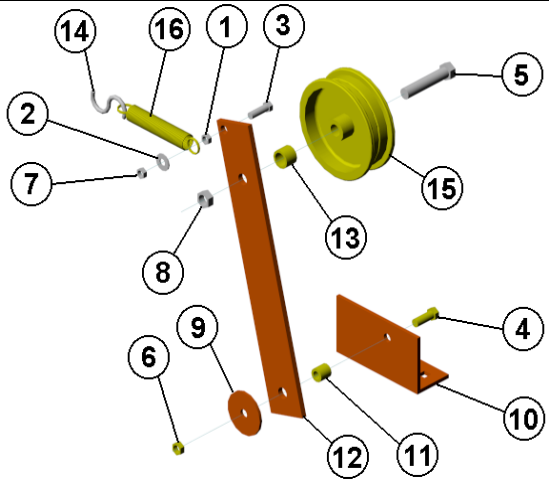
Silo-Matic BELT TIGHTENER ASSEMBLIES

A0600 GEARBOX BELT TIGHTENER



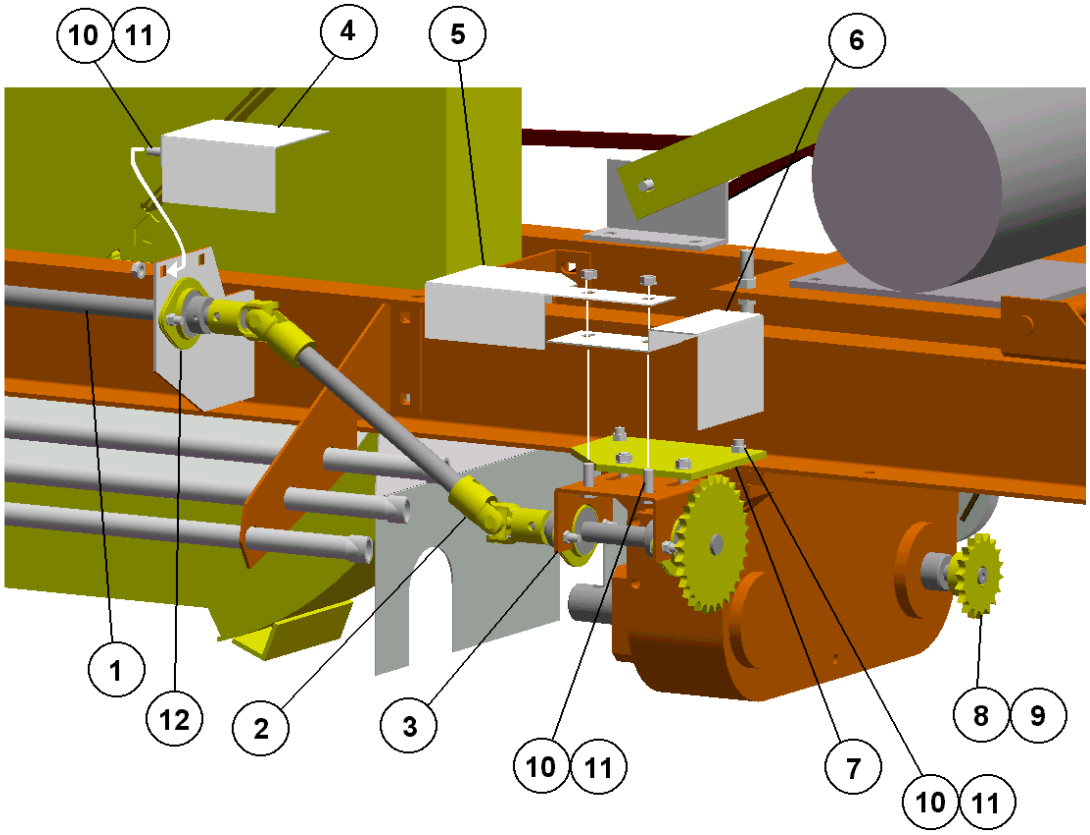
PC	PART #	DESCRIPTION	QT
1	G120376	Nut, 5/16NC Hex ZP	1
2	G120393	Washer, Flat 5/16" ZP	1
3	G122017	HHCS 5/16NC x 1" G5	1
4	G180122	HHCS 3/8NC x 1" G5 ZP	1
5	G180185	HHCS 1/2NC x 2 1/2" G5	1
6	G9414201	Nut, 3/8NC Hex Centerlock	1
7	G9415987	Nut, 5/16NC Hex Centerlock	1
8	G9416450	Nut, 1/2NC Hex Centerlock	1
9	M4232	Washer, Belt Tightener	1
10	M4624	Mounting Brkt Gearbox Belt	1
11	M4626	Spacer Bushing	1
12	M4627	Belt Tightener Strap	1
13	M4653	Spacer, Idler Bushing	1
14	S0089	S Hook #105	1
15	S0792	Pulley Idler	1
16	S0800	Spring, Belt Tightener	1

A0601 ROTOR BELT TIGHTENER



PC	PART #	DESCRIPTION	QT
1	G120376	Nut, 5/16NC Hex ZP	1
2	G120393	Washer, Flat 5/16" ZP	1
3	G122017	HHCS 5/16NC x 1" G5	1
4	G180122	HHCS 3/8NC x 1" G5 ZP	1
5	G180185	HHCS 1/2NC x 2 1/2" G5	1
6	G9414201	Nut, 3/8NC Hex Centerlock	1
7	G9415987	Nut, 5/16NC Hex Centerlock	1
8	G9416450	Nut, 1/2NC Hex Centerlock	1
9	M4232	Washer, Belt Tightener	1
10	M4625	Belt Tightener Mounting	1
11	M4626	Spacer Bushing	1
12	M4627	Belt Tightener Strap	1
13	M4653	Spacer, Idler Bushing	1
14	S0089	S Hook #105	1
15	S0792	Pulley Idler	1
16	S0800	Spring, Belt Tightener	1

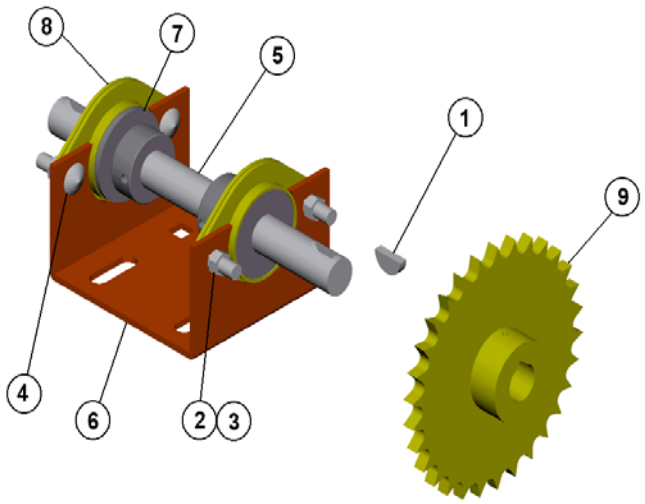
GEMINI RING DRIVE LINE SHAFT DRIVE ASSEMBLY



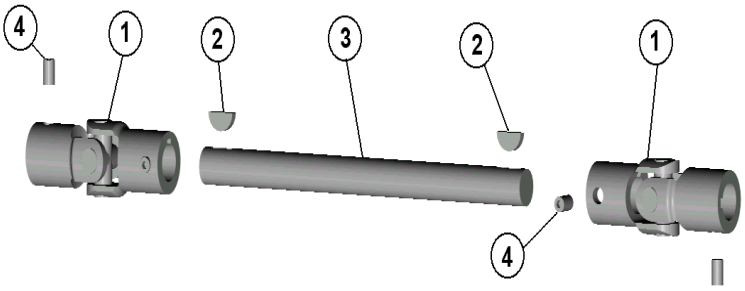
PC	PART	DESCRIPTION	QT		PC	PART	DESCRIPTION	QT
1	M4662	Slide Shaft	1		7	M4736	Jack Shaft Support Plate	1
2	A0650	Line Shaft Assembly	1		8	S0645	Gearbox Sprocket 40B18	1
3	A0649	Jackshaft Assembly	1		9	S0859	Roller Chain	1
4	M4738	U-Joint Shield, Upper	1		10	G120915	BOLT, 3/8NC X 1" CRG	8
5	M4718	U-Joint Shield, Lower	1		11	G9411507	Nut, 3/8NC Serrated Flange	8
6	M5409	Chain Guard	1		12	A0651	Bearing Bracket Assembly	1

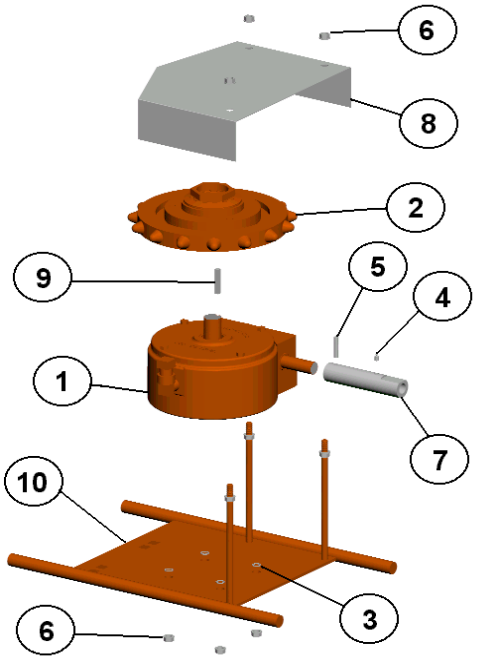
A0649 JACKSHAFT ASSEMBLY

PC	PART#	DESCRIPTION	QT
1	G106751	Woodruff Key, #9 (3/16x3/4)	2
2	G120214	Washer, Lock 5/16" ZP	4
3	G120376	Nut, 5/16NC Hex ZP	4
4	G126216	Carriage Bolt, 5/16NC x 3/4"	4
5	M4664	Jack Shaft 3/4"	4
6	M4733	Jack Shaft Bearing Bracket	1
7	S0217	Bearing, Insert, 3/4" Bore	2
8	S0218	Flange, Two-Bolt ZP	4
9	S0220	Sprocket, 40B30 x 3/4" Bore	1

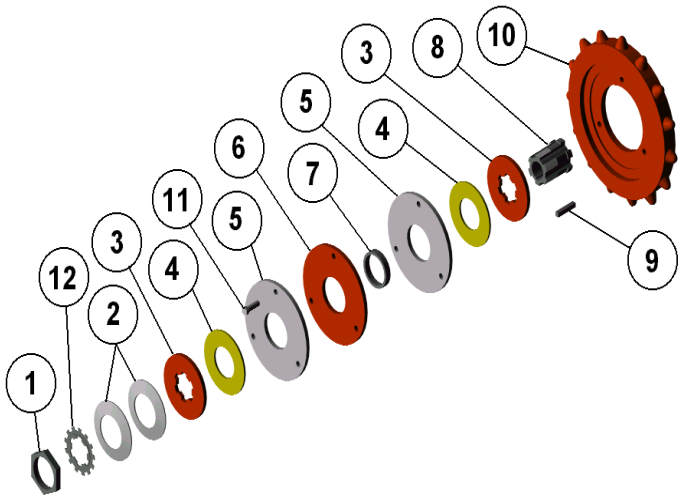


Silo-Matic	A0650 LINE SHAFT ASSEMBLY		
PC	PART #	DESCRIPTION	QT
1	S0858	U-Joint ,3/4"	2
2	G106751	#9 Woodruff Key	2
3	M4663	U-Joint Shaft	1
4	G102581	Setscrew 5/16-18NC X 3/8	4





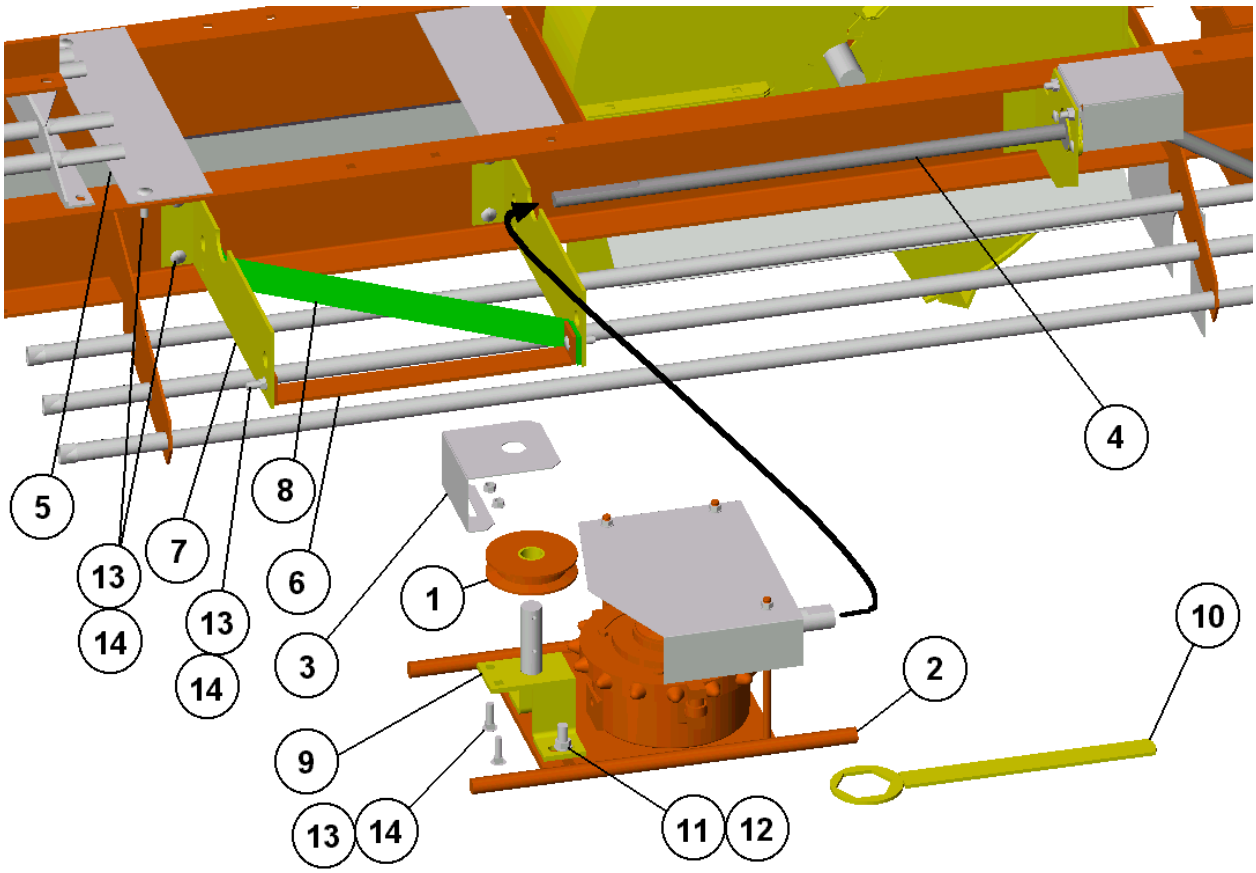
Silo-Matic A0678 RING GEARBOX & CLUTCH			
PC	PART#	DESCRIPTION	QT
1	A0562	Ring Gear Box Assembly	1
2	A0586	Sprocket & Clutch Assembly	1
3	G103321	Washer, Lock 3/8" ZP	4
4	G271291	Grease Fitting, 1/4-28	1
5	G454565	Pin, Spring 1/4 x 1 1/4"	1
6	G9411507	Nut, 3/8NC Serrated Flange	10
7	M4302	Slide Sleeve	1
8	M4665	Ring Drive Shield	1
9	S0690	Key, 1/4" Sq. x 1-1/2"	1
10	W0808	Mounting Ring Gear Box	1



Silo-Matic	A0586 SLIP CLUTCH ASSEMBLY		
PC	PART #	DESCRIPTION	QT
1	S0691	Adjuster Nut	1
2	S0646	Belleville Spring	2
3	S0692	Pressure Plate	2
4	S0693	Friction Disk	2
5	M4430	SS Clutch Plate	2
6	M4431	HR Clutch Plate	1
7	M4845	Spacer, Slip Clutch	1
8	S0695	Slip Clutch Hub	1
9	S0690	Key, 1/4" X 1/4" X 1-1/2"	1
10	C0207	Drive Sprocket	1
11	G122017	Bolt, 5/16NC X 1"	3
12	S0691-1	Locking Ring	1

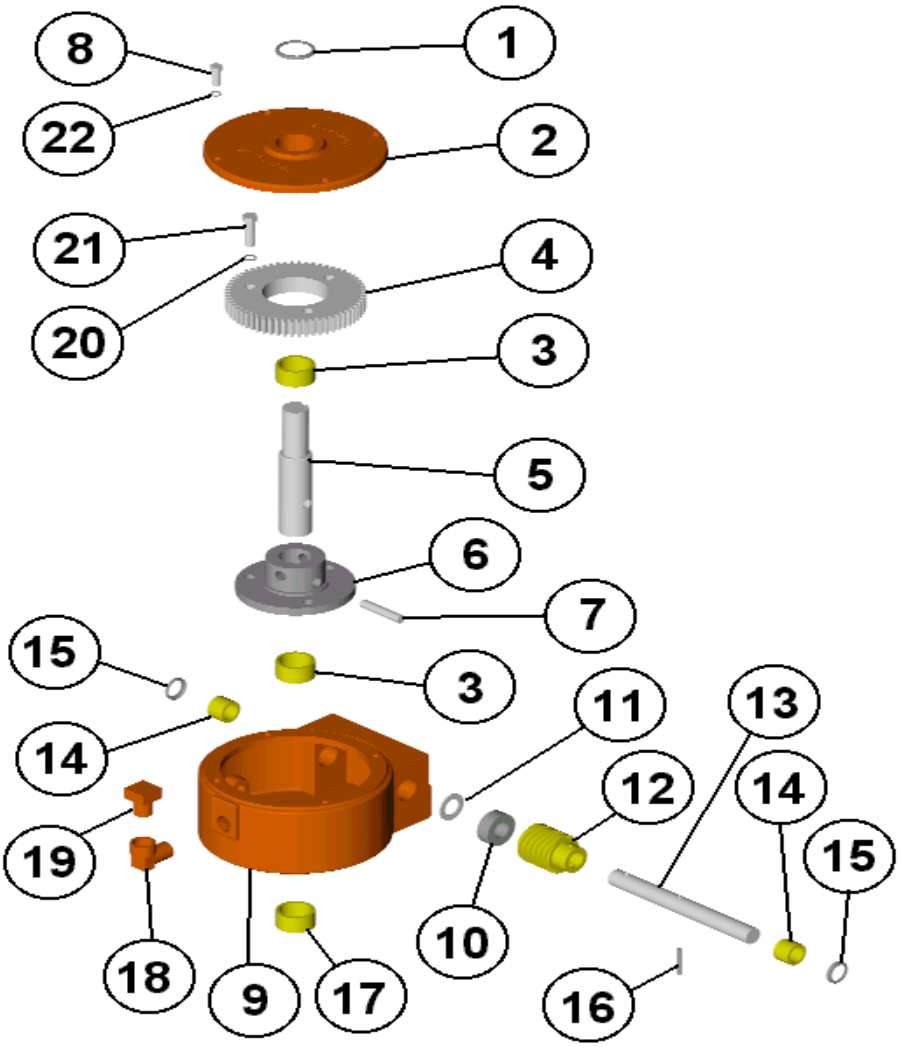
Silo-Matic

RING DRIVE ASSEMBLY



PC	PART#	DESCRIPTION	QT
1	A0539	Roller with Bushing	1
2	A0678	Ring Gear Box W/Clutch Assembly	1
3	M4400	Snubber Roller Shield-R26+GRD	1
4	M4662	Slide Shaft, 3/4"	1
5	M4666	Filler Plate	2
6	M4727	Tie Bar	1
7	M4731	Ring Drive Slide Support	2
8	M4735	Z Brace	1
9	W0831	Spindle	1
10	W0936	Wrench Clutch	1
11	G120917	Carriage Bolt, 1/2NC x 1-1/2 G5	2
12	G9415187	Nut, 1/2NC Serrated Flange ZP	2
13	G120915	Carriage Bolt, 3/8NC x 1" ZP G2	16
14	G9411507	Nut, 3/8NC Serrated Flange ZP	16

Silo-Matic RING GEAR BOX ASSEMBLY



PC	PART #	DESCRIPTION	QT	PC	PART #	DESCRIPTION	QT
1	S0256	1-1/4" Oil Seal	1	12	S0651	Worm	1
2	A0575	Cover Assembly	1	13	M4303	Input Shaft	1
3	S0652	1-1/2" OD Bearing Sleeve	2	14	S0225	Sleeve Bearing	2
4	S0650	Worm Gear	1	15	S0226	3/4" Grease Seal	2
5	M4328	Output Shaft	1	16	G273336	3/16" x 1-1/4" Spring Pin	1
6	C0053	Gear Hub	1	17	S0653	Expansion Plug	1
7	S0214	Spring Pin, 7/16 x 2 1/4	1	18	S0696	Street EL 1/2NPT x 1-1/2 x 90	1
8	G122017	5/16NC x 3/4" HEX BOLT	4	19	M0320	Vented Pipe Plug, 1/2NPT	1
9	A0574	Gear Housing	1	20	G103321	Washer, 3/8" Lock	3
10	S0603	Thrust Bearing	1	21	G122145	Hex Bolt, 3/8NC x 1-1/4"	3
11	S0059	Machinery Bushing	AR	22	G120214	Washer, 5/16" Hex Lock	4

SEE SERVICE BULLETIN ON NEXT PAGE FOR SPECIAL INSTRUCTIONS WHEN REBUILDING.

Silo-Matic

SERVICE BULLETIN

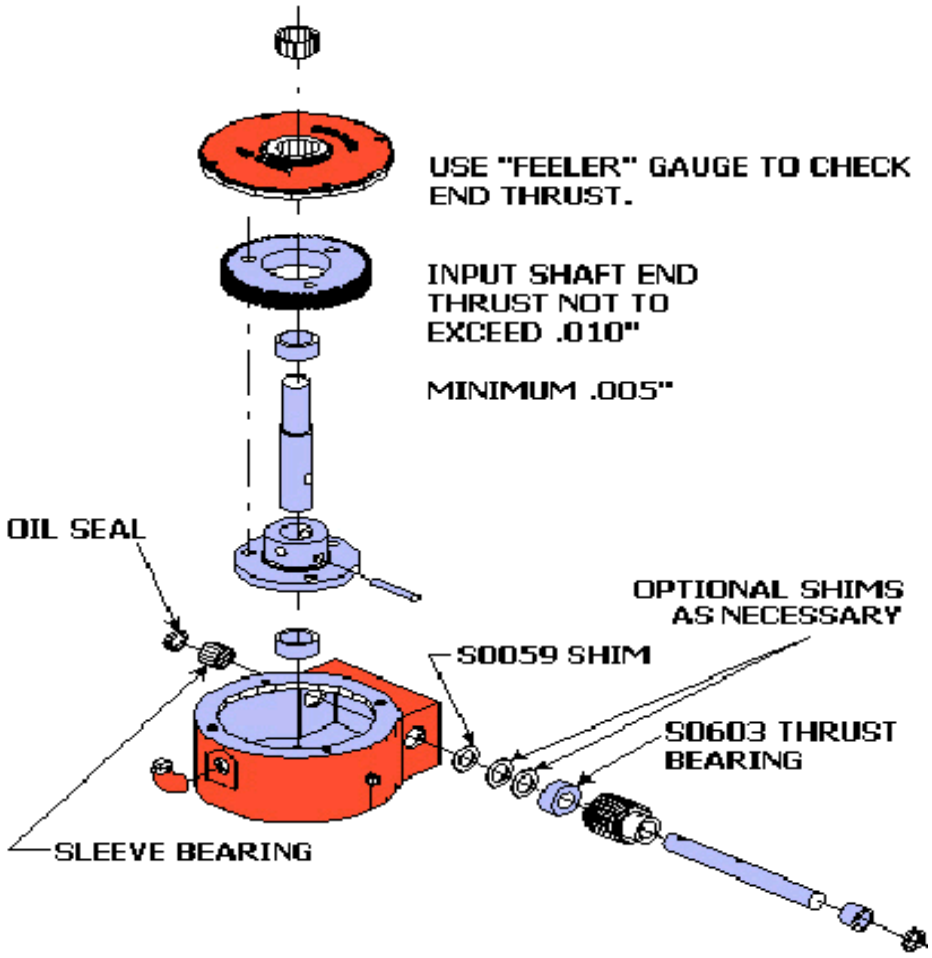
Bulletin 01-99

January 25, 1999

REBUILDING A0562 GEARBOX TO FACTORY SPECIFICATIONS

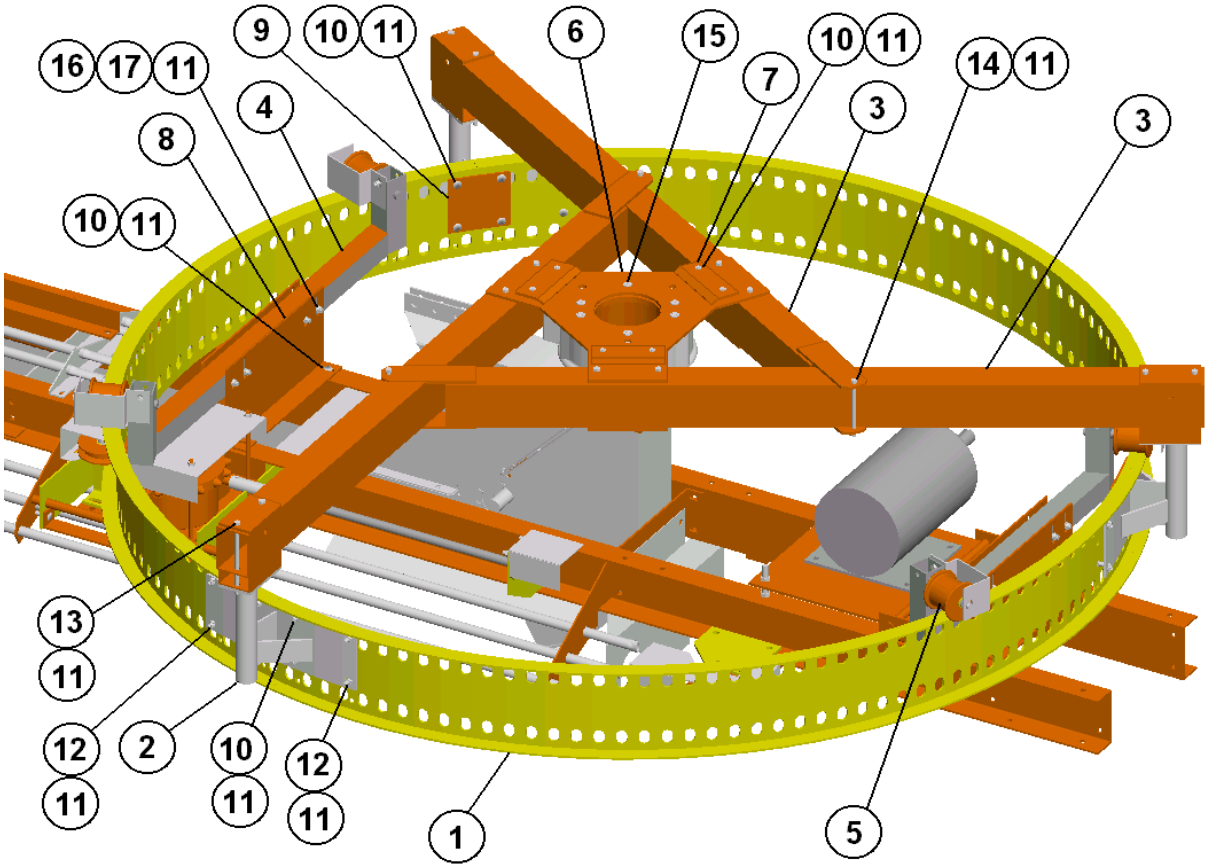
It has been reported that A0562 Gearboxes that have been rebuilt in the field have been having S0650 Gears and S0651 Worm gears fail prematurely. Upon inspection of certain gearboxes it has been determined that end thrust on the input shaft was excessive after rebuild.

In rebuilding A0580 Worm & Shaft Assembly it may be necessary to add or remove S0059 shims between S0603 Thrust bearings and housing to achieve proper end thrust. Input shaft end thrust should not exceed .010" but at least be .005" as measured with a "feeler" gauge.



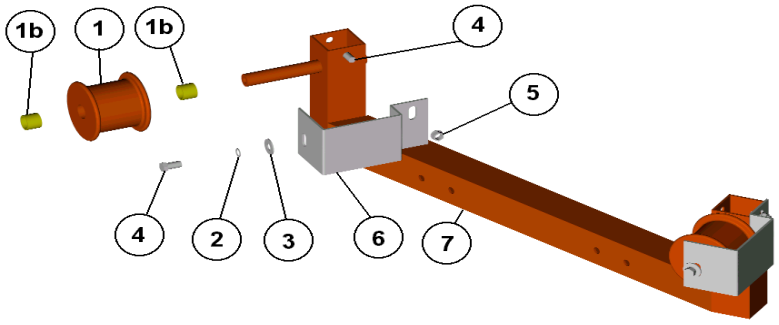
Valesco Manufacturing, Inc | 7857 N 1100 E | Loogootee, IN 47553 | (812) 636-6001

Silo-Matic TRI ARMS & DRIVE RING



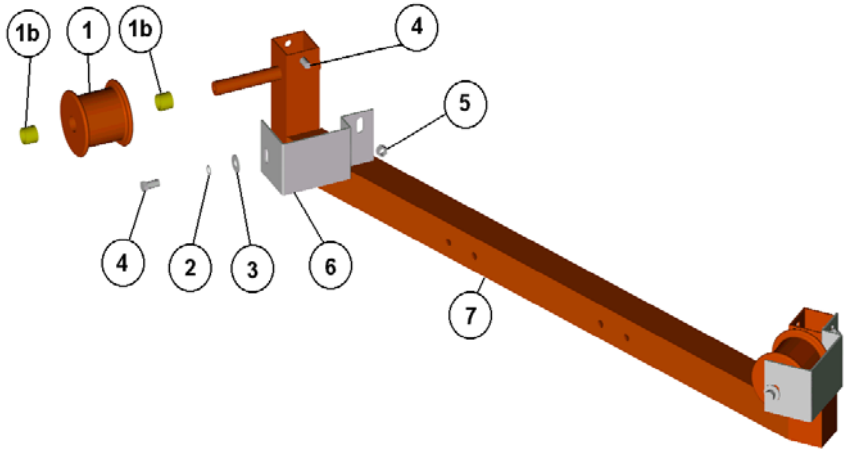
PC	PART	DESCRIPTION	QT
1	M4660	Gemini Ring Segment	3
2	W0805	Ring Connector	3
3	W0906	Tri Arm Weldment	3
4	A0605	Roller Support Assembly Front	1
5	A0604	Roller Support Assembly Rear Short	1
6	M4246	Tri Arm Plate-R26+GRD	1
7	M4285	Clamp Plate, Torque Arm-R26	3
8	M4732	Ring Support Mounting Plate	4
9	M4198	Stiffener Plate, Ring Connector	3
10	G120915	Carriage Bolt 3/8NC x 1" ZP G2	30
11	G9411507	Nut, 3/8NC Serrated Flange ZP	60
12	G126227	Carriage Bolt 3/8NC x 3/4" ZP	12
13	G9418354	HHCS 3/8NC x 6 1/2" G5 ZP	6
14	G189306	HHCS 3/8NC x 5" G5 ZP	9
15	S0654	CapScrew, FH Socket 3/8NCx1"	6
16	G122207	HHCS 3/8NC x 3" G2 ZP	8
17	G120394	Washer, Flat 3/8" USS ZP	8

A0604 REAR ROLLER SUPPORT ASSEMBLY



PC	PART#	DESCRIPTION	QTY
1	A0540	Cable Roller with Oillite	2
1b	S0280	Oilite Bearing	2
2	G103321	Washer, Lock 3/8" ZP	2
3	G120394	Washer, Flat 3/8" USS ZP	2
4	G180120	HHCS 3/8NC x 3/4" G5 ZP	4
5	G9411507	Nut, 3/8NC Serrated Flange	2
6	M4288	Guard Roller	2
7	W0907	Rear Roller Support Weld	1

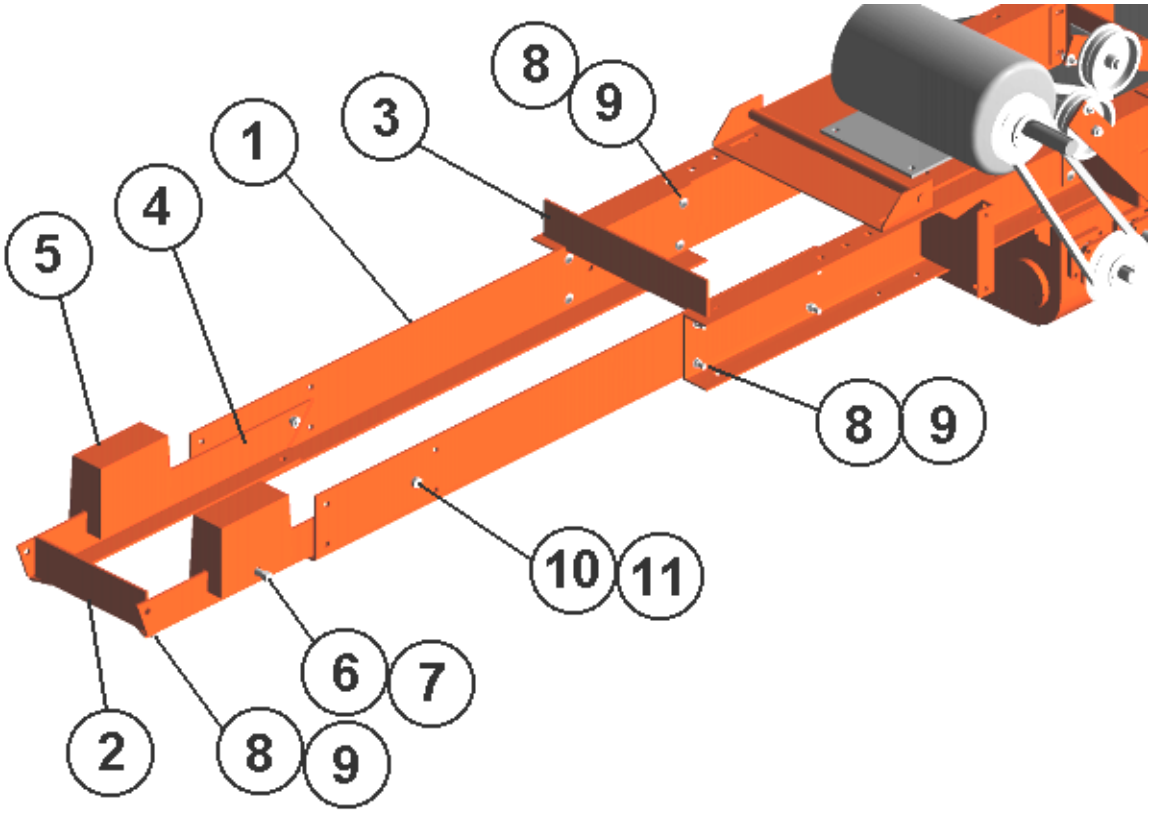
A0605 FRONT ROLLER SUPPORT ASSEMBLY



PC	PART#	DESCRIPTION	QTY
1	A0540	Cable Roller with Oilite	2
1b	S0280	Oilite Bearing	2
2	G103321	Washer, Lock 3/8" ZP	2
3	G120394	Washer, Flat 3/8" USS ZP	2
4	G180120	HHCS 3/8NC x 3/4" G5 ZP	4
5	G9411507	Nut, 3/8NC Serrated Flange	2
6	M4288	Guard Roller	2
7	W0908	Front Roller Support Weld	1

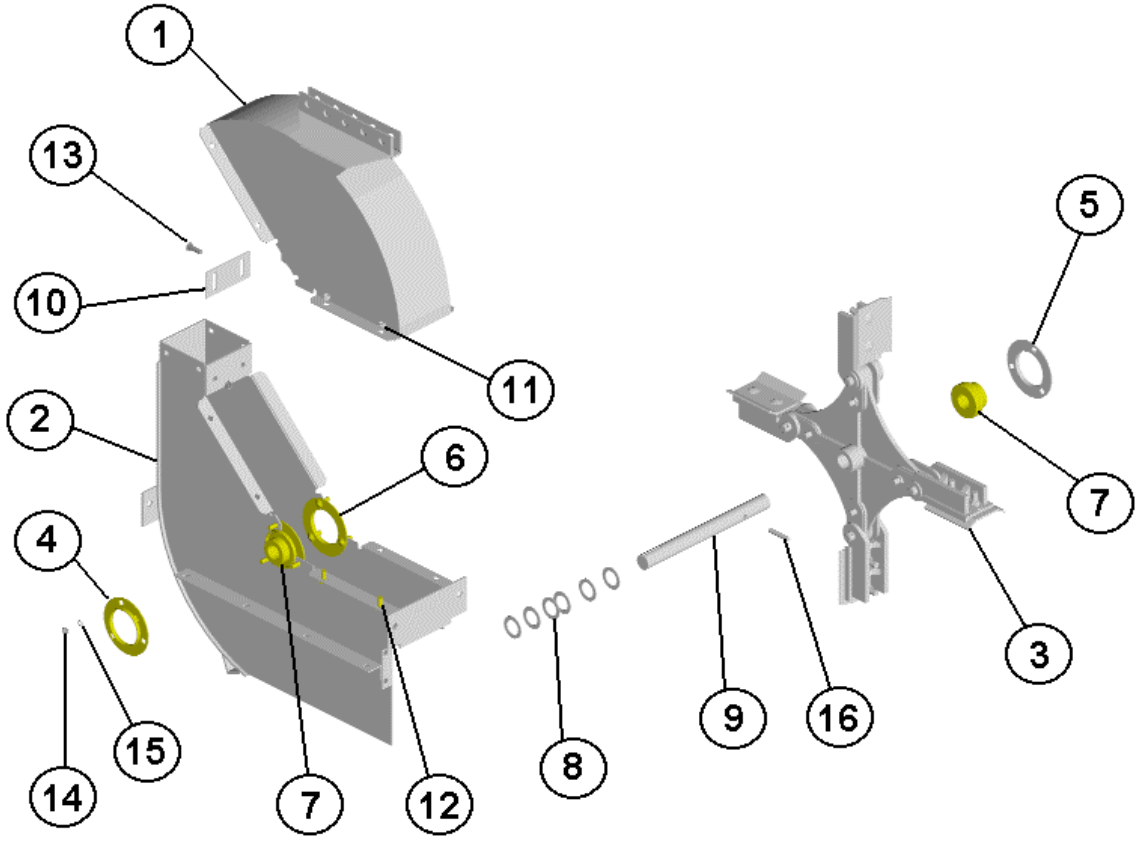
Silo-Matic GEMINI COUNTERWEIGHTS

PC	PART#	DESCRIPTION	QT
1	M4580	14/16' Rear Counterweight Rail (22")	2
	M4581	18' Rear Counterweight Rail (34")	
	M4582	20' Rear Counterweight Rail (46")	
	M4583	22' Rear Counterweight Rail (58")	
	M4584	24' Rear Counterweight Rail (70")	
2	M4587	Tie Angle, Counterweight Rail	1
3	M4586	Counterweight Extension Cross Tie	1
4	M4585	Counterweight Rail Extension	1
5	C0034	Counterweight	AR
6	G110453	1/2" x 1-3/4" Square Head Setscrew	AR
7	G109527	Nut, 1/2" Square	AR
8	G120915	Carriage Bolt, 3/8NC x 1" ZP G2	10
9	G9411507	Nut, 3/8NC Serrated Flange ZP	10
10	G180175	HHCS 1/2NC x 1 1/4" G5 ZP	2
11	G9416450	Nut, 1/2NC Hex Centerlock	2



Silo-Matic

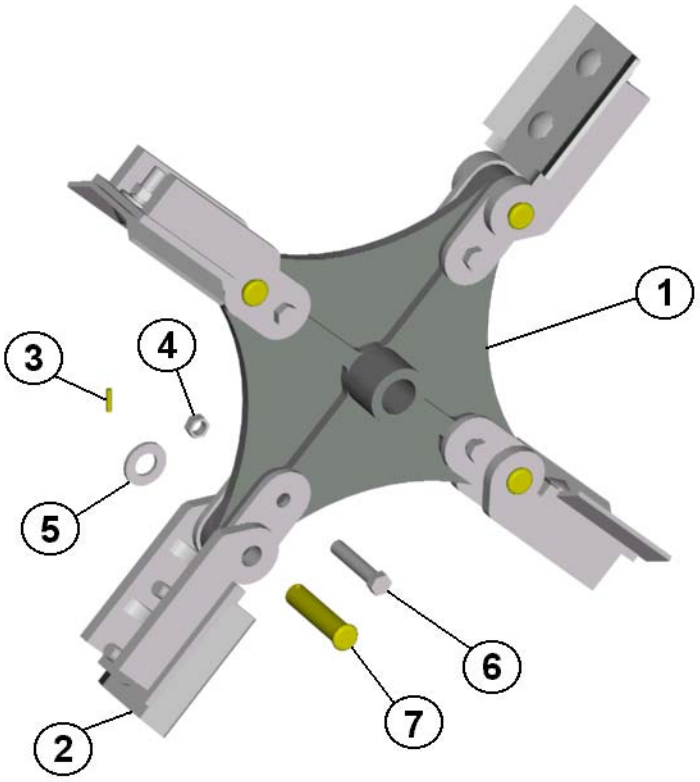
A0703 ROTOR HOUSING ASSEMBLY COMBINATION
5245X ROTOR HOUSING ASSEMBLY STAINLESS STEEL

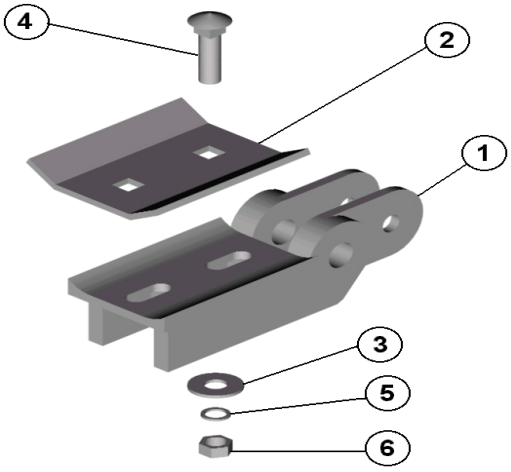


PC	PART #	DESCRIPTION	QT
1	W0891	Rotor Housing, Upper Stainless	1
	W0958	Rotor Housing, Upper Combination	
2	W0873	Rotor Housing Lower Stainless	1
	W0957	Rotor Housing Lower Combination	
3	A0679	Rotor & Pawl Assembly	1
4	S0787-01	Bearing Flange With 45 Degree Zirk	2
5	S0787	Bearing Flange With Zirk	2
6	S0503	Bearing Flange	2
7	S0502	Bearing Assembly	2
8	S0061	Washer, 14 Gauge	8
9	M4645	Rotor Shaft	1
10	M4320	Shear Plate	1
11	G9411507	Nut, 3/8NC Hex , Serrated Flange	10
12	G126228	Carriage Bolt, 3/8NC x 3/4" Stainless Steel	6
13	G120915-S	Carriage Bolt, 3/8NC x 1" Stainless Steel	6
14	G120377	Nut, 3/8" Hex	6
15	G103321	Lock Washer, 3/8 ZP	6
16	S0224	Spring Pin 3/8" x 2"	1

Silo-Matic A0679 ROTOR & PAWL ASSEMBLY

PC #	PART #	DESCRIPTION	QTY
1	A0552	Rotor , 26" 4 Pawl With S0280 Bushings	1
2	A0553	Pawl Assembly, 26" 4 Pawl	4
3	G273336	Spring Pin, 3/16" x 1 1/4"	4
4	G9416450	Nut, 1/2NC Hex Centerlock	4
5	S0059	Bushing, Machine 3/4" x 18 gauge Narrow	4
6	S0804-01	HHCS 1/2NC x 2-1/2" Stainless Steel	4
7	S1056	Pin, Pawl 3/4 x 3-1/16"	4





Silo-Matic A0553 PAWL ASSEMBLY			
PC	PART #	DESCRIPTION	QT
1	C0208	Pawl Casting	1
2	M4281	Pawl Face	1
3	G120396	Washer, 1/2" Flat USS	2
4	G109136	Carriage Bolt, 1/2NC x 1 1/2" SS	2
5	G103323	Washer, Lock 1/2" ZP	2
6	S0857	Nut, 1/2-13NC Stainless Hex	2

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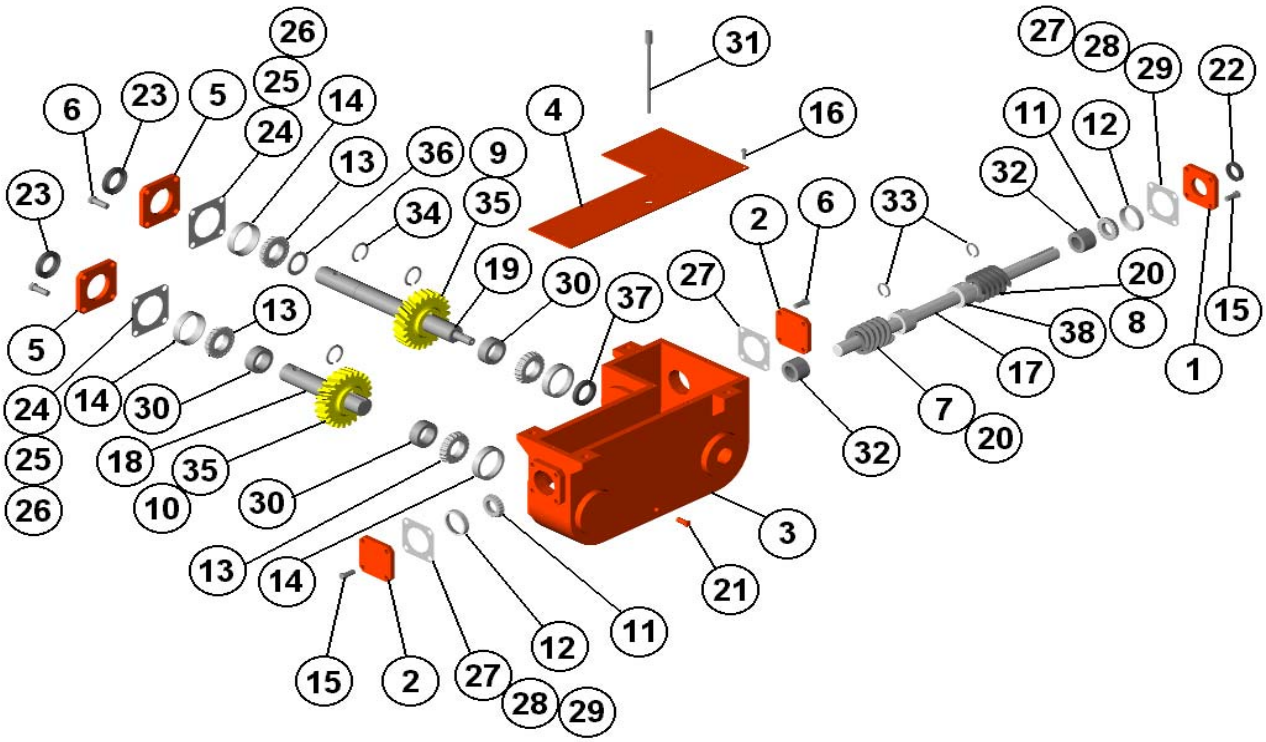
A0749 GEMINI RING DRIVE GEARBOX (DURST)



PC	PART	DESCRIPTION	QT		PC	PART	DESCRIPTION	QT
1	S1344	End Plate, Open	1		20	S1113	Key, 1/4" x 1/4" x 2"	2
2	S1345	End Plate, Closed	2		21	S1289	Drain Plug, 3/8NPT	1
3	S1343	Housing	1		22	S1331	Oil Seal	1
4	S1342	Cover	1		23	S1332	Oil Seal	2
5	S1346	Cover, Open	2		24	S1333	Shim, Gasket(.007)	AR
6	S1327	HHCS 7/16NC x 1-1/4"	8		25	S1334	Shim, Gasket(.010)	AR
7	S1100	Worm 6:1 LH	1		26	S1335	Shim, Gasket(.015)	AR
8	S1101	Worm 8:1 RH	1		27	S1339	Shim,Gasket(.007)	AR
9	S1102	Worm Gear 24T	1		28	S1340	Shim, Gasket(.010)	AR
10	S1103	Worm Gear 24T	1		29	S1341	Shim, Gasket(.015)	AR
11	S1104	Bearing Cone #44643	2		30	S1295	Spacer	3
12	S1105	Bearing Cup #44610	2		31	S1115	Plug, Vent & Dipstick	1
13	S0806	Bearing Cone #48548	4		32	S1293	Spacer	2
14	S0805	Bearing Cup #48510	4		33	S1109	Snap Ring	2
15	S1326	HHCS 3/8NC x 7/8" Self Tap	12		34	S1108	Snap Ring	3
16	S1288	HHCS 1/4NC x 5/8" Self Tap	8		35	S1114	Key, 3/8 x 3/8 x 1-3/8"	2
17	S1110	Input Shaft	1		36	S1294	Spacer	1
18	S1112	Output Shaft	1		37	S1412	Seal	1
19	S1111	Output Shaft	1		38	S1430	Snap Ring Lock Collar	2