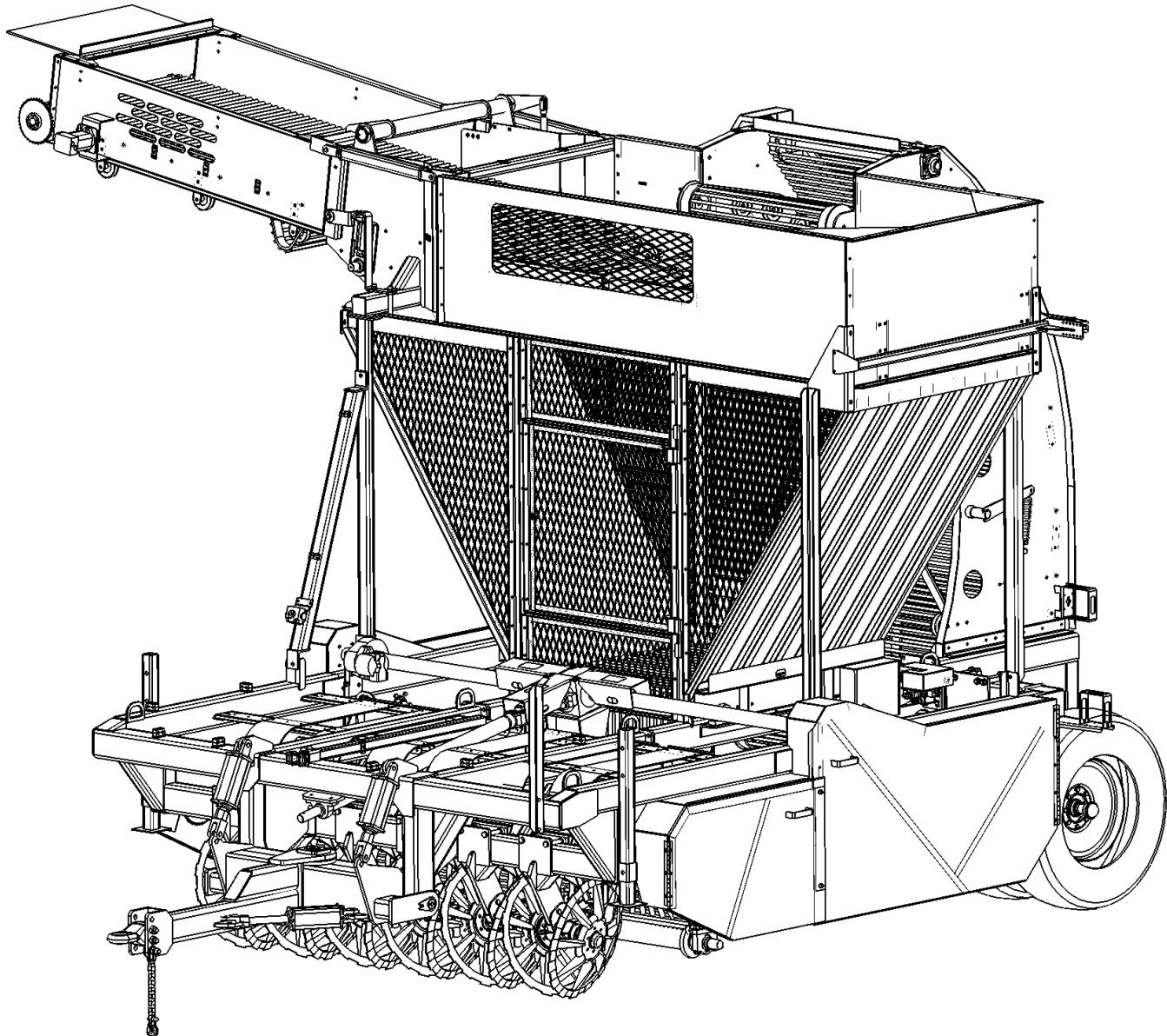


alloway
STANDARD

BEET HARVESTER



OPERATOR'S MANUAL

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Alloway dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration included in this manual. Both dealer and customer must sign the registration which certifies that all Dealer Check List items have been completed. The dealer is to return the prepaid postage portion to Alloway, give one copy to the customer, and retain one copy. **Note: Warranty credit is subject to this form being completed and returned.**

TO THE OWNER:

Read this manual before operating your Alloway equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer or, in the United States and Canada.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Alloway dealer has trained mechanics, genuine Alloway service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Alloway service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: _____ Date of Purchase _____
Serial Number: (see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.



This Safety-Alert Symbol indicates a hazard and means
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



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 includes hazards that are exposed when guards are removed



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

STANDARD
alloway

TABLE OF CONTENTS

| | |
|---|--------------------|
| INTRODUCTION | Inside Front Cover |
| GENERAL INFORMATION | 1 |
| SPECIFICATIONS | 2 |
| CHECK LISTS (DEALER'S RESPONSIBILITY) | 3 |
| SAFETY RULES | 4-7 |
| SAFETY DECALS | 8-11 |
| BOLT SIZE CHART..... | 12 |
| BOLT TORQUE CHART | 13 |
| OPERATION | 15 |
| OWNER SERVICE | 26 |
| INDEX TO PARTS LISTS | 36 |
| INDEX..... | 72 |
| WARRANTY..... | Inside Back Cover |

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Beet Harvester. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing, but due to possible inline production changes, your machine may vary

Slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.



WARNING

■ Some illustrations in this manual show the Beet Harvester with safety shields removed to provide a better view. The Beet Harvester should never be operated with any safety shielding removed.

Throughout this manual, references are made to right and left direction. These are determined by standing behind the equipment facing the direction of forward travel.

SPECIFICATIONS

| Model | H132 | H144 | H180 |
|--------------------------|--------------------------|--------------------------|--------------------------|
| Overall width | 189" | 197" | 197" |
| Overall length | 280" | 280" | 280" |
| Overall height | 164" | 164" | 164" |
| Gearbox | 200 HP | 200 HP | 200 HP |
| Belt elevator chain | 42" | 42" | 42" |
| 1/2" Elevator chain rods | 56mm pitch | 56mm pitch | 56mm pitch |
| Tank capacity | 3-1/2 - 6 ton | 3-1/2 - 6 ton | 3-1/2 - 6 ton |
| Tractor PTO speed | 1000 RPM | 1000 RPM | 1000 RPM |
| Belt system | 4B power band | 4B power band | 4B power band |
| Elevator drive | Hydraulic | Hydraulic | Hydraulic |
| Wheel struts | 2 adjustable | 2 adjustable | 2 adjustable |
| Number of tires | 4 | 4 | 4 |
| Tire type | 12.4x24 traction | 12.4x24 traction | 12.4x24 traction |
| Tire pressure | 32 psi | 32 psi | 32 psi |
| Tire ply rating | 8 | 8 | 8 |
| Tire load capacity | 11,300 lbs. | 11,300 lbs. | 11,300 lbs. |
| Grab roll bed | rock protected | rock protected | rock protected |
| Grab rolls adjustable | 7 full length | 7 full length | 7 full length |
| Grab roll option | 2 stub rollers | 2 stub rollers | 2 stub rollers |
| Grab roll composition | steel or plastic covered | steel or plastic covered | steel or plastic covered |
| Digger struts | fixed or flex | fixed or flex | fixed or flex |
| Tongue weight (drawbar) | 6500 | 6650 | 7000 |
| Weight empty | 18,500 | 18,800 | 19,500 |

CHECK LISTS

PRE-DELIVERY CHECK LIST (DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that shields and guards are properly installed and in good condition. Replace if damaged.
- Check that PTO shaft is properly installed.
- Properly attach implement to tractor and make all necessary adjustments.
- Check all bolts to be sure they are tight.
- Check wheel bolts for proper torque.
- Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- Check and grease all lubrication points as identified in "Service, lubrication information."
- Check the level of gearbox fluids before delivery. Service, if required, as specified in the "Service, lubrication information."
- Check that tractor hydraulic reservoir has been serviced and that hydraulic system and all functions have been operated through full cylinder stroke to purge air from system.
- After pressurizing and operating all harvester functions, stop tractor and make sure there are no leaks in the hydraulic system. Follow all safety rules when checking for leaks.

DELIVERY CHECK LIST (DEALER'S RESPONSIBILITY)

- Show customer how to make adjustments and select proper PTO speed.
- Show customer how to make adjustments.
- Instruct customer how to lubricate and explain importance of lubrication.
- Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- Show customer how to make sure driveline is properly installed and that spring-activated locking pin or collar slides freely and is seated in groove on tractor PTO shaft.
- Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- Explain to customer that when equipment is transported on a road or highway, safety devices should be used to give adequate warning to operators of other vehicles.
- Explain to customer that when equipment is transported on a road or highway, a Slow Moving Vehicle (SMV) sign should be used to provide adequate warning to operators of other vehicles.
- Explain to customer that when towing on a public road to comply with all state and local lighting/ marking laws and to use a safety tow chain.
- Make customer aware of optional equipment available so that customer can make proper choices as required.
- Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "*The best safety device is an informed, careful operator.*" We ask you to be that kind of an operator.

TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals are available from dealer or, in the United States. Failure to follow instructions or safety rules can result in serious injury or death.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Keep hands and body away from pressurized lines. Use paper or cardboard, not body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.
- Make sure that all operating and service personnel know that in the event hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury, or gangrene, serious injury or death will result. **CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**
- Do not allow children or untrained persons to operate equipment.

PREPARATION

- Check that all hardware is tight and properly installed. Always tighten to torque chart specifications.
- Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. Before operating or allowing anyone to approach the equipment, purge any air in the system by operating all hydraulic functions several times after connecting equipment, connecting hoses, or doing any hydraulic maintenance.
- Make sure all hydraulic hoses, fittings and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.
- Ensure implement is properly attached, adjusted and in good operating condition.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Before starting tractor, check all equipment driveline guards for damage and make sure they rotate freely on all drivelines. Replace any damaged guards. If guards do not rotate freely on drivelines, repair and replace bearings before operating.
- Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- Connect PTO driveline directly to tractor PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and result in personal injury or death.

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

- Remove accumulated debris from this equipment, tractor and engine to avoid fire hazard.
- Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Ensure shields and guards are properly installed and in good condition. Replace if damaged.
- A minimum 20% of tractor and equipment weight must be on tractor front wheels with attachments in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the Roll Over Protection Structure (ROPS) weight certification. Weigh the tractor and equipment. Do not estimate.
- Make sure hydraulic hoses and cylinders are fully purged of air before operating. Keep all persons away and fill the system by raising and lowering all functions several times. Air in the system can allow components to fall unexpectedly.

OPERATIONAL SAFETY

- Do not allow other people in the area when operating, attaching, removing, assembling or servicing equipment.
- Keep bystanders away from equipment.
- Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.
- Do not operate equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Avoid contact with electrical wires.

- Keep hands, feet, hair and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- No riders are allowed on equipment.
- Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.
- Always sit in tractor seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake and ensure all other controls are disengaged before starting tractor engine.
- Operate tractor PTO at RPM speed stated in "Specifications" section.
- Do not operate tractor PTO during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate on steep slopes.
- Do not stop, start or change directions suddenly on slopes.
- Watch for hidden hazards on the terrain during operation.
- Stop tractor and implement immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operation.
- Truck boom lock must be engaged when truck boom is in operating position. Do not operate unloader conveyor unless boom lock is engaged and in good repair. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Always connect safety chain from implement to towing vehicle when transporting.

(Safety Rules continued on next page)

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

■ AVOID INJURY OR DEATH FROM POWER LINES:

- Stay away from power lines.
- Electrocution can occur without direct contact.
- Check clearances before raising implement.
- Do not leave the operator's seat if any part of the tractor or implement contacts electric lines.

■ Before dismounting tractor, disengage tractor PTO power to implement, lower front lift cylinders so that lifter wheels are on the ground, and lower holding tank bottom. Operate valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt.

■ Before performing any service or maintenance, disengage power to implement, lower front lift cylinders so that lifter wheels are on the ground, lower holding tank bottom, lower truck boom, lower 3-point hitch. Operate valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt. Disconnect driveline from tractor PTO. Chock (block) front and rear of implement wheels.

■ Before working underneath a raised implement, read and follow all operator's manual instructions and safety rules. Implement must be attached to tractor, lift cylinder locks must be installed, and lift cylinders lowered against locks. Hydraulic system leak down, hydraulic system failures, or movement of control levers can cause equipment to drop unexpectedly and cause severe injury or death.

MAINTENANCE SAFETY

■ Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.

■ Before dismounting tractor, disengage tractor PTO power to implement, lower front lift cylinders so that lifter wheels are on the ground, and lower holding tank bottom. Operate valve control levers to

release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt.

■ Before performing any service or maintenance, disengage power to implement, lower front lift cylinders so that lifter wheels are on the ground, lower holding tank bottom, lower truck boom, lower 3-point hitch. Operate valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt. Disconnect driveline from tractor PTO. Chock (block) front and rear of implement wheels.

■ Before working underneath a raised implement, read and follow all operator's manual instructions and safety rules. Implement must be attached to tractor, lift cylinder locks must be installed, and lift cylinders lowered against locks. Hydraulic system leak down, hydraulic system failures, or movement of control levers can cause equipment to drop unexpectedly and cause severe injury or death.

■ Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.

■ Before performing any maintenance on the beet harvester, lower holding tank bottom completely, to rest on tank support. Do not work in or under the holding tank with the tank bottom in the raised (unload) position. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

■ Before performing any maintenance on the beet harvester, the truck boom must be fully lowered into the transport position. Do not work on harvester with truck boom in any intermediate position. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

■ Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



■ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

■ Do not allow other people in the area when operating, attaching, removing, assembling or servicing equipment.

■ Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.

■ Ensure implement is properly attached, adjusted and in good operating condition.

■ Never perform service or maintenance with engine running.

■ Make sure hydraulic hoses and cylinders are fully purged of air before operating. Keep all persons away and fill the system by raising and lowering all functions several times. Air in the system can allow components to fall unexpectedly.

■ Keep all persons away from operator control area while performing adjustments, service or maintenance.

■ Make certain all movement of implement components has stopped before approaching for service.

■ Tighten all bolts, nuts and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before operating.

■ Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

■ Ensure shields and guards are properly installed and in good condition. Replace if damaged.

■ Do not disconnect hydraulic lines until engine is stopped, tractor is properly secured, equipment and all components are lowered to the ground, and system pressure is released by operating all valve control levers.

STORAGE

■ For storage, disengage tractor PTO power to harvester, lower front lift cylinders so that lifter wheels are on the ground, lower holding tank bottom, lower truck boom, lower 3-point hitch. Operate tractor valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt. Remove driveline from tractor PTO. Chock (block) front and rear of harvester wheels.

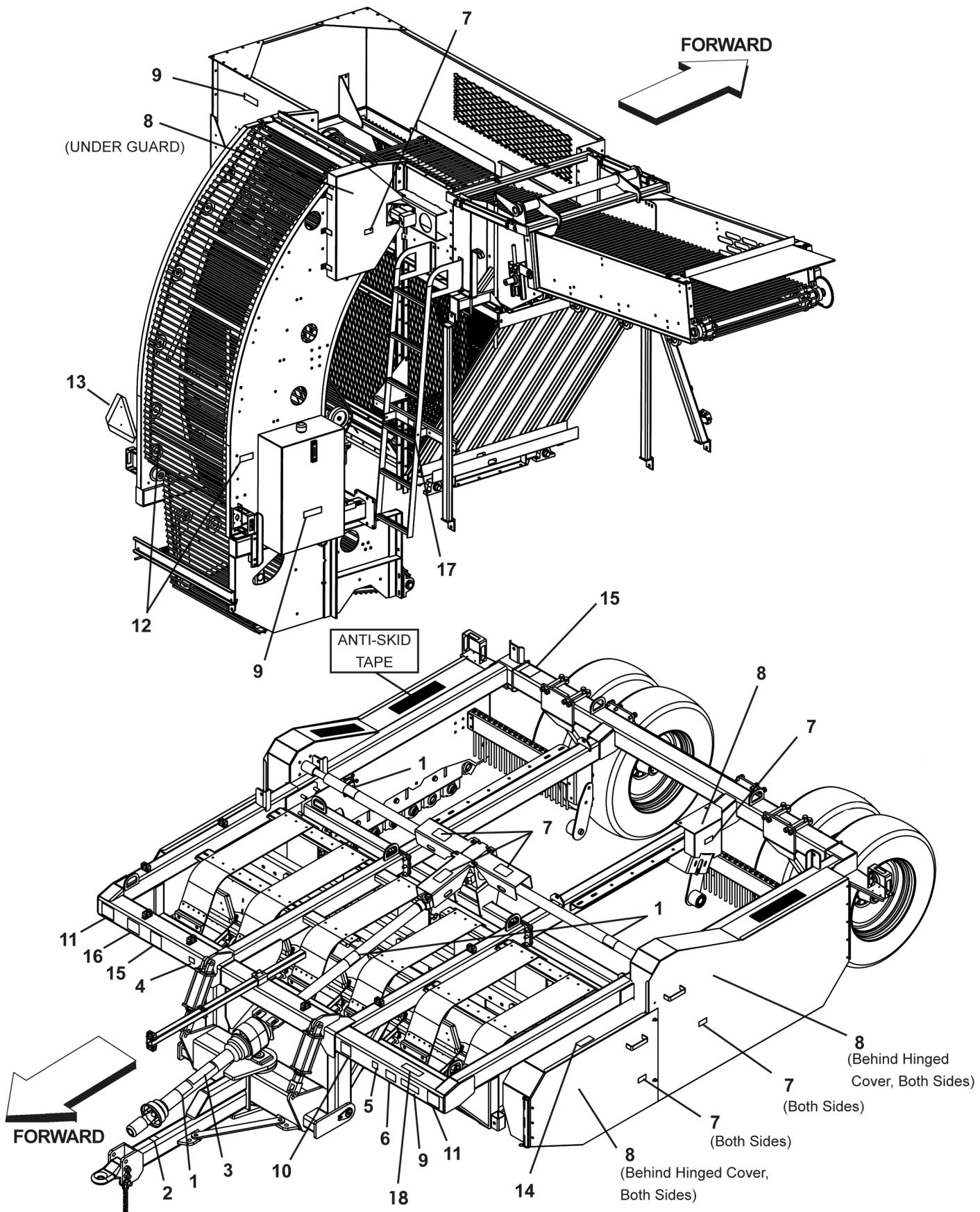
■ Keep children and bystanders away from storage area.

NOTES

SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



SAFETY & INSTRUCTIONAL DECALS
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! **Replace Immediately If Damaged!**



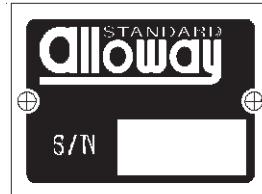
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2 - PN-70030519



3 - PN-90317456



4 - PN-20031366



5 - PN-70030494

(Safety Decals continued on next page)



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



(Safety Decals continued from previous page)

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from dealer or, in the United States and Canada, call 1-800-319-6637.)
- Keep all guards in place, properly secured and in good condition. Replace if damaged.
- Operate from tractor seat only.
- Do not allow any other persons in the area when operating.
- Before dismounting tractor:
 - Disengage PTO.
 - Lower equipment and all raised components.
 - Stop engine, remove key and engage brake.
 - Operate hydraulic valve levers to release any pressure.
 - Allow no children or untrained persons to operate the equipment.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

PN 700-3-0493

6 - PN-70030493

⚠ WARNING

ROTATING DRIVE HAZARDS

- Before opening drive guard:
 - Disengage PTO drive,
 - Lower equipment to ground,
 - Stop engine, remove key and engage brake,
 - Operate valve levers to release any hydraulic pressure,
 - Wait for all rotation to stop,
 - Disconnect driveline from tractor PTO.
- Before starting tractor:
 - Close drive cover and secure,
 - Keep guard in good condition.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

7 - PN-70030495

⚠ DANGER

SHIELD MISSING

DO NOT OPERATE - PUT SHIELD ON

18869-B

8 - PN-50630194



⚠ WARNING

HIGH-PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN RESULTING IN SERIOUS INJURY, GANGRENE OR DEATH.

- Check for leaks with cardboard; never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.
- Consult physician immediately if skin penetration occurs.

9- PN-50630195

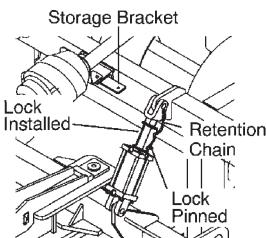


⚠ WARNING

RAISED EQUIPMENT CAN DROP AND CRUSH.

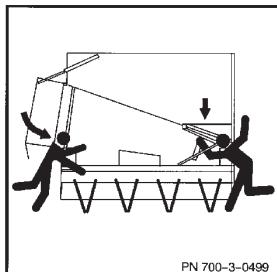
- Install both cylinder locks before transporting or working underneath raised harvester.
- Locks must be installed correctly, kept in good condition, and stored on harvester.
- Read and follow manual instructions.

FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.



CYLINDER LOCKS

10- PN-70030498



⚠ WARNING

RAISED EQUIPMENT CAN DROP AND CRUSH.

- Truck boom and holding tank must be lowered before leaving tractor, or before servicing or storing harvester.
- Lowering components prevents crushing from hydraulic leak down, hydraulic system failures, movement of control levers or mechanical component failures.

FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

11 - PN-70030499



⚠ WARNING

KEEP AWAY FROM ELEVATOR CHAIN

- Never use service access holes while equipment is running.
- Before servicing elevator chain, tractor must be shut off and PTO shaft disconnected from tractor.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

12 - PN-70030497



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



13 - PN-50031696

SMV SIGN (Not Shown)



WARNING

MANUAL CONTAINER AND MANUAL ARE MISSING

- REPLACE AND READ BEFORE OPERATING.
- KEEP MANUAL CONTAINER AND MANUAL MOUNTED IN THIS LOCATION. (Available from dealer or call 1-800-319-6637.)

FAILURE TO FOLLOW MANUAL INSTRUCTIONS AND SAFETY RULES CAN RESULT IN SERIOUS INJURY OR DEATH. 506-3-0192

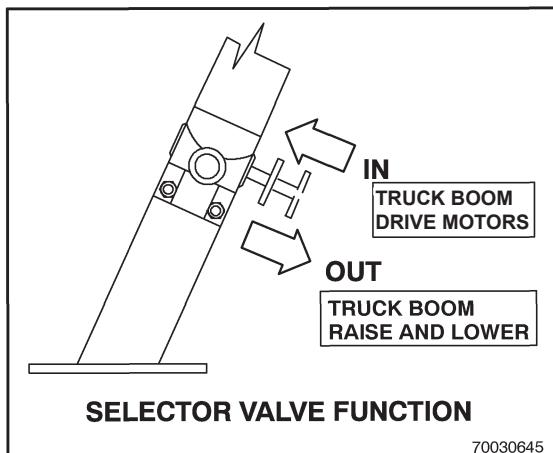
BOOM LOCK MUST BE ENGAGED WHEN TRUCK BOOM IS RAISED TO OPERATING POSITION:

1. Read manual and follow all instructions and safety rules.
2. Lock pin must be in lowered position.
3. Hydraulically raise truck boom.
4. Boom lock must fully rotate into engaged position as shown.
5. Check and do not operate unless boom lock is fully engaged and in good repair.

BOOM LOCK MUST BE RELEASED BEFORE TRUCK BOOM CAN BE LOWERED:

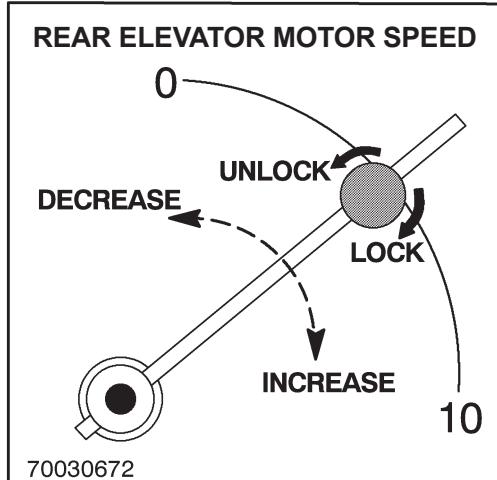
1. Read manual and follow all instructions and safety rules.
2. Hydraulically raise truck boom to full up position to remove boom weight from boom lock.
3. Stand behind truck boom and raise lock pin handle to raised position as shown.
4. Hydraulically lower truck boom to transport position.
5. The lock pin will automatically reset to the lowered position as the truck boom is lowered. If lock pin does not reset, have unit repaired before operating.

14 - PN-50630192

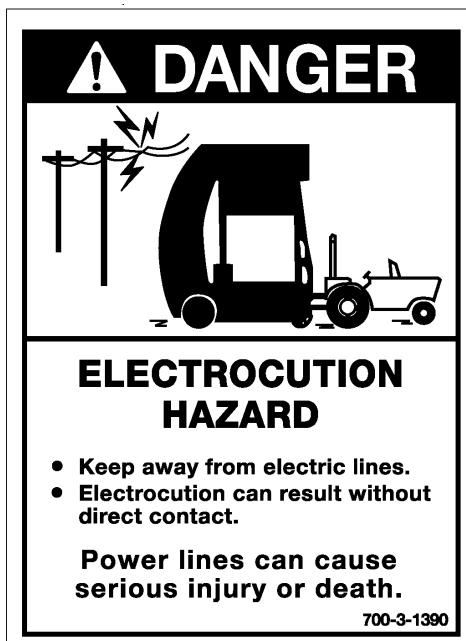


16- PN-70030645

15 - PN-70030644



17 - PN-70030672



18 - PN-70031390

BOLT SIZE CHART

NOTE: Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and Metric Bolts.

SAE Bolt Thread Sizes

5/16

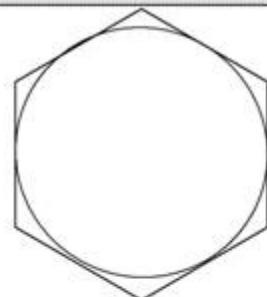
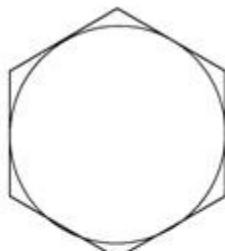
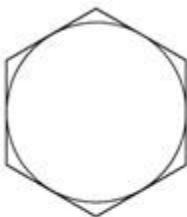
3/8

1/2

5/8

3/4

7/8



IN

1

2

3

4

5

6

7

MM

25

50

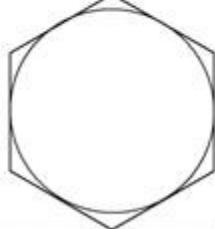
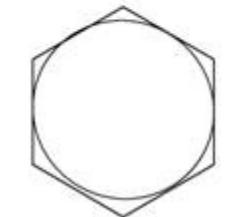
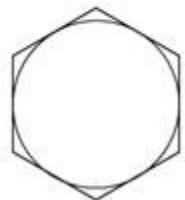
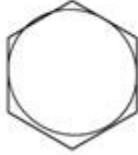
75

100

125

150

175



Metric Bolt Thread Sizes

8MM

10MM

12MM

14MM

16MM

18MM

NOTES

BOLT TORQUE CHART

SAE Series Torque Chart

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

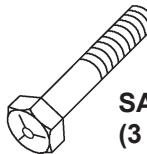
Fasteners must always be replaced with the same grade as specified in the manual parts list.

Make sure fastener threads are clean and you properly start thread engagement

SAE
Bolt Head
Identification



SAE Grade 2
(No Dashes)

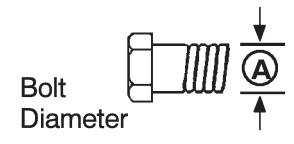


SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

| Bolt Diameter | Wrench Size | MARKING ON HEAD | | | | | |
|------------------|----------------|-----------------|--------|----------|--------|----------|--------|
| | | SAE 2 | | SAE 5 | | SAE 8 | |
| | | Lbs.-Ft. | (N-m) | Lbs.-Ft. | (N-m) | Lbs.-Ft. | (N-m) |
| 1/4" | 7/16" | 6 | (8) | 11 | (15) | 14 | (19) |
| 5/16" | 1/2" | 13 | (18) | 21 | (28) | 25 | (34) |
| 3/8" | 9/16" | 23 | (31) | 38 | (52) | 55 | (75) |
| 7/16" | 5/8" | 37 | (50) | 55 | (75) | 80 | (110) |
| 1/2" | 3/4" | 57 | (77) | 85 | (115) | 120 | (165) |
| 9/16" | 13/16" | 82 | (111) | 125 | (170) | 180 | (245) |
| 5/8" | 15/16" | 111 | (150) | 175 | (240) | 230 | (310) |
| 3/4" | 1-1/8" | 200 | (270) | 300 | (410) | 440 | (600) |
| 7/8" | 1-5/16" | 280 | (380) | 450 | (610) | 720 | (975) |
| 1" | 1-1/2" | 350 | (475) | 680 | (925) | 1035 | (1400) |
| 1-1/8" | 1-11/16" | 450 | (610) | 885 | (1200) | | |
| 1-1/4" | 1-7/8" | 600 | (815) | 1255 | (1700) | | |
| 1-3/8" | 2-1/16" | 675 | (915) | 1620 | (2200) | | |
| 1-1/2" | 2-1/4" | 920 | (1250) | 2200 | (2900) | | |



Metric Series Torque Chart

Use only metric tools on metric hardware.

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade.

Make sure fastener threads are clean and you properly start thread engagement.

| Bolt Diameter | Wrench Size | MARKING ON HEAD | | | |
|------------------|----------------|-----------------|------------|------|------------|
| | | 8.8 | | 10.9 | |
| | | N-m | (Lbs.-Ft.) | N-m | (Lbs.-Ft.) |
| 5 mm | 8 mm | 6 | (4.5) | 9 | (6.5) |
| 6 mm | 10 mm | 10 | (7.5) | 15 | (11) |
| 8 mm | 13 mm | 25 | (18) | 35 | (26) |
| 10 mm | 16 mm | 50 | (37) | 75 | (55) |
| 12 mm | 18 mm | 85 | (63) | 130 | (97) |
| 14 mm | 21 mm | 110 | (80) | 150 | (110) |
| 16 mm | 24 mm | 215 | (159) | 315 | (232) |
| 20 mm | 30 mm | 435 | (321) | 620 | (457) |
| 24 mm | 36 mm | 750 | (553) | 1070 | (789) |
| 30 mm | 46 mm | 1495 | (1103) | 2130 | (1571) |

Metric
Bolt Head
Identification



Metric
Grade 8.8



Metric
Grade 10.9

NOTES

OPERATION

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "*The best safety device is an informed, careful operator.*" We ask you to be that kind of an operator.



WARNING

- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Do not allow children or untrained persons to operate equipment.



CAUTION

- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing



WARNING

- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Before starting tractor, check all equipment driveline guards for damage and make sure they rotate freely on all drive-lines. Replace any damaged guards. If guards do not rotate freely on drivelines, repair and replace bearings before operating.
- A minimum 20% of tractor and equipment weight must be on tractor front wheels with attachments in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the Roll Over Protection Structure (ROPS) weight certification. Weigh the tractor and equipment. Do not estimate.



WARNING

- Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Ensure shields and guards are properly installed and in good condition. Replace if damaged.
- Do not allow other people in the area when operating, attaching, removing, assembling or servicing equipment.
- Keep bystanders away from equipment.

Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.



CAUTION

- Operate only in daylight or good artificial light.



DANGER

- Avoid contact with electrical wires.



WARNING

- Keep hands, feet, hair and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- No riders are allowed on equipment.
- Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

To assure safe and efficient operation it is essential, that each machine operator read and understand the operating procedures and related safety requirements outlined in this manual.

Complete the Pre-Operation Checklist before initial operation, after the first hour of field operation, and before each shift thereafter.

- ___ Review and follow all safety rules and safety decal instructions on pages 4 through 11.
- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that all shields and guards are properly installed and in good condition. Replace if damaged.
- ___ Check that all hardware and cotter pins are properly installed and secured.
- ___ Check alignment and pinch point of digger wheels.
- ___ Check alignment of grab rolls and remove any obstructions.
- ___ Check that elevator chains, rollers and tensioners move freely and without obstruction.
- ___ Check tractor and harvester tire pressures. Service as necessary.
- ___ Check that boom lock is in good repair. Do not operate unless boom lock is fully engaged when truck boom is raised.
- ___ Check that equipment is properly and securely attached to tractor.
- ___ Make sure driveline spring-activated locking collar slides freely and is seated firmly in tractor PTO spline groove.
- ___ Before starting tractor, check all equipment driveline guards for damage and make sure they rotate freely on all drivelines. Replace any damaged guards. If guards do not rotate freely on drivelines, repair and replace bearings before operating.
- ___ Do not allow riders.
- ___ Check and keep all bystanders away from equipment working area.
- ___ Check all lubrication points and grease as instructed in "Service, lubrication information". Make sure the PTO slip joint is lubricated and that the gearbox fluid levels are correct.
- ___ Set tractor PTO at correct rpm for your equipment.
- ___ Check that all hydraulic connections are correct and all hydraulic control movements function as described in the Operator's Manual.
- ___ Check that all hydraulic hoses and fittings are in good condition and not leaking before starting tractor. Check that hoses are not twisted, bent sharply, kinked, frayed or pulled tight. Replace any damaged hoses immediately.

___ Raise and lower equipment to make sure air is purged from hydraulic cylinders and hoses.

___ Make sure tractor 3-point lift links do not interfere with hydraulic hoses or driveline throughout full turning range.

___ Make sure tractor ROPS or ROPS CAB and seat belt are in good condition. Keep seat belt securely fastened during operation.

___ Before starting engine, operator must be in tractor seat with seat belt fastened. Place transmission in neutral or park, engage brake and disengage tractor PTO.

HARVESTER COMPONENTS (Figure 1)

The harvester consists of several components which will be referred to throughout this manual. They are as follows:

- **Main frame:** This is the base structure to which all components of the harvester are attached.
- **Hitch:** Located on the front of the harvester, it is used to attach the harvester to a tractor. Hydraulic cylinders connect the Hitch to the Main Frame and are used to control the working depth and harvester steering.
- **Lifter struts:** Lifter struts are attached to the front of the harvester to align with each row of beets. A pair of lifter wheels is attached to each strut to remove the beets from the soil.
- **Paddle shaft:** Shaft and paddle assemblies rotate through each lifter wheel assembly directing all materials from between the lifter wheels onto the grab roll bed.
- **Grab rolls bed:** Pairs of counter-rotating cleaning rolls remove soil and debris from the beets while moving beets to the vertical elevator.
- **Bed Chain:** Chain that carries beets from lifter wheels to the grab roll bed.
- **Vertical elevator:** Structure comprised of two powered belted chains moving the beets vertically from the grab rolls to the top of the holding tank.
- **Holding tank:** Beet holding area below truck boom. Beets are dropped into the tank until truck arrives. Beets are then cycled back into the Vertical Elevator and onto truck boom.
- **Truck boom:** The foldable conveyor extension on the top right of the harvester used to convey beets to the truck.
- **Carrier wheel struts:** Wheel and strut assemblies attach to the rear of the Main Frame. Struts are adjustable to level the machine for operation. Optional steerable struts are available.

The harvester main frame is supported by four wheels on two adjustable struts at the rear of the harvester, and by the tractor drawbar through the harvester hitch at the front.

The harvester controls the working depth of the lifter wheels through two hydraulic cylinders. The harvester hitch also controls the side to side position of the harvester through the hitch steering cylinder.

The lifter wheel struts are attached to the front tool bar of the main frame.

The grab rolls, main drive components and paddle shaft are attached to the main frame.

The elevator is attached to the center main frame members and the holding tank.

The holding tank is mounted on the main frame.

The Truck boom is mounted on the discharge end of the holding tank.

EQUIPMENT MATCHING

| <u>Harvester</u> | <u>Minimum HP</u> |
|------------------|-------------------|
| 6 ROW 22" | 140 HP Class III |
| 6 ROW 30" | 180 HP Class IV |
| 8 ROW 22" | 180 HP Class IV |

Use the above guidelines to select a tractor with adequate power and weight to operate the harvester.

Use tractor manufacturer ASAE HP ratings and tractor class for tractor matching.

Tire Requirements

The loaded beet harvester will transfer 5000 to 7250 lbs. of static weight to the tractor drawbar. Tractor tires must be of adequate capacity to carry the additional load.

See your tractor operator's manual for selecting tires of the proper capacity and the correct air pressure required.

Dual tractor wheels set to the correct row spacing may be used to increase load capacity.

Tractor tire spacing must be adjusted to match the harvester row spacing.

1. Main frame
2. Hitch
3. Lifter struts
4. Paddle shaft
5. Grab rolls
6. Vertical elevator
7. Holding tank
8. Carrier struts
9. Truck boom
10. Row Finder
11. Chain Bed
12. Electric Valve
13. Slide Conveyor
14. Tank Unload Conveyor
15. Selector Valve
16. Belt Tightener (Boom)

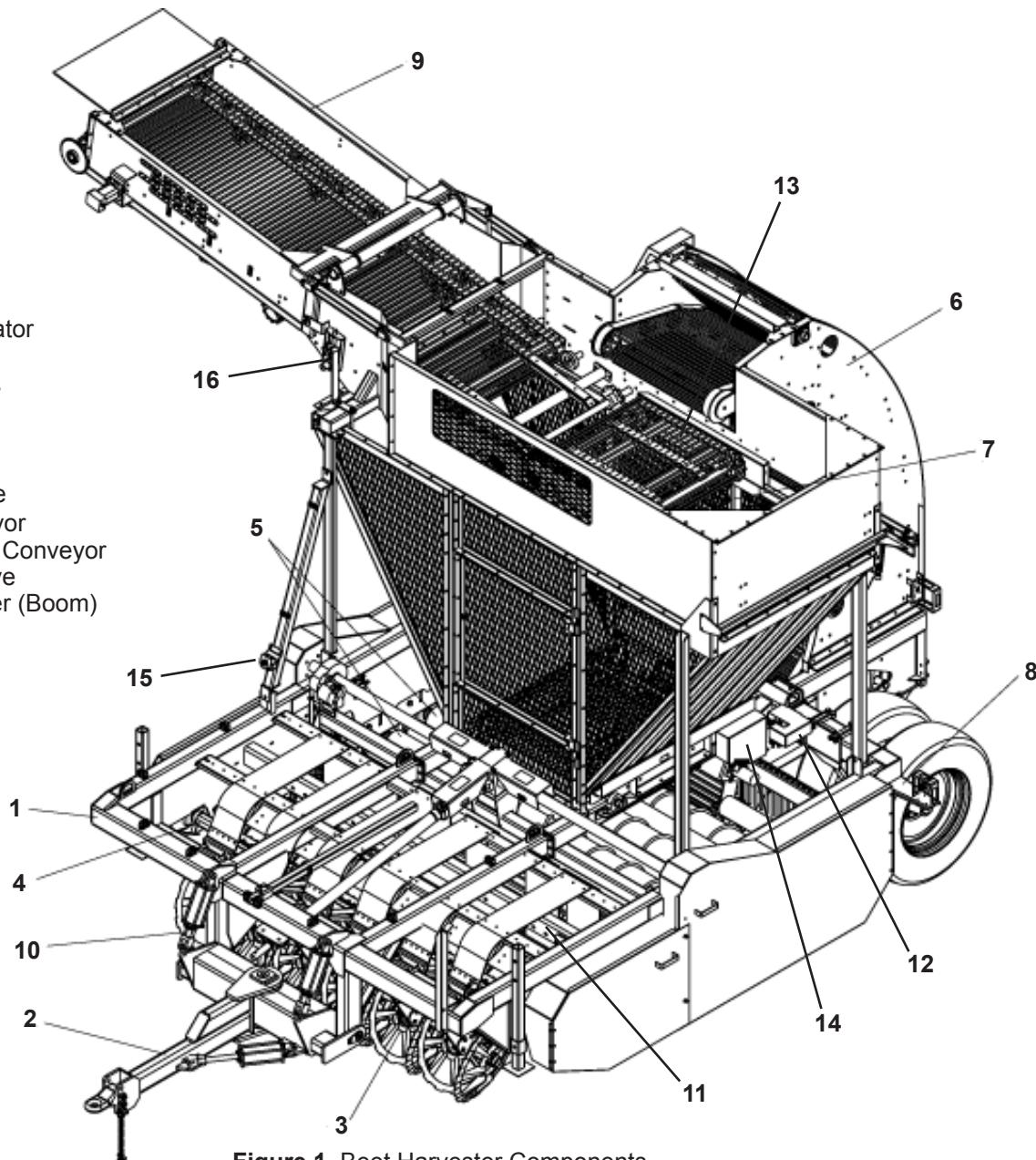


Figure 1. Beet Harvester Components

PTO

WARNING

- Connect PTO driveline directly to tractor PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and result in personal injury or death.

Tractor must be equipped with a 1000 rpm PTO shaft. The harvester may be equipped with either a 1-3/8"-21 or 1-3/4"-20 spline driveline to match the tractor output shaft without using adapters.

The harvester may be equipped with optional CV driveline.

Hitch Requirements

The drawbar length must be adjusted to a minimum of 16" to 18" between the end of the tractor PTO shaft and the center of the hitch pin.

IMPORTANT

- **Fasten support chains so that they support the drawbar equally.**
- **Raise the three-point hitch only high enough to support the drawbar. Do not bend the drawbar or hitch components.**

Hydraulic System

The tractor must be equipped with a minimum of three operator controlled remote outlets and one power-beyond circuit or four operator controlled remote outlets on a closed center or pressure/flow compensated hydraulic system.

Each outlet requires a minimum flow of 12-16 GPM at 2000 psi.

On certain tractors using a pressure/flow compensated system, a load sensing line may be required for proper hydraulic system operation. Consult your tractor dealer for the specific requirements of your tractor hydraulic system.

- The tractor remote valve supplies hydraulic power for the depth control/transport cylinders.
- The tractor remote supplies hydraulic power to the Boom lift/lower cylinders or Hydraulic drive motors on Boom Unload Conveyor.
- The tractor remote valve supplies hydraulic power to the row finder override.
- The tractor remote valve or power-beyond circuit supplies hydraulic power for row finder and electric valve that controls Holding Tank Unload Conveyor and slide conveyor hydraulic cylinder.

Electrical System (Figure 3)

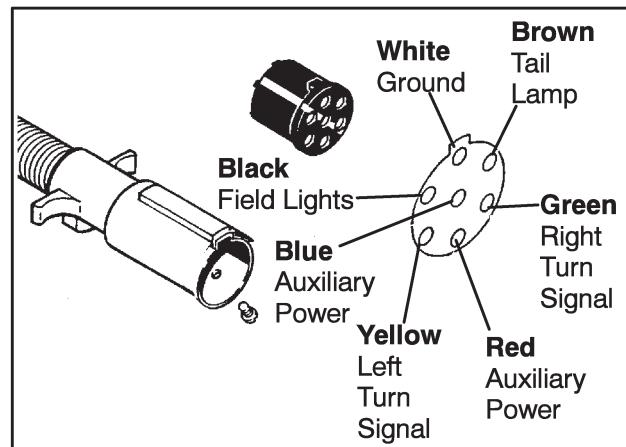


Figure 3. 7-Pin Electrical Connector

The tractor must be equipped with a SAE J560a 7-pin electrical connector. This will provide power for turn signals, warning flashers, and operating power for the optional rear steering selector switch.

The harvester is equipped with warning flashers and turn signals located on each corner. Warning lights must be functional whenever the harvester is transported on public highways.

See your tractor operator's manual for instructions on warning light and turn signal operation.

If warning lights and turn signals do not function correctly, see your Alloway dealer.

Tractor Ballast

The tractor should be equipped with manufacturer's maximum allowable front end ballast for operational and transport stability.

ATTACHING TRACTOR TO THE HARVESTER (Figure 4 & Figure 5)

Make sure there are no bystanders between tractor and harvester.

Carefully back up, until the Pin on the tractor is directly in line with the harvester clevis ring.

Stop engine, set parking brake, wait for all moving parts to stop and remove ignition key before dismounting.

Clean the hydraulic couplers and fittings to avoid oil contamination.

Connect the hydraulic hoses which control the front hitch cylinders to the tractor. Connect these hoses so that moving the control lever forward lowers the harvester (raises the hitch tongue) and moving the control lever rearward raises the harvester (lowers the hitch tongue).

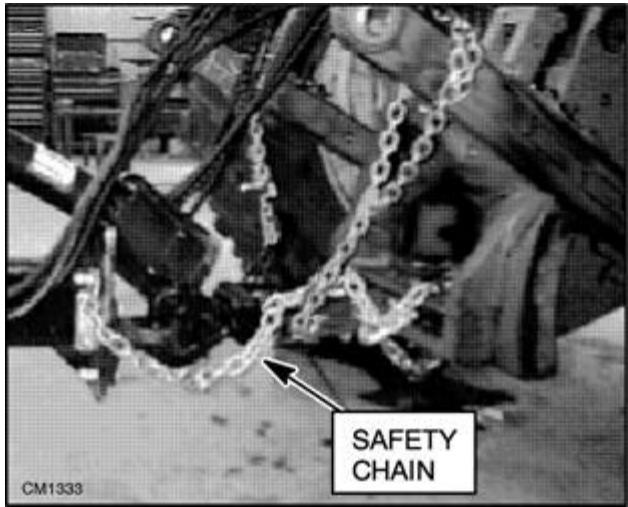


Figure 4. Lock Pin & Safety Chain

Attach the safety chain to the drawbar support of the tractor. Attach Hydraulic Lines. Insert the 7-pin male harvester electrical cable into the tractor female connector.

The unloader conveyer motor is operated by tractor remote valve. Connect the hoses originating at the harvester so that moving lever forward causes the boom conveyor motor to run forward. Pulling lever back causes conveyor motor to reverse and load beets into tank. When bottom of tank is covered with beets push slider conveyor switch and slide conveyor to the left this will fill center of tank.

Check the harvester PTO shaft for smooth telescoping action. Attach the harvester PTO shaft to the tractor PTO shaft. Make sure the locking collar is fully engaged in the lock groove of the tractor PTO.

Hydraulically raise front of the harvester, stop engine, set park brake, wait for all moving parts to stop and remove ignition key before dismounting.

Install transport locks on depth control cylinders.

UNHOOKING THE TRACTOR FROM THE HARVESTER (Figure 7 & Figure 8)

Locate the harvester on a hard level surface.

Make sure area is free of bystanders.

Lower machine with the tractor hydraulics from tractor seat, until machine is resting in a level and stable position on the lifter wheels. Planks or blocking of a suitable size may be used to prevent the harvester from sinking into the soil or damaging the floor surface.

Move boom locks out of cradled position and fully lower the truck boom. Stop the engine, set parking brake, remove ignition key and wait for all moving parts to stop before dismounting the tractor. Block the rear wheels of the harvester to prevent the harvester from

rolling. Disconnect PTO shaft from tractor. Disconnect the safety tow chain. Disconnect the electrical cable from the tractor and store in a safe and secure position on the hitch. Remove Pin from hitch.

Lower the hitch to the full extension of the lift cylinders. Stop the engine, release hydraulic pressure in all remotes, set parking brake, remove ignition key and wait for all moving parts to stop before dismounting the tractor.

Disconnect all hydraulic lines and the rear steering electrical connector.

FIELD OPERATION

The Alloway harvester will give best performance only if it is properly set for individual field conditions. These setting requirements may change with changes in soil moisture, density and beet varieties. The following explains the operation and adjustment of the machine. Check with your dealer or Alloway for special conditions.

Raising and Lowering the Harvester

The harvester lift cylinders are attached to the harvester tongue and are used to raise the front of the harvester out of the ground. The lift cylinders are connected to tractor hydraulic outlet.

Harvester hydraulic connections should be made so that moving tractor control lever forward lowers the harvester and moving lever rearward raises the harvester.

Transport locks are included and must be installed whenever the harvester is attached to the tractor but not involved in digging operations.

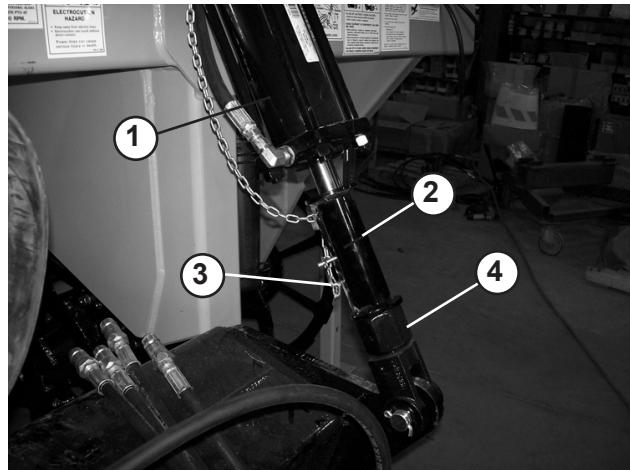
Depth Stops and Transport Locks (Figure 9)

Digging depth is controlled with two hydraulic lift cylinders on the hitch. Adjustable stops are provided on these cylinders which are used to set and retain the desired machine working depth. These stops must be adjusted so both cylinders have the same stop length.

Adjust cylinder depth stops by turning stop nut. Lengthening stop will raise harvester out of the ground for shallower operation. Shortening the stop will lower the harvester into the ground for deeper operation.

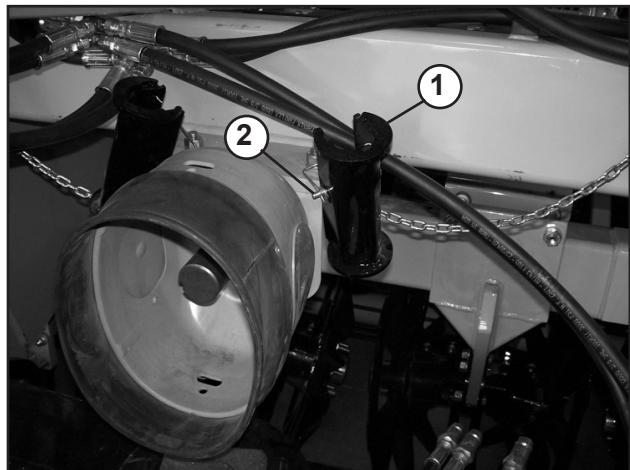
Transport locks are included and must be installed whenever the harvester is attached to the tractor but not involved in digging operations.

To install transport locks, depth stops must be adjusted equally. Raise harvester completely. Set tractor park brake, turn off tractor engine, remove key and exit tractor cab. Working from beside the lift cylinders, remove transport lock from storage bracket and install transport lock over cylinder rod. Install lock pin in transport lock to hold lock in place on cylinder rod. Install transport lock for both lift cylinders



1. Front lift cylinder
2. Transport lock
3. Lock pin
4. Adjustable depth stop

Figure 9. Transport Locks Installed



1. Transport lock
2. Lock pin

Figure 10. Transport Lock Storage Position

Transport locks should be attached to the storage brackets whenever locks are removed for digging operation. Replace any lost or damaged transport lock component immediately. Recommended operating depth is between 2" and 3" measured from cleared undisturbed soil to the bottom of the cut trench behind

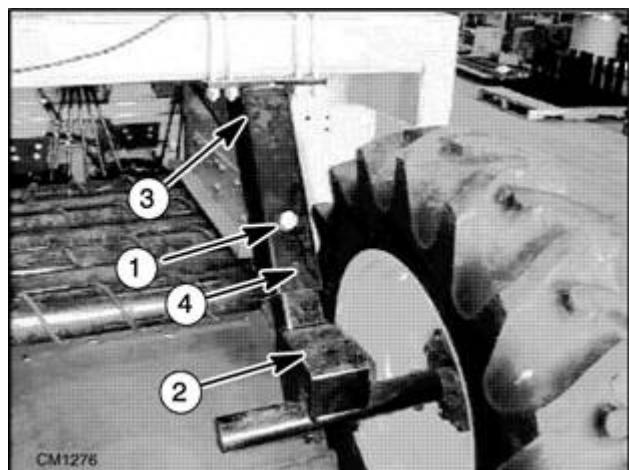
the harvester.

IMPORTANT

- When operating in rocky conditions, the lift circuit should be placed in "float" position to allow the harvester to raise over rocks without lifting the tractor.

With lifter wheels at the desired operating depth, the machine should be level front-to-rear and side-to-side. The rear carrier struts are individually adjustable to level the machine.

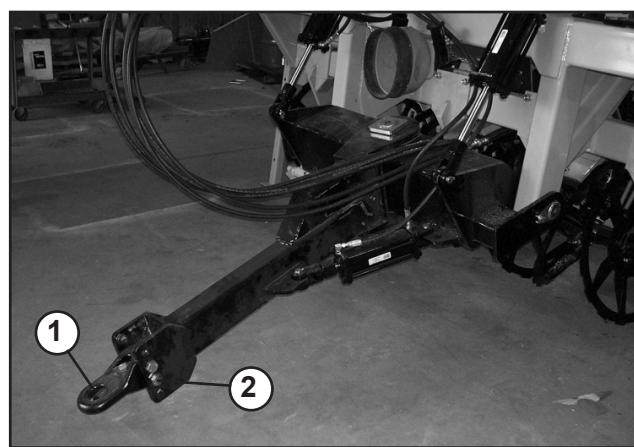
Manually adjustable rear struts are supplied on harvesters.



1. Leveling adjustment bolt
2. Spindle housing
3. Support strut
4. Leveling adjustment holes

Figure 12. Standard Rear Strut (Wheel Removed)

Additional leveling adjustment is possible by moving the hitch ring attached to the harvester tongue.



1. Adjustable hitch ring
2. Hitch adjustment bolts

Figure 13. Hitch Ring Adjustment

Adjust Chain Bed spacing between lifter wheels and Chain Bed by adjusting Pivot Bracket with adjusting bolt. Try to keep a minimum distance of approximately 1/2" between lifter wheels and Chain Bed.

Cleaning capacity of the harvester can be affected by raising or lowering the adjustable grabroll bed. The front of the side sheet may be lowered (This allows beets more time on grabroll bed for better cleaning.). The front of the side may be raised if less cleaning is needed.

Raise Truck Boom to Operating Position

The truck boom must be raised from the lowered transport position and locked in the raised operating position before operating the truck boom conveyor. The truck boom is raised into position with single acting cylinders and is lowered to rest on boom locks during operation.



WARNING

- **Truck boom lock must be engaged when truck boom is in operating position. Do not operate unloader conveyor unless boom lock is engaged and in good repair. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.**

IMPORTANT

- **Operate unloader conveyor only with truck boom fully raised and with boom lock engaged. Hydraulic pressure on boom cylinders must be relieved and hydraulic selector valve moved to the "in" position (row finder override function). Make sure all people and equipment are clear of the boom area.**



Figure 14. Boom Lock Engaged

Move the hydraulic selector valve to the "out" position to activate the truck boom circuit.

Using tractor remote lever #3, move lever rearward to retract the boom cylinders. Raise the truck boom completely until the boom locks drop into place as shown in Figure 14. Move control lever #3 forward to lower the boom to rest on the boom locks.

Stop the engine, set parking brake, remove ignition key and wait for all moving parts to stop before dismounting the tractor. Move the hydraulic selector valve to the "in" position to activate the harvester truck boom hydraulic motors.

Lower Truck Boom to Transport Position

Make sure all people and equipment are clear of the boom area.

The hydraulic selector valve must be in the "out" position to activate the truck boom circuit.

Using tractor remote lever #3, move lever rearward to retract the boom cylinders. This will raise the truck boom completely and remove the boom weight from the boom locks.

Stop the engine, set parking brake, remove ignition key and wait for all moving parts to stop before dismounting the tractor.



Figure 15. Boom Lock Released

Stand behind truck boom and pull the lock pin handle to position the lock pin in raised position as shown in Figure 15. This releases the boom lock so the truck boom can be lowered. Move tractor control lever forward and fully lower the truck boom.



Figure 16. Truck Boom in Lowered Transport Position

Holding Tank/Truck Boom, Load Tank

To load the tank while lifting beets: push the tractor hydraulic control lever past neutral into reverse position. To load the tank push the hydraulic lever controlling truck boom in other direction reversing hydraulic motors. The conveyor running in reverse will fill the tank on the left side. When tank starts to fill approximately 1/4 way up, push slider switch on control box to left position. This will open the truck boom in center of the vertical elevator, allowing beets to fill center of tank.

Truck Boom & Tank Unload

IMPORTANT

- Operate unloader conveyer only with truck boom fully raised and with boom lock in place. Hydraulic pressure on boom cylinders must be relieved. Make sure all people and equipment are clear of the boom area.

The holding tank serves as temporary storage for beets when opening fields, turning on the head lands or changing trucks.

Hydraulic power to run the truck boom motors. Tractor hydraulic flow rate must be adjusted to provide enough flow for operating the truck boom motors.

To unload the holding tank: activate the truck boom hydraulic motors. Push the tank unload switch on the valve control box. This will activate the tank unload conveyor. Push the slider switch to the right position, this will close the gap in the truck boom conveyor. When lifting beets keep tank unload in slow position. When not pulling beets push the switch to the fast position and hold. This will speed up unload conveyor for fast removal.

Truck Boom Motor Speed, Adjust

Adjust truck boom motor speed using the tractor remote. Start tractor and activate truck boom motor. Observe

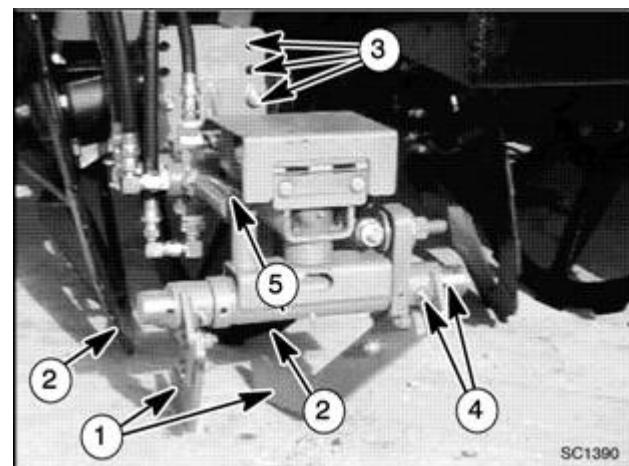
truck boom unloading speed.

Row Finder (Figure 18)

Automatic steering by the row finder requires constant hydraulic potential at the automatic steering valve. Hydraulic power for the row finder is provided by the tractor power-beyond kit or tractor remote #4 set for continuous operation.

Make sure the row finder assembly is level and the feeler arms are aligned with the center of the lifter wheels on the finder row.

With the harvester at the set operating depth, adjust the row finder feeler arms to run as lightly on the soil as possible. Adjust the width of the feeler arms to the approximate diameter of the beets at ground level. Adjust the length of the valve control rod to center the feeler arms on the lifter wheel strut. Adjust the auxiliary centering springs to the same position as the centering spring in the row finder valve spool. It is generally more productive to adjust the row finder on level ground in the land and not on the head land.



1. Feelers arms
2. Lifter wheels
3. Row finder height Adjustment
4. Feelers arm width adjustment
5. Steering control rod

Figure 18. Row Finder

IMPORTANT

- Before backing up, raise harvester completely. The row finder may be damaged if it is allowed to contact the ground while backing.

Row Finder Override

A row finder override control is powered by tractor control valve. This provides manual control of the steering system and can be used to override the row finder.

To operate the row finder override control: activate tractor control lever rearward to move the harvester left, and forward to move the harvester right.

PTO Engagement

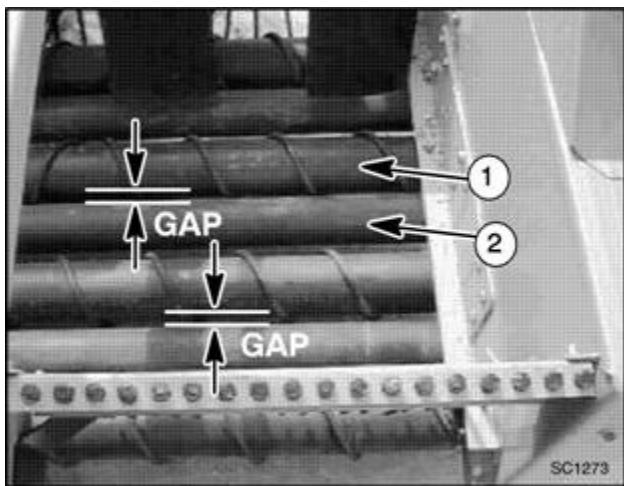
Set the tractor throttle to idle before engaging or disengaging the PTO.



WARNING

- Connect PTO driveline directly to tractor PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and result in personal injury or death.

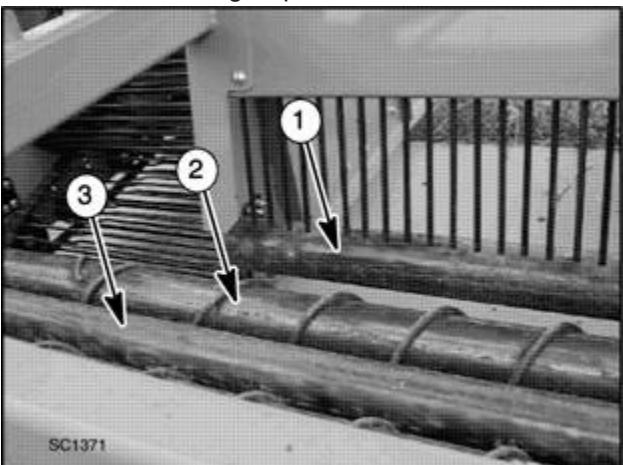
Grab Rolls (Figure 21)



1. Spiral roll (fixed)
2. Smooth roll (adjustable)

Figure 21. Grab Roll Gap

The grab roll bed is a series of counter-rotating roll pairs which help to clean the beets and move them to the elevator. The gap between roll pairs is adjustable for different cleaning requirements.



1. Stub roll (optional)
2. Rear spiral roll
3. Smooth roll

Figure 22. Stub Roll (optional)

The grab roll bed is equipped with a system of cushions to help absorb shocks and permit small stones or other debris to pass between the grab rolls.

It is important to have an even space on the left and right sides of the harvester between the pairs of grab rolls; however, the individual pairs can have different gaps to accommodate conditions. For instance a wide gap may be helpful on the first pair of rollers to get rid of a lot of soil, and a narrow gap on the last pair may save tails. Spiral rolls are fixed in the grab roll bed. In 7-roll harvesters, the rear spiral roll has no paired smooth roll. Optional fixed-position rear stub rolls are available.

Grab Roll Bed Rods

The grab roll rods are located at the rear of the roll bed, and may be removed for access to the bed.

Lifter Wheels (Figure 23)

The pinch point width should be uniform across all rows of the harvester. The pinch point width can be adjusted by adding or removing pairs of spacers at each lifter wheel.

Raise harvester and install transport locks (see Blocking Method, page 32).

To remove or add spacers, loosen lifter wheel nuts and remove the bolt retaining each spacer (one bolt per spacer). Install or remove spacers as required to set the desired width and re-tighten the wheel nuts to 100 lb-ft. (without wheel cushions). With wheel cushions, tighten wheel nuts to compress wheel spring assemblies $1/4$ " from their free height.

Spacers must be installed as pairs. Multiple spacer pairs may be used at each wheel to increase the pinch point width.

It is not necessary to remove the lifter wheels when adding or removing spacers.

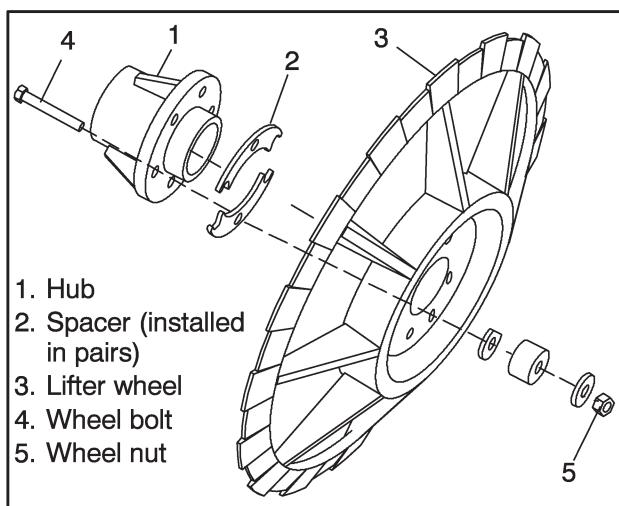


Figure 23. Install Lifter Wheel Spacers

Wheel Scrapers

Wheel scraper blades are adjustable for digging conditions. To adjust scraper blades, loosen retaining bolts and slide scraper blades to place the scraper closer to the wheel or away from the wheel. Retighten scraper retaining bolts.

Wheel Fillers

Under certain digging conditions, beets may fall through the spokes of the lifter wheels during operation. This condition may require the installation of filler spokes on the lifter wheels. To install fillers, remove two wheel nuts (opposite from each other) and install wheel filler. Retighten wheel retaining nuts.

Flexing Lifter Struts (Optional)

Flex struts are available for the lifter wheel struts for operation in rocky conditions.

Flex cushions on the lifter wheels will reduce damage to the lifter wheels in rocky conditions.

When operating in rocky conditions, the lift circuit should be run in "float" to allow the harvester to raise over rocks without lifting the tractor.

IMPORTANT

- When operating in rocky conditions, the lift circuit should be placed in "float" position to allow the harvester to raise over rocks without lifting the tractor.

Paddle Shaft

The paddle shaft provides a set of rotating paddles between each set of lifter wheels. Beets are moved onto the chain bed by the rotating paddles. The height of the paddle shaft may be raised or lowered to obtain the correct clearance for the harvesting conditions. With flex struts installed, the paddle shaft must be placed in the uppermost position to maintain adequate clearance between the paddle shaft and the lifter wheels. Keep front and rear paddle deflectors in place and in good condition; replace if damaged or missing.

Truck Boom Conveyer Chain

IMPORTANT

- Do not operate the unloader conveyer with the truck boom in the transport position, damage to the conveyer or drives may result.



Figure 23.

Tighten boom conveyor chain using adjusting screws on front and back side of boom. Tighten until chain does not slip over drive sprockets. Tighten evenly.

Truck Boom Conveyer Chain

IMPORTANT

- Do not operate the unloader conveyer with the truck boom in the transport position, damage to the conveyer or drives may result.

Tighten boom conveyor chain using adjusting screws on front and back side of boom. Tighten until chain does not slip over drive sprockets. Tighten evenly.

Vertical Elevator

A dual chain elevator moves the beets from the grab roll bed to the holding tank. A combination of straight and offset rods is used in the elevator to provide a pocket for carrying beets. All machines are equipped with 1:1 speeds for the vertical elevator chains. If scrubbing action is desired, the speed of the outside chain can be increased by replacing the 40 tooth "driven" sprocket with a 34 tooth sprocket. This will give a scrub ratio of approximately 15% between the two vertical elevator chains.

As the elevator fills with beets, spring loaded tensioner arms allow the chains to operate correctly. Tension adjustment springs for the outer chain are located on the both sides of the elevator. Tension adjustment spring for the inner chain is located on the right side of the elevator.

The vertical elevator is driven from the self contained hydraulic system or by 4th remote on tractor (optional). To speed up rear elevator use flow control. For more speed and power increase flow.

TRANSPORTING

Fully lower the elevator boom as instructed in "Truck Boom Lower".

Raise the machine and insert the transport locks on the hitch lift cylinders.

Transport locks must be installed whenever the harvester is transported.

Replace any lost or damaged transport lock component immediately.

Do not transport the harvester with beets in the holding tank.

Make sure reflectors, lights and the SMV sign are clean and clearly visible to other traffic.

Do not allow riders.

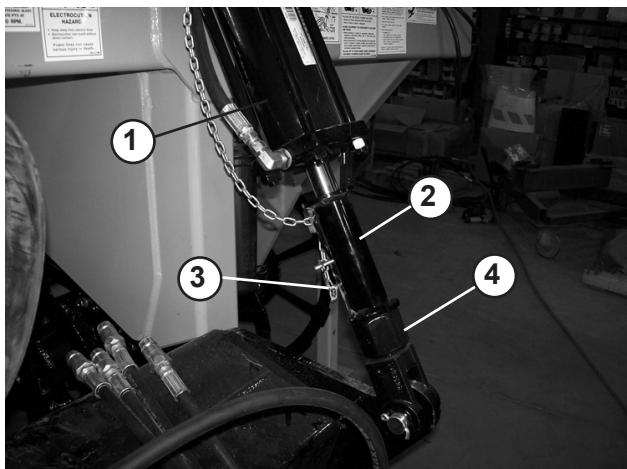
Use hazard flashers on the tractor and harvester when transporting.

Never exceed safe travel speed, slow down when making turns and traveling on rough roads or shoulders.

Only use a tractor of the recommended size and weight for transporting.

Lock foot brake pedals for even application during road travel.

Do not exceed 10 mph transport speed.



1. Lift cylinder
2. Transport lock
3. Lock pin
4. Adjustable depth stop

Figure 24. Transport Locks Installed

STORAGE



WARNING

- For storage, disengage tractor PTO power to harvester, lower front lift cylinders so that lifter wheels are on the ground, lower truck boom, lower 3-point hitch. Operate tractor valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt. Remove driveline from tractor PTO. Chock (block) front and rear of harvester wheels.



CAUTION

- Keep children and bystanders away from storage area.

After the season's use, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of the next season.

To insure a long, trouble free life, this procedure should be followed when preparing the unit for storage.

Clear the area of bystanders.

Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris or residue.

Check the rotating components for damage or entangled material. Repair or replace damaged parts. Remove any entangled material.

Inspect all hydraulic hoses, fittings, lines and couplers. Tighten any loose fittings. Replace any hose that is cut, nicked or abraded or is separating from the crimped end of the fitting.

Change the oil in the gearbox.

Lubricate all grease fittings. Make sure that all grease cavities have been filled with grease to remove any water residue from the washings.

Touch up all paint nicks and scratches to prevent rusting.

Move to storage area.

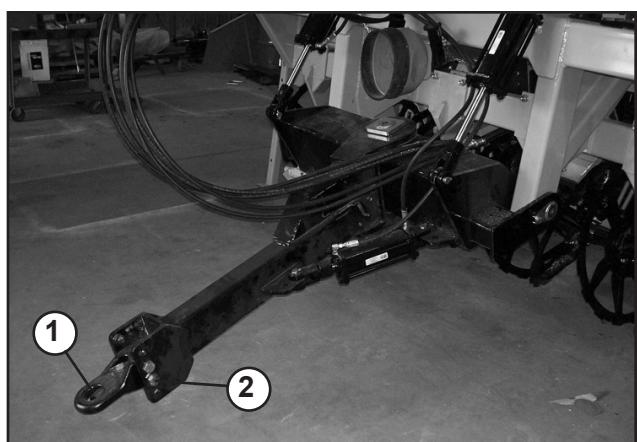
Select an area that is dry, level and free of debris.

Unhook from tractor.

Place PTO shaft on hitch to keep PTO off the ground.

Store the machine in an area away from human activity.

Do not allow children to play on or around the stored machine.



1. Hitch ring (adjustable)
2. Harvester hitch

Figure 25. Hitch Storage Position

OWNER SERVICE

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said *"The best safety device is an informed, careful operator."* We ask you to be that kind of an operator.

The information in this section is written for operators who possess basic mechanical skills. Should you need help, your dealer has trained service technicians available. For your protection, read and follow all safety information in this manual.



WARNING

- Before dismounting tractor, disengage tractor PTO power to implement, lower front lift cylinders so that lifter wheels are on the ground. Operate valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt.
- Before performing any service or maintenance, disengage power to implement, lower front lift cylinders so that lifter wheels are on the ground, lower truck boom, lower 3-point hitch. Operate valve control levers to release any hydraulic pressure. Stop engine, set parking brake, remove key and unfasten seat belt. Disconnect driveline from tractor PTO. Chock (block) front and rear of implement wheels.
- Before working underneath a raised implement, read and follow all operator's manual instructions and safety rules. Implement must be attached to tractor, lift cylinder locks must be installed, and lift cylinders lowered against locks. Hydraulic system leak down, hydraulic system failures, or movement of control levers can cause equipment to drop unexpectedly and cause severe injury or death.



WARNING

- Never perform service or maintenance with engine running.
- Do not disconnect hydraulic lines until engine is stopped, tractor is properly secured, equipment and all components are lowered to the ground, and system pressure is released by operating all valve control levers.
- Keep all persons away from operator control area while performing adjustments, service or maintenance.



CAUTION

- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.



WARNING

- Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.

BLOCKING METHOD FOR LIFTER WHEELS AND ROW FINDER SERVICE

The only approved blocking devices for this harvester are the cylinder transport locks supplied with the unit. The harvester must be located on a hard level surface and the transport locks properly installed. Do not use a transport lock or retaining pin which is bent or damaged. Replace any damaged or lost transport lock component immediately.

Do not work underneath harvester unless it is properly attached to the tractor and blocked securely. When properly attached, the unit will be anchored to minimize front-to-rear movement.

Before blocking, ensure harvester is securely attached to tractor. Truck boom must be fully lowered into transport position. Do not work on harvester with truck boom in any intermediate position.

Raise harvester completely, set park brake, shut off engine, remove key, and chock tractor wheels. Without going under the harvester, carefully install transport locks and retaining pins. Start tractor and lower harvester onto transport locks. Cylinder depth stops must be set equally before installing transport locks. Disconnect PTO driveline before performing any maintenance on the harvester.

TRUCK BOOM SERVICE



WARNING

- Before performing any maintenance on the beet harvester, the truck boom must be fully lowered into the transport position. Do not work on harvester with truck boom in any intermediate position. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Truck boom lock must be engaged when truck boom is in operating position. Do not operate unloader conveyor unless boom lock is engaged and in good repair. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.

Before working on truck boom or any components on the right side of the harvester, the truck boom must be fully lowered into transport position. Do not work on harvester with truck boom in any intermediate position.

LUBRICATION (Figure 26)

Figure 26 shows the lubrication points. The accompanying chart gives the frequency of lubrication in operating hours, based on normal conditions. Severe or unusual conditions may require more frequent lubrication.

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

Use SAE multi-purpose high temperature grease, or SAE multi-purpose lithium based grease.

Use a lithium grease of No. 2 consistency with a MOLY (molybdenum disulfide) additive for all locations. Be sure to clean fittings thoroughly before attaching grease gun. When applied according to the lubrication chart, one good pump of most

guns is sufficient. Do not over grease. Grease the telescoping driveline. Daily lubrication of the PTO slip joint is necessary or damage to U-joints, gearboxes, tractor PTO and/or harvester driveline can result. Close and secure all removable covers and guards before operating harvester.

DAILY SERVICE

Inspect all drive belts for slippage, damage or accumulation of foreign materials. Adjust and clean as necessary.

Inspect all drive chains and adjust as necessary.

Inspect paddle shaft for loose or missing paddles.

Inspect grab roll bed for alignment, spacing, and roll damage. Check that grab roll shock cushions are in good condition.

Inspect the elevator and unloader structures for missing or damaged rollers. Inspect unloader chain slide bars on the tank bottom for damage or wear; replace if necessary.

Inspect hydraulic system for leaking or damaged components. Replace or repair leaking fittings immediately.

Inspect all conveyor chains for loose or missing cross rods. Check the splices on each belted chain, tighten chain as necessary.

Inspect lifter wheels and struts for alignment, loose or missing components, and proper setting.

Check tractor and harvester tire pressure. Service as necessary.

YEARLY SERVICE

Inspect PTO driveline components for wear or damage and repair as necessary.

Inspect all gearboxes for leaks or damage, and repair.

Drain and replace all gearbox lubricant and clean breathers.

Repack lifter wheel bearings and replace any worn or damaged components.

Inspect chain bed for damaged or bent chain and replace if necessary.

Inspect paddle shaft bearings, paddles, and deflectors. Replace as necessary.

Inspect grab rolls for proper alignment, bent rolls, or damaged flighting and replace if necessary. Inspect grab roll drive belts, sheaves and tighteners; repair any damaged components.

Inspect transport cylinder locks; replace any worn or damaged component.

Repack carrier wheel bearings and replace any damaged components.

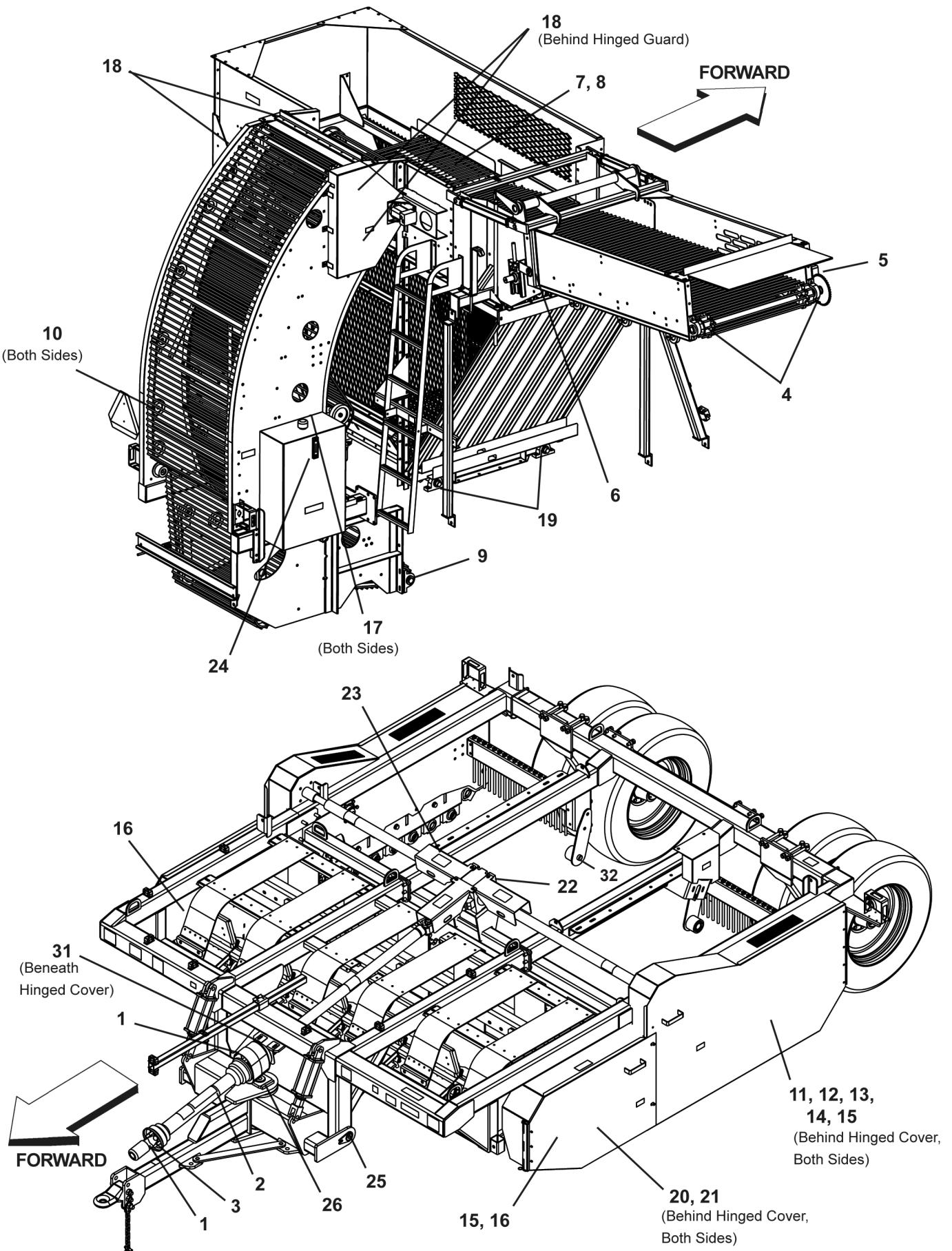


Figure 26. Lubrication Locations

LUBRICATION CHART

| <u>Ref. No.</u> | <u>Description</u> | <u>Frequency</u> | <u>Number</u> |
|---------------------|------------------------------------|------------------|----------------|
| 1 | U-joint | 24 hrs | 2(std),3(CV) |
| 2 | Slip-joint | 8 hrs | 1 |
| 3 | CV-joint (optional) | 8 hrs | 1 |
| 4 | Cross shaft | 24 hrs | 2 |
| 5 | Motor primary shaft bearing | 24 hrs | 1 |
| 6 | Truck Boom Belt Tightener brg. | 24 hrs | 2 |
| 7 | Slide Conveyor Takeup bearing | 24 hrs | 1 |
| 8 | Slide Conveyor Shaft bearings | 24 hrs | 1 |
| 9 | Lower Elevator Cross Shaft brgs. | 24 hrs | 1 |
| 10 | Elevator tensioner pivots | 8 hrs | 2 |
| 11 | Grab roll bearing | 24 hrs | 16 |
| 12 | Cushion pivot | 8 hrs | 6 |
| 13 | Grab roll idler pivots | Yearly | 4 |
| 14 | Grab roll drive bearing | 24 hrs | 2 |
| 15 | Paddle shaft primary drive | 24 hrs | 4 |
| 16 | Paddle shaft bearings | 24 hrs | 2 or 3 |
| 17 | Elevator tensioner pivots | 8 hrs | 2 |
| 18 | Elevator upper shafts | 24 hrs | 4 |
| 19 | Holding Tank bearings | 24 hrs | 1 |
| 20 | Chain Bed Shaft bearings | 24 hrs | 1 |
| 21 | Idler Pulley Hubs | 24 hrs | 2 |
| 22 | Main gearbox: Check lube level | 24 hrs | 1 |
| 23 | Main gearbox output U-joints | 24 hrs | 2 |
| 24 | Oil Level & Temp Gauge | 8 hrs | Check |
| 25 | Hitch lift pivots | 8 hrs | 2 |
| 26 | Hitch steering pivots | 8 hrs | 2 |
| 27 | Lifter wheel bearing | 24 hrs | 1 (each wheel) |
| 28 | Row finder pivot shafts | 8 hrs | 2 |
| 29 | Rear steering pivot shaft (opt) | 8 hrs | 2 |
| 30 | Rear steering level adjuster (opt) | 8 hrs | 4 |
| 31 | PTO Carrier bearing | 24 hrs | 1 |
| 32 | Short grab roll bearing | 24 hrs | 2 |

MAINTENANCE

Before performing any maintenance or inspections on the harvester, shut off the tractor, set the parking brake, release all hydraulic system pressure with the tractor hydraulic controls and remove the key from the tractor.

Grab Roll Drive Belt Adjustment

(Figure 28)

Open grab roll side door. Tighten the tension spring adjustment bolt so as to show approximately 1/8" gap between each of the spring coils.

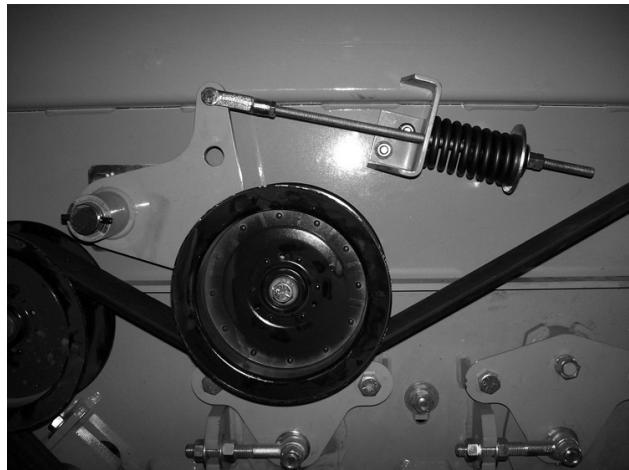


Figure 28. Grab Roll Drive

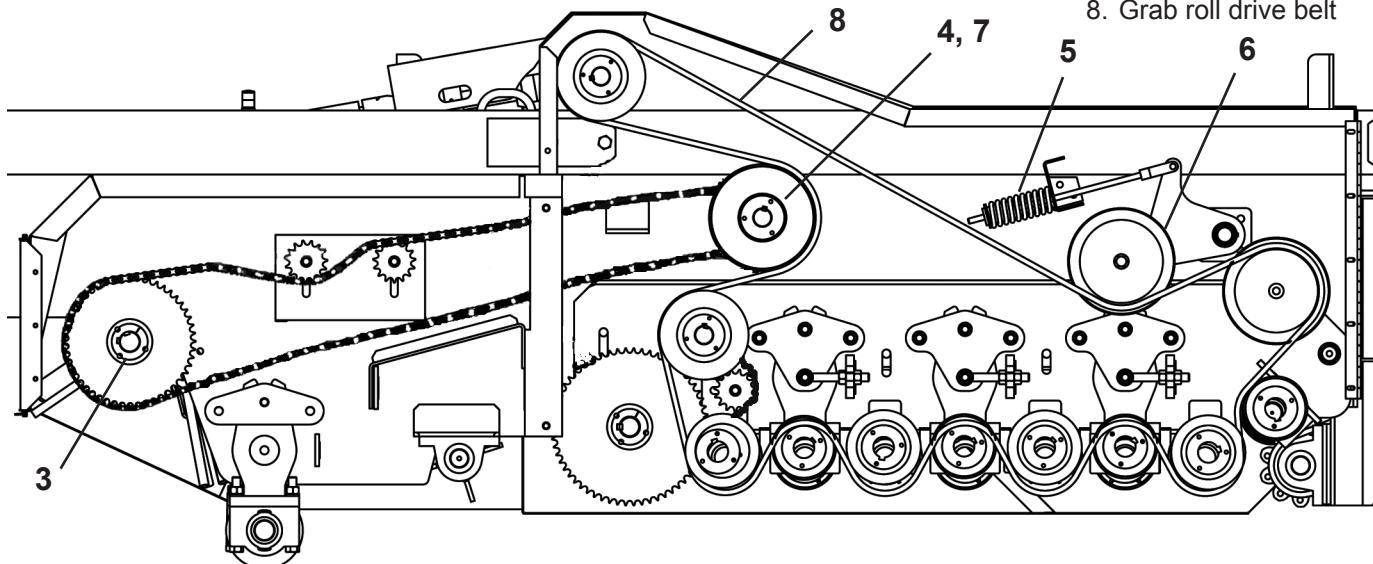
Belt Replacement (New Belt)

To remove belt, loosen the idler spring.

Install belt over grab roll sheaves as shown in Figure 29.

Route belt around drive sheaves and idlers as shown in Figure 31. Do not pry belt over sheaves as damage to the belt may result.

Figure 30. Grab Roll Drive



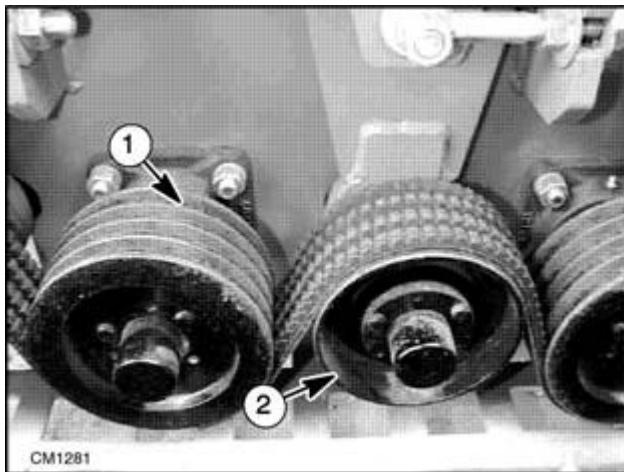
Tighten idler spring until belt does not slip under full load operation. Close and secure grab roll side door.

Paddle Shaft, Elevator and Unloader

Drive Chains

Adjust drive chains by moving idler sprocket until chain has 3/8" slack in the long side of the chain. Elevator inner and outer chains are set at the factory to run at the same speed. In some conditions scrubbing action may be needed. By running the inner and outer chains at different speeds, beets are "rolled" up the elevator for additional cleaning.

A 34-tooth top sprocket (driven) is available to increase the outer elevator speed and provide a 15% scrubbing ratio between elevator chains.



1. Grab roll drive sheave, grooved (fixed position spiral roll)
2. Grab roll drive sheave, flat (adjustable position smooth roll)

Figure 29. Belt Routing

3. Paddle shaft primary drive
4. Grab roll drive sheaves
5. Idler spring
6. Belt idler
7. Paddle shaft drive sprocket
8. Grab roll drive belt

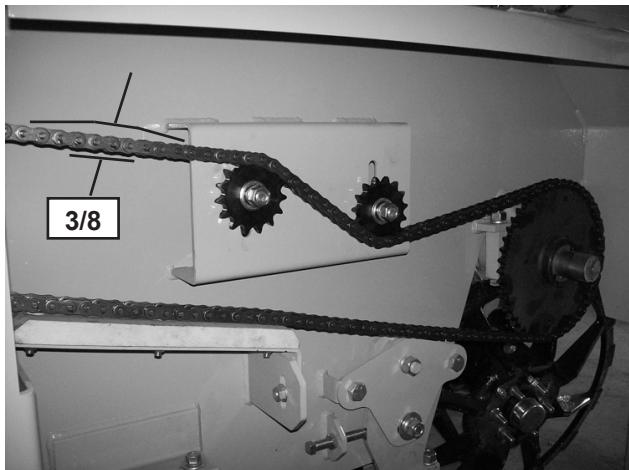
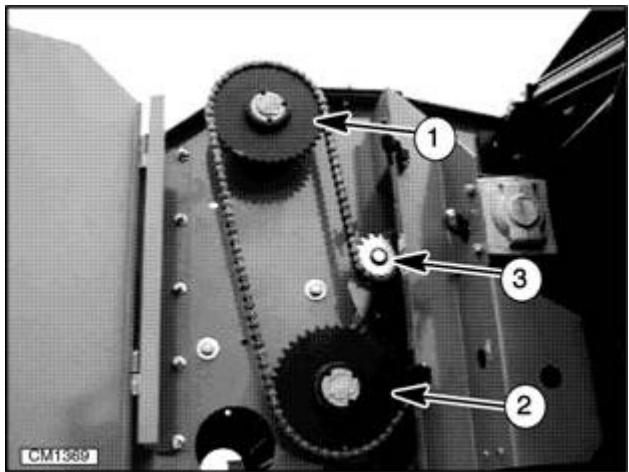


Figure 32. Drive Chain Adjustment

Elevator Speed Adjustment (Figure 33)



1. Outer elevator, "driven" sprocket (40T standard, 34T optional)
2. Inner elevator, "driven" sprocket (40T)
3. Idler

Figure 33. Elevator Upper Drive

Working from the holding tank, remove shield and drive chain at top of elevator.

Remove outer elevator chain drive sprocket.

Install appropriate replacement drive sprocket (40-tooth standard or 34-tooth optional scrubber sprocket.)

Add or remove chain links to fit new sprockets

Install drive chain and adjust.

Close and fasten drive shield.

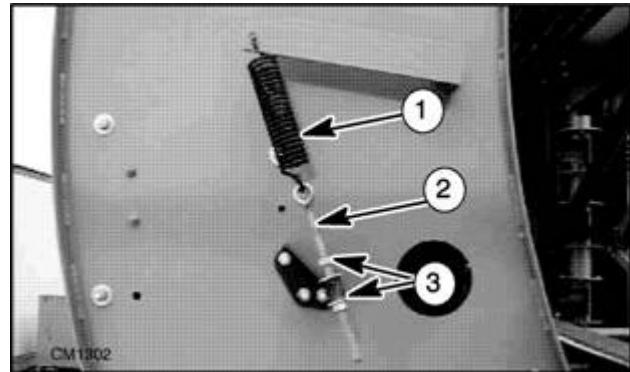
Elevator Chain Adjustment

Inspect all elevator drive sprockets and rollers for damage or missing components. Missing or damaged rollers will cause chain tension to be incorrect.

Replace any missing or damaged roller.

With the elevator empty of beets and free from accumulated dirt, adjust elevator tightener springs PN-70031574 (10/07)

(both sides) so that they have 1/8" gap between coils.

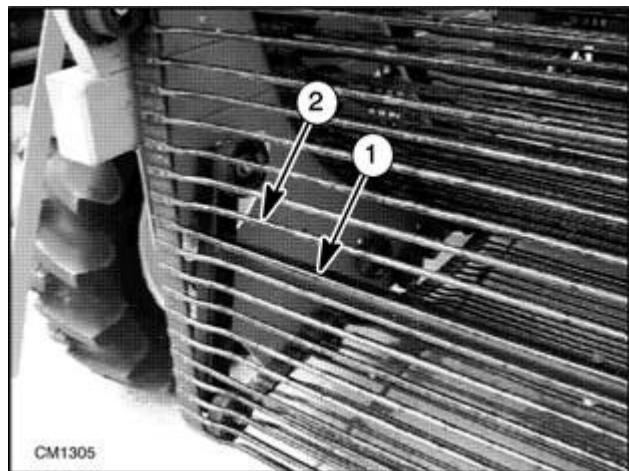


1. Tension spring
2. Adjustment eyebolt
3. Jam nuts

Figure 34. Elevator Tensioner

Elevator Chain Cross Rod Replacement

Elevator chains have a combination of straight and offset rods which are spaced for maximum performance. Truck boom conveyer has all straight rods. Do not operate the harvester with loose, bent or missing cross rods. Replace rods with the type removed. Install offset rods with the offset away from the beets as shown in Figure 35



1. Straight rod (1)
2. Offset rod (5)

Figure 35. Elevator Cross Rods

Remove rivets attaching rod to belt. Use caution to avoid damaging the belt.

Attach replacement rod to belt using bolts and threaded back-plate. Make sure offset portion of rod is away from the beets.

Elevator Chain Routing and Roller Location (Figure 36 & Figure 37)

Roller location and elevator chain routing must be correct to provide proper tension during operation. Replace any damaged or missing rollers using the correct type specified.

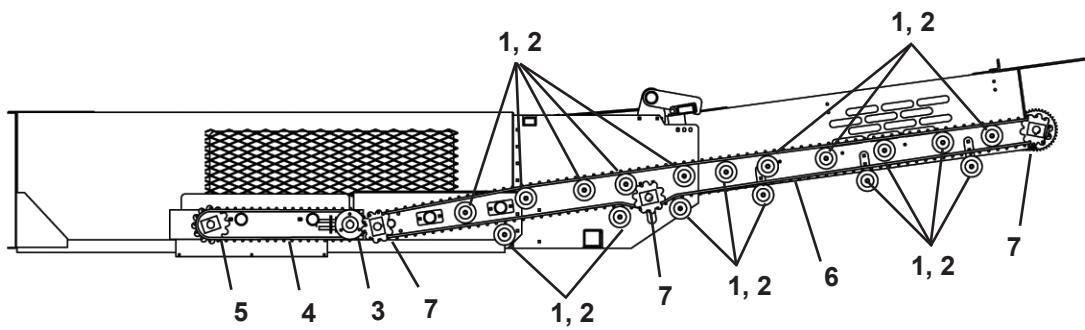


Figure 36. Roller Components (Boom - Tank Bottom)

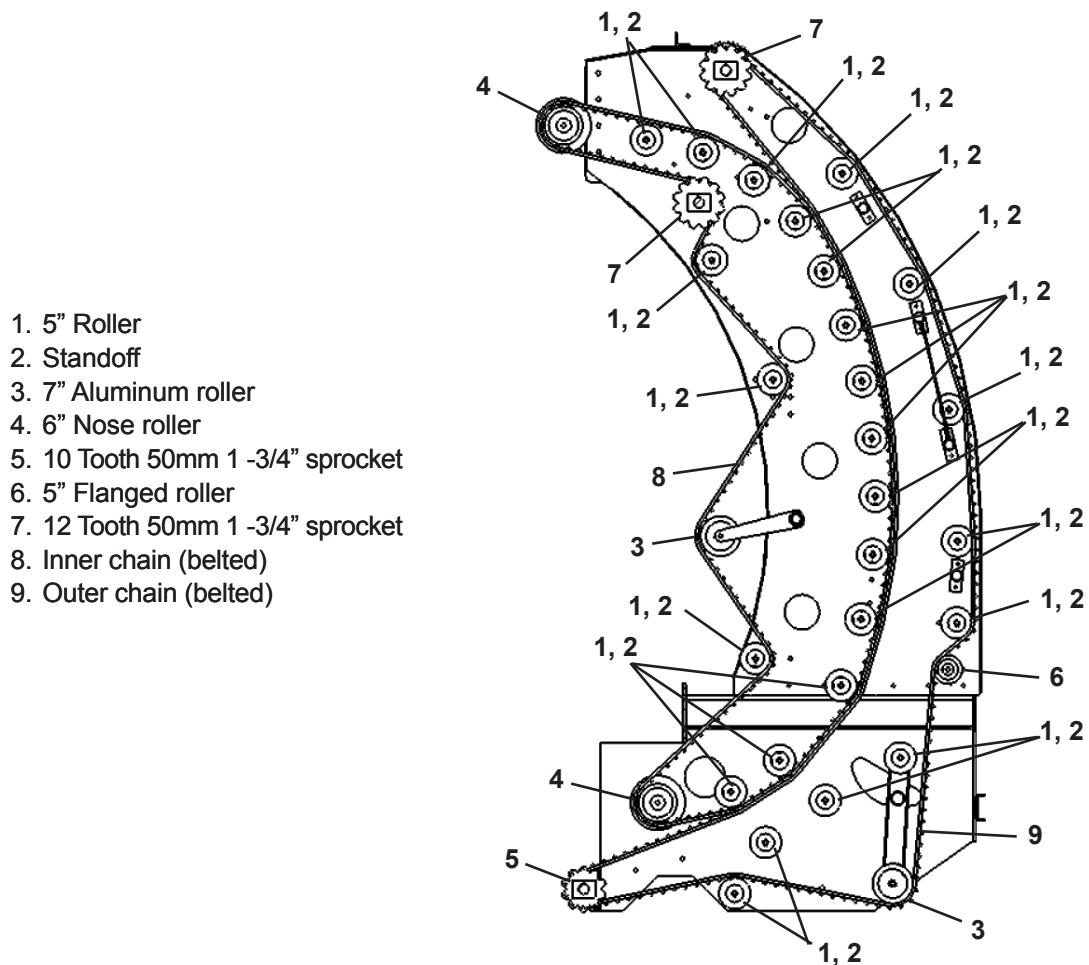


Figure 37. Roller Components (Elevator)

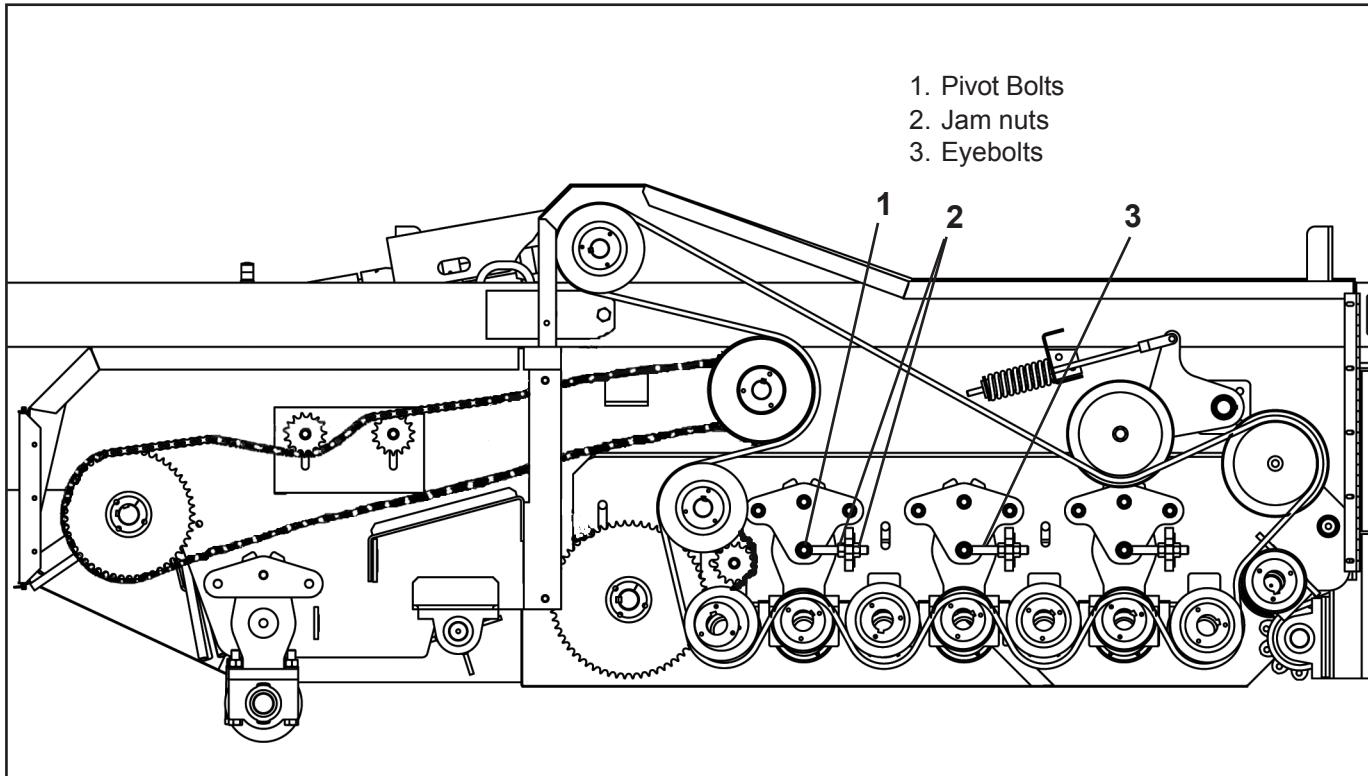


Figure 38. Grab Roll Adjustment

Holding Tank Chain Glides

Replaceable glides in the tank bottom provide wear surfaces for the unloader conveyer chain.

Remove worn or damaged glides and install replacement glides using new hardware.

Bed Chain Adjustment

To adjust bed chain open front door (both sides). Loosen center bolt in Pivot Bracket. Loosen Adjusting Bolt, adjust Bed Chain to allow 1/2" gap between Bed Chain and lifter wheels. Retighten Hardware.

Grab Roll Adjustment (Figure 38 and Figure 39)

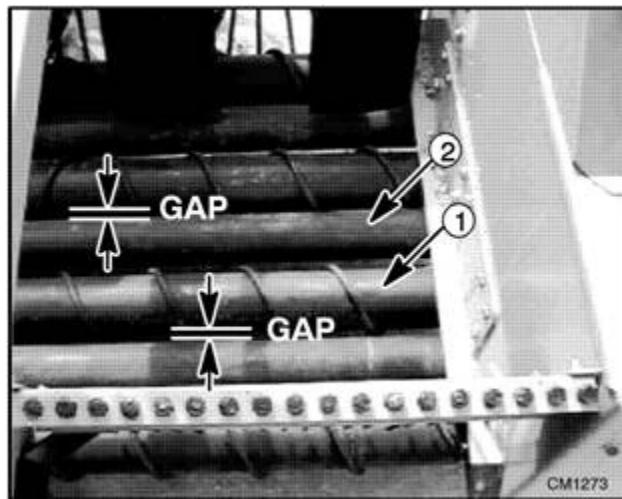
Before working on any components on the right side of the harvester, the truck boom must be fully lowered into transport position with hydraulic pressure relieved or locked in unload position with boom locks installed. Do not work on harvester with truck boom in any intermediate position.

It is important to have an even space on the left and right sides of the harvester between the pairs of grab rolls; however, the individual pairs can have different gaps to accommodate conditions. For instance a wide gap may be helpful on the first pair of rolls to get rid of a lot of soil, and a narrow gap on the last pair may save tails. Spiral rolls are fixed in the grab roll bed.

Open grab roll drive shields and secure. Loosen the 3/4" nut at the pivot point of the pivot arm bearing holder.

Loosen both 3/4" nuts on the eyebolt and move the

1. Pivot Bolts
2. Jam nuts
3. Eyebolts



1. Smooth roll (adjustable)
2. Spiral roll (fixed)

Figure 39. Grab Roll Gap

Grab Roll Cushions, Replace

The grab roll bed is equipped with a system of cushions to help absorb shocks and permit small stones or other debris to pass between the paired grab rolls. Each adjustable roll swing arm has a cushion bushing to provide limited roll movement.

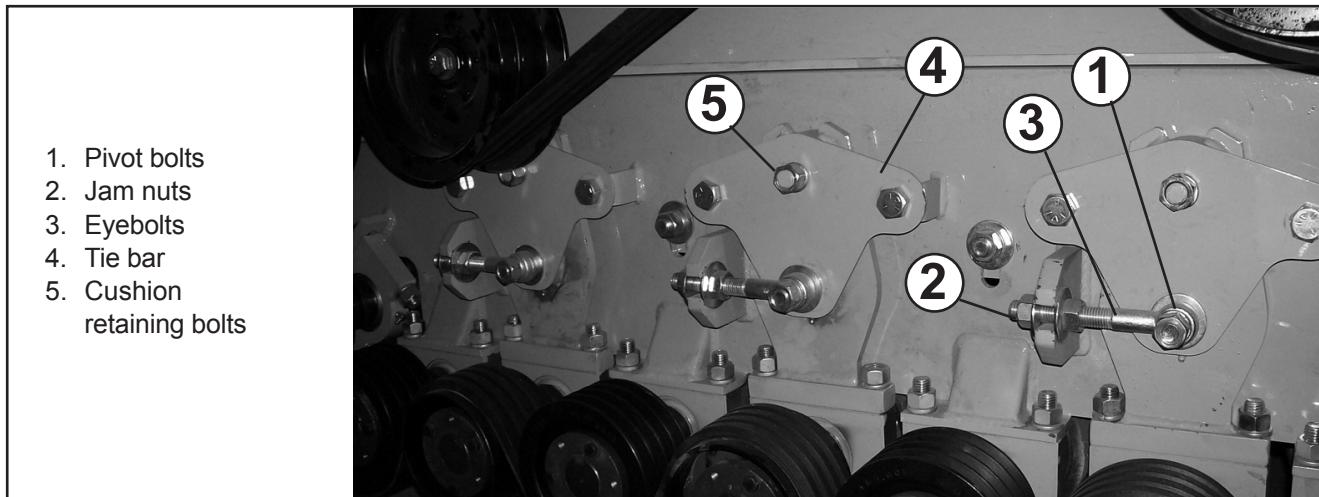


Figure 40. Grab Roll Cushions

Before working on any components on the right side of the harvester, the truck boom must be fully lowered into transport position with hydraulic pressure relieved or locked in unload position with boom locks installed. Do not work on harvester with truck boom in any intermediate position.

Open grab roll drive shields and secure. Loosen or remove grab roll drive belt.

Remove roll adjustment eyebolts. Remove retaining plate.

Remove and replace grab roll cushions.

Reinstall retaining plate, nuts and eyebolts. Tighten nuts to 100 lbs-ft.

Adjust grab roll gap as described in Grab Roll Adjust.

Tighten remaining bolts to specifications in Bolt Torque Chart.

Replace grab roll drive belt.

Close grab roll drive shield and secure for operation.

Lifter Strut Adjustment

Lifter struts should be adjusted to match the row spacing of the beets being harvested. When struts are moved, paddles must be adjusted to prevent contact between paddles and lifter wheels.

Raise harvester and install transport locks (See Blocking Method).

Loosen strut mounting bolts. Slide strut to new location and tighten evenly. When moving strut, it may be necessary to loosen paddle support on paddle shaft to allow strut to be moved.

Measure to confirm correct row spacing and tighten to specifications in Bolt Torque Chart, page 13 (standard struts). Tighten optional flex strut cushion bolts to 100 lbs./ft.

Adjust paddles and paddle shaft (see Paddle Shaft Adjustment, page 42).

Lifter Wheel Fillers

Harvesting small beets may require the use of optional fillers to prevent beets from being lost through lifter wheel spokes.

Raise harvester and install transport locks.

Remove two opposite wheel nuts from each lifter wheel.

Attach wheel fillers to the lifter wheel with a filler rod between each wheel spoke.

Re-install wheel nuts and tighten to specifications in Bolt Torque Chart.

Lifter Wheel Spacers

The pinch point width should be uniform across all rows of the harvester. The pinch point width can be adjusted by adding or removing pairs of spacers at each lifter wheel.

Raise harvester and install transport locks (see Blocking Method).

To remove or add spacers, loosen lifter wheel nuts and remove the bolt retaining each spacer (one bolt per spacer). Install or remove spacers as required to set the desired width and re-tighten the wheel nuts to 100 lb-ft.

Spacers must be installed as pairs. Multiple spacer pairs may be used at each wheel to increase the pinch point width. It is not necessary to remove the lifter wheels when adding or removing spacers.

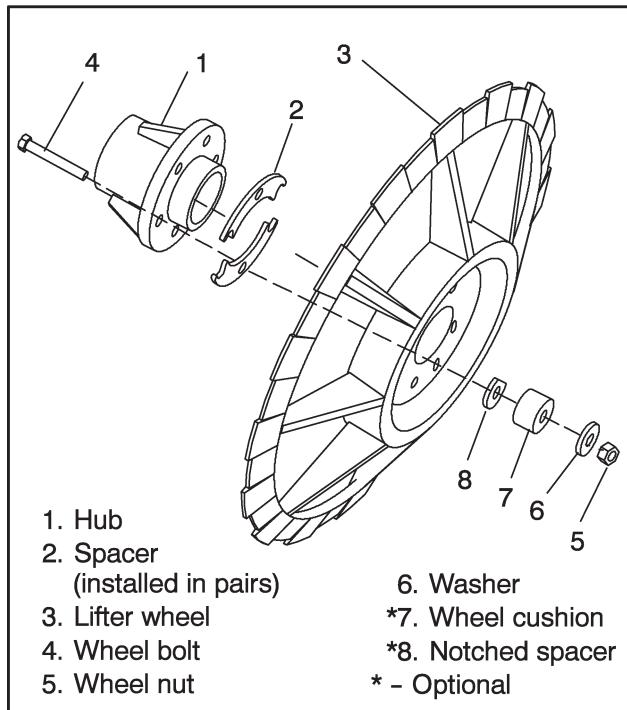


Figure 41. Install Lifter Wheel Spacers

Paddle Shaft Adjustment

The paddle shaft may be adjusted to provide proper movement of beets onto the grab roll bed. Paddle assemblies are adjustable side-to-side to maintain an equal gap between lifter wheels. The paddle shaft may be adjusted vertically to move paddles closer to the lifter wheels. The paddle assemblies must be adjusted after any movement of lifter wheels or struts. When using flex struts, paddle shaft must be raised to the uppermost position so that wheels cannot contact paddle shaft when strut is moved rearward by contact with a rock.

Raise harvester and install transport locks (see Blocking Method, page 28). Loosen paddle assemblies on paddle shaft and adjust so that each paddle is centered between the lifter wheels.

Tighten paddle assembly bolts to specifications in Bolt Torque Chart, page 15.

Loosen paddle shaft bearing housings and lift or lower shaft to provide 2-1/2" clearance between paddle shaft and lifter wheels. With flex struts installed, paddle shaft must be placed in the uppermost position. Clearance must be at least 2-1/2" to allow for strut movement.

Tighten paddle shaft bearing housings to specifications in Bolt Torque Chart, page 15.

Electrical System

The harvester is equipped with a SAE J560a 7-pin electrical connector. This provides power for turn signals, warning flashers, row finder override, boom fold selector switch, and optional rear steering switch.

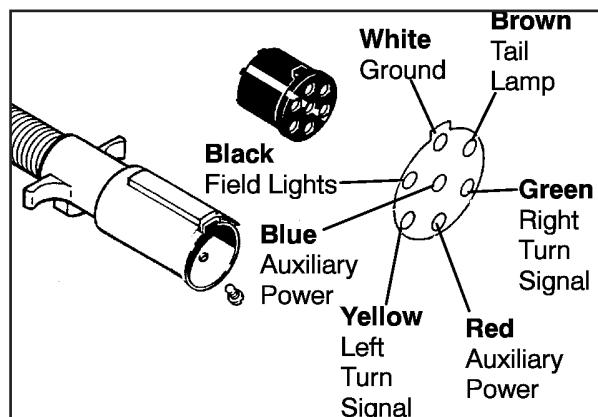


Figure 45. 7-Pin Electrical Connector

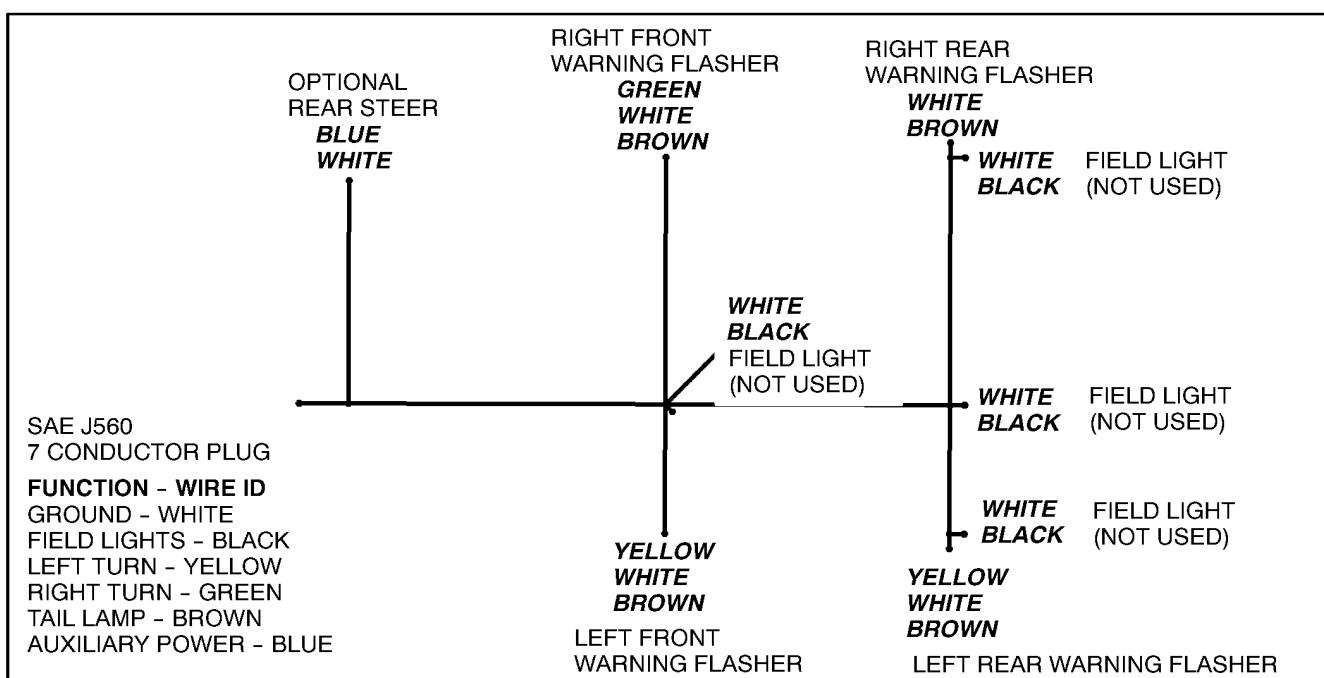


Figure 46. Harvester Harness (without rear steering)

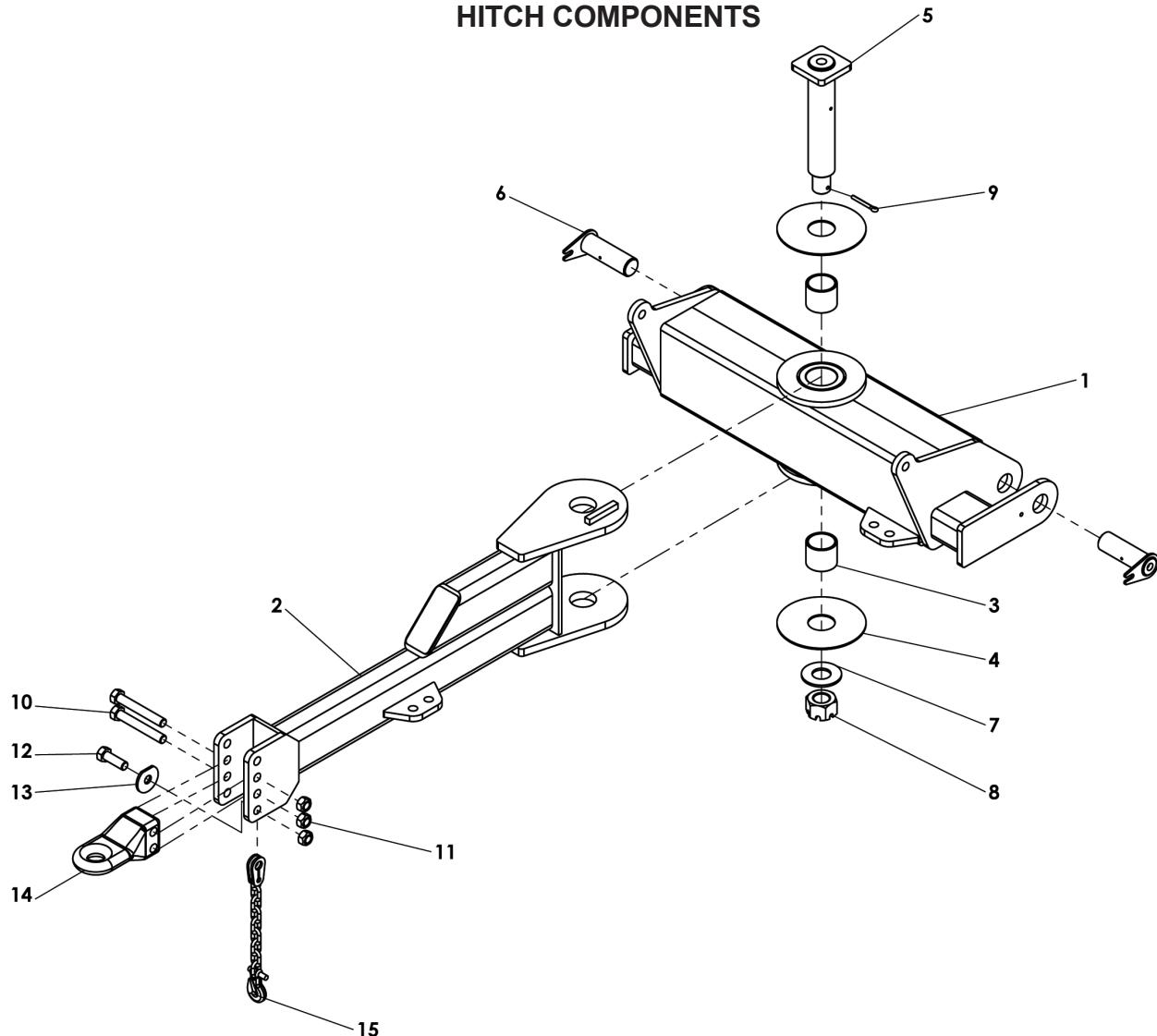


PARTS INDEX

BEET HARVESTER

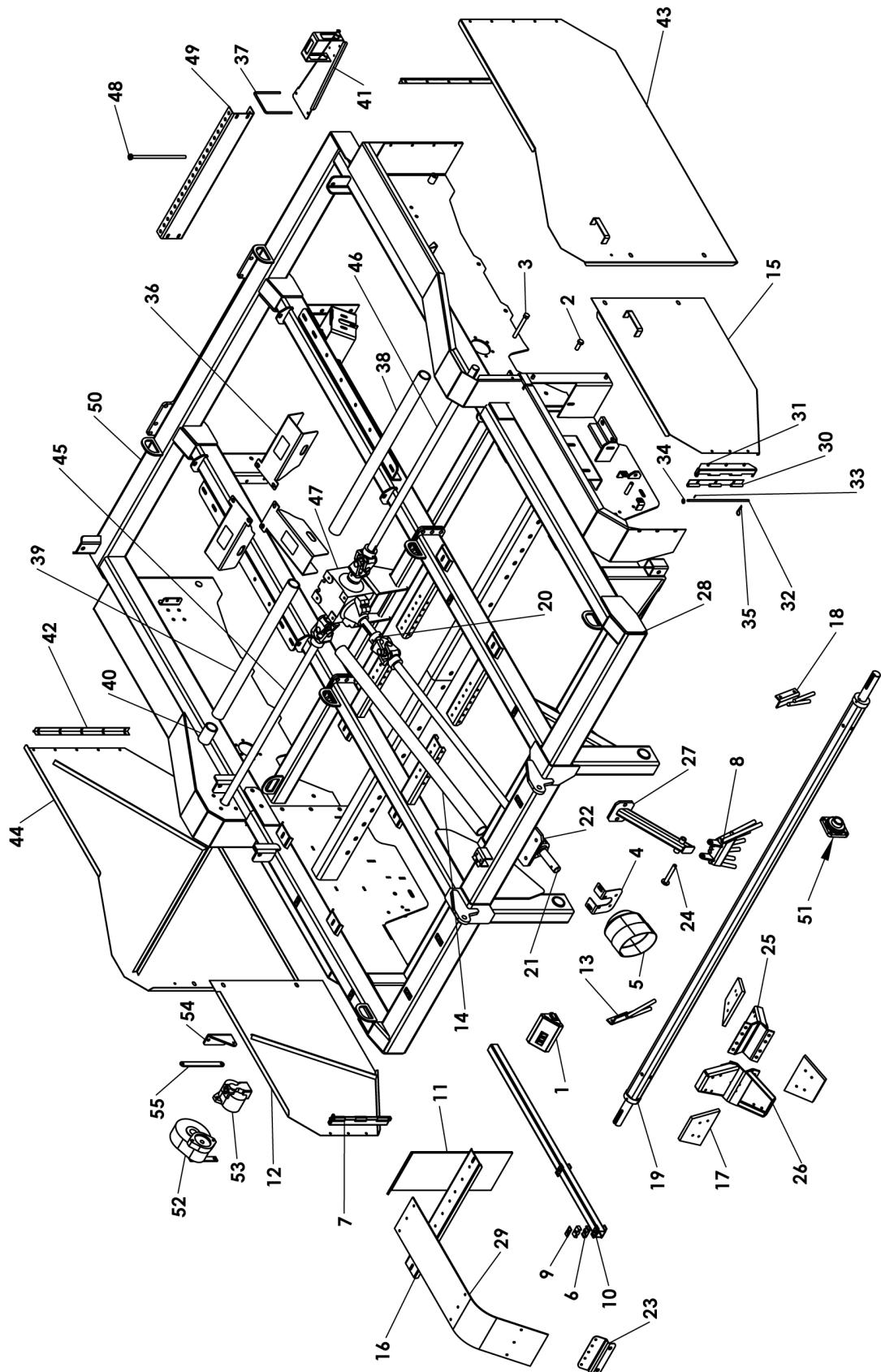
(All hardware is Grade 5 unless otherwise specified to be Grade 8.)

HITCH COMPONENTS



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---------------------------------------|------|
| 1 | 700-2-0338 | INNER HITCH WELDMENT | 1 |
| 2 | 700-2-0337 | FRONT HITCH WELDMENT | 1 |
| 3 | 901-01344 | SPLIT BUSHING - 3 ID X 3.50D X 3 LONG | 2 |
| 4 | 700-3-0741 | THRUST WASHER - HITCH | 2 |
| 5 | 700-2-0340 | POLE PIN WELDMENT - HITCH | 1 |
| 6 | 700-2-0019 | PIN WELDMENT - HITCH MOUNT | 2 |
| 7 | 900-11048 | 2 FLAT WASHER ZN | 1 |
| 8 | 900-06239 | 2 NC HEAVY HEX SLOTTED NUT G5 ZP | 1 |
| 9 | 900-23084 | 3/8 X 3-1/2 COTTER PIN | 1 |
| 10 | 900-02930 | 1-8 X 7" HEX BOLT | 2 |
| 11 | 900-06514 | 1-8 TOP LOCK NUT | 3 |
| 12 | 900-01519 | 1-8 X 3" HEX BOLT | 1 |
| 13 | 500-3-1631 | WASHER 1.03 X 3.25 X .25 | 1 |
| 14 | 505-3-0831 | HITCH TONGUE COMP CAT3 | 1 |
| 15 | 905-07123 | TOW CHAIN SAFETY 21,000 LB | 1 |
| | 700-2-0339 | HITCH ASSEMBLY | 1 |

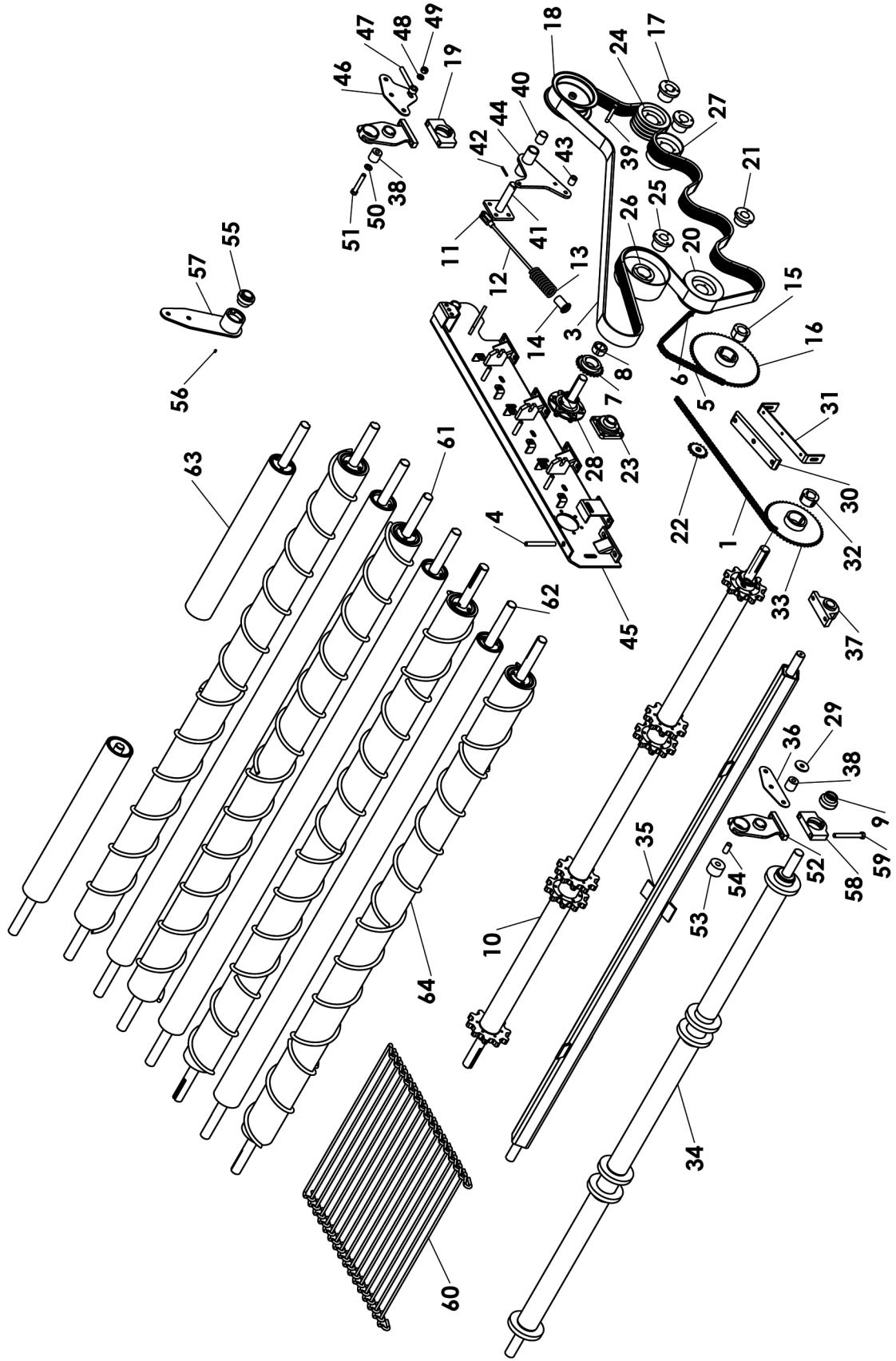
FRAME COMPONENTS



FRAME COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|------------|--|--|------|
| 1 | 700-2-0531 | SWITCH BOX ASSEMBLY | 1 | 39 | 700-3-1185 | SHAFT SHIELD (RH) - (622) | 1 |
| 2 | 900-01403 | HEX BOLT - 3/4NC X 2 GR5 ZP | 18 | 700-3-1611 | SHAFT SHIELD (RH) - (624) | 1 | |
| 3 | 900-01427 | HEX BOLT - 3/4NC X 6 GR5 ZP | 4 | 700-3-1535 | SHAFT SHIELD (RH) - (630, 822) | 1 | |
| 4 | 700-3-0444 | FRONT BELL MOUNT | 1 | 40 | 700-3-1186 | SHAFT SHIELD-SHORT | 1 |
| 5 | 903-18007 | PTO BELL | 1 | 41 | 700-2-0514 | AMBER LIGHT BRACKET | 1 |
| | | | | 42 | 700-3-1107 | SHIELD HINGE-BACK | 2 |
| 6 | 900-31069 | CLAMP BODY - HOSE HOLDER | A/R | 43 | 700-2-0506 | DOOR WELD - REAR LH | 1 |
| 7 | 700-2-0671 | HINGE ASSY - DOOR (includes Ref. 30-35) | 2 | 44 | 700-2-0507 | DOOR WELD - RH | 1 |
| 8 | 700-3-1483 | FRONT BARRIER - 17.7" | 7 | 45 | 700-3-1183 | SIDE DRIVE SHAFT (RH) - (622) | 1 |
| | 700-2-0568 | FRONT BARRIER - 22" | 5 | 700-3-1610 | SIDE DRIVE SHAFT (RH) - (624) | 1 | |
| | 700-2-1666 | FRONT BARRIER - 30" | 5 | 700-3-1534 | SIDE DRIVE SHAFT (RH) - (630, 822) | 1 | |
| 9 | 900-31068 | COVER PLATE AND BOLT | 2 | 46 | 700-3-1026 | SIDE DRIVE SHAFT (LH)- (622) | 1 |
| 10 | 700-2-0552 | HYDRAULIC HOSE HOLDER TUBE | 1 | 700-3-1612 | SIDE DRIVE SHAFT (LH)- (624) | 1 | |
| | | | | 700-3-0854 | SIDE DRIVE SHAFT (LH)- (630, 822) | 1 | |
| 11 | 700-3-0317 | PADDLE DEFLECTOR | 1 | 47 | 903-15547 | G-BOX - SUPERIOR #680ACF006876 | 1 |
| 12 | 700-2-0509 | DOOR WELD - FRONT RH | 1 | 48 | 700-2-0345 | REAR BARRIER ROD WELDMENT | 5 |
| 13 | 700-2-0421 | SIDE BARRIER WELD - RH | 1 | 49 | 700-3-1028 | CLIP - REAR BARRIER (622) | 2 |
| | 700-2-0691 | FRONT BARRIER SIDE PLATE - RH (30") | | 700-3-1607 | CLIP - REAR BARRIER (624) | 2 | |
| 14 | 700-3-1189 | SHAFT SHIELD-FRONT | 1 | | 700-3-0773 | CLIP - REAR BARRIER (630, 822) | 2 |
| 15 | 700-2-0508 | FRONT DOOR WELD - LH | 1 | 50 | 700-2-0452 | BODY FRAME WELD - (622 REAR) | 1 |
| | | | | 700-2-0684 | BODY FRAME WELD - (624 REAR) | 1 | |
| 16 | 700-3-1025 | MOUNT PLATE - PADDLE COVER (617.7, 622) | 4 | 700-2-0648 | BODY FRAME WELD - (630, 822 REAR) | 1 | |
| | 700-3-1620 | MOUNT PLATE - PADDLE COVER (624) | 4 | 51 | 901-01185 | 1-3/4 4-BOLT BEARING (822 ONLY) | 2 |
| | 700-3-0772 | MOUNT PLATE - PADDLE COVER (630, 822) | 4 | 52 | 903-15563 | PARALLEL SHAFT REDUCER - HUB CITY 85LH-B2 (See page 70) | 1 |
| | | | | 53 | 904-05244 | HYD PUMP #25504RSC | 1 |
| | | | | 54 | 700-3-1155 | TORQUE ARM BRACKET | 1 |
| 17 | 700-3-1207 | RUBBER FLAPS - NARROW | 18 | 55 | 700-3-1156 | TORQUE ARM | 1 |
| | 700-3-0946 | RUBBER FLAPS - PRIOR TO 2007 | 18 | | | | |
| 18 | 700-2-0420 | LEFT SIDE BARRIER WELD | 1 | 700-2-0515 | FRONT FRAME ASSY - 6 ROW 17.7" SPACING | 1 | |
| | 700-3-1692 | FRONT BARRIER SIDE PLATE - LH (30") | 1 | 700-2-0672 | FRONT FRAME ASSY - 6 ROW 22" SPACING | 1 | |
| 19 | 700-2-0477 | PADDLE TUBE WELD - 622 | 1 | 700-2-0682 | FRONT FRAME ASSY - 6 ROW 24" SPACING | 1 | |
| | 700-2-0690 | PADDLE TUBE WELD - 624 | 1 | | 700-2-0642 | FRONT FRAME ASSY - 6 ROW 30" SPACING & 8 ROW 22" SPACING | 1 |
| | 700-2-0646 | PADDLE TUBE WELD - 822 | 2 | | | | |
| 20 | 903-05034 | U-JOINT - 1.75 KEYED 44R | 3 | 700-2-0451 | REAR FRAME ASSY | 1 | |
| 21 | 700-3-0814 | FRONT DRIVE SHAFT | 1 | | | | |
| 22 | 901-01272 | BRG 1.75 PILLOW BLOCK - IPTCI NAPL 209-28 | 1 | | | | |
| 23 | 700-3-0807 | MOUNT PLATE - FRONT PADDLE COVER | 4 | | | | |
| 24 | 700-2-0353 | PIN WELD - FRONT BARRIER | 5 | | | | |
| 25 | 700-2-0069 | PADDLE WELD (ONE PADDLE) | 6 | | | | |
| 26 | 700-2-0070 | PADDLE WELD (TWO PADDLES) | 6 | | | | |
| 27 | 700-2-0351 | MOUNT WELD - FRONT BARRIER | 5 | | | | |
| 28 | 700-2-0445 | BODY FRAME WELD - (622) | 1 | | | | |
| | 700-2-0687 | BODY FRAME WELD - (624) | 1 | | | | |
| | 700-2-0643 | FRONT FRAME WELD - (630, 822) | 1 | | | | |
| 29 | 700-3-1126 | PADDLE COVER | 6 | | | | |
| 30 | 700-2-0635 | BACK HINGE WELD | 2 | | | | |
| 31 | 700-2-0636 | OUTER HINGE WELD | 2 | | | | |
| 32 | 700-3-1567 | ROD - HINGE PIN | 2 | | | | |
| 33 | 900-29082 | PIN ROLL 1/8 X 3/4 | 2 | | | | |
| 34 | 900-11033 | FLAT WASHER 3/8 ZP | 2 | | | | |
| 35 | 900-25003 | 3/32 HAIR PIN COTTER #7 | 2 | | | | |
| 36 | 500-2-0537 | SHIELD WITH DECAL | 3 | | | | |
| 37 | 900-35023 | U-BOLT 3/8 X 6 X 6 X 1.5 | 2 | | | | |
| 38 | 700-3-1184 | SHAFT SHIELD (LH) - (622) | 1 | | | | |
| | 700-3-1613 | SHAFT SHIELD (LH) - (624) | 1 | | | | |
| | 700-3-1533 | SHAFT SHIELD (LH) - (630, 822) | 1 | | | | |

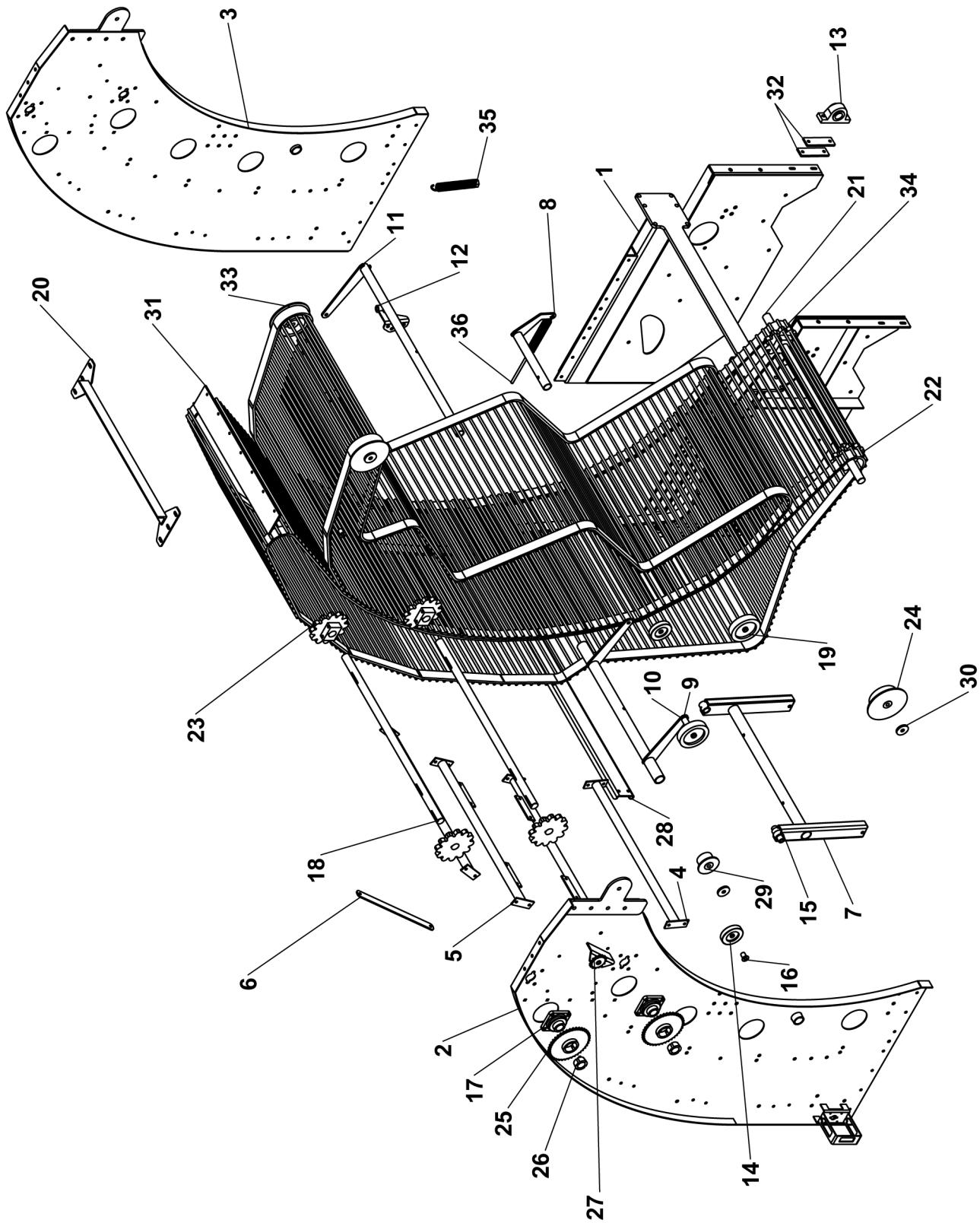
CHAIN BED & GRAB ROLL DRIVE COMPONENTS



CHAIN BED & GRAB ROLL DRIVE COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|----------|-------------|--|------|
| 1 | 700-3-1564 | ROLLER CHAIN, RS-60, 98 LINKS | 1 | 48 | 900-11017 | 3/4 LOCK WASHER | 1 |
| 2 | 903-03062 | RS-60 CONNECTING LINK | 2 | 49 | 900-06015 | HEX NUT - 3/4 NC | 1 |
| 3 | 903-01440 | BELT 4B240 | 1 | 50 | 900-11038 | 3/4" FLAT WASHER | 1 |
| 4 | 700-3-1562 | THREADED ROD - GRAB ROLL BED | 1 | 51 | 900-01421 | 3/4-10 X 4 HEX BOLT | 1 |
| 5 | 700-3-1563 | ROLLER CHAIN, RS-60, 35 LINKS | 1 | 52 | 700-2-0375 | SWING ARM WELD (GRABROLL) 1.93 | 2 |
| | | | | 53 | 700-3-0557 | SPACER, GRAB ROLL ARM | 2 |
| 6 | 903-03089 | OFFSET LINK #60-1 | 1 | 54 | 700-3-0609 | PIVOT BUSHING - SWING ARM | 2 |
| 7 | 903-11080 | SPROCKET - 60BTL22H 2012 | 2 | 55 | 901-01310 | 1-3/4 INSERT BRG NA-209-28 | 1 |
| 8 | 903-08412 | BUSHING TAPPER LOCK 2012 - 1.75 B | 2 | 56 | 905-15024 | ZERK 1/4-28 UNF STRAIGHT | 1 |
| 9 | 901-01280 | 1-15/16 INSERT BRG NA-210-31 | 2 | 57 | 700-2-0364 | INNER BEARING PLATE - GRABROLLS | 1 |
| 10 | 700-2-0448 | DRIVE TUBE ASSY - CHAIN BED (622) | 1 | 58 | 700-3-0857 | MACHINED BEARING BLOCK - 1.93 | 1 |
| | 700-2-0685 | DRIVE TUBE ASSY - CHAIN BED (624) | | 59 | 900-01425 | HEX BOLT - 3/4NC X 5-1/2 GR5 ZP | 2 |
| | 700-2-0649 | DRIVE TUBE ASSY - CHAIN BED (630, 822) | | 60 | 903-03151 | CHAIN .5 X 42 X 2.38 X 40 LINKS | 1 |
| | 700-3-0809 | SPROCKET, SPLIT | | 61 | 700-2-0503 | SPIRAL PLASTIC GRAB ROLL - REAR (622) | 2 |
| 11 | 500-3-1247 | CLEVIS | 1 | | 700-2-0457 | SPIRAL STEEL GRAB ROLL - REAR (622) | 2 |
| 12 | 700-3-1180 | THREADED ROD-BELT TIGHTENER | 1 | | 700-2-0667 | SPIRAL STEEL GRAB ROLL - HD (622) | 2 |
| 13 | 905-14018 | SPRING - 2.44 OD X .38 WIRE X 6.00 FL X 10.5 COILS | 1 | | 700-2-0696 | SPIRAL STEEL GRAB ROLL - REAR HD (624) | 2 |
| 14 | 500-2-0580 | SPRING SUPPORT WELD | 1 | | 700-2-0361 | SPIRAL PLASTIC GRAB ROLL - REAR (630, 822) | 2 |
| 15 | 903-08449 | BUSHING TAPPER LOCK 2517 - 1.93 B | 1 | | 700-2-0661 | SPIRAL STEEL GRAB ROLL - REAR (822) | 2 |
| 16 | 903-11061 | SPROCKET - 60BTL60 | 1 | | 700-3-0913 | GRAB ROLL REPLACEMENT SHAFT | A/R |
| 17 | 903-08452 | TYPE Q1 HUB 1-15/16 BORE | 8 | | 903-08452 | HUB Q1 1-15/16 BORE | A/R |
| 18 | 500-3-1249 | PULLEY - 8 OD X 3.25 X .63 ID FLANGED BEARING BLOCK ASSY - 1.93 | 2 | 62 | 700-2-0481 | SMOOTH PLASTIC GRAB ROLLER (622) | 3 |
| 19 | 700-2-0377 | | 1 | | 700-2-0458 | SMOOTH STEEL GRAB ROLL (622) | 3 |
| 20 | 903-08400 | PULLEY - 4B80SK | 2 | | 700-2-0668 | SMOOTH STEEL GRAB ROLL - HD (622) | 3 |
| 21 | 903-08416 | TYPE SK HUB 1-3/4 BORE | 2 | | 700-2-0698 | SMOOTH STEEL GRAB ROLL (624) | 3 |
| 22 | 903-11066 | IDLER SPROCKET - 60B15H .63 BORE | 3 | | 700-2-0389 | SMOOTH PLASTIC GRAB ROLL (822) | 3 |
| 23 | 901-01185 | BEARING - NANFS 209-28 1.75 | 1 | | 700-2-0663 | SMOOTH STEEL GRAB ROLL (822) | 3 |
| 24 | 903-08431 | PULLEY - 4B66 Q1 | 4 | | 700-3-0913 | GRAB ROLL REPLACEMENT SHAFT | A/R |
| 25 | 903-08419 | TYPE Q1 HUB 1-3/4 BORE | 1 | | 903-08452 | HUB Q1 1-15/16 BORE | A/R |
| 26 | 700-2-0374 | 10 SMOOTH PULLEY WELD | 1 | 63 | 700-2-0483 | PLASTIC STUB ROLL (622) | 2 |
| 27 | 700-2-0267 | PULLEY WELD - 6 INCH | 4 | | 700-2-0669 | STEEL STUB ROLL (622) | 2 |
| 28 | 700-2-0373 | HUB & SPINDLE ASSY - IDLER PULLEY | 1 | | 700-2-0699 | STEEL STUB ROLL (624) | 2 |
| 29 | 700-3-1110 | WASHER - 2-3/4 OD X 3/4 ID X 1/4 | 1 | | 700-2-0388 | PLASTIC STUB ROLL (822) | 2 |
| 30 | 700-3-1100 | UHMW WEAR STRAP - CHAIN SLIDE | 1 | | 700-2-0664 | STEEL STUB ROLL ROLL (822) | 2 |
| 31 | 700-3-1099 | CHAIN SLIDE PLATE | 1 | | 700-3-0 | STUB ROLL REPLACEMENT SHAFT | A/R |
| 32 | 903-08450 | BUSHING TAPPER LOCK 2012 - 1.93 B | 1 | | 903-08452 | HUB Q1 1-15/16 BORE | A/R |
| 33 | 903-11079 | SPROCKET - 60BTL48 - 2012 | 1 | 64 | 700-2-0499 | SPIRAL PLASTIC GRAB ROLL, FRONT (622) | 2 |
| 34 | 700-2-0447 | FRONT CHAIN BED TUBE - (622) | 1 | | 700-2-0455 | SPIRAL STEEL GRAB ROLL, FRONT (622) | 2 |
| | 700-2-0689 | FRONT CHAIN BED TUBE - (624) | | | 700-2-0666 | SPIRAL STEEL GRAB ROLL, FRONT - HD (622) | 2 |
| | 700-2-0644 | FRONT CHAIN BED TUBE - (630, 822) | | | 700-2-0697 | SPIRAL STEEL GRAB ROLL, FRONT - HD (624) | 2 |
| 35 | 700-2-0450 | CENTER CHAIN BED SUPPORT TUBE WELD (622) | 1 | | 700-2-0386 | SPIRAL PLASTIC GRAB ROLL, FRONT (822) | 2 |
| | 700-2-0691 | CENTER CHAIN BED SUPPORT TUBE WELD (624) | | | 700-2-0657 | SPIRAL STEEL GRAB ROLL, FRONT (822) | 2 |
| | 700-2-0645 | CENTER CHAIN BED SUPPORT TUBE WELD (630, 822) | | | 700-3-0913 | GRAB ROLL REPLACEMENT SHAFT | A/R |
| 36 | 700-3-0774 | TIE STRAP - BED CHAIN | 1 | | 903-08452 | HUB Q1 1-15/16 BORE | A/R |
| 37 | 901-01272 | BRG 1.75 PILLOW BLOCK - IPTCI NAPL 209-28 | 1 | 65 | 700-2-0499 | SPIRAL PLASTIC GRAB ROLL, FRONT (622) | 2 |
| 38 | 700-3-0458 | BUSHING - KNULED | 2 | | 700-2-0455 | SPIRAL STEEL GRAB ROLL, FRONT (622) | 2 |
| 39 | 900-01361 | HEX BOLT 5/8 - 11 X 4 GRADE 5 | 1 | | 700-2-0666 | SPIRAL STEEL GRAB ROLL, FRONT - HD (622) | 2 |
| 40 | 901-01343 | OILITE BUSHING 1.5 ID X 1.75 OD X 2.0 L | 2 | | 700-2-0697 | SPIRAL STEEL GRAB ROLL, FRONT - HD (624) | 2 |
| 41 | 700-2-0347 | BASE WELD - BELT TENSIONER | 1 | | 700-2-0386 | SPIRAL PLASTIC GRAB ROLL, FRONT (822) | 2 |
| 42 | 900-29208 | 5/16 X 2-1/4 ROLL PIN | 1 | | 700-2-0657 | SPIRAL STEEL GRAB ROLL, FRONT (822) | 2 |
| 43 | 700-3-0785 | SPACER BUSHING - BELT TENSIONER | 1 | | 700-3-0913 | GRAB ROLL REPLACEMENT SHAFT | A/R |
| 44 | 700-2-0371 | PIVOT BRACKET WELD - BELT TENSIONER RH | 1 | | 903-08452 | HUB Q1 1-15/16 BORE | A/R |
| 45 | 700-2-0459 | GRAB ROLLER ADJUSTMENT PLATE WELD | 1 | 66 | 700-2-0499 | SPIRAL PLASTIC GRAB ROLL, FRONT (622) | 2 |
| 46 | 700-3-0753 | TIE STRAP | 1 | | 700-2-0455 | SPIRAL STEEL GRAB ROLL, FRONT (622) | 2 |
| 47 | 900-03463 | 3/4-10 EYE BOLT | 1 | | 700-2-0666 | SPIRAL STEEL GRAB ROLL, FRONT - HD (622) | 2 |

ELEVATOR COMPONENTS

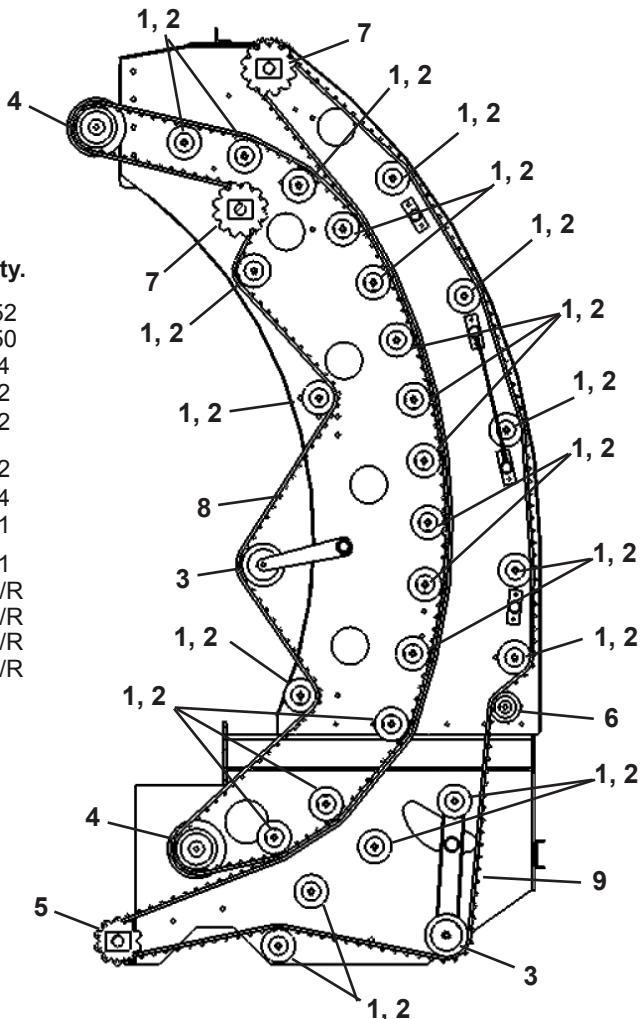


ELEVATOR COMPONENTS

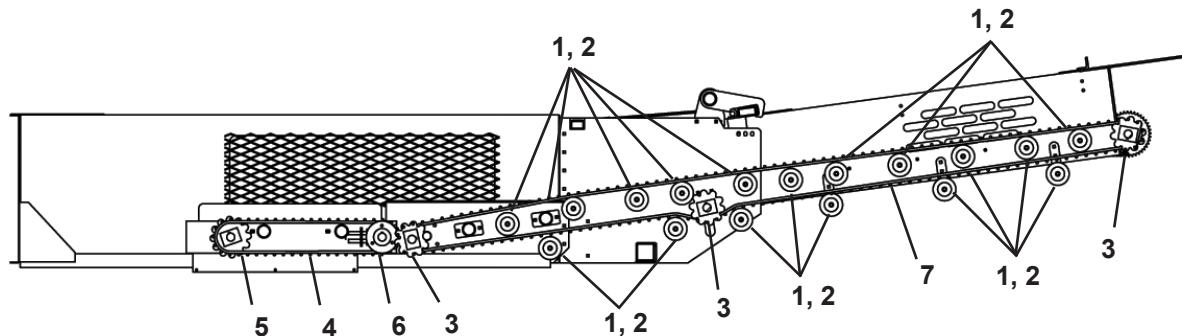
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0524 | REAR ELEVATOR MOUNT WELD | 1 |
| 2 | 700-2-0031 | SIDE PLATE WELD (RH) | 1 |
| 3 | 700-2-0032 | SIDE PLATE WELD (LH) | 1 |
| 4 | 700-2-0023 | SPREADER BAR WELD | 2 |
| 5 | 700-2-0024 | SPREADER STIFFENER BAR WELD | 2 |
| 6 | 700-3-0080 | BAR - SPREADER STIFFENER | 2 |
| 7 | 700-2-0028 | OUTSIDE ARM WELD | 1 |
| 8 | 700-2-0381 | TENSION ARM WELD (OUTSIDE) | 1 |
| 9 | 700-3-0417 | SLEEVE - OUTSIDE ARM | 4 |
| 10 | 700-2-0027 | TENSION ARM WELD (MAIN) | 1 |
| 11 | 700-2-0026 | TENSION ARM WELD | 1 |
| 12 | 700-2-0030 | BRACKET WELD - SPRING TENSIONER | 1 |
| 13 | 901-01272 | BRG 1.75 PILLOW BLOCK - IPTCI NAPL 209-28 | 2 |
| 14 | 903-08433 | 5" RUBBER ROLLER | 52 |
| 15 | 700-3-0547 | SPACER - ELEVATOR H-WELD | 2 |
| 16 | 903-08424 | SPACER ROLLER STANDOFF | 50 |
| 17 | 901-01185 | BEARING - NANFS 209-28 1.75 | 4 |
| 18 | 700-3-0086 | DRIVE SHAFT - ELEVATOR | 2 |
| 19 | 903-08425 | 7" CAST RUBBER WHEEL | 4 |
| 20 | 700-2-0096 | DEFLECTOR WELD | 1 |
| 21 | 700-3-0862 | LOWER SHAFT - ELEVATOR | 1 |
| 22 | 903-11068 | SPROCKET - 10T 50MM PITCH 1.75 BORE | 2 |
| 23 | 903-11067 | SPROCKET - 12T 50MM PITCH 1.75 BORE | 4 |
| 24 | 903-08437 | 6 INCH NOSE ROLLER | 4 |
| 25 | 903-11070 | SPROCKET - 60BTL40 | 2 |
| 26 | 903-08412 | BUSHING TAPPER LOCK 2012 - 1.75 B | 2 |
| 27 | 903-11066 | IDLER SPROCKET - 60B15H .63 BORE | 1 |
| 28 | 700-3-1212 | CHANNEL-ELEVATOR | 1 |
| 29 | 903-08426 | 5 INCH FLANGE ROLLER | 2 |
| 30 | 500-3-1463 | WASHER | 6 |
| 31 | 700-3-1213 | RUBBER FLAP - REAR ELEVATOR | 1 |
| 32 | 700-3-1214 | BEARING SPACER - 3/8 INCH | 4 |
| 33 | 903-03130 | BELTED CHAIN INSIDE VERTICAL | 1 |
| 34 | 903-03131 | BELTED CHAIN OUTSIDE VERTICAL | 1 |
| 35 | 700-2-0550 | SPRING TENSIONER ASSEMBLY | 2 |
| 36 | 700-3-1255 | 1/2-13 TENSION ROD | 1 |
| | 700-2-0380 | ELEVATOR ASSEMBLY | 1 |

ROLLER COMPONENTS (ELEVATOR)

| Item No. | Part Number | Description | Qty. |
|----------|-------------|-------------------------------|------|
| 1 | 903-08433 | 5" Roller | 52 |
| 2 | 903-08424 | Standoff | 50 |
| 3 | 903-08425 | 7" Cast Rubber Wheel | 4 |
| 4 | 903-08437 | 6" Nose Roller | 2 |
| 5 | 903-11068 | 10 Tooth 50mm 1-3/4" Sprocket | 2 |
| 6 | 903-08426 | 5" Flanged Roller | 2 |
| 7 | 903-11067 | 12 Tooth 50mm 1-3/4" Sprocket | 4 |
| 8 | 903-03130 | Inside Belted Chain | 1 |
| 9 | 903-03131 | Outside Belted Chain | 1 |
| | 903-03135 | Belted Chain Repair Splice | A/R |
| | 903-03134 | 4' Chain Extension | A/R |
| | | Belted Chain Backing Plate | A/R |
| | | 1/4 x 1-1/4 NF Counter Sink | A/R |
| | | Allen Bolt | |

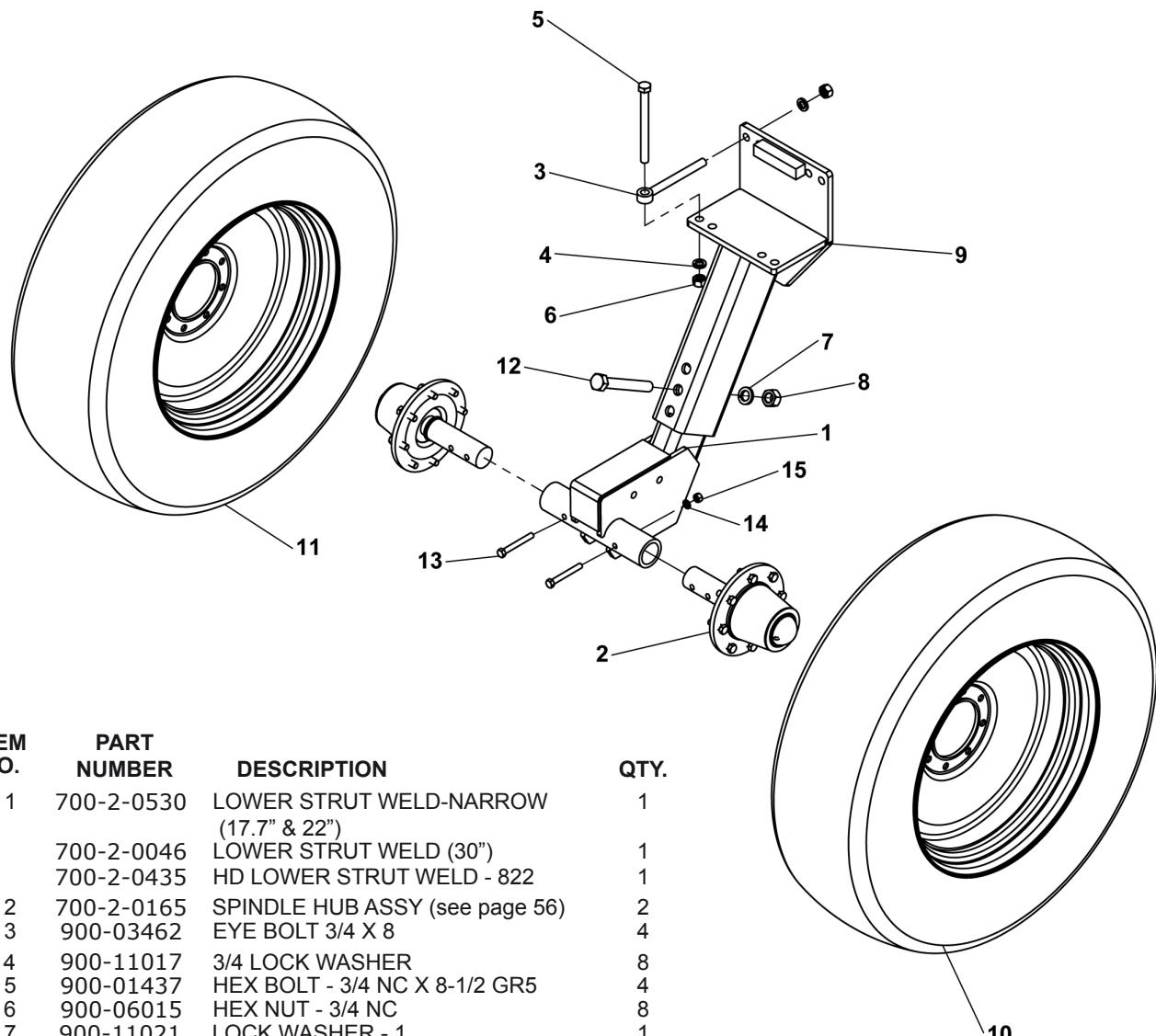


ROLLER COMPONENTS (BOOM - TANK BOTTOM)



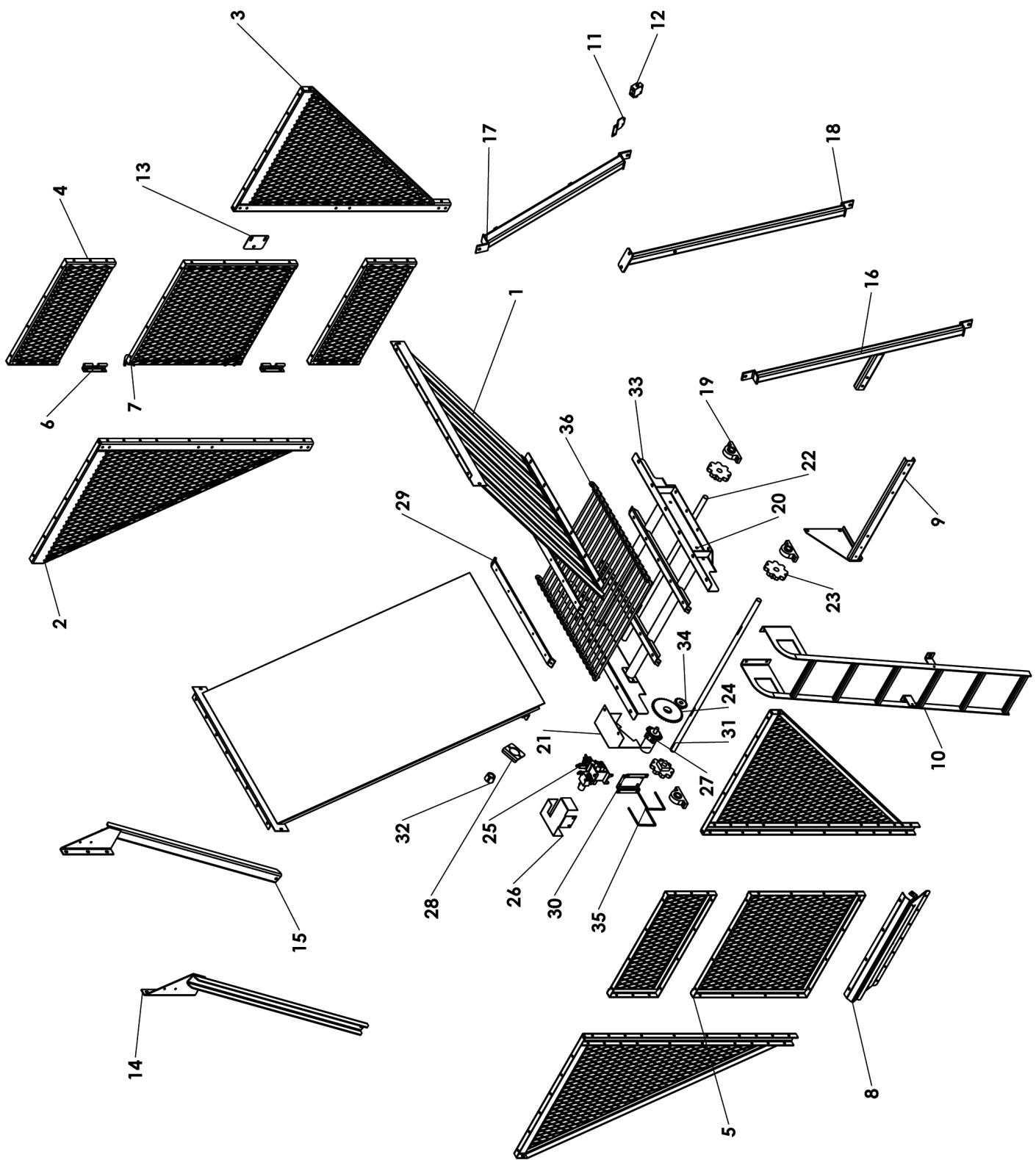
| Ref No | Part Number | Description | Qty. | Item No. | Part Number | Description | Qty. |
|--------|-------------|---------------------------------|------|----------|-------------|--------------------------------|------|
| 1 | 903-08433 | 5" Roller | 34 | 6 | 700-20526 | 7" Smooth Sprocket | 2 |
| 2 | 903-08424 | Standoff | 30 | 7 | 903-03132 | Belted Boom Chain, Long | 1 |
| 3 | 903-11068 | 10 Tooth, 50MM, 1-3/4" Sprocket | 2 | | 903-03134 | 4' Chain Extension | A/R |
| 4 | 903-03155 | Belted Boom Chain, Short | 1 | | 903-03135 | Belted Chain Repair Splice | A/R |
| 5 | 903-11067 | 12 Tooth, 50mm, 1-3/4" Sprocket | 2 | | 903-03141 | Belted Chain Backing Plate | A/R |
| | | | | | 900-03469 | 1/4 x 1-1/4NF Countersink Bolt | A/R |

STRUT COMPONENTS



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--|------|
| 1 | 700-2-0530 | LOWER STRUT WELD-NARROW (17.7" & 22") | 1 |
| | 700-2-0046 | LOWER STRUT WELD (30") | 1 |
| | 700-2-0435 | HD LOWER STRUT WELD - 822 | 1 |
| 2 | 700-2-0165 | SPINDLE HUB ASSY (see page 56) | 2 |
| 3 | 900-03462 | EYE BOLT 3/4 X 8 | 4 |
| 4 | 900-11017 | 3/4 LOCK WASHER | 8 |
| 5 | 900-01437 | HEX BOLT - 3/4 NC X 8-1/2 GR5 | 4 |
| 6 | 900-06015 | HEX NUT - 3/4 NC | 8 |
| 7 | 900-11021 | LOCK WASHER - 1 | 1 |
| 8 | 900-06019 | 1-8 HEX NUT | 1 |
| 9 | 700-2-0529 | UPPER STRUT WELD-NARROW | 1 |
| | 700-2-0047 | UPPER STRUT WELD | 1 |
| | 700-2-0436 | HD UPPER STRUT WELD - 822 | 1 |
| 10 | 700-2-0167 | TIRE AND RIM ASSY | 1 |
| | 905-09127 | RIM 24 x 10, 88T | |
| | 905-09130 | TIRE 12-4-24 | |
| | 700-2-0438 | TIRE AND RIM ASSY RIM 24 x W15L TIRE 16.9-24 | 1 |
| 11 | 700-2-0168 | TIRE AND RIM ASSY | 1 |
| | 905-09127 | RIM 24 x 10, 88T | |
| | 905-09130 | TIRE 12-4-24 | 1 |
| | 700-2-0438 | TIRE AND RIM ASSY | 1 |
| 12 | 900-01535 | HEX BOLT - 1NC X 7-1/2 GR5 ZP | 1 |
| 13 | 900-01245 | 1/2 X 4 HEX BOLT GR5 ZP | 2 |
| | 900-01247 | 1/2 X 4-1/2 HEX BOLT GR5 ZP | 2 |
| 14 | 900-11013 | WASHER, LOCK 1/2 | 2 |
| 15 | 900-06009 | NUT HEX 1/2 UNC | 2 |
| | 700-2-0528 | REAR STRUT ASSEMBLY - NARROW | 1 |
| | 700-2-0382 | REAR STRUT ASSEMBLY | |
| | 700-2-0437 | HD REAR STRUT ASSEMBLY | |

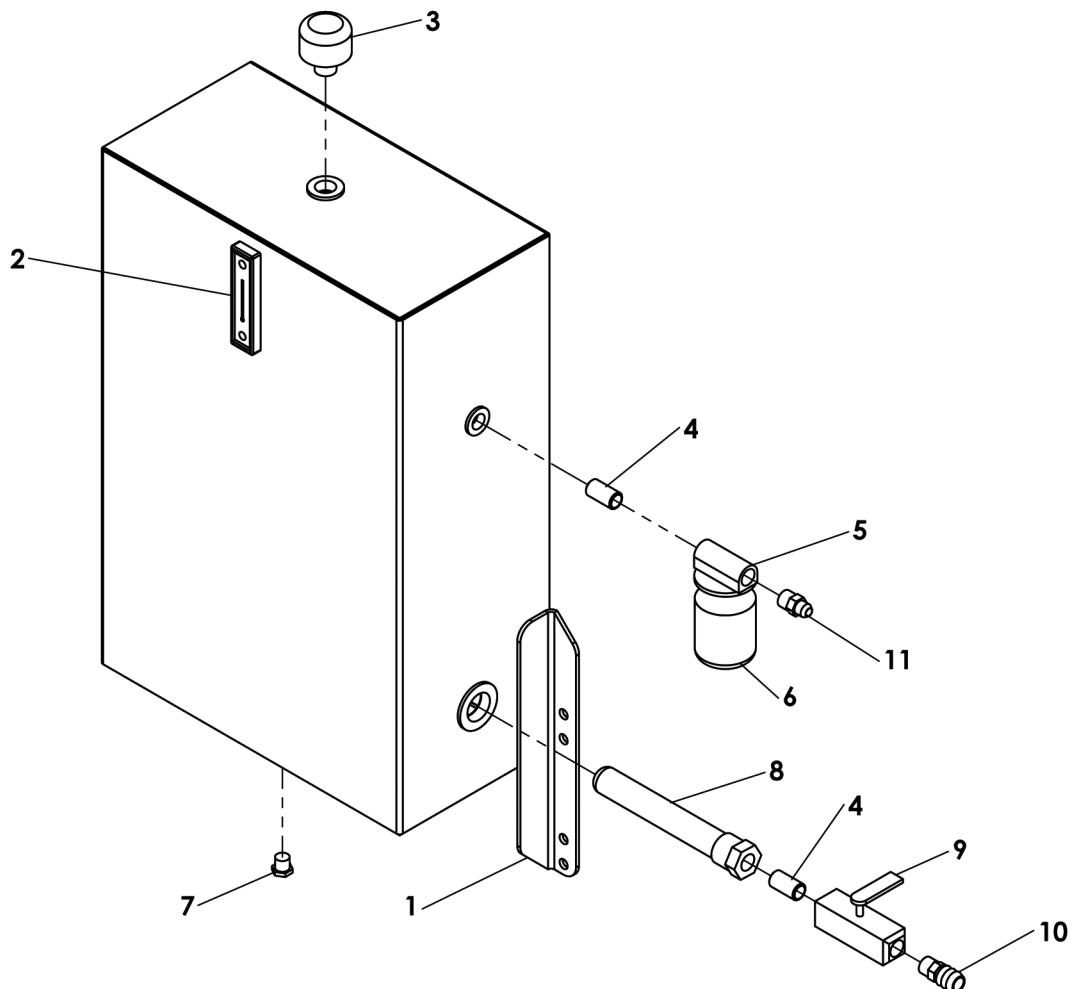
HOPPER COMPONENTS



HOPPER COMPONENTS

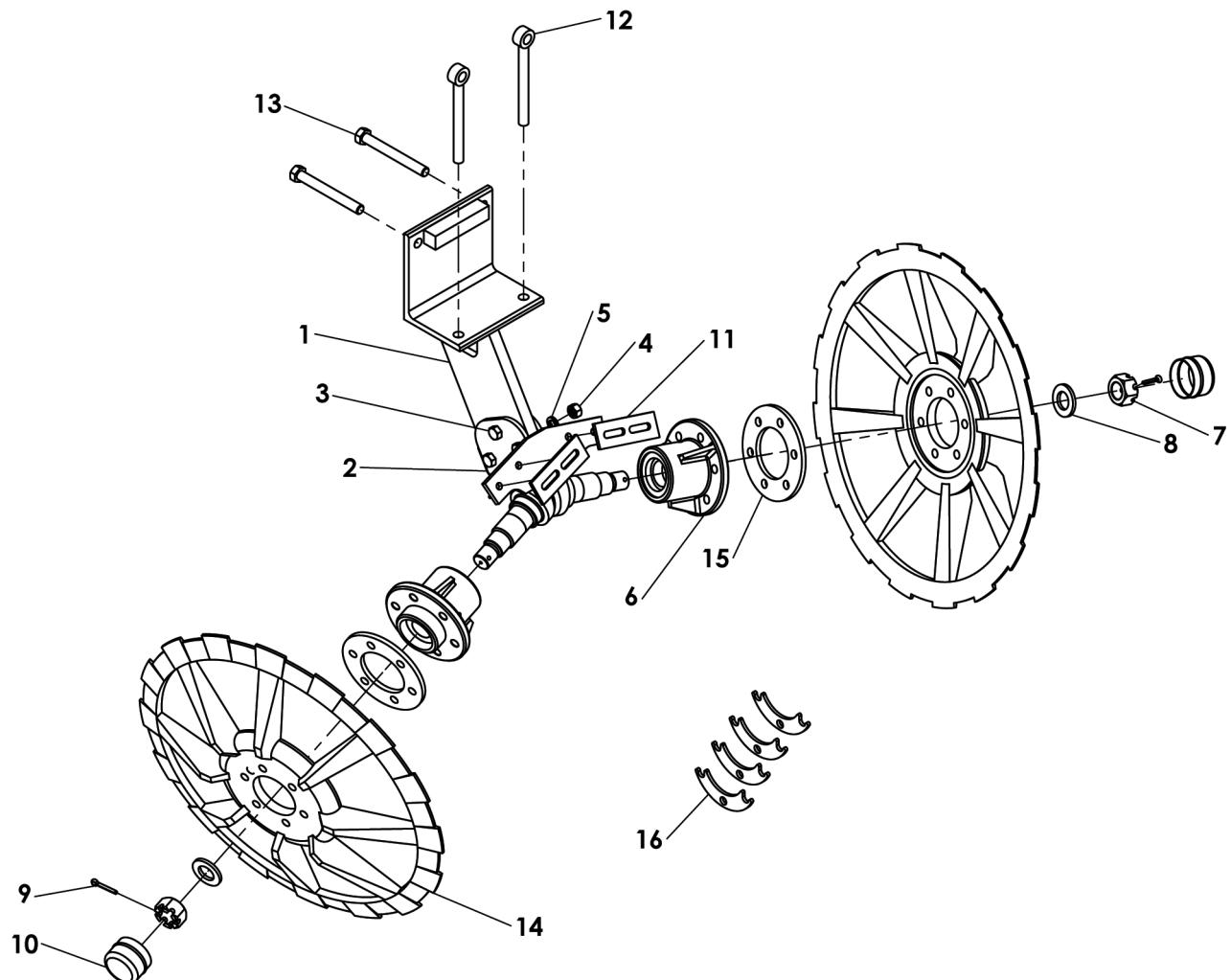
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0513 | TANK SLIDE ASSY-LARGE TANK | 2 |
| 2 | 700-2-0395 | MESH WELD - RH | 2 |
| 3 | 700-2-0396 | MESH WELD - LH | 2 |
| 4 | 700-2-0402 | BOTTOM FRONT TANK WELD | 3 |
| 5 | 700-2-0403 | DOOR WELD - REAR | 1 |
| 6 | 700-2-0422 | HINGE WELD - TANK DOOR | 2 |
| 7 | 700-2-0423 | DOOR WELD - FRONT | 1 |
| 8 | 700-2-0495 | REAR GATE ASSY | 1 |
| 9 | 700-2-0501 | LADDER SUPPORT WELD | 1 |
| 10 | 700-2-0502 | LADDER WELD - 622 | 1 |
| 11 | 700-3-1240 | MOUNTING BRACKET - CHECK VALVE | 1 |
| 12 | 905-03155 | CHECK VALVE - 1/2 NPT PORTS | 1 |
| 13 | 700-2-0634 | DOOR STOP WELD | 1 |
| 14 | 700-2-0654 | TANK SUPPORT WELD - REAR LEFT 8ROW | 1 |
| 15 | 700-2-0655 | TANK SUPPORT WELD - FRONT LEFT | 1 |
| 16 | 700-2-0653 | SUPPORT TUBE WELD-RH REAR | 1 |
| 17 | 700-2-0399 | TUBE WELD | 1 |
| 18 | 700-2-0656 | SUPPORT TUBE WELD - FRONT BOOM - 822 | 1 |
| 19 | 901-01345 | BRG 1.50 PILLOW BLOCK - IPTCI NAPL 208-24 | 4 |
| 20 | 700-2-0489 | TANK SLIDE WELD | 1 |
| 21 | 700-3-1466 | SHIELD - TANK UNLOAD CONVEYOR | 1 |
| 22 | 700-3-0932 | CROSS SHAFT - TANK CONVEYOR | 1 |
| 23 | 903-11082 | SPROCKET - H237 8T 1.5B | 5 |
| 24 | 903-11070 | SPROCKET - 60BTL40 | 1 |
| 25 | 700-2-0538 | 2 BANK VALVE - 38/36 SERIES WITH FITTINGS | 1 |
| 26 | 700-3-1465 | SHIELD - VALVE | 1 |
| 27 | 904-05241 | HYD MOTOR - CHAR-LYNN H SERIES 101-1040 | 1 |
| 28 | 700-3-0894 | MOUNT PLATE - HYD MOTOR | 1 |
| 29 | 700-3-1124 | UHMW SLIDE-TANK | 2 |
| 30 | 700-3-1190 | VALVE MOUNTING PLATE | 1 |
| 31 | 700-3-0890 | DRIVE SHAFT - TANK CONVEYOR | 1 |
| 32 | 903-08456 | BUSHING TAPPER LOCK 2012 - 1.50 B | 1 |
| 33 | 700-2-0517 | BOTTOM TANK MOUNT PLATE WELD | 2 |
| 34 | 903-11083 | #60-1 15 TOOTH SPROCKET | 1 |
| 35 | 900-35023 | U-BOLT 3/8 X 6 X 6 X 1.5 | 2 |
| 36 | 903-03152 | HOOK CHAIN .63 X 42 X 2.38 X 46 LINKS | 1 |
| | 700-2-0525 | LOWER TANK ASSEMBLY (622) - 6 TON | 1 |

HYDRAULIC TANK COMPONENTS - 40 GALLON



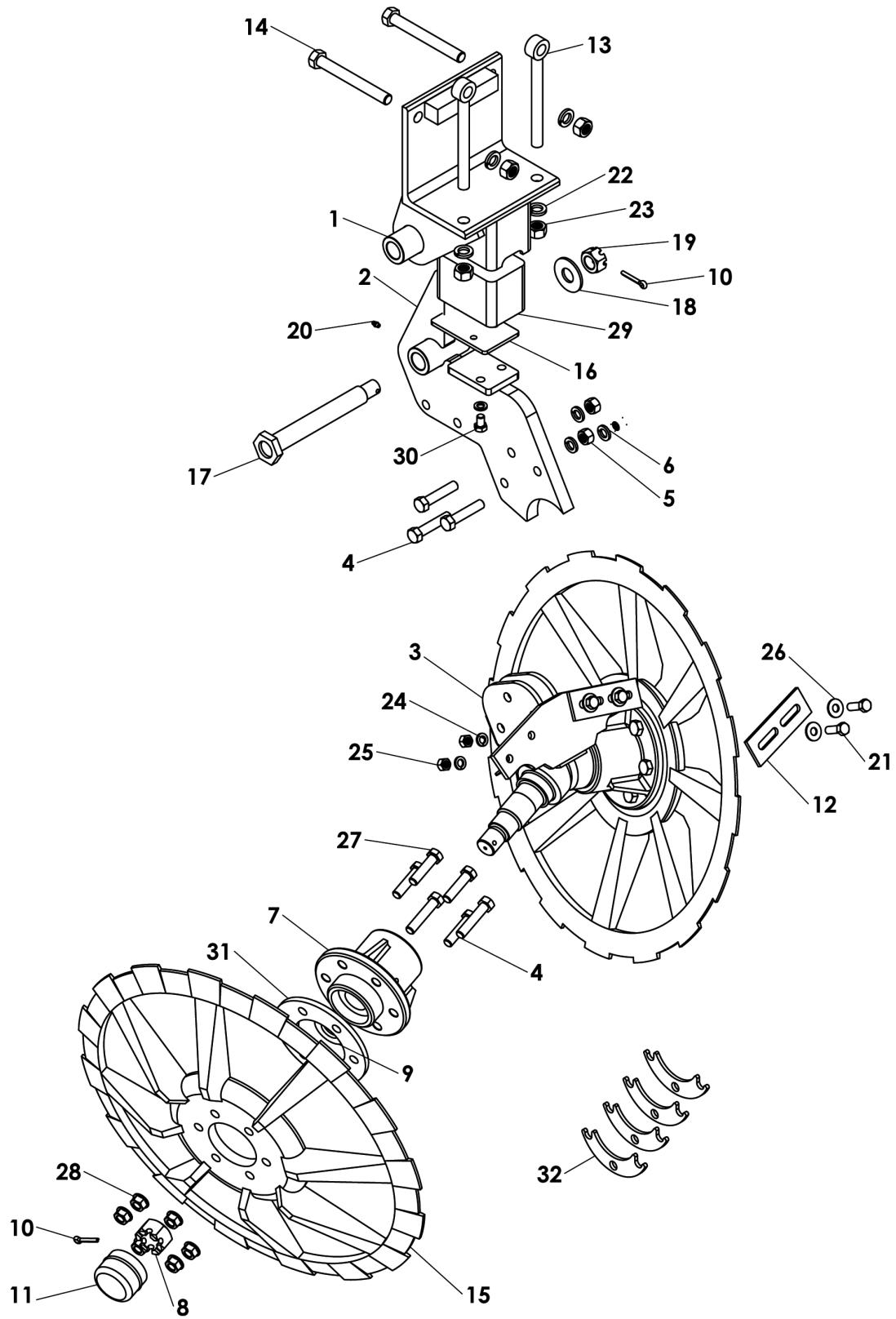
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|---|-------------|----------------------------------|------|
| 1 | 700-2-0431 | 40 GAL HYD TANK WELD | 1 |
| 2 | 905-03190 | 5 INCH SIGHT LEVEL GAGE | 1 |
| 3 | 905-03202 | BREATHER CAP - 1 NPT | 1 |
| 4 | 903-03201 | 3/4 NPT NIPPLE | 2 |
| 5 | 905-03203 | HYD FILTER - 3/4 NPT | 1 |
| 6 | 905-03204 | HYDRAULIC FILTER | 1 |
| 7 | 905-01548 | PIPE PLUG - 1/2 MPT | 1 |
| 8 | 905-03206 | SUCTION SCREEN - S15-100-RV5 | 1 |
| 9 | 905-03207 | BRASS BALL VALVE - 3/4" | 1 |
| 10 | 905-03208 | NIPPLE - 3/4MP X 1-1/4 HOSE BARB | 1 |
| 11 | 905-03205 | ADAPTOR - 12MPT X 8MJIC | 1 |
| 700-2-0533 HYDRAULIC TANK ASSY - 40 GAL | | | 1 |

DIGGER STRUT COMPONENTS



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--|------|
| 1 | 700-2-0407 | STRUT WELD - DIGGER | 1 |
| 2 | 700-2-0464 | SPINDLE WELD - (STD 22"-30") | 1 |
| 3 | 700-2-0511 | SPINDLE WELD - (17.7" ROWS) | 1 |
| 4 | 900-01353 | 5/8 NC X 3 HEX BOLT GRADE 5 | 3 |
| 5 | 900-06013 | NUT HEX 5/8 UNC | 3 |
| 6 | 900-11015 | WASHER, LOCK, 5/8 | 3 |
| 7 | 700-2-0410 | HUB ASSY - DIGGER STRUT | 2 |
| 8 | 900-06068 | 1-3/8 - 12 SLOTTED HEX NUT | 2 |
| 9 | 120-3-0003 | WASHER - 1.41 OD X 2.5 OD X .25 | 2 |
| 10 | 900-23064 | COTTER PIN - 1/4 X 2 | 2 |
| 11 | 905-09129 | DUST CAP- 3 OD X 2.25 DP | 2 |
| 12 | 700-3-1056 | SCRAPER BLADE - DIGGER STRUTS | 2 |
| 13 | 900-03462 | EYE BOLT 3/4 X 8 | 2 |
| 14 | 900-01425 | HEX BOLT - 3/4NC X 6-1/2 GR5 ZP | 2 |
| 15 | 700-3-0303 | LIFTER WHEEL - 28 CASTING | 2 |
| 16 | 700-3-1475 | WHEEL SPACER - 3/8" (17.7" ROWS ONLY) | 2 |
| 17 | 700-3-0447 | WHEEL SPACER - 1/4" (22" ROWS ONLY) | 4 |
| 18 | 700-2-0409 | STRUT ASSEMBLY (STD - REF 1-14) | 1 |
| 19 | 700-2-0512 | STRUT ASSEMBLY (17.7" ROWS - REF 1-15) | 1 |

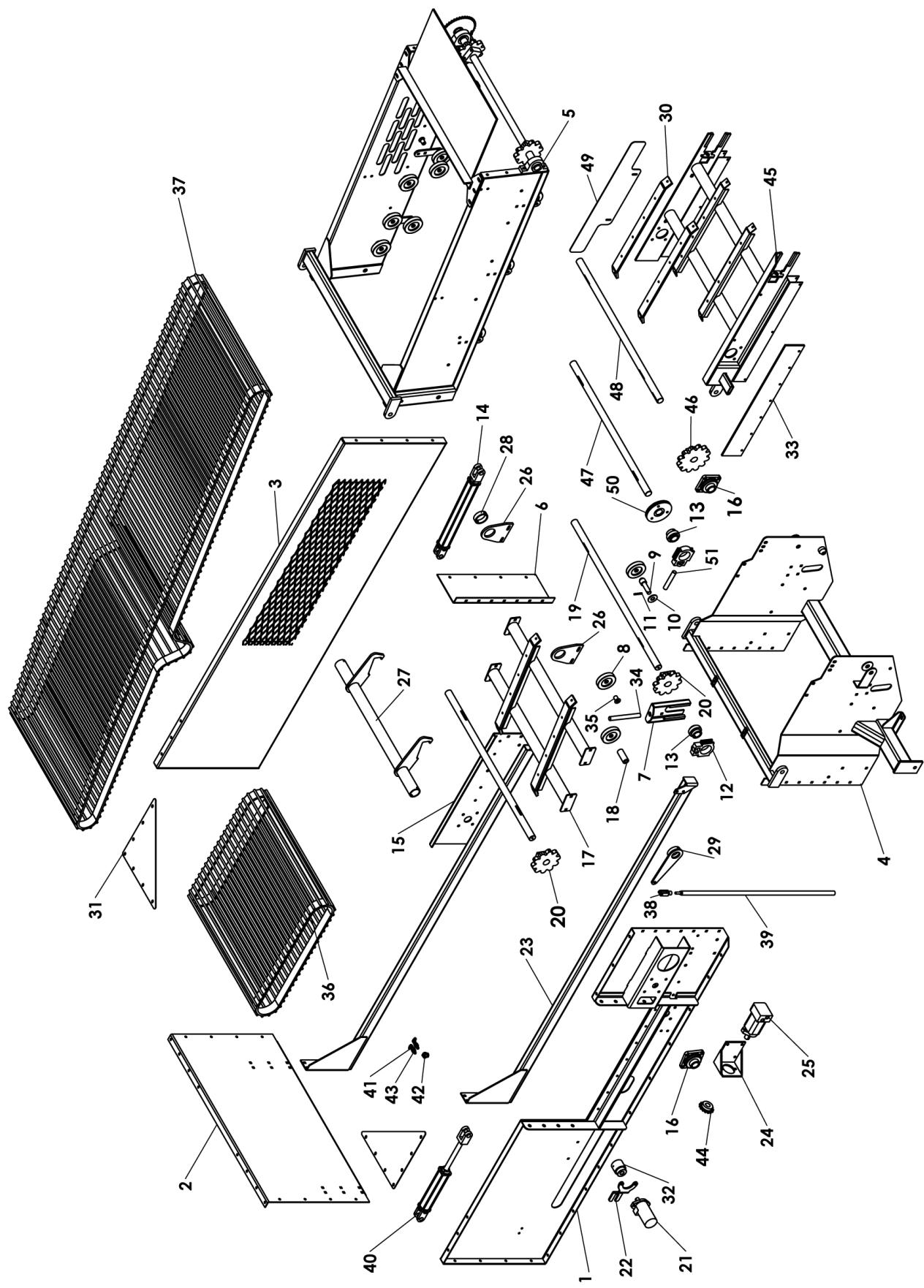
STANDARD CUSHION DIGGER STRUT COMPONENTS



STANDARD CUSHION DIGGER STRUT COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0534 | PIVOT MOUNT WELD | 1 |
| 2 | 700-2-0535 | LIFTER PIVOT | 1 |
| 3 | 700-2-0464 | SPINDLE WELD - (STD 22"-30") | 1 |
| | 700-2-0511 | SPINDLE WELD - (17.7" ROWS) | 1 |
| 4 | 900-01353 | 5/8 NC X 3 HEX BOLT GRADE 5 | 7 |
| 5 | 900-06013 | NUT HEX 5/8 UNC | 3 |
| 6 | 900-11015 | WASHER, LOCK, 5/8 | 3 |
| 7 | 700-2-0410 | HUB ASSY - DIGGER STRUT | 2 |
| 8 | 900-06068 | 1-3/8 - 12 SLOTTED HEX NUT | 2 |
| 9 | 120-3-0003 | WASHER - 1.41 OD X 2.5 OD X .25 | 2 |
| 10 | 900-23064 | COTTER PIN - 1/4 X 2 | 3 |
| 11 | 905-09129 | DUST CAP- 3 OD X 2.25 DP | 2 |
| 12 | 700-3-1056 | SCRAPER BLADE - DIGGER STRUTS | 2 |
| 13 | 900-03462 | EYE BOLT 3/4 X 8 | 2 |
| 14 | 900-01429 | HEX BOLT - 3/4NC X 6-1/2 GR5 ZP | 2 |
| 15 | 700-3-0303 | LIFTER WHEEL - 28 CASTING | 2 |
| 16 | 700-3-1237 | RUBBER BOLT PLATE | 1 |
| 17 | 700-2-0537 | DIGGER STRUT LIFT PIN | 1 |
| 18 | 900-11040 | 1" FLAT WASHER | 1 |
| 19 | 900-06061 | 1-8 HEX SLOTTED NUT | 1 |
| 20 | 905-15024 | ZERK 1/4-28 UNF STRAIGHT | 1 |
| 21 | 900-01225 | 1/2 NC X 1-1/2 HEX BOLT GR 5 | 4 |
| 22 | 900-11017 | 3/4 LOCK WASHER | 4 |
| 23 | 900-06015 | HEX NUT - 3/4 NC | 4 |
| 24 | 900-11013 | WASHER, LOCK 1/2 | 6 |
| 25 | 900-06009 | NUT HEX 1/2 UNC | 4 |
| 26 | 900-11035 | 1/2 FLAT WASHER | 4 |
| 27 | 900-01347 | 5/8" X 2-1/2 NC HEX BOLT | 8 |
| 28 | 900-06145 | 5/8 WHIZ NUT | 12 |
| 29 | 700-3-1397 | ROCK CUSHION | 1 |
| 30 | 900-01217 | HEX BOLT - 1/2 NC X 3/4 ZP | 2 |
| 31 | 700-3-1475 | WHEEL SPACER - 3/8" (17.7" ROWS ONLY) | 2 |
| 32 | 700-3-0447 | WHEEL SPACER - 1/4" (22" ROWS ONLY) | 4 |
| | 700-2-0641 | CUSHION STRUT ASSY. (STD - REF 1-30) | 1 |
| | 700-2-0536 | CUSHION STRUT ASSY. (17.7" ROWS - REF 1-31) | 1 |

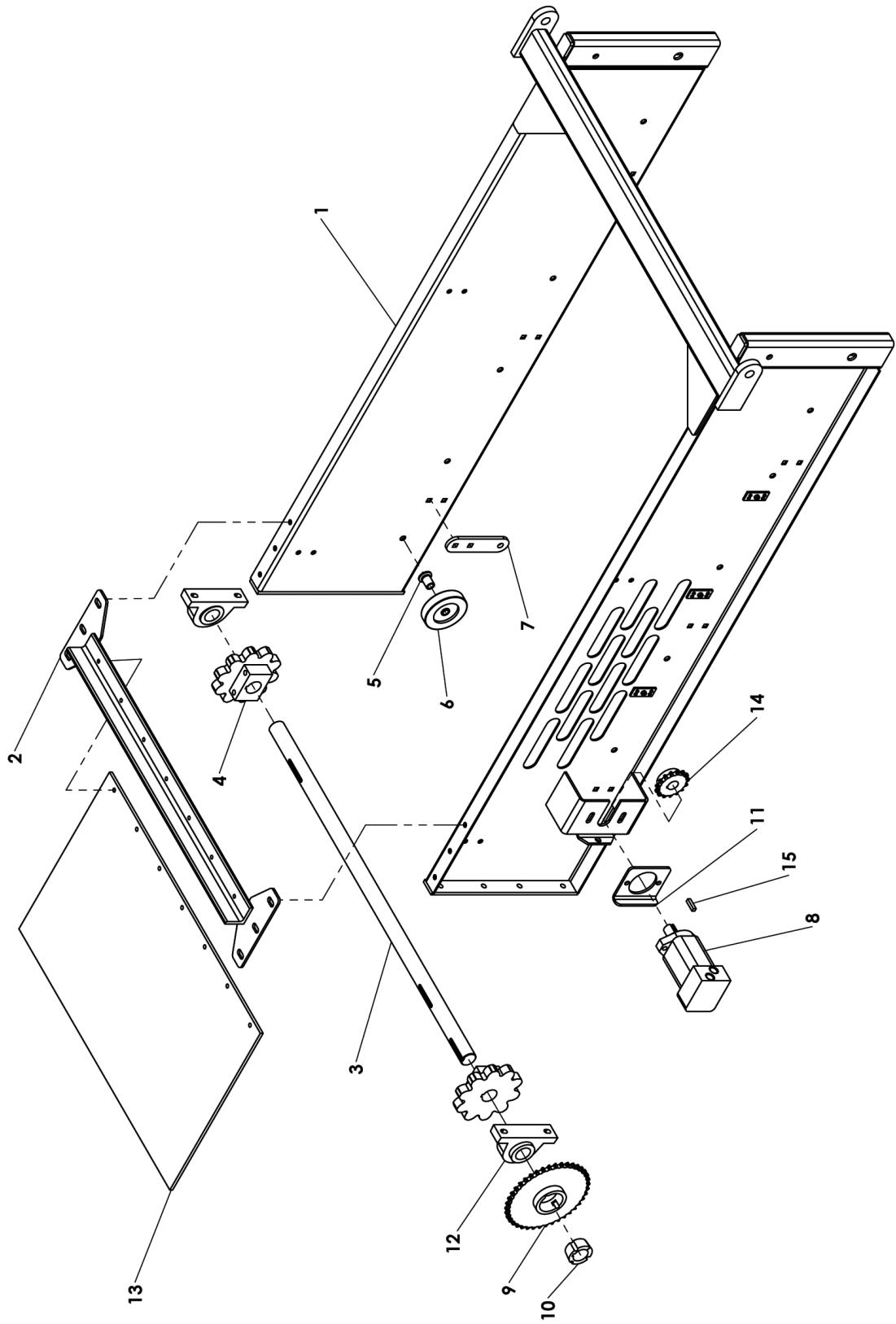
LARGE TANK COMPONENTS



LARGE TANK COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0419 | HOPPER BACK SHEET WELD - LARGE TANK | 1 |
| 2 | 700-3-1115 | END PLATE - TANK (622) | 1 |
| 3 | 700-2-0384 | UPPER FRONT PANEL WELD | 1 |
| 4 | 700-2-0486 | INTERMEDIATE WELD -622 | 1 |
| 5 | 700-2-0491 | OUTER BOOM WELD - 622 | 1 |
| 6 | 700-3-1114 | CORNER PLATE - TANK (622) | 1 |
| 7 | 700-2-0404 | CONVEYOR TAKEUP WELD | 2 |
| 8 | 903-08433 | 5" RUBBER ROLLER | 16 |
| 9 | 700-3-0916 | PIVOT PIN - BOOM | 2 |
| 10 | 900-11040 | 1" FLAT WASHER | 2 |
| 11 | 900-29208 | 5/16 X 2-1/4 ROLL PIN | 2 |
| 12 | 901-01359 | T209 BEARING HOUSING | 4 |
| 13 | 901-01310 | 1-3/4 INSERT BRG NA-209-28 | 4 |
| 14 | 905-21396 | HYDRAULIC CYL 2 X 20 - (20TD20-112) | 2 |
| 15 | 700-2-0487 | CONVEYOR SLIDE - FRONT | 1 |
| 16 | 901-01305 | BEARING - UCFS 209-28 1.75 (W/SET SCREWS) | 4 |
| 17 | 700-2-0412 | CHAIN SLIDE WELD | 1 |
| 18 | 700-3-0924 | STANDOFF - INNER WHEEL | 6 |
| 19 | 700-3-0928 | IDLER SHAFT - SHORT CONVEYOR | 2 |
| 20 | 903-11068 | SPROCKET - 10T 50MM PITCH 1.75 BORE | 4 |
| 21 | 904-05241 | HYD MOTOR - CHAR-LYNN H SERIES 101-1040 | 1 |
| 22 | 700-3-0945 | TORQUE ARM - HYD MOTOR | 1 |
| 23 | 700-2-0493 | CONVEYOR SLIDE - REAR | 1 |
| 24 | 700-2-0426 | HYD MOTOR MOUNT WELD | 1 |
| 25 | 904-05223 | HYD MOTOR - CHAR-LYNN 1041026 | 1 |
| 26 | 700-3-0979 | PIVOT EAR - BOOM LOCK | 2 |
| 27 | 700-2-0494 | LOCK BAR WELD - BOOM (622) | 1 |
| 28 | 700-3-1146 | COLLAR BOOM LOCK - PAINTED | 1 |
| 29 | 700-2-0498 | BOOM LOCK LEVER | 1 |
| 30 | 700-3-1169 | UHMW SLIDE-SLIDE CONVEYOR | 4 |
| 31 | 700-3-1218 | CORNER GUSSET - TANK | 2 |
| 32 | 700-2-0527 | COUPLER WELD - HYD MOTOR | 1 |
| 33 | 700-3-1213 | RUBBER FLAP - REAR ELEVATOR | 1 |
| 34 | 700-3-1221 | THREADED ROD - TAKEUP | 2 |
| 35 | 903-08424 | SPACER ROLLER STANDOFF | 8 |
| 36 | 903-03155 | BELTED CHAIN BOOM SHORT | 1 |
| 37 | 903-03154 | BELTED CHAIN BOOM LONG | 1 |
| 38 | 500-3-1247 | CLEVIS | 1 |
| 39 | 700-2-0547 | HANDLE WELD | 1 |
| 40 | 905-21390 | HYDRAULIC CYL 2 X 10 | 1 |
| 41 | 905-03211 | ELBOW, 6MJIC x 6FJICSVL (90 DEG) | 2 |
| 42 | 905-03210 | ADAPTER, 6MJIC x 12MORB | 1 |
| 43 | 905-03212 | ADAPTER, 6MJIC x 8MORB | 2 |
| 44 | 903-11085 | #60-1 15 TOOTH SPROCKET 1-1/4 B W/KSS | 1 |
| 45 | 700-2-0441 | TANK CONVEYOR WELD - UPPER | 1 |
| 46 | 903-11067 | SPROCKET - 12T 50MM PITCH 1.75 BORE | 2 |
| 47 | 700-3-0944 | IDLER SHAFT - SHORT CONVEYOR | 1 |
| 48 | 700-3-0927 | DRIVE SHAFT - SHORT CONVEYOR | 1 |
| 49 | 700-3-1215 | BACKBOARD - CONVEYOR | 1 |
| 50 | 700-2-0526 | SMOOTH SPROCKET WELD -1.75 | 2 |
| 51 | 700-3-1217 | THREADED ROD - TAKEUP | 2 |
| | 700-2-0485 | LARGE TANK ASSY (622) | 1 |

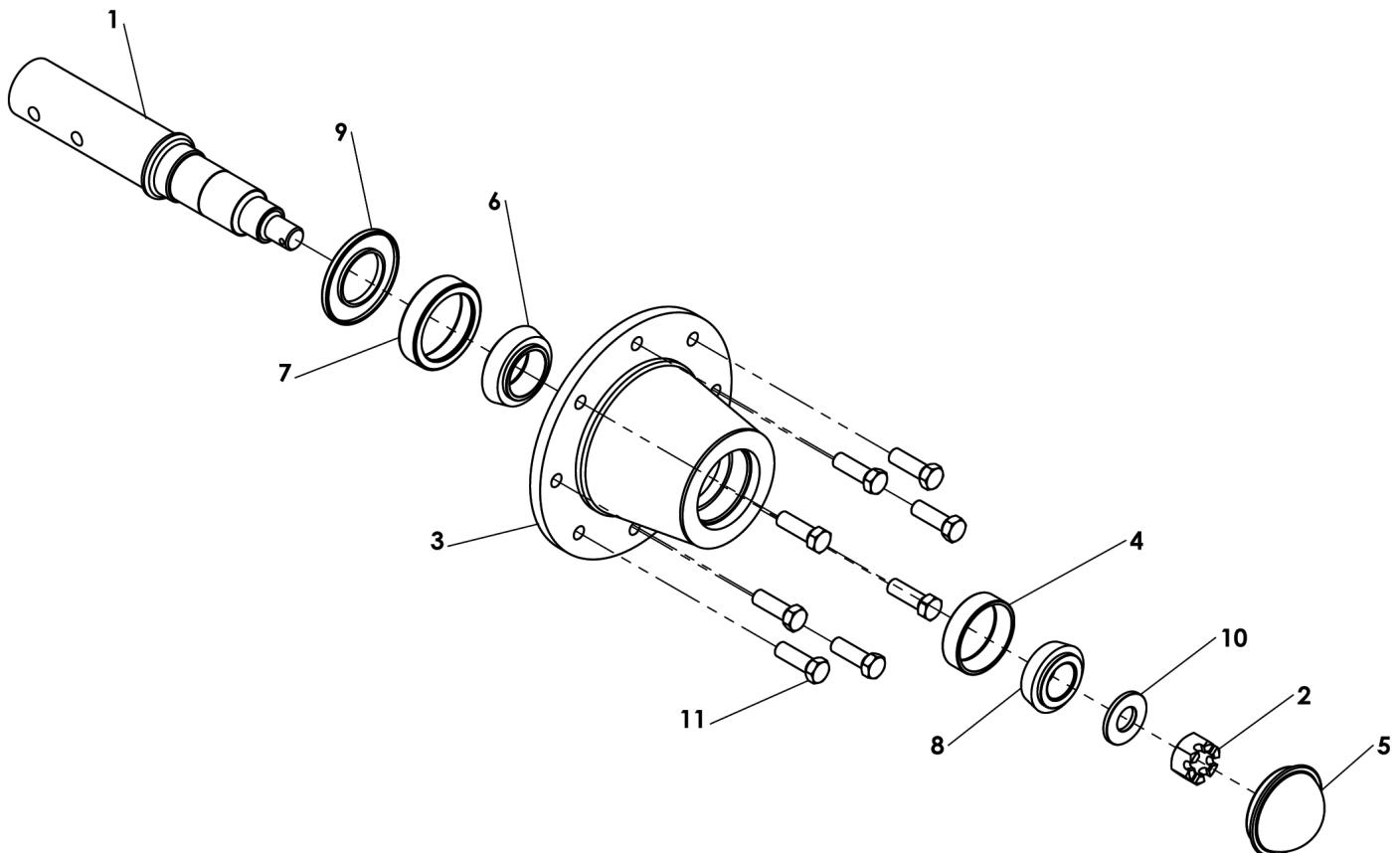
OUTER BOOM COMPONENTS



OUTER BOOM COMPONENTS

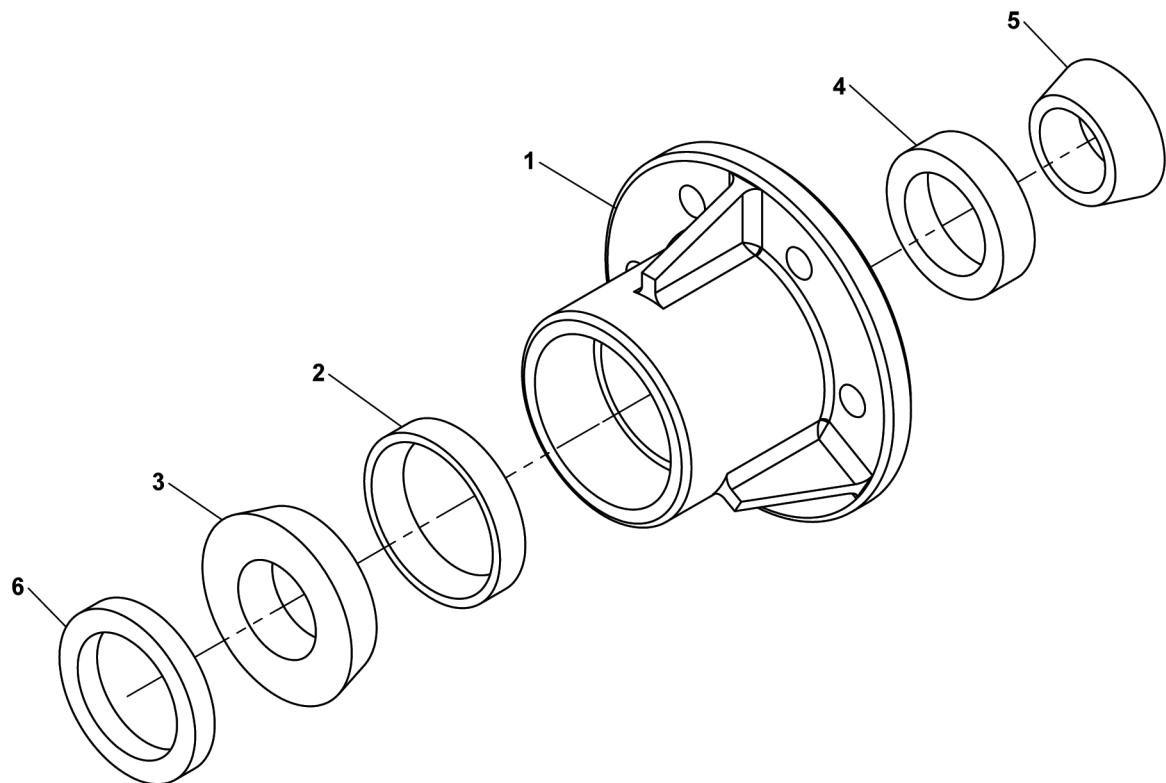
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0492 | OUTER BOOM WELD - 622 | 1 |
| 2 | 700-2-0096 | DEFLECTOR WELD | 1 |
| 3 | 700-3-0086 | DRIVE SHAFT - ELEVATOR | 1 |
| 4 | 903-11068 | SPROCKET - 10T 50MM PITCH 1.75 BORE | 2 |
| 5 | 903-08424 | SPACER ROLLER STANDOFF | 18 |
| 6 | 903-08433 | 5" RUBBER ROLLER | 18 |
| 7 | 700-3-0230 | ROLLER DROP STRAP | 6 |
| 8 | 904-05223 | HYD MOTOR - CHAR-LYNN 1041026 | 1 |
| 9 | 903-11070 | SPROCKET - 60BTL40 | 1 |
| 10 | 903-08412 | BUSHING TAPPER LOCK 2012 - 1.75 B | 1 |
| 11 | 700-3-0894 | MOUNT PLATE - HYD MOTOR | 1 |
| 12 | 901-01303 | BRG 1.75 PILLOW BLOCK - IPTCI NAPL 209-28 | 2 |
| 13 | 700-3-1220 | RUBBER FLAP - BOOM | 1 |
| 14 | 903-11085 | #60-1 15 TOOTH SPROCKET 1-1/4 B W/KSS | 1 |
| 15 | 100-3-1318 | KEY - 3/8 x 3/8 x 1-1/2 | 1 |
| | 700-2-0491 | OUTER BOOM WELDMENT - 622 | 1 |

SPINDLE HUB COMPONENTS



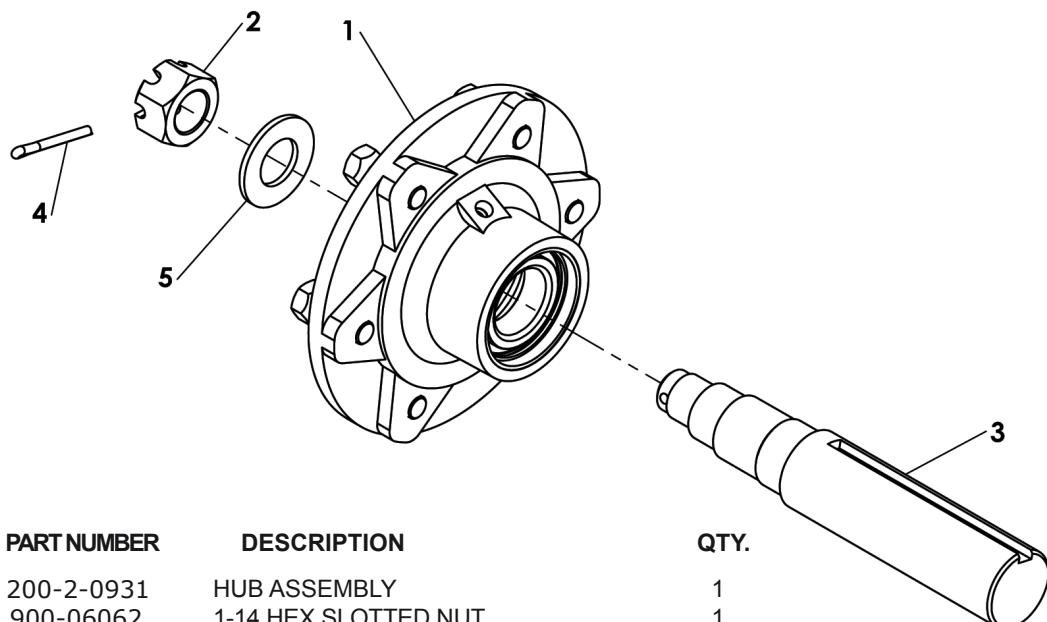
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|------------------------------|------|
| 1 | 700-3-0143 | SPINDLE REAR STRUT | 1 |
| 2 | 905-09132 | SLOTTED HEX NUT 7/8 -14 NF | 1 |
| 3 | 905-09136 | HUB - 8 BOLT | 1 |
| 4 | 901-01324 | BEARING CUP (OUTER) | 1 |
| 5 | 905-09135 | CAP | 1 |
| 6 | 901-01325 | BEARING CUP (INNER) | 1 |
| 7 | 901-01152 | BEARING CUP CONE | 1 |
| 8 | 901-01326 | BEARING CONE | 1 |
| 9 | 901-09215 | SEAL | 1 |
| 10 | 905-09067 | WASHER | 1 |
| 11 | 905-09039 | WHEEL BOLT 9/16-18 X 1-11/16 | 8 |
| | 700-2-0165 | SPINDLE HUB ASSEMBLY | 1 |

DIGGER STRUT HUB COMPONENTS



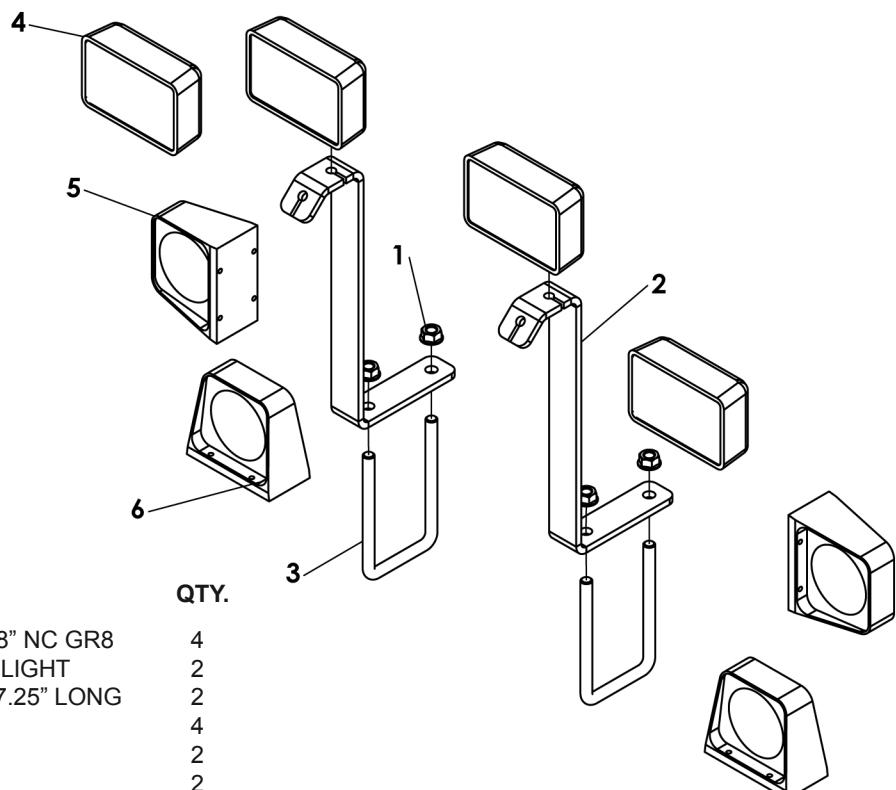
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|------------|-------------|-------------------------|------|
| 1 | 700-3-0275 | HUB - MACHINED (DIGGER) | 1 |
| 2 | 901-01319 | BEARING CUP #362A | 1 |
| 3 | 901-01320 | BEARING CONE #368A | 1 |
| 4 | 901-01321 | BEARING CUP #26823 | 1 |
| 5 | 901-01322 | BEARING CONE #26884 | 1 |
| 6 | 901-09214 | SEAL - NATIONAL #415302 | 1 |
| 700-2-0410 | | HUB ASSY - DIGGER STRUT | |

IDLER PULLEY HUB & SPINDLE COMPONENTS



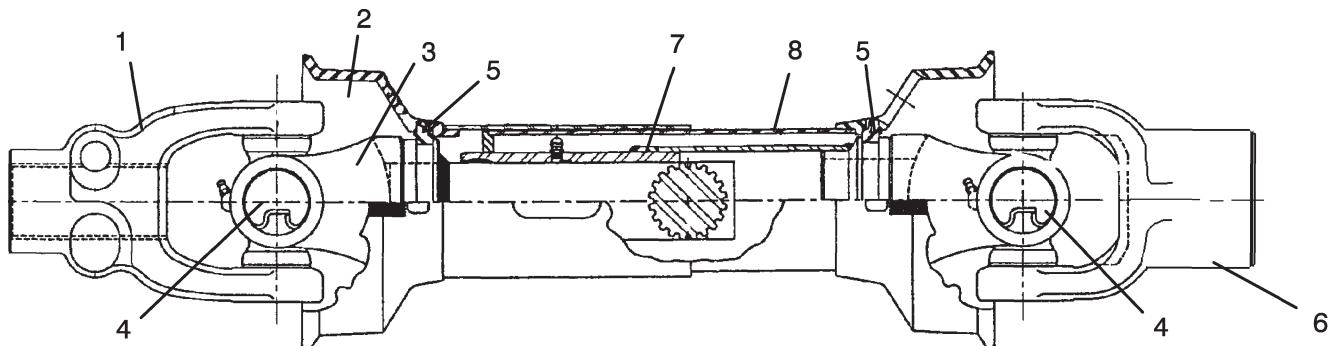
| REF. | PART NUMBER | DESCRIPTION | QTY. |
|------|-------------|-----------------------------------|------|
| 1 | 200-2-0931 | HUB ASSEMBLY | 1 |
| 2 | 900-06062 | 1-14 HEX SLOTTED NUT | 1 |
| 3 | 700-3-0851 | SPINDLE - IDLER PULLEY | 1 |
| 4 | 900-23045 | 3/16 X 2 COTTER PIN | 1 |
| 5 | 905-09068 | WASHER 1" SAE | 1 |
| | 700-2-0373 | HUB & SPINDLE ASSY - IDLER PULLEY | 1 |

LIGHT KIT COMPONENTS



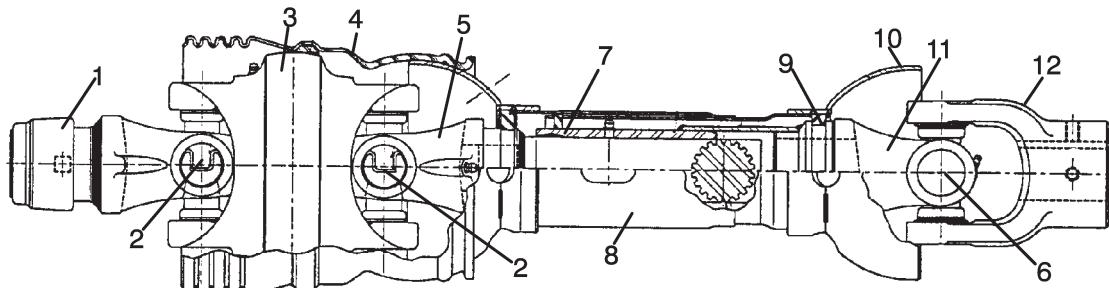
| REF. | PART NUMBER | DESCRIPTION | QTY. |
|------|-------------|---|------|
| 1 | 900-06145 | NUT, FLANGE, 5/8" NC GR8 | 4 |
| 2 | 500-3-1720 | BRACKET, FIELD LIGHT | 2 |
| 3 | 200-3-0017 | U-BOLT 5/8 x 4 x 7.25" LONG | 2 |
| 4 | 500-3-1721 | LIGHT, FIELD | 4 |
| 5 | 904-01154 | AMBER LAMP | 2 |
| 6 | 904-01155 | RED LAMP | 2 |
| 7 | 700-3-1496 | WIRE HARNESS, 622/822/630 HARVESTER (NOT SHOWN) | 1 |
| | 500-1-0109 | FIELD LIGHT BRACKET KIT (REF 1, 2, 3) | |
| | 700-2-0521 | LIGHT KIT, HARV 622/822/630 (REF 4, 5, 6, 7) | |

PTO SHAFT - WEASLER (STANDARD)



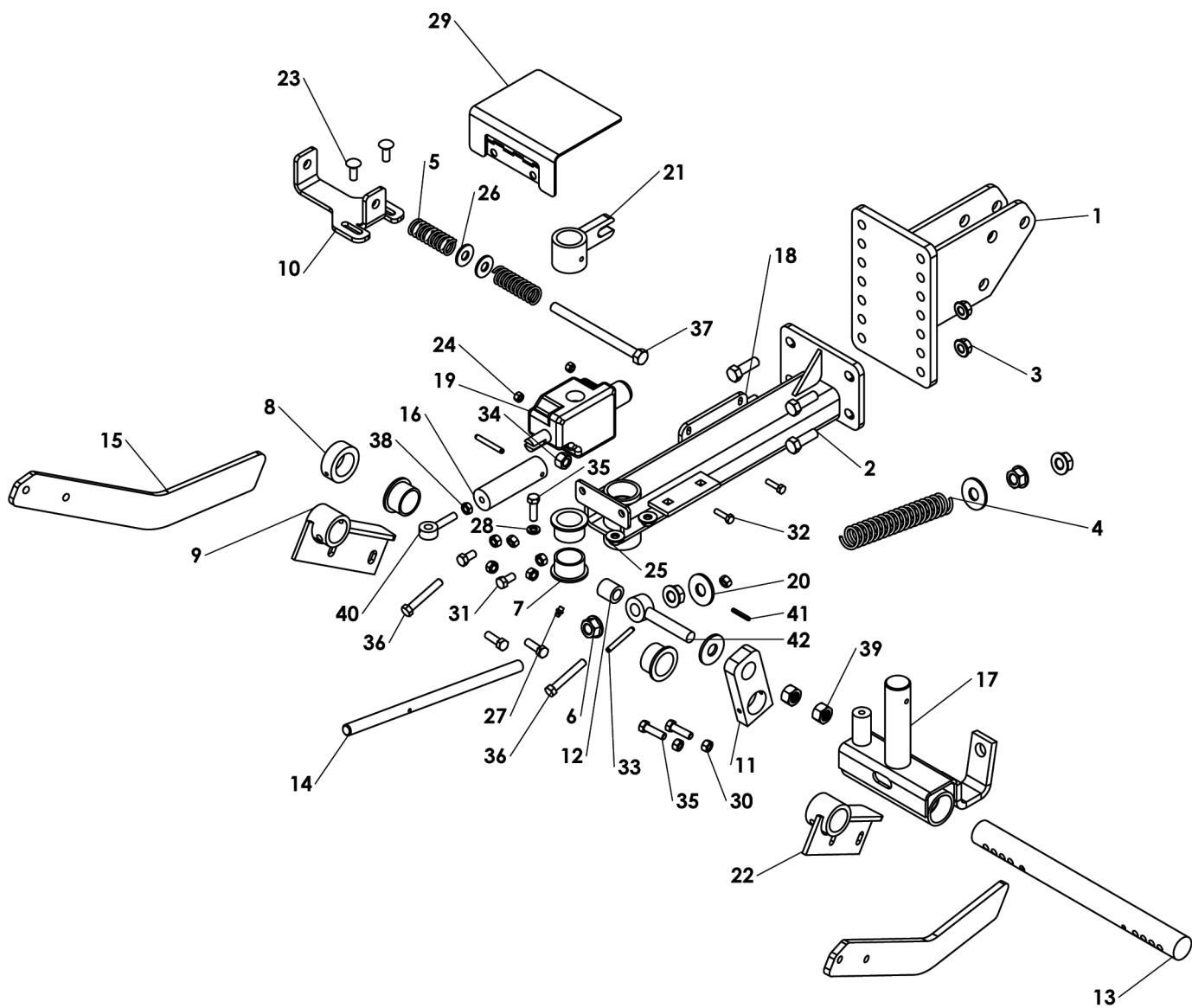
| REF. | PART NUMBER | DESCRIPTION | QTY. | REF. | PART NUMBER | DESCRIPTION | QTY. |
|------|-------------|-----------------------------|------|------|-------------|---------------------------------|------|
| 1 | 903-17472 | Q.D. Yoke Assembly (1-3/8") | 1 | 6 | 903-17475 | Yoke | 2 |
| | 903-18068 | Q.D. Repair Kit (1-3/8") | 1 | 7 | 903-18063 | Yoke, Tube & Slip Sleeve | 1 |
| | 903-17531 | Q.D. Yoke Assembly (1-3/4") | 1 | 8 | 903-18062 | Inner Guard | 1 |
| | 903-17729 | Q.D. Repair Kit (1-3/4") | 1 | | 903-18054 | PTO Shaft (1-3/4"), complete | 1 |
| 2 | 903-18069 | Outer Guard | 1 | | 903-18053 | PTO Shaft (1-3/8"), complete | 1 |
| 3 | 903-18070 | Yoke & Shaft | 1 | | 903-18072 | Tractor Half With Guard, 1-3/8" | 1 |
| 4 | 903-17525 | 44R Cross & Bearing Kit | 2 | | 903-18071 | Tractor Half With Guard, 1-3/4" | 1 |
| 5 | 903-17851 | Nylon Bearing | 2 | | 903-18066 | Implement Half With Guard | |

PTO SHAFT - WEASLER (CONSTANT VELOCITY)



| REF. | PART NUMBER | DESCRIPTION | QTY. | REF. | PART NUMBER | DESCRIPTION | QTY. |
|------|-------------|---|------|------|-------------|--|------|
| 1 | 903-17711 | Safety Slide Lock Yoke Assembly, 1-3/8" | 1 | 8 | 903-18103 | Outer Guard | 1 |
| | 903-18106 | Repair Kit, 1-3/8" | 1 | 9 | 903-17851 | Nylon Bearing Repair Kit | 1 |
| 2 | 903-17712 | Cross & Bearing Kit | 2 | 10 | 903-18102 | Inner Guard | 1 |
| 3 | 903-17713 | Center Housing Assembly | 1 | 11 | 903-18101 | Yoke, Tube & Slip Sleeve | 1 |
| 4 | 903-17714 | Bell Extension | 1 | 12 | 903-17475 | Yoke | 1 |
| 5 | 903-18105 | Yoke & Shaft | 1 | | 903-18091 | PTO Shaft, 1-3/8" Complete | 1 |
| 6 | 903-17525 | Cross & Bearing Kit | 1 | | 903-18090 | PTO Shaft, 1-3/4" Complete | 1 |
| 7 | 903-18104 | Nylon Bearing Repair Kit | 1 | | 903-18098 | PTO Half With Guard, 1-3/8" tractor half | |
| | | | | | 903-18099 | PTO Half With Guard, 1-3/4" tractor Half | |
| | | | | | 903-18100 | PTO Half With Guard, Implement | |

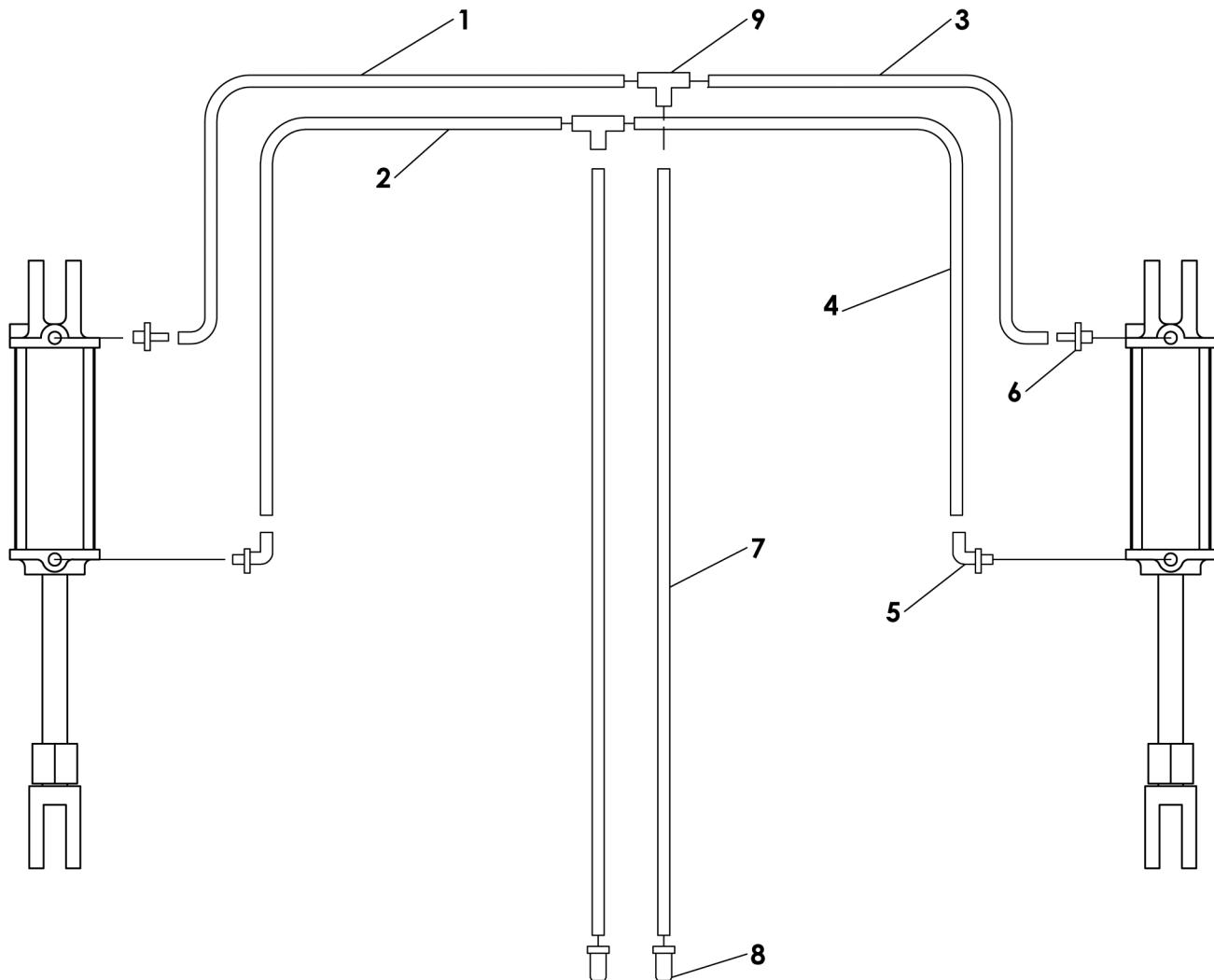
ROWFINDER COMPONENTS



ROWFINDER COMPONENTS

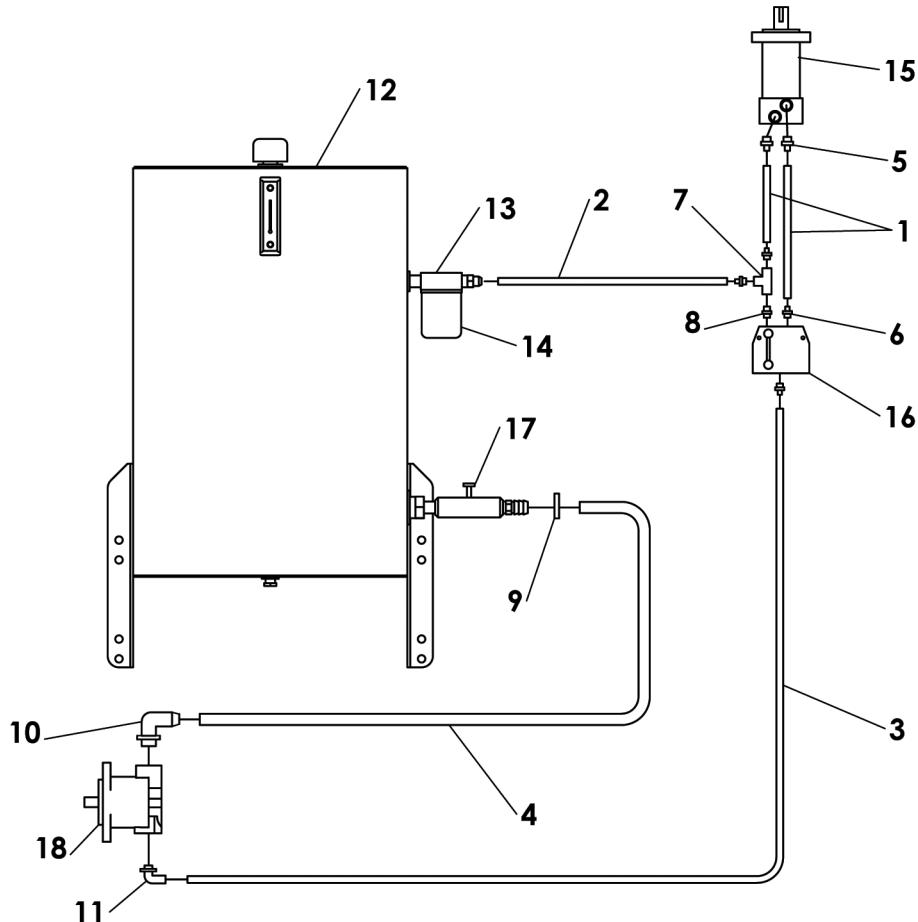
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--|------|
| 1 | 700-2-0425 | ADJ PLATE WELD - ROW FINDER | 1 |
| 2 | 900-01225 | 1/2 NC X 1-1/2 HEX BOLT GR 5 | 4 |
| 3 | 900-06143 | 1/2 NC SPIRALOCK NUT ZP GR5 | 4 |
| 4 | 905-14007 | SPRING - 1.245 OD X .148 WIRE X .4029 P X 7.75 LONG | 1 |
| 5 | 905-14006 | SPRING - 1.00 OD X .128 WIRE X 2.95 LONG X .2993 PITCH | 2 |
| 6 | 900-06145 | 5/8 WHIZ NUT | 4 |
| 7 | 700-3-0383 | OILITE BUSHING - FF-1618-1 | 4 |
| 8 | 901-01323 | SET COLLAR - 1.38 | 1 |
| 9 | 700-2-0123 | FINGER WELD RH | 1 |
| 10 | 700-3-0339 | PLATE SPRING | 1 |
| 11 | 700-3-0349 | BLOCK DOWN PRESSURE | 1 |
| 12 | 700-3-0350 | BUSHING DOWN PRESSURE BLOCK | 1 |
| 13 | 700-3-0351 | SHAFT HORZ PIVOT | 1 |
| 14 | 700-3-0352 | ROD ROW FINDER | 1 |
| 15 | 700-3-0356 | FINGER | 2 |
| 16 | 700-3-0382 | SHAFT, TIE ROD-ROW FINDER | 1 |
| 17 | 700-2-0112 | PIVOT WELD | 1 |
| 18 | 700-2-0103 | PIVOT MOUNT WELD | 1 |
| 19 | 905-03116 | DIRECTIONAL CONTROL VALVE | 1 |
| 20 | 900-11037 | WASHER, FLAT, 5/8" | 3 |
| 21 | 700-2-0106 | STEERING PADDLE WELD | 1 |
| 22 | 700-2-0124 | FINGER WELD LH | 1 |
| 23 | 900-01695 | CARRIAGE BOLT 3/8 NC X 1 ZP | 2 |
| 24 | 900-06001 | 1/4-20 HEX NUT | 3 |
| 25 | 900-11033 | FLAT WASHER 3/8 ZP | 2 |
| 26 | 900-11035 | 1/2 FLAT WASHER | 2 |
| 27 | 905-15024 | ZERK 1/4-28 UNF STRAIGHT | 1 |
| 28 | 900-11011 | WASHER LOCK | 1 |
| 29 | 700-2-0130 | SHIELD WELDMENT | 1 |
| 30 | 900-06500 | NUT HEX 3/8 TOP LOCK | 10 |
| 31 | 900-01105 | 3/8-16 X .75" HEX BOLT | 2 |
| 32 | 900-01069 | 1/4 NC X 1-3/4 HEX BOLT | 3 |
| 33 | 900-29182 | 1/4 X 2 ROLL PIN | 2 |
| 34 | 900-06504 | NUT HEX 1/2 NC TOP LOCK ZP | 1 |
| 35 | 900-01111 | 3/8NC X 1-1/4 HEX BOLT GR 5 | 5 |
| 36 | 900-01121 | 3/8NC X 2-1/2 HEX BOLT GR 5 | 2 |
| 37 | 900-01255 | HEX FL BOLT 1/2 UNC X 6-1/2 | 1 |
| 38 | 900-06273 | HEX JAM NUT 3/8-NF (WIP) | 1 |
| 39 | 900-06013 | NUT HEX 5/8 UNC | 2 |
| 40 | 903-05044 | EYEBOLT - ROD END | 1 |
| 41 | 900-29132 | PIN ROLL 3/16 X 1-1/4 | 1 |
| 42 | 900-03465 | EYE BOLT 5/8 X 3 | 1 |
| | 700-1-0019 | HYDRAULIC ROWFINDER - COMPLETE | 1 |

HITCH HYDRAULIC COMPONENTS



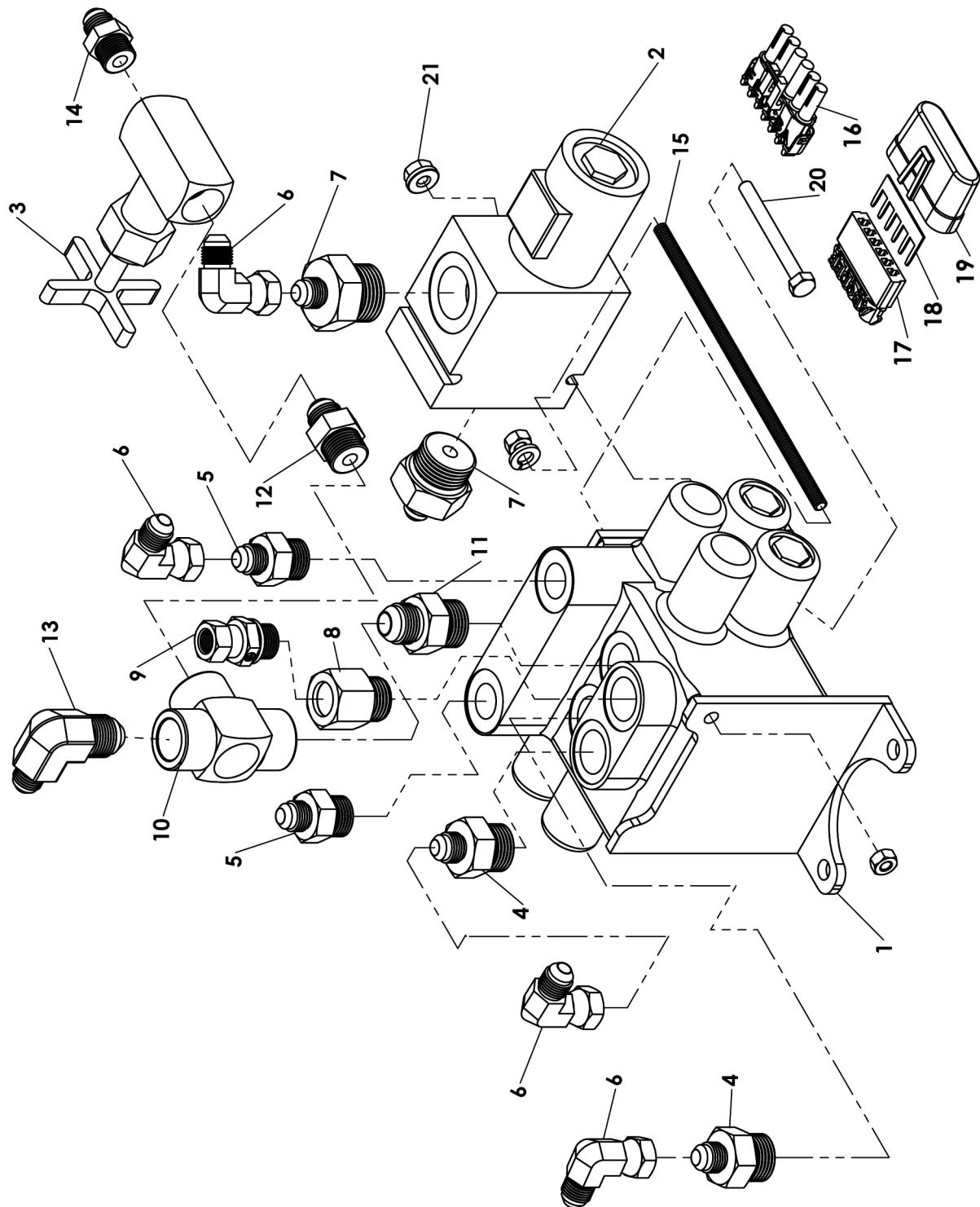
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|------------|-------------|------------------------------------|------|
| 1 | 905-19192 | HOSE 3/8", 6FJIC x 6FJIC x 18" | 1 |
| 2 | 905-19191 | HOSE 3/8", 6FJIC x 6FJIC x 24" | 1 |
| 3 | 905-19190 | HOSE 3/8", 6FJIC x 6FJIC x 30" | 1 |
| 4 | 905-19189 | HOSE 3/8", 6FJIC x 6FJIC x 42" | 1 |
| 5 | 905-03114 | ELBOW 90°, 6MJIC x 3/4-16MORB | 2 |
| 6 | 905-03115 | ADAPTER, 6MJIC x 3/4-16MORB | 2 |
| 7 | 905-19210 | HOSE 3/8", 6FJIC x 8MORBSVL x 120" | 2 |
| 8 | 905-19126 | QUICK COUPLER, MALE 8MORB | 2 |
| 9 | 905-03112 | TEE, 6MJIC | 2 |
| 700-1-0021 | | HITCH, HYDRAULIC COMPONENT KIT | |

REAR ELEVATOR HYDRAULIC COMPONENTS



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 905-19208 | HOSE 1/2", 8FJIC x 8FJIC x 60" | 2 |
| 2 | 905-19207 | HOSE 1/2", 8FJIC x 8FJIC x 24" | 1 |
| 3 | 905-19206 | HOSE 1/2", 8FJIC x 8FJIC x 120" | 1 |
| 4 | 905-19208 | HOSE 1-1/4", 20FJIC (one end only) x 126" | 1 |
| 5 | 905-03121 | ADAPTER, 10MORB x 8MJIC | 2 |
| 6 | 905-03200 | ADAPTER, 12MPT x 8MJIC | 4 |
| 7 | 905-03227 | TEE, 12FPT | 1 |
| 8 | 905-03201 | NIPPLE, 12MPT x 12MPT | 1 |
| 9 | 905-03217 | HOSE CLAMP, 1-1/4" HOSE | 1 |
| 10 | 905-03221 | ELBOW 90°, 20MJIC x 20MORB | 1 |
| 11 | 905-03222 | ELBOW 90°, 8MJIC x 12MORB | 1 |
| 12 | 700-2-0431 | 40 GAL HYDRAULIC TANK | 1 |
| 13 | 905-03203 | HYDRAULIC FILTER ASSEMBLY - 3/4 NPT | 1 |
| 14 | 905-03204 | HYDRAULIC FILTER | 1 |
| 15 | 905-05223 | HYDRAULIC MOTOR - CHAR-LYN 1041026 | 1 |
| 16 | 905-03218 | TOP PORT FLOW CONTROL VALVE WITH RELIEF | 1 |
| 17 | 905-03207 | BRASS BALL VALVE - 3/4" | 1 |
| 18 | 904-05244 | HYDRAULIC PUMP #25504RSC | 1 |
| | 700-1-0025 | REAR ELEVATOR, HYDRAULIC COMPONENT KIT | 1 |

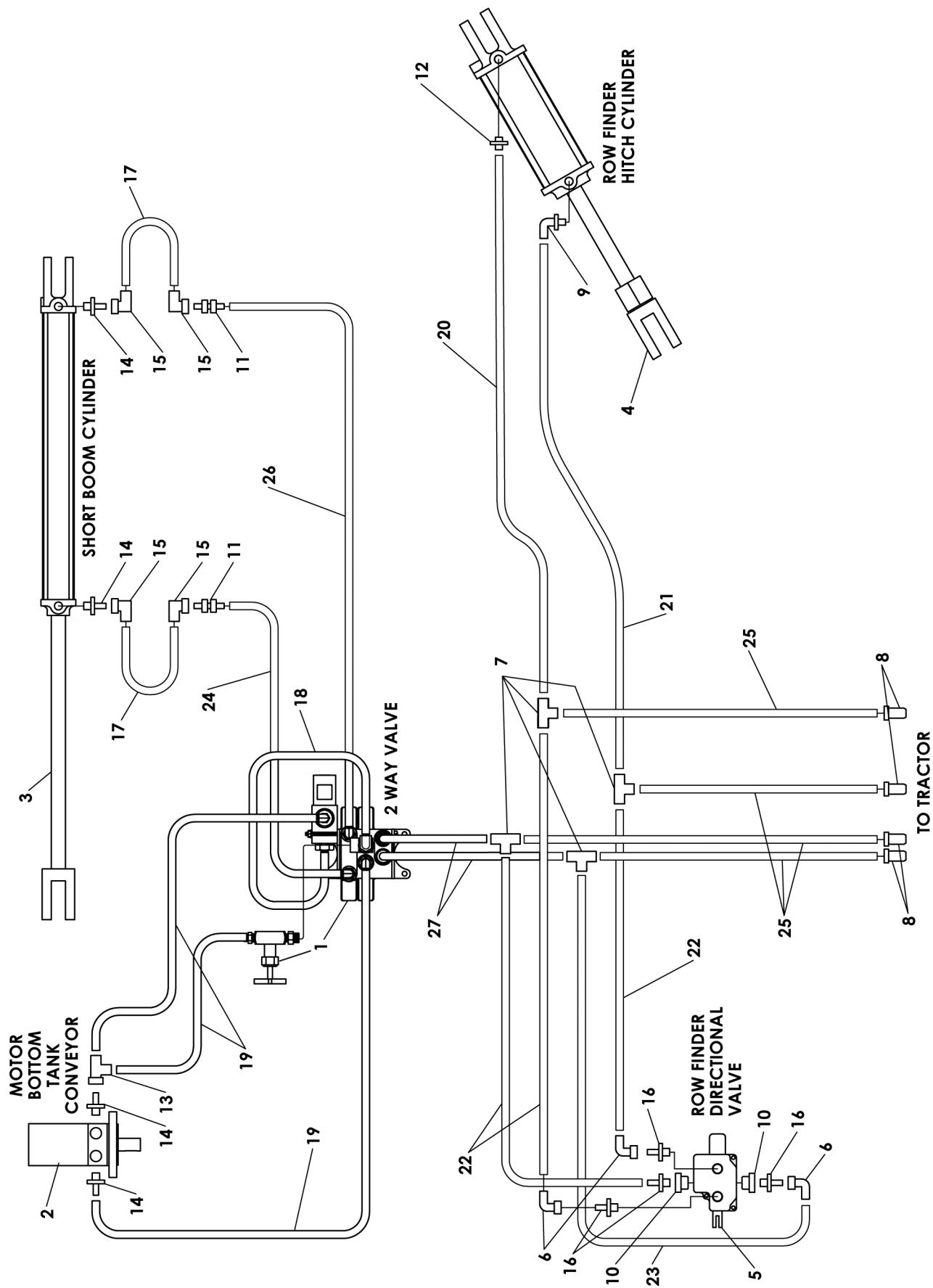
HYDRAULIC VALVE COMPONENTS



HYDRAULIC VALVE COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 905-03188 | 2 BANK VALVE - 38/36 SERIES | 1 |
| 2 | 905-03189 | DUMP VALVE | 1 |
| 3 | 905-03209 | NEEDLE VALVE | 1 |
| 4 | 905-03198 | ADAPTER, 10MORB-6MJIC | 2 |
| 5 | 905-03212 | ADAPTER, 6MJIC x 8MORB | 2 |
| 6 | 905-03211 | ELBOW 90°, 6MJIC x 6FJICSVL | 4 |
| 7 | 905-03210 | ADAPTER, 6MJIC x 12MORB | 2 |
| 8 | 905-03214 | ADAPTER, 10MORB x 6FPT | 1 |
| 9 | 905-03215 | ADAPTER, 6MPT x 6FJICSVL | 1 |
| 10 | 905-03166 | ADAPTER, 8FPT TEE | 1 |
| 11 | 905-03213 | ADAPTER, 8MPT x 10MORB | 1 |
| 12 | 905-03216 | ADAPTER, 6MPT-8MPT | 1 |
| 13 | 905-03117 | ELBOW 90°, 6MJIC x 8MPT | 1 |
| 14 | 905-03129 | ADAPTER, 6MJIC x 6MPT | 1 |
| 15 | 700-3-1421 | THREADED ROD FOR VALVE ASSY | 1 |
| 16 | 904-01219 | 6 PRONG TOWER | 1 |
| 17 | 904-01218 | 6 CONTACT SHROUD | 1 |
| 18 | 904-01228 | COMMON BAR, 6 GANG, SEAL SPLICE PACK | 1 |
| 19 | 904-01233 | CAVITY PLUG | 1 |
| 20 | 900-01021 | .25 UNC X 2 1/2 BOLT | 1 |
| 21 | 900-06136 | FLANGE WHIZ NUT, 1/4"-20 | 1 |
| | 700-2-0538 | 2 BANK VALVE - 38/36 SERIES WITH FITTINGS | 1 |

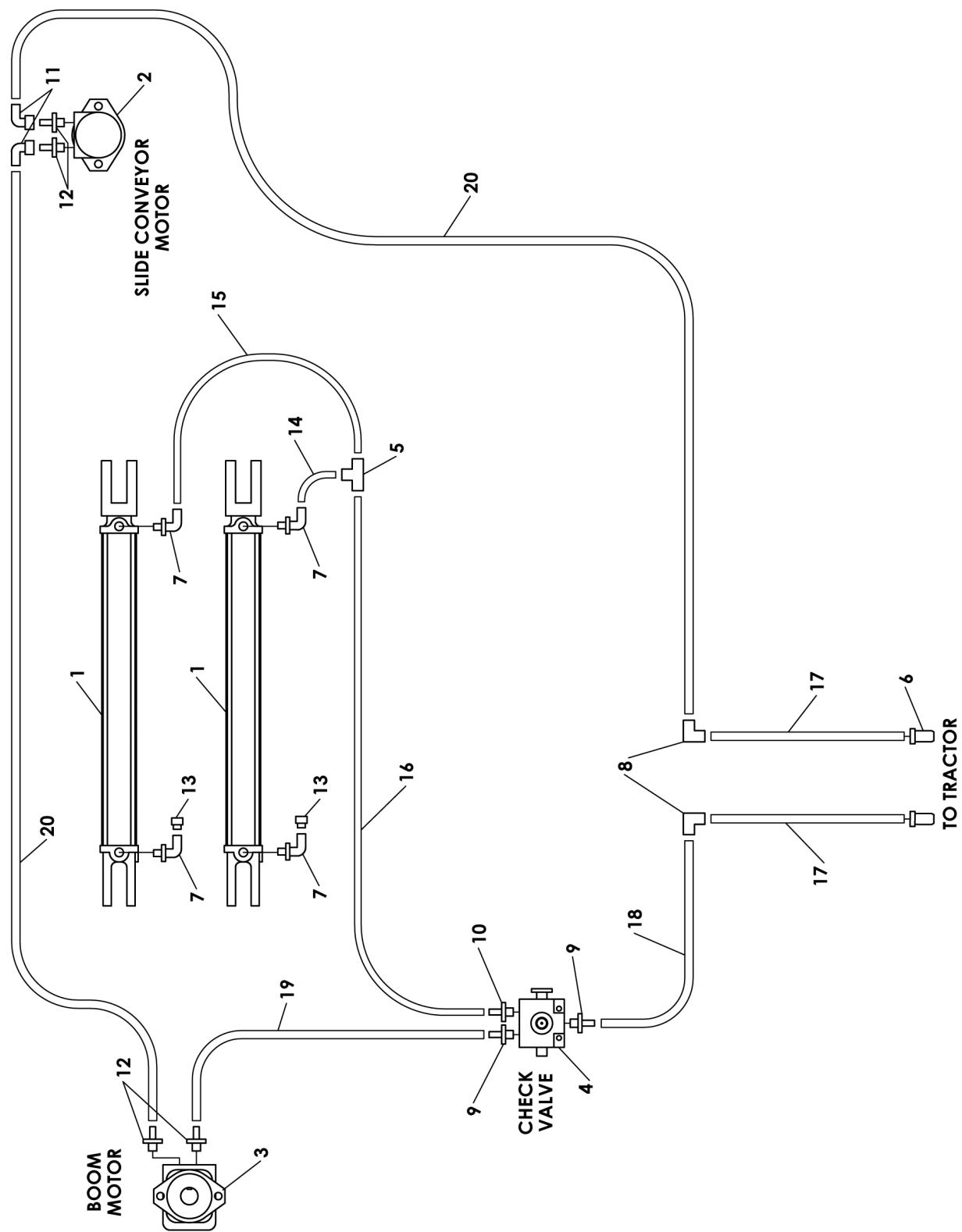
ROWFINDER AND ELECTRIC VALVE HYDRAULIC COMPONENTS



ROWFINDER AND ELECTRIC VALVE HYDRAULIC COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 700-2-0538 | 2 BANK VALVE - 38/36 SERIES WITH FITTINGS | 1 |
| 2 | 904-05241 | HYD MOTOR - CHAR-LYNN H SERIES 101-1040 | 1 |
| 3 | 905-21396 | HYDRAULIC CYL 2 X 20 - (20TD20-112) | 1 |
| 4 | 905-21400 | HYD CYL - 3.5 X 8 | 1 |
| 5 | 905-03116 | DIRECTIONAL CONTROL VALVE | 1 |
| 6 | 905-03163 | ELBOW 90°, 6MJIC x 6FJIC | 3 |
| 7 | 905-03112 | TEE 6MJIC | 4 |
| 8 | 905-19126 | QUICK COUPLER | 4 |
| 9 | 905-03114 | ELBOW 90°, 6MJIC X 3/4-16 MORB | 1 |
| 10 | 905-03196 | ADAPTER, 12MPT x 8FPT | 2 |
| 11 | 905-03228 | BULKHEAD STRAIGHT, 6MJIC x 6MJIC | 2 |
| 12 | 905-03162 | RESTRICTOR, 6MJIC x 8MORB | 1 |
| 13 | 905-03199 | TEE, 6FJIC x 6MJIC x 6MJIC | 1 |
| 14 | 905-03198 | ADAPTER, 10MORB x 6MJIC | 4 |
| 15 | 905-03211 | ELBOW 90°, 6FJIC x 6MJIC | 4 |
| 16 | 905-03110 | ADAPTER, 1/2MPT x 6MJIC | 4 |
| 17 | 905-19217 | HOSE 3/8", 6FJIC x 6FJIC, 10-1/2" | 2 |
| 18 | 905-19192 | HOSE 3/8", 6FJIC x 6FJIC, 18" | 1 |
| 19 | 905-19191 | HOSE 3/8", 6FJIC x 6FJIC, 24" | 3 |
| 20 | 905-19169 | HOSE 3/8", 6FJIC x 6FJIC, 54" | 1 |
| 21 | 905-19197 | HOSE 3/8", 6FJIC x 6FJIC, 60" | 1 |
| 22 | 905-19195 | HOSE 3/8", 6FJIC x 6FJIC, 66" | 3 |
| 23 | 905-19196 | HOSE 3/8", 6FJIC x 6FJIC, 72" | 1 |
| 24 | 905-19203 | HOSE 3/8", 6FJIC x 6FJIC, 112" | 1 |
| 25 | 905-19155 | HOSE 3/8", 6FJIC x 6FJIC, 120" | 4 |
| 26 | 905-19202 | HOSE 3/8", 6FJIC x 6FJIC, 136" | 1 |
| 27 | 905-19171 | HOSE 3/8", 6FJIC x 6FJIC, 193" | 2 |

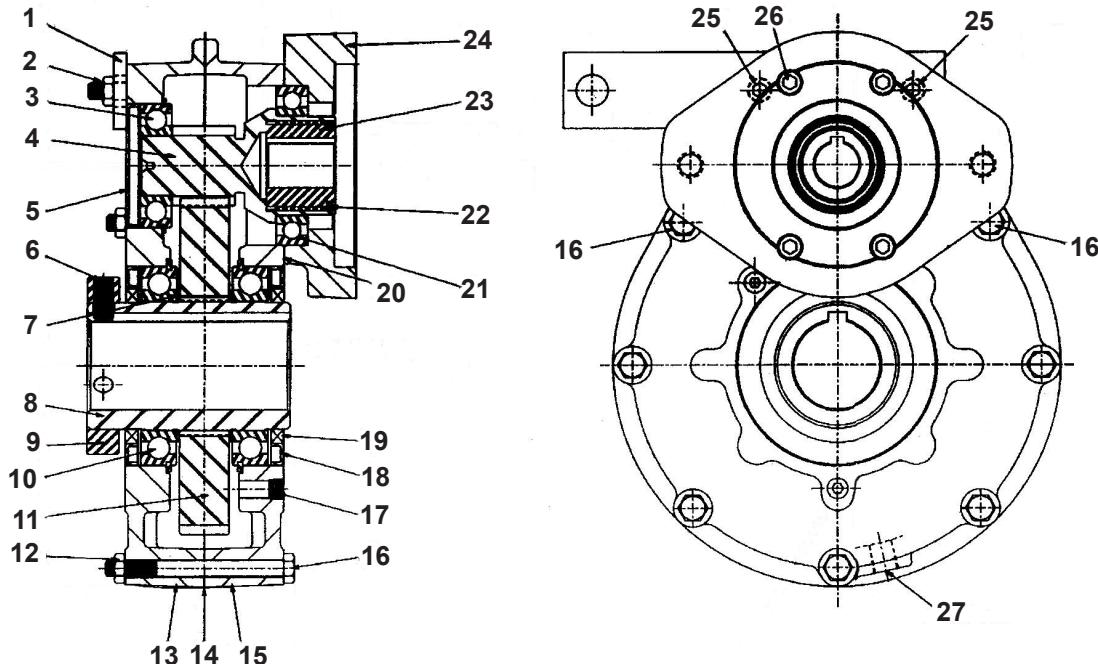
BOOM CONVEYOR HYDRAULIC COMPONENTS



BOOM CONVEYOR HYDRAULIC COMPONENTS

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 905-21396 | HYDRAULIC CYL 2 X 20 - (20TD20-112) | 2 |
| 2 | 904-05241 | HYD MOTOR - CHAR-LYNN H SERIES 101-1040 | 1 |
| 3 | 904-05223 | HYD MOTOR - CHAR-LYNN 1041026 | 1 |
| 4 | 905-03155 | CHECK VALVE - 1/2 NPT PORTS | 1 |
| 5 | 905-03112 | TEE 6MJIC | 1 |
| 6 | 905-19126 | QUICK COUPLER | 2 |
| 7 | 905-03114 | ELBOW 90°, 6MJIC x 3/4-16 MORB | 4 |
| 8 | 905-03194 | ELBOW 90°, 8MJIC x 8MJIC | 2 |
| 9 | 905-03107 | ADAPTER, 1/2MPT x 8MJIC | 2 |
| 10 | 905-03110 | ADAPTER, 1/2MPT x 6MJIC | 1 |
| 11 | 905-03195 | ELBOW 90°, 8FJIC x 8MJIC | 2 |
| 12 | 905-03121 | ADAPTER, 10MORB x 8MJIC | 4 |
| 13 | 905-03140 | CAPS, 6FJIC (BREATHER), #830-FS-06 | 2 |
| 14 | 905-19192 | HOSE 3/8", 6FJIC x 6FJIC x 18" | 1 |
| 15 | 905-19194 | HOSE 3/8", 6FJIC x 6FJIC x 90" | 1 |
| 16 | 905-19193 | HOSE 3/8", 6FJIC x 6FJIC x 106" | 1 |
| 17 | 905-19211 | HOSE 1/2", 8MORBSVL X 8FJIC x 120" | 2 |
| 18 | 905-19204 | HOSE 1/2", 8FJIC X 8FJIC x 132" | 1 |
| 19 | 905-19205 | HOSE 1/2", 8FJIC X 8FJIC x 155" | 1 |
| 20 | 905-19184 | HOSE, 1/2" 8FJICSVL X 8FJICSVL x 300" | 2 |
| | 700-1-0022 | TRUCK BOOM, HYDRAULIC COMPONENT KIT | 1 |

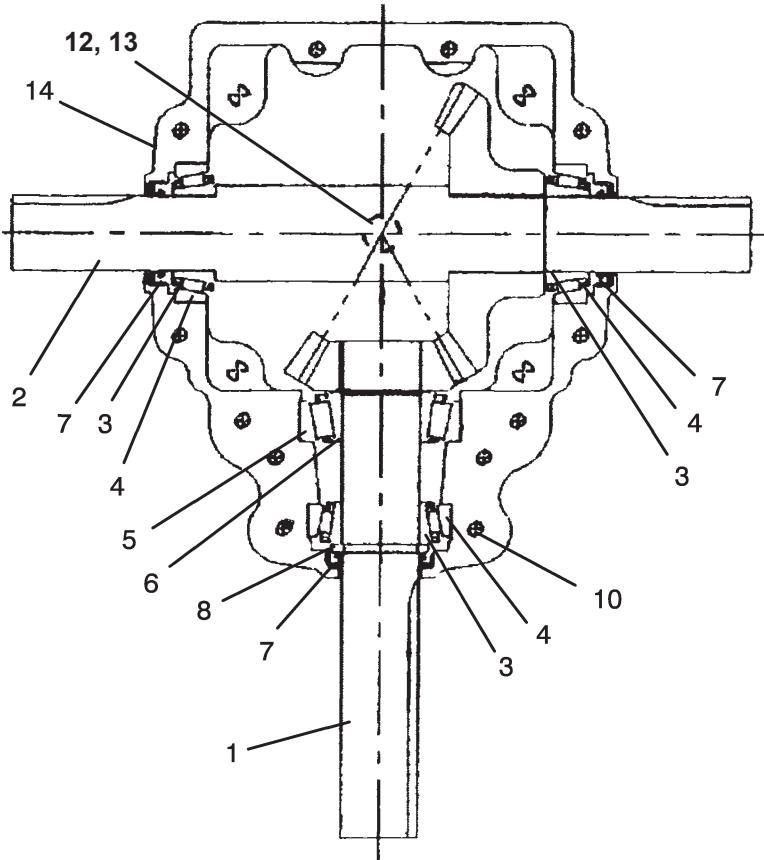
PARALLEL SHAFT REDUCER - HUB CITY 85LH-B2



| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|---|------|
| 1 | 903-18278 | PLATE, TORQUE | 1 |
| 2 | 900-06003 | NUT, HEX 5/16-18 NC | 2 |
| 3 | 901-01373 | BEARING, BALL 206-SG OR EQ | 1 |
| 4 | 903-11091 | GEAR, INTG SPUR 17T | 1 |
| 5 | 905-01557 | PLUG, EXPANSION | 1 |
| 6 | 900-16255 | SCREW, SOCKET SET GR8 3/8 NC x 3/4 | 3 |
| 7 | 903-18281 | SPACER, SHIM | 2 |
| 8 | 900-31076 | SLEEVE, OUTPUT 1.750 | 1 |
| 9 | 900-31077 | COLLAR, LOCKING | 1 |
| 10 | 901-01374 | BEARING, BALL 113-KSG OR EQ | 2 |
| 11 | 903-11092 | GEAR, SPUR 53T | 1 |
| 12 | 900-06004 | NUT, HEX 5/16NF | 7 |
| 13 | 903-18279 | HOUSING, HALF | 1 |
| 14 | 905-05014 | GASKET, CASE HALF | 1 |
| 15 | 903-18280 | HOUSING, HALF | 1 |
| 16 | 900-01080 | SCREW, HEX CAP GR 5 5/16 NF x 3-1/2 | 7 |
| 17 | 905-01558 | PLUG, PIPE SOCKET 1/8 NPT HT | 2 |
| 18 | 905-01559 | PLUG, EXPANSION | 2 |
| 19 | 901-09234 | SEAL, TCH 253062SM | 2 |
| 20 | 905-05015 | GASKET, FLANGE TO GEARBOX | 1 |
| 21 | 901-01375 | BEARING, BALL 9110K OR EQ | 1 |
| 22 | 900-29432 | RING, RETAINING RR-168 OR EQ | 1 |
| 23 | 901-01376 | BUSHING | 1 |
| 24 | 903-18282 | FLANGE, MOTOR B2 | 1 |
| 25 | 900-16405 | SCREW, SOCKET CAP 5/16 NC x 3-1/2 | 2 |
| 26 | 900-16396 | SCREW, SOCKET CAP 5/16 NC x 1-1/4 | 4 |
| 27 | 905-01560 | PLUG, PIPE SOCKET 1/4 NPT HT | 1 |
| 28 | 905-05016 | GASKET, FLANGE TO HYDRAULIC PUMP | 1 |
| 29 | 905-01561 | BREATHER, 1/4 NPT BRASS WIRE | 1 |
| 30 | 901-09235 | O-RING, - 240 OR EQ | 1 |
| 31 | 903-15563 | PARALLEL SHAFT REDUCER - HUB CITY 85LH-B2 | 1 |

GEARBOX - SUPERIOR (3-WAY)

| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
|----------|-------------|--------------------------------------|------|
| 1 | 903-15550 | Assy, Pinion Shaft\Gear | 1 |
| 2 | 903-15551 | Assy, Cross Shaft\Gear | 1 |
| 3 | 901-01150 | Bearing Cone | 3 |
| 4 | 901-01152 | Bearing Cup | 3 |
| 5 | 901-01153 | Bearing Cup | 1 |
| 6 | 901-01151 | Bearing Cone | 1 |
| 7 | 901-09125 | Seal, 1-3/4" | 3 |
| 8 | 900-39030 | Retaining Ring, 1-3/4" | 1 |
| 10 | 900-03033 | 3/8 NC x 2-1/4 Socket Head Cap Screw | 12 |
| 11 | 905-03078 | Plug (1/2 NPT) | 1 |
| 12 | 905-01159 | Bushing, 1/2 NPT to 1/8 NPT | 1 |
| 13 | 905-03080 | Plug, Pressure Relief | 1 |
| 14 | 903-15548 | Casting Machined, Threaded(1.857:1) | 1 |
| 15 | 903-15549 | Casting Machined | 1 |
| | 903-15547 | (1.857:1) Gearbox, Complete | 1 |



NOTES

INDEX

CHECK LISTS

- Delivery Check List(Dealer's Responsibility), 3
- Pre-Delivery Check List(Dealer's Responsibility), 3
- Pre-Operation Check List(Owner's Responsibility), 16

GENERAL

- Bolt Size Chart, 12
- Bolt Torque Chart, 13
- General Information, 1
- Introduction, 2
- Specifications, 2
- Table of Contents, 1
- Warranty, 73

OPERATION

- Attaching Tractor to the Harvester, 18
- Beet Harvester Components, 16
- Depth Stops and Transport Locks, 19
- Equipment Matching, 17
 - Electrical System, 18
 - Hitch Requirements, 18
 - Hydraulic System, 18
 - PTO, 18
 - Tire Requirements, 17
 - Tractor Ballast, 18
- Field Operation, 19
 - Depth Stops and Transport Locks, 19
 - Flexing Lifter Struts (Optional), 24
 - Grab Roll Bed Rods, 23
 - Grab Rolls, 23
 - Holding Tank/Truck Boom, Load Tank, 22
 - Holding Tank/Truck Boom, Unload Tank, 22
 - Lifter Wheels, 23
 - Paddle Shaft, 24
 - PTO Engagement, 23
 - Raising and Lowering the Harvester, 19
 - Row Finder, 22
 - Row Finder Override, 22
 - Truck Boom, Lower, 21
 - Truck Boom, Raise, 21
 - Truck Boom Conveyer Chain, 24
 - Truck Boom Motor Speed, Adjust, 22
 - Vertical Elevator, 24
 - Wheel Fillers, 24
 - Wheel Scrapers, 24
- Pre-Operation Check List (Owner's Responsibility), 16
- Storage, 25
- Transporting, 24
- Unhooking the Tractor from the Harvester, 19

OWNER SERVICE

- Blocking Method for Lifter Wheels and Row Finder Service, 26
- Daily Service, 27
- Lubrication, 27

OWNER SERVICE *(Continued)*

- Lubrication Chart, 29
- Maintenance, 30
 - Belt Replacement (New Belt), 30
 - Elevator Chain Cross Rod Replacement, 31
 - Elevator Chain Routing and Roller Location, 31
 - Elevator Speed Adjustment, 31
 - Grab Roll Adjustment, 33
 - Holding Tank Chain Glides, 33
 - Lifter Strut Adjustment, 34
 - Lifter Wheel Fillers, 34
 - Paddle Shaft, Elevator and Unloader Drive Chains, 30
- Truck Boom Service, 27

PARTS INDEX, 36

SAFETY

- Check Lists
 - Delivery (Dealer's Responsibility), 3
 - Pre-Delivery (Dealer's Responsibility), 3
 - Pre-Operation (Owner's Responsibility), 16
- Safety & Instructional Decals, 8
- Safety-Alert Symbol (Explanation), 2
- Safety Rules, 4

WARRANTY

Please enter information below and SAVE FOR FUTURE REFERENCE.

Date Purchased: _____

From (Dealer): _____

Model Number: _____

Serial Number: _____

ALLOWAY warrants each new ALLOWAY product to be free from defects in material and workmanship. This warranty is applicable only for the normal service life expectancy of the machine or components, not to exceed twelve consecutive months from the date of delivery of the new ALLOWAY product to the original purchaser.

Genuine ALLOWAY replacement parts and components will be warranted for 90 days from date of purchase, or the remainder of the original equipment warranty period, whichever is longer.

Under no circumstances will it cover any merchandise or components thereof, which, in the opinion of the company, has been subjected to negligent handling, misuse, alteration, an accident, or if repairs have been made with parts other than those obtainable through ALLOWAY.

The company in no way warrants engines, batteries, tires or other trade accessories since these items are warranted separately by their respective manufacturers.

Our obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that in our judgement shall show evidence of such defect, provided further that such part shall be returned within thirty (30) days from date of failure to ALLOWAY, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting, or any expense or loss incurred for labor, supplies, substitute machinery, rental or for any other reason.

Except as set forth above, ALLOWAY SHALL HAVE NO OBLIGATION OR LIABILITY OF ANY KIND ON ACCOUNT OF ANY OF ITS EQUIPMENT AND SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES. ALLOWAY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND, SPECIFICALLY, ALLOWAY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR PROVINCES DO NOT PERMIT LIMITATIONS OR EXCLUSIONS OF IMPLIED WARRANTIES OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATIONS OR EXCLUSIONS IN THIS WARRANTY MAY NOT APPLY.

This warranty is subject to any existing conditions of supply which may directly affect our ability to obtain materials or manufacture replacement parts.

ALLOWAY reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligations to owners of units previously sold.

No one is authorized to alter, modify, or enlarge this warranty nor the exclusions, limitations and reservations.



PART NUMBER
70031574

**Alloway Equipment
Company**

4230 14th Ave NW.
Fargo, ND 58102

877-275-8714 tel
701-356-4985 fax

STANDARD
alloway