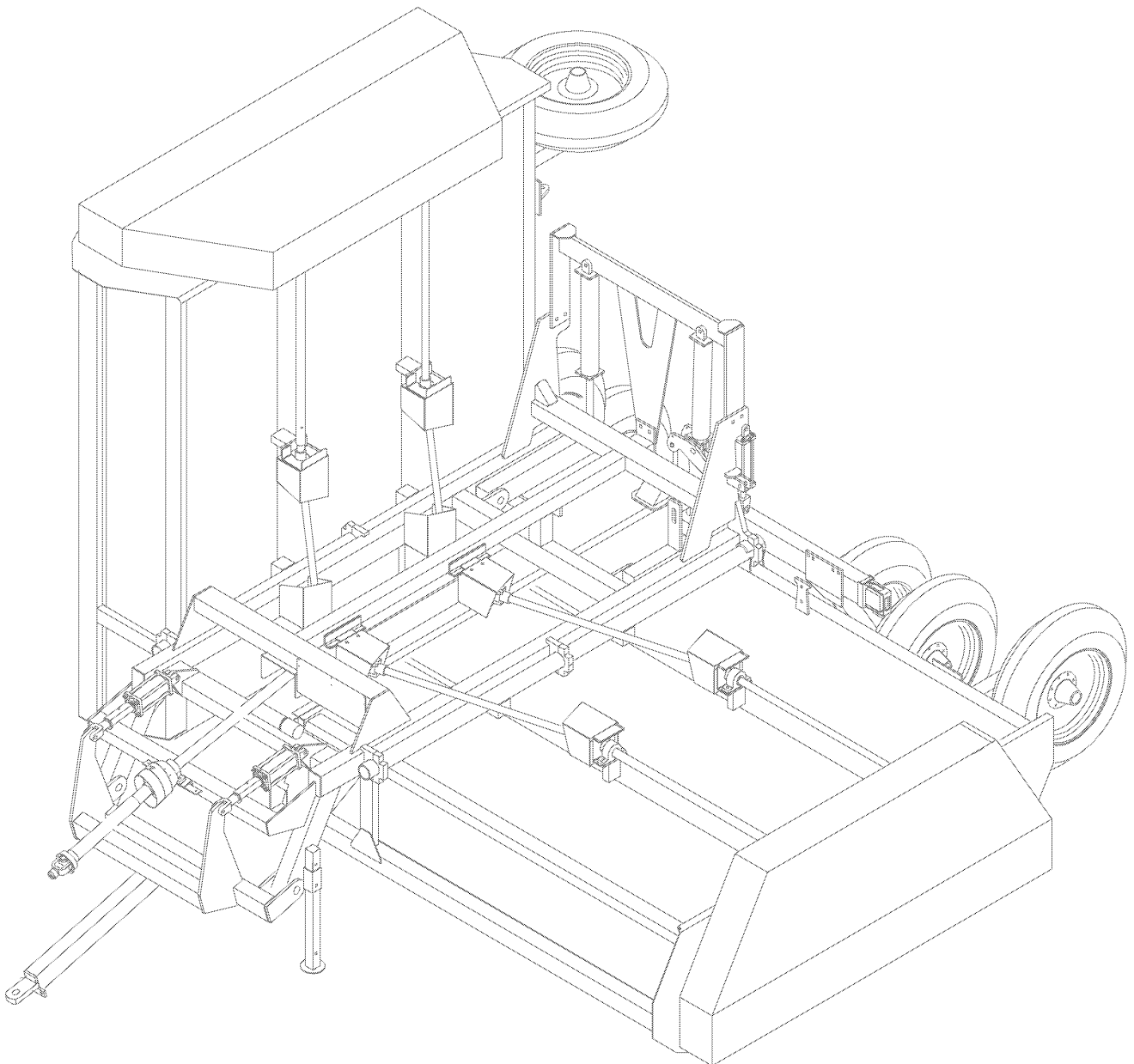




1222

# FOLDING DEFOLIATOR



**500-3-1672**

## 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, by calling 1-877-275-8714.

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!**



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



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.



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

**IMPORTANT**

Indicates that failure to observe can cause damage to equipment.

**NOTE**

Indicates helpful information.



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## SPECIFICATIONS

|                                             |                                                   |
|---------------------------------------------|---------------------------------------------------|
| Number of Rows .....                        | 12                                                |
| Row Spacing .....                           | 22"                                               |
| Transport Width (Folded) .....              | 14' 4"                                            |
| Overall Width (Operating Position) .....    | 25' 6"                                            |
| Transport Height (Folded) .....             | 13' 4"                                            |
| Tractor PTO Speed .....                     | 1000 RPM                                          |
| Tire Size .....                             | 11.2 x 24                                         |
| Tire Pressure .....                         | 20 PSI                                            |
| Flail Types .....                           | Steel (Cup-Knife)<br>Steel (L-Knife)<br>or Rubber |
| Scalper (Rotating Disc Type) .....          | Optional                                          |
| Weight (with Cup-Knife Rotor) .....         | 14,395 Lbs.                                       |
| Weight (with L-Knife Rotor) .....           | 13,775 Lbs.                                       |
| Weight (with Rubber Flail Rotor) .....      | 13,200 Lbs.                                       |
| Weight of Optional Scalper Attachment ..... | 2,826 Lbs.                                        |

# GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Alloway Defoliator. 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 defoliator with safety shields removed to provide a better view. The defoliator should never be operated with any safety shielding removed.**

Throughout this manual, references are made to right, left, forward and rearward directions. These are determined by sitting in the tractor operator's seat facing the direction of forward travel.

## 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 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 equipment 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)

- \_\_\_ Present Operator's Manual and request that customer and all operators read it before operat-

ing 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 the Operator's Manual storage tube.
- \_\_\_ Show customer how to make adjustments and select proper PTO speed.
- \_\_\_ 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.
- \_\_\_ 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, a Slow Moving Vehicle (SMV) sign should be used to provide adequate warning to operators of other vehicles.
- \_\_\_ Show customer how to connect the equipment lights to the tractor and check for proper function.
- \_\_\_ 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.

# BOLT TORQUE CHART

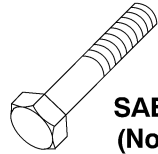
## SAE Series Torque Chart

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

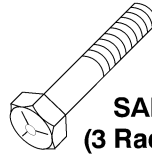
Fasteners must always be replaced with the same grade as specified in the manual parts list.

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

### SAE Bolt Head Identification



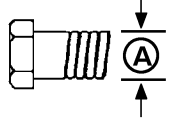
**SAE Grade 2  
(No Dashes)**



**SAE Grade 5  
(3 Radial Dashes)**



**SAE Grade 8  
(6 Radial Dashes)**

| Bolt Diameter "A" | 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.

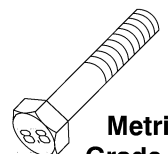
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade.

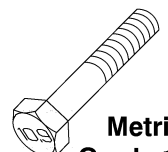
Make sure fastener threads are clean and you properly start thread engagement.

| Bolt Diameter "A" | 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



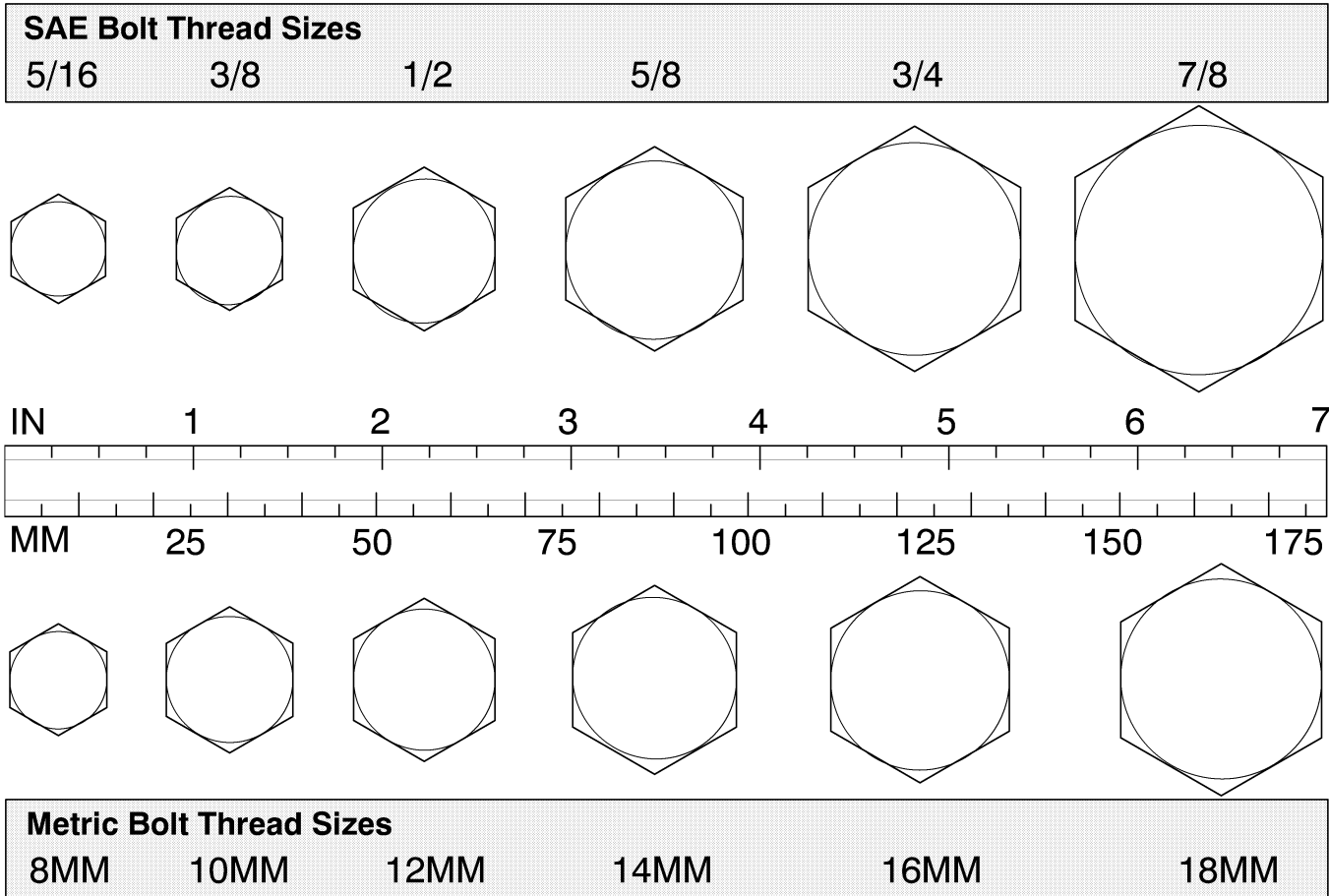
**Metric Grade 8.8**



**Metric Grade 10.9**

# BOLT SIZE CHART

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



## NOTES

# 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 an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, 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 operator.

The designed and tested safety of this equipment depends on it being operated within the limitations as explained in this manual.

## 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 and Canada, call 1-877-275-8714.) 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 if 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.**

■ **Never allow children or untrained persons to operate equipment.**

## PREPARATION

■ **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**

■ **Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. Before putting into service 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.**

■ **Make sure 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.**

*(Safety Rules continued on next page)*

# SAFETY RULES



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



*(Safety Rules continued from previous page)*

■ 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.

■ Inspect rubber flaps and swing rod before each use. Replace if damaged or missing. Flaps must pivot and hang freely so there are no gaps. Do not operate until repaired.

■ Remove accumulated debris from this equipment, tractor and engine to avoid fire hazard.

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

■ Make sure 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. 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.

■ Inspect and clear area of stones, branches or other hard objects that might be thrown, causing injury or damage.

## OPERATIONAL SAFETY

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

■ Never walk, stand or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.

■ 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.

■ Never allow riders on power unit or attachment.

■ 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.

■ Before raising or lowering wings, front hitch/lift and rear wheel/lift cylinders must be fully extended and all four cylinder locks installed. This prevents rotor and bearing support damage that can result from ground contact.

# SAFETY RULES



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



- 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.
- Never work on scalper attachment in the raised position. Lower scalpors to the ground and service each unit individually.
- Always connect safety chain from implement to towing vehicle when transporting.
- **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 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 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 fail-

ures, 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.
- Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.
- 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 bystanders 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.
- Make sure 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.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.

*(Safety Rules continued on next page)*

# SAFETY RULES



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



*(Safety Rules continued from previous page)*

■ 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.

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

■ Make sure 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

■ Follow manual instructions for storage.

■ Keep children and bystanders away from storage area.

---

## NOTES

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

**Replace Immediately If Damaged!**



**⚠ DANGER**

**SHIELD MISSING**  
**DO NOT OPERATE**  
**PUT SHIELD ON**

**⚠ DANGER**

**SHIELD MISSING**  
**DO NOT OPERATE**  
**PUT SHIELD ON**

**3 - Decal 18868**  
(underneath shield)

# SAFETY & INSTRUCTIONAL DECALS

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



**! WARNING**

HIGH PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN

- 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.

SKIN PENETRATION CAN RESULT IN SERIOUS INJURY AND GANGRENE.

19924

5 - Decal 19924

**! 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 1-877-275-8714.)

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

6 - Decal 50630192

**! DANGER**



**GUARD MISSING.  
DO NOT OPERATE.**

**! DANGER**



**GUARD MISSING.  
DO NOT OPERATE.**

33347E

**! DANGER**

11 - Decal 33347  
(underneath  
driveline guard)

**! DANGER**



**ROTATING DRIVELINE  
CONTACT CAN CAUSE DEATH  
KEEP AWAY!**

**DO NOT OPERATE WITHOUT-**

- ALL DRIVELINE GUARDS, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE GUARDS THAT TURN FREELY ON DRIVELINE

18864B

13 - Serial Number Plate

|           |            |            |
|-----------|------------|------------|
| MODEL NO. | SERIAL NO. | YR OF MFG. |
| ID NO.    | MASS (KG)  |            |

7 - Decal 70030493

**! WARNING**

**TO AVOID SERIOUS INJURY OR DEATH:**

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. Store Manual in Manual Container on this equipment. (Manuals are available from dealer or, in the United States and Canada, call 1-877-275-8714.)
- 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.
- Allow no children or untrained persons to operate the equipment.
- 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.

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN  
RESULT IN SERIOUS INJURY OR DEATH.** PN-70030493-A

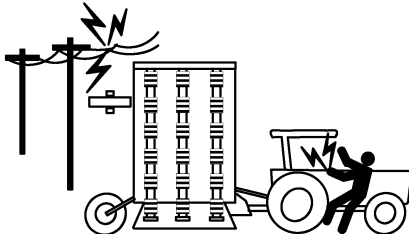
# SAFETY & INSTRUCTIONAL DECALS

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

| <b>! WARNING</b>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p style="text-align: right; font-size: small;">PN-70030495</p> | <p><b>ROTATING DRIVE HAZARDS</b></p> <ul style="list-style-type: none"> <li>■ Before opening drive guard: <ul style="list-style-type: none"> <li>■ Disengage PTO drive,</li> <li>■ Lower equipment to ground,</li> <li>■ Stop engine, remove key and engage brake,</li> <li>■ Operate valve levers to release any hydraulic pressure,</li> <li>■ Wait for all rotation to stop,</li> <li>■ Disconnect driveline from tractor PTO.</li> </ul> </li> <li>■ Before starting tractor: <ul style="list-style-type: none"> <li>■ Close drive cover and secure,</li> <li>■ Keep guard in good condition.</li> </ul> </li> </ul> <p><b>FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> |

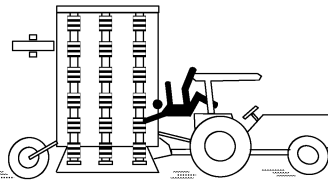
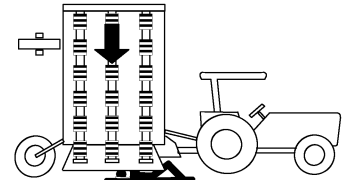
**8 - Decal 70030495**

**14 - Decal 50031687**

| <b>! DANGER</b>                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                             |
| <p><b>ELECTROCUTION HAZARD</b></p> <ul style="list-style-type: none"> <li>● Keep away from electric lines.</li> <li>● Electrocution can result without direct contact.</li> </ul> <p><b>Power lines can cause serious injury or death.</b></p> <p style="text-align: right; font-size: x-small;">50031687</p> |

**20 - Decal 50031689**

| <b>! CAUTION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>AVOID ROTOR DAMAGE FROM RAISING OR LOWERING WINGS.</b></p> <p>Before raising or lowering wings:</p> <ul style="list-style-type: none"> <li>● Follow all manual instructions and safety rules.</li> <li>● Raise equipment to maximum height to provide necessary ground clearance below rotor.</li> <li>● Install cylinder locks on all four lift cylinders.</li> </ul> <p><b>FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN ROTOR DAMAGE AND PERSONAL INJURY.</b></p> <p style="text-align: right; font-size: x-small;">50031689-A</p> |

| <b>! WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <p><b>FALLING OFF CAN RESULT IN BEING RUN OVER.</b></p> <ul style="list-style-type: none"> <li>■ Buckle Up! Tractor should have ROPS and seat belt.</li> <li>■ Allow no riders on tractor or equipment.</li> </ul> <p><b>RAISED EQUIPMENT OR COMPONENTS CAN DROP AND CRUSH.</b></p> <ul style="list-style-type: none"> <li>■ Before servicing, working on or working underneath equipment, read manual instructions.</li> <li>■ Manual instructions and all safety rules for securing equipment and components must be followed to prevent crushing from hydraulic leak down, hydraulic system failure, movement of control levers or mechanical component failures.</li> </ul> <p><b>FALLING OFF OR GOING UNDER RAISED EQUIPMENT CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right; font-size: x-small;">50031688</p> |                                                                                      |

**12 - Decal 50031688**

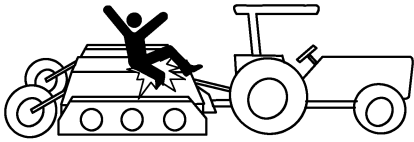
**21 - SMV (Slow Moving Vehicle)  
Sign PN-50031696**

**22 - Amber Reflector PN-20030143**

**23 - Red Reflector PN-20030142**

# SAFETY & INSTRUCTIONAL DECALS

**⚠ ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! ⚠**  
**Replace Immediately If Damaged!**

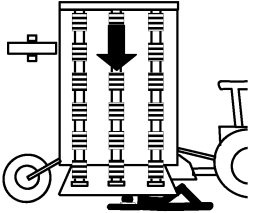
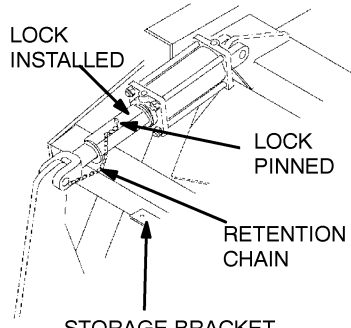
|                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>⚠ WARNING</b>                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                              |
| <p><b>STANDING ON DEFOLIATOR CAN RESULT IN FALLING INTO FLAIL ROTORS.</b></p> <ul style="list-style-type: none"> <li>■ Do not stand or walk on defoliator housing.</li> <li>■ Defoliator covering will not support people or animals.</li> </ul> <p><b>FALLING INTO FLAIL ROTORS CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right;">PN-50031690</p> |

15 - Decal 50031690

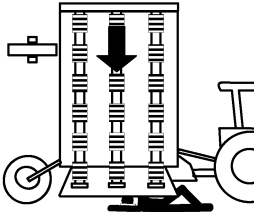
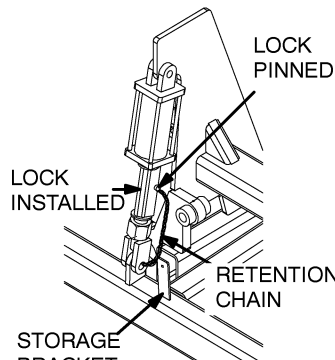
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>⚠ WARNING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <p><b>RAISED WING EXPOSES FLAIL ROTORS AND INCREASES THROWN OBJECT HAZARDS.</b></p> <ul style="list-style-type: none"> <li>■ Only raise wings for transport.</li> <li>■ Read and follow all manual instructions. Stop equipment and pin wings in "Lock-Up" position before transporting.</li> <li>■ Wings must be completely lowered to the ground when operating.</li> </ul> <p><b>RAISED WING CAN FALL AND CRUSH.</b></p> <ul style="list-style-type: none"> <li>■ Keep away. Never go under a raised wing.</li> <li>■ Raised wing must always be pinned in "Lock-Up" position.</li> <li>■ Lower wings after transport.</li> <li>■ Wings must be lowered before any service work and for storage.</li> </ul> <p><b>FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> <p style="text-align: right;">50031691</p> |                                                                                     |

16 - Decal 50031691

18 - Decal 50031693

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------|
|  <p style="text-align: right;">50021693</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>⚠ WARNING</b> |  |
| <p><b>RAISED EQUIPMENT CAN DROP AND CRUSH</b></p> <p><b>Before working on or underneath equipment:</b></p> <ul style="list-style-type: none"> <li>■ Read and follow all manual instructions and safety rules.</li> <li>■ Install cylinder locks on both front lift cylinders.</li> <li>■ Cylinder locks must be installed correctly, kept in good condition, and stored on equipment when not in use.</li> <li>■ All four corners of both wings must be securely blocked with jack stands.</li> </ul> <p><b>FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> |                  |                                                                                       |

19 - Decal 50031694

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------|
|  <p style="text-align: right;">PN-50031694</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>⚠ WARNING</b> |  |
| <p><b>RAISED EQUIPMENT CAN DROP AND CRUSH</b></p> <p><b>Before working on or underneath equipment:</b></p> <ul style="list-style-type: none"> <li>■ Read and follow all manual instructions and safety rules.</li> <li>■ Install cylinder locks on both rear lift cylinders.</li> <li>■ Cylinder locks must be installed correctly, kept in good condition, and stored on equipment when not in use.</li> <li>■ All four corners of both wings must be securely blocked with jack stands.</li> </ul> <p><b>FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</b></p> |                  |                                                                                       |

# 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 an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, 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 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.
- Never allow children or untrained persons to operate equipment.



## CAUTION

- If you do not understand any part of this manual and need assistance, see your dealer.
- 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

- 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.
- 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. Weigh the tractor and equipment. Do not estimate.



## WARNING

- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Never walk, stand or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.
- 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.
- Keep hands, feet, hair and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Never allow riders on power unit or attachment.
- 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.



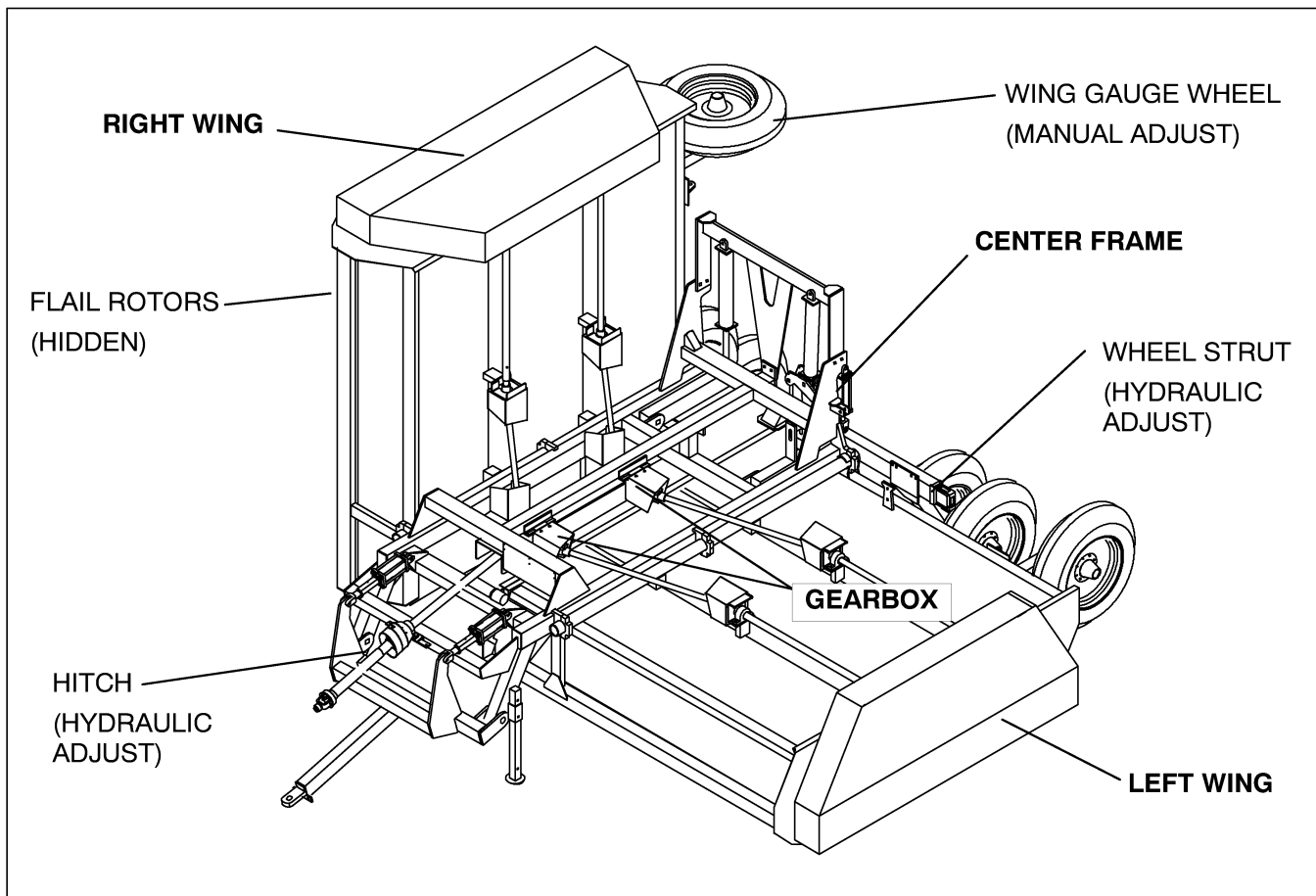
## CAUTION

- Operate only in daylight or good artificial light.
- Always comply with all state and local lighting and marking requirements.



## DANGER

- Avoid contact with electrical wires.



**Figure 1. Principal Components**

## PRINCIPAL COMPONENTS

The Alloway Folding Defoliator is built as three major components.

- a) Right Wing Assembly
- b) Left Wing Assembly
- c) Center Frame

The center frame is supported by hydraulically adjustable wheel struts and the hydraulically adjustable hitch. The main driveline and two gearboxes are mounted to the center frame.

Each wing assembly holds three flail rotor assemblies, their drive components, and a manually adjustable wing gauge wheel.

Optional scalper attachments can be mounted directly to each wing assembly.

Optional rear wheel steering struts are available.

## 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 Check List after the first hour of field operation and before each shift thereafter.

- \_\_\_ Keep Operator's Manual in storage tube for ready reference and use.
- \_\_\_ Review and follow all safety rules and safety decal instructions on pages 5 through 12.
- \_\_\_ 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 the condition of all flails and check that they swing freely. Replace any damaged or broken flails.

- \_\_\_ Check the condition of the scalpers. Adjust or repair as required.
- \_\_\_ Check tire pressures. Service as necessary.
- \_\_\_ 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 the condition of all drive belts. Tension or align as required. Replace any that are frayed or broken.
- \_\_\_ 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 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 to prevent falling off.
- \_\_\_ 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.
- \_\_\_ Check that rubber flaps are in good condition, pivot freely, and hang without gaps.

## EQUIPMENT MATCHING

Use only a tractor with adequate power and weight to operate this Defoliator. The following specifications are guidelines for a proper match.

## PTO

**Tractor must be equipped with a 1000 RPM PTO. The Defoliator driveline can be ordered with a tractor yoke that matches a 1-3/8" 21-spline shaft or a 1-3/4" 20-spline shaft. A CV joint is also available in either size. Carefully measure PTO driveline in operating positions to ensure that there is proper engagement**

**between male and female shaft to prevent the driveline from coming apart or bottoming out. Standard PTO driveline must not be shorter than 56" or longer than 84" in any position during operation, as shown in Figure 2.**

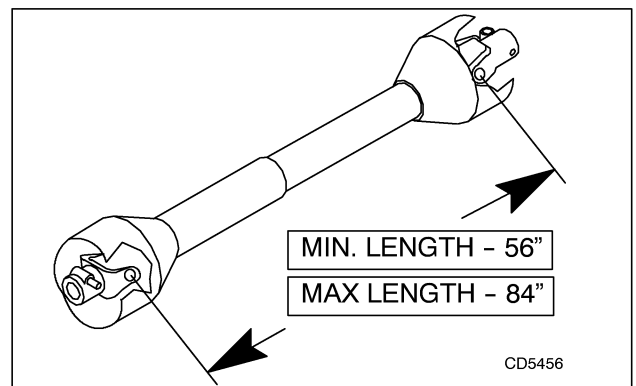
**Optional CV PTO driveline must not be shorter than 57" or longer than 83" in any position during operation, as shown in Figure 3.**

## WARNING

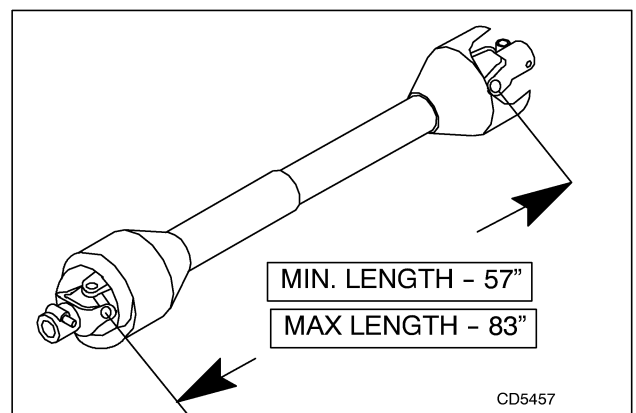
■ **Connect PTO driveline directly to tractor PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and result in personal injury or death.**

## IMPORTANT

■ **Standard PTO shafts will operate in limited turns. Allow sufficient turning radius so that standard driveline will not bind or "knock." If large radius turns cannot be made, turn tractor PTO off before starting the turn.**



**Figure 2. PTO Driveline Operating Length (Standard Driveline)**



**Figure 3. PTO Driveline Operating Length (Optional CV Driveline)**

## Optional CV Driveline Turning Limits

You must not exceed a turning angle of 80 degrees at the head of the Constant Velocity driveline or damage will occur.

### IMPORTANT

■ The optional CV PTO shaft allows the operator to make relatively short turns at the end of the field, without disengaging the PTO drive. However do not make turns tighter than 80 degrees off the straight position. If turning radius exceeds 80 degrees, disengage tractor PTO before starting the turn.

## Hydraulic System

The tractor hydraulic system must be capable of supplying 8 gpm (22 lpm) at 2000 psi (13,900 kPa). The tractor must be equipped with a minimum of three operator controlled hydraulic remote valves (one additional valve is required if optional rear steering is used).

Use #1 tractor remote valve to supply hydraulic power for the rear lift cylinders.

Use #2 tractor remote to supply hydraulic power for the front lift cylinders.

Use #3 remote valve to supply hydraulic power for the wing lift cylinders.

Use #4 remote valve to supply hydraulic power for the optional rear steering cylinder.

## Drawbar with Clevis

The tractor drawbar must be set to provide 16 inches (406 mm) between the end of the PTO shaft and the center of the drawbar pin. A tractor manufacturer's clevis hitch (hammer strap and hitch pin) must be installed.

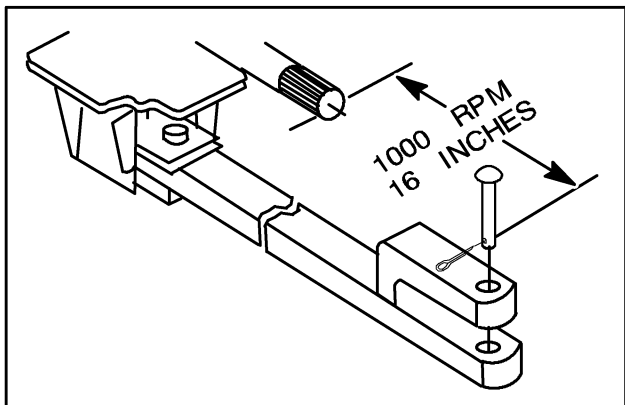


Figure 4. Drawbar Dimensions

## Electrical System (Figure 5)

The tractor must be equipped with a SAE J560a 7-pin electrical connector. When connected to the Defolia-

tor, turn signals and warning flashers will operate with the tractor lighting system.

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

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

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

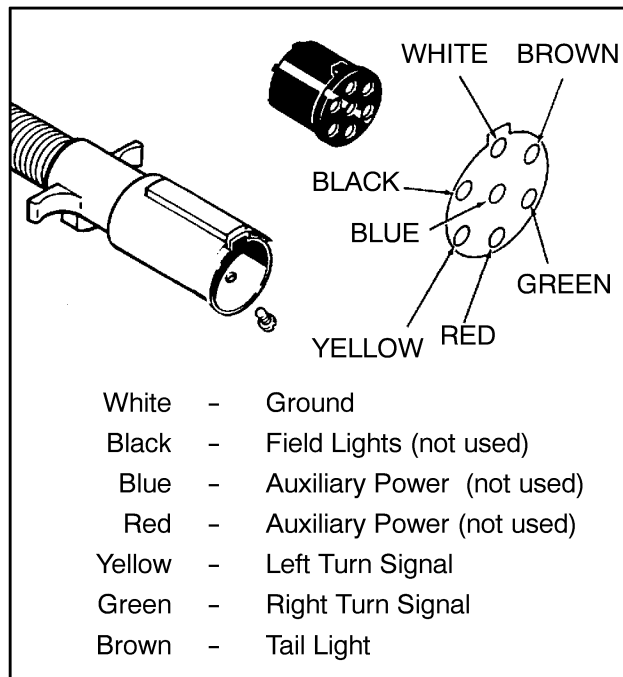


Figure 5. 7-Pin Electrical Connector (Defoliator End)

## Tractor Ballast

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

## PROPERLY MOUNT AND DISMOUNT TRACTOR

Proper safety procedures should be followed when mounting tractor. The operator should be in the tractor seat with the seat belt securely fastened and any foldable ROPS system should be in the "locked-up" position before starting the engine or operating any controls.

Whenever the operator is required to leave the tractor seat, follow proper safety procedures. The "proper dismounting procedure" is to stop the engine, set brakes, remove the ignition key, and wait for all moving parts to stop before removing seat belt to dismount. After dismounting the tractor, secure wheels with chocks.

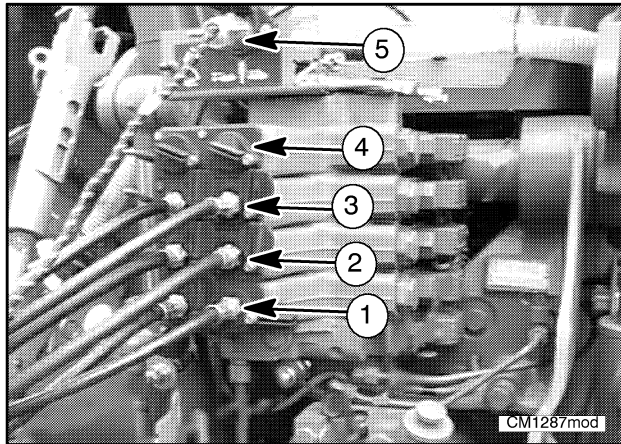
## ATTACHING DEFOLIATOR TO TRACTOR (Figure 6 through Figure 12)

**Note:** The following procedure presumes that the Defoliator is in “STORED POSITION” as described on page 23, with rear wheel/lift cylinder locks installed.

Make sure there are no bystanders between tractor and Defoliator or in the area.

Carefully back up until the tractor drawbar aligns with the Defoliator hitch.

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



1. Tractor hydraulic valve #1 (Rear wheel/lift cylinders)
2. Tractor hydraulic valve #2 ( Front hitch/lift cylinders)
3. Tractor hydraulic valve #3 (Wing lift cylinders)
4. Tractor hydraulic valve #4 (Optional rear steering)
5. 7-Pin electrical connector

**Figure 6.** Tractor Connection (Typical)

Clean the hydraulic couplers and fittings to avoid oil contamination.

Connect the hydraulic hoses which control the front hitch/lift cylinders to remote valve #2 hydraulic couplers on the tractor. Connect these hoses so that moving the operator control lever forward lowers the Defoliator (raises the hitch tongue) and moving the operator control lever rearward raises the Defoliator (lowers the hitch tongue).

From the tractor seat, hydraulically position the height of Defoliator hitch and back up the tractor to allow the tractor clevis to align with the Defoliator hitch.

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

Install tractor manufacturer's clevis hitch pin and secure with tractor manufacturer's lock mechanism.

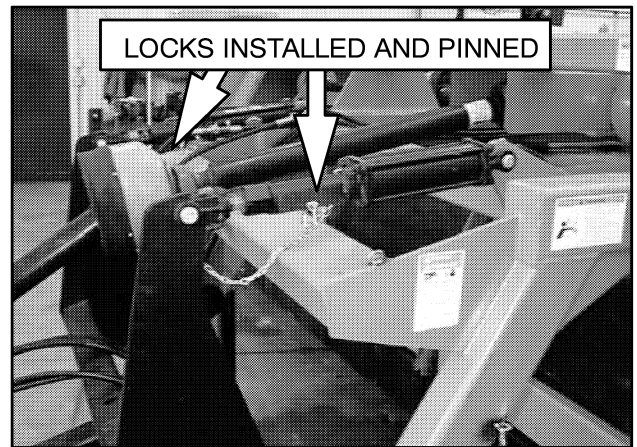
Attach the safety chain to the drawbar support of the tractor.

Insert the 7-pin male Defoliator electrical cable into the tractor female connector. Route electrical wires to prevent chafing, abrasion, or contact with rotating components.

Connect hydraulic hoses to tractor hydraulic couplers as shown in Figure 6.

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

Install cylinder locks on front hitch/lift cylinders.

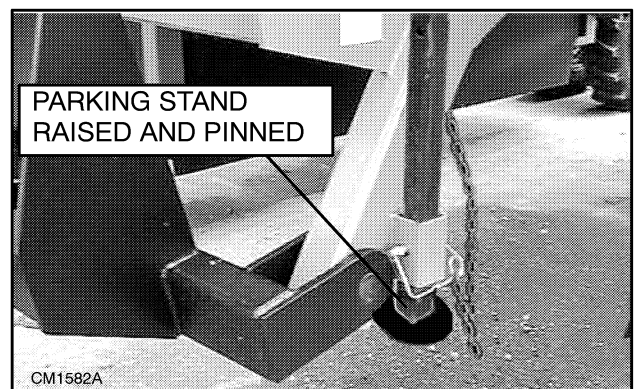


**Figure 7.** Front Hitch/Lift Cylinder Locks (Installed)

Raise parking stands and secure in raised position, Figure 8. Make sure all cylinder locks are in place.

Check that all PTO driveline guards are in place and that driveshaft telescopes correctly. Attach PTO driveshaft to tractor and make sure locking pin or collar is fully engaged.

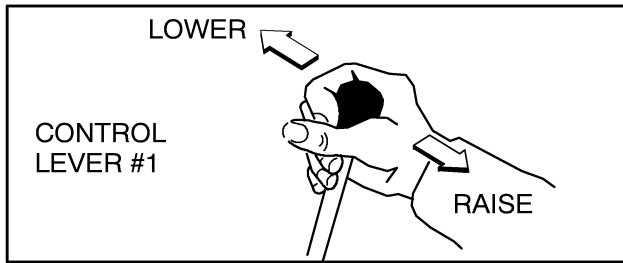
Verify that all tractor hydraulic control lever movements are correct before operating or transporting the Defoliator.



**Figure 8.** Parking Stand in Raised Position (Left Side Shown)

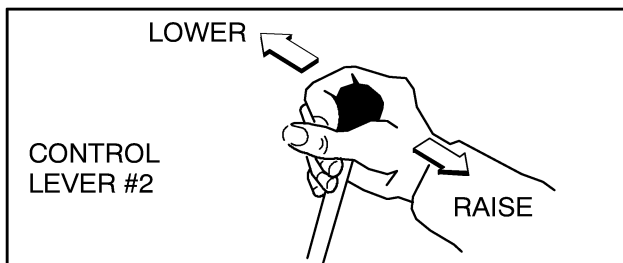
## Verification of Control Movements

Comply with all Safety Rules and start the tractor. Check that all tractor hydraulic control lever movements operate the Defoliator correctly as shown in Figure 9 through Figure 12.



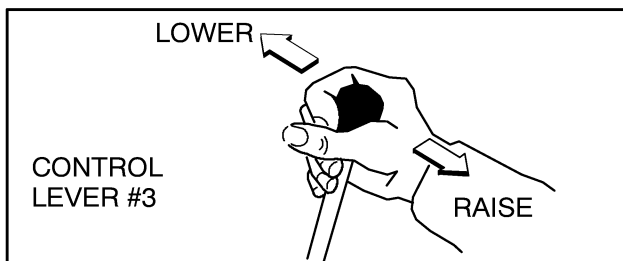
- Handle forward - Lower Rear of Defoliator
- Handle back - Raise Rear of Defoliator

**Figure 9.** Rear Wheel/Lift Cylinders



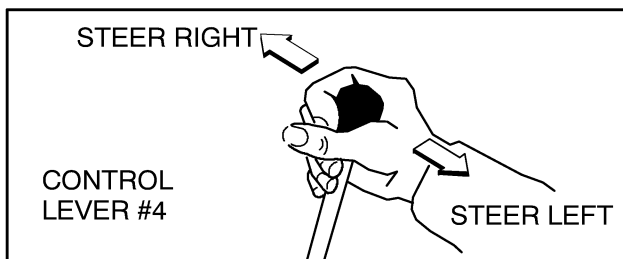
- Handle forward - Lower Front of Defoliator
- Handle back - Raise Front of Defoliator

**Figure 10.** Front Hitch/Lift Cylinders



- Handle forward - Lower Wings to Operating Position
- Handle back - Raise Wings to Transport Position

**Figure 11.** Wing Raise/Lower Cylinders



- Handle forward - Defoliator Steers to Right
- Handle back - Defoliator Steers to Left

**Figure 12.** Rear Steering Cylinders (Optional)

Defoliator movements must be correct before proceeding with field operation. If movements are not correct, recheck all hydraulic coupler connections.

## DISCONNECTING DEFOLIATOR FROM TRACTOR

After following the instructions for "Disconnecting Defoliator from Tractor" the Defoliator will be in "STORED POSITION." In "STORED POSITION," Defoliator wings must be lowered to rest on wing gauge wheels, rear wheel/lift cylinder locks installed, both parking stands lowered, front hitch in lowered position, PTO driveline in storage bracket, and unit parked on a hard level surface.

Always be aware of hydraulic system leak-down. Never place any part of your body underneath equipment or between moveable parts.

Check that park stands, park stand brackets, park lockpins, and lockpin retaining chains are in good condition. Replace any missing or damaged park stand component immediately.

Park Defoliator on a hard level surface.

If Defoliator wings are in the raised transport position, carefully lower wings as instructed in "LOWERING WINGS to OPERATING POSITION"

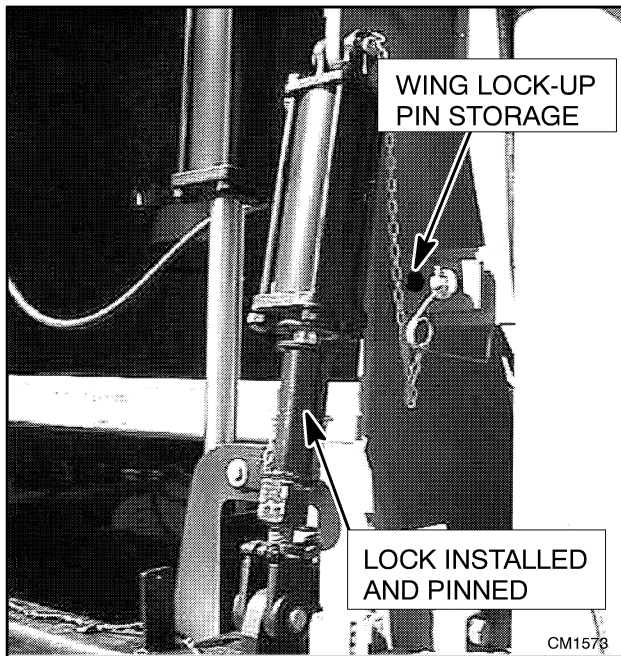
Stop the engine, set brakes, remove ignition key, and wait for all moving parts to stop before dismounting.

Set and secure parking stands in lowered position (Figure 13).



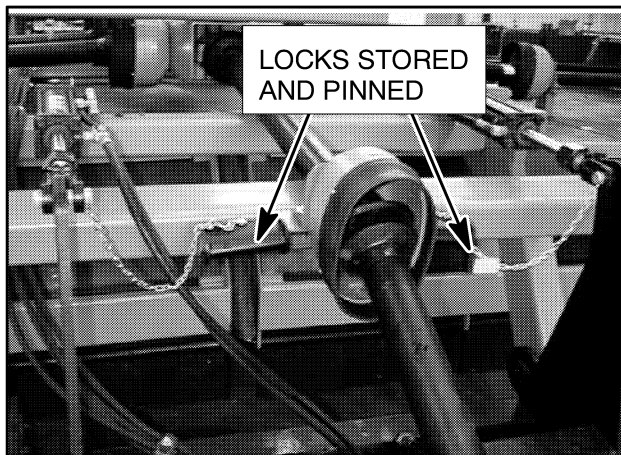
**Figure 13.** Parking Stand in Lowered Position (Right Side Shown)

Insure that rear cylinder locks are installed as shown in Figure 14.



**Figure 14.** Rear Wheel/Lift Cylinder Lock

Front cylinder locks should be in storage position as shown in Figure 15.



**Figure 15.** Front Hitch/Lift Cylinder Lock Storage (Front)

Lower Defoliator to rest on rear cylinder locks and parking stands. Raise hitch slightly from tractor drawbar so that drawbar pin can be removed.

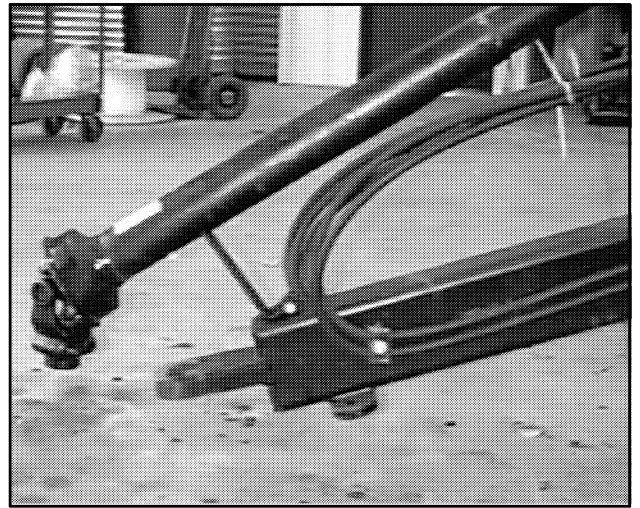
Stop engine, set parking brake, remove ignition key, and wait for all moving parts to stop before dismantling.

Remove drawbar pin.

Disconnect PTO from tractor shaft and place PTO on PTO storage rest, Figure 16.

Carefully drive tractor ahead far enough to disengage hitch from tractor drawbar.

Disconnect hydraulic lines and electrical connector.



**Figure 16.** PTO Rest

## RAISING WINGS TO TRANSPORT POSITION

### **WARNING**

■ Never walk, stand or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.

### **CAUTION**

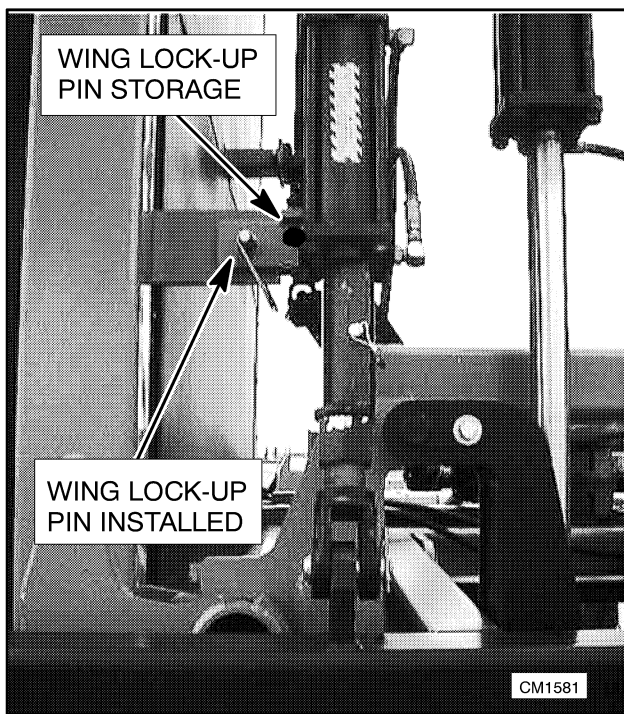
■ Before raising or lowering wings, front hitch/lift and rear wheel/lift cylinders must be fully extended and all four cylinder locks installed. This prevents rotor and bearing support damage that can result from ground contact.

When raising wings to transport position, the Defoliator must be securely attached to the tractor with front hitch/lift and rear wheel/lift cylinder locks installed as shown in Figure 7 and Figure 14.

Make sure that wing lock-up pins are in their storage positions as shown in Figure 14.

Fully raise front and rear of Defoliator and move tractor control lever #3 to raise wings to transport position.

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



**Figure 17.** Wing Lock-Up Pin Installation

Install wing lock-up pins as shown in Figure 17.

Check that the hitch is securely attached to the tractor drawbar and the safety chain is properly fastened.

Lower hydraulic cylinders to rest on cylinder locks.

## LOWERING WINGS TO OPERATING POSITION



### WARNING

■ Never walk, stand or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.



### CAUTION

■ Before raising or lowering wings, front hitch/lift and rear wheel/lift cylinders must be fully extended and all four cylinder locks installed. This prevents rotor and bearing support damage that can result from ground contact.

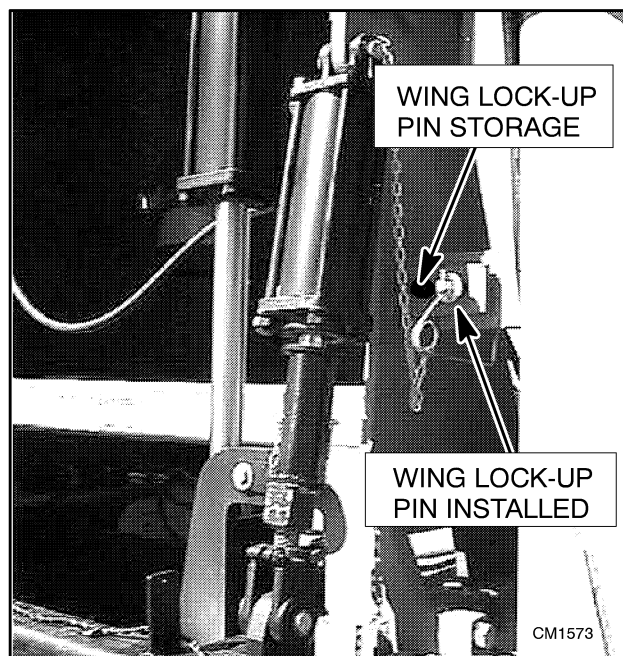
When lowering wings to operating position, the Defoliator must be properly attached to the tractor on level ground, with front hitch/lift and rear wheel/lift

cylinder locks installed and pinned as shown in Figure 7 and Figure 14.

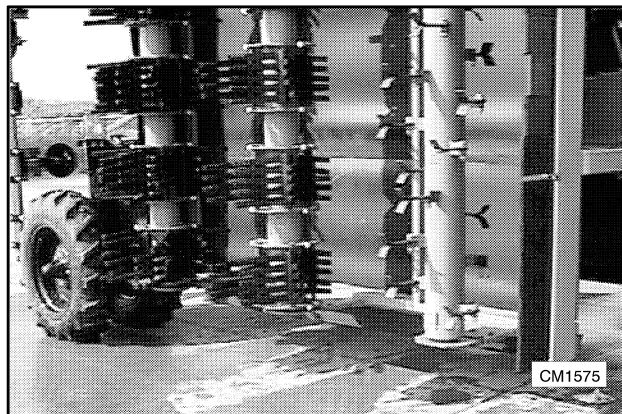
Use tractor hydraulic lever #3 to relieve pressure on wing lock pins.

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

Remove wing lock-up pins and place in storage position as shown in Figure 18.



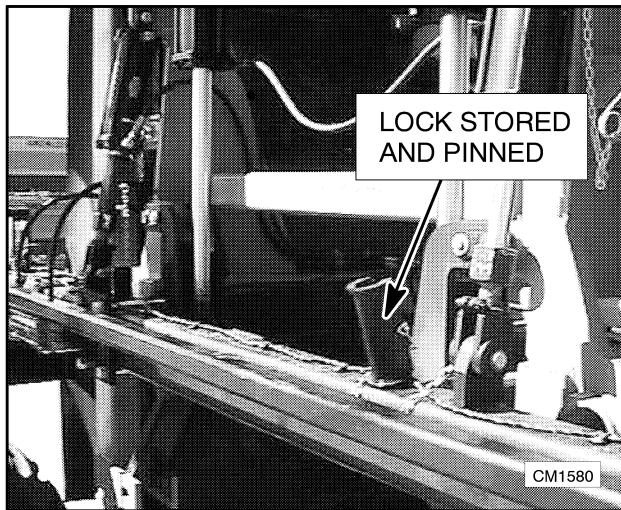
**Figure 18.** Wing Lock-Up Pin (Installed)



**Figure 19.** Inside Flail Tube Brackets

Lower the wings to rest the wing gauge wheels on the ground. Retract wing cylinders completely to allow wings to follow ground contour during operation.

**Note:** Pull ahead several feet to help align wing wheels before making final field adjustments.



**Figure 20.** Rear Wheel/Lift Cylinder Lock Storage

## FIELD OPERATION

The Alloway Defoliator will give best performance if it is properly set to work in existing conditions.

### IMPORTANT

■ **Field conditions may require additional fine adjustment since tractor tracks are usually lower from cultivating and other previous field operations.**

Machine setting may require adjustment within or between fields as conditions change. Changes in soil moisture, soil density or even beet varieties may affect performance.

Defoliator must be adjusted so that wheels are centered between rows and rubber flail assemblies are centered over beet rows. All flail tips should be about 1/2" above the ground.

Before entering the field initially, the machine should be unfolded on firm and level ground.

### Leveling the Defoliator

Place Defoliator wings in operating position.

Remove front hitch/lift and rear wheel/lift cylinder locks.

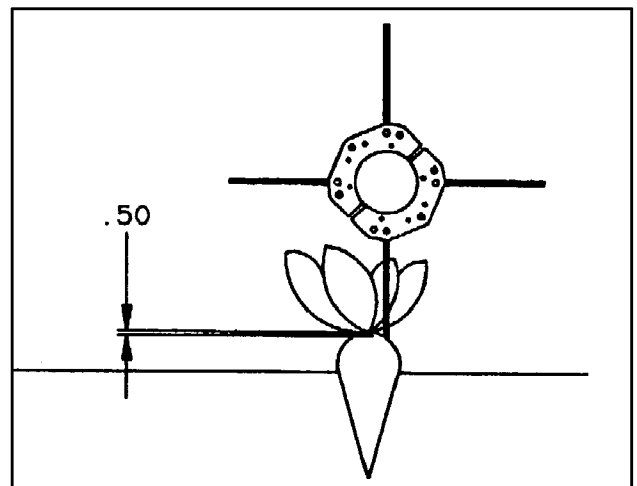
Lower rear of machine until the rubber flail tips contact the beets 1/2" below the crown.

Lower the front of the machine until the Defoliator wings are parallel to the ground. Adjust front hitch/lift and rear wheel/lift cylinder stop collars (Figure 21) to establish the operating position of the center frame. Fine adjustment may be required to match field conditions.

Adjust wing gauge wheels so that wings are level across the beet tops.



**Figure 21.** Rear Wheel/Lift Cylinder Stop Collars (Front Hitch/Lift Collars are Similar)



**Figure 22.** Leveling Defoliator

Adjust the ratchet jacks on each gauge wheel strut to level the wings and establish flail cutting height.



**Figure 23.** Gauge Wheel Ratchet Jack

On machines equipped with steel flail front rotor, the steel flail tips are 4" shorter than the rubber flail tips. Steel flails should remove only greens and not damage beet crowns, while rubber flails remove the residual foliage and deposit leaves between the beet rows.

Machines may be equipped with rubber flails on all rotors. The load of leaf removal should be split between the #1 and #2 rotor. For that reason fewer flails are used on the #1 rotor.

## Entering the Field

Pull into the field with the tractor centered on the first set of rows.

Lower the machine front and rear to the pre-set position. Scalpers will automatically lower after the rear depth control cylinders bottom out.

## Starting Defoliator

With the tractor engine at idle, slowly engage the PTO and choose your forward speed setting. Recommended speed in average conditions is 2 to 3 mph.

Increase engine speed to PTO speed.

Release clutch and move tractor forward following the beet rows.

If the performance of the Defoliator is not satisfactory, stop the unit and make any necessary adjustments.

## Stopping Defoliator

Reduce engine speed and depress clutch. Take tractor out of gear. After engine has slowed to idle, disengage PTO.

### IMPORTANT

■ **Never disengage PTO at high RPM because the inertia of the turning rotors in the Defoliator can damage the tractor PTO brake.**

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

Check behind the Defoliator to observe performance.

Further fine-adjustment on wing gauge wheels and/or center carrier may be needed for satisfactory performance.

## Field Performance

Many factors will influence the performance of the Defoliator:

- Bulk of leaf canopy
- Moisture content of foliage
- Frozen leaves
- Beet varieties

- Beet stand
- Cultivating job
- Forward speed
- Soil moisture content
- Height of beds

The operator will have to adjust the machine accordingly.

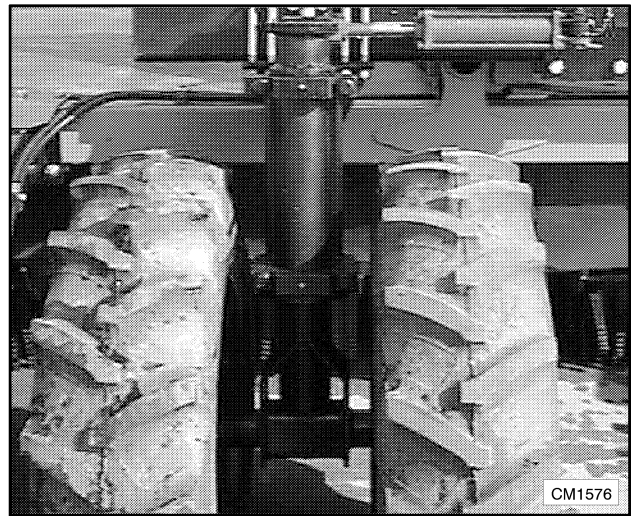
In soft or wet conditions, the tires will sink into the soil and the machine should be raised to maintain the flail contact point 1/2" below the beet crown.

In conditions where beets extend above the ground and are easily knocked over, adjust flails to contact beet at or just below the crown.

Do not allow the flails to contact the ground. Dirt, stones or other material can be thrown from under the machine.

Running the flails too low causes high flail wear and breakage, higher fuel consumption, and more build up inside the machine. Tall beets may be kicked between rows.

## Rear Steering (Optional)



**Figure 24. Rear Steering**

Optional rear wheel steering struts are used when additional maneuverability is required. Tractor must be equipped with a fourth hydraulic control lever if rear steering is to be used.

To operate the rear steering, connect hydraulic hoses so that moving the #4 control lever forward steers the Defoliator to the right and moving the #4 control lever rearward moves the Defoliator to the left.

Use the optional rear steering system to adjust the offset of the Defoliator for field operation. Ensure that rear steering is "centered" for transport and is tracking directly behind the tractor.

## Scalper Attachments (Optional)

### **WARNING**

- **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**

The scalper option available from Alloway is a non-driven, mechanically rotating disc. Scalper lift cylinders operate in parallel with the rear wheel lift cylinders. When raising the rear of the Defoliator, scalper attachments will raise first. When lowering the rear of the Defoliator, scalper attachments will lower last.

### **IMPORTANT**

- **Always raise scalpels before backing up. Scalpers must be fully raised before folding wings.**

The disc will rotate to either side and a sharp cutting edge is exposed to do the scalping job. When properly adjusted, it will stay free of debris and consistently cut the required amount of the beet crown.

Uneven beet stands and double beets will cause less than perfect performance. Adjustments should be made to regulate the thickness of the slice to be removed.

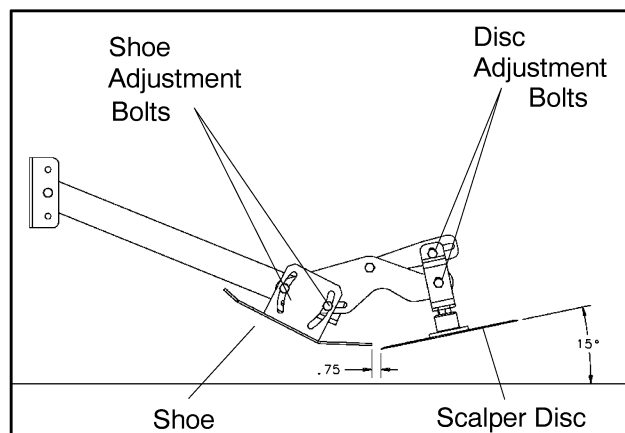
Forward speed changes will influence the performance.

In any working position, the disc forward edge of the disc should always be a few degrees lower than the rear edge.

Scalpels are factory pre-set, but need fine adjustment for individual conditions.

### **CAUTION**

- **Never work on scalper attachment in the raised position. Lower scalpels to the ground and service each unit individually.**



**Figure 25.** Scalper Adjustment

Loosen shoe adjustment bolts and adjust scalper shoe. The trailing surface of the shoe should be nearly horizontal.

Loosen disc adjustment bolts to adjust disc operating pitch. Adjust pitch of scalper disk to slice beets as required.

When adjustments are complete, tighten bolts to specifications in torque chart.



**Figure 26.** Scalper Attachment

## **TRANSPORTING THE DEFOLIATOR**

When transporting on public roads, wings must be raised to transport position. Follow instructions in "Raising Wings to Transport Position."

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

Do not allow riders.

Use hazard flashers on the tractor when transporting.

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

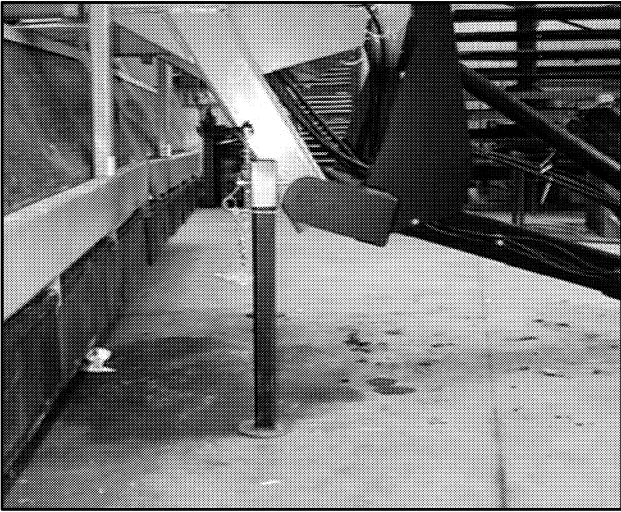
Make sure to use a tractor of sufficient size and with enough front end ballast to assure safe steering.

Lock foot brake pedals for even application during road travel.

## **DEFOLIATOR STORED POSITION**

Lower wings to operating position and disconnect Defoliator from tractor as described in "Disconnecting Defoliator from Tractor." Defoliator should be in "STORED POSITION" and be supported by park stands, rear wheel/lift cylinder locks, and wing gauge wheels.

Gauge wheel screw jacks may be adjusted to support wings in a level position.



**Figure 27.** Parking Stand

Store Defoliator in an area away from children and bystanders.

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

Store in a dry, level area.

---

## NOTES

# 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 an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, 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 operator.

The information in this section is written for the operator who possesses 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

■ 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 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.

■ 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.

■ 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

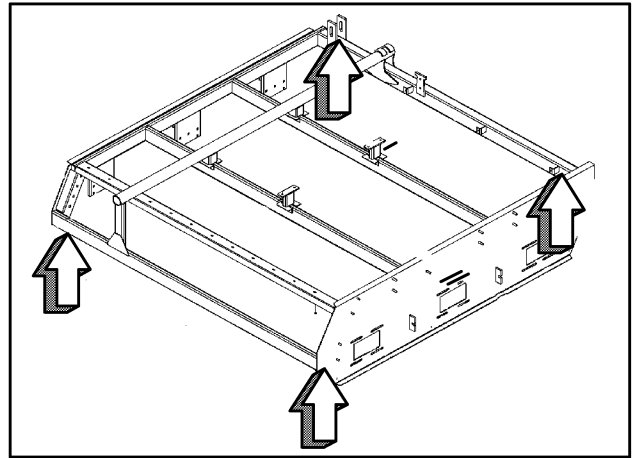
levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.

## CAUTION

■ 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.

## BLOCKING METHOD (Figure 28)

Do not work underneath the Defoliator 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. Do not work on Defoliator with wings in any intermediate position.



**Figure 28** Jackstand Locations  
(Left wing shown; Right wing similar)

For any service work which requires working underneath the Defoliator, the following blocking instructions must be followed.

The Defoliator must be properly attached to a tractor located on a hard level surface.

The Defoliator wings must be lowered into operating position with wing gauge wheels adjusted to support the wings during service.

Front and rear cylinder locks must be properly installed. Do not use a cylinder lock or retaining pin which is bent or damaged. Replace any damaged or lost cylinder lock components immediately.

Jackstands, with a minimum load rating of 4000 lbs each, must be placed under the wing frames at each corner of the right and left wings as shown in Figure 28. Jackstands should be adjusted so that they securely support the Defoliator during service.

Tractor park brake must be engaged, wheels chocked, and PTO shaft disconnected from the tractor.

## LUBRICATION

### Gearbox Oil

Use 80W90 gear lube. Capacity: 1 US quart.

### Greasing

Use a multi-purpose high temperature grease.

**Note:** Over-greasing can cause damage to bearing seals.

- Use hand held grease gun to avoid blown seals.
- Wipe grease fittings clean to avoid contamination.
- Replace or repair broken fittings immediately.
- If fittings do not take grease, remove zerk, and clean passageway.

### Sealed Bearing Information (Figure 29)

Moisture and contaminants can be trapped behind the bearing seals.

Usually a single pump of a hand held grease gun every 40 hours of operation will be sufficient to force moisture out and relube the bearing. Please keep this in mind when greasing line shaft or rotor bearings on the Defoliator.

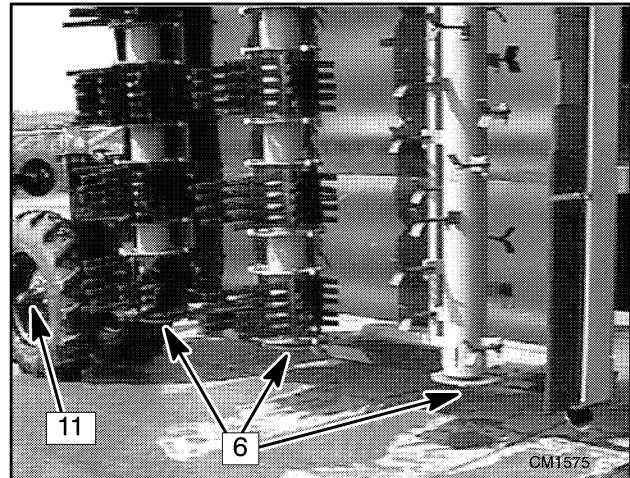


Figure 29. Inside Rotor Bearings

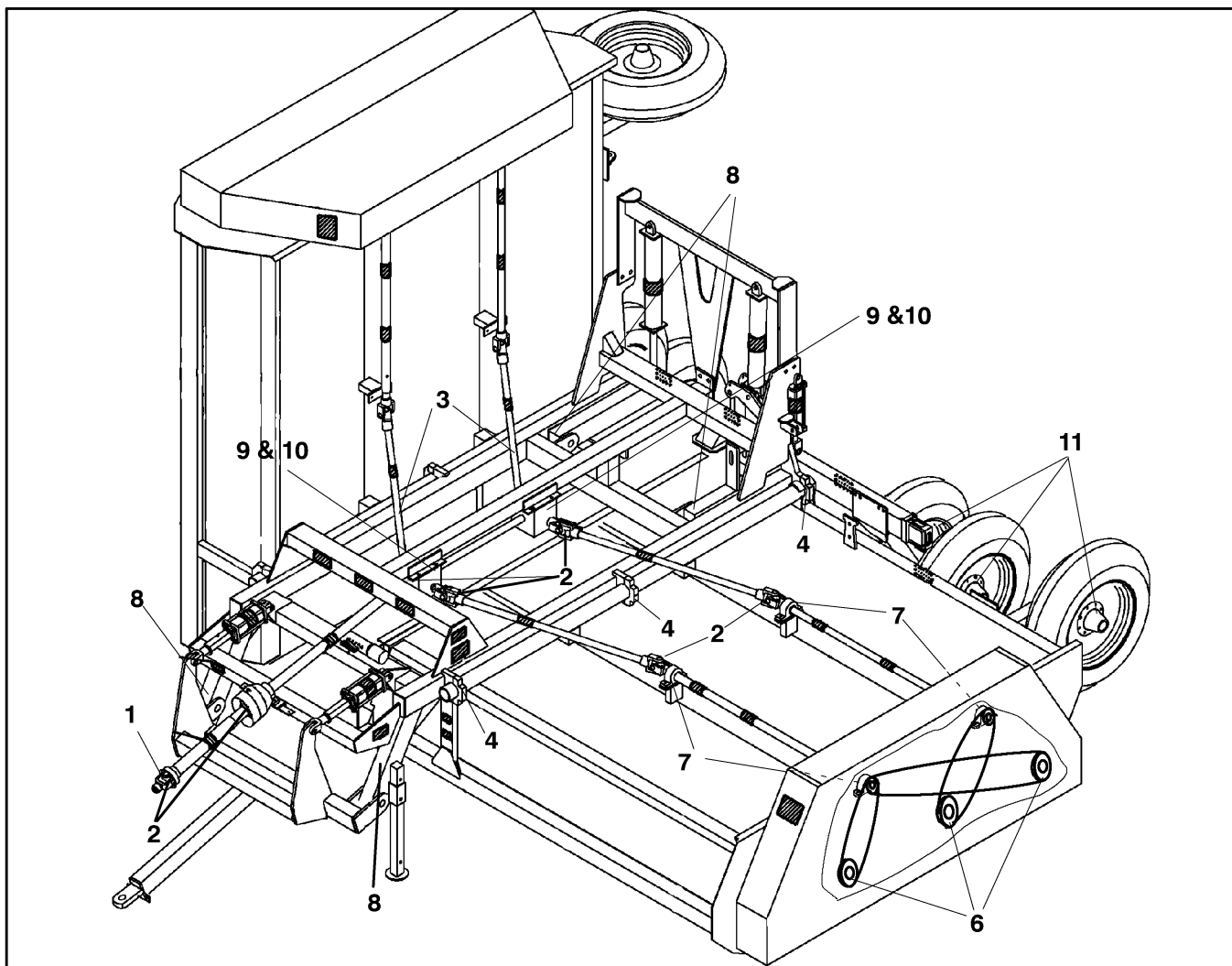


Figure 30. Lubrication Points

## Grease Intervals

(Figure 30 through Figure 32)

### 10 Hours

1. Grease CV PTO portion of the driveline.
2. Grease PTO driveline with regular universals and shield zerks.

### 20 Hours

3. Grease all telescoping drive shafts on top of the machine including shield zerks.
4. Grease wing hinge points and all lift arm linkages.

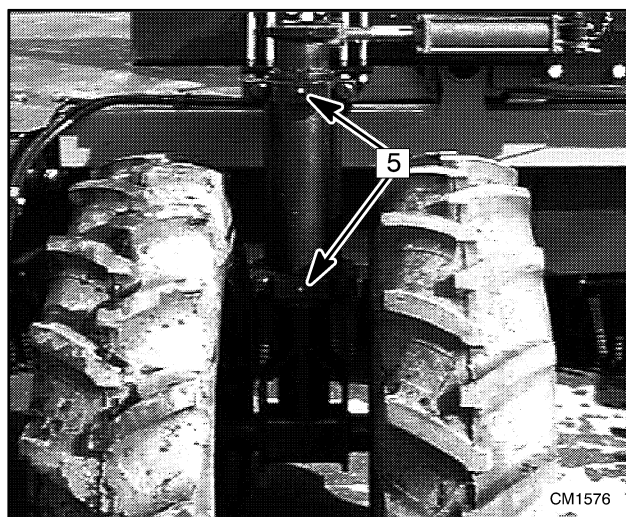
### 40 Hours

5. Grease rear steering pivots (Figure 31).
6. Grease all rotor bearings (Figure 29 and Figure 30).
7. Grease all line shaft bearings.
8. Grease hitch and rear carrier hinge points.

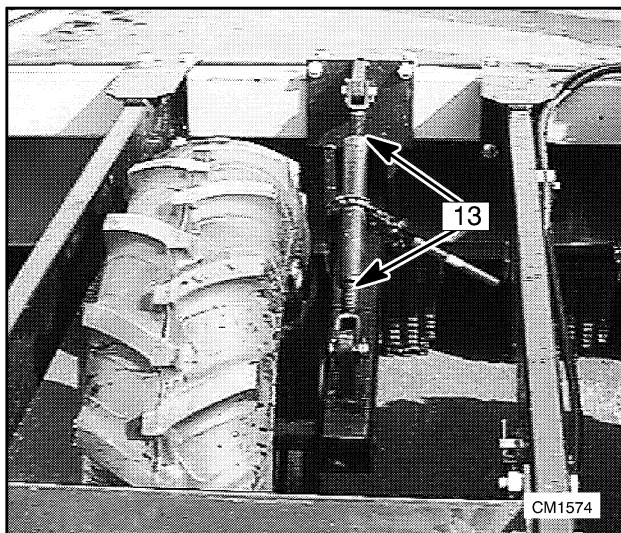
### Annually

9. Change oil in gearboxes.
10. Clean gearbox breathers.
11. Repack carrier wheel bearings.
12. Inspect scalper bearings.
13. Grease gauge wheel jack screws (Figure 32).

Grease all zerks after washing and at outset or end of season to remove potential moisture from bearings.



**Figure 31.** Rear Steering Pivots



**Figure 32.** Gauge Wheel Jack Screws

## MAINTENANCE

### Drive Belts

#### Belt Tension

Banded drive belts are used to transmit power to the rotor shafts. Improperly adjusted belts will create heat which results in poor performance and fast belt wear. It is wise to check belts every 4 to 5 hours, if they feel cool to touch, they are adjusted well. Any high heat should signal a need for adjustment.

**Note:** Heat buildup can also be caused by running flails too close to the ground or excessive build up inside the Defoliator.

#### Adjusting Belt Tension (Figure 33)

Stop tractor engine, put all controls in neutral, remove ignition key, and wait for all moving parts to stop before dismounting.

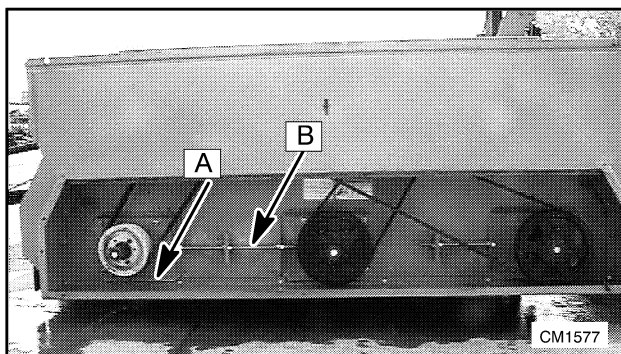
Open and secure lower belt housing shields.

Loosen bearing plate anchor bolts (A).

Adjust nuts on tightener rod (B) until proper tension is reached.

Retighten bearing plate (A).

Close and secure belt housing shields.



**Figure 33.** Belt Tension Adjustment - Belt Box

### Replacing Drive Belts (Figure 33 & Figure 34)

Stop tractor engine, put all controls in neutral, remove ignition key, and wait for all moving parts to stop before dismounting.

Open and secure lower belt housing shields.

Loosen bearing plate anchor bolts (A).

Loosen nuts on tightener rod and bring rotor shaft to the extreme loose position.

Replace belt on sheaves as shown in Figure 33 and Figure 34.

Adjust nuts on tightener rod (B) until proper tension is reached.

Retighten bearing plate (A).

Close and secure belt housing shields.

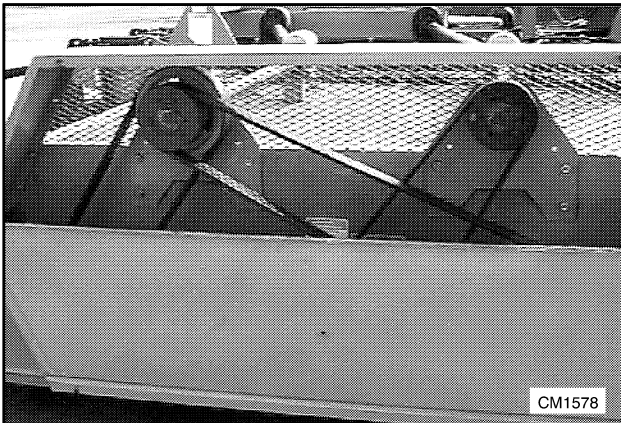


Figure 34. Rotor Upper Drive Pulleys

### Flail Replacement

Securely block-up the Defoliator as described in "Blocking Method for Defoliator Service," Figure 28.



#### WARNING

■ Never walk, stand or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak down, hydraulic system failures, mechanical failures or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.

#### IMPORTANT

■ Always replace opposite pairs of knives and mounting hardware to maintain rotor balance. Replace any broken or missing knife immediately.

### L-Knife/Cup

Remove bolt from flail bracket and remove flail.

Replace flail bushing and tighten bolt to specifications in Torque Chart.

### Rubber Flail

Rubber flails are attached to adjustable flail heads, which are clamped to the rotor.

To replace rubber flails, remove flail pin retaining bolt and withdraw pin. Remove flail assembly as a unit. Head clamping bolts may need to be loosened to make disassembly easier.

Note location of flails, spacers and bushings. Replace any worn, damaged or missing components in their correct location. Insert flail pin through assembly and install retaining bolt. Tighten flail pin retaining bolt to specifications in Torque Chart.

Inspect flail heads to determine that they are securely clamped to rotor. If flail heads are not attached securely, tighten clamping bolts to specifications in Torque Chart.



Figure 35. Flail Assembly

# TROUBLESHOOTING

The Folding Defoliator uses rubber or steel flails on drums to remove foliage from the tops of sugar beets. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local Alloway dealer. Before you call, please have this Operator's Manual and the serial number from your machine ready.

| <b><u>PROBLEM</u></b>              | <b><u>POSSIBLE CAUSE</u></b>        | <b><u>SOLUTION</u></b>                                                              |
|------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| Rapid belt wear                    | Machine plugged with mud            | Clean machine.                                                                      |
|                                    | Pulleys out of alignment            | Align pulleys.                                                                      |
|                                    | Belts overtightened                 | Loosen belts.                                                                       |
|                                    | Loose belts                         | Tighten belts.                                                                      |
|                                    | Machine overloaded                  | Slow travel speed.                                                                  |
| Flails breaking                    | Machine too low                     | Raise machine.                                                                      |
| Machine vibration                  | Driveline does not telescope freely | Clean and lube telescoping members.                                                 |
|                                    | Rotor unbalanced                    | Replace missing knives or rubber flails. Always replace in pairs 180 degrees apart. |
| Beet crown not clean               | Machine too high                    | Lower the machine.                                                                  |
|                                    | Flails broken                       | Replace broken flails.                                                              |
|                                    | Traveling too fast                  | Slow down.                                                                          |
|                                    | Running slow                        | Increase speed to rated PTO RPM.                                                    |
|                                    | Need a scalper                      | Install and set scalper.                                                            |
|                                    | Scalper bounces                     | Increase scalper spring tension.<br><br>Reduce speed.                               |
| Beets are pulled out of the ground | Machine too low                     | Raise machine.                                                                      |
|                                    | Machine too slow                    | Increase ground speed.                                                              |
|                                    | Scalper pulling beets out of ground | Adjust scalper.                                                                     |

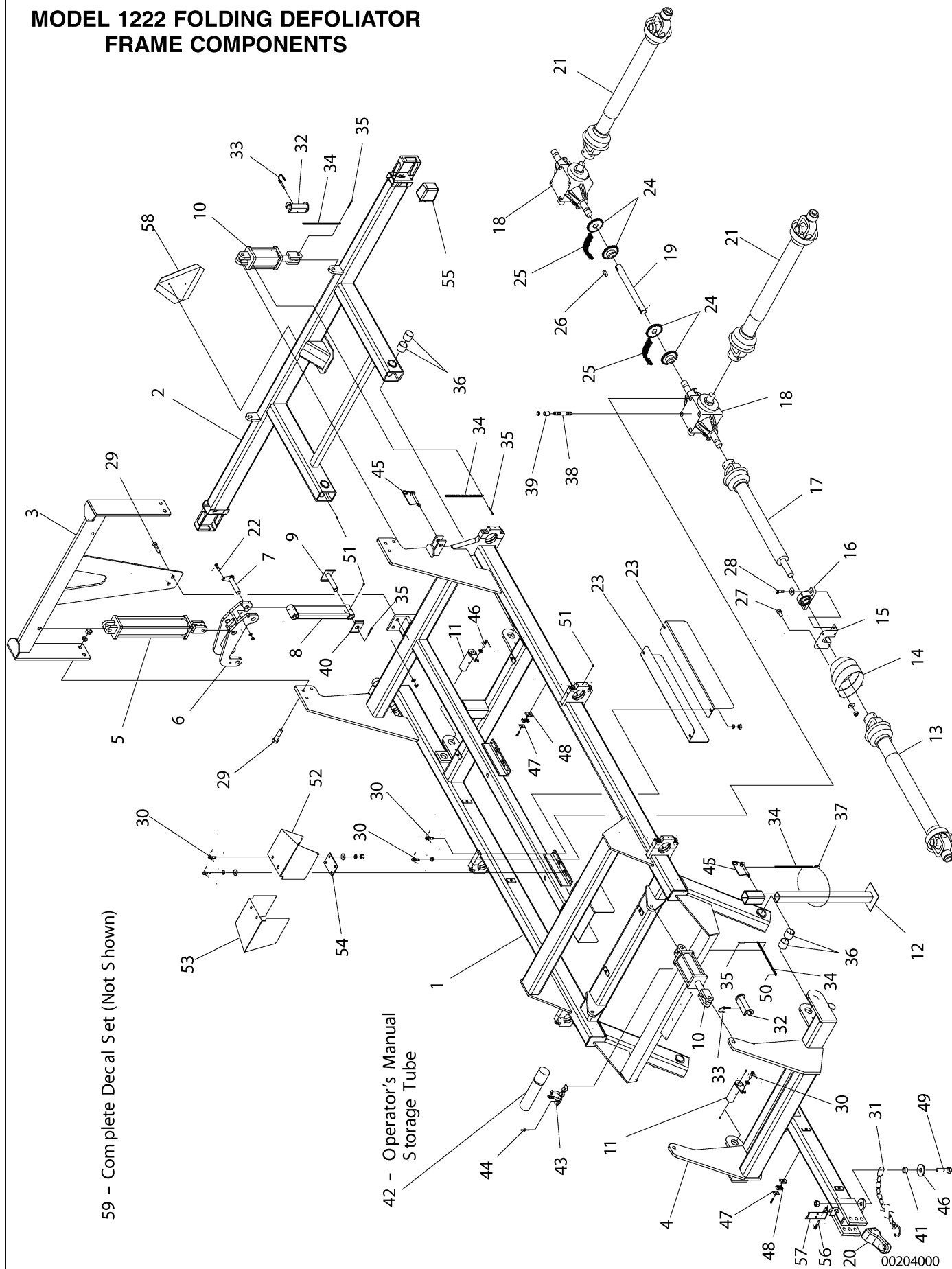
# NOTES

# **Model 1222 Folding Defoliator**

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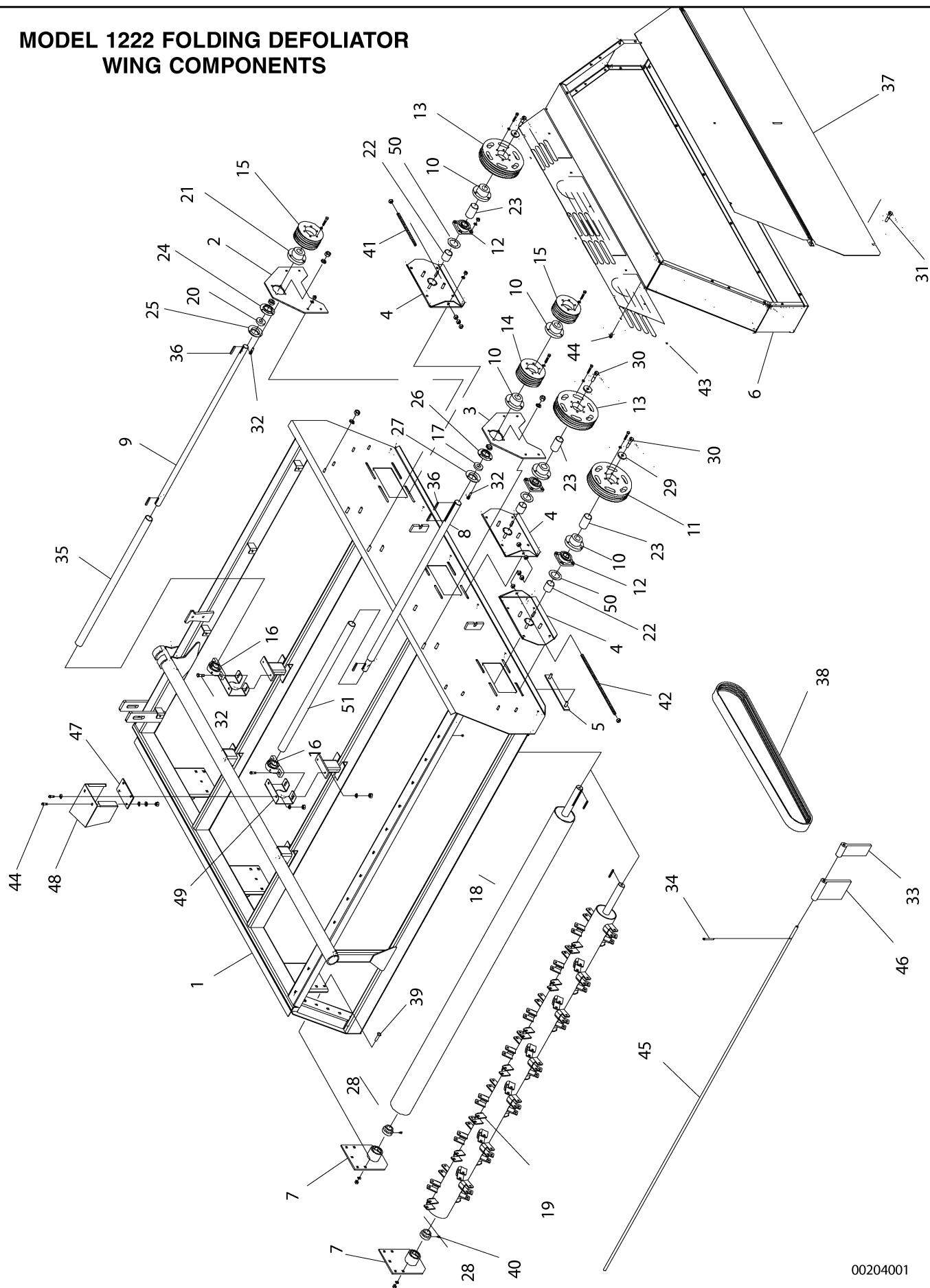
# **MODEL 1222 FOLDING DEFOLIATOR FRAME COMPONENTS**



## MODEL 1222 FOLDING DEFOLIATOR FRAME COMPONENTS

| REF. | PART NO. | DESCRIPTION                                                   | QTY. |
|------|----------|---------------------------------------------------------------|------|
| 1    | 50020664 | Center Frame                                                  | 1    |
| 2    | 50020659 | Strut Mount                                                   | 1    |
| 3    | 50020661 | Top Bar                                                       | 1    |
| 4    | 50020663 | Hitch                                                         | 1    |
| 5    | 90521395 | Hydraulic Cylinder, 4" x 24"                                  | 2    |
|      | 90521409 | Seal Kit, 4" x 24"                                            | 2    |
| 6    | 50020662 | Link Arm                                                      | 2    |
| 7    | 50020684 | 1-1/4" Pin                                                    | 4    |
| 8    | 50020682 | Pivot Tube                                                    | 2    |
| 9    | 50020685 | Channel Pin                                                   | 2    |
| 10   | 90521400 | 3-1/2" x 8" Cylinder                                          | 4    |
|      | 90521401 | Seal Kit, 3-1/2 x 8                                           | 1    |
| 11   | 70020019 | Pin                                                           | 4    |
| 12   | 50020658 | Parking Stand                                                 | 2    |
| 13   |          | PTO Shaft, Standard (See Page 46)                             | 1    |
|      |          | PTO Shaft, Constant Velocity (See Page 47)                    | 1    |
| 14   | 90318007 | PTO Bell                                                      | 1    |
| 15   | 70030444 | Front Bell Mount                                              | 1    |
| 16   | 90101272 | 1-3/4" Pillow Block Bearing                                   | 1    |
| 17   | 90318052 | Driveline (See Page 48)                                       | 1    |
| 18   | 90315560 | Gearbox (4 Way)                                               | 2    |
| 19   | 50020751 | Intermediate Shaft (With safety decal)                        | 1    |
| 20   | 50530831 | Hitch Tongue, Complete                                        | 1    |
| 21   | 90318055 | Driveline, Wing (See Page 48)                                 | 4    |
| 22   | 90001225 | 1/2 NC x 1-1/2 Hex Bolt, GR5                                  | 4    |
| 23   | 50020760 | Driveline Shield (With safety decal)                          | 2    |
| 24   | 90311074 | Coupling Sprocket, 60B24                                      | 4    |
| 25   | 90303142 | Double Roller Chain, 60-2 (24 Links)                          | 1    |
| 26   | 10033333 | 3/8" x 2 Key                                                  | 4    |
| 27   | 90001694 | 3/8" NC x 3/4" Carr. Bolt                                     | 20   |
| 28   | 90001233 | 1/2" NC x 2-1/2" Hex Bolt, GR5                                | 2    |
| 29   | 90001515 | 1" NC x 2-1/2" Hex Bolt, GR5                                  | 2    |
| 30   | 90001221 | 1/2" NC x 1 Hex Bolt, GR5                                     | 20   |
| 31   | 90507113 | Tow Chain                                                     | 1    |
| 32   | 70020159 | Cylinder Lock (used for Front Hitch/Lift and Rear Wheel/Lift) | 4    |
| 33   | 90042055 | Cylinder Lock Pin                                             | 4    |
| 34   | 12030472 | Chain, PTO Hook-up                                            | 8    |
| 35   | 90023045 | 3/16 x 2 Cotter Pin                                           | 8    |
| 36   | 90101318 | Bushing, 2-1/2 OD x 2" Long                                   | 8    |
| 37   | 90042051 | 1/8" Quick Link                                               | 4    |
| 38   | 90501238 | Nipple, 1/2 NPT x 6                                           | 2    |
| 39   | 90504189 | Coupling, 1/2 NPT                                             | 2    |
| 40   | 50031510 | Channel Pin                                                   | 2    |
| 41   | 50530713 | Spacer Bushing                                                | 1    |
| 42   | 10033957 | Manual Tube                                                   | 1    |
| 43   | 10033958 | Clamp                                                         | 1    |
| 44   | 90021489 | Pop Rivet                                                     | 14   |
| 45   | 90042054 | Lock-up Pin (used for Wings and Parking Stand)                | 4    |
| 46   | 50031631 | Washer                                                        | 1    |
| 47   | 90031068 | Cover Plate and Bolt                                          | 14   |
| 48   | 90031069 | Clamp Body                                                    | 14   |
| 49   | 90001519 | 1 x 3 Hex Bolt, GR5                                           | 1    |
| 50   | 90017046 | 1/4"-28 Hex Washer Head Screw                                 | 4    |
| 51   | 90515024 | Zerk                                                          | 14   |
| 52   | 50020749 | Gearbox Shield (LH, With safety decal)                        | 2    |
| 53   | 50020750 | Gearbox Shield (RH, With safety decal)                        | 2    |
| 54   | 50031684 | Rubber Hinge                                                  | 2    |
| 55   | 90401132 | Light Assembly                                                | 2    |
|      | 90101133 | Light Bulb #3157                                              | 2    |
| 56   | 90001195 | 7/16 x 4 Hex Bolts, GR5                                       | 1    |
| 57   | 50020532 | PTO Rest                                                      | 1    |
| 58   | 50031696 | SMV with Metal Base                                           | 1    |
| 59   | 50010100 | Complete Decal Set (Includes all Safety Decals)               | 1    |

# **MODEL 1222 FOLDING DEFOLIATOR WING COMPONENTS**

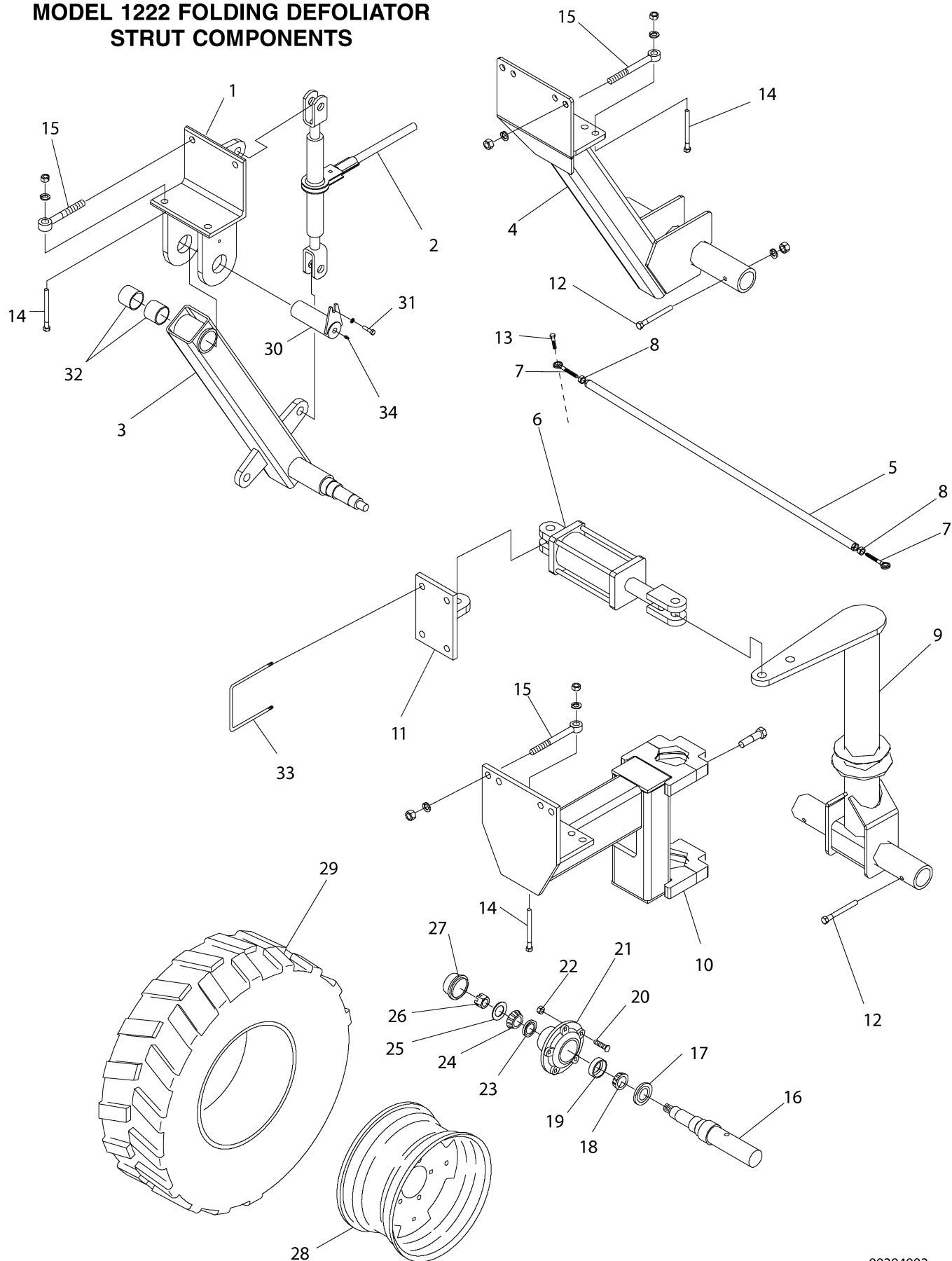


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## MODEL 1222 FOLDING DEFOLIATOR WING COMPONENTS

| REF. | PART NO. | DESCRIPTION                                           | QTY. |
|------|----------|-------------------------------------------------------|------|
| 1    | 50020674 | Wing Weldment (RH)                                    | 1    |
|      | 50020673 | Wing Weldment (LH)                                    | 1    |
| 2    | 50031462 | Rear Upper Plate                                      | 1    |
| 3    | 50031461 | Front Upper Plate                                     | 1    |
| 4    | 50020672 | Bearing Slide Weldment                                | 3    |
| 5    | 50020671 | Slide Strap Weldment                                  | 6    |
| 6    | 50020756 | Side Shield Weldment (With safety decal)              | 1    |
| 7    | 50020670 | Mounting Plate Weldment                               | 3    |
| 8    | 50020757 | Front Output Shaft (With safety decal)                | 1    |
| 9    | 50020758 | Rear Output Shaft (With safety decal)                 | 1    |
| 10   | 90308420 | Hub, 2-3/16" Type E                                   | 5    |
| 11   | 90308362 | Pulley, 3C8.5 (Steel)                                 | 1    |
|      | 90308421 | Pulley, 3C14 (Rubber)                                 | 1    |
| 12   | 90101311 | 2-3/16" Bearing Assy.                                 | 3    |
| 13   | 90308421 | Sheave, 3C14                                          | 2    |
| 14   | 90308363 | Sheave, 3C13 (Steel)                                  | 1    |
|      | 90308362 | Pulley, 3C8.5 (Rubber)                                | 1    |
| 15   | 90308362 | Pulley, 3C8.5                                         | 2    |
| 16   | 90101272 | 1-3/4" Pillow Block Bearing                           | 2    |
| 17   | 90101309 | 2-3/16" Bearing                                       | 1    |
| 18   | 50020699 | Flail Drum Weld                                       | A/R  |
| 19   | 50020784 | Flail Tube, FUD RH                                    | 1    |
| 19   | 50020785 | Flail Tube, FUD LH                                    | 1    |
| 20   | 90101186 | 1-3/4" Insert Bearing                                 | 1    |
| 21   | 50031061 | Hub, 1-3/4" Type E                                    | 1    |
| 22   | 50031541 | Steel Spacer (2.58 Long)                              | 3    |
| 23   | 50031540 | Steel Spacer (4.16 Long)                              | 3    |
| 24   | 90101312 | Flange, 4 Hole 90 MM                                  | 1    |
| 25   | 90101313 | Flange, 4 Hole 90 MM (Zerk)                           | 1    |
| 26   | 90101314 | Flange, 4 Hole 100 MM                                 | 1    |
| 27   | 90101315 | Flange, 4 Hole 100 MM (Zerk)                          | 1    |
| 28   | 90101310 | Bearing, 1-3/4 Insert                                 | 3    |
| 29   | 50031463 | Washer                                                | 3    |
| 30   | 90001399 | 3/4" NC X 1-1/2" Hex Bolt                             | 3    |
| 31   | 90003467 | 1/2" NC X 1" Flange Whiz Bolt                         | 4    |
| 32   | 90001751 | 1/2" NC x 1-1/2" Carr Bolt                            | 8    |
| 33   | 50530868 | Flap, 3-1/2"                                          | 1    |
| 34   | 90023034 | 5/32 x 1-1/4 Cotter Pin                               | 1    |
| 35   | 50020755 | Shaft Shield (With safety decal)                      | 2    |
| 36   | 10033333 | 3/8" X 2" Key                                         | 5    |
| 37   | 50020690 | Door, Shield                                          | 2    |
| 38   | 90301433 | Belt, 3C105                                           | A/R  |
|      | 90301434 | Belt, 3C173                                           | 1    |
| 39   | 90001784 | 5/8 NC x 1-1/2 Carr Bolt                              | 15   |
| 40   | 90003052 | 5/16 NF x 1/2 Socket Head Cap Screw                   | 3    |
| 41   | 50031629 | 3/4" Threaded Rod (Short)                             | 1    |
| 42   | 50031628 | 3/4" Threaded Rod (Long)                              | 1    |
| 43   | 50031632 | Cover Inner Belt                                      | 1    |
| 44   | 90001221 | 1/2 x 1 Hex Bolt, GR5                                 | 9    |
| 45   | 50031636 | Rod, Flaps                                            | 1    |
| 46   | 50530739 | Flap, 6"                                              | 42   |
| 47   | 50031685 | Rubber Hinge                                          | 2    |
| 48   | 50020752 | Pillow Block Shield (LH, With safety decal) Shown     | 2    |
|      | 50020753 | Pillow Block Shield (RH, With safety decal) Not Shown | 2    |
| 49   | 50020754 | Pillow Block Bracket (With safety decal)              | 2    |
| 50   | 90011072 | Narrow Rim Machine Bushing                            | 51   |
| 51   | 50020759 | Shaft Shield (with safety decal)                      | 2    |

# **MODEL 1222 FOLDING DEFOLIATOR STRUT COMPONENTS**

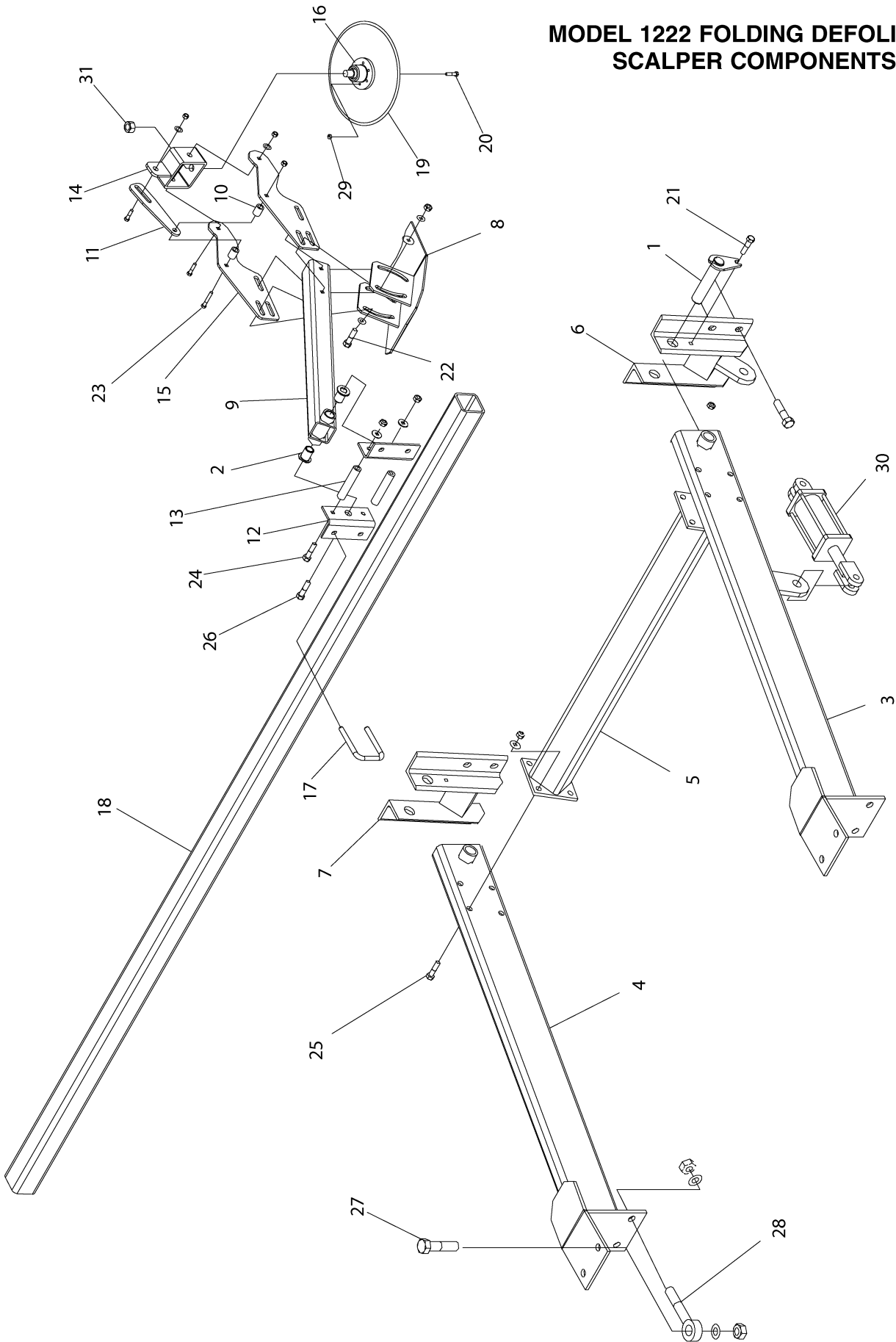


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# MODEL 1222 FOLDING DEFOLIATOR STRUT COMPONENTS

| REF. | PART NO. | DESCRIPTION                            | QTY. |
|------|----------|----------------------------------------|------|
| 1    | 50020686 | Mounting Angle                         | 2    |
| 2    | 90523014 | Ratchet Jack - Heavy Duty              | 2    |
| 3    | 50020687 | Strut Tube Weldment                    | 1    |
| 4    | 50020657 | Center Strut                           | 2    |
| 5    | 70020275 | Tie Rod (Optional Rear Steer)          | 1    |
| 6    | 90521194 | 3 x 8 Cylinder (Optional Rear Steer)   | 1    |
|      | 90521379 | Seal Kit                               | 1    |
| 7    | 90305031 | Pivot Link, RH                         | 1    |
| 7    | 90305030 | Pivot Link, LH                         | 1    |
| 8    | 90006288 | 1-1/8 NC Jam Nut, RH                   | 1    |
| 8    | 90006310 | 1-1/8 NC Jam Nut, LH                   | 1    |
| 9    | 50020727 | Wheel Strut (Optional Rear Steer)      | 2    |
| 10   | 50020728 | Strut Weldment (Optional Rear Steer)   | 2    |
| 11   | 50020726 | Cylinder Anchor (Optional Rear Steer)  | 1    |
| 12   | 90001241 | 1/2 NC X 3-1/2 Hex Bolt, GR5           | 4    |
| 13   | 90001415 | 3/4 NC x 3-1/2 HHCS                    | 2    |
| 14   | 90001437 | 3/4" NC x 8-1/2" Hex Bolt, GR5         | 4    |
| 15   | 90003463 | 3/4" NC x 6" Eye Bolt                  | 4    |
| 16   | 70030143 | Spindle                                | 2    |
| 17   | 90109215 | Seal                                   | 1    |
| 18   | 90101325 | Bearing Cone (Inner)                   | 1    |
| 19   | 90101152 | Bearing Cup (Inner)                    | 1    |
| 20   | 90509039 | Wheel Bolt, 9/16 - 18 NF x 1-1/2" Long | 8    |
| 21   | 90509136 | Hub                                    | 1    |
| 22   | 90509134 | Wheel Nut                              | 8    |
| 23   | 90101324 | Bearing Cup (Outer)                    | 1    |
| 24   | 90101326 | Bearing Cone (Outer)                   | 1    |
| 25   | 90509133 | Washer                                 | 1    |
| 26   | 90509132 | Slotted Hex Nut, 7/8 - 14 UNF          | 1    |
| 27   | 90509129 | Dust Cap                               | 1    |
| 28   | 90509127 | Rim (24 x 10.8)                        | 4    |
| 29   | 90509130 | Tire (12.4 - 24)                       | 4    |
|      | 90509131 | Inner Tube                             | 4    |
| 30   | 70020019 | Pin Weldment                           | 1    |
| 31   | 90001221 | 1/2 NC x 1 Hex Bolt, GR5               | 1    |
| 32   | 90101318 | Split Bushing                          | 2    |
| 33   | 20030024 | 3/4 NC x 6 x 5.5 Long U-Bolt           | 2    |
|      | 70020165 | Hub Assy. (Ref. 17-24)                 | 1    |
|      | 70020167 | Rim and Tire Assy. (LH)                | 2    |
|      | 70020168 | Rim and Tire Assy. (RH)                | 2    |
|      | 70020165 | Hub and Spindle                        | 4    |
|      | 50020737 | Strut with Hub (RH)                    | 1    |
|      | 50020736 | Strut with Hub (LH)                    | 1    |

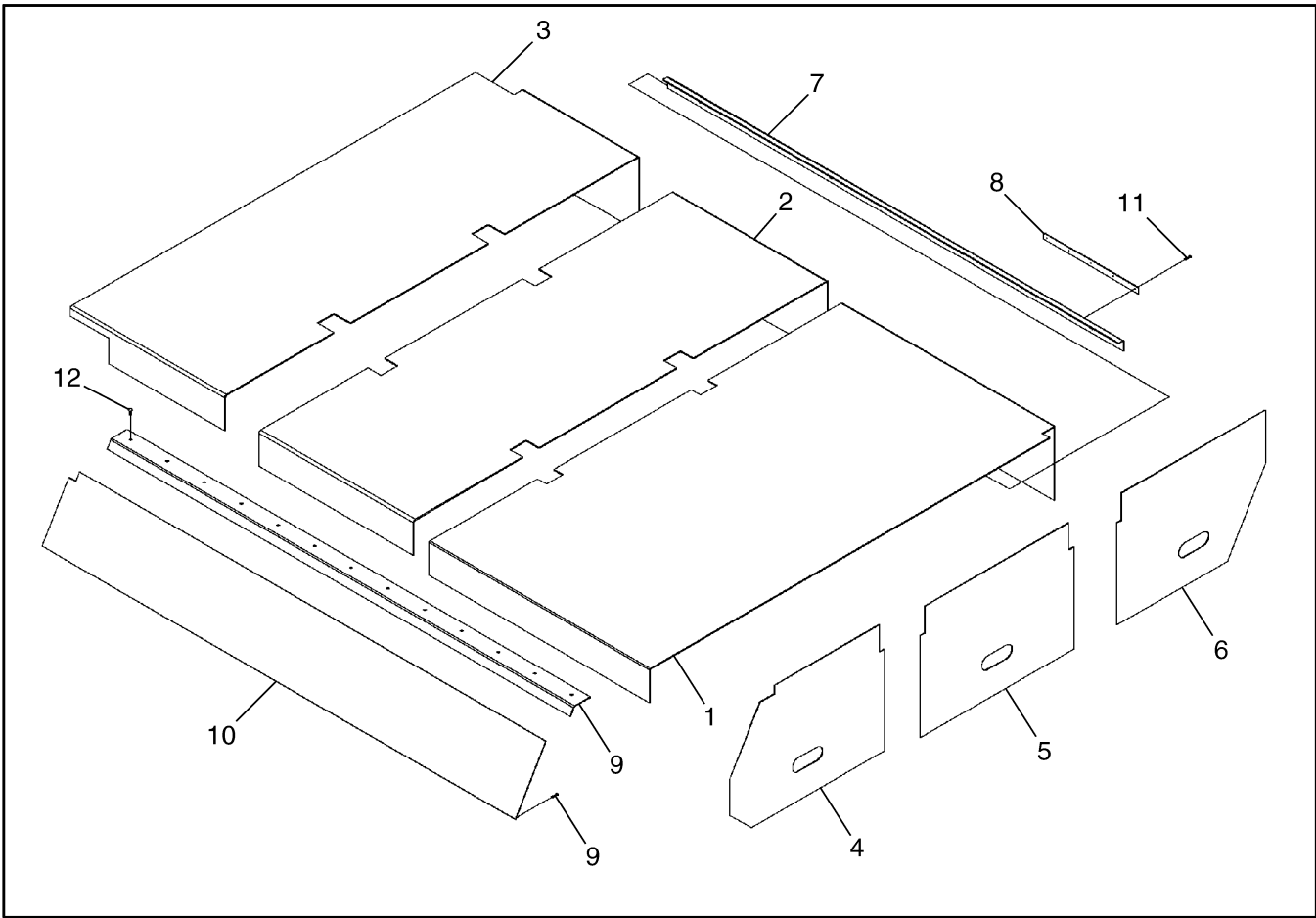
# **MODEL 1222 FOLDING DEFOLIATOR SCALPER COMPONENTS**



## MODEL 1222 FOLDING DEFOLIATOR SCALPER COMPONENTS

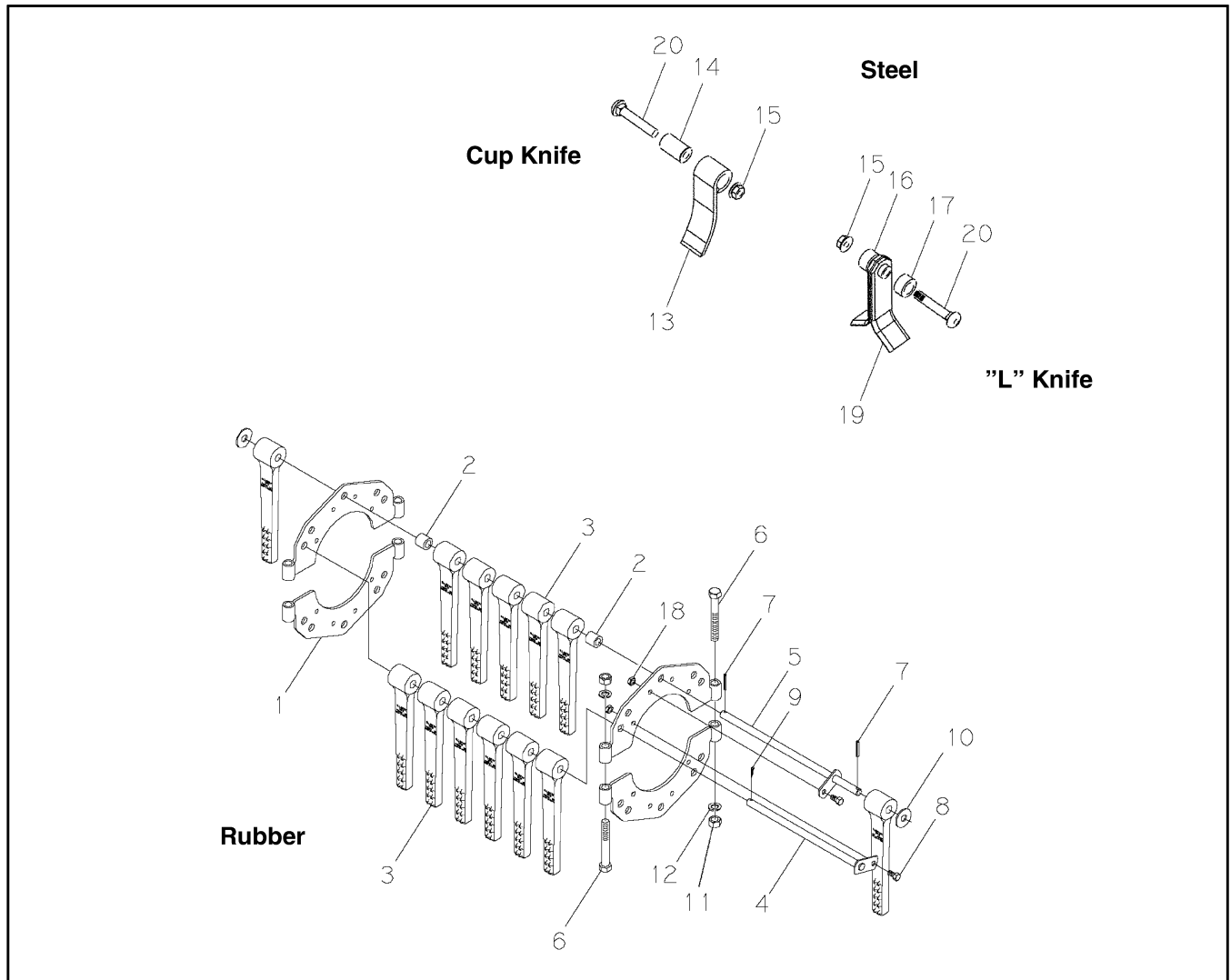
| REF. | PART NO. | DESCRIPTION                                         | QTY. |
|------|----------|-----------------------------------------------------|------|
| 1    | 50020684 | 1-1/4" Pin Weld                                     | 2    |
| 2    | 20033544 | Bushing                                             | 12   |
| 3    | 50020691 | Inner Scalper Unit Set-Back                         | 1    |
| 4    | 50020692 | Outer Scalper Unit Set-Back                         | 1    |
| 5    | 50020693 | Set-Back Spreader                                   | 1    |
|      | 50020738 | Set-Back Rear Steer                                 | 1    |
| 6    | 50020695 | Inner Scalper Mount (with Lift Cylinder Bracket)    | 1    |
| 7    | 50020696 | Outer Scalper Mount (without Lift Cylinder Bracket) | 1    |
| 8    | 50020704 | Scalper Shoe                                        | 6    |
| 9    | 50020705 | Scalper Tube                                        | 6    |
| 10   | 50031556 | Rear Spacer Tube                                    | 12   |
| 11   | 50031557 | Top Rear Adjusting Strap                            | 6    |
| 12   | 50031560 | Bracket Plate                                       | 12   |
| 13   | 50031561 | Front Spreader Tube                                 | 12   |
| 14   | 50030774 | Pivot Bracket                                       | 6    |
| 15   | 50031563 | Rear Top Bracket Plate                              | 12   |
| 16   | 90109219 | Scalper Hub                                         | 6    |
| 16   | 90109220 | Hub Repair Kit                                      | A/R  |
| 17   | 50031578 | U-Bolt                                              | 4    |
| 18   | 50031579 | Scalper Unit Mounting Tube                          | 1    |
| 19   | 50031582 | Scalper Disc                                        | 6    |
| 20   | 90001055 | 1/4 NC x 3/4 Hex Bolt, GR5                          | 36   |
| 21   | 90001225 | 1/2" NC x 1-1/2" Hex Bolt, GR5                      | 6    |
| 22   | 90001247 | 1/2" NC x 4-1/2" Hex Bolt, GR5                      | 16   |
| 23   | 90001245 | 1/2" NC x 4 Hex Bolt, GR5                           | 6    |
| 24   | 90001251 | 1/2" NC x 5-1/2 Hex Bolt, GR5                       | 30   |
| 25   | 90001353 | 5/8" NC x 3 Hex Bolt, GR5                           | 4    |
| 26   | 90001427 | 3/4" NC x 6 Hex Bolt, GR5                           | 6    |
| 27   | 90001437 | 3/4" NC x 8-1/2" Hex Bolt, GR5                      | 4    |
| 28   | 90003463 | 3/4" NC x 6 Eye Bolt                                | 4    |
| 29   | 90006496 | 1/4" NC Top Lock Nut                                | 36   |
| 30   | 90521400 | 3-1/2" x 8" Cylinder                                | 1    |
| 31   | 90006145 | 5/8 NC Spiralock Flag Nut                           | A/R  |
|      | 90521401 | Seal Kit                                            | 1    |

# **MODEL 1222 FOLDING DEFOLIATOR COVER COMPONENTS**



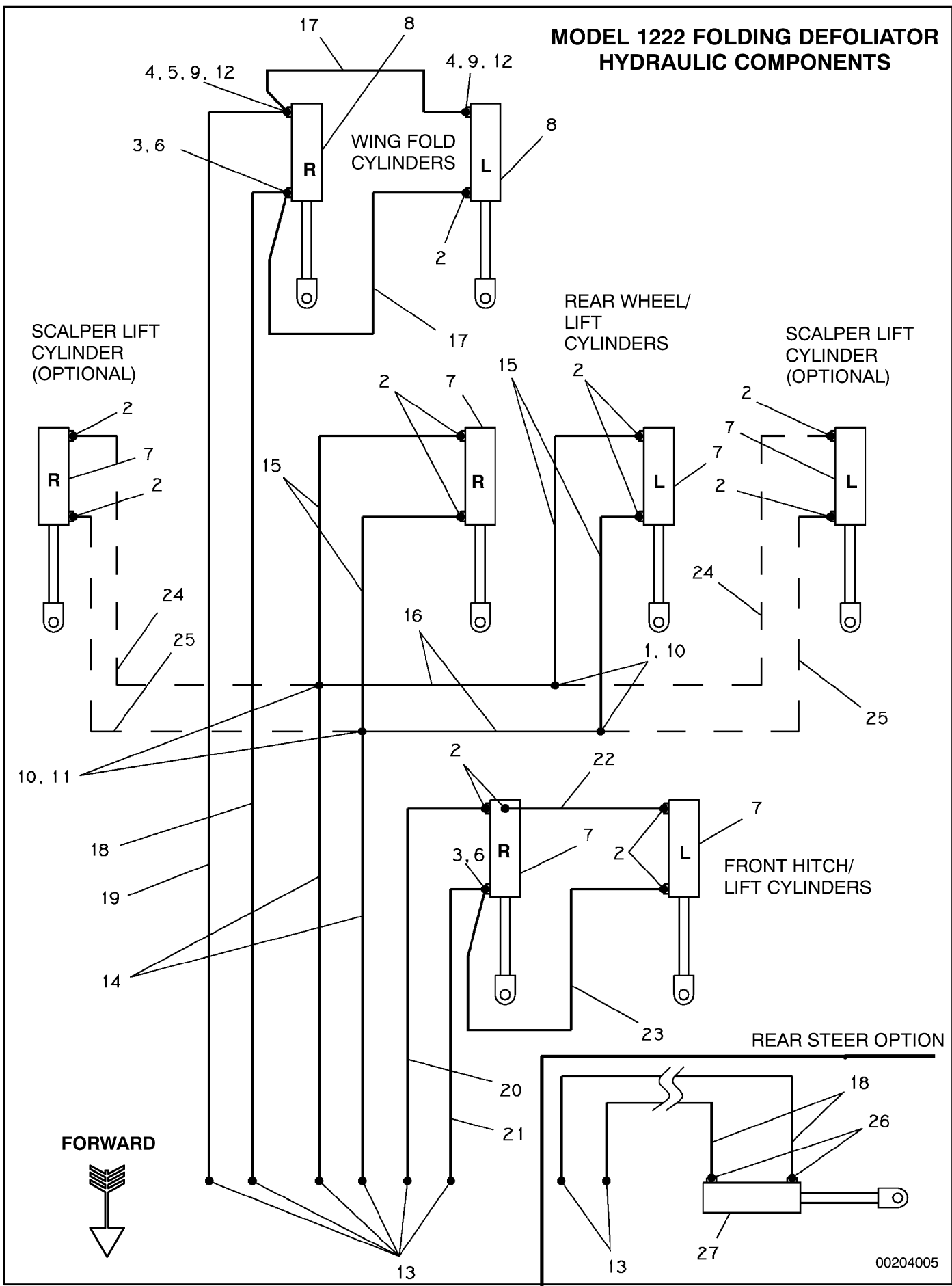
| REF. | PART NO. | DESCRIPTION              | QTY. |
|------|----------|--------------------------|------|
| 1    | 50031537 | Rubber Top (Outside)     | 1    |
| 2    | 50031536 | Rubber Top (Middle)      | 1    |
| 3    | 50031535 | Rubber Top (Inside)      | 1    |
| 4    | 50031612 | Plastic Liner (Front)    | 1    |
| 5    | 50031613 | Plastic Liner (Middle)   | 1    |
| 6    | 50031514 | Plastic Liner (Rear)     | 1    |
| 7    | 50031467 | Rear Top Tie             | 1    |
| 8    | 50031533 | Canvas Clamp Strip       | A/R  |
| 9    | 50031466 | Top Cover Strip          | 1    |
| 10   | 50031538 | Front Plastic Cover (LH) | 1    |
|      | 50031539 | Front Plastic Cover (RH) | 1    |
| 11   | 90016964 | 1/4 x 1-1/2 Tek Screw    | A/R  |
| 12   | 90001695 | 3/8 NC x 1 Carr. Bolt    | A/R  |

# **MODEL 1222 FOLDING DEFOLIATOR FLAIL COMPONENTS**



| REF. | PART NO.  | DESCRIPTION                  | QTY. |
|------|-----------|------------------------------|------|
| 1    | 50020067  | Flail Mounting Bracket       | A/R  |
| 2    | 50030151  | 1" Spacer                    | A/R  |
| 3    | 50030316  | Rubber Flail                 | A/R  |
| 4    | 50020068  | Rubber Flail Pin             | A/R  |
| 5    | 50020069  | Rubber Flail Pin Extension   | A/R  |
| 6    | 90001363  | 5/8 NC x 4-1/2 Hex Bolt, GR5 | A/R  |
| 7    | 90029153  | Roll Pin, 7/32 x 1-1/2       | A/R  |
| 8    | 90001105  | 3/8 NC x 3/4 Hex Bolt, GR5   | A/R  |
| 9    | 90023041  | 3/16 x 1 Cotter Pin          | A/R  |
| 10   | 90011131  | Washer, Nylon 5/8 ID         | A/R  |
| 11   | 90006013  | 5/8 NC Hex Nut               | A/R  |
| 12   | 900011015 | 5/8 Lock Washer              | A/R  |
| 13   | 50530972  | Cup Knife                    | A/R  |
| 14   | 50530405  | Bushing, Wear                | A/R  |
| 15   | 90006145  | 5/8 NC Spiralock Nut         | A/R  |
| 16   | 50031733  | L-Knife Bushing              | A/R  |
| 17   | 50031736  | Spacer                       | A/R  |
| 18   | 90006500  | 3/8 Top Lock Nut             | A/R  |
| 19   | 50531735  | Steel "L" Knife              | A/R  |
| 20   | 90001792  | 5/8 NC x 3-1/2 Carriage Bolt | A/R  |

# **MODEL 1222 FOLDING DEFOLIATOR HYDRAULIC COMPONENTS**

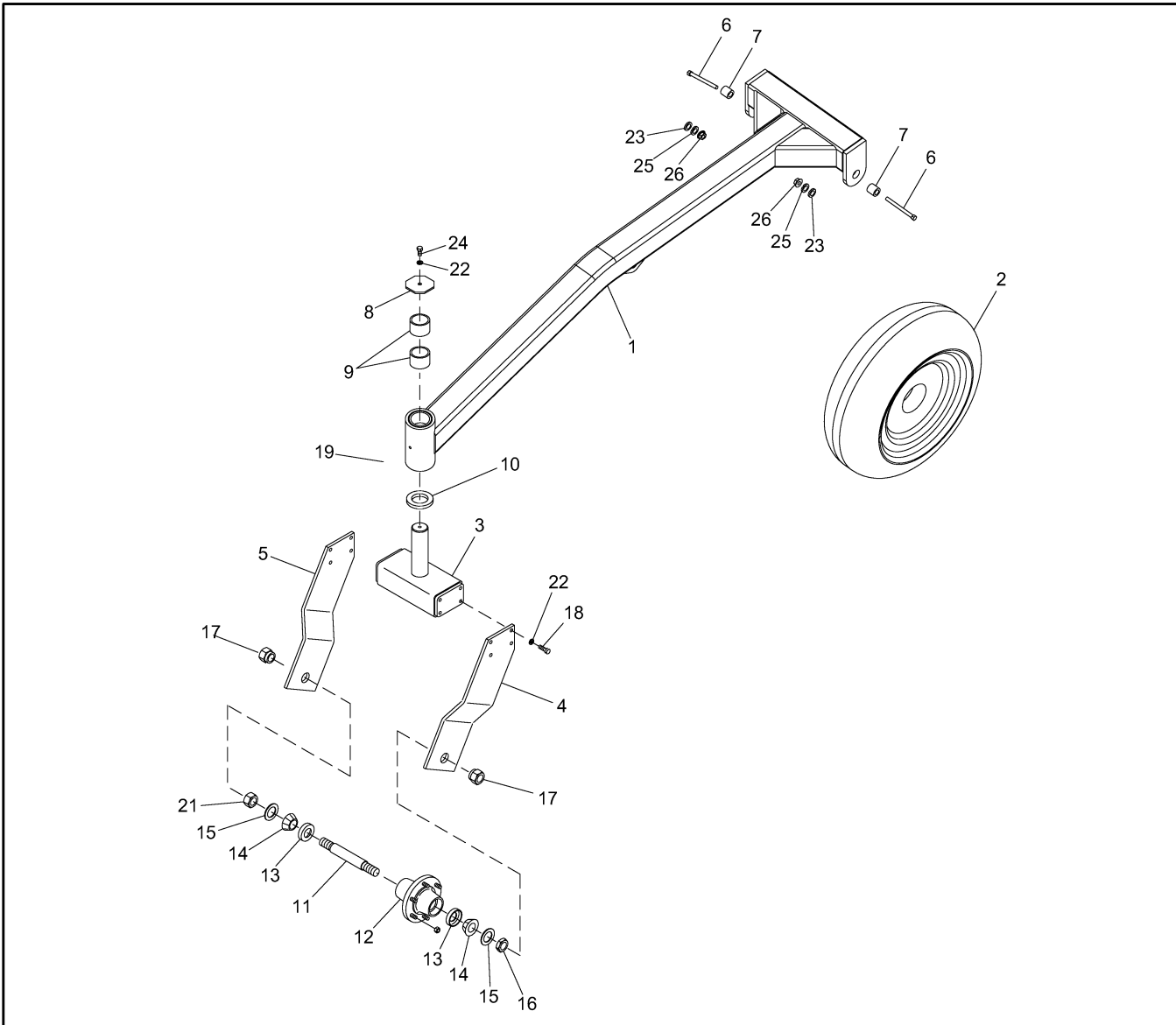


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# **MODEL 1222 FOLDING DEFOLIATOR HYDRAULIC COMPONENTS**

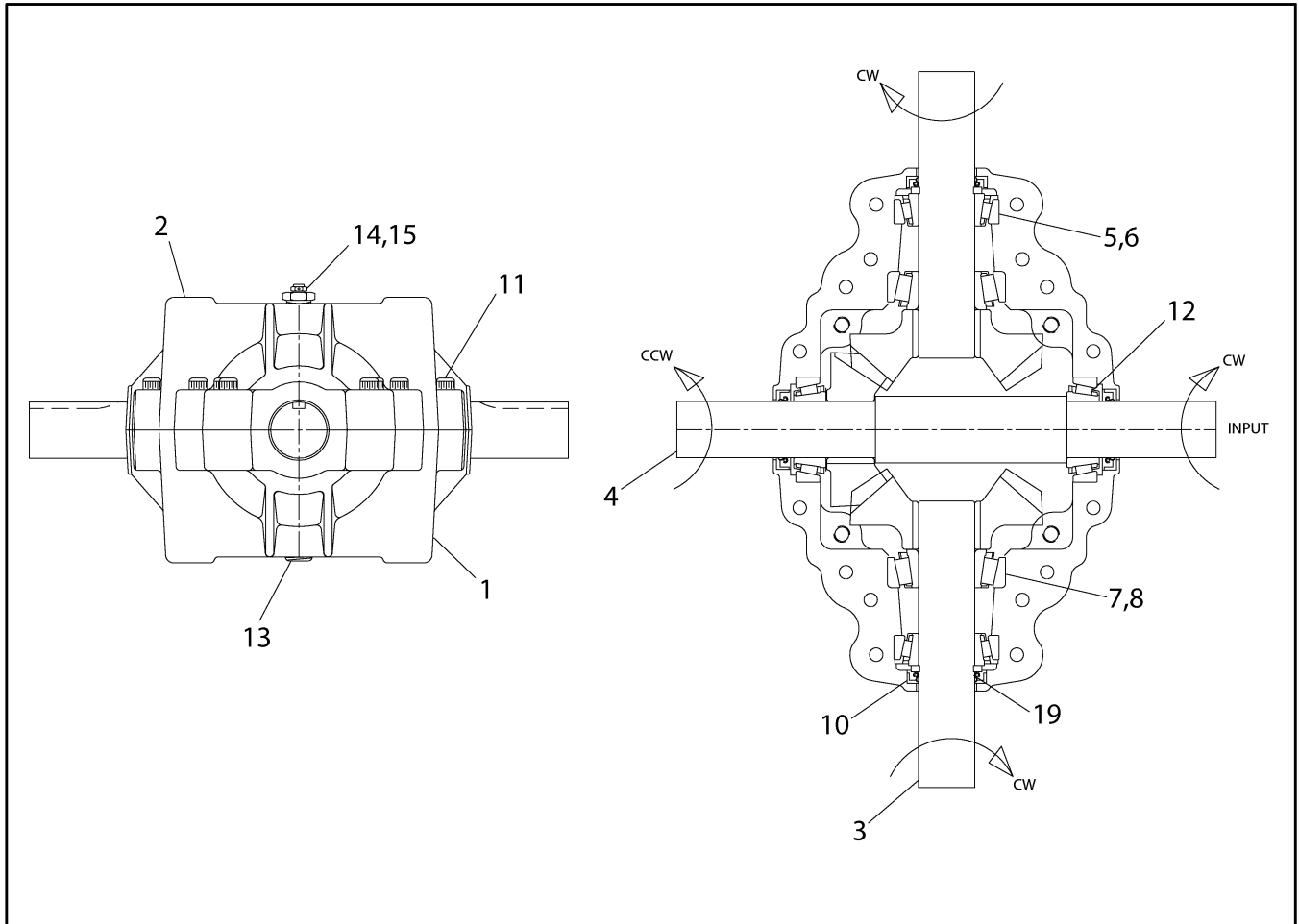
| <b>REF.</b> | <b>PART NO.</b> | <b>DESCRIPTION</b>                        | <b>QTY.</b> |
|-------------|-----------------|-------------------------------------------|-------------|
| 1           | 90503112        | Tee, 6 MJIC                               | 2           |
| 2           | 90503114        | 90 Deg. Adapter, 6 MJIC X 3/4-16 MORB     | 9/13        |
| 3           | 90503115        | Adapter, 6 MJIC X 3/4-16 MORB             | 2           |
| 4           | 90503124        | Adapter, 8 MORB X 3/4 FPT                 | 2           |
| 5           | 90503126        | Tee, 6 MJIC X 6 FJIC X 6 MJIC             | 1           |
| 6           | 90503127        | Tee, 6 MJIC X 6 MJIC X 6 FJIC             | 2           |
| 7           | 90521400        | 3-1/2 x 8 Cylinder with Depth Stop        | 4/6         |
|             | 90521401        | Seal Kit, 3-1/2 x 8                       | A/R         |
| 8           | 90521395        | 4 x 24 Cylinder (Wing Lift)               | 2           |
|             | 90521409        | Seal Kit, 4 x 24                          | 2           |
| 9           | 90503136        | 90 Deg Elbow, 6 MJIC X 6 MPT w/ Bevel     | 2           |
| 10          | 90503140        | Cap                                       | 4           |
| 11          | 90503141        | Cross, 6 MJIC                             | 2           |
| 12          | 90519112        | 3/8" Swivel Flow Restrictor 1/16          | 2           |
| 13          | 90519126        | Male Hydraulic Coupler                    | 6           |
| 14          | 90519133        | 3/8" Hose, 252" Long, 6 FJIC x 8 MORB     | 2           |
| 15          | 90519134        | 3/8" Hose, 53-1/2" Long, 6 FJIC x 6 FJIC  | 4           |
| 16          | 90519135        | 3/8" Hose, 58" Long, 6 FJIC x 6 FJIC      | 2           |
| 17          | 90519136        | 3/8" Hose, 41-1/2" Long, 6 FJIC x 6 FJIC  | 2           |
| 18          | 90519127        | 3/8" Hose, 300" Long, 6 FJIC x 8 MORB     | 1           |
| 19          | 90519138        | 3/8" Hose, 324" Long, 6 FJIC x 8 MORB     | 1           |
| 20          | 90519139        | 3/8" Hose, 150" Long, 6 FJIC x 8 MORB     | 1           |
| 21          | 90519140        | 3/8" Hose, 138" Long, 6 FJIC x 8 MORB     | 1           |
| 22          | 90519141        | 3/8" Hose, 50" Long, 6 FJIC x 6 FJIC      | 1           |
| 23          | 90519142        | 3/8" Hose, 70" Long, 6 FJIC x 6 FJIC      | 1           |
| 24          | 90519143        | 3/8" Hose, 130" Long, 6 FJIC x 6 FJIC     | 2           |
| 25          | 90519121        | 3/8" Hose, 120" Long, 6 FJIC SVL x 8 MORB | 2           |
| 26          | 90503114        | 90 Deg Elbow, 6 MJIC x 3/4-16 MORB        | 2           |
| 27          | 90521194        | 3 x 8 Cylinder (Optional Rear Steer)      | 1           |
|             | 90521379        | Seal Kit, 3 x 8                           | 1           |

## MODEL 1222 FOLDING DEFOLIATOR STABILIZER WHEEL



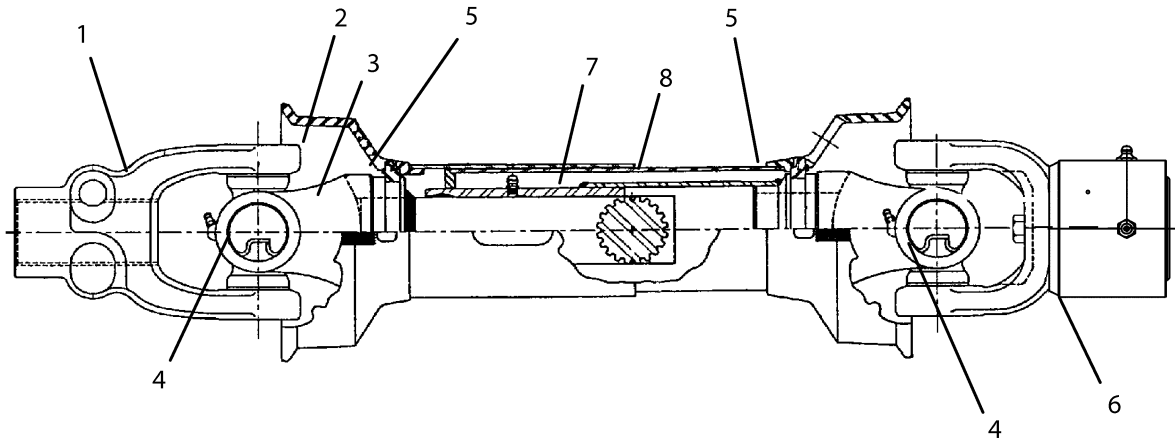
| REF | PART     | QTY | DESCRIPTION                | REF | PART     | QTY | DESCRIPTION                 |
|-----|----------|-----|----------------------------|-----|----------|-----|-----------------------------|
| 1   | 50020788 | 1   | Weld, Stabilizer Wheel Arm | 14  | 90101149 | 2   | Bearing cone                |
| 2   | 20020988 | 1   | Tire & Wheel Assembly      | 15  | 90109127 | 2   | Seal                        |
| 3   | 20020689 |     | Caster pivot weldment      | 16  | 20032726 | 1   | Nut, short 1-1/4 NF         |
| 4   | 20032622 | 1   | Side plate RH              | 17  | 20031847 | 2   | 1-1/4 NF Shoulder nut       |
| 5   | 20032621 |     | Side plate LH              | 18  | 90001225 | 8   | 1/2 NC x 1-1/2 Hex bolt GR5 |
| 6   | 90001407 | 2   | 3/4 x 3 Hex Bolt           | 19  | 90515024 | 1   | 1/4-28 UNF Straight zerk    |
| 7   | 50031751 | 2   | Bushing Steel              | 20  | 20020705 | 1   | Ratchet Jack, not shown     |
| 8   | 20031219 | 1   | Retainer plate             | 21  | 90006024 | 1   | 1-1/4 NF Hex nut            |
| 9   | 20031766 | 2   | Bushing                    | 22  | 90011013 | 9   | 1/2 Lock Washer             |
| 10  | 20031233 | 1   | Thrust bearing             | 23  | 90011038 | 2   | 3/4 Flat Washer             |
| 11  | 20031240 | 1   | Spindle                    | 24  | 90001221 | 1   | 1/2 NC x 1 Hex bolt GR5     |
| 12  | 90509082 | 1   | Hub with cups              | 25  | 90011017 | 2   | 3/4 Lock Washer             |
| 13  | 90101148 | 2   | Bearing cup                | 26  | 90006015 | 3   | 3/4 NC Hex Nut              |

# **MODEL 1222 FOLDING DEFOLIATOR GEARBOX - SUPERIOR (4-WAY)**



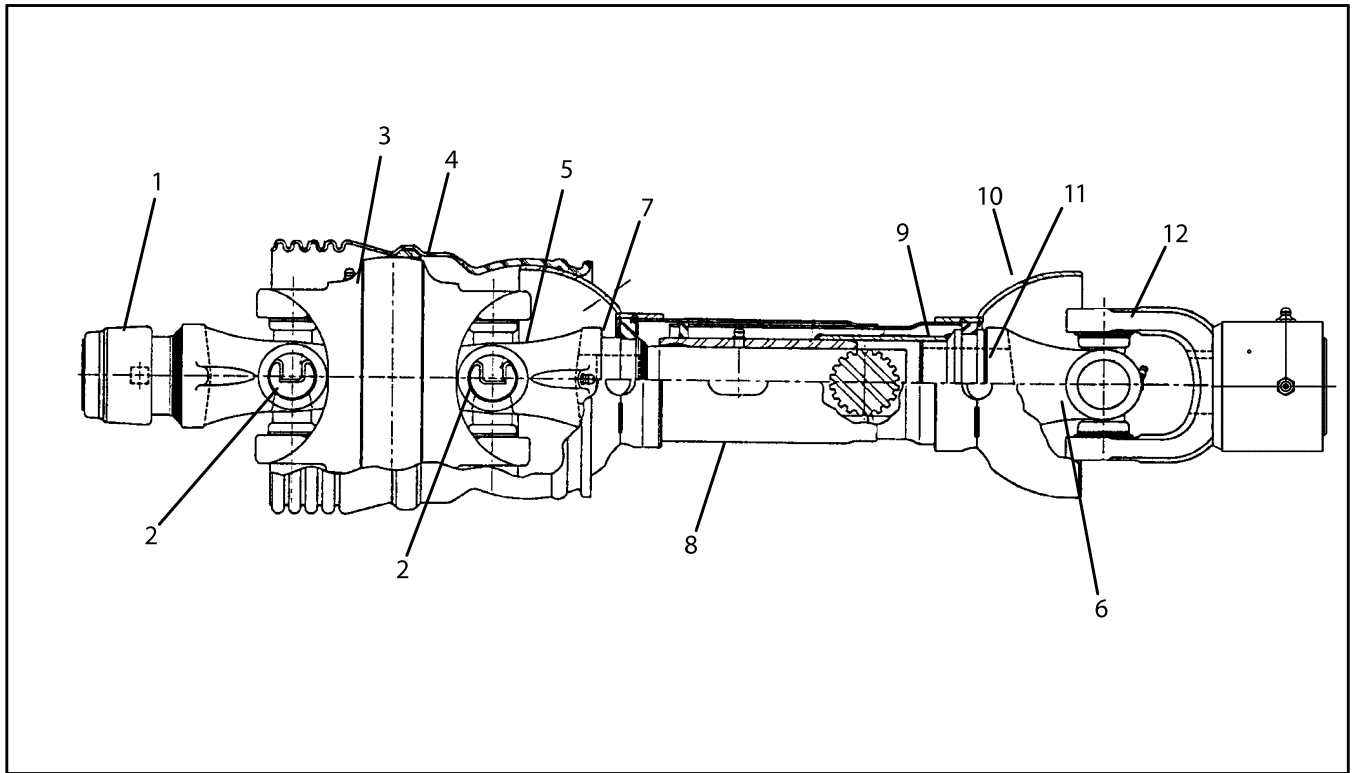
| REF. | PART NO. | DESCRIPTION                    | QTY. |
|------|----------|--------------------------------|------|
| 1    | 90315526 | Casting, Mach 600              | 1    |
| 2    | 90315525 | Casting, Mach 600              | 1    |
| 3    | 90315561 | Assy, Stub Shaft/Gear R600     | 2    |
| 4    | 90315562 | Assy, Cross Shaft/Gear         | 1    |
| 5    | 90101150 | Bearing Cone 25581             | 3    |
| 6    | 90101152 | Bearing Cup 25520              | 4    |
| 7    | 90101151 | Bearing Cone 3782              | 2    |
| 8    | 90101153 | Bearing Cup 3720               | 2    |
| 9    | 90039030 | Retaining Ring, Ext 1.750 Shft | 2    |
| 10   | 90109125 | Seal TC-1.750-2.437-.312       | 4    |
| 11   | 90003033 | Bolt, 3/8-16 x 2.25 SHCS       | 16   |
| 12   | 90101328 | Bearing Cone 25580             | 1    |
| 13   | 90503078 | Plug, 1/2-14 NPT SCHD W/3M     | 1    |
| 14   | 90503080 | Plug, Vent 5PSI                | 1    |
| 15   | 90515359 | Bushing, 1/2 NPT to 1/8 NPT    | 1    |
| 16   | 90515560 | Gearbox, Complete              | 1    |

# **MODEL 1222 FOLDING DEFOLIATOR PTO SHAFT - WEASLER**



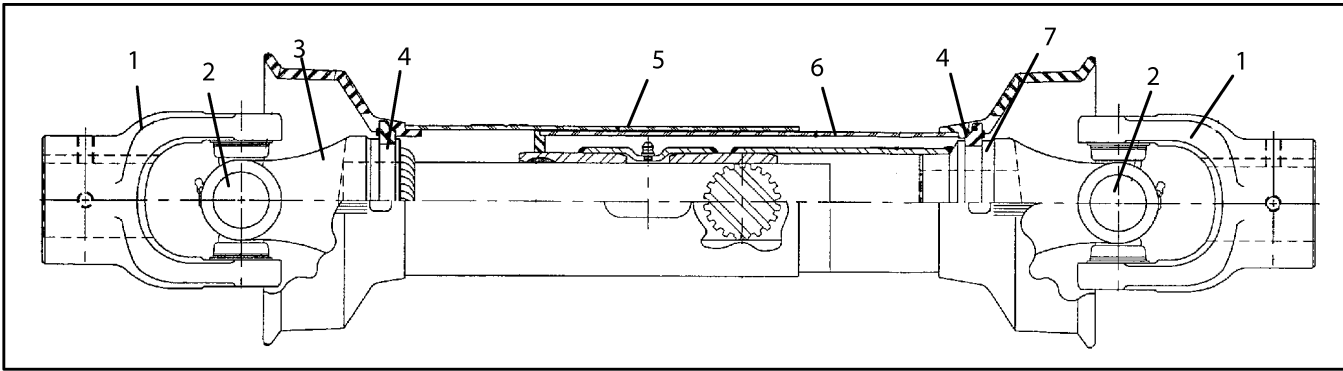
| REF. | PART NO. | DESCRIPTION                         | QTY. |
|------|----------|-------------------------------------|------|
| 1    | 90317472 | Q.D. Yoke Assem bly (1-3/8")        | 1    |
|      | 90318068 | Q.D. Repai r Kit (1-3/8")           | 1    |
|      | 90317531 | Q.D. Yoke Assem bly (1-3/4")        | 1    |
|      | 90317729 | Q.D. Repai r Kit (1-3/4")           | 1    |
| 2    | 90318069 | Outer Guard                         | 1    |
| 3    | 90318070 | Yoke & S haft                       | 1    |
| 4    | 90317525 | 44R Cross & Bear ing Kit            | 2    |
| 5    | 90317851 | Nylon Bearing                       | 2    |
| 6    | 90318107 | Yoke w/ Over Run                    | 2    |
|      | 90318188 | Over Run Repair Kit (For 903-18107) |      |
| 7    | 90318063 | Yoke, Tube & Slip Sleeve            | 1    |
| 8    | 90318062 | Inner Guard                         | 1    |
| 9    | 90029223 | Roll Pin, 3/8 x 2-1/2 (Not Shown)   | 1    |
|      | 90318054 | PT O Shaft (1-3/4"), complete       | 1    |
|      | 90318053 | PT O Shaft (1-3/8"), complete       | 1    |
|      | 90318072 | Tractor Half With Guard, 1-3/8"     | 1    |
|      | 90318071 | Tractor Half With Guard, 1-3/4"     | 1    |
|      | 90318066 | Implement Half With Guard           |      |

**MODEL 1222 FOLDING DEFOLIATOR  
PTO SHAFT - WEASLER  
CONSTANT VELOCITY**



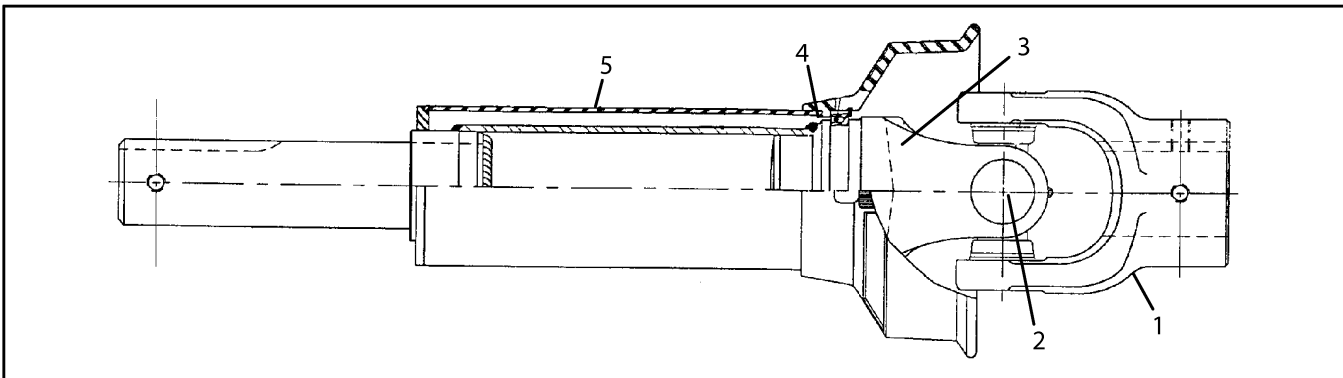
| REF. | PART NO.  | DESCRIPTION                                   | QTY. |
|------|-----------|-----------------------------------------------|------|
| 1    | 9031771 1 | Safety Slide Lock Yoke Assem bly, 1-3/8"      | 1    |
|      | 90317427  | Repai r Kit, 1-3/8"                           | 1    |
|      | 90317771  | Saf ety Slide Lock Yoke Assem bly, 1-3/4"     | 1    |
|      | 90317772  | Repai r Kit, 1-3/4"                           | 1    |
| 2    | 90317712  | Cross & Bear ing Kit                          | 2    |
| 3    | 90317713  | Center Housi ng Assem bly                     | 1    |
| 4    | 90318103  | Guard Set                                     | 1    |
| 5    | 90318105  | Yoke & Shaft                                  | 1    |
| 6    | 90317525  | Cross & Bear ing Kit                          | 1    |
| 7    | 90318104  | Nylon Bearing Repair Kit                      | 1    |
| 8    | 90318103  | Guard Set                                     | 1    |
| 9    | 90318104  | Nylon Bearing Repair Kit                      | 1    |
| 10   | 90318103  | Guard Set                                     | 1    |
| 11   | 90318101  | Yoke, Tube & Slip Sleeve                      | 1    |
| 12   | 90318107  | Yoke w/ Over Run                              | 1    |
| 13   | 90029223  | Roll Pin, 3/8 x 2-1/2 (Not Shown)             | 1    |
|      | 90318188  | Over Run Repair Kit (For 903-18107)           | 1    |
|      | 90318090  | PT O Shaft, 1-3/8" Complete (CV)              | 1    |
|      | 90318091  | PT O Shaft, 1-3/4" Complete (CV)              | 1    |
|      | 90318098  | PT O Half With Guard Set, 1-3/8" tractor half |      |
|      | 90318099  | PT O Half With Guard Set, 1-3/4" tractor Half |      |
|      | 90318100  | PT O Half With Guard Set, Implement           |      |

## MODEL 1222 FOLDING DEFOLIATOR WING DRIVE LINE



| REF. | PART NO. | DESCRIPTION                        | QTY. |
|------|----------|------------------------------------|------|
| 1    | 90317639 | Yoke                               | 2    |
| 2    | 90317525 | 44R Cross and Bearing Kit          | 2    |
| 3    | 90318079 | Yoke and Shaft                     | 1    |
| 4    | 90317851 | Nylon Repair Kit                   | 2    |
| 5    | 90318080 | Outer Guard                        | 1    |
| 6    | 90318081 | Inner Guard                        | 1    |
| 7    | 90318082 | Yoke, Tube, and Slip Sleeve        | 1    |
|      | 90318075 | Joint and Shaft Half Asm. w/ Guard | 1    |
|      | 90318076 | Joint and Shaft Half Asm           | 1    |
|      | 90318077 | Joint and Tube Half Asm. w/ Guard  | 1    |
|      | 90318078 | Joint and Tube Half Asm            | 1    |
|      | 90317055 | Complete Shaft                     |      |

## MODEL 1222 FOLDING DEFOLIATOR INTERMEDIATE SHAFT



| REF. | PART NO. | DESCRIPTION                | QTY. |
|------|----------|----------------------------|------|
| 1    | 90317639 | Yoke                       | 1    |
| 2    | 90317525 | 44R Cross and Bearing Kit  | 1    |
| 3    | 90318085 | Yoke, Tube, and Stub Shaft | 1    |
| 4    | 90317851 | Nylon Repair Kit           | 1    |
| 5    | 90318084 | Inner Guard                | 1    |
|      | 90318083 | Joint and Tube half Asm.   | 1    |
|      | 90318052 | Assy. Complete             |      |

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# WARRANTY

Please Enter Information Below and Save For Future Reference.

Date Purchased: \_\_\_\_\_ From (Dealer): \_\_\_\_\_

Model Number: \_\_\_\_\_ Serial Number: \_\_\_\_\_

ALLOWAY STANDARD, d/b/a ALLOWAY, warrants this product to be free from defect in material and workmanship for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of ALLOWAY, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than ALLOWAY, a ALLOWAY authorized dealer or distributor, and/or a ALLOWAY authorized service center; This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through ALLOWAY.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

ALLOWAY makes no warranty, express or implied, with respect to tires or other parts or accessories not manufactured by ALLOWAY. Their respective manufacturers, if any, provide warranties for these items, separately. ALLOWAYS' obligation under this Warranty is limited to, at ALLOWAYS' option, the repair or replacement, free of charge, of the product if ALLOWAY, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. The product must be returned to ALLOWAY with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. ALLOWAY shall complete such repair or replacement within a reasonable time after ALLOWAY receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. ALLOWAY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALLOWAY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

ALLOWAY shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing. Alloway specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss Incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect ALLOWAYS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company; including without limitation, ALLOWAY, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

This Warranty is effective only if the warranty registration card is returned within ten (10) days.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

Alloway  
4230 14<sup>th</sup> Ave. NW  
Fargo, North Dakota 58102  
701-356-4983

## **WARRANTY**

ALLOWAY STANDARD, d/b/a ALLOWAY, warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of ALLOWAY, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

ALLOWAYS' obligation under this Warranty is limited to, at ALLOWAYS option, the repair or replacement, free of charge, of the product. If ALLOWAY, in its sole discretion, deems it, to be defective or in noncompliance with this Warranty. The product must be returned to ALLOWAY with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. ALLOWAY shall complete such repair or replacement within a reasonable time after ALLOWAY receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. ALLOWAY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALLOWAY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

ALLOWAY shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach, of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Alloway specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect ALLOWAYS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, ALLOWAY, Its authorized dealers, distributors, and service centers, IS authorized to alter, modify, or enlarge this Warranty.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

Alloway  
4230 14<sup>th</sup> Ave. NW  
Fargo, North Dakota 58102  
701-356-4983



**PART NO.**

**500-3-1672**

**Alloway Equipment  
Company**

4230 14th Ave. NW

Fargo, North Dakota 58102

701-356-4983

**alloway** STANDARD