

AG SHIELD



5 section LandRoller(46-70 foot)

OPERATOR'S HANDBOOK AND PARTS MANUAL

Ag Shield Manufacturing
Box 9, Benito, Manitoba R0L 0C0
Phone 800-561-0132 or 204-539-2000
Fax 204-539-2130
E-mail address sales@agshield.com
Please visit web site at <http://www.agshield.com>

Printed in Canada

April 15 2015

REV 3

-Part No 800055

Serial no. 1215501 and up



WARRANTY REGISTRATION-LandRoller

RETURN TO:

AG SHIELD MANUFACTURING

BOX 9, BENITO, MB, R0L 0C0

PHONE 800-561-0132 or 204-539-2000 FAX 204-539-2130

E-mail sales @agshield.com

This form must be filled out by the dealer (if applicable) and signed by both the dealer and customer at the time of delivery, and returned to Ag Shield within 10 days to validate warranty.

Customer _____

Dealer _____

Address _____

Address _____

City, _____

City, _____

Prov. _____ Code _____

Prov. _____ Code _____

phone(_____) _____

phone(_____) _____

fax _____

fax _____

Model and size _____

Model and size _____

Serial no _____

Delivery Date _____

Delivery Date _____

Used for - farm custom / rental

Used for - farm custom / rental

SAFETY

DEALER INSPECTION REPORT

____ Hydraulic connections all sealed

____ All decals installed

____ Reflectors clean

____ Review operating and safety instructions

____ Retainer pins installed as required

I have thoroughly instructed the customer on the above described equipment, including the content of the Owner's Handbook, equipment care, adjustments, safe operation, and applicable warranty policy.

Date _____ Dealer signature _____

The equipment was complete with all parts in good working order except as noted below. I have received the owner's handbook, and I have been thoroughly instructed in the use of it. I have been instructed in the care, adjustments, the safe operation of the machine, and the applicable warranty policy.

Date _____ Customer signature _____

Except _____

1. TABLE OF CONTENTS

1.	TABLE OF CONTENTS	3
2.	INTRODUCTION AND SIGN-OFF FORM	4
3.	SAFETY	5
3.1.	SAFETY OVERVIEW	6
3.2.	GENERAL SAFETY	6
3.3.	MAINTENANCE SAFETY	7
3.4.	THROWN OBJECTS SAFETY	7
3.5.	CHAIN DRIVE SAFETY	7
3.6.	HYDRAULIC SAFETY	7
3.7.	MECHANICAL GEARBOX DRIVELINE SAFETY	7
3.8.	STORAGE SAFETY	8
3.9.	TRANSPORT SAFETY	8
3.10.	REFUELING SAFETY	8
3.11.	TIRE SAFETY	8
3.12.	OPERATING SAFETY	8
3.13.	SAFETY DECALS	9
4.	SETUP FROM SHIPPING MODE	15
4.1.	TOWED OUT SHIPPING	15
4.2.	TRUCK SHIPPING	15
5.	OPERATIONS	16
5.1.	EASIFOLD (NOT POWERFOLD) FOLDING FROM ROAD TO FIELD	16
5.2.	“EASIFOLD” FOLDING FROM FIELD TO ROAD PROCEDURE	20
5.3.	POWERFOLD FOLDING FROM ROAD TO FIELD	22
5.4.	ADJUSTING POWERFOLD SEQUENCE VALVE OPERATING PRESSURES.	24
5.5.	POWERFOLD FOLDING FROM FIELD TO ROAD PROCEDURE	24
5.6.	WATER FILLING ROLLER TANK	25
5.7.	ACRE METER OPTION	26
5.8.	LUBRICATION	28
6.	SPECIFICATIONS – 5 SECTION LANDROLLERS	29
7.	PARTS LIST 3 SECTION LANDROLLER	30
7.1.	TOW HITCH 3 SECTION UNITS- 800450	30
7.2.	CENTER FRAME ASSEMBLY	31
7.3.	INNER WING FRAME ASSEMBLY	32
7.4.	5 SECTION KNUCKLES FRONT HITCH	33
7.5.	CENTER SECTION 5 SECTION 62 FOOT REAR VIEW	34
7.6.	CENTER SECTION 5 SECTION 62 FOOT END OF ROLLER	35
7.7.	CENTER SECTION WHEELS HYDRAULICS	36
7.8.	62 FT 5 SECTION RH WING	37
7.9.	62 FT 5 SECTION LH WING	38
7.10.	OUTER FRAME / ROLLER 5 SECTION 62 FT	39
7.11.	OUTER WHEEL ASSEMBLY	40
7.12.	SPINDLE AND HUB PARTS 8 BOLT-113686	42
7.13.	HYDRAULIC SCHEMATIC 5 SECTION 62 FT BOOM	43
8.	WARRANTY	44
9.	POWERFOLD OPTION INSTRUCTIONS	48

3. SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means:
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the Ag Shield Recon 300 and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.



3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

- DANGER -** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components, which for functional purposes, cannot be guarded.
- WARNING -** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
- CAUTION -** Indicates a potentially hazardous situation that, if not avoided, could result in minor injury. It may also be used to alert against unsafe practices.

3.1. SAFETY OVERVIEW

YOU are responsible for the **SAFE** operation and maintenance of your Ag Shield Recon 300. **YOU** must ensure that you and everyone who is going to operate, maintain or work around the LandRoller be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the LandRoller.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- LandRoller owners must give operating instructions to operators or employees before allowing them to operate the LandRoller, and at least annually thereafter per OSHA regulation 1928.57.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

3.2. GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or transporting the LandRoller.
2. Only trained competent persons shall operate the LandRoller. An untrained operator is not qualified to operate the machine.



3. Have a first-aid kit available for use should the need arise and know how to use it.



4. Have a fire extinguisher available for use should the need arise and know how to use it.



5. Do not allow riders.

6. Wear appropriate protective gear. This list includes but is not limited to:



- A hard hat
- Protective shoes with slip resistant soles
- Protective glasses or goggles
- Heavy gloves
- Hearing protection

7. Stop the engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
8. Review safety related items with all personnel annually.

3.3. MAINTENANCE SAFETY

1. Review the Operators Manual and all safety items before working with, maintaining or operating the LandRoller.
2. Stop the tractor engine, place all controls in neutral, set park brake, remove ignition key, wait for all moving pads to stop before servicing, adjusting, repairing or unplugging.
3. Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
4. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
5. Keep hands, feet, clothing and hair away from all moving and/or rotating pads.
6. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
7. Place stands or blocks under the frame before working beneath the machine.

3.4. THROWN OBJECTS SAFETY

1. Always wear safety goggles when working near or adjusting conditioner.
2. Never stand or run directly behind rollers when machine is rotating, as rollers are capable of throwing obstacles at greater than 30 mph.
3. Shields are provided to reduce thrown debris hazard, Leave chain guard in place, be sure the rock guards are in place, and inspect chain guard frequently to ensure protection is in good repair.

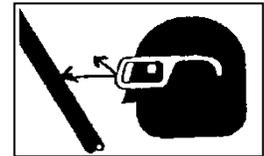
3.5. CHAIN DRIVE SAFETY

1. Always keep safety guard in place. You might be the one who trips and falls into a rotating machine.
2. Never adjust the chain tension, roller spacing, roller tension, or other items with the machine running, always stop the machine before opening chain cover.

3.6. HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before dismounting.

2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses and steel lines.
4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs can fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
7. Before applying pressure to hydraulic system make sure that all connections are tight and that all hoses and fittings are in good condition.



3.7. MECHANICAL GEARBOX DRIVELINE SAFETY

The operator must obey all safety labels and must maintain the proper shielding. A high percentage of driveline injuries occur when safety shielding is missing or not functioning properly.

1. Do not operate the machine without all driveline, tractor, and implement shields in place.
2. Before operating the machine, be sure drivelines are attached securely to the tractor and to the implement.
3. Keep operators and bystanders away from all moving parts.
4. Shut off tractor engine and remove key before coming close to the implement or doing any maintenance
5. Drive shafts shielding must be kept in condition and checked daily to see that it is free spinning on the inner shaft.

3.8. STORAGE SAFETY

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored LandRoller.
3. Store in a lower position so persons cannot be injured or property cannot be damaged by mechanical failure.

3.9. TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the LandRoller in the field and/or on the road.
2. Check with local authorities regarding machinery transport on public roads. Obey all applicable laws and regulations.
3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
5. Ensure that the trailer is hitched positively to the towing vehicle. Always use a safety chain between the machine and the tractor.
6. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
7. Always use hazard warning flashers on the Recon 300 when transporting unless prohibited by law.

3.10. REFUELING SAFETY



sparks.

1. Handle fuel with care. It is highly flammable.
2. Do not refuel the machine while smoking or when near open flame or

3. Stop engine before refueling. Clean up spilled fuel before restarting engine.

3.11. TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion, which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Operate the tires at the pressures, loads, and speeds suggested by the manufacturer.
5. Tires rated Farm Hiway Service are rated for intermittent service at 50 mph / 80 kilometers per hour.

3.12. OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Stop engine place all controls in neutral, set park brake, remove ignition key, wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Before rolling a field, be familiar with all potential hazards: trees, rocks ditches, gullies, etc. Plan your route to avoid hazards. Keep LandRoller width in mind when maneuvering to avoid obstacles.
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Keep all shields and guards in place when operating.
6. Do not allow riders on the LandRoller or tractor during operation or transporting.
7. Clear the area of all bystanders, especially children, before starting.
8. Stay away from machine when folding deflectors. Keep others away.
9. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
10. Review safety instructions annually

3.13. SAFETY DECALS

Become familiar with these decals, and the hazards they are marking. The decal locations are detailed in this section below



part # 113552 high pressure fluid



Part # 116116 Danger pinch point hazard



Part # 113523

part number 113555 warning pinch point hazard

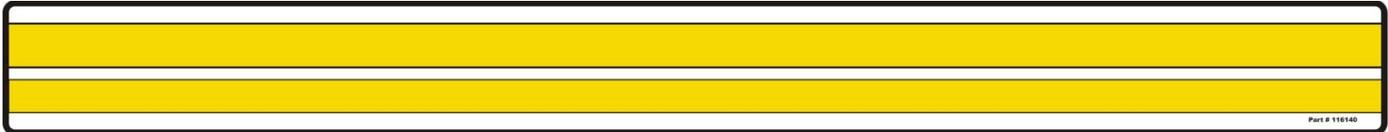


FIGURE 1 #116140 YELLOW AND WHITE AG SHIELD STRIPES



FIGURE 2 DECAL #116141 YELLOW AND WHIRE STRIPES AG SHIELD



FIGURE 3 116142 "LANDROLLER" YELLOW AND WHITE STRIPES



FIGURE 4 DECAL AGSHIELD MFG SIDE REAR OF HITCH 3X36 #116107

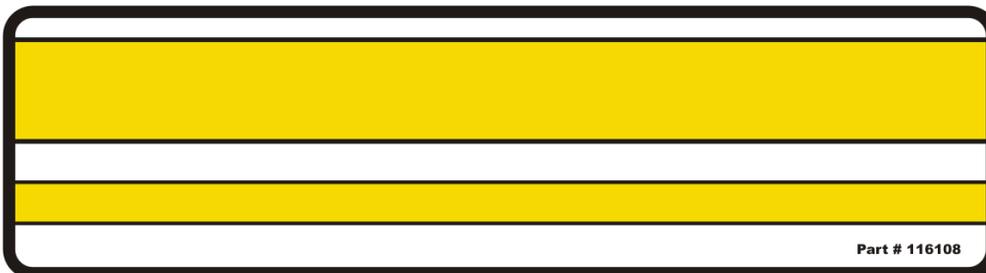


FIGURE 5 STRIPS SIDE DEFLECTOR 3X12 IN #116108



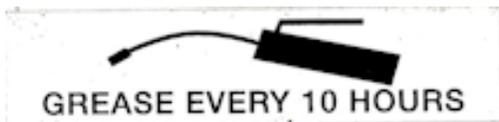
FIGURE 6 DECAL 12-62-5



FIGURE 7 DECAL 12-66 5



FIGURE 8 DECAL 12-70-5



part # 800819



part# 800818



red and white tape # 803088 for cut length – bulk part #

part



Serial plate part number #800817



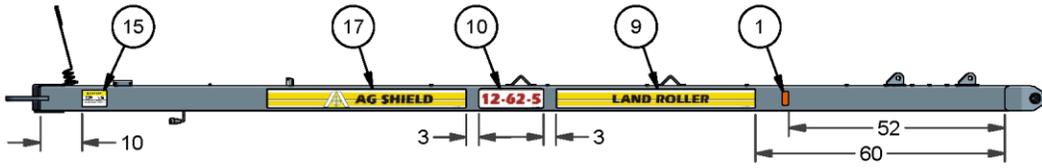
FIGURE 9 DANGER DECAL #116116



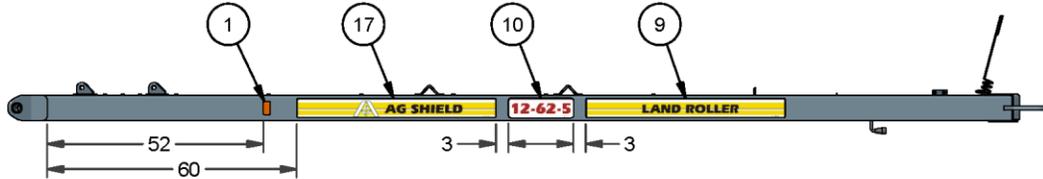
WARNING OVERHEAD HAZARD #113549

5 SECTION HITCH AND CENTER SECTION DECAL LOCATIONS

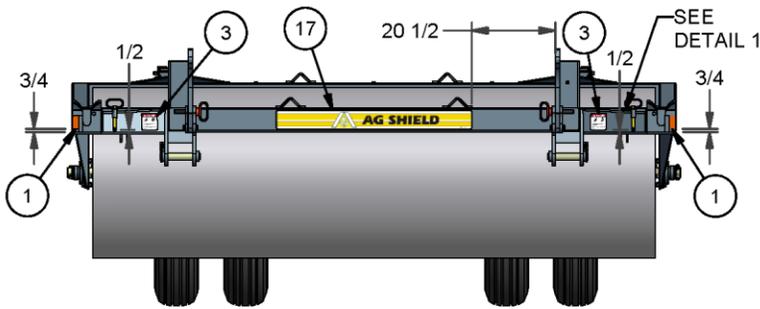
031511 QZ



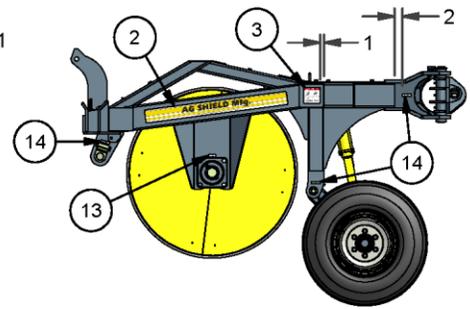
LH SIDE VIEW



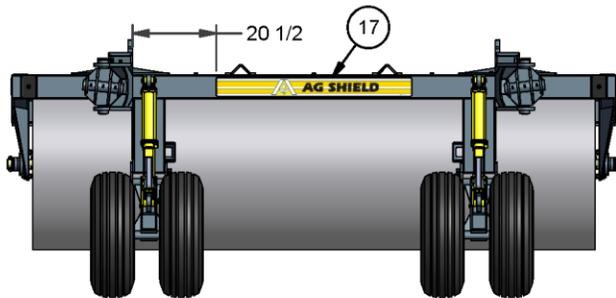
RH SIDE VIEW



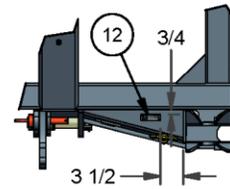
FRONT VIEW



LH SIDE VIEW
RH SIDE AS OPPOSITE



REAR VIEW

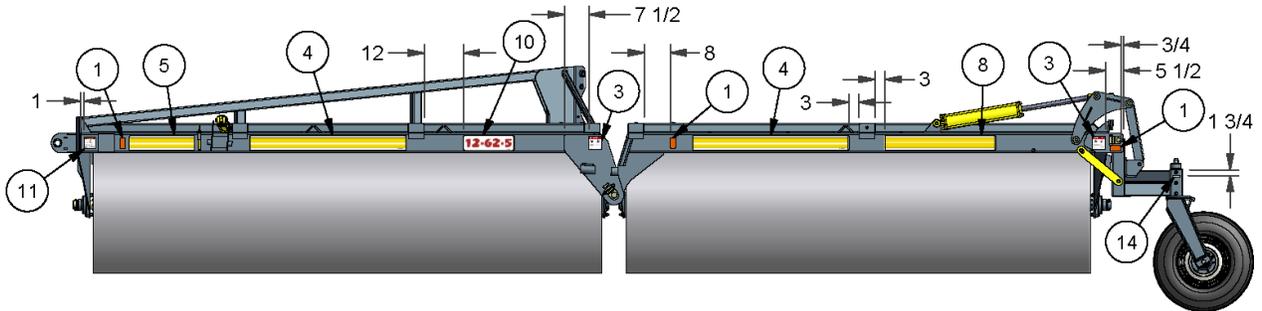


DETAIL 1
SERIAL NUMBER
LOCATION

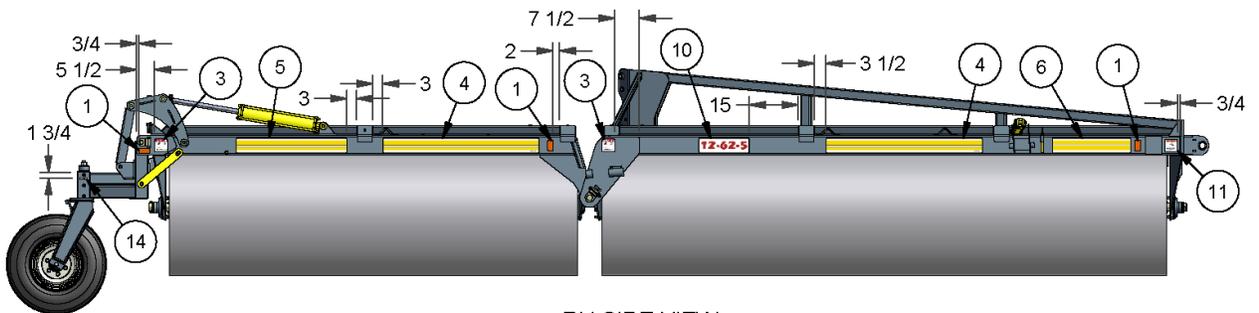
Decal Parts List			Decal Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	12	113561 Amber Reflector	10	4	116145 Decal Unit Number 12-62-5
2	2	116107 Agshield Ltd Decal	11	2	116549 Decal Overhead Hazard
3	10	116116 Pinch Point Danger Decal	12	1	800817 Serial Tag Plate
4	4	116140 Decal Yellow Stripe	13	6	800818 Grease Annually Decal
5	3	116140A 5S Decal Yellow Stripe 20"	14	24	800819 Grease 10 hours Decal
6	1	116140B 5S Decal Yellow Stripe 24"	15	1	800820 High Pressure Fluid Decal
7	2	116140C 5S Decal Yellow Stripe 14"	16	2	803088 Safety Tape
8	2	116140D 5S Decal Yellow Stripe 34"	17	4	803094 Decal Stripe Agshield
9	2	116142 Decal Stripe Land Roller			

5 SECTION WING DECAL LOCATIONS (CON'T)

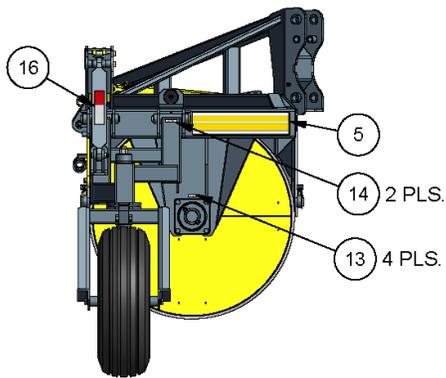
031511 OZ



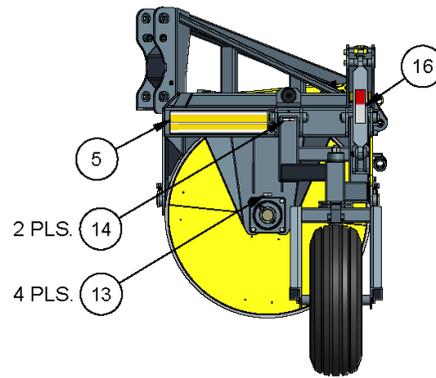
LH SIDE VIEW
LH WINGS



RH SIDE VIEW
RH WINGS



LH REAR VIEW



RH REAR VIEW

4. Setup from Shipping Mode

4.1. TOWED OUT SHIPPING

Towed out units should be field ready, Check wheel bearings for correct adjustment, grease and go to the field.

4.2. TRUCK SHIPPING

5. OPERATIONS



DANGER

WATCH FOR PEDESTRIAN TRAFFIC- Rollers will always win and pedestrians will lose the battle with a LandRoller.

5.1. EASIFOLD (NOT POWERFOLD) FOLDING FROM ROAD TO FIELD.

EasiFold is the standard Ag Shield configuration where each inner wing wheel is rotated 25 degrees by a hydraulic cylinder, and the operator must then **back up the whole unit** to have the wing move from behind the center section to the field position. This is different from the Ag Shield PowerFold option where the wheels are first turned a full 90 degree by the hydraulic cylinder, a drive spindle is lowered to contact the wheel, and then sequence valve will keep the cylinder pressure at the preset level, and **drive the wings to field position while the LandRoller center frame is stationary**. LandRoller wheel rotate circuits are shipped with the large 1/2" hoses installed so that field installation of the PowerFold option is a simple bolt on attachment at the inner wheel location.

There are 2 hydraulic circuits on all 5 section Ag Shield LandRollers:

- A. This first circuit hereafter on "Lever 1" that rotates the wheel assembly so that a backing up motion will move the LandRoller wings to field position, This is the same circuit that is the used for PowerFold wheel option.
- B. The second circuit (Lever2) that raises or lowers the center, inner, and outer wheels for road transport, and is teed together with the diagonal arm locking function, the hydraulic hitch locking cylinder,

Unfolding to field Procedure

1. Chose a reasonably level location with no bystanders or small children in the vicinity.
2. Operate the whole unit in a forward direction until the wings are trailing out behind the center section at an equal and perpendicular angle to the center section.



FIGURE 10 WINGS TRAILING DIRECTLY BEHIND

3. Operate Lever 2 to raise the rollers up ALL the Way to top to allow transport locks to be removed.
4. Set parking brake, place tractor transmission in Neutral, leave the tractor cab tractor,
5. Make one rotation around the machine doing all the road locks in sequence. Start with floating hitch left side, move the height lock from B to C, and then remove Pin A and place in holder nearby.

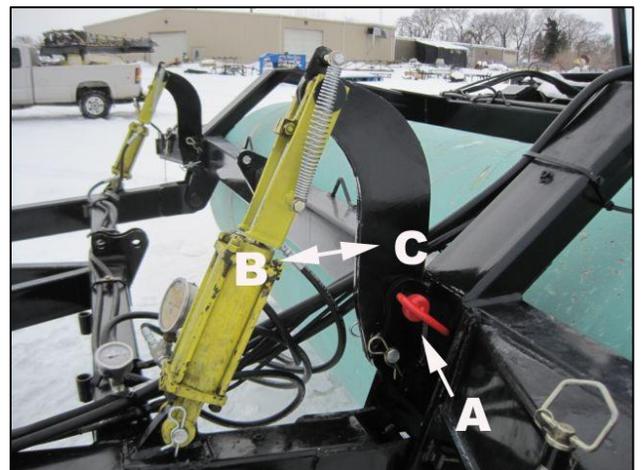


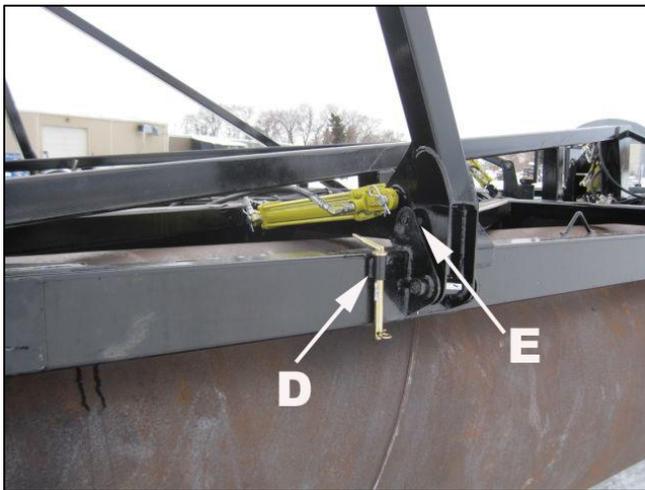
FIGURE 11 FLOATING HITCH 2 POINTS EACH SIDE LOCKED

6. Rotate the 2 center wheel locks over center to the rear.



FIGURE 12 CENTER WHEEL UNLOCKED FOR FIELD

7. Remove diagonal arm lock pin from hole E and store in holder bushing D nearby.



8. Move the height lock on outer wheel from pin F to Pin G.

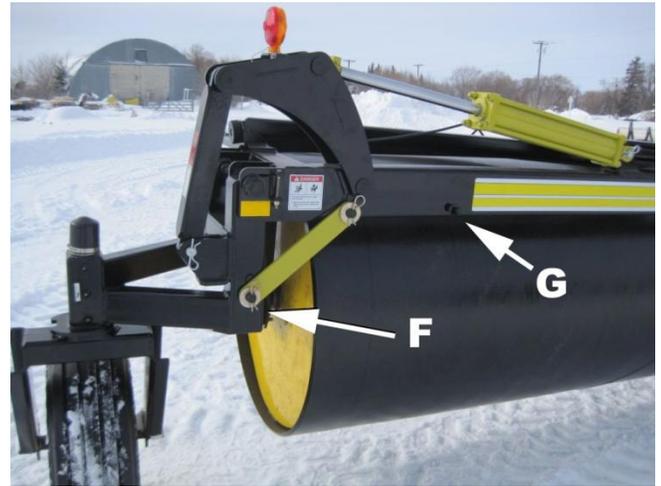
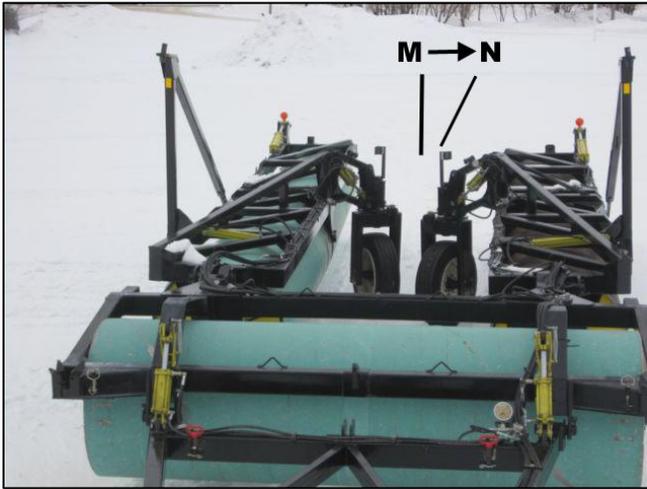


FIGURE 13 OUTER WHEEL HEIGHT LOCKED UP

9. Remove the height locks H from the cylinders at the inner wheels. Place the lock on storage point I during field operation.



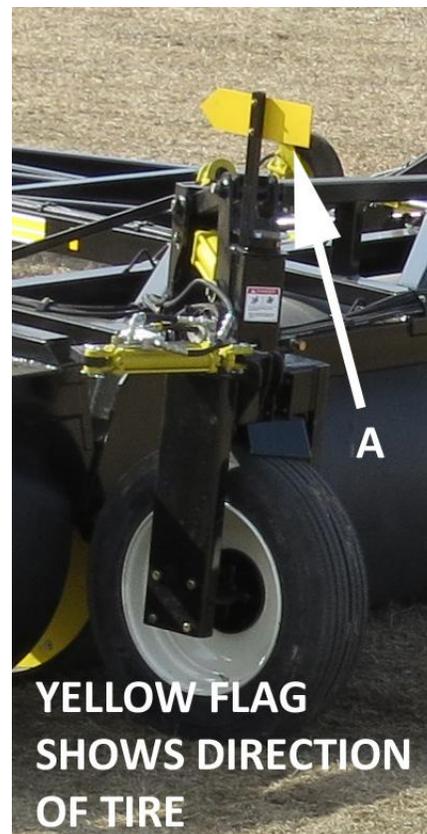
10. Rotate the 2 center wheel locks over center to the rear.
11. Lift wheel rotation lock J , place pin K on top of tab L. When Lever 1 (rotate wheels) is moved to turn wheels the lock will no longer hold the wheel in road position.
12. Walk back down the right hand side of machine, doing the locks as per steps 5,7,8 above .
13. Enter tractor cab, operate lever 1 to rotate the inner wheels to angled position N approximately 25 degree from road position M. Both wheels should rotate the same angle at the same time.



15. Move Lever 1 to rotate the wheels to the field position. When the wheels are in road position the flag above the wheel will point in the direction of the tire.



14. Carefully back up the unit until the wings reach the stops at "O" on rear of center frame. Both the left and right stops MUST reach the frame at a similar time. DO NOT CONTINUE TO BACK UP AFTER ONE STOP CONTACTS THE FRAME, as wheel and frame damage will result. Instead pull ahead and get the 2 wings to contact at a similar time.



16. Move lever 2 to lower the rollers to the ground, and raise the wheels completely up into field operation position.

17. Observe that the diagonal pulling arms are fully rotated into the slots on front corner of both ends of the center section. To get diagonal arms fully down, rotate steering wheels on 4WD tractors, perhaps move slightly forward or backward.
18. Observe that the 2 front floating hitch cylinders have moved to fully retracted position. The hitch is free to float as the rollers follow ground contours.
19. Set parking brake, place transmission in neutral, exit the cab.
20. Normally the locking pins that hold diagonal arms in to the slots on front of frame are not required. The diagonal pulling arms will stay in the slots during field work. However, if your tractor hydraulics and field conditions combine to have the diagonal pulling arm rise out of the slots while travelling across the field, now is the time to install the retaining pins above the diagonal pulling bar.

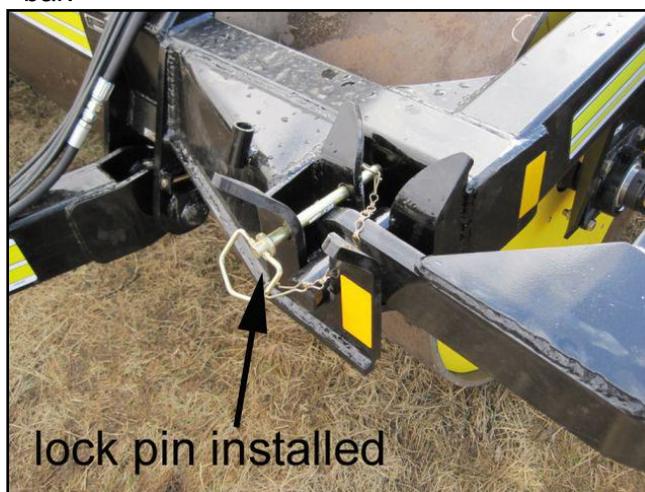


FIGURE 14 DIAGONAL PULL ARM LOCKED FOR FIELD

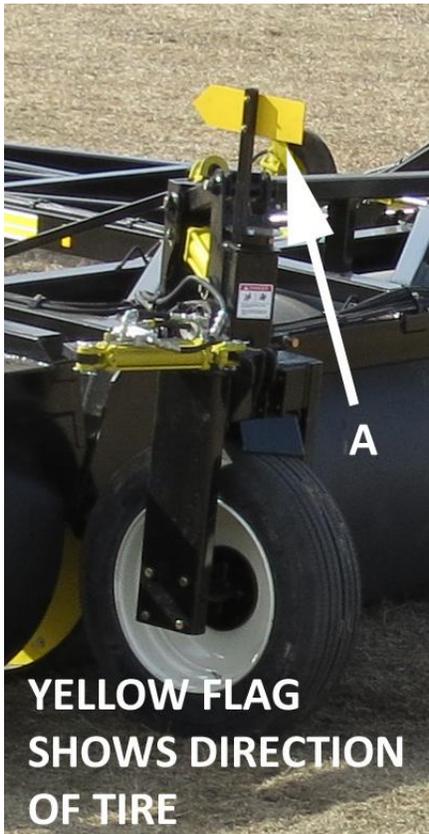
21. Enter the cab, and begin to smooth and firm your field to perfection.
22. **Maximum speed selection** depends upon field conditions. Mellow fields with corn root balls and few 8 inch diameter stones may be rolled at 5-8 mph. If there are a lot of 8 inch diameter stones, **speeds above 7 mph may dent the standard .530- .560 inch thick rollers.** If these are normal conditions and you wish to travel at higher field speeds, consider using the thicker .625 inch wall rollers.

23. On the middle transport weldment we use a check valve to ensure the wheel stays in position. The wheel will not creep in or out. Once the lever is pushed then the tire will begin to move.



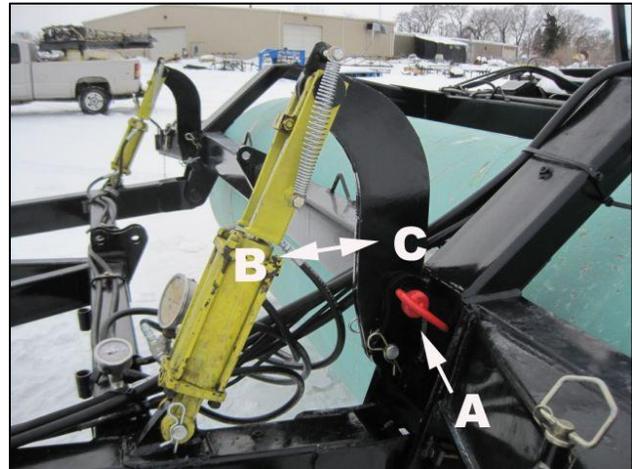
5.2. “EASIFOLD” FOLDING FROM FIELD TO ROAD PROCEDURE

1. Chose a reasonably level location with no bystanders or children in the vicinity.
2. Exit the cab
3. If diagonal pull arm locks were inserted in step 15 above, set parking brake, place tractor transmission in Neutral, leave the tractor cab tractor, remove the diagonal arm lock pins.
4. Raise the wheel rotation locking pin Q , place tab R under it on both wheels



5. Enter the tractor cab. Move lever 1 to confirm that the inner wheels are rotated to the road position. The wheel flags will point in the direction of the wheel.
6. Operate Lever 2 to raise the rollers up ALL the Way to top to allow transport locks to be engaged.
7. Observe that the diagonal pull arms have risen to road position.
8. Observe that the front floating hitch cylinders have been fully extended.
9. Set parking brake, place tractor transmission in Neutral, leave the tractor cab tractor ,

10. Move over center cylinder lock from C to B
Place the pin into hole A to retain the locks.



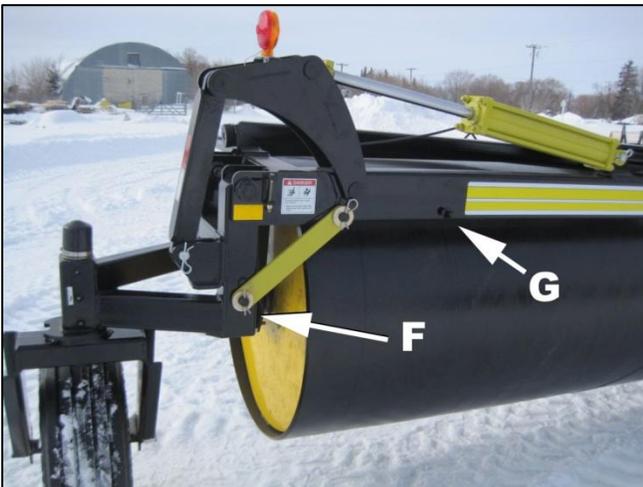
11. Lock the 2 center wheel over center latches.



12. Move pins from storage position D to E-- LOCKED position to hold up for road travel. .



13. Lock the outer wheels in raised position to prevent accidental falling while in road transport.



14. Remove inner wheel locks from storage I and place into road lock up position H.



15. Do all locks the same for the right side of machine.

- 16. Enter the cab,
- 17. Drive forward, observing that the wings trail in behind the center section to the normal 13.5 foot wide transport width.
- 18. You may adjust the angle of the wings in transport by turning thread adjust on the locking pins. The wings trail nearly straight back – there should be 6-8” between the 2 wheel assemblies in normal straight ahead road transport.
- 19. Measure the distance from the barrel X to the Wheel Y at both the forward and rearward steel rim locations. Distance Z must be 1/2” greater at the rear than at the front of the tire on both sides.



20. Continue to next location.

5.3. POWERFOLD FOLDING FROM ROAD TO FIELD

POWERFOLD SECTION NOT COMPLETE Rev1a

The Ag Shield PowerFold option has cylinder A to lower the spindle onto the tire, cylinder B to rotate the wheel between field and road positions, and cylinder C for height adjustment .

Photos of powerfold with all cylinders and motor

When the hydraulic lever 1 is moved, the inner wheels are turned a full 90 degree by the hydraulic cylinder, the drive spindle is pressed onto the tire by cylinder A , and the hydraulic motor D begins to turn the spindle E to roll the wing to field position. The sequence valve will keep the cylinder pressure at the preset level, and **drive the wings to field position while the LandRoller center frame is stationary.**

LandRollers are shipped with the large 1/2" hoses installed so that field installation of the PowerFold option is a simple bolt on attachment at the inner wheel location.

FIGURE 15 POWERFOLD OPTION INSTALLED

There are 2 hydraulic circuits on all Ag Shield LandRollers:

- This first circuit hereafter on "Lever 1" that turns the wheels so that a backing up motion will move the LandRoller wings to field position, This is the same circuit that is the used for PowerFold wheel option.
- The second circuit (Lever2) that raises or lowers the center and outer wheels for road transport, and is teed together with the diagonal arm locking function, the hydraulic hitch locking cylinder.

Unfolding-- road to field Procedure

- Chose a reasonably level location with no bystanders or small children in the vicinity.
- Operate the whole unit in a forward direction until the wings are trailing out behind the center section at an equal and perpendicular angle to the center section.



FIGURE 16 WINGS TRAILING DIRECTLY BEHIND

- Operate Lever 2 to raise the rollers up ALL the Way to top to allow transport locks to be removed.
- If so equipped, use lever 3 to raise the leveling blade to the highest position.
- Set parking brake, place tractor transmission in Neutral, leave the tractor cab.
- Remove the road transport locks from outer wheels rotation,

FIGURE 17 OUTER WHEEL LOCKED

- Move the height lock on outer wheel from pin A to Pin B.

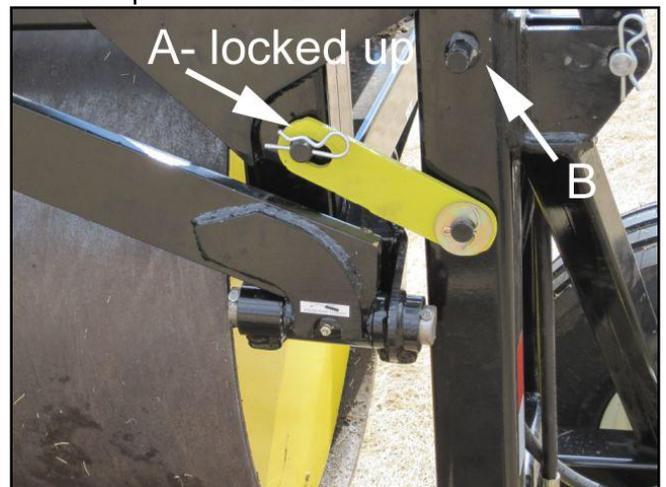


FIGURE 18 OUTER WHEEL HEIGHT LOCKED UP

- Rotate the center wheel lock over center to the rear.



FIGURE 19 CENTER WHEEL UNLOCKED FOR FIELD

- Rotate front hydraulic floating hitch to Field position.

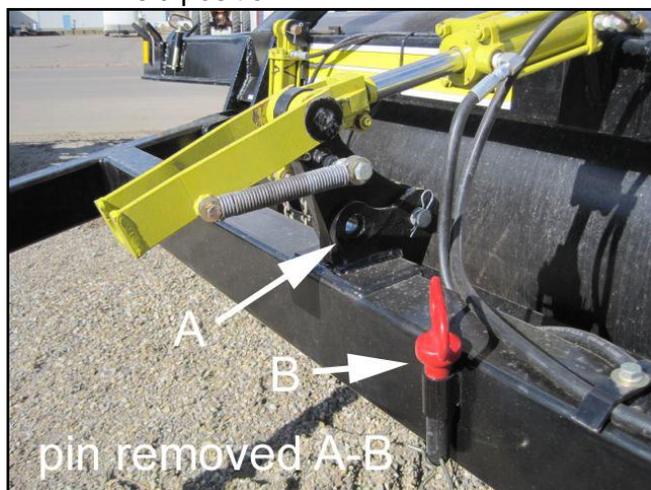


FIGURE 20 FLOATING HITCH UNLOCKED FOR FIELD

- Enter tractor cab, operate lever 1 to rotate the outer wheels 90 degrees. When the wheels contact the drive spindle, the hydraulic motor will begin turning, and the wing will roll out into field position. If one wing reaches the frame stop first, the spindle should stop turning, and the wheel continue to turn until both wings are in field position.
- Move Lever 1 the opposite direction to rotate the wheels to the road position again.

- Move lever 2 to lower the rollers to the ground, and raise the wheels completely up into field operation position.
- Observe that the diagonal pulling arms are fully rotated into the slots on front corner of both ends of the center section.
- Observe that the front floating hitch cylinder has moved to fully retracted position. The hitch is free to float as the roller follows ground contours.
- Set parking brake, place transmission in neutral, exit the cab.
- Remove the pin from the floating hitch tab, and place in the holding socket provided, place retaining key through end of pin.
- Normally the locking pins that hold diagonal arms in to the slots on front of frame are not required. The diagonal pulling arms will stay in the slots during field work. However, if your tractor hydraulics and field conditions combine to have the diagonal pulling arm rise out of the slots while travelling across the field, now is the time to install the retaining pins above the diagonal pulling bar.

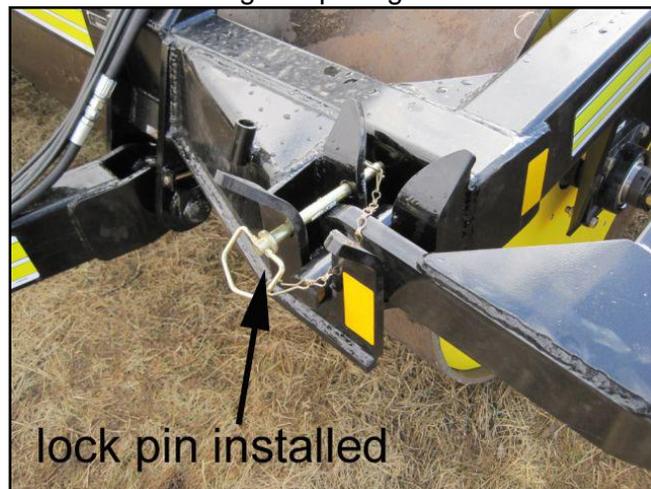


FIGURE 21 DIAGONAL PULL ARM LOCKED FOR FIELD

- Enter the cab, lower the leveling blade if desired, and begin to smooth and firm your field to perfection.
- Maximum speed selection** depends upon field conditions. Mellow fields with corn root balls and few 8 inch diameter stones may rolled at 5-8 mph. When using the leveling blade to move several inches of earth, 3-4 mph is appropriate, even less if there are a lot of larger

square cornered stones protruding out of the ground. If there are a lot of 8 inch diameter stones, **speeds above 7 mph may dent the standard .530- .560 inch thick rollers.** If these are normal conditions and you wish to travel at higher field speeds, consider using the thicker .625 inch wall rollers. Rollers with Leveling blades **MUST** operate slower than rollers without leveling blades.

5.4. ADJUSTING POWERFOLD SEQUENCE VALVE OPERATING PRESSURES.

The PowerFold option allows you to park the LandRoller on one spot and move the wings to field position. It works by building up to a preset pressure in the cylinders holding the tire against the drive spindle, before oil flow is delivered to the hydraulic motors.

The face of the tire should be reasonably dry and clean before operating the Powerfold. If the tire were recently pulled through a sticky clay mud hole before folding is attempted, extra care will be required to see that the wheels are turning across the field within 2 seconds of the time that the lever is engaged.

The PowerFold option come from the factory with both sequence valve set at the same pressure using the gauges on each wheel. Do not begin randomly adjusting the pressures, Contact factory before making adjustment to get further understanding of the system, and how it operates.

5.5. POWERFOLD FOLDING FROM FIELD TO ROAD PROCEDURE

1. Choose a reasonably level location with no bystanders or children in the vicinity.
2. Move lever 1 to confirm that the outer wheels are rotated to the road position.
3. If so equipped use lever 3 to raise the leveling blade to the highest position.
4. If diagonal pull arm locks were inserted in step 15 above, Set parking brake, place tractor transmission in Neutral OR park, leave the tractor cab tractor, remove the diagonal arm lock pins.
5. Enter tractor cab.

6. Operate Lever 2 to raise the rollers up ALL the Way to top to allow transport locks to be engaged.
7. Observe that the diagonal pull arms have risen to road position.
8. Observe that the front floating hitch cylinder has been fully extended.
9. Set parking brake, place tractor transmission in Neutral, leave the tractor cab tractor ,
10. Engage the road transport locks to prevent outer wheel spindle housing from rotating.
11. Lock the outer and center wheels in raised position to prevent accidental falling while in road transport.
12. Lock the front hydraulic floating hitch cylinder in the extended position, See "A" in Figure 22 LOCKED FOR ROAD TRANSPORT



FIGURE 22 LOCKED FOR ROAD TRANSPORT

13. Insert the 1 inch diameter lock pin "B" to lock the floating hitch leveling rocker into road position. Insert retaining key into end of pin. See Figure 22 LOCKED FOR ROAD TRANSPORT
14. Enter the cab,
15. Drive forward, observing that the wings trail in behind the center section to the normal 12.5 foot wide transport width. Continue to next location.

5.6. WATER FILLING ROLLER TANK

The larger 3 – 5 section LandRollers typically used in grain farming are seldom filled with water. If your conditions require the extra weight, a water fill option may be factory installed, or field installed anytime after initial purchase.

The water fill option added about 550 pounds per lineal foot (820 kg/ meter) . for example- a nominal 20 foot roller would hold water in about 18 feet of the barrel, and therefore add a maximum of 10350 pounds (4490 kg/ 6 meter) .

When planning to fill a 42” roller expect to use 55 Imperial gallons per foot, 66 USG per foot, 250 liters per foot, or 820 liters /meter

Except by special request Ag Shield LandRollers are not designed to be transported while filled. **Damage to machine components will occur if a water filled roller is even attempted to be raised hydraulically to road position.**

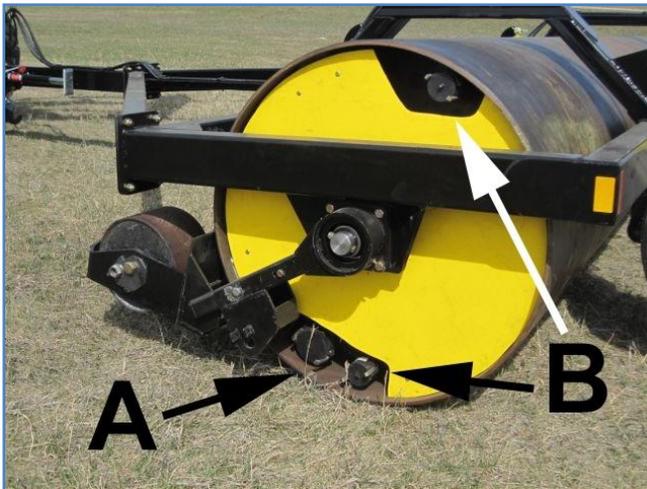


FIGURE 23 WATER FILL PORTS OPTION

There are 3 quick coupler attachments to allow the fastest filling and emptying of the roller. See Figure 23 WATER FILL PORTS OPTION. Port A is a 3” quick coupler, port B are both 2” quick couplers.

The fastest fill is to attach the hose to the 3” connection at the bottom, and open a 2” vent at the top. The water may be sucked out with a pump via either a 2 or 3” quick coupler. The tank can be drained the fastest (< 5 minutes per 17 foot barral) by opening all 3 connections, and rolling ahead until the 3”/2” combination is at the bottom.



FIGURE 24 WATER DRAINING BY GRAVITY

Scraper option – weld on

5.7. ACRE METER OPTION

The option electronic hubodometer threads into a ½” fine hole tapped into the end of the right hand center roller shaft. Install the acremeter with a oil filter wrench to 23 lb foot of torque with a lock washer to ensure that the unit is not lost. It is protected by a flange welded onto the The Veeder Root electronic acre meter.

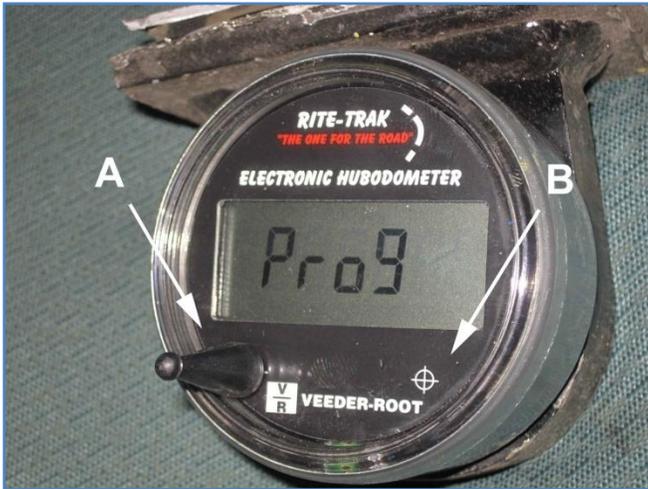


FIGURE 25 ACREMETER TO PROGRAM MODE

See Figure 25 ACREMETER TO PROGRAM MODE above.

The acre meter calibration is done by touching a magnet to the outside of the face of the odometer on a Left spot marked “A” and Right spot marked “B” The simplified instructions to set to 88.0 for a 45 foot LandRoller are:

- 1) Hold magnet on the left position- “A” – in 6 seconds will read serial number, leave on MUCH longer – until PROG shows on screen.
- 2) Lift off of left calibration for 1 second, touch magnet down to see units= “acres” set already

- 3) Lift and touch left again advance to revolutions per acre, 0000.0 acres per revolution will show—should be 0088.0 for a 45 foot –



FIGURE 26 CALIBRATING "REVS" FOR 45

- 4) Touch left to advance to second left zero-
- 5) Touch left again to have the third left digit of 0000.0 flashing,
- 6) Touch right “B” eight times to have the 0 advance to first “8” of 0088.0
- 7) Touch left to advance to fourth left digit of 0000.0.
- 8) Touch right “B” 8 times to advance to “8” in the fourth digit.
- 9) Do nothing for 10-20 seconds, and front screen will come up reading 88.0 revs acres in lower left. DO NOT continue to more programming as the counter may become locked and of no value.

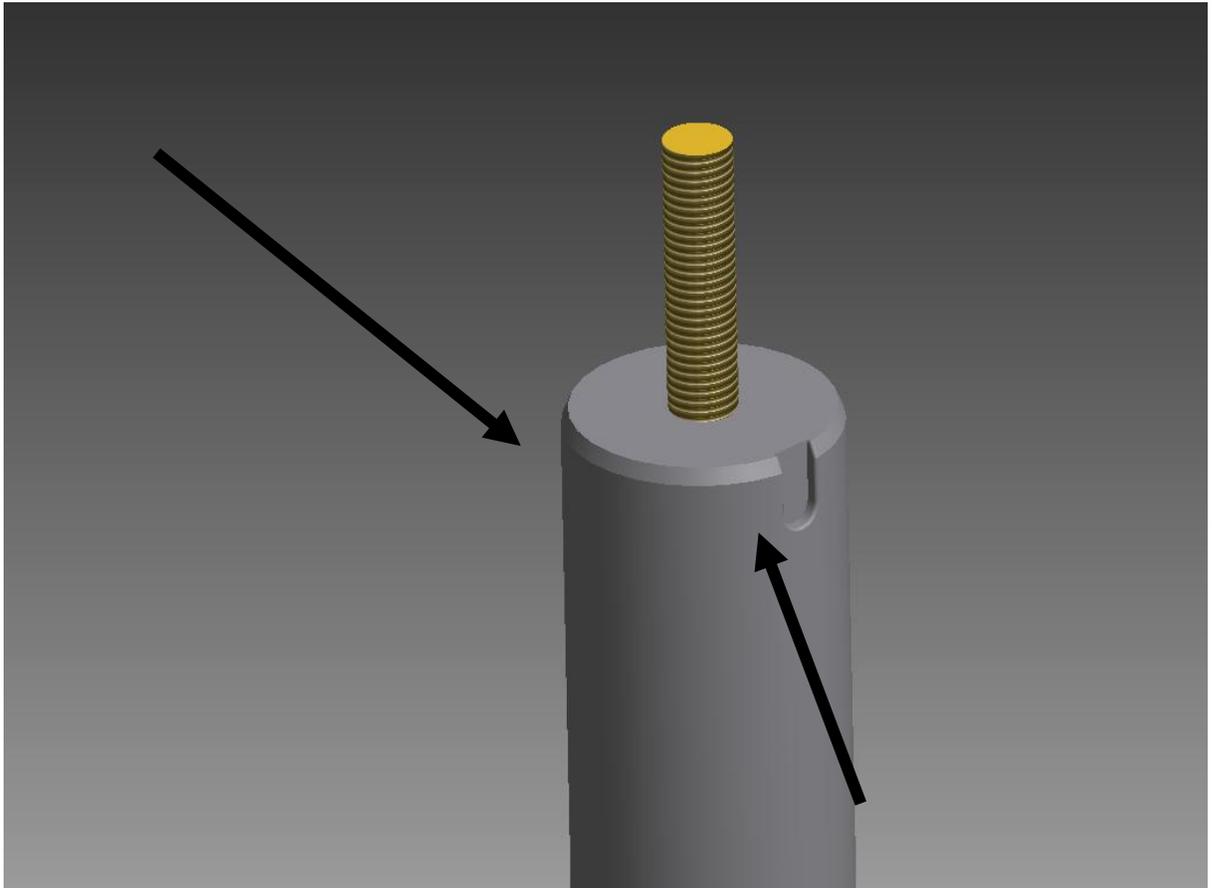
Consult the table below for other calibration numbers.

machine width feet	17.0	20.0	31.0	40.0	45.0	46.0	52.0	62.0	66.0	70.0	80.0
machine width meters	5.2	6.1	9.5	12.2	13.7	14.0	15.9	18.9	20.1	21.3	24.4
acres per 1/2 mile	1.0	1.2	1.86	2.4	2.7	2.76	3.2	3.8	4.0	4.2	4.8
rev per one acre	233.0	198.1	127.8	99.0	88.0	86.1	76.2	63.9	60.0	56.6	49.5
rev per 1 hectare	575.8	489.5	3.161	244.7	217.5	213.	188.3	157.9	148.3	139.8	122.4
acres / hour @5 mph	10.3	12.1	18.76	24.2	27.3	27.9	31.5	37.6	40.0	42.4	48.5

5.8. REPLACING THE OUTER CASTER WHEEL

Only necessary if having to replace the outer caster wheels.

- 1) It is important that before you install the caster wheel that it must have all sharp edges removed or it will cut the O ring as it is inserted into the bushing.



Both edges where the lines are will need to be smoothed out. Using a fine grit sand paper ensure that there are no sharp edges around the keyway or the chamfered edge.

- 2) Next will be to insert the O ring into the O ring groove. Making sure that the O ring is greased before inserting it into the groove. Make sure the O ring is tight before pushing shaft in. A loose O ring will cause it to grab on the shaft and push through the top.
- 3) Very important that you do not twist the caster wheel while trying to put it into the bushing. The twisting motion will cause the shaft to cut the O ring.
- 4) Raise the caster wheel arm using the hydraulics so it is 90 to the ground. This will allow you to lift the caster wheel and then push it into the bushing.
- 5) Once the caster wheel is in check to see that the O ring did not rip and push through with the shaft.

5.9. LUBRICATION

Grease all pivot points daily, or 8 hours of operation.

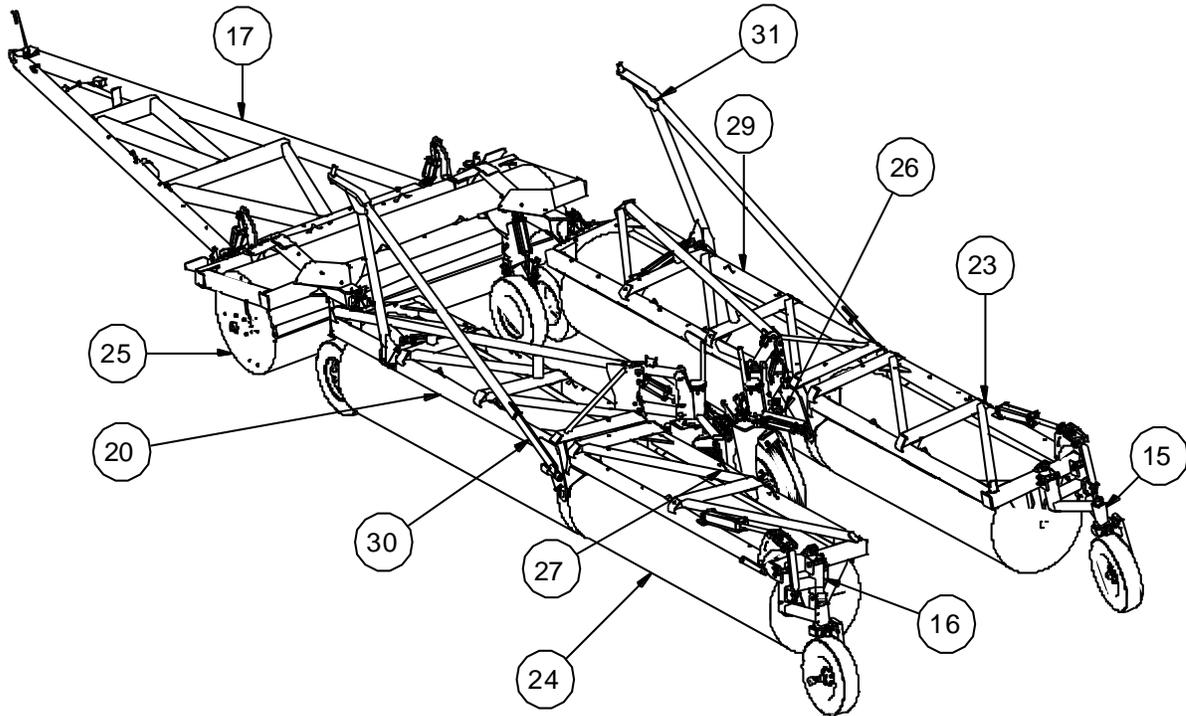
Grease the bearings on the rollers weekly or 50 hours, some places annually

No other lubrication is required

7.PARTS LIST 3 SECTION LANDROLLER

7.1. TOW HITCH 3 SECTION UNITS- 800450

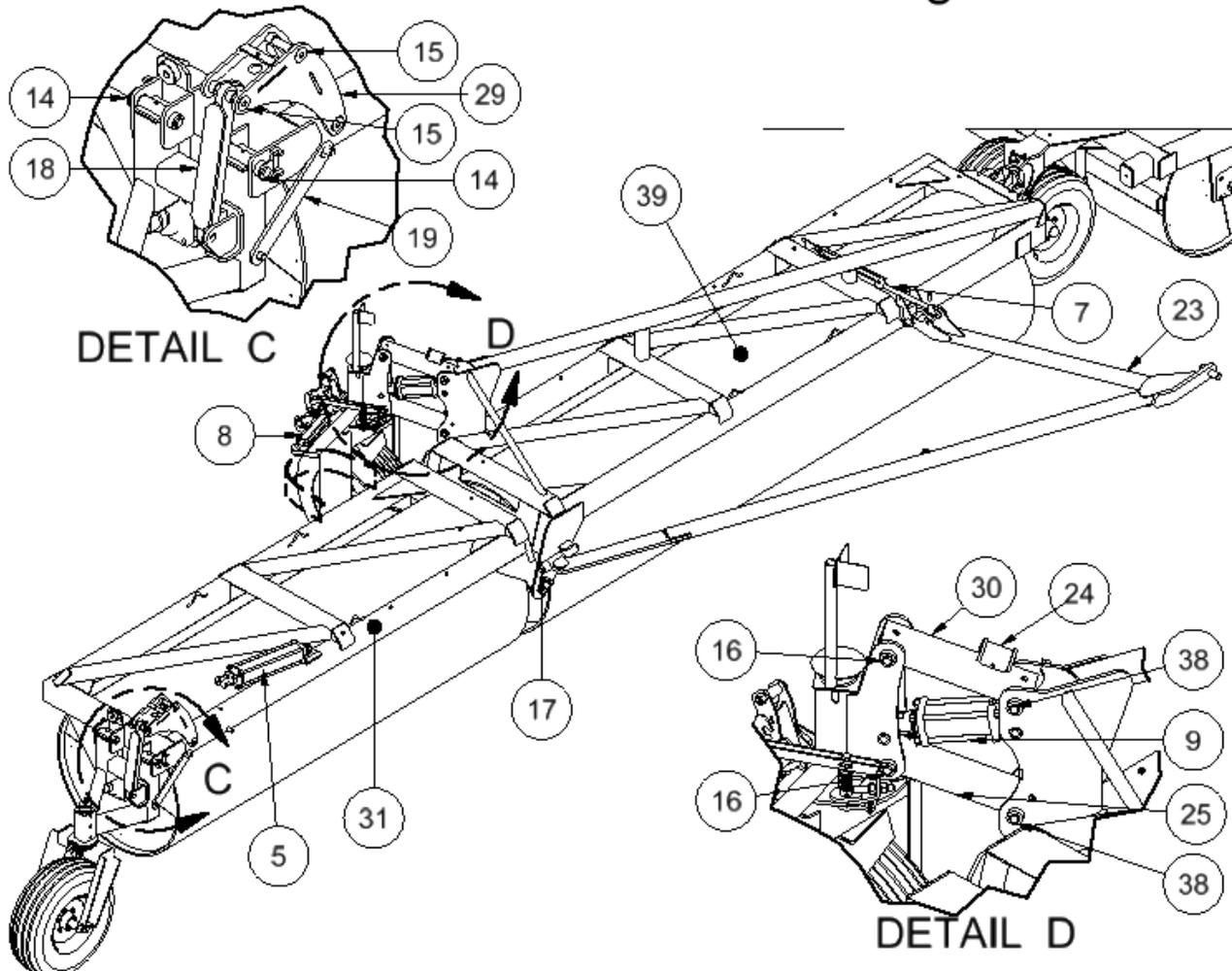
800022 Land Roller 62ft Assembly



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	113803 Flat Mount Hose Holder	18	1	801311 Inner Wheel Cyl Lock
2	2	117337 Hyd Cyl AGU 4 x 20	19	2	801342 Inner Wheel Parallel Arm 5S
3	2	117354 Hyd Cyl AGU 2 x 16	20	1	801355 Wing Assy Inner 5S LH
4	2	117360 Hyd Cyl AGU 2 x 10	21	2	801600 Rear Wheel T-Link
5	2	117365 Hyd Cyl AGU 3 1/2 x 6 W-Mod Clevis	22	2	801707 Parallel Arm W-Lock Storage Wldmt
6	1	128076 Operators manual cannister	23	1	801726 Outer Wing Assy 62ft 5S RH
7	2	800280 wheel lock castor trans	24	1	801728 Outer Wing Assy 62ft 5S LH
8	4	800403 pin wldt 1-3/4 x 13	25	1	801737 Center Section Assy 5S
9	4	800410 pin wldt 1-1/4 x 7-1/4	26	1	801753 Inner Wheel Assy RH
10	6	800415 pin wldt 1 x 5-1/2	27	1	801754 Inner Wheel Assy LH
11	5	800420 pin wldt 1-1/4 x 7-5/8	28	5	801755 Parallel Arm Frame Pin Wldmt
12	2	800425 pin 1-3/4 x 14	29	1	802006 Wing Assy Inner 5S RH
13	2	800485 Link Rear Wldt	30	1	804192 2013 Diag Arm Wldmt LH 5S
14	2	800619 Lock Bar Rear Wheel Lift	31	1	804193 2013 Diag Arm Wldmt RH 5S
15	1	804190 Wheel Assy Outer caster RH 2013	32	2	801814 Parallel Arm Cyl Pin Wldmt Wheel
16	1	804191 Wheel Assy Outer caster LH 2013	33	2	801813 Parallel Arm Cyl Pin Wldmt Frame
17	1	801220 Hitch Wldt 5 Section			

7.2. CENTER FRAME ASSEMBLY

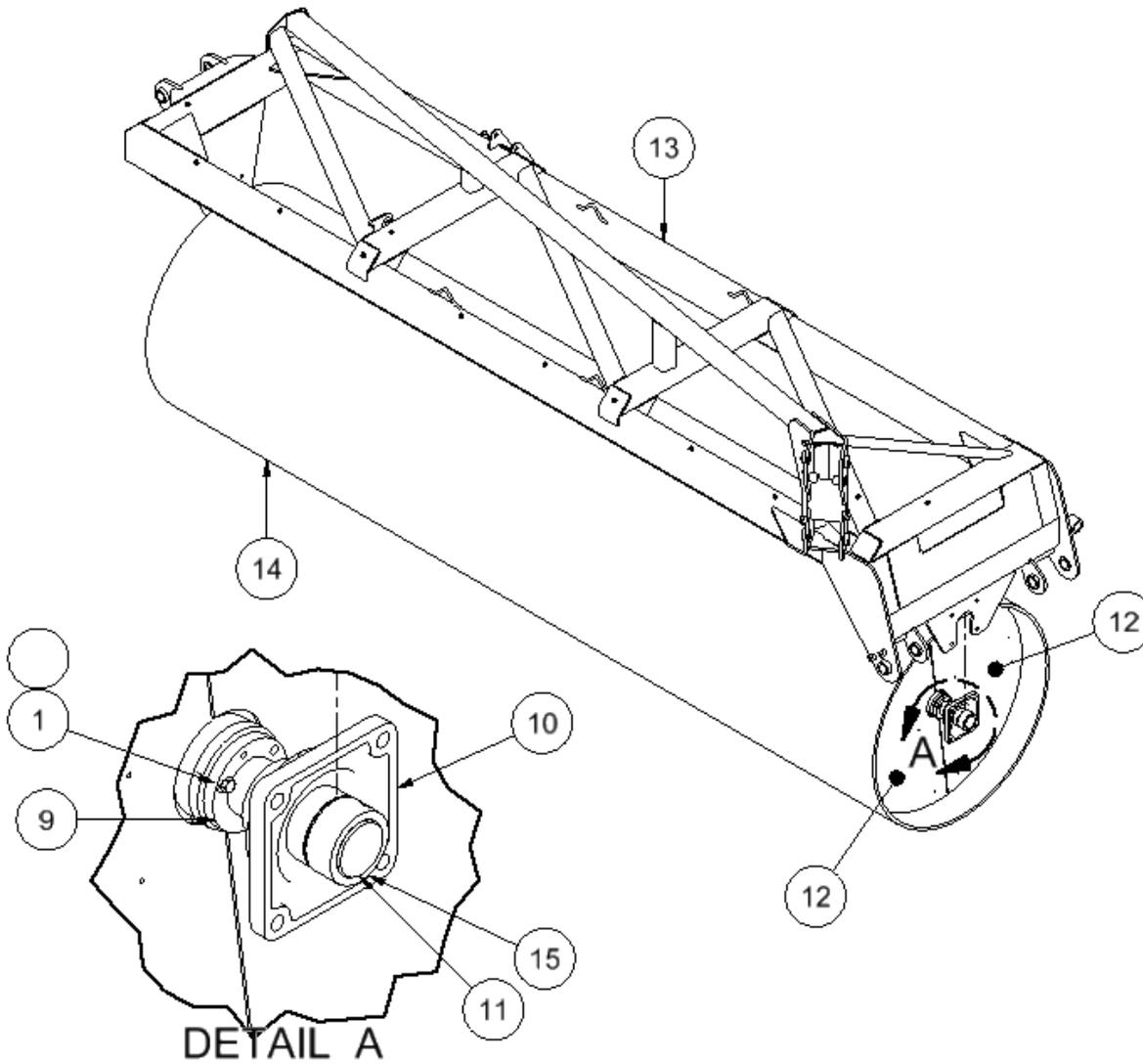
800022 Land Roller 62ft - RH Wing



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
5	2	117337 Hyd Cyl AGU 4 x 20	24	2	801311 Inner Wheel Cyl Lock
7	2	117354 Hyd Cyl AGU 2 x 16	25	2	801342 Inner Wheel Parallel Arm 5S
8	2	117360 Hyd Cyl AGU 2 x 10	26	2	801348 Hitch Double Lock Link
9	2	117365 Hyd Cyl AGU 3 1/2 x 6 W-Mod Clevis	27	1	801355 Wing Assy Inner 5S LH
14	4	800410 pin wldt 1-1/4 x 7-1/4	28	1	801371 Diag Arm Wldmt LH 5S
15	6	800415 pin wldt 1 x 5-1/2	29	2	801600 Rear Wheel T-Link
16	4	800420 pin wldt 1-1/4 x 7-5/8	30	2	801707 Parallel Arm W-Lock Storage Wldmt
18	2	800485 Link Rear Wldt	31	1	801726 Outer Wing Assy 62ft 5S RH
19	1	800619 Lock Bar Rear Wheel Lift	33	1	801737 Center Section Assy 5S
20	1	800700 Wheel Assy Outer caster RH backup	34	1	801750 Knuckle Wldt 5S RH
21	1	800701 Wheel Assy Outer caster LH	36	1	801753 Inner Wheel Assy RH
22	1	801220 Hitch Wldt 5 Section	38	4	801755 Parallel Arm Frame Pin Wldmt
23	1	801263 Diag Arm Wldmt RH 5S	39	1	802006 Wing Assy Inner 5S RH

7.3. INNER WING FRAME ASSEMBLY

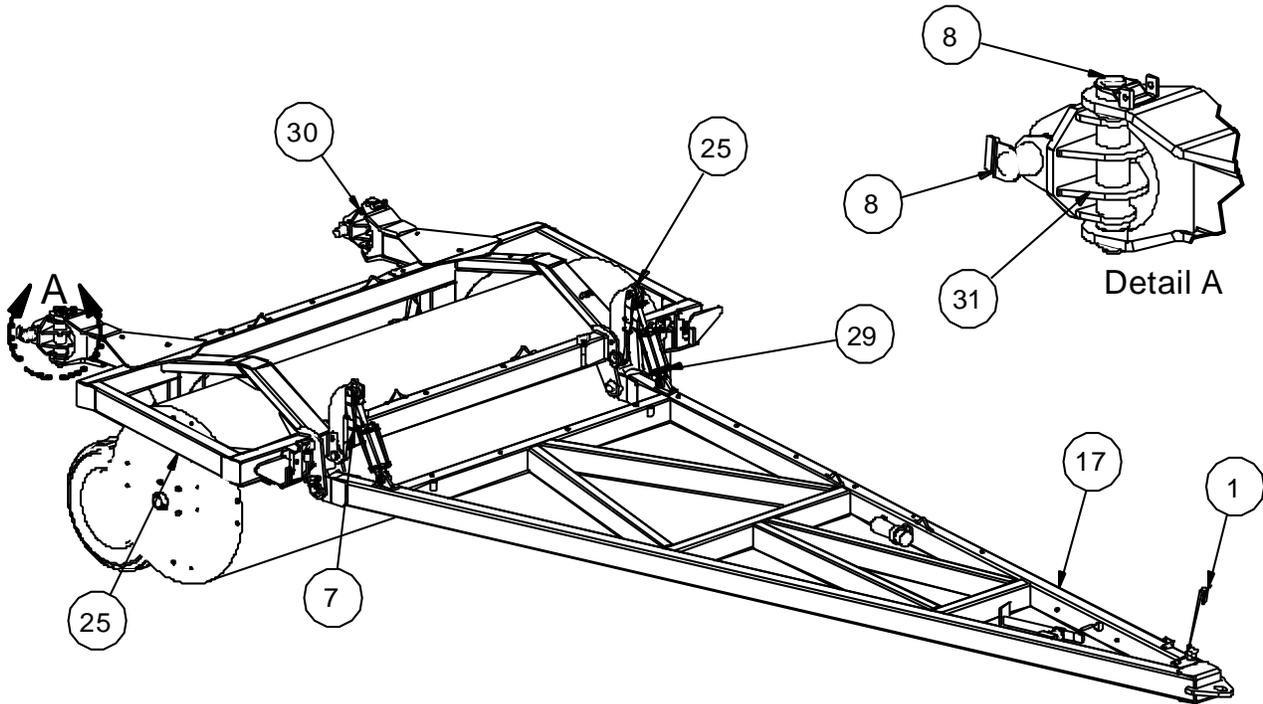
802006 Wing Assembly Inner 5 Section RH



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	6	100604 bolt 3/8 X 1 1/2 gr5 pltd nc	9	2	114438 bushing Q1 2-1/2 bore
2	4	100707 bolt 1/2 X 4 gr5 pltd nc	10	2	114490 Bearing 2-1/2 UCF213-40
3	8	100804 bolt 5-8 X 2 1/2 gr5 pltd nc	11	2	800106 Shaft Roller End
4	6	101145 lock washer 3/8"	12	4	800345 end cover plastic
5	4	102125 nut nylok 1/2" nc gr5 pltd	13	1	802021 frame inner wldt RH 5S
6	8	102127 nut nylok 5/8" nc gr5 pltd	14	1	802025 roller wldt inner wing 5S
7	24	103204 10 x 1 Self Tapping Screw	15	2	802086 bushing shaft lock
8	2	105639 Grease Zerk 1_1/4LG 1/8 NPT			

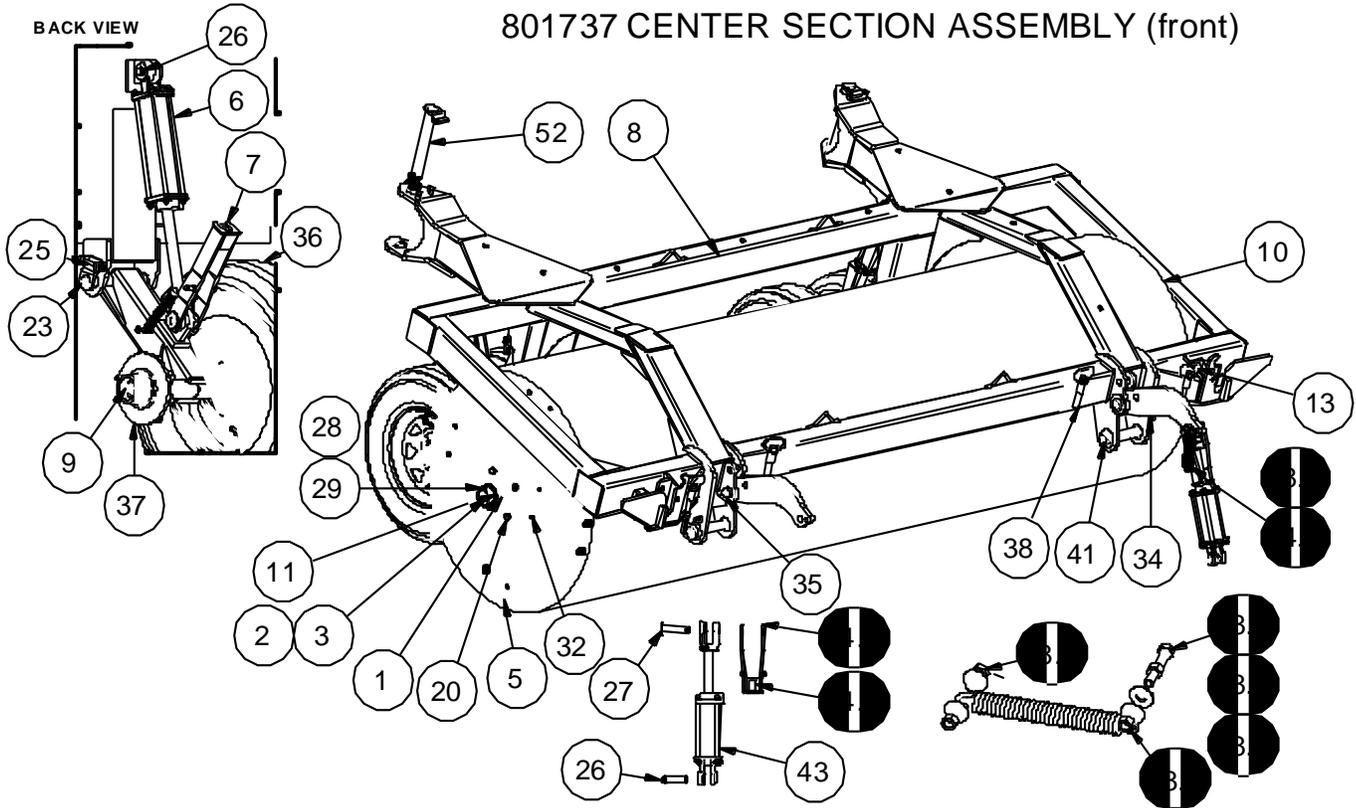
7.4. 5 SECTION KNUCKLES FRONT HITCH

800022 Land Roller 62ft - Center



17	1	801220 Hitch Wldt 5 Section	25	1	801737 Center Section Assy 5S
29	1	802006 Wing Assy Inner 5S RH	11	5	800420 pin wldt 1-1/4 x 7-5/8
23	1	801726 Outer Wing Assy 62ft 5S RH	26	1	801753 Inner Wheel Assy RH
24	1	801728 Outer Wing Assy 62ft 5S LH	27	1	801754 Inner Wheel Assy LH
16	1	804191 Wheel Assy Outer caster LH 2013	12	2	800425 pin 1-3/4 x 14
15	1	804190 Wheel Assy Outer caster RH 2013	9	4	800410 pin wldt 1-1/4 x 7-1/4
			14	2	800619 Lock Bar Rear Wheel Lift
13	2	800485 Link Rear Wldt	10	6	800415 pin wldt 1 x 5-1/2
			28	5	801755 Parallel Arm Frame Pin Wldmt
7	2	800280 wheel lock castor trans	8	4	800403 pin wldt 1-3/4 x 13
2	2	117337 Hyd Cyl AGU 4 x 20	29	1	117339 Hyd Cyl AGU 3 x 6 - Barrel
4	2	117360 Hyd Cyl AGU 2 x 10	30	1	804160 Extended Knuckle Wldt LH 5S 5 deg
1	1	113803 Flat Mount Hose Holder	31	1	804159 RH Extended knuckle wldmnt 5S 5 deg
3	2	117354 Hyd Cyl AGU 2 x 16			
18	1	801311 Inner Wheel Cyl Lock	30	1	804192 2013 Diag Arm Wldmt LH 5S
19	2	801342 Inner Wheel Parallel Arm 5S	31	1	804193 2013 Diag Arm Wldmt RH 5S
20	1	801355 Wing Assy Inner 5S LH	32	2	801814 Parallel Arm Cyl Pin Wldmt Wheel
21	2	801600 Rear Wheel T-Link			
5	2	117365 Hyd Cyl AGU 3 1/2 x 6 W-Mod Clevis	33	2	801813 Parallel Arm Cyl Pin Wldmt Frame
22	2	801707 Parallel Arm W-Lock Storage Wldmt			

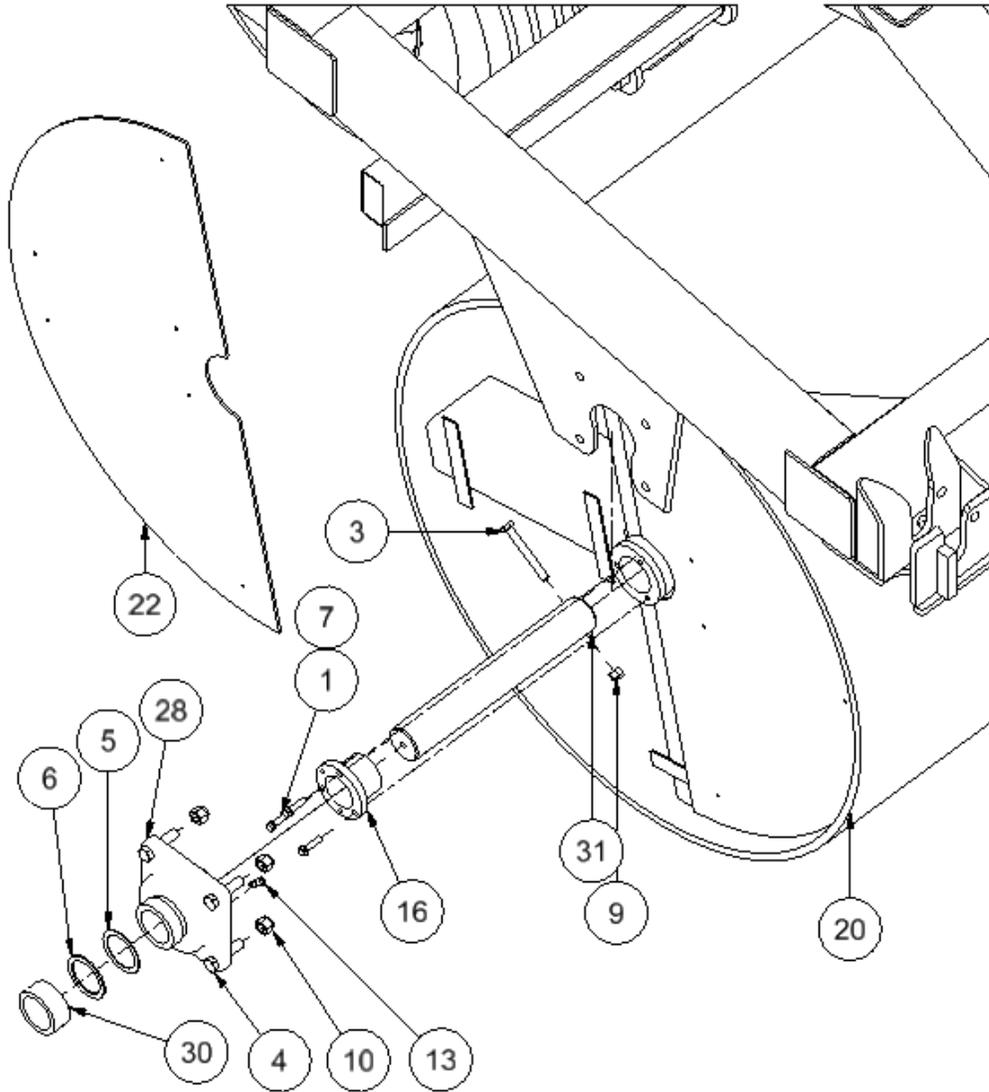
7.5. CENTER SECTION 5 SECTION 62 FOOT REAR VIEW



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	800999 Bearing DT 2-1/2" UCF213-40	28	4	102125 nut nylok 1/2" nc gr5 pltd
2	1	800106 Shaft Roller End	29	4	100707 bolt 1/2 X 4 gr5 pltd nc
3	1	803248 Shaft Roller End Threaded RH only	30	2	101127 Machinery Washer 2-1/2 ID 14 Gauge
4	2	114438 bushing Q1 2-1/2" bore	31	2	101128 Machinery Washer 2-1/2 ID 10 Gauge
5	4	800345 end cover plastic	32	24	103204 10 x 1 Self Tapping Screw
6	2	117342 Hyd Cyl AGU 3 x 10	34	2	804115 Double lock link wldmnt
7	2	800285 wheel lock mid trans	35	2	804111 Hitch Lock Pin
8	1	801703 Center Section Frame 5S	36	4	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot
9	2	800540 Wheel Center Arm Wldt HVY 2012	37	4	113686 hub 8 bolt 6 5 bc 4500lb
10	1	800110 roller wldt center	38	2	104517 Hitch Lock Pin 1 x 4-1/2
11	2	802086 bushing shaft lock	41	2	800405 pin wldt 1-3_4 x 9-1_8
13	2	104516 Hitch Pin 3/4" x 4-1/2"	43	2	117339 Hyd Cyl AGU 3 x 6
17	6	100604 bolt 3/8" X 1 1/2" gr5 pltd nc	44	2	800280 wheel lock castor trans
18	2	105639 Grease Zerk 1-1/4" LG 1/8 NPT	44.4	1	800284 nylon shaft protector
19	6	101145 lock washer 3/8"	48	1	113971 cylinder lock spring assy
20	8	100804 bolt 5/8" X 2-1/2" gr5 pltd nc	48.1	1	113952 Extension Spring 5-1_2 LG
21	8	102127 nut nylok 5/8" nc gr5 pltd	48.2	1	100602 bolt 3/8"nc x 1" gr5 pltd hex
23	2	800406 pin wldt 1-1/4 "x 10-1/2"	48.3	1	100629 bolt 3-8 X 2 all thrd nc
24	2	102123 nut nylok 3/8" nc gr5 pltd	48.4	4	101105 flat washer 3/8"
25	2	100614 bolt 3/8" X 4" gr5 pltd nc	48.5	4	102106 nut 3-8 nc pltd
26	5	117324 pin 3-5/8" in two grooves	52	2	800403 pin wldt 1-3_4 x 13_MIR
27	5	800426 pin wldt 1 x 4			

7.6. CENTER SECTION 5 SECTION 62 FOOT END OF ROLLER

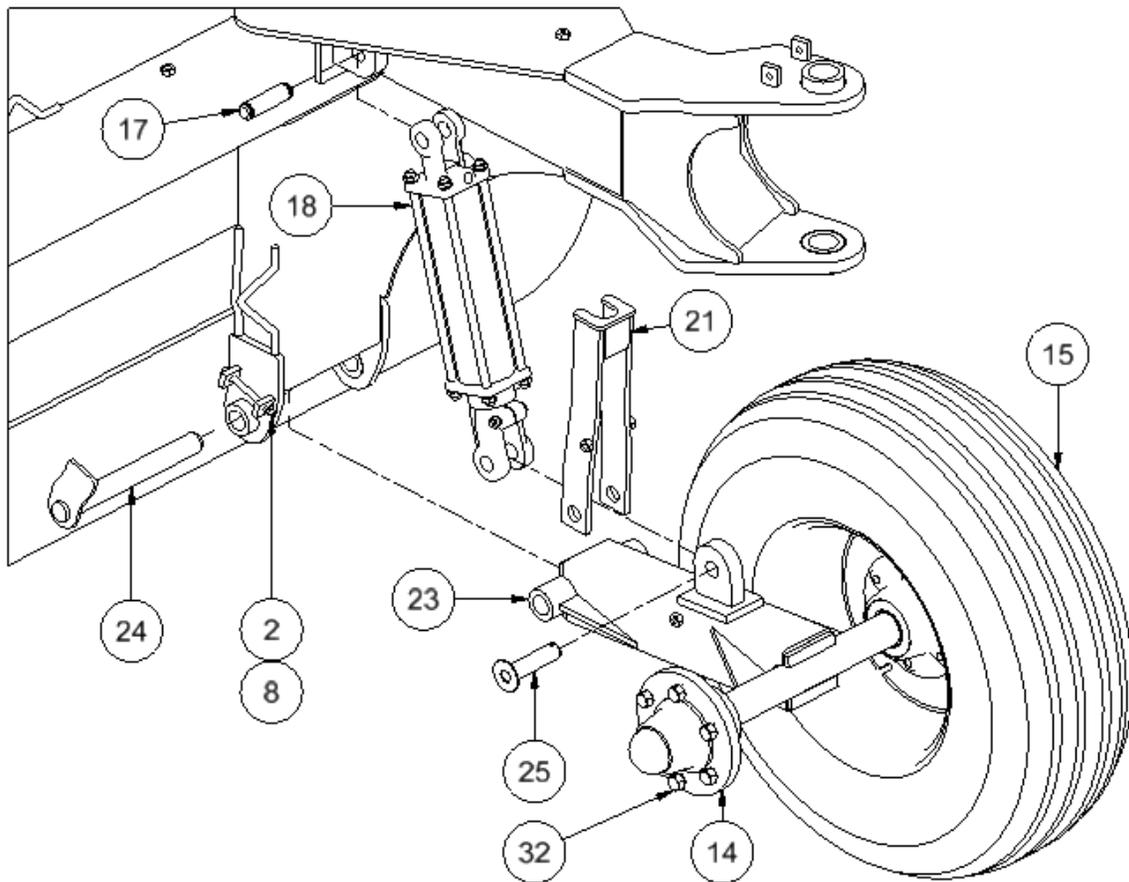
801737 Center Section -Roller Bearing RH



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	8	100604 bolt 3/8 X 1 1/2 gr5 pltd nc	11	24	103204 10 x 1 Self Tapping Screw
3	4	100707 bolt 1/2 X 4 gr5 pltd nc	13	2	105639 Grease Zerk 1_1/4LG 1/8 NPT
4	8	100804 bolt 5/8 X 2 1/2 gr5 pltd nc	16	2	114438 bushing Q1 2-1/2 bore
5	2	101127 Machinery Washer 2_1/2 ID 14 Gauge	20	1	800110 roller wldt center
6	2	101128 Machinery Washer 2_1/2 ID 10 Gauge	22	4	800345 end cover plastic
7	6	101145 lock washer 3/8"	28	2	800999 Bearing Drilled and Tapped 2-1/2 UCF213-40
9	4	102125 nut nylok 1/2" nc gr5 pltd	30	2	802086 bushing shaft lock
10	8	102127 nut nylok 5/8" nc gr5 pltd	31	1	803248 Shaft Roller End Threaded

7.7. CENTER SECTION WHEELS HYDRAULICS

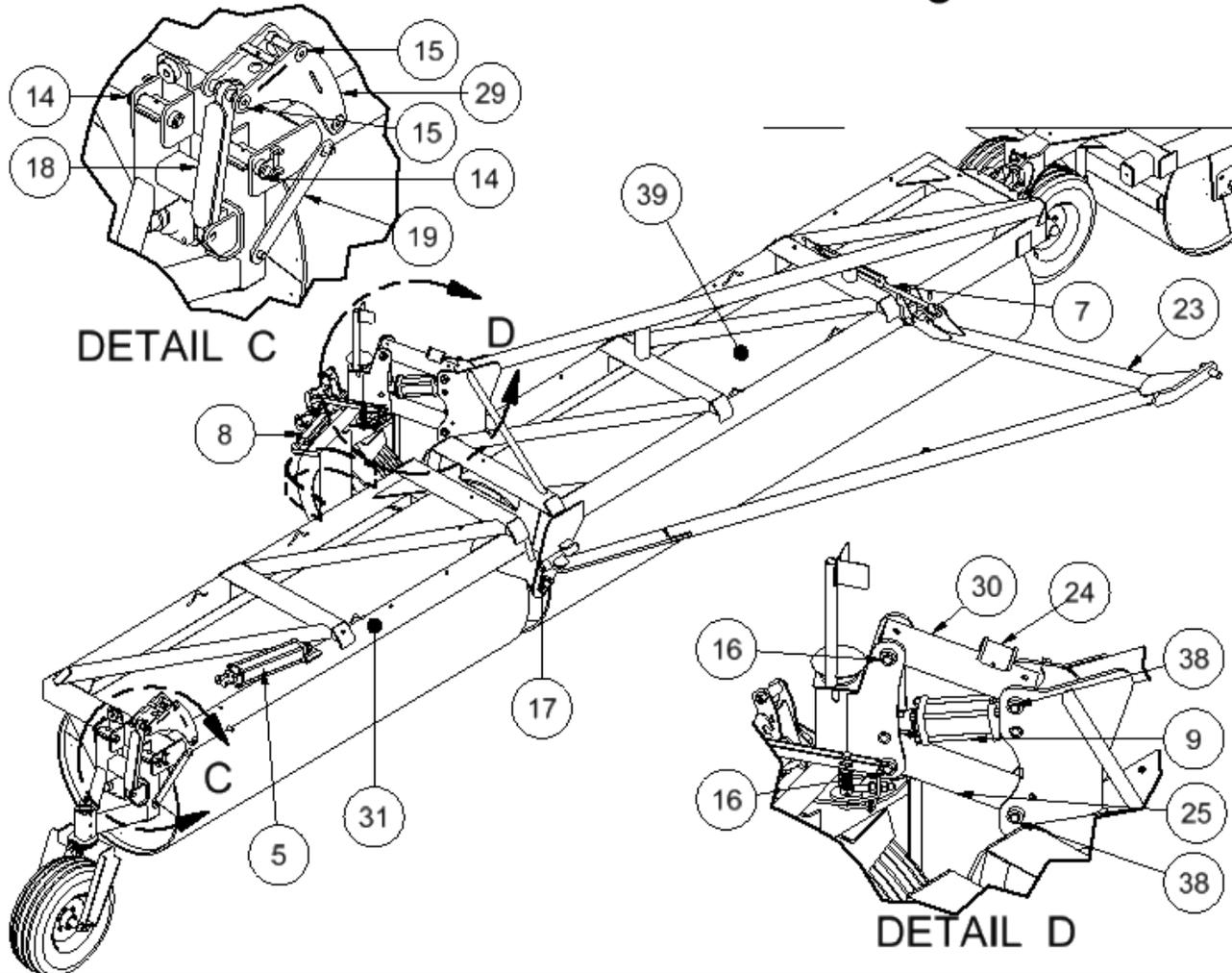
801737 Center Section -Tire Mount



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	8	100604 bolt 3/8 X 1 1/2 gr5 pltd nc	16	2	114438 bushing Q1 2-1/2 bore
2	2	100614 bolt 3/8 X 4 gr5 pltd nc	17	2	117324 pin 3-5_8 in two grooves
3	4	100707 bolt 1/2 X 4 gr5 pltd nc	18	2	117342 Hyd Cyl AGU 3 x 10
4	8	100804 bolt 5/8 X 2 1/2 gr5 pltd nc	19	1	800106 Shaft Roller End
5	2	101127 Machinery Washer 2_1/2 ID 14 Gauge	20	1	800110 roller wldt center
6	2	101128 Machinery Washer 2_1/2 ID 10 Gauge	21	2	800285 wheel lock mid trans
7	6	101145 lock washer 3/8"	22	4	800345 end cover plastic
8	2	102123 nut nylok 3/8" nc gr5 pltd	23	2	800360 Wheel Center Arm Wldt
9	4	102125 nut nylok 1/2" nc gr5 pltd	24	2	800406 pin wldt 1-1/4 x 10-1/2
10	8	102127 nut nylok 5/8" nc gr5 pltd	25	2	800426 pin wldt 1 x 4
11	24	103204 10 x 1 Self Tapping Screw	26	2	800836 Poly Stop Block 3/4
12	2	104516 Hitch Pin 3/4 x 4-1/2	27	4	800837 Stop Block Shim Plt
13	2	105639 Grease Zerk 1_1/4LG 1/8 NPT	28	2	800999 Bearing Drilled and Tapped 2-1/2 UCF213-40
14	4	113667 Assembled 6 Bolt Hub Inc-Axle	29	1	801703 Center Section Frame 5S
15	4	113998 Tire Assy 11L x 15 FI Hwy Load D	30	2	802086 bushing shaft lock
			31	1	803248 Shaft Roller End Threaded
			32	24	Wheel Bolt WB12 9-16 NF x 1 1/4

7.8. 62 FT 5 SECTION RH WING

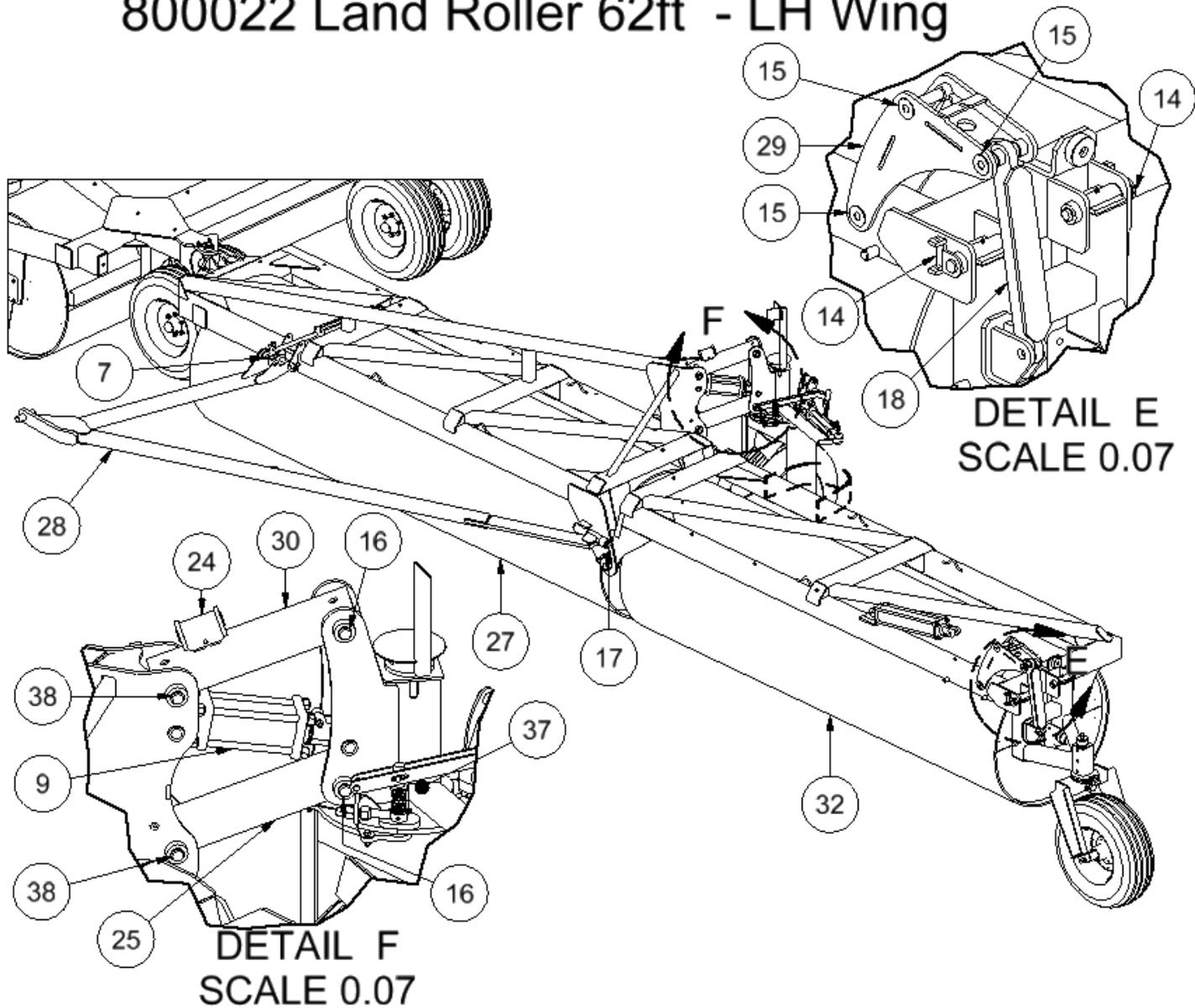
800022 Land Roller 62ft - RH Wing



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
5	2	117337 Hyd Cyl AGU 4 x 20	24	2	801311 Inner Wheel Cyl Lock
7	2	117354 Hyd Cyl AGU 2 x 16	25	2	801342 Inner Wheel Parallel Arm 5S
8	2	117360 Hyd Cyl AGU 2 x 10	26	2	801348 Hitch Double Lock Link
9	2	117365 Hyd Cyl AGU 3 1/2 x 6 W-Mod Clevis	27	1	801355 Wing Assy Inner 5S LH
14	4	800410 pin wldt 1-1/4 x 7-1/4	28	1	801371 Diag Arm Wldmt LH 5S
15	6	800415 pin wldt 1 x 5-1/2	29	2	801600 Rear Wheel T-Link
16	4	800420 pin wldt 1-1/4 x 7-5/8	30	2	801707 Parallel Arm W-Lock Storage Wldmt
18	2	800485 Link Rear Wldt	31	1	801726 Outer Wing Assy 62ft 5S RH
19	1	800619 Lock Bar Rear Wheel Lift	33	1	801737 Center Section Assy 5S
20	1	800700 Wheel Assy Outer caster RH backup	34	1	801750 Knuckle Wldt 5S RH
21	1	800701 Wheel Assy Outer caster LH	36	1	801753 Inner Wheel Assy RH
22	1	801220 Hitch Wldt 5 Section	38	4	801755 Parallel Arm Frame Pin Wldmt
23	1	801263 Diag Arm Wldmt RH 5S	39	1	802006 Wing Assy Inner 5S RH

7.9. 62 FT 5 SECTION LH WING

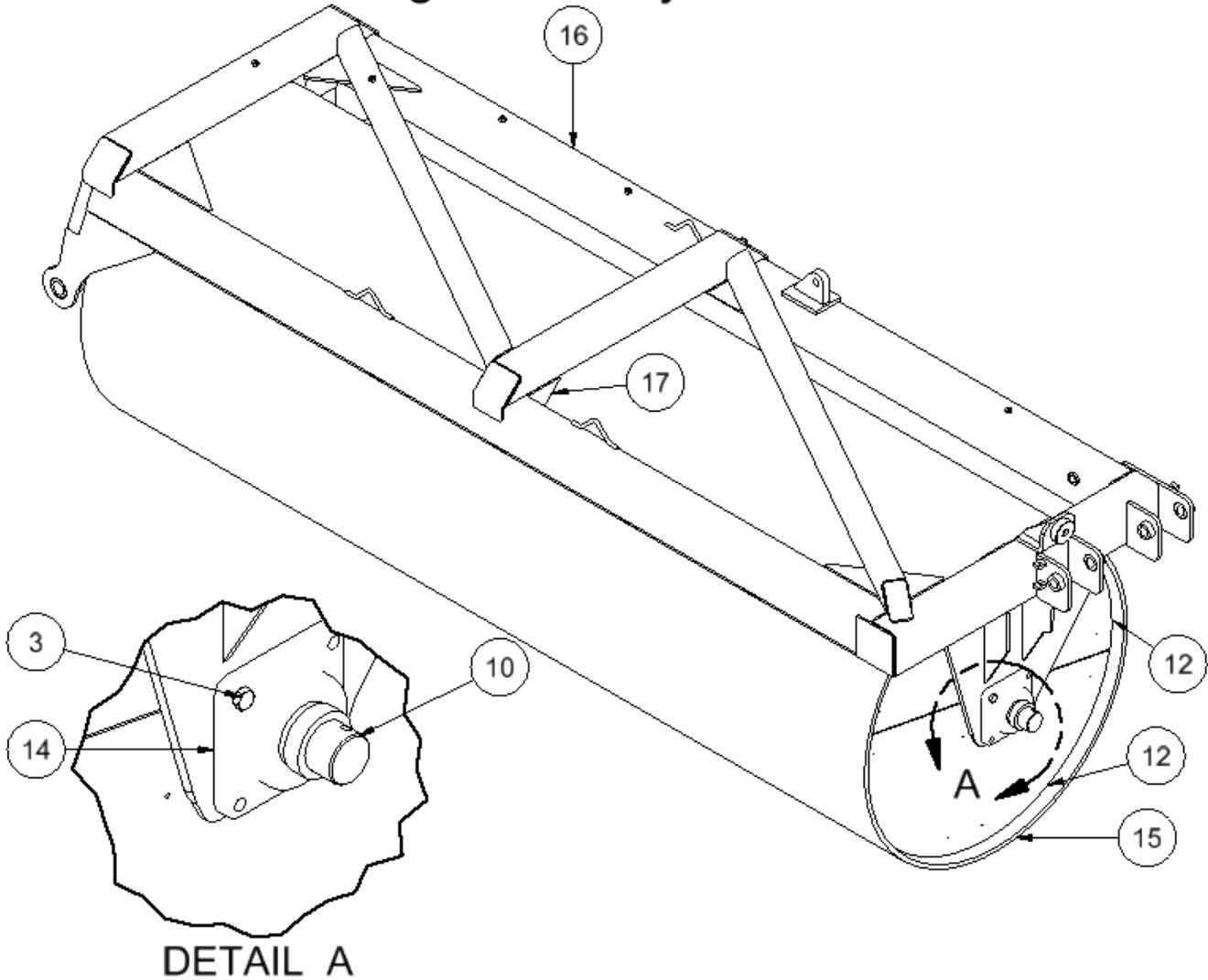
800022 Land Roller 62ft - LH Wing



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
9	2	117365 Hyd Cyl AGU 3 1/2 x 6 W-Mod Clevis	28	1	801371 Diag Arm Wldmt LH 5S
14	4	800410 pin wldt 1-1/4 x 7-1/4	29	2	801600 Rear Wheel T-Link
15	6	800415 pin wldt 1 x 5-1/2	30	2	801707 Parallel Arm W-Lock Storage Wldmt
16	4	800420 pin wldt 1-1/4 x 7-5/8	32	1	801728 Outer Wing Assy 62ft 5S LH
17	2	800425 pin 1-3/4 x 14	37	1	801754 Inner Wheel Assy LH
18	2	800485 Link Rear Wldt	38	4	801755 Parallel Arm Frame Pin Wldmt
27	1	801355 Wing Assy Inner 5S LH			

7.10. OUTER FRAME / ROLLER 5 SECTION 62 FT

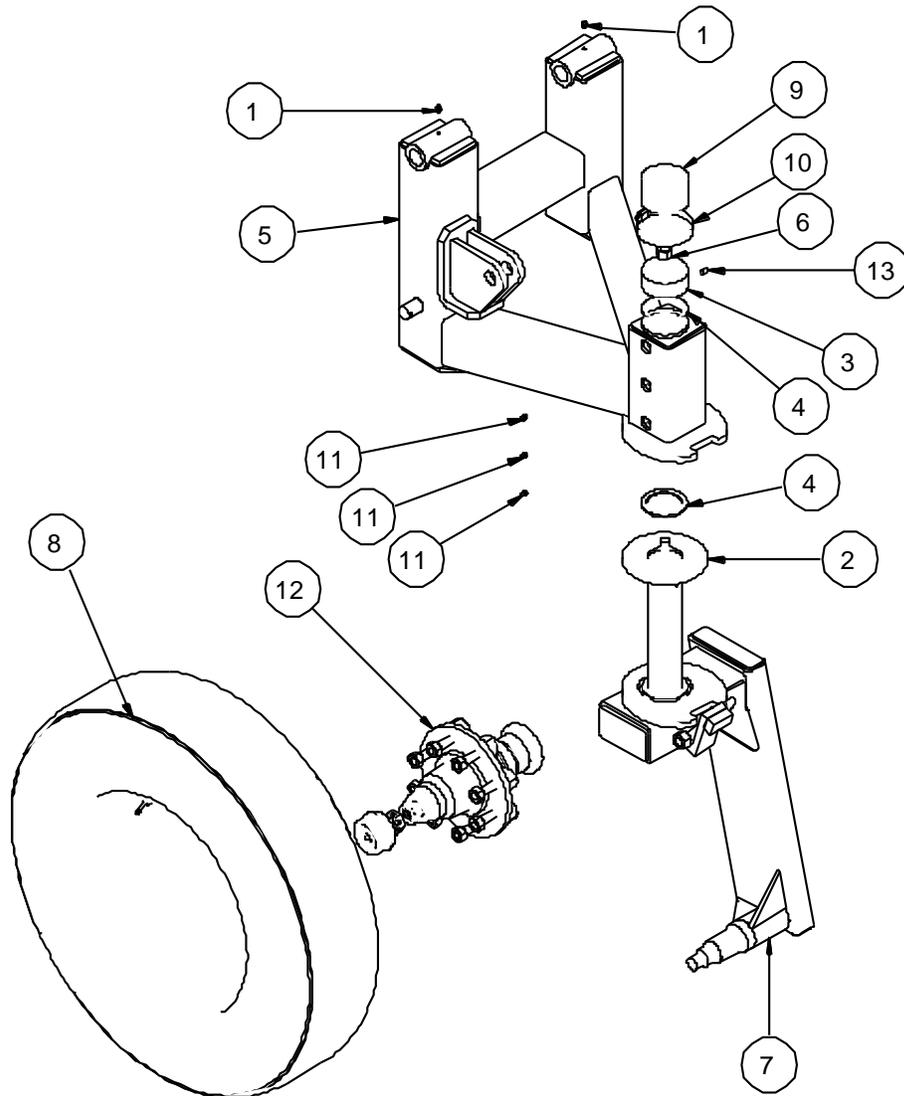
801726 Wing Assembly Outer 5 Section RH



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	6	100604 bolt 3/8 X 1 1/2 gr5 pltd nc	11	1	800153 stop puck 1x3
2	4	100707 bolt 1/2 X 4 gr5 pltd nc	12	4	800345 end cover plastic
3	8	100804 bolt 5/8 X 2 1/2 gr5 pltd nc	13	2	800460 gusset corner wings
4	6	101145 lock washer 3/8"	14	2	800999 Bearing Drilled and Tapped 2-1/2 UCF213-40
5	4	102125 nut nylok 1/2" nc gr5 pltd	15	1	801724 Outer Wing Roller Wldmt 62ft RH
6	8	102127 nut nylok 5/8" nc gr5 pltd	16	1	801727 Outer Wing Frame Wldmt 62ft 5S RH
7	24	103204 10 x 1 Self Tapping Screw	17	2	802029 gussett folded inner 5S frame
8	2	105639 Grease Zerk 1_1-4LG 1/8 NPT	18	2	802086 bushing shaft lock
9	2	114438 bushing Q1 2-1/2 bore			
10	2	800106 Shaft Roller End			

7.11. OUTER WHEEL ASSEMBLY

804191 WHEEL ASSY OUTER CASTER

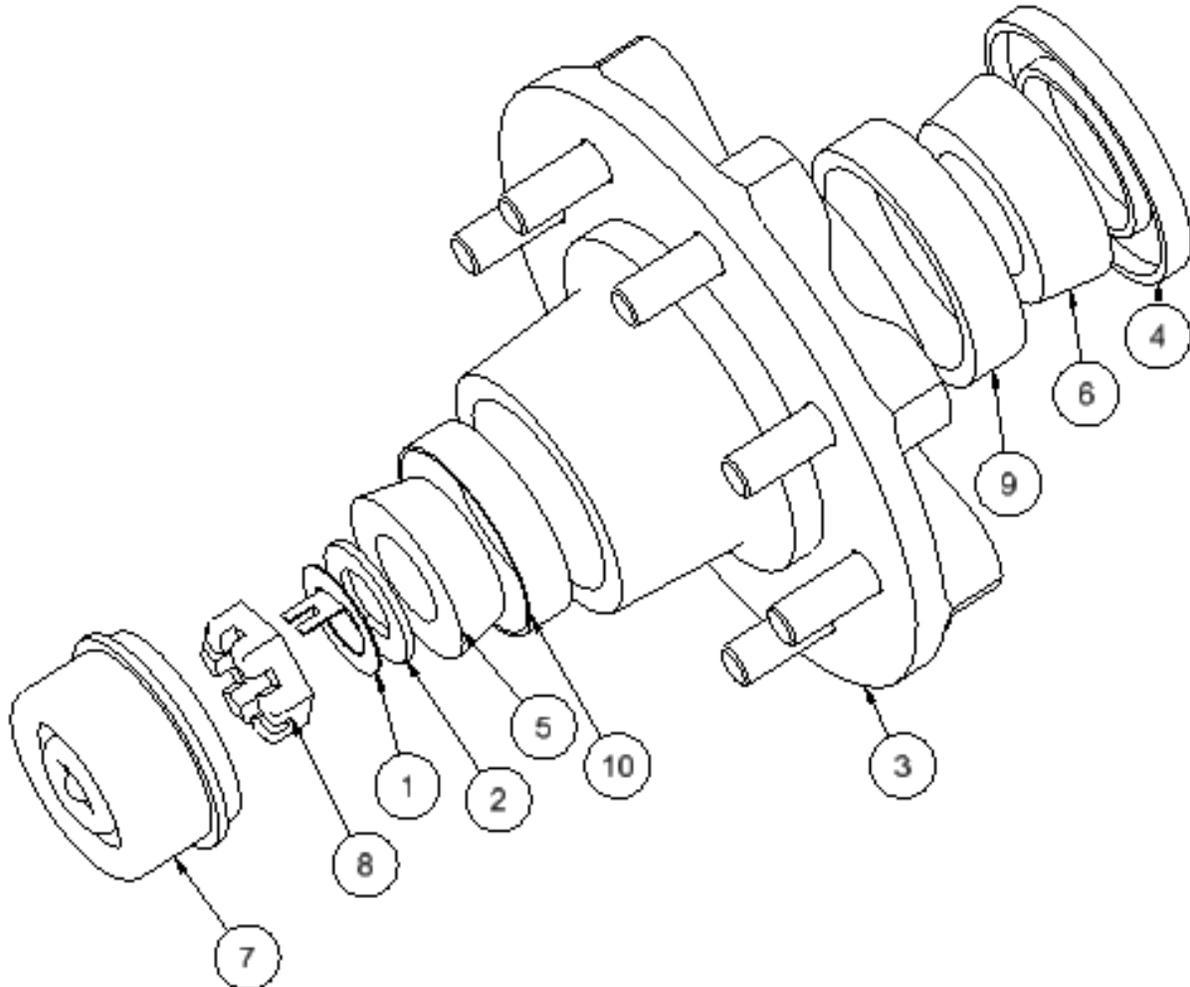


ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	105607 grease zerk	8	1	113986 tire whl assy 8 bolt 6 x 16 5.15 pilot
2	1	800724 washer poly 22 caster 5S outer	9	1	128113 3 1-4 vinyl cap
3	1	800748 caster 5S top nut wldt	10	1	112411 HOSE CLAMP ALL SS HAS 52
4	2	114613 washer bronze 325OD x 25ID x 123 th	11	3	105602 grease nipple 1 4 x28 nf str
5	1	800722 wheel pivot caster 5S LH wldt	12	1	113686 hub assy w brg nut washer cap 3500 8 bolt
6	1	102108 nut 5 8 nc std	13	1	105503 set screw 3/8 NF x 1/2 pltd
7	1	804180 castor one arm wldt 5S outer RH			

7.13. SPINDLE AND HUB PARTS 8 BOLT-113686

113686 hub assy 8 bolt 3500 pound hwy

with cup cones caps nut washers



1	1	1136975 washer locking castle nut hub
2	1	1136965 flat washer 1 ID x 1.7OD flat side on hole x .115th
3	1	113686 hub 8 bolt 6 5 bc 4500lb
4	1	113698 plug rubber
5	1	113694 bearing 14125A 3500M 1.25in
6	1	113695 bearing 25580 3500M 1_25in
7	1	113697 grease cap 2.72 OD x 1.53 hg
8	1	1136795 nut castle 1 -14 UNS
9	1	1136955 cup inner 3500M 8 bolt assy 100-2162
10	1	1136945 cup outer 3500M 8 bolt assy 100-2158

7.14. HYDRAULIC SCHEMATIC 5 SECTION 62 FT BOOM

800022 Hyd Lift & Fold Circuit - 62ft - 5 Section no Powerfold

TRANSPORT POSITION = RED

FIELD POSITION = BLUE

PIVOT TO FOLD CIRCUIT = GREEN

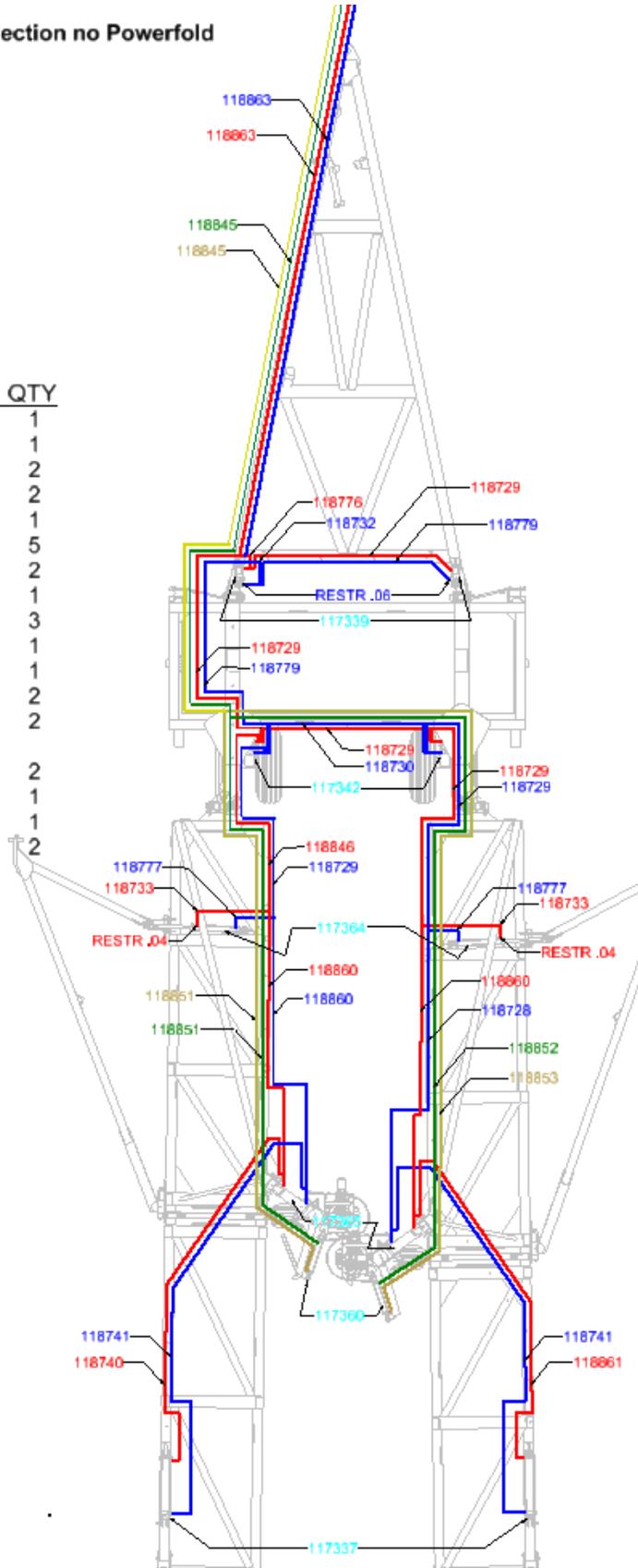
PIVOT TO TRANSPORT CIRCUIT = YELLOW

Hydraulic Hoses

Part	Size	Lgth	End Crimps	QTY
118776	3/8 hose	20"	06JICF x 06JICF	1
118732	3/8 hose	26"	06JICF x 06JICF	1
118777	3/8 hose	35"	06JICF x 06JICF	2
118733	3/8 hose	42"	06JICF x 06JICF	2
118846	3/8 hose	73"	06JICF x 06JICF	1
118729	3/8 hose	90"	06JICF x 06JICF	5
118779	3/8 hose	100"	06JICF x 06JICF	2
118730	3/8 hose	112"	06JICF x 06JICF	1
118860	3/8 hose	142"	06JICF x 06JICF	3
118740	3/8 hose	164"	06JICF x 06JICF	1
118861	3/8 hose	170"	06JICF x 06JICF	1
118741	3/8 hose	195"	06JICF x 06JICF	2
118863	3/8 hose	290"	06JICF x 08MPT	2
118851	1/2 hose	240"	08JICF x 08JICF	2
118852	1/2 hose	348"	08JICF x 08JICF	1
118853	1/2 hose	360"	08JICF x 08JICF	1
118845	1/2 hose	368"	08JICF x 08MPT	2

Hydraulic Cylinders

Part #	Bore	Stroke	QTY
117360	2"	10"	2
117365	3 1/2"	6"	2
117339	3"	6"	2
117364	2"	16"	2
117337	4"	20"	2
117342	3"	10"	2



8. WARRANTY

1. Ag Shield Manufacturing warrants each new Ag Shield LandRoller to be free from factory defects in material and workmanship under normal use and service, when set up and operated in accordance with factory instructions for one year from the date of delivery to the original purchaser.
2. Ag Shield's obligation under this warranty is limited to the supplying of parts to replace those which are defective due to factory workmanship or material.
3. Your Ag Shield Dealer is responsible for providing warranty labour. Credit for required labour is specifically agreed to on an individual case basis.
4. The warranty is void on any unit which has been tampered with, or modified in any way not authorized in writing by the factory.
5. This warranty is void on any unit which is subject to misuse, negligence or accident, or which has had the serial number tampered or removed.
6. A "Warranty Claim Form" (sample at end of handbook) must be submitted to Ag Shield with returned parts in order for parts to be considered for warranty examination.
7. A warranty registration page from the front of this manual must be returned to the factory in order to qualify for warranty examination.
8. All returned parts must be sent to the factory freight prepaid, and warranty parts will be returned to you freight collect.
9. Replacement parts shipped pending receipt of parts for examination will be invoiced, and remain on your account until such time as examination indicates that a credit for those parts be issued or that payment is due.
10. Parts not returned for warranty examination within 30 days must be paid for at that time. Ag Shield will immediately reimburse any cash paid for items that are later determined defective.
11. Warranty terms and conditions are subject to provincial and state legislation.

This page intentionally blank

WARRANTY CLAIM FORM

Ag Shield Mfg

Box 9, Benito,
 MB, ROL 0C0
 ph 800-561-0132
 fax 204-539-2130
 ph 204-539-2000i

Dealer		
Address		
City	State/Province	Zip/Postal

End User		
Address		
City	State/Province	

DATE OF SALE	DATE FAILED	REPAIR DATE	ACRES/HOURS	MODEL	SERIAL NUMBER
--------------	-------------	-------------	-------------	-------	---------------

LABOUR HOURS	LABOUR RATE	LABOUR AMOUNT	PARTS MUST BE RETURNED TO BENITO MB FREIGHT PREPAID TO BE CONSIDERED FOR WARRANTY. DATE SHIPPED		
--------------	-------------	---------------	---	--	--

QUANTITY ITEM	PART NUMBER	DESCRIPTION	PRICE EACH	TOTAL PRICE	DESCRIBE THE CAUSE OF FAILURE AND CORRECTIVE ACTION TAKEN	APPROVE /REJECT
1						
2						
3						
4						
5						
6						
7						
8						

I CERTIFY THAT THE INFORMATION IS ACCURATE AND THAT THE PARTS WERE REPLACED ON THE MACHINE	PARTS		DATE PARTS RECD	RECD BY
	LABOUR		ITEMS TO SUPPLIERS	
	TOTAL			

SHADED AREAS AG SHIELD USE ONLY ---PLEASE ADD DETAILS FOR ITEM NUMBERS ON BACK

9. PowerFold option instructions

The PowerFold option allows you to park the LandRoller on one spot and move the wings to field position. It works by building up to a preset pressure in the cylinders holding the tire against the drive spindle, before oil flow is delivered to the hydraulic motors.

The face of the tire should be reasonably dry and clean before operating the PowerFold. If the tire were recently pulled through a sticky clay mud hole before folding is attempted, extra care will be required to see that the wheels are turning across the field within 2 seconds of the time that the lever is engaged.

OPERATOR ALERT - Depending upon your tractor system pressure, and sequence valve adjustments, it is possible to damage a tire by holding the lever to move the wings to field position after the wings have contacted the fold stops. That is **the motor might continue to turn the drive spindle, the wheel is unable to rotate forward, and the spindle will over heat the tire, and chew the tire rubber away.**

When installed the PowerFold comes from the factory with the sequence valves preset to 2500 psi on each side. That may need to be adjusted to a lower setting if the tractor cannot create 200 psi more than 2500 psi.

When folding to the field position, observe if one side normally reaches the fold stop on center frame ahead of the other. To synchronize the speed the 2 sides, increase the pressure setting on the faster side by screwing the adjust thread into the cavity 1/12 turn CW or "into" the cavity. The pressure gauge do not have to have the same pressure, the gauges can read slightly different when receiving the same pressure. Use the gauges as an approximate Use the gauge as an approximate pressure reading.

The retrofit PowerFold option comes from the factory with both sequence valve set too low to operate.

After the installation is complete, have a co worker operate cab lever, while a second person adjusts the pressures to 2500 psi on each side. The set pressure determines the amount of rotating cylinder pressure that is applied before the hydraulic motor starts to turn. If that setting is too low compared to the maximum system pressure of the system, then the drive spindle may continue turning when the tire is not rotating, causing damage to the tire.

If you do not have coworker present to observe the spindle versus tire operation **DO NOT** begin randomly adjusting the pressures, tire damage may result. Contact factory before making adjustment to get further understanding of the system, and how it operates.

Field installation

The LandRoller is shipped PowerFold ready, that is the hoses to the rear wheel cylinders are ½" hoses capable of handling the higher flows needed to operate the 2 hydraulic motors, The motors are each able to use 8-12 gpm, so the tractor circuit should be adjusted wide open for most models of tractor. The hydraulic motor operation preferred circuit will be the best choice for this operation.

The unit will be preassembled subunits for each side, and the correct unit for left side will be marked "left" on the motor, the correct unit for right side will be marked "right" on the motor.

- 1) Remove the transport locks to allow the rollers to be lowered to the ground, lower the roller, and raise the outer transport wheel up PART WAY so that the tire is resting lightly on the ground, or on a stand to allow easy work ion the tire caster assembly.
- 2) Remove the tire from the hub to make easier access, and easier lifting of parts.
- 3) Remove the cylinder clevis pins from rod end of cylinder.
- 4) Loosen the bolt securing the cylinder clevis to the cylinder rod, unscrew the steel cylinder clevis, it is not used in the PowerFold system.
- 5) Screw on the new cast cylinder clevis provided until the end of cylinder shaft is flush with the inside of clevis. Tighten the lock bolt to maximum recommended for that bolt.
- 6) Remove the vertical castor pin –part # 800412 through the caster assembly. It is too short to be used in a PowerFold system .
- 7) Place the drive wheel weldment into position, loosely install the ½ x 1 ½ bolts into wheel frame.
- 8) Install the rotating castor pin 800417 through the caster, and new drive wheel weldment # 800525.
- 9) When assembled, move control lever to shorten cylinder, observe 2 THINGS:
A) THAT THE CYLINDER SHAFT DOES NOT SHORTEN COMPLETE, THAT IS THAT THERE IS STILL .25 INCHES OF CYLINDER STROKE REMAINING UNUSED WHEN THE FULL PRESSURE OF 2050 PSI IS APPLIED- SCREW THE CLEVIS **ON** AS NEEDED TO ACHIEVE THIS SETTING

- B) the curve of tire fits precisely into the curve of the drive spindle when under pressure,
- 10) IF it does not fit perfectly when under pressure, shim the spindle end ways using the machinery bushing, and spacers to hold the spindle in precisely the correct position. See Figure 35 below with bushing and spacers on the ends of the spindle.
 - 11) If working in folded transport position, Run a light chain between the wing sections, so that the drive spindle cannot rotate the wheels, and move the wheels to field position. It is easy to adjust the 2 pressure gauge without walking as much .
 - 12) Increase the pressures of both sides 100 psi at a time alternating between the 2 sides. The correct pressure is 200 psi less than maximum tractor system or at least 2300 psi.
 - 13) Remove the chain and allow the wings to fold out. If one moves faster than the other on similar ground conditions, increase the pressure setting on the faster wheel to slow down the speed that the wheel rolls compared to the other side. The goal is to have the wheel roll as a similar speed, and both sides arrive at the fold stop on the center section at the same time.
 - 14) If one wheel arrives at the fold stop ahead of the other, check to see that the drive spindle cannot turn and damage the tire. When the gauge pressure is high enough, the cylinder will force the spindle on to the tire tightly enough that the friction between the drive spindle and the tire will stop the motor from turning.
 - 15) When both wings have reached the stop, the tractor system pressure relief should allow both spindles to stop turning, therefore not damaging the tire.
 - 16)



FIGURE 27 POWERFOLD WHEEL SYSTEM



FIGURE 28 DRIVE SPINDLE WITH SPACERS & MACHINERY BUSHINGS TO SHIM TO CENTER



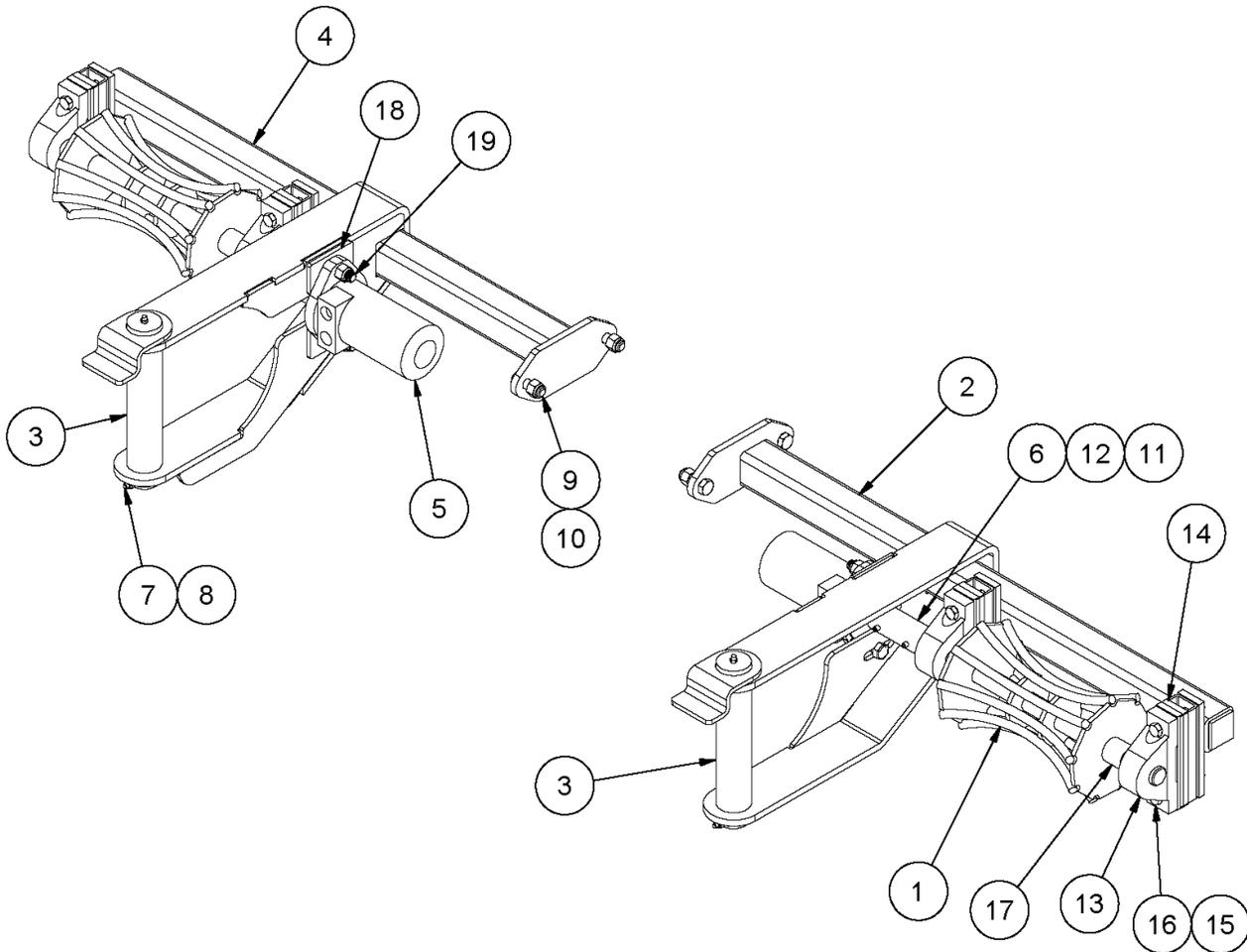
FIGURE 29 POWERFOLD KIT CONTENTS



FIGURE 30 EASIFOLD WHEEL - HYDRAULIC TURN – NOT POWERFOLD-- LOCKED

800506 Power Folding Option

Rev 2 DK 051920

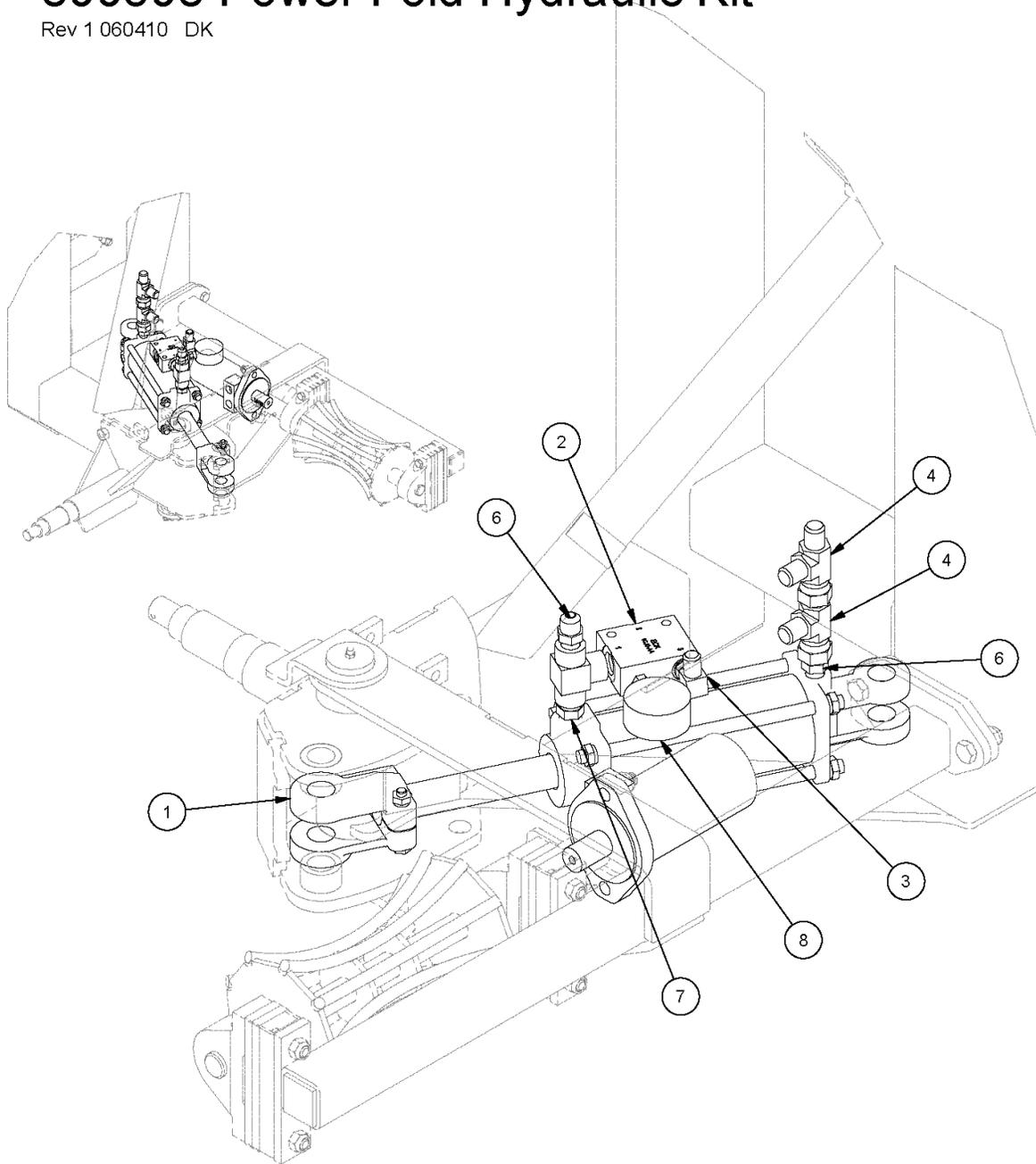


Parts List		
ITEM	QTY	PART NUMBER
1	2	800500 Roller Drive Wheel Wldt
2	1	800525 Drive Wheel Wldt
3	2	800417 pin wldt wheel pivot rear
4	1	800535 Drive Wheel Wldt LH
5	2	117173 HYD MOTOR 17.9 CID 2 bolt
6	2	800531 coupler wheel driver
7	2	100408 bolt 1-4 X 2 1-4 nc
8	2	102121 nut nylok 1/4" nc gr5 pltd
9	4	100702 bolt 1-2 X 1 1-2 gr5 pltd nc
10	8	102125 nut nylok 1/2" nc gr5 pltd

Parts List		
ITEM	QTY	PART NUMBER
11	2	805019 key drive roller
12	2	105204 SET SCREW 250-28 X 375 KNURLED
13	4	114475 PILLOW BLOCK P205 1in 2 BOLT
14	4	800533 spacer block 1-1_2
15	8	102124 nut nylok 7/16" nc gr5 pltd
16	8	100665 bolt 7-16 X 3 gr5 pltd nc
17	4	800523 spacer bushing drive
18	4	800524 retainer drive mt
19	4	100703 bolt 1/2"nc 2 gr5 pltd hex
20	8	800532 mt plt bearings

800508 Power Fold Hydraulic Kit

Rev 1 060410 DK



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	117350 Clevis 1-1_4 NF FEM x 1 Pin	6	2	118175 adapter str 08 mpt x 08 mjic
2	1	800509 Sun PRV 10-10-06 Drilled	7	1	118008 NIPPLE 08MPT X 08MPT
3	1	117977 adapter elbow 06 ORBM X 08 JICM	8	1	112300 gauge 3000 psi 1 4 mpt btm mt
4	2	117950 run T08 mjic X 08 fjic X 08 mjic	11	1	117173 HYD MOTOR 17.9 CID 2 bolt
5	1	118043 TEE C3709 X 8 X FPT IE 25VJ08			