

AG SHIELD



**RECON 300 PULL TYPE- 84" & 111"
RECON 400 3 POINT PIVOT 111"wide**

OPERATOR'S HANDBOOK AND PARTS MANUAL

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-Part No 113599

Serial no.-1816000 up 2" Mechanical dual drive



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Warranty Registration Form - Warranty registration must be filled out by the dealer at the time of delivery, and emailed, faxed, or mailed to Ag Shield within 10 days of customer invoice to validate warranty.

Machine type-e.g. ReCon, LandRoller	Model - e.g, 400 or 12- 46- 3	Delivery Date
Serial Number e.g. 1815125	Size - e.g. 7 ft or 46 ft	Options
Additional Serial Number e.g. 1415103	Size - e.g. 7 ft or 46 ft	Options
Customer Name	Contact Person	
Phone Number	Mailing Address	
City	State / Province	Country
Postal Zip code	Email Address for service & updates- required	

enter X Customer agrees that the equipment was complete with all parts in good working order except as noted below, that the customer has received the owner's handbook, and the customer has been thoroughly instructed in the use of it. Customer agrees that he has been instructed in the care, adjustments, the safe operation of the machine, and the applicable warranty policy.

Dealer Name	Phone Number
Mailing Address	City
State / Province	Country
Postal Zip Code	Email Address for service & updates- required

enter X Dealer agrees to have thoroughly instructed the customer on the above described equipment, including the contents of the Owner's Handbook, equipment care, adjustments, safe operation, and applicable warranty policy.

Dealer Sales Person Name	Cell Phone Number
Mailing Address	City
State / Province	Country
Postal Zip code	Email Address for Discount Programs

TABLE OF CONTENTS

1.	INTRODUCTION AND SIGN-OFF FORM	7
2.	SAFETY	8
2.1.	SAFETY OVERVIEW	9
2.2.	GENERAL SAFETY	9
2.3.	MAINTENANCE SAFETY	10
2.4.	THROWN OBJECTS SAFETY	10
2.5.	CHAIN DRIVE SAFETY	10
2.6.	HYDRAULIC SAFETY	10
2.7.	MECHANICAL GEARBOX DRIVELINE SAFETY	10
2.8.	STORAGE SAFETY	11
2.9.	TRANSPORT SAFETY	11
2.10.	REFUELING SAFETY	11
2.11.	TIRE SAFETY	11
2.12.	OPERATING SAFETY	11
2.13.	SAFETY DECALS	12
3.	SETUP FROM SHIPPING MODE	17
3.1.	MECHANICAL GEAR DRIVE	17
4.	OPERATIONS	19
4.1.	RECON 300 ADJUSTMENTS	19
4.1.1.	Height of operation-Belleville spring disc washers - transport	19
4.1.2.	Truck Transport	19
4.1.3.	Chain Tension	20
4.1.4.	Roller speed	25
4.1.5.	Timing of Drive Rollers	25
4.1.6.	SETTING ROLLER CLEARANCES WITH TIN FOIL AND CALIPERS	26
4.1.7.	In line adjuster options	27
4.1.8.	Roller adjustment vs crop damage	27
4.1.9.	Timing of Operation	28
4.1.10.	Alfalfa Settings	30
4.1.11.	Timothy Settings-	31
4.1.12.	Oats for green feed Settings	32
4.1.13.	ReCon Capacity versus forward speed	32
4.1.14.	Side and Top Deflector adjustment	32
4.2.	SPINNER SPREADER ADJUSTMENTS	35
4.3.	TOP DEFLECTOR FIN WIDE SWATH KIT	37
4.4.	HAY SAVER WHEELS	38
4.5.	WALKING BEAM AXLE- IN LINE	38
4.6.	WALKING BEAM AXLE STAGGERED FOR BEDS	39
4.7.	LUBRICATION	40
4.7.1.	GREASE NIPPLE LOCATIONS	40
4.7.2.	Drive chain oiling, all models	42
4.8.	MECHANICAL GEAR BOX DRIVE ONLY - OPERATIONS	43
4.8.1.	Hook-Up	43
4.8.2.	540-1000 RPM Changeover	43
4.8.3.	Spring clutch maintenance and settings	44
4.8.4.	Constant velocity (C.V.) shaft	44
4.8.5.	Lubrication-Mechanical Gearbox Drive	44
5.	RECON 400 3PP	46
5.1.	SETUP	46
5.2.	LUBRICATION RECON 400 ONLY	49
6.	RECON 400 DIMENSIONS	51
7.	PARTS LIST RECON 400 MECHANICAL GEAR BOX DRIVE	52
7.1.	LH DRIVE CHAIN COMPONENTS	52
7.2.	RECON 400 LH MAIN FRAME	53

7.3.	RECON 400 CHAIN CASE RH	54
7.4.	RECON 400 MAINFRAME RH	55
7.5.	RECON 400 DEFLECTOR SIDE AND TOP FLAP	56
7.6.	RECON 400 DRIVELINE COMPONENTS	57
7.7.	RECON 400 HITCH ASSEMBLY	58
7.8.	RECON 400 ROLLERS, HITCH, TOOLBOX AND MANUAL	59
7.9.	RECON 400 DECAL LOCATIONS	60
8.	SPECIFICATIONS - RECON 300 & 400.....	61
8.1.	RECON300 TRANSPORT DIMENSION	62
9.	PARTS LIST RECON 300 MECHANICAL GEARBOX DRIVE 7-9 FT	64
9.1.	LH CHAIN DRIVE COMPONENTS.....	64
9.2.	LH WHEEL, SPRINGS, JACKSHAFT ON CHAIN CASE	65
9.3.	RH CHAIN CASE, SPROCKETS, BEARINGS	66
9.4.	RH PIVOT ARM, SPRINGS, ROLLER BEARINGS	67
9.5.	DEFLECTOR, SIDE AND TOP AND TOP FLAP	68
9.6.	DRIVELINE COMPONENTS.....	69
9.7.	FRONT HITCH ASSEMBLY FOLDING	70
9.8.	ROLLERS, FRONT HITCH, TOOLBOX, TOOLS, MANUAL	71
9.9.	DECALS LOCATIONS AND PART NUMBERS	72
9.10.	9 FT RECON 300 PARTS.....	73
9.11.	408876WALKING BEAM AXLE PARTS PART # 321500	74
9.12.	WALKING BEAM AXLE – STAGGERED FOR BEDS.....	75
9.13.	SUPERIOR GEAR BOX	76
	76
9.14.	DRIVE LINE COMPONENTS.....	77
9.15.	DRIVE LINE COMPONENTS.....	78
	78
9.16.	DRIVE LINE COMPONENTS.....	79
9.17.	SPINNER SPREADER PRE 2007	81
9.18.	SPINNER SPREADER KIT 2007 (SN 2807XXX).....	82
9.19.	SPINNER SPREADER 2008+ (SN 2808XXX+)	83
9.20.	SPINNER SPREADER WHEEL GUARDS 2007 AND LATER	84
9.21.	OPEN CENTER FLOW CONTROL	85
9.22.	CLOSED CENTER FLOW CONTROL.....	86
9.23.	HAY SAVER KIT R2.....	87
10.	WARRANTY	88

1.INTRODUCTION AND SIGN-OFF FORM

Congratulations! on your choice of an Ag Shield Recon 300-400 forage reconitioner. This equipment has been designed and manufactured to meet the haying needs of the discerning farmers and custom haymakers.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from the tractor driver's seat and facing in the normal direction of travel.

Ag Shield follows the general safety standards specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration OSHA). Anyone who will be operating and/or maintaining the Ag Shield Recon 300 must read and clearly understand ALL Safety, Operating, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Review this information annually before season start-up. Make these reviews of safety and operation a standard practice for all of your equipment. An untrained operator is **not qualified** to operate this machine.

A sign off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understood the information in the Operators Handbook and have been instructed in the operation of the equipment.

SIGN-OFF FORM

DATE	OPERATORS SIGNATURE	EMPLOYERS SIGNATURE

2. 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.





2.1. SAFETY OVERVIEW

YOU are responsible for the **SAFE** operation and maintenance of your Ag Shield Recon 300. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the reconitioner 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 reconitioner.

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.

- Reconitioner owners must give operating instructions to operators or employees before allowing them to operate the Recon 300, 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!**

2.2. GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the Recon 300.

2. Only trained competent persons shall operate the reconitioner. 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.

2.3. MAINTENANCE SAFETY

1. Review the Operators Manual and all safety items before working with, maintaining or operating the reconditioner.
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.

2.4. 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, inspect chain guard frequently to ensure protection is in good repair.

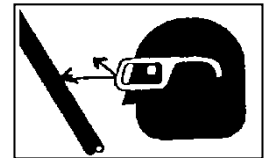
2.5. CHAIN DRIVE SAFETY

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.

2.6. 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.



2.7. 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.

2.8. STORAGE SAFETY

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

2.9. TRANSPORT SAFETY

1. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the Recon 300 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.

2.10. REFUELING SAFETY



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

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

2.11. 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.

2.12. 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 conditioning a field, be familiar with all potential hazards: trees, rocks ditches, gullies, etc. Plan your route to avoid hazards. Keep conditioner 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 Recon 300 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

2.13. SAFETY DECALS

Become familiar with these decals and the hazards they are marking.

The decal locations are detailed in 9.9DECALS LOCATIONS AND PART NUMBERS



part #113524



part # 113552

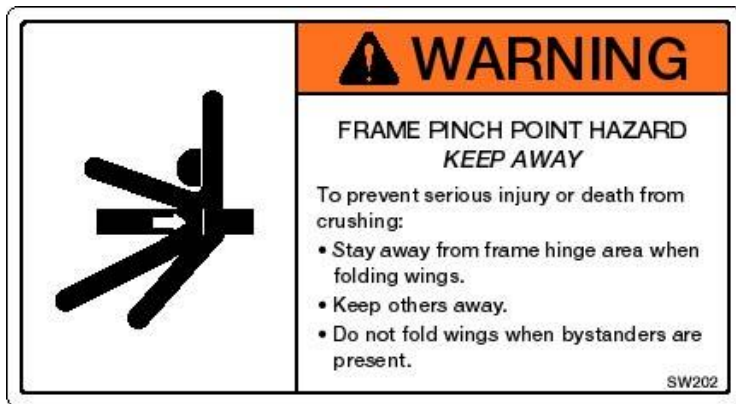
Become familiar with these decals and the hazards they are marking.



part # 113523



part # 113525



part number 113555

0

FIGURE 1 R300 DUAL DRIVE #116105 CHAIN CASE 11X11IN

Decals 2004 models



FIGURE 2 DECAL RECON 300 SIDE FRONT HITCH 3X42IN #116106



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



FIGURE 4 STRIPS SIDE DEFLECTOR 3X12 IN #116108



FIGURE 5 RECON 300 800- SIDE DEFLECTOR #116109



FIGURE 6 DANGER THROWN OBJECT #116115



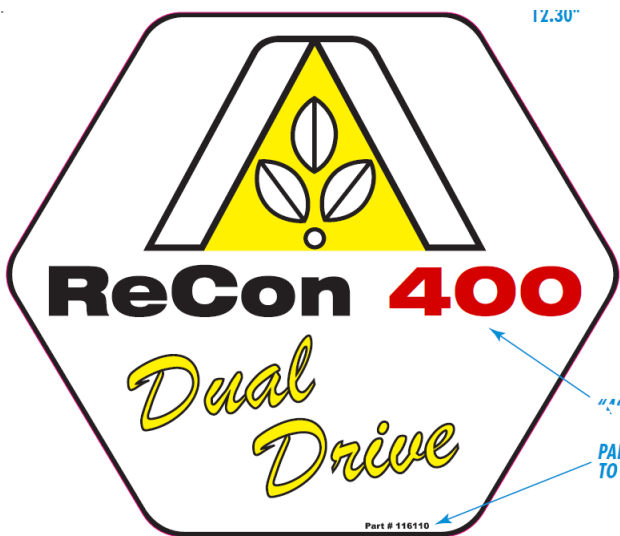
FIGURE 7 WARNING ROTATING PART #116117



FIGURE 8 DANGER ROTATING SPINNERS #116118



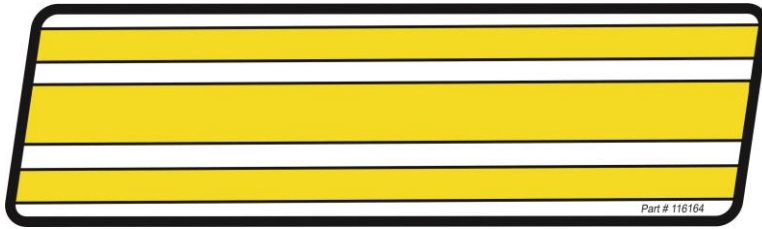
RECON 400 SIDE DEFLECTOR #116111



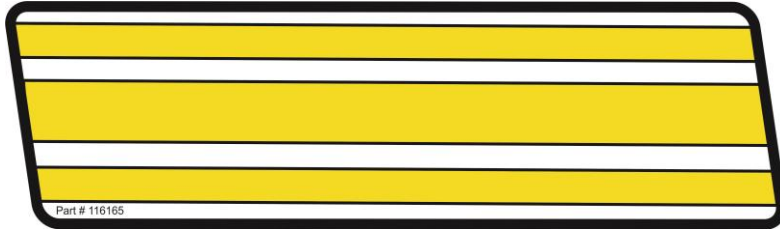
RECON 400 DUAL DRIVE #116110



RECON 400 FRONT TOP #113501



LEG LH DECAL #116164



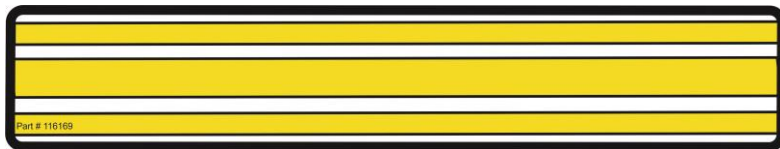
LEG RH DECAL #116165



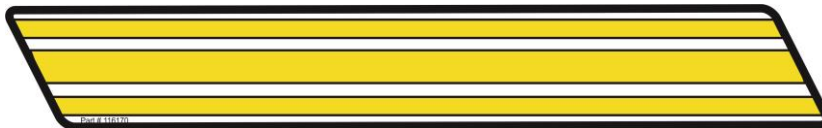
RECON 400 FRONT DECAL #116166



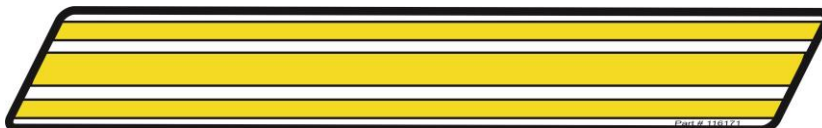
RECON 400 FRONT WARNING DECAL #116168



CENTER VERTICAL DECAL #116169



WHEEL SUPPORT RH DECAL #116170



WHEEL SUPPORT LH DECAL #116171



RECON 400 CHAIN CASE DECAL #116175

3. Setup from Shipping Mode

3.1. MECHANICAL GEAR DRIVE

**Refer to section 8, SPECIFICATIONS - RECON 300, page 61 for correct requirements for the model and size of your ReCon 300.

The ReCon 300 roller unit has been run and rollers timed and set to a clearance of .032 or less at the factory.

The driveline was tested for output, although not all components together.

Items required or preferred for setup

1. Tractor with front end loader or forklift
2. Tractor with hydraulic system to raise and lower, machine, and 1000 or 540 PTO as required.
3. Hand tools
4. Air pressure gauge and possibly a source of air to inflate tires to 18 psi.

Procedure

1. Inflate tires to 18 psi only (depending on model and size of your machine). This pressure will allow the tires side wall to flex over bumps in the field, and yet is enough pressure to allow long distance travel at 100 km/h (60 mph).
2. Place ReCon 300 in area where you can use front end loader at 15ft height
3. Cut wires and metal banding that hold plastic deflectors (321874 & 321879) onto chassis and set aside the deflectors.
4. Cut wires and metal banding that hold top all metal deflector (321319) onto chassis. Loosen jack(also secures deflector) and set deflector and jack aside
5. Remove toolbox & obtain these instructions.
6. Cut straps securing A-front forward hitch. With a partner or hoist set aside. Cut zip ties and remove the two pieces of PTO shaft.
7. Install A-front forward hitch onto mainframe using the 5/8"x2" bolts and 5/8" nylok nuts and torque to 160+ lb.-ft. Install the hitch jack onto the hitch assembly so that it points in the same direction as the four mounting holes.
8. Hook chain to main frame hitch. Use the loader to back up and pull the mainframe over to leave unit in field ready position.

9. Hook up the farm tractor to the draw bar and adjust hitch to provide 14"-16" rearward from tip of PTO shaft to center of draw pin hole.
10. Attach forward drive shaft with smaller overrunning clutch towards rear of machine and CV joint towards front of machine(to tractor) refer to 9.6 DRIVELINE COMPONENTS
11. Attach unit driveline to tractor using the quick-connect coupler.
12. Install right and left hand light onto bracket using 6mm nuts.
13. Remove plug from lift cylinder Attach the two ¼" hoses to the lift cylinder. Clean and plug hydraulic couplers into tractor, and raise unit slightly until bottom of rollers is about 25 cm (10 inches) above ground.
14. Refer to 7.8. Install the tool box on the top and near the rearward edge of the deck (on left hand side) Use two ¼NC x 1' bolts with washers and self locking nuts.
15. Clear the area of all bystanders, and be sure no tools or items are near the rollers. Start the PTO slowly, observe that the rollers turn,
16. With PTO running raise unit to top, top roller should lift clear of bottom roller. Operate at full-recommended speed for 1 minute, observe chains runs smoothly. Check the oil cases, bearings and the gearbox for heat buildup.
17. Install the side deflector arms and cylinder as per photo below (see A) and parts page section 9.5 Deflector, side and top and top flap.

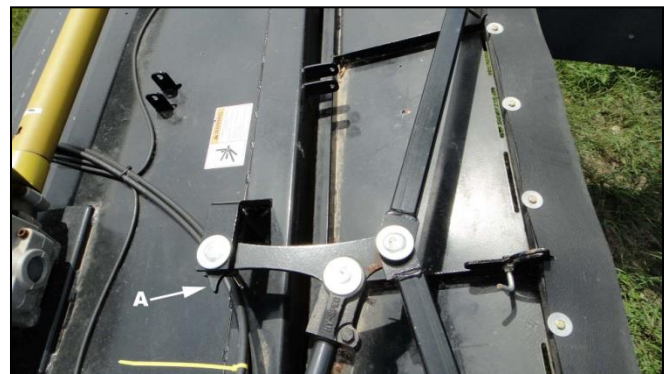


FIGURE 9 PIVOT CHANGED TO CORRECT SETUP FROM SHIPPING MODE

18. Using two 1" OD x 5" long pins, install left deflector. The pin head notch must straddle the ReCon frame to stop the pin from turning. Use the cotter pins supplied to retain the hinge pins. Install the right deflector and cotter pins.
19. Install the top deflector through 2 oblong holes in side frame above and to the rear of the rollers. Retain on the left end with the bushing and 1/4" bolt provided. Set the top deflector flap to be in the highest position, almost horizontal.
20. Refer to 4.7 LUBRICATION and do a complete grease up, check gearbox oil level (4.8.5 Lubrication-Mechanical Gearbox Drive) and field pre delivery.
21. Check that there is oil in both chain cases refer to Figure 70 SIGHT GLASS LOW ON CASE and Figure 71 SIGHT GLASS CLOSE UP
22. Check that there is a 1/2 MPT breather in the top of the gearbox, if not, remove the plug and replace with the breather from the toolbox.

4. OPERATIONS



DANGER

**WATCH FOR THROWN OBJECTS
WHENEVER MACHINE IS RUNNING**

4.1. RECON 300 ADJUSTMENTS

The tires have been oversized for maximum flotation; factory setting of tire pressure is 17-19 psi to take advantage of suspension in tire side wall.

4.1.1. Height of operation-Belleville spring disc washers - transport

Proper operating height is the maximum at which the rollers do an excellent job of picking up the swath, usually 8 cm (3") or more between bottom of roller lug and the ground. You will have excessive roller wear if the rollers are continually contacting the ground or stone. If there is a build up of dirt between the lugs, the operating height is probably too low or the mole hills too high. The skid shoes at each end of the machine are intended to operate **above the ground**, and keep the bottom roller from digging in if a tire does go into a hole.

All pull type models have Belleville spring disc washers on the lift cylinder to give smooth ride at all operating heights



FIGURE 10 TRANSPORT LOCK- CYLINDER STOP

Set the threaded stroke adjustment on the hydraulic cylinder to the normal operating position. See figure 10 TRANSPORT LOCK- CYLINDER STOP This setting will eliminate the possibility of the rollers being run into the ground on an operator over travel.

Use highest settings to reduce contact with knobby stones and pick up or throw fewer fist-sized stones.

For road transport, add a 1" aluminum cylinder stop number 117510 (supplied) into the cylinder to hold the bottom roller 7" above the ground. When not on road, clip the cylinder stop around the adjacent hose or cylinder port.

4.1.2. Truck Transport

When transporting behind a truck with a hitch REACHING PAST THE DECK or BOX, the PTO shaft may be left attached and simply racked in the U bracket with the hoses under the pins of the U clamp. Refer to Figure 11 TRUCK TRANSPORT LONG HITCH



FIGURE 11 TRUCK TRANSPORT LONG HITCH





FIGURE 12 TRUCK TRANSPORT SHORT HITCH

When transporting with a Ute with the deck overhanging the hitch, remove the PTO shaft from the spline as one unit to avoid getting dirt into the telescoping portion of the hitch. Fold the hitch hose holder back as shown in Figure 12 TRUCK TRANSPORT SHORT HITCH, and use the U mount to hold the hoses only.

4.1.3. Chain Tension

Upper roller lift

In order to allow easy roller stop adjustment and clearing of most wads from the tractor seat, the upper roller is raised on both ends when the machine body is lifted to have the skid shoes more than 8" above the ground. Refer to Figure 13 CHAIN LIFT FOR UPPER ROLLER and block "E" part number 321953 supplied in Figure 14 Left Hand chain case bolts.



CAUTION

WHEN THE MACHINE HAS BEEN RAISED MORE THAN 8' ABOVE THE GROUND, THERE IS >1000 LBS OF SPRING FORCE PULLING TOP ROLLER DOWN. DO NOT WORK ON THE TOP ROLLER OR IT'S DRIVE WITHOUT SAFETY STOPS TO PREVENT THE ROLLER ASSEMBLY FROM PINCHING FINGERS OR MORE.

When the ReCon 300 frame is raised to highest hydraulic height, the upper roller should be lifted to have approximately 4.4cm (1 3/4") of gap between the lugs of the rollers. Chain may have links removed or added to achieve this setting. The chain should be long enough to allow the upper roller to rest on the field stop during road transport when the roller is 7-8" above the ground. Use 26 rollers of 60 chain with joiners on each. For your convenience, units have a hole in side plate to allow chain joiner to feed from the inside of end plate when putting link on pivot plate end.

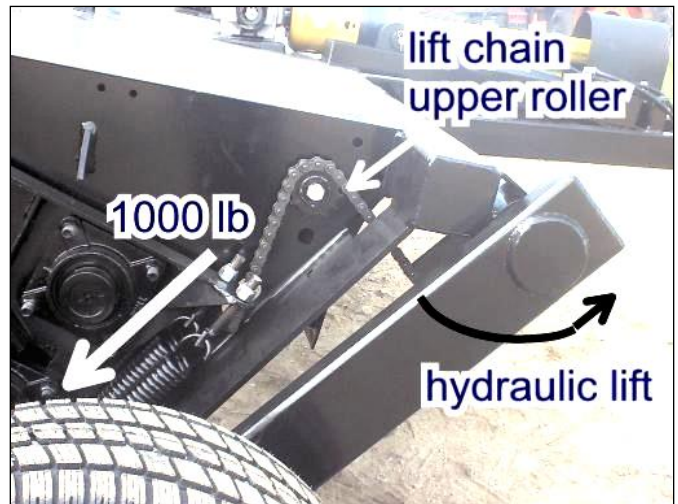


FIGURE 13 CHAIN LIFT FOR UPPER ROLLER

Left hand chain case

The long span in the chain is 25", therefore the correct chain adjustment is to have 1/2" of movement in center of span as Figure 16 LEFT HAND CHAIN CASE CHAIN TENSION. Refer to Figure 14 Left Hand chain case bolts

Follow these steps to adjust chain tension:

1. Raise the machine to the highest height on the hydraulic cylinder.
2. Shut down the tractor motor, set the tractor park brake securely, remove the key from the ignition, dismount from the tractor seat, Insert wood block "E" part number 321953 supplied with your unit under the pivot arm to prevent the springs from crushing your hands if the 60 chain that raises the upper roller should fail.
3. Mark the eccentric rotation position on the side of the chain case. This provides a reference as to starting point before eccentric was rotated
4. Loosen the 3 bolts "A" in Figure 14 Left Hand chain case bolts with a 9/16 wrench approximately one turn

5. Hold the tip of bolt B with the 9/16 wrench and loosen self locking nut with a 1 1/16 wrench.

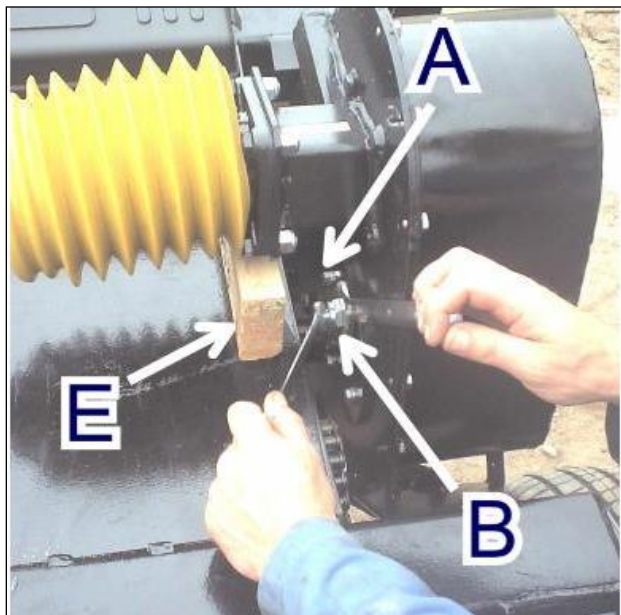


FIGURE 14 LEFT HAND CHAIN CASE BOLTS

6. Remove the inspection port cover with jaws of the open end wrench as per Figure 15 REMOVE INSPECTION FILL PLUG.



FIGURE 15 REMOVE INSPECTION FILL PLUG

7. Reach through the inspection port D to feel for chain tightness on the span with the 1 1/16 wrench head as per Figure 16 LEFT HAND CHAIN CASE CHAIN TENSION

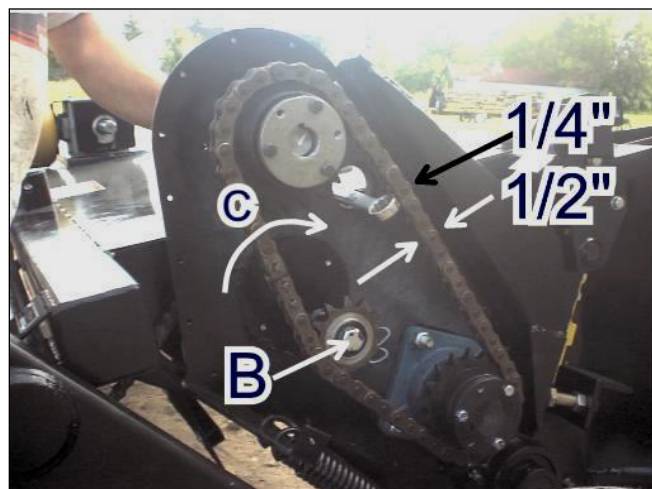


FIGURE 16 LEFT HAND CHAIN CASE CHAIN TENSION

8. Use a 1 1/16" wrench to rotate the eccentric in direction of arrow C. On serial numbers up to 1804000, if the eccentric is difficult to rotate, use a chisel as a wedge and a hammer to break the eccentric free from the chain case sealing compound. Rotate the eccentric until there is 1/4" inch of slack as the chain is pulled rearward by the wrench. Later serial numbers use an o ring seal and will not be difficult to turn when the bolt are loose.
9. Hold the 3/4 bolt B with the 9/16 wrench, and tighten the self locking nut with 1 1/16 wrench.
10. Recheck tension as above to ensure the chain is not excessively tight.
11. Re torque the 3 bolts A to 22 ft lb.
12. Install the port cover, tighten with the 1 1/16 open end wrench using the 9/16 as a T handle.

If the chain tension is too tight, the chain case will run hotter than the gearbox on the center of the machine. If one or both drive chains is too loose, the roller will "clang" together when roller speed changes rapidly. Occasional roller noise is normal, and does not damage the rollers. If the rollers ring frequently during normal operation recheck chain tension on both rollers.

Refer to 4.1.5 Timing of Drive Rollers

Right hand chain case

1. Mark the eccentric position in the side of the chain case. This provides a reference as to starting point before eccentric was rotated
2. Loosen the 3 bolts A in Figure 17 Loosen Bolts approximately one turn with a 9/16 wrench
3. Hold the tip of bolt B with the 9/16 wrench and loosen self locking nut with a 1 1/16 wrench.

- Remove the inspection port cover with the jaws of the open end wrench.

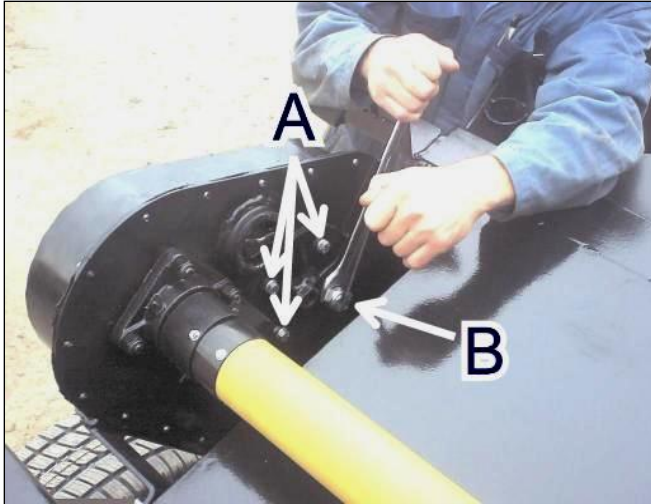


FIGURE 17 LOOSEN BOLTS

- Reach through the inspection port D to feel for chain tightness on the span with the 1 1/16 wrench head as per Figure 18 Chain tension RH chain case.
- Use a 1 1/16" wrench to rotate the eccentric in direction of arrow C Figure 19 rotating eccentric tightener. If the eccentric is difficult to rotate, use a chisel as a wedge and a hammer to break the eccentric free from the chain case sealing compound. Rotate the eccentric until there is 1/4" inch of slack at 'D' as the chain is pushed downward.

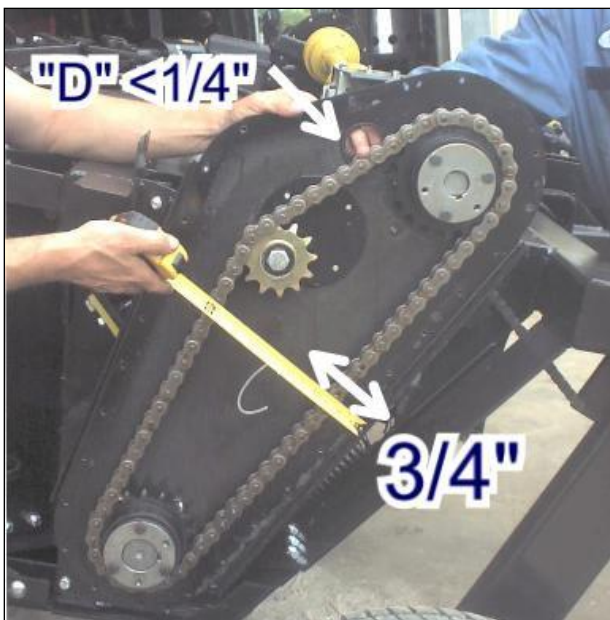


FIGURE 18 CHAIN TENSION RH CHAIN CASE

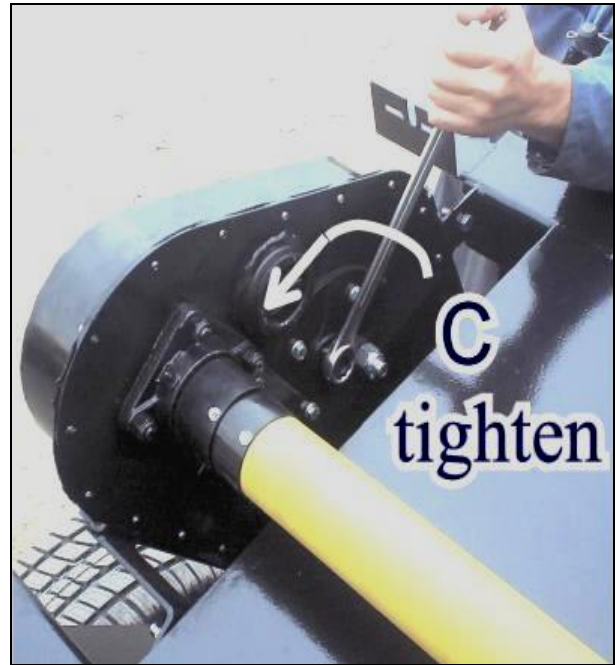


FIGURE 19 ROTATING ECCENTRIC TIGHTENER

- Hold the 3/4 bolt B with the 9/16, and tighten the self locking nut with 1 1/16 wrench.
- Recheck tension as above to ensure the chain is not excessively tight.
- Re torque the 3 bolts A to 22 ft lb.
- Install the port cover, tighten with the 1 1/16 open end wrench using the 9/16 as a T handle.

If the chain tension is too tight, the chain case will run hotter than the gearbox on the center of the machine. If one or both drive chains is too loose, the roller will "clang" together when roller speed changes rapidly. Occasional roller noise is normal, and does not damage the rollers. If the rollers ring frequently during normal operation recheck the play between the rollers.

4.1.5 Timing of Drive Rollers

If the chain cannot be tightened by rotating the eccentric, the cover may be removed and a link removed from the chain to shorten the loop. The shorter chain may then be tensioned as per the above instructions

The 80 chain should be replaced when 12 links of chain exceeds 314mm (12 3/8"), an increase of 3% or 3/8" from new length, in the opinion of some chain manufacturers much sooner.

Spring Tension

Both of the upper roller springs should be tightened until the overall extreme spring measurement is 37cm (14.5"). This tension will to keep rollers from moving up excessively even in heavy crops and will allow passage of a 8.8 cm (3.5") stone or other hard object with out damage to rollers. Do not over tighten.

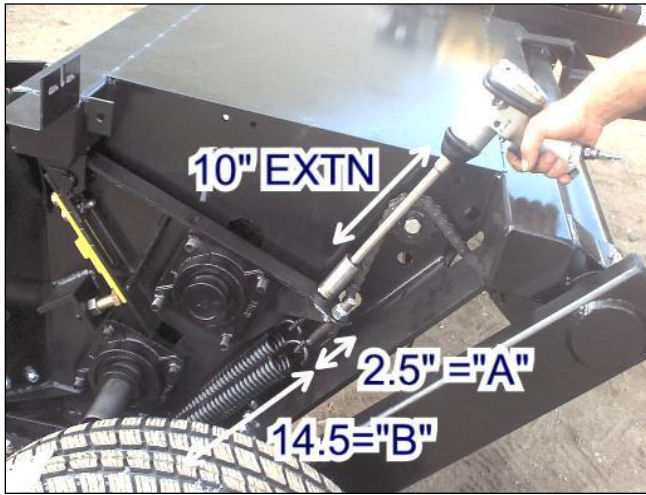


FIGURE 20 SPRING TENSION RH

On the RH side the spring length is difficult to measure on a completely assembled machine. Use the measurement of 2.5 inches lower than the bottom of nut on top to the end of the spring. To tighten the spring a 10" extension and 15/16" deep socket will be required.



FIGURE 21 LH SPRING TENSION ADJUSTMENT

On the LH side use the 15/16" deep socket or other wrench that you may have, and tighten at the bottom end of spring.

Clearing a Wad

On PTO mechanical drive models, the roller may be stopped by contact with ground and/or a wad of swath material. Immediately disengage the tractor PTO to keep from overheating and wearing out the slip clutch.

To clear the wad, follow these steps:

1. Raise the machine to highest position above the ground to raise the upper roller clear of the wad.

2. With motor rpm at 50% of normal operating, engage the tractor PTO. The wad should fly out of the machine.
3. If the wad does not clear immediately, stop the PTO to limit heat in the clutch.
4. Shut down the tractor motor, set the park brake securely, remove the key from the ignition, dismount from the tractor seat, and locate the roller wrench (ASM part # 320330) stored in the RH rear corner of the ReCon.
5. Use the roller reversing wrench as shown in Figure 22 reversing roller to clear wad to roll the wad out of the front of the rollers. Never attempt to lift the roller wrench handle by straightening your back. Lift by straightening your legs only.
6. Start the tractor, engage the PTO cautiously at 50% of the full motor operating rpm, and proceed as usual to complete the reconditioning job.



FIGURE 22 REVERSING ROLLER TO CLEAR WAD

This wrench (part # 320330) also scrapes clay from between the lugs on the rollers.

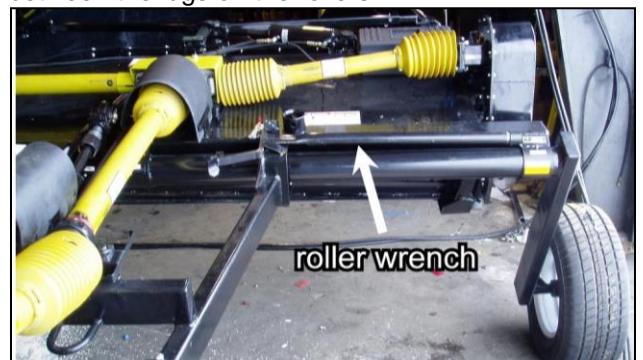


FIGURE 23 ROLLER WRENCH MOUNTED

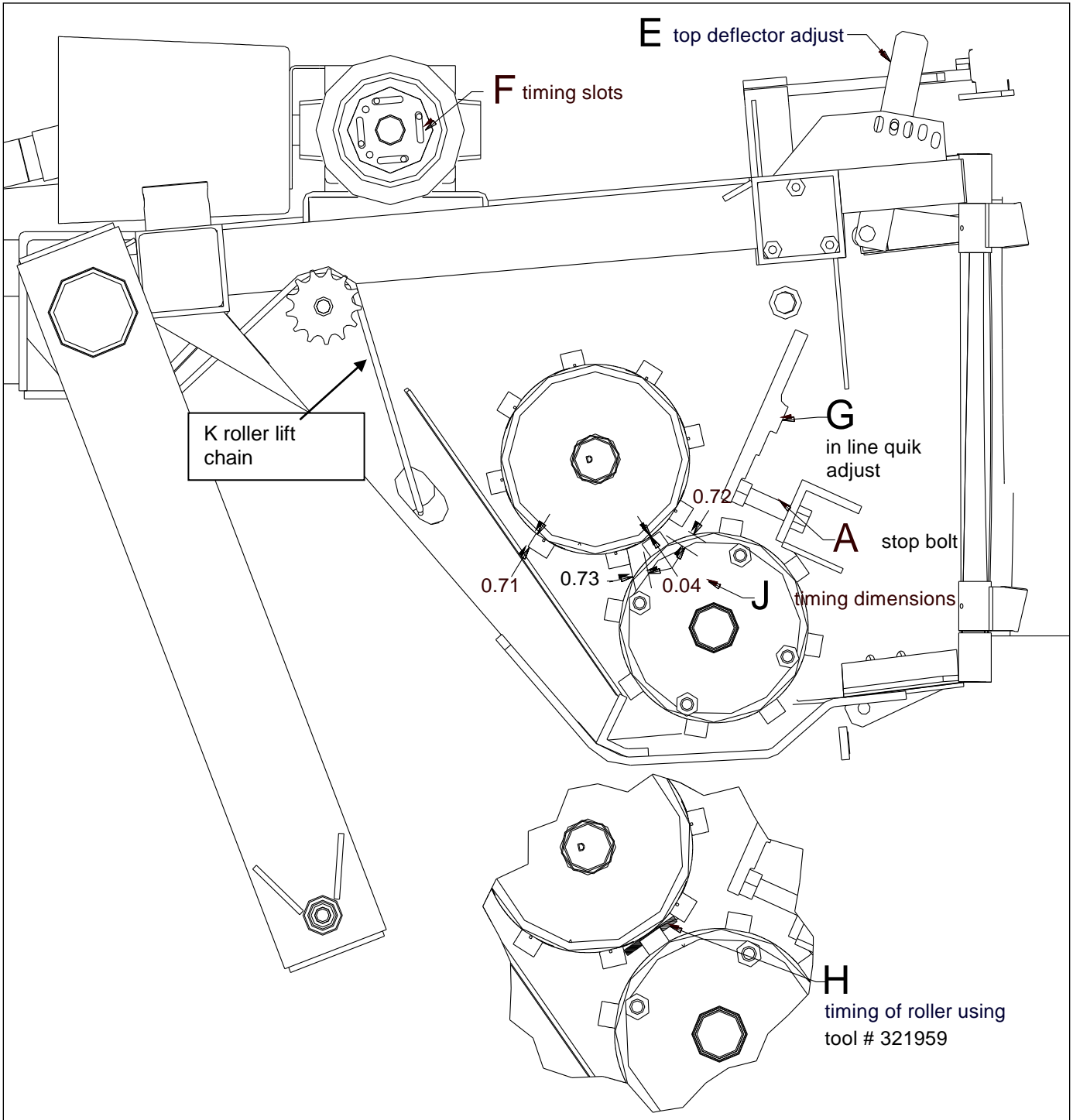


Figure 24 TIMING OF ROLLERS

4.1.4. Roller speed

Roller speed may be varied by reducing the motor speed of the tractor below standard PTO operating speed. If the swaths are extra heavy, this reduced speed will somewhat reduce capacity. The reduced roller speed is useful in reducing crop damage when the crop has become too dry or easily broken up, e.g. cutting the heads off of export timothy or oat hay crops will reduce the grade and value of the crop.

4.1.5. Timing of Drive Rollers

It is essential that drive rollers be kept in proper timing and adjustment at all times to avoid damage to drive components.

Refer to Figure 24 TIMING OF ROLLERS and Figure 25 TIMING ADJUSTMENT ON SLOTS. to see the timing instructions.



FIGURE 25 TIMING ADJUSTMENT ON SLOTS

If the ReCon 300 makes a loud continuous noise when the PTO is engaged, shut the PTO off immediately and check for one or more of the following conditions:

- A. Rollers running with the forward edge of the lugs on one roller are hitting the rear edge of the lugs on another roller, referred to as out of time.
- B. Rollers running too close together, the bars of one roller touching the barrel of the other roller, creating a continuous roar.
- C. A stone bruise on one roller lug is touching the barrel of the other roller, creating a ding each time the roller turns.

A: To correct units running out of time follow these steps:

1. Raise the main hydraulic lift until the 60 chains on the sides are holding the rollers apart with no overlap
2. Shut down the tractor motor, set the tractor park brake securely, remove the key from the ignition, dismount from the tractor seat.
3. Place a tool in the position "L" Figure 25 TIMING ADJUSTMENT ON SLOTS and use one open end and one box end wrench to loosen the 4 bolts "O" until the flanges may be turned separately.
4. Walk around behind the rollers and rotate the rollers until the rollers are positioned like the rollers in Figure 24 TIMING OF ROLLERS. If you have a timing tool #321959 set over a lug on the bottom roller. Then rotate the tool and roller until the rollers must be correctly timed.
5. Lower the hydraulic lift to allow the rollers to come together.
6. Observe that the tool holds the rollers at a correct timing rotation or that the .7 inch or 18mm spacing is correct from lug to lug.
7. Tighten the bolts "O" to at least 20ft lb torque. If a washer M (ASM part number 321890) is lost, purchase a replacement as mild steel washers will bend into the slot, and work loose.
8. Retrieve your roller timing tool.
9. Start the machine to test for roller noise.

B: To adjust roller clearance on Recon 300 with serial number 1803800 and up follow these steps on both ends of the roller. **OR see** 4.1.6 SETTING ROLLER CLEARANCES WITH TIN FOIL AND CALIPERS

1. Set the ReCon until the rollers are about 7" above the ground, check that the roller lift chains are not pulling the rollers apart. See K Figure 24 TIMING OF ROLLERS
2. Shut down the tractor motor, set the tractor park brake securely, remove the key from the ignition, dismount from the tractor seat,
3. Check that the inline adjusters are positioned with the thinnest part of the adjuster between the pivot arm and the stop bolt.
4. Use tool number 321955 to check that the barrel of one roller is within .032 inches or less of the lugs of the other roller. The .032" thick tool is inserted between the rollers as shown in Figure 26 TOOLS ROLLER ADJUST to check for clearance between the rollers. If the tools can be **tipped up and down on the side** than the clearance is much greater than .032". **If the tool is pinched when the roller is rolled onto the tip of tool**, then the clearance is less than tool thickness of .032"

5. If the rollers are not operating close enough together, loosen the lock nut on bolt "A" and rotate the bolt clockwise into the roller stop. Retighten the lock nut to 200-300 ft lbs or as tight as possible.
6. Run the machine, and listen for roller noise. The optimum setting is when the rollers are as close together as can be run without excessive noise. Machines are factory set at .015-.035 clearance, and can be set that close with care.

If there appears to be insufficient crimp, consider lowering the upper roller until it just starts to make noise on one side, and then raise a fraction of a turn on the stop bolt "A". At this point the 321955 tool should be tight between the rollers.

C: When running the rollers at .032 or .8mm, it is possible to strike a stone and have the "bruise" from the stone contacting the other roller. Grind the bruise down to original level rather than opening the rollers and reducing the effectiveness of the ReConditioner.

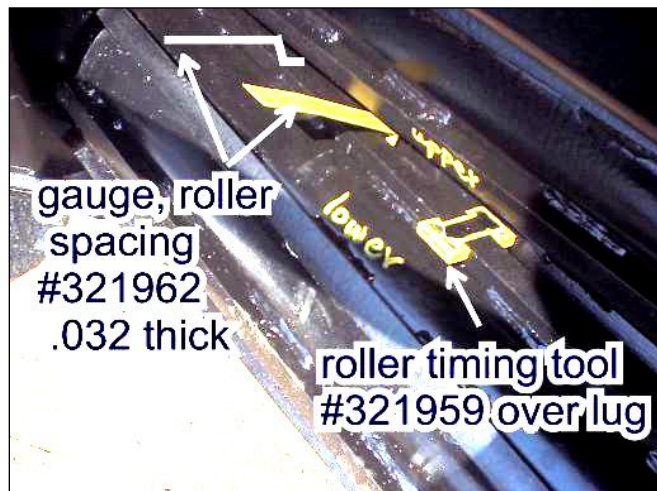


FIGURE 26 TOOLS ROLLER ADJUST

4.1.6. SETTING ROLLER CLEARANCES WITH TIN FOIL AND CALIPERS

The ReCon 300 was supplied with a .032" thick gauge for feeling to see how far apart the rollers are. That is ok for determining one setting, but to have other settings, a better method is to use tin foil and calipers.

1. Take a 12" wide roller of tin foil and tear off 8-12 inches of foil,
2. Place the foil on a flat surface and roll the foil up to make a pencil diameter tube



FIGURE 27 TIN FOIL "PENCIL" BEING ROLLED

3. Find a spot within 6 inches of the left end of the rollers that is clear of roller build up. Place the tube in the rollers at the clear spot and pull rearward on the bottom of the bottom roller, pulling the tube through between the lugs of the roller. Repeat on the right end of the rollers.
4. Retrieve from the ground and measure the pinched points of the foil with calipers, using the thick portion of the caliper jaw not the thin knife edges. The pinch points will be similar thicknesses within .005-.010 inches, average the readings.



FIGURE 28 TIN FOIL TUBES BEFORE AND AFTER CRIMPING

- Adjust the spacing by sliding the in line slider to a different setting (see options below), or by turning the large adjusting bolts under the yellow in line adjuster (part #'s 321632, 321997, 321812) . Use the chart below to calculate how many turns or flats (1/6 of a turn) to make the required adjustment.

Bolt size and pitch (threads per inch)	Change inches for 1 Turn of bolt	Change inches for 1/6 turn of bolt	Change mm for 1 Turn of bolt	Change in mm for 1/6 turn of bolt
¾ UNC 10 tpi	.100	.017	2.54	.42
¾ UNF 16 tpi	.063	.011	1.6	.27
1 UNC 8 tpi	.125	.021	3.175	.53
1 UNF 14 tpi serial # 1804 up	.071	.012	1.8	.3

4.1.7. In line adjuster options

The in line adjusters have several variations. And unless special ordered, the in line adjusters are likely to be as shown in the table below. The newer designs of in line adjusters are supplied to minimize the adjustments done by turning the stop bolts.

Model year	Serial numbers	Standard part
2003	all	321812 (.150)
2004	1804000-050	321812
2004	1804051-070	321997
2004	1804070 up	321632
2005-7	1805000 up	321623

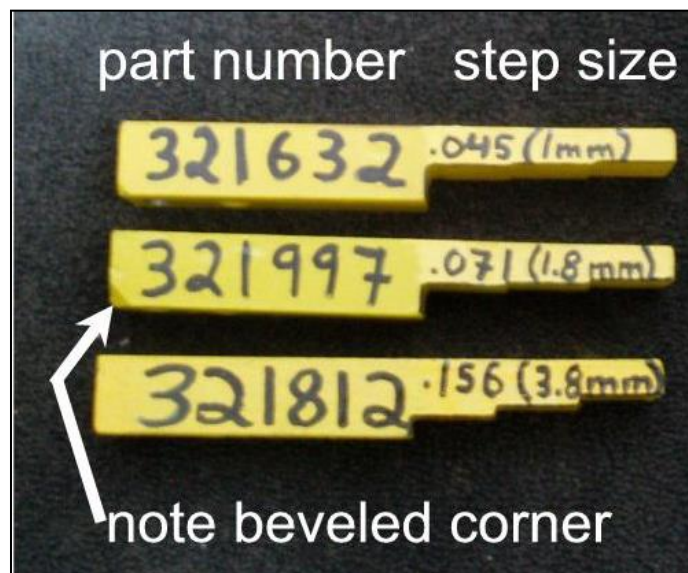


FIGURE 29 IN LINE ADJUSTERS UP TO END 2004

4.1.8. Roller adjustment vs crop damage

When the ReCon 300 is operated on setting #1, the stems should be cracked and buckle when pushed shorter. Stem cracked in this manner should dry in 50% of the time required for a stem not pinched this well.



FIGURE 30 PINCHED STEMS BUCKLE AFTER RECON 300

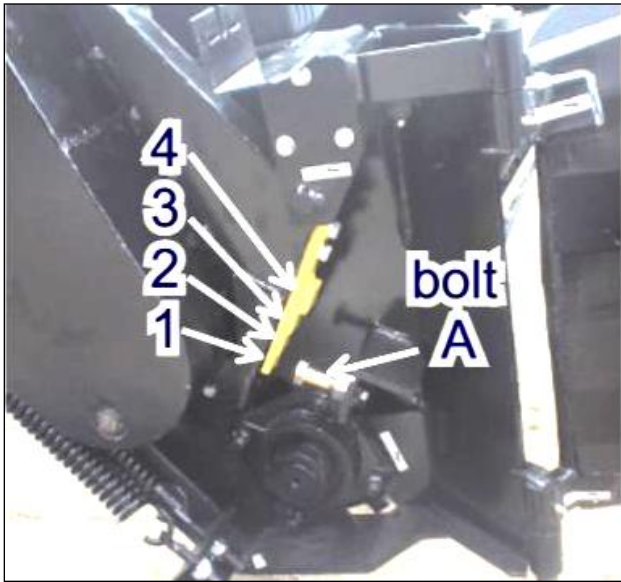


FIGURE 31 IN LINE QUIK ADJUST

Rollers are factory set to have .040", 1 mm or less between the lug of top roller and the round barrel of lower roller when the In line Roller Quik Set (part # 321812) is at minimum thickness. This setting will give a very aggressive crimping action required for grassy crops.

The In line Roller Quik Set has four roller settings

#	Distance between roller and lug	Typical uses
1	.040" -shown as .04 in Figure 24 TIMING OF ROLLERS	Green grassy crops like timothy or orchard grass, unless excessive damage, shredding, or shelling of grains
2	.080	Alfalfa recently cut, drier crops that are damaged by setting 1 above
3	.120"	Cereal hay like oats, mature coarse stemmed alfalfa 50 + days since cutting
4	.656	Just fluffing, the rollers are barely overlapping, previously reconditioned grassy hay being fluffed or combining 2 swathes into one

FIGURE 32 ROLLER CLEARANCE AND USES

If the Recon is doing too much damage to crop material consider slowing the rollers down by reducing motor and PTO shaft input RPM. **The reduction in lug velocity is frequently a better solution to reducing crop damage than raising the top roller with the In Line Quik Adjust.**

Consider reducing the roller speed, by reducing PTO speed as low as 60% of normal rpm. Machine capacity will be decreased, but most single swathes do not even approach the capacity of the machine.

When the in line adjuster is first installed, use a 1 1/2" wrench (part number 321983 supplied with machine) to adjust the rollers to the clearances in the table above, loosen the lock nut and rotate bolt "A" Figure 31. The setting will be closest setting that the rollers can be at without excessive roller noise. Re torque the lock nut to 300-900 ft lb torque.



FIGURE 33 TIGHTEN LOCK NUT ON ROLER STOP

4.1.9. Timing of Operation

Any crop may be conditioned a few seconds after cutting until a few days after cutting.

It is too late to run when the swathes have wilted to a point that the sap squeezed out of the plant is sticky and combines with the plant material to make a build up on the rollers, which in turn reduces the effective roller spacing to zero clearance from the lug of one roller to the barrel of the other roller.

The optimum time to do a first pass with the reconditioner will be determined by 4 or more factors:



FIGURE 34 ALFALFA –MEDIUM CRIMP WITHOUT LEAF LOSS

1. Type of crop-

To prevent leaf loss, **alfalfa** must be conditioned before the leaves on the top of the swath get crisp- usually within 6-48 hours depending upon drying conditions. See Figure 34 alfalfa –Medium crimp without leaf loss. The total harvest leaf loss in alfalfa may be reduced compared to traditional conditioners and rake systems because the stems are drying nearly as fast as the leaves.

Grassy crops may be reconditioned any time without leaf loss if the rollers are adjusted to prevent excessive chaffing or breaking.

2. Thickness or height of the swath-

If the swathes are laid out wide and thin, conditioning quickly after cutting will give the quickest dry down because there is sufficient air flow past the swath. Thick swathes may benefit more from allowing crop to wilt before conditioning, counting on greater fluffing to offset the delay in opening up the plant stems.



FIGURE 35 WILTED TIMOTHY SWATH BEING FLUFFED UP

3. Moisture condition of the swath at cutting

Crops cut with a dew on the plants in the morning (plants cells refill with water each night) are turgid (full of cell moisture) and may be chopped up by the ReCon 300 at tightest settings. See Figure 37. Unless the swath is to be chopped for forage, this is likely undesirable. The same crop cut later in the day may be aggressively reconditioned seconds after cutting without severing stems. See Figure 36 oat stems smashed not cut. Crops at less mature stages- pre bloom alfalfa, cereal green feed not yet in head - may require a wilt where mature crops growing in dry soil wilt standing are at low enough moisture to be conditioned right at the time of cutting.



FIGURE 36 OAT STEMS SMASHED NOT CUT



FIGURE 37 AHEAD OF A FORAGE HARVESTER--TURGID OAT HAY STEMS SEVERED

4. Whether or not you plan to do a second reconditioning later

You may plan to do a second pass later if:

- A. the swath is cut without conditioning
- B. the buyer of the hay wishes a uniform color throughout the swath
- C. the swath is thick, or deep from top to bottom
- D. if two swathes are to be placed side by side for final drying and baling See Figure 38 2-13ft swathes combined into one 26ft swath.

The first conditioning can be done sooner to get the stems open and the drying started, the second pass to invert (combine) the swathes to allow the bottom of the swath to get dried while on the top.



FIGURE 38 2-13FT SWATHES COMBINED INTO ONE 26FT SWATH

Changes in crop condition greatly affect the degree of crimping with a ReCon 300. A freshly cut cereal or alfalfa crop with 75% to 90% moisture will not only be crimped but it will be chopped by the ReCon 300, a slightly older crop cut in the afternoon, not the morning can be conditioned at the same setting without

chopping the stems. Set the rollers as little .040" or 1mm wider, and the stems will not be chopped. Reconditioning will burst individual plant cells and free water will be on the rollers. The same crop reconditioned at less than 50% moisture will bleed sticky sap material and the sap and dirt from the swath as well as bits of plant stem and leaf will built up a cement like substance on the roller.



FIGURE 39 SCRAPPING BUILD UP FROM ROLLER

The cement build up will cause the entire ReCon to vibrate and is likely to lead to failure in bearings, roller stops, and sheet metal. See Figure 39 Scrapping build up from roller, where a 1" wide wood chisel is used to scrap off the build up.

To avoid build up, adjust the in line adjuster to give a wider gap between roller so that the sap is not squeezed out of the plant. See 4.1.8 Roller adjustment vs crop damage

OPERATING TIP

Operating the Recon with a roller build up will cause excessive vibration. Frame, bearing, and drive failure caused by continued operation with roller build up is not covered by warranty.

4.1.10. Alfalfa Settings

The Recon 300 can be set as close as .032 " or .8 mm, and at that setting some of the alfalfa stems would be separated from the leafy tops. A larger clearance may be preferred if the swath is to be raked dry later.

Run as soon as possible after cutting on lush, full of moisture pre bloom alfalfa, at a setting of .085-090 inches (2.2 mm) from the barrel of one roller to the lug of the other roller (see section 4.1.6) and a tractor input speed of less than full PTO speed e.g. if the full PTO speed is at 2100 motor RPM then approximately

1500-1600 motor rpm) The rollers will be wet and stay clear of crop residue build up (see Figure 41). We have made a lot of 2-3 day hay this year, if you wait 2 days to recondition; it is unlikely that you would make 2 day hay.

In **mature** alfalfa with coarse stems a setting of .110-.120" (2.9 mm) will split the stems, and increase capacity compared to tighter settings. The swath will have more height and aerate better than a swath that is squashed to tightly and is less fluffy.

If the swath is very heavy, and the ReCon 300 is run directly behind the cutter, the swath deposited may be too tight to allow air movement through the swath. Leave the swath as wide as possible, considering using our newest attachments, the spinning spreader (assembly # 321645) or the fins for the bottom of the top deflector (assembly # 321631)



FIGURE 40 ALFALFA SWATH SPREAD FROM 4 FT TO 11 FT WIDE



FIGURE 41 OATS 4 T PER ACRE TO 14+ FT WIDE

If you delay approx 24 hours you may get a situation where the top of the swath is wilted and

lifeless, requiring a much closer setting to properly recon the upper part of the swath, the lower part of swath is still full of moisture, and is likely to have a lot of stems separated from the leaves at a setting that is ideal for the upper part of the swath.

It is too late to run when the swaths have wilted to a point that the sap squeezed out of the plant is sticky and combines with the plant material to make a build up on the rollers, which in turn reduces the effective roller spacing to zero clearance from the lug of one



FIGURE 42 ROLLER BUILD IN ALFALFA AFTER 2 DAYS WILT

roller to the barrel of the other. At that point you need to stop, scrap the rollers clean with a 1" wide wood chisel, open the rollers up to do an aggressive job of fluffing, not the squeezing that the ReCon 300 is capable of performing.

OPERATING TIP

Operating the Recon with roller build up causes the entire ReCon to vibrate at more than 13,000 cycles per minute and may lead to premature machine failure that is not covered by warranty.

4.1.11. Timothy Settings-

Run as soon as feasible after cutting with a setting of .040 or 1mm between roller lugs and barrel of the opposing roller at full PTO rpm. The swath may be lofted using the second highest setting of the top deflector to increase the width, or the top flap can be turned down at 45 degrees to leave swath a bit higher and fluffier. The freshly cut plants will have each cell

full of moisture and with this aggressive setting, many cells will be smashed, the stems will be well opened and yet the stems stay full length to please offshore fiber market buyers. Up to 40% of the large nodes should be cracked or opened.

If desired a second pass can be made after 24-36 hours to invert heavy swaths by pulling one side deflector into the flow of the crop. If required the top deflector can be raised to the top setting. The top flap must also be raised. The rollers should be set tight enough to crack off brown leaf tips without shortening the stems. Two swaths that are from 11 to 13 feet cut can be combined at this time.

4.1.12.Oats for green feed Settings

If the green feed is for consumption by your own stock , the settings of the ReCon 300 may be different than if the feed is intended for an export market where colour and extreme dryness of feed is most important grading factor.

Some varieties of oats are specifically thin stemmed, stem thickness will vary by year and maturity of the crop, and fertility available.

A roller setting of .080 to .120 inches or 2 - 3 mm is a good starting point, operate at full PTO rpm to maximize capacity, unless the crop is mature and too much grain is being lost. There will be a **large** increase in capacity if the roller spacing is increased compared to very close settings. One thousand PTO rpm machines have significantly higher capacity for larger stemmed crop in large swaths.

4.1.13.ReCon Capacity versus forward speed

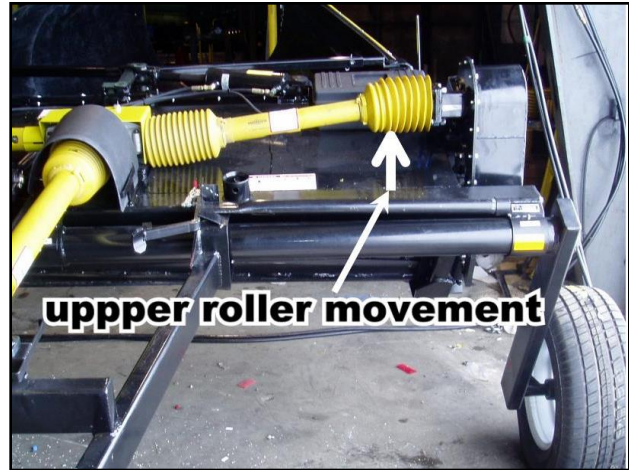


FIGURE 43 UPPER ROLLER MOVEMENT

The maximum crop capacity of a ReCon 300 is determined by the up and down movement of the top roller. Assuming that the field is smooth, increase forward speed until the top roller (the left hand chain case and side shaft --see Figure 43)starts to lift and drop FREQUENTLY as the crop forces the roller up, then decrease forward speed 10% until roller normally stays fixed down. This is the maximum flow at which the crop is being continually crimped to the roller setting. This speed may be 2mph in a 4 ton per acre / 30 ft green feed oat swath or 14 mpg in a 1 ton per acre / 12 ft alfalfa swath. For fluffing only or in thick stemmed forage sorghum or Sudan Grass crops, the spacing between the rollers may be increased, sufficient crimping is probable, and the capacity of the machine will be increased. Field speed on a narrow high swath will be lower than the same swath laid wider and thinner swath. The spring tension on the roller is at the maximum recommended level when the machine is delivered.

OPERATING TIP

Driving at a forward speed sufficient to cause the top roller to continually bounce up and down may lead to machine failure that is not covered by warranty.

The forward speed of operation should also be limited by the roughness of the field, and whether or not the tractor, operator and ReCon will shake to pieces.

4.1.14.Side and Top Deflector adjustment

The adjustment of both top and side deflectors is critical to obtaining desired results. Both of these adjustments are in turn modified by changes in forward speed. A small change frequently causes dramatic changes in swath shape, position, and degree of inversion.

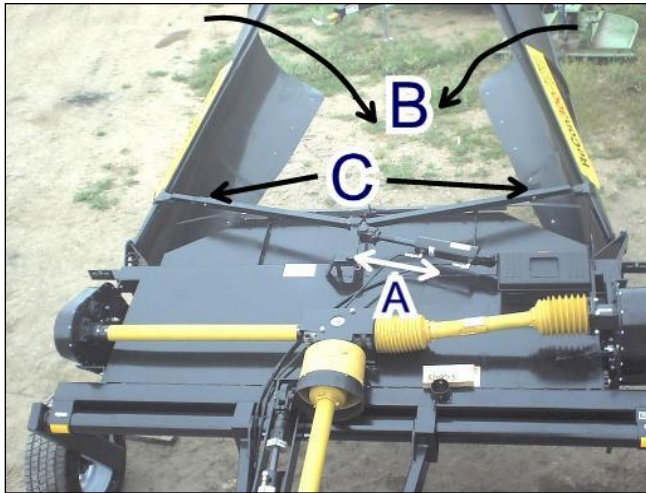


FIGURE 44 SIDE DEFLECTOR MOVEMENT

Side Deflectors

Side deflectors are adjusted in 2 ways

1. Hydraulically from the tractor seat on the go. As cylinder “A” moves the deflector goes through arc “B” Refer to Figure 44 SIDE DEFLECTOR MOVEMENT above.
2. By pulling the pins at “C” in Figure 44 SIDE DEFLECTOR MOVEMENT adjusting the holes 1-4 to line up with the hole #5 in the longer arm. See the adjusting holes in Figure 45 SIDE DEFLECTOR ADJUSTMENT

The hole adjustment allows a swath to be adjusted as follows:

Hole lined up with #5 using pins at “C”	Common applications
1	Makes narrow swaths for small square balers, lower top deflector one notch also
2	varying widths of wider pickups, round balers when inverting swaths
3	varying widths of wider pickups, round balers when inverting swaths
4	Widest swath possible for fastest drying of swath that will be raked or tilled later anyway, Long distance road transport of machines, least wind resistance

If a swath is not getting narrower to your satisfaction by making a narrower gap between the deflectors, lowering the top deflector will drop material narrower.

Swaths may be shaped into a high narrow configuration by causing material to tumble off of the end of one deflector,

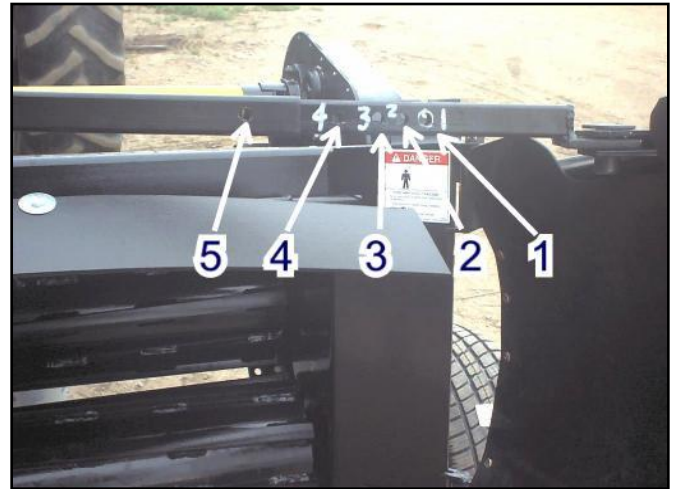


FIGURE 45 SIDE DEFLECTOR ADJUSTMENT

When operating in high crosswind conditions, consider changing side deflector at each end of field to throw primarily down wind.

If 2 conditioning passes (in grasses or hemp) are anticipated, leave the swath wider during first pass, narrowing during second, If bleaching of green color is primary concern, consider more side deflector action to invert and mix swath.

Combining Swaths

Swaths may be combined with your ReCon 300 by driving one direction and throwing material to the side, and returning on next swath deflecting second swath on or beside the first. Two 12 ft swaths may be combined using standard side deflectors, two 13.5 ft swaths may be combined into a single 27ft swath by using optional extensions (part# 320301).

Inverting Swaths

Swaths may be completely inverted by bringing in the left side deflector, and driving down the swath so that most of the material goes into the left side of the machine. All the material that touches the side deflector will be inverted. Frequently a higher top deflector setting is the most effective, and the top flap must be raised to the highest position to allow all material to flow off of the side deflectors.

Top deflector Adjustment

The top deflector changes the place of contact of the swath on the side deflector. Use lower setting in high (cross) wind conditions to keep material from scattering excessively. Use highest setting to raise a

swath up and drop down on same location. Use any setting to alter the degree of inversion of swath by directing to different position on rear deflectors. In hemp, a low setting will be preferred to keep heavy stocks from scattering.

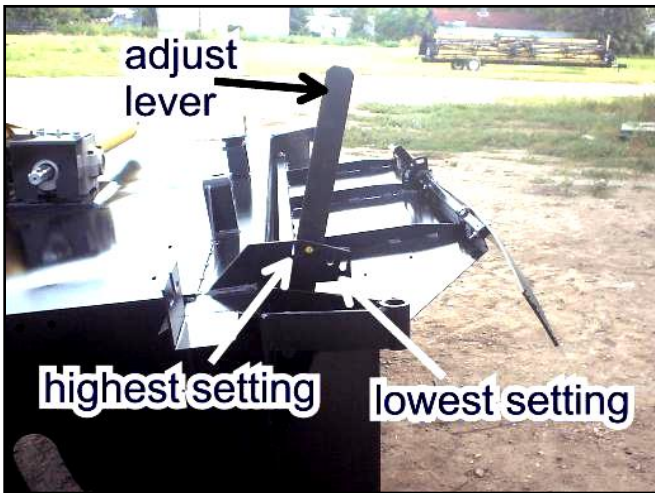


FIGURE 46 TOP DEFLECTOR ADJUST

To adjust the top deflector, spring the handle towards the center of machine and chose a different hole to hold the pin.

Lowering the top deflector adjustment will narrow the swath by approximately 1 ft compared to the highest setting.

Top Flap Adjustment

The top flap is frequently not used at all, and is rotated up to a position where it is not contacting the swath. In some conditions a better windrow can be formed by stopping the swath and letting it drop rather than throwing the material high and using the side deflectors to form the swath. The top flap is used to form a more continuous windrow in lighter swathes, or the attempt to leave limp pre bloom alfalfa piled a little higher. It is one more tool available to help growers make hay just the way they prefer.

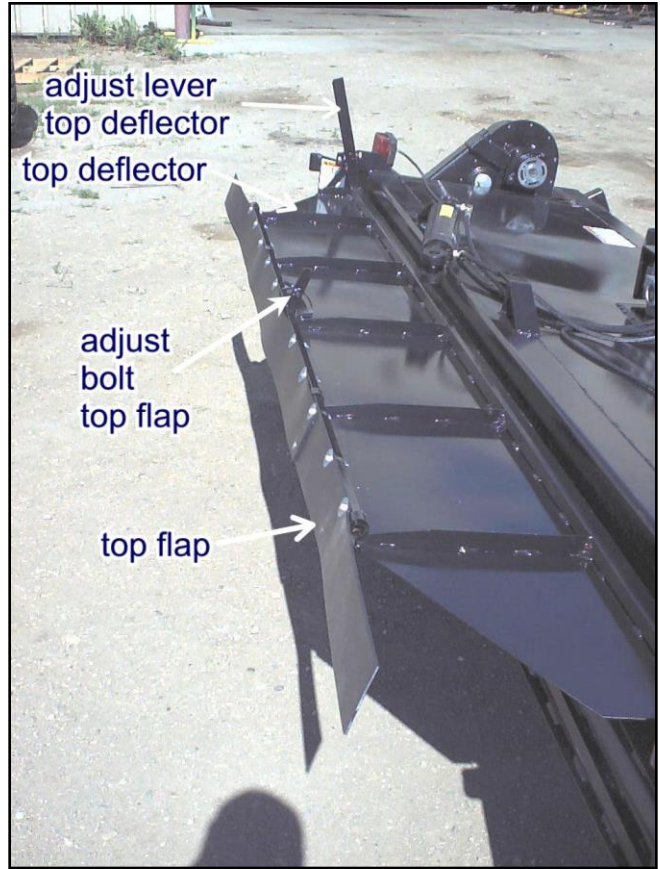


FIGURE 47 TOP FLAP ON TOP DEFLECTOR



FIGURE 48 GREEN OATS WITH FLAP DOWN

4.2. SPINNER SPREADER ADJUSTMENTS

The spinner spreader is designed to spread the swath uniformly over a swath width determined by the speed of the spinners and the type of material that is being spread. Denser materials with larger stems (recently cut Sudan grass or oat hay) will throw farther than feather like grass stems that are nearly dry.



FIGURE 49 SPINNER SPREADER IN GREEN OATS

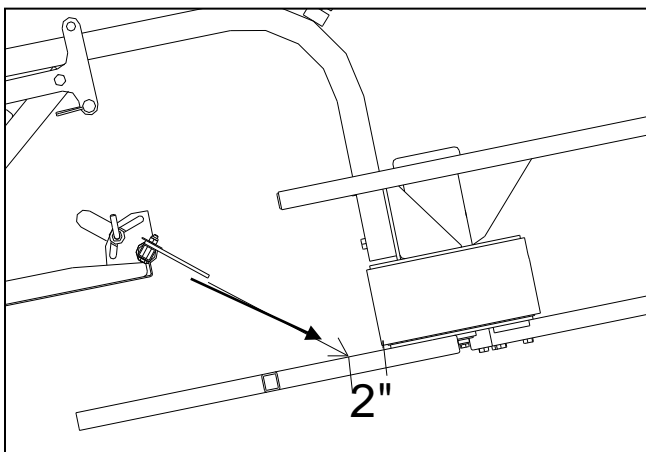
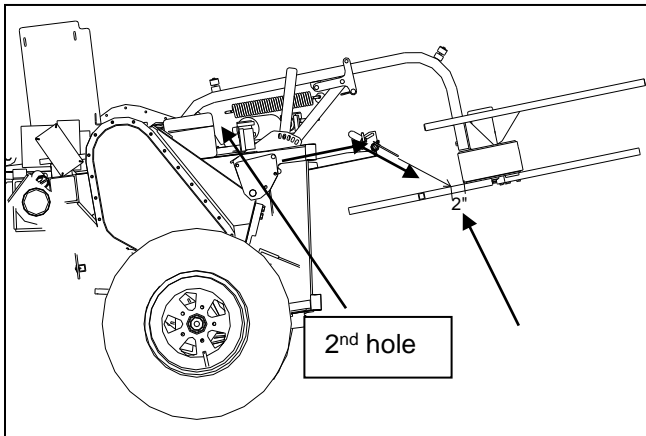


FIGURE 50 SPINNER ADJUSTMENTS

The rotation of the spinners may be in either direction--- “through the center“ OR “to the sides“ at the front edge of the rotors. To the side would be as viewed from the top, the left hand spinner should turn counter clockwise or to the side at the front of it, the right hand spinner rotates clockwise, that is the front of the rotor turns to the right side, not the center. Rotating the spinners through the center causes material to hit the wheel guards. See figure Figure 51 Left wheels guard installed Without wheel guards, crop will throw onto the axles and wrap on the axles. Reverse the hydraulic flow by moving the cab lever in the opposite direction, or reversing the hoses.

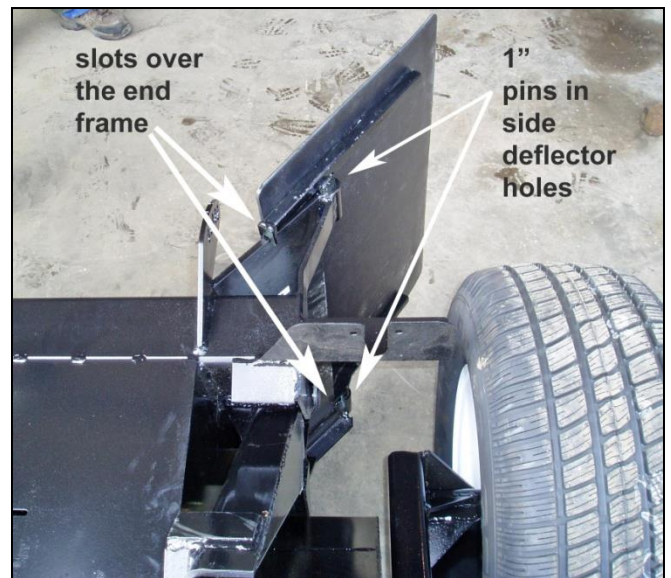


FIGURE 51 LEFT WHEELS GUARD INSTALLED



FIGURE 52 RIGHT WHEEL GUARD INSTALLED

UNIFORMITY OF SPREAD

The flow of material from the ReCon should enter the spinner spreader approximately 2 inches ahead of the round drum housing the spinner unit (refer to Figure 50 Spinner adjustments). This setting is accomplished by putting the top deflector in the second hole from top adjustment, and fine tuning with the infinitely adjustable top flap to direct the material. If the ReConned material wishes to wrap around the drum, and not throw off of the spinner arms lower the top flap to keep crop away from the drum.

When rotating to the side-- If the spread swath is heavy at the outside edges and lighter in the center, raise the top flap to direct material closer to the center of the spinners. If the crop is dropped onto the rotors near the center, it will stay on the arms longer and discharge later, If the crop is dropped closer to the tip of the rotor, the crop will leave the rotor without being carried as far around the rotor.

WIDTH OF SPREAD

To change the width of swath, change the oil flow being sent to the spinner motors, 6 gpm of oil might give approximately 8 foot wide spread in alfalfa, and 15 gpm of oil will spread green oats 18 ft wide, heavier material farther. On a continuous basis the hydraulic motors can operate at 15 gpm and 1700 psi of oil pressure into the first motor. For a few seconds per minute the motors may operate at 2300 psi to clear a lump in the swath. Excessive oil flow will cause motor damage that is not covered by warranty.

The spinner spreader is run by one hydraulic circuit, the height of the ReCon rollers above the ground is controlled by a second circuit. For tractors equipped with closed center hydraulics and a flow control for at least the spinner circuit, simply plug the 4 hoses into the 2 different circuits. If your older closed center – pressure compensated system does not have flow controls, add Ag Shield kit #321698 to the motor circuit to give spinner speed control and therefore width control of the swath that is created.

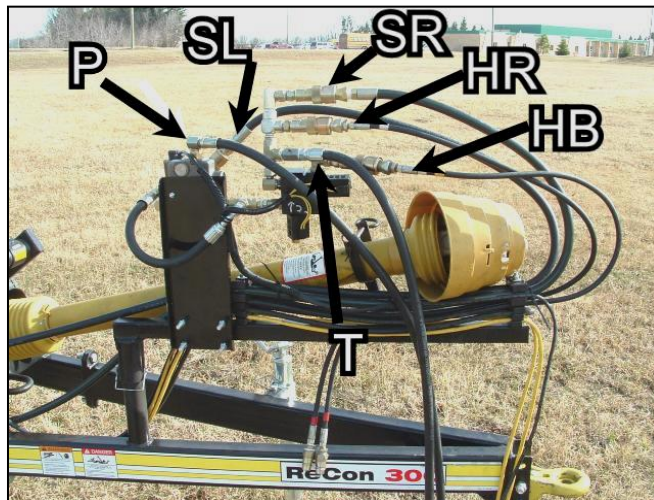


FIGURE 53 OPEN CENTER HYDRAULIC KIT

The Open center hydraulic kit is connected as per the photo letters as follows:

- P= pressure from the tractor
- T = return to the tractor
- SL = spinners hose from the left hand motor
- SR = spinner to the RH motor
- HR = height circuit –rod end of cylinder
- HB = height circuit barrel end of cylinder to raise

For tractor equipped with open center hydraulics, it is unlikely that the ReCon can be lifted at the end of the swath to turn if the spinners are running, and there will be no flow control to adjust spinner speed and swath width. Ag Shield kit # 321699 plugs into one circuit of the open center tractor and converts that single circuit into two circuit, one for raising the ReCon at the end of swath to lift over a headland swath, and a second controlled flow circuit that is pressure compensated to give consistent spread width even when the ReCon needs to have a height adjustment part way along a swath to clear a wad or a stone.

The kit is bolted onto the front hydraulic hose support, and the normal 4 hoses plug in to the 4 female Pioneer couplers provided in the kit. There is a compact switch box that is mounted in the cab of the open center tractor to allow the raise and spin functions to be operated on the fly. The ReCon is unchanged, and could be hooked to 2 circuits on a closed center tractor without using a wrench.

If a field condition warrants that the spinner spreader is not used, simply lift the spring assisted spreader out of the crop flow and drop Recon swaths in the traditional manner.

4.3. TOP DEFLECTOR FIN WIDE SWATH KIT

The fin kit is designed to spread heavier swaths from the 4-5 foot width as laid by the cutter out to 10 –11 ft wide to allow the swath to dry approximately 20% faster than a swath that has been ReConned and placed for drying at 4-6 ft wide. The accelerated drying is due to the thinner layer of crop material, and the greater exposure to the sun and wind that must carry the crop moisture away.

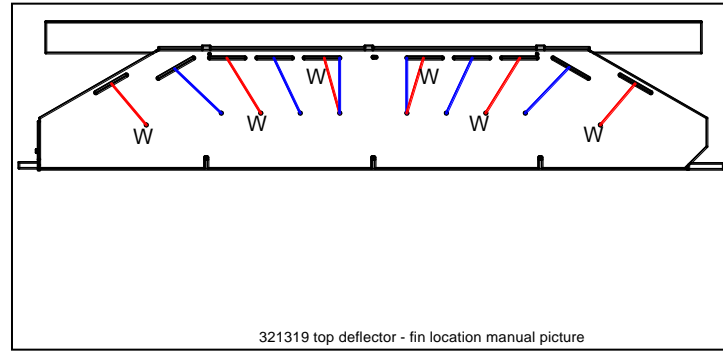
The kit is intended for heavier swaths. On narrow light swaths the swath needs to be fed into the front of the Recon more accurately than a skilled operator can reasonably do at high field speeds.



FIGURE 54 ALFALFA TO 11 FT WIDE WITH FIN KIT

The fins can be used in one of 2 ways:

1. Attach the 6 fins with 12 bolts supplied each time you desire to spread a crop, detach whenever the crop does not require spreading. Requires only kit number 321631.
2. Have a second top deflector with the fins attached and adjusted to exchange for the top deflector without fins. Requires kit number 321631 plus a top deflector assembly # 321311. The top deflectors can be exchanged in 5 minutes



321319 top deflector - fin location manual picture

FIGURE 55 FIN LOCATION TOP DEFLECTOR

Refer to Figure 55 Fin location top Deflector for a recommended pattern to bolt the fins onto the deflector. Figure 42 shows a “W” beside the fins that are recommended for a wide or >4.5 ft wide input swath.

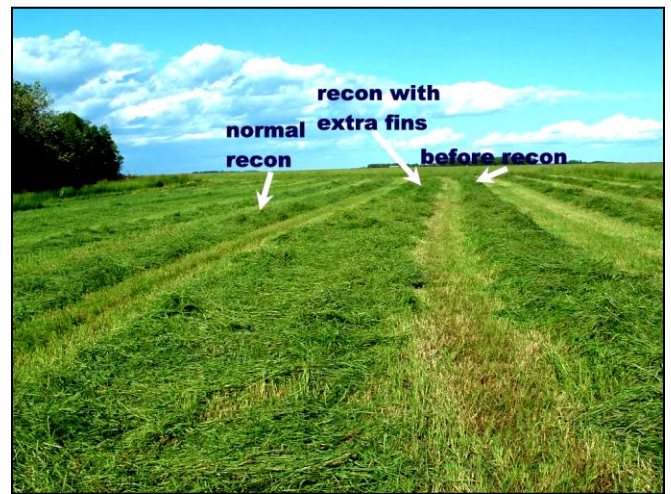


FIGURE 56 EXPORT TIMOTHY

Timothy crops can be spread easily to 10+ ft wide with fins only.



4.4. HAY SAVER WHEELS

The hay saver wheels (kit #321613) may be attached to either 7ft or 9 ft Recon to bring wider swaths inside the corners of the Recon frame to allow more uniform feeding of otherwise excessively wide swaths. The wheels raise with the mainframe providing headland swath clearance. The wheels will gather up to 1 additional ft on each side of the Recon.

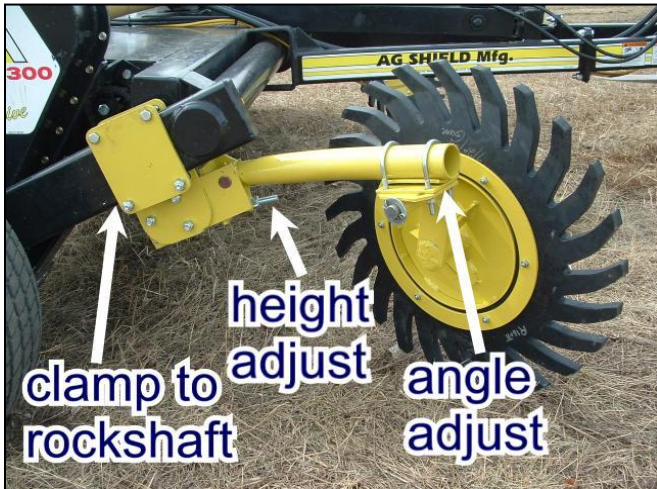


FIGURE 57 HAY SAVER CLAMPED TO ROCKSHAFT

The Hay saver may be adjusted for height on a locking bolt. (See Figure 57 Hay saver clamped to Rockshaft) The angle of the hay saver wheel may be adjusted by loosening the U bolts on the round tube.

Hay savers on staggered walking beam axle machines are bolted onto mounting lugs on the rockshaft, not clamped onto the rockshaft arm.

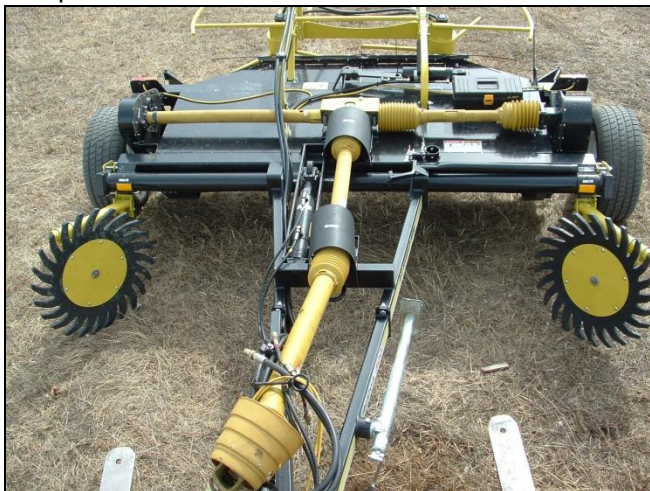


FIGURE 58 HAY SAVERS MOUNTED BOTH SIDES

4.5. WALKING BEAM AXLE- IN LINE



There is a walking beam axle option available for the ReCon 300 (part number 321500 as a factory option, or 321511 as a retrofit kit). A walking beam axle allows the ReCon 300 to run smoothly over the worst rutted fields. The material shooting high out the back of a ReCon may be deposited back on the ground unevenly if the field conditions are too rough. The walking beam option will make the best effort at making a swath as uniform as the one that was picked up by the ReCon.

A walking beam axle has one grease nipple and should be greased every 8 hours of operation with the rest of the machine.

A tire pressure of 17 psi is adequate for the walking beam axles

The walking beam axle option is not compatible with the use of the spinner spreader option as the rear tire interferes with the spreader. Only one of these options may be used at a time.

With the Walking Beam option, the total transport width is 136in [3.45m].

4.6. WALKING BEAM AXLE STAGGERED FOR BEDS

In order to be able to pick up a swath consistently without picking dirt, the Recon frame must ride at a constant height compared to the top of the beds.

The unit must be special ordered, as the frame has an extended front beam to carry the wider rockshaft. Either a 7 foot or a 9'3" machine may be purchased in this configuration. The unit transports at roller length plus 6 ft.

A tire pressure of 17 psi is adequate for the walking beam axles.



FIGURE 59 FRONT VIEW OF STAGGER AXLE



FIGURE 60 REAR VIEW OF STAGGER AXLE

4.7. LUBRICATION

4.7.1. GREASE NIPPLE LOCATIONS

Grease using standard high quality grease according to the following table. **Do not over grease wheel and sealed roller bearings** to the point where seals are damaged or pushed out.



decals mark grease nipple locations.

MAINFRAME/ROLLER DRIVE

Gn#	LOCATION	PERIOD	# OF ZERKS
gn1	Jack Shaft LH chain case	120 hours 3 shot per bearing	1 external , 1 internal annually
gn2	Main height rock shaft	10hr daily	4 along front
gn3	Deflector inner hinges	10hr daily	2 each side
gn4	Height cylinder adjustment	10hr daily	1 on casting
gn5	Upper roller pivots	10hr-daily	1 each side
gn6	Wheel bearings	Weekly +	1 each side
gn7	Main roller bearings DO NOT OVER GREASE	120 hours 3 shot per bearing	2 RH side, 1 on left lower roller
gn8	Steady bearing front	10hr/daily	1 on casting
gn9	Steady bearing RH drive shaft	10hr/daily	1 on casting
gn10	Slip coupling RH side of gear box	10hr/daily	1 in hole

DRIVELINES

Grease nipples (marked gn??) in order from the input to the left hand jackshaft, and photos are in a similar order continuing on to the deflectors and finishing at the RH front corner.

Decal below	LOCATION	PERIOD	# OF PUMPS	# OF ZERKS
gnA	CV front cross	10 hours daily	3-5	1
gnB1	Center body (C.V. joint)	10 hr/daily	10-30	1
gnB2	Shield nipple On CV	10 hr/daily	4-8	1
gnC	CV rear cross	10 hrs daily	3-5	1
gnD	Plastic shield	10 hrs daily	1-2	1
gnE	Shaft telescope	10 hr/daily	4-8	1
gnF	Plastic shield	10 hr/	1-2	1
gnG	Cross rear end of CV	10 hours daily	3-5	1
gnG 1	Overrunning clutch	10 hr daily	2-4	1
gnH	Plastic shield	10 hr daily	1.2	1
gnI	Cross rear end of clutch shaft	10 hr daily	3-5	1
gnJ	Cross inner end of side shaft	10 hr daily	3-5	1
gnK	Plastic shield	10 hrs daily	1-2	1
gnL	Shaft Telescope	8 hr/daily	5	1 per shaft
gnM	Plastic shield	10 hrs daily	1-2	1
gnN	Cross outer end of side shaft	10 hr daily	3-5	1

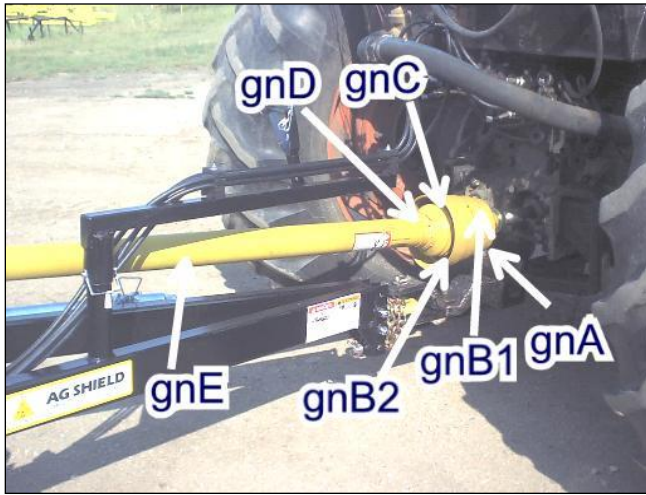


FIGURE 61 GREASE FRONT CV SHAFT

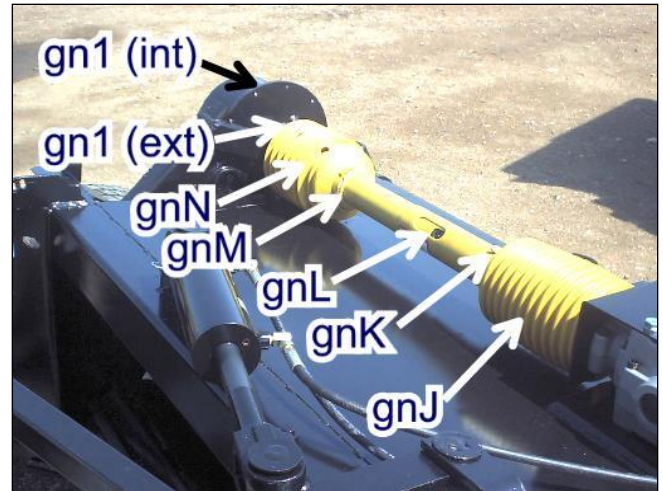


FIGURE 64 GREASE LH SHAFT –JACKSHAFT

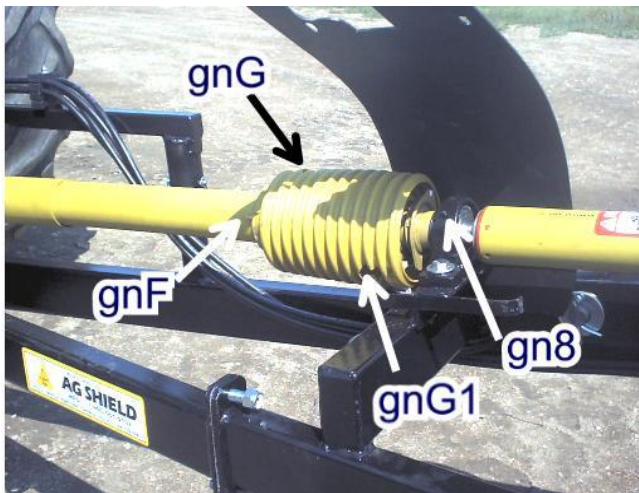


FIGURE 62 GREASE FRONT STEADY AREA

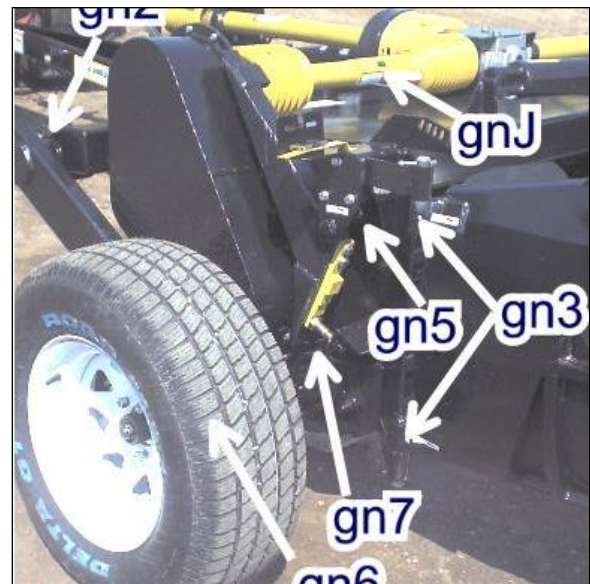


FIGURE 65 GREASE LH END, DEFLECTORS, PIVOT

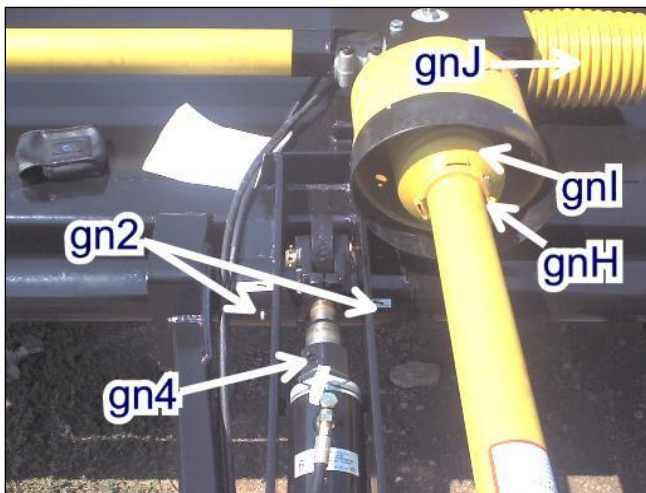


FIGURE 63 GREASE GEARBOX LIFT CYLINDER

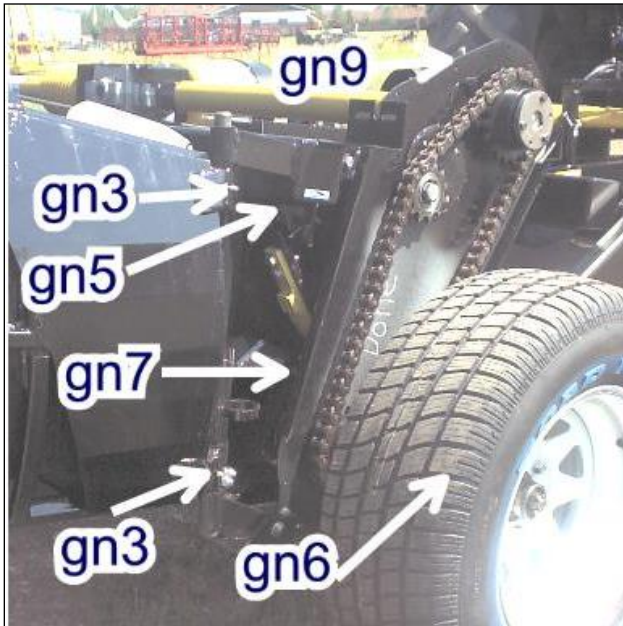


FIGURE 66 GREASE RH END DEFLECTORS, BEARINGS

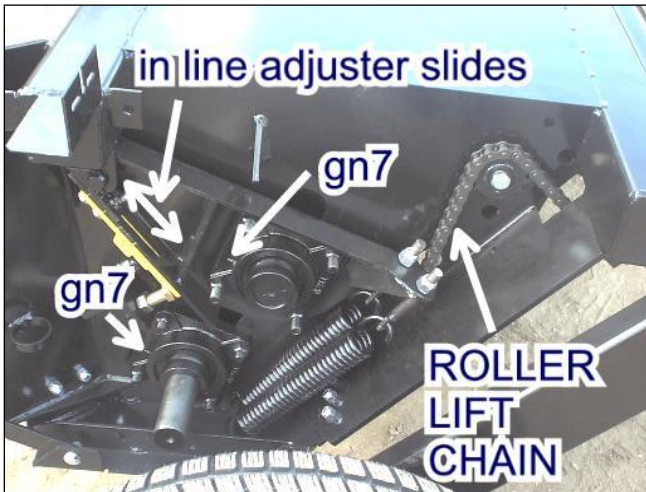


FIGURE 67 GREASE RH END BEHIND CASE VIEW

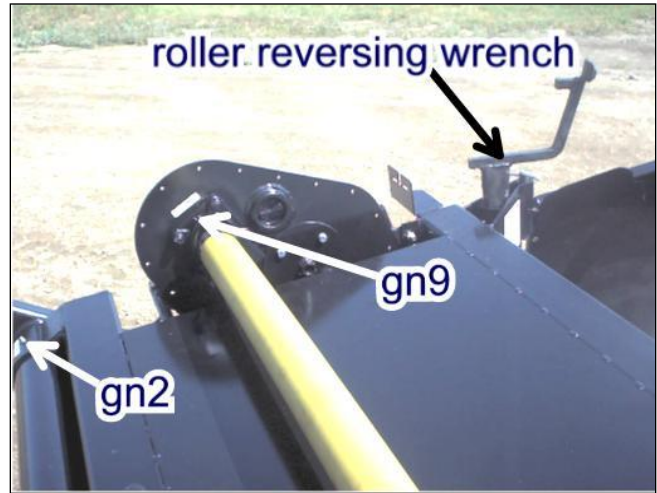


FIGURE 68 GREASE RH END MACHINE ROLLER WRENCH



FIGURE 69 GREASE RH SLIP SHAFT GEARBOX

4.7.2. Drive chain oiling, all models

The chain should be **replaced** when 12 links of chain exceeds 314mm (12 3/8"), an increase of 3% or 3/8" from new length. Replace with highest quality chain available (prefer Ag Shield part # 114206 for Tsubaki Long Life 80 chain for longest life in comparative tests in this application)

The chain cases have 50 synthetic oil gear oil normally used for very low temperature operation in gearboxes. This oil has a light enough viscosity to penetrate between the pins and plates, and heavy enough to withstand significant pressure without leaving, and allowing the longest time between changes. Change every 1000 hours of use, or once per year whichever comes first. Each time the oil is changed grease the sealed bearing on the jackshaft at the top of the chain case, 3 shots per year.



FIGURE 70 SIGHT GLASS LOW ON CASE

There is a sight glass near the bottom of each chain case. Maintain the oil level in the top half of the sight gauge by adding 50 synthetic oil gear oil through the inspection fill port shown IN Figure 18 Chain tension RH chain case. See also Figure 70 SIGHT GLASS LOW ON CASE and Figure 71 SIGHT GLASS CLOSE UP



FIGURE 71 SIGHT GLASS CLOSE UP RH

4.8. MECHANICAL GEAR BOX DRIVE ONLY - OPERATIONS

4.8.1. Hook-Up

Length

Adjust the tractor hitch length to provide 14"-16" rearward from tip of PTO shaft to center of draw pin hole.

Attachment

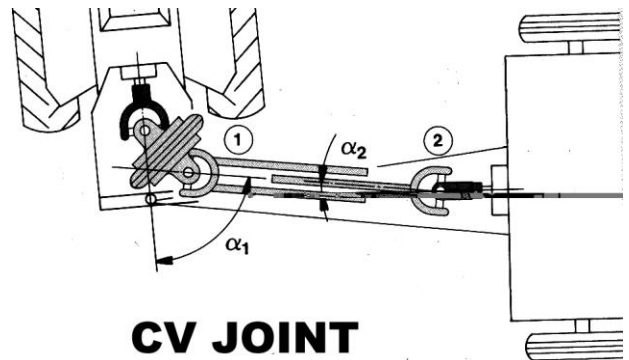
Lubricate tractor PTO splines and quick disconnect yoke with grease to reduce wear on splines. Twist locking collar and slide quick connect yoke onto PTO shaft. Be sure the driveline is properly attached and all bolts and setscrews are tight on the implement input shaft and on the tractor PTO shaft. Raise jack to storage position.

Shielding

Be sure the shielding is not damaged and rotates freely on the driveline.

Working angle

Constant velocity joints can operate up to 80 degrees for short periods.(i.e. during turns).



Storage

When not in use, cover to protect the driveline from the weather. When removed from the machine, store both half shafts together to prevent damage. Check all components for proper function and lubrication before use.

4.8.2. 540-1000 RPM Changeover

The RECON 300 gearbox PTO drive is designed for conversion from standard 540 input RPM to 1000 RPM. For maximum driveline life, the 540 rpm shaft speed is recommended. The part numbers required are in the following table:

Desired RPM	Front shaft Yoke only	Front shaft assembly	Gearbox
540	111642	111605	111714
1000	111641	111606	111712

1. Adjust the drawbar to again provide 14" for 540 RPM and 16" for 1000 RPM rearward distance from tip of PTO shaft to center of draw pin hole.
2. Happy haymaking!!

4.8.3. Spring clutch maintenance and settings

Annual maintenance of your clutch is required to ensure that the unit has not rusted and seized in the off-season, effectively eliminating the clutch protection of components.

1. Park the ReCon so that the discharge of ReCon is clear for 50 yards behind the machine.
2. Shut off tractor engine, set the park brake, disengage the PTO lever, and remove the key.
3. Loosen the 4 clutch tension bolts sufficiently (approximately 1 full turn) using a 17mm wrench. This will allow the friction plates to slip when machine rollers are jammed to simulate a wad or blockage situation.
4. Kneel down in front of one corner of machine, and pull the rock guard aside. Place a sound block of wood (a piece of 2"X4" approx.8 inches. long works well ASM part # 321953) between upper and lower roller lugs with the 8" side parallel to the long axis of the rollers. Slightly turn the rollers to hold the block between 2 lugs
5. Observe that no person or being is in the possible discharge of the block. Although there is NO incidence of this jamming device failing to stay in position, better safe than sorry.
6. Start tractor and carefully engage PTO with the engine idling, watching that the jamming device is working properly to stop rollers.
7. Friction type torque limiter should slip on its own hub. This 'burning the clutch ' removes rust from the friction plates and prevents damage that could occur should the friction plates become seized and not operate properly.
8. DISENGAGE PTO (AFTER APPROX 5 SEC), then shut off tractor, and remove key. Visually inspect the condition of all components, and service or replace as necessary.
9. Remove object used to jam rollers.
10. Retighten clutch bolts to specifications, ensuring that proper working gap of .125 inch is achieved and that this distance is constant for all bolts.

Spring clutch tension settings

Setting the clutch is critical to correct function of the unit. Adjustment tighter than these settings will result in damage to other components when roller blockage occurs. Improperly tight settings of the springs will void warranty.

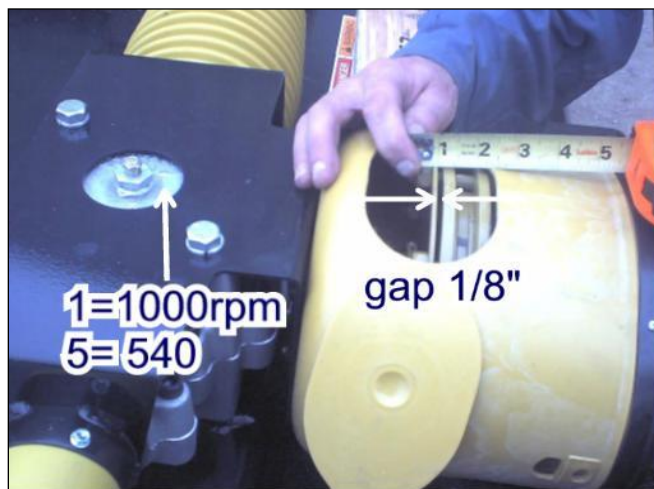


FIGURE 72 CLUTCH SPRING TENSION /GEARBOX RPM

4.8.4. Constant velocity (C.V.) shaft

1. The manufacturer recommends proper lubrication and inspection intervals of C.V. components.
2. Become familiar with the limits of the C.V. shaft assembly and components
3. Working angle of constant velocity joints can operate up to 80 degrees for short periods required to turn 90 or 180 degree corners.
4. Refer to 4.8.1, Hook-Up, page 43 for information on working angle, attachment, and storage of C.V. shaft and driveline components.

4.8.5. Lubrication-Mechanical Gearbox Drive

Frequent lubrication is required to maintain superior performance and minimal wear of parts. Grease the driveline parts after the number of hours of use as shown on the chart.

1. After long periods of non-use, lubricate and check the function of every driveline component before operating machine.
2. Grease all universal joints on shaft.
3. Wipe any excess grease off clutch assembly and other driveline components.
4. Check oil level in gearbox and add oil if necessary.
5. Ensure proper operation of friction-type torque limiter.
6. Lubricate tractor PTO splines and quick disconnect yoke with grease to reduce wear on splines

GEARBOX

Checking oil level

1. Remove the top oil fill breather plug, dip with a 8" long wire to confirm that the oil level is 3" above the bottom of the gearbox and 2.25 inches below the top of the box.
2. Add 80W90 Extreme Pressure gear oil if required.
3. Replace the top bung and tighten.

Scheduled maintenance

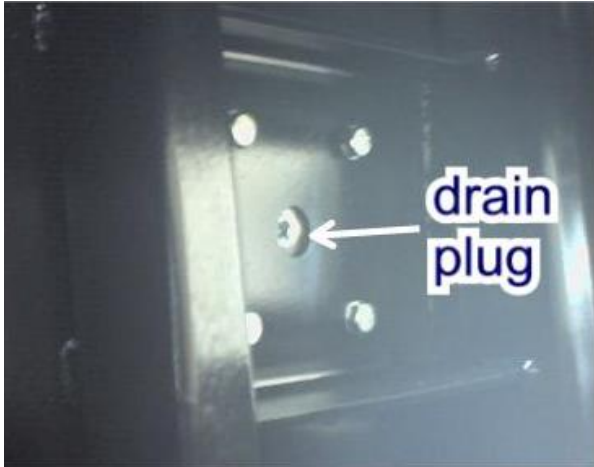


FIGURE 73 GEAR BOX DRAIN PLUG

Break in the gearbox for 50 hours, drain and refill.

After break in, drain and refill the gearbox the sooner of annually or 1000 hours of use.

1. Run machine to warm the oil before draining.
2. Raise the machine to a point where the gearbox is level (allows for proper drainage) and block machine for safety.
3. Observe all safe working conditions while performing maintenance. Refer to 2.3 MAINTENANCE SAFETY, page 10.
4. Refer to Figure 73 gear box drain plug. Access drain plug through hole in gearbox mount plate from front and underside of machine Remove drain port plug located on bottom of gearbox using a 3/8" Allen wrench.
5. Drain oil into container; replace and tighten drain plug.
6. Remove fill plug/ breather located on top of gearbox. Refill gearbox to operating level with 32 oz (1 US quart or 1 liter of 80-90W EP gear oil. Refer to fill plug in Figure 72 CLUTCH SPRING TENSION /GEARBOX RPM
7. Dip with a 8" long wire to confirm that the oil level is 3" above the bottom of the gearbox and 2.25 inches below the top of the box.
8. Replace top plug and tighten.
9. Remove safety blocking, start and run unit to check for leaks.

5.ReCon 400 3PP

5.1. SETUP

Machine comes setup except for the rear deflectors.

Lift machine by the lower 3 point attachments.



FIGURE 74 3 POINT LIFT HOOK

Set the machine down on a level surface,
Rotate the hitch jacks to parking position,



FIGURE 75 TIPPING DOWN RECON 400

and slowly back up while lowering the lifting forks.



FIGURE 76 PARKING POSITION

The ReCon 400 can be placed into parking position resting on the jacks and the wheels.

The side deflectors may be placed using the recon 300 instruction [page](#)

Hooking up the Recon 400 3PP.

The Recon 400 may be hooked to Cat II , Cat 3 narrow , or Cat 3 3 point hitch tractors.

The Recon 400 must always be attached using a heavy duty Quick Hitch- Ag shield part number 401601 or similar. The Quick hitch is an integral part of the hitch strength ,. Operation without the quick hitch will lead to hitch failure not covered by machine warranty.

[Quick hitch photo](#)

The hitch pins are standard Cat2 sizes, the lower pins may be bushed up to Cat 3 by using the bushings supplied in the tool box of the ReCon 400.



FIGURE 77 CAT 3 BUSHINGS

The PTO shaft may be placed on the rest provided to allow more convenient hookup of the shaft.

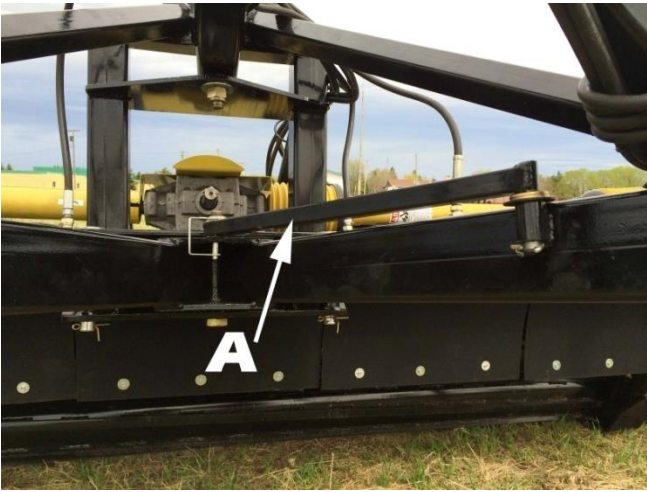


FIGURE 78 PTO SHAFT MOUNT

The Recon 400 uses up to 3 hydraulic circuits

- 1) Hitch rotation to allow angle adjust and offsetting of the swath- hoses marked yellow
- 2) Roller lift circuit to allow the roller clearance settings to be adjusted, rarely used- make sure that these cylinder are retracted enough to allow the roller pivot arm to rest on the yellow roller adjusters- marked blue.
- 3) Side deflector swing- to help invert swaths, and direct the hay into a narrower swath when displacing to the side- marked red
- 4) OR when no side deflectors, a spinner spreader hydraulic motor circuit maybe used to operate the hydraulic motor powering the spinners. Normally these hoses would be inserted into a preferred circuit for hydraulic motor operation- marked green

5.2. LUBRICATION RECON 400 ONLY

Refer to 4.7 LUBRICATION page 40 for additional Recon 400 lubrication instructions
This section is for additional lubricating for the Recon 400 only.

Grease using standard high quality grease according to the following table. **Do not over grease wheel and sealed roller bearings** to the point where seals are damaged or pushed out.



decals mark grease nipple locations.

Gn#	Location	Period	# of Zerks
Gn11	Bottom pivot point 3 point hitch	10hr daily	1
Gn12	Upper pivot point 3 point hitch	10hr daily	1
Gn13	Caster wheel spindles	10hr daily	2 each side
Gn 14	Wheel bearings	Weekly +	1 each side



FIGURE 79 BOTTOM PIVOT GREASE VIEW

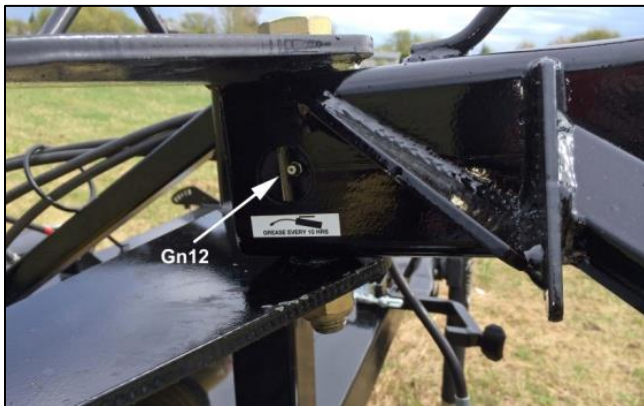


FIGURE 80 TOP PIVOT GREASE VIEW



FIGURE 81 CASTER SPINDLE VIEW



FIGURE 82 WHEEL BEARINGS GREASE VIEW

Driveline Grease Nipple Locations

Gn#	Location	Period	# of Pumps	# of Zerks
Gn15	Center body C.V Joint	10hr daily	10-30	1
Gn16	Center C.V cross	10hr daily	3-5	1
Gn17	Over running clutch	10hr daily	2-4	1
Gn18	Center C.V cross	10hr daily	3-5	1
Gn19	Plastic shield	10hr daily	1-2	1

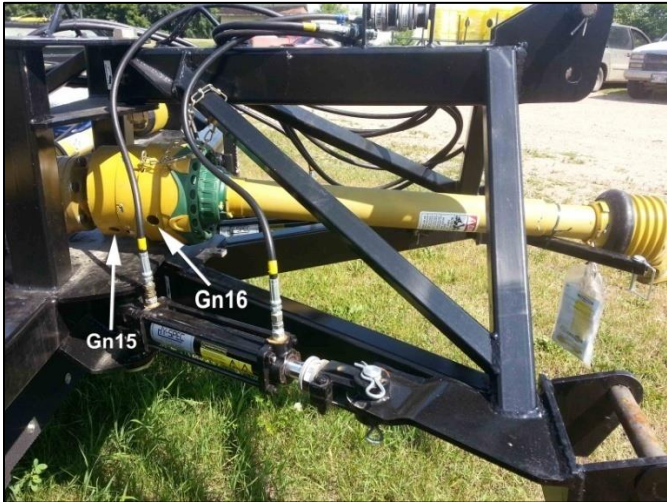


FIGURE 83 DRIVE SHAFT GREASE VIEW

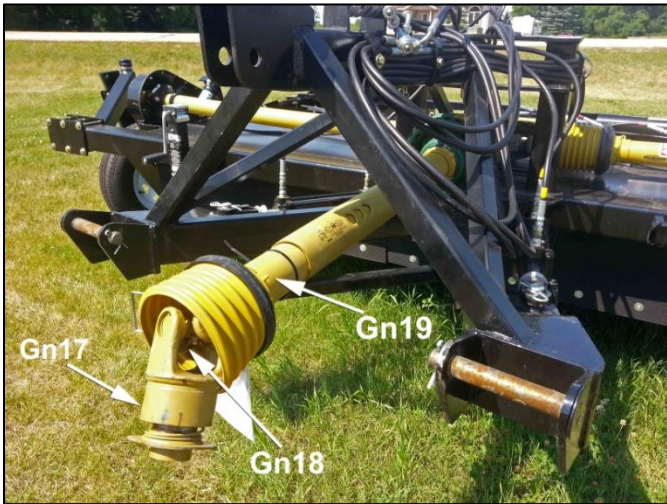
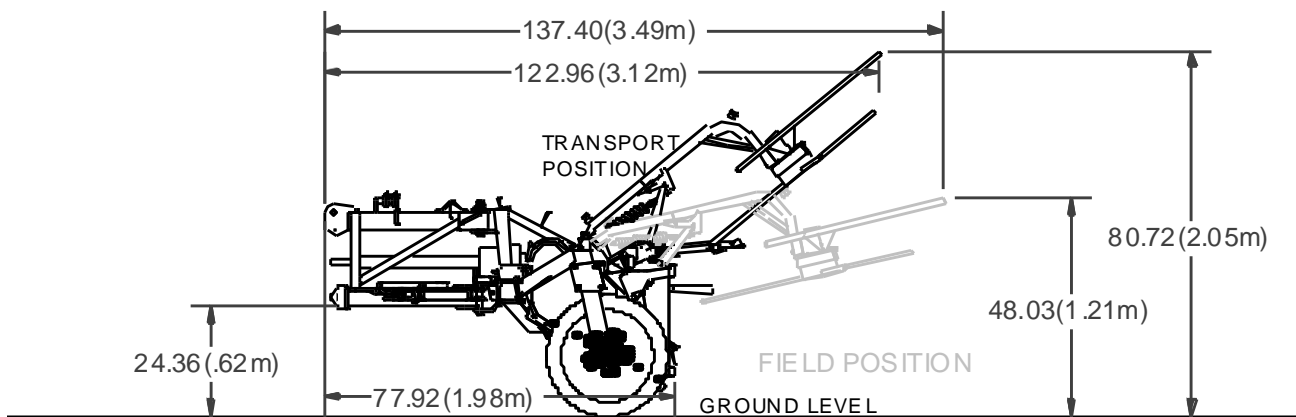
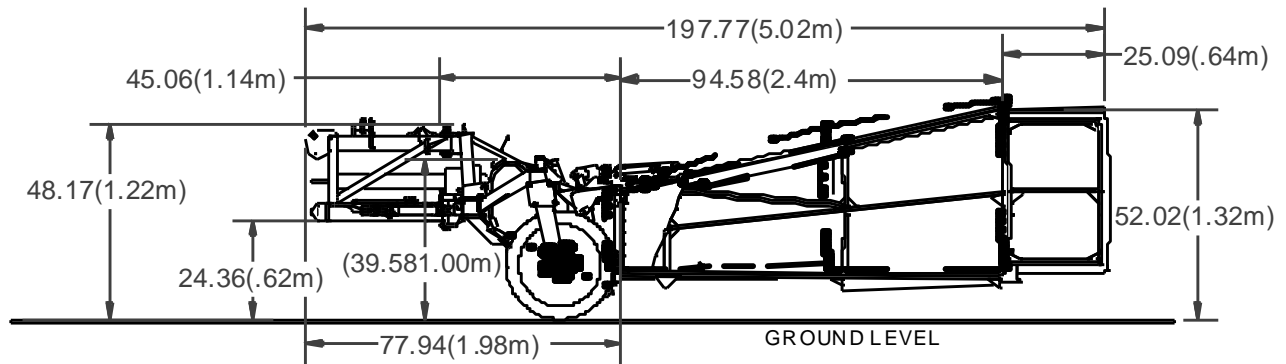
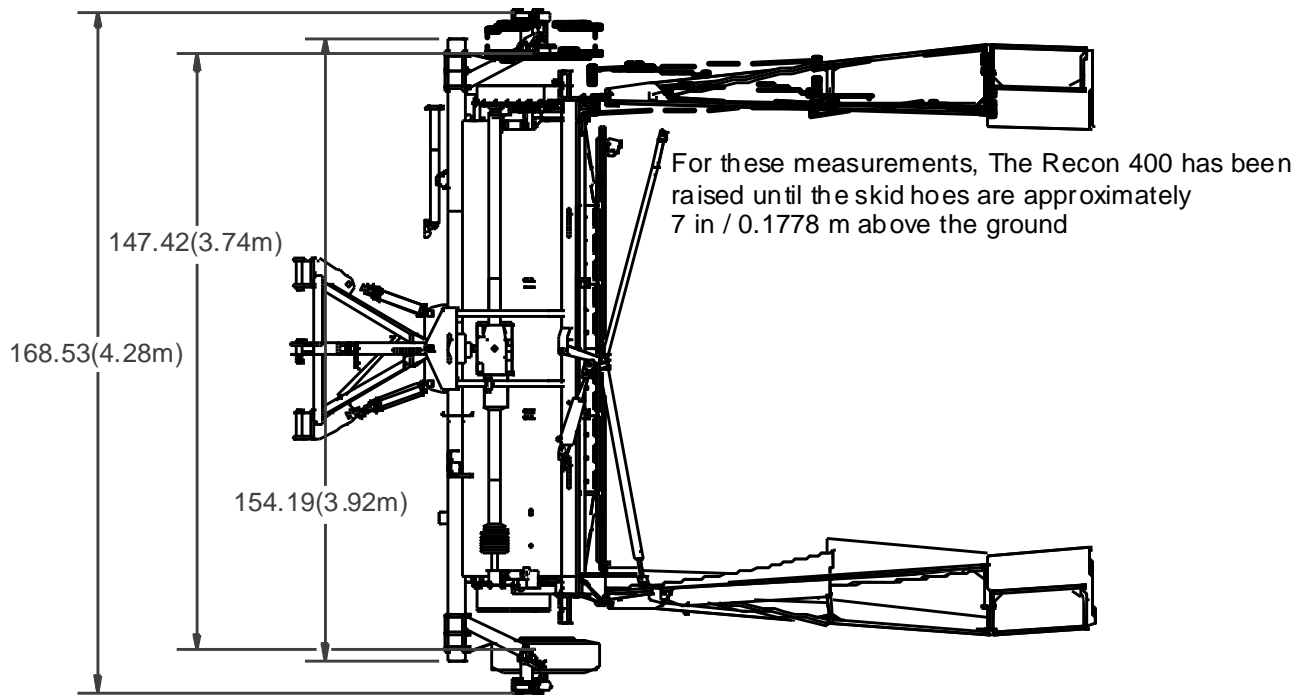


FIGURE 84 DRIVE SHAFT GREASE VIEW

6.RECON 400 dimensions

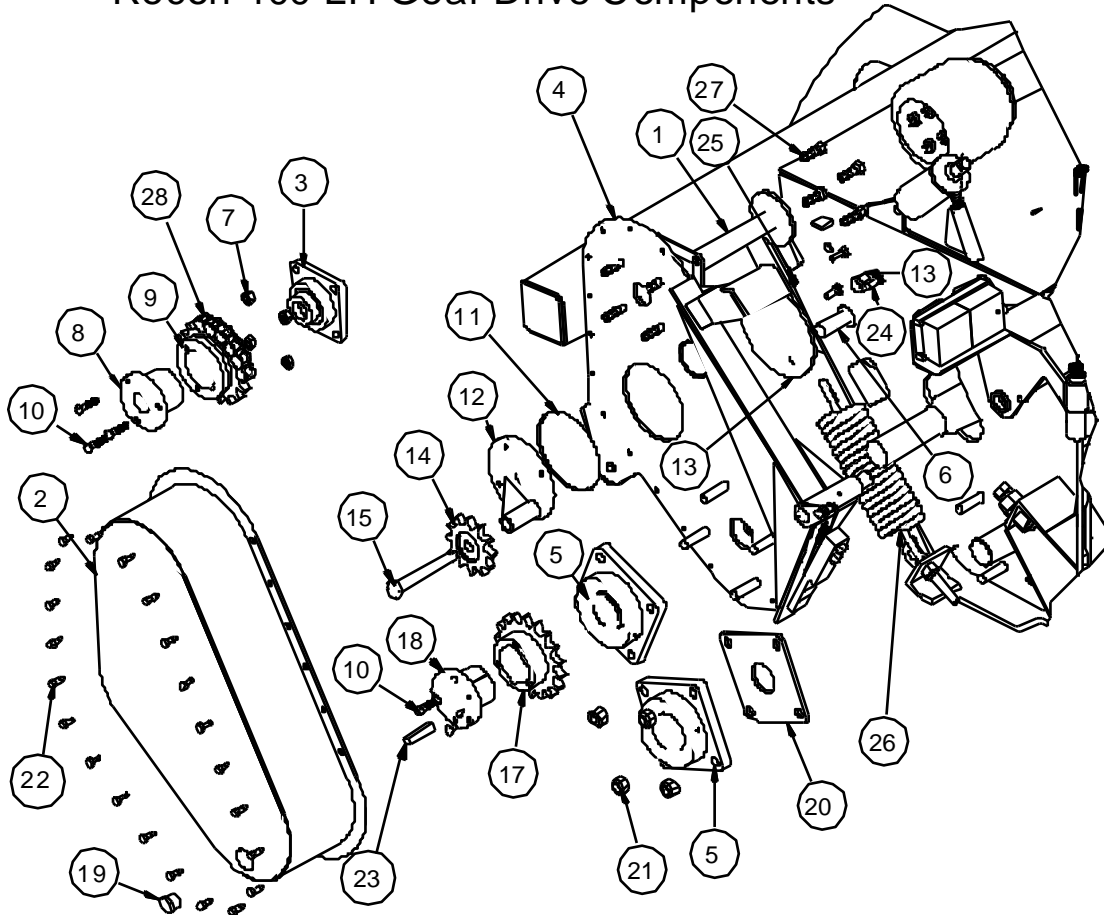
RECON 400 MODEL DIMENSIONS



7.parts list recon 400 mechanical gear box drive

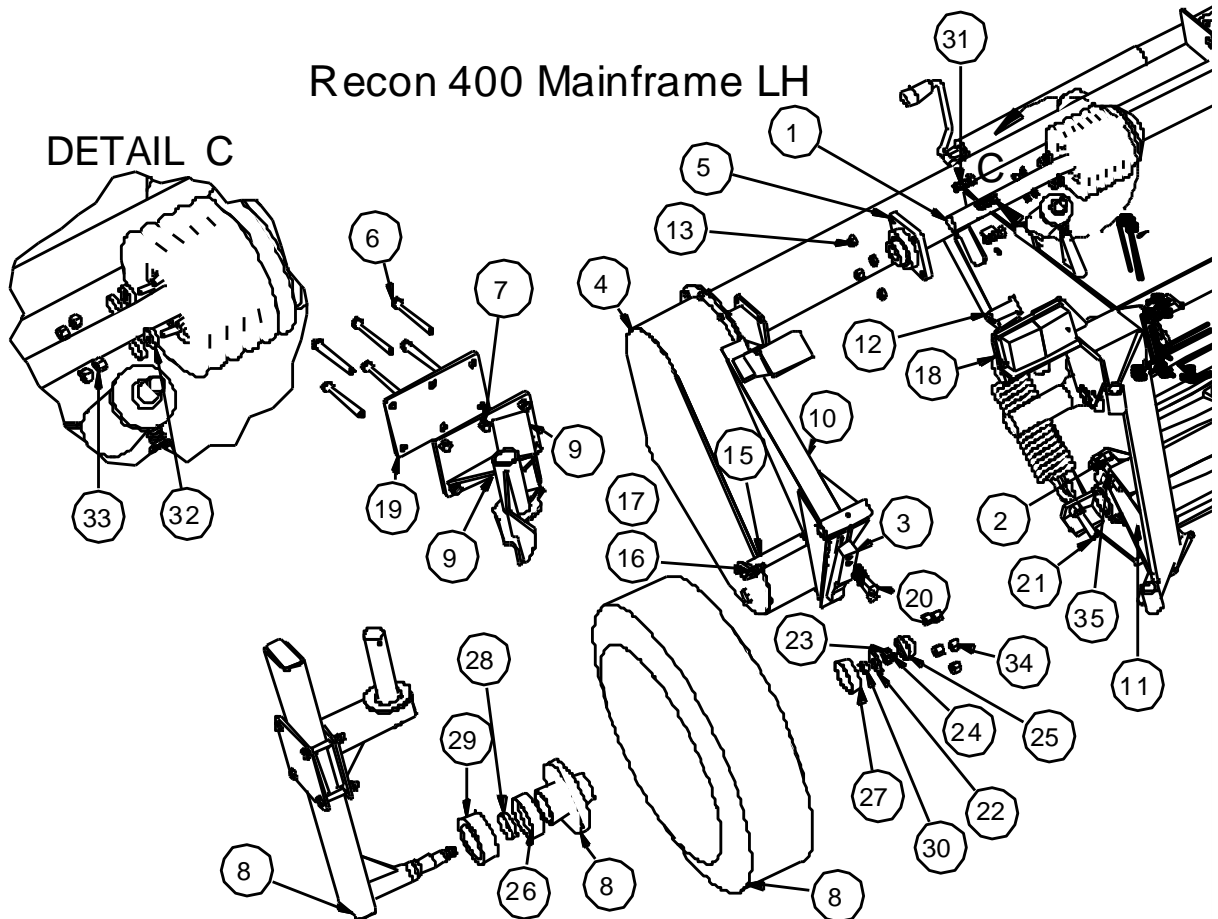
7.1. LH DRIVE CHAIN COMPONENTS

Recon 400 LH Gear Drive Components



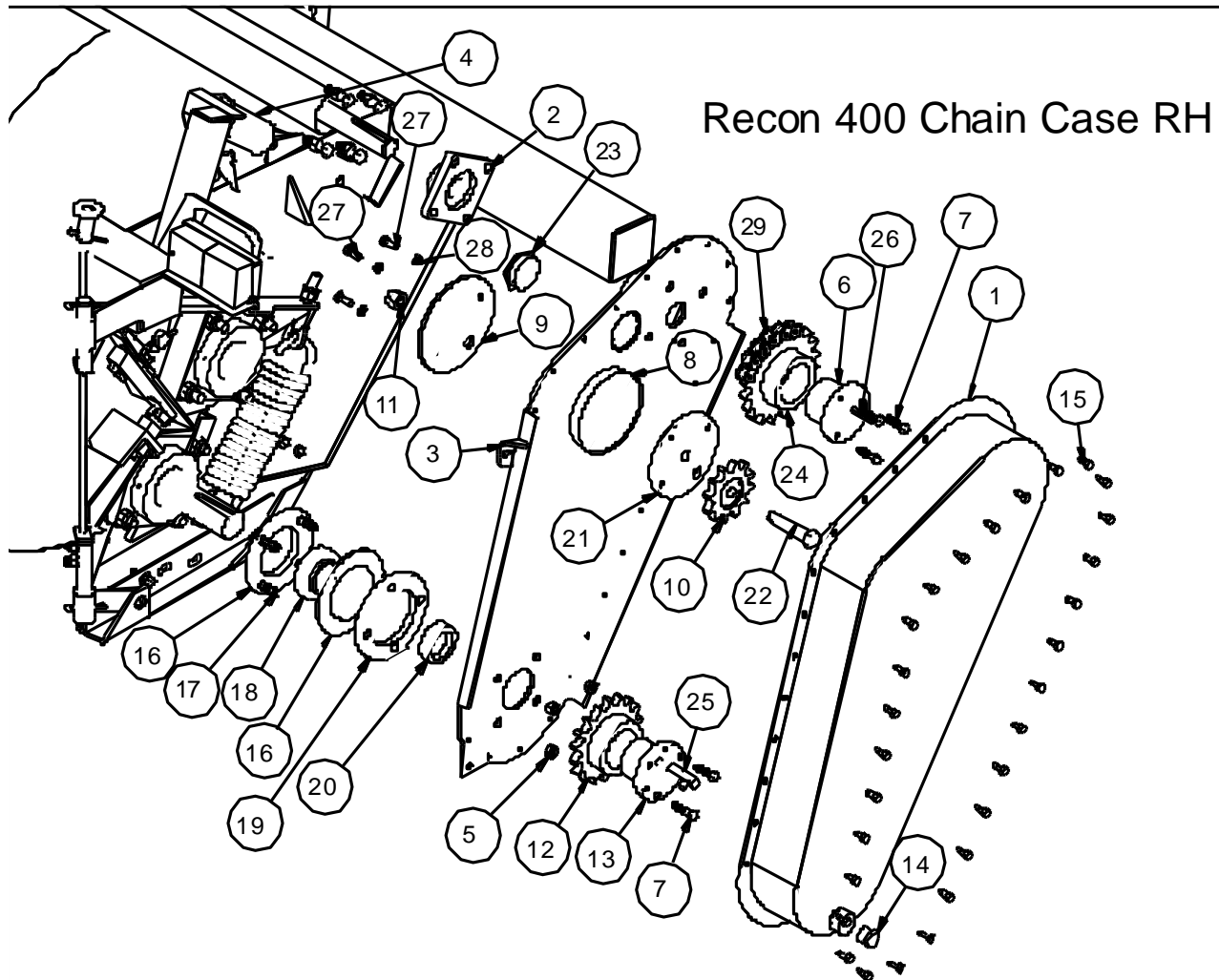
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	321650 jshaft lh dual drive wldt	15	1	321 787 bolt 3 4 x 5NC flats
2	1	321762 chain case cover wldt LH R3	16	2	102 128 nut3 4 nylock gr 5 pltd
3	2	114472 flange brg 4 bolt 207 brg 1 38	17	2	114 255 SPROCKET 80Q18 28 ppr
4	1	324167 pivot chain case wldt linear hgt adj LH R3	18	2	114 434 bushing Q1 2 bore
5	4	114422 2 211 ductile flge brg 2 assy	19	2	117 676 sight glass 3 4 MPT
6	1	324256 Recon 400 roller safety pin	20	1	320 399 PLATE BEARING PROTECTOR 2.2 IN
7	8	102146 nut 1 2 stover lock	21	4	102 117 nut 5 8 nc stover lock
8	2	114433 bushing Q1 138 bore	22	51	103 216 hex head 5 16 x 3 4 thread cutting screw
9	1	114256 SPROCKET 80Q20 28	23	2	320 899 KEYSTOCK 1 2X 1 2X 2
10	12	100604 BOLTS 3 8NC 1 1 2 GR5 PLTD HEX	24	6	100 602 bolt 3/8"ncC x 1" gr5 pltd hex
11	2	117035 oring 54255	25	6	101 145 washer lock 3/8"
12	1	321788 eccentric wldt oil case	26	2	113 954 spring EXT _500wire X 2_875 X 18 turns X 12_875
13	2	321753 iddler ecc mt wldt r3 oil	27	4	100 702 bolt 1/2nc 1 1/2 gr5 pltd hex
14	2	114249 sprocket idler 80ch x 12t x 3 4h	28	1	114 206 80 chain 53 links

7.2. RECON 400 LH MAIN FRAME



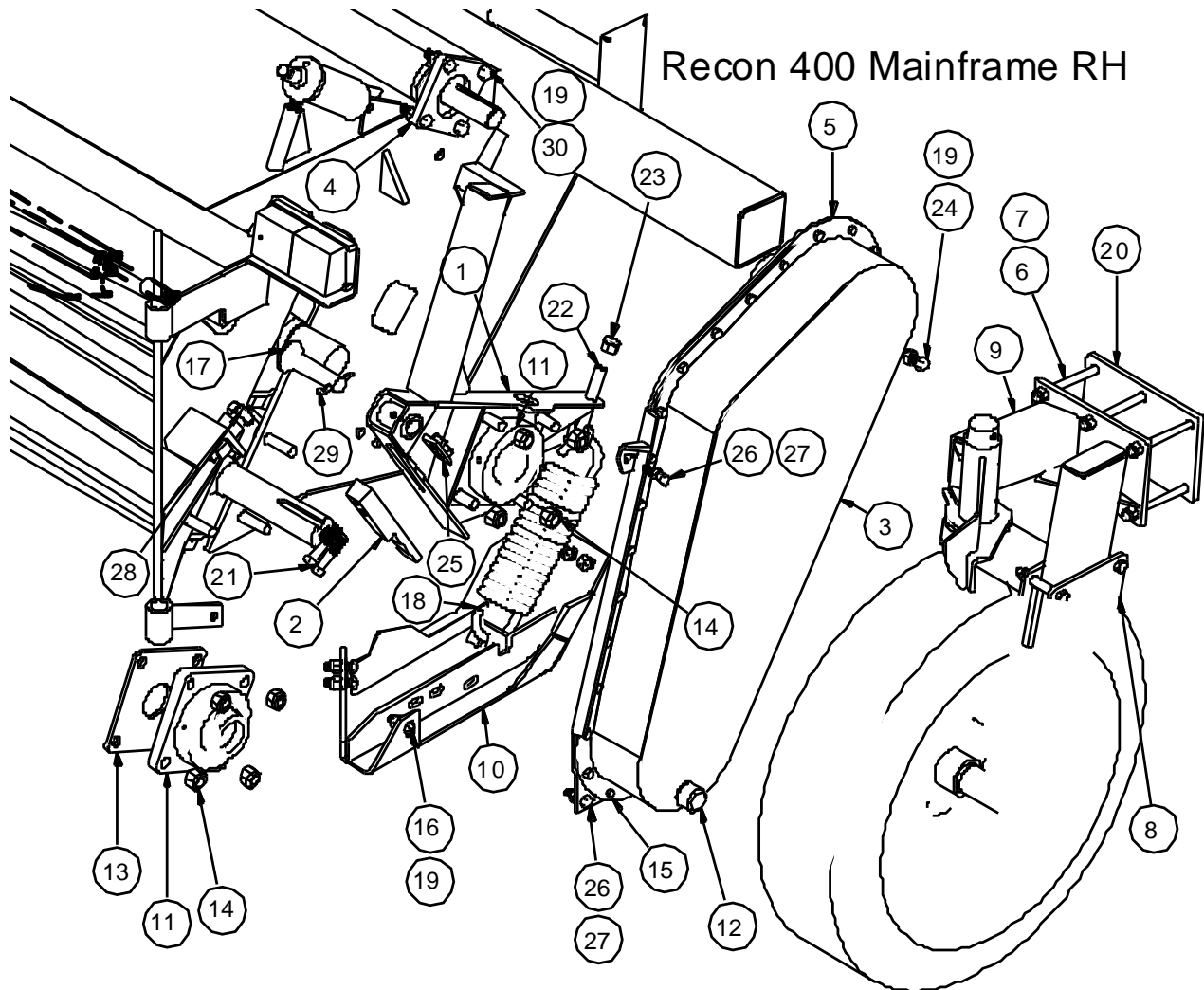
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	321650 jshaft lh dual drive wldt	19	2	322153 caster wheel bolt on plate 375
2	2	100921 BOLT 3 4 X3 gr8 hex pltd	20	2	100704 bolt 1/2nc x 2 1/2 gr5 pltd hex
3	3	321632 quick adj inline 045 R3 machined	21	1	321841 spring adj wldt HEAVY R3
4	1	321762 chain case cover wldt LH R3	22	1	101108 washer flat 34 in
5	2	114472 flange brg 4 bolt 207 brg 1 38	23	1	102111 castle nut 3 4 inch
6	12	100711 bolt 1-2 X5 1-2 gr5 pltd nc	24	1	104903 cotter pin 1 8 X 1 1 2
7	12	102125 nut nylok 1/2" nc gr5 pltd	25	1	113604 dust cap dc 11
8	1	322132 caster wheel assy	26	1	TJ 113626 INNER RACE
9	1	322147 LH Caster wheel mnt	27	1	TJ 113627 OUTER RACE
10	1	324167 pivot chain case wldt linear hgt adj LH R3	28	1	113628 bearing inner cone LM48548
11	4	114422 2 211 ductile flge brg 2 assy	29	1	113663 brg outer cup 1010hub 453A
12	1	324256 Recon 400 roller safety pin	30	1	113629 outer cone
13	8	102146 nut 1 2 stover lock	31	4	100702 bolt 1/2nc 1 1/2 gr5 pltd hex
14	12	100604 BOLTS 3 8NC 1 1 2 GR5 PLTD HEX	32	4	321890 washer flange 87odx32id 25th QT
15	1	321283 pin wldt LH Pivit Pin	33	4	102142 nut stover 5-16 NF gr 5 pltd
16	1	100603 bolt 3 8NCx1 1 4 gr5 hex pltd	34	5	113656 WHEEL NUT 1 2 NF
17	1	102123 nut 3/8" nylock nc	35	1	102098 NUT HEX 1in GR 8 NF
18	2	113954 spring EXT _500wire X 2_875 X 18 turns X 12_875			

7.3. RECON 400 CHAIN CASE RH



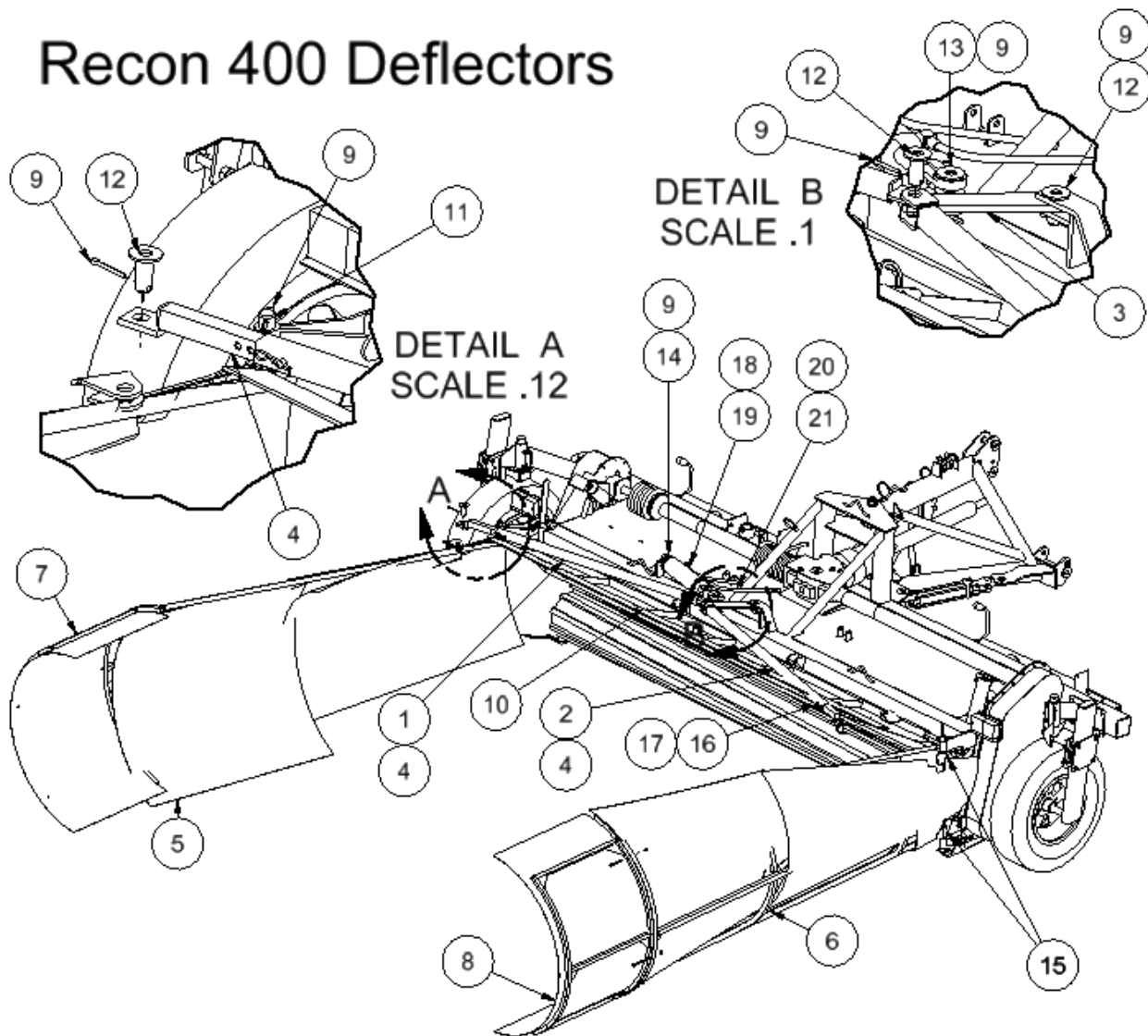
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	321820 chain case wldt RH R3	15	51	103216 hex head 5 16 x 3 4 thread cutting screw
2	2	114472 flange brg 4 bolt 207 brg 1 38	16	2	114480 flangette 90MS 4 b 2 ID brg
3	1	321804 chain case mt wldt RH R3	17	10	100948 bolt carriage 1/2"x1 1/4" gr5 pltd nc
4	2	117261 hyd cyl 2 bore x 3 stroke .5 pin welded	18	1	114490 brg 2ID G210 narrow self ecc
5	8	102146 nut 1 2 stover lock	19	1	321828 shim half inch for 90ms 4b flgt
6	2	114433 bushing Q1 138 bore	20	1	114490 lock collar 2 nrw brg
7	12	100604 BOLTS 3 8NC 1 1 2 GR5 PLTD HEX	21	1	321989 idler eccentric plt wldt
8	2	117035 oring 54255	22	1	321807 bolt 3 4 x 2 5 with flats
9	2	321753 iddler ecc mt wldt r3 oil	23	1	117999 bung 2 mpt rieke
10	2	114249 sprocket idler 80ch x 12t x 3 4h	24	1	114256 SPROCKET H80Q20
11	2	102128 nut 3 4 nylock gr 5 pltd	25	2	320899 KEYSTOCK 1 2X 1 2X 2
12	2	114255 SPROCKET 80Q18 28 ppr	26	1	320900 KEY STOCK 5 16X 5 16X 2 PART 1
13	2	114434 bushing Q1 2 bore	27	6	100602 bolt 3/8"ncC x 1" gr5 pltd hex
14	2	117676 sight glass 3 4 MPT	28	6	101145 washer lock 3/8"
			29	1	114206 80 chain 53 links

7.4. RECON 400 MAINFRAME RH



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	324035 pivot plate wldt RH R400 oil	16	10	100948 bolt carriage 1/2"x1 1/4" gr5 pltd nc
2	3	321632 quick adj inline 045 R3 machined	17	1	320192Z PIN WLDT UPPER ROLLER
3	1	321820 chain case wldt RH R3	18	2	113954 spring EXT _500wire X 2_875 X 18 turns X 12_875
4	2	114472 flange brg 4 bolt 207 brg 1 38	19	11	102125 1/2" nylock
5	1	321804 chain case mt wldt RH R3	20	2	322153 caster wheel bolt on plate 375
6	12	100711 bolt 1-2 X 5 1-2 gr5 pltd nc	21	4	100704 bolt 1/2nc x 2 1/2 gr5 pltd hex
7	12	102125 nut nylok 1/2" nc gr5 pltd	22	2	321841 spring adj wldt HEAVY R3
8	1	322143 RH caster wheel assy	23	2	102127 nut 5/8 nc nylock
9	1	322147 LH Caster wheel mntmir	24	5	100702 bolt 1/2nc 1 1/2 gr5 pltd hex
10	1	321829 skid plate wldt RH R3 oil	25	1	321816 plate with nuts quik adj R3
11	4	114422 2 211 ductile flge brg 2 assy	26	2	100660 BOLT 7 16 X 1NC
12	2	117676 sight glass 3 4 MPT	27	2	102124 nut 7/16 nc nylock
13	2	320399 PLATE BEARING PROTECTOR 2.2 IN	28	2	321752 bolt 1in roller stop bolt
14	12	102117 nut 5 8 nc stover lock	29	1	104907 cotter pin 1 4 X 2 5
15	51	103216 hex head 5 16 x 3 4 thread cutting screw	30	4	100708 BOLT 1 2NC 1 3-4 GR5 PLTD HEX

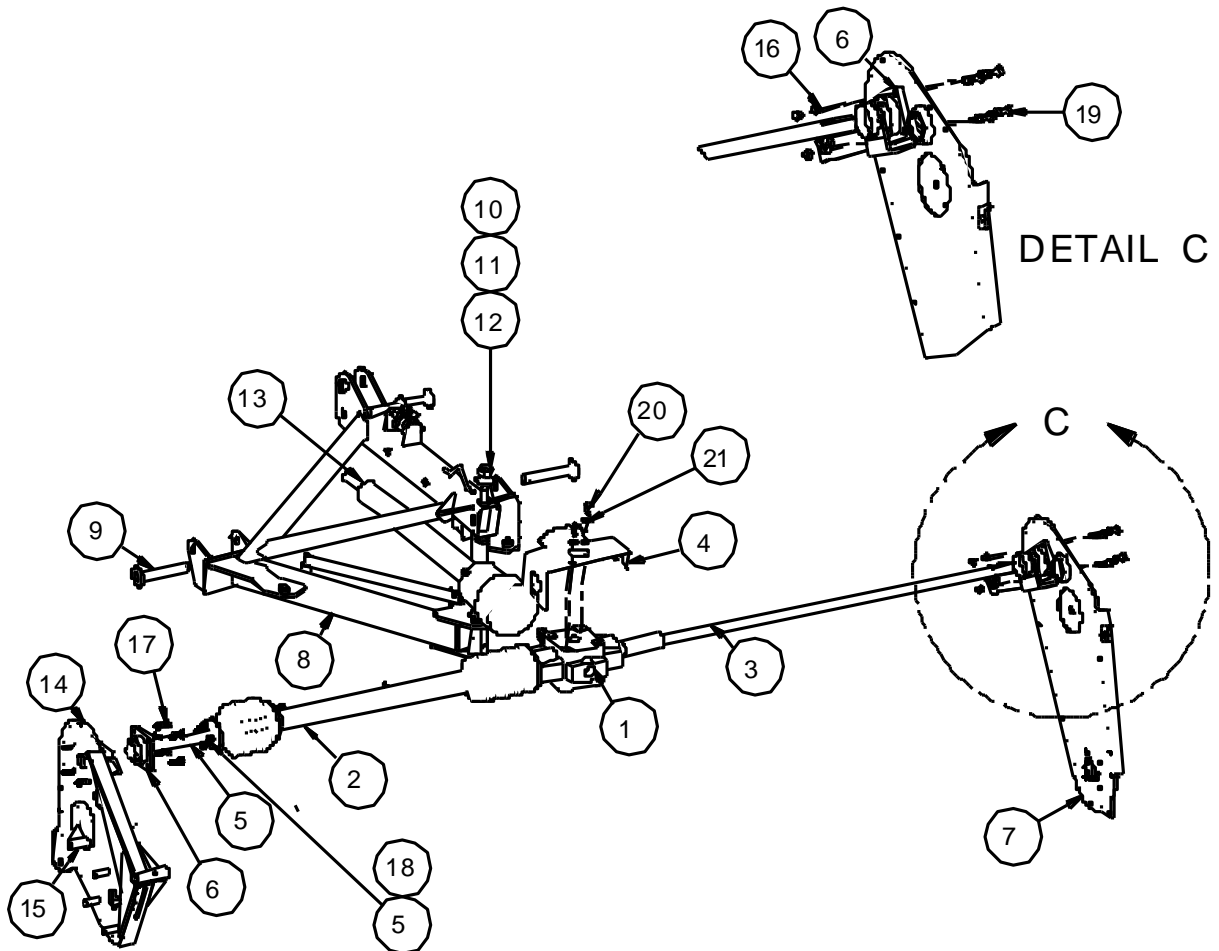
7.5. RECON 400 DEFLECTOR SIDE AND TOP FLAP



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	321931 arm wldt dfctr LH R3 9 ft	12	4	225558 PIN WLDT FRONT BREAKAWAY
2	1	321932 arm wldt dfctr RH R3 9 ft	13	1	208255 Pin 1IN OD x 3.625 LG
3	1	321863 pivot arm wldt dfctr adj R3	14	1	225554 PIN WLDT BREAKAWAY CYL BL END
4	2	321868 arm wldt adjustable deflector side	15	2	105609 grease zerk
5	2	321883 dfctr assy LH R300	16	2	320229Z PIN WLDT REAR DEFLECTER ARM
6	2	321884 dfctr assy RH R300	17	2	104101 hairpin 11 1/8 x 2.75
7	1	321683 extension side deflect assy LH	18	1	117655 RESTRICTOR 90 1 4MPT X 1 4FPTS 1501 4 4 BLANK
8	1	321267 extension side deflect assy RH	19	1	118595 hose hyd 191 1 4 mpt ends
9	11	104907 cotter pin 1 4 X 2 5	20	1	118121 swivel adaptor 1 4 mpt x 1 4 fps
10	1	320575 DEFLECTOR WLDT 9FT TOP RECON 2009 WIDE 16 INCH	21	1	117705 hose 181 1 4 mpt ends
11	4	320196 PIN WLDT 1 OD X 5 375 LG RECON 200			

7.6. RECON 400 DRIVELINE COMPONENTS

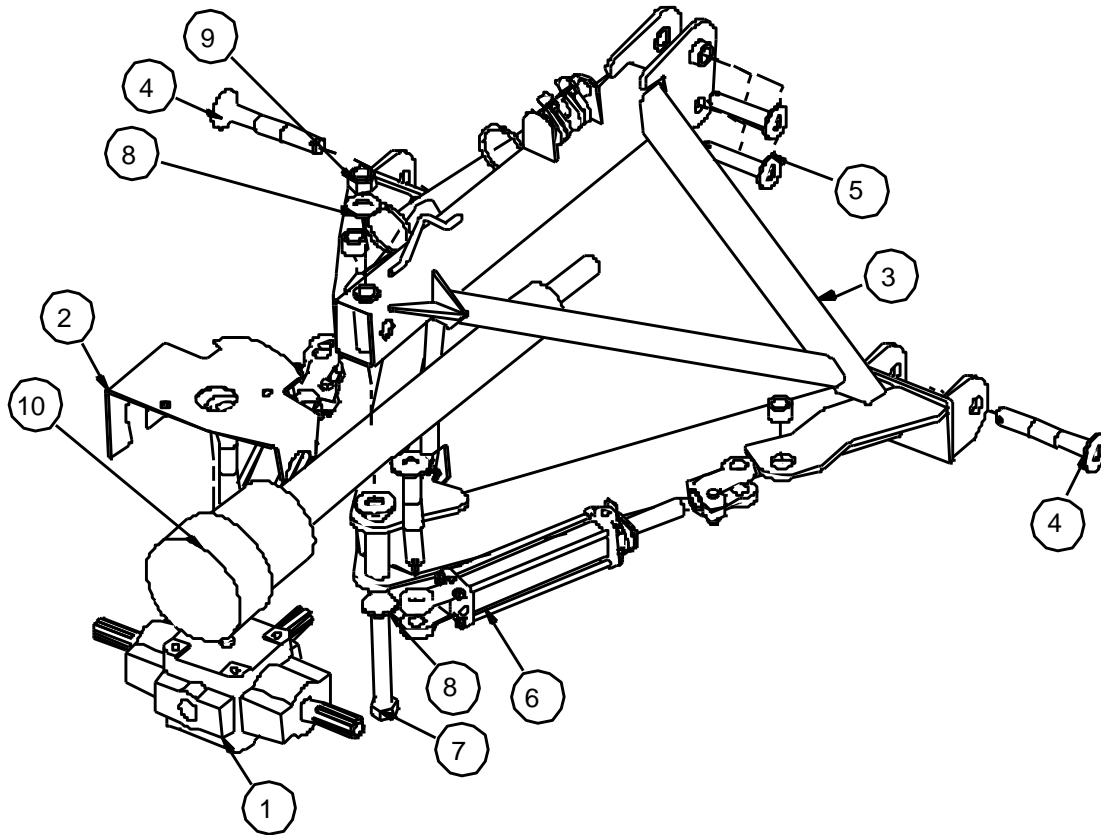
Recon 400 Drive Line Components



ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	111712 Gear Box 100RPM 3 Shaft	13	1	111935 PTO drive shaft w clutch
2	1	111775 shaft side 9 ft 394721	14	1	324167 pivot chain case wldt linear hgt adj LH R3
3	1	321906 driveshaft wldt R3 9 ft oil	15	1	321788 eccentric wldt oil case
4	1	321715 shaft cover hldr RH R3	16	11	102125 1/2" nylock
5	1	321650 js shaft lh dual drive wldt	17	9	100702 bolt 1/2nc 1 1/2 gr5 pltd hex
6	2	114472 flange brg 4 bolt 207 brg 1 38	18	4	321890 washer flange 87odx32id 25th QT
7	1	321804 chain case mt wldt RH R3	19	4	100708 BOLT 1 2NC 1 3-4 GR5 PLTD HEX
8	1	324070 30Deg Hitch Pivot Wldmt	20	2	100240 BOLT HEX HEAD 14 X 25 METRIC
9	2	324097 Lower Hitch Pin	21	2	101153 lock washer METRIC 14MM
10	1	100957 bolt 1nc x 7 lg gr5 pltd			
11	2	101110 washer flat 1 in			
12	1	102140 NUT 1 NC NY LOCK			

7.7. RECON 400 HITCH ASSEMBLY

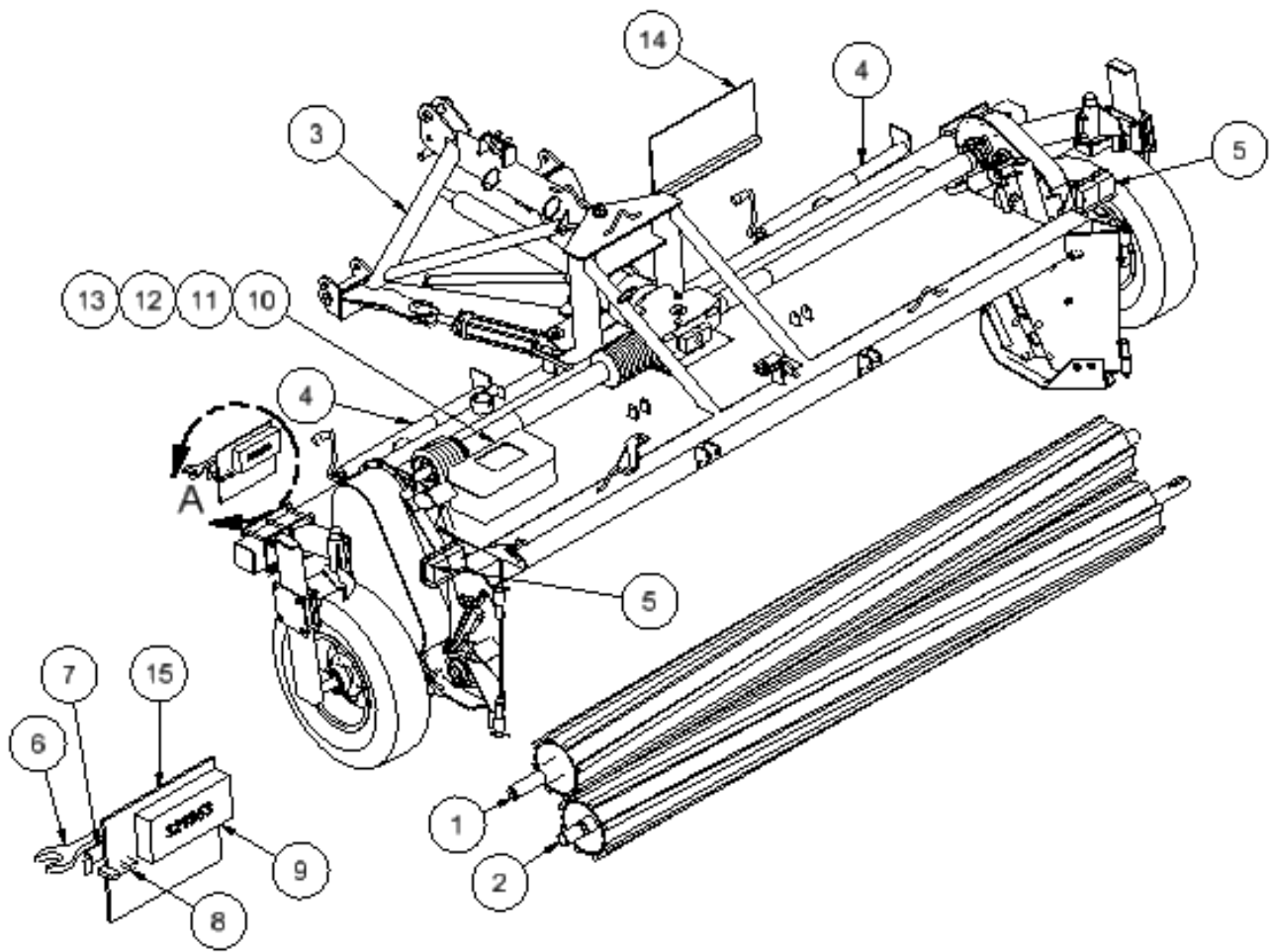
Recon 400 Hitch Assembly



ITEM	QTY	PART NUMBER
1	1	111714 gear box 540in superior 3sft
2	1	321715 shaft cover hldr RH R3
3	1	324070 30Deg Hitch Pivot Wldmt
4	5	324097 Lower Hitch Pin
5	2	324098 Upper Hitch Pin
6	2	117351Hyd Cyl AGU 2 x 8
7	1	100957 bolt 1nc x 7 lg gr5 pltd
8	2	101110 washer flat1 in
9	1	102140 NUT 1 NC NY LOCK
10	1	111323 WS shaft w clutch 1 38 6 MF

7.8. RECON 400 ROLLERS, HITCH, TOOLBOX AND MANUAL

Recon 400 Roller, Hitch and Toolbox

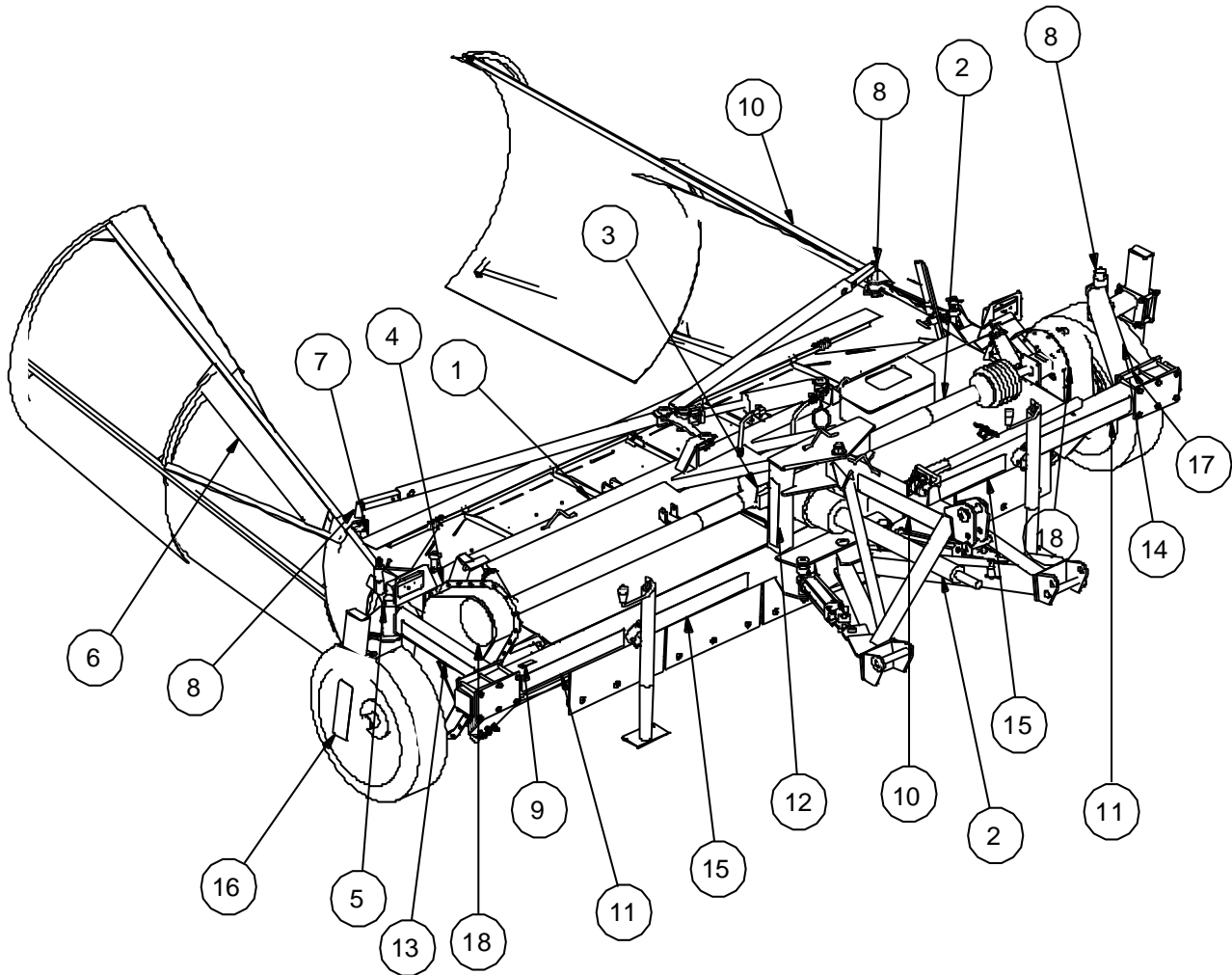


DETAIL A: Toolbox Parts

ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	321912 roller wldt 9' up 2 R3 oil	9	1	321953 wood block LH chain adj 2x4x8in
2	1	321913 roller wldt low R3 9 ft oil	10	1	128041 tool box
3	1	324070 30Deg Hitch Pivot Wldmt	11	2	100403 bolt 1-4 X 1 gr5 pltd nc
4	2	116905 HITCH JACK 2015	12	2	102121 nut nylok 1/4" nc gr5 pltd
5	2	113488 tail light 3 lamp OZ R	13	2	101103 flat washer 1/4"
6	1	321983 wrench roller stop adjust	14	5	320250 ROCK GUARD ASSY
7	1	321999 guage roller spacing wldt	15	1	113598 Recon 300 owners manual
8	1	321959 roller timing tool rect R3			

7.9. RECON 400 DECAL LOCATIONS

Recon 400 Decal Locations



1	1	113555 Pinch point warning	10	1	116172 Recon 400 Top Ag Shield
2	2	113525 Rotating Drive Line Danger	11	2	116166 Front Recon 400 Decal
3	2	113521 Grease Annually	12	2	116169 Recon 400 Center Vertical
4	1	113524 Rotating Blade Warning	13	1	116170 Recon Wheel support Decal
5	1	113520 Grease Every Ten Hours	14	1	116171 Recon 400 Wheel support Decal
6	2	116111 Recon 400 decal	15	2	116168 Recon 400 Front Warning Decal
7	1	113523 Thrown Object Danger	16	1	116165 Recon 400 RH Leg Decal
8	2	116107 Stripes Side Deflector	17	1	116164 Recon 400 LH Leg Decal
9	1	113510 serial number plate ASM	18	2	116175 Chain Case Recon Decal

8.SPECIFICATIONS - RECON 300 & 400

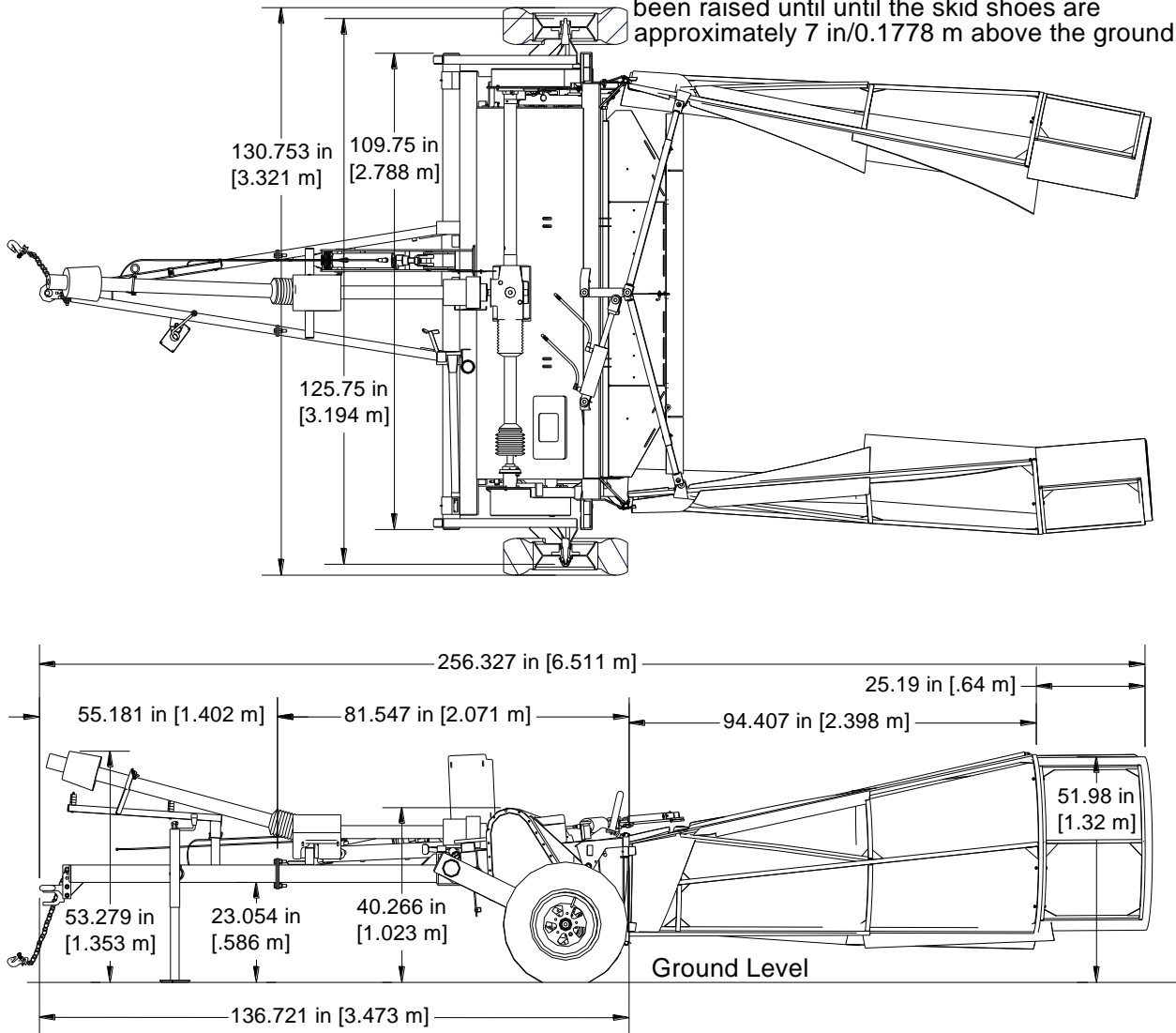
SPECIFICATION	ReCon 300 MECHANICAL GEAR BOX DRIVE 7 ft.-pull type	ReCon 300 MECHANICAL GEAR BOX DRIVE 9 ft.-pull-type	ReCon 400 MECHANICAL GEAR BOX DRIVE 9 ft.-3 Point Hitch
Weight Dry(shipping) Operating(field)	2750 lb 2750 lb.	3075 lb 3075 lb.	3000 lb. 3000 lb.
Shipping space partially knocked down	36x 133x 72"	36x 162x 72"	48x168 x 72"
Main body front- rear			75.5" top deflector 87.5
Length (front hitch to tip of side deflector)	238 in.	238 in.	175 in.
Width	133 in.	162 in.	172 in.
Tire Size	P275 60SR15	P275 60SR15	P275 60SR15
Rim Size	15"x 8"x 5" -5 bolt	15"x 8"x 5" -5 bolt	15"x 8"x 5" -5 bolt
Tire pressure	18 psi	19 psi	18 psi
Wheel nut size	½" NF	½" NF	½" NF
Wheel nut torque	70 lb. ft.	70 lb. ft.	70 lb. ft.
Drive system	Mechanical Gearbox PTO driven	Mechanical Gearbox PTO driven	Mechanical Gearbox PTO driven
Drive Line	Constant Velocity shaft assembly & overrunning clutch 540/1000 rpm input	Constant Velocity shaft assembly & overrunning clutch 1000 rpm input	Over running clutch 540/1000 rpm input
Drive protection	Friction-type torque limiter	Friction-type torque limiter	Friction-type torque limiter
Tractor PTO horsepower (minimum)	70 hp+	70 hp+	70 hp+
PTO speed-(RPM)	540 or 1000 input by changing 3 shaft gearbox and front shaft	540 or 1000 input by changing 3 shaft gearbox and front shaft	540 or 1000 input by changing 3 shaft gearbox and front shaft
Gearbox	Superior R500	Superior R500	Superior R500
Gearbox oil capacity	1.0 liters / 32 oz.	1.0 liters/32 oz.	1.0 liters/32 oz.
Right hand chain case capacity	.4 liters Synthetic 50 gear oil to upper half of sight glass	.4 liters Synthetic 50 gear oil to upper half of sight glass	.4 liters Synthetic 50 gear oil to upper half of sight glass
Left hand chain case capacity	.6 liters Synthetic 50 gear oil to upper half of sight glass	.6 liters Synthetic 50 gear oil to upper half of sight glass	.6 liters Synthetic 50 gear oil to upper half of sight glass

8.1. RECON300 TRANSPORT DIMENSION

ReCon300 7' Transport Dimensions

06/14/07

For these measurements the ReCon300 has been raised until the skid shoes are approximately 7 in/0.1778 m above the ground.

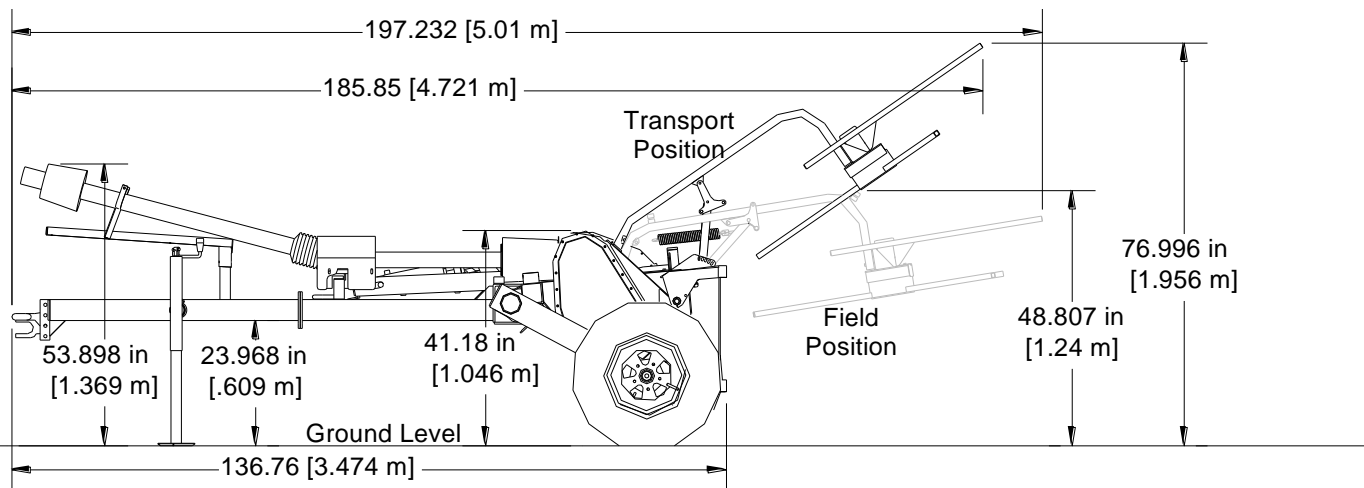
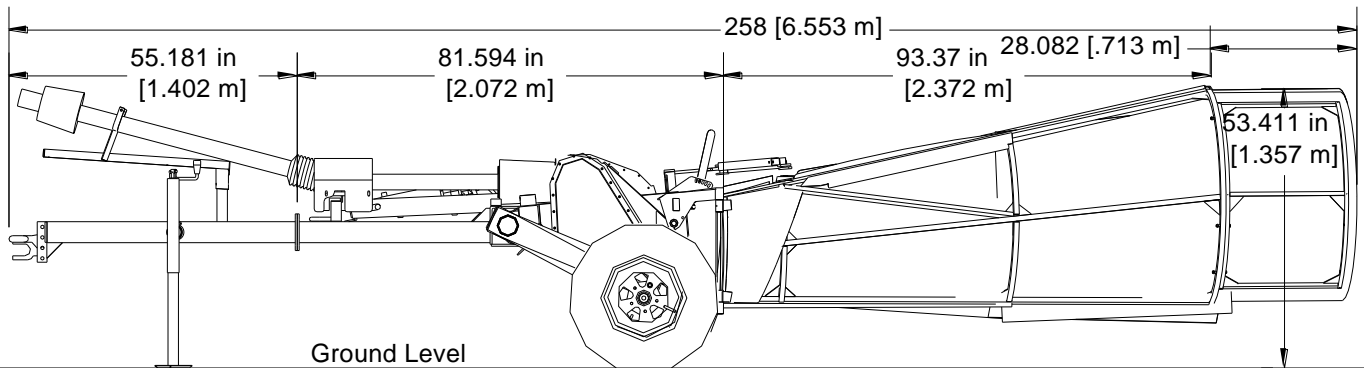
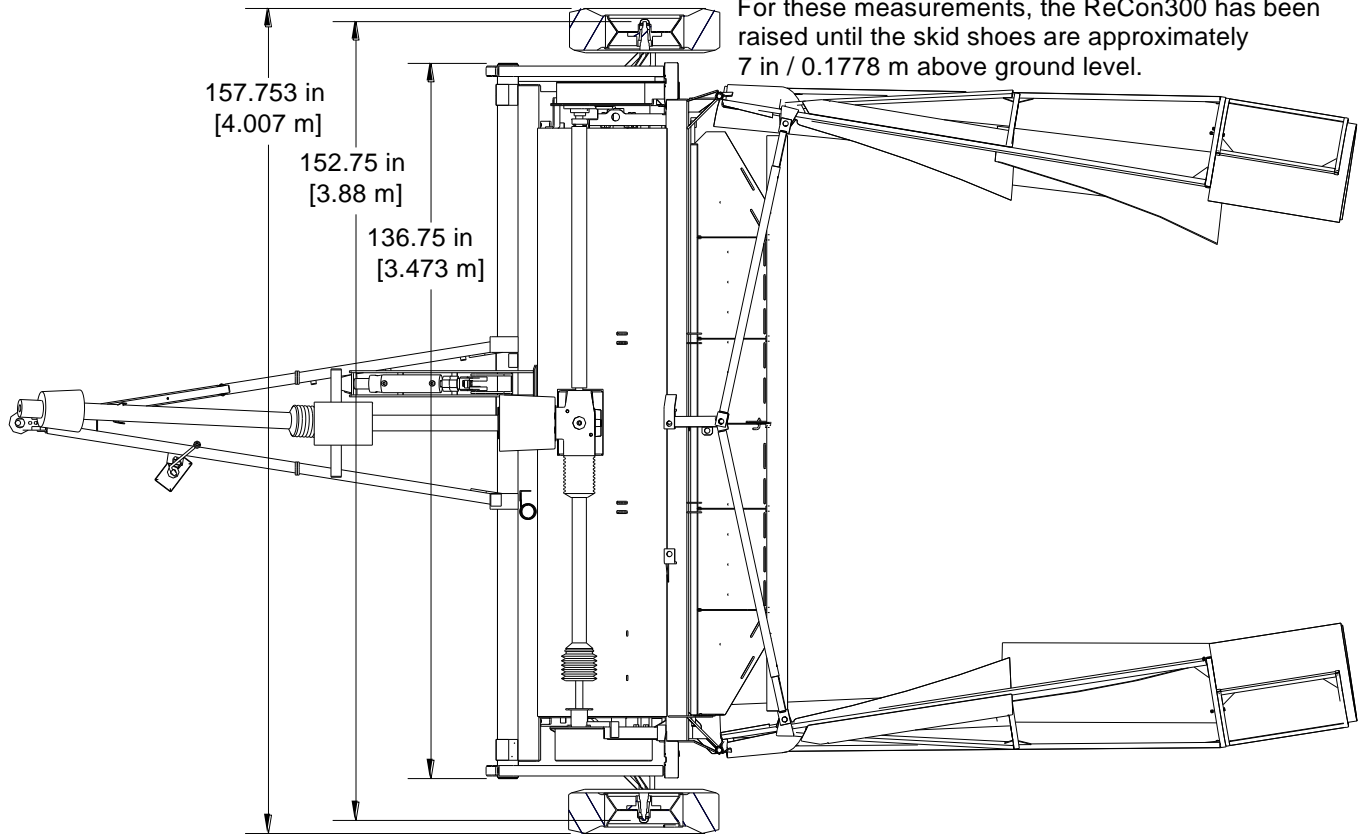


NOTE: With the Walking Beam option #321500, the total transport width is 136in [3.45m].

ReCon300 9' Model Transport Dimensions

06/15/2007

For these measurements, the ReCon300 has been raised until the skid shoes are approximately 7 in / 0.1778 m above ground level.

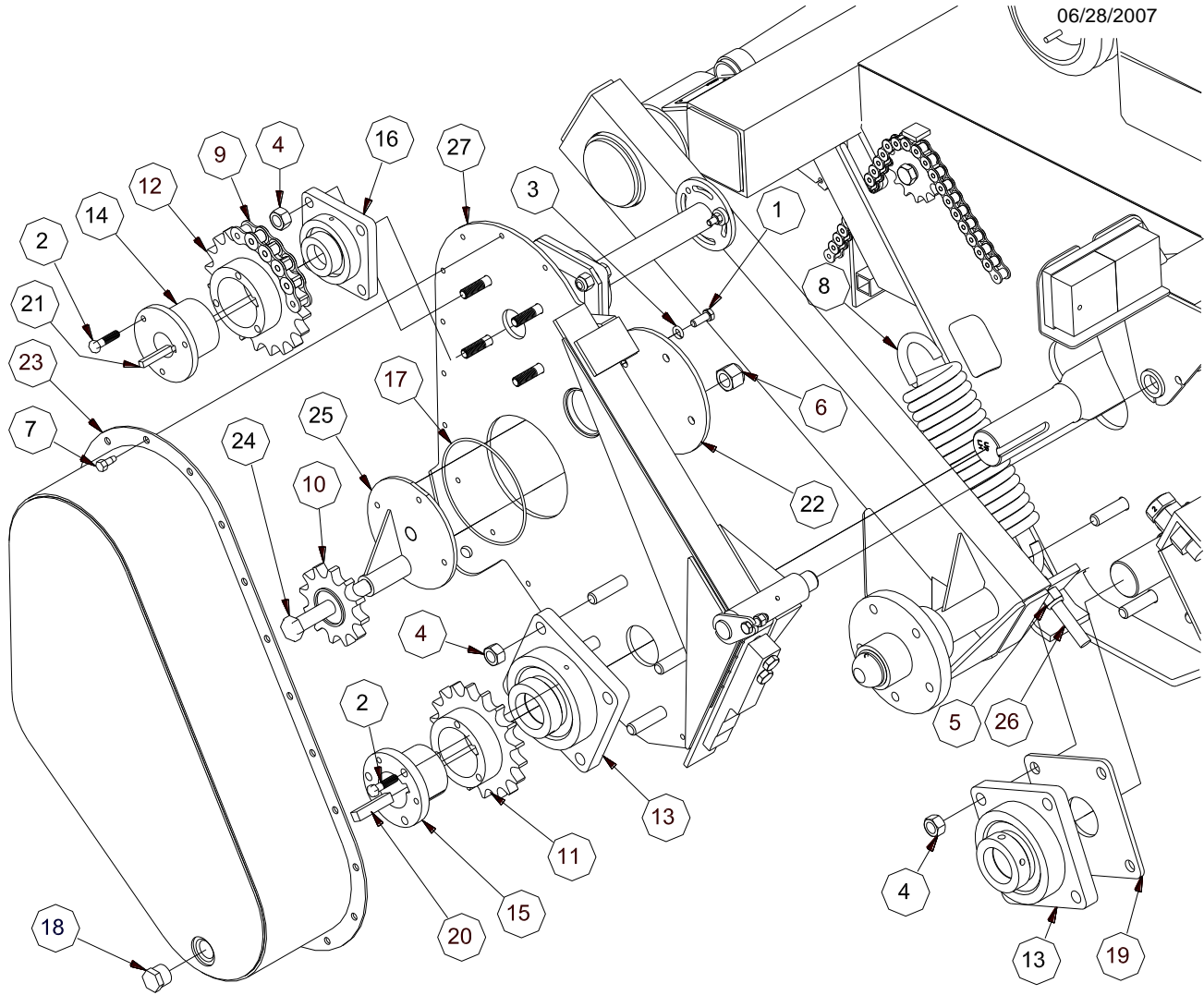


9.PARTS LIST RECON 300 MECHANICAL GEARBOX DRIVE 7-9 FT

9.1. LH CHAIN DRIVE COMPONENTS

321700 Recon 300 LH Gear Drive Components

06/28/2007

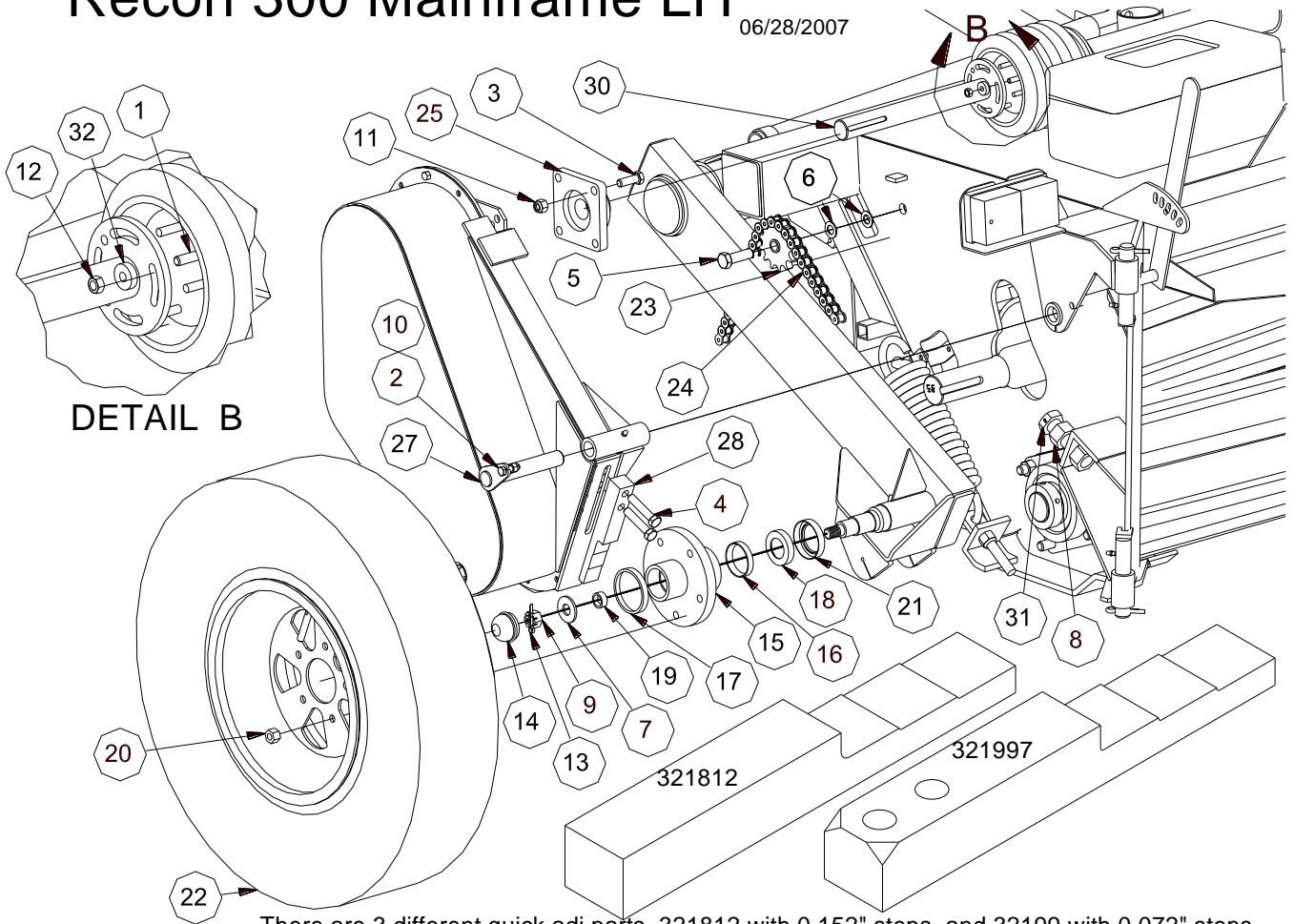


ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100602 bolt 3/8 X 1 gr5 pltd nc	15	2	114434 bushing Q1 2 bore
2	4	100604 bolts 3/8NC 1 1/2 gr5 pltd hex	16	3	114472 flange brg 4 bolt 207 brg 1 38
3	2	101145 lock washer 3/8	17	2	117035 oring 54255
4	5	102117 nut stvr 5/8 nc GR C P	18	2	117676 sight glass 12 ORB
5	10	102127 nut nylok 5-8 nc gr5 pltd	19	2	320399 palte bearing protector 2.2 IN
6	2	102128 nut nylok 3/4 nc gr5 pltd	20	2	320899 keystock 1/2X 1/2X 2
7	2	103216 hex head 5/16x3/4 thrd cutting	21	2	320900 keystock 5/16X 5/16X 2
8	2	113954 spring .5wirex2 7/8x18 turnsx12 7/8	22	2	321753 iddler ecc mt wldt r3 oil
9	1	114206 80 chain 53 links	23	1	321762 chain case cover wldt LH R3
10	2	114249 sprocket idler 80ch x 12t x 3 4h	24	1	321787 bolt 3/4 x 5NC flats
11	2	114255 SPROCKET 80Q18 28 ppr	25	1	321788 eccentric wldt oil case
12	2	114256 SPROCKET H80Q20	26	2	321841 spring adj wldt HEAVY R3
13	4	114422 2 211 ductile flge brg 2 assy	27	1	321854 pivot chain case wldt LH R3
14	2	114433 bushing Q1 138 bore			

9.2. LH WHEEL, SPRINGS, JACKSHAFT ON CHAIN CASE

Recon 300 Mainframe LH

06/28/2007



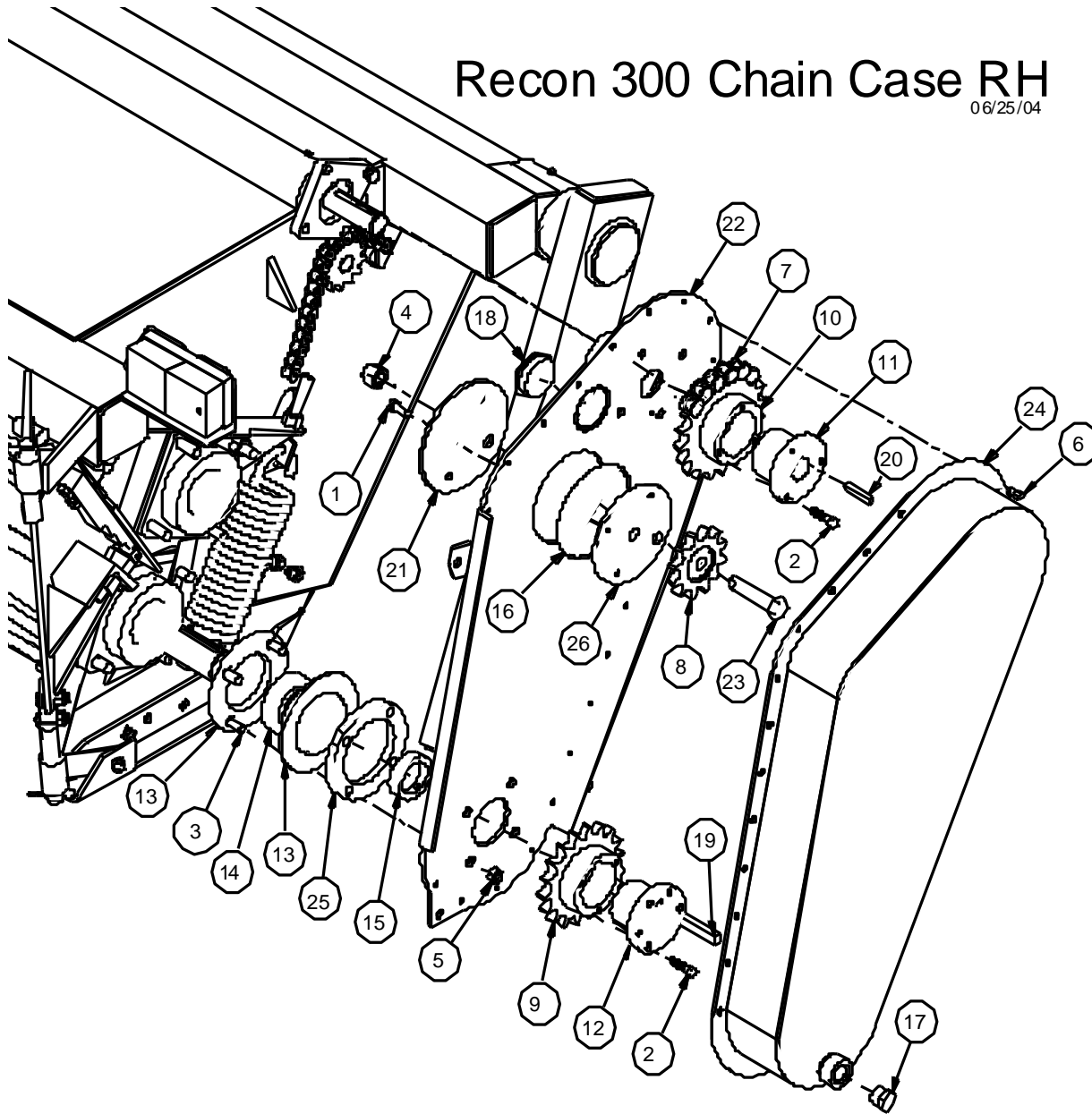
There are 3 different quick adj parts, 321812 with 0.152" steps and 32199 with 0.072" steps and 321653 with 0.045 steps. 321997 can be identified by having chamfered corners while 321812, and 321632 have square corners. This applies to both left hand and right hand quick adjusts. 321632 is standard on new machines.

ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	100523 bolt 5/16 X 1 1/4 gr8 pltd nf	17	1	113627 bearing outer race L44810
2	1	100603 bolt 3/8 X 1 1/4 gr5 pltd nc	18	1	113628 bearing inner cone LM48548
3	6	100702 bolt 1/2 X 1 1/2 gr5 pltd nc	19	1	113629 outer cone
4	4	100704 bolt 1/2 X 2 1/2 gr5 pltd nc	20	1	113656 WHEEL NUT 1/2 NF
5	2	100803 bolt 5/8 X 2 gr5 pltd nc	21	1	113663 seal se22
6	4	101107 washer flat 5/8	22	2	113995 Tire P275 60SR15 cw 15x8x5
7	1	101108 washer flat 3/4 in	23	2	114248 idler sprocket 60 13T 5 8 bore
8	2	102098 NUT HEX 1in GR 8 NF	24	2	114278 60 chain 26 links
9	1	102111 castle nut 3/4 inch	25	3	114472 flange brg 4 bolt 207 brg 1 38
10	1	102123 nut nylok 3/8 nc gr5 pltd	26	1	117494-9 shaft clevis for hgt R3
11	11	102125 nut nylok 1/2 nc gr5 pltd	27	1	321283 pin wldt LH Pivt Pin
12	1	102142 nut stover 5/16 NF gr5 pltd	28a	2	321632 quick adj inline 045 R3 machined
13	1	104903 cotter pin 1/8 X 1 1/2	29b	2	321997 quik adj inline torch cut 072 R3
14	1	113604 dust cap dc 11	30	1	321650 jshaft lh dual drive wldt
15	2	113622 HUB 216 5B 45BC Z	31	2	321752 bolt 1in roller stop bolt
16	1	113626 bearing inner race LM48510	32	1	321890 washer flange 87odx32id 25th QT

9.3. RH CHAIN CASE, SPROCKETS, BEARINGS

Recon 300 Chain Case RH

06/25/04

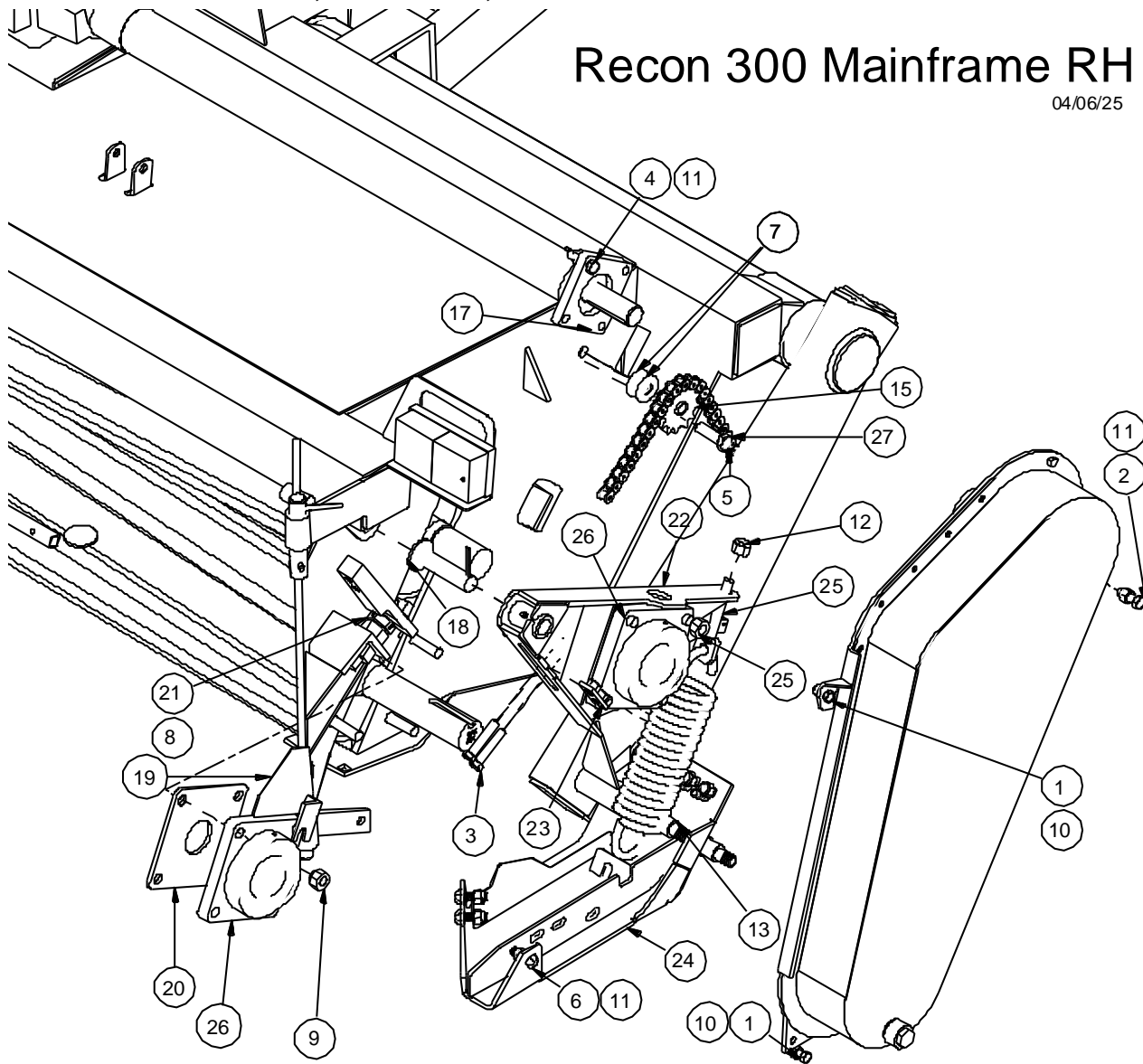


ITEM	QT	PART NUMBER	ITEM	QT	PART NUMBER
2	4	100604 bolt 3/8 x 1 1/2 gr5 pltd nc	14	1	114481 bearing AEL210-200d1
3	4	100948 carriage bdt 1-2 X 1 1-4 nc pltd	15	1	114481 lock collar 2 nrw brg
4	2	102128 nut nylok 3-4 nc gr5 pltd	16	2	117035 oring 54255
5	1	102146 nut str 1-2	17	2	117676 sight glass 12 ORB
6	2	103216 hex head 5/16x3/4 thrd cutting	18	2	117999 bung 2 mpt rieke
7	1	114206 80 chain 74 links	20	2	320900 keystick 5 16X 5 16X 2
8	2	114249 sprocket idler 80ch x 12t x 3 4h	21	2	321753 iddler ecc mt wldt r3 oil
9	2	114255 SPROCKET 80Q18 28 ppr	22	1	321804 chain case mt wldt RH R3
10	2	114256 SPROCKET H80Q20	23	1	321807 bolt 3 4 x 2 5 with flats
11	2	114433 bushing Q1 138 bore	24	1	321820 chain case wldt RH R3
12	2	114434 bushing Q1 2 bore	25	1	321828 shim half inch for 90ms 4b flgt
13	2	114480 flangete 90MS 4b 2 ID brg	26	1	321989 idler eccentric plt wldt

9.4. RH PIVOT ARM, SPRINGS, ROLLER BEARINGS

Recon 300 Mainframe RH

04/06/25

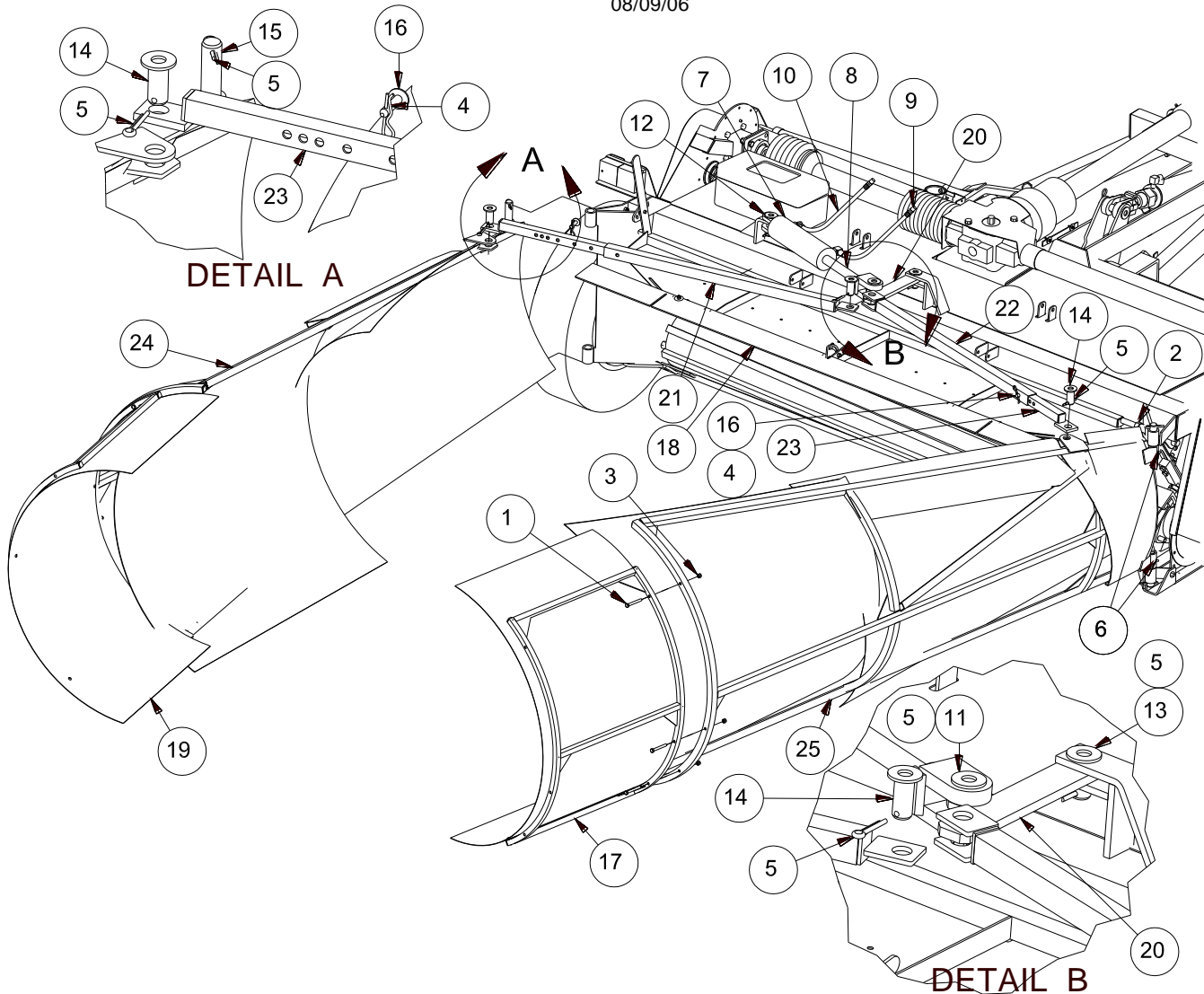


ITEM	QT	PART NUMBER	ITEM	QT	PART NUMBER
1	2	100660 bolt 7/16 X 1 gr5 pltd nc	14	1	114206 80 chain 53 links
2	6	100702 bolt 1/2 X 1 1/2 gr5 pltd nc	15	2	114248 idler sprocket 60 13T 5/8 bore
3	4	100704 bolt 1/2 X 2 1/2 gr5 pltd nc	16	1	100603 bolt 3-8 X 1 1-4 gr5 pltd nc
4	1	100708 bolt 1-2 X 1 3-4 gr5 pltd nc	17	3	114472 flange brg 4 bolt 207 brg 1 38
5	2	100803 bolt 5/8 X 2 gr5 pltd nc	18	1	320192Z PIN WLDT UPPER ROLLER
6	6	100948 bolt carriage 1/2nc 1 1/4 gr5 pltd	19	1	320361Z DUST GUARD
7	4	101121 Machine Bushing 5/8 x 1-1/8"	20	2	320399 plate bearing protector 2.2 IN
8	2	102098 NUT HEX 1in GR 8 NF	21	2	321752 bolt 1in roller stop bolt
9	5	102117 nut stvr 5/8 nc GR C P	22	1	321797 pivot plate wldt RH R3 oil
10	2	102124 nut nylok 7/16 nc gr5 pltd	23	2	321816 plate with nuts quik adj R3
11	11	102125 nut nylok 1/2 nc gr5 pltd	24	1	321829 skid plate wldt RH R3 oil
12	10	102127 nut nylok 5/8 nc gr5 pltd	25	2	321841 spring adj wldt HEAVY R3
13	2	113954 spring 1/2wire X2 7/8 x18turns x12 7/8	26	4	114422 flange w/ brg 211 45 deg zerk
			27	2	114278 chain 60
			28	1	114422 flange w/ brg 211 straight zerk

9.5. DEFLECTOR, SIDE AND TOP AND TOP FLAP

Recon 300 Deflectors

08/09/06

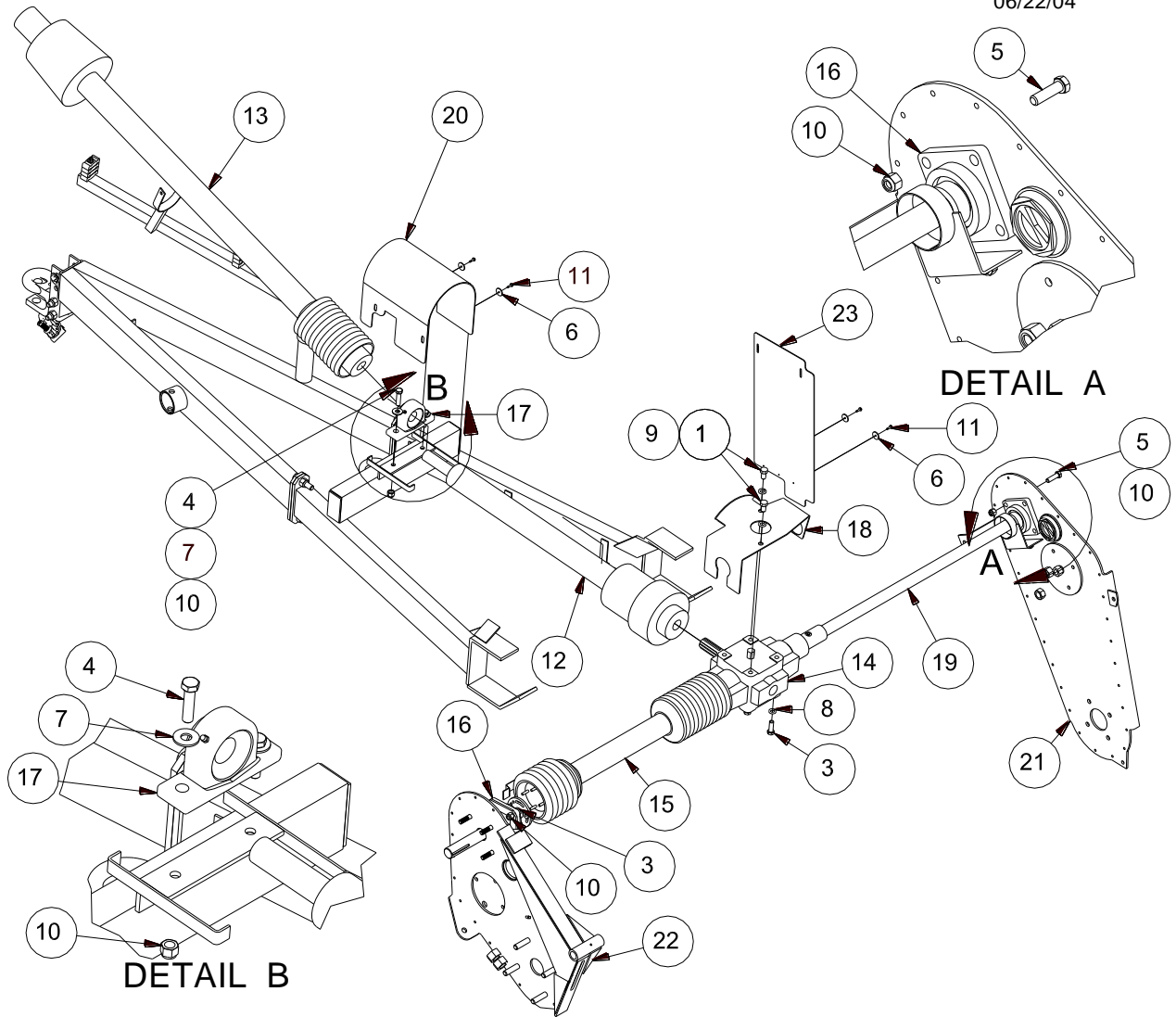


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	6	100509 bolt 5/16 X 2 1/2 gr5 pltd nc	14	3	225558 pin wldt front breakaway 2.5 in
2	1	102109 nut 3/4 nc std	15	4	320196 pin wldt 1 odx5.375 lg recon200
3	6	102122 nut nylok 5/16 gr5 pltd	16	2	320229Z pin wldt rear dlfr arm
4	4	104101 hairpin 11 1/8 x 2.75	17	1	321267extension side deflect assy RH
5	12	104907 cotter pin 1/4 X 2.5	18	1	321311 dflctr wldt top recon200 wide
6	8	105609 grease zerk	19	1	321683 extension side deflect assy LH
7	1	117495 cylinder 3 X 8 c/w clevis ears	20	1	321863 pivot arm wldt dlfr adj R3
8	1	117499 shaft for cylinder 3 X 8	21	1	321866 arm wld deflector lh R3
9	1	117705 hose 181 1/4 mpt ends	22	1	321867 arm wldt deflector rh R3
10	1	118595 hose hyd 191 1/4 mpt ends	23	2	321868 arm wldt adjustable dlfr side
11	1	208255 PIN WLDT 1 X 3.625	24	1	321883 dflctr assy LH R300
12	1	225554 pin wldt breakaway cyl bl end	25	1	321884 dflctr assy RH R300
13	1	225558 pin wldt front breakaway			

9.6. DRIVELINE COMPONENTS

Recon 300 Drive Line Components

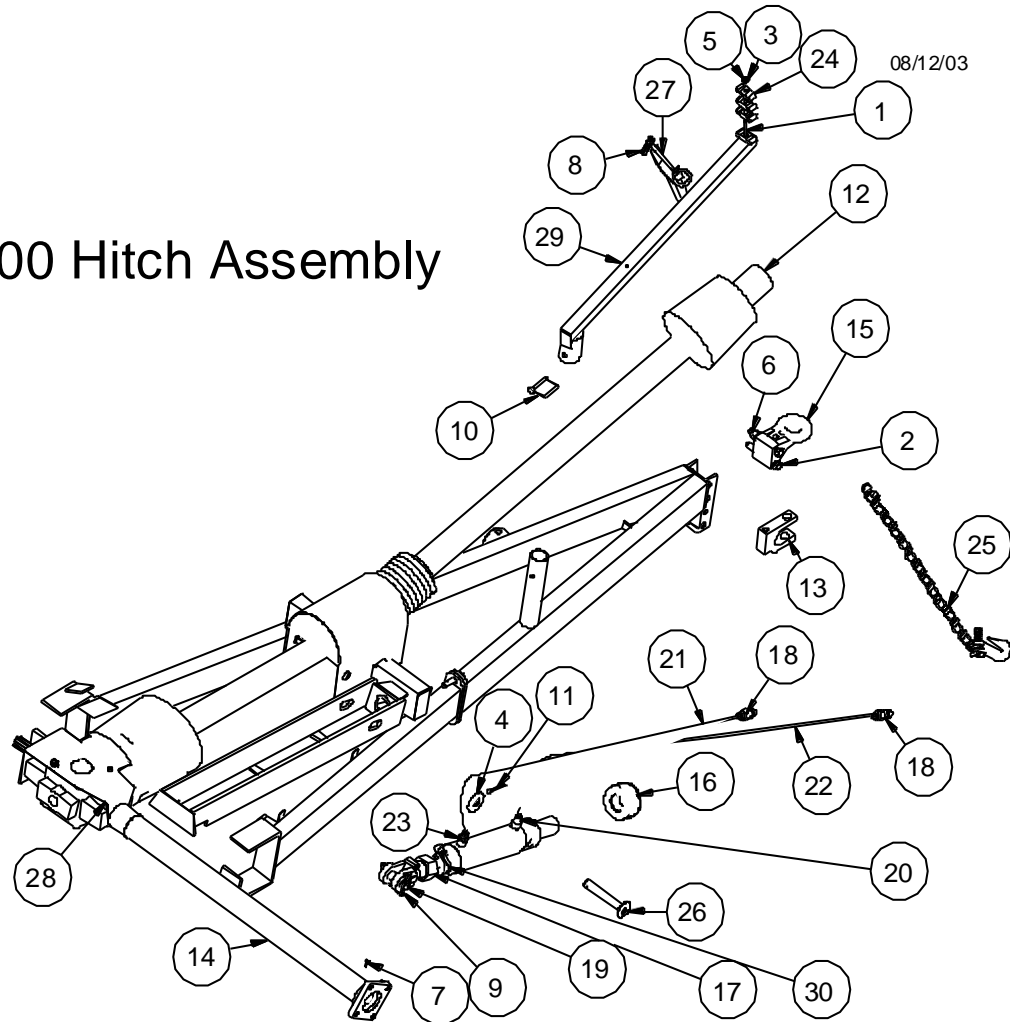
06/22/04



Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100240 bolt hex head 14 X 25 metric	14	1	111714 gear box 540in superior 3sht
3	6	100702 bolt 1/2 X 1 1/2 gr5 pltd nc		1	111712 gear box 1000in 3 shaft
4	2	100703 bolt 1/2 X 2 gr5 pltd nc	15	1	111771 WSpto side shaft 22 138 6 x4b flg flx
5	1	100708 bolt 1/2 X 1 3/4 gr5 pltd nc	16	3	114472 flange brg 4 bolt 207 brg 1 38
6	4	101102 FENDER WASHER .188 X 1	17	1	114474 brg 207x 1 38 rtnr 2 bolt pillow
7	2	101106 flat washer 1/2	18	1	321716 shaft cover hdr wldt RH R3
8	4	101146 lock washer 1/2	19	1	321720 drive shaft wldt R3 RH 7 ft
9	2	101153 lock washer METRIC 14MM	20	1	321728 pto cover R3 plastic
10	11	102125 nut nylok 1/2 nc gr5 pltd	21	1	321804 chain case mt wldt RH R3
11	4	103202 S M SCR 10 X 3/4 D T	22	1	321854 pivot chain case wldt linear hgt adj LH R3
12	1	111323 WS shaft w clutch 1 38 6 MF	23	1	321993 cover clutch plastic
13	1	111605 WS pto shaft 48 cv 1 38 6 overrun			
	1	111606 PTO shaft 1000RPM			

9.7. FRONT HITCH ASSEMBLY FOLDING

Recon 300 Hitch Assembly

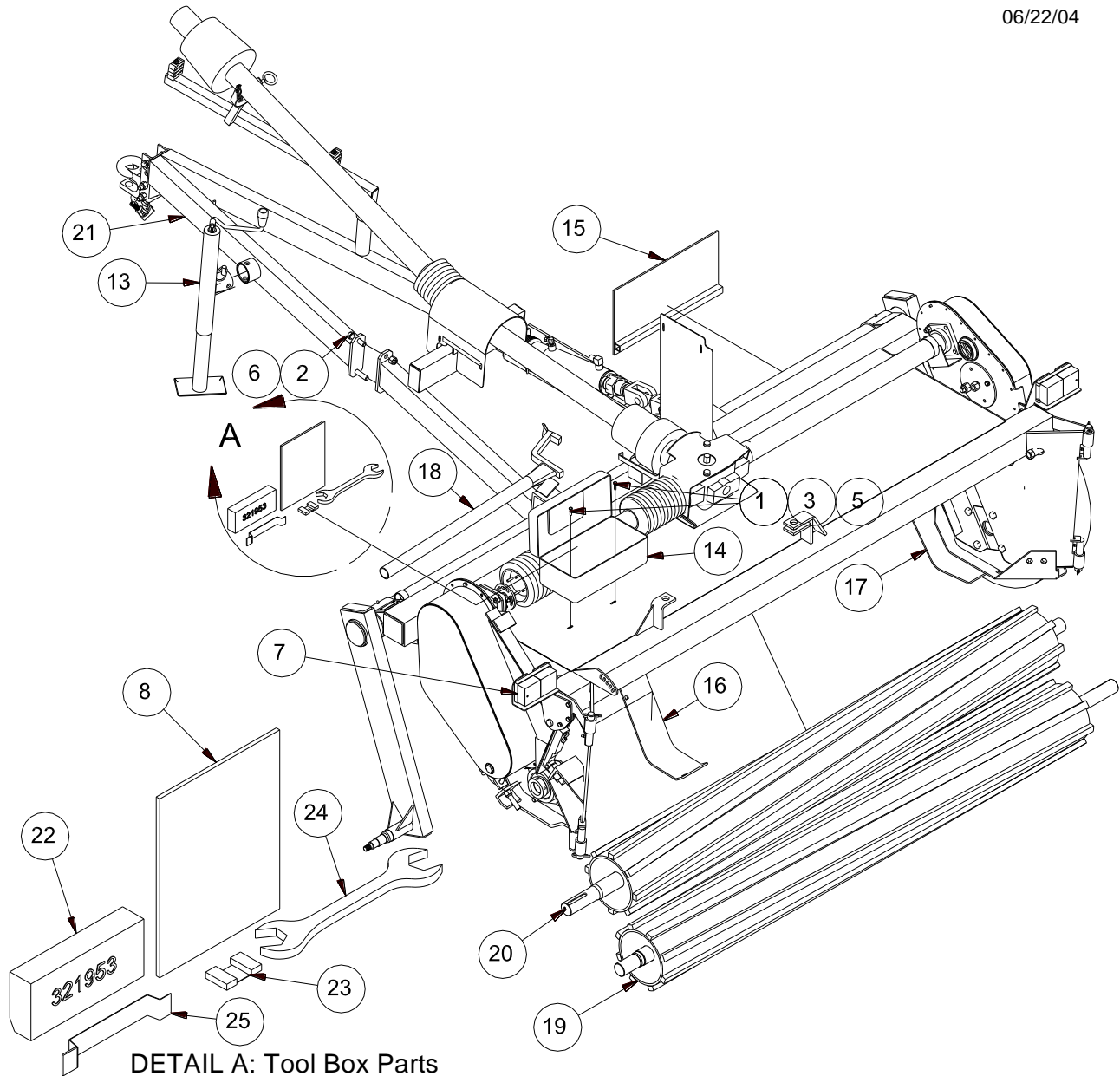


ITEM	QT	PART NUMBER	ITEM	QT	PART NUMBER
1	2	100423 bolt 1-4 X 4 1-2 nc	16	9	113955 washer belleville spring
2	2	100809 bolt 5-8 X 4 1-2 gr5 pltd nc	17	1	117498 cyl 3 x 8 stroke control 2025
3	1	101103 flat washer 1-4	18	2	117502 HYD CPLR12 FPT X MALE PIONEER
4	1	101110 flat washer 1	19	1	117508 pin cyl 1 x 3.6lg grooved
5	1	102121 nut nylok 1-4 nc gr5 pltd	20	1	117651 restrictor 1 4MPT x 1 4FPS 06
6	2	102127 nut nylok 5-8 nc gr5 pltd	21	1	117849 hose 1 4 x 116 1 4 mpt rnds
7	1	103206 12 x 3 4 DRILL TAP	22	1	117850 hose 1 4 x 107 1 4 mpt ends lh
8	3	104101 hairpin 11 1 8 x 2 75	23	1	118101 1 4 MPT X 1 4 FPT S
9	2	104303 hairpin for 1 grvd pins	24	6	128106 HOSE HOLDER
10	1	104507 quick pin square 3 8 X2 1 2	25	1	320295 SAFETY CHAIN ASSY
11	2	104907 cotter pin 1 4 X 2 5	26	1	320486 pin wldt hgt lift cyl new
12	1	111605 WS pto shaft 48 cv 1 38 6 overrun	27	1	320591 pin wldt pto shaft Tsupport
13	1	113637 CLEVIS PERFECT HITCH PP107	28	1	321716 shaft cover hdr wldt RH R3
14	1	111780 shaft cover yellow 2.875 od	29	1	321881 pivot arm hose fold wldt
15	1	113636 perfect hitch basePP1-26VR	30	1	117510 cyl stop 1 in wire handle

9.8. ROLLERS, FRONT HITCH, TOOLBOX, TOOLS, MANUAL

Recon 300 Roller Hitch and Toolbox Parts

06/22/04

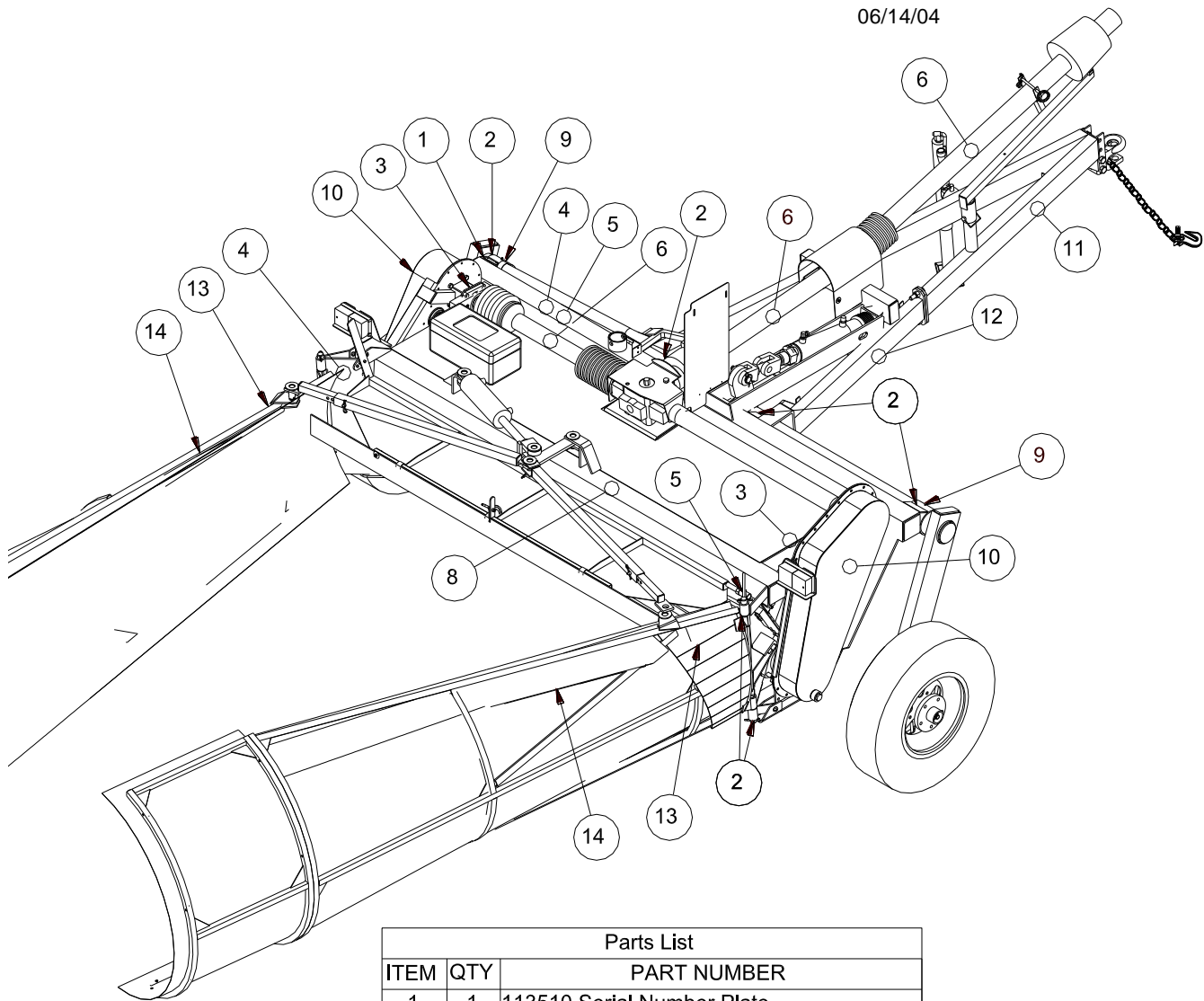


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100403 bolt 1/4 X 1 gr5 pltd nc	16	1	320308 HEMP GUARD LH LOWER
2	4	100804 bolt 5/8 X 2 1/2 gr5 pltd nc	17	1	320309 HEMP GUARD RH LOWER
3	4	101103 flat washer 1/4	18	1	320330 wrench wldt recon 200 roller
5	2	102121 nut nylock 1/4 nc gr5 pltd	19	1	321846 roller wldt low R3 1x34 oil
6	10	102127 nut nylok 5/8 nc gr5 pltd	20	1	321849 roller wldt up 2 R3 oil
7	2	113488 tail light 3 lamp OZ R	21	1	321875 hitch wldt front A R3 fold
8	1	113598 Recon 300 owners manual	22	1	321953 wood block LH chain adj 2x4x8in
13	1	116905 HITCH JACK 2015	23	1	321959 roller timing tool rect R3
14	1	128041 tool box	24	1	321983 wrench roller stop adjust
15	4	320250 ROCK GUARD ASSY	25	1	321999 guage roller spacing wldt

9.9. DECALS LOCATIONS AND PART NUMBERS

Recon 300 Decal Locations

06/14/04

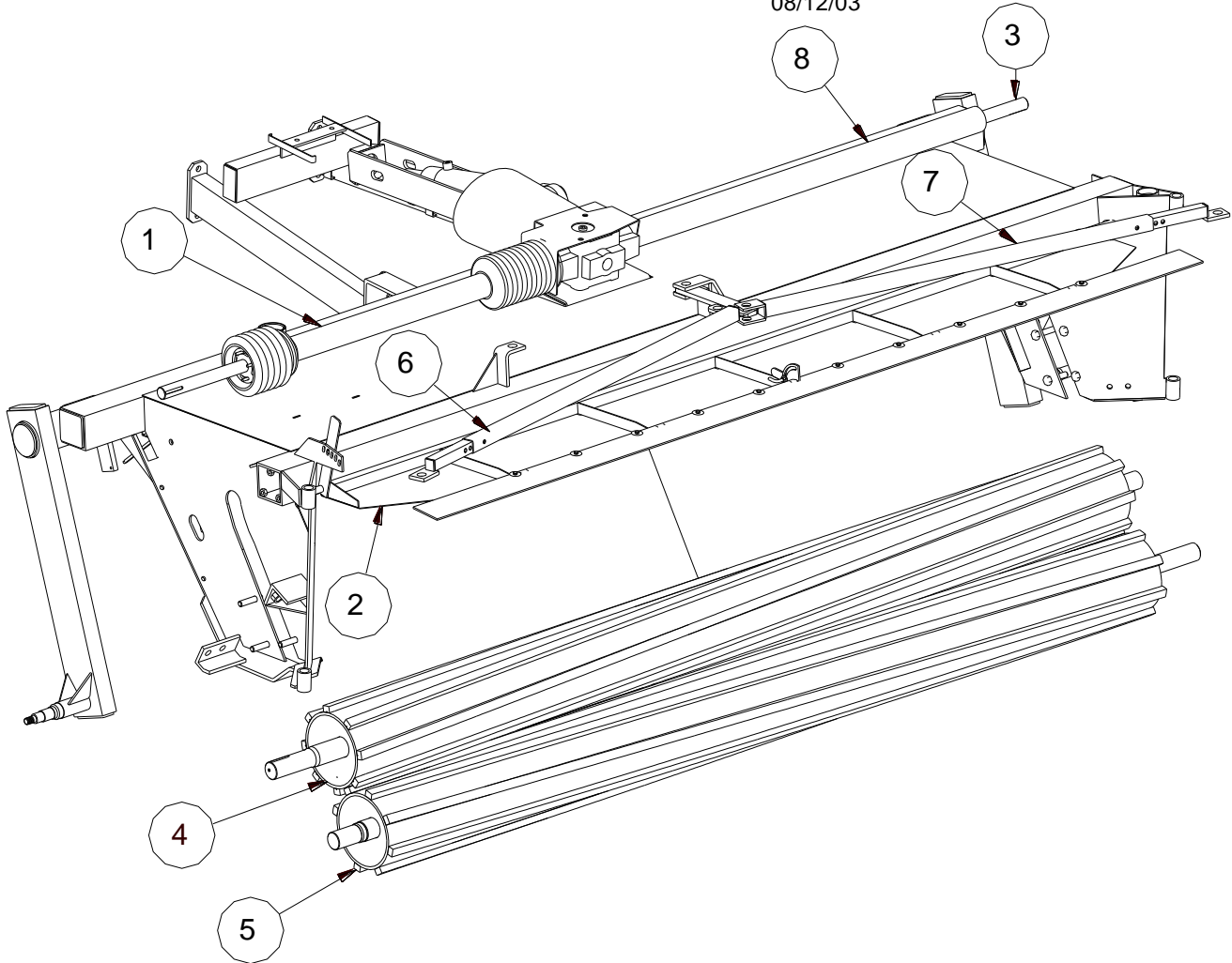


Parts List		
ITEM	QTY	PART NUMBER
1	1	113510 Serial Number Plate
2	8	113520 Grease Every 10 Hours
3	2	113521 Grease Annually
4	2	113523 Thrown Object Danger
5	2	113524 Rotating Blade Warning
6	3	113525 Rotating Drive-line Danger
8	1	113555 Pinch Point Warning
9	2	113561 Amber Adhesive Reflector
10	2	116105 Dual Drive
11	2	116106 Recon 300 Side Front Hitch
12	2	116107 Recon 300 Ag Shield Decal
13	2	116107 Stripes Side Deflector
14	2	116109 Recon 300 Decal

9.10. 9 FT RECON 300 PARTS

Recon 300 9' Parts

08/12/03

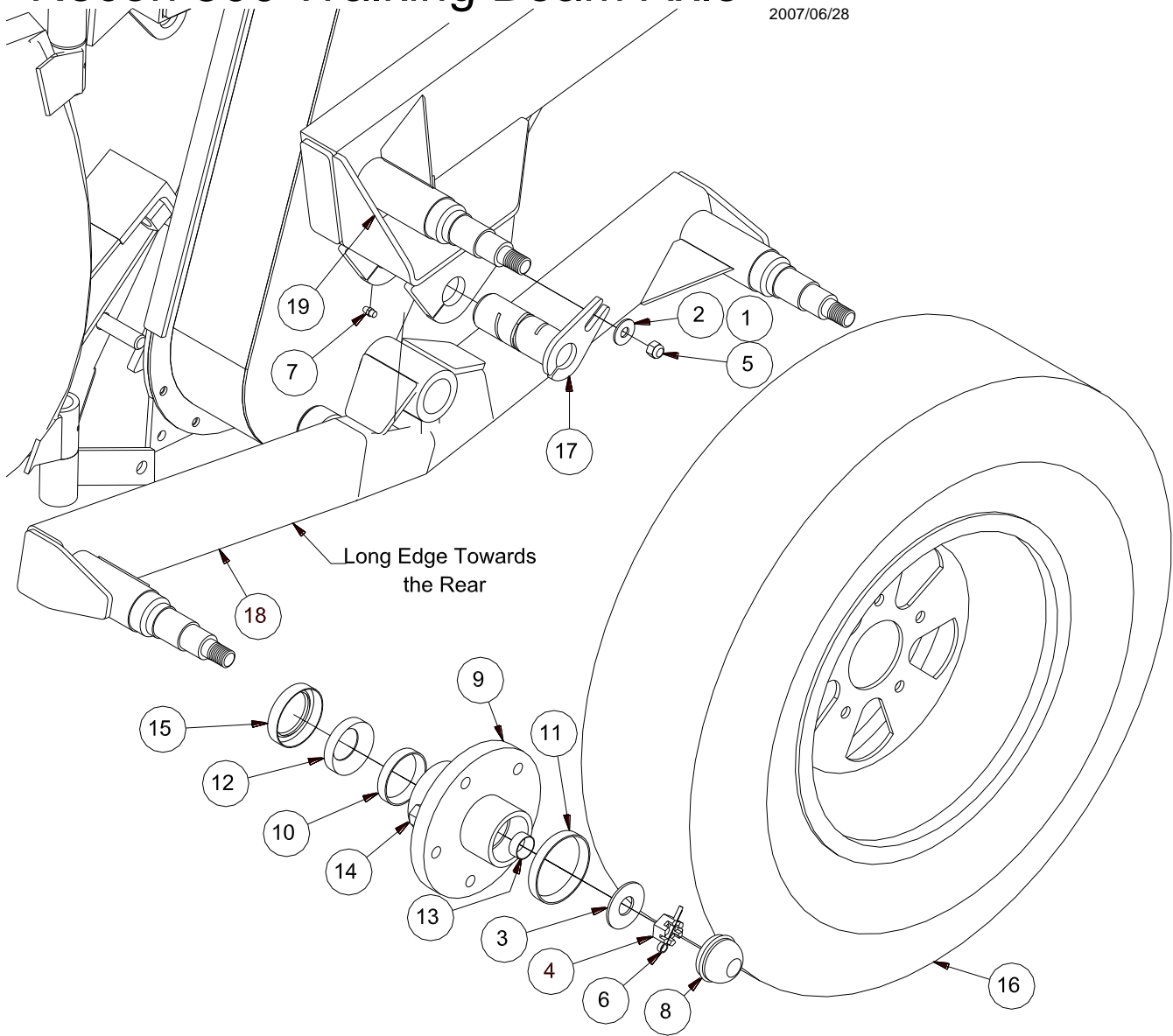


Parts List		
ITEM	QTY	PART NUMBER
1	1	111775 shaft side 9 ft 394721
2	1	320575 DEFLECTOR WLDT 9FT TOP RECON 2009 WIDE 16 INCH
3	1	321906 driveshaft wldt R3 9 ft oil
4	1	321912 roller wldt 9' up 2 R3 oil
5	1	321913 roller wldt low R3 9 ft oil
6	1	321931 arm wldt dflctr LH R3 9 ft
7	1	321932 arm wldt dflctr RH R3 9 ft
8	1	321954 shaft cover RH 9 ft R3 2 875 OD

9.11. 408876 WALKING BEAM AXLE PARTS PART # 321500

Recon 300 Walking Beam Axle

2007/06/28

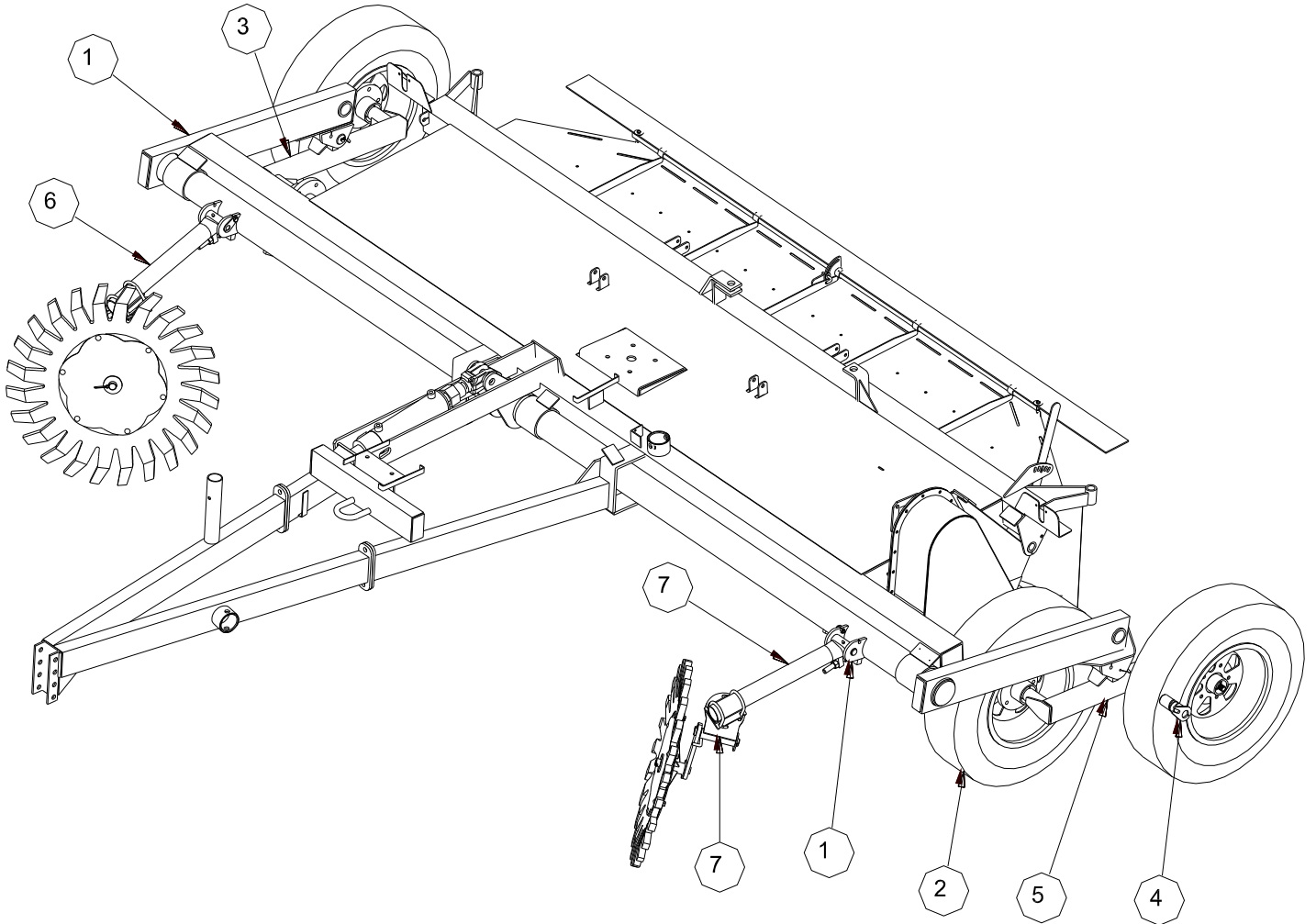


Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100616 BOLT 3/8NC 5 GR5 PLTD HEX	12	1	113628 bearing inner cone LM48548
2	2	101105 washer flat 3/8	13	1	113629 outer cone
3	1	101108 flat washer 3/4	14	1	113656 WHEEL NUT 1/2 NF
4	1	102111 castle nut 3/4 inch	15	1	113663 seal se22
5	2	102123 NUT 3/8 NYLOC NC	16	4	113994 TIRE WITH WHEEL
6	1	104903 cotter pin 1/8 X 1 1/2	17	2	321516 pin wldt wlkg bm axle
7	2	105609 grease zerk	18	1	321565 walking axle R300 RH - pre06
8	1	113604 dust cap dc 11		1	321567 walking axle R300 LH - pre06
9	5	113622 HUB 216 5B 45BC Z	19	1	321560 mt weld on walking beam axle
10	1	113626 bearing inner race LM48510			RH - 05+older
11	1	113627 bearing outer race L44810		1	321561 mt weld on walking beam axle LH
					- 05+older

9.12. WALKING BEAM AXLE – STAGGERED FOR BEDS

Walking beam axle - staggered for beds

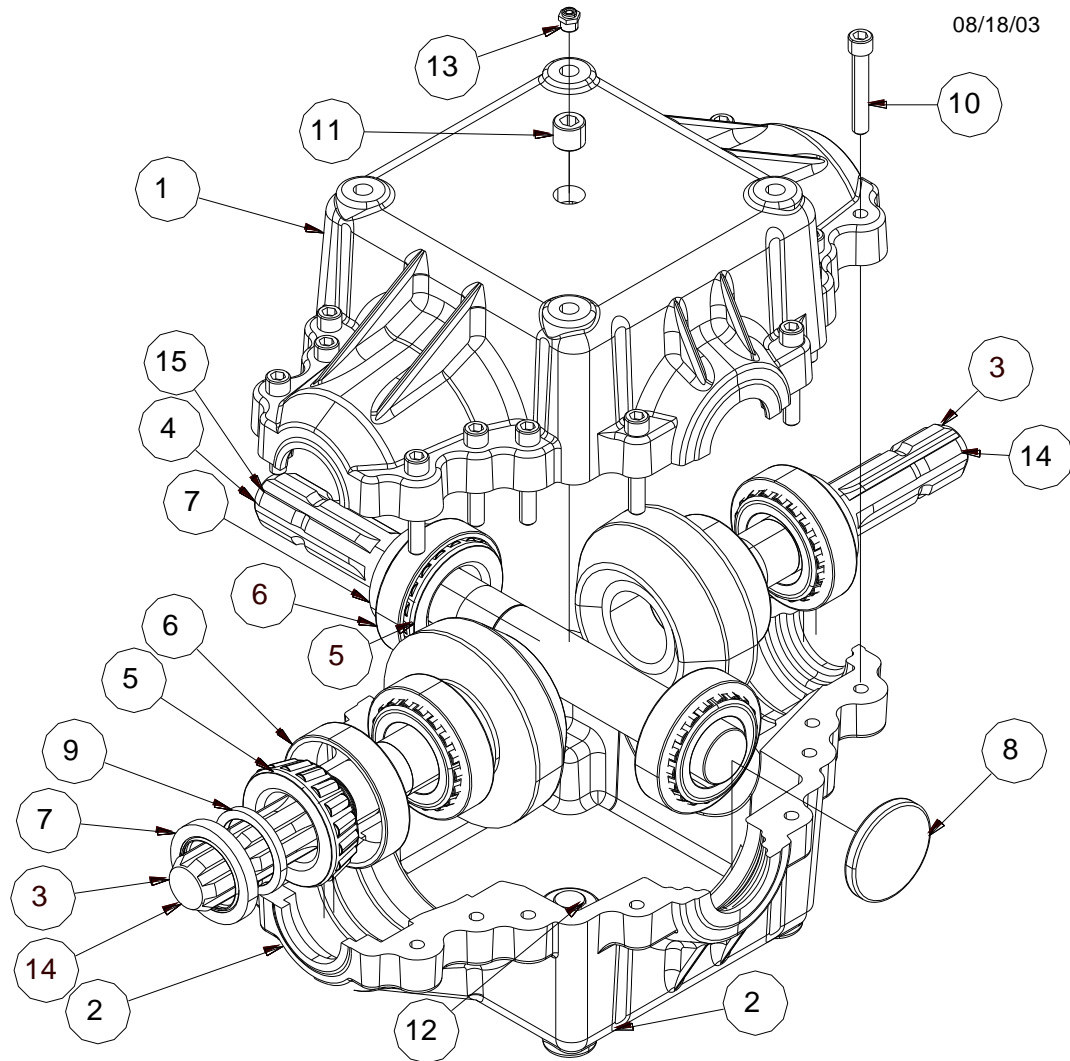
Rev 1 050107tm



Parts List		
ITEM	QTY	PART NUMBER
1	1	322082 walking beam recon frame 9ft - staggered
2	4	113994 TIRE WITH WHEEL
3	1	322086 walking axle RH staggered wheels
4	2	321516 pin wldt wlkg bm axle
5	1	322085 walking axle LH staggered wheels
6	1	Hay Saver RH-
7	1	Hay Saver LH-

9.13. SUPERIOR GEAR BOX

Recon 300 Superior Gear Box - 3 Shaft



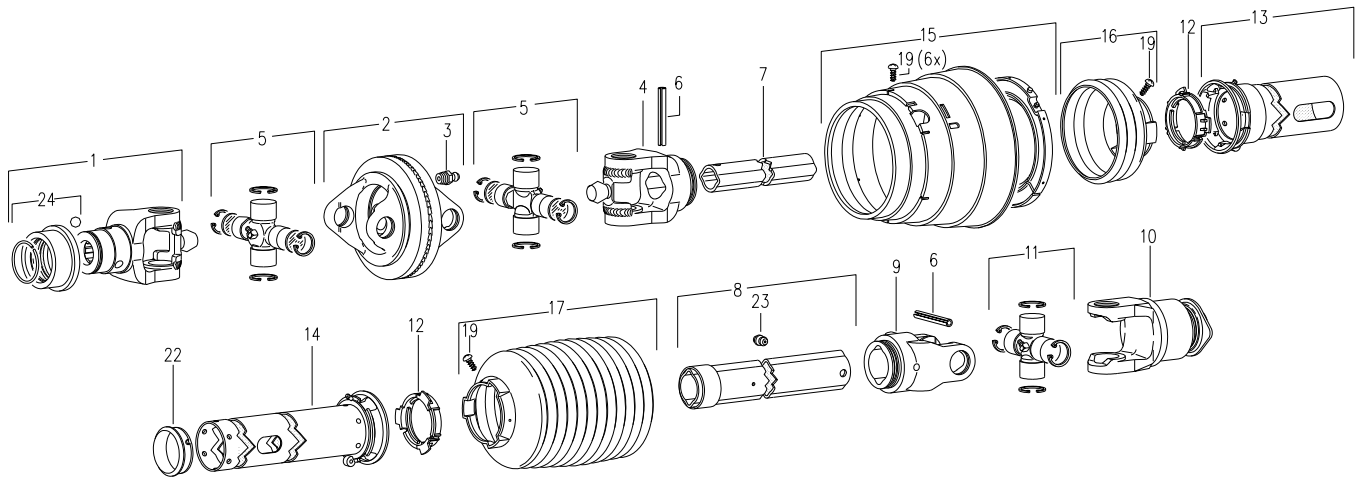
Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	111782 top half gear box R5	9	2	111790 retaining ring ext 1 375 shft
2	1	111783 btm half gear box R5	10	16	111791 bolt 3 8-16 X 150 SHCS
3	2	111784 suba R500 stub shaft gear	11	1	111792 bushing 1/2 npt to 1/8 npt
4	1	111785 suba R500 cross shaft gear	12	1	111792 plug 1 2 npt schd w 3m
5	6	111786 bear cone tmkn 14137A	13	1	111794 plug vent 5psi v n 005677
6	6	111787 bearing cup tmkn 14276	14	2	111795 suba R500 sub shaft gear
7	3	111788 seal 1 375-2 00- 312 R TC	15	1	111796 suba R500 cross shaft gear
8	1	111789 end cap CP-2 - 312D 0689			

Parts 111784 (Item #3), and 111785 (Item #4) are for the 540 rpm gear box, part numbers 111795 (Item # 14), and 111796 (Item # 15) replace those in the 1000 rpm gear box.

9.14. DRIVE LINE COMPONENTS

Front Shaft Assembly

08/08/03

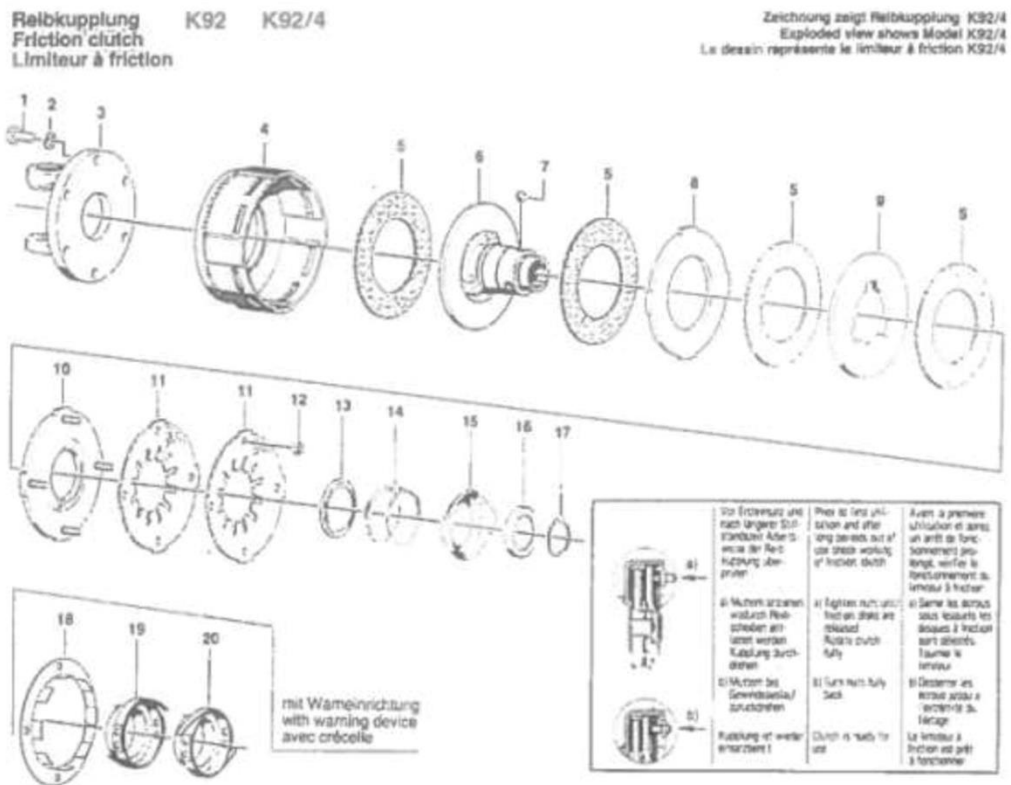


111605 Front Shaft Assembly 540 RPM
 111606 Front Shaft Assembly 1000 RPM

BILL OF MATERIALS			
QTY	CUSTOMER	DESCRIPTION	
1	111641	YOKE 1 3/8"-21 SPL. ASG 1000 RPM	
	111642	YOKE 1 3/8"-6 SPL. ASG 540 RPM	
2	111637	DOUBLE YOKE	
3	105603	ZERK-IN ITEM 2	
4	111638	INBOARD YOKE 1b	
5	111636	CROSS & BEARING KIT	
6	111646	SPRING PIN 10 X 80	
7	111647	INNER PROFILE 1bGA	
8	111648	PROFILE & SLEEVE W.A.	
9	111640	INBOARD YOKE 2a	
10	111643	OVER RUNNING CLUTCH	
11	111639	CROSS & BEARING KIT	
12	111642	BEARING RING SC25	
13	111900	OUT. SHIELD TUBE OVAL	
14	111901	INN. SHIELD TUBE RND.	
15	111644	CV CONE & BEARING ASSY.	
16	111902	SHIELD CONE 3 RIB	
17	111903	SHIELD CONE 12 RIB	
19	103202	SCREW-IN ITEMS 15,16,17	
22	111904	SUPPORT BEARING	
23	105609	ZERK-IN ITEM 8	
24	111905	ASG COL. KIT-IN ITEM 1	

9.15. DRIVE LINE COMPONENTS

RECON 400 CLUTCH ASSEMBLY

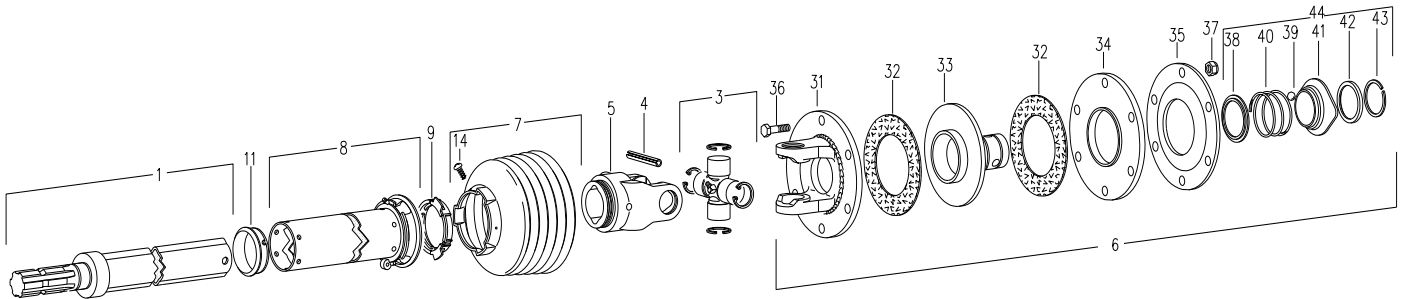


PARTS LIST	PARTS LIST	PARTS LIST
ITEM	QTY	PART NUMBER
1	6	111939 BOLT M12 X 85 MM
2	6	LOCK WASHER M12
3	1	FLANGE YOKE
4	1	111940 CLUTCH HOUSING
5	4	111627 FRICTION DISC
6	1	111944 FLANGE HUB
7	1	111622 BALL
8	1	111941 DRIVE PLATE
9	1	111942 DRIVE PLATE
10	1	111946 THRUST PLATE
11	1	111943 BELLEVILLE WASHER
12	1	111933 HEXAGON NUT
13	1	111625 BACK UP RING
14	1	111624 COMPRESSION SPRING
15	1	111623 LOCK COLLAR
16	1	111629 BACK UP RING
17	1	111628 SNAP RING
18	1	LUG RING
19	1	LEAF SPRING RIGHT HAND ROTATION
20	1	LEAF SRPING LEFT HAND ROTATION

9.16. DRIVE LINE COMPONENTS

111323 SECONDARY Q SHAFT C/W CLUTCH

08/08/03



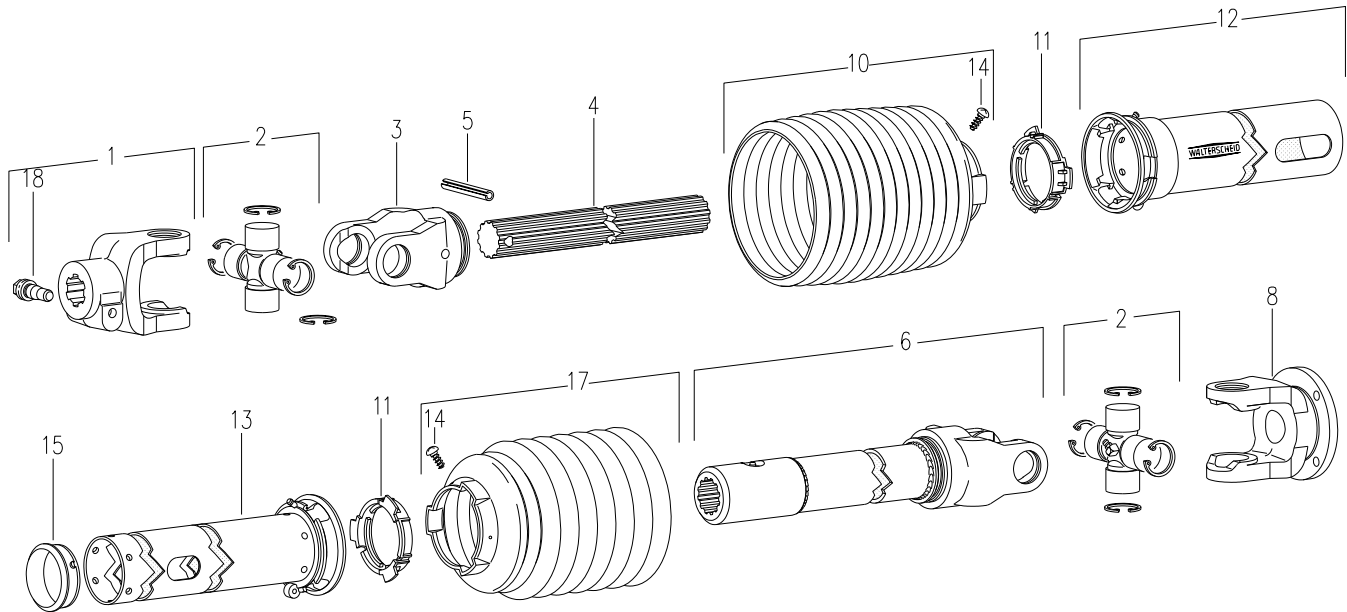
BILL OF MATERIALS			
QTY	PART NUMBER	DESCRIPTION	
1	111918	2a PROFILE AND STUB SHAFT W.A.	
3	111639	CROSS & BEARING KIT	
4	111646	SPRING PIN 10 X 80	
5	111919	INBOARD YOKE 2a	
6	111619	FRICTION CLUTCH	
7	111920	SHIELD CONE 6 RIB	
8	111921	INN SHIELD TUBE RND	
9	111645	BEARING RING SC25	
11	111904	SUPPORT BEARING	
14	103202	SCREW - IN ITEM 7	
31	111633	FLANGE YOKE	

BILL OF MATERIALS - CONT'D			
QTY	PART NUMBER	DESCRIPTION	
32	111627	FRICTION DISC	
33	111626	HUB 1 3/8-6-QD, SN	
34	111631	THRUST PLATE	
35	111632	BELLEVILLE SPRING	
36	111620	HEX BOLT-M10x50	
37	111321	HEX LOCKNUT M10	
38	111625	BACK-UP RING	
39	111622	BALL	
40	111624	COMPRESSION SPRING	
41	111623	LOCK COLLAR	
42	111629	BACK-UP RING	
43	111628	SNAP RING	
44	111630	FLG KIT-INCL ITEM 8-13	

DRIVE LINE COMPONENTS

Side Shaft Assembly LH

08/08/03



111771 Side Shaft Assembly LH 7'
111775 Side Shaft Assembly LH 9'

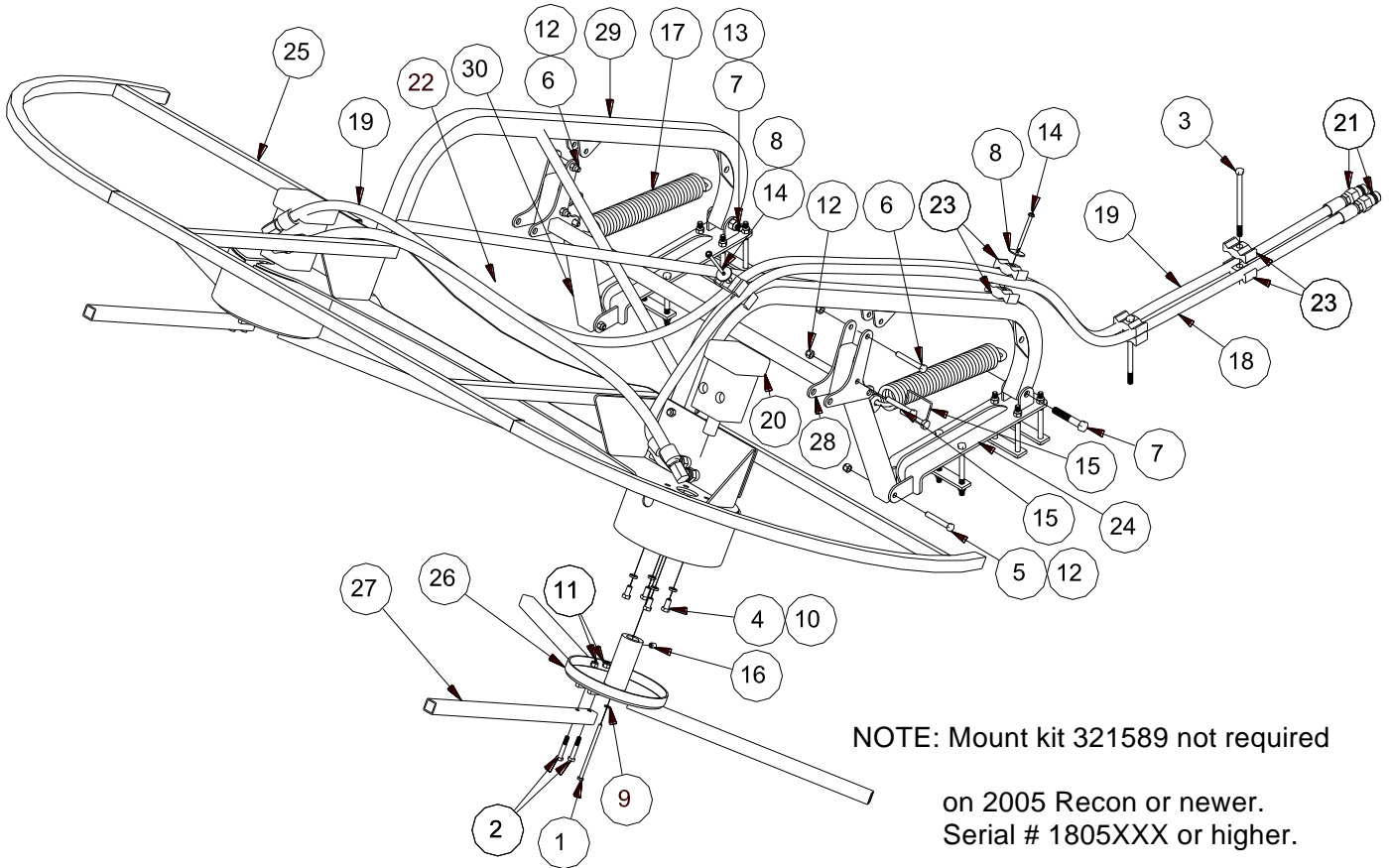
BILL OF MATERIALS		
QTY	Part Number	DESCRIPTION
1	111906	YOKE 1 3/8"-6 SPL. CC
2	111910	CROSS & BEARING KIT
3	111907	INBOARD YOKE 35x31(18)
4	111908	INNER PROFILE 35x31(18)
5	111909	SPRING PIN 10 X 65
6	111911	INBOARD YOKE, TUBE & SLEEVE W.A. 9' Recon
	111922	INBOARD YOKE, TUBE & SLEEVE W.A. 7' Recon
8	111912	FLANGE YOKE
10	111913	SHIELD CONE 12 RIB
11	111914	BEARING RING SC25
12	111923	OUTER SHIELD TUBE SIDE SHAFT
11	111924	INNER SHIELD TUBE SIDE SHAFT
14	103202	SCREW-IN ITEM 10 & 17
15	111915	SUPPORT BEARING
17	111916	SHIELD CONE 9 RIB-FLEX
18	111917	CC LOCK ASSY-IN ITEM 1

9.17. SPINNER SPREADER PRE 2007

Spinner Spreader

7ft - 321645 (9ft - 321250)

Rev.1 041805



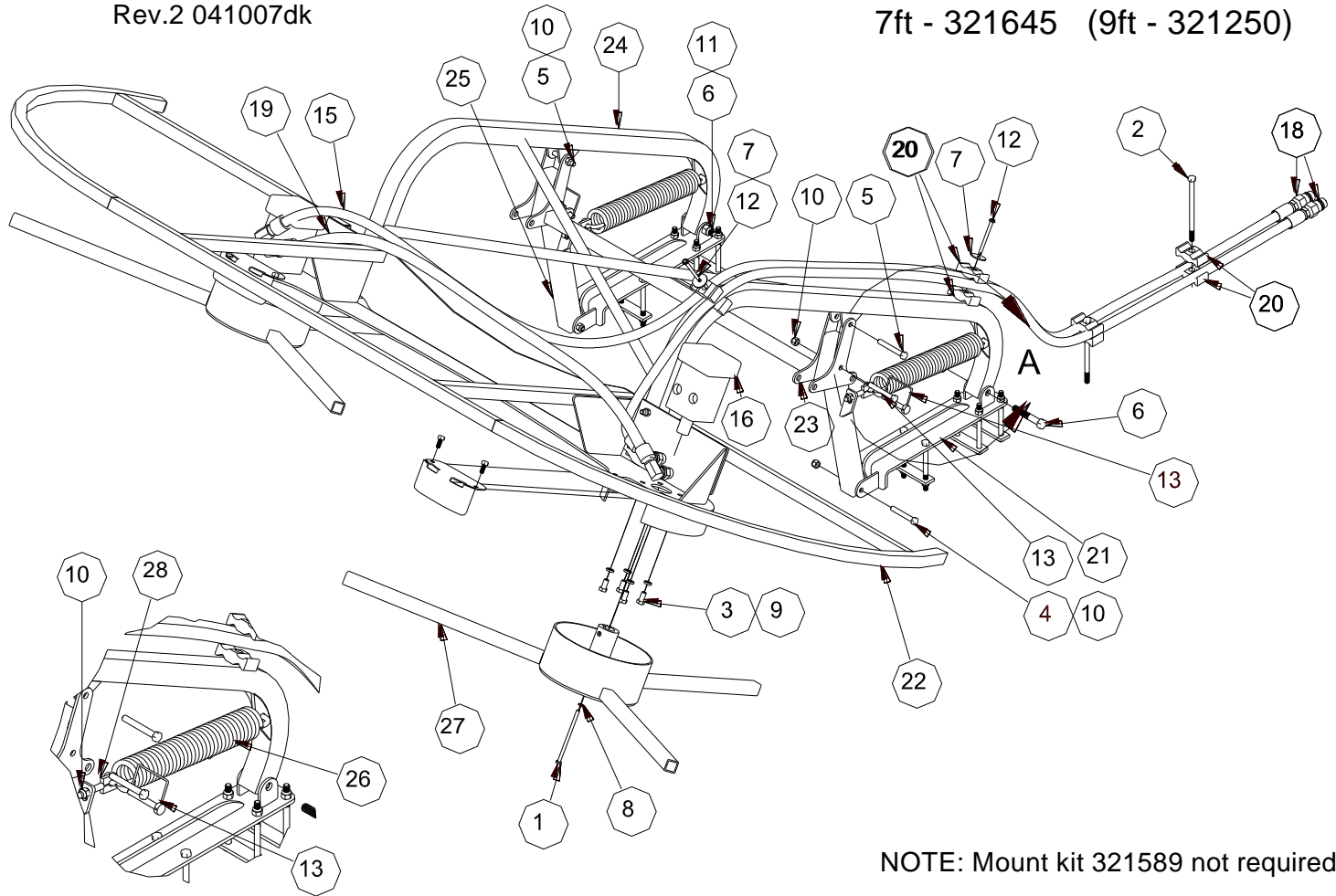
NOTE: Mount kit 321589 not required
on 2005 Recon or newer.
Serial # 1805XXX or higher.

Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100423 BOLT 1/4NC X 4 1/2 gr5 pltd hex	19	1	117104 hose 08 x 248in x 08mpt x 10morb90
2	4	100506 BOLTS 5/16NC 1-3/4 gr5 pltd hex	(19)	1	117106 hose 08 x 252 - 9ft
3	2	100517 BOLT 5/16NC 6 gr5 pltd hex	20	2	117162 CHARLYNN MOTOR 8.9 CID 4 bolt
4	8	100601 BOLTS 3/8NC 3/4 gr5 pltd hex	21	2	117502 HYD CPLR12 FPT X MALE PIONEE
5	6	100608 BOLTS 3/8NC 2 1/2 gr5 pltd hex	22	1	118621 hose 1/2x48 - 10MORB 90 both ends
6	4	100609 BOLTS 3/8NC 2 3/4 gr5 pltd hex	(22)	1	118622 hose 1/2x60 - 10MORB 90 - 9ft
7	2	100705 BOLT 1/2NC 3 gr5 pltd hex	23	8	128108 HOSE HOLDER LARGE
8	2	101101 FENDER WASHER 250 X 1	24	1	321589 spreader mt kit pre 2005 recon
9	2	101144 WASHER LOCK 1/4	25	1	321640 spreader frame wldt
10	8	101145 WASHER LOCK 3/8	(25)	1	321251 spreader frame wldt 9ft
11	4	102122 5/16 NYLOCK	26	2	321649 hub spreader wldt
12	10	102123 NUT 3/8 NYLOC NC	(26)	1	321277 hub spreader wldt 9ft
13	2	102125 1/2 NYLOCK	27	2	321659 tine spreader bolt on
14	2	103214 screw d t 1/4 x 3 lg	(27)	1	321255 tine spreader bolt on 9ft
15	2	104506 QUICK PIN SQUARE 3/8 X2 1/4	28	1	321668 link short spreader
16	2	105503 set screw 3/8 NF x 1/2 pltd	29	1	321684 clearance arm wldt
17	2	113949 spring upper roller tension	(29)	1	321684 clearance arm wldt 9ft
18	1	117103 hose 08 x 224in x 08mpt x 10morb90	30	2	321690 scissor long wldt
(18)	1	117105 hose 08 x 216 - 9ft			

9.18. SPINNER SPREADER KIT 2007 (SN 2807XXX)

Rev.2 041007dk

7ft - 321645 (9ft - 321250)



DETAIL A

NOTE: Mount kit 321589 not required

on 2005 Recon or newer.
Serial # 1805XXX or higher.

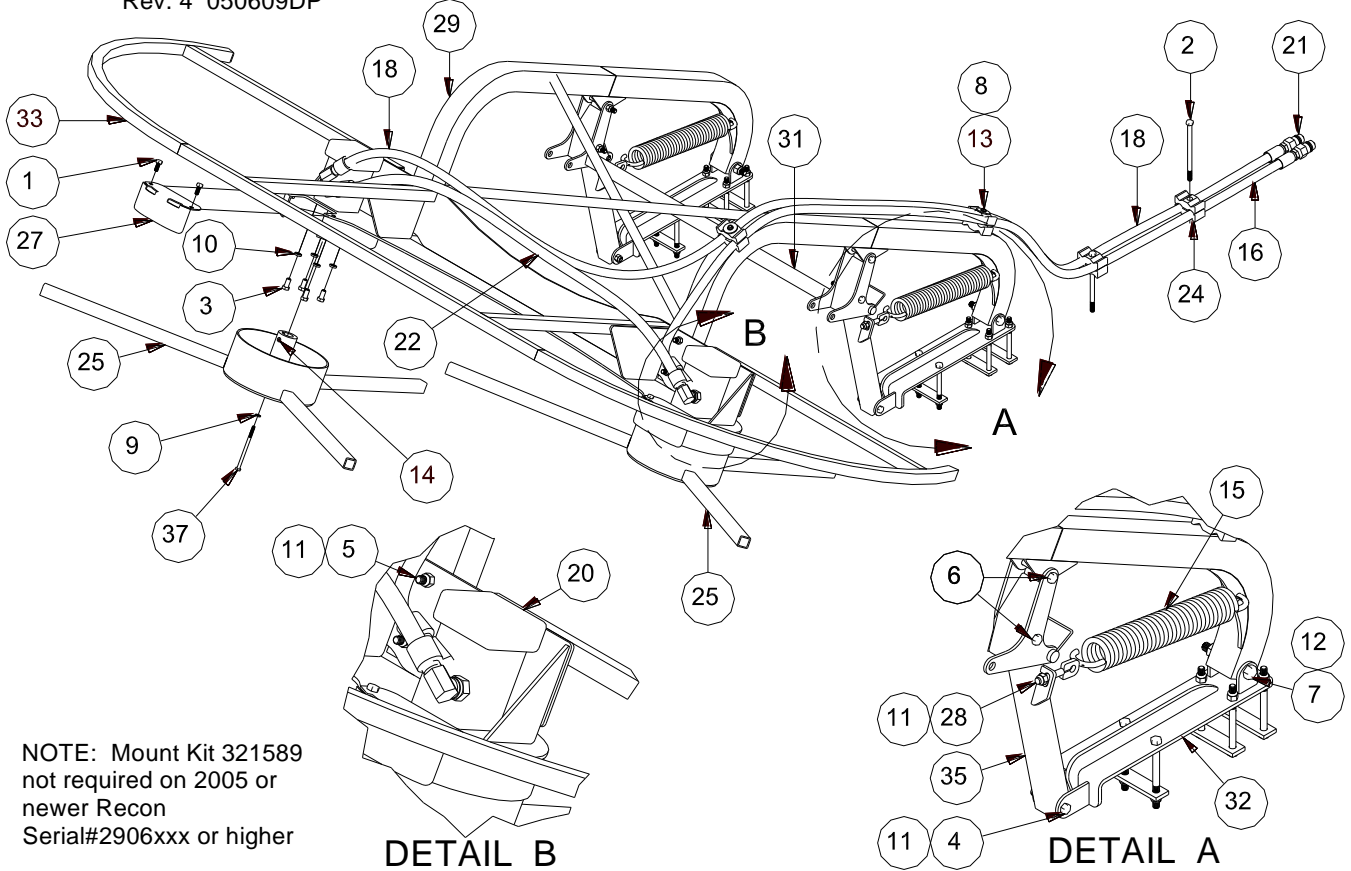
Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	2	100423 BOLT 1/4NC X 4 1/2 gr5 pltd hex	16	2	117162 CHARLYNN MOTOR 8.9 CID 4 bolt
2	2	100517 BOLT 5/16NC 6 gr5 pltd hex	17	1	117162 Hyd motor double keyway 9ft
3	8	100601 BOLTS 3/8NC 3/4 gr5 pltd hex	18	2	117502 HYD CPLR12 FPT X MALE PIONEE
4	6	100608 BOLTS 3/8NC 2 1/2 gr5 pltd hex	19	1	118621 hose 1/2x48 - 10MORB 90 both ends
5	4	100609 BOLTS 3/8NC 2 3/4 gr5 pltd hex	20	8	128108 HOSE HOLDER LARGE
6	2	100705 BOLT 1/2NC 3 gr5 pltd hex	21	1	321589 spreader mt kit pre 2005 recon
7	2	101101 FENDER WASHER 250 X 1	22	1	321640 spreader frame wldt
8	2	101144 WASHER LOCK 1/4	23	1	321668 link short spreader
9	8	101145 WASHER LOCK 3/8	24	1	321684 clearance arm wldt
10	12	102123 NUT 3/8 NYLOC NC	25	2	321690 scissor long wldt
11	2	102125 1/2 NYLOCK	26	2	113949 SPRING
12	2	103214 screw d t 1/4 x 3 lg	27	2	321050 hub spreader covered assy
13	2	104506 QUICK PIN SQUARE 3/8 X2 1/4	28	2	321066 draw bolt spreader
14	1	117103 hose 08 x 224in x 08mpt x 10morb90	29	2	321060 cover plt spreader
15	1	117104 hose 08 x 248in x 08mpt x 10morb90	30	4	100502 BOLTS 5 16NC 3 4 GR5 PLTD HEX

9.19. SPINNER SPREADER 2008+ (SN 2808XXX+)

Spinner Spreader

7ft - 321645 (9ft - 321250)

Rev. 4 050609DP



NOTE: Mount Kit 321589 not required on 2005 or newer Recon Serial#2906xxx or higher

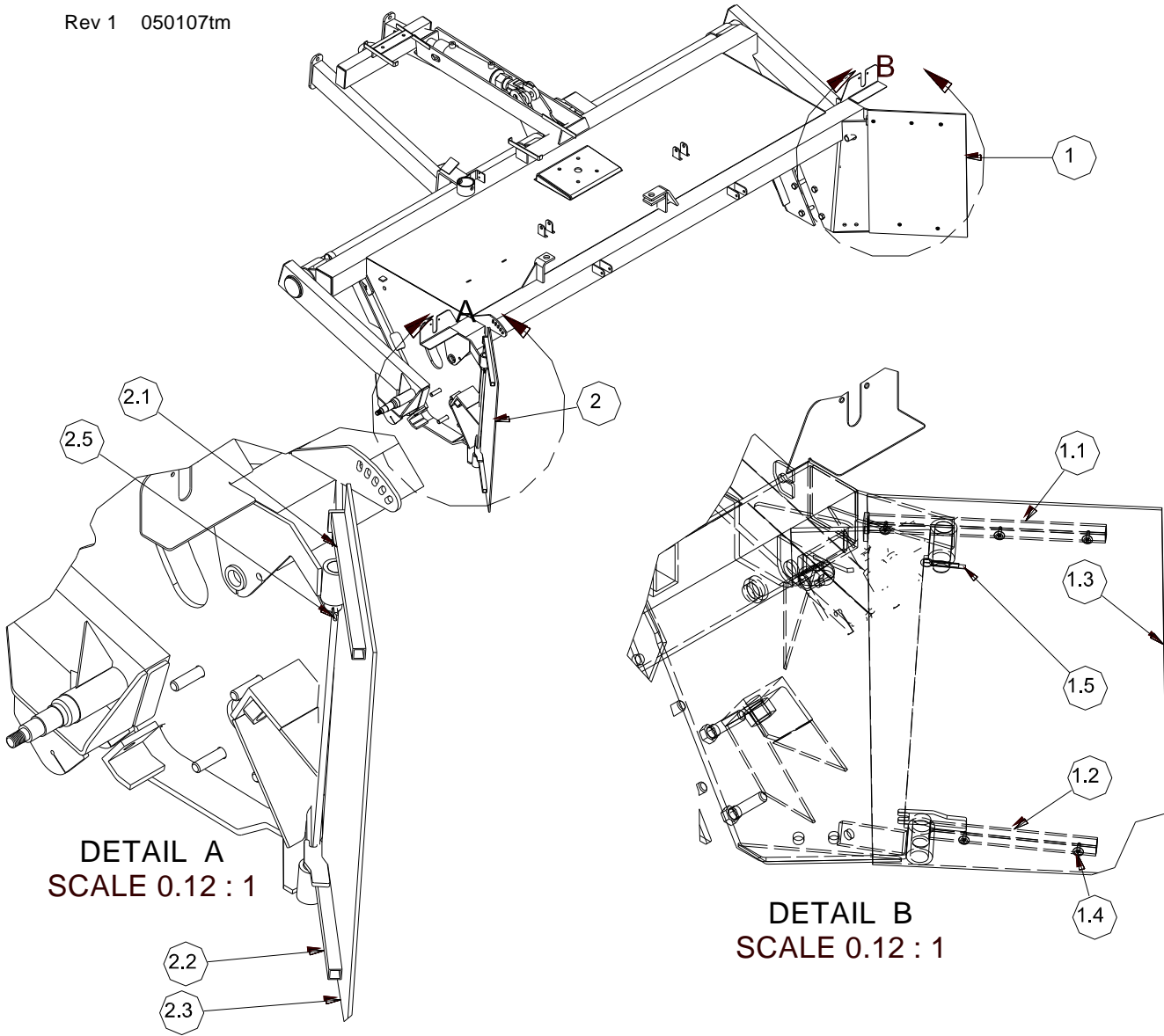
Parts List		
ITEM	QTY	PART NUMBER
1	4	103150 SCREW FLANGE-LOCK 5/16"X 3/4"L
2	2	100517 bolt 5/16NC 6 gr5 pltd hex
3	8	100602 BOLT 3/8NC 1 GR5 PLTD HEX
4	2	100608 bolt 3/8nc 2 1/2 gr5 pltd hex
5	4	100610 bolt 3/8nc 3 gr5 pltd hex
6	4	100612 bolt 3/8nc 3 1/2 gr5 pltd hex
7	2	100706 bolt 1/2nc 3 1/2 gr5 pltd hex
8	2	101101 fender washer 1/4 x 1-1/4
9	2	101144 washer lock 1/4
10	8	101145 WASHER LOCK 3/8
11	12	102123 nut 3/8 nylock nc
12	2	102125 1/2 nylock
13	2	103214 screw d t 1/4 x 3 lg
14	2	105503 set screw 3/8 NF x 1/2 pltd
15	2	113949 spring upper roller tension
16	1	117103 hose 08 x 224in x 08mpt x 10mor90
17	1	117105 hose 08 x 216 - 9ft
18	1	117104 hose 08 x 248in x 08mpt x 10mor90
19	1	117106 hose 08 x 252 9ft

Parts List		
ITEM	QTY	PART NUMBER
20	2	117162 CHARLYNN MOTOR 8.9 CID 4 bolt
21	2	117502 hyd cplr 12ft X maile pioneer
22	1	118621 hose 1/2x48 10 MORB 90
23	1	118622 hose 1/2x60 10 MORB 90 - 9ft
24	8	128108 HOSE HOLDER LARGE
25	2	321051 hub spreader wldt long cover
26	2	321069 hub spreader weldt long cover - 9ft
27	2	321060 cover pltd spreader
28	2	321066 draw bolt spreader
29	1	321071 clearance arm wldt - heavy
30	1	321081 clearnace arm wldt - heavy - 9ft
31	1	321075 link short spreader - heavy
32	1	321589 spreader mt kit pre 2005 recon
33	1	321640 spreader frame wldt
34	1	321251 spread frame wldt - 9ft
35	2	321690 scissor long wldt
36	2	104511 quick pin 3 8 x3
37	2	100421 bolt 1/4NC 4 gr8 pltd hex

9.20. SPINNER SPREADER WHEEL GUARDS 2007 AND LATER

322030-031 Wheel guard assembly -spinner 07+

Rev 1 050107tm



DETAIL A
SCALE 0.12 : 1

DETAIL B
SCALE 0.12 : 1

Parts List			Parts List		
ITEM	QTY	PART NUMBER	ITEM	QTY	PART NUMBER
1	1	322030 wheel guard assy rev spinners RH	2	1	322031 wheel guard assy rev spinners LH
1.1	1	322038 wheel guard rev spinners upper swldt RH	2.1	1	322049 wheel guard assy rev spinners LH upper
1.2	1	322039 wheel guard rev spinners swldt lower RH	2.2	1	322050 wheel guard rev spinners swldt lower LH
1.3	1	322034 plastic sheet wheel cover	2.3	1	322034 plastic sheet wheel cover
1.4	5	103205 screws dt 3 4X10 liner screw	2.4	5	103205 screws dt 3 4X10 liner screw
1.5	1	104907 cotter pin 1 4 X 2 5	2.5	1	104907 cotter pin 1 4 X 2 5

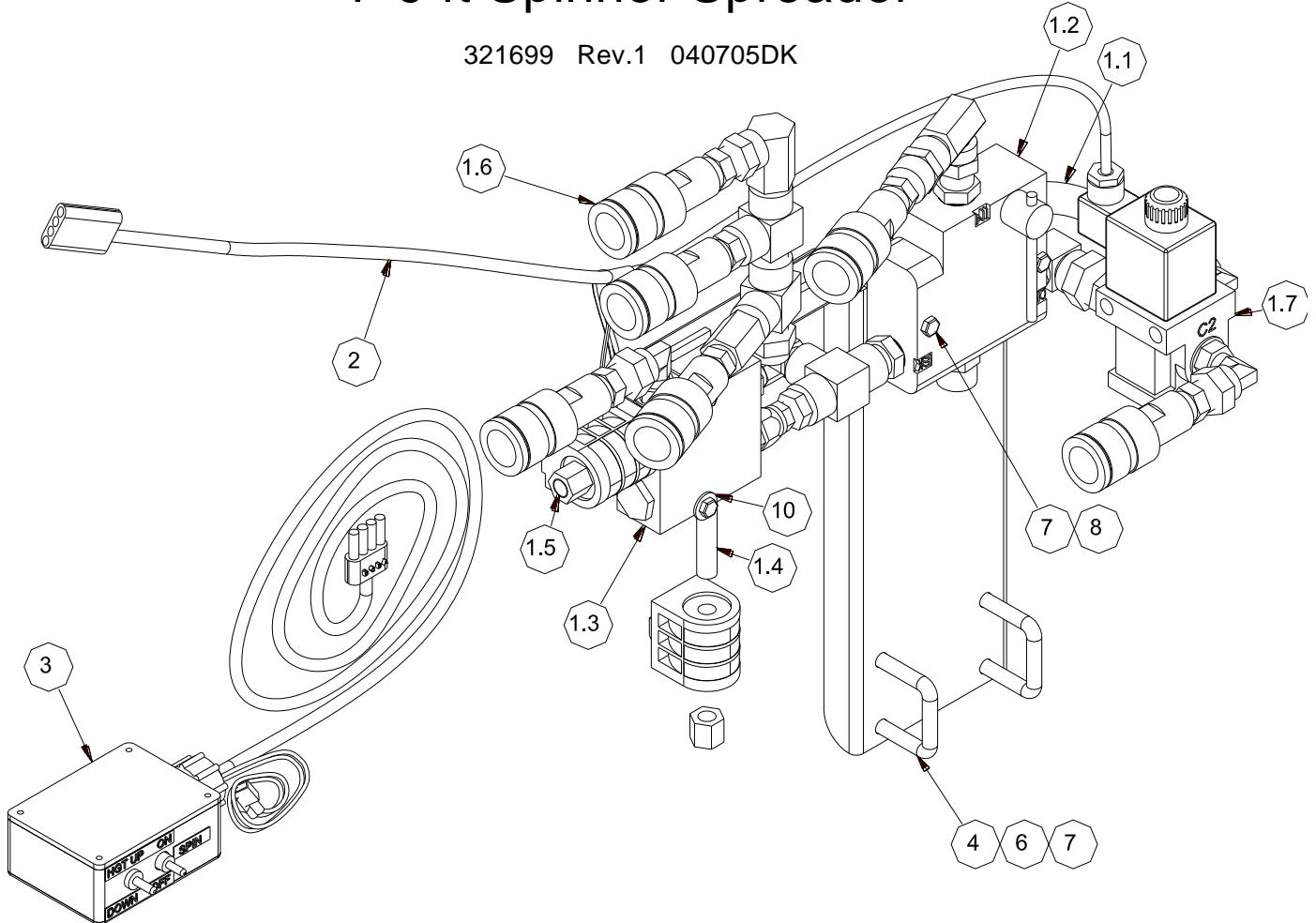
part of kit 321645 7 ft spinner spreader kit, or kit 321250 for 9'3" wide machine

9.21. OPEN CENTER FLOW CONTROL

Open Center Flow Control Kit

7-9 ft Spinner Spreader

321699 Rev.1 040705DK



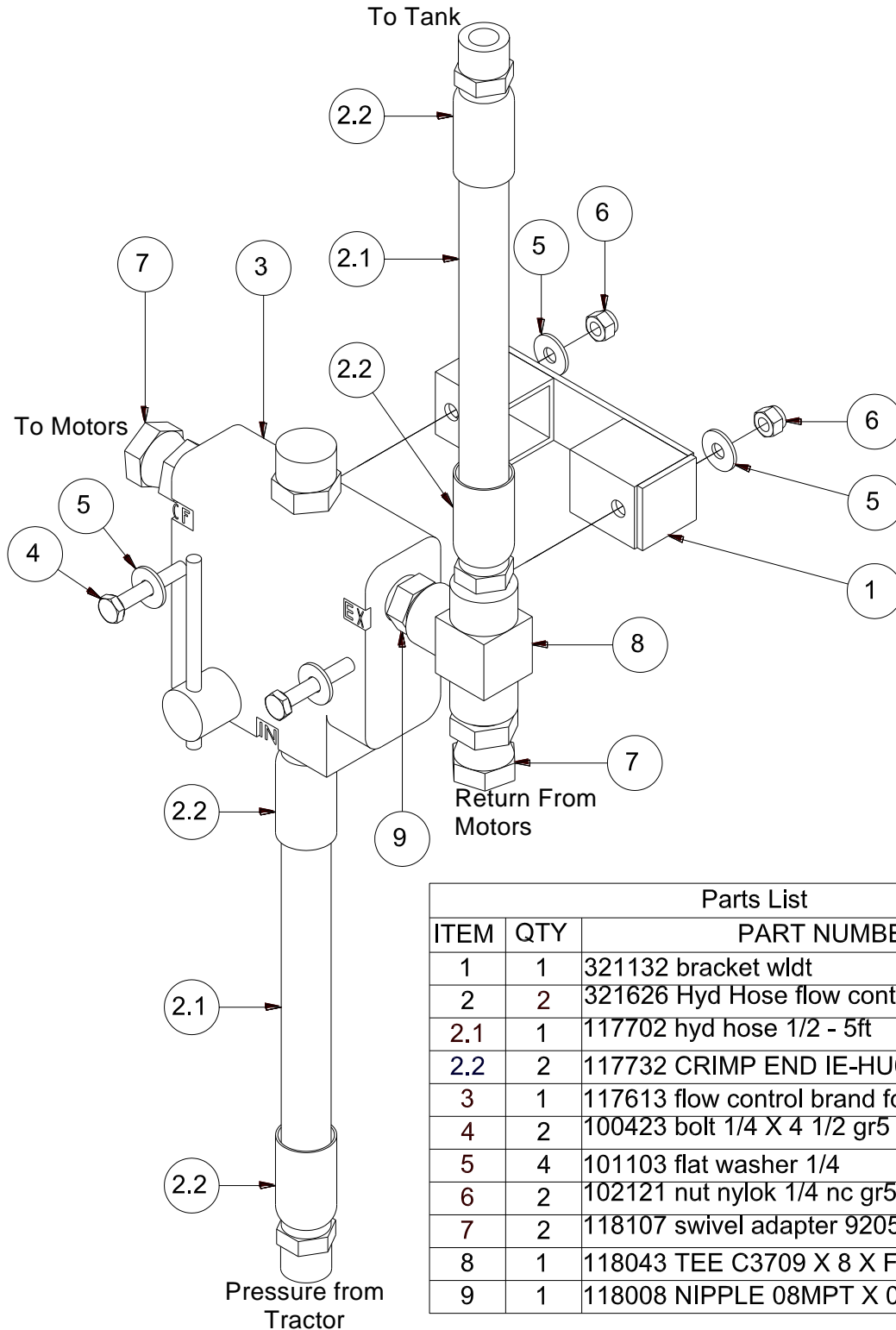
Parts List		
ITEM	QTY	PART NUMBER
1	1	321270 spd control OC spreader hyd kit
1.1	1	321272 hose spreader OC kit
1.2	1	117613 flow cont brand fcr51 10orb
1.3	1	117130 Delta block Lift-check-dump
1.4	1	117060 HYD CART DP DE S2C 00
1.5	1	118304 HYD CART DP DE S2A
1.6	6	117501 female pioneer coupler
1.7	1	117085 electric flow diverter
2	1	321275 spreader OC solenoid harness

Parts List		
ITEM	QTY	PART NUMBER
3	1	321274 spreader OC cab control
4	2	101000 U BOLT 3 8 X 1-1 2 X 3 L
5	4	101105 washer flat 38
6	4	102123 NUT 3 8 NYLOC NC
7	4	100409 BOLTS 1 4NC 2 1 2 GR5 PLTD HEX
8	4	102121 nut 1 4 nc nylock gr 5
9	1	321278 mt flow control O-C option wldt
10	4	101103 flat washer 1 4

9.22. CLOSED CENTER FLOW CONTROL

Closed Center Flow Control Kit 7-9 ft Spinner Spreader

321698 Rev 1. 08/14/06

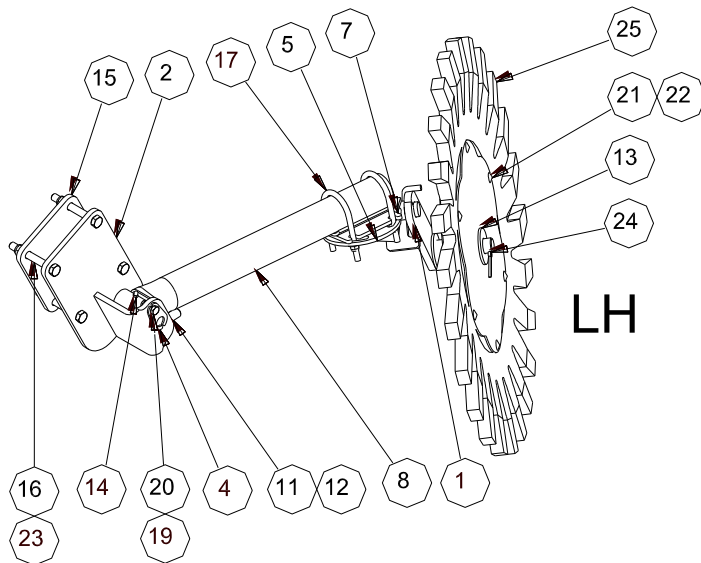


Parts List		
ITEM	QTY	PART NUMBER
1	1	321132 bracket wldt
2	2	321626 Hyd Hose flow contrl CC
2.1	1	117702 hyd hose 1/2 - 5ft
2.2	2	117732 CRIMP END IE-HU08-08MB
3	1	117613 flow control brand fcr 1 1 2
4	2	100423 bolt 1/4 X 4 1/2 gr5 pltd nc
5	4	101103 flat washer 1/4
6	2	102121 nut nylok 1/4 nc gr5 pltd
7	2	118107 swivel adapter 9205X8X8 IE60S
8	1	118043 TEE C3709 X 8 X FPT IE 25VJ08
9	1	118008 NIPPLE 08MPT X 08MPT

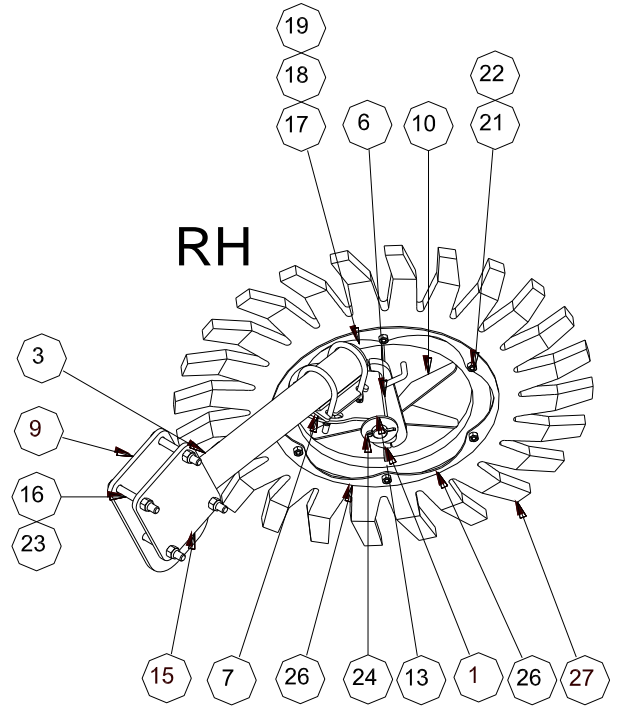
9.23. HAY SAVER KIT R2

321530 Haysaver Kit

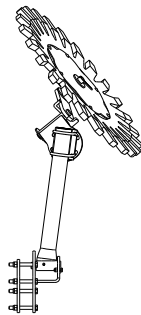
Rev.2 030807 Modify Wheel Mounts to allow more angle during operation



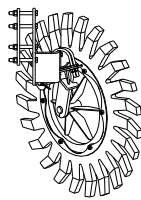
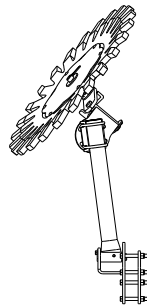
LH



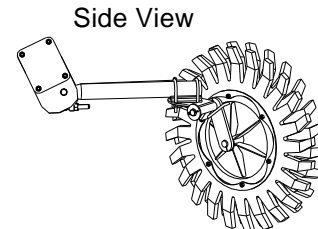
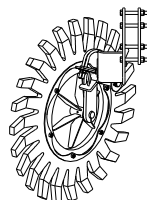
RH



Top View



Rear View



Side View

Parts List			Parts List			Parts List		
ITE	QTY	PART NUMBER	ITE	QTY	PART NUMBER	ITE	QTY	PART NUMBER
1	2	321539 pivot wheel	12	2	102108 nut 5-8 nc pltd	21	12	100946 carriage bolt 5-16 X 1
2	1	321543 arm pivot LH	13	6	101110 flat washer 1			1-2 nc
3	1	321538 haysaver arm RH	14	2	105609 grease zerk	22	12	102106 nut 3-8 nc pltd
4	2	321550 haysaver arm pin	15	2	321636 mt hay saver back plt	23	8	102125 nut nylok 1-2 nc gr5
5	1	321555 mnt wheel LH	16	8	100707 bolt 1-2 X 4 gr5 pltd nc			pltd
6	1	321529 mnt wheel RH	17	4	101020 u bolt 3 8X2 1 2X4 1	24	4	104902 COTTER PIN 1 8 X 1
7	2	321528 arm backing			2lg			1 4
8	1	321546 haysaver arm LH	18	8	101105 flat washer 3-8	25	1	127901 hay saver LH. 24
9	1	321531 arm pivot RH	19	10	102123 nut nylok 3-8 nc gr5			finger rubber
10	2	321533 wheel cntr	20	2	100602 bolt 3-8 X 1 gr5 pltd nc	26	2	321537 wheel backing
11	2	100806 bolt 5-8 3 1-2 gr5 pltd nc				27	1	127902 hay saver RH 24
								finger rubber

10.WARRANTY

1. Ag Shield Manufacturing warrants each new Ag Shield reconitioner 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.

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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

ITEM

ITEM

The end

