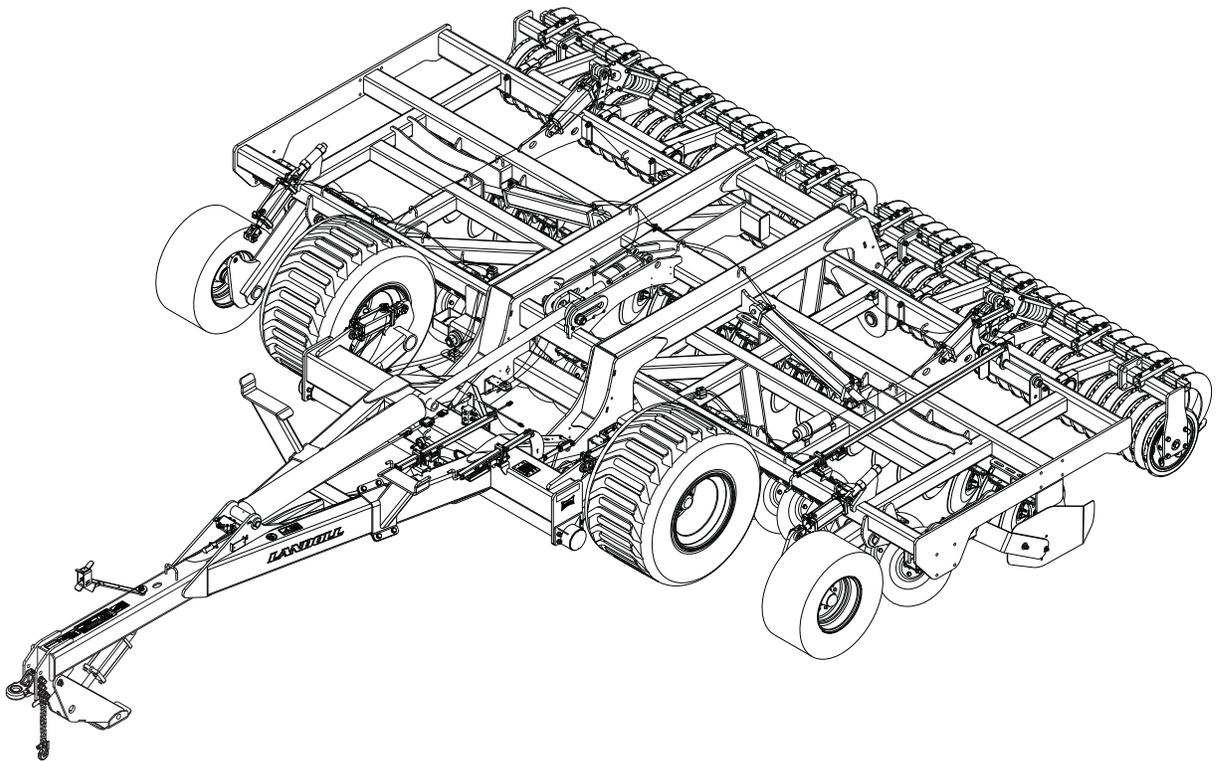




Model 7822
High Speed Landoll
Operator's Manual



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Manuals for 7822 HSL

Manual Number	Manual Name
F-1045	Operator's Manual
F-1034	Parts Manual

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Introduction & Safety

The Landoll Model 7822 High Speed Landoll () is a quality product designed to give years of trouble free performance. By following each section of this manual, your system will perform as designed for you and your operation.

- Chapter 1** Gives basic instructions on the use of this manual and understanding the safety statements.
- Chapter 2** Gives product specifications for the equipment. These specifications supply lengths and measures for your equipment. A Standard Bolt Torque Table is provided to give guidelines for bolt torques to be used when servicing this product.
- Chapter 3** Contains assembly instructions for your 7822 High Speed Landoll (). When these procedures are correctly followed, your equipment should provide you years of trouble-free operation and service.
- Chapter 4** Instructs how to operate your equipment before using it, and describes adjustments needed. Gives practical advice for the care and maintenance of your Landoll equipment. Drawings in this section locate adjustment points on the equipment.

**IF YOU HAVE ANY QUESTIONS CONTACT:
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**PHONE # (785) 562-5381 or (800) 428-5655
OR
FAX # (888) 527-3909**

- Chapter 5** Is a troubleshooting guide to aid in diagnosing and solving problems with the High Speed Landoll ()
- Parts Manual** Is a separate manual showing the various assemblies, sub-assemblies, and systems. Refer to that manual when ordering Landoll replacement parts. Order parts from your Landoll dealer.
- Warranty** The Warranty Registration form is included with the product documents. Fill it out and mail it within 15 days of purchase.
NOTE: IMPROPER ASSEMBLY, MODIFICATION, OR MAINTENANCE OF YOUR LANDOLL MACHINE CAN VOID YOUR WARRANTY.
- Comments** Address comments or questions regarding this publication to:

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MARYSVILLE, KANSAS 66508**

Understanding Safety Statements

You will find various types of safety information on the following pages and on the machine signs (decals) attached to the machine. This section explains their meaning.

The Safety Alert Symbol means **ATTENTION! YOUR SAFETY IS INVOLVED!**

NOTE

Means that failure to follow these instructions could cause damage to the equipment or cause it to operate improperly.

IMPORTANT

Special notice - read and thoroughly understand.

 CAUTION
<p>Caution means serious equipment or other property damage can occur if instructions on this label are not properly followed.</p>

 WARNING
<p>Warning means serious injury or death can occur if safety measures or instructions on this label are not properly followed.</p>

 DANGER
<p>Danger means a life-threatening situation exists. Death can occur if safety measures or instructions on this label are not properly followed.</p>

NOTE

Make sure you read and understand the information contained in this manual and on the machine signs (decals) before you attempt to operate or maintain this machine.

The safety statements contained in this manual relate to the operation of the Model 7822 High Speed Landoll () Decal Safety.

- Examine safety decals and be sure you have the correct safety decals for the implement.

- Keep these signs clean so they can be observed readily. It is important to keep these decals cleaned more frequently than the implement. Wash with soap and water or a cleaning solution as required.
- Replace decals that become damaged or lost. Also, be sure that any new implement components installed during repair include decals which are assigned to them by the manufacturer.
- When applying decals to the implement, be sure to clean the surface to remove any dirt or residue. Where possible, sign placement should protect the sign from abrasion, damage, or obstruction from mud, dirt, oil etc.

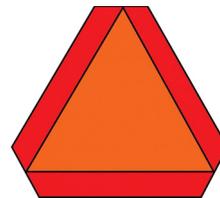
 DANGER
<ul style="list-style-type: none"> • Do not allow anyone to ride on the tractor or implement. Riders could be struck by foreign objects or thrown from the implement. • Never allow children to operate equipment. • Keep bystanders away from implement during operation.

Transporting Safety

IMPORTANT

It is the responsibility of the owner/operator to comply with all state and local laws.

When transporting the implement on a road or highway, use adequate warning symbols, reflectors, lights and slow moving vehicle sign as required. Slow moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.



- Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.
- Carry reflectors or flags to mark the tractor and implement in case of breakdown on the road.
- Do not transport at speeds over 20 MPH under good conditions. Never travel at a speed which does not allow adequate control of steering and stopping.
- Use a tractor heavier than the implement.

- Avoid sudden stops or turns because the weight of the implement may cause the operator to lose control of the tractor.
- Use caution when towing behind articulated steering tractors; fast or sharp turns may cause the implement to shift sideways.
- Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your implement.

Attaching, Detaching and Storage

DANGER

- **Do not stand between the tractor and implement when attaching or detaching implement unless both are not moving.**
- **Chock the tires of the implement so it will not roll when unhitched from the tractor.**
- **Store in an area where children do not play.**

IMPORTANT

Never store the HSL with it's weight on the disc blades.

Attaching the HSL to the Tractor

1. Line the tractor up with the and back up close enough to attach the hydraulic couplers, but not too close to interfere with the hitch.
2. Connect the hydraulic jack couplers (the 1/4" hose lines) to the tractor so the hitch height can be adjusted.
 - This circuit will be the lowest priority circuit of all.

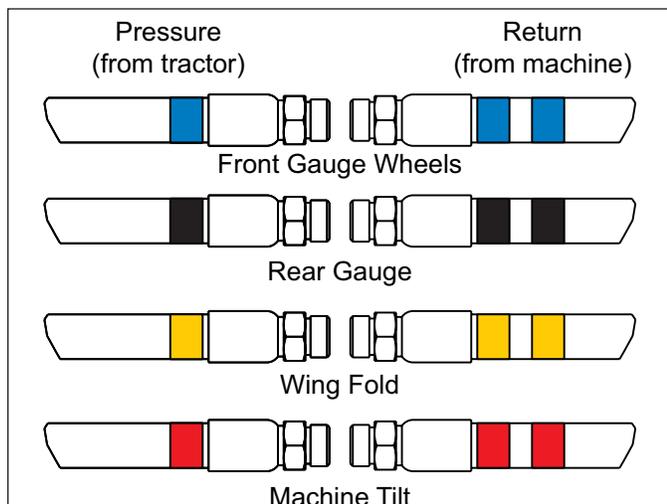


Figure 1-1: Hose Identification

3. With the hitch height adjusted, continue to back the tractor up and drop the hitch pin in.
 - For “wheeled” tractors, it is standard for the hitch pin to be 1 inch behind the rear extremity of the rear tractor tires.
 - “Track” tractors can vary from this standard and it may be desirable to have your hitch extended.

IMPORTANT

Please consult your dealer if the hitch point is forward of the rear extremity of your tracks.

4. Finish connecting the hydraulic couplers:
 - Highest priority, and most accessible control, “Red” circuit, machine tilt circuit.
 - Second priority, “Blue” circuit, front gauge wheels and depth control.
 - Third priority, “Black” circuit, rear reel control.
 - Fourth priority, “Yellow” circuit, wing fold circuit.
5. Connect the safety warning lights.
6. Raise the hydraulic jack.
7. Unhook the HSL by reversing the procedure called out above.

Maintenance Safety

DANGER

Do not make adjustments or lubricate implement while it is in motion.

- Understand the procedure before doing the work.
- Use proper tools and equipment.
- Make sure all moving parts have stopped.
- Block the implement so it will not roll when working on or under it to prevent injury.

Prepare for Emergencies

- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctor, ambulance, hospital, and fire department near the phone.

High Pressure Fluid Safety

 DANGER
<ul style="list-style-type: none"> Hydraulic oil can be under very high pressure. A pinhole leak is not easily seen and if it pierces the skin, it can cause injury and possible death. Any fluid injected into the skin under high pressure should be considered a medical emergency despite a normal appearance of the skin. Medical attention should be administered immediately.

 CAUTION
<ul style="list-style-type: none"> Relieve all pressure from the hydraulic system before attempting to service it. Make sure all hydraulic lines are tight before starting the system.

Protective Equipment

- Wear protective clothing and equipment.
- Wear clothing and equipment appropriate for the job. Avoid loose fitting clothing.



- Prolonged exposure to loud noise can cause hearing impairment or hearing loss; wear suitable hearing protection, such as earmuffs or earplugs.

Hydraulic Tongue Jack

 CAUTION
Operate the jack slowly.

Always make certain the jack leg is completely retracted after the has been hooked to the tractor and before moving the.

Chemical Safety

 WARNING
<ul style="list-style-type: none"> Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property. Read chemical manufacturer's instructions and store or dispose of unused chemicals as specified. Handle chemicals with care and avoid inhaling smoke from any type of chemical fire. Store or dispose of unused chemicals as specified by the chemical manufacturer.

Tire Safety

- Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side, not in front of or over the tire assembly. Use a safety cage if available.
- When removing and installing wheels use wheel-handling equipment adequate for the weight involved.

Safety Chain

- Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, in accordance with ASAE S338.2 specifications.
- If two or more implements are pulled in tandem, a larger chain may be required. Chain capacity must be greater than the TOTAL weight of all towed implements.
 - A second chain should be used between each implement.
- Attach the chain to the tractor drawbar support or specified anchor location. Allow only enough slack in the chain to permit turning. The distance from hitch pin to attachment point or intermediate support point should not exceed 9 inches.
- Replace the chain if any links or end fittings are broken, stretched or damaged.
- Do not use a safety chain for towing.

Standard Specifications

Model Specifications

7822 High Speed Landoll (HSL)					
Model Number	Working Width	Transport Width	Number of Blades 24" Front & Rear	Hitch Weight (Transport)	Estimated Weight
7822-15	180'	13' 1"	19 Front - 18 Rear	3,343 LBS.*	19,725 LBS.*
7822-17	200"	13' 1"	21 Front - 20 Rear	4,211 LBS.*	21,671 LBS.*
7822-20	240"	13' 1"	25 Front - 24 Rear	4,807 LBS.*	23,583 LBS.*
7822-23	280"	13' 1"	29 Front - 28 Rear	4,953 LBS.*	24,896 LBS.*

* With single chevron reel installed.

Tire Inflation Recommended				
Tire Size	Tire Manufacturer	Ply/Load Rating	Inflation Pressure (Psi)	Model
710/40R22.5	Goodyear	Load Rating 168/156 - 12,300LBS.	46 psi max. 40 psi recommended	All
VF 410/50R16.5	BKT	153 A8/B	73 psi	7822-17,20,23

Recommended Torque Specification For Lug Bolts and Nuts	
Bolt Size	Torque (FT. LBS.)
M22 Stud w/ 2 piece flange nut	50 - 90 FT. LBS/ Sequence 1 450-500 FT. LBS/ Sequence 2

General Torque Specifications (rev. 4/97)

TORQUE SPECIFIED IN FOOT POUNDS - This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and cap screws assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 cap screws. Use value in [parentheses] if using prevailing torque nuts.

UNC SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8	UNF SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	4 [5]	6 [7]	9 [11]	1/4-28	5 [6]	7 [9]	10 [12]
5/16-18	8 [10]	13 [13]	18 [22]	5/16-24	9 [11]	14 [17]	20 [25]
3/8-16	15 [19]	23 [29]	35 [42]	3/8-24	17 [21]	25 [31]	35 [44]
7/16-14	24 [30]	35 [43]	55 [62]	7/16-20	27 [34]	40 [50]	60 [75]
1/2-13	35 [43]	55 [62]	80 [100]	1/2-20	40 [50]	65 [81]	90 [112]
9/16-12	55 [62]	80 [100]	110 [137]	9/16-18	60 [75]	90 [112]	130 [162]
5/8-11	75 [94]	110 [137]	170 [212]	5/8-18	85 [106]	130 [162]	180 [225]
3/4-10	130 [162]	200 [250]	280 [350]	3/4-16	150 [188]	220 [275]	320 [400]
7/8-9	125 [156]	320 [400]	460 [575]	7/8-14	140 [175]	360 [450]	500 [625]
1-8	190 [237]	408 [506]	680 [850]	1-14	210 [263]	540 [675]	760 [950]
1-1/8-7	270 [337]	600 [750]	960 [1200]	1-1/8-12	300 [375]	660 [825]	1080 [1350]
1-1/4-7	380 [475]	840 [1050]	1426 [1782]	1-1/4-12	420 [525]	920 [1150]	1500 [1875]
1-3/8-6	490 [612]	1010 [1375]	1780 [2225]	1-3/8-12	560 [700]	1260 [1575]	2010 [2512]
1-1/2-6	650 [812]	1460 [1825]	2360 [2950]	1-1/2-12	730 [912]	1640 [2050]	2660 [3325]
1-3/4-5	736 [920]	1651 [2063]	2678 [3347]	1-3/4-12	920 [1150]	2063 [2579]	3347 [4183]

METRIC:
Coarse thread metric class 10.9 fasteners and class 10.0 nuts and through hardened flat washers, phosphate coated, Rockwell "C" 38-45. Use value in [parentheses] if using prevailing torque nuts.

Nominal thread diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque)	Nominal Thread Diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque)
6	10 [14]	7 [10]	20	385 [450]	290 [335]
7	16 [22]	12 [16]	24	670 [775]	500 [625]
8	23 [32]	17 [24]	27	980 [1105]	730 [825]
10	46 [60]	34 [47]	30	1330 [1470]	990 [1090]
12	80 [125]	60 [75]	33	1790 [1950]	1340 [1450]
14	125 [155]	90 [115]	36	2325 [2515]	1730 [1870]
16	200 [240]	150 [180]	39	3010 [3210]	2240 [2380]
18	275 [330]	205 [245]			

Hydraulic Fitting Torque Specifications

TORQUE IS SPECIFIED IN FOOT POUNDS- 37° JIC, ORS, & ORB (REV. 10/97)

This chart provides tightening torques for hydraulic fitting applications when special torques are not specified on process or drawing. ASSEMBLY TORQUES APPLY TO PLATED CARBON STEEL AND STAINLESS STEEL FITTINGS ASSEMBLED WITHOUT SUPPLEMENTAL LUBRICATION (AS RECEIVED CONDITION. They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. Brass fittings and adapters - 65% of the torque value for steel, stainless steel, aluminum, and monel-threads are to be lubricated.

Parker Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	11-13	15-17	13-15
-5	14-16	-----	21-23
-6	20-22	34-36	25-29
-8	43-47	58-62	40-44
-10	55-65	100-110	58-62
-12	80-90	134-146	75-85
-16	115-125	202-218	109-121
-20	160-180	248-272	213-237
-24	185-215	303-327	238-262
-32	250-290	-----	310-340

Gates Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	10-11	10-12	14-16
-5	13-15	-----	-----
-6	17-19	18-20	24-26
-8	34-38	32-40	37-44
-10	50-56	46-56	50-60
-12	70-78	65-80	75-83
-14	-----	65-80	-----
-16	94-104	92-105	111-125
-20	124-138	125-140	133-152
-24	156-173	150-180	156-184
-32	219-243	-----	-----

Aeroquip Brand Fittings

Dash Size	37 Degree JIC	O-Ring (ORS)	O-Ring Boss (ORB)
-4	11-12	10-12	14-16
-5	15-16	-----	16-20
-6	18-20	18-20	24-26
-8	38-42	32-35	50-60
-10	57-62	46-50	75-80
-12	79-87	65-70	125-135
-14	-----	-----	160-180
-16	108-113	92-100	200-220
-20	127-133	125-140	210-280
-24	158-167	150-165	270-360
-32	245-258	-----	-----

Assembly Instructions

It is very important that your new 7822 High Speed Landoll () be properly assembled, adjusted and lubricated before use. Illustrations in this section show proper assembly procedures. Remove paint from grease fittings. Replace any grease fittings that are damaged or missing. Be sure to return screws, clips, etc., to their original locations.

To ensure alignment of assemblies, **leave the nuts loose until completion** of final assembly. Use lock washers or flat washers as specified. Spread all cotter pins.

After completion of final assembly, tighten all nuts evenly to prevent misalignment, distortion or binding. Tighten all screws and nuts to the recommended torques shown in *“General Torque Specifications (rev. 4/97)”* on page 2-2.

! DANGER

Disc blades are extremely sharp. Exercise extreme care when working on or near disc blades. Do not allow discs to roll over or fall onto any bodily part. Do not allow wrenches to slip when working near disc blades. Never push wrenches toward disc blades. Do not climb over machine above disc blades. Failure to stay clear of disc blade edges can cause serious personal injury or death.

! WARNING

Do not attempt to lift heavy parts (such as the frame, disc gangs, rockshaft, and pull hitch) manually. Use a hoist or a fork lift to move these parts into position.

! DANGER

To prevent accidental lowering:

- All hydraulically elevated equipment must be locked out using the cylinder lockouts.
- Lower equipment to the ground while servicing or when it is idle.

Failure to take measures to prevent accidental lowering may result in serious personal injury or death.

! CAUTION

Be sure to bleed the hydraulic system of all air in lines after installation. Failure to bleed the system of all air can result in improper machine operation.

Unloading the HSL and Final Assembly

In most cases the 7822 has come to you with the main wheels and tires shipped loose due to shipping width, restrictions.

1. Install the main wheels and tires to the hitch rockshaft hubs. *See Figure 3-2*
2. Due to the being a towed implement the tire tread is typically installed opposite of that of a tread where power would be applied through it.

NOTE

There is a protruding step on the hub pilot. The wheel center plate must fit over the hub pilot and then bottom out against the hub flange. Failure to get the wheel properly positioned against the hub face will cause the wheel to loosen and cause damage to the hub and/or wheel.

3. With the tire and wheel assembly correctly positioned against the hub, begin to tighten the flange nuts sequentially as shown below.

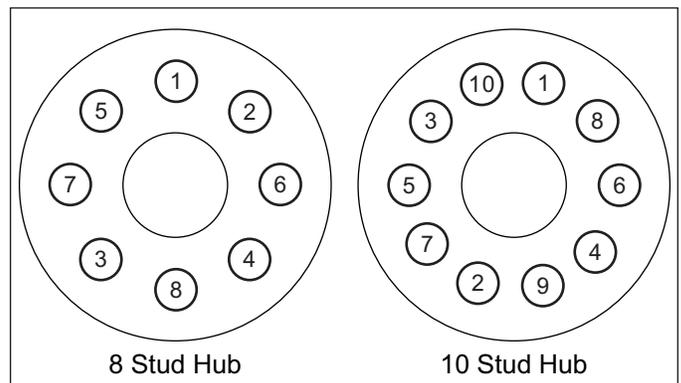


Figure 3-1: Lug Nut Tightening Sequence

4. Re-check the positioning of the wheel relative to the hub and proceed by tightening the lug nut assemblies sequentially to 450 to 500 foot pounds.

DECAL - 3-573-010210

TORQUE SPECIFICATIONS FOR PILOT MOUNTED DISC WHEELS

⚠ DANGER

⚠ Read and Understand the installation, service and safety instructions manual before installing or servicing the hub. Failure to do so may result in personal injury or death, and may result in a compromise of your vehicle's safety through loss or failure of a wheel or compromise of the braking system.

⚠ Use a torque wrench to assure proper torque, failure to do so will compromise your products service, life and safety. Under torque and over torque can cause thread and/or nut damage, and may result in the loss of a wheel.

⚠ Recheck torque after the first 50 to 100 miles of service. Parts may seat naturally, causing the torque to drop. Proper torque is essential for the service, life and safety of this product.

8 AND 10 STUD HUBS
Applies to M22 X 1.5 studs/two piece flange nut.

All threads are right hand metric.

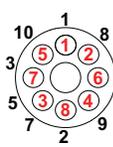
First Tighten Flange Nuts to 50ft. lb. Using sequence shown.

Check Disc-Wheel for proper positioning on pads and proper seating against flange.

Then Tighten Flange Nuts to recommended torque using sequence shown.

RECOMMENDED TORQUE: 450-500FT. LBS.

3-573-010210



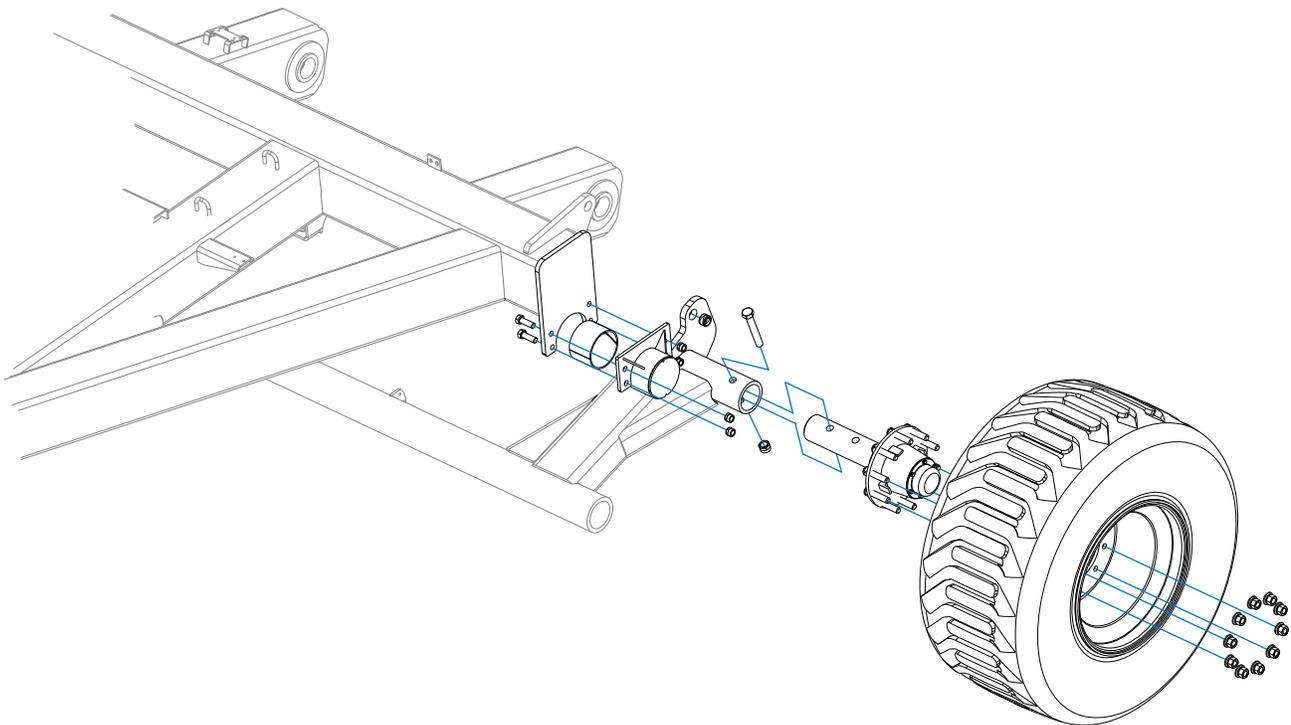


Figure 3-2: Tire and Wheel Installation

Unfolding the HSL

⚠ WARNING

Always unfold the 7822 on a level surface and away from overhead power lines. Keep bystanders and pets clear of the area.

1. Lift the 7822 with the two large transport tires by extending the front gauge wheel cylinders (blue circuit).
 - Failure to do so may cause the wing frames to interfere with the transport tires.

2. Tip the top of the center section reward far enough to lift the wing frames several inches above the wing rest saddles located on the hitch. The center section is tilted backward by extending the large cylinder located over the hitch (circuit with red hose wrap.)

⚠ CAUTION

Do not lift the wing assemblies more than a few inches above the wing rest saddles when the wing assemblies are folded forward.

3. With the wing frames above the wing rest saddles, open the wing assemblies up until they are flat across and aligned with each other.
 - The wing assemblies are opened (unfolded) by extending the wing fold cylinders (yellow circuit).

4. When the wing assemblies are aligned with each other and flat across, extend the large tilt cylinder located above the hitch, until the center and wing assemblies are at rest on the ground.

Final Assembly

The 7822 HSL has been almost completely assembled at the factory. The one exception is that the rear gauge assemblies will most likely need to be attached to the in the field, due to transport height.

NOTE

Consult the Parts Manual section on “Rear Gauges” to avoid assembling them incorrectly. Some of the rear gauge rockshafts are the same apparent width, but may be different in other ways relative to the final assembly.

1. Once the rear gauge rockshafts are in place, secure the rockshaft bearings with the 3/4-10 x 12 hex screws provided. Torque the nuts to approximately two hundred foot pounds (200 ft/lbs).
2. Once the rear gauge rockshafts are in place secure them to the rear gauge cylinders with the pins provided.
3. The rockshaft to the left of center of the machine has a special step pin that connects the rockshaft spring assembly to the cylinder at that same location. Please consult the parts manual for the correct assembly sequence.

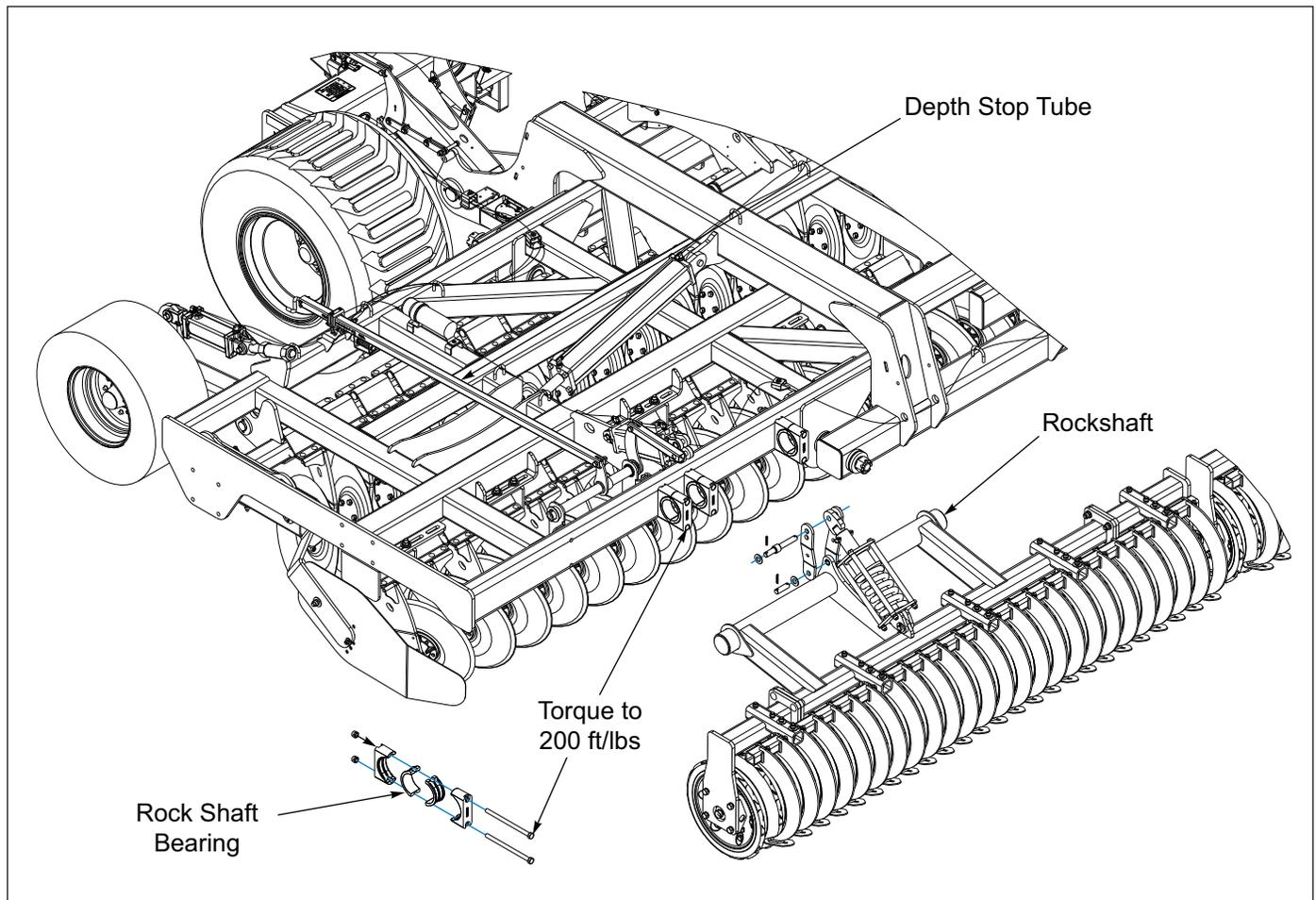


Figure 3-3: Rear Gauge Assembly

Operation & Maintenance



DANGER

- Never allow anyone to ride on the 7822 High Speed Landoll (HSL) at any time.
- Allowing a person to ride on the machine can inflict serious personal injury or death to that person.



DANGER

- Disc blades are extremely sharp.
- Exercise extreme care when working on or near disc blades.
- Do not allow discs to roll over or fall onto any bodily part.
- Do not allow wrenches to slip when working near disc blades.
- Never push wrenches toward disc blades.
- Do not climb over machine above disc blades.
- Failure to stay clear of disc blade edges can cause serious personal injury or death.



WARNING

- All hydraulically elevated equipment must have cylinder lockouts installed or be lowered to the ground, when servicing or when equipment is idle.
- Failure to take preventive measures against accidental lowering can result in serious personal injury.



DANGER

- Always lock the tractor drawbar in the center position when transporting the unit.
- Failure to do so can result in serious injury or death and cause damage to the equipment.



DANGER

- When transporting the unit, place cylinder lockouts in the transport lock position after fully extending the cylinders.
- Insert the lockout pins to secure the cylinder lockouts.
- Failure to lockout the cylinders can cause the unit to settle during transport, which can result in serious injury or death and cause damage to the equipment.



CAUTION

- When transporting farm implements on public roads, it is the responsibility of the operator to abide by state and local laws concerning wide loads, speed, safety emblems and safety lighting equipment.
- Drive at safe speeds. Particularly when rounding corners, crossing rough ground or driving on hillsides, to prevent tipping the tractor.

Product Description and Operation

The High Speed Landoll (HSL) is a non-tradition tillage tool. It is extremely versatile and can be used in lieu of traditional primary tillage tools or may be used in final seeding and planting preparations.

- The HSL can be employed at depths as shallow as 1-1/2 to 2 inches or as deep as 4-1/2. It is most efficiently used from 2 inches to 3-1/2 inches deep. It can be adjusted to eradicate virtually all weeds.
- The HSL is capable of incorporating high amounts of plant residue. It leaves a firm, reconsolidated soil profile for conservation of not only the soil itself, but the moisture in the soil profile.

The HSL is comprised of two rows of disc blades; each individually mounted on a spring torsion type mount. The row units rotate per field conditions and in response to the work being done and upon encountering obstacles in the soil.

- As the individual units rotates, the resistance to rotation increases as the degree of rotation increases.

OPERATION & MAINTENANCE

- The front row fractures soil to the left side of each of the front blades, while the rear row fractures soil to the right side of each of the rear blades.
- As a result, each blade, in each row is moving soil in the same direction as the others in that row. Because of this, the HSL creates and maintains a level field.

The primary depth control of the HSL is directly in front of the machine. The main wheels and tires on the hitch, and the wing gauge wheels and tires on the wing frames provide primary depth gauge.

The HSL is equipped with a reel/roller system that stabilizes the machine, reconstitutes the worked soil and provides a finished characteristic to the reel/roll purchased.

The depth of the depth gauges is controlled from a single point control just to the left of the tilt cylinder on the hitch. The depth control utilizes a master and slave hydraulic cylinder system.

The down pressure of the reel/roller system is controlled from a single point control on the left hand wing. The setting of the reel/roller system utilizes a master and slave hydraulic cylinder system.

The rear depth reel/roller system the HSL is not intended to be a depth control. It is intended to stabilize the 7822 and re-consolidate the worked soil. The rear reel/roller system is available in five different offerings as shown in the figure below.

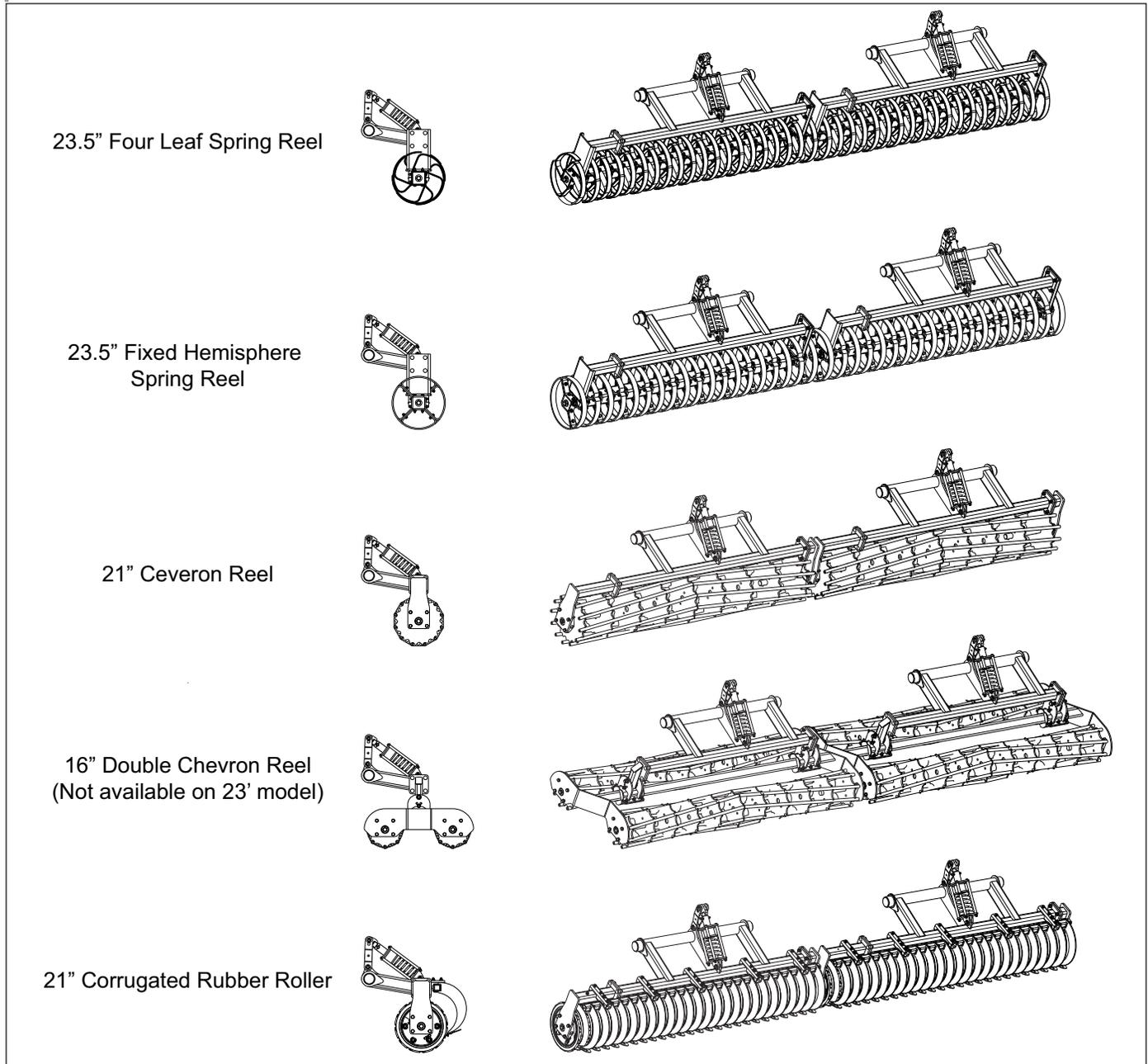


Figure 4-1: Rear Gauge Reels & Rollers

Unfolding the 7822 HSL



WARNING

Always unfold the 7822 on a level surface and away from overhead power lines. Keep bystanders and pets clear of the area.

1. Lift the 7822 with the two large transport tires by extending the front gauge wheel cylinders (blue circuit).
 - Failure to do so may cause the wing frames to interfere with the transport tires.
2. Tip the top of the center section rearward far enough to lift the wing frames several inches above the wing rest saddles located on the hitch. The center section is tilted backward by extending the large cylinder located over the hitch (red circuit).



CAUTION

Do not lift the wing assemblies more than a few inches above the wing rest saddles when the wing assemblies are folded forward.

3. With the wing frames above the wing rest saddles, open the wing assemblies up until they are flat across and aligned with each other.
 - The wing assemblies are opened (unfolded) by extending the wing fold cylinders (yellow circuit).
4. When the wing assemblies are aligned with each other and flat across, extend the large tilt cylinder located above the hitch, until the center and wing assemblies are at rest on the ground.

The 7822 is equipped with a urethane draft cushion. This creates a semi rigid hitch and allows the machine to adjust to undulations as the 7822 is pulled across the field.

Folding the 7822 HSL



WARNING

Always fold the 7822 on a level surface and away from overhead power lines. Keep bystanders and pets clear of the area.

1. Lift the 7822 with the two large transport tires by extending the front gauge wheel cylinders (blue circuit).
 - Failure to do so may cause the wing frames to interfere with the transport tires.

2. Tilt the center section and wing assemblies up by raising the rear of the HSL upward until it is near completely upright.
 - The center section is tilted upright by retracting the large tilt cylinder located over the hitch (red circuit).
3. Fold the wing assemblies forward by retracting the wing fold cylinders (yellow circuit).
4. Tip the center section top rearward far enough to lift the wing frames several inches above the wing rest saddles located on the hitch. The center section is tilted backward by extending the large cylinder located over the hitch (red circuit).
5. With the wing assemblies just above the wing rest saddles, further retract the wing fold cylinders to position the wing assemblies over the wing rest saddles (yellow circuit).
6. With the wing assemblies over the wing rest saddles, lower the wing assemblies into the wing rest saddles by further retracting the large tilt cylinder over the hitch. Retract the large tilt cylinder until the wings are at rest in the wing rest saddles (red circuit).

Synchronizing and Leveling Front Gauge Points

The front gauge is comprised of the main wheels and tires on the hitch frame and the gauge wheels and tires on the wing frames.

NOTE

The 7822-15 wings unfold into a rigid configuration from side to side.

The 7822-15 does not have gauge wheels and tires on the wing assemblies.

IMPORTANT

Make sure the front gauges are synchronized and leveled to enable the HSL to work the soil to uniform depth of cut, across the entire machine.

The HSL has been adjusted prior to being shipped, but it is appropriate to re-check it. Please consult the following instructions and diagrams to check, or to re-set the levelness of the front gauges should that become necessary (*See Figure 4-2.*)

NOTE

You will need the open end 2-5/8" wrench stored inside the left wing frame, should adjustment be necessary.

Follow the steps below when setting the front gauges.

1. Unfold the 78252 on a relatively flat surface.

OPERATION & MAINTENANCE

2. Retract the four (4) front gauge cylinders completely. There are two (2) cylinders on the main hitch. There is one (1) additional cylinder on each of the two (2) wing frames.
 - Check that all of the polished chrome of the cylinder rods is retracted into the cylinder body.
 - This procedure will require that the front gauge depth control (on the hitch frame) be adjusted to its most extreme depth setting.
 - If the cylinder rods are for some reason not completely retracted, then fully extend the front gauge cylinders until they are fully extended and continue extending them for an additional five (5) to ten (10) seconds after they appear to be fully extended. This procedure will re-synchronize all of the gauge cylinders. It is a good practice to re-synchronize the front gauge cylinders once or twice daily by extending them completely and holding the circuit control in the extend position for an additional five (5) to ten (10) seconds.
3. The wheels and tires of the main frame hitch are not adjustable. Leveling the front of the HSL from side to side is accomplished by adjusting the wing front gauge wheels. With the four (4) front gauge point cylinders completely retracted, place a long straight edge across the top of the center section frame. Measure from the top of the hitch rockshaft spindle bushings to the top of the top center section frame. Confirm the distance to be approximately three and one quarter (3-1/4) inches.
4. The wing gauge wheels and tires on the 7822-17, 7822-20 and 7822-23 are BKT 410/50R16.5. Adjust the wing gauge wheel cylinder mounts so that the distance from the top of the wing frame to the top of the wing gauge spindle sleeve is six (6) inches more than the measurement confirmed in step number 3.
 - So, if the measurement in step two was observed to be 3-1/4 inches, then adjustments will need to be made so that the distance from the top of the wing frame to the top of the wing gauge spindle sleeve is 9-1/4 inches (3-1/4 + 6 = 9-1/4) when the cylinders are completely retracted.
5. Repeat this procedure for the other side of the 7822 HSL.
6. The final adjustment can be affected by several factors, including tire inflation, machine width, and the wing down pressure setting.
 - Expect the hitch tires to squat slightly more than wing front gauge tires.
 - The final setting should be determined from field observations. One of the simplest ways to observe if the HSL is operating at a uniform working depth across the entire machine, is to stop abruptly when making a pass through a flat area and look along the front or rear edge of the wing frames and check for alignment and straightness.
 - Checking the working depth across the width of the machine is also recommended.

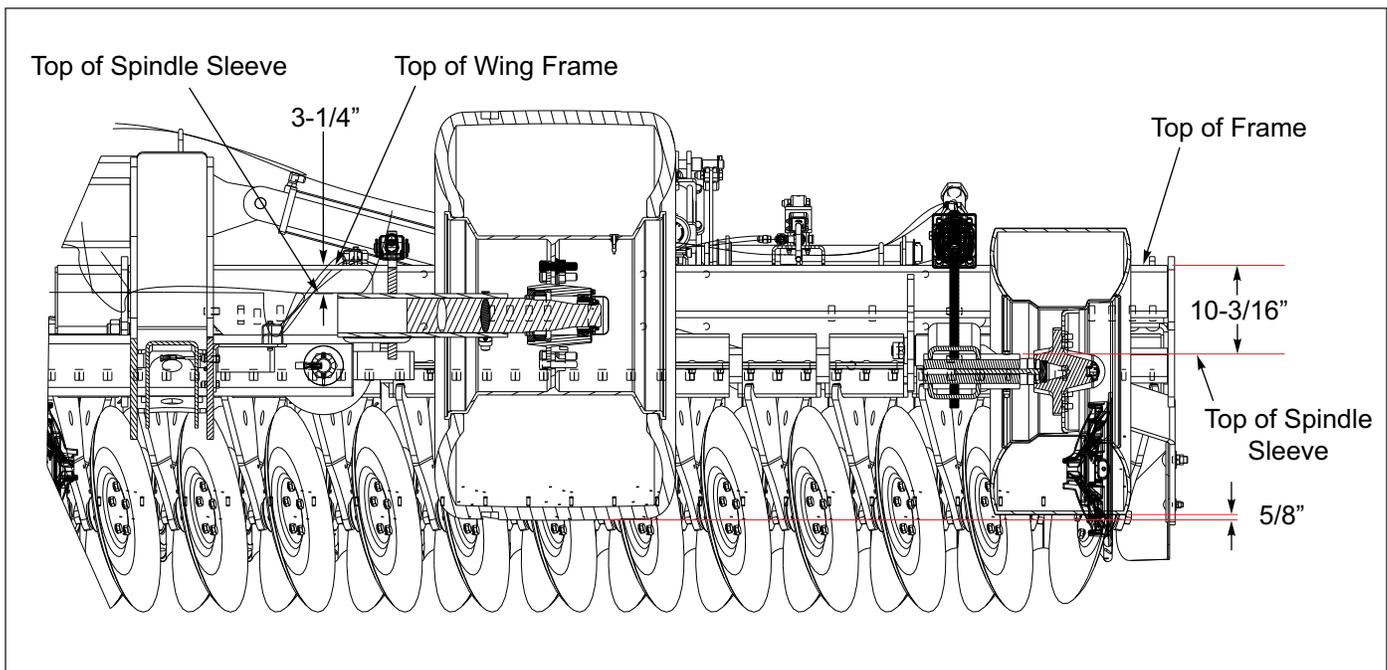


Figure 4-2: Synchronizing and Leveling Front Gauge Points

Synchronizing Rear Gauge/Finishing Feature Cylinders

The rear gauge/finishing feature is operated with a master and slave cylinder system.

The rear reels/rollers can limit the depth of the rear of the 7822 if they are set too low. The rear reels/rollers need to be set on the ground firmly enough to stabilize the HSL and reconstitute the worked soil but not to the point where the rear of the machine is held out of the ground.

1. Synchronize the master and slave cylinders by fully extending the cylinders of this circuit (black circuit).
2. Maintain the hydraulic controls in the extend mode for an additional five (5) to ten (10) seconds.

IMPORTANT

It is highly recommended that the operator re-set the hydraulic cylinders that control both the front depth gauges as well as the rear finishing feature once or twice daily while operating the HSL.

Front to Rear Adjustment with the Tilt Controlled 7822 HSL

NOTE

The 7822 HSL is most effective at speeds of eight miles per hour or greater. If field conditions permit, a speed of nine or ten miles per hour is very desirable.

NOTE

If plugging occurs reduce the working depth until the issue has been remedied. The HSL can produce a “blacker” field in just a few inches of working depth, than a convectional machine at approximately twice the depth.

The tilt controlled 7822 HSL has only one adjustment for the front to rear adjustment (tilt control).

The tilt control is an adjustable mechanical control that stops the extension of the tilt cylinder (the large cylinder on the hitch) at the discretion of the operator.

The adjustment for the tilt control is on the left hand side of the hitch assembly. The markings on the adjustment tube call out the “rear gang” and has arrows indicating which direction the rear gang will go relative to the front gang. “A” is the deepest setting while “G” is the shallowest setting. Typically start out in the mid-range

and then adjust the control from that point until the HSL tracks straight behind the tractor.

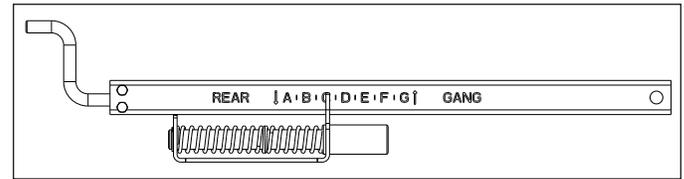


Figure 4-3: Tilt Control Adjustment

The front row disc units would cause the HSL to track to the tractors right hand side if they were dominant. In the same way the rear disc units would cause the HSL to track to the tractors left hand side if they were dominant.

- If the HSL is tracking to the left side of the tractor the operator will need to raise the rear gang relative to the front gang because the rear gang is dominating, and the system is not in equilibrium. The rear gang is raised by rotating the tilt control hand crank counter clockwise. The tilt cylinder will need to be retracted a bit to make this adjustment.
- If the HSL is tracking to the right side of the tractor the operator will need to lower the rear gang relative to the front gang because the front gang is dominating, and the system is not in equilibrium. The rear gang is lowered by rotating the tilt control hand crank clockwise.

The tilt control has very high resolution. Each turn of the adjustment crank will move the rear gang about 3/32 inch (.092) more than it moves the front gang in a given direction. Eleven (11) rounds will move the back gang one (1) inch more in a given direction than it will the front gang.

- Changing the depth of operation **will not** typically require any adjustment of the tilt control.
- Changing the amount of down pressure on the rear reels may require adjusting the tilt control to regain true tracking.

It is always desirable to start the HSL at a shallow depth and then subsequently adjust it from that point. The amount of plant residue buried is a function of machine depth and speed. Operating the HSL at greater depths will naturally bury more plant residue. However, increasing the speed of the HSL will also bury more plant residue. Therefore, if operating at greater depths comes at the sacrifice of speed. Running deeper may not be the most desirable choice.

NOTE

The 7822 HSL is most effective at speeds of eight miles per hour or greater. If field conditions permit, a speed of nine or ten miles per hour is very desirable.

NOTE

If plugging occurs reduce the working depth until the issue has been remedied. The HSL can produce a “blacker” field in just a few inches of working depth, than a convectional machine at approximately twice the depth.

NOTE

It is paramount that the 7822 track straight behind the tractor. It is unimportant whether the machine run level or not; typically the 7822 will run down hill to the front when tracking straight.

Lateral Adjustment of Rear Gang Assemblies

The front row of disc blades are fixed in position laterally. They are designed to only rotate in place around their torsion mounts.

- The rear row of blades are mounted on gangbar weldments which can be adjusted laterally. The gangbars are secured with 3/4-10 carriage bolts extending through slotted brackets.

- The gang assemblies can be adjusted to the right or left several inches. The gang bar adjustment brackets, (Landoll Part Numbers 187631 and 195279) are designed to simplify adjusting the gangs laterally.
- The HSL is set at the factory for an optimum floor cut. As the disc blades wear down you will find it beneficial to adjust the rear gangs to the machines right side.
 - When adjusting the rear disc gangs laterally, it is best to first set the gang in the direction of the desired movement so that the gangs do not hit each other.
 - While the typical row unit spacing is 10”, the spacing between the row units at the fold break is approximately 10-3/8”. Once the center section rear gang assembly is adjusted and secured in place, the wing rear gang assemblies should be set relative to the center section rear gang assembly.
 - The wing rear gang assemblies should be adjusted so the first row unit adjacent to the nearest center section rear row unit is 10-3/8” on center from it. *See Figure 4-5*

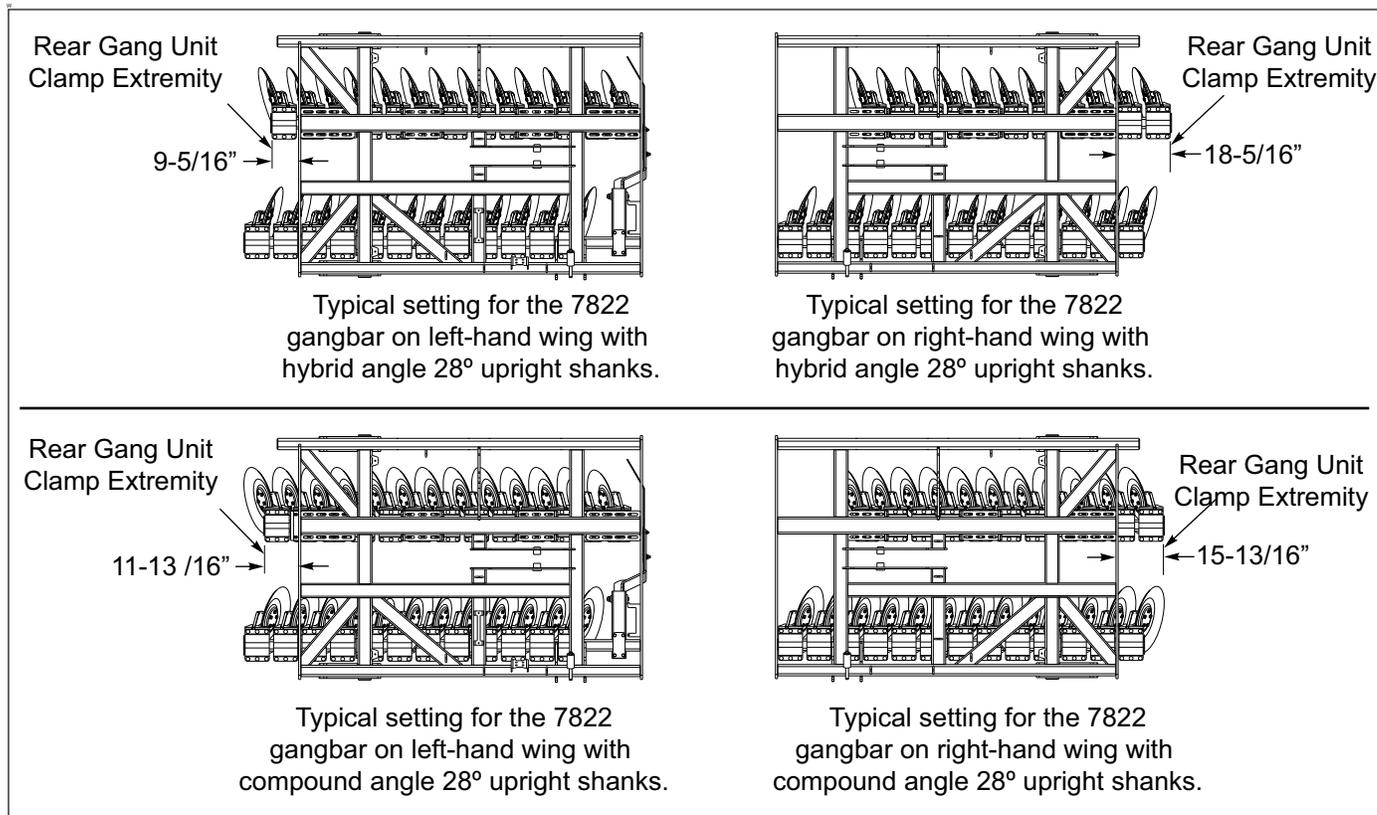


Figure 4-4: Lateral Adjustment of Gang Assemblies (1 of 2)

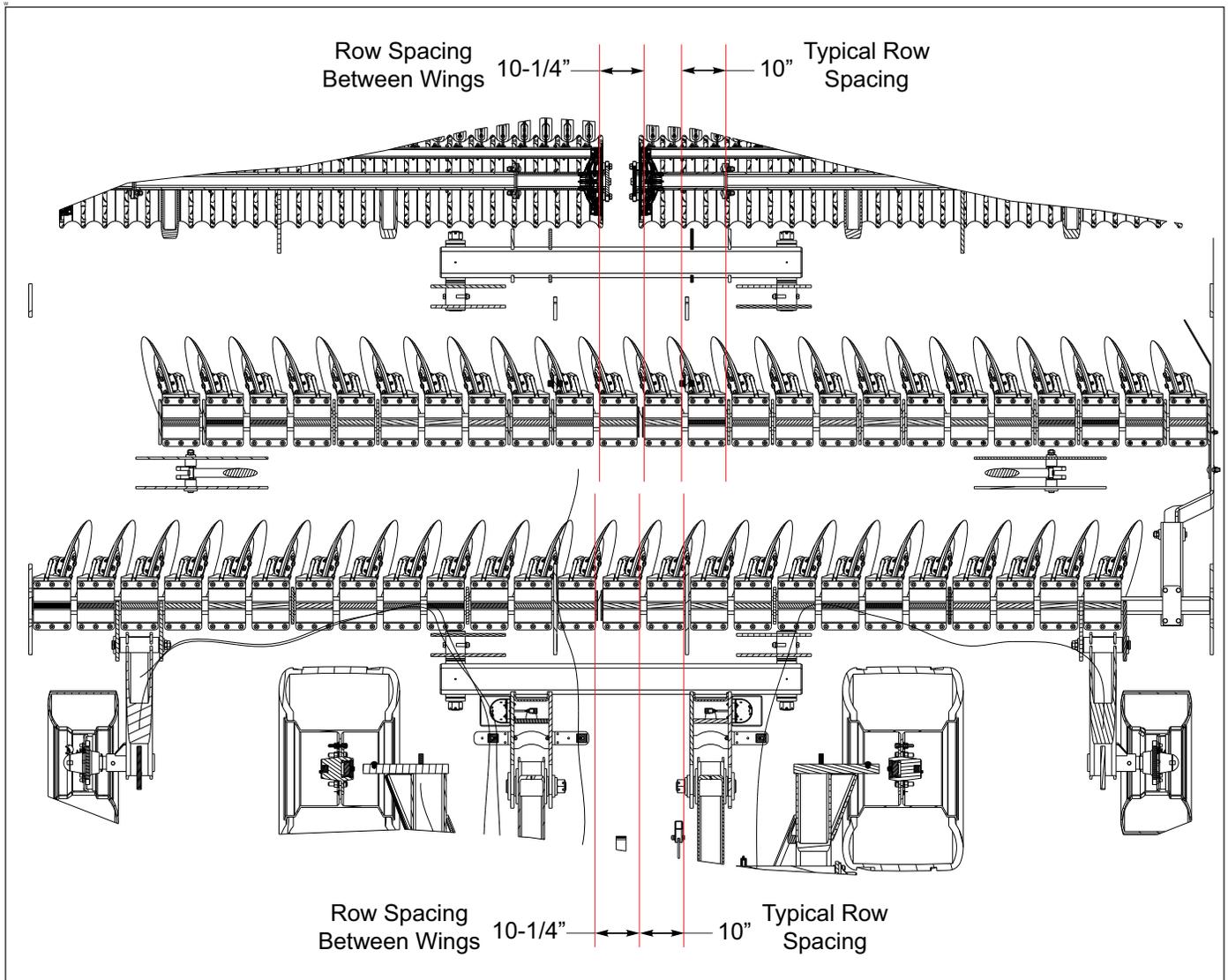


Figure 4-5: Lateral Adjustment of Gang Assemblies (2 of 2)

Adjusting the Blade Leveler

Without the blade leveler, it is inherent that the left rear corner blade of the machine would leave a small divot because there is not any dirt flow to fill the void left by the left rear blade. The “Blade Leveler” re-directs soil from a single twenty-four inch cover disc blade. It redirects soil into the area mentioned above. The Blade Leveler is adjustable in height, in angle, as well as laterally.

The performance of the blade leveler is a function of both speed and field conditions (loose dirt present.)

- It is best to initially adjust the blade leveler to ride at ground level, with the bottom edge parallel to the ground. If it is set to high the loose dirt will escape underneath the blade and not be delivered to where it is needed.
- If the ground speed will be ten miles per hour or more, gap the blade leveler laterally a bit further left of the left end cap of the left rear gang for most working conditions. For most working conditions, it is most effective when positioned approximately 1” to 1-1/2” to the left of the left rear gangbars left side end cap. [See Figure 4-6](#)

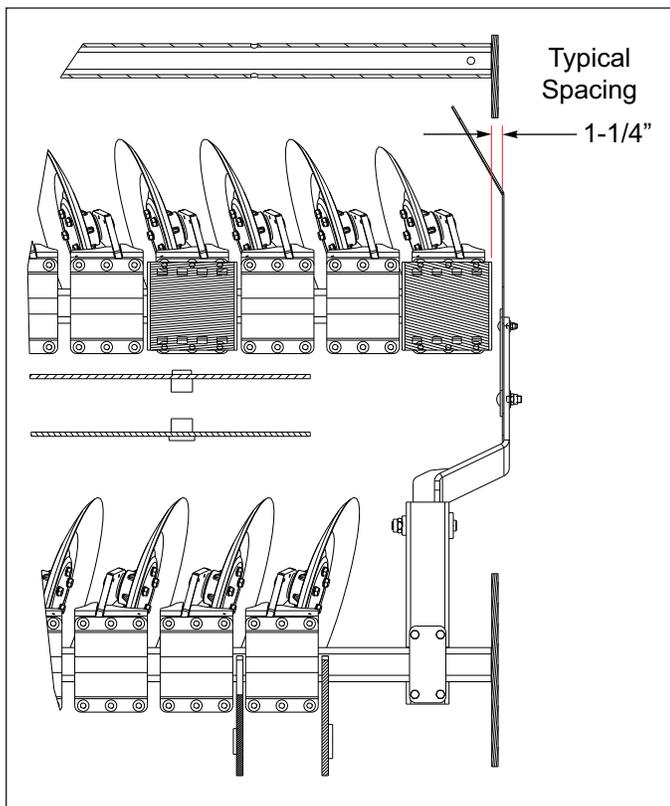


Figure 4-6: Adjusting the Blade Level

Wing Hydraulic Down Pressure

7822 Hydraulic Wing Down Pressure Settings

Model	Hydraulic Wing Down Pressure Settings
7822-17	200 - 300 psi
7822-20	300 - 500 psi
7822-23	500 - 700 psi

The 7822 HSL comes equipped with hydraulic wing down pressure incorporated in the wing fold system.

- Except the 7822-15 which unfolds into a rigid configuration.

The hydraulic wing down pressure transfers weight from the heavier center section out into the outward to the wing tips. The wing down pressure system assures that the active down force on each disc unit is equal. The hydraulic wing down pressure manifold is located on the left side of the hitch, just inside the frame.

The hydraulic wing down pressure system needs to be run continuously when the 7822 HSL is working in the field.

- It is recommended that the wing fold circuit (yellow circuit) be connected to a tractor circuit in which the flow has been reduced to approximately twenty percent (20%) of its full capacity.
- Turning the flow volume down will supply an adequate flow to the down pressure system and simultaneously prevent excessive buildup of heat or loss of power.
- The down side to turning the flow down is that the fold and unfold functions will be slowed down.

The wing down pressure is a function of geometry and a “set it and forget it” setting. The design intent of the hydraulic wing down pressure is to evenly distribute the weight of the heavier center section evenly across the entire machine. For that reason adjusting the down pressure is not recommended. It has been correctly set at the factory. The pressure setting is adjustable; however, the maximum pressure should never exceed 700 psi. If adjustment becomes necessary, loosen the lock nut on the “PRV” cartridge and adjust it clockwise for higher pressure and counter clockwise for lower pressure.

The wing based gauge wheels and tires may need to be adjusted so that the 7822 HSL operates level from side to side. The wing gauge wheels and tires are connected to the main hitch wheels and tires through a master/slave hydraulic system. The front gauge wheels are controlled through a single point control.

Operating Speed

The operating speed is very significant to the performance of the HSL. It requires some speed to make it work correctly and efficiently.

- The minimum operating speed should be approximately 7-1/2 to 8 miles per hour unless the goal is to minimize the percent of crop residue being buried.
- Maximum operating speed recommended is approximately 12 miles per hour.

The amount of crop residue that is buried is a function of the operating speed.

- The higher the speed of operation of the HSL, the greater the percent of crop residue that will be buried.
- The slower the speed of operation of the HSL, the greater the percentage of crop residue left on the surface.

When operating the HSL, higher speed can be a substitute for operating deeper. On the other hand, in some cases, it is desirable to reduce the percentage of crop residue buried. In such cases the operator will need to reduce the speed of operation. Typically the 8 to 10 miles per hour window of operating speed will yield the most desirable results.

The wing based wheels and tires alone with the down pressure settings are responsible for making the 7822 run level from side to side.

- Every rotation of the control crank adjusts the working depth by a ¼ inch, four (4) turns to an inch of operating depth.

Operating Depths and Adjustments for the Tilt Control Operated HSL

The optimum working depth is considered to be 1-1/2 to 3-1/2 inches. The HSL can work on either side of this range with good performance and results; but typically the 1-1/2 to 3-1/2 inch depth range is the most efficient work depth.

Working depth adjustments should always be made in conjunction with considerations of operating speed. The HSL can bury as much plant debris in a relatively shallow working depth as conventional machines can at considerable deeper operating depths because of the mixing action inherent to the HSL if adequate operating speed is maintained.

The 7822 HSL has a single point depth control. It located just to the left of center on the hitch, [See Figure 4-7](#).

The tilt cylinder combined with the tilt control system, control the operating depth of the rear row of disc units relative to the front row of disc units (see the previous section, [“Front to Rear Adjustment with the Tilt Controlled 7822 HSL,” on page 4-5](#)). The 7822 tilt control is a single point control.

While the depth control is a single point depth control, the rear reels play a major role in the final performance of the HSL. If the down pressure on the reels becomes extensive it will have an adverse effect on the overall system. If too much down pressure is applied to the rear reels they will hold the rear row of disc units out of the ground. This will cause the HSL to track to the left hand side. Typically, when this is the case, the operator will observe that the rear urethane spring in the draft cushion assembly will be ballooned. Too much down pressure on the rear reels can also lead to bouncing. On the other hand, too little down pressure will cause the machine to have decreased stability in the field. Too little down pressure also tends to leave a less desirable field finish and does not reconstitute the soil profile to an optimum level.

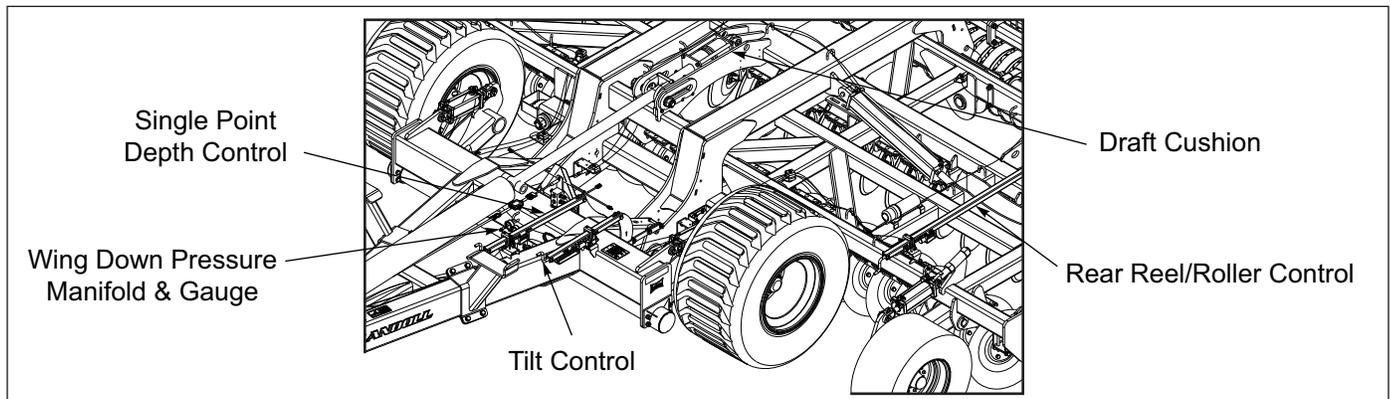


Figure 4-7: Operating Depths and Adjustments

Operating the HSL with GPS

Operating the HSL with the assistance of GPS can be beneficial in several ways and is recommended.

The 7822 is designed to be symmetrical. It will work the same distance both to the left and the right of center when it is tracking straight.

- When operating the Landoll HSL with the assistance of GPS guidance, set the swath width per the table to the right.

Gps Guidance			
Model	Working Width	GPS Swath (When Turning Right)	GPS Swath (When Turning Left)
7822-15	180" (15')	178 inches	178 inches
7822-17	200" (16'8")	198 inches	198 inches
7822-20	240" (20')	238 inches	238 inches
7822-23	280" (23'4")	278 inches	278 inches

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- When the GPS is set up to correctly to reflect the distance worked either side of center it becomes very easy to see if the HSL is tracking straight by the distance overlapped.
- When the GPS guidance is set correctly and the Landoll HSL is tracking straight, there will be minimal overlap on either side, and no skips.
- GPS guidance also helps out when turning narrower units on the headland. It may become more efficient when turning at higher speeds to not have to turn back in, for what would be the next adjacent pass; but instead work a rotation where one or two passes are skipped to be completed later.

Turning On the Headland

The recommended turning procedure for the 7822 HSL on the headland is to tilt the rear of the machine upward (red circuit), so that the weight of the entire machine is riding on the front gauge wheels and tires.

1. Tilt the rear up only far enough that all of the blades disengage the dirt. Tilting the HSL much over ten (10) to fifteen (15) degrees while turning on the headland exposes the wing fold cylinders and the machine at large, to possible damage as well as lengthens the time it takes to turn around.
2. Tilt the HSL rear up only enough to get the blades out of the dirt. Setting the tilt up on a timer can be beneficial. Once the turn is completed lower the HSL back into the field by reversing the tilt cylinder (red circuit) until its extension is terminated by the tilt control valve.

Replacing the Disc Hub Bearing

1. The replacement hub and bearing assembly is available as a pre-assembled assembly (Landoll P/N 210880). Should you choose, the wear parts are also available in a kit to re-build the disc hub. Landoll kit 219945 includes the essential wear parts to rebuild a disc hub in the field.
 - When rebuilding disc hubs in the field it is highly recommended that you obtain a die, Landoll 218733, to assist in the proper assembly of the components in the hub assembly. Landoll Corporation will not accept responsibility for, or warranty hub assemblies re-built in the field.
2. When installing the hub assembly on the shank, torque the flange top lock nut to approximately 200-250 foot pounds of torque immediately after applying Loctite 271.
3. When replacing the disc blade on the disc hub, clean the O-Ring groove and the surfaces between the hub face and the correlating disc surface. Failure to clean the surfaces mentioned above, can cause the disc blade to loosen and cause water to infiltrate the bearing area.

NOTE

Inadequate torquing of the disc hub (<120 ft/lb.) flanged top lock nut will cause premature bearing failure. Over torquing can also lead to premature bearing failure.

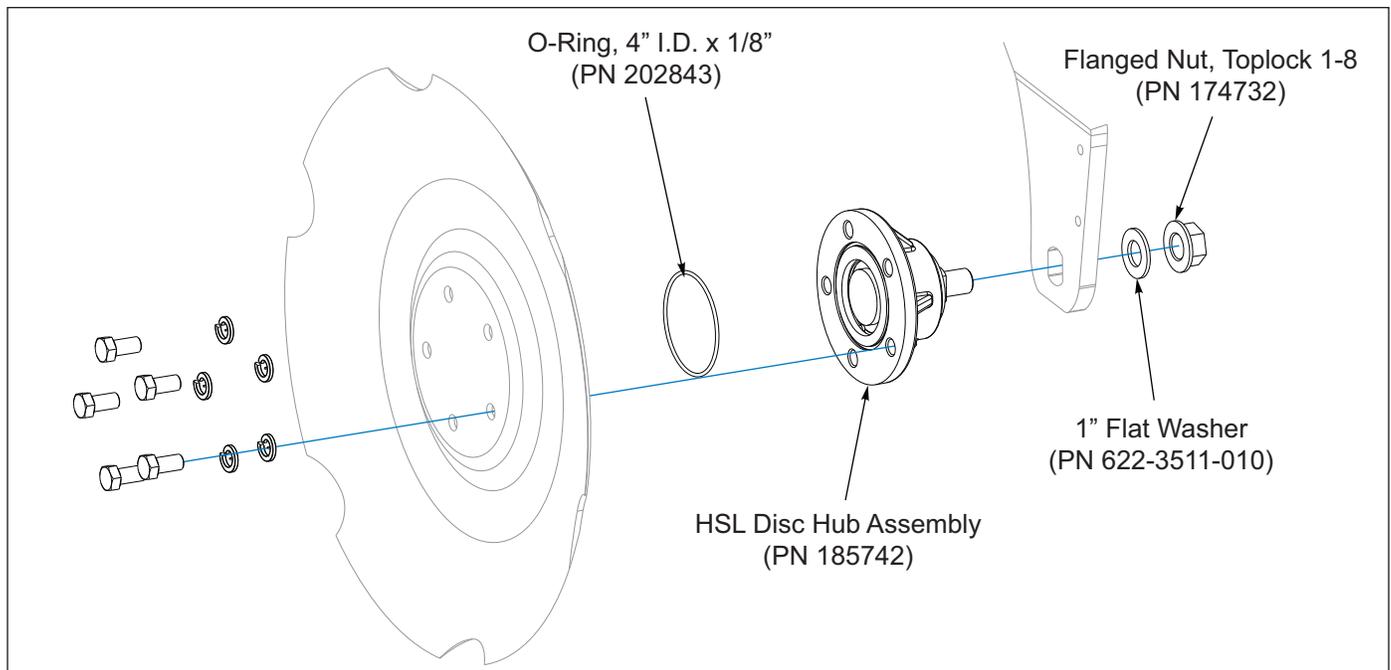


Figure 4-8: Disc Hub Bearing

Lubrication Maintenance

The 7822 HSL features a maintenance free double tapered roller bearing in each disc hub (Landoll Part No. 174526). The maintenance free double tapered bearing is protected by a life time lubricated five lip seal (Landoll Part No. 185757) on the hub's spindle side (**See Figure 4-8.**) The joint between the disc blade and the hub face is sealed with an O-ring that is compressed in a groove in the hub and seals against the disk. Should it become necessary for a disc hub bearing to be replaced there are two options available.

1. A complete hub assembly (Landoll PN 210880), ready to install.
2. A rebuild kit (Landoll PN 219945) with all required components.
 - The rebuild kit comes with instructions (PN 219946)
 - Installation of the HSL hub rebuild kit requires a die (PN 218733) to set the bearing and seals.

3. When lubricating the HSL, SAE multi-purpose EP grease, or EP grease with 3-5% molybdenum sulfide is recommended. Wipe soil from fittings before greasing. Replace any lost or broken fittings immediately.
4. The wing gauge wheel hubs and the reel bearings are equipped with seals that will let grease purge without harming the seal. Regular lubrication will maintain a full grease cavity and help purge any contaminants. Grease the bearings before long periods of storage to prevent moisture buildup within the bearing cavity.
5. **Table** specifies the number and the period of lubrication points on the 7822 HSL. Proper maintenance of your machine will, under normal operating conditions, help to keep it operating at its peak performance. Proper maintenance is also a condition to keep your warranty in good status.

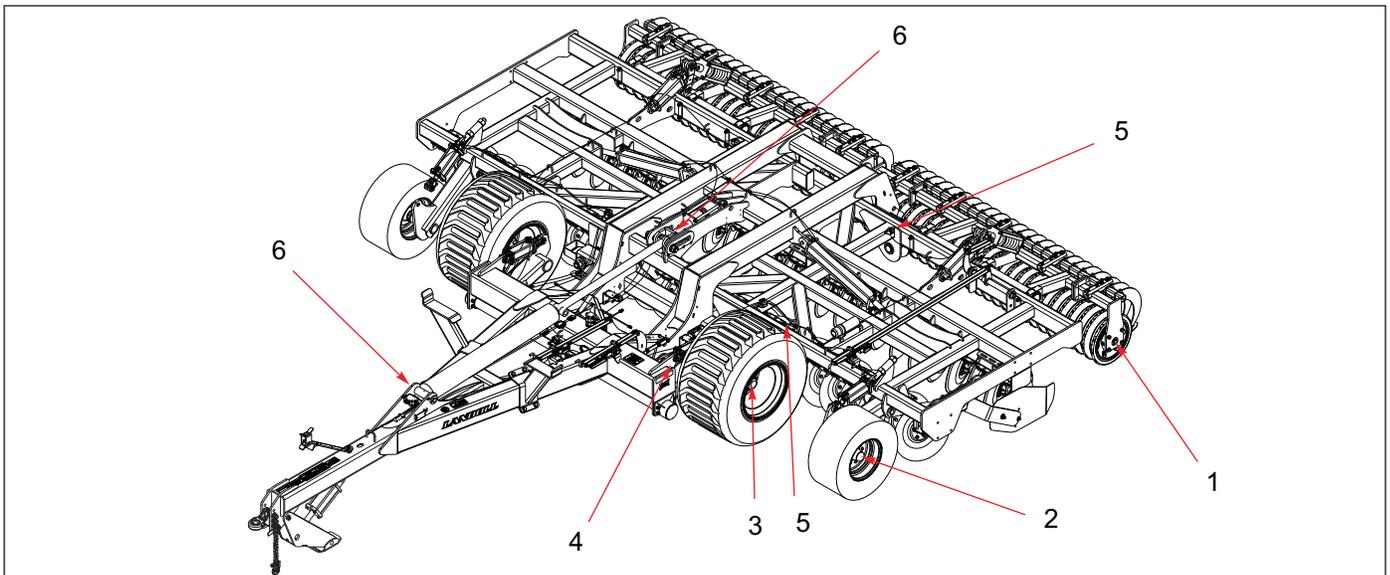


Figure 4-9: Lubrication Schedule

Lubrication Table			
ITEM	DESCRIPTION	NO. OF LUBE POINTS	INTERVAL (Hours Unless Stated)
1	Reel Bearings	2 per Reel Section	10
2	Wing Wheel Hubs	1 each	50
3	Center Section Wheel Hubs	(2) Check and Re-pack	250-500
4	Center Section/Hitch Pivot	2 each	10
5	Center Section/Wing Frame Fold (FRONT)	2 each	10
	Center Section/Wing Frame Fold (REAR)	2 each	10

Lubrication Table			
ITEM	DESCRIPTION	NO. OF LUBE POINTS	INTERVAL (Hours Unless Stated)
6	Main Tilt Cylinder	2 each	50

Rubber Roller Scraper Adjustment

The roller scrapers should be adjusted so that they have an adequate clearance from the rubber roller grooves but not excessive. If the clearance exceeds a 1/4 inch, plugging may occur. 5/32 to 3/16" clearance is optimum.

- The rubber rollers are subject to some irregularity in diameter, especially during initial use or when returning to duty after have set for a period.
- It is always a good idea to rotate the rubber rollers after making adjustments to assure an adequate clearance between the roller and the scrapers.
- The scrapers will require adjustment periodically as they wear to maintain the proper clearance.

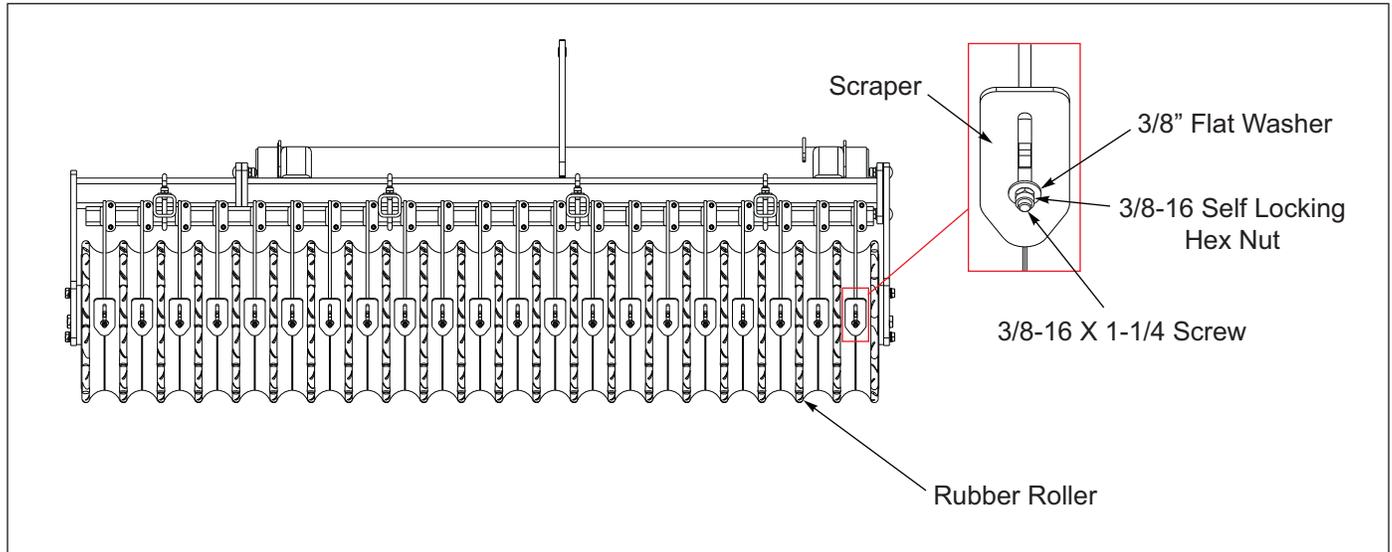


Figure 4-10: Rubber Roller Scraper Adjustment

Troubleshooting

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can occur when using your 7822 High Speed Landoll (HSL). Follow all the safety precautions stated in the previous sections when making any adjustments to your machine.

Problem	Cause	Solution(s)
Disc plugs or pushes.	Operating too deep.	Shallow up the depth gauges.
	Operating speed too slow.	<ul style="list-style-type: none"> Reduce tillage depth. Increase ground speed.
	Excessive amount of dirt collected on the discs.	Field conditions too damp.
	Foreign object caught between the blade and shank, or blade and frame.	Remove the object. If this happens repeatedly, consider installing scrapers.
	Disc hub bearing frozen.	Replace the bearing and hub assembly.
	Depth gauge cylinders (front and/or rear) out of synchronization.	Synchronize cylinders by holding hydraulic circuit in extended position for 5 to 10 seconds after full extension.
	Front wing gauge wheels not level with center section.	See <i>“Synchronizing and Leveling Front Gauge Points”</i> on page 4-3.
	Rear depth gauge reel/roller bearing frozen.	Replace the bearing assembly.
Disc tracking to the left behind tractor.	Rear gangs too deep relative to the front.	Adjust tilt control counter-clockwise.
Disc tracking to the right behind tractor.	Front gangs too deep relative to the rear.	Adjust tilt control clockwise.
Leaving a valley on the left rear corner.	Leveling board too high; dirt flowing beneath it.	<ul style="list-style-type: none"> Lower leveling board. Make lower extremity of the leveling board parallel with the ground.
	Cover disc not generating enough loose dirt.	<ul style="list-style-type: none"> Move cover disc towards leveling board. Replace front left 22” blade with 24” blade. Use compound angle disc shank in place of a vertical shank.
Floor cut has grooves or ridges.	HSL is not tracking straight behind tractor.	See previous guides on “tracking to the left or right”.
Floor cut has ridges.	Rear gangs out of adjustment relative to the front disc unit.	Adjust rear gang to the left slightly less than the average width of the ridge top.

TABLE OF CONTENTS

TROUBLESHOOTING

Problem	Cause	Solution(s)
Floor cut has grooves.	Rear gangs out of adjustment relative to the front disc unit.	Adjust rear gang to the right slightly less than the average width of the groove bottoms.
Machine bounces in the field.	Field conditions too rough for operating speed.	Reduce operating speed. Work twice if necessary.
	Floor cut irregular.	Adjust rear gangs laterally.
	Wing down pressure is not operating.	Confirm wing down pressure.
	Air is trapped in the gauge cylinders.	Remove air from the cylinders by holding hydraulic circuit in extend position for 5 to 10 seconds after full extension.
	Excessive down pressure on rear reels/rollers.	<ul style="list-style-type: none"> • Decrease rear reel down pressure on left-hand wing. • Turn adjustment crank counter-clockwise.
Uneven operating depth.	Wing frame(s) not operating at uniform depths.	See <i>“Synchronizing and Leveling Front Gauge Points” on page 4-3.</i>
	Rear gauge points out of synchronization.	Synchronize cylinders by holding hydraulic circuit in extended position for 5 to 10 seconds after full extension.
	Hydraulic wing down pressure is not operating (correctly).	Make certain that the indicator gauge is showing the recommended pressure and the flow is not excessive.
	Hydraulic wing down pressure is too high and center section is too light.	Reduce wing down pressure.
	Hydraulic wing down pressure is too low and the wing tips are too light.	Increase wing down pressure.
Rear gauge points not uniform.	Rear gauge points out of synchronization.	Synchronize cylinders by holding hydraulic circuit in extended position for 5 to 10 seconds after full extension.
	Cylinder leaking internally.	Repair/replace cylinder.
Machine does not hold consistent working depth.	Rear finishing feature single point limit valve leaking.	Replace rear limit valve (on left-hand wing frame).
	Front gauge point limit valve leaking.	Replace front limit valve (on hitch).
	Front and/or rear gauge points out of synchronization.	Synchronize cylinders by holding hydraulic circuit in extended position for 5 to 10 seconds after full extension.
Wings fold too slowly.	Restrictors are not properly installed.	Smart restrictor fittings should be installed in wing cylinder base end points.

Problem	Cause	Solution(s)
Wings fold too fast.	Restrictors not properly installed.	Black restrictor fittings should be installed in the rod ends of wing cylinders.
Wing tip operating shallow.	Hydraulic wind down pressure is too low or not operating.	Increase/turn on wing down pressure.
	Wing fold down cylinders leaking internally.	Repair or replace wing fold cylinder.
	Front wing gauge wheels set too low.	Adjust front wing gauge wheels.
Gauge point cylinders not fully extending.	Gauge point cylinders not synchronized.	Synchronize cylinders by holding hydraulic circuit in extended position for 5 to 10 seconds after full extension.
	Gauge point cylinders not installed in proper series.	Install cylinders in decreasing diameters as distance from center increases.
	Hoses not properly connected.	Check hose routing against schematics (found in parts manual).
Machine will not unfold (raise wing frames out of transport saddles).	Tractor valve not working.	Try a different tractor circuit known to work.
	Limit valve on hitch safety circuit not closing b-pass circuit.	<ul style="list-style-type: none"> • Confirm spring plunger to be depressing limit valve plunger when folded forward. • Hitch safety circuit limit valve leaking and needs replaced.
Machine will not tilt (rear upward) or fold.	Tractor valve not working.	Try a different tractor circuit known to work.
	Check valve on hitch safety circuit not closing; leaking.	<ul style="list-style-type: none"> • Clean check valve. • Replace check valve.
Machine will not fold or unfold (both wing frames out of transport saddles).	Tractor valve not working.	Try a different tractor circuit known to work.
	Hoses not properly connected.	Check hose routing against schematics (found in parts manual).
	High pressure manifold filter dirty.	Replace filter.
Hydraulic depth control limit valve not working.	Hoses not properly connected.	Check hose routing against schematics (found in parts manual).
	Depth stop contracts limit valve does not close off flow.	<ul style="list-style-type: none"> • Clean check valve. • Replace check valve.
	Machine will raise by not lower.	Check limit valve and manifold for correct plumbing.
Wheel bearing failure.	Seals not properly installed.	Triple lip seal should be installed with lips points outward away from the hub.

Document Control Revision Log:

Date	Form #	New/Updated	Improvement(s): Description and Comments
08/27/2019	F-1045-0819	New	Initial Release - GG



Intertek

Equipment from Landoll Company, LLC. is built to exacting standards ensured by ISO 9001 registration at all Landoll manufacturing facilities.

Model 7822 High Speed Landoll (HSL) Operator's Manual

Re-Order Part Number F-1045-0819

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