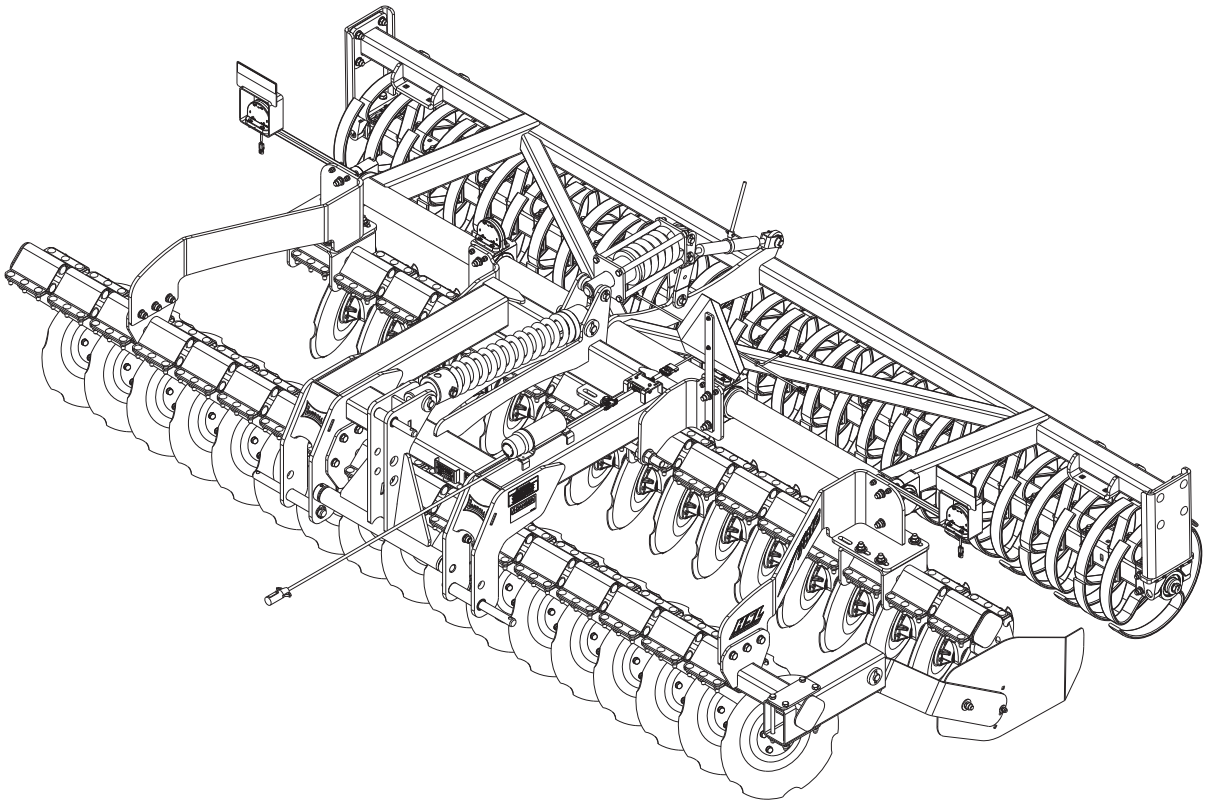
Model 7812
High Speed Landoll (HSL)
Operator's and Parts Manual



LANDOLL COMPANY, LLC
1900 North Street
Marysville, Kansas 66508
(785) 562-5381
800-428-5655 ~ WWW.LANDOLL.COM

F-1127-0622

Instructions for Ordering Parts

**** Repair parts must be ordered through an Authorized Dealer ****

DEALER INSTRUCTIONS FOR ORDERING PARTS FROM LANDOLL PARTS DISTRIBUTION CENTER

Phone #: 800-423-4320 or 785-562-5381 **Fax #: 888-527-3909**

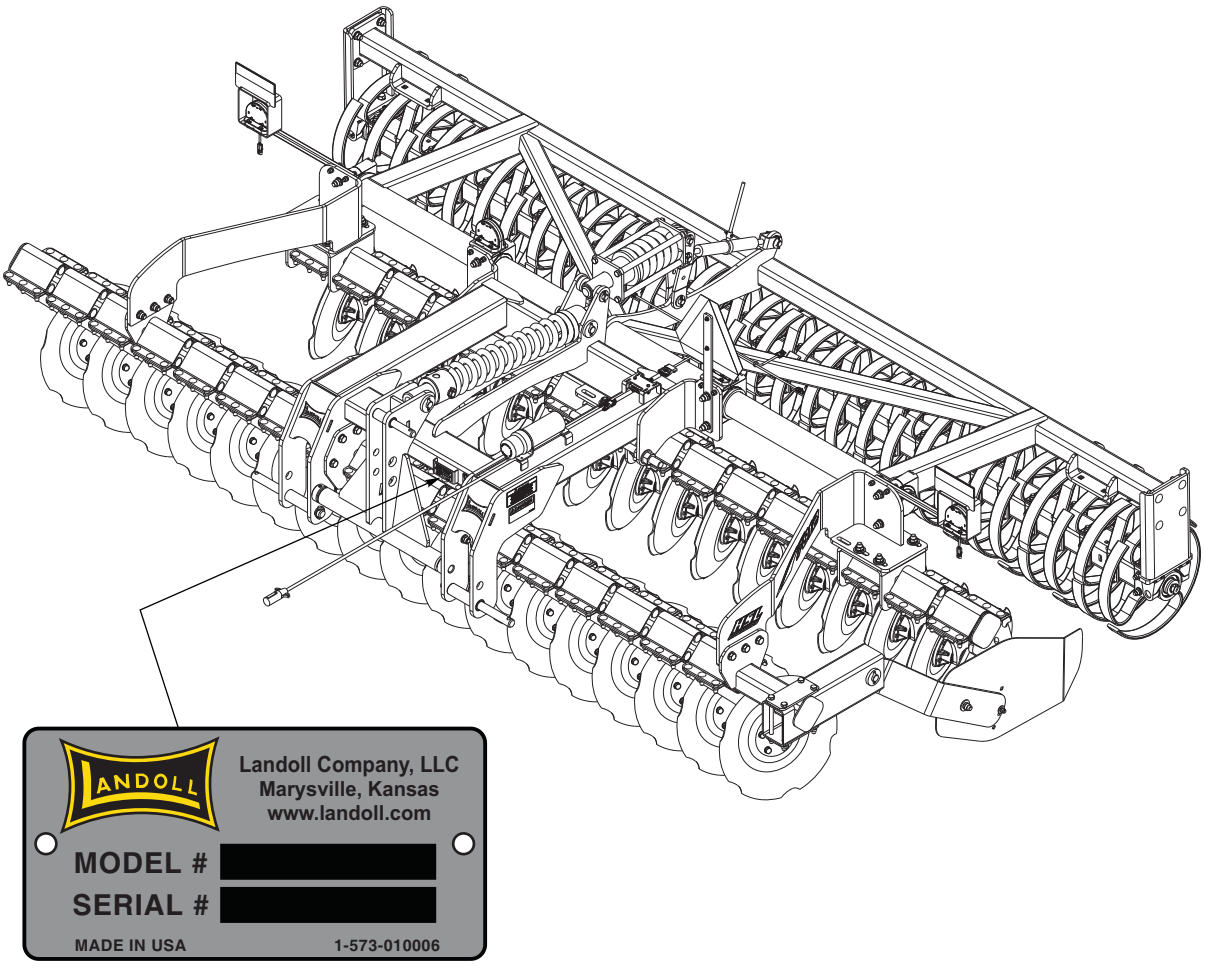
Order online: dealer.landoll.com

IDENTIFICATION PLATE

The identification plate, which list the model number and serial number is located on the front of the frame.

SERIAL NUMBER NOMENCLATURE

The serial number is located on the identification plate.



Identification Plate

Manuals for 7812 High School Landoll (HSL)

Manual Number	Manual Type
F-1127	Operator's and Parts Manual

DANGER

DO NOT operate or perform any maintenance tasks on this equipment until you have completed the following:

1. **Receive proper training to operate this equipment safely.**
2. **Read and understand the operator's manual.**
3. **Be thoroughly trained on inspection and repair procedures.**

Failure to comply with this warning may result in serious injury or possibly death.

Table of Contents

Introduction and Safety Information

This manual provides operating, servicing, and maintenance instructions for 7812 High Speed Landoll (HSL) manufactured by Landoll Company, LLC., Marysville, Kansas 66508.

CHAPTER 1 Gives basic instructions on the use of this manual and understanding the safety statements.

CHAPTER 2 Gives product specifications for the trailer, including measurements and component specifications. A Standard Bolt Torque Table is provided to give guidelines for bolt torques to be used when servicing this product.

CHAPTER 3 Gives instructions for the proper operation of the equipment.

CHAPTER 4 Gives general maintenance procedures, a maintenance schedule, and a lubrication schedule. Improper maintenance will void your warranty.

IF YOU HAVE ANY QUESTIONS CONTACT:
LANDOLL COMPANY, LLC.
1900 NORTH STREET
MARYSVILLE, KANSAS 66508

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 trailer.

PARTS MANUAL CHAPTER 6- 11 Shows 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:

LANDOLL COMPANY, LLC.
1900 NORTH STREET
MARYSVILLE, KANSAS 66508
ATTENTION: PUBLICATIONS - DEPT. 55

Safety

Understanding Safety Statements

You will find various types of safety information on the following pages and on the machine signs (decals) attached to the vehicle. 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

IMPORTANT, Means read and thoroughly understand.

DANGER

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

WARNING

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

CAUTION

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

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 7812 High Speed Landoll (HSL) 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

- **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.**
- **Block 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.

- Before applying pressure to the hydraulic system, be sure all connections are tight and that hydraulic hoses are not damaged.
- Relieve pressure in hydraulic lines before uncoupling hydraulic hoses from tractor.

Attaching the HSL to the Tractor

The 7812 HSL is designed to be pulled with a Category 3 3-PT Hitch. **Refer to Tractor's Operator's Manual.**

1. Attach the HSL to the Tractor's 3-PT Hitch using the appropriate size pins and bushings. Be sure to use the hardware provided and the hardware is in good working order. **Refer to the Tractor Operator's Manual for Quick Hitch Operation.**

CAUTION

The 7812 MUST be mounted onto the tractor using a Top Link Mounting Point.

Do not move tractor without making sure Top Link Mounting Point is connected to tractor.

IMPORTANT

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

2. Connect the hydraulic couplers (the 3/8" hose lines) to the tractor.
3. Before applying pressure to the hydraulic system, be sure all connections are tight and that hydraulic hoses are not damaged.
4. Connect the safety warning lights.
5. 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.

Protective Equipment

- Wear protective 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.

Chemical Safety

WARNING

- **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.**

Table provided for general use.

NOTES:

Standard Specifications

Model Specifications

7812 High Speed Landoll (HSL)				
Model	**Working Width**	**Transport Width**	**Number of 22" Blades, Front & Rear**	**Weight**
7812-13	150"	191"	Front: 17 [16 + 1 Cover] - Rear: 16	7650 LBS.*
* With Spring Reel installed.				

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	----------	----------

Table provided for general use.

NOTES:

Assembly Instructions

It is very important that your new 7812 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, and rockshaft) manually. Use a hoist or a fork lift to move these parts into position.

DANGER

To prevent accidental lowering, 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.

Final Assembly

The 7812 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.

NOTE

Consult the Parts Manual section on "Finishing Features" 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 8" & 9" 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 link spings with the pins provided.

Table provided for general use.

NOTES:

DANGER

Never allow anyone to ride on the 7812 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.**

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.

NOTE

The 7812 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 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.
- 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.
- 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

It is paramount that the 7812 track straight behind the tractor. It is unimportant whether the machine run level or not; typically the 7812 will run down hill to the front when tracking straight.

Depth Control

WARNING

The Depth Control is controlled by the tractor in combination with the rear roller or can be controlled by the tractor itself. (TOP LINK MOUNTING POINT MUST BE USED)

Rear Reel/Roller Control

The HSL is equipped with a reel/roller system that stabilizes the machine. It reconstitutes the worked soil and provides a finished characteristic to the soil surface. ***See "Finishing Features," on page 13-1.***

The down pressure of the reel/roller system is controlled by adjusting the adjustable link (Ratchet Jack) between the Main Frame Spring Assembly and the Reel.

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. 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.

Lateral Adjustment of Rear Gang Assemblies

The front row of disc blades are mounted on a gangbar and 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. ***See Figure 4-1.***

- The rear gang assemblies can be adjusted to the right or left several inches. The gang bar adjustment bracket, (Landoll P/N 187631) is 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.

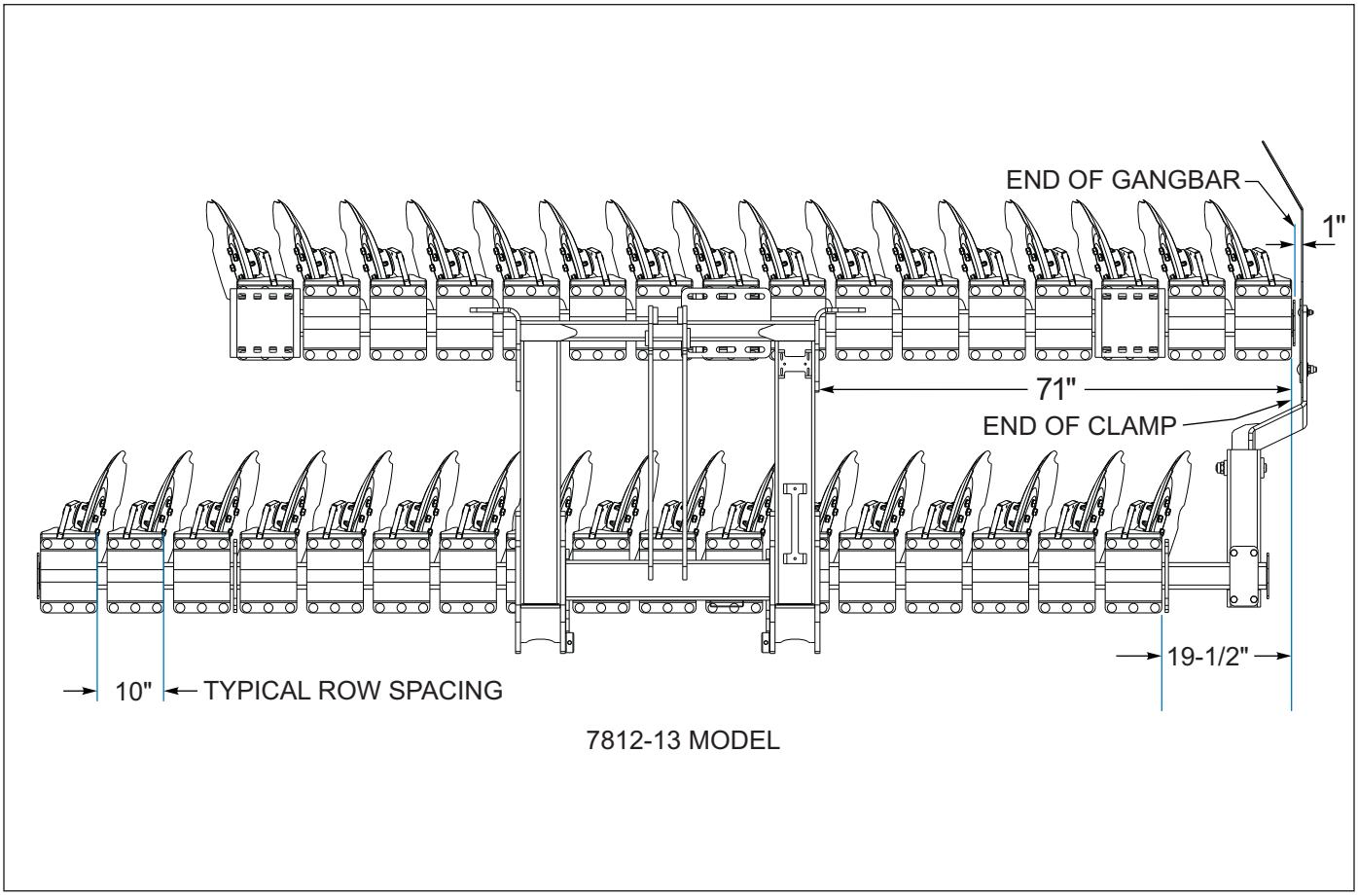


Figure 4-1: Lateral Adjustment of Gang Assemblies

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 4-2.***

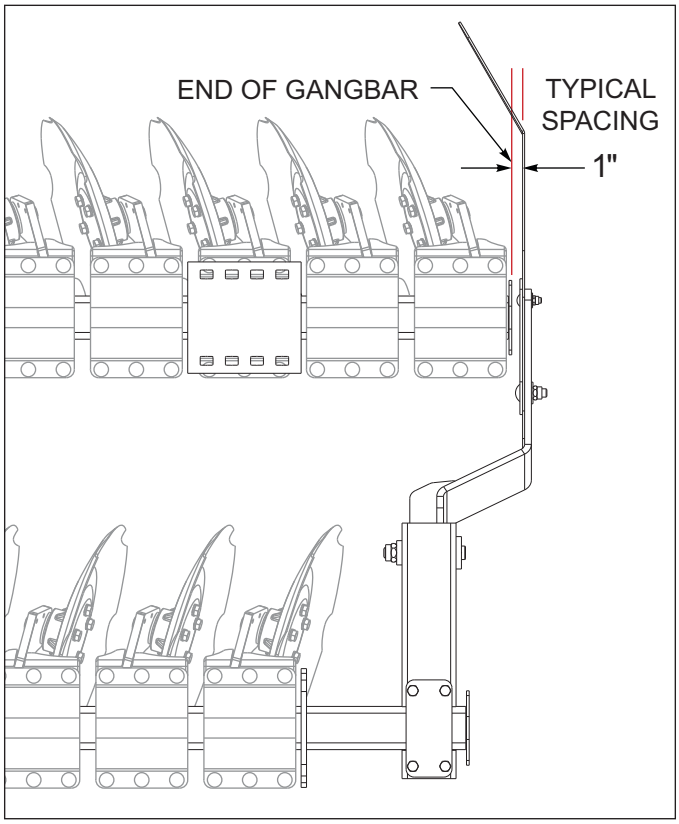


Figure 4-2: Adjusting the Blade Leveler

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.

Field Operation, 3-PT Hitch

1. The tractor must hold the 7812 HSL Front Gang from going too deep. The Top Link of the 3-PT Hitch controls the depth of the Rear Gang relative to the Front Gang.
2. Lower the 7812 HSL to the ground and pull it a few feet at the approximate desired depth.
3. Check for front-to-rear operating depth. Adjusting the 3-PT Hitch Top Link Mounting Point until the front and rear operating depths are similar and the 7812-13 tracks straight.
   a. Set disc depth by adjusting the max depth stop on the 3-Point Control in the tractor.
   b. Lock Locknut on Ratchet Top Link to secure it to the adjusted length.
   c. Tighten all hardware to the recommended torques. ***See “General Torque Specifications (rev. 4/97),” on page 2-2.***
4. Always lift the HSL completely out of the ground before turning to prevent disc damage or damage to their respective mounting brackets.
5. Reduce speed at field ends, raise the HSL out of the ground.
6. After a few hours of initial operation, check all hardware for tightness. Tighten any loose hardware.

Operating the HSL with GPS

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

The 7812 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 HSL with the assistance of GPS guidance, set the swath width per the table.

GPS Guidance			
Model	**Working Width**	**GPS Swath (When Turning Right)**	**GPS Swath (When Turning Left)**
7812-13	150"	144" (150 MAX)	144" (150 MAX)

- 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 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 in the rotation.

Replacing the Disc Hub Bearing

1. The replacement hub and bearing assembly is available as a pre-assembled assembly (Landoll P/N 185742). Should you choose, the wear parts are also available in a kit to re-build the disc hub. Landoll Kit 210880 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 Company, LLC., 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 Toplock Nut will cause premature bearing failure. Over torquing can also lead to premature bearing failure.

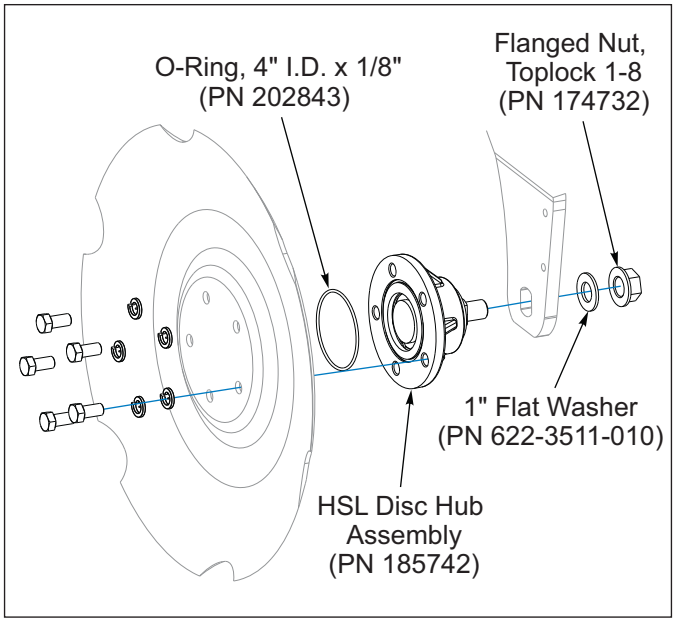


Figure 4-3: Disc Hub Bearing

Lubrication Maintenance

The 7812 HSL features a maintenance free double tapered roller bearing in each disc hub (Landoll P/N 185742). The maintenance free double tapered bearing is protected by a life time lubricated five lip seal (Landoll P/N 185757) on the hub's spindle side. ***See Figure 4-1.*** 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 disc. Should it become necessary for a disc hub bearing to be replaced there are two options available.

1. A complete hub assembly (Landoll P/N 210880), ready to install.
2. A rebuild kit (Landoll P/N 219945) with all required components.
   - The rebuild kit comes with instructions (P/N 219946)
   - Installation of the HSL hub rebuild kit requires a die (P/N 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 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. The ***Lubrication Table*** below specifies the number and the period of lubrication points on the 7812 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.

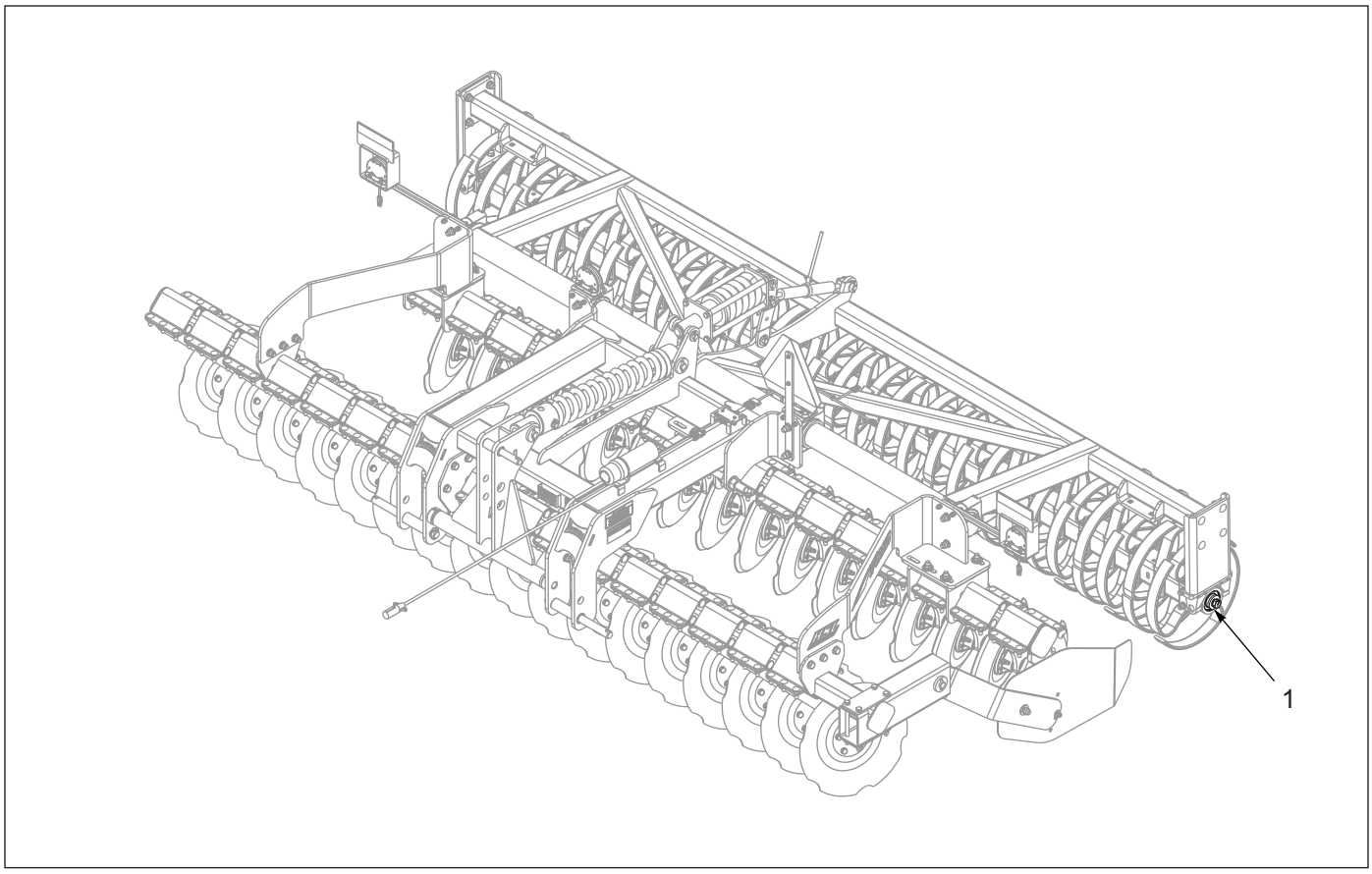


Figure 4-1: Lubrication Schedule

Lubrication Table			
ITEM	**DESCRIPTION**	**NO. OF LUBE POINTS**	**INTERVAL (Hours Unless Stated)**
1	Reel Bearings	2 per Reel Section	10

Storage

1. The service life of the 7812 HSL will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
   a. Completely clean the unit.
   b. Inspect the machine for worn or defective parts. Replace as needed.
   c. Repaint all areas where the original paint is worn off.
   d. Lubricate each point of the machine as stated in ***"Lubrication Maintenance," on page 4-5*.**
2. Store the unit in a shed or under a tarpaulin to protect it from the weather. The discs should rest on boards, or some other object, to keep them out of the soil.

Troubleshooting Guide

The Troubleshooting Guide, shown below, is included to help you quickly locate problems that can occur when using your 7812 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. Operating speed to slow.	Shallow up the working depth. • Reduce tillage depth. • Increase ground speed.
	Excessive amount of dirt collected on the discs.	Field conditions too damp.
	Foreign object caught between the bland 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.
	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 (shorten) Top Link of 3-PT Hitch.
Disc tracking to the right behind tractor.	Front gangs too deep relative to the rear.	Adjust (lengthen) Top Link of 3-PT Hitch.
Leaving a valley on the left rear corner.	Leveling board too high; dirt flowing beneath it.	• Lower leveling board. • Make lower extremity of the leveling board parallel with the ground.
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.
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.
	Excessive down pressure on rear reels/rollers.	Decrease rear real down pressure by shortening Ratchet Jack Linkage.
Uneven operating depth	Lower Links of 3-PT Hitch are uneven.	Adjust the lower 3-PT Hitch links to be the same height.

Frame Assembly

Frame Assembly

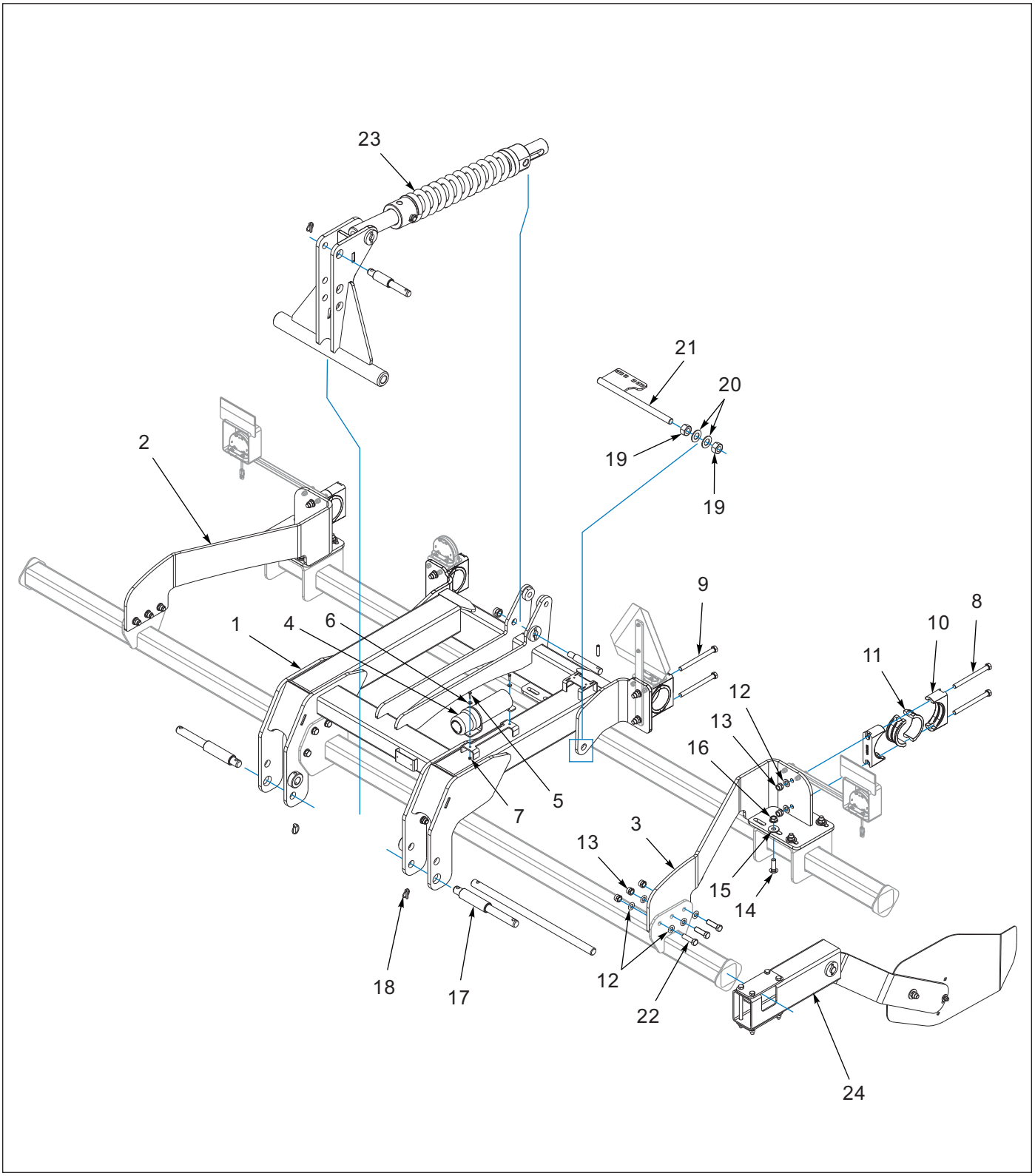


Figure 6-1: Frame Assembly

Frame Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
1	221081	FRAME, CENTER WLDMT	1
2	221086	BRACKET-GANG MOUNT, RH, WLDMT	1
3	221087	BRACKET-GANG MOUNT, LH, WLDMT	1
4	142753	MANUAL HOLDER	1
5	1-654-010047-06	SCREW, HX CP 1/4-20UNCx1 GR5	2
6	1-861-010032-07	WASHER,FLAT 1/4 ZP	2
7	1-512-010005-01	NUT,HEX,SLFLKG GRB 1/4-20	2
8	1-654-010061-22	SCREW,HEX CAP,3/4-10UNCX8-1/2	6
9	1-654-010061-23	SCREW,HEX CAP 3/4-10UNCX9 GR5	2
10	188038	BRG HALF, 4-1/2 INSERT	8
11	2P793	BRG INSERT, 4 1/2 INSERT	8
12	1-861-010032-20	WASHER, FLAT,3/4 N ZP/CD	36
13	1-512-010005-15	NUT,HEX,SLFLKG GRB 3/4-10	23
14	3/4-10X2-1/2CB	SCREW,RDH SQNK 3/4-10X2-1/2	13
15	1-861-010032-21	WASHER, FLAT 3/4 W ZP/CD	13
16	103841	NUT,FLG,LNK,SERRATED 3/4-10UNC	12
17	191656	PIN HITCH CAT II/III/IV-N	2
18	2-557-010417	PIN, LYNCH CAT III	3
19	1-512-010007-16	NUT,HEX 1-1/4-7 GR2 ZP	2
20	116100	WASHER 1-1/4 NAR FL ZP/CD	4
21	187631	BRACKET-GANG ADJUSTMENT WLDMT	1
22	1-654-010061-07	SCREW,HX CP 3/4-10UNCX2-1/2G5	14
23	- - - - -	7812 THREE POINT LIFT **(SEE PAGE 6-3)**	1
24	- - - - -	LEVELER BLADE ASSEMBLY **(SEE PAGE 6-4)**	1

3-PT Lift

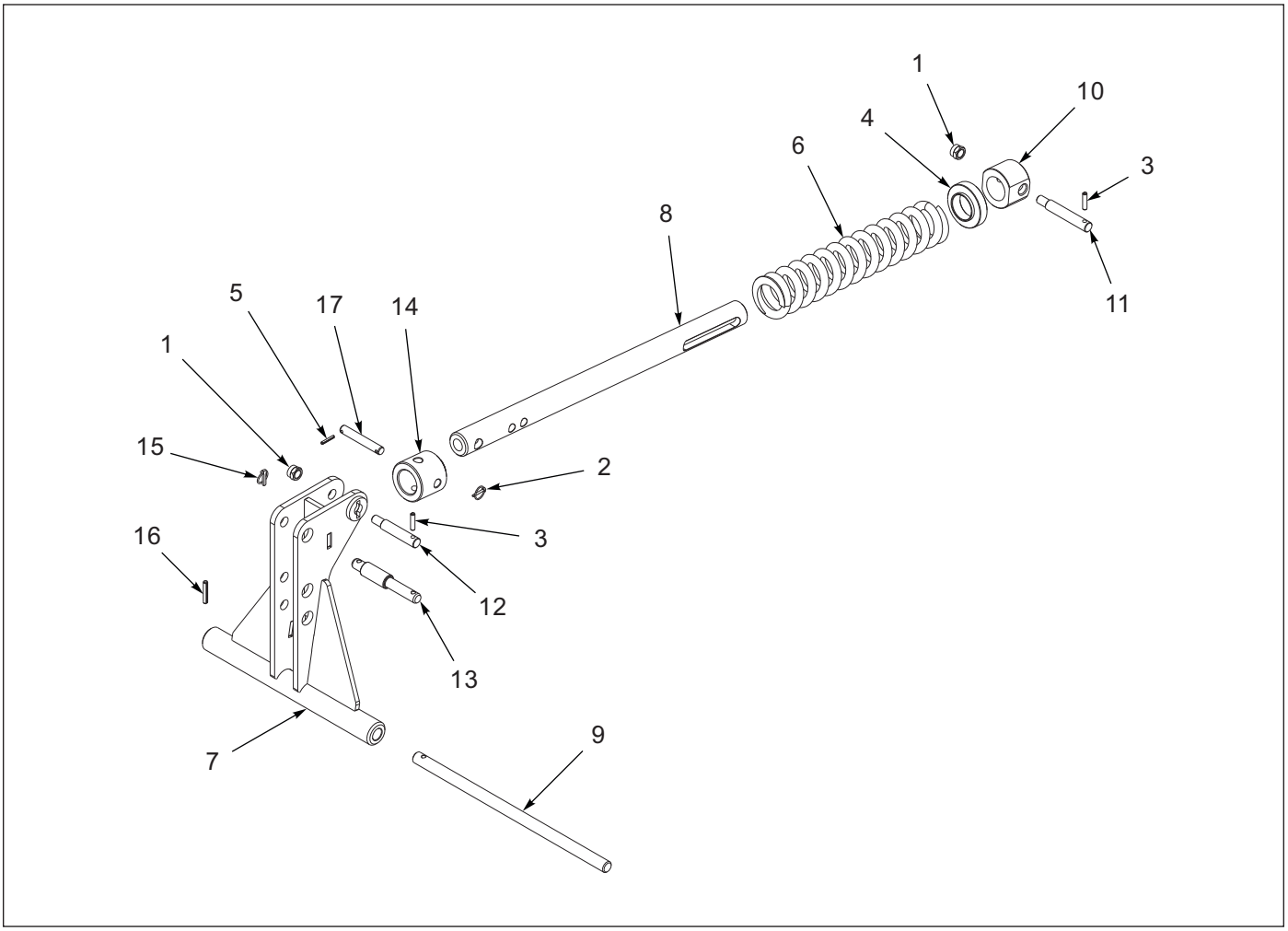


Figure 6-2: 3-PT Lift

3-PT Lift

ITEM	PART NUMBER	DESCRIPTION	QTY
1	1-512-010005-19	NUT 1-8 HEX SLF-LOCKING GRB	2
2	1-557-010327	PIN LYNCH 1/4X1-1/4	1
3	141251	SPRING PIN,SLOTTED 1/2X2-1/4	2
4	144449	WASHER, SPRING ROD	1
5	147072	PIN, SPRING SLOTTED 5/16 X 2	1
6	156383	SPRING, COMPRESSION	1
7	187605	LINK-TOP PIVOT SUPPORT	1
8	221426	LINK - TOP	1
9	187671	PIN - TOP LINK SUPPORT	1
10	187672	BUSHING, GLIDE LINK	1
11	187696	PIN, 1-1/4 X 6, STEP	1
12	187706	PIN - 1-1/4 X 4-7/8, STEP	1
13	187708	PIN-TOP LINK, CAT III/IV	1
14	188843	BUSHING-SPRING STOP	1
15	2-557-010417	PIN LYNCH	1
16	5D979	ROLL PIN 1/2 X 3	1
17	6J580	PIN	1

Blade Leveler Assembly

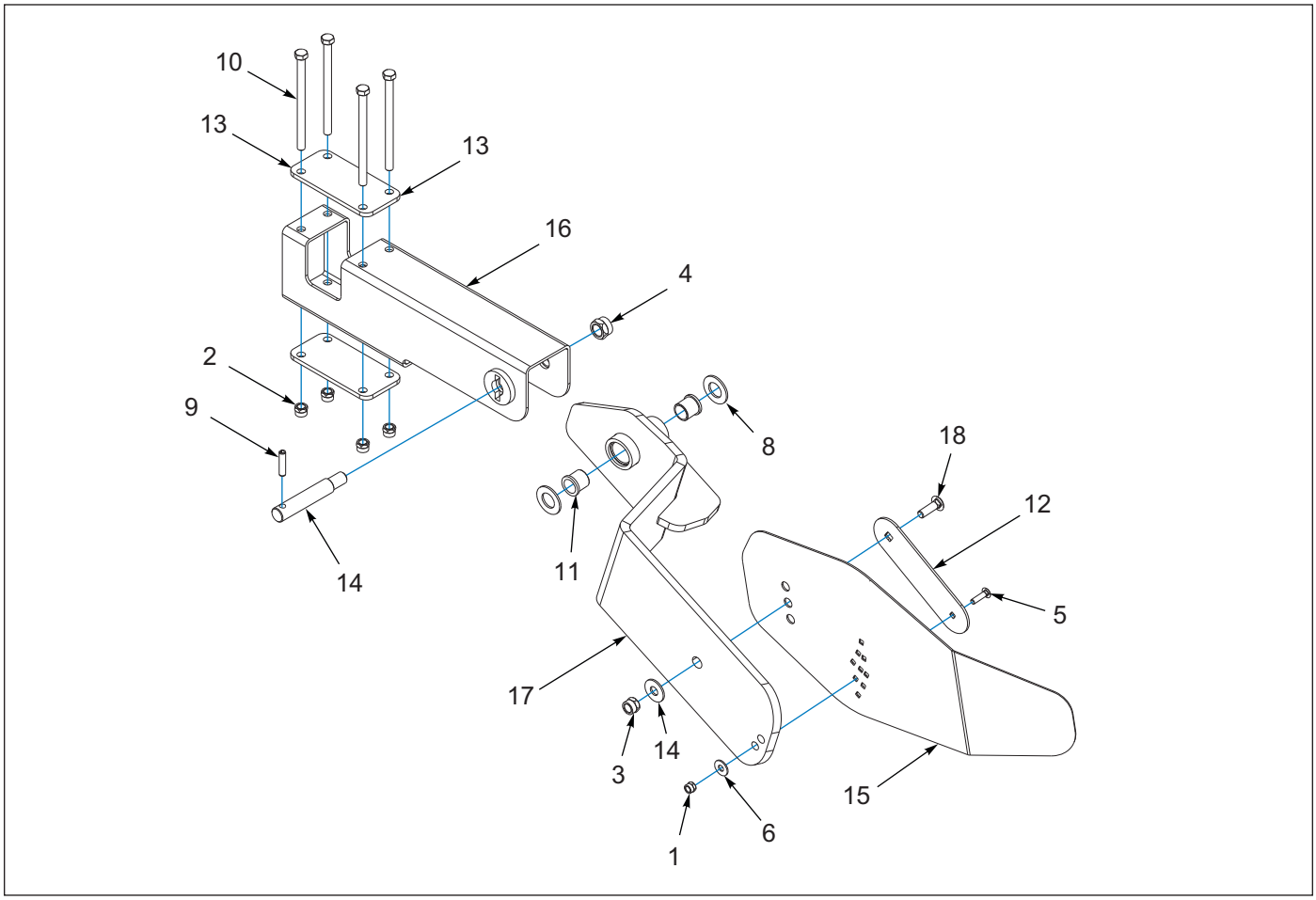


Figure 6-3: Blade Leveler Assembly

Blade Leveler Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	1-512-010005-09	NUT, HEX SLFLKG, 1/2-13 UNC, GRB	1
2	1-512-010005-13	NUT, HEX SLFLKG, 5/8-11 UNC, GRB	4
3	1-512-010005-15	NUT, HEX SLFLKG, 3/4-10 UNC, GRB	1
4	1-512-010005-19	NUT, HEX SLFLKG, 1-8 UNC, GRB	1
5	1-654-010070-05	SCREW, RDH SQ NK, 1/2-13 X 2	1
6	1-861-010032-15	WASHER, FLAT, ZP/CD, 1/2W	1
7	1-861-010032-21	WASHER, FLAT, ZP/CD, 3/4W	1
8	116100	WASHER, FLAT, ZP/CD, 1-1/4N	2
9	141251	PIN, SPRING SLOTTED, 1/2 X 2-1/4	1
10	171892	SCREW, HEX CAP, 5/8-11 UNC X 9 GR5	4
11	184413	BEARING, FLANGE 1, 1/4	2
12	192594	PLATE, BACKER	1
13	193699	PLATE, STRAP	2
14	193730	PIN, SHOULDER 1-1/4 X 5	1
15	193757	BLADE, LEVELER	1
16	193758	MOUNT, BLADE LEVELER WELDMENT	1
17	193763	ARM-LEVELER MOUNT, WELDMENT	1
18	3/4-10X2-1/2CB	SCREW, RDH SQ NK, 3/4-10 X 1/2	1

Front Gang Assembly

Front Gang Assembly

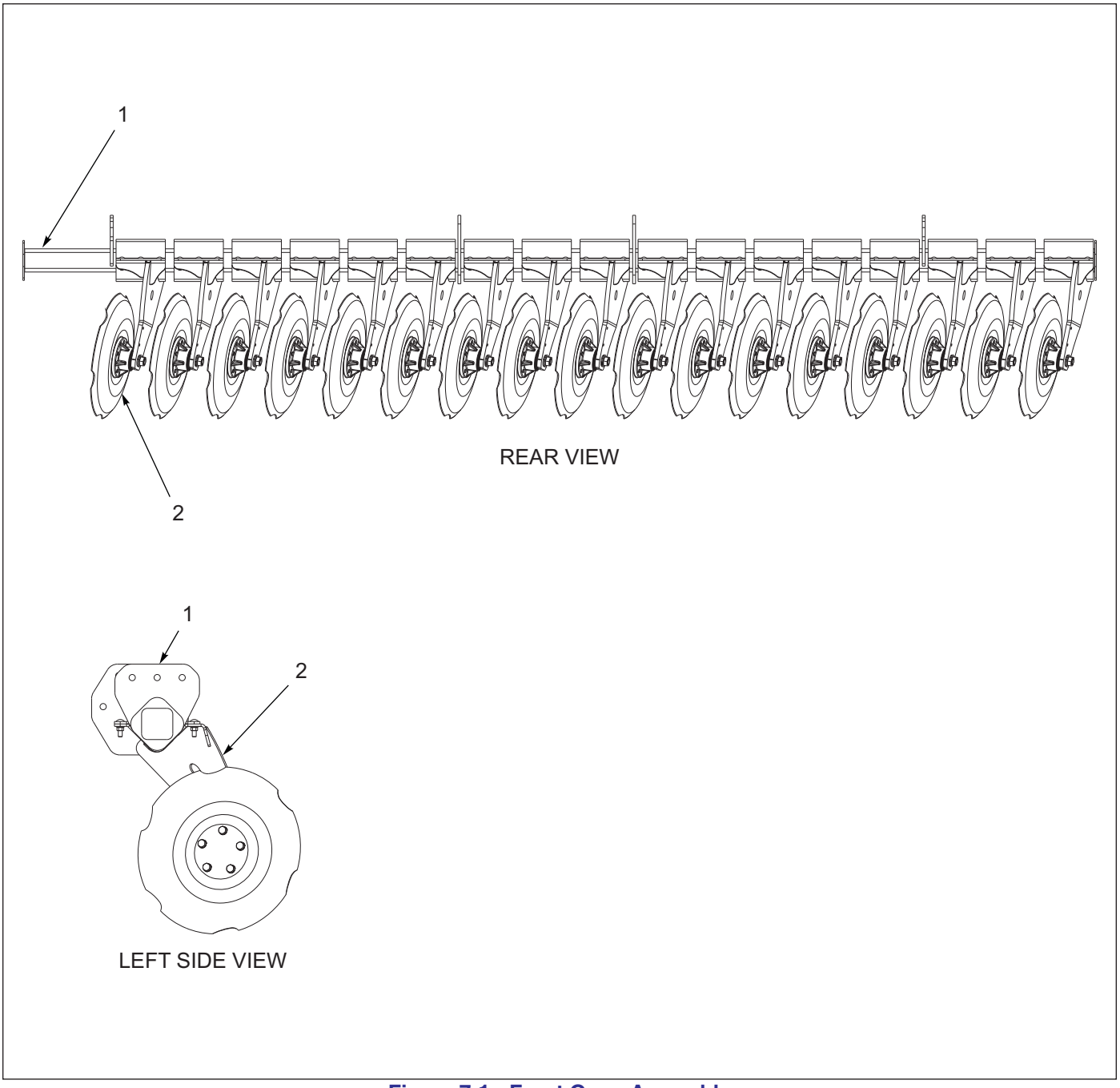


Figure 7-1: Front Gang Assembly

Front Gang Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
	220787	GANG ASM 7811-13, HYBRD NOTCH	1
1	220799	GANGBAR-7811-13,FRONT, WLDMT	1
2	221909	DISC-LH, HYBRD,17-7,NOTCHD ASM	17

Hybrid Disc Assembly (LH), Notched

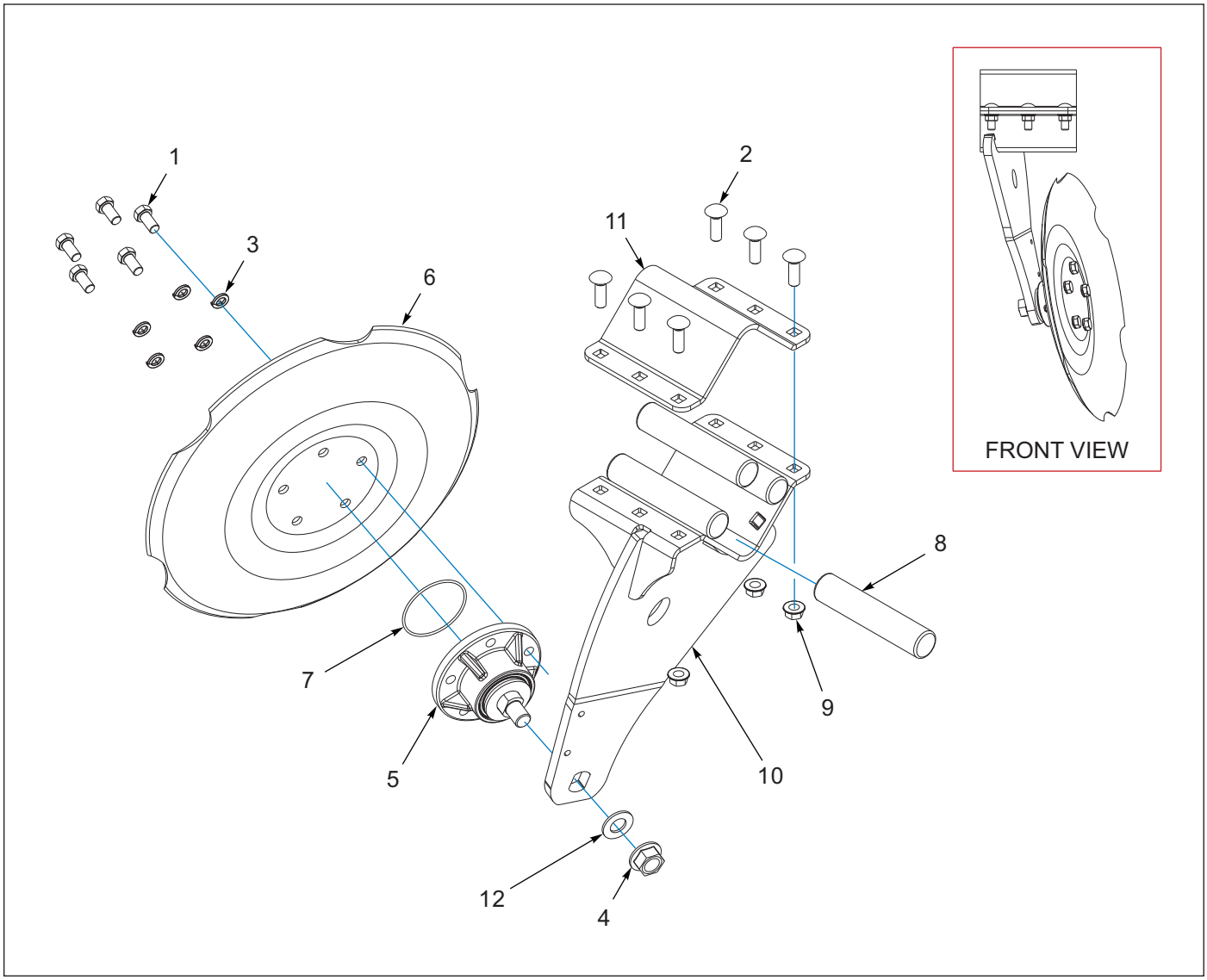


Figure 7-2: Hybrid Disc Assembly (LH), Notched

Hybrid Disc Assembly (LH), Notched

ITEM	PART NUMBER	DESCRIPTION	QTY
	221909	DISC-LH, HYBRD,17-7,NOTCHD ASM	1
1	1-654-010059-02	SCREW,HEX CAP,5/8-11X1-1/4GR5	5
2	1-654-010126-05	SCREW,RD HD,SQNCK,5/8-11X2 G5	6
3	1-861-010034-15	WASHER,LKG,HLCL SPR,5/8	5
4	174732	NUT, FLG HD, TOPLOCK, 1-8 UNC	1
5	185742	HUB ASSY HSL DISC **(SEE PAGE 7-3)**	1
6	186561	DISC BLADE,LH 22X1/4 DIR NOTCH	1
7	202843	O-RING, 4" ID X 1/8" BUNA	1
8	203525	SPRING-TORSION, RUBBER, 1-3/4	4
9	218739	NUT,HD FLNG HEX,5/8-11 UNC,GR5	6
10	221062	SHANK-HYBRID, LH, 17-7,WLDMT	1
11	221066	CAP-SHANK MOUNT	1
12	622-3511-010	WASHER, FLAT 1" MIL-CARB SAE	1

Disc Hub Assembly

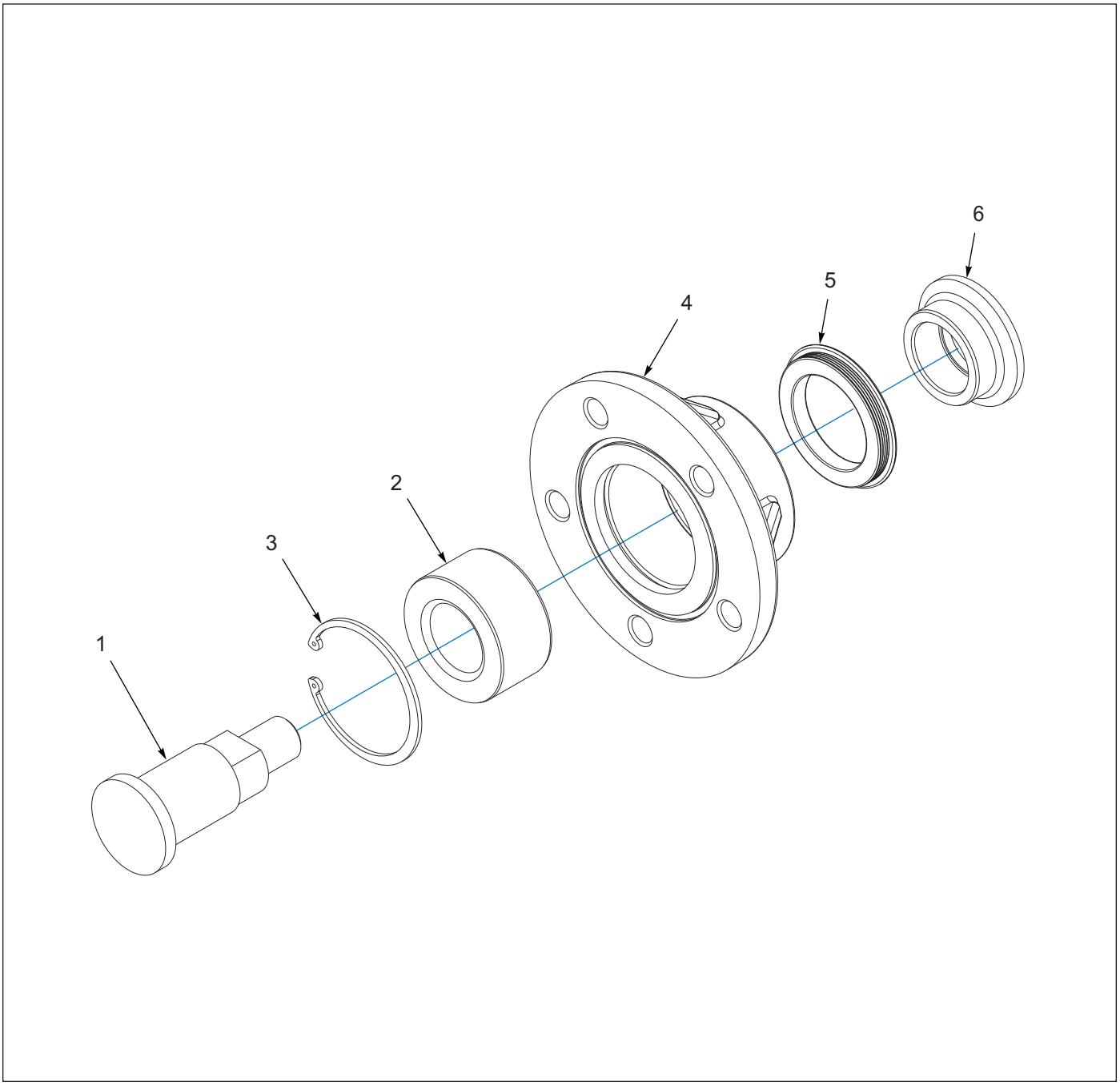


Figure 7-3: Disc Hub Assembly

Disc Hub Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
	185742	HUB ASSY HSL DISC	1
1	174523	BOLT-SPINDLE, DISC, HSL	1
2	174526	BEARING, DOUBLE TAPER RLLR	1
3	174532	INTERNAL SNAP RING	1
4	185740	HUB-DISC, HSL CAST	1
5	185757	SEAL, MAINT FREE HUB HSL	1
6	188757	BUSHING-SPINDLE MOUNT	1

Table provided for general use.

NOTES:

Rear Gang Assembly

Rear Gang Assembly

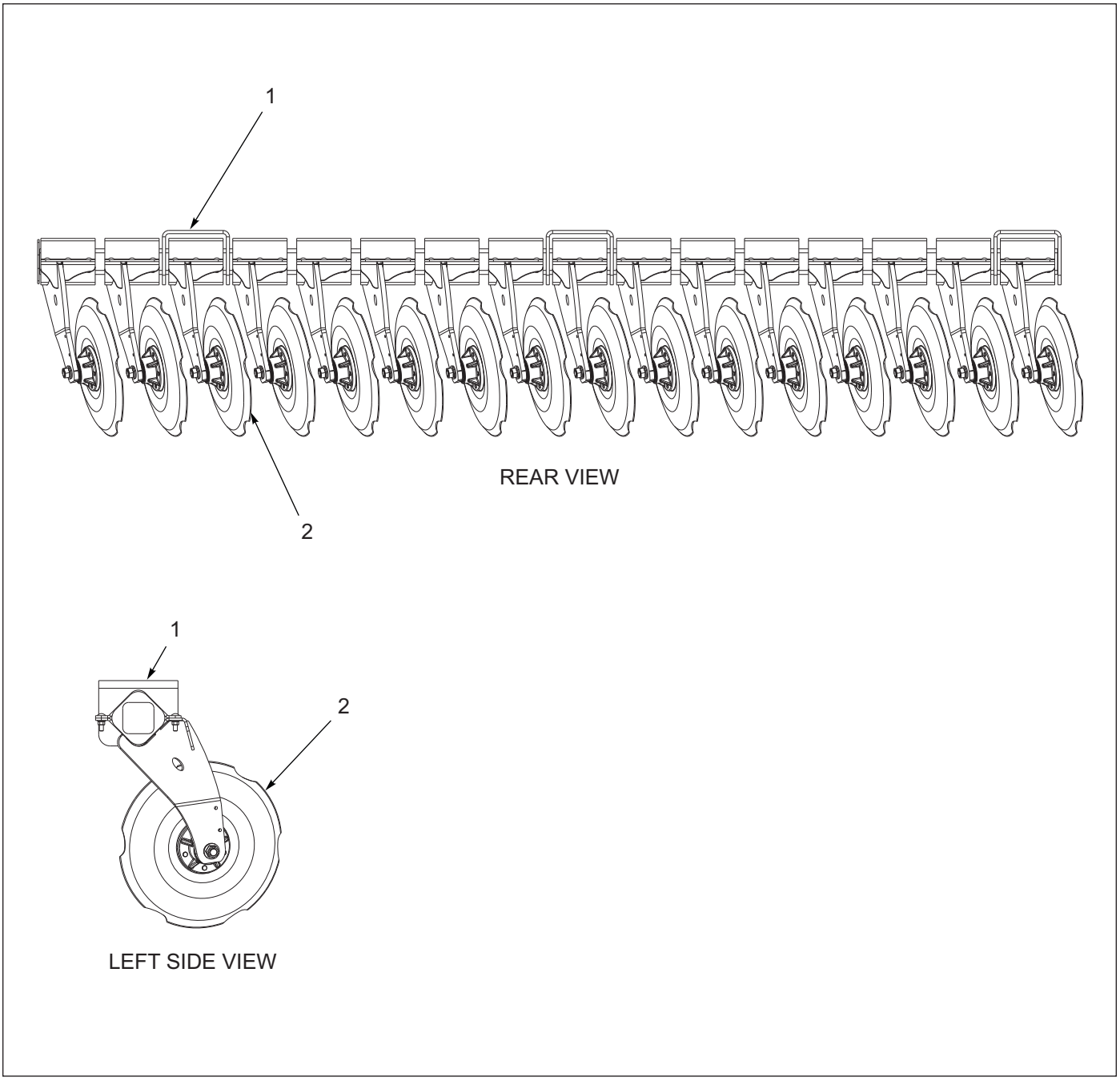


Figure 8-1: Rear Gang Assembly

Rear Gang Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
	220791	GANG ASM 7811-13, HYBRD NOTCH	1
1	220800	GANGBAR-7811-13,REAR,WLDMT	1
2	221910	DISC-RH, HYBRD,17-7,NOTCHD ASM **(SEE PAGE 8-2)**	16

Hybrid Disc Assembly (RH), Notched

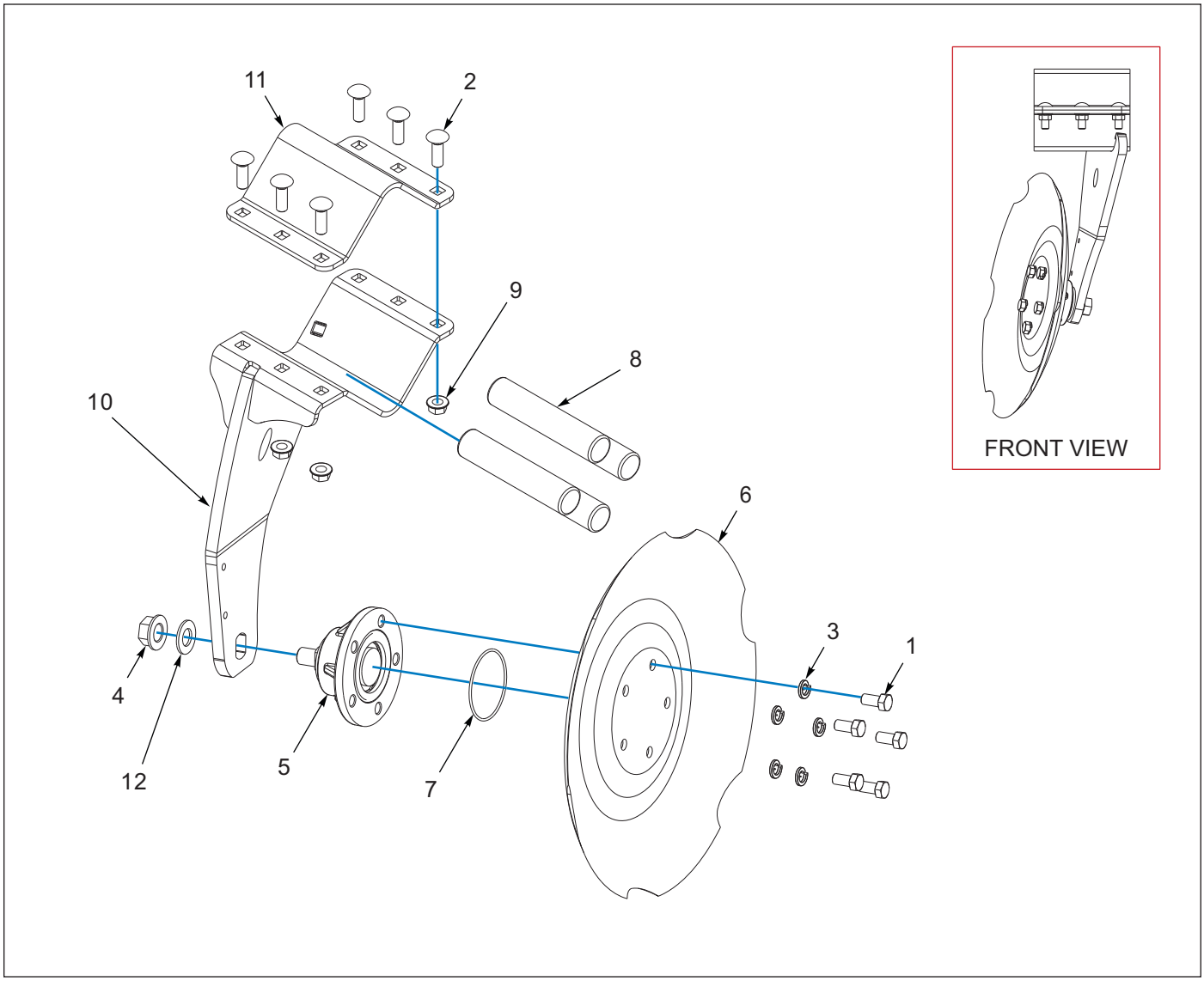


Figure 8-2: Hybrid Disc Assembly (RH), Notched

Hybrid Disc Assembly (RH), Notched

ITEM	PART NUMBER	DESCRIPTION	QTY
	221910	DISC-RH, HYBRD,17-7,NOTCHD ASM	1
1	1-654-010059-02	SCREW,HEX CAP,5/8-11X1-1/4GR5	5
2	1-654-010126-05	SCREW,RD HD,SQNCK,5/8-11X2 G5	6
3	1-861-010034-15	WASHER,LKG,HLCL SPR,5/8	5
4	174732	NUT, FLG HD, TOPLOCK, 1-8 UNC	1
5	185742	HUB ASSY HSL DISC **(SEE PAGE 7-3)**	1
6	186562	DISC BLADE,RH 22X1/4 DIR NOTCH	1
7	202843	O-RING, 4" ID X 1/8" BUNA	1
8	203525	SPRING-TORSION, RUBBER, 1-3/4	4
9	218739	NUT,HD FLNG HEX,5/8-11 UNC,GR5	6
10	221063	SHANK-HYBRID, RH, 17-7,WLDMT	1
11	221066	CAP-SHANK MOUNT	1
12	622-3511-010	WASHER, FLAT 1" MIL-CARB SAE	1

Chapter 9

TABLE OF CONTENTS

Electrical

Wiring Diagram

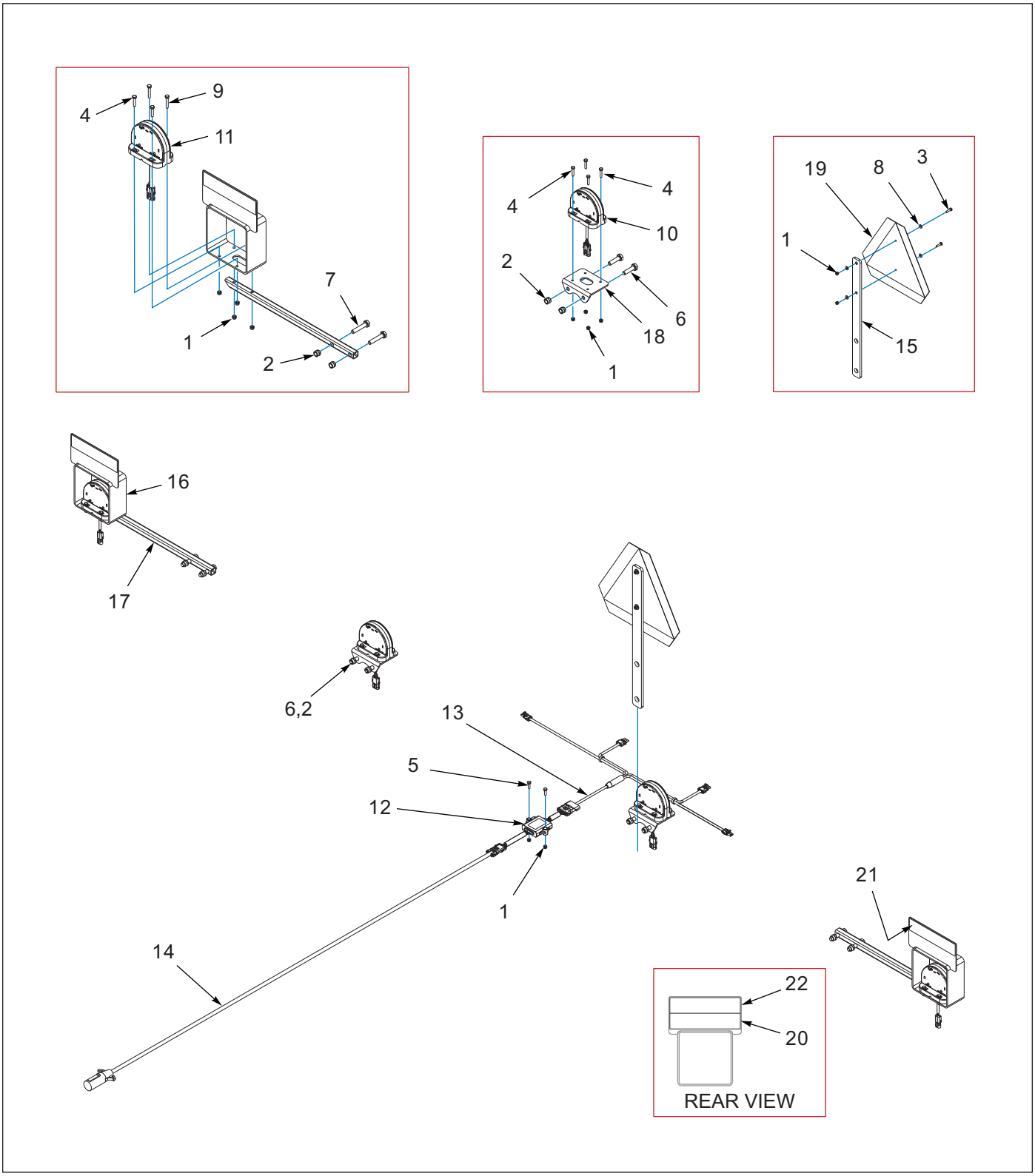


Figure 9-1: Wiring Diagram (1 of 2)

7-PIN CONN.	4-PIN TOWER	CIRCUIT	WIRE COLOR
1	D	GROUND	GROUND
2	–	WORK LAMPS	BLACK
3	B	LEFT FLASHING & TURN	YELLOW
4	–	STOP LAMPS	RED
5	A	RIGHT FLASHING & TURN	GREEN
6	–	TAIL LAMPS	BROWN
7	C	SWITCHED POWER (12 V)	BLUE

MAIN WARNING LIGHT HARNESS - WIRING CHART

	1	2	3	4	5
	2-PIN TOWER	3-PIN TOWER	6-PIN SHROUD	3-PIN TOWER	2-PIN TOWER
BLACK LEFT TURN			A	C	
WHITE GROUND	A	A	B	A	A
BROWN TAIL LIGHT		B	C	B	
YELLOW LEFT TURN			D		B
GREEN RIGHT TURN	B		E		
RED RIGHT TURN			F		

REAR WARNING LIGHT HARNESS - WIRING CHART

Figure 9-2: Wiring Diagram (2 of 2)

Wiring Diagram

ITEM	PART NUMBER	DESCRIPTION	QTY
	221423	KIT-LIGHTS, WARNING 7811-13	1
1	1-512-010005-01	NUT,HEX,SLFLKG GRB 1/4-20	20
2	1-512-010005-09	NUT,HEX,SLFLKG, 1/2-13 GRB	8
3	1-654-010047-06	SCREW,HX CP 1/4-20UNCX1 GR5	2
4	1-654-010047-07	SCREW,HX CP 1/4-20UNCX1-1/4G5	12
5	1-654-010047-08	SCREW HX CP,1/4-20UNCX1-1/2G5	2
6	1-654-010055-03	SCREW,HEX CAP,1/2-13UNCX1-1/2	4
7	1-654-010055-07	SCREW HX CP 1/2-13UNCX2-1/2	4
8	1-861-010032-07	WASHER,FLAT 1/4 ZP	4
9	111190	SCREW HX CP 1/4-20UNCX2-1/4G5	4
10	174435	LAMP, AG RED SINGLE LED	2
11	174436	LAMP, AG AMBER SINGLE LED	2
12	174437	MODULE, AG FLASHER CONTROL	1
13	175151	HARNESS, LED WARNING LIGHTS	1
14	178515	HARNESS, 7 PIN/4 PIN WP, 15'	1
15	179149	BRACKET, SMV 2410F	1
16	188084	BRACKET-LIGHT MOUNT, REFLECTOR	2
17	221078	TUBE, LAMP MOUNT	2
18	221079	BRACKET-LIGHT MOUNT	2
19	70260977	SMV EMBLEM	1
20	528933	REFLECTOR - RED	2
21	528934	REFLECTOR - YELLOW	2
22	528938	STRIPE, ORANGE	2

Table provided for general use.

NOTES:

Finishing Features

Spring Reel (4 Leaf)

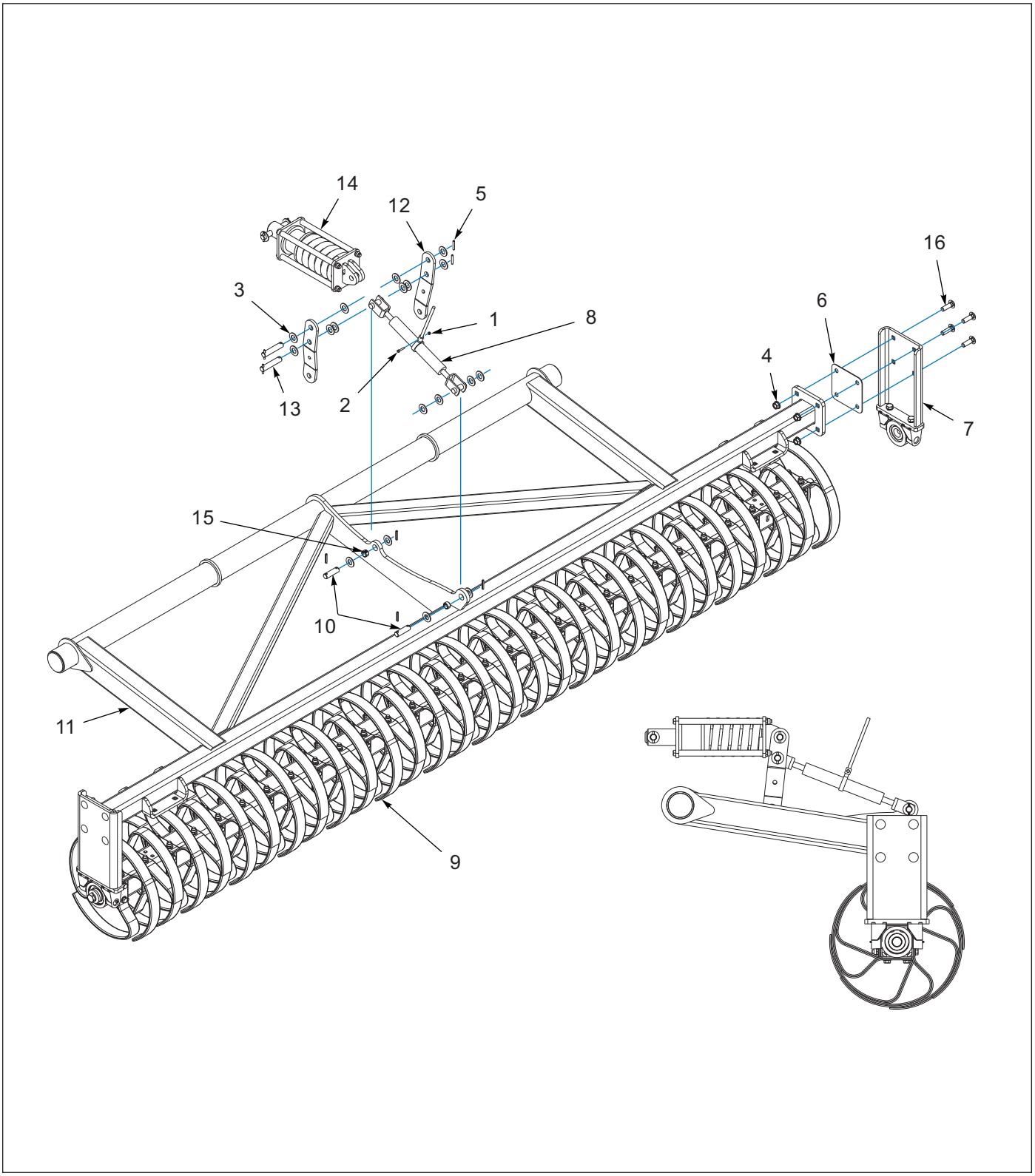


Figure 10-1: Spring Reel (4 Leaf)

Spring Reel (4 Leaf)

ITEM	PART NUMBER	DESCRIPTION	QTY
	221093	REEL-SPRING,4LEAF,7811-13,ASM	1
1	1-512-010005-01	NUT,HEX,SLFLKG GRB 1/4-20	1
2	1-654-010047-08	SCREW HX CP,1/4-20UNCX1-1/2G5	1
3	1-861-010032-24	WASHER FL 1IN NARROW ZP	20
4	103841	NUT,FLG,LNK,SERRATED 3/4-10UNC	8
5	147072	PIN, SPRING SLOTTED 5/16 X 2	8
6	187755	PLATE SHIM 11 GA	1
7	191759	MOUNT, SPRING-REEL, ASSY **(SEE PAGE 10-3)**	2
8	2-423-010040	JACK,RATCHET 8IN STROKE	1
9	207187	REEL ASSY SPRING 186"	1
10	209162	PIN, 1 X 3-5/16, H2	2
11	221094	ROCKSHAFT-REEL MNT, WLDMT 7811	1
12	221408	LINK-IDLER	2
13	221908	PIN, 1 X 4-7/8, H2	2
14	221911	LINK-SPRING, K4600, ASSY	1
15	3P079	SPRING BUSHING,1 X 1.25 X 0.75	2
16	3/4-10X2-1/2CB	SCREW,RDH SQNK 3/4-10X2-1/2	8

Spring Reel Mount Assembly

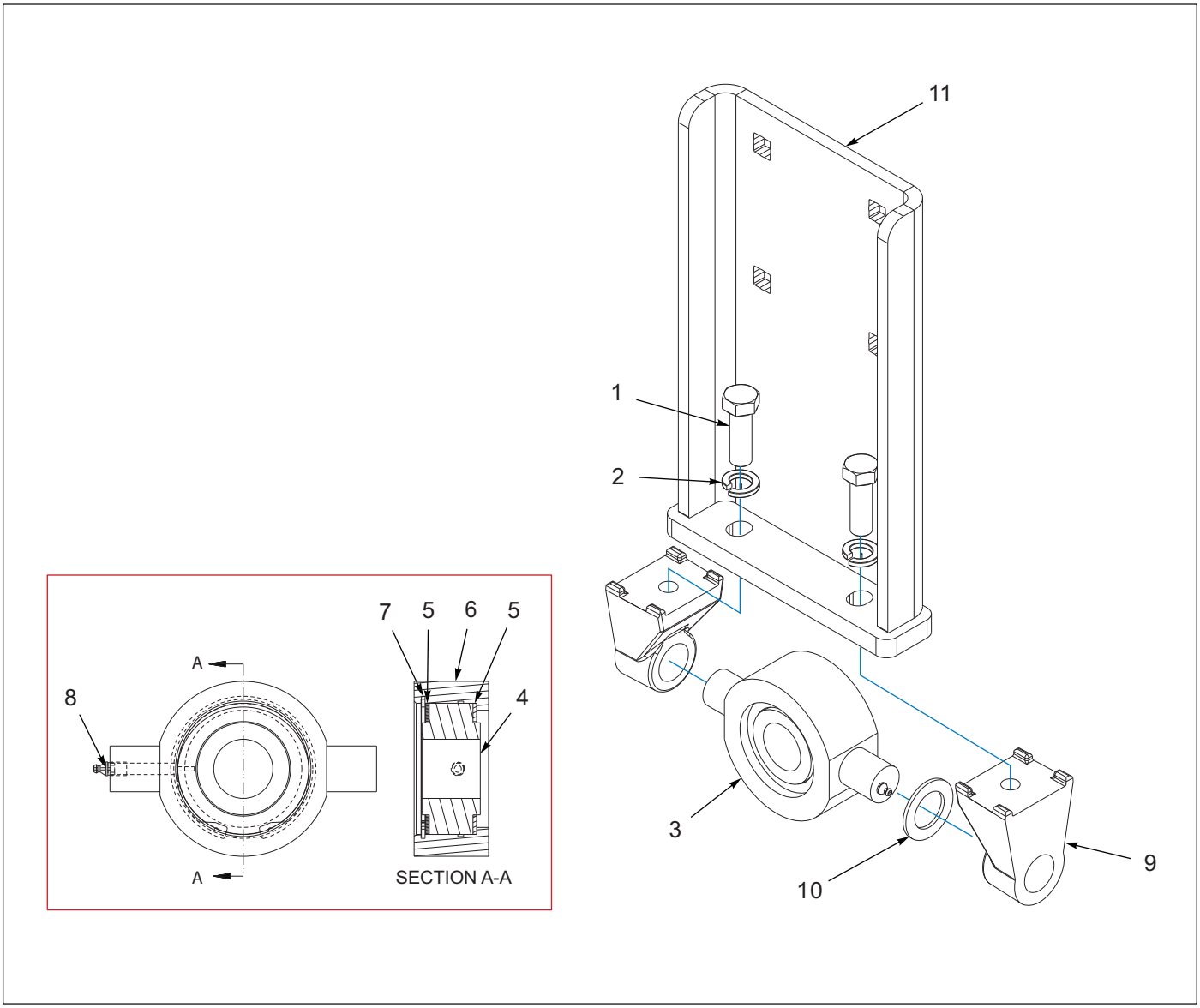


Figure 10-2: Spring Reel Mount Assembly

Spring Reel Mount Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
	191759	MOUNT, SPRING-REEL, ASSY	1
1	1-861-010034-17	WASHER,LKG,HLCL SPR,3/4	2
2	100941	SCREW,HEXCAP,3/4-10X2-1/4G8ZP	2
3	140477	BEARING, DISC 1.775 ID ASSY **(INCLUDES ITEMS 4 - 8)**	1
4	140464	BEARING, DISC 1.775 ID	1
5	140473	WASHER, BEARING	1
6	140475	CASTING, TRUNNION	1
7	140476	INTERNAL RETAINING RING	2
8	5000	ZERK FITTING 1/8NPT	1
9	140479	MOUNT, TRUNNION	2
10	140480	WASHER, TRUNNION	1
11	188825	BRACKET-REEL MOUNT, WLDMT	1

Table provided for general use.

NOTES:

Decals

Decals

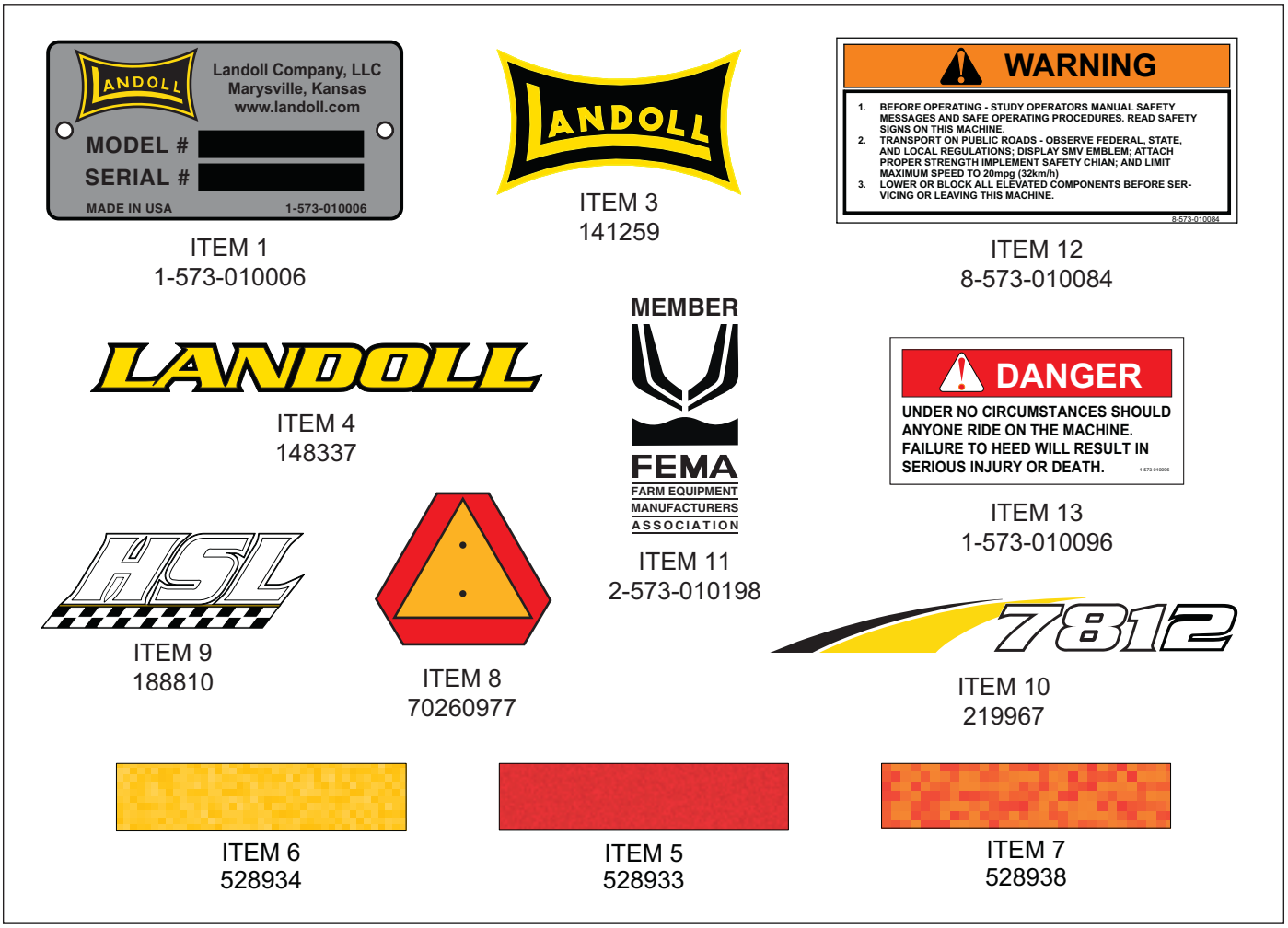


Figure 11-1: Decals

Decals

ITEM	PART NUMBER	DESCRIPTION	QTY
1	1-573-010006	PLACARD, NAME	1
2	156010	RIVET, BLIND .156X1/2 GRIP **(HARDWARE FOR ITEM 2)**	2
3	141259	DECAL, LANDOLL, YELLOW	2
4	148337	ATTACHMENT DECAL, LANDOLL	2
5	528933	REFLECTOR - RED	2
6	528934	REFLECTOR - YELLOW	2
7	528938	STRIPE, ORANGE	2
8	70260977	SMV EMBLEM	1
9	188810	DECAL, HSL	2
10	219967	DECAL-7812	2
11	2-573-010198	DECAL, MEMBER FEMA	1
12	8-573-010084	DECAL WARNING BEFORE OPERATG	1
13	1-573-010096	DECAL, DANGER NO RIDERS	1

Decal Placement

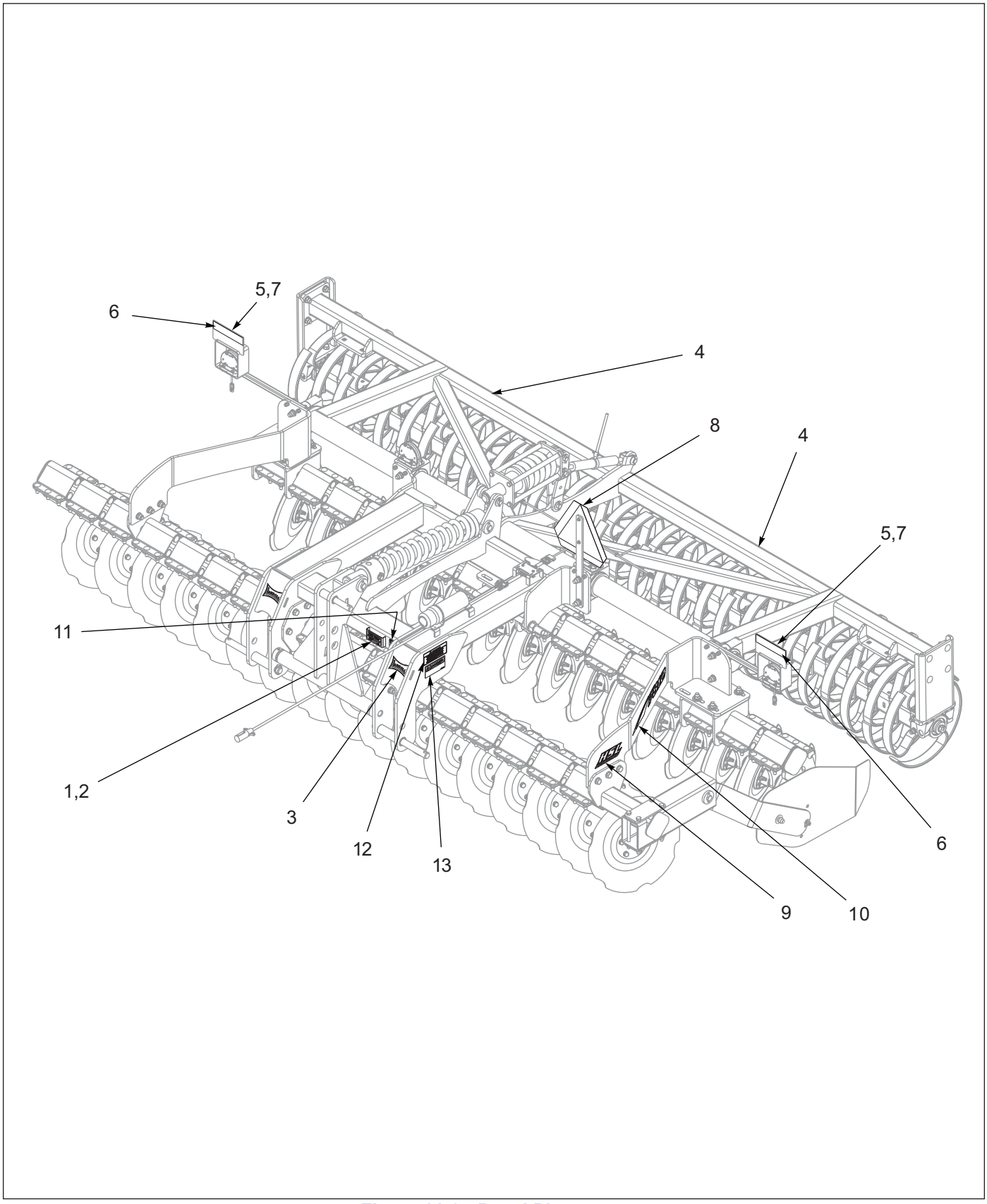


Figure 11-2: Decal Placement

Table provided for general use.

NOTES:

Chapter 12

Glossary

For clarity this glossary of industry standard abbreviations and their definitions are provided. For additional information, see instruction on the inside front cover or the last page of this manual.

A

ASM . . . . . .Assembly

B

BATT . . . . . .Battery
BHSC . . . . . .Button Head Socket Cap
BLK . . . . . Black

C

CB . . . . . .Carriage Bolt
CONN . . . . . Connector
CRG . . . . . Carriage
CTSK . . . . . Countersunk
CTWT . . . . . .Counterweight
CVR . . . . . .Cover
CYD . . . . . .Cylinder

D

DBL . . . . . .Double
DIA . . . . . Diameter

E

ENCLSD . . . . . Enclosed

F

FHCS . . . . . .Flanged Head Cap Screw
FHHCS . . . . . Flanged Hex Head Cap Screw
FL OR **FLG** . . . . . Flange
FLT . . . . . Flat

G

GA . . . . . Gauge

H

HHCS . . . . . .Hex Head Cap Screw
HCS . . . . . High Carbon Steel
HD . . . . . .Head
HLCL . . . . . .Helical
HCSKT . . . . . .Hex Socket
HSFC . . . . . .Hex Socket Flat Countersunk
HYD . . . . . Hydraulic

I

ID . . . . . Inside Diameter

L

LH . . . . . Lefthand
LKG OR **LOCK** . . . . . .Locking
LWR . . . . . Lower

M

MANF . . . . . Manifold
MNT . . . . . Mount

N

NRW . . . . . Narrow
- - - - - . . . . . .Not Serviced Separately

O

OD . . . . . Outside Diameter
OHG . . . . . .Overhead Guard
ORFS OR **ORS** . . . . . O-Ring Seal
ORP OR **ORB** . . . . . .O-Ring Boss

P

P-STEER . . . . . .Power Steering
PTFE . . . . . .Polytetrafluoroethylene (Teflon)

R

RH . . . . . Righthand
RND . . . . . Round

S

SER . . . . . Series
SHCS . . . . . Socket Head Cap Screw
SHLD . . . . . Shield
SKT . . . . . Socket
SLFLKG . . . . . Selflocking
SOC . . . . . Socket
SPDT . . . . . Single Pole Double Throw
SPR . . . . . Spring
SQ . . . . . Square
SRTD . . . . . Serrated
SSCR . . . . . Setscrew
SST . . . . . Stainless Steel
STD . . . . . Standard

U

UPR . . . . . Upper

W

WHL . . . . . Wheel
WLD OR **WLDMT** . . . . . Weldment

Chapter 13

Index

Numerics

Table provided for general use.

NOTES:

Instructions for Ordering Parts

**** Repair parts must be ordered through an Authorized Dealer ****

DEALER INSTRUCTIONS FOR ORDERING PARTS FROM LANDOLL PARTS DISTRIBUTION CENTER

Phone #: 800-423-4320 or 785-562-5381 **Fax #: 888-527-3909**

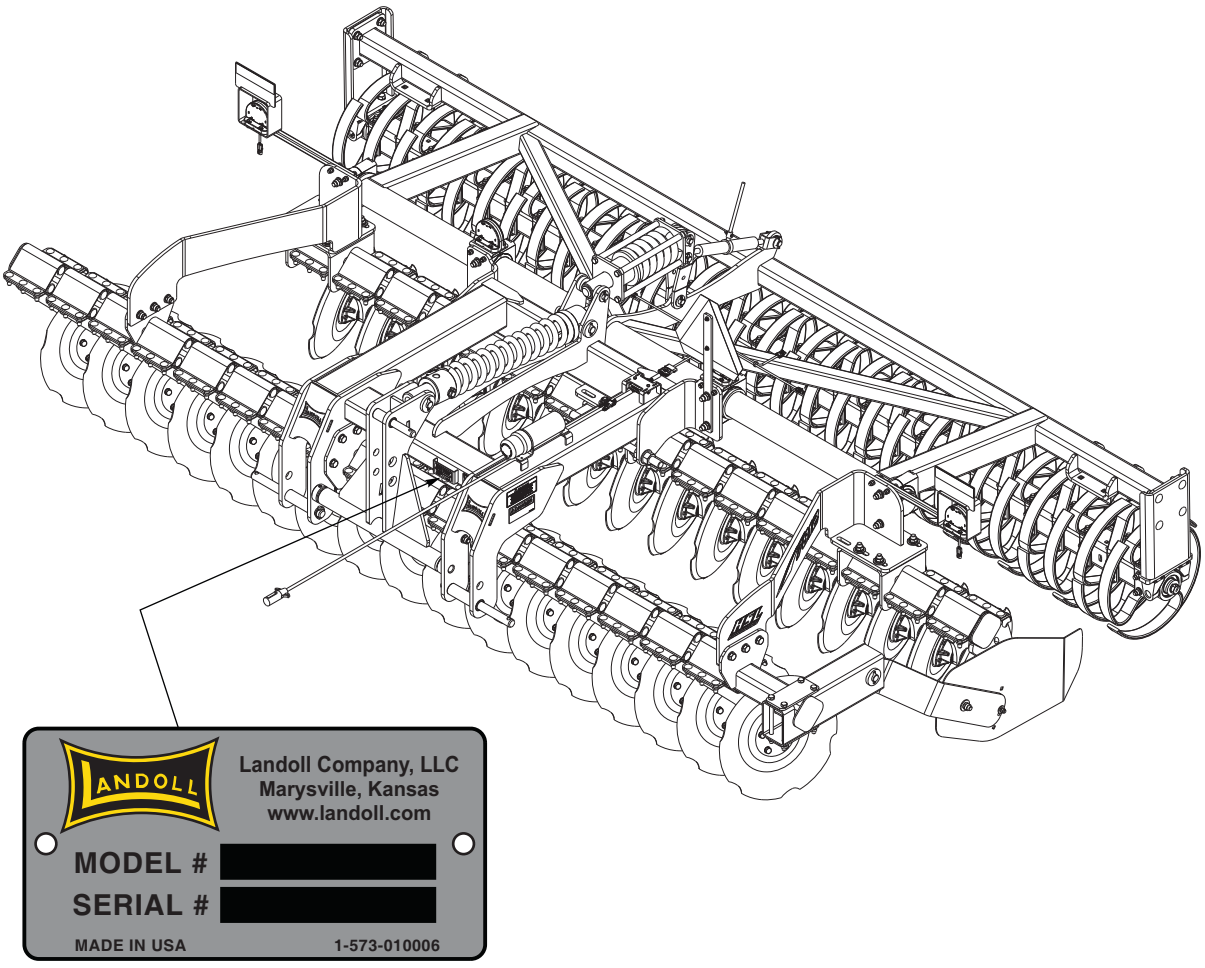
Order online: dealer.landoll.com

IDENTIFICATION PLATE

The identification plate, which list the model number and serial number is located on the front of the frame.

SERIAL NUMBER NOMENCLATURE

The serial number is located on the identification plate.



Identification Plate

Manuals for 7812 High School Landoll (HSL)

Manual Number	Manual Type
F-1127	Operator's and Parts Manual

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
06/2022	F-1127-0622	Initial Release

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

Model 7812
High Speed Landoll (HSL)
Operator's and Parts Manual

Re-Order Part Number F-1127

LANDOLL COMPANY, LLC
1900 North Street
Marysville, Kansas 66508
(785) 562-5381
800-428-5655 ~ WWW.LANDOLL.COM