Soil Builder
Coulter Chisel
Models: CDA53-1, 73-1 and HCDA73-1
Operator's Manual

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Chapter 1

Introduction and Safety Information

Introduction

The implement described in this manual has been designed with care and built by skilled workers using quality materials and processes. Proper assembly and maintenance will provide you with satisfactory use for seasons to come.

DANGER

Read this entire manual before attempting to assemble, adjust or operate this implement. Failure to comply with this warning can result in personal injury or death, damage to the implement or its components and inferior operation.

Description of Unit

The CD models are the original Soil Builders. A single, manually adjustable gang of coulters with 7 ½" spacing in the front of the machine starts the tillage process. Two ranks of chisel shanks are supported on a weighted frame that allow for 15" shank spacing. The shank and coulter spacing allow one coulter to lead each shank and have one coulter in between each shank for optimum soil breakout and residue flow. The CD series is available in 5 and 7 shank models. These machines fit very well with 100 to 150 HP tractors in most conditions.

Using this Manual

This manual will familiarize you with safety, assembly, operation, adjustment, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

- The information in this manual is current at time of printing. Some parts may have changed to assure top performance.
- Location reference: Right and Left designations in this manual are determined by facing the direction the implement will travel during field operation, unless otherwise stated.

Owner Assistance

If customer service or repairs are needed, contact your Brillion dealer. They have trained personnel, parts and service equipment specially designed for Brillion products. Your implement's parts should only be replaced with Brillion parts. If items covered in this manual are not understood, contact your local Brillion Dealer.

Warranty Registration

Brillion Farm Equipment, by Landoll, shall have no warranty obligation unless each product is registered within 10 days of retail purchase, using the Landoll Corporation Ag Products on-line registration process. Please refer to the Ag Products Policy and Procedures Manual, accessible at *www.landoll.com* for step by step instructions regarding product registration.

Enter your product information below for quick reference.

MODEL NUMBER

SERIAL NUMBER

DATE OF PURCHASE

Refer to the ID plate as shown. See Figure 1-1.

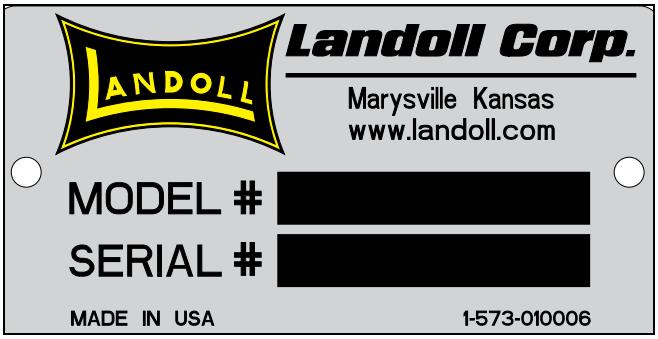


Figure 1-1: ID Plate

Safety

NOTE

Investigation has shown that nearly 1/3 of all farm accidents are caused by careless use of machinery. Insist that all people working with you or for you abide by all safety instructions.

Understanding Safety Statements

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

NOTICE

Special notice - read and thoroughly understand.

CAUTION

Proceed with caution. Failure to heed caution may cause injury to person or damage product.

WARNING

Proceed with caution. Failure to heed warning will cause injury to person or damage product.

DANGER

Proceed with extreme caution. Failure to heed notice will cause injury or death to person and/or damage product.

NOTE

You should read and understand the information contained in this manual and on the implement decals before you attempt to operate or maintain this equipment.

Examine safety decals and be sure you have the correct safety decals for the implement. See Figures 1-3 and 1-4.

Order replacement decals through your Brillion dealer.

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. Reduce speed if towed load is not equipped with brakes.

Avoid sudden stops or turns because the weight of the implement may cause the operator to lose control of the tractor. Use a tractor heavier than the implement.

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

- Do not stand between the tractor and implement when attaching or detaching implement unless both are blocked from moving.
- Block implement so it will not roll when unhitched from the tractor.

Maintenance Safety

- Block the implement so it will not roll when working on or under it to prevent injury.
- Do not make adjustments or lubricate the machine while it is in motion.
- Make sure all moving parts have stopped.
- Understand the procedure before doing the work. Use proper tools and equipment.

Protective Equipment

- Wear protective clothing & equipment appropriate for the job. Avoid loose fitting clothing.
- Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection, such as earmuffs or earplugs.

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 safety chain to help control drawn machinery should it separate from the tractor drawbar.

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 machines are pulled in tandem, a larger chain may be required. Chain capacity must be greater that 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. See Figure 1-2.

Replace chain if any links or end fittings are broken, stretched or damaged.

Do not use a safety chain for towing.

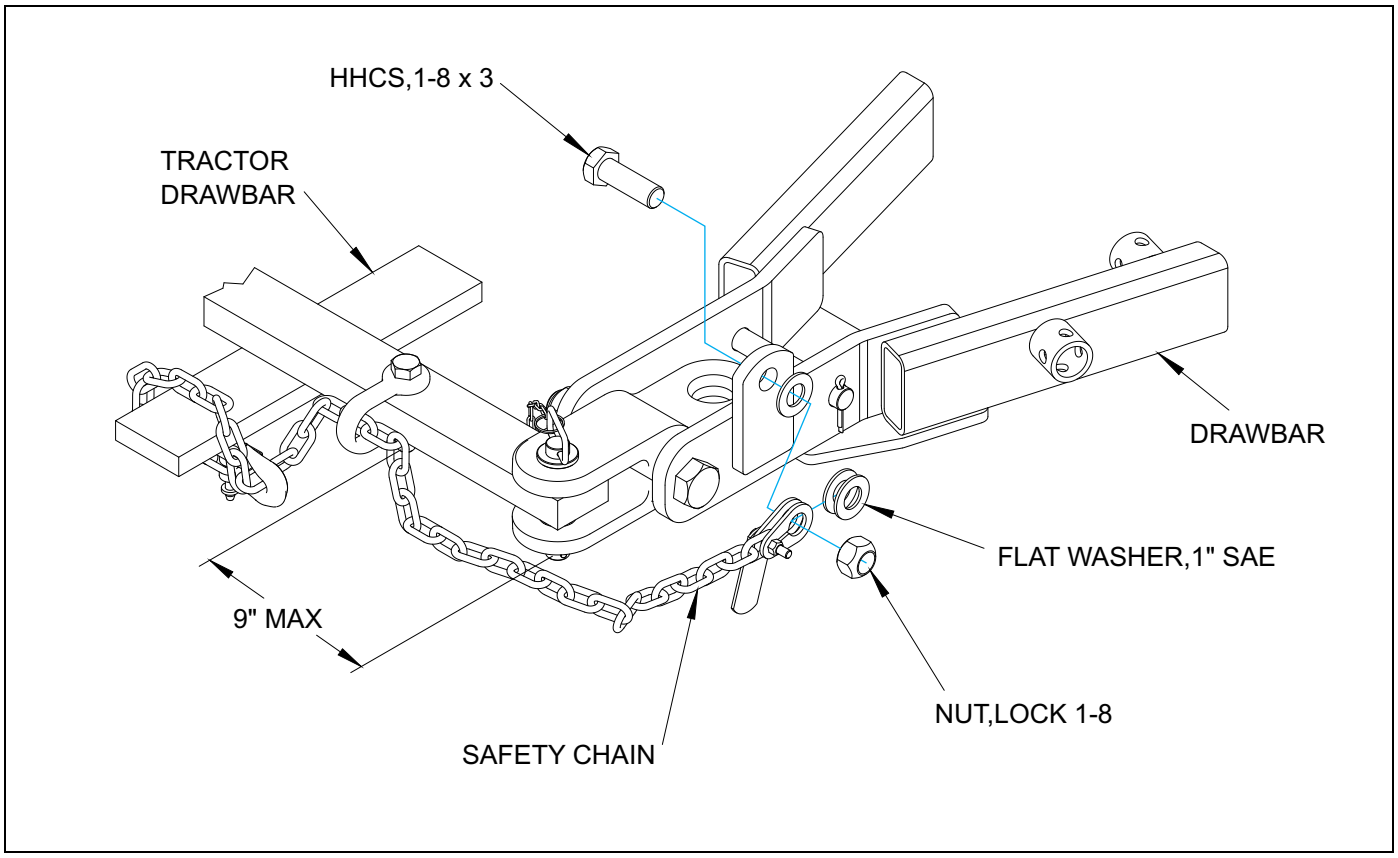
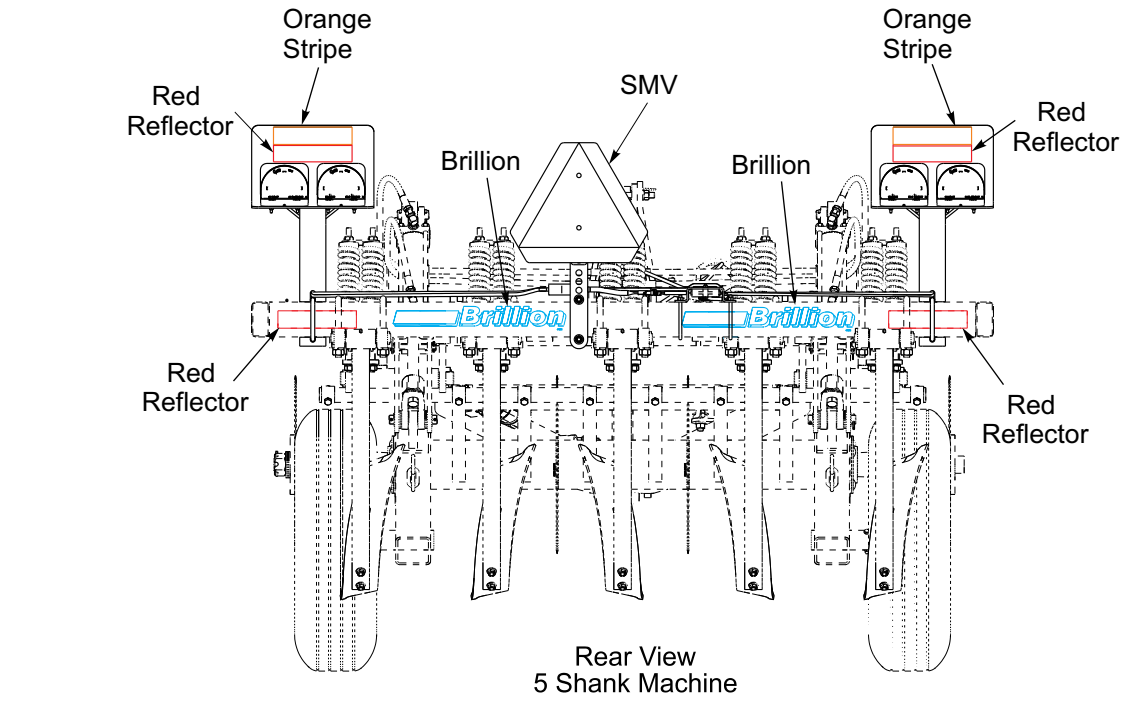


Figure 1-2: Safety Chain

Decals



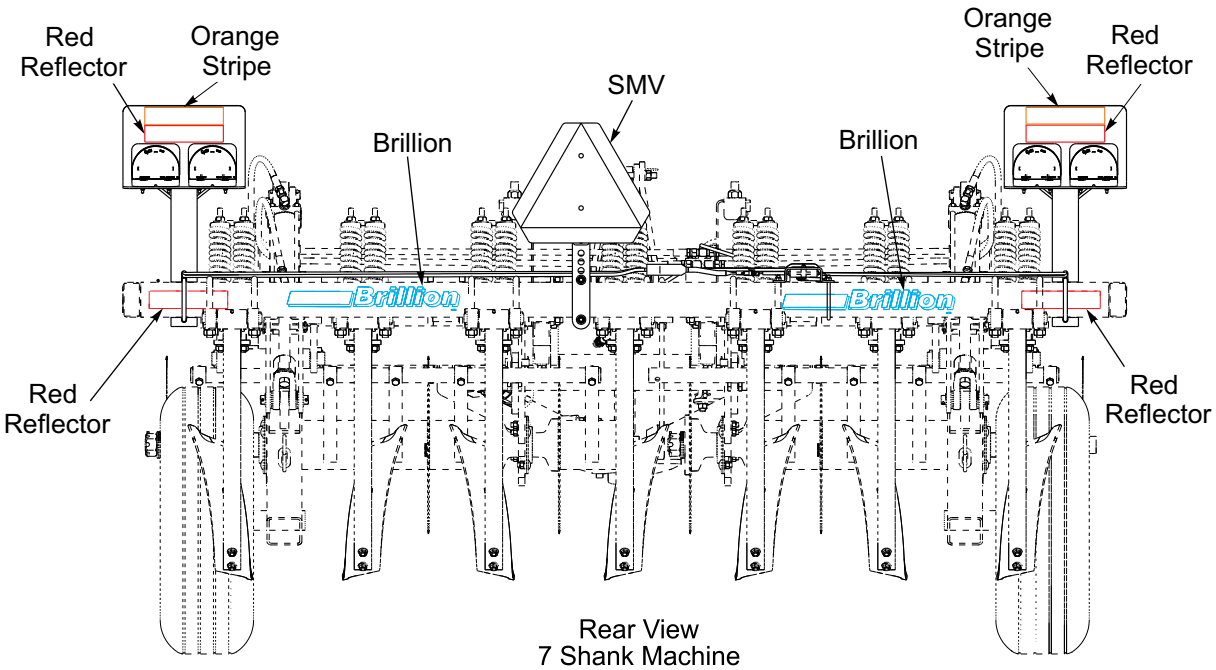


Figure 1-3: Decals and Locations (1 of 2)

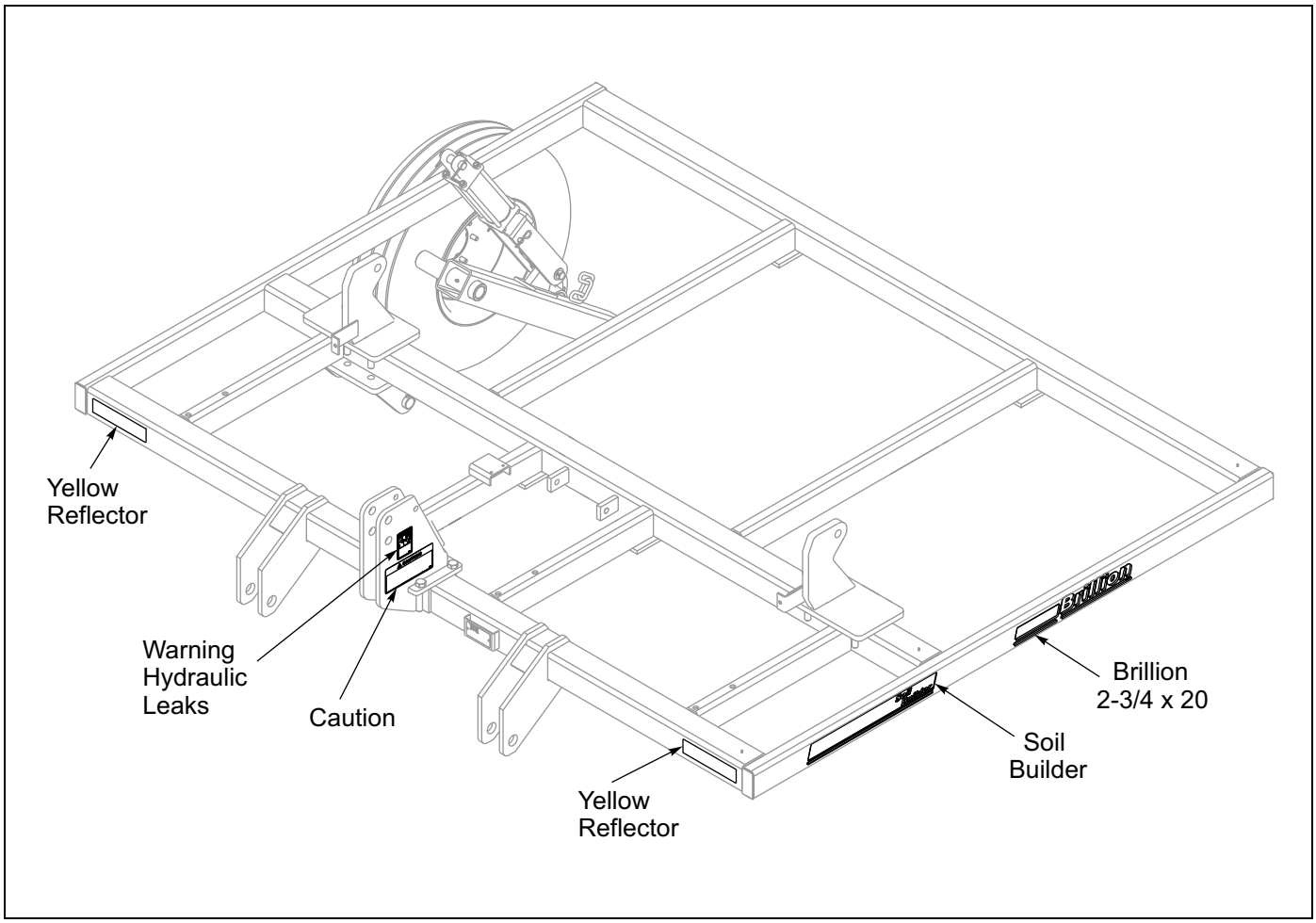


Figure 1-4: Decals and Locations (2 of 2)

Table provided for general use.

NOTES:

Chapter 2

Assembly

CAUTION

Do not work on or under this machine unless securely blocked and supported by a hoist or tractor or by other sufficient means.

DANGER

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

NOTE

Refer to the repair parts manual 3J161 for identification of parts and for the approximate relationship of the parts in assembly.

Frame and Wheel Arm Assembly

Using blocks or other supports, block up the frame approximately 36". Be sure that it is secure and cannot topple. Then chalk mark the frame to locate the mast center and the center lines of the shank assemblies. Depending upon the machine size,

On the mast center line marked on frame previously, assemble the mast as shown using 3/4-10 x 6-1/2" bolts, nuts and lock washers. See Figure 2-1.

Assemble the braces from the mast to the frame. Use the 5/8-11 x 6" bolt, nut and lock washer through the braces and the mast and the 5/8-11 x 2" bolts, nuts and lock washers through the braces and the frame lugs.

NOTE

The Braces are assembled to the inside of the Frame Lugs, toward the center of the machine.

Mount the Left Hand Gage Wheel Assembly using the 3/4-10 x 6-1/2" bolts, nuts and lock washers. Then mount the Right Hand Gage Wheel Assembly in similar fashion. See Figure 2-1.

Install hydraulic cylinders (with ports up) and the cylinder lockout weldments. Use cylinder pins on anchor ends and 1" x 5-1/2" long pin assemblies, with regular cotter pin, on the rod ends. The 1/2" x 5-1/4" long pin assemblies and hairpin cotters are used to lock the cylinder lockout weldments in place when in use.

Install Wheel and Tire Assemblies to hubs with wheel bolts provided. Recommended tire sizes are as follow: 5-shank models, use 9.5 L x 15, 6 ply. 7-shank models, use 11 L x 15, 8 ply.

IMPORTANT

- If pre-assembled parts or fasteners are temporarily removed, remember where they go. It is best to keep parts separated.
- Check that all working parts move freely, bolts are tight and cotter pins spread.
- Refer to the Torque Table for proper torque valves. Note the different torque requirements for bolts with lock nuts. See Page 4-1.

"Left" and "Right" refer to directions seen as if standing behind the machine and facing in the direction of forward travel.

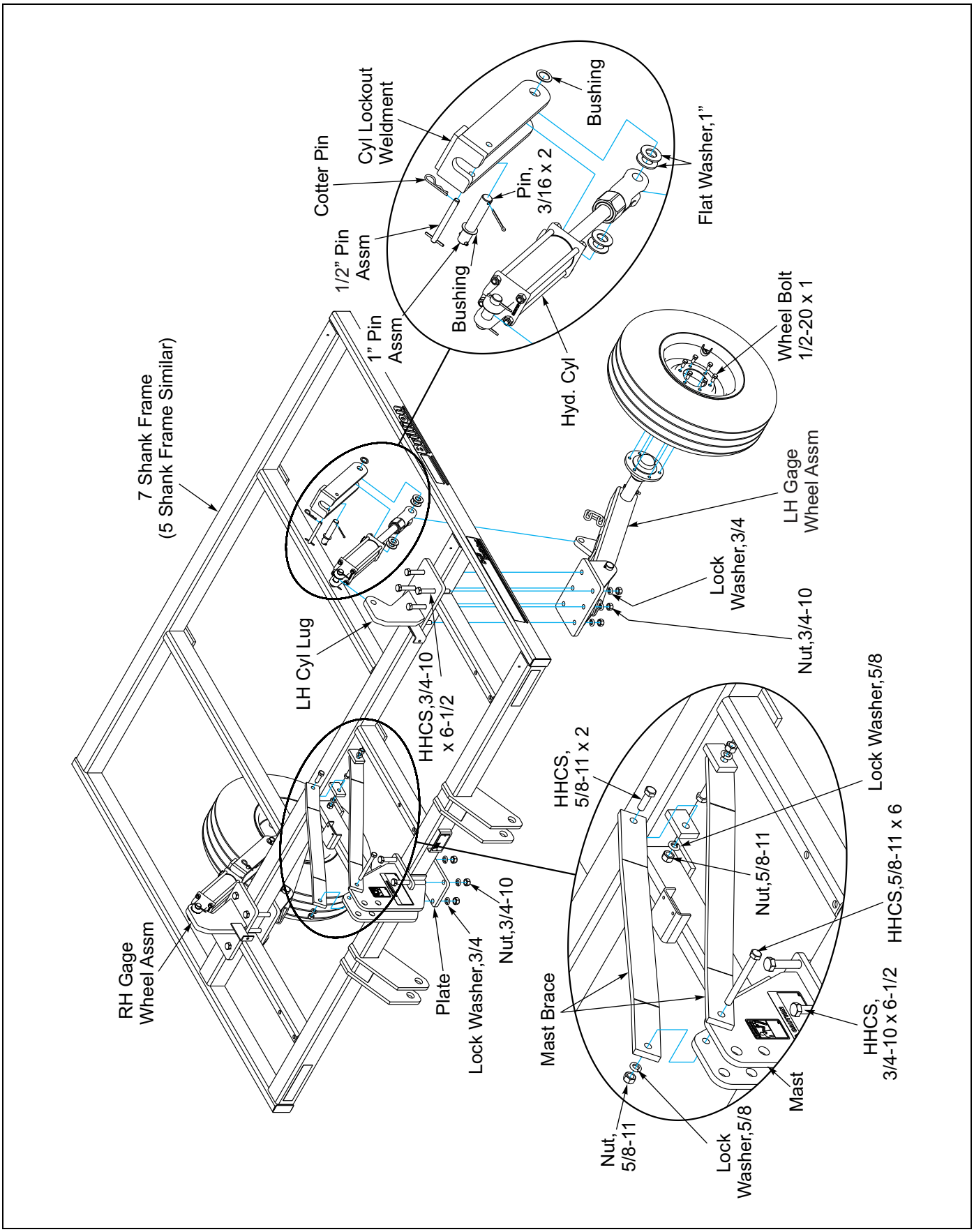


Figure 2-1: Frame and Wheel Arms

Drawbar Installation

- Mount the Drawbar Assembly to the lugs on the front of the frame with 1-7/16” x 6-1/8” pins and 7/16” kilk-pins.
- Install the brace rod to the mast with 1” x 4-1/2” pin and 1/4” kilk pin. Attach the other end using 1” x 7-7/16” pin and two 1/4” x 2” cotter pins.

NOTE

The brace rod adjusts to locate the hitch clevis at the correct height for the tractor drawbar and to level the machine. Adjusting can be accomplished by turning the brace rod by it’s handle.

- Attach the drawbar jack by slipping one tube over the other and inserting the pin.
- Install the hose support using 5/8-11 x 2” bolt, flat washer, lock washer and nut.

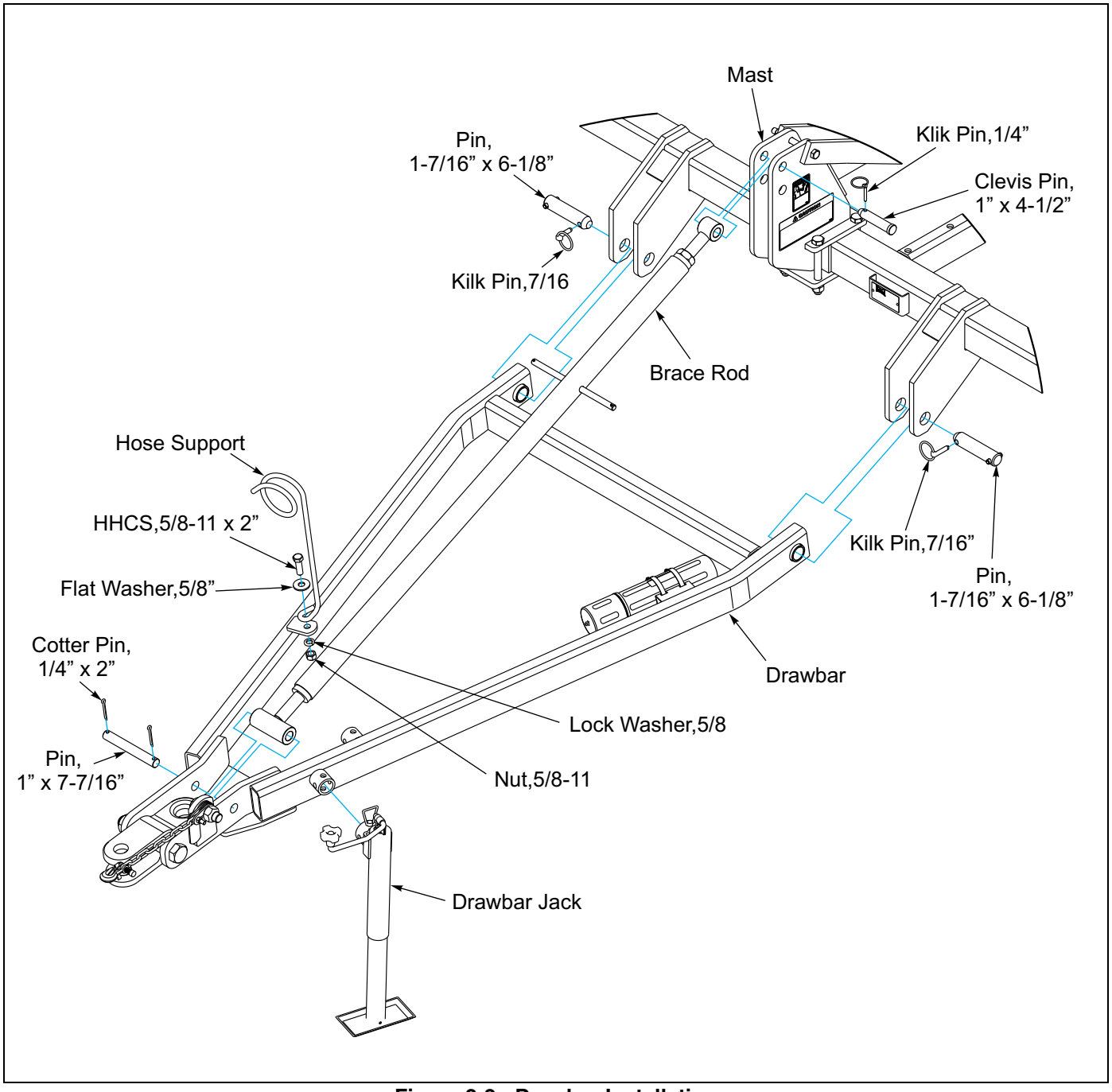


Figure 2-2: Drawbar Installation

5 and 7 Shank Manual Coulter

Assemble the Spring Bracket Assemblies to the frame. (Two on 5-shank models; four on 7-shank models.) Using 5/8-11 x 3-3/4” bolts, lock washers and nuts. Note that they are to be assembled to the frame members that have holes for the coulter gang bearing castings. See Figures 2-5 and 2-6. Locate the center of the spring brackets 19-3/4” from the front of the frame. See Figure 2-3.

Next, roll the Coulter Gang Assembly/Assemblies under the frame. On 7 shank models roll the gang with the most coulters under the left side of the machine; slotted nut to the outside. Roll the other gang under the right side of the machine, slotted nut to the inside.

Then lower the machine and install the axle bearings to the coulter gangs and to the frame. See Figures 2-5 and 2-6**.** Use the 5/8-11 x 10-1/2” long bolts, lock washers and nuts. Next, attach the spring rods to the Coulter Gang Assembly/Assemblies with the 3/4” x 2 1/2” long clevis pins, flat washers and 1/8” x 1-1/4” cotter pins.

NOTE

Use the upper most hole in the spring rod straps for normal conditions. Where more pressure on coulters is desired, change to different setting accordingly.

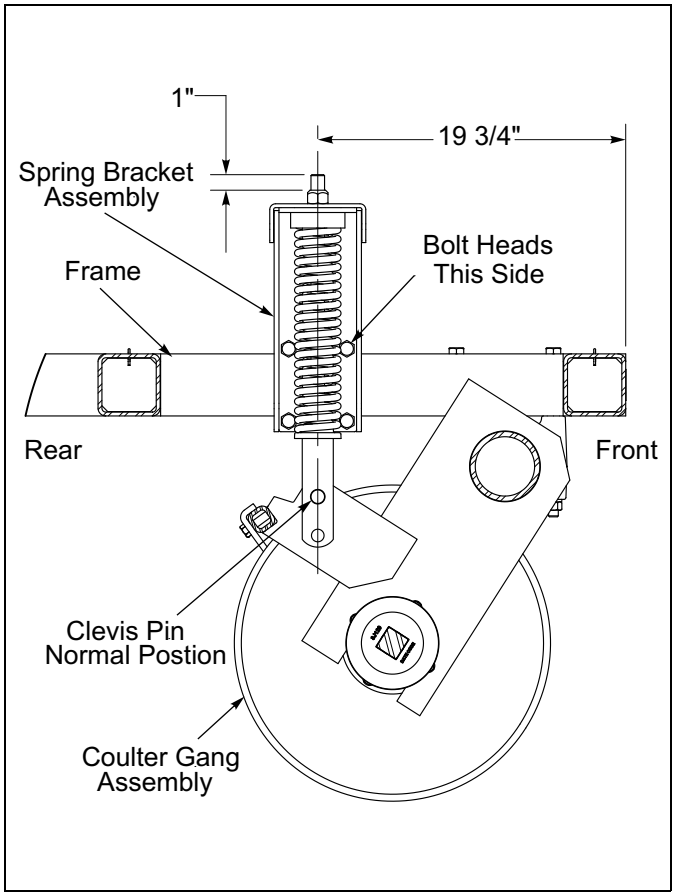


Figure 2-3: Spring Bracket Mounting Dimension

Center Scraper

Assemble the center scraper bracket to the front frame tube with 5/8-11 U-bolts, lock washers and nuts, so that the bar extends downward and is centered between the coulter gangs. (Not required on five shank models.) See Figure 2-4.

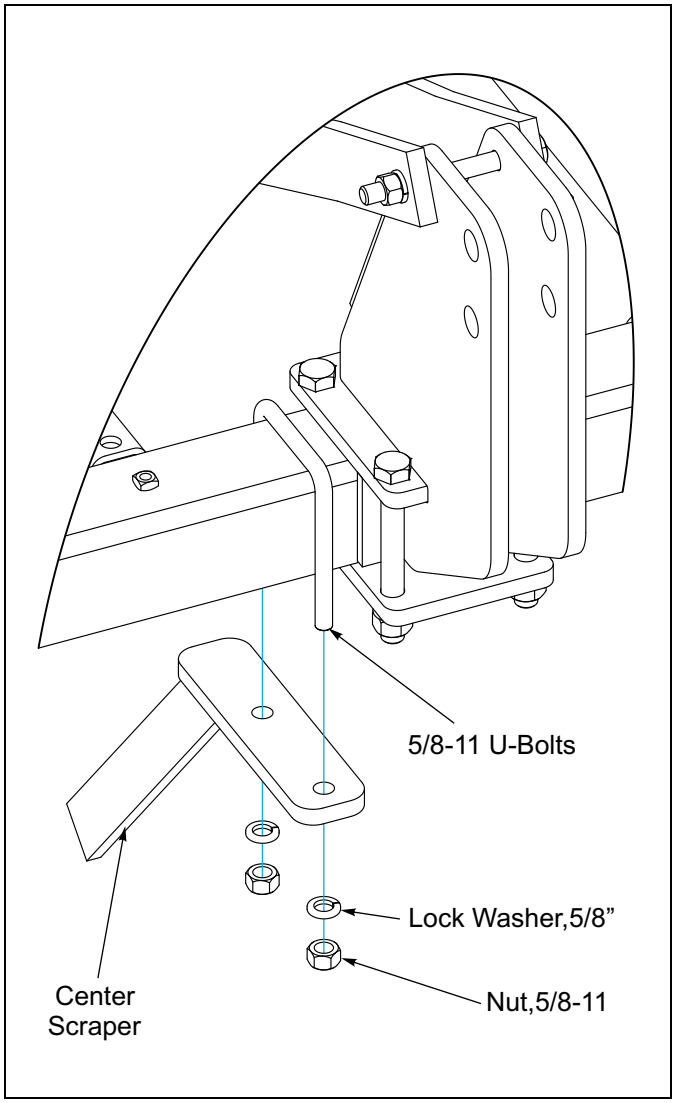


Figure 2-4: Center Scraper

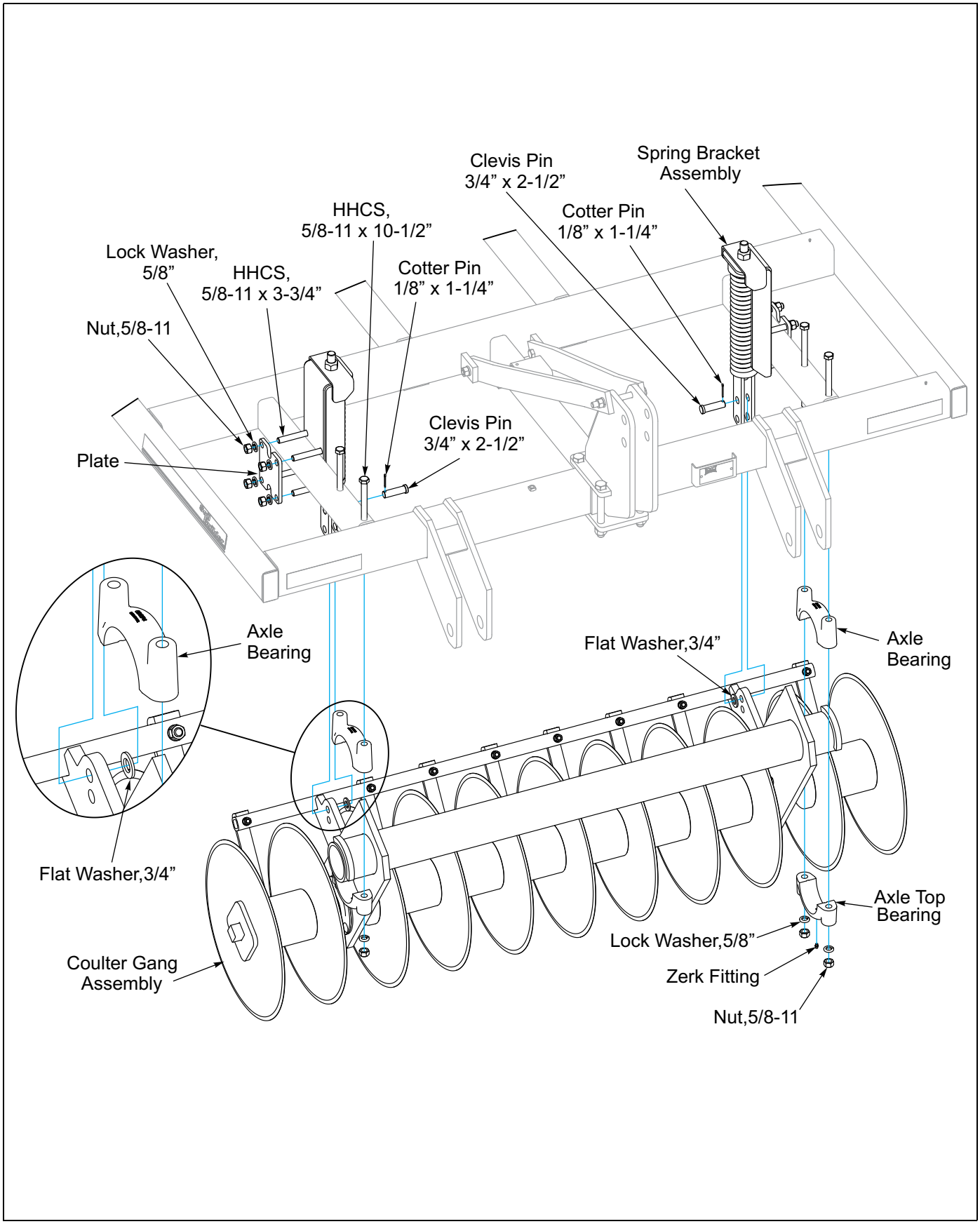


Figure 2-5: 5 Shank Model

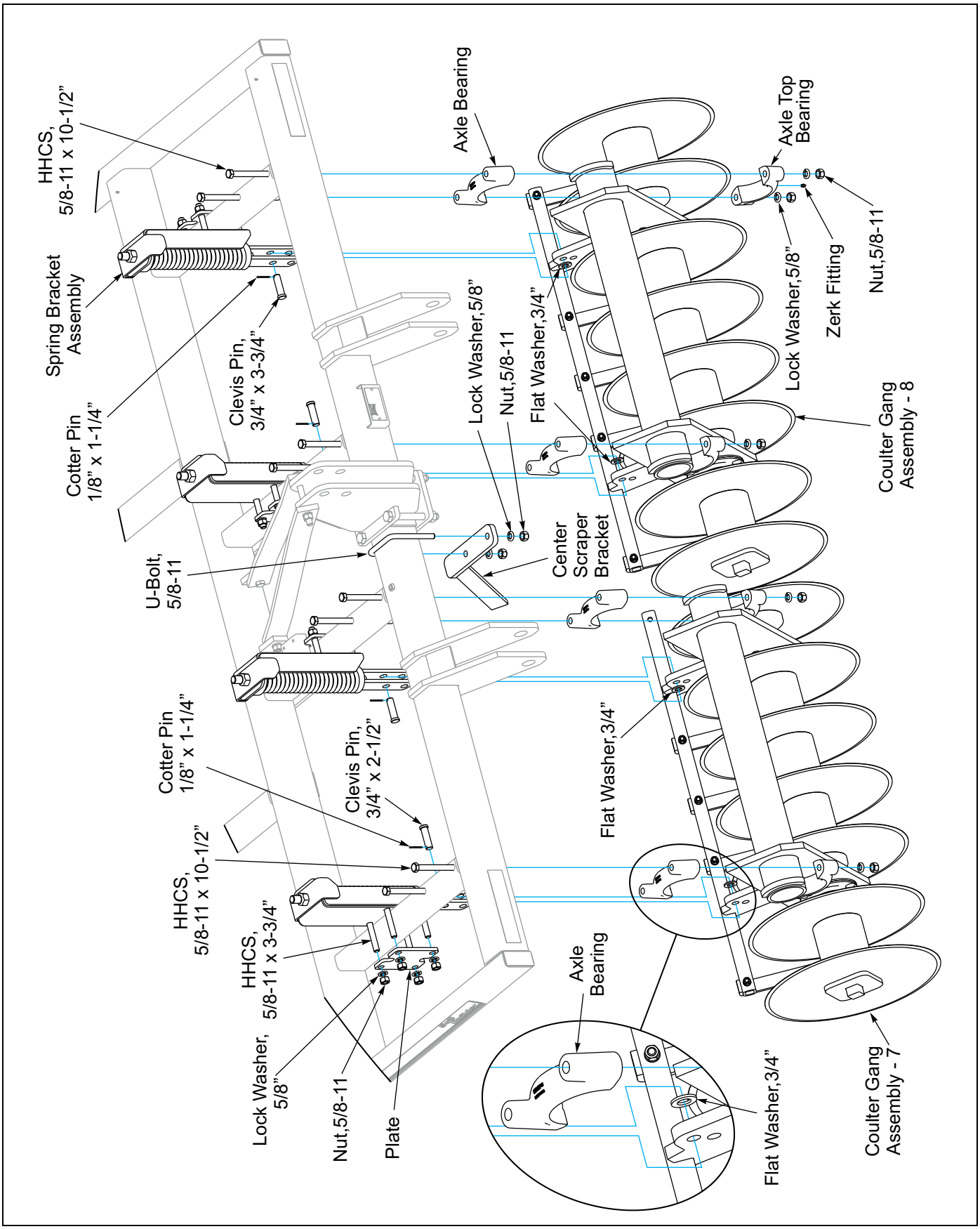


Figure 2-6: 7 Shank Model

7 Shank Hydraulic Coulter

Attach the cylinder anchor to front frame tube before coulter gangs are installed with 3/4-10 x 7” bolts, lock washers and nuts. Position cylinder anchor against mast. See Figure 2-7. Plate notch must be up.

Install the frame reinforcement as shown using 3/4-10 U-bolts, lock washers and nuts. Place the spring rockshaft on top of frame with axle bearings. The heavy axle bearings with grease fitting must be on top of spring rockshaft.

Position the coulter gangs under the frame. Roll the gang with the most coulters under the left side of the machine; slotted nut to the outside. Roll the other gang under the right side of the machine. Attach the coulters to the rockshaft using 5/8-11 stud and locknut on heavy axle bearing and lock washer and locknut on the bottom axle top bearing. See Figure 2-9.

Attach the hydraulic spring rod assemblies to coulter gang top holes with 3/4” x 2-1/2” long clevis pins, flat washers and 1/8” x 1-1/4” cotter pins. Attach the top of the spring rod assemblies to the spring rockshaft as shown. See Figure 2-8.

Install Center Scraper. See Figure 2-4.

Attach the 3 x 8 hydraulic cylinder with ports up.

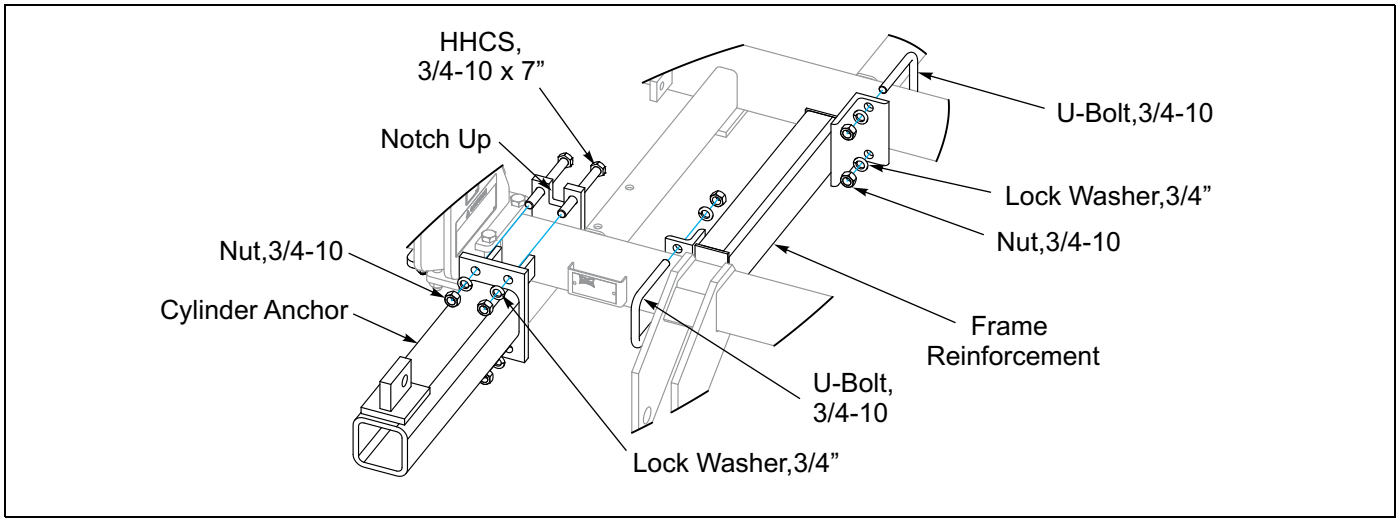


Figure 2-7: Plate - Notch Up

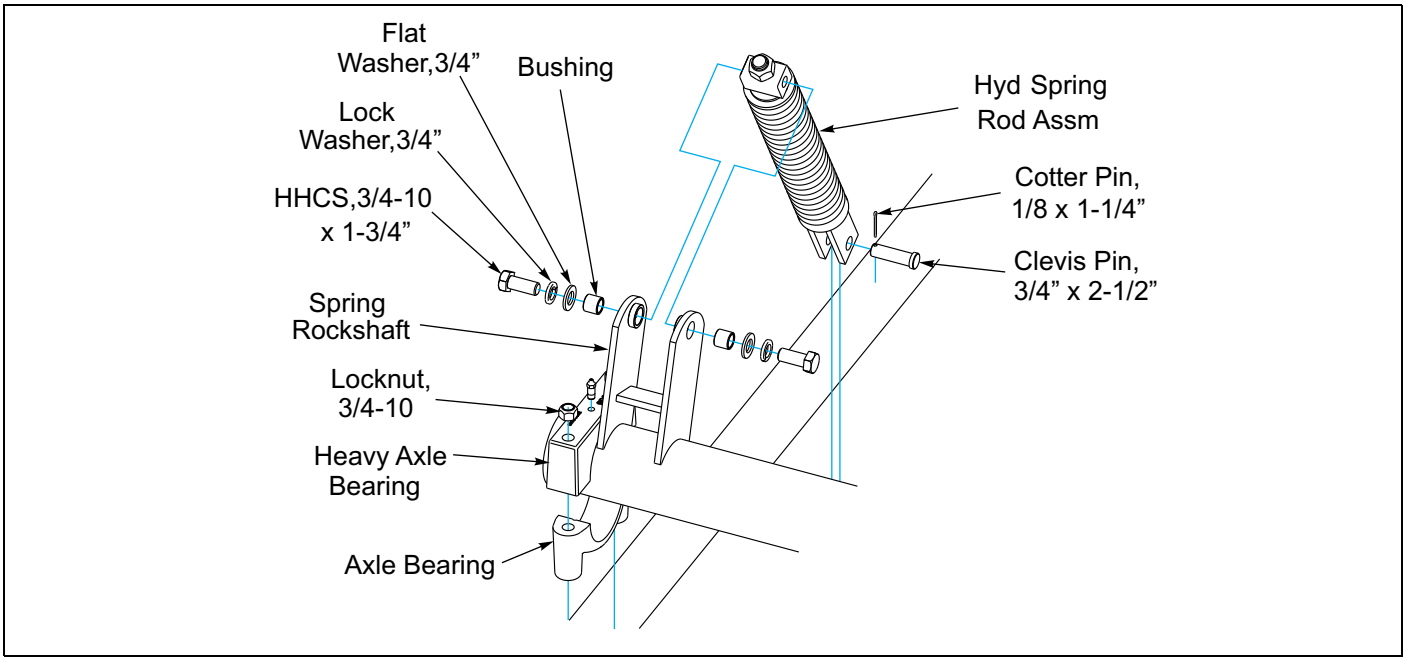


Figure 2-8: Hydraulic Spring Rod

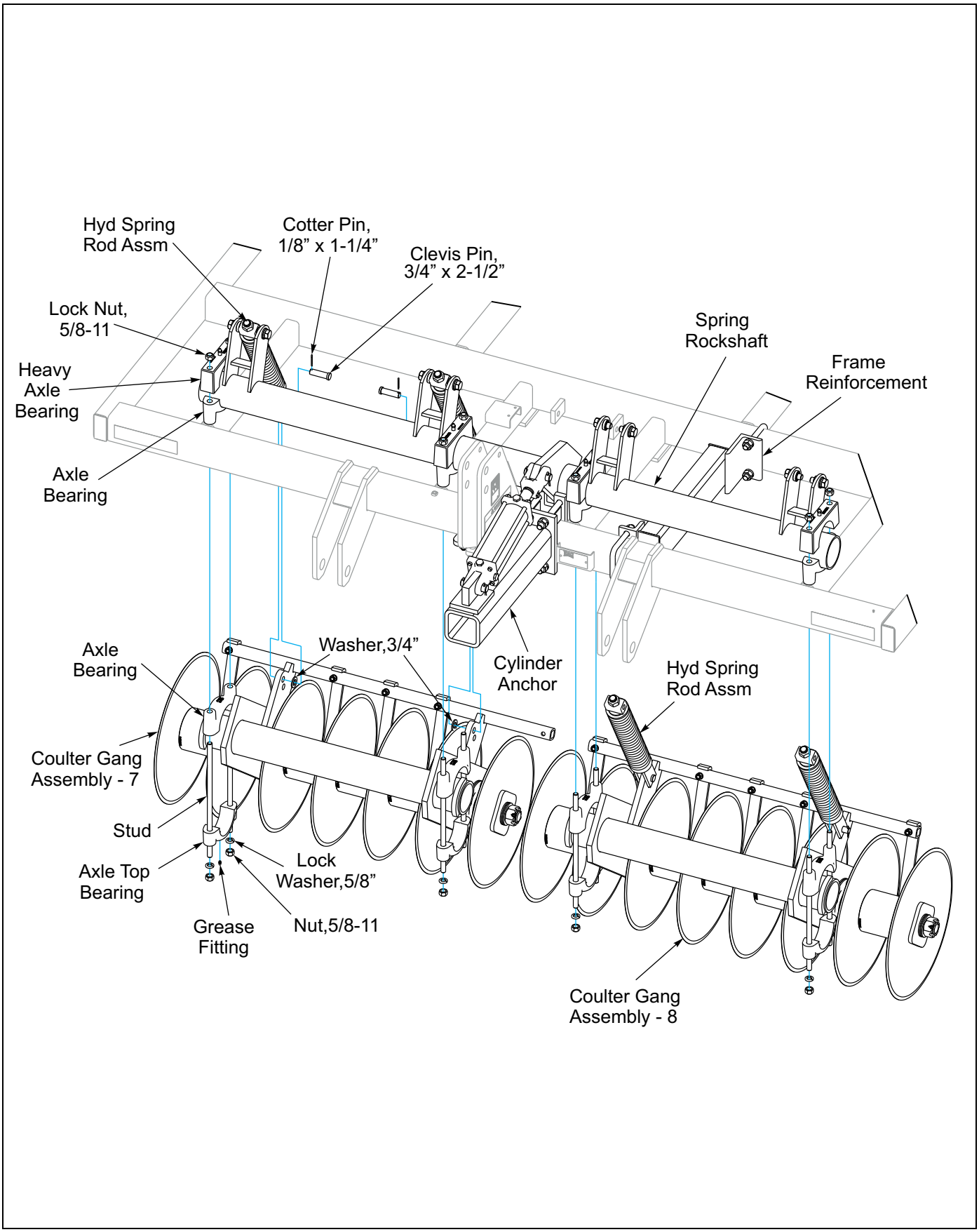


Figure 2-9: 7 Shank Hydraulic Coulter Model

Mounting of Shanks, Points and Shovels

NOTE

It is easier to bolt the points to the shank before mounting them to the machine

1. Assemble the left hand and right hand shovels to the shanks with the plow bolts provided inside their box assemblies.
2. The right hand, three piece type of shovel assembly is illustrated at right. On all machine sizes you will have one more right hand shovel than left hand. The components are stamped “R” or “L” for identification.
3. For assembly of the one piece shovels, bolt onto shanks with the plow bolts provided.
4. For normal operation the nuts on the spring mounting should be tightened so **one inch of thread is exposed.**

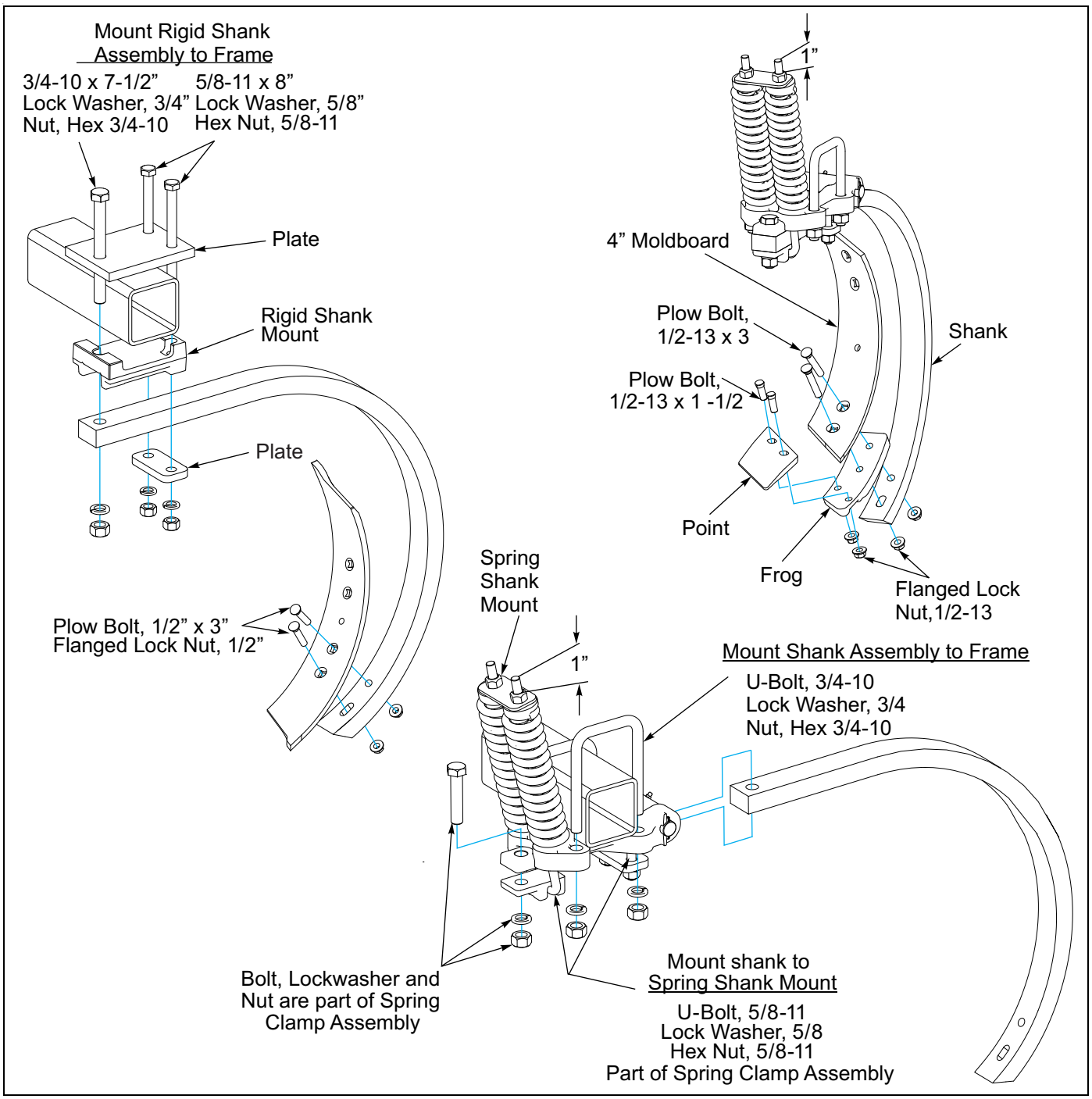


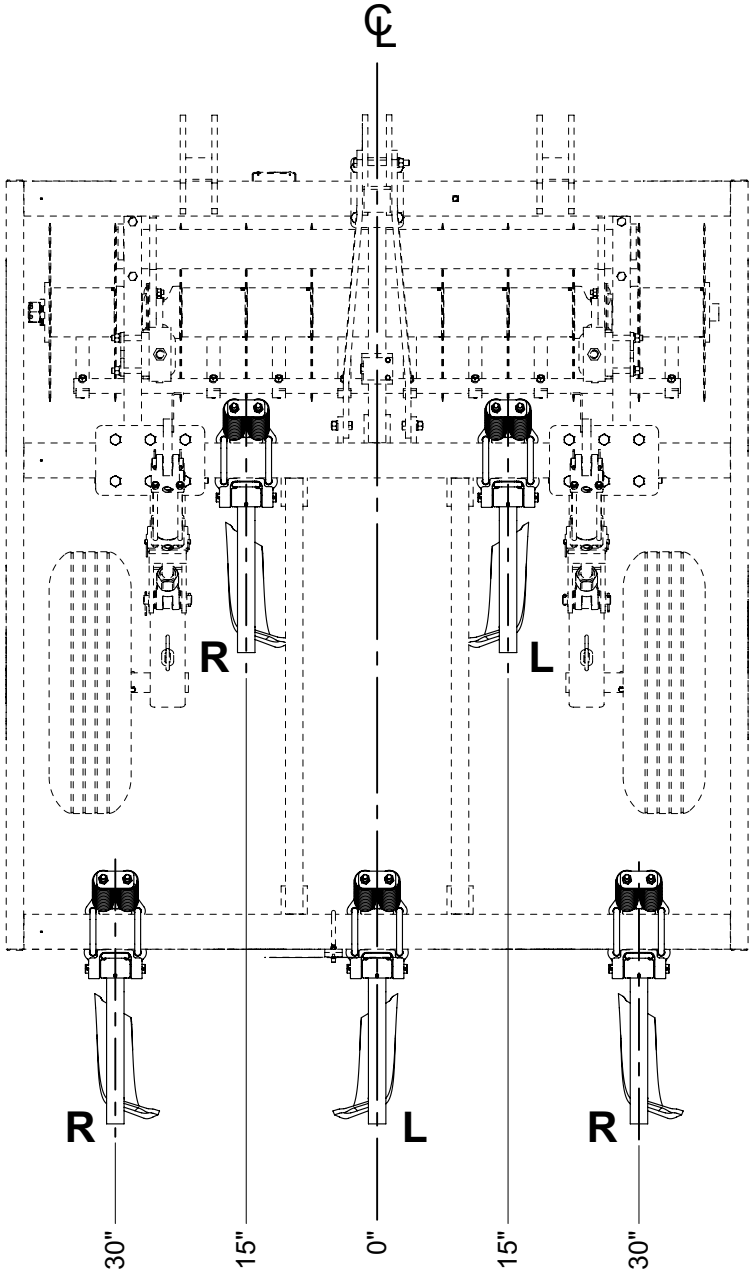
Figure 2-10: Shanks and Shovels

Shank Positions

NOTE

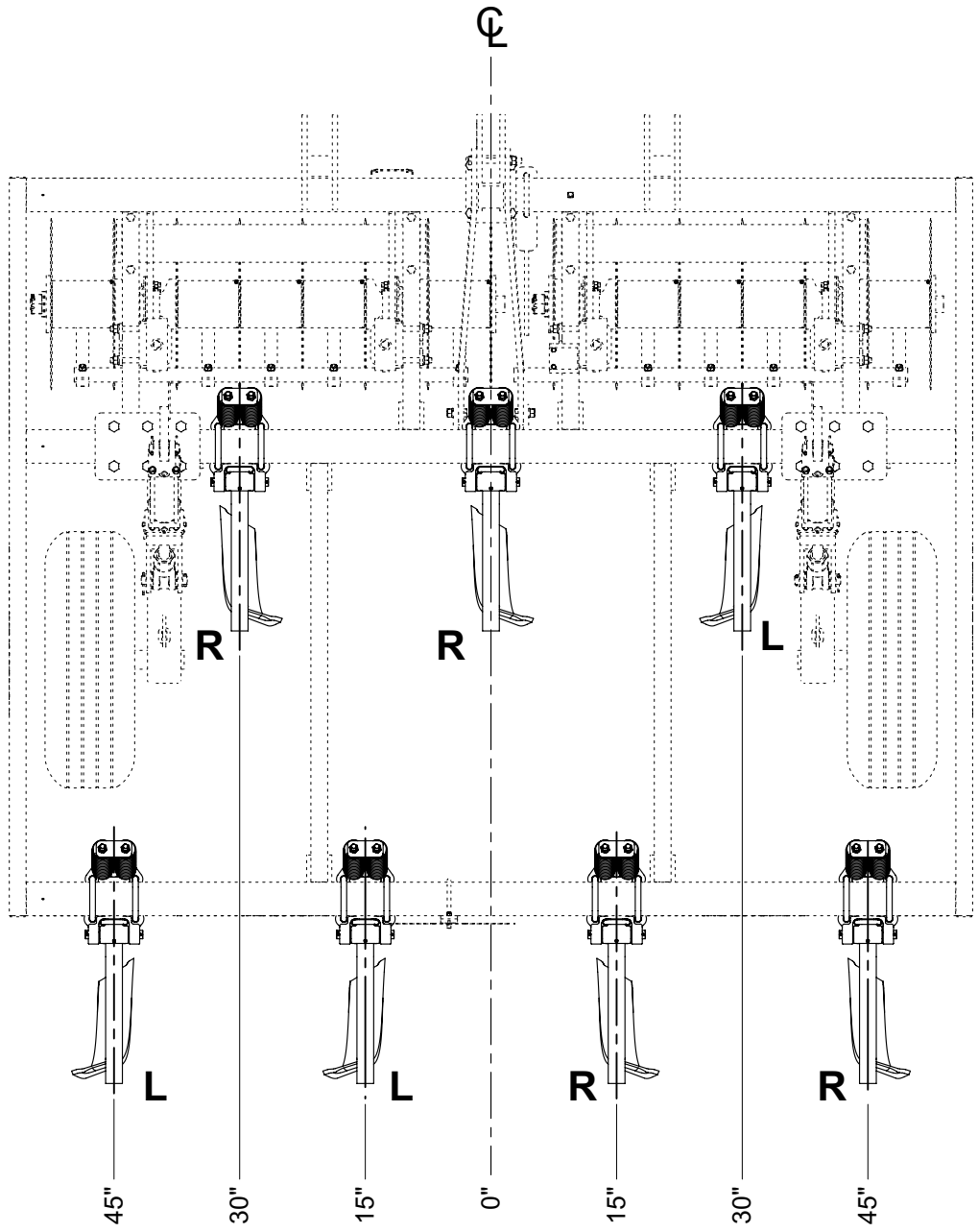
The R (right) and L (left) on the shank layout indicate which direction that the shank will throw the dirt. See Figures 2-11 and 2-12. For normal operation the nuts on the spring mounting should be tightened so ***one inch of thread is exposed****.* See Figure 2-10.

On all machine sizes you will have one more right hand shovel than left hand.



Top View
5 Shank Machine

Figure 2-11: 5 Shank Positions



Top View
7 Shank Machine

Figure 2-12: 7 Shank Positions

Hydraulic Layout

Install hydraulic components as shown; See Figures 2-13, 2-14. Use the shorter hoses on the right side of the machine. For hydraulic fittings torque values, See Page 4-2.

NOTE

The hoses from the Flow Divider Valve must be connected to the rod end of the cylinders.

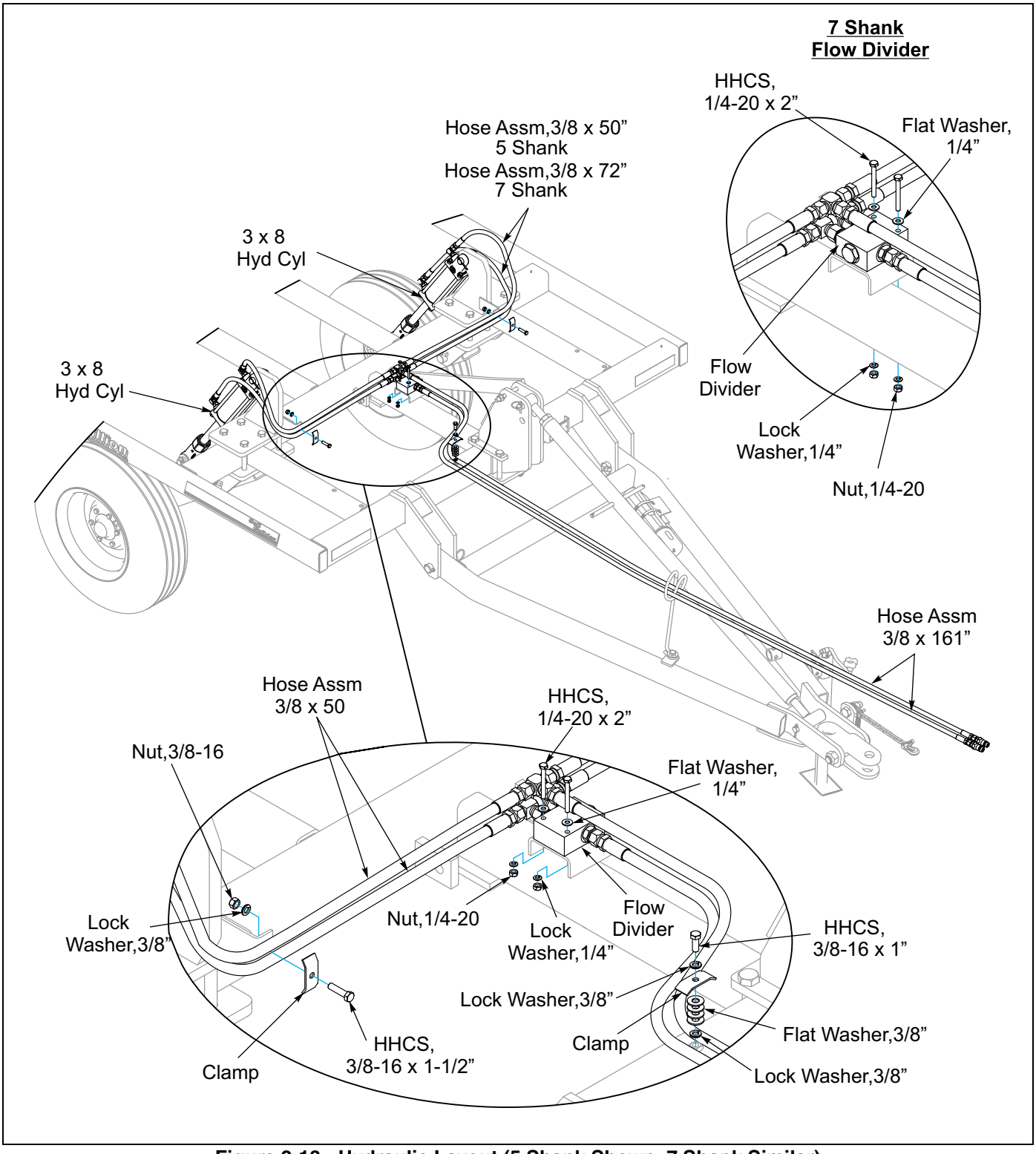


Figure 2-13: Hydraulic Layout (5 Shank Shown, 7 Shank Similar)

Hydraulic Coulter Layout - 7 Shank

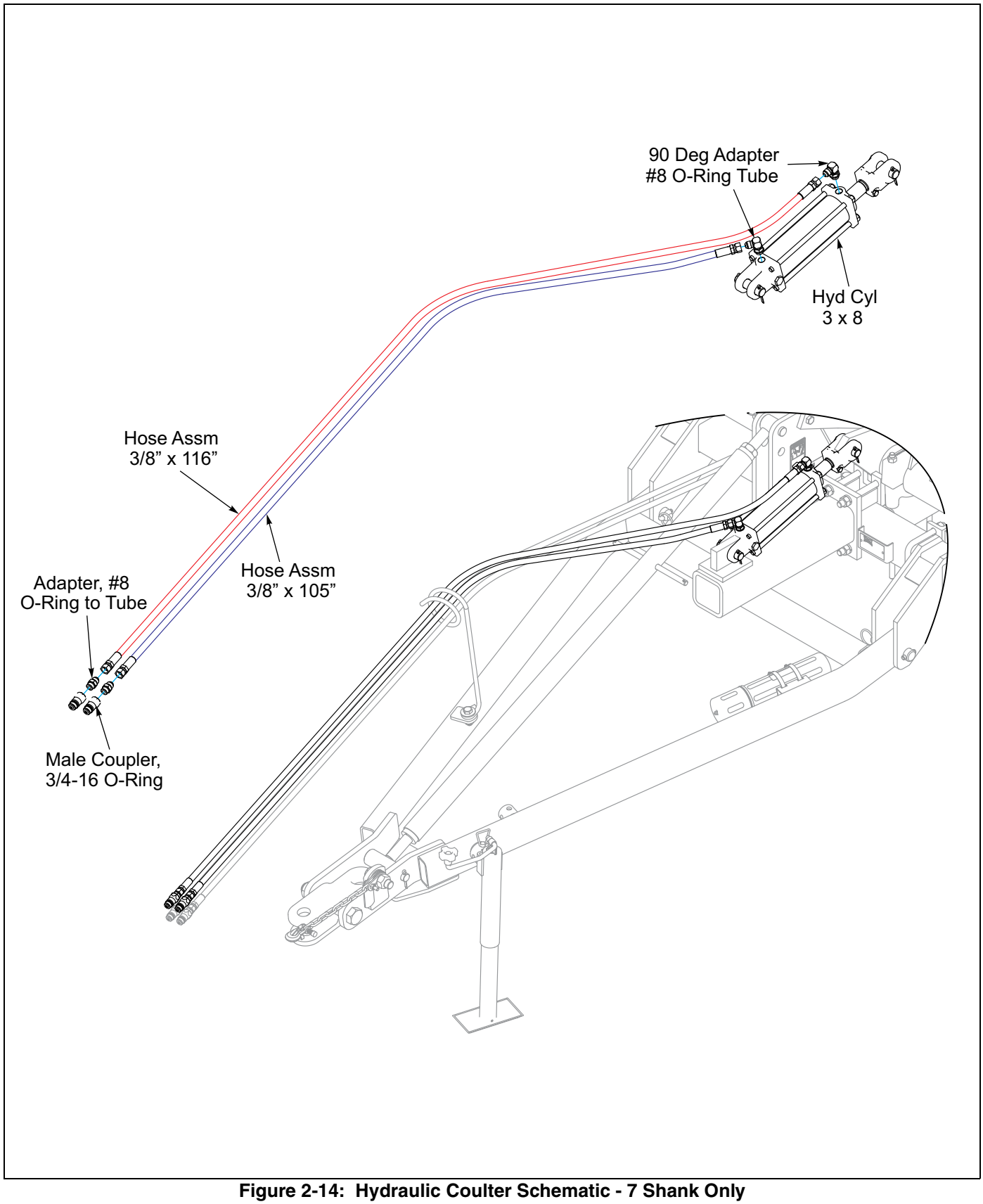


Figure 2-14: Hydraulic Coulter Schematic - 7 Shank Only

Replacement Kit for 2J750 Valve

If your older model CD Soil Builder is equipped with the 2J750 Valve, replace it with 180657 Kit. See your Brillion Dealer for additional information.

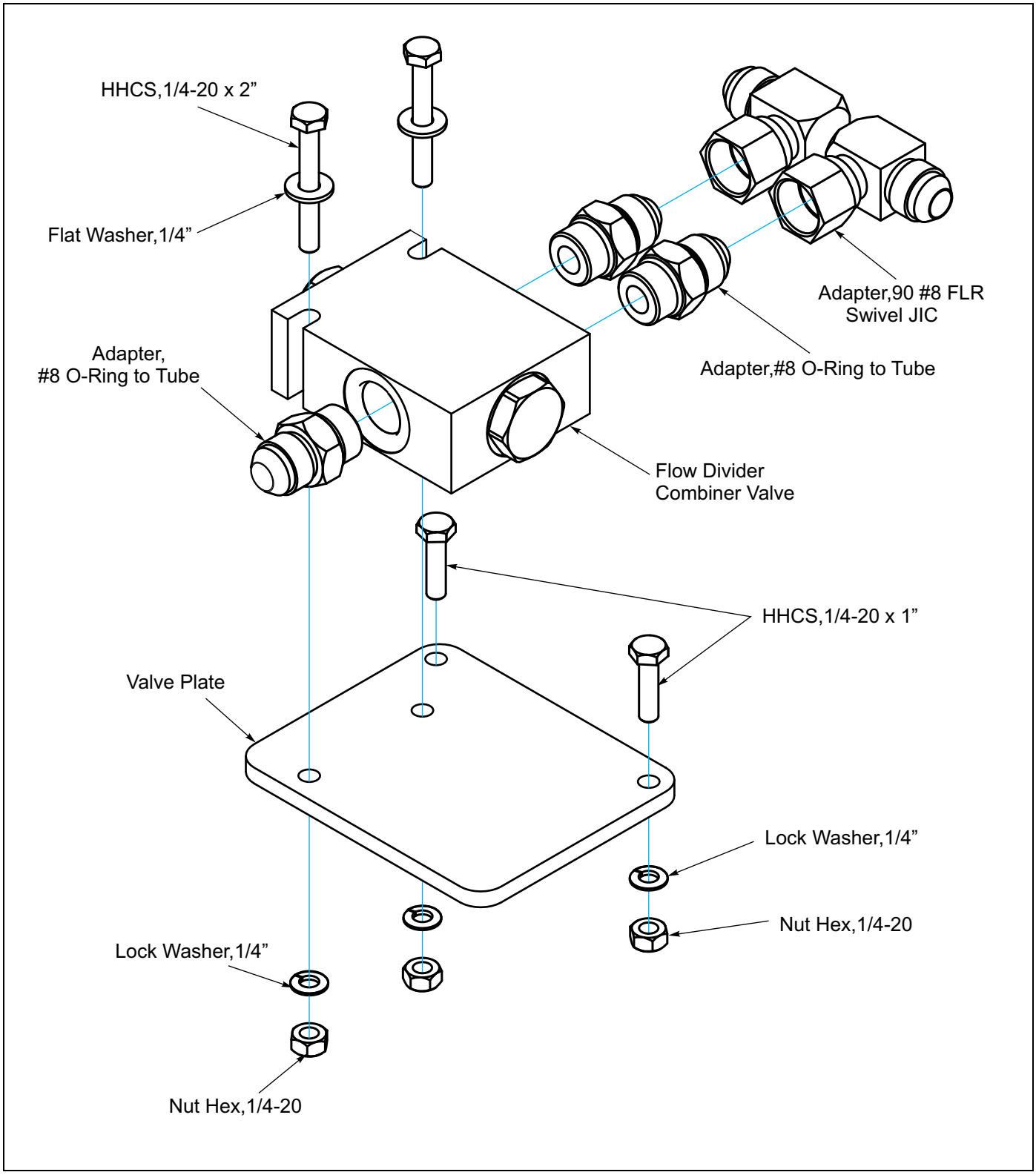
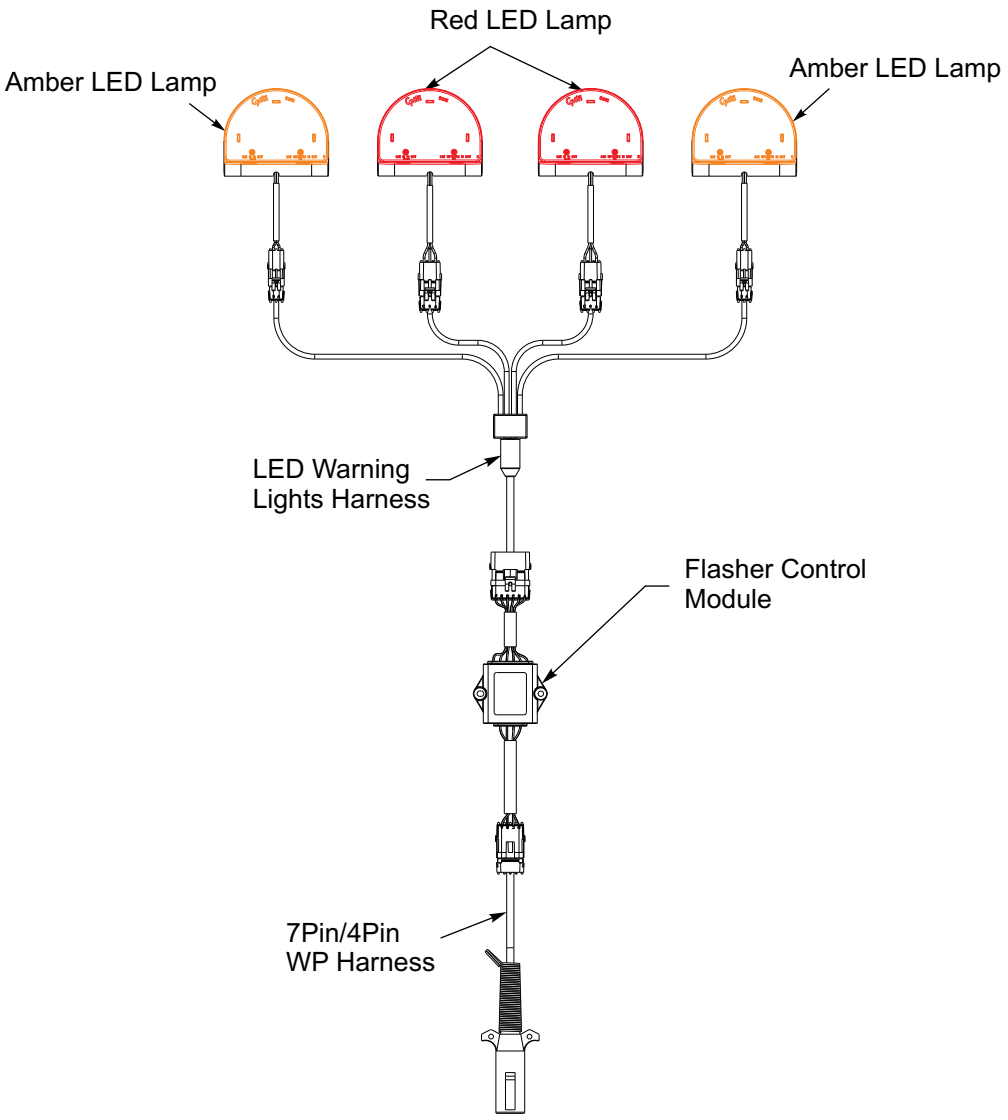


Figure 2-15: Replacement Kit 180657

LED Warning Lights

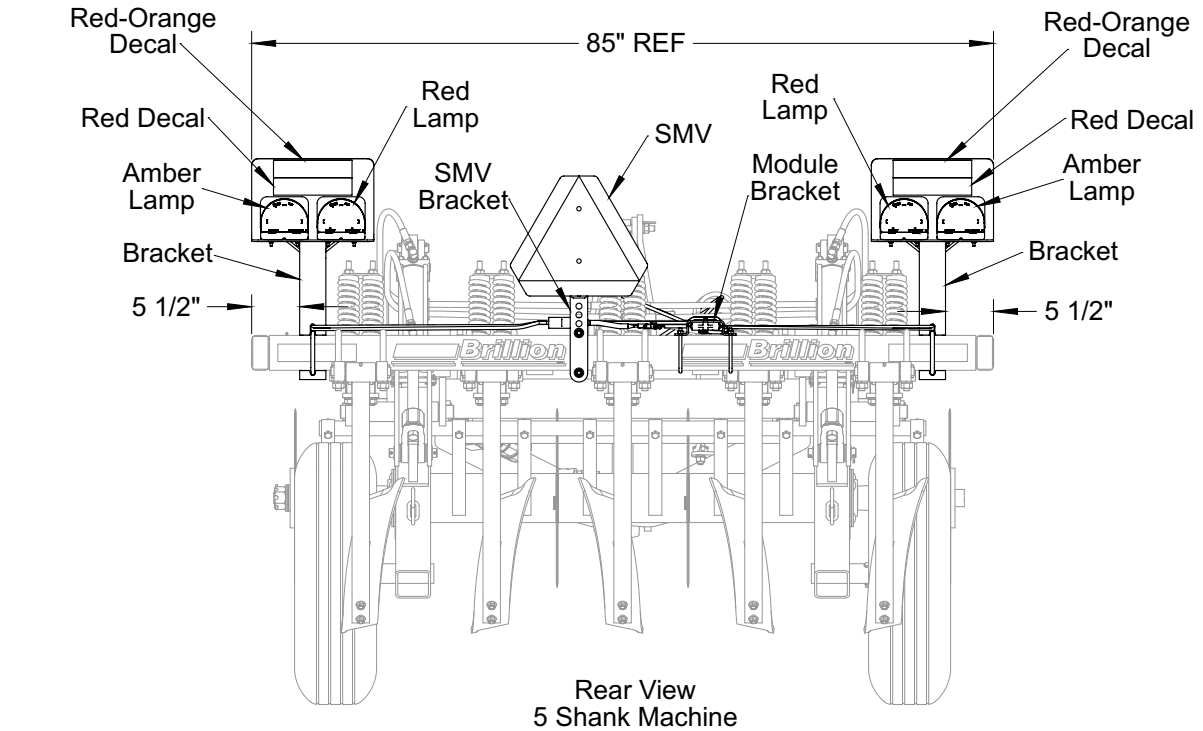


When plugging in the LED 7-pin connector:

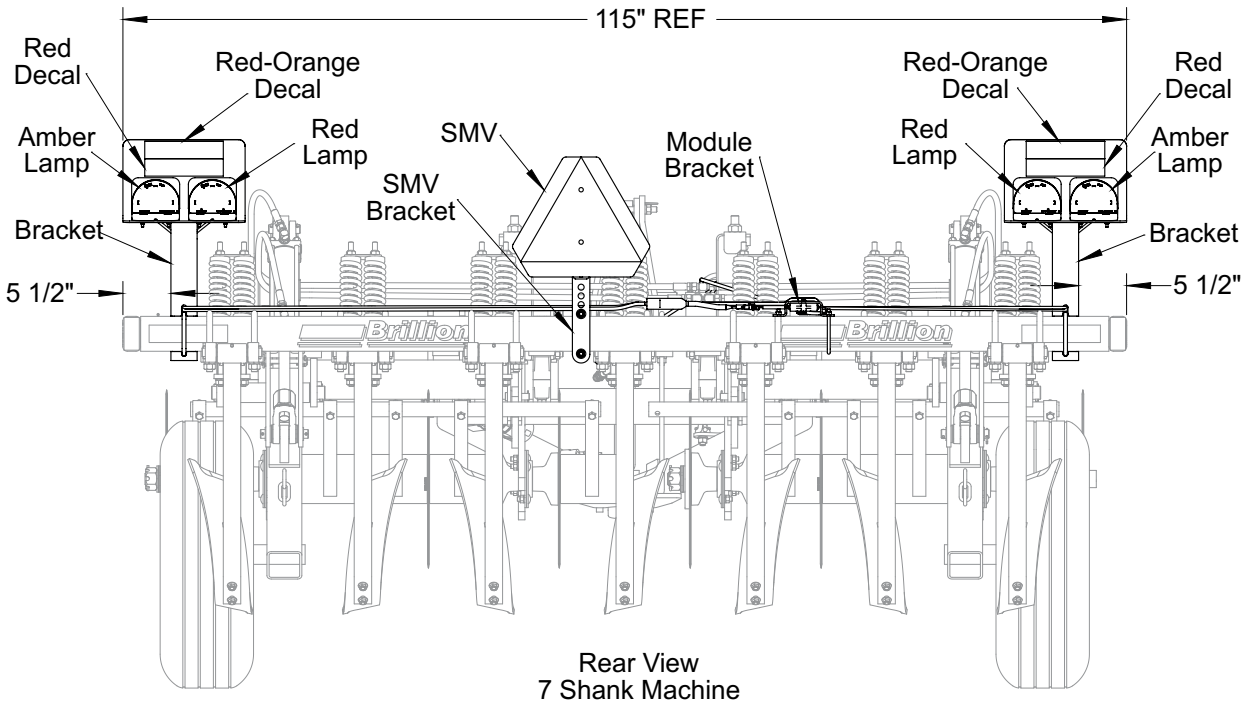
1) Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
2) Make sure the 7-pin connector is inserted ALL the way in. With tighter fitting pins, operator may think the connector is all the way in, but really isn't.
3) Make sure the tractor receptacle cover latches over the keyway on the 7-pin connector to hold the connector in place.

If an operator plugs in the 7-pin connector, but the lights do not seem to work right, check the above items to make sure there is a good connection with the 7-pin connector.

Figure 2-16: LED Warning Lights Schematic



Rear View
5 Shank Machine



Rear View
7 Shank Machine

Figure 2-17: Electrical Installation Dimensions

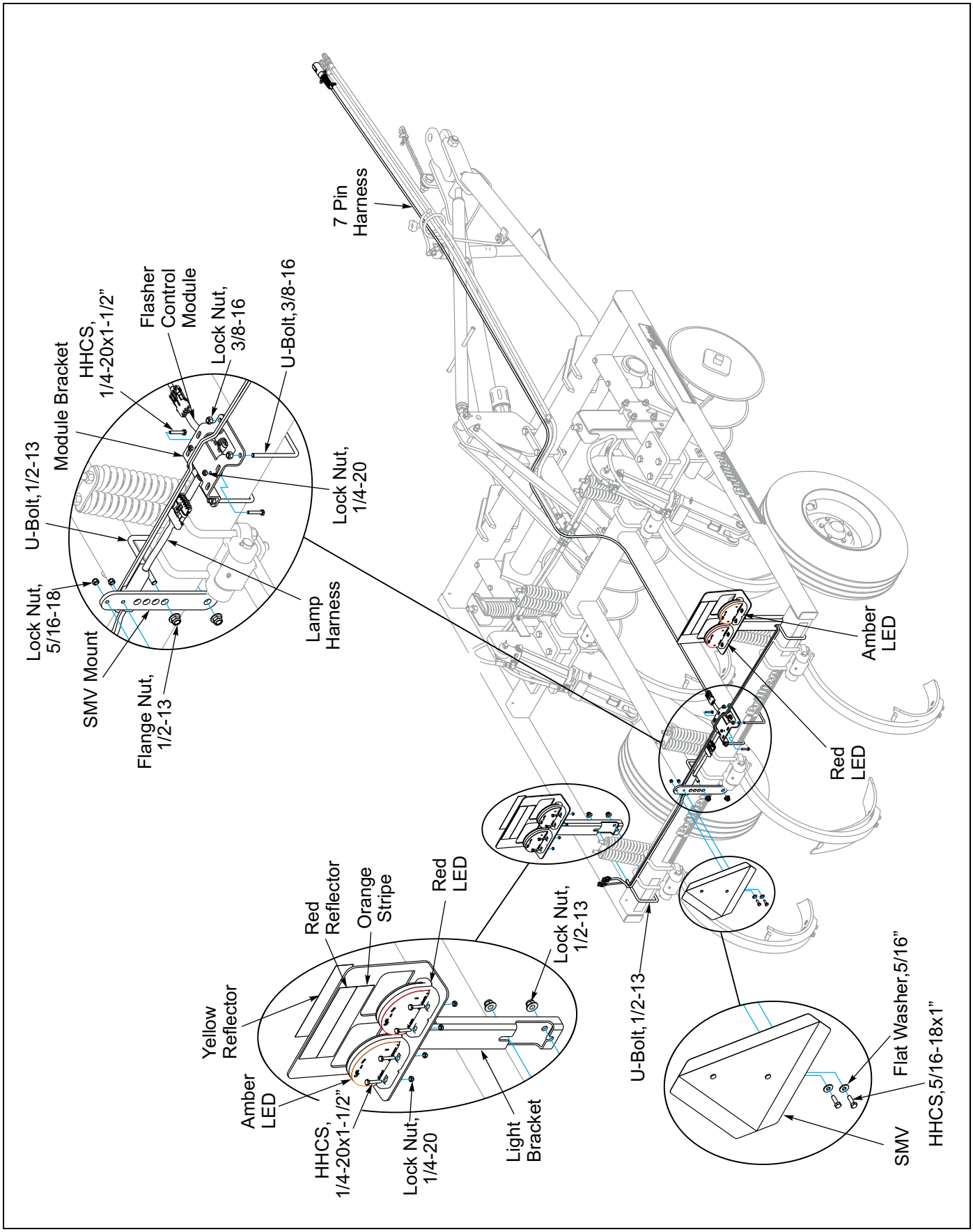


Figure 2-18: LED Warning Lights - 5 Shank

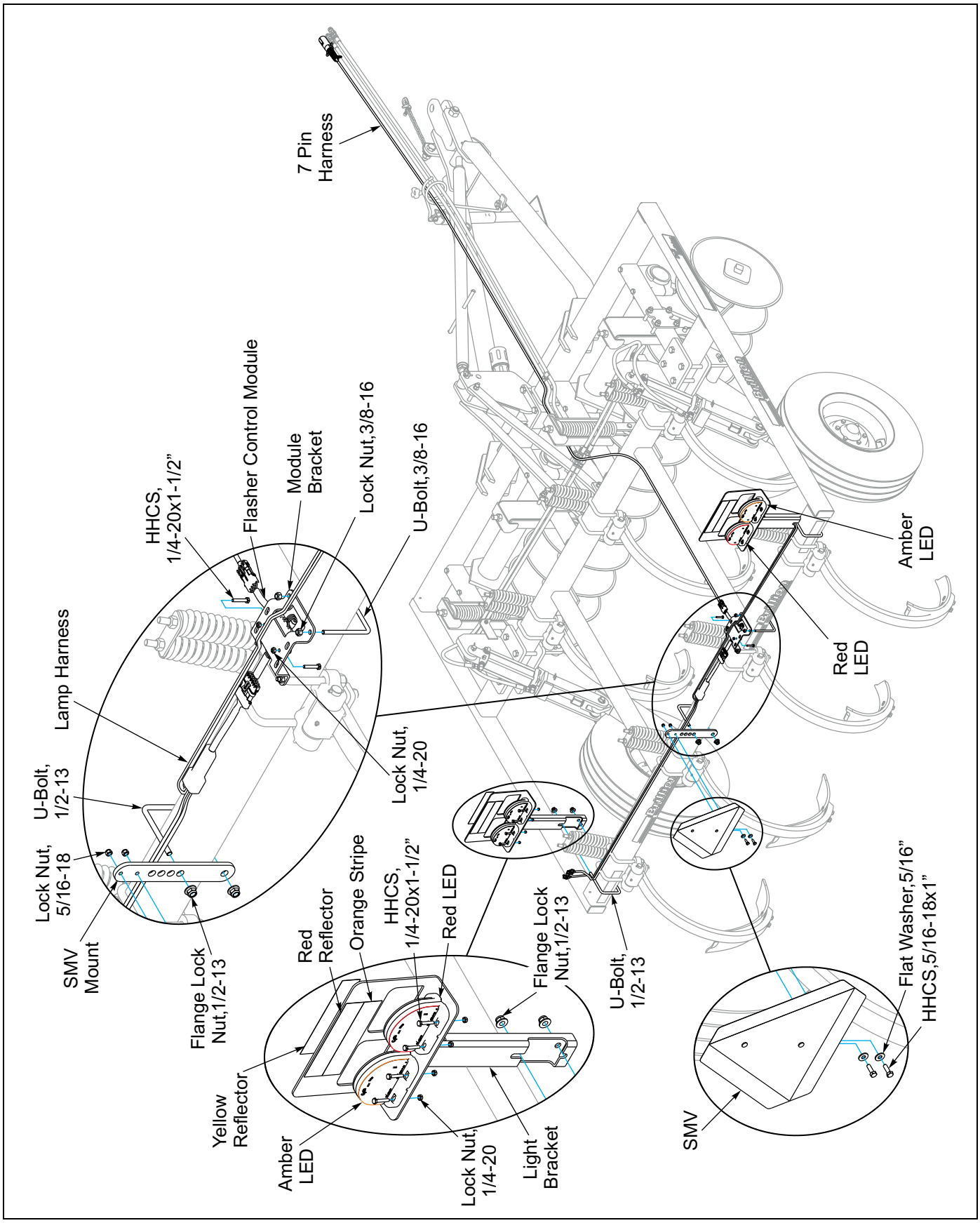


Figure 2-19: LED Warning Lights - 7 Shank

LED Installation Instructions

NOTE

All models similar. See Figures 2-18 and 2-19. Refer to Figure 2-17 for bracket and light placement dimensions.

1. Attach both Light Brackets to the rear frame using the 1/2-13 U-Bolts and Flange Locknuts.
2. Attach Amber LED to the outside of the Light Bracket using (4) 1/4-20 x 1-1/4" Screws and Locknuts, then attach the Red LED next to the Amber LED using (4) 1/4-20 x 1-1/4" Screws and Locknuts
3. Attach the Flasher Control Module under the Module Bracket using (2) 1/4-20 x 1-1/2" Screws and Locknuts, then attach the Module Bracket to the top of the rear frame using 2 (two) 3/8-16 U-Bolts and Locknuts.
4. Attach the SMV Mount to the rear frame using 1/2-13 U-Bolt and Flange Locknut. Then attach the SMV Sign to the Mount using (2) 5/16-18 x 1" Screws, Flat Washers, and Locknuts.
5. Layout the Lamp Harness, noting that the connectors marked with Green Tape is Right Side and Yellow Tape is Left Side.
6. Plug the Lamp Harness into the Flasher Control Module, route both cord plugs with Green Tape along the top right side of the rear frame. Route the plugs up through the Light Bracket and plug the 3 prong cord into the Red LED. Plug the 2 prong cord into the Amber LED.
7. Repeat for the Left Side (Yellow Tape).
8. Plug the 7 Pin Harness into the Light Module, then route the harness along the Right Hand Brace and secure with Tie Straps.
9. Bundle and secure excess cord to the Module Bracket with Tie Straps. Secure cords along frame and brace using Tie Straps.

NOTE

All wires must be firmly attached to machine frame members so they do not sag or become torn loose by field debris.

Chapter 3

Operation

NOTE

This chapter will cover the basic operation and procedures for the Landoll Brillion Soil Builder. Be sure to read and understand the Safety Procedures and Cautions starting on Page 1-2.

General

The Brillion Soil Builder should be inspected prior to operation to see that all nuts and bolts are tight and to be sure that it is in good operating condition. (After the first few hours of initial operation, check bolts again to be sure they haven't loosened.)

Hitch the implement to the tractor drawbar. It may be necessary to make adjustments on the adjustable brace rod assembly of the Soil Builder so that the clevis is at the proper height for tractor drawbar.

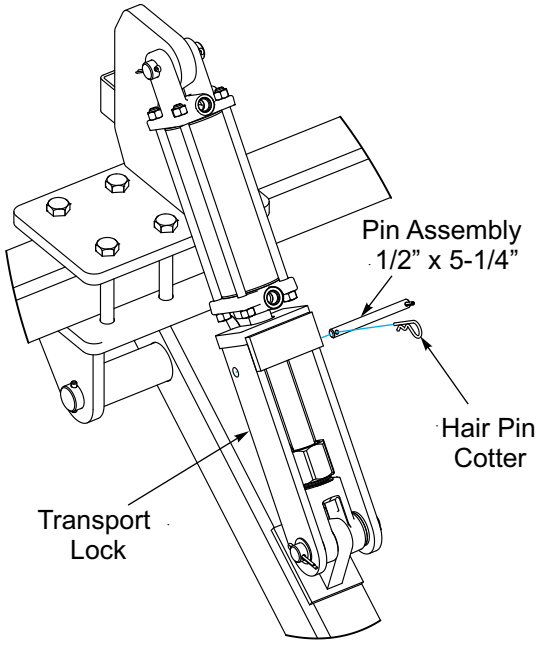
Hydraulic cylinders are used to raise and lower the machine. Attach hydraulic hoses to the tractor hydraulic system so the machine can be lowered with the tractor control lever.

Transporting the Soil Builder

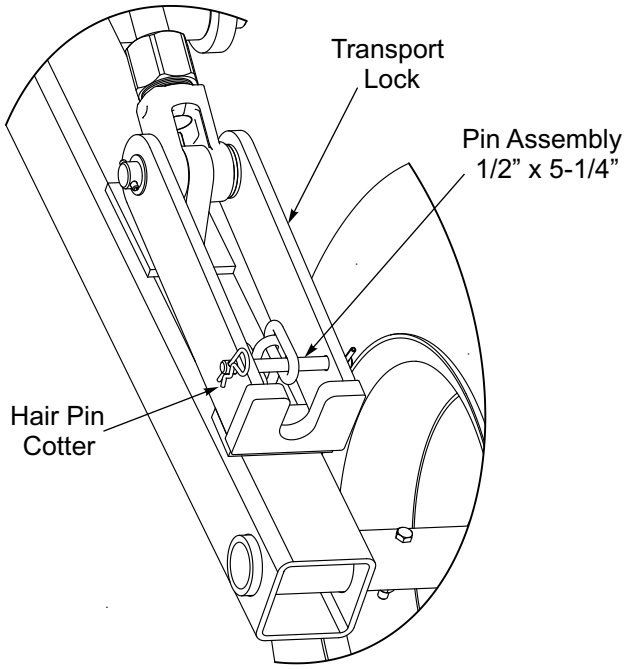
To transport the unit, extend the transport cylinders completely and place cylinder lockouts in the transport lock position, over the cylinder rods. Then insert a pin assembly into each cylinder lockout and secure them with the hairpin cotters provided. The cylinder lockouts are now in place and will keep the machine in a raised position for transport. See Figure 3-1.

Field Operation

Once the soil builder has been transported to the field, remove the pin assemblies that secured the cylinder lockouts for transport. Lower the machine until the points reach the desired depth you wish to work.
Then adjust the Brace Rod assembly on the drawbar so the machine runs level and all shanks are working at approximately the same depth. See Figure 3-1.



Transport Position



Working Position

Figure 3-1: Transport Lock

For best working results, operate tractor at 4 to 6 miles per hour. Reduce speed when approaching the end of the field. When turning or backing up be sure to raise the machine completely out of the ground. This prevents damage to the shanks and coulter gang assemblies.

Coulter gang assemblies should be adjusted so that coulters operate just deep enough to penetrate down to firm soil and cut the residue. In most cases the more firm the soil, the less pressure is required on the coulter gangs. Where more pressure on coulters is desired, change to the lower clevis pin position. See Figure 3-2.

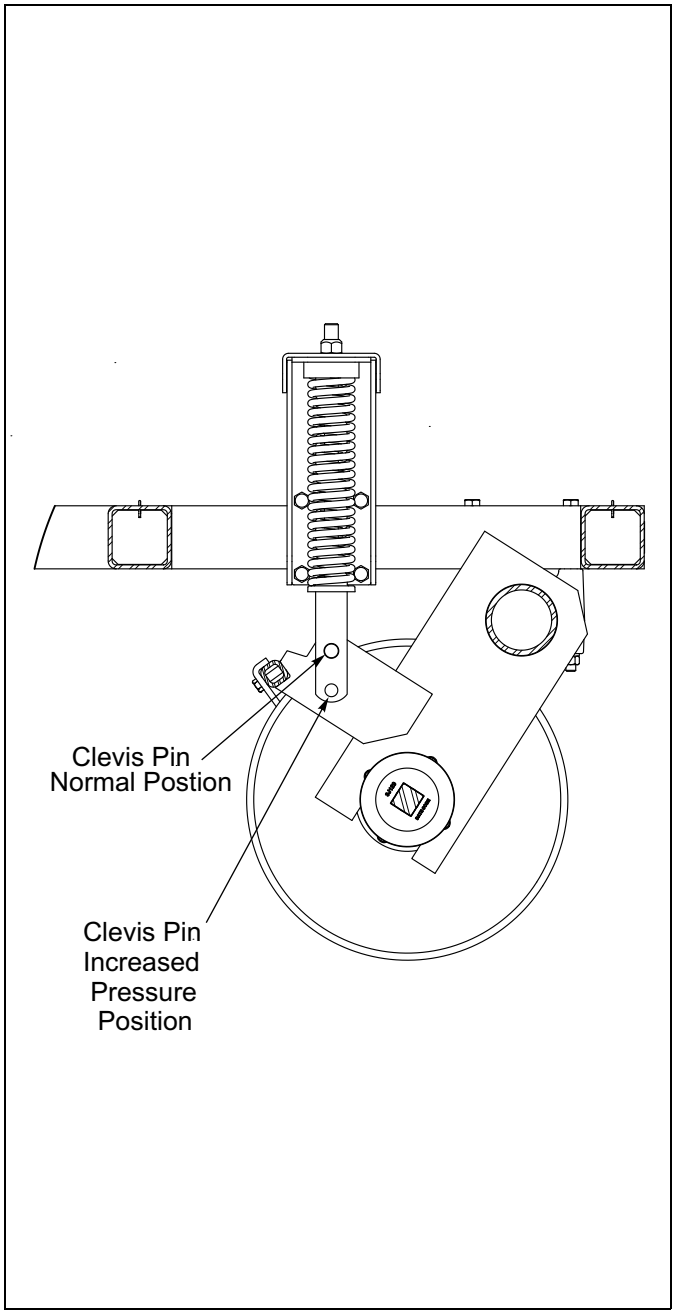


Figure 3-2: Coulter Pressure

Reflectors and SMV Sign

Reflectors and a slow moving vehicle sign (SMV) are required if the Wing Float Pulverizer is transported on a public road. Check with local laws/ordinances. See Figure 3-3.

NOTICE

When Transporting on Roadways, Obey all Applicable Laws and Regulations.

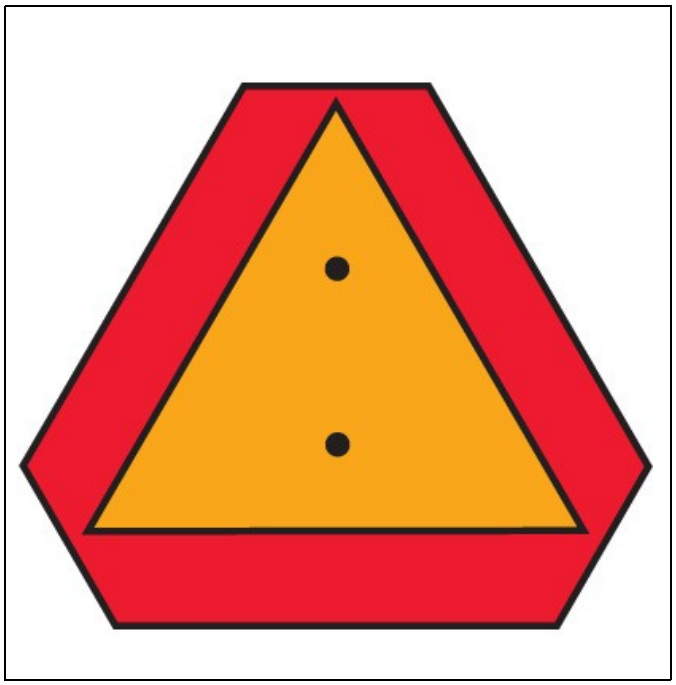


Figure 3-3: SMV Sign

Chapter 4

Maintenance

General Torque Specifications

(rev. 4/97)

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 capscrews 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 capscrews. Use value in [ ] if using prevailing torque nuts

TORQUE SPECIFIED IN FOOT POUNDS

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]

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 [ ] 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

37 degree JIC, ORS, &ORB (REV. 10/97)

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 capscrews 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 capscrews. Use value in [ ] if using prevailing torque nuts

TORQUE SPECIFIED IN FOOT POUNDS

PARKER® BRAND FITTINGS

Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-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

AEROQUIP® BRAND FITTINGS

Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-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

GATES® BRAND FITTINGS

Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-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	----------	----------

Fasteners

Before operating your Brillion machine, check all hardware for tightness. Use the Tightening Torque Table as a guide. See Page 4-1.

After a few hours of use, check entire machine and tighten any loose nuts or bolts. Daily or periodic checks should be made thereafter.

When replacing bolts, be sure to use fasteners of equal grade.

Lubrication

Lubricate with quality grease per recommended lubrication frequency intervals indicated or if machine is not used for an extended period. See Figure 4-1.

⚠ CAUTION

Over lubrication of these bearings can cause premature bearing failure.

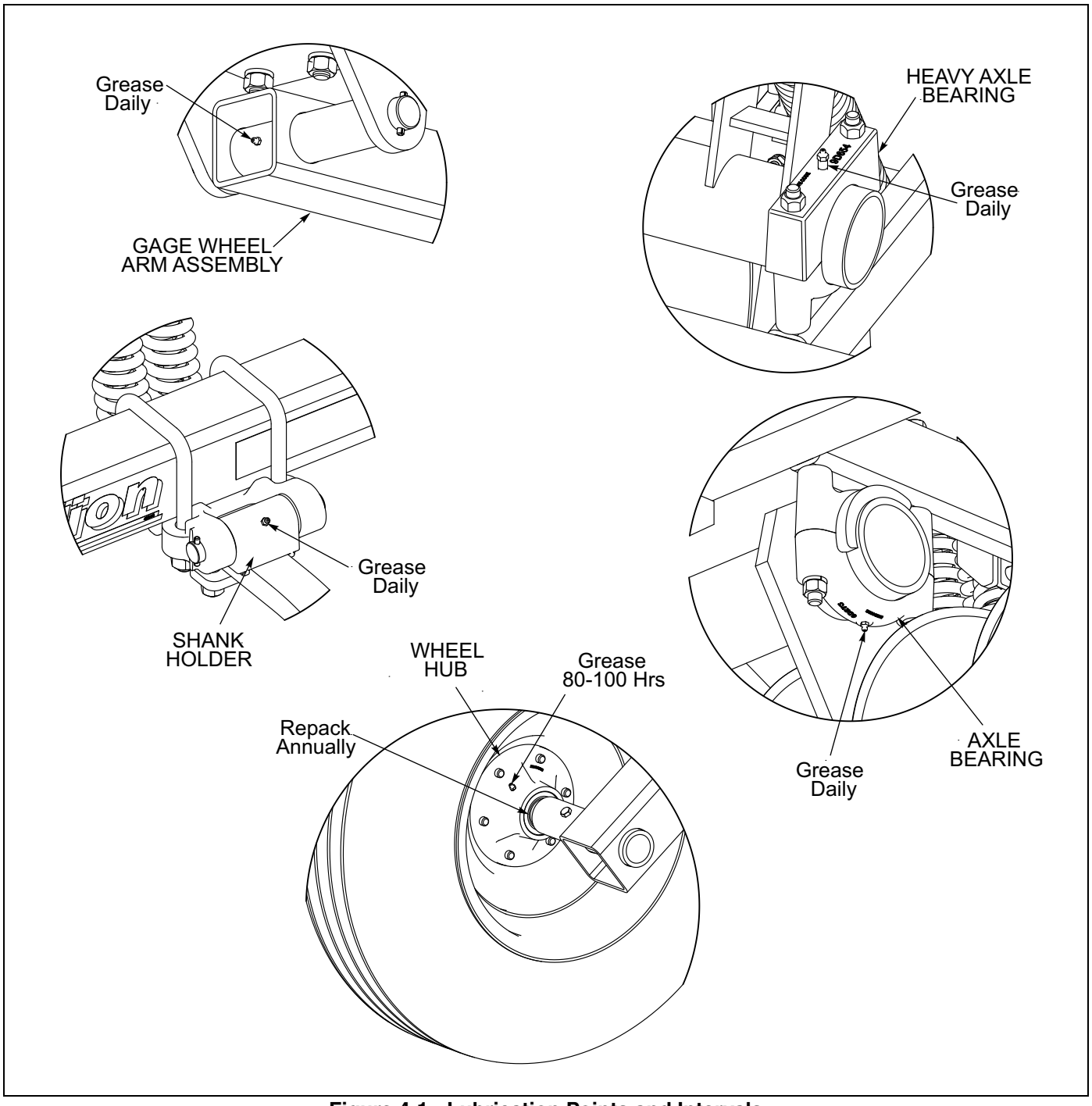


Figure 4-1: Lubrication Points and Intervals

Hydraulic System

Check the hydraulic lines and cylinders for leaks before starting operation each day.

CAUTION

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands to search for suspected leaks. Wear protective gloves and safety glasses or goggles when working with the hydraulic system.

When the machine is not to be used for some time, exposed portions of the cylinder rods should be cleaned and covered with a thin coat of grease. This will prevent corrosion which will damage cylinder seals.

Bleeding Hydraulic Cylinders

The first time the machine is connected to the tractor, or any time the hydraulic circuit is opened, air must be bled from the system.

Tires

Recommended tire sizes are as follows: 5-shank models, use 9. 5 L x 1511, 6 ply (inflate to 28 p.s.i.). 7-shank models, use 11 L x 1511, 8 ply (inflate to 32 p.s.i.).

Maintenance Routine

Beginning Of Day

- Check for and tighten any loose U-bolts holding spring clamps to frame. See Torque Chart.

End of Day

- Clean dirt and residue from implement.
- Check for and repair any equipment damage.

Beginning of Season

- Grease all grease fittings.
- Tighten all loose bolts, U-bolts.
- Check tire pressure
- Check for hydraulic leaks.

End of Season

- Clean all dirt and residue from implement.
- Avoid spraying high pressure washer directly at bearing seals and electrical connections.
- Paint areas where paint is chipped or worn away.
- Repair or replace any damaged parts.
- Replace missing or damaged decals.
- Store implement in a clean, dry area away from livestock.
- Raise the machine and install the transport locks.

Chapter 5

General Reference and Specifications

	CDA53-1	CDA73-1	HCDA73-1
Approximate Weight	3,204 lbs. (1,453 kg)	4,481 lbs. (2,033 kg)	4,751 lbs. (2,155 kg)
Working Width	6 ft. 3 in. (1.91 m)	8 ft. 9 in. (2.67 m)	8 ft. 9 in. (2.67 m)
Transport Width	7 ft. 1 in. (2.16 m)	9 ft. 7 in. (2.92 m)	9 ft. 7 in. (2.92 m)
Transport Height	5 ft. 2 in. (1.58 m)	5 ft. 2 in. (1.58 m)	5 ft. 2 in. (1.58 m)
Overall Length	16 ft. 11 in. (5.16 m)	16 ft. 11 in. (5.16 m)	16 ft. 11 in. (5.16 m)
Number of Coulter Blades	11	15	15
Coulter Blade Diameter	20 in. (508 mm)	20 in. (508 mm)	20 in. (508 mm)
Coulter Blade Thickness	7 ga.	7 ga.	7 ga.
Coulter Blade Spacing	7.5 in. (191 mm)	7.5 in. (191 mm)	7.5 in. (191 mm)
Coulter Bearings	Self-Aligning Flange Type	Self-Aligning Flange Type	Self-Aligning Flange Type
Coulter Protection	Compression Coil Spring	Compression Coil Spring	Compression Coil Spring
Coulter Gang Bolt	1.5 in. (38 mm) Square	1.5 in. (38 mm) Square	1.5 in. (38 mm) Square
Number of Shanks	5	7	7
Shank Mount	Dual Nested Spring	Dual Nested Spring	Dual Nested Spring
Shank Type	Parabolic	Parabolic	Parabolic
Shank Spacing	15 in. (381 mm)	15 in. (381 mm)	15 in. (381 mm)
Shank Working Depth	Maximumof 10 in. (254 mm)	Maximumof 10 in. (254 mm)	Maximumof 10 in. (254 mm)
Spring Pressure/Trip Resistance	550 lbs. to 825 lbs.	550 lbs. to 825 lbs.	550 lbs. to 825 lbs.
Chisel Points Available	4 in. (102 mm) Twisted Shovels	4 in. (102 mm) Twisted Shovels	4 in. (102 mm) Twisted Shovels
Under Frame Clearance	29 in. (737 mm)	29 in. (737 mm)	29 in. (737 mm)
Frame Structure	4 in. x 4 in. x .25 in. (102 x 102 x 6.35 mm)	4 in. x 4 in. x .25 in. (102 x 102 x 6.35 mm)	4 in. x 4 in. x .25 in. (102 x 102 x 6.35 mm)
Rockshaft Pivot Bearings	Two Piece Cast Iron	Two Piece Cast Iron	Two Piece Cast Iron
Transport Axle Type	Single Tire	Single Tire	Single Tire
Main Frame Cylinders	3 in. x 8 in. (76 x 203 mm)	3 in. x 8 in. (76 x 203 mm)	3 in. x 8 in. (76 x 203 mm)
Main Frame Cylinder Control	External Depth Stop	External Depth Stop	External Depth Stop
Coulter Depth Cylinders	N/A - Manual	N/A - Manual	3 in. x 8 in. (76 x 203 mm)
Coulter Depth Cylinder Control	N/A	N/A	Depth Control Segments
Tires	(2) 9.5L x 15-6 Ply	(2) 11L x 15-8 Ply	(2) 11L x 15-8 Ply
Hitch Pin Hole Diameter	1.563 in. (40 mm) Flip-Flop Style Hitch	1.563 in. (40 mm) Flip-Flop Style Hitch	1.563 in. (40 mm) Flip-Flop Style Hitch
Safety Warning Lights and SMV Emblem	Standard	Standard	Standard
Safety Chain	Standard	Standard	Standard
Horsepower Requirements	15 to 20 HP (11 to 15 kW) per Shank	15 to 20 HP (11 to 15 kW) per Shank	15 to 20 HP (11 to 15 kW) per Shank
Recommended Operating Speed	5 to 6.5 MPH (8 to 10.5 km/h)	5 to 6.5 MPH (8 to 10.5 km/h)	5 to 6.5 MPH (8 to 10.5 km/h)

Figure 5-1: Specifications

Specifications subject to change without notice

http://landoll.com/content/index.php/products/farm_equipment/brillion-farm-equipment/soil-builder/

Table provided for general use.

NOTES:

Document Control Revision Log:

Date	Revision	Improvement(s) Description and Comments	Team Member
07/2001		Initial Release	
11/2013	1113	Updated to the Landoll format. Added LED Warning Lights	WML
07/2014	0714	Complete Update of Drawings and Instructions	WML

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

Soil Builder
Coulter Chisel
Models: CDA53-1, 73-1 and HCDA73-1
Operator's Manual

Re-Order Part Number 2J757

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