WARRANTY REGISTRATION

Dealer name: _____ Customer name: _____

Address: _____ Address: _____

_____ _____

City, State, Zip: _____ City, State, Zip: _____

_____ _____

Model & Serial Number: _____

Date of Delivery: _____

CUSTOMER'S WARRANTY REGISTRATION

Customer's warranty protection on this equipment is only valid when this certification form is completed and signed by both the customer and dealer at the time of delivery of the equipment and registered with the manufacturer.

DEALER'S SIGNATURE INDICATES:

- ☐ Equipment operates properly and customer was instructed in safe and proper operation
- ☐ Customer received a copy of the operator's manual
- ☐ Warranty was explained to the customer
- ☐ Equipment Received a Pre-Delivery Inspection
- ☐ Chain tension and adjustment section reviewed and discussed

_____ _____ _____

Signature of Dealer Dealer Name Date

CUSTOMER'S SIGNATURE INDICATES:

- ☐ Acceptance of equipment
- ☐ Receipt of owners manual and clear understanding of warranty
- ☐ All systems were explained and understood
- ☐ Receipt of instructions on safe and proper use
- ☐ Proper Hydraulic Connection Was Explained by Dealer
- ☐ A dealer parts/service representative contact has been provided
- ☐ Clear understanding of chain tension and adjustment

_____ _____ _____

Signature of Customer Customer Name Date

TRACTOR-SUPPLIED HYDRAULIC SYSTEMS INFORMATION

IMPORTANT!

The following information is extremely important when connecting a unit equipped with Tractor-Supplied Hydraulics:

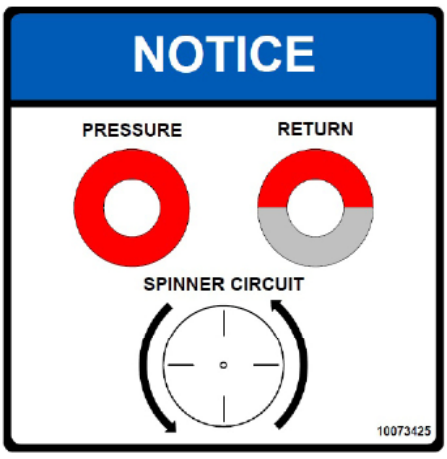
DO NOT connect the hydraulic system to the tractor unless the tractor's case drain can be identified. Language for this type of return varies by manufacturer and may also be referred to as a 0 Pressure Return. Your tractor dealer should be contacted with any questions in regards to the proper connections. Improper connection will result in motor failure and VOID THE WARRANTY.

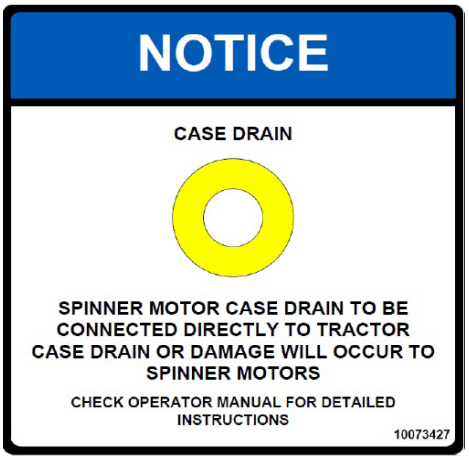
The proper connection sequence is as follows:

1). Connect Spreader Case Drain Line (Yellow Handle) to Tractor Case Drain
2). Connect Spreader Main Return Line (Half Red / Half Grey Handle) to Tractor Remote
3). Connect Spreader Pressure Line (Red Handle) to Tractor Remote

***Reduce Tractor Hydraulic Output to no more than 21 GPM*

Signature of Dealer	Dealer Name	Date
Signature of Customer	Customer Name	Date





Trooper 8.0
OPERATOR'S MANUAL- 2020

Salford BBI Inc.
470 South Wayside Street
Cornelia, GA 30531
www.salfordgroup.com/bbi-spreaders/
(800) 282-3570

READ MANUAL IN ITS ENTIRETY BEFORE OPERATING MACHINE

Table of Contents

Warranty and Limitation of Liability

Salford products are designed and built with longevity and serviceability in mind and are intended to withstand the normal rigors of agricultural use. In case of defect in material or workmanship, Salford Group, Inc. (Salford) will replace and/or repair at its option any part covered by the warranty policy outlined below.

Salford will provide this warranty upon the following conditions and will begin from the date of delivery to the end user.

- **Registration is filled out and returned to validate the warranty.**
- **For instances where significant repair work is required, the reseller will notify Salford BEFORE the work has begun and obtain a Warranty Authorization Number (WAN).**

What is covered by warranty

A new whole goods serial numbered machine is warranted free from defects in material or workmanship when assembled and set up correctly, The machine must be properly lubricated, properly stored and properly maintained in accordance with the instructions contained in the operators manual for the period of 1 year or 12 months as outlined below. Warranty may be voided by extreme usage beyond normal operating conditions.

This warranty is transferable within the time periods and conditions outlined below.

1 year - parts and labor to remove, repair or replace defective parts only.

What is not covered by warranty:

- Replacement of non-defective wear items expected to be replaced during the warranty period, including, but not limited to: lights, conveyor belts, drive sprockets and chains or items replaced due to customer demand
- Normal maintenance parts and service, including, but not limited to lubrication, coolants, filters and thermostats
  Note: Lubricants, filters, and coolants do not qualify for warranty reimbursement unless they require replacement as a DIRECT RESULT of a defect in material or workmanship.
- New Salford products, parts and components that are covered by separate and specific warranties (i.e. Tires).
- Any and all travel costs associated with hauling or towing a customer's machine to and from a customer's location related to any warranty repair unless specifically covered by a program or policy.
- Repairs arising from any unauthorized modification to the product or the use of non-Salford attachments or parts.
- Repairs arising from service performed by agents not approved by Salford.
- Repairs arising from storage deterioration, failure to maintain the equipment, improper use of the equipment, collision or other accident, vandalism, or other casualty, or operation beyond rated capacity or specifications.
- Repairs arising from abuse or neglect including, but not limited to: operation without adequate lubrication, overspeeding, improper storage, incorrect oil or other fluids.
- Failure of the machine or its attachments caused by improper field application or overloading.
- Failure of any vehicle towing or carrying the Salford product that is not approved for towing or carrying the Salford product.
- Premiums charged for overtime labor costs.
- Economic loss, including lost profits, crop loss, equipment rental or other expenses.
- Costs associated with cleaning the machine in preparation for servicing.
- Loss or damage during shipment.
- Cost of initial setup or installation of any optional equipment or attachments to a unit.
- Items used for repairs including, but not limited to: solvents, cleaners, anti-seize lubricants, oil-dry, shop towels, special tools, etc.
- Claims for stolen equipment.
- Claims for replacing a complete assembly when the repair is less than the replacement.
- Claims involving the inspection or reconditioning of units.
- Costs of any duplicate, repeat or roll-back repair resulting from improper diagnosis, testing, or poor service work.
- Cost of removing or installing Non-Salford optional equipment or attachments.

Continued on next page

Salford Group, Inc.
364018 McBeth Road, Salford, ON, Canada N0J 1W0
Form Dated 9/18

Warranty and Limitation of Liability

Users obligations

- It is the users obligation to read and understand the operators manual provided with the serial numbered machine.
- Lubricate and maintain the equipment in accordance with instructions in the operators manual.
- Replace wear parts in a timely manner and in accordance with reasonable operating practices.
- Operate the machinery in a safe and approved manner while in the field and in transport.

How to obtain warranty service

- Report problem to your original authorized reseller.
- Have proof of product warranty coverage still being valid (i.e. model & serial no. of machine).
- Reseller will obtain Warranty Authorization Number.
- Provide transportation of the product or failed part to and from reseller's place of business.

Limitations of liability

Salford provides this warranty in lieu of all other warranties or conditions whether express or implied. Salford shall not be held responsible or liable to the purchaser or to the dealer for any indirect or consequential damages resulting from any defects covered by this warranty or any implied warranty applicable to the product including, but not limited to, property damage, loss of use, labour costs, loss of earnings, or loss of profit resulting from the failure of a part, component or a machine covered under the conditions and terms of this warranty.

This policy is subject to local regional laws and statutes governing warranty inclusions and exclusions.

This Warranty is not valid unless registered with Salford.

Who provides warranty work

Salford offers this warranty work to be done by either the original authorized dealer or a Salford authorized technician.

In the case where the work is to be performed by the owner, the reseller will contact Salford BEFORE the work is carried out. Salford will grant approval of the repair after assessing the technical compentency of the owner.

Cost to purchaser

Salford will supply the dealer with approved replacement parts and/or instructions on how to perform the work necessary.
Premium charges for overtime are **not** covered by warranty and will be charged to the purchaser if warranty work requires overtime or after hours time.

Limitation of Remedy

In the event of a failure of the repair the purchasers sole and exclusive remedy against Salford shall be for the repair and replacement of the failed part and this exclusive remedy shall not be deemed to have failed in it's essential purpose as long as Salford is willing and able to repair or replace the defective part in the manner prescribed herein the terms of the product warranty.

Salford Group, Inc.
364018 McBeth Road, Salford, ON, Canada N0J 1W0
Form Dated 9/18

Safety Instructions

Safety Warnings

Signal Words

Please read and understand the safety warnings contained in this manual before operation.

TAKE NOTE: THIS SAFETY ALERT SYMBOL, FOUND THROUGHOUT THIS MANUAL, IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THAT OF OTHERS; FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN **INJURY OR DEATH**.

In this manual and on safety signs placed on your spreader, the words "DANGER", "WARNING," "CAUTION," and "IMPORTANT" are used to indicate the following:

DANGER!

Indicates an **IMMINENTLY HAZARDOUS SITUATION** that, if not avoided, **WILL** result in **DEATH OR SERIOUS INJURY**. This signal word is to be limited to the most extreme situations and typically for machine components that, for functional purposes, cannot be guarded.

WARNING!

Indicates a **POTENTIALLY HAZARDOUS SITUATION** that, if not avoided, **COULD** result in **DEATH OR SERIOUS INJURY**. This includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION!

Indicates a **POTENTIALLY HAZARDOUS SITUATION** that, if not avoided, **MAY** result in **MODERATE OR MINOR INJURY**. It may also be used to alert against unsafe practices.

IMPORTANT!
NOTICE!

Indicates critical information regarding potential damage or deterioration of equipment if not heeded. Generally would not involve personal injury.

We cannot stress enough the need for personal safety. Salford BBI strongly urges you to make safety your top priority when operating any equipment. Anyone allowed to operate our equipment must be thoroughly trained and tested to prove that they understand the fundamentals for safe operation.

Our intention is that the following guidelines cover general usage of Salford BBI equipment and assist you in avoiding accidents. There will be times when you will run into situations that are not covered in this section. At those times, the best standard to use is caution guided by your own common sense. If, at any time, you have a question concerning these guidelines, please call your authorized Salford BBI dealer or the Salford BBI factory at (800) 282-3570.

Safety Instructions

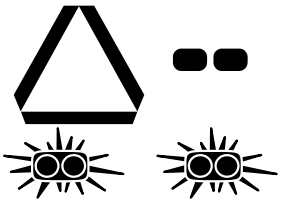
General Safety

General Safety & Precautions

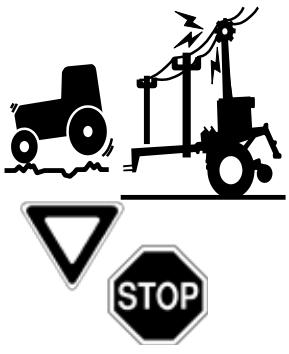
- Read Operators manual before using.
  Ensure operator is fully familiar with all operational features and safety concerns of the implement.

- Observe all safety and warning decals and practice safe operation of equipment, this will help prevent accidents and save lives. Safety first!

- Keep area free from bystanders while hooking to tractor, failure to do so may result in fatal injury. Hitch machine securely with draw pin and safety locking pin with safety chain attached. Failure to do so may cause machine to disconnect from tractor and cause fatal injury.



- Ensure safety lighting is operational and slow moving vehicle sign is installed. Slow moving objects are a hazard on the roads and are sometimes difficult to see, especially at night.



- Use all safety locks and safety equipment while transporting. When transporting equipment on public roadways, watch for overhead wires or objects, link tractor brake pedals, and do not exceed 12 mph.
  If road is rough keep speed to minimum, excessive speed may cause machinery to start swerving or tip over.

Safety Instructions

- Adapt operating speed to ground conditions. Never assume that you can make a turn at full speed. Always use turn signals and slow down when turning. When travelling down hill shift down to a lower gear.

- Exercise extreme caution when changing wear parts!

- When working on the implement, be sure it is supported with safety stands to prevent any part of the machine from falling on to the operator.

- Absolutely no riders allowed at any time, rider can fall off the implement and get seriously injured or killed.

- Do not dismount tractor when tractor is still running. Always engage parking brake before dismounting tractor.

Safety Instructions

Avoid Accidents

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, have causes stemming from the failure of individuals to follow simple and fundamental safety rules and precautions. For this reason, people can prevent most accidents by recognizing their real, potential causes and rectifying these causes before they ever allow accidents to occur.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that we cannot completely safeguard against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT. THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT THOUSANDS OF SERIOUS INJURIES EACH YEAR.

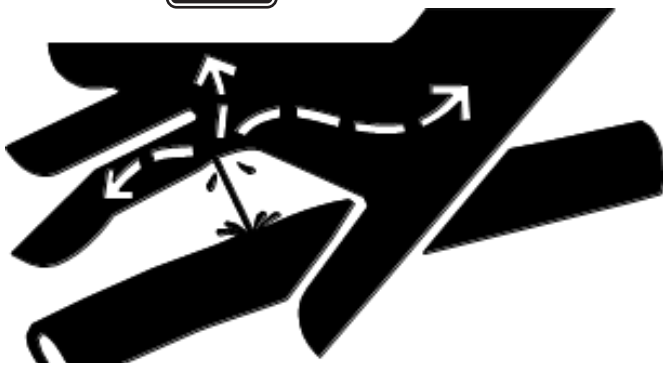
THAT RULE IS:

NEVER CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS UNDER POWER.
- National Safety Council

CAUTION! If you use your spreader to transport chemicals, check with your chemical supplier regarding the applicable DOT (Department of Transportation) regulations.

Hydraulics

DANGER!



- **DO NOT** search for high pressure hydraulic leaks without any hand and face protection. A tiny, almost invisible leak can penetrate skin, requiring immediate medical attention.
- Use cardboard or wood to detect leaks – never your hand.
- Double check that all is clear before operating hydraulics. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Use transport/maintenance locks when machine is raised.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition and are properly tightened.

Safety Instructions

Chemical Safety

- Take extreme care when filling, emptying, or cleaning hoppers.
- Read and follow product container labels outlining the handling and storage instructions of the chemical manufacturer.
- Do not breathe, touch, or ingest chemicals. Wear long sleeve clothing and personal protective equipment including safety goggles, gloves, and breathing apparatus.
- Clear the area of bystanders.
- Wash exposed skin immediately- do not leave chemicals on your skin. Wash hands before eating.
- Wash clothing and equipment contaminated by chemicals.
- In case of chemical poisoning seek immediate medical attention. Have the container label on hand.
- Keep all chemicals out of the reach of children and animals. Store in original containers in a locked area.
- Dispose of excess chemicals and chemical containers in a proper manner.

Safety Instructions

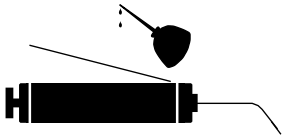
Maintenance Safety

SALFORD BBI implements are exposed to many types of forces during normal operation. Vibration and friction are two key items that contribute to down-time, therefore it is very IMPORTANT to keep all nuts and bolts tight and all other fasteners (hair pins, linch pins, roll pins etc.) in good condition.

DANGER! When servicing your implement you may be severely injured or killed by being crushed by the implement, always install transport lock pins and install blocks underneath the frame to prevent from falling on the operator.

DANGER! When replacing wear parts always wear protective gear to prevent serious injury.

Because of the constant heavy loads, DAILY INSPECTION AND LUBRICATION at specified intervals is necessary to maximize the life of the implement. (see "Lubrication and Maintenance" section)



DANGER! When changing a tire be extremely careful, use a safety cage when inflating tires and never stand in front of tire! Use a clip-on chuck and extension hose, never exceed recommended tire pressure and always use the correct tools and equipment.

IMPORTANT!

Transportation

Ensure the towing vehicle is properly rated to tow an un-braked implement on roadways / hi-ways.

- Always install safety chain before transporting on roadways or hi-ways.
- Never exceed 12 mph (19 km/h)
- Total gross weight of towed implement(s) not to exceed 1.5 times tractor gross weight.
- Do not travel at road speeds or over long distances with applicator loaded, always exercise caution and safe operation.

Safety Instructions

Hazards

1. Refrain from wearing loose fitting clothing on or around this piece of machinery. There are many places that loose clothing may become wrapped or pulled into devices.

2. Be aware of any moving parts on this machinery. Make sure that any person or persons on or around this piece of machinery are aware of the dangers as well. There are many places where injury may occur. Learn about your unit and the dangers of it. Always use caution in the operation of this piece of machinery.

3. Be sure that any individuals operating this equipment are trained and are aware of the dangers of this equipment.

4. Check for rocks, sticks, or anything that may cause bodily harm to you or damage your unit.

5. Never attempt to work on or repair this piece of equipment while it is running. The PTO and/or any other power source must be completely disengaged while working on this unit.

6. Those working around this unit should remain at least 100 feet from it while it is in operation. The fans are able to propel objects at a high speed up to this distance.

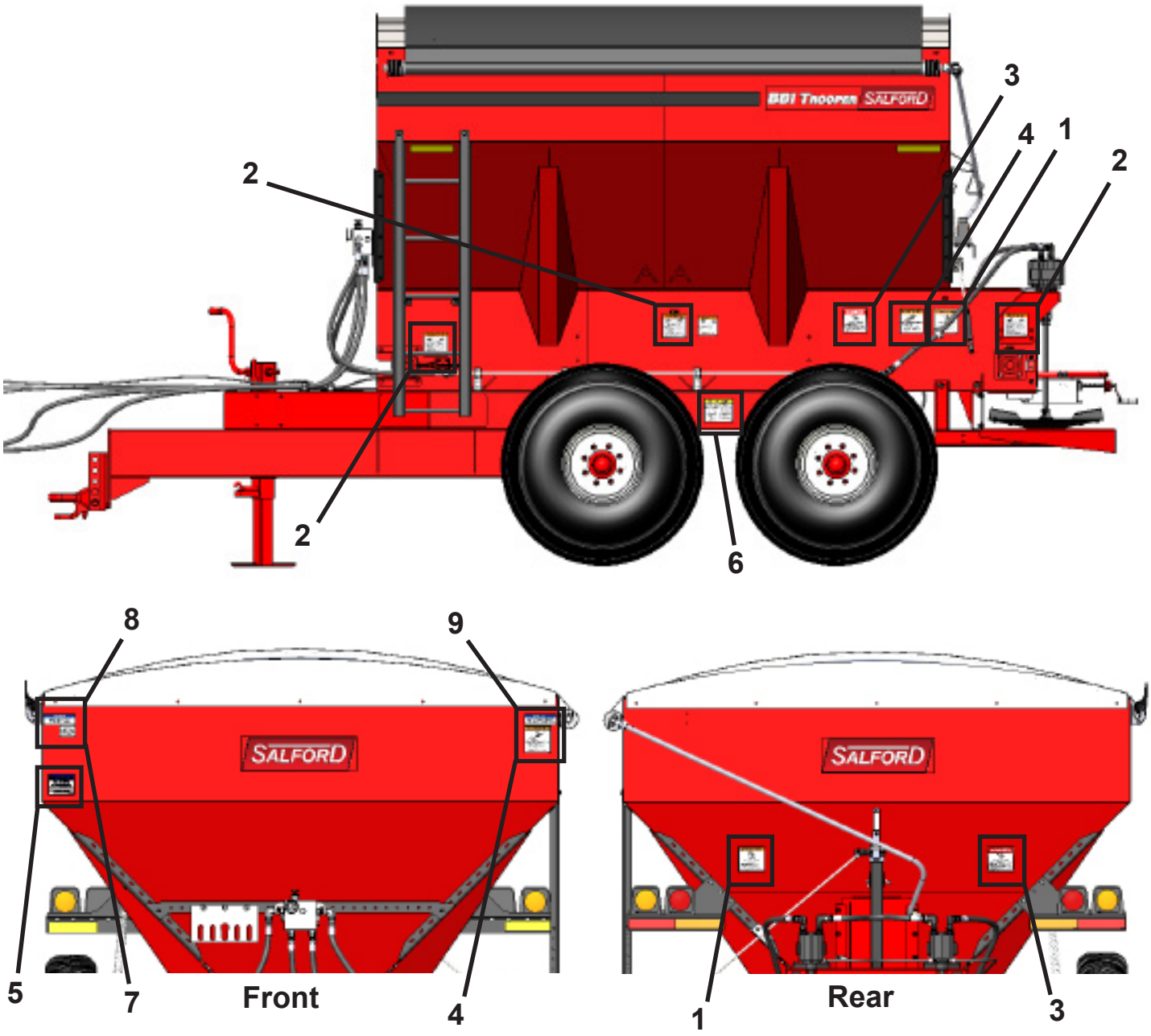
7. Be aware of the dangers of hydraulic systems. Hydraulic fluid is under very high pressure, and may cause serious injury if it hits the facial area, especially the eyes.

8. Shut down the entire system before checking hydraulic fluid level or adding fluid to the system.

Safety Instructions

Safety Decals

Safety Decal Locations



Decal Maintenance Instructions

1. Keep safety decals and signs clean and legible at all times.
2. Replace safety decals and signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current safety sign.
4. Safety Decals are available from your local Salford BBI dealer's Parts Department or our factory at Salford BBI.

Safety Instructions

Decals

ITEM	PART NO.	DESCRIPTION	QTY
1.	10058038	Thrown Object Hazard	3

ITEM	PART NO.	DESCRIPTION	QTY
2.	10002989	Moving Parts Hazard	6

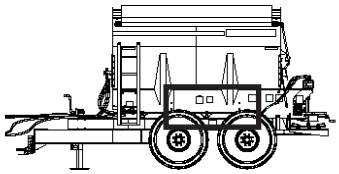
ITEM	PART NO.	DESCRIPTION	QTY
3.	10073807	Sever Hazard	3

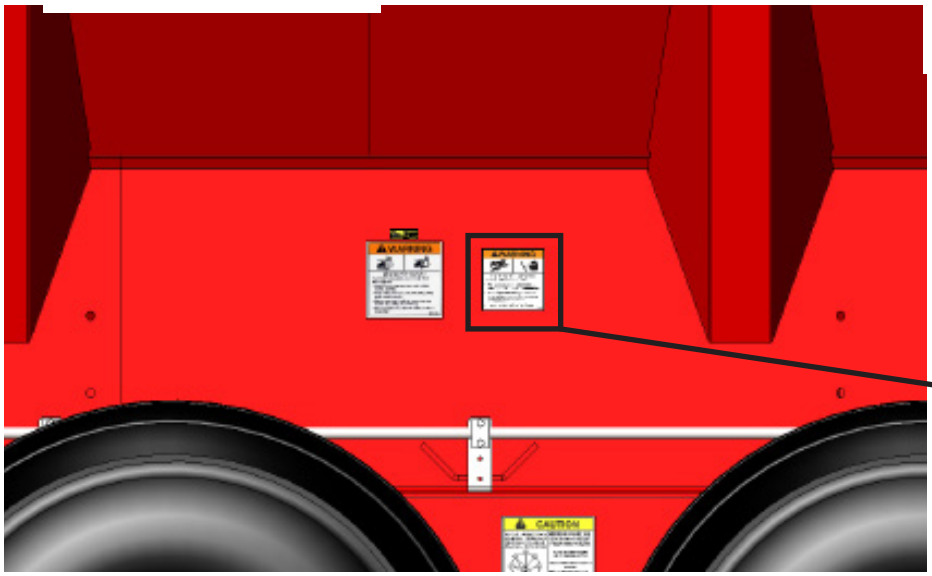
ITEM	PART NO.	DESCRIPTION	QTY
4.	10058039	Drag Chain Hazard	3

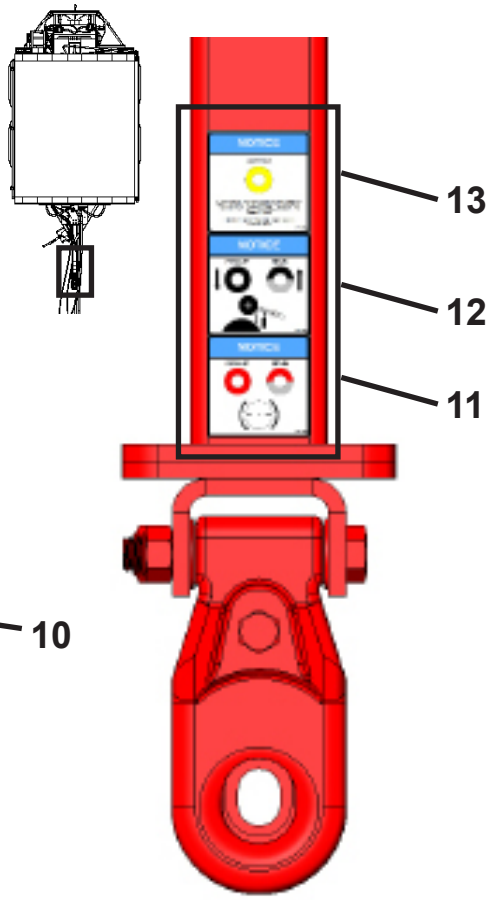
ITEM	PART NO.	DESCRIPTION	QTY
5.	10073217	No Ag Lime	1

Safety Instructions

Hydraulic Decal Locations

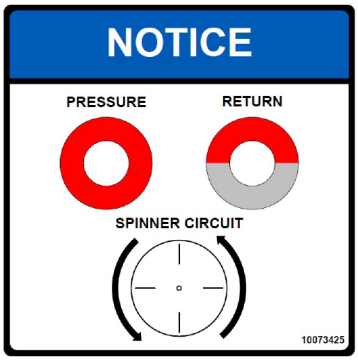


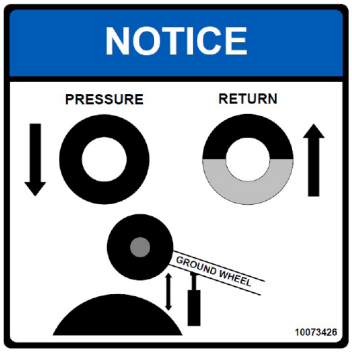




Hydraulic Decals

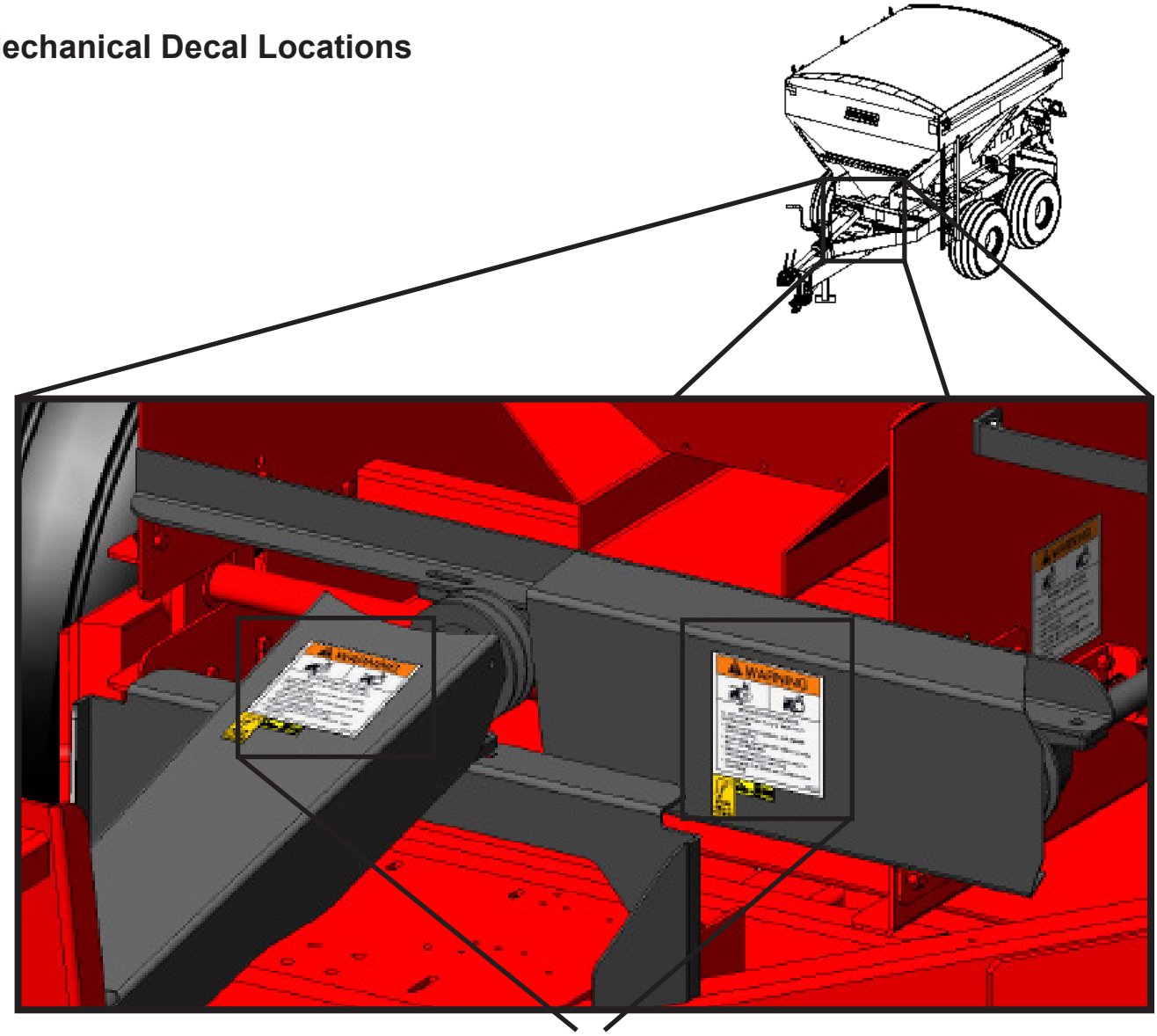
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10.	10016859	High-Pressure Fluid	2	11.	10073425	Spinner Connections	1
12.	10073426	Ground Wheel Connections	1	13.	10073427	Case Drain Connection	1





Safety Instructions

Mechanical Decal Locations



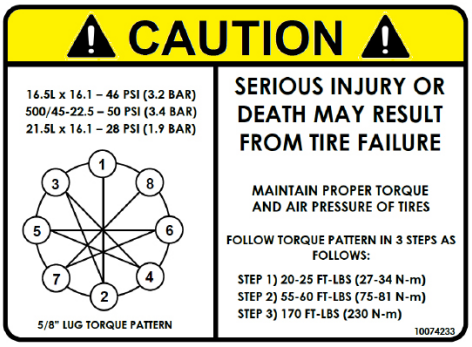
Mechanical Decals

14.	10002989	Moving Parts Hazard	2

Safety Instructions

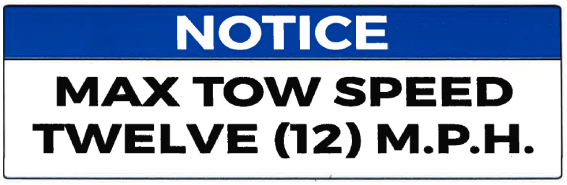
Decals

6.	10074233	8-Bolt Tire Pressure	2



7.	10073812	Press Wheel Warning	1

8.	10073810	Max Payload 10 Tons	1



Set-up and Preparation

Tractor Preparation and Hook-up

Prior to Start-up

Look over the entire unit, checking that all guards and fasteners are in place and fasteners are properly tightened, including lug nuts.

IMPORTANT! **NOTE: Do not load spreader with material until after completing initial start-up steps.**

Tractor Preparation and Hook-up

1. Adjust tractor hitch and drawbar as close to horizontal as you can. Adjust drawbar so hitch pin hole is directly below center line of PTO shaft. Make sure drawbar is in a stationary position.

2. Back tractor to spreader and connect with a minimum ¾" diameter hitch pin. Secure with a locking or cotter pin.
   Ensure the towing vehicle is properly rated to tow an un-braked implement on roadways / hi-ways.

WARNING! Pressurized hydraulic fluid can penetrate body tissue and result in death, serious infection, or other injuries. Fluid injected under skin must be IMMEDIATELY removed by a surgeon familiar with this type of injury. Make sure connections are tight and hoses and fittings are not damaged before applying system pressure. Leaks can be invisible. Keep away from suspected leaks. Relieve pressure before searching for leaks or performing any system maintenance.

IMPORTANT! Ensure that you always keep your hose ends clean using a cloth. Never use a dirty coupling. If it does drop in the dirt, clean it up before you apply or damage to your tractor can occur.

3. Attach the safety chains.

4. Raise jack stand. **Caution**: **The jack leg is under spring tension and will retract quickly when the securing pin is pulled! Take care when retracting the jack leg.**

5. Either connect hydraulic hoses (as discussed in the Tractor-supplied Hydraulic Section), or connect PTO shaft to tractor PTO in the case of a PTO-Driven Spinner System. Be cautious of pinch points.

6. Connect hydraulic hoses for ground wheel cylinder.

7. Check to be sure that no loose parts or other material are in the hopper, on the conveyor or on the spinners. Be sure to remove any loose pieces and ensure all guards are in place.

Set-up and Preparation

Hopper Access

Outside Step Locations

DANGER! Never enter the hopper unless another person is present and the tractor is shut off!

Set-up and Preparation

Model Options

1. Hydraulic Spinners

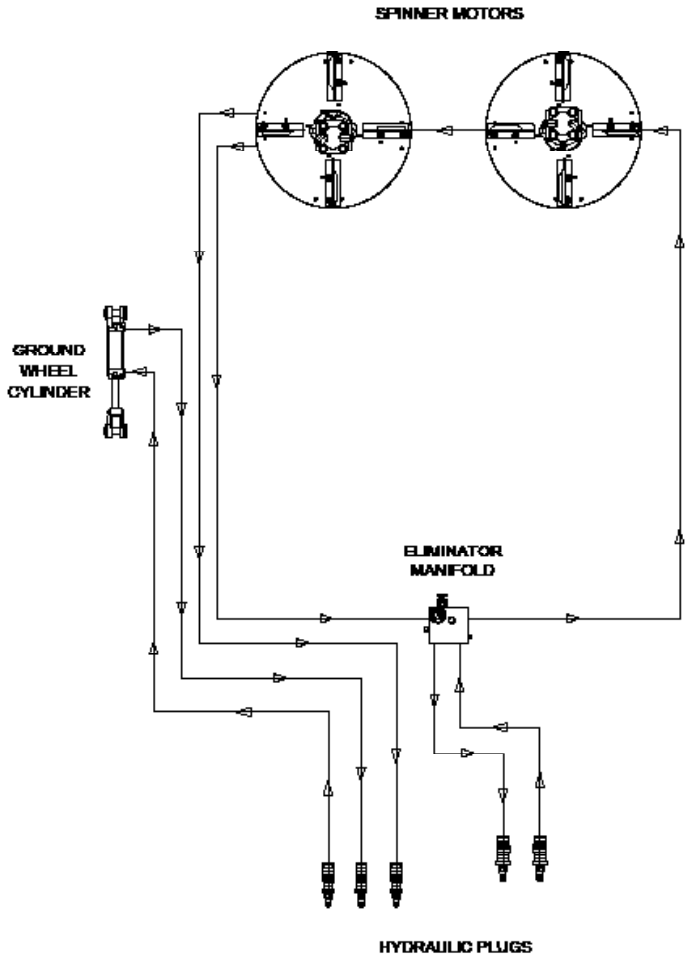
For spreaders powered by the tractor's hydraulic system, you will need to connect three hoses to the tractor- Pressure, Return and Case Drain. Make sure that you match and properly connect the pressure and return hoses. *Mismatched hoses or return hoses that are not properly connected will cause damage to hydraulic components on the spreader.*

IMPORTANT!

On units equipped with tractor-supplied hydraulics (hydraulic spinners) the spinner motor case drain must be connected to a 0 (zero) pressure return / case drain on the tractor. Gear motor systems require 0 Pressure return.

DO NOT connect the system unless 0 (zero) pressure can be verified on the case drain or damage to the motors will result! Connecting to a pressurized return will **VOID THE WARRANTY**.

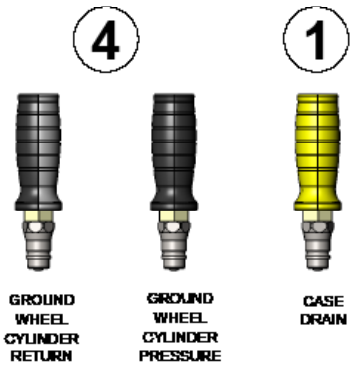
Various tractor manufacturers use different language for their brand to identify a 0 (zero) pressure return / case drain. Please consult your manufacturer to insure the proper return is identified.

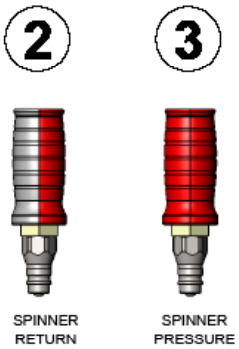


Set-up and Preparation

Connection Order

1. Case Drain (Yellow)
2. Spinner Return (Red-Grey)
3. Spinner Pressure (Red)
4. Ground Wheel Cylinder (Black/ Black-Grey)

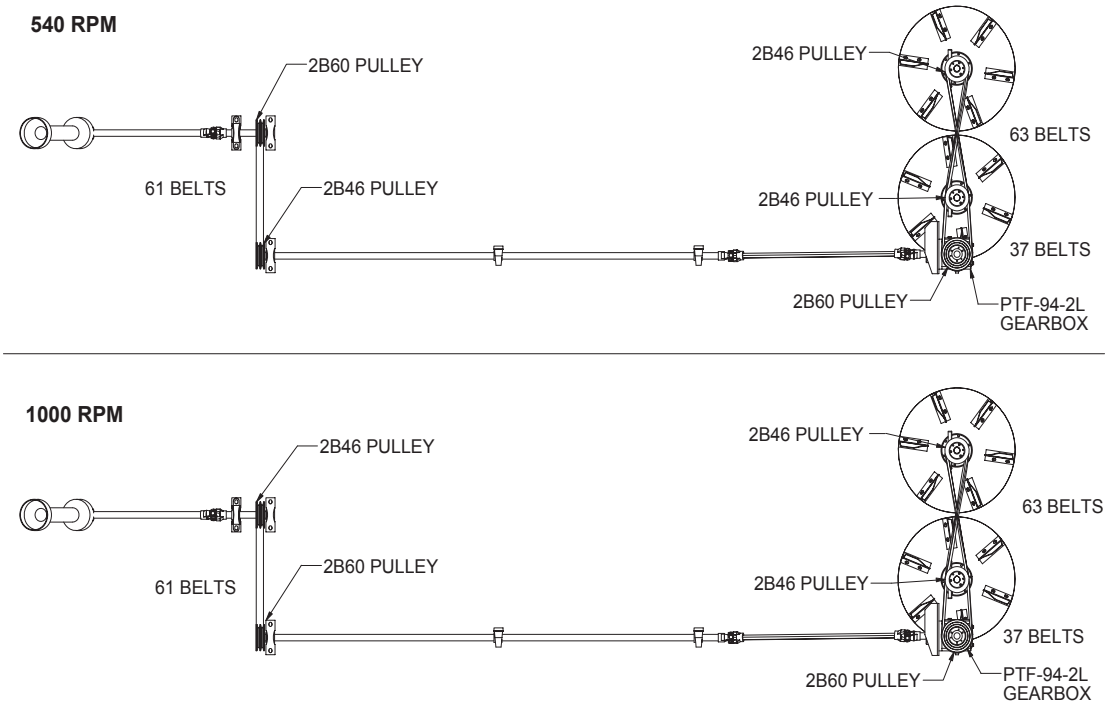




NOTE: Failure to follow proper connection procedures before operation could result in damaged equipment and **VOID THE WARRANTY**.

2. PTO Driven - Mechanical Spinners

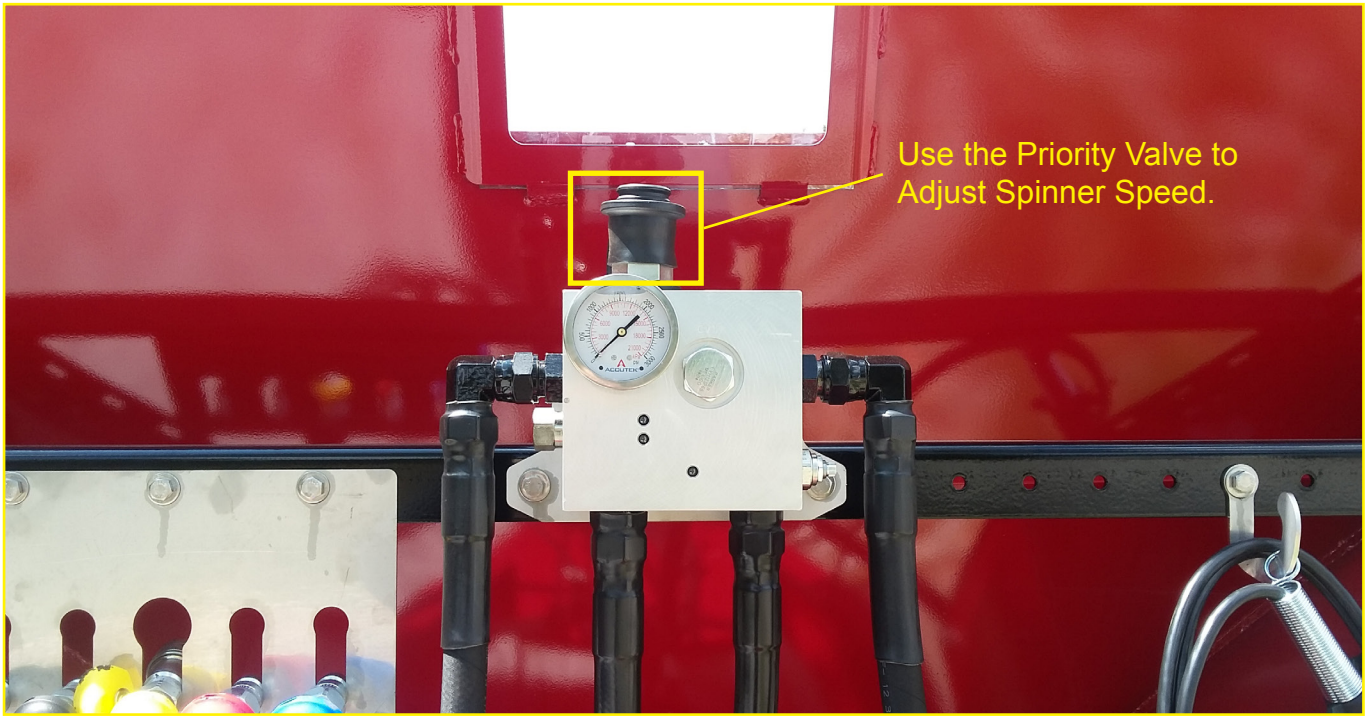
PTO driven spinners are controlled by the tractor's PTO input speed. Salford BBI PTO driven spinners are designed to run at either 540 or 1000 RPM tractor PTO speeds respectively. The following diagram indicates the proper pulley configuration for either 540 or 1000 RPM input speeds. The best operation can be found by turning the spinners at the proper speed. Turning the spinners faster than the pulley setup allows will damage the components of the spinner system. The drive pulleys may be swapped to allow for a different input speed. Please note that the proper PTO shaft will be needed when changing input speed configurations.

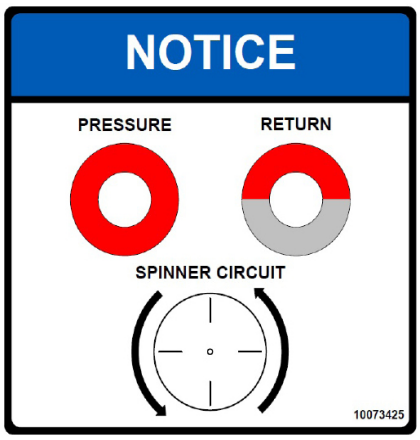


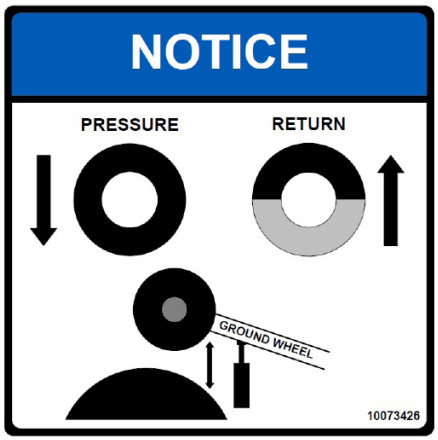
Set-up and Preparation- Hydraulic Spinners

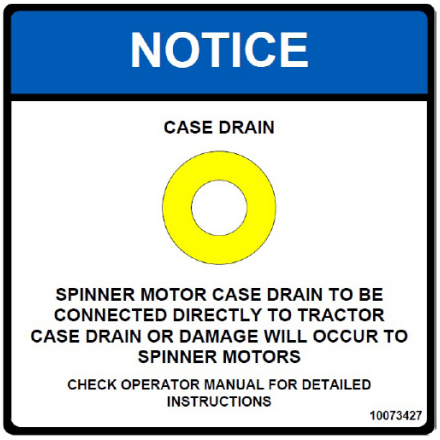
Eliminator Manifold- Hydraulic Spinners

The Eliminator Manifold, found on units equipped with hydraulic spinners, is designed to help protect your hydraulic spinner motors from damage. Specifically, it helps to protect against deadhead, cross hook-up, and over-pressure situations. The manifold contains a priority flow control, pressure relief valve, and a working pressure gauge. **The priority flow control valve located on the top of the manifold is used to adjust the spinner speed.** The gauge reports the load on the circuit, not the available pressure from the tractor. A reading from the gauge can not be used to set spinner speed. A hand tachometer is the most common tool used for this purpose.









All Tractor-Supplied Hydraulic Systems include the Hydraulic Connections label. This indicates that the half-colored hose is for **Return** and the full-colored hose is for **Pressure**.

Set-up and Preparation

Pre-Operation Inspection Sheet

Read the Operator's Manual carefully and become completely familiar with the implement.

Do Not Operate Unless:

You learn and practice the principles of safe machine operation contained in this operator's manual.

1. Avoid hazardous situations.
2. Always perform a pre-operation inspection.
3. Always perform function tests prior to use.
4. Inspect the workplace. Know and understand the workplace inspection before going on to the next section.
5. Only use the machine as it was intended.

General

- Check that all parts are installed properly and tightened according to assembly manual
- Check that all hydraulic hoses are properly attached and clamped

Tires

- Check if tires are inflated properly (refer to maintenance section)
- Check if tire lug nuts/bolts are torqued properly (refer to maintenance section)

Lubrication

- Grease all zerks on all shafts, bearings and pivots
- lubricate all chains before operating or transporting

Transport

- Check that all lights and safety signs are installed and legible
- Check that all hydraulic hoses are connected
- Check that the proper hitch pin is used to connect machine to tractor
- If transporting long distances and the machine has ground drive, ensure lockout is engaged

Notes:

Set-up and Preparation

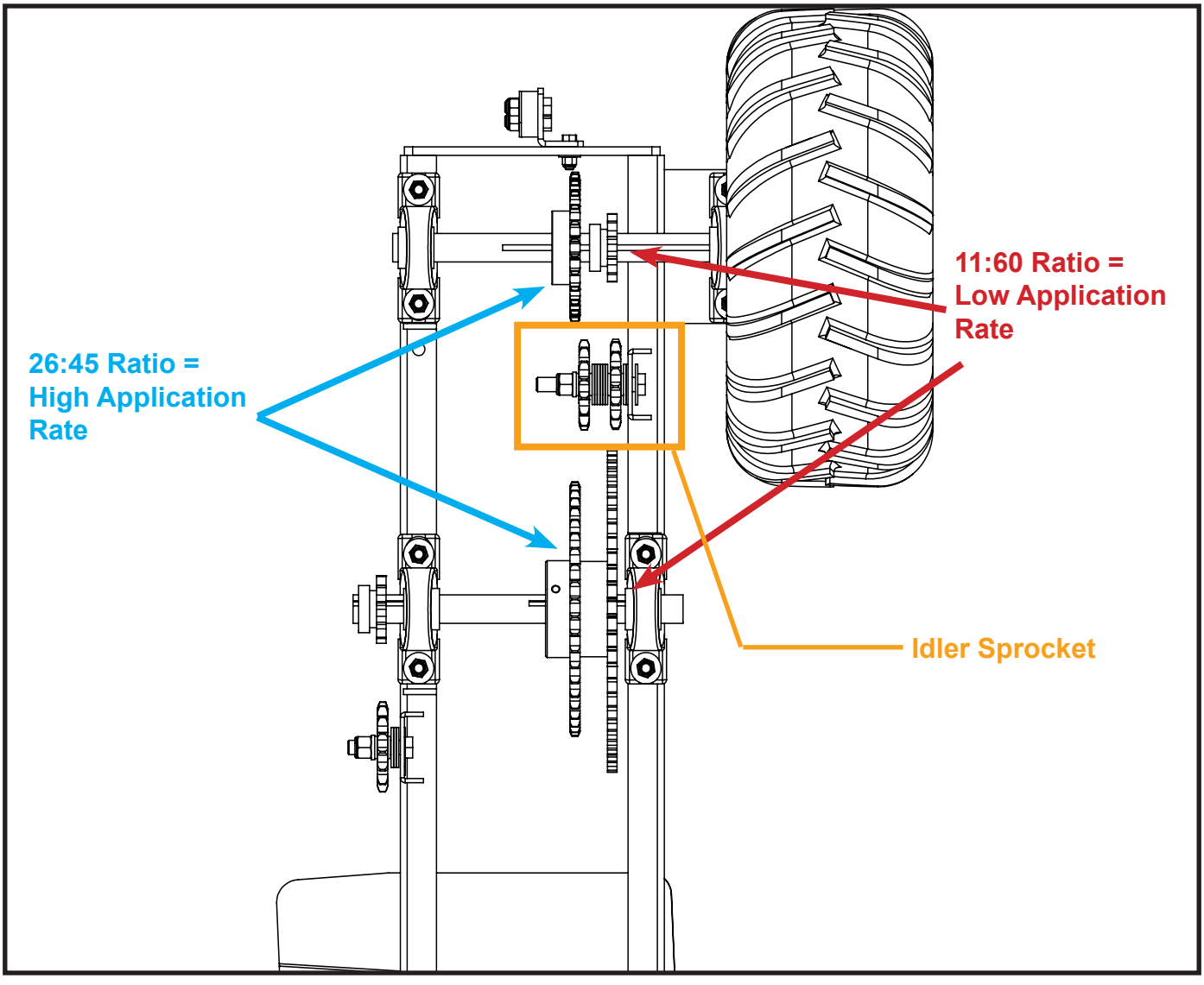
Setting the Correct Ground Drive Ratio

Trooper 8.0 applicators are equipped with a dual ratio ground drive. These are commonly referred to as the high application and low application ratios. These different ratios directly determine the amount of product dispensed as the applicator is towed in the field. The two ratios are defined as follows:

11:60 = Low application Rate

26:45 = High Application Rate

To adjust between the two ratios, loosen idler sprocket to relieve tension on the drive chain. Move the drive chain to the desired set of sprockets. Adjust the idler sprocket to relieve excess chain tension. Tighten the idler sprocket locking bolt.
**** It is extremely important to utilize the correct side of the rate chart when setting the application rate. Charts reflect the low application rate settings on the left and the high settings on the right.**



Set-up and Preparation

Field Testing

Initial Field Test

Prior to first use of the machine for each spreading season, as well as following any major repair or overhaul, you should field test your machine to verify that all systems and components are functioning properly. You should execute field testing on any suitable course that will allow the spreader to be driven at similar speeds used during spreading.

CAUTION!

To observe conveyor and spinners while the vehicle is in motion, you must take proper safety precautions. These safety precautions may include use of mirrors clamped to permit safe observation, following the spreader in another vehicle at a safe distance, or other suitable means. *DO NOT stand in the hopper or on any part of the spreader, as there is danger of falling off the vehicle or into moving machinery. Use great care while performing this test.*

Spread Pattern

Trooper 8.0 units equipped with hydraulic spinners are capable of accurately broadcasting a consistent, flat pattern of granular material up to 80 feet wide. *The equipment may throw material at much greater distances, but the most effective patterns are most likely at distances up to 80 feet. The driving interval should equal the swath.*

Factors Affecting the Spread Pattern

Many of the following conditions may affect your equipment's spread pattern performance:

1. Flow divider position
2. Spinner blade position
3. Spinner speed
4. The condition of the spinner blades on the spinner discs
5. Physical properties of material
    a. Density
    b. Size
6. Rate of delivery of material
7. Balance between deliveries to both spinners
8. Wind

Because most of these characteristics will change with each material spread, a certain amount of your own experience with both equipment and material, along with some testing on your part, will determine the adjustments needed to obtain the desired swath width and spread rate.

Overloading

IMPORTANT!

Be aware of the designated maximum capacity of the suspension system when loading the hopper. It is possible to overload the spreader with a heavy material or too much material. Overloading can cause many different problems with the spreader such as suspension damage, excessive conveyor chain stretching, and structural damage to the hopper.

Set-up and Preparation

Pan Testing

Material Size and Density

The particle size is one aspect that determines the maximum spread pattern width. The spread pattern can vary anywhere from 25 feet for products containing an abundance of fines or up to 80 feet for higher quality fertilizers with larger particles.

The density of the material also affects the pattern. The spreader will throw large, dense particles farther than finer materials with lower density.

Spread Pattern Testing

TEST KIT

Not included; available for purchase separately from Salford BBI. Part# 89TestPanKit

A spread pattern test kit should contain the following items:

- 17 plastic pans (14" x 18")
- 17 plastic test tubes with ¾" opening
- 1 test tube rack
- 1 tape measure
- 1 funnel
- 1 density cup to determine weight per cubic foot or five gallon bucket

Set Up

The test area should be at least 250 feet in length and as wide as necessary, depending on the swath width of the material to be checked.

Lay out test pans on a level area so the spreader can be driven into or with the wind. If the wind is greater than ten miles per hour, you should not attempt a spread pattern check.

Position the pans so the spreader can be running at least 100 feet before it reaches them and can continue spreading 150 feet beyond the pans. Place a marker at the beginning and end of the test area as guides for the operator.

Level the pans and place them at essentially the same height. Place a marker at the center of each pan so after the pans have been picked up they can be placed back in their original position without measuring.

Use the chart below to determine the interval that the pans should be placed. A swath width from 30 to 80 feet will be sufficient to check most spreaders.

SWATH WIDTH	NUMBER OF PANS NEEDED	INCHES BETWEEN EACH PAN (center to center)
30'	7	60"
40'	9	60"
50'	11	60"
60'	13	60"
70'	15	60"
80'	17	60"

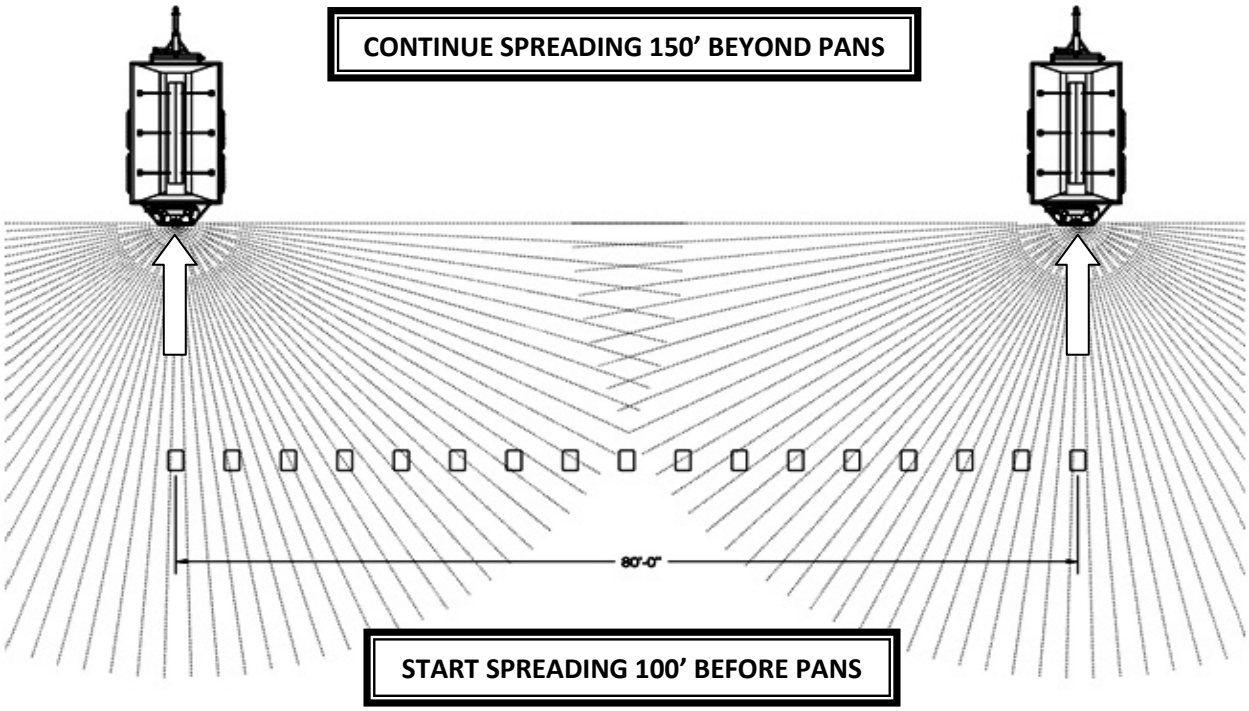
Set-up and Preparation

Spread Test

To get a true representation of the spread pattern, you'll need two passes across the pans. On the first pass, line up the spreader with one of the pans on the end. Start spreading material at least 100 feet before the pans and continue at least 150 feet beyond the pans. Repeat the process for the second pass on the opposite end of the line of pans.

Make sure to run both passes in the same direction so that you get a sample from both spinners.

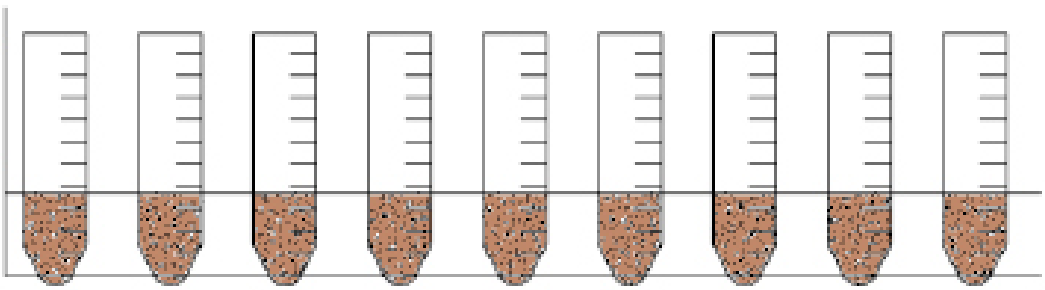
Collect the material from each pan into corresponding test tubes to view the pattern. Depending on the pattern, adjustments to the spreader may be necessary.



Evaluation of the Pattern

Trooper 8.0 spreaders are capable of producing a flat pattern, but you may see slight variances in the pattern, due to the terrain used for testing, irregular materials, and/or other abnormalities. In all cases, the material will ultimately dictate the quality of the pattern.

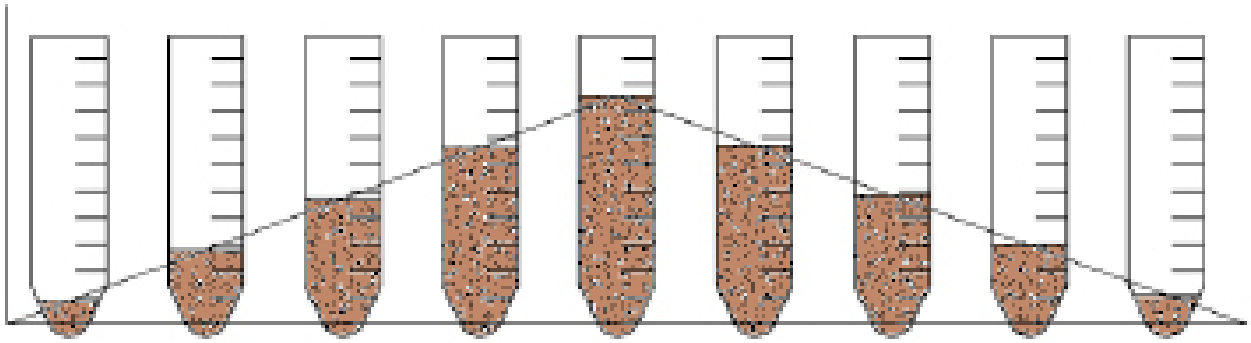
This graphic represents an ideal, uniform pattern after pan testing and making adjustments.



Set-up and Preparation

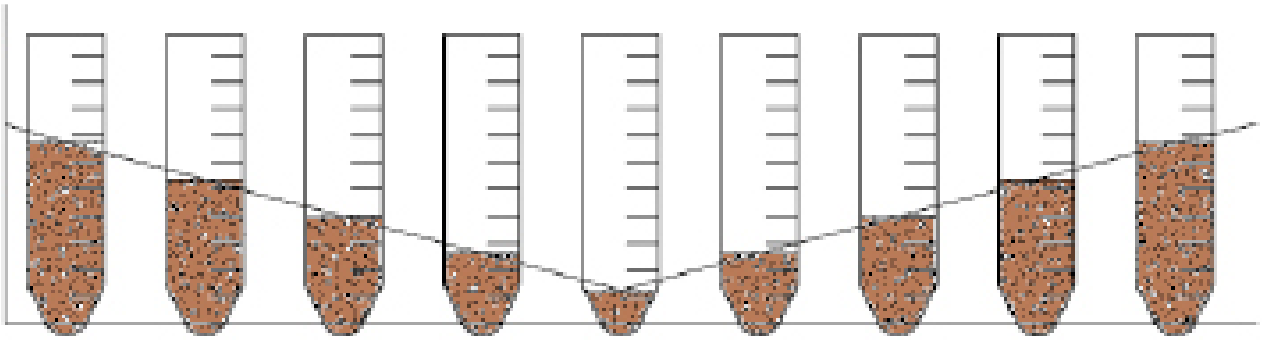
Evaluation and Adjustments

Heavy on the OUTSIDE of the pattern



Problem	Cause	Solution
Too much material on the outside or edge of the swath.	-Damaged or Worn Fins. -Flow Divider Set Too Far To The Rear. -Fins Advanced. -Spinner Speed Too Fast.	-Adjust Flow Divider To A Lower Numbered Setting. -Adjust Spinner Speed. -Retard Fins (Rare).

Heavy Behind the Spreader



Problem	Cause	Solution
Too much material behind the spreader and light on the edge of the swath.	-Damaged or Worn Fins. -Flow Divider Set Too Far Forward. -Spinner Speed Too Low.	-Adjust Flow Divider To A Higher Numbered Setting. -Adjust Spinner Speed. -Advance Fins (Rare).

Note: In rarer occurrences, other variations of problem spread patterns may occur. If you are having trouble adjusting your machine to correct these issues, please contact your local Salford BBI dealer.

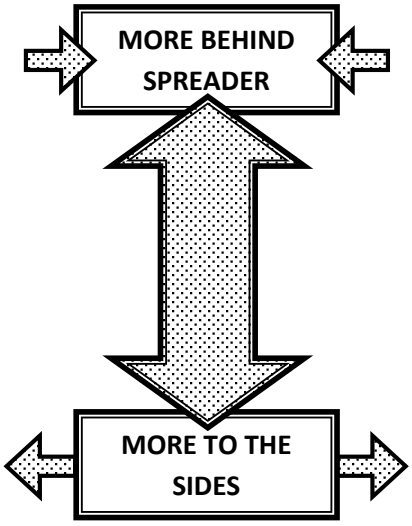
Set-up and Preparation

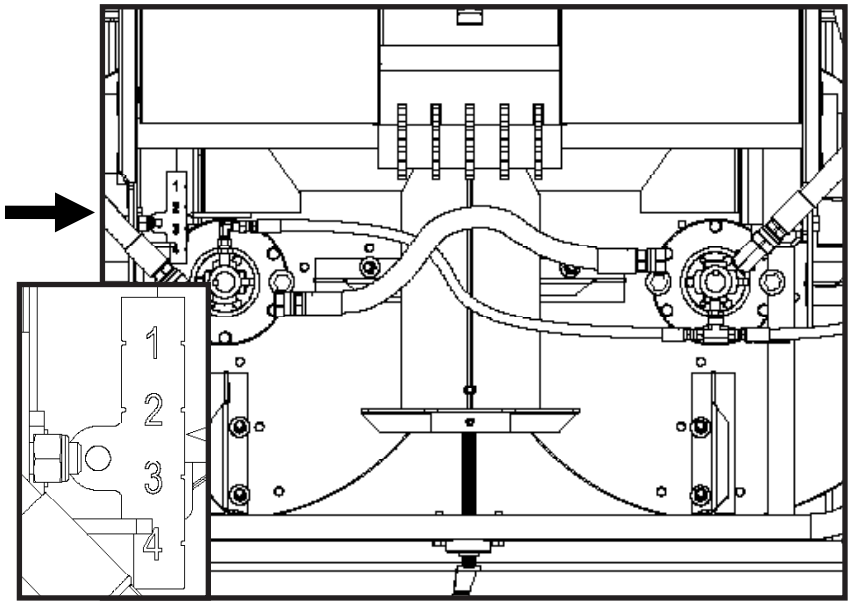
Pan Testing - Making Adjustments

You can change the spread pattern by adjusting the flow divider, spinner fins, and spinner speed. Flow divider adjustment is always the first adjustment to be made. In most cases, this adjustment will correct the pattern. If the flow divider adjustments do not produce the desired spread pattern, then you may need to adjust the spinner speed or fins.

Flow Divider

Adjust the flow divider forward using the handle to increase the amount of material being applied directly behind the spreader. Adjust the flow divider toward the rear to throw more material to the sides of the spreader. Moving the flow divider will not make the spread pattern wider—it will only change the distribution of material within the pattern. The flow divider gauge located on the left side of the flow divider should be referenced when making adjustments.





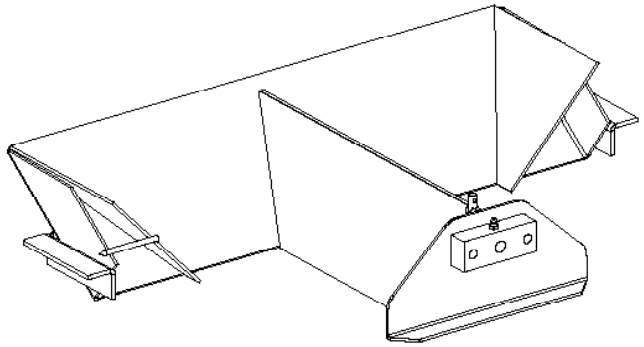
In the center of the flow divider, you'll see a removable insert. Always use insert for Trooper 8.0 units. As a starting point, set the flow divider on 3-1/2.

Always TEST and CALIBRATE the spreader properly prior to operating in the field.

Flow Divider Settings

As a starting point, set the flow divider on the follc

Fertilizer = 3-1/2 (Always use In

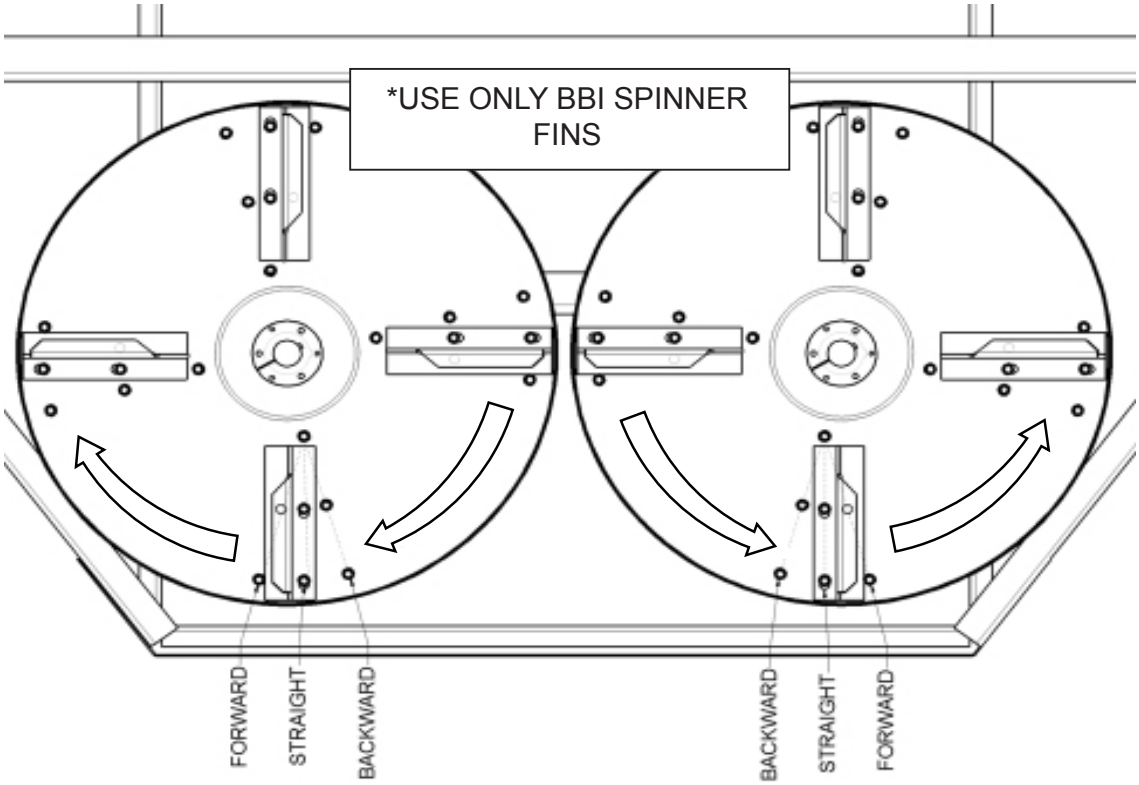


Materials need customer-specific adaptation to suit regional variations. Please be sure to adjust your flow divider whenever fertilizer brand or quality changes to optimize the spread pattern.

Set-up and Preparation

Spinner Fins

You can adjust the spinner fins to three different positions: straight, forward, and backward. Moving the fin **FORWARD or ADVANCING** causes more material to be thrown to the sides of the spreader. Placing the fins the in the **BACK or RETARDED** position causes more material to be thrown directly behind the spreader. Standard factory installation for the fins is in the straight position.



Spinner fins will wear and disfigure from the abrasiveness of the materials. Excessive wear can cause an uneven spread pattern. You should replace worn fins before they affect the spread pattern. Fins can be purchased from your authorized Salford BBI dealer.

Spinner Speed

Predicting how an increase or decrease in spinner speed will affect the spread pattern is difficult. You should make this particular adjustment only after other methods of adjustment fail to give a satisfactory pattern. Increasing spinner speed may increase or decrease the material directly behind the spreader, depending on the material being spread, the original spinner RPM, and type of blade setting. *You will have to use trial and error to make adjustments with spinner speed, due to the lack of predictability with this type of adjustment.*

SPINNER SPEED RECOMMENDATIONS

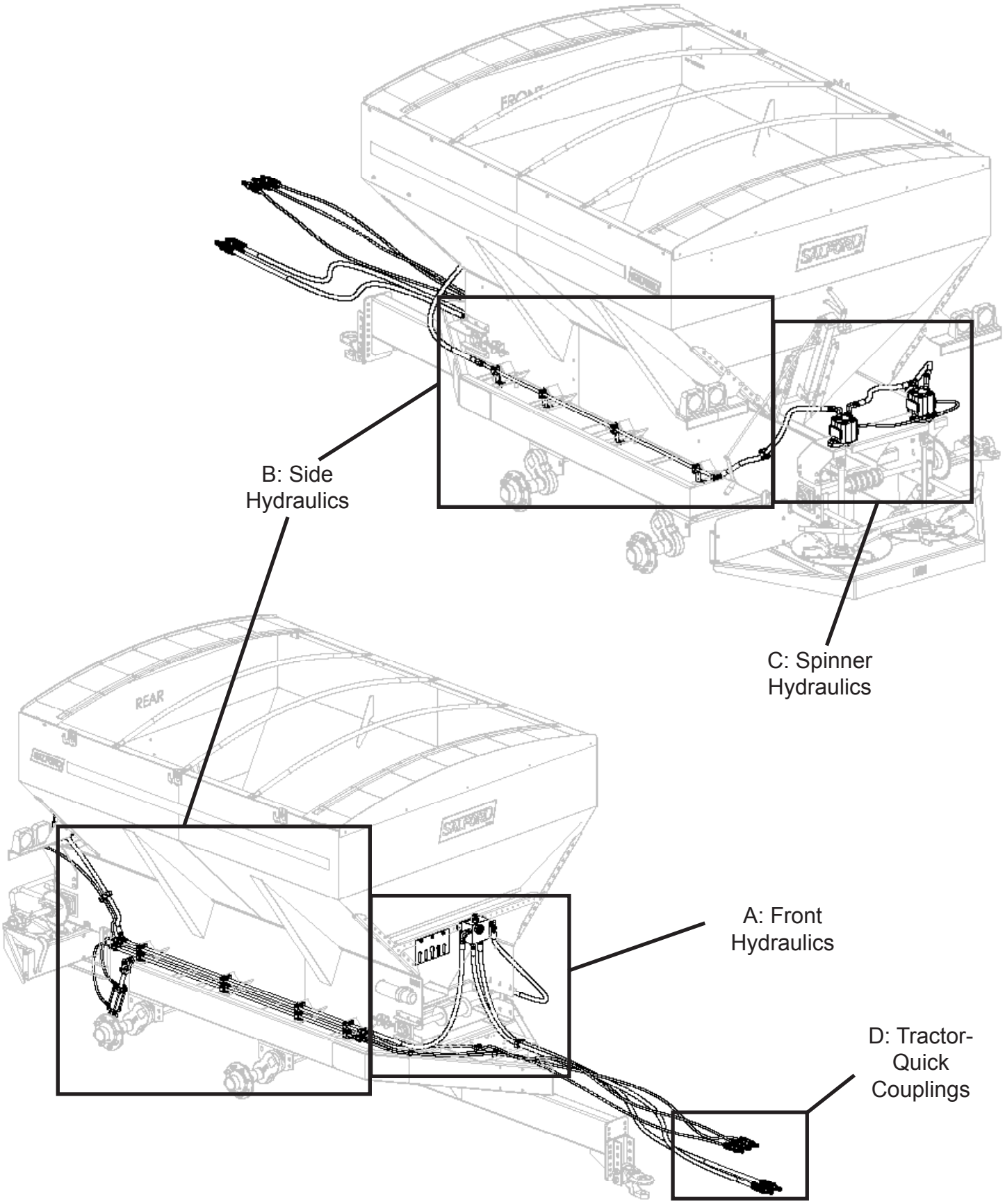
*Fertilizer (80 ft Wide) = 850-900 RPM

Fertilizer (60 ft Wide) = 650 RPM

* **Must have tractor supplied hydraulic spinners and 21 GPM @2000 PSI.**

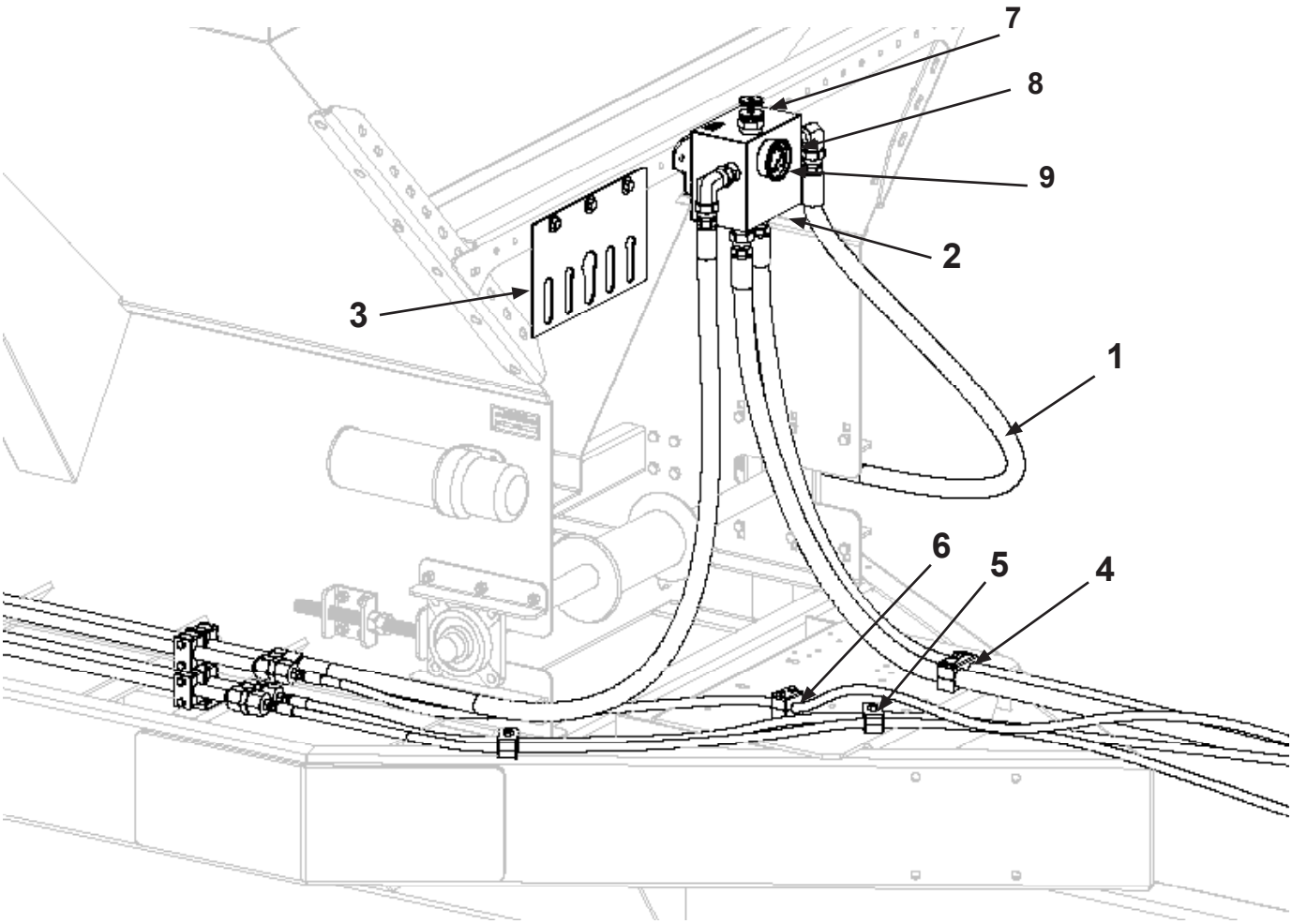
Systems Identification

Hydraulic Layout



Systems Identification

A: Front Hydraulics

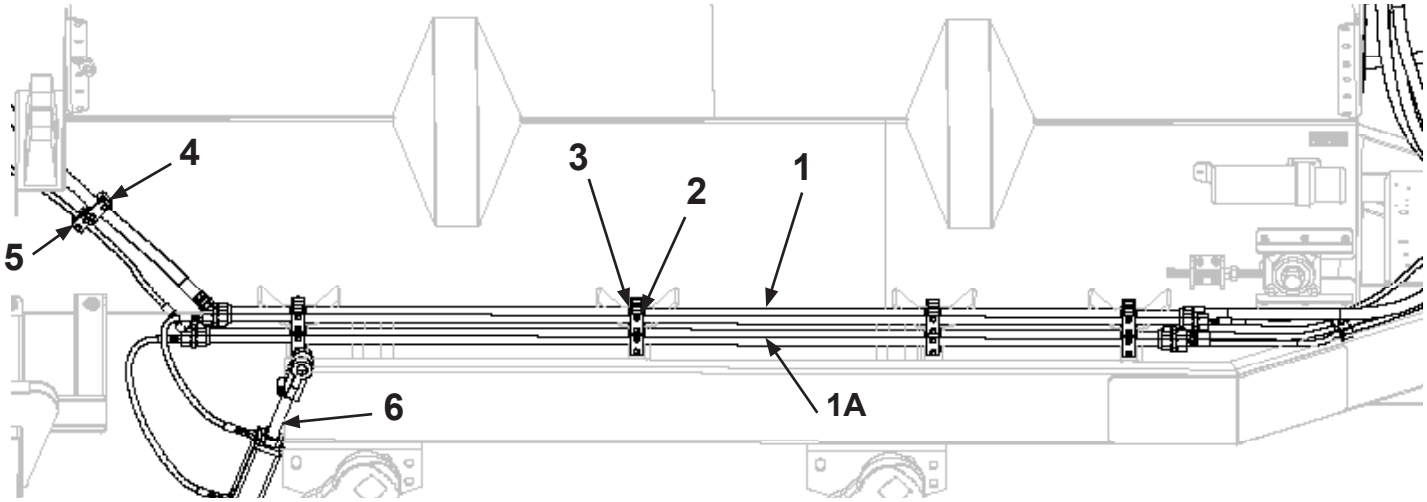


1. Hydraulic Tubes and Fittings
All tubes and fittings are part of the Hydraulic Trooper 8.0 kit

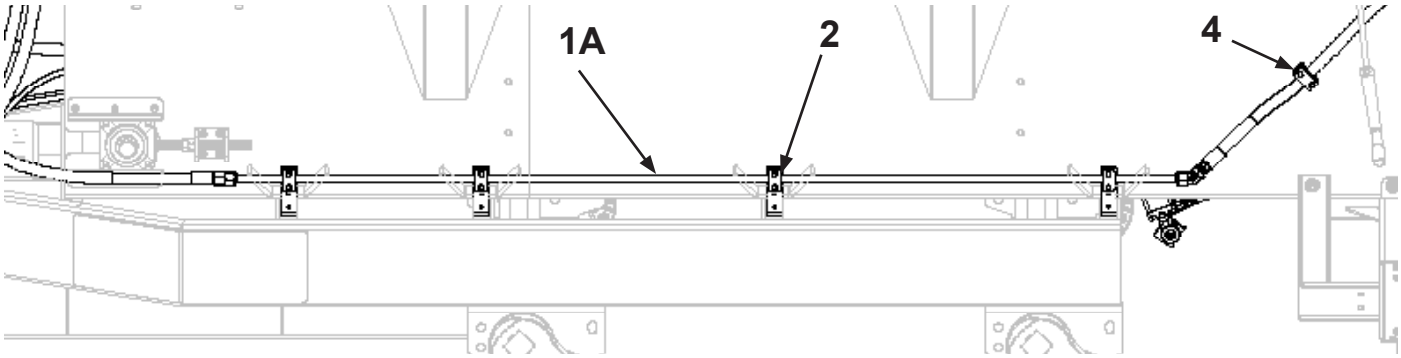
ITEM	PART NO.		DESCRIPTION	QTY
2.	10072280	32PLGTTRCT	Plug to Tractor Hydraulic Manifold- Complete	1
3.	10061107	18HEH-01-A	Quick Disconnect Mount	1
4.	10073643	89TSCP100	1 in. Double Hose Clamp	1
5.	10073644	89TSCP050	1/2 in. Double Hose Clamp	1
6.	10073645	B S20082-BLK	1/2 in. Single Hose Clamp	1
7.		32J1A125WN	Priority Valve- Used to set Spinner Speed	1
8.		32RAH101S30	Spinner Circuit Relief Valve	1
9.		3G253M	Working Pressure Gauge	1

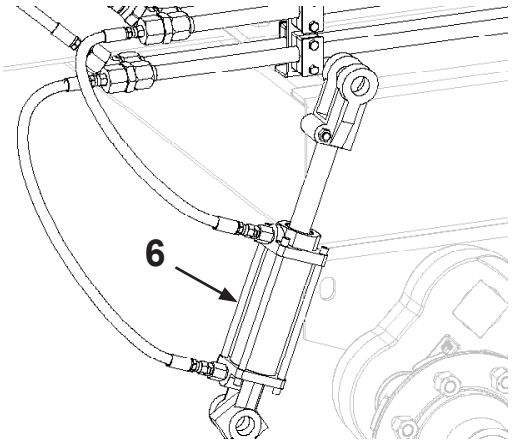
Systems Identification

B: Side Hydraulics



ITEM	PART NO.		DESCRIPTION	QTY
1.	10094988- 2 Upper Lines		Stainless Steel 3/4" Hydraulic Tube- 75"	2
1A.	10074099- 2 Lower Lines Spinner pressure Line		Stainless Steel 3/4" Hydraulic Tube- 90"	3
2.	10057375	89SSCT075	3/4" Single Hydraulic Tube Clamp	20
3.	10072698		Trooper Hose Clamp Bracket	4
4.	10073603	89SSCP100	1" Single Hydraulic Hose Clamp	2
5.	10073645	B S20082-BLK	1/2" Single Hydraulic Hose Clamp	1

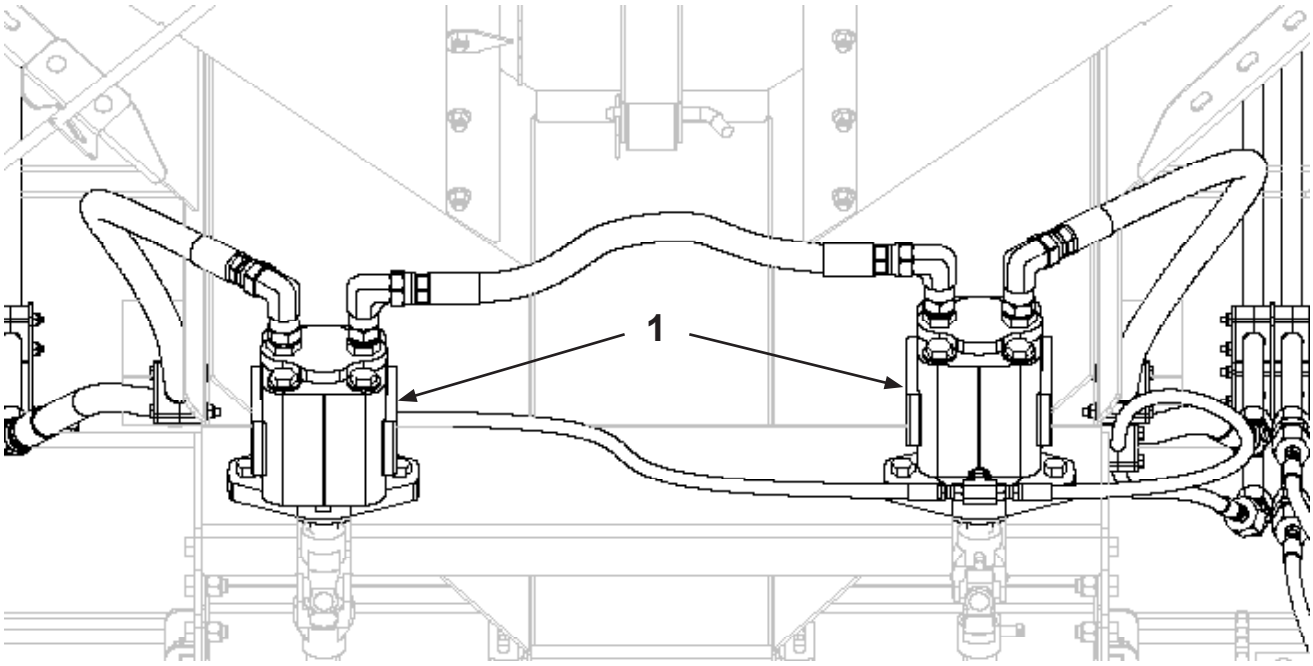




6. Ground Wheel Cylinder			
PART NO.		DESCRIPTION	QTY
10074058	362004TCB	Hydraulic Cylinder	1

Systems Identification

C: Spinner Hydraulics



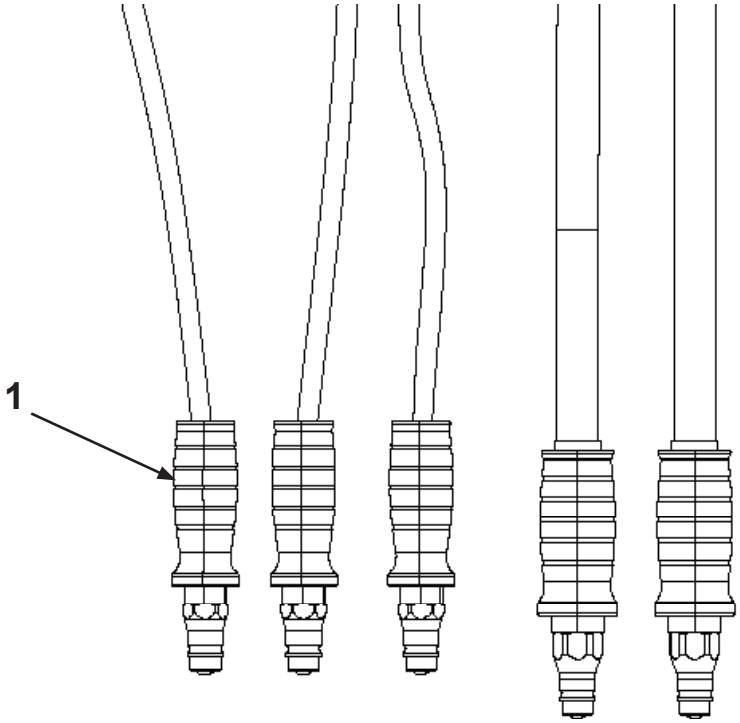
1. Spinner Motors			
PART NO.		DESCRIPTION	QTY
10073130	3121SDM15	Permco Motor	2
-	31M2100SK152025	Seal Kit	1
-	30Q-1956-4	Seal Installation Tool	1

Note: Seal Installation Tool is required to properly install new motor pressure seal.

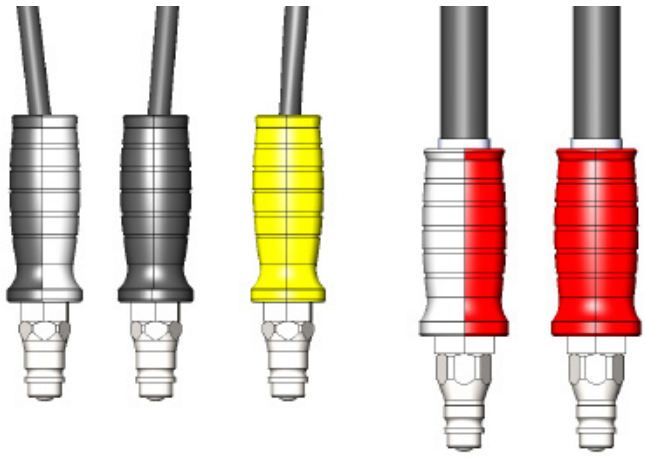
See page 55 for more information on Spinners and Spinner Components.

Systems Identification

D: Tractor-Connect Couplings / Grips



1. Hydraulic Hose Grips		
PART NO.		DESCRIPTION
10073579	33HYDRAGRIPBLACK/GREY	Black & Grey
10073578	33HYDRAGRIPBLACK	Black
10073586	33HYDRAGRIPYELLOW	Yellow
10073585	33HYDRAGRIPRED/GREY	Red & Grey
10073584	33HYDRAGRIPRED	Red



Lubrication and Maintenance

Preventative Maintenance

Need for Preventative Maintenance

The chemical agents in commercial fertilizers are very corrosive. Without an established preventative maintenance program, your spreader will decay in a relatively short time. The cleaning, lubrication, and maintenance practices that you follow will affect the life, service, and overall cost-of-use of the spreader.

Lubrication

Salford lubricates implements with NLGI #2 a lithium complex based grease.

Note: If using another brand of grease the required specifications are NLGI #2 lithium complex. Check compatibility when using any other type of grease.

Frequently lubricate all bearings and other grease points to extend the life of the components. When lubricating, it is important to also inspect the components to ensure satisfactory operation.
The required interval of lubricating will depend on the operating environment. Conditions such as dust, moisture, speed, and temperature will affect how often to lubricate. Refer to the chart below for a guideline.

Lubrication Schedule

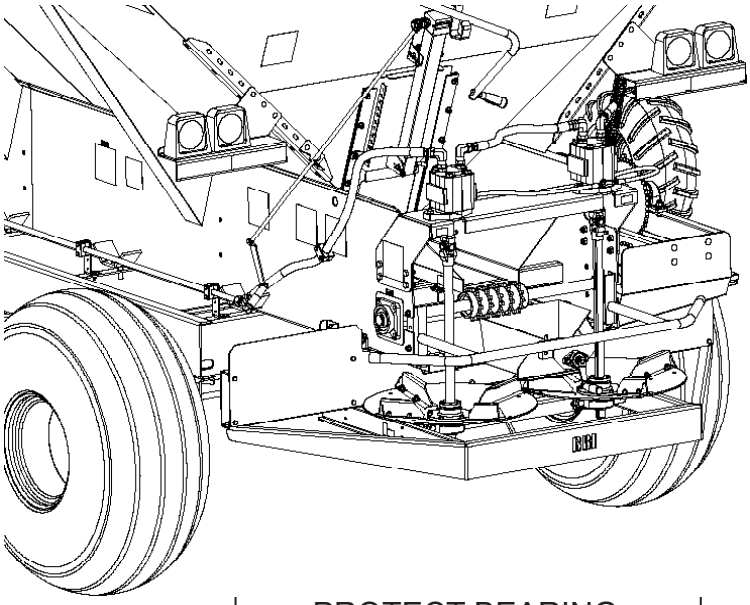
Item	Frequency
Front Roller Bearings	100 hours
Rear Roller Bearings	100 hours
Spinner Pillow Block Bearings	8 hours
Spinner U-Joints	8 hours
Flow Divider Bushing	100 hours
Ground Wheel Bearings	100 hours
PTO Pulleys	100 hours
PTO Bearings	8 hours

Note: Salford BBI has filled Gearboxes with 90-weight oil at the factory. You should replace the factory oil after the first 50 hours of break-in time. Thereafter, you should drain and refill the oil after every season.

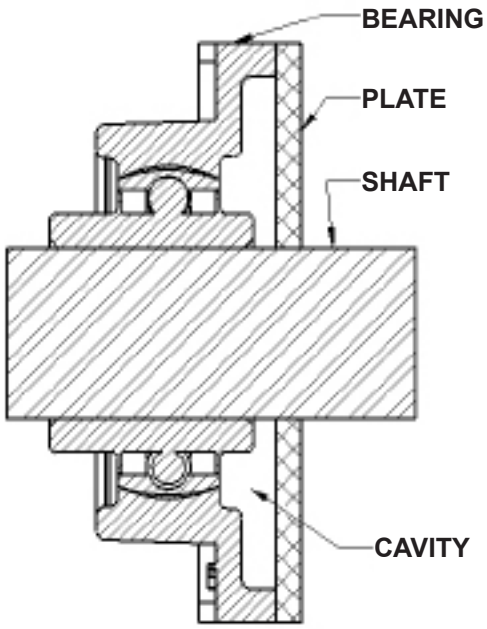
Lubrication and Maintenance

Rear Roller Bearing Plates

You'll find the stainless steel plates located behind the rear roller bearings. With the addition of this plate, a cavity has been created that is filled with grease which will help purge any debris that might cause damage or corrosion. Grease these bearings every 100 hours of operation for protection.



PROTECT BEARING



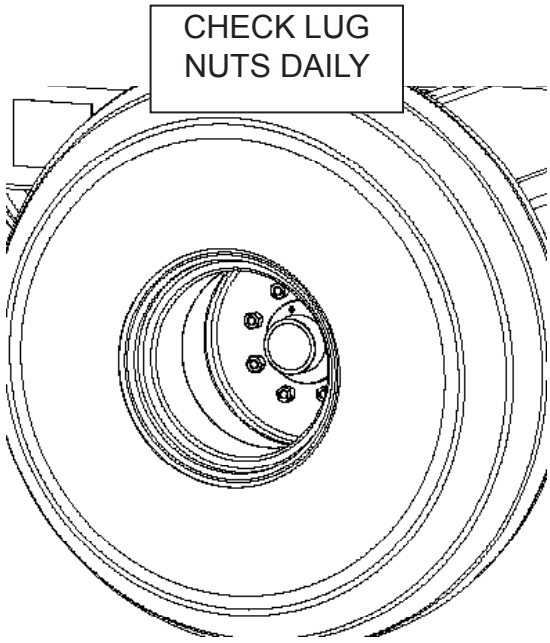
Fasteners

Tighten all screw fasteners after the first week of operation and regularly thereafter. Replace any lost or damaged fasteners or other parts immediately upon finding such damage or loss.

Lug Nuts

Check lug nuts before every use. Ensure lug nuts are tightened to the appropriate torque specification.

For 8-bolt hubs, tighten lug nuts to 170 ft/lbs.



IMPORTANT! **Tightening lug nuts more than recommended can damage wheels.**

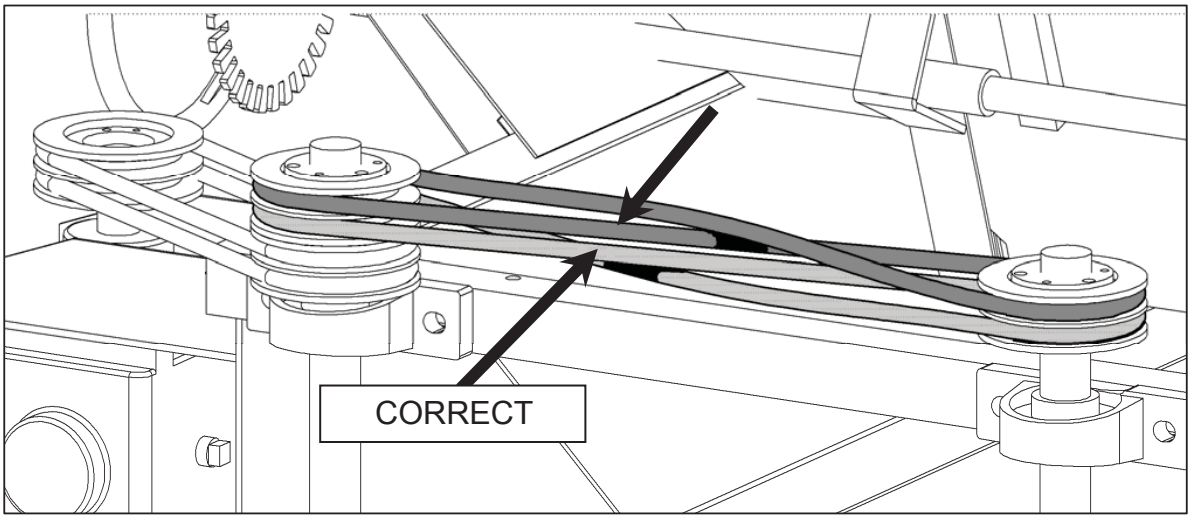
Lubrication and Maintenance

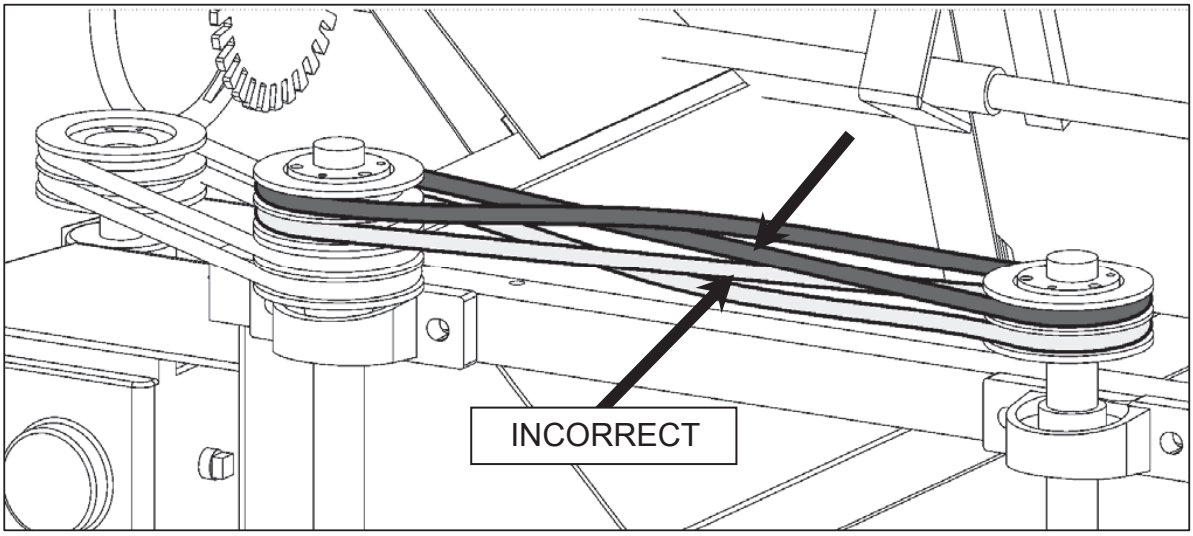
Spinner Gear Case

Check the oil level in the gear case monthly. The oil in a new unit should be drained at the end of **first two weeks or 50 hours** and then thoroughly flushed with light oil. A good quality **90 weight oil** is used in Salford BBI gearboxes. Refill the gear case with a recommended lubricant. After the initial change, the oil should be changed annually. Notice the grease fitting for the top bearing. It needs grease twice per week during normal operations.

Spinner Belt Setup

When replacing worn spinner belts, it is important to install them correctly so that they do not wear out prematurely. Use the illustrations below for reference.





Adjustments and Service

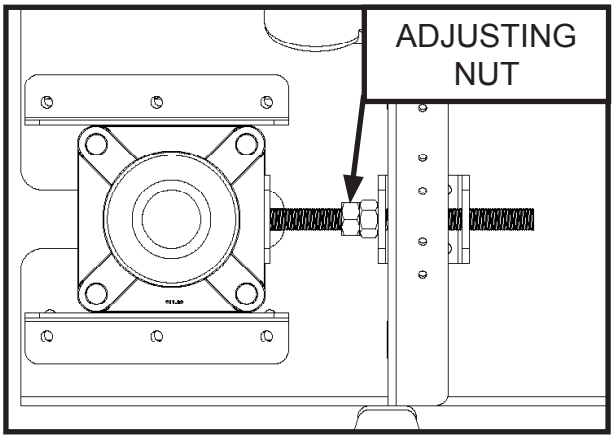
Mesh Chain

Mesh Chain Tension

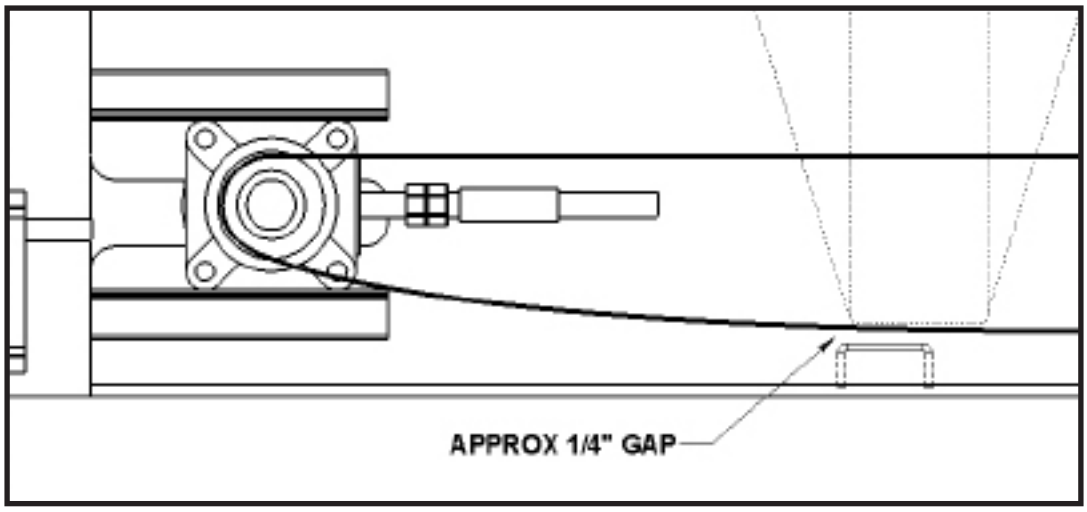
IMPORTANT!

Note: Stainless steel mesh chain will stretch when first used. *You must check the chain for appropriate tension and properly adjust it to avoid damaging unit.* **After initial break-in period, stretching should be minimal.**

- MAKE SURE THE CHAIN IS ADJUSTED EQUALLY ON BOTH SIDES
- A CHAIN TOO LOOSE WILL WRAP AND CATCH OBJECTS
- A CHAIN TOO TIGHT WILL STRETCH THE CHAIN BEYOND OPERATING TENSION



Front Roller Adjustment used to change chain tension.

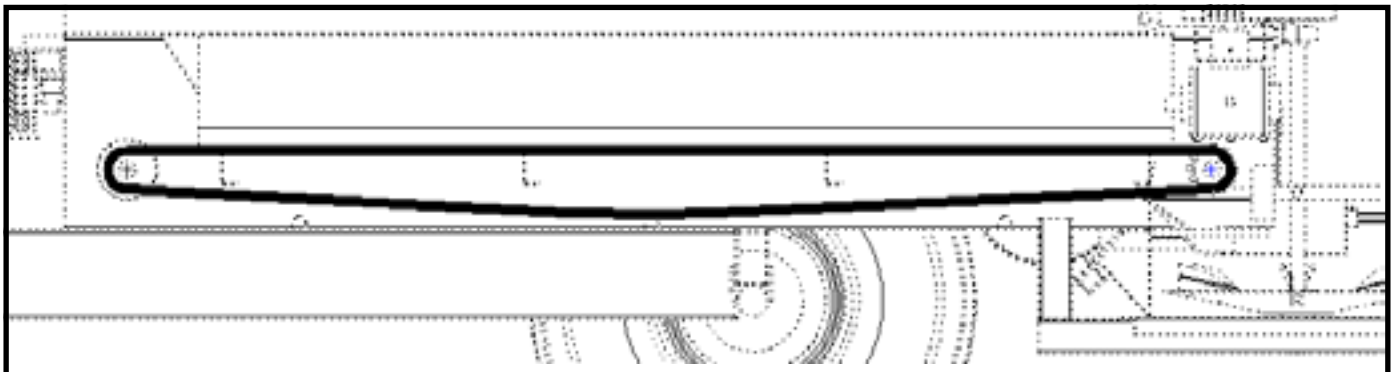


Adjustments and Service

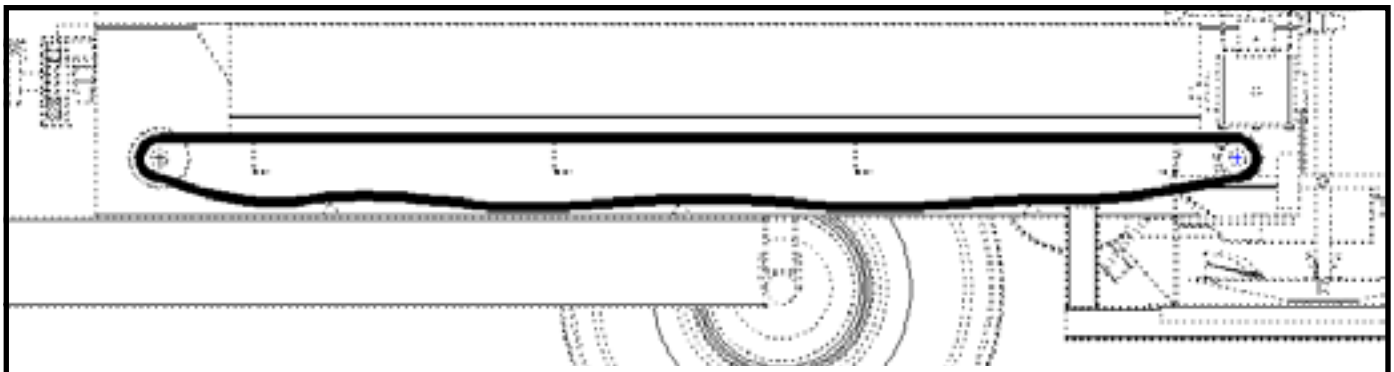
Conveyor Tension Adjustment - Additional Information

When adjusting the conveyor chain, allow the bottom side of the conveyor to touch the cross members of the chassis inside the conveyor return tunnel.

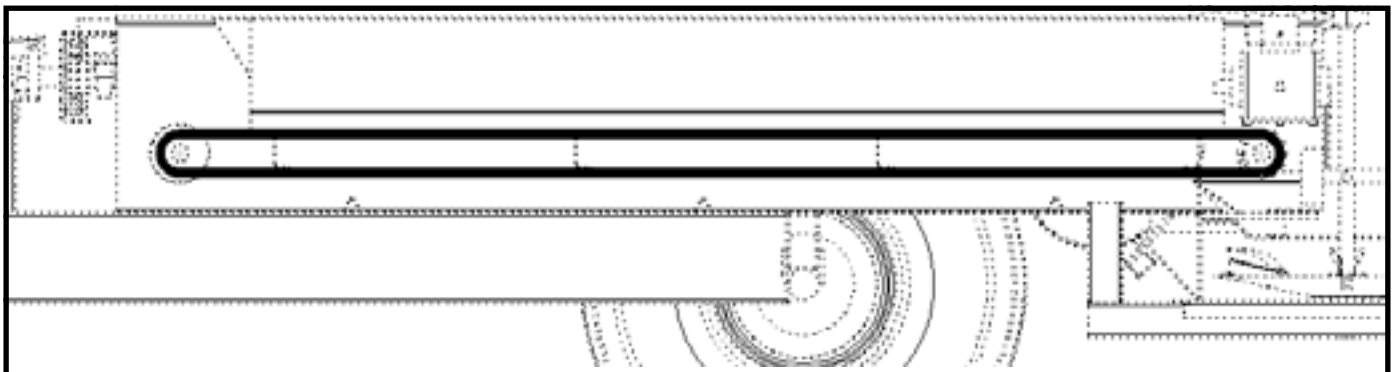
NOTE: Conveyor Chain will stretch when first used. Chain must be checked for appropriate tension and properly adjusted to avoid damaging unit. After initial break in period stretching should be minimal.



PROPERLY ADJUSTED CHAIN TENSION



CHAIN TENSION IS TOO LOOSE



CHAIN TENSION IS TOO TIGHT

Troubleshooting

Troubleshooting

Should you encounter problems with your applicator, the following sections list the possible causes and recommended solutions. If the problem persists even after taking the steps recommended in this section, call your Salford dealer. Before you call, have this operator's manual and the applicator serial number ready.

Problem	Cause	Solution
Hydraulic Spinners Will Not Spin.	No Hydraulic Flow From Tractor.	Engage Tractor Hydraulic Flow.
	Hydraulic Lines Not Connected to Same Outlet on Tractor.	Pressure and Return Lines Must Be on Same Remotes on Tractor.
	Circuit is "Checked". Hydraulic Flow Has Been Supplied in Both Raise and Lower. Return Coupler Has Excessive Pressure Preventing Flow.	Carefully Release Excess Pressure On Return Circuit. **See Pressurized Hydraulic Warning Info In This Document.**
	Spinner Priority Flow Control Valve is Closed. Pioneer Couplers Defective.	Open Spinner Priority Flow Control Valve. Check Condition of Couplers.
Hydraulic Spinner Speed is Not Adjustable.	Priority Flow Control Valve Spool is Stuck or Scotched.	Spool In Valve Is Not Moving. Remove Adjustment Stem. Spray Lubricant Into Spool. Push On Spool With Small Diameter ScrewDriver to Free Spool. Valve May Need To Be Removed To Free Spool By Pushing On Bottom of Spool.
Ground Wheel Slipping.	Low Tire Pressure on Ground Drive Tire. Ground Drive Engagement Not Adjusted Properly.	Inflate Tire to Proper Inflation Specification. Adjust Hydraulic Cylinder to Apply More Pressure When Engaged.

Tire Information

Wheel Torque Specifications

WARNING! Maintain proper torque to provide safe and secure attachment of the wheel hub/drum. Improperly tightened wheel nuts can cause the wheel to separate from the wheel mounting surface during operation. This could result in property damage, serious personal injury, or possibly loss of life.

NOTE - if wheel does not have chamfers to match profile of the nuts – use flat side of nuts against rim face.

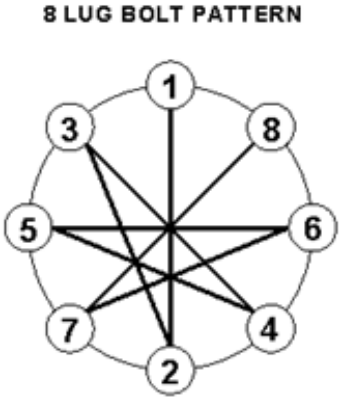
Install all lug nuts/bolts by hand to prevent cross threading and tighten lug nuts/bolts following the steps and tightening sequence diagram below.

STEP 1. Torque to 20-25 ft/lbs of torque.
STEP 2. Torque to 55-60 ft/lbs.
STEP 3. Torque bolts/nuts to the final ft. lb rating (see bolt size below)

Bolt Size (Hub Size)	**Final Torque***
5/8" dia. bolt (8000 - 12,000 lb hubs)	170 ft. lbs.

*'Dry Torque' values shown.
If using a lubricant (eg oil, or anti-seize), use only 75% of the dry torque.

Lug Nut/Bolt Tightening Sequence



NOTE - Recheck the torque settings of lug nuts/bolts after 10 km (6 miles) and again after 50 km (30 miles). Periodically and at the beginning of each season check the condition and the torque of the lug nuts/bolts.

Tire Information

Tire Pressure Ratings

Ensure proper inflation of each tire for safe operation and extended tire life.

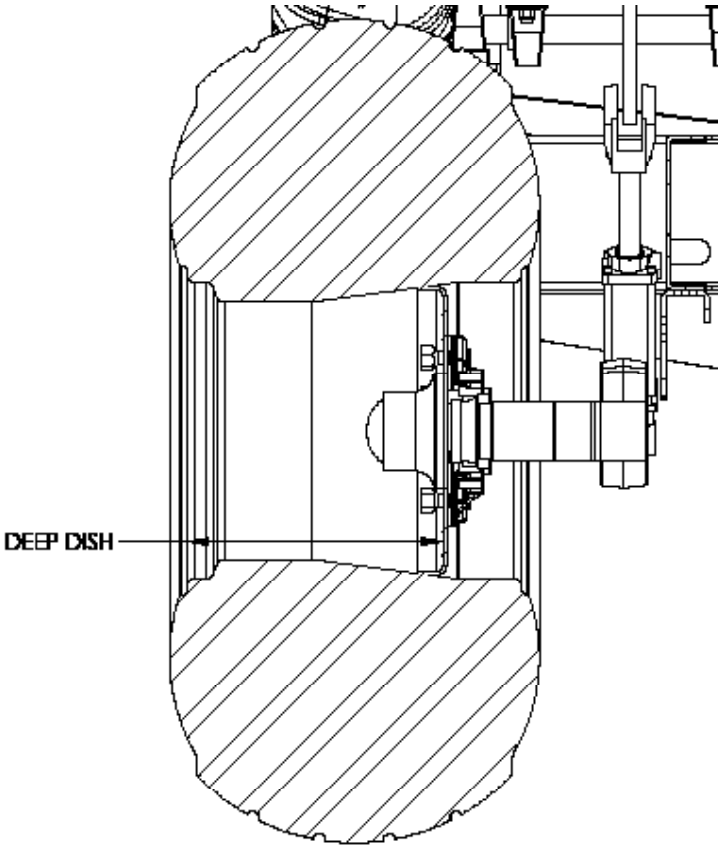
Proper Machine Model	Tire Size	Pressure [psi]	Pressure [bar]
Trooper 8.0	19L-16.1SL	32 [psi]	2.206 [bar]
	21.5L-16.1SL	28 [psi]	1.931 [bar]

NOTE - Periodically and at the beginning of each season check the condition and the pressure of each tire

Tire Installation Direction

Measure both sides of the tire into rim face.
Install the tires deep dish out.

ITEM	PART NO.	DESCRIPTION	QTY
1.	10070145	T+R, 19-16.1X42.4DIA, 10PR, 8 BOLT	4
2.	10070146	T+R, 21.5L-16.1X44.5DIA, 14PR, 8 BOLT	4

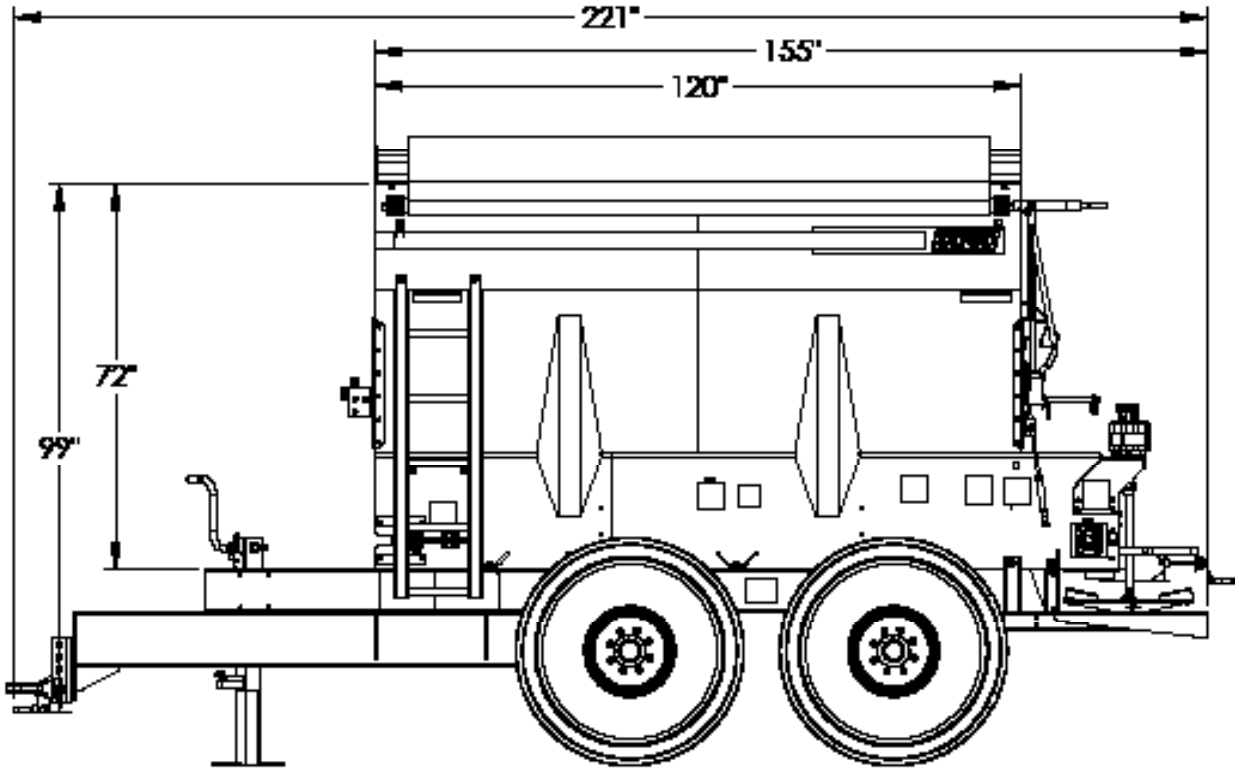


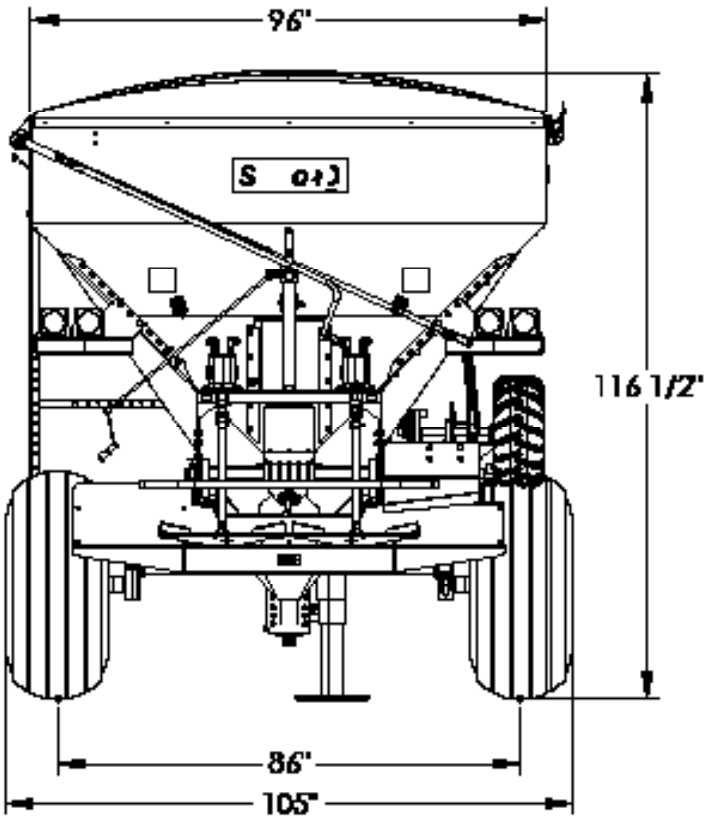
19L-16.1SL

Do not rely on valve stem for orientation of tires. It may face in or out on different rims.

Dimensions and Specifications

Model Dimensions





Dimensions and Specifications

Specifications

Trooper 8.0

Hopper Material: Painted 409 Stainless Steel

Hopper Length: 10 feet

Struck Capacity: 270 cubic feet

Weight (Empty): 4600 lbs.

Required Flow: Minimum required oil flow: 18 U.S. gpm @ 2300 psi
(Required for Hydraulic Spinners Only)

Conveyor: Single 8 Inch Stainless Steel Mesh Chain
Ground Wheel Drive

Spinners: Construction: Stainless Steel
24" Discs with 7.5" MagnaSpread fins

Suspension: Dual, 10k Torsion Axles (Max. 9 Ton Load Capacity)

(Optional) Surge Brake Axle 10k

Tires: (Standard) 19L-16.1SL

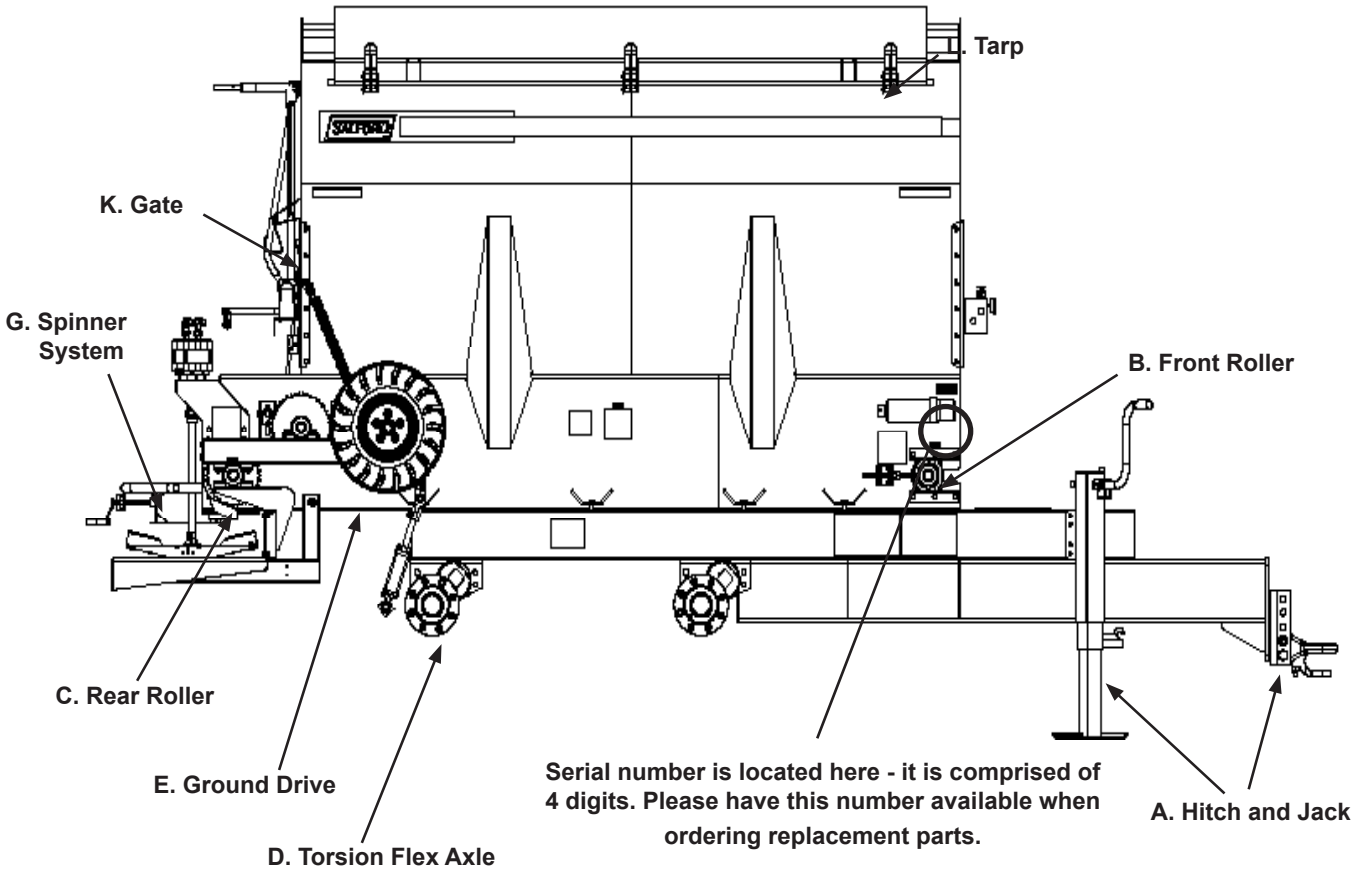
(Optional) 21.5L-16.1SL

Track Width: 86 in.

Lighting: 12V LED

Spread Range: Up to 80 feet (hydraulic spinners)
60 feet for PTO driven spinners

Parts Identification and Ordering



Parts Information:

Information contained in this section is provided for identification and reference purposes when ordering replacement parts.

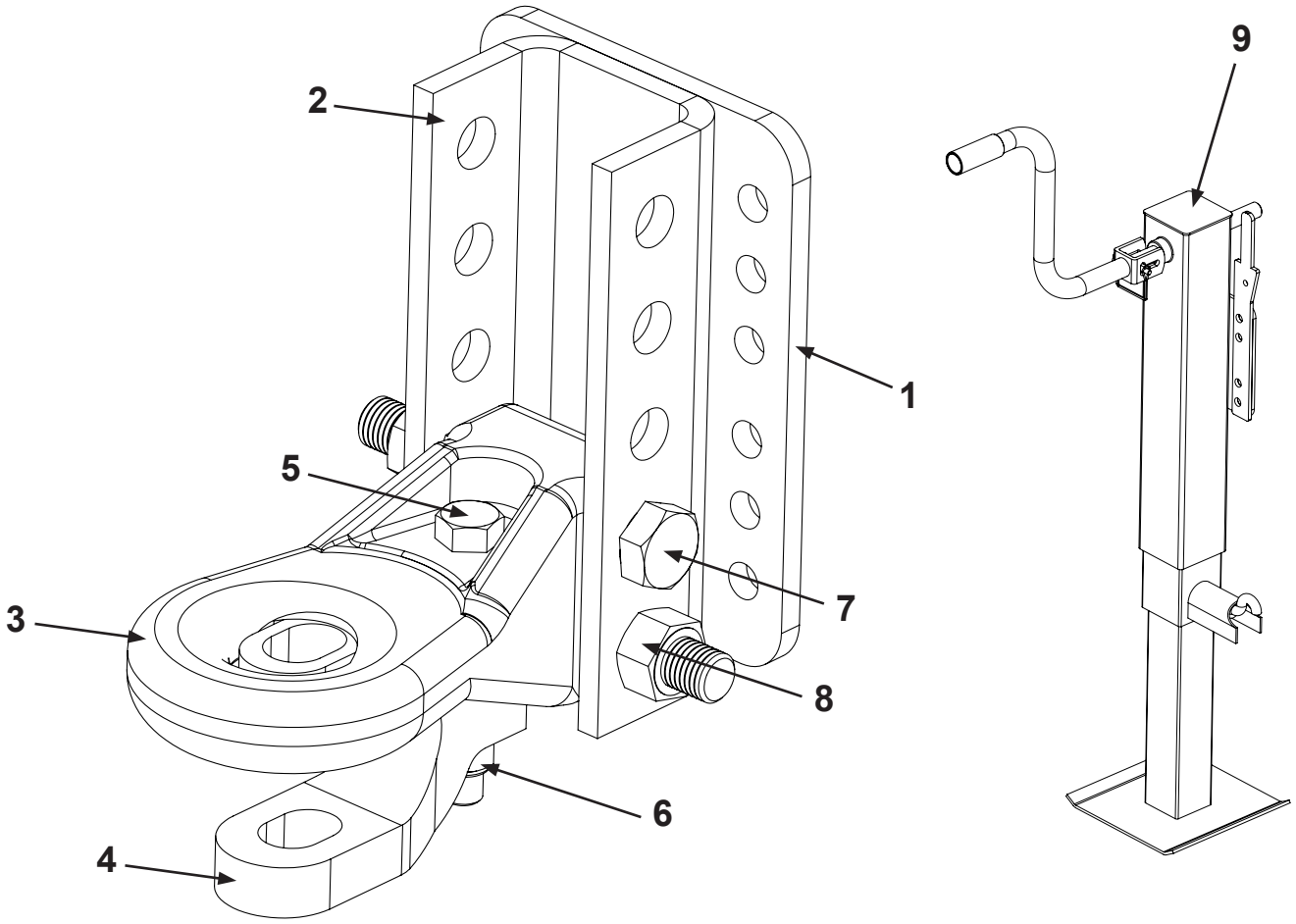
1). Identify the part or component that needs to be replaced.
2). Locate the appropriate section on the following pages where the part is located.
3). Reference the appropriate page to gather necessary part number and pertinent information.

Replacement Parts Ordering:

Salford BBI parts are sold by the authorized dealer in your area. If you are unsure of whom to purchase parts from, please call 800-282-3570 to inquire or you may visit SalfordGroup.com and look up your authorized dealer with the dealer search tab. Scanning the QR code below will provide a quick link to the Salford Group dealer search page.

Assembly and Part Identification

A: Perfect Hitch & Jack Components



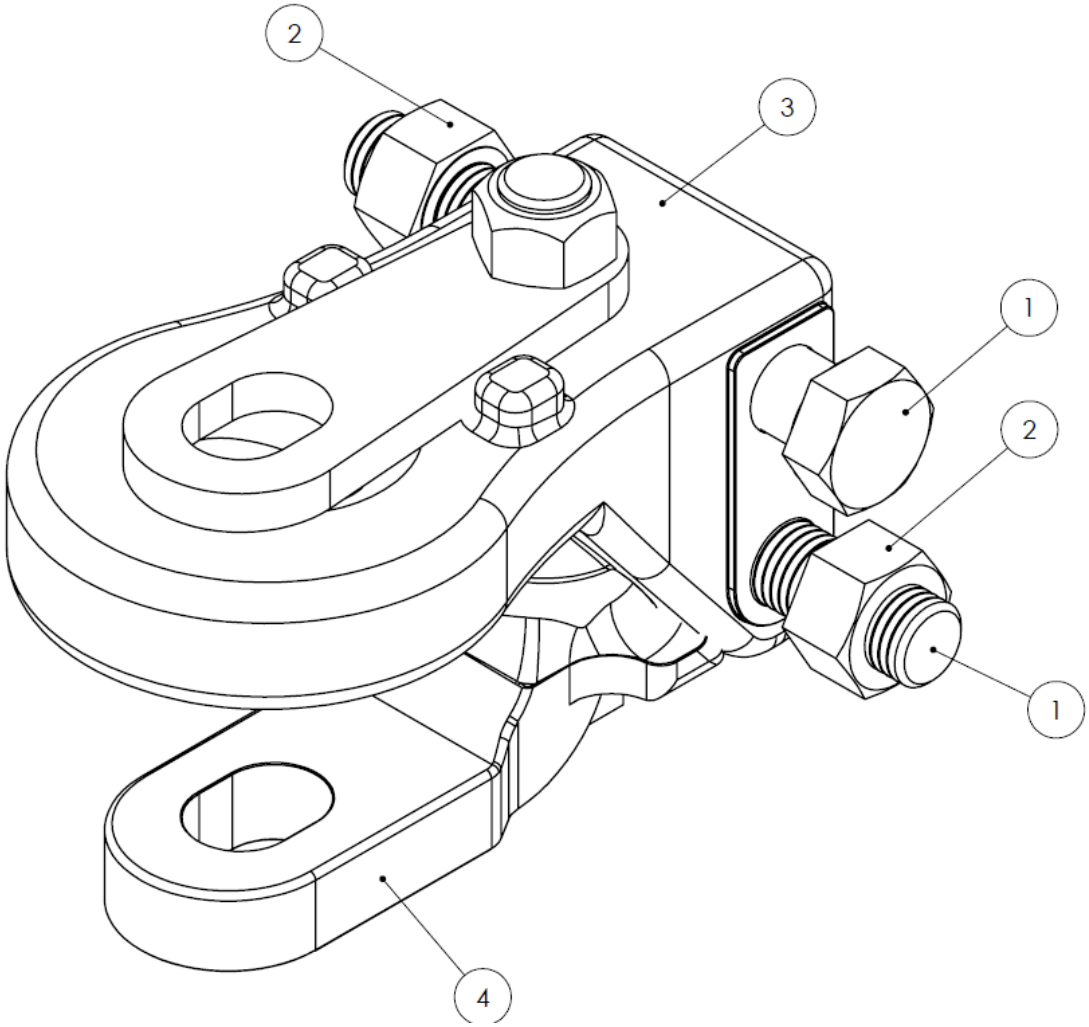
Perfect Hitch				
PART NO.			DESCRIPTION	QTY
10072102		24PPI301V3A	Perfect Hitch Assembly #3	1
ITEM	PART NO.		DESCRIPTION	QTY
1.	10069996	15HH2-06-A	Hitch Plate	1
2.	10057296	24PPHB305	Hitch Bracket	1
3.	10072113	24PPI301V3	Perfect Hitch Pintle	1
4.	10029036	24PPI208VR	Perfect Hitch Clevis	1
5.	10007156		3/4" Hex Bolt x 5-1/2"	1
6.	10007468		3/4" Nylock Nut	1
7.	10048648		1" Hex Bolt x 7"	2
8.	10007502		1" Nylock Nut	2

9. Spreader Jack			
PART NO.		DESCRIPTION	QTY
10056690	24182400	10k Jack	1

Assembly and Part Identification

A: North Field Hitch

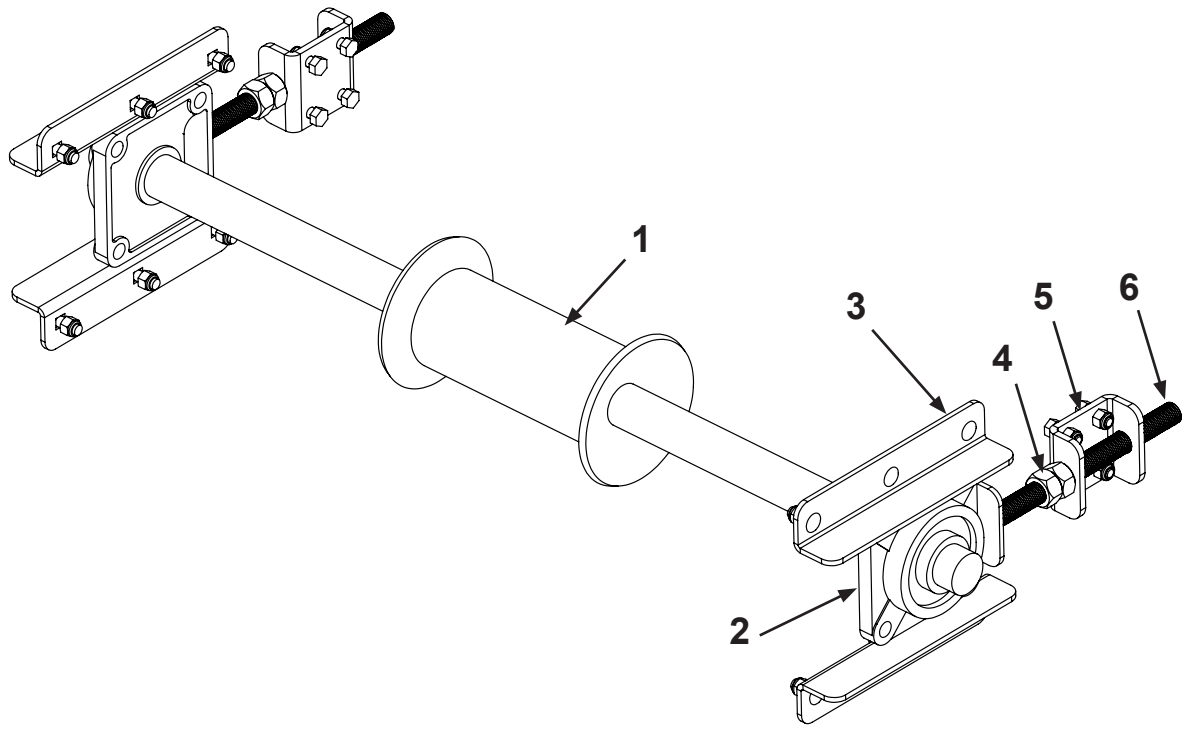
****The hitch mounting plates for this design are welded to the tongue of the unit.**



Item	Part NO.	Description	Qty
1.	10048648	Bolt, 1"x 7" Grade 8	2
2.	10007502	Nut, Nylock	2
3.	10077874	Complete Hitch Assembly, Cat 3	1
4	10059296	Clevis	1

Assembly and Part Identification

B: Front Roller Components

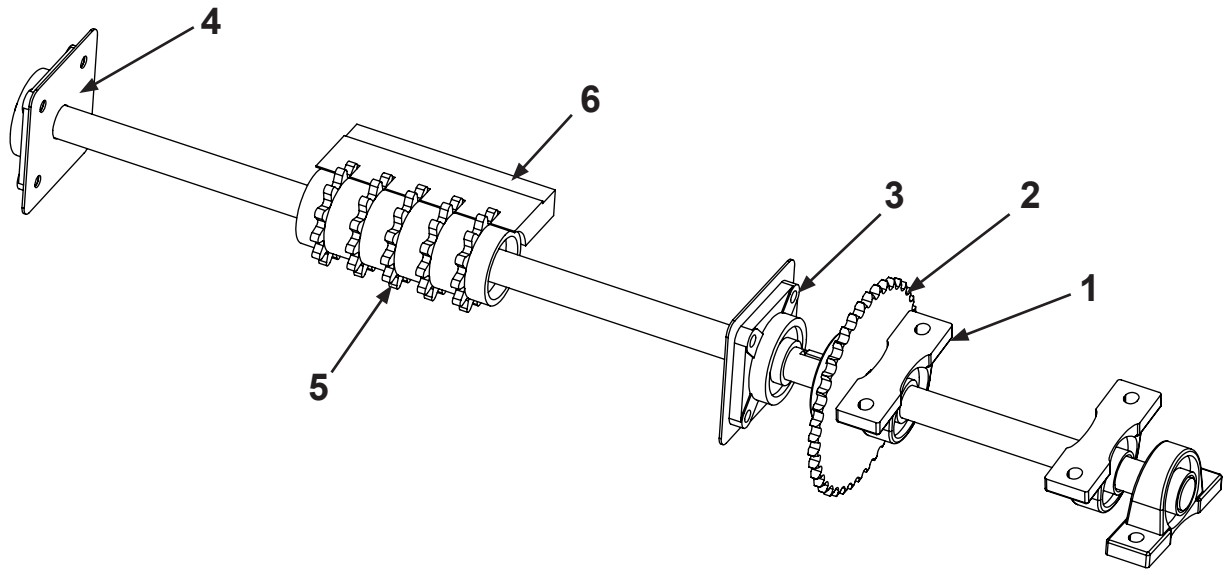


ITEM	PART NO.		DESCRIPTION	QTY
1.	10055493	42FRM08	8" Mesh Front Roller	1
2.	10055317	60UCF208-24	1 1/2" 4-Bolt Flange	2

Front Roller Adjuster				
PART NO.			DESCRIPTION	QTY
10055191			Front Roller Adjuster Assembly	2
ITEM	PART NO.		DESCRIPTION	QTY
3.	10055192	48FRAA-A	Front Roller Adjuster Guide	4
4.	10007456		3/4" Nut	4
5.	18FRAA-A		Front Roller Adjuster Rod Bracket	2
6.	10055194	42FRASS	Front Roller Adjuster Rod	2

Assembly and Part Identification

C: Rear Roller Components



Rear Roller				
PART NO.			DESCRIPTION	QTY
10070125			Trooper 8.0 Rear Roller Assembly	1
ITEM	PART NO.		DESCRIPTION	QTY
1.	10069874	60UCP208-24	1 1/2 Pillow Block	3
2.	10070134	6760BS40-1538	40 Tooth Drive Sprocket	1
3.	10055317	60UCF208- 24	1 1/2" Flange Bearing	2
4.	10057386	89PSS-15	Bearing Backer Plate 1.5"	2
5.	10070125	42RRM08TP	8" Mesh Rear Roller	1

ITEM	PART NO.		DESCRIPTION	QTY
6.	10072159	42C08	8" Mesh Rear Roller Comb	1

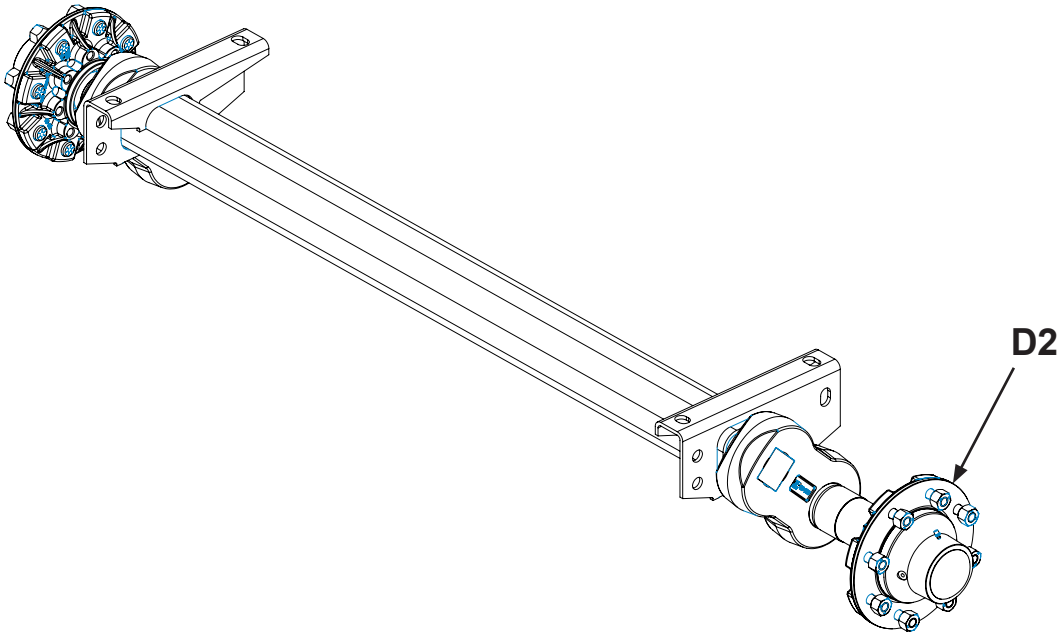
PART NO.		DESCRIPTION
10074383	41MC1108	8" Stainless Mesh Chain 262" LG
-	41MC08sP	8" Connector Pin

Note: When ordering chain, please have serial number available.

To calculate the required length, multiply hopper length by two, then add two feet.

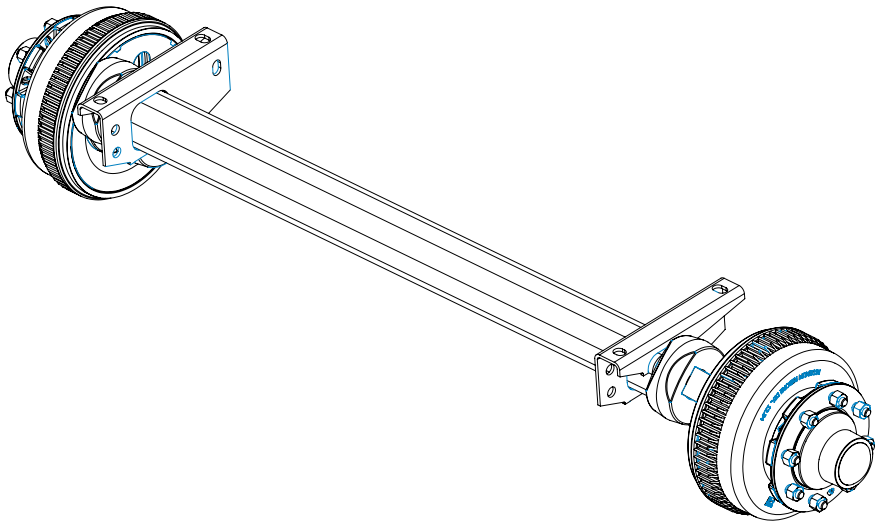
Assembly and Part Identification

D1: Torsion Flex Axle Components



Non Brake Torsion Flex Axle			
PART NO.		DESCRIPTION	QTY
10061234	21AXBB7101181i	10k Axle 8 Bolt	2

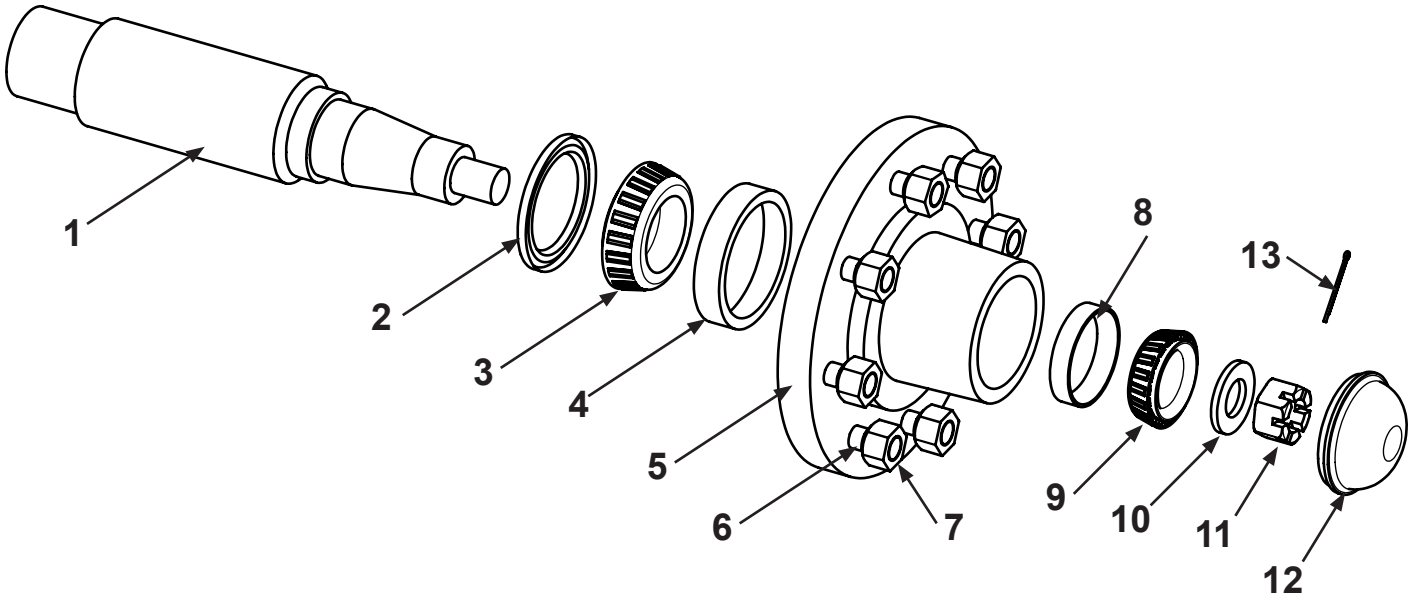
See Diagram D2 (next page) for Exploded View of 10k 8 Bolt Hub



Brake Equipped Axle			
PART NO.		DESCRIPTION	QTY
10061739	21AX-HYDBK10K	10k Axle 8 Bolt	2

Assembly and Part Identification

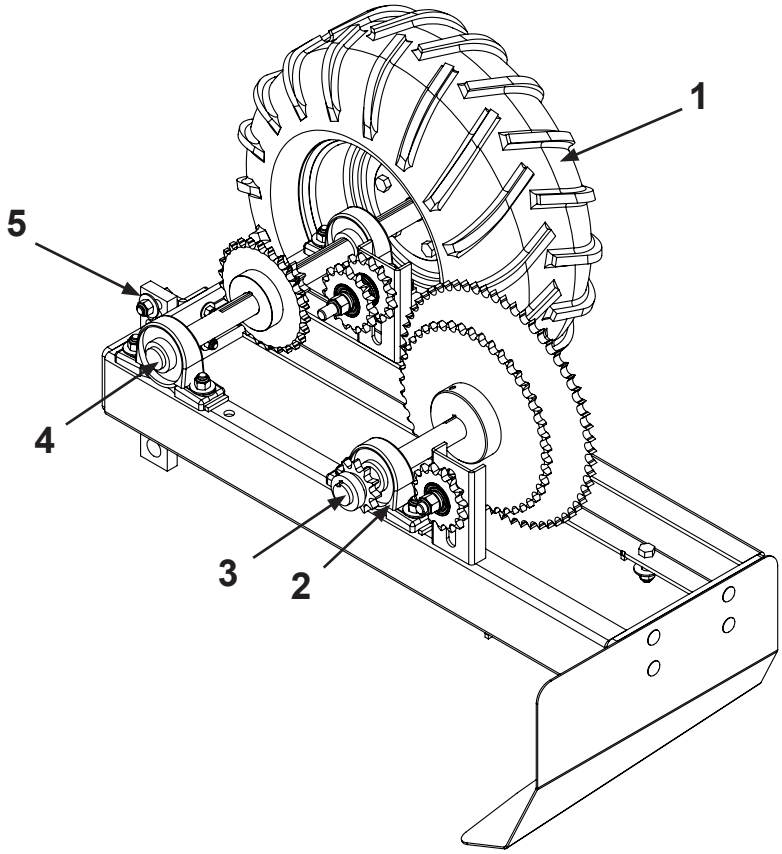
D2: 10,000 lb (10k) Hub Assembly
22AX3160424A (8 Bolt) - No Spindle



ITEM	PART NO.	DESCRIPTION	QTY
1.	22AXS-6000F	10K Spindle Shaft	1
2.	22AXSL-275	10K Oil Seal (CR27394)	1
3.	22AX506849	10K Inner Bearing	1
4.	22AX506810X	10K Inner Race	1
5.	22AX3160424	10K 8 Lug Hub Only	1
6.	22AXST-625	5/8" x 18-90 Press-in Stud	1
7.	22AXSTN-629	5/8" x 18-90 Lug Nut	1
8.	22AX501310	10K Outer Race	1
9.	22AX501349	10K Outer Bearing	1
10.	22AXSW-1001	10K Axle Washer	1
11.	22AXSN-1001	10K Axle Nut	1
12.	22AX1609DEX	10K Dust Cap	1
13.	22AXSCP-102	10K Cotter Pin	1

Assembly and Part Identification

E: Ground Drive Components (1 of 2)

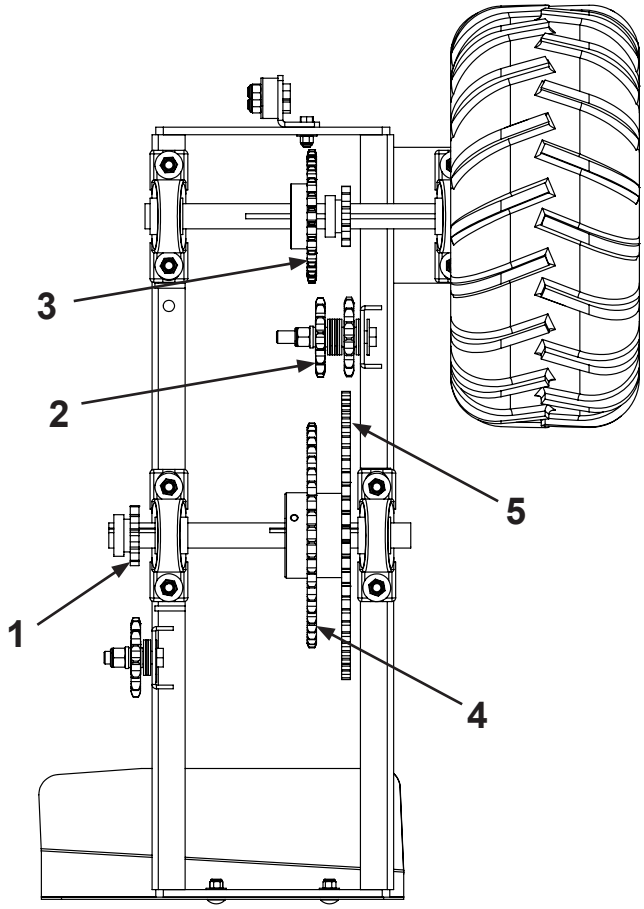


Tires				
ITEM	**PART NO.**		**DESCRIPTION**	**QTY**
1.	10070127	25427820L	Cleated with Rim	1
Metal Press Wheel				
ITEM	**PART NO.**		**DESCRIPTION**	**QTY**
1.	-	25GWML	Metal Press Wheel	1
Hubs				
ITEM	**PART NO.**		**DESCRIPTION**	**QTY**
	10073535	25GW-H5-A	5 Lug Hub	1

ITEM	**PART NO.**		**DESCRIPTION**	**QTY**
2.	10060130	60UCP207-20	1-1/4" Pillow Block	4
3.	10061246		Sprocket Shaft	1
4.	10061245		Drive Shaft	1
5.	10072079	15GW-UM3-A	Adjustable Mount	1
	10071955	253848272	Return Spring	1

Assembly and Part Identification

E: Ground Drive Components (2 of 2) - Sprockets and Chains

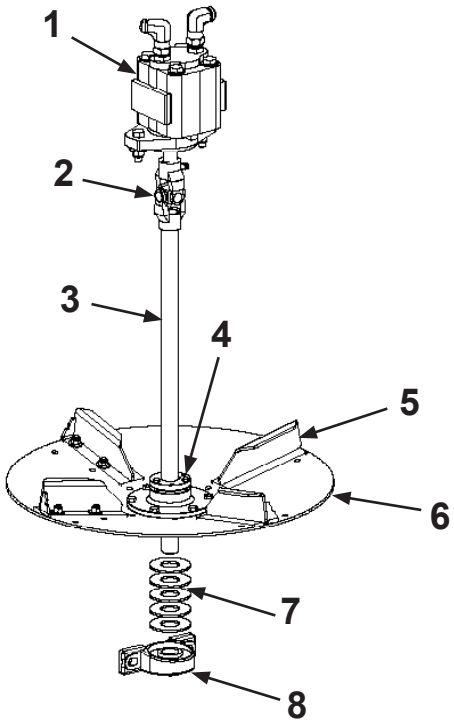


ITEM	PART NO.		DESCRIPTION	QTY
1.	10070650	6760BS11-1225	11 Tooth Sprocket	2
2.	10070093	67AG2417	Idler Sprocket	3
3.	10070700	6760BS26-1225	26 Tooth Sprocket	1
4.	10070648	6760BS45-1225	45 Tooth Sprocket	1
5.	10070649	6760BS60-1225	60 Tooth Sprocket	1

CHAIN - # 60 ROLLER	
PART NO.	DESCRIPTION
4160 - 1SS	# 60 Chain - Stainless
4160 - 1CLSS	Master Link - Stainless

Assembly and Part Identification

F: Hydraulic Spinner Components



ITEM	PART NO.		DESCRIPTION	QTY
1.	10073130	3121SDM15	Permco Hydraulic Motor	2
2.	10059943	61U183010293	1-1/4" X 1" U-Joint (1/4" Keys)	2
3.	10059933	45FSH28	1-1/4" Keyed Shaft	2
4.	10059616	50P1125	1-1/4" Taper Bushing Lock	2

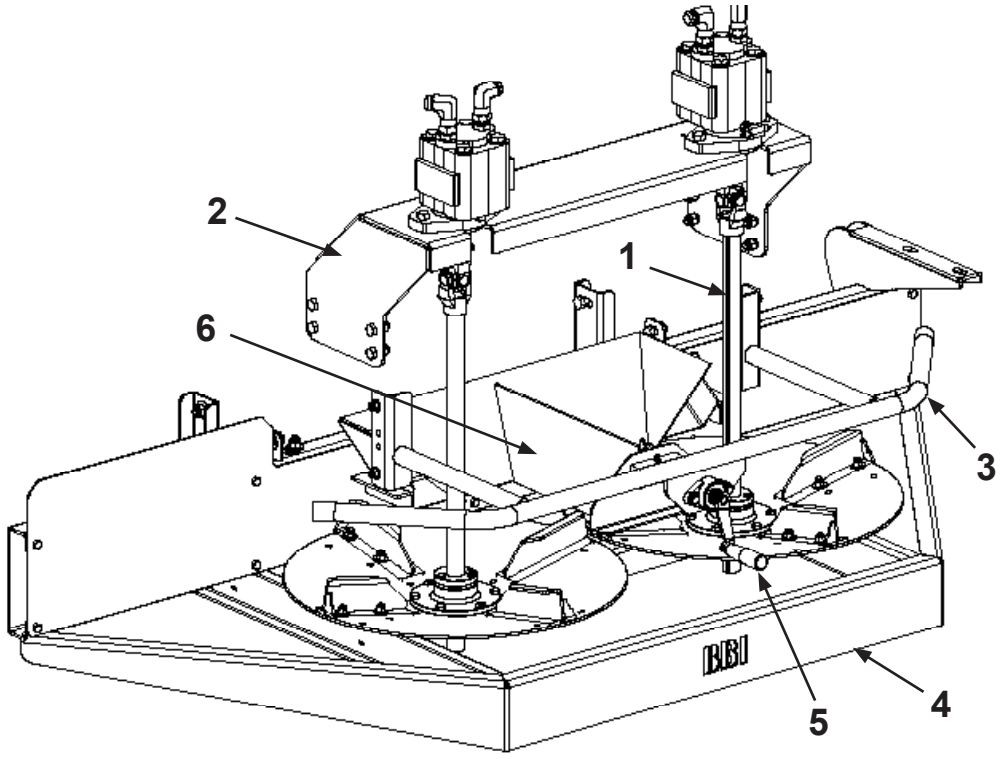
5. Fins			
PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
51FT75MC-RH	Carbon 7.5" Right Hand	51FT75MS-RH	Stainless 7.5" Right Hand
51FT75MC-LH	Carbon 7.5" Left Hand	51FT75MS-LH	Stainless 7.5" Left Hand

6. Disc Assemblies					
PART NO.		DESCRIPTION	PART NO.		DESCRIPTION
	50MS24CSA-RH	Carbon 24" Right	10059593	50MS24SSA-RH	Stainless 24" Right
	50MS24CSA-LH	Carbon 24" Left	10059583	50MS24SSA-LH	Stainless 24" Left

ITEM	PART NO.		DESCRIPTION	QTY
7.	10059970	93114FWUSSZ	1 3/8" X 3" X 9/64" Flat Washer	10
8.	10060130	60UCP207-20	1 1/4" Pillow Block Bearing	2

Assembly and Part Identification

G1: Hydraulic Spinner System Components

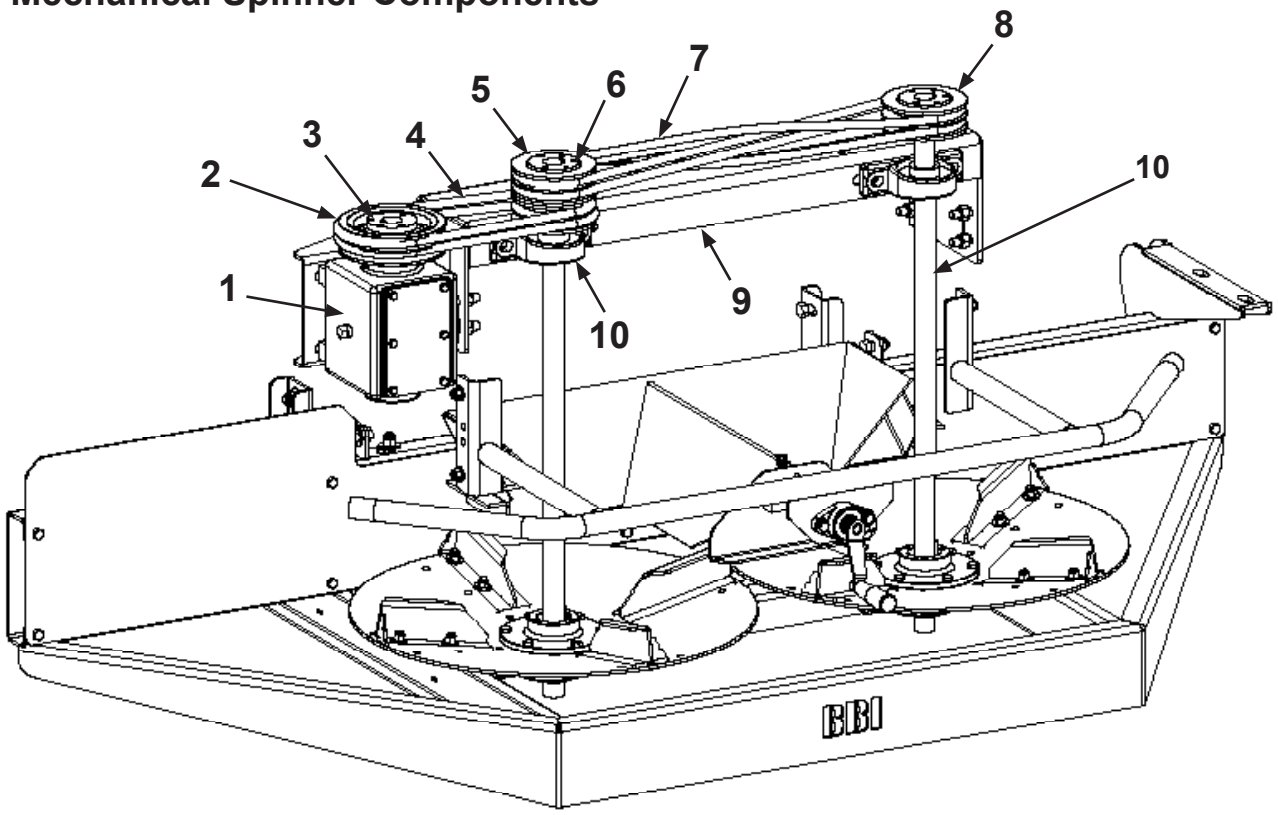


1. Spinners				
PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	
10073140	Left-Hand	10073139	Right-Hand	

ITEM	PART NO.		DESCRIPTION	QTY
2.	10055106		Magna Motor Mount	1
3.	10055275	51SG-SS	Flow Divider Guard	1
4.	10070161	50FTS24SS	Magna Spread Shield	1
5.	10060559	52FDH	Flow Divider Adjustment Handle	1
6.	10055306	52FFD200MS	Magna Spread Flow Divider	1
	10059532	DIXAC1	Flow Divider Insert Hair Pin	1

Assembly and Part Identification

G2: Mechanical Spinner Components

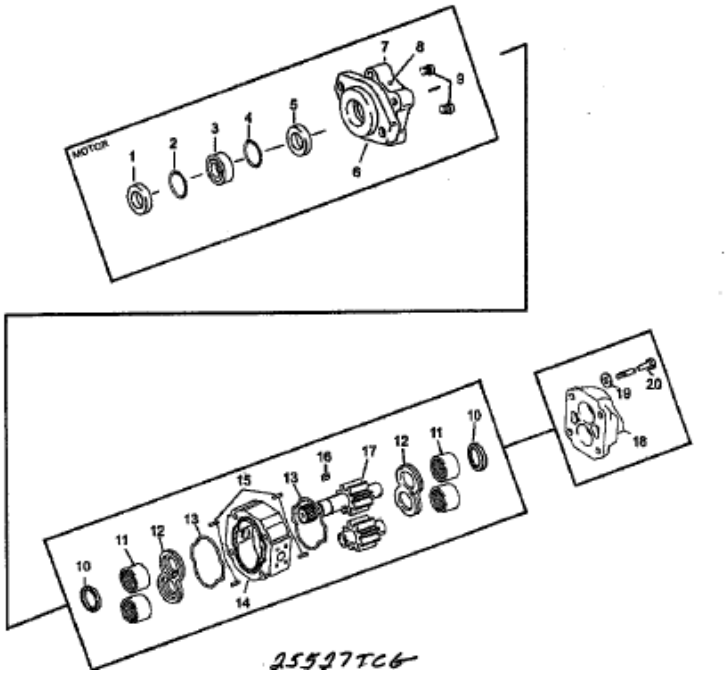


ITEM	PART NO.		DESCRIPTION	QTY
1.	10074595	70PTF942L	Gearbox - See Diagram H	1
2.	10072078	622B60SDS	2B60SDS Pulley (Larger)	1
3.	10074686	63SDS125	SDSX 1 1/4 Taper Bushing	2
4.	10074796	68B37	Drive Belt	2
5.	10075137	624B46SD	4B46SD Pulley (Double)	1
6.	10075136	63SD125	SDX1 1/4 Taper Bushing	1
7.	10074794	68B63K	Kevlar Spinner Drive Belt	2
8.	10072077	622B46SDS	2B46SDS Pulley (Smaller)	1
9.	10070046		Mechanical Motor Mount	1
10.	45FSB32.5		Vertical Spinner Shaft	2

Note: Fins, Shafts, and Flow Divider components can be found on Hydraulic Spinner System Components Section.

Assembly and Part Identification

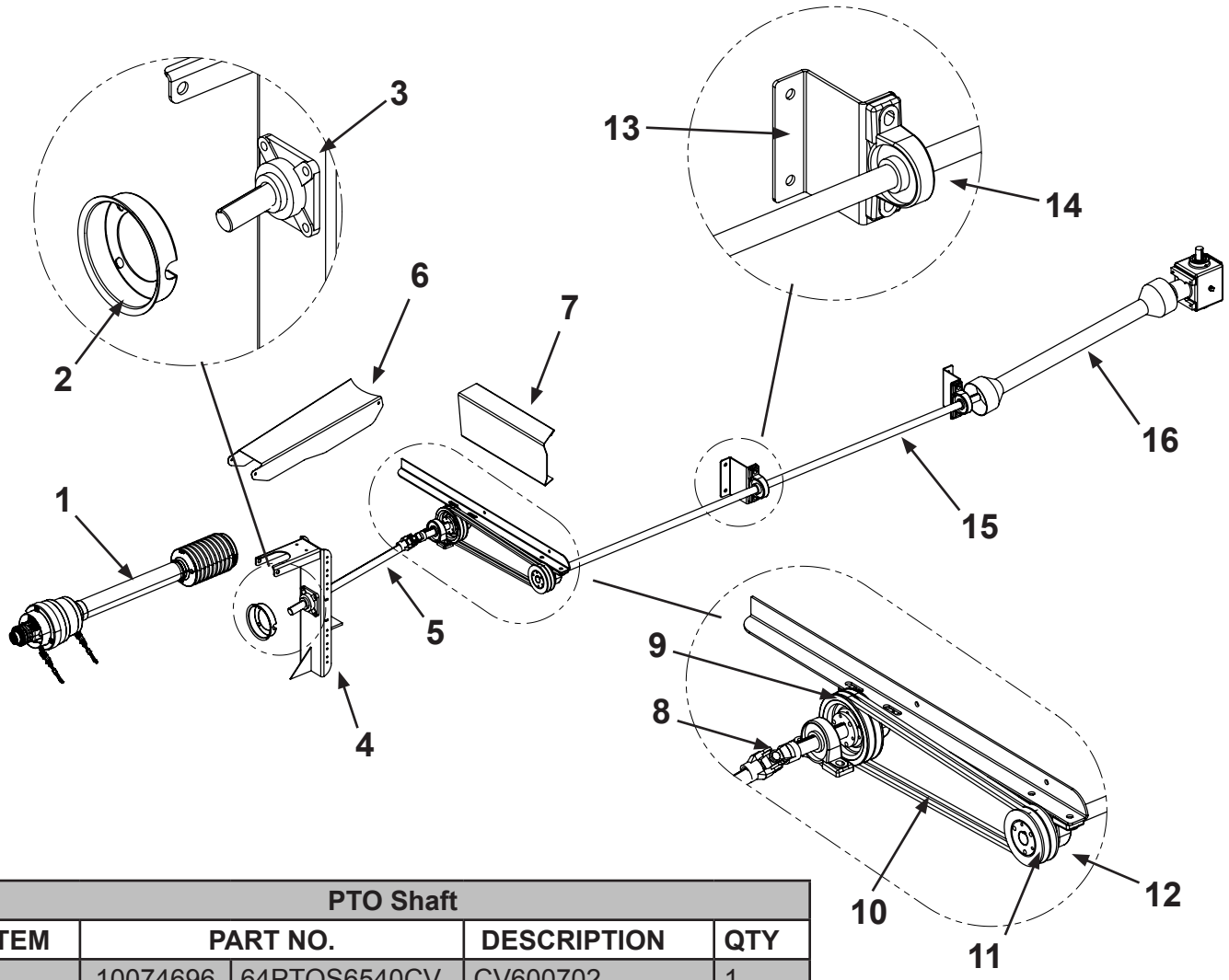
H: Spinner Motor
3121SDM15



ITEM	PART NO.	DESCRIPTION	QTY
1.	3125527TCG	Grease Seal	1
2.	31W023-206	Snap Ring	1
3.	31MZ-0961	Tell-Tale Seal Retainer	1
4.	K-2995-109-2100	Seal Retainer O-Ring	1
5.	31W62499	Shaft Seal	1
6.		1/8" NPT Grease Fitting Hole	
7.		2-Bolt-B Shaft End Cover (SEC)	1
8.	30W0-17	Pipe Plug 1/4" NPT for (SEC)	1
9.	L-0280-K	Check Valve Assembly	2
10.	31KA-0558-1XS	Ring Seal	2
11.	31X-0921	Roller Bearing	4
12.	31ZZ-0947-TC	Thrust Plate	2
13.	31K-2995-240-2100	Gear Housing Gasket Seal	2
14.		Gear Housing	1
15.	280-1971-031	Dowel Pin	4
16.	31W09-02	Shaft Key	1
17.	31DC-0024-L-3-15	Gear Set	1
18.	592-00662	Port End Cover (PEC)	1
19.	30W033-3	Washer 9/16"	4
20.	30W900-01021-1225	Hex Head Bolt	4

Assembly and Part Identification

I: PTO Shafts, Drive Shafts, Pulleys, Belts

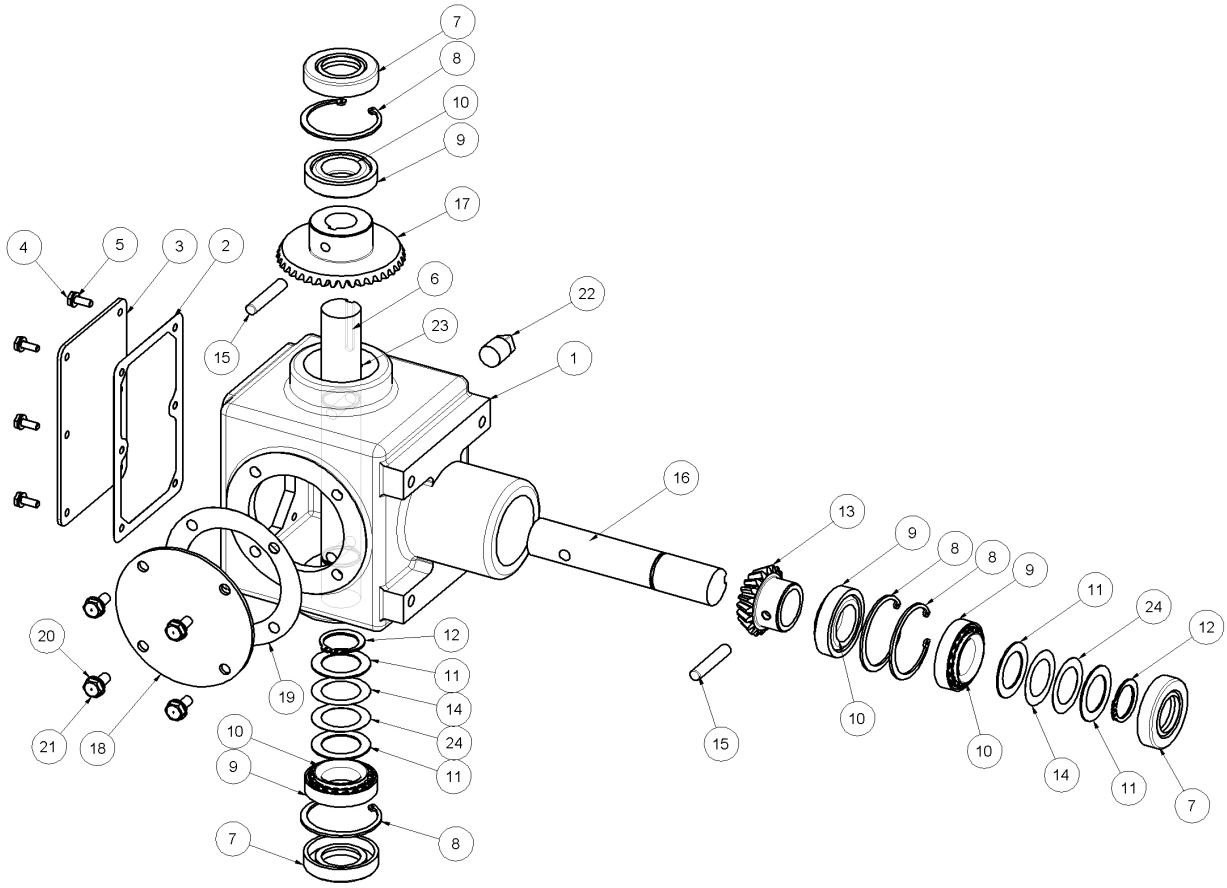


PTO Shaft				
ITEM	**PART NO.**		**DESCRIPTION**	**QTY**
1.	10074696	64PTOS6540CV	CV600702	1

ITEM	PART NO.		DESCRIPTION	QTY
2.	10074672	64CL502	PTO Boot Mount	1
3.	10072480	60HCFS206-20	Eccentric Collar Bearing	1
4.	-	15PTO-1-B	PTO Tower	1
5.	10074701	45MS25	PTO Mechanical Input Shaft	1
6.	10074691	15PTO-H2-A	Front Shaft Cover	1
7.	10074598	68PTOBeltGuardF	Front Belt Cover	1
8.	10074669	61U400101400	1-1/4 x 1-1/4 U-Joint	1
9.	10072078	622B60SDS	2B60SDS Pulley (Larger)	1
10.	10074795	68B61	B61 Belt	2
11.	10074686	63SDS125	SDSX1 1/4 Taper Bushing	2
12.	10072077	62246SDS	2B46SDS Pulley (Smaller)	1
13.	10073207	BLANK	Driveline Bearing Mount	2
14.	10060130	60UCP207-20	1-1/4 Pillow Block Bearing	5
15.	10074710	BLANK	Main Driveline	1
16.	10074802	64PTO7102071	#2 PTO Drive Shaft	1

Assembly and Part Identification

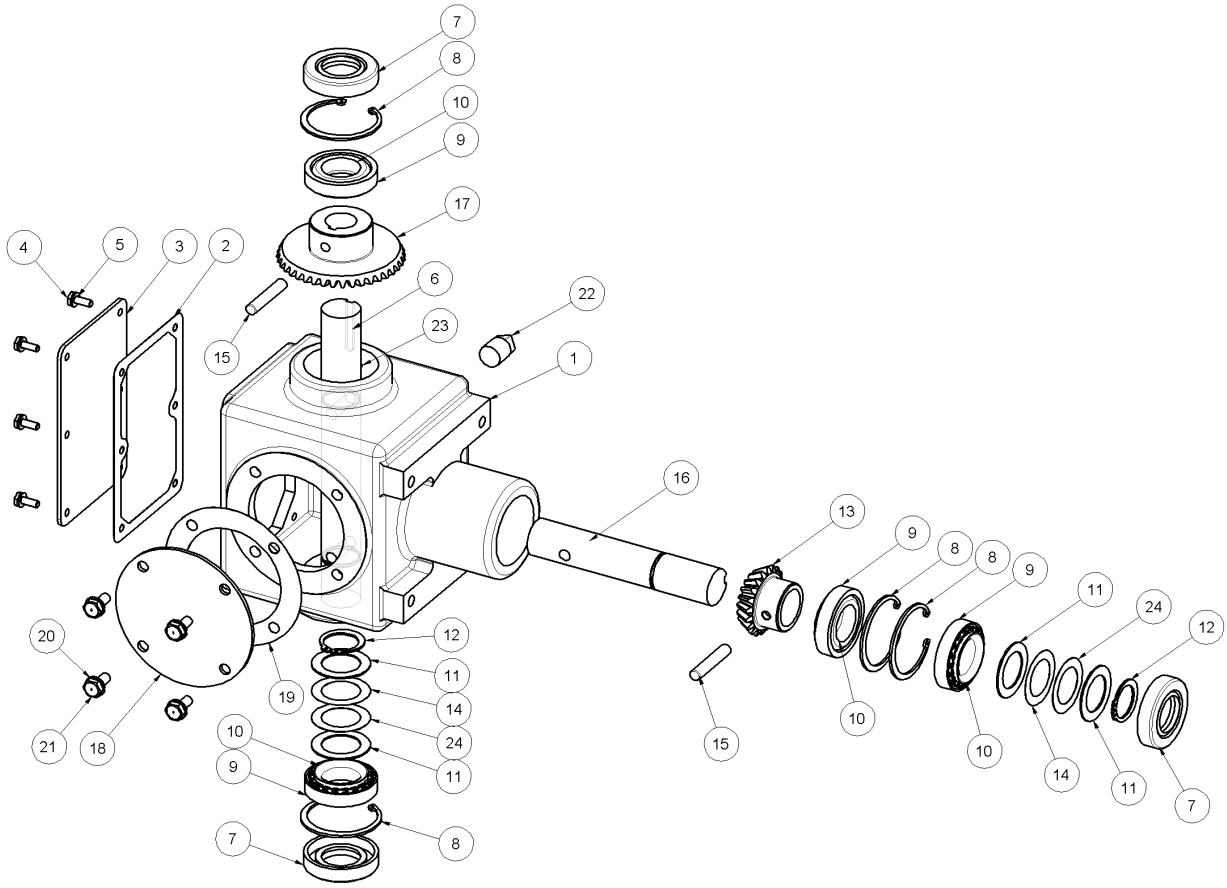
J: Two Shaft Spinner Gearbox (1 of 2)
70PTF942-L



ITEM	PART NO.	DESCRIPTION	QTY
1.	70PTF1A	LH Housing w/ Grease Fitting	1
2.	70PTF3	Gasket, Top (Rectangle)	1
3.	70PTF2A	Top Cover (Rectangle)	1
4.	70PTF4	Cap Screws (1/4" x 3/4")	6
5.	70PTF5	Split Lock Washers, 1/4"	6
6.	70PTF6	Output Shaft (1-1/4" x 10-3/4")	1
7.	70PTF11	Oil Seal	3
8.	70PTF12	Retaining Ring, Large	4
9.	70PTF10R	Race	4
10.	70PTF10C	Bearing	4
11.	70PTF16	Washer / Spacer / Shim	4
12.	70PTF13	Retaining Ring, Small	2

Assembly and Part Identification

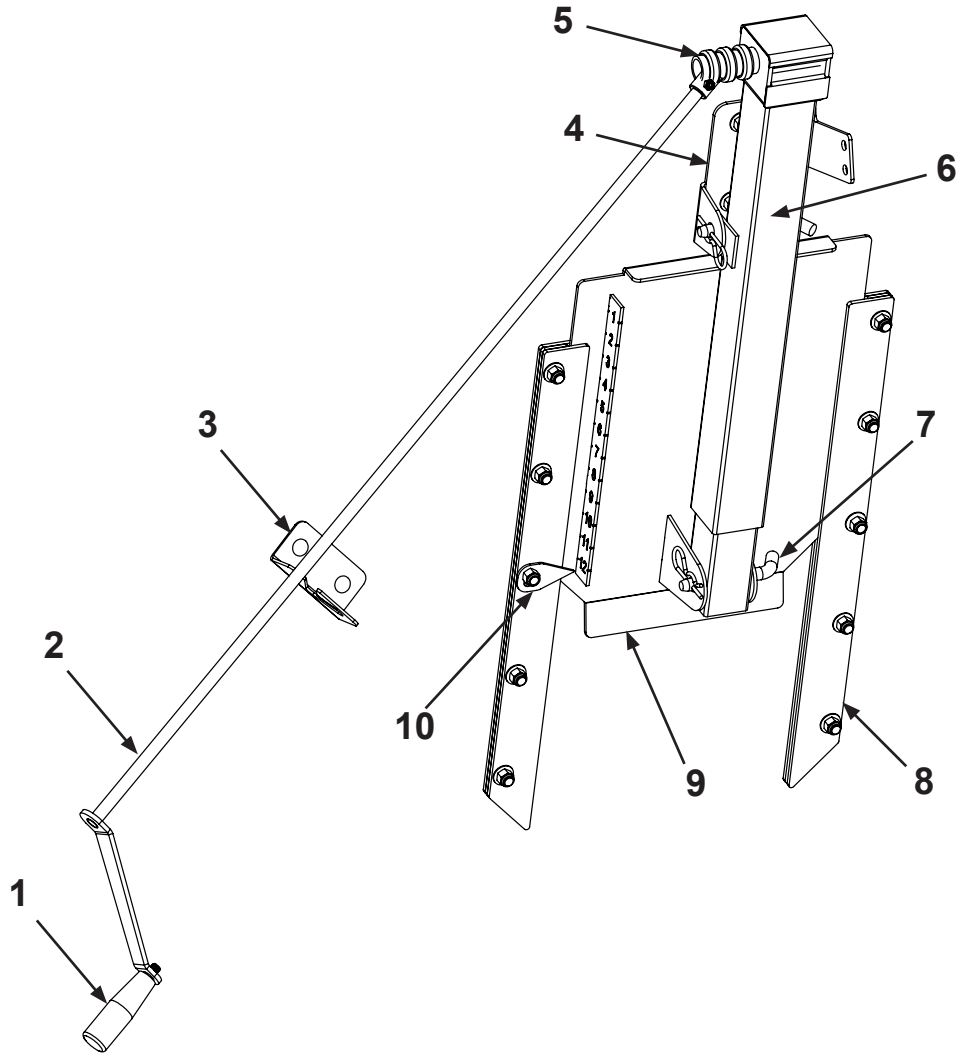
J: Two Shaft Spinner Gearbox (2 of 2)
70PTF942-L



ITEM	PART NO.	DESCRIPTION	QTY
13.	70PTF8P	Pinion gear	1
14.	70PTF18A	Shim .005	2
15.	70PTF9	#15 Roll Pin (2" x .385/.375)	2
16.	70PTF7	Input Shaft (1-1/4" x 6-5/8")	1
17.	70PTF8B	Gear	1
18.	70PTF2B	Side Cover (Round)	1
19.	70PTF19B	Side Gasket, Round .020	1
20.	70PTF17	Lock Washer, Split (5/16")	1
21.	70PTF15A	Cap Screw (5/16" x 1-1/2")	4
22.	70PTF14	Pipe Plug	1
23.	70PTF22	Grease Fitting	1
24.	70PTF18B	Shim .010	2

Assembly and Part Identification

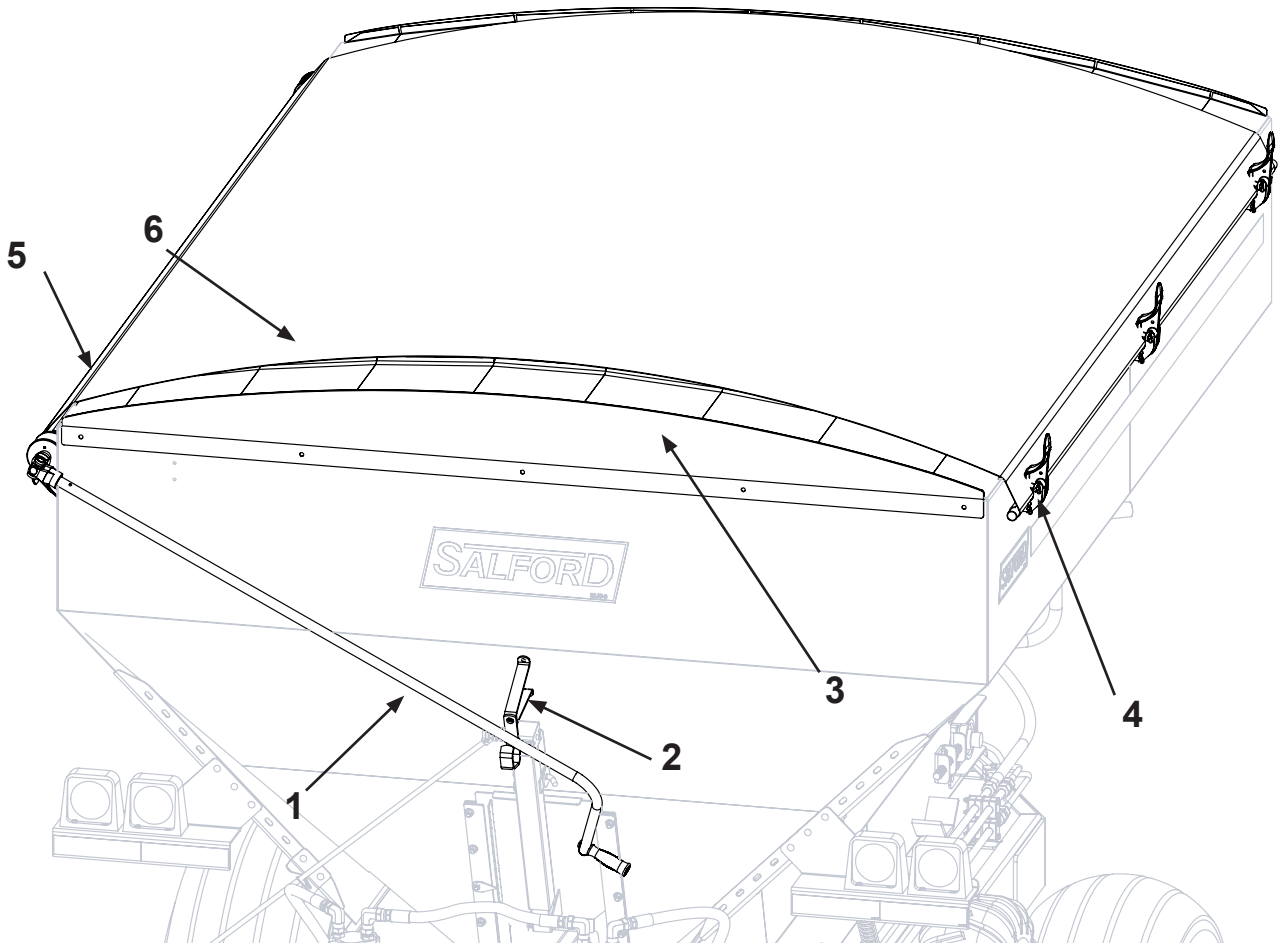
K. Gate Components



ITEM	PART NO.		DESCRIPTION	QTY
1.	10069723	WBB1505202	3.5 x 1.125 Phenolic Handle	1
2.	10070522		Trooper 8.0 Gate Handle Weldment	1
3.	10072260		Gate Jack Handle Bracket	1
4.	10059990		Gate Height Adjusting Mount	1
5.	10069719		1/2" Zinc Gate Jack U-Joint	1
6.	10069122		14-1/2 TAB Gate Jack Assembly	1
7.	10071566		304 SS 1/2 x 3 WL 1 Hole Clevis Pin	2
8.	10069727		Bolt-on Gate Slide	2
9.	10069982		Trooper 8 Gate (Includes Gauge)	1
10.	10071215		Gate Height Indicator	1

Assembly and Part Identification

L. Tarp Components



ITEM	PART NO.	QTY	DESCRIPTION
1.	691801509	1	Tarp Adjuster Handle
2.		1	Tarp Handle Hanger Bracket
3.	691120178	1	Front Endcap - Aluminum
	691114897	1	Front Endcap - Stainless
	691120181	1	Rear Endcap - Aluminum
	691114400	1	Rear Endcap - Stainless
4.	691100049	1	Tarp Stop
5.	691700051	1	Roll Tube
6.	69TV	1	Tarp (123" x 9' 8")
	691100695	3	Tarp Bow (Not Pictured)

Rate Charts

Dual Ratio 60ft

470 Wayside St. S.
Cornelia, GA 30531
Ph: (706) 778-2767
www.salfordgroup.com

APPLICATION RATE
TROOPER
8" MESH CHAIN

60' SWATH

Sprocket Ratio - 11:60 — Spread Swath **60** ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	221	248	276	304	331	359	386	414	442	469	497	524	552
11.5	212	238	265	291	317	344	370	397	423	450	476	503	529
11	202	228	253	278	304	329	354	380	405	430	455	481	506
10.5	193	217	242	266	290	314	338	362	386	411	435	459	483
10	184	207	230	253	276	299	322	345	368	391	414	437	460
9.5	175	197	219	240	262	284	306	328	350	371	393	415	437
9	166	186	207	228	248	269	290	311	331	352	373	393	414
8.5	156	176	196	215	235	254	274	293	313	332	352	371	391
8	147	166	184	202	221	239	258	276	294	313	331	350	368
7.5	138	155	173	190	207	224	242	259	276	293	311	328	345
7	129	145	161	177	193	209	225	242	258	274	290	306	322
6.5	120	135	150	164	179	194	209	224	239	254	269	284	299
6	110	124	138	152	166	179	193	207	221	235	248	262	276
5.5	101	114	127	139	152	164	177	190	202	215	228	240	253
5	92	104	115	127	138	150	161	173	184	196	207	219	230
4.5	83	93	104	114	124	135	145	155	166	176	186	197	207
4	74	83	92	101	110	120	129	138	147	156	166	175	184
3.5	64	72	81	89	97	105	113	121	129	137	145	153	161
3	55	62	69	76	83	90	97	104	110	117	124	131	138
2.5	46	52	58	63	69	75	81	86	92	98	104	109	115
2	37	41	46	51	55	60	64	69	74	78	83	87	92
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

Sprocket Ratio - 26:45 — Spread Swath **60** ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	696	783	870	956	1043	1130	1217	1304	1391	1478	1565	1652	1739
11.5	667	750	833	917	1000	1083	1167	1250	1333	1417	1500	1583	1667
11	638	717	797	877	956	1036	1116	1196	1275	1355	1435	1514	1594
10.5	609	685	761	837	913	989	1065	1141	1217	1293	1370	1446	1522
10	580	652	725	797	870	942	1014	1087	1159	1232	1304	1377	1449
9.5	551	620	688	757	826	895	964	1033	1101	1170	1239	1308	1377
9	522	587	652	717	783	848	913	978	1043	1109	1174	1239	1304
8.5	493	554	616	678	739	801	862	924	985	1047	1109	1170	1232
8	464	522	580	638	696	754	812	870	927	985	1043	1101	1159
7.5	435	489	543	598	652	706	761	815	870	924	978	1033	1087
7	406	457	507	558	609	659	710	761	812	862	913	964	1014
6.5	377	424	471	518	565	612	659	706	754	801	848	895	942
6	348	391	435	478	522	565	609	652	696	739	783	826	870
5.5	319	359	399	438	478	518	558	598	638	678	717	757	797
5	290	326	362	399	435	471	507	543	580	616	652	688	725
4.5	261	293	326	359	391	424	457	489	522	554	587	620	652
4	232	261	290	319	348	377	406	435	464	493	522	551	580
3.5	203	228	254	279	304	330	355	380	406	431	457	482	507
3	174	196	217	239	261	283	304	326	348	370	391	413	435
2.5	145	163	181	199	217	235	254	272	290	308	326	344	362
2	116	130	145	159	174	188	203	217	232	246	261	275	290
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

1) Locate Material Weight per Cubic Foot at the bottom of the desired chart.
NOTE: If the weight per cubic foot is not known, weigh one gallon of material and multiply by 7.5. This will give your approximate material weight per cubic foot.
(5 gal. X 1.5 = Approx. 1 cubic foot)
2) Look up the column vertically to find the amount of **Material** you want to **Spread per Acre**.
3) Move left across the row to locate the **Gate Setting** required for your application.
CAUTION: This Chart is CORRECT only for the specific type of spreader noted at the top of this chart, and for the application rate (High or Low) and swath as noted.

Rate Charts

Dual Ratio 80ft

470 Wayside St. S.
Cornelia, GA 30531
Ph: (706) 778-2767
www.salfordgroup.com

APPLICATION RATE
TROOPER
8" MESH CHAIN

HYDRAULIC
SPINNERS
80' SWATH

Sprocket Ratio - 11:60 — Spread Swath **80** ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	166	186	207	228	248	269	290	311	331	352	373	393	414
11.5	159	179	198	218	238	258	278	298	317	337	357	377	397
11	152	171	190	209	228	247	266	285	304	323	342	361	380
10.5	145	163	181	199	217	235	254	272	290	308	326	344	362
10	138	155	173	190	207	224	242	259	276	293	311	328	345
9.5	131	147	164	180	197	213	229	246	262	279	295	311	328
9	124	140	155	171	186	202	217	233	248	264	279	295	311
8.5	117	132	147	161	176	191	205	220	235	249	264	279	293
8	110	124	138	152	166	179	193	207	221	235	248	262	276
7.5	104	116	129	142	155	168	181	194	207	220	233	246	259
7	97	109	121	133	145	157	169	181	193	205	217	229	242
6.5	90	101	112	123	135	146	157	168	179	191	202	213	224
6	83	93	104	114	124	135	145	155	166	176	186	197	207
5.5	76	85	95	104	114	123	133	142	152	161	171	180	190
5	69	78	86	95	104	112	121	129	138	147	155	164	173
4.5	62	70	78	85	93	101	109	116	124	132	140	147	155
4	55	62	69	76	83	90	97	104	110	117	124	131	138
3.5	48	54	60	66	72	78	85	91	97	103	109	115	121
3	41	47	52	57	62	67	72	78	83	88	93	98	104
2.5	35	39	43	47	52	56	60	65	69	73	78	82	86
2	28	31	35	38	41	45	48	52	55	59	62	66	69
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

Sprocket Ratio - 26:45 — Spread Swath **80** ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	522	587	652	717	783	848	913	978	1043	1109	1174	1239	1304
11.5	500	562	625	687	750	812	875	937	1000	1062	1125	1187	1250
11	478	538	598	658	717	777	837	897	956	1016	1076	1136	1196
10.5	457	514	571	628	685	742	799	856	913	970	1027	1084	1141
10	435	489	543	598	652	706	761	815	870	924	978	1033	1087
9.5	413	465	516	568	620	671	723	774	826	878	929	981	1033
9	391	440	489	538	587	636	685	734	783	831	880	929	978
8.5	370	416	462	508	554	601	647	693	739	785	831	878	924
8	348	391	435	478	522	565	609	652	696	739	783	826	870
7.5	326	367	408	448	489	530	571	611	652	693	734	774	815
7	304	342	380	418	457	495	533	571	609	647	685	723	761
6.5	283	318	353	389	424	459	495	530	565	601	636	671	706
6	261	293	326	359	391	424	457	489	522	554	587	620	652
5.5	239	269	299	329	359	389	418	448	478	508	538	568	598
5	217	245	272	299	326	353	380	408	435	462	489	516	543
4.5	196	220	245	269	293	318	342	367	391	416	440	465	489
4	174	196	217	239	261	283	304	326	348	370	391	413	435
3.5	152	171	190	209	228	247	266	285	304	323	342	361	380
3	130	147	163	179	196	212	228	245	261	277	293	310	326
2.5	109	122	136	149	163	177	190	204	217	231	245	258	272
2	87	98	109	120	130	141	152	163	174	185	196	207	217
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

1) Locate Material Weight per Cubic Foot at the bottom of the desired chart.
NOTE: If the weight per cubic foot is not known, weigh one gallon of material and multiply by 7.5. This will give your approximate material weight per cubic foot.
(5 gal. X 1.5 = Approx. 1 cubic foot)
2) Look up the column vertically to find the amount of **Material** you want to **Spread per Acre**.
3) Move left across the row to locate the **Gate Setting** required for your application.
CAUTION: This Chart is CORRECT only for the specific type of spreader noted at the top of this chart, and for the application rate (High or Low) and swath as noted.

Rate Charts

Dual Ratio 60 / 30

470 Wayside St. S.
Cornelia, GA 30531
Ph: (706) 778-2767
www.salfordgroup.com

SALFORD BBI

APPLICATION RATE
TROOPER
8" MESH CHAIN PTO SPINNERS

Sprocket Ratio - 11:60 — Spread Swath: 60 ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	221	248	276	304	331	359	386	414	442	469	497	524	552
11.5	212	238	265	291	317	344	370	397	423	450	476	503	529
11	202	228	253	278	304	329	354	380	405	430	456	481	506
10.5	193	217	242	266	290	314	338	362	386	411	435	459	483
10	184	207	230	253	276	299	322	345	368	391	414	437	460
9.5	175	197	219	240	262	284	306	328	350	371	393	415	437
9	166	186	207	228	248	269	290	311	331	352	373	393	414
8.5	156	176	196	215	235	254	274	293	313	332	352	371	391
8	147	166	184	202	221	239	258	276	294	313	331	350	368
7.5	138	155	173	190	207	224	242	259	276	293	311	328	345
7	129	145	161	177	193	209	225	242	258	274	290	306	322
6.5	120	135	150	164	179	194	209	224	239	254	269	284	299
6	110	124	138	152	166	179	193	207	221	235	248	262	276
5.5	101	114	127	139	152	164	177	190	202	215	228	240	253
5	92	104	115	127	138	150	161	173	184	196	207	219	230
4.5	83	93	104	114	124	135	145	155	166	176	186	197	207
4	74	83	92	101	110	120	129	138	147	156	166	175	184
3.5	64	72	81	89	97	105	113	121	129	137	145	153	161
3	55	62	69	76	83	90	97	104	110	117	124	131	138
2.5	46	52	58	63	69	75	81	86	92	98	104	109	115
2	37	41	46	51	55	60	64	69	74	78	83	87	92
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

Sprocket Ratio - 26:45 — Spread Swath: 30 ft

GATE SETTING	40	45	50	55	60	65	70	75	80	85	90	95	100
12	1391	1565	1739	1913	2087	2261	2435	2609	2782	2956	3130	3304	3478
11.5	1333	1500	1667	1833	2000	2167	2333	2500	2667	2833	3000	3167	3333
11	1275	1435	1594	1754	1913	2072	2232	2391	2551	2710	2869	3029	3188
10.5	1217	1370	1522	1674	1826	1978	2130	2283	2435	2587	2739	2891	3043
10	1159	1304	1449	1594	1739	1884	2029	2174	2319	2464	2609	2754	2898
9.5	1101	1239	1377	1514	1652	1790	1927	2065	2203	2340	2478	2616	2754
9	1043	1174	1304	1435	1565	1696	1826	1956	2087	2217	2348	2478	2609
8.5	985	1109	1232	1355	1478	1601	1725	1848	1971	2094	2217	2340	2464
8	927	1043	1159	1275	1391	1507	1623	1739	1855	1971	2087	2203	2319
7.5	870	978	1087	1196	1304	1413	1522	1630	1739	1848	1956	2065	2174
7	812	913	1014	1116	1217	1319	1420	1522	1623	1725	1826	1927	2029
6.5	754	848	942	1036	1130	1225	1319	1413	1507	1601	1696	1790	1884
6	696	783	870	956	1043	1130	1217	1304	1391	1478	1565	1652	1739
5.5	638	717	797	877	956	1036	1116	1196	1275	1355	1435	1514	1594
5	580	652	725	797	870	942	1014	1087	1159	1232	1304	1377	1449
4.5	522	587	652	717	783	848	913	978	1043	1109	1174	1239	1304
4	464	522	580	638	696	754	812	870	927	985	1043	1101	1159
3.5	406	457	507	558	609	659	710	761	812	862	913	964	1014
3	348	391	435	478	522	565	609	652	696	739	783	826	870
2.5	290	326	362	399	435	471	507	543	580	616	652	688	725
2	232	261	290	319	348	377	406	435	464	493	522	551	580
1.5													
1													

MATERIAL DENSITY (LBS PER CU. FT.)

1] Locate Material Weight per Cubic Foot at the bottom of the desired chart.
NOTE: If the weight per cubic foot is not known, weigh one gallon of material and multiply by 7.5. This will give your approximate material weight per cubic foot.
(5 gal. X 1.5 = Approx. 1 cubic foot)
2] Look up the column vertically to find the amount of Material you want to Spread per Acre.
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