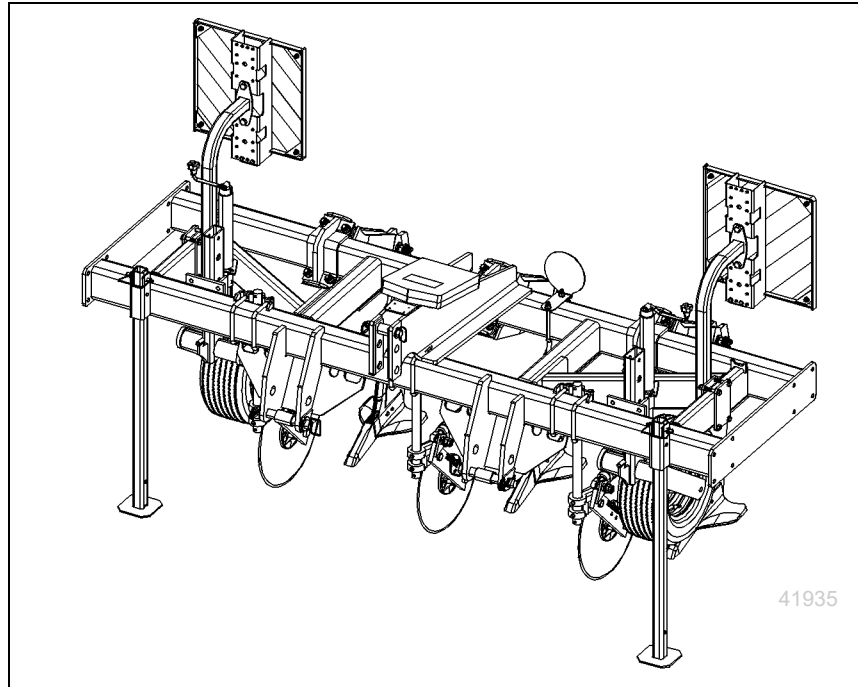


Operator Manual

VT1520-0370 - VT1520-0656
Sub-Soiler Inline Ripper



Read the operator's manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!



Illustrations may show optional equipment not supplied with standard unit.

ORIGINAL INSTRUCTIONS



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Printed 8/26/24

596-383M

Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you or the dealer have added options not originally ordered with the machine, or removed options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements with the option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Year of Construction	
Delivery Date	
First Operation	
Accessories	<hr/> <hr/> <hr/>

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

Dealer's Customer No.: _____



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Printed in the United States of America



Great Plains welcomes you to its growing family of new product owners. Your product VT1520 Sub-Soiler has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

Before placing the machine into service for the first time, read and understand this manual, in particular the “**Important Safety Information**”, pages 5 to 8. Have all operators read this manual before allowing them to work with the machine.

Description of Unit

The VT1520 Sub-Soiler is a one-section machine. It is designed to break up soil crust on hard dried fields while eliminating compaction layers. An optional berm conditioner may be added to the rear of each shank.

Models Covered

VT1520-0370	70cm-centers, 3-shank, 1-section
VT1520-0375	75cm-centers, 3-shank, 1-section
VT1520-0470	70cm-centers, 4-shank, 1-section
VT1520-0475	75cm-centers, 4-shank, 1-section
VT1520-0568	68cm-centers, 5-shank, 1-section
VT1520-0570	70cm-centers, 5-shank, 1-section
VT1520-0654	54cm-centers, 6-shank, 1-section
VT1520-0656	56cm-centers, 6-shank, 1-section

Document Family

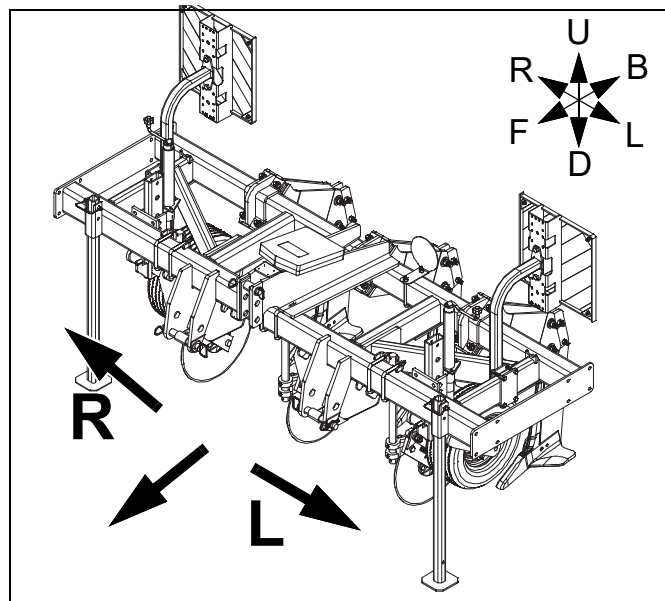
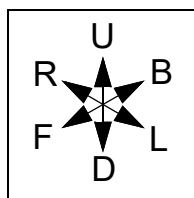
596-383M	Operator Manual (this document)
596-383P	Parts Manual

Using this Manual

This manual familiarizes you with safety, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow that recommendations to help ensure safe and efficient operation.

The information in this manual is current at printing. Some parts may change to assure top performance.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Downs, Front, Right.



Parts Manual QRC

The QR Code to the left will take you to this machine's parts manual. Use your smart phone or tablet to scan and start viewing.



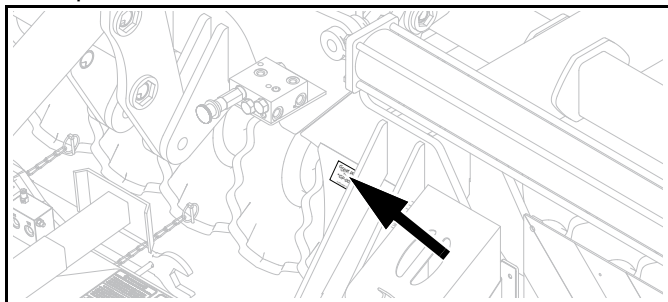
Product Manuals QRC

The QR Code to the left will take you to Great Plains' catalog of product manuals. Use your smart phone or tablet to scan and start viewing.

Owner Assistance

If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts and equipment specially designed for Great Plains products.

Your machine's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer. The serial-number plate is located on the left side main frame, below bypass and down pressure valve.



Record your machine's model and serial number on the inside cover of this manual for quick reference.

Definitions


Safety admonishment signal words are described on page 5.

The following terms are used throughout this manual.

NOTICE

Identifies an Economic (not a Safety) Risk:

NOTICE provides a crucial point of information related to the current topic. Read and follow the instructions to avoid damage to equipment and ensure desired field results.

 *This form sets off useful information related to the current topic, or forestalls possible misunderstanding.*

Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new product. If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please take the following actions first:

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.

If your dealer is unable to resolve the problem or the issue is parts related, please contact:

**Great Plains Service Department
1525 E. North St.
P.O. Box 5060
Salina, KS 67402-5060**

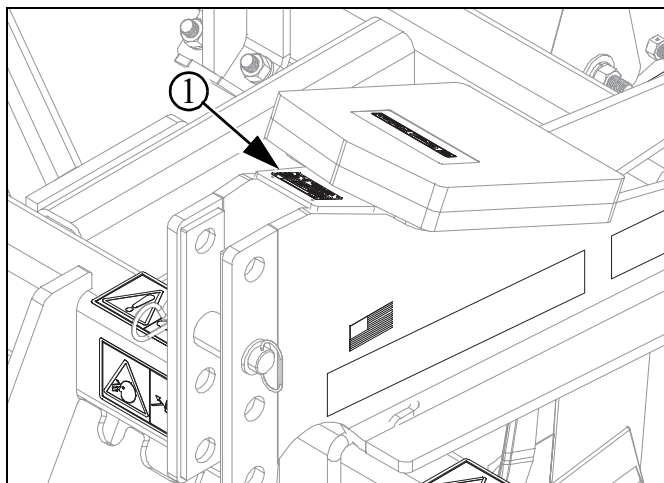
Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.

Equipment Identification

This Manual Type manual applies to the following Great Plains pull-type secondary conventional tillage systems

See “**VT1520 Specifications and Capacities**” on page 27 for precise swath information.

For positive equipment identification, consult the machine label (1) located on the top of the left hand hitch truss, near the single point depth control.



Machine Label

Models VT1520 Sub-Soiler can be built to European regulatory and highway transport standards. See “**EC Declaration of Conformity**” on page 38 for full details. The machine can also be built to North American regulatory and highway transport standards, depending on which light option package is purchased.

The Serial Number Plate (example shown: which is NOT from an actual machine) and/or the machine label provides data which is specific to your machine as originally shipped from the factory.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements no longer are accurate for your machine. Update the Record on the next page upon modifications.

See “**VT1520 Specifications and Capacities**” on page 27 for additional weights and measurements.



Owner Assistance

If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts and equipment specially designed for Great Plains products.

Your machine's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer.

Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.

Further Assistance

Great Plains Manufacturing, Inc. wants you to be satisfied with your new Sub-Soiler. If for any reason you do not understand any part of this manual or are otherwise dissatisfied with the product please contact:

Great Plains Service Department
1525 E. North St.
P.O. Box 5060
Salina, KS 67402-5060

Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.



Important Safety Information

Look for Safety Symbol

The SAFETY ALERT SYMBOL^a indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.



Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

DANGER, and the colour Safety Red, indicate an imminent hazard which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.



WARNING, and the colour Safety Orange, indicate a potential hazard which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



CAUTION, and the colour Safety Yellow, indicate a potential hazard which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



Prepare for Emergencies

- ▲ *Be prepared if a fire starts*
- ▲ *Keep a first aid kit and fire extinguisher handy.*
- ▲ *Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.*



Be Familiar with Safety Decals

- ▲ *Read and understand "Safety Reflectors and Decals" on page 9, thoroughly.*
- ▲ *Read all instructions noted on the decals.*
- ▲ *Keep decals clean. Replace damaged, faded and illegible decals.*



a. Symbols and colours in this manual, and on north american models, are based on ANSI standard Z535. Decals on international models are based on ISO standard 3864.

Wear Protective Equipment

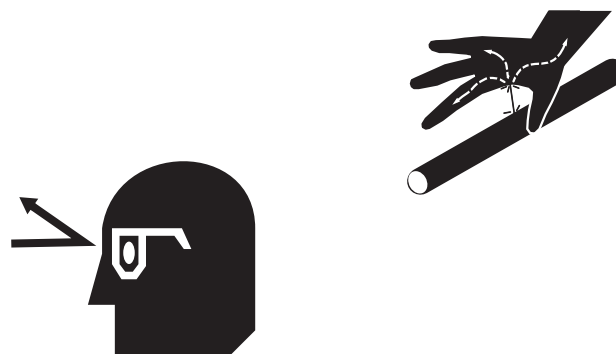
- ▲ *Wear protective clothing and equipment.*
- ▲ *Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.*
- ▲ *Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection such as earmuffs or earplugs.*
- ▲ *Because operating equipment safely requires your full attention, avoid wearing entertainment headphones while operating machinery.*



Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury.

- ▲ *Avoid the hazard by relieving pressure at other remote, and shutting down tractor before connecting, disconnecting or inspecting hydraulic lines.*
- ▲ *Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.*
- ▲ *Wear protective gloves and safety glasses or goggles when working with hydraulic systems.*
- ▲ *If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.*



Keep Riders Off Machinery

Riders obstruct the operator's view. Riders could be struck by foreign objects or thrown from the machine.

- ▲ *Never allow children to operate equipment.*
- ▲ *Keep all bystanders away from machine during operation.*



Tire Safety

Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

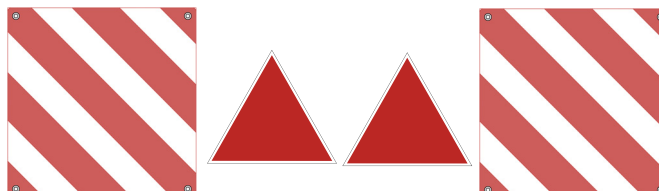
- ▲ *When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.*
- ▲ *When removing and installing wheels, use wheel-handling equipment adequate for weight involved.*



Use Safety Lights and Devices

Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

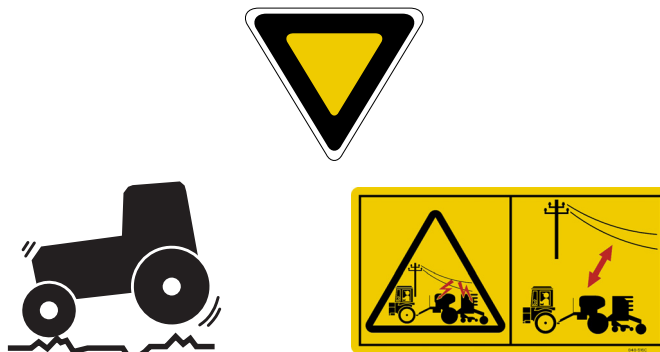
- ▲ *Use flashing warning lights and turn signals whenever driving on public roads.*
- ▲ *Use lights and devices provided with implement.*



Transport Machinery Safely

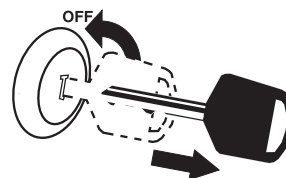
Maximum transport speed for implement is 30 kph. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 30 kph or 20 mph. 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.*
- ▲ *Comply with national, regional and local laws.*
- ▲ *Do not tow an implement or nurse tank that weighs more than 1.5 times the weight of towing vehicle.*
- ▲ *Carry reflectors or flags to mark product in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “VT1520 Specifications and Capacities” on page 27.*
- ▲ *Reduce speed on rough roads.*
- ▲ *Do not fold or unfold the product while the tractor is moving.*



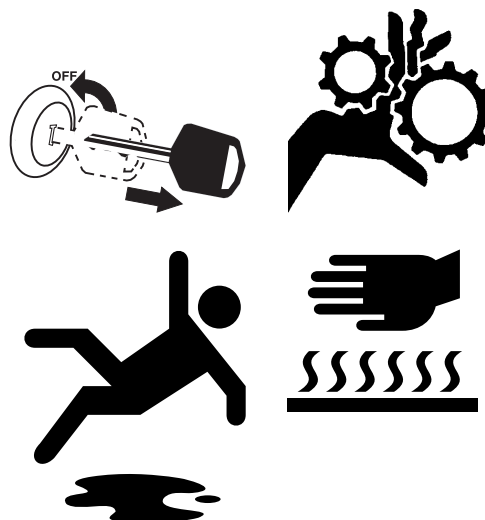
Shutdown and Storage

- ▲ *Lower product, put tractor in park, turn off engine, and remove the key.*
- ▲ *Secure product using parking stands provided.*
- ▲ *Detach and store product in an area where children normally do not play.*



Practice Safe Maintenance

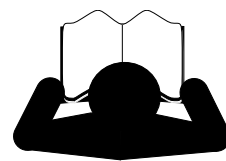
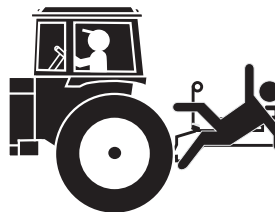
- ▲ *Understand procedure before doing work. Use proper tools and equipment.*
- ▲ *Work in a clean, dry area.*
- ▲ *Unfold and lower the implement, put tractor in park, turn off engine, and remove key before performing maintenance. If work must be performed with implement raised, use center section lift lock and gauge lock channels provided.*
- ▲ *Make sure all moving parts have stopped and all system pressure is relieved.*
- ▲ *Allow machine to cool completely.*
- ▲ *Disconnect battery ground cable (-) before servicing or adjusting electrical systems.*
- ▲ *Welding: Disconnect battery ground. Protect hydraulic lines. Avoid fumes from heated paint.*
- ▲ *Inspect all parts. Make sure parts are in good condition and installed properly.*
- ▲ *Remove buildup of grease, oil or debris.*
- ▲ *Remove all tools and unused parts from product before operation.*



Safety At All Times

Thoroughly read and understand the instructions in this manual before operation. Read all instructions noted on the safety decals.

- ▲ *Be familiar with all product functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave product unattended with tractor engine running.*
- ▲ *Do not stand between the tractor and implement, or implement and nurse tank during hitching.*
- ▲ *Keep hands, feet and clothing away from power-driven parts.*
- ▲ *Wear snug-fitting clothing to avoid entanglement with moving parts.*
- ▲ *Watch out for wires, trees, etc., when folding and raising product. Make sure all persons are clear of working area.*



Accident Prevention

- ▲ *In addition to the Operating Instructions, it is important to observe the accident prevention regulations specified by agricultural trade associations. It is the Operator's responsibility to ensure that all other persons are excluded from danger zones surrounding or on the machine during its operation.*

It is the Owner's Responsibility to Ensure;

- ▲ *The Operator is trained and competent to use the machine and tractor.*
- ▲ *The tractor is suitable for the machine.*
- ▲ *Adequate Risk and COSHH assessments have been undertaken regarding the machine's use, Specifically, these include issues concerning contact with the soil, crop residues, chemicals, lubricants and other compounds during operation, maintenance, and the possibility of stones being ejected at high speed during work.*

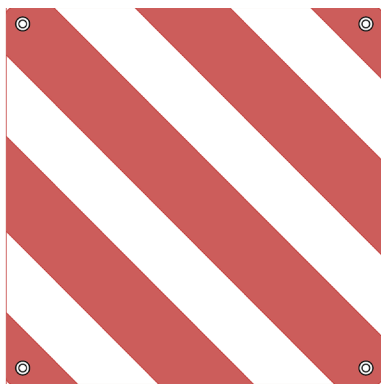
⚠ DANGER

Beware of trapping hazards when manipulating the parking jacks or other moving parts. Ensure any heavy components are fully supported when removing pins/bolts. Safety Decals

Safety Reflectors and Decals

Your implement comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your implement.

- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts or components, also request corresponding safety decals.*



843-183C Fluorescent Reflector

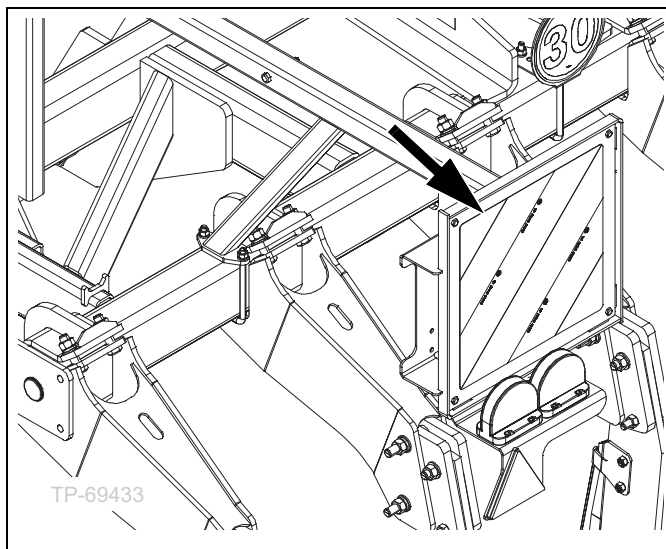
On the back sign mount weldment both sides.
2 total

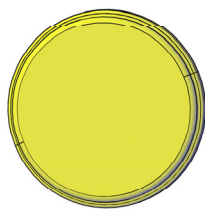
⚠ DANGER

Do not use implement to lift objects; to pull objects such as fence posts, stumps, ect; or to push objects. The unit is not designed or guarded for these uses.

To install new decals:

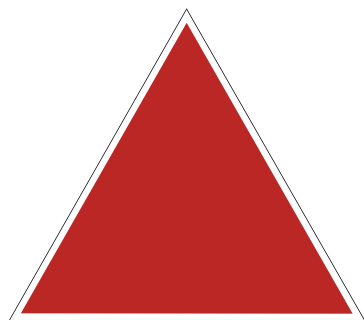
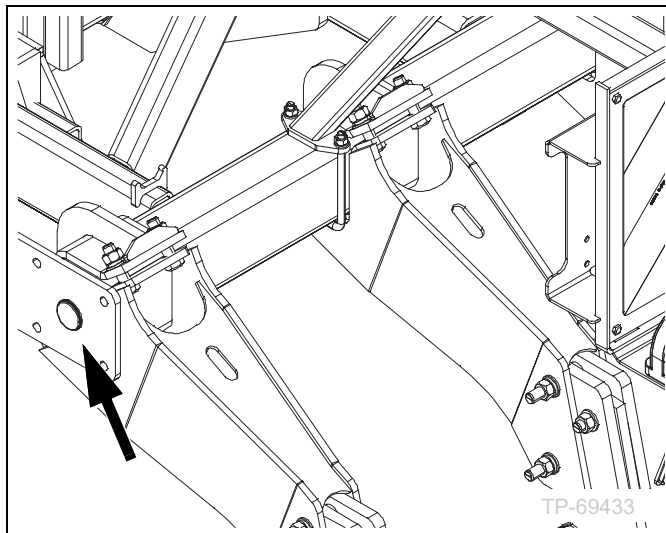
3. Clean the area on which the decal is to be placed.
4. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.





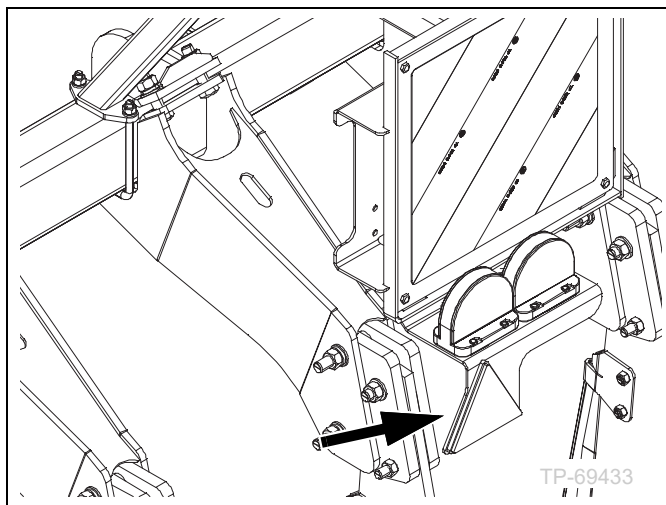
838-615C Amber Reflectors

On outside of ripper frame, both sides.
2 total



833-399C Red Triangle Reflector

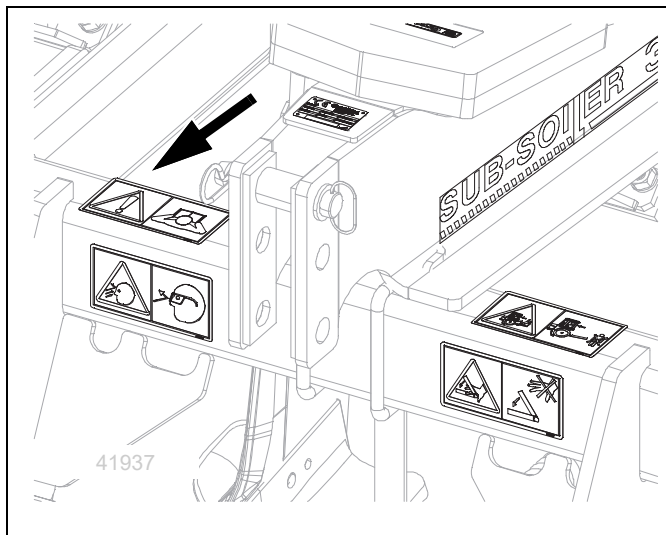
On rear of speed limit bracket, both sides;
2 total

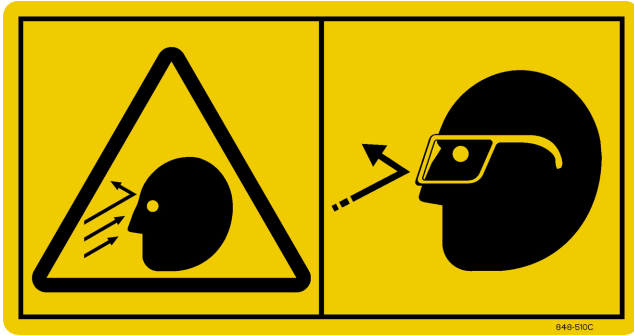


848-512C

On front, top of ripper frame.
1 total

Read & follow general instructions prior to machine operation.

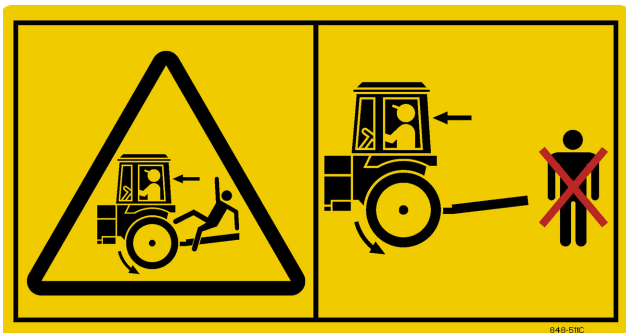
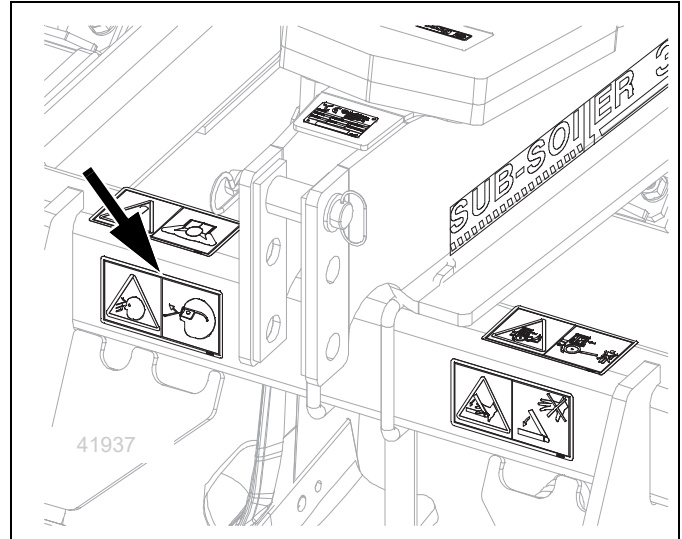




848-510C Eye Protection

On front of ripper frame;
1 total

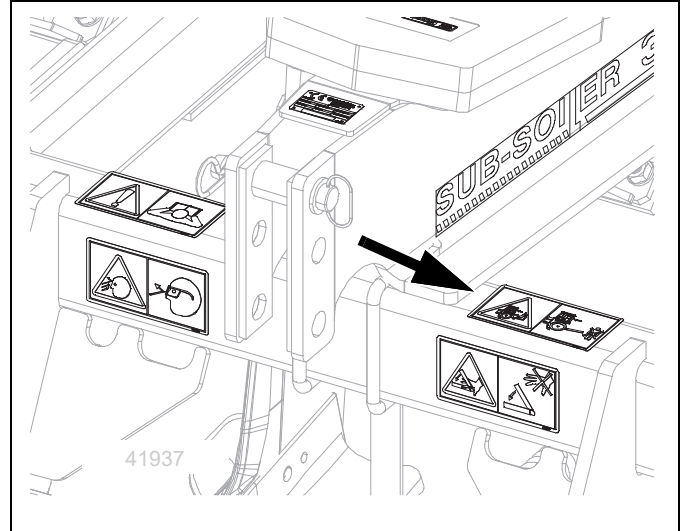
Wear eye protection to keep debris out of eyes.



848-511C Do Not Ride

On top, front of center frame;
1 total

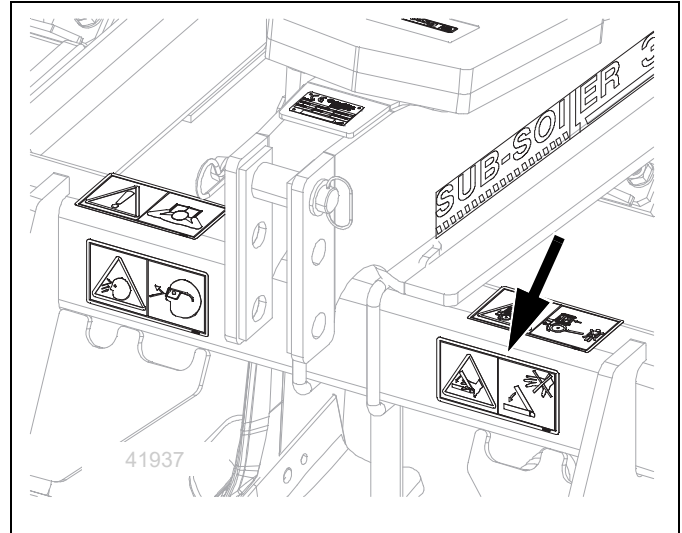
Do not allow riders on machine at any time.



848-531C Pinch Point

On front of center frame;
1 total

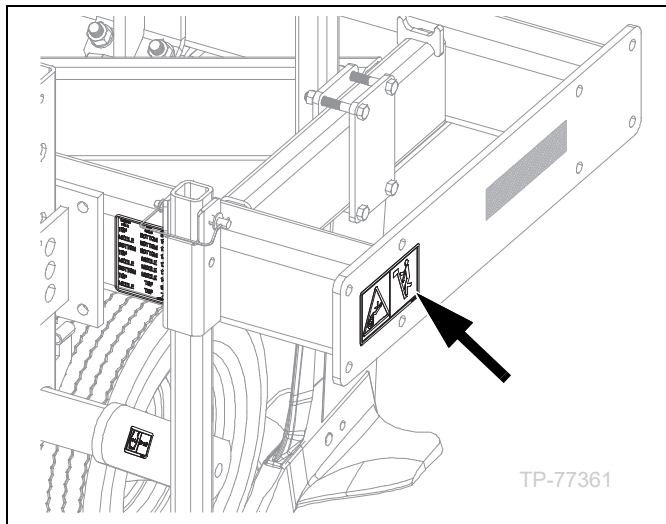
Do not place hands between moving parts.



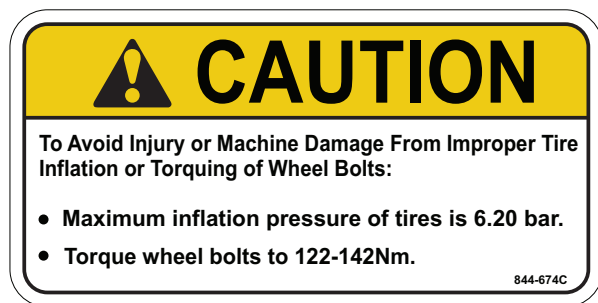
**848-507C****Tire is Not a Step**

Front side of gauge wheel jack, both sides;
2 total

Use ladder, not tires, to climb on machine.

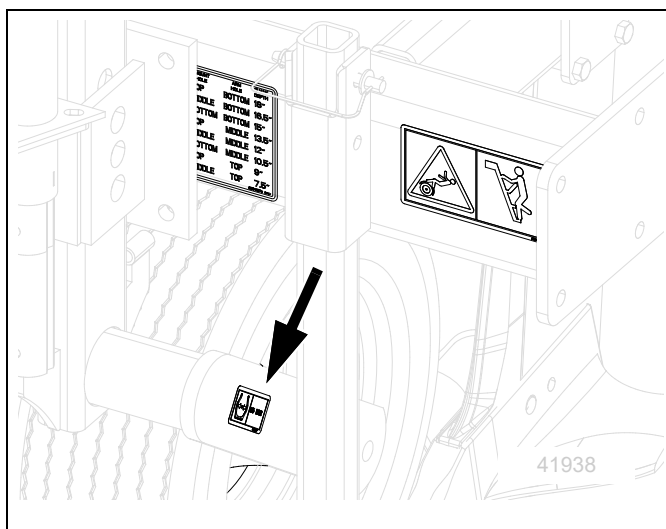


TP-77361

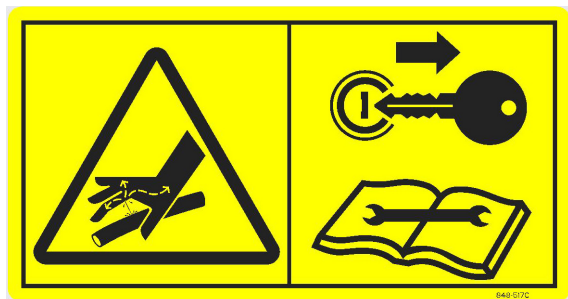
**844-674C****Caution: Tire 6.20 BAR/122-142Nm**

On outside of gauge wheel arms;
2 total

Inflate tires no more than maximum pressure.

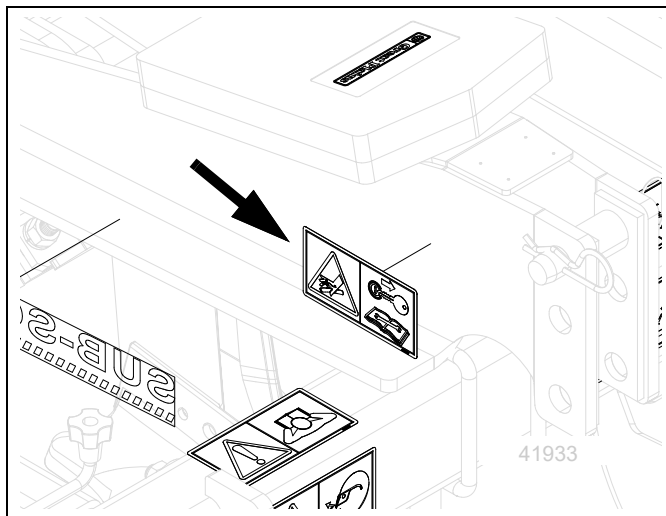


41938

**848-517C****High Pressure Hydraulics**

On right side of center frame upright;
1 total

Relieve pressure in system, shut off engine and remove key before service or repair.

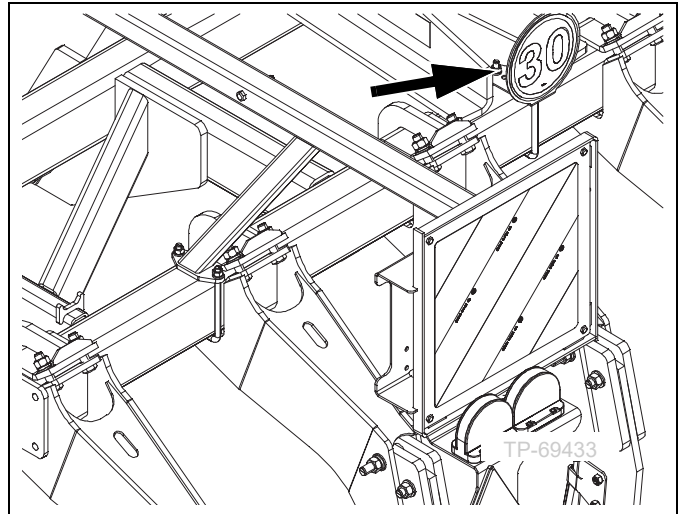


41933

**848-398C****30KM Per HR**

One on rear of speed limit bracket.;
1 total

Do Not exceed recommended speed limit.

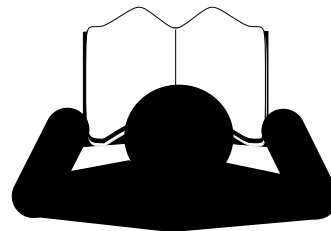




Preparation and Setup

This section helps you prepare your tractor and VT1520 Sub-Soiler for use, and covers tasks that need to be done seasonally, or when the tractor/product configuration changes.

Before using the product in the field, you must hitch it to a suitable tractor, inspect systems and level the product. Before using the product for the first time, and periodically thereafter, certain adjustments and calibrations are required.



Prior to Going to the Field Checklist

Complete this checklist before routine setup:

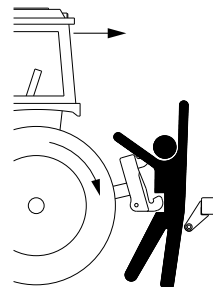
- ☐ Read and understand “**Important Safety Information**” on page 5.
- ☐ Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- ☐ Make sure your tractor horsepower matches the implement you are pulling. This is important so the implement can do the best possible job.
- ☐ Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 25. The hubs will come pre-greased and will not need greased at this time.
- ☐ Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Reflectors and Decals**” on page 9.
- ☐ Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire Inflation Chart**” on page 28.

Hitching Tractor to Sub-Soiler

⚠ DANGER

Crushing Hazard:

Do not stand or place any part of your body between sub-soiler and moving tractor. You may be severely injured or killed by being crushed between the tractor and sub-soiler. Stop tractor engine and set parking brake before attaching cables and hoses.



⚠ WARNING

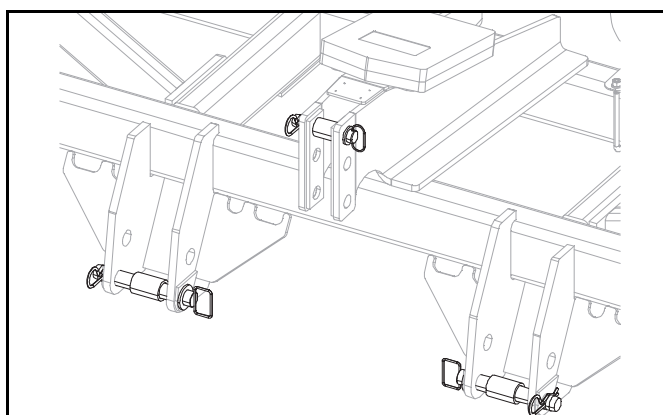
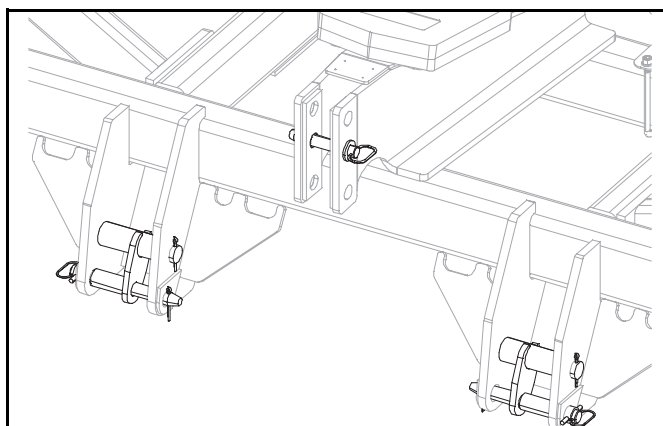
High Pressure Fluid Hazard:

Relieve pressure before disconnecting hydraulic lines. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



Hitching with 3-Point

1. The sub-soiler is designed to use either Category II or III tractors.
2. See drawing for correct pins and hole positions for Category II.
3. See drawing for correct pins and hole positions for Category III.
4. Connect your tractor 3-point to the sub-soiler 3-point hitch. If using quick hitch be sure sub-soiler locks into hitch securely.
5. Raise tractor 3-point just enough to relieve pressure from parking stands.
6. Swing up and pin up 3-point stands. See **“Storing Parking Stands”** on page 16.



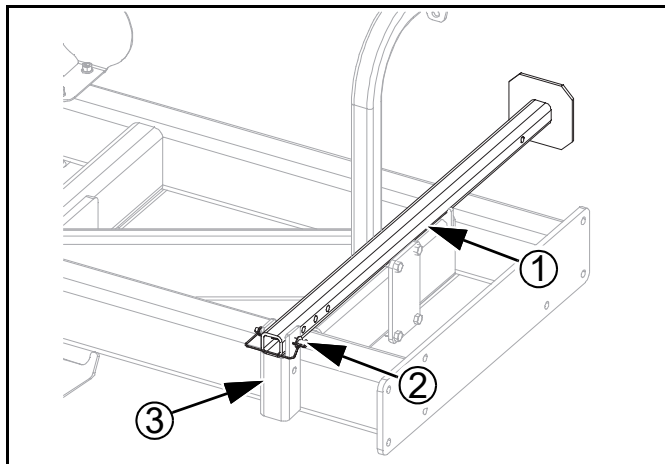
NOTICE**Load Sway Risk:**

Adjust 3-point hitch arms and sway blocks to minimize any side-to-side sway to assure proper tracking in the field and safe road travel.

7. Connect light electrical cable to tractor.

Storing Parking Stands

1. While holding the parking stand (1), remove the snap lock pin (2).
2. Slide the stand out the bottom of the holder (3) and position stand across frame as shown.
3. Install snap lock pin through aligned holes to secure.

**Electrical Connection**

1. Make sure tractor is shut down with accessory power off before making connections.
2. Connect lighting connector and any options or after-market electronics to tractor outlets.
3. Tie up excess cable, allowing enough slack for the implement name to tilt back.

**NOTICE****Make Electrical Connections****Make connections prior to machine movement.**

- (1) #1 Yellow - LH Flashing Lights
- (2) #6 Red - Brake Lights
- (3) #5 Empty
- (4) #4 Green - RH Flashing Lights
- (5) #3 White - Ground
- (6) #2 Blue - Aux Power
- (7) #7 Brown - Tail Lights

Machine Adjustments


Pre-Leveling of Machine

Front to Rear Leveling

1. Pre-leveling of machine may be done on a level floor.
Lower the machine down until the shank tips are just above the floor.
2. Adjust the 3 point top link until the front and rear points are level.

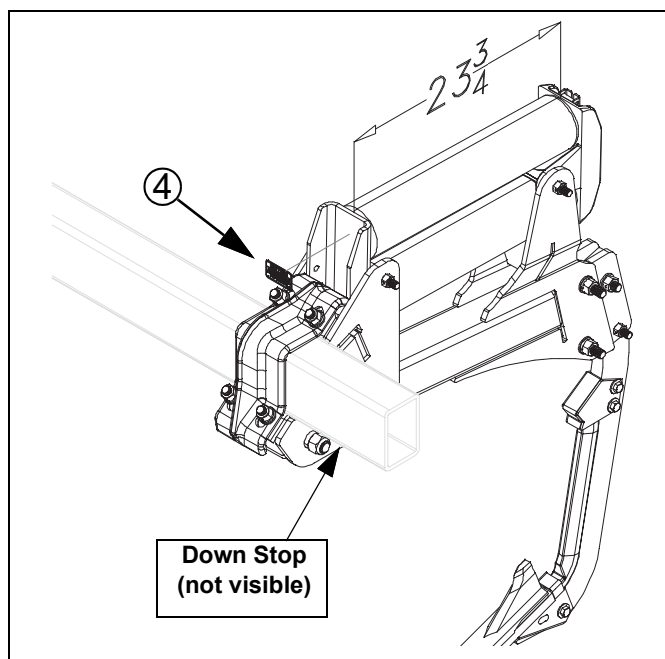
Auto Reset Shank Adjustment

Standard Shanks


3. The dual spring package will be preloaded so both top and bottom springs are loaded evenly and measure 23.8" from end of coil to end of coil.
-  Be sure to take note of the type of Auto Reset shanks that are installed on your machine. Standard Auto Shanks will trip at 3000lbs (1360kg) and the Hi-Protection Shanks will trip at 2000lbs (907kg). Decal 844-451C (4) will indicate the Standard Spring shanks

DANGER

Spring pack is pre-loaded at factory and should not be disassembled in the field. You could be severely injured or killed by instant release of stored energy.

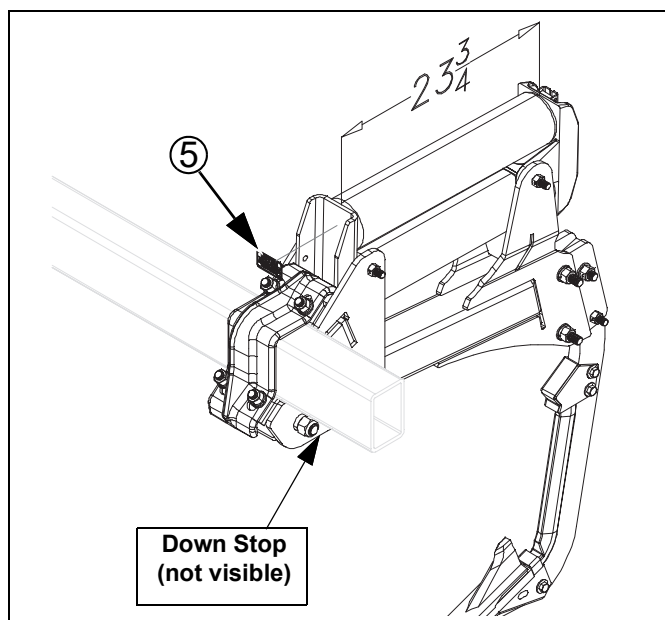


Hi-Protection Shanks


-  Be sure to take note of the type of Auto Reset shanks that are installed on your machine. Hi-Protection Shanks will trip at 2000lbs (907kg) and the Standard Auto Shanks will trip at 3000lbs (1360kg). Decal 844-452C, (5) and a blue line painted on the length of the spring will identify the Hi-Protection Shanks.

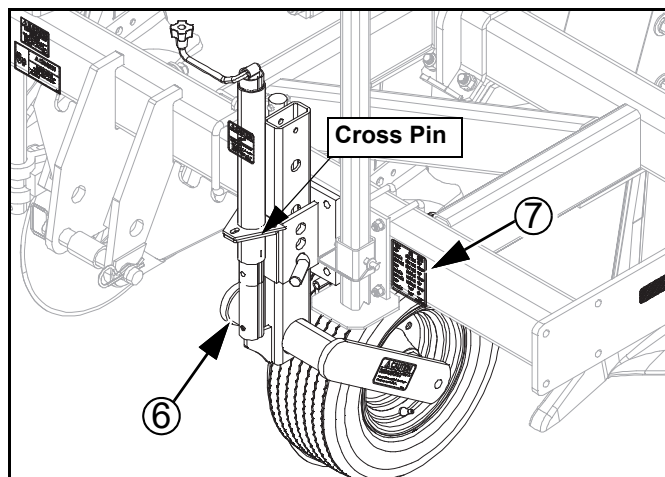
4. The dual spring package will be preloaded so both top and bottom springs are loaded evenly and measure 23.8" from end of coil to end of coil.

Spring pack is pre-loaded at factory and should not be disassembled in the field. You could be severely injured or killed by instant release of stored energy.



Gauge Wheel Adjustment

-  The jacks should only be used to help raise and lower the gauge wheels (6). The cross pin still needs to be used in order to avoid overloading the jack
5. Adjust the gauge wheel as shown on the shank depth decal (7) on the front of the frame.
 6. Tire pressure needs to be a maximum of 6.12BAR (90psi) and wheel bolts need to be torqued at 122-142Nm (90-105ft-lbs).



MOUNT HOLE	ARM HOLE	SHANK DEPTH
TOP	BOTTOM	18"
MIDDLE	BOTTOM	16.5"
BOTTOM	BOTTOM	15"
TOP	MIDDLE	13.5"
MIDDLE	MIDDLE	12"
BOTTOM	MIDDLE	10.5"
TOP	TOP	9"
MIDDLE	TOP	7.5"

838-597c rev.-


Coulter Adjustment

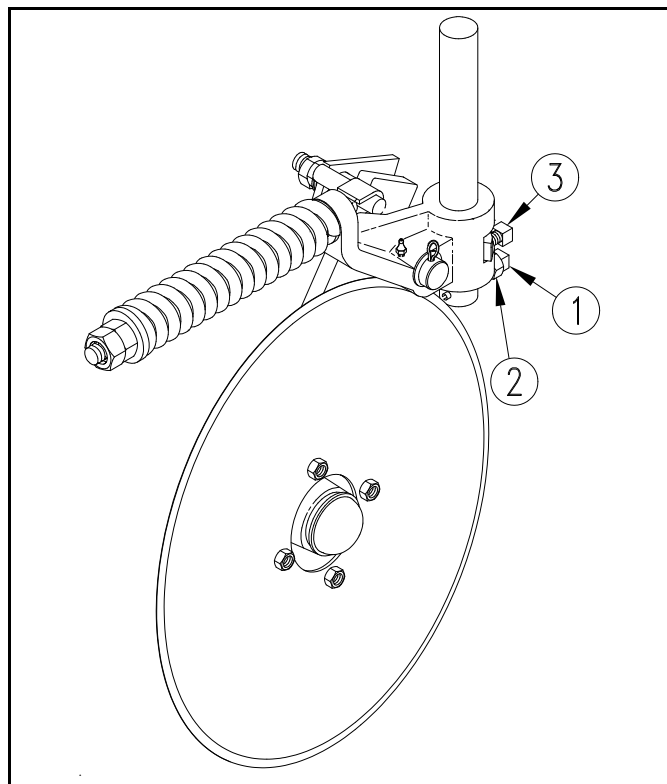
Coulter Height

1. Determine the desired depth of the shank and set the gauge wheel in the appropriate hole.
2. Subtract 8" from the shank depth. Take this distance and measure from the top of the frame to the top of the coulter shank. This will allow the coulter to run approximately hub deep. If trying to deep rip less than 8", position the top of the coulter shank flush with the top of the tube.


Coulter Alignment

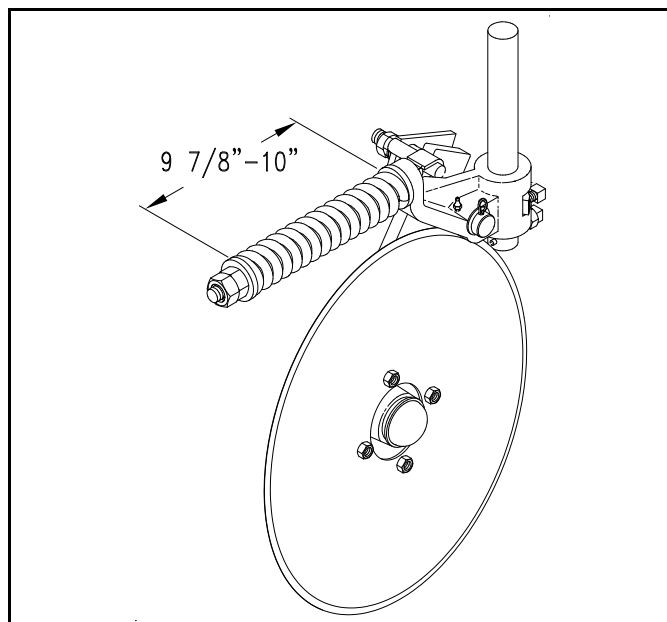
3. Loosen the bottom set screw (1), jam nut (2) and swivel limiter set screw (3). Lower the ripper in the ground and drive forward a few feet.
4. Leave the ripper in the ground and tighten the bottom set screw (1) and jam nut (2). Position the swivel limiter in the center of the slot and tighten the set screw (3).
5. Check alignment of the coulter and shank. Move either the coulter or shank so the shank is in the center of the groove made by the coulter.

 Note: If you want the coulter to swivel, loosen the bottom set screw (1) and jam nut (2). Retighten jam nut to prevent from losing set screw.



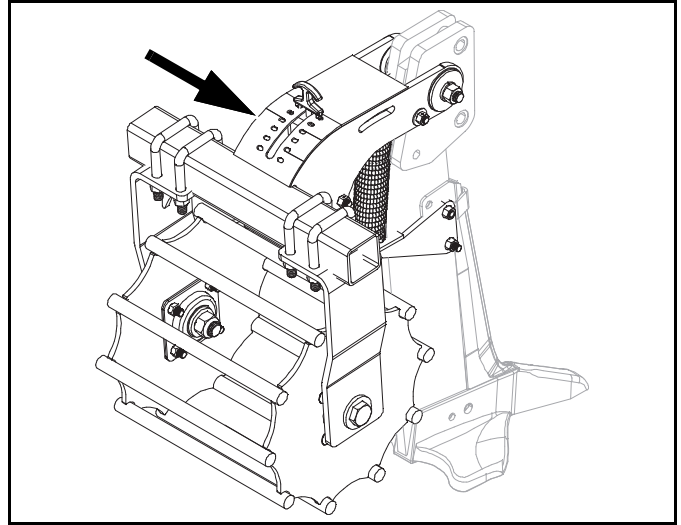
Coulter Spring

6. The coulter springs are preset at the factory to between $9\frac{7}{8}$ " to 10". This is measured from the inside surface of the coulter spring washer to the inside surface of the coulter bushing.
-  Adjusting the spring below $9\frac{7}{8}$ " (24.8cm) could cause premature part failure and void the warranty.



Berm Conditioner

1. The berm conditioner may be adjusted pulling up on handle sliding to a different notch.
2. For maximum down pressure move handle towards rear.





Operating Instructions

This section covers general operating procedures. Experience, machine familiarity, and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

Perform the following steps before transporting the product to the field.

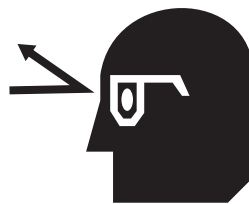
- ☐ Carefully read “**Important Safety Information**” on page 5.
- ☐ Lubricate product as indicated under “**Lubrication**” on page 25.
- ☐ Check all tires for proper inflation. “**Tire Inflation Chart**” on page 28
- ☐ Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 28.
- ☐ Check product for worn or damaged parts. Repair or replace parts before going to the field.
- ☐ Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.

Field Operation

! DANGER

You may be severely injured or killed by being crushed between the tractor and implement. Do not stand or place any part of your body between implement and moving tractor. Stop tractor engine and set park brake before installing pins.

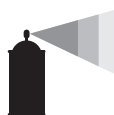
1. Hitch implement to a suitable tractor.
2. Check to be sure machine is running level from front to rear when running machine at depth desired. See “**Front to Rear Leveling**” on page 17
3. Adjust gauge wheels to desired tillage depth. See “**Gauge Wheel Adjustment**” on page 18.
4. Adjust and align coulters to desired tillage depth. “**Coulter Alignment**” on page 19
5. Always lift implement out of the ground when turning at field ends and for other short-radius turns.
6. Both the Auto reset and Rigid shank mounts are protected by shear bolts for extreme overloads. If the shank bolt shears replace the lower bolt with the correct shear bolt, use GP part number 802-060C. (HHCS 5/8-11 x 4 Gr5).



! WARNING

High Pressure Fluid Hazard:

Relieve pressure and shut down tractor before connecting, disconnecting or checking hydraulic lines. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



Transporting

See “**Hitching Tractor to Sub-Soiler**” on page 15 before transporting the product.

Check Tractor Capacity and Configuration

- Consult your tractor manual for 3-point limitations.
- Add weights to tractor as required.

When determining the weight of your product, be sure to include the weight of any options.

Transport Checklist

- ☐ Plan the route. Avoid steep hills. Keep Clearances in mind.
- ☐ Make all electrical and hydraulic connections. See “**Hitching Tractor to Sub-Soiler**” on page 15.
- ☐ Raise product.
- ☐ Always have lights on for highway operation.
- ☐ Comply with all federal, state and local safety laws when traveling on public roads.
- ☐ Travel with caution. Allow safe clearance. Remember that the product is wider than the tractor.

Parking

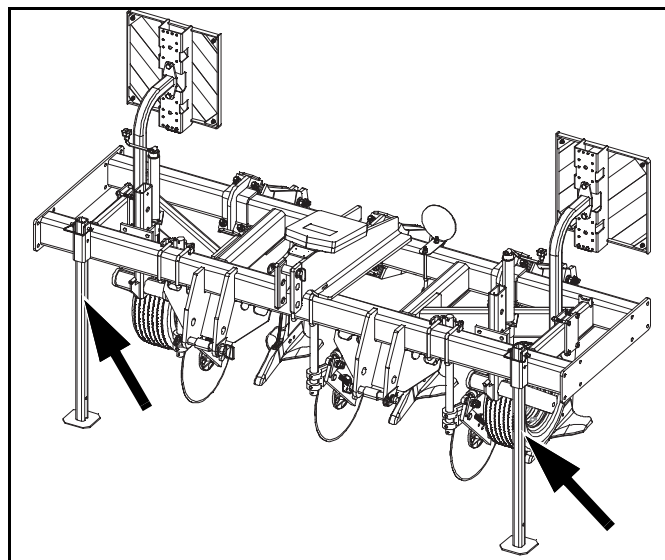
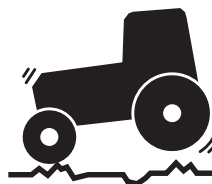
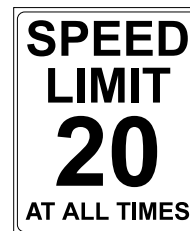
Perform the following steps when parking the implement. Refer to “Storage”, page 24, to prepare for long-term storage.

1. Park implement on a level, solid area.
 2. Lower implement until shanks are resting on the ground.
-
1. Lower and pin parking stands.
 2. Unplug light harness lead from tractor receptacle. Do not allow lead to rest on the ground.
 3. Unhitch from the tractor 3-point.

WARNING

Loss of Control Hazard:

Use a tractor rated for the load. Add tractor ballast as needed. Do not exceed 30kmh (20 mph). Towing the product with a vehicle that is not adequate, or at high speeds, could lead to loss of vehicle control. Loss of vehicle can result in a serious road accident, severe injury or death. Check that your tractor has enough to handle the weight of the product. Refer to your tractor’s operator manual for capacities and ballast requirements.





Troubleshooting

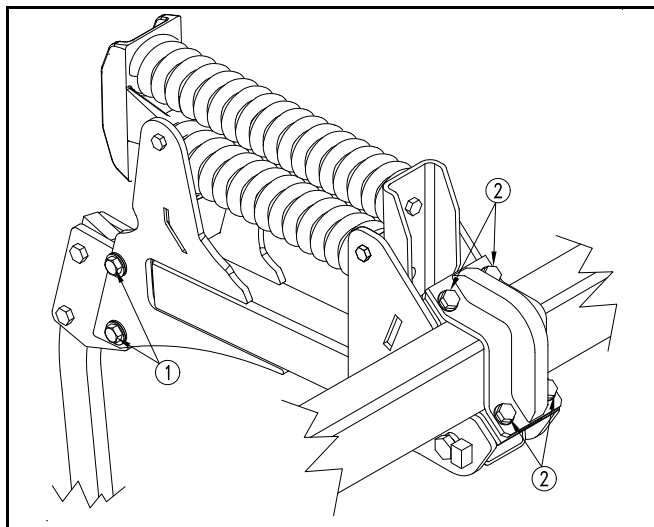
Problem	Cause	Solution
Excessive blowout	Going too fast.	Slow down.
	Ripping too shallow.	Raise gauge wheel.
	Coulter not deep enough.	Lower coulter, see "Coulter Height", page 19.
	Shank not aligned with coulter.	Align shank with trench made by coulter, see "Coulter Alignment", page 19.



Maintenance and Lubrication

Maintenance

1. Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime and repair.
2. Always turn off and remove the tractor key before making any adjustments or performing any maintenance
3. After using the implement for several hours, check all bolts to be sure they are tight.
4. After one hour and again after five hours re-torque the grade 8 bolts (1) to 400 FT LBS. Re-torque periodically.
5. Lubricate areas listed under "Lubrication", page 25.
6. Inflate tires as specified on "Tire Inflation Chart", page 28.
7. Replace or rotate worn parts as needed -- hinge bolts, clevis pins, bearings, etc.
8. Grease wheel bearings and walking beams sparingly. Over greasing may cause damage to seals and reduce the life of the bearing. Grease hinge points periodically.
9. If machine is stored outdoors over the winter months, it is a good idea to fold the machine then set it down on the ground so all the cylinders are retracted to protect the cylinder rods. This will extend the life of the cylinder seals and reduce internal and external leaks.







Storage

10. Store implement where children do not play. If possible, store the implement inside for longer life.
11. Remove any dirt and debris that can hold moisture and cause corrosion.
12. Lubricate areas noted under "Lubrication", page 25.
13. Inspect implement for worn or damaged parts. Make repairs and service during the off season.
14. Use spray paint to cover scratches, chips and worn areas on the implement to protect the metal.

By following and maintaining a routine service and lubrication program, your tillage equipment will give you many years of service.

Lubrication

 Multipurpose spray lube	 Multipurpose grease lube	 Multipurpose oil lube	 50	Intervals (service hours) at which lubrication is required
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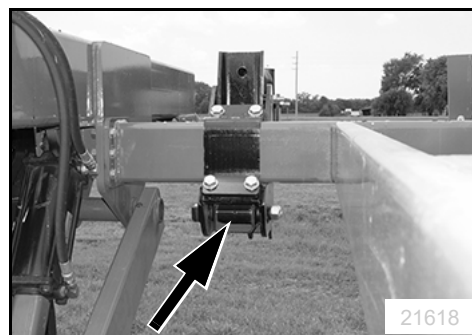
Shank Pivot Arms



1 zerk on each shank pivot arm.;

Type of Lubrication: Grease

Quantity: Until grease emerges.



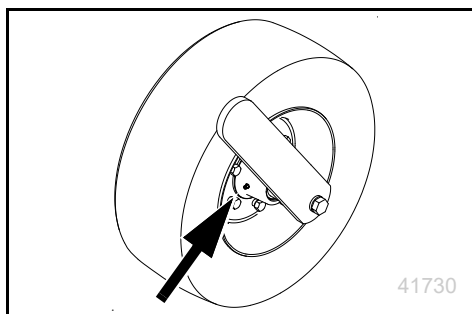
Wheel Bearings



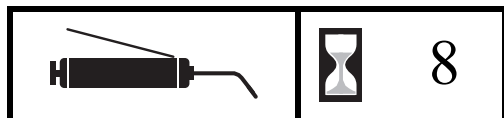
One on each gauge wheel.

Type of Lubrication: Grease

Quantity: Pump grease into bearings until resistance is felt, being careful not to pressurize seal or blow out cap.



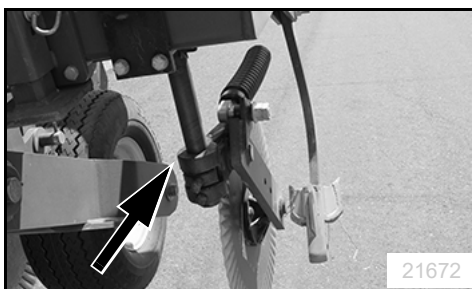
Coulter Swing Arms



1 zerk on each hub;

Type of Lubrication: Grease

Quantity: Until grease emerges.



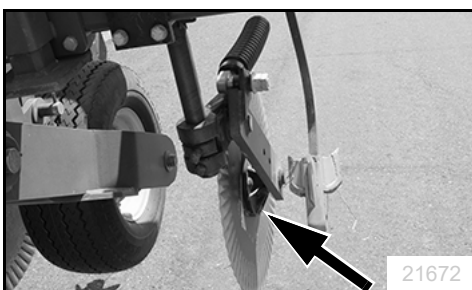
Coulter Hubs

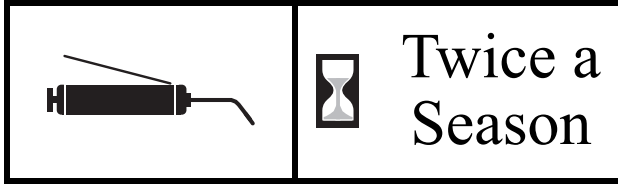


1 zerk on each hub;

Type of Lubrication: Grease

Quantity: Pump grease until resistance is felt, being careful not to pressurize seal or blow out cap.

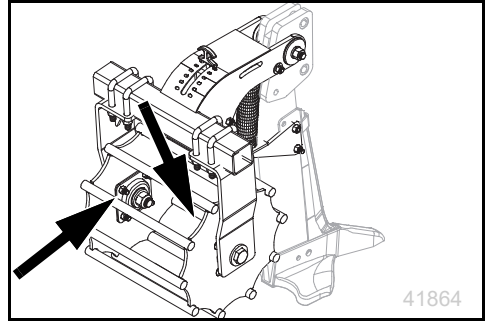


Berm Conditioner

2 zerk on each basket;

Type of Lubrication: Grease

Quantity: Sparingly, Do Not Over Grease.





VT1520 Specifications and Capacities

MODEL VT1520	0370	0375	0470	0475
Shank Spacing	70cm (27 1/2")	75cm (29 1/2")	70cm (27 1/2")	75cm (29 1/2")
Number of Shanks	3	3	4	4
Weight (Rigid-No-Till Shanks)	921kg (2030lbs)	921kg (2030lbs)	1046kg (2305lbs)	1046kg (2305lbs)
Weight (Auto Reset-No-Till Shank)	1247kg (2750lbs)	1247kg (2750lbs)	1481kg (3265lbs)	1481kg (3265lbs)
Working Width	210cm (6' 9")	225cm (7' 3")	280cm (9')	300cm (9' 9")
Transport Width	300cm (9' 9")	300cm (9' 9")	300cm (9' 9")	300cm (9' 9")
Height (ground to top of light placard)	198cm (78")	198cm (78")	198cm (78")	198cm (78")
Gauge Wheel Tire Size	20.5x8 10 PLY	20.5x8 10 PLY	20.5x8 10 PLY	20.5x8 10 PLY
Number of Gauge Wheels	2	2	2	2
Horsepower (PTO)	150-240	150-240	200-320	200-320
Kilowatt	112-179	112-179	150-239	150-239

MODEL VT1520	0568	0570	0654	0656
Shank Spacing	68cm (26 3/4")	70cm (27 1/2")	54cm (21 1/4")	56cm (22")
Number of Shanks	5	5	6	6
Weight (Rigid-No-Till Shanks)	1170kg (2580lbs)	1170kg (2580lbs)	1297kg (2860lbs)	1297kg (2860lbs)
Weight (Auto Reset-No-Till Shank)	1715kg (3780lbs)	1715kg (3780lbs)	1950kg (4300lbs)	1950kg (4300lbs)
Working Width	340cm (11' 3")	350cm (11' 6")	324cm (10' 6")	336cm (11')
Transport Width	300cm (9' 9")	300cm (9' 9")	300cm (9' 9")	300cm (9' 9")
Height (ground to top of light placard)	198cm (78")	198cm (78")	198cm (78")	198cm (78")
Gauge Wheel Tire Size	20.5x8 10 PLY	20.5x8 10 PLY	20.5x8 10 PLY	20.5x8 10 PLY
Number of Gauge Wheels	2	2	2	2
Horsepower (PTO)	250-400	250-400	330-480	300-480
Kilowatt	187-299	187-299	224-358	224-358

Tire Inflation Chart




Tire Size	Inflation
20.5x8.0-10 ply LRE	620 kPa 90 psi




Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer	Web site
Firestone	www.firestoneag.com
Gleason	www.gleasonwheel.com
Titan	www.titan-intl.com

Torque Values Chart

Bolt Size in-tpi ^a	Bolt Head Identification					
						
	Grade 2		Grade 5		Grade 8	
	N-m ^b	ft-lb ^d	N-m	ft-lb	N-m	ft-lb
1/4-20	7.4	5.6	11	8	16	12
1/4-28	8.5	6	13	10	18	14
5/16-18	15	11	24	17	33	25
5/16-24	17	13	26	19	37	27
3/8-16	27	20	42	31	59	44
3/8-24	31	22	47	35	67	49
7/16-14	43	32	67	49	95	70
7/16-20	49	36	75	55	105	78
1/2-13	66	49	105	76	145	105
1/2-20	75	55	115	85	165	120
9/16-12	95	70	150	110	210	155
9/16-18	105	79	165	120	235	170
5/8-11	130	97	205	150	285	210
5/8-18	150	110	230	170	325	240
3/4-10	235	170	360	265	510	375
3/4-16	260	190	405	295	570	420
7/8-9	225	165	585	430	820	605
7/8-14	250	185	640	475	905	670
1-8	340	250	875	645	1230	910
1-12	370	275	955	705	1350	995
1 1/8-7	480	355	1080	795	1750	1290
1 1/8-12	540	395	1210	890	1960	1440
1 1/4-7	680	500	1520	1120	2460	1820
1 1/4-12	750	555	1680	1240	2730	2010
1 3/8-6	890	655	1990	1470	3230	2380
1 3/8-12	1010	745	2270	1670	3680	2710
1 1/2-6	1180	870	2640	1950	4290	3160
1 1/2-12	1330	980	2970	2190	4820	3560

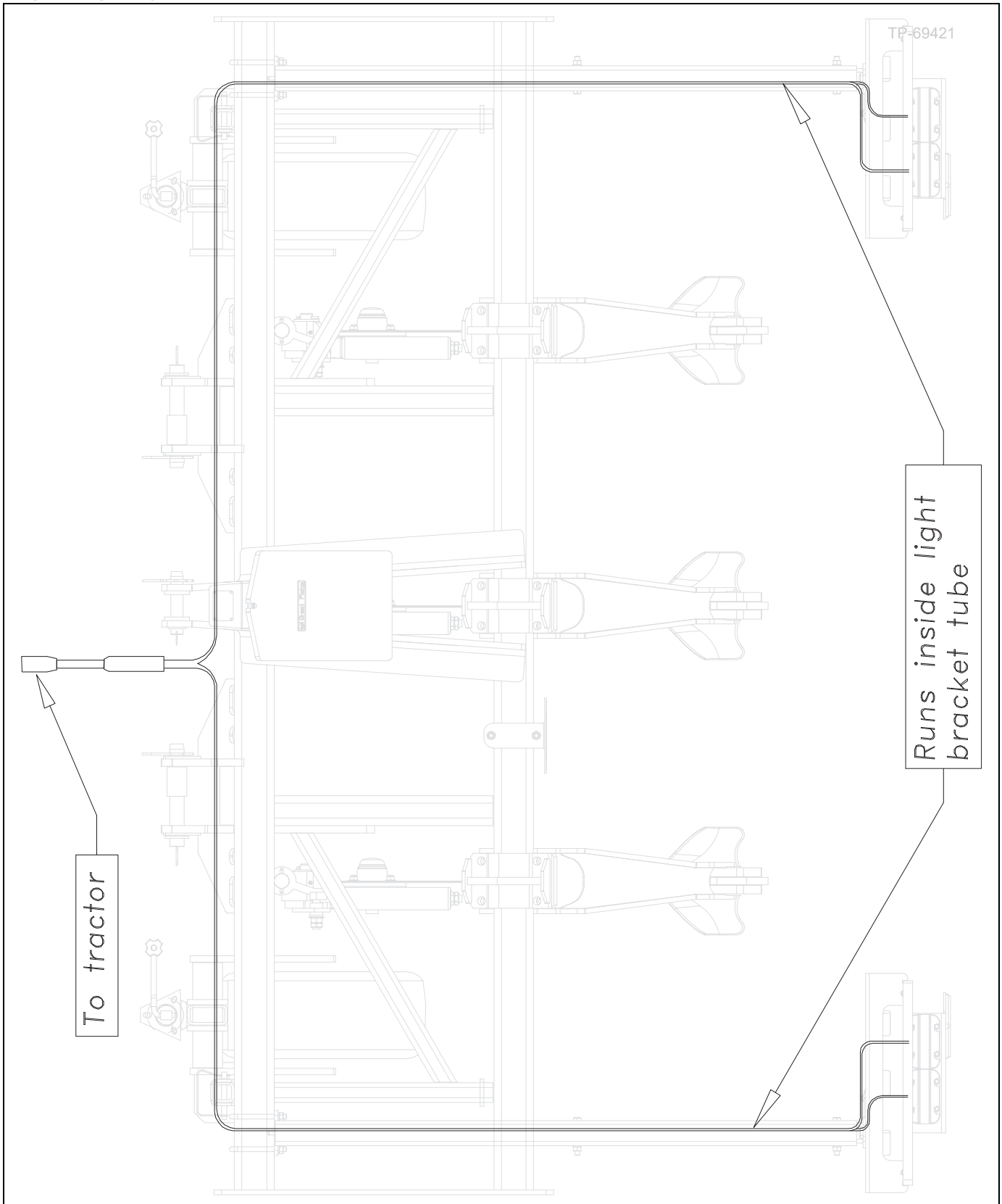
Bolt Size mm x pitch ^c	Bolt Head Identification					
						
	Class 5.8		Class 8.8		Class 10.9	
	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

- a. in-tpi = nominal thread diameter in inches-threads per inch
b. N·m = newton-meters
c. mm x pitch = nominal thread diameter in mm x thread pitch
d. ft-lb = foot pounds

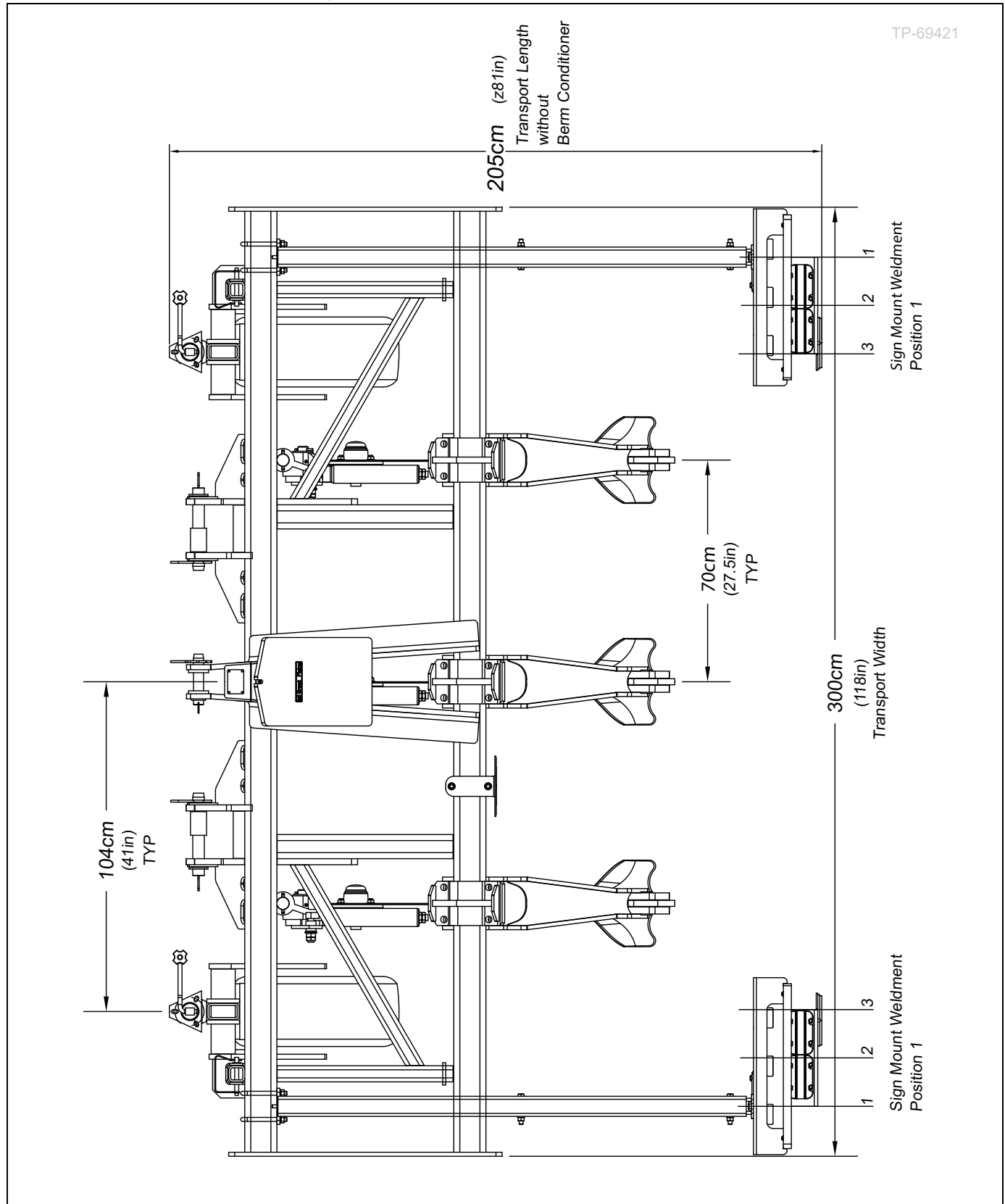
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

25199

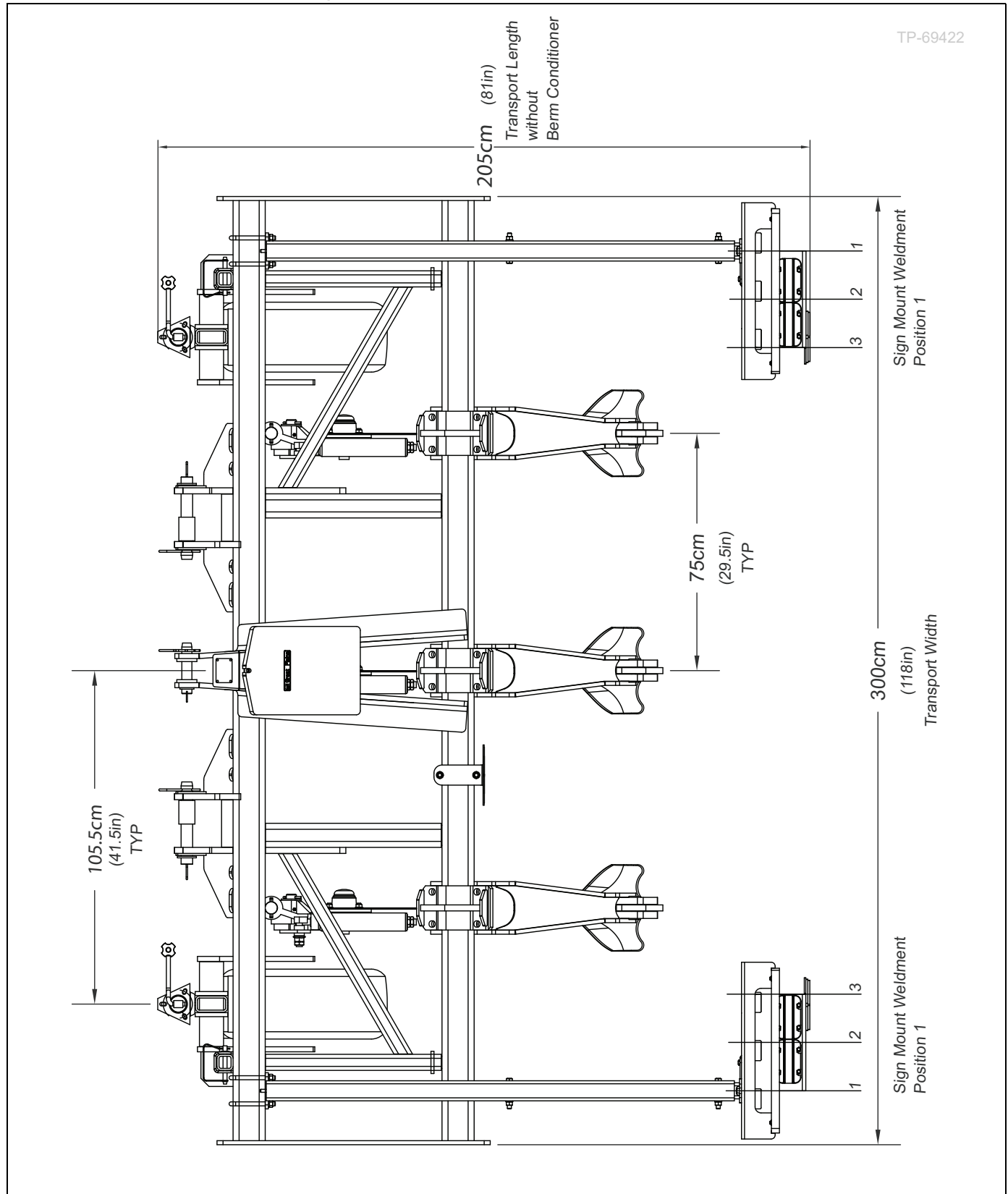
Lighting Layout Export



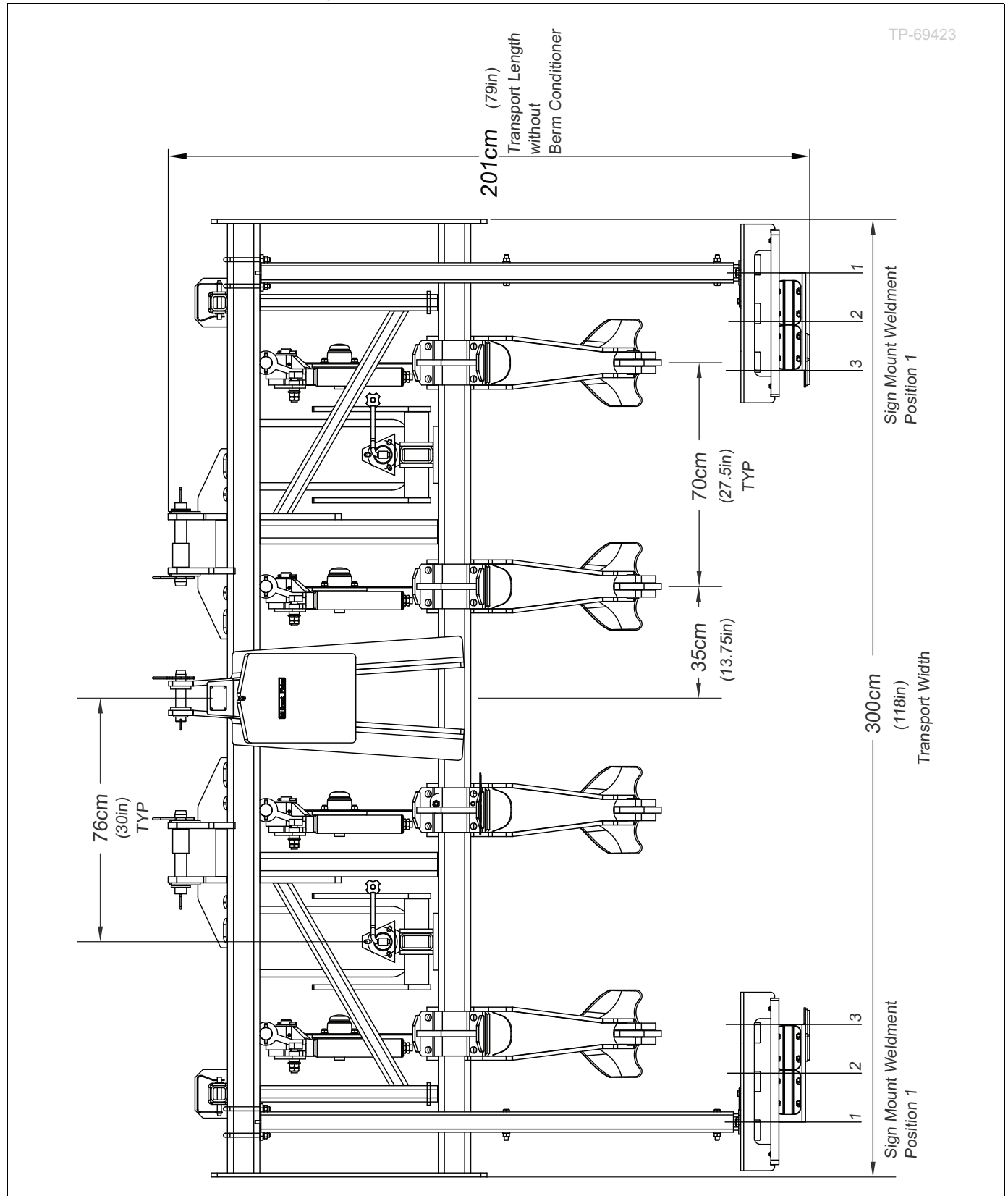
VT1520-0370 Machine Layout Export



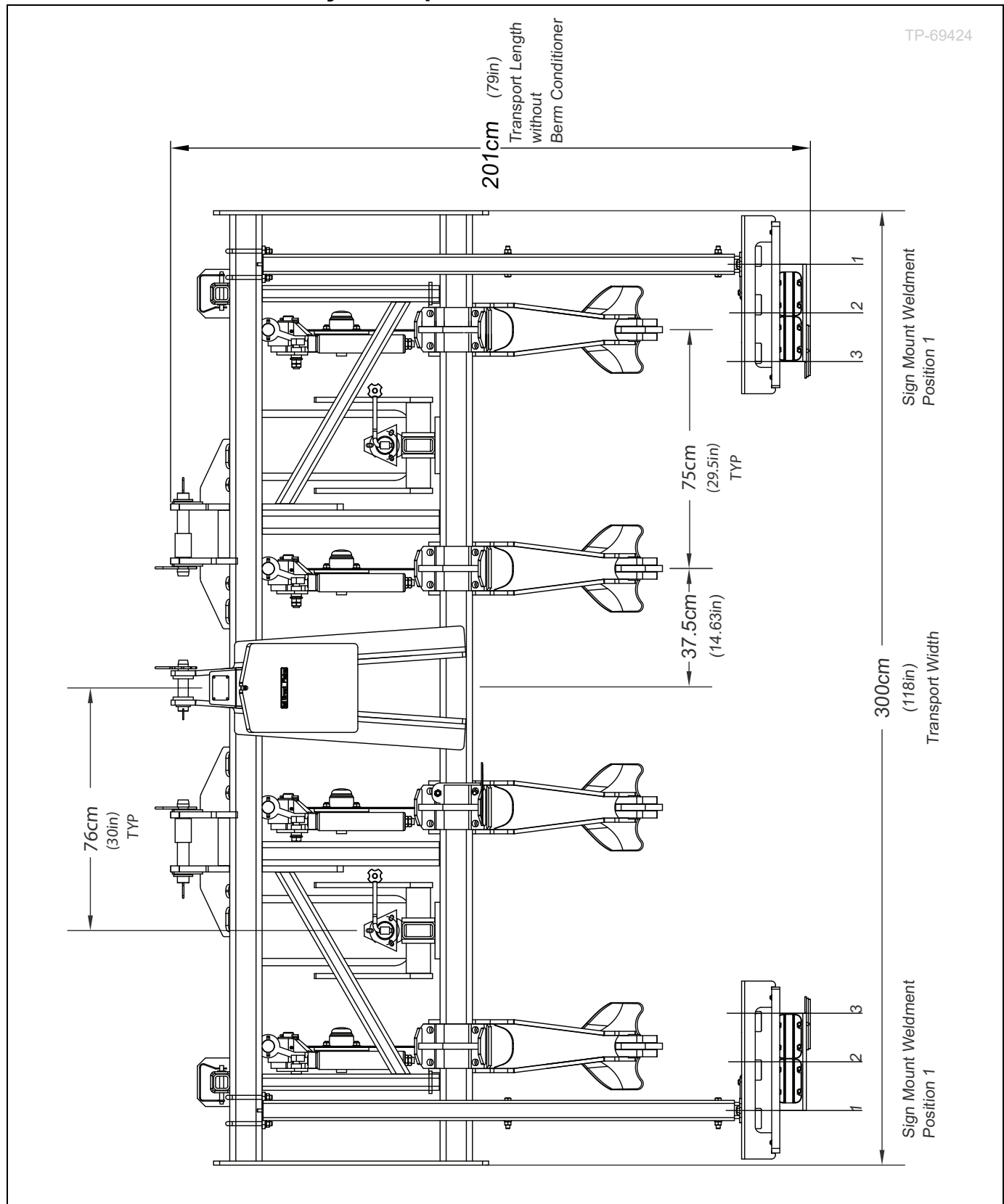
VT1520-0375 Machine Layout Export



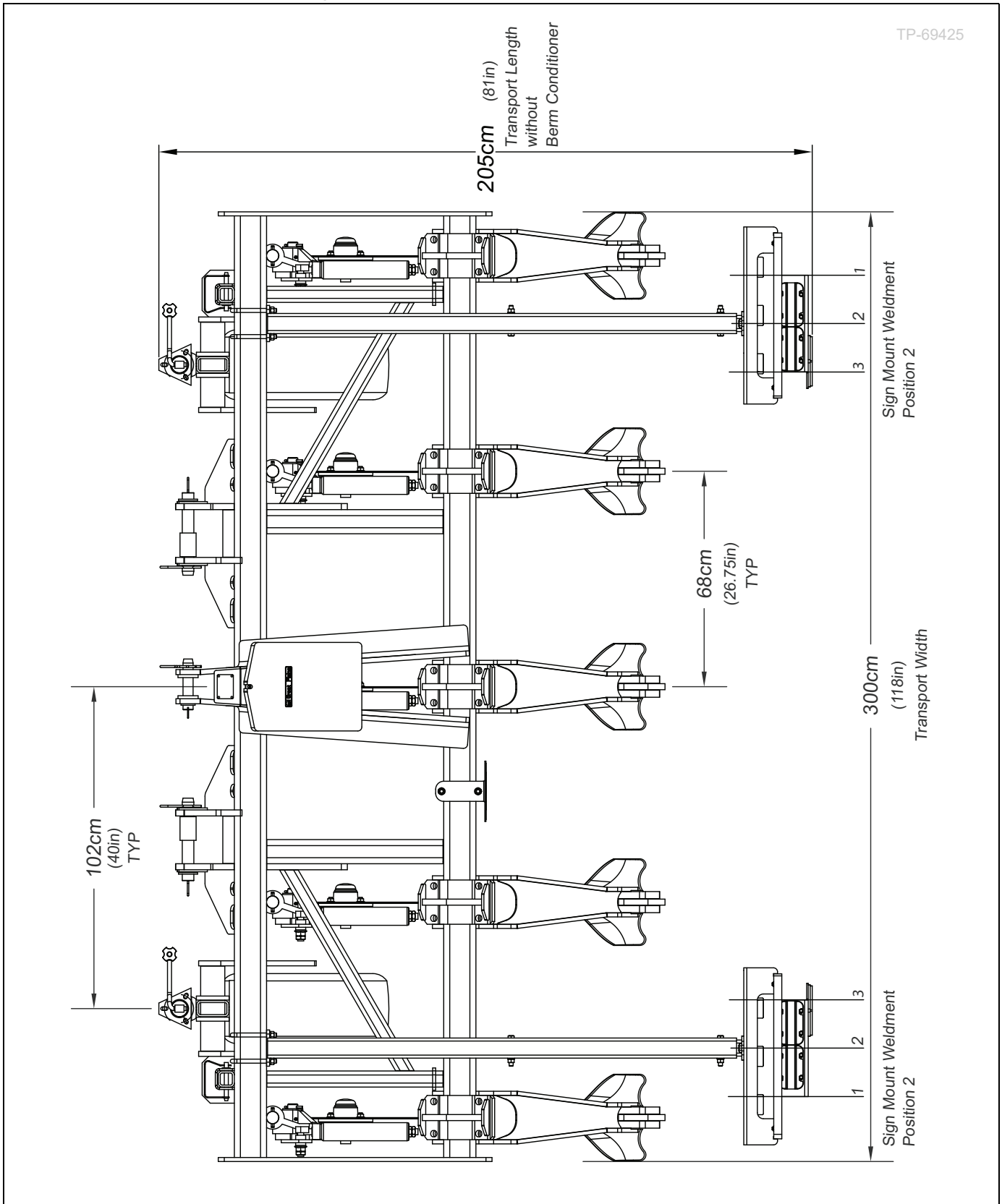
VT1520-0470 Machine Layout Export



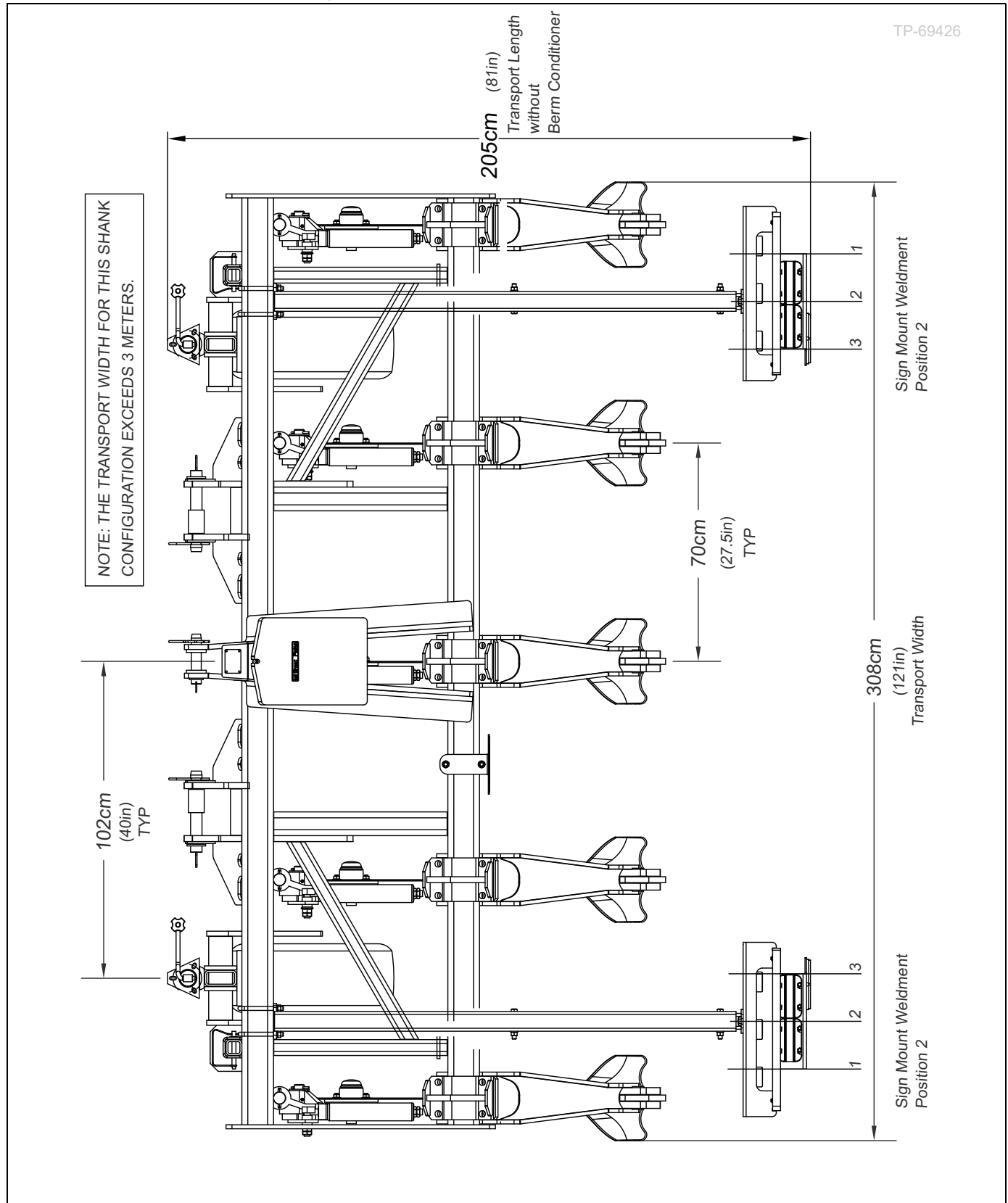
VT1520-0475 Machine Layout Export



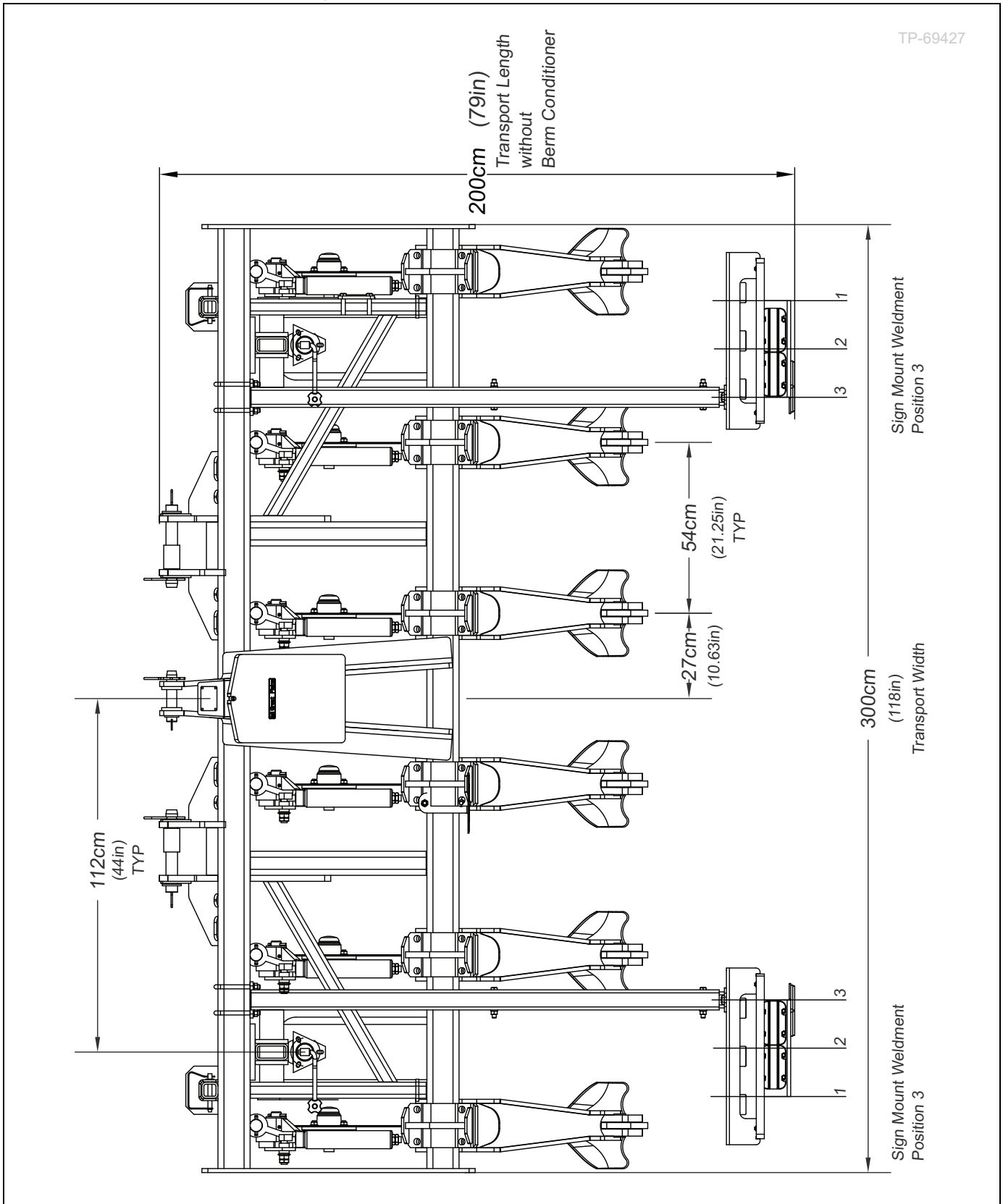
VT1520-0568 Machine Layout Export



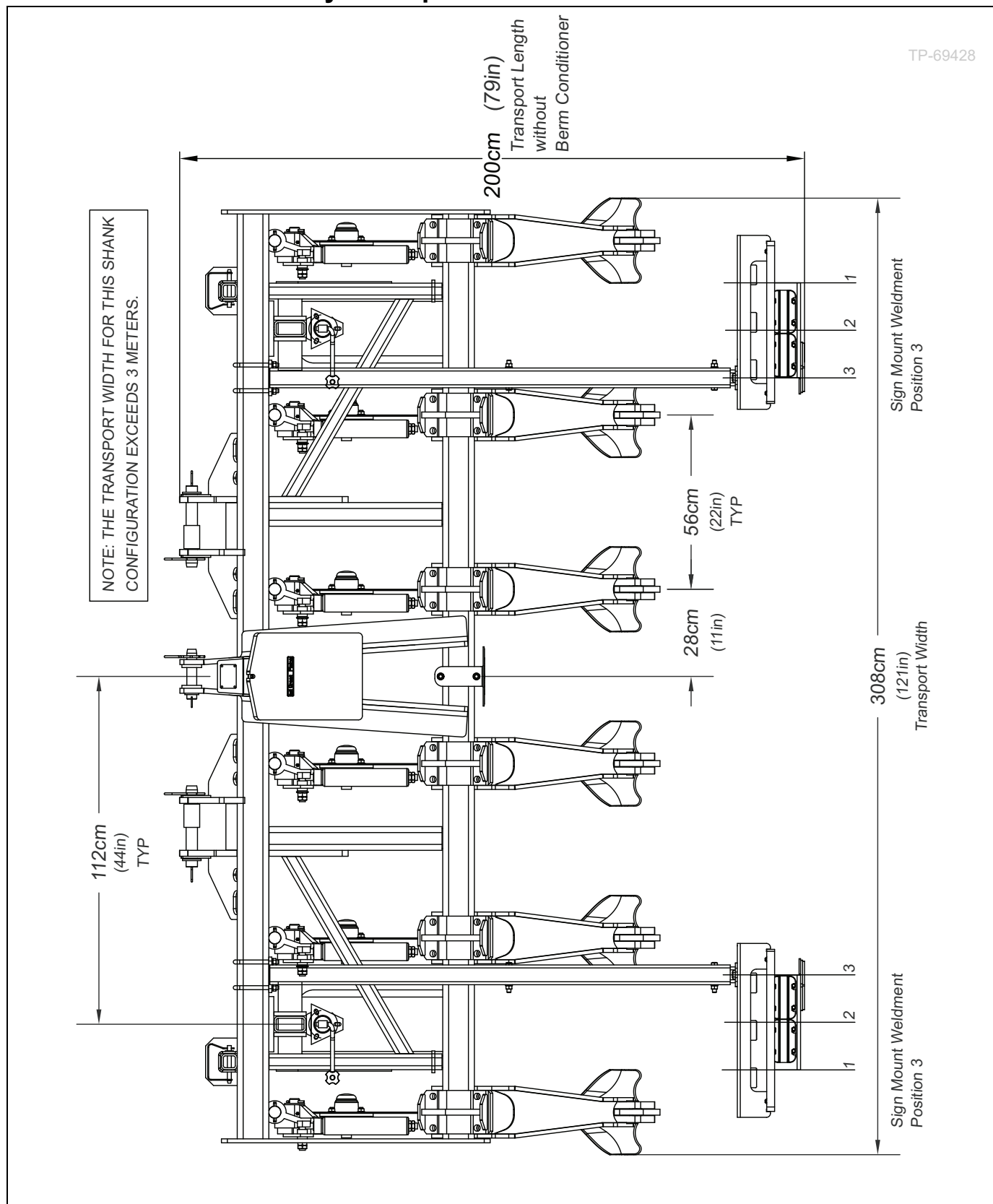
VT1520-0570 Machine Layout Export



VT1520-0654 Machine Layout Export



VT1520-0656 Machine Layout Export





Appendix R - Regulatory Data

EC Declaration of Conformity

ORIGINAL EC DECLARATION OF CONFORMITY

Corresponding to the directive 2006/42/EC

We, the manufacturer,	Great Plains Manufacturing 1525 E. North Street Salina, KS 67401 United States
and Authorized representative in European Community and authorized for compile the technical file, established in EC	Arable Systems Division c/o Kverneland Group Gottmadingen N.V. Industriepark 312 D-78244 Gottmadingen Germany

Declare under our sole responsibility that the product,

Designation of machine:	Tillage
Machine type:	VT1520
Valid from serial no.	GP-2937YY+

corresponds to the above mentioned directive.

The following harmonized standards are applied.

EN ISO 4254-1:2015

Salina, Ks, 24 - 08 -2022

Rye DeGarmo
Vice President of Engineering

Gottmadingen, 24 - 08 -2022

Michael Enders*
Product Safety &
Homologation Harvesting Division



A			
address, Great Plains	2		
Auto Reset Shank Adjustment	15		
B			
bearings	22		
berm conditioner	24		
C			
Caution			
Read Operator's Manual	8		
CAUTION, defined	3		
checklists			
pre-setup	12		
pre-start	19		
transport	20		
children	4		
clothing	4		
Coulter Hubs	23		
coulter swing arms	23		
customer service	2		
D			
Danger			
Crushing Hazard	9		
DANGER, defined	3		
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caution			
tire 6.12BAR/88 psi	10		
high pressure hyd	10		
pic			
not a step	10		
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30km per hr	10, 11		
30km/h	11		
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directions	2		
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connection	14		
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fumes	5		
G			
Gleason	26		
H			
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hearing	4		
high pressure fluids	4		
Hi-Protection Shanks	15		
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category II	13		
category III	13		
hydraulic safety	4		
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Important!, defined	2		
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kPa	26		
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VT1520-0375 Layout	29		
VT1520-0470 Layout	30		
VT1520-0475 Layout	31		
VT1520-0568 Layout	32		
VT1520-0570 Layout	33		
VT1520-0654 Layout	34		
VT1520-0656 Layout	35		
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M			
Maintenance	22		
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medical assistance	4, 13, 19		
model number	2		
N			
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O			
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Parking	20		
parking stand			
storage	14		
parts	22		
phone number, GP	12		
Pre-leveling of machine	15		
protective equipment	4		
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reflector			
red triangle	8		
reflectors			
amber	8		
fluorescent panel	7		
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repair parts	2		
riders	4		
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rose, orientation	2		
S			
safety decal	7		
safety information	3		
general	3		
safety symbol	3		
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SMV (Slow Moving Vehicle)	7		
Specifications and Capacities	25		
Standard Shanks	15		
Storage	22		
storage	5		
storing machine	22		
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torque values	26		
tire inflation	26		
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Titan	26		
transport	20		
transport speed	5		
transporting	19		
U			
URLs, tires	26		
W			
WARNING, defined	3		
welding	5		
Wheel Bearing Hub	23		
wheel bearings	23		
Numerics			
3-point hitching	13		
30 kph	5		
30kmh (20 mph)	20		
596-383M, manual	2		
596-383P, manual	2		
833-399C, reflector	8		
838-615C, reflector	8		
843-183c, reflector	7		
848-398C, decal	11		
848-507C, decal	10		
848-510C, decal	9		
848-511C, decal	9		
848-512C, decal	8		
848-517C, decal	10		
848-531C, decal	9		
858-660C, decal	10		



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