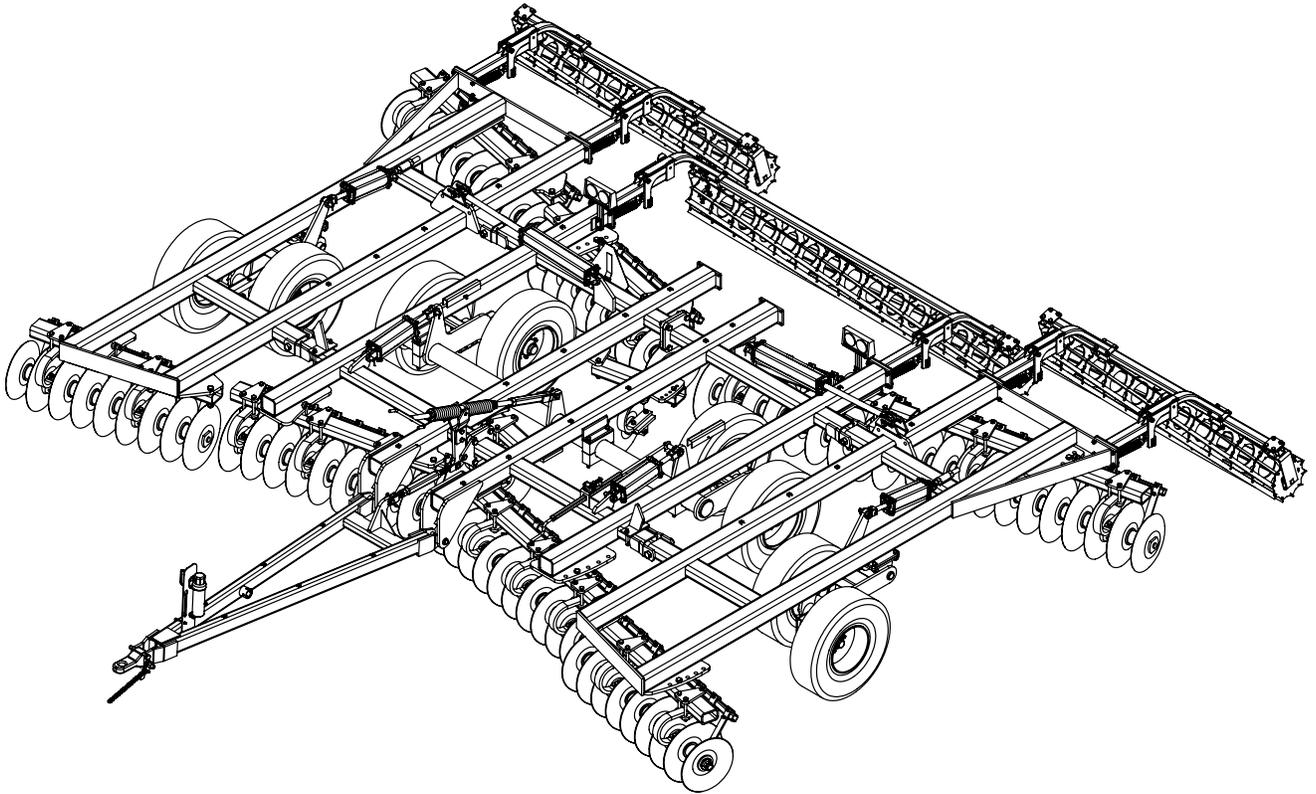


KONGSKILDE 9100

Vertical Tillage - Operator's Guide

Kongskilde
9100 Series



*Model may not be exactly as shown.

Kongskilde reserves the right to make changes to product designs and specifications without notice or obligation to rework.

See your local Kongskilde representative for current product specifications and options.

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INTRODUCTION

This manual has been developed to assist you in operating and servicing your new Kongskilde product. Read it carefully: it will provide you with information that will enable you to obtain years of dependable service.

Before attempting to operate this equipment, read and understand this manual fully and follow all safety precautions. In addition, make sure that every individual who operates or works with this equipment is familiar with these instructions. Observation of these safety precautions will make your farm a safer place to work.



READ THE OWNERS MANUAL BEFORE OPERATING OR SERVICING THE MACHINE

Machine Identification

The machine manufacturer along with the model and serial number are provided on the metal Serial Number Plate located on the front left beam of the center section weldment.

Please record the model and serial number of the machine on the registration form provided in the front of the book and have it ready for reference when making inquiries regarding spare parts or service information.

If you did not receive a warranty registration form, contact your dealer and they will obtain one for you. It is important that the warranty registration be completed and returned to Kongskilde to validate the warranty protection period.



SAFETY ALERT SYMBOL:

This safety symbol, is used to call your attention to instructions concerning the personal safety of the owner or operator.

WARNING! Do not operate this machine unless you have read and understood the instructions and safety information in the Kongskilde Operator's Manual.

Failure to follow the instructions for safe operation of the equipment could result in serious injury or death. Proper care and operation of this implement is your responsibility.

Contact your dealer or Kongskilde for replacement manuals, safety decals and replacement parts.



SAFETY KEY WORDS & ALERTS:

The key words - DANGER, WARNING and CAUTION, used alone or in combination with the Safety Hazard Alert Symbol in this Operators Manual and on Safety Decals located on the framework of the machine, are used to identify hazards on or near the implement.

Safety Instructions indicate procedures which must be followed to avoid hazards.

Hazard Alerts are identified by the key word, and the symbol:

DANGER - An immediate hazard which WILL result in severe personal injury or death if the proper precautions are not taken.

WARNING - A potential hazard or unsafe practice which COULD result in serious personal injury or death if the proper precautions are not taken.

CAUTION - A potential hazard or unsafe practice which COULD result in personal injury or in product or property damage if the proper precautions are not taken.

SAFETY DECALS:

Safety Decal Locations:

Safety Decals are located on the framework of the implement. The specific locations are chosen to provide optimal visibility to the operator or bystanders. In the case of hidden or obstructed hazards or safety precautions, the decals may be located on or near the hazard, or other convenient locations near hook-up points, adjustment devices or service points frequently visited by the operator.

Please read and obey all safety decals on the machine. Ensure they are kept clean and in good condition. Kongskilde is committed to safety and provides replacement safety decals and operator manuals at no charge if they become lost, damaged or illegible.

Each safety decal is identified by a part number, and are available through your Kongskilde Dealer.



IMPORTANT NOTICE:

Kongskilde cannot anticipate every possible circumstance that might involve a hazard with this product. The hazard alerts and safety instructions in this publication and on the product are therefore not all inclusive. If a tool, procedure, work method or operating technique not specifically recommended by Kongskilde is used, you must satisfy yourself that it is safe for you and others. You must ensure that the implement will not be damaged or made unsafe by the operation, maintenance or repair procedures you choose.

Kongskilde will not be held responsible for any unauthorized modifications made to this product and will immediately void the warranty coverage.

PRODUCT SAFETY PRECAUTIONS



Make certain all safety decals, reflectors and SMV signs are applied to your machine. Refer to your local governmental regulations for more information on proper procedures and markings for safe road transport in your area.



IMPORTANT NOTE: This unit has a narrow transport width and a high center of gravity which may pose a tipping hazard when folded for transport.



Do not transport over 32 kmh (20 M.P.H.) Reduce speed in adverse weather, when turning or travelling on inclines or uneven ground. Always start and stop slowly.





The operator is responsible at all times to comply with the local government regulations and insure the safe transport of the implement when transporting large or oversized implements on public or private roadways. Careful consideration must be given in order to prevent accidents with other vehicles and avoid coming in contact with obstacles such as: bridges, tunnels, overpasses, guard rails, road signs, traffic lights, power lines, public utilities, and other structures that may be encountered along the chosen route. In some jurisdictions the operator may be required to obtain special permits or arrange for escorts before transporting oversized equipment. Kongskilde is not liable for personal or property damage caused by inappropriate, unauthorized or unsafe transport or operation of equipment.



DANGER! Watch for wires.
Take care when transporting, folding or unfolding the implement around power lines. Serious injury or death to the operator or bystanders will result through direct or indirect contact with power lines.

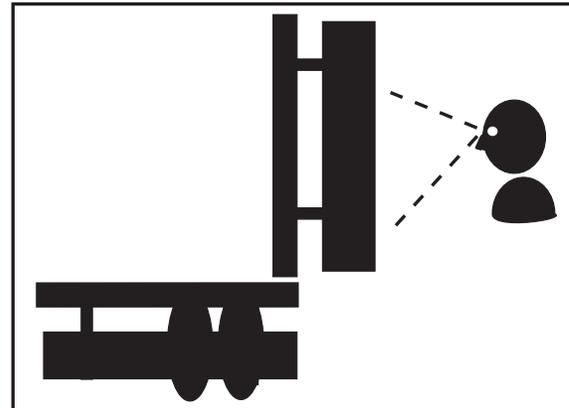


Never unfold when there are bystanders in the area of the wing fall zone. Be certain all persons are clear of working area in and around the machine whenever folding, unfolding, raising or lowering the machinery or in any way using the hydraulic system.





Be alert when walking around the machinery in the folded transport position to avoid walking into the edge of a sharp blade. Severe head or body injury could result.



Make sure that the tractor is shifted into park before getting out to remove transport locks and wing fold lock pins. Never remove wing lock pins or wheel transport locks when the implement is sitting on uneven ground where tipping could occur.



Never remove transport lockout devices or unfold the unit unless cylinders are completely full of oil. Failure to properly charge the folding hydraulics with oil could allow the wings to free fall when unfolding, causing damage to the equipment and possible injury to the operator or bystanders. Never fold the implement wings by any mechanical method! Always charge the hydraulic system first and use it to fold and unfold the wings. Stand clear of the machine and watch for overhead hazards or objects in the wing-fall zone when folding and unfolding.



SAFETY DEVICES FOR Folding and Transporting Implements:



WHEEL LOCK FOR TRANSPORT CYLINDERS

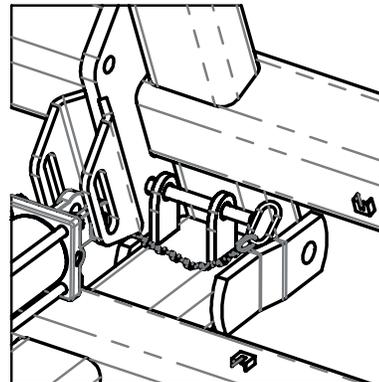
Insert safety locks over the center section master cylinder rods and fasten the pins. Slowly ease the machine down until the wheel locks are wedged firmly in place.

When operating in the field, the safety locks should be stored in the tractor box or in a place that will not interfere with the safe operation of the implement.



WING FOLD LOCKS

Insert safety pins through the center frame tabs and wing fold plate near the rear wing pivots. When operating in the field, the safety locks should be stored in the tractor box or in a place that will not interfere with the safe operation of the implement.



DRAW PIN AND SAFETY TOW CHAIN

Always use an approved hitch pin with safety lock pin when hooking towed implements to the tractor draw bar.

For added security, use a certified safety tow chain to connect the implement to the tractor draw frame before transporting.



MAINTENANCE & LUBRICATION



Use extreme caution around suspected hydraulic leaks or damaged hose lines. Hydraulic fluid under pressure can be extremely dangerous. Always wear hand and eye protection. Always lower the machine to the ground and release hydraulic pressure before performing maintenance to the hydraulic system.



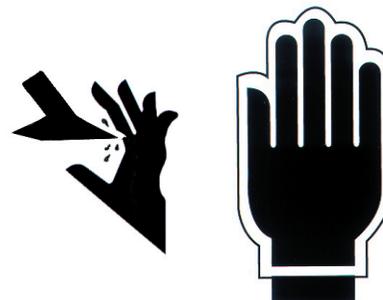
Take care to keep the floor area clean when performing maintenance to the machine. Help protect our environment and prevent injuries from falls by cleaning up any spilled or leaking fluids with absorbant products. Take care to dispose of contaminated rags or absorbants in accordance with your local environmental regulations. Put away tools and roll up any air lines or electrical cords that were used when making repairs to the equipment and dispose of scrap materials or worn out parts in an appropriate manner.



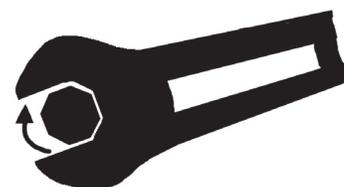
Never crawl under the machine to make repairs or adjustments unless you have properly blocked and supported the frame. The machine must be secured in a fixed position in order to prevent it from moving or falling before making any attempt to work underneath. Use suitable shop stands or lifting devices that can support the entire weight of the implement. Never use cement blocks, bricks, hollow tiles or other props that may crumble or collapse under continuous load.



Wear gloves when working around the blades as edges are extremely sharp.



Regularly check all nuts and bolts for tightness and secure if loose. Replace worn out or damaged machine components. Establish a good routine for regular inspection, lubrication and maintenance in order to keep the machine in good operating condition.





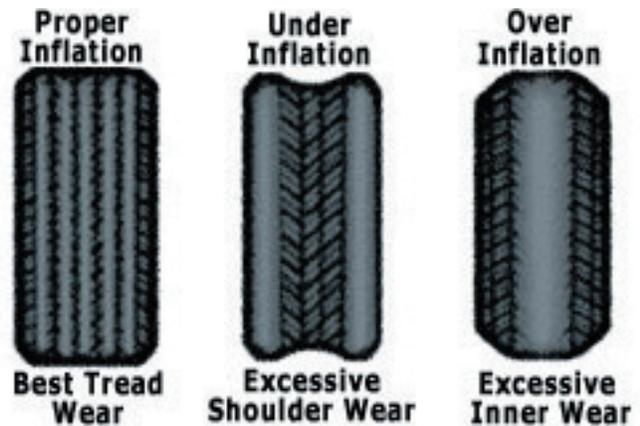
TIRE PRESSURE:

Explosive separation of tire and rim can result in serious injury or death. To prevent tire explosion, maintain proper tire pressure. Inflating a tire below or above the recommended pressure can result in tire damage (see illustration below). Tires should only be mounted by properly trained personnel. Replace damaged or worn tires and rims immediately. Replace all missing lug nuts and bolts.

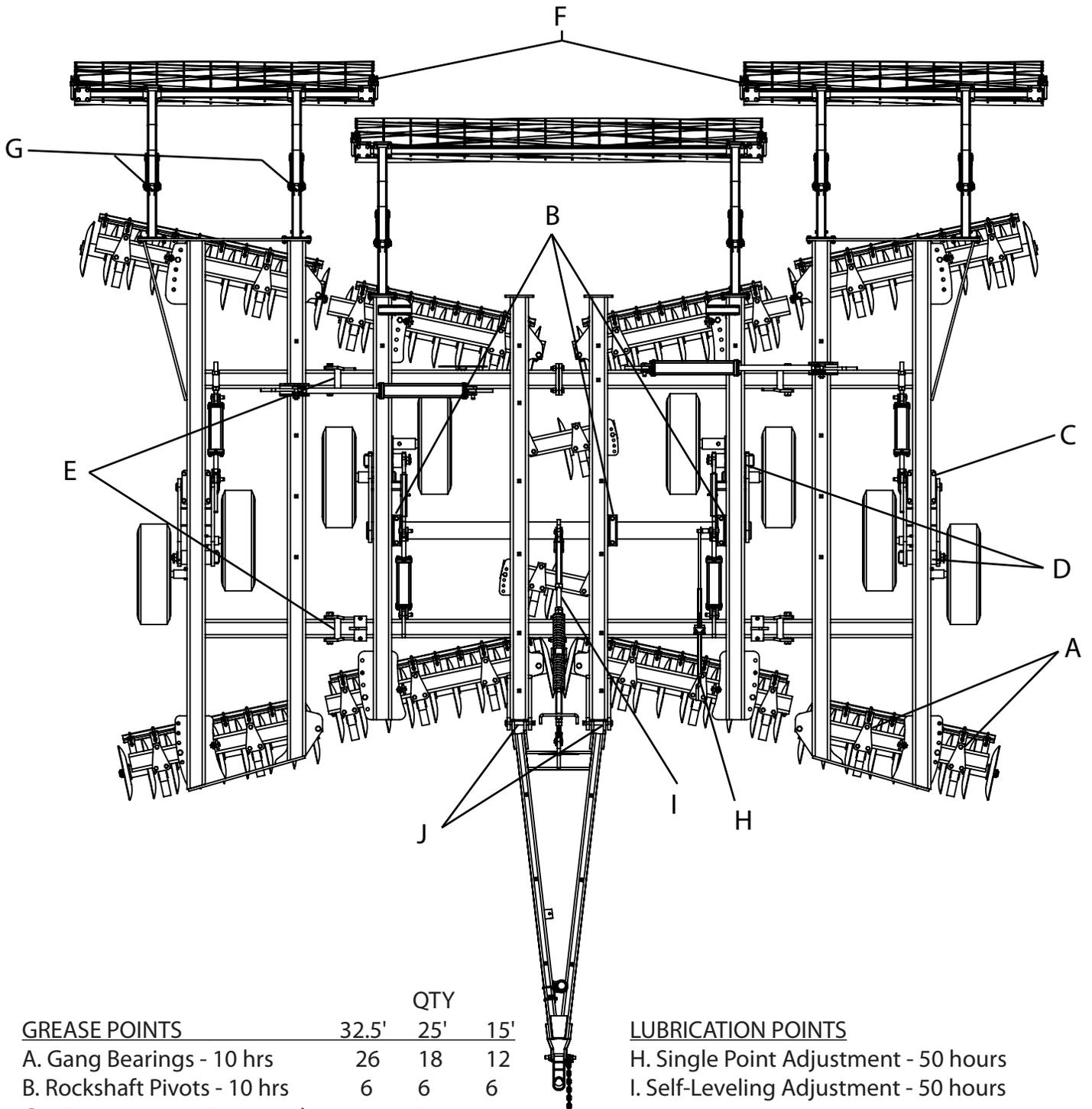
MODEL 9100 OPERATING PRESSURE RECOMMENDED BY TIRE MANUFACTURER:

Galaxy 12L-16.5 tire (Main Frame).....Inflate to 105 psi (723.9 kPa)

Galaxy 11L-15 tire (Wings).....Inflate to 90 psi (620.5 kPa)



LUBRICATION DIAGRAM



GREASE POINTS	QTY		
	32.5'	25'	15'
A. Gang Bearings - 10 hrs	26	18	12
B. Rockshaft Pivots - 10 hrs	6	6	6
C. Wing Wheel Arm Pivot - 10 hrs	2	2	-
D. Tandem Pivots - 10 hrs	8	8	4
E. Wing Pivots - 25 hrs	4	4	-
F. Roller Bearings - 10 hrs	6	6	4
G. Harrow Arm Pivots - 25 hrs	6	6	4
J. Hitch Pivots - 10 hrs	2	2	2

- LUBRICATION POINTS**
 H. Single Point Adjustment - 50 hours
 I. Self-Leveling Adjustment - 50 hours

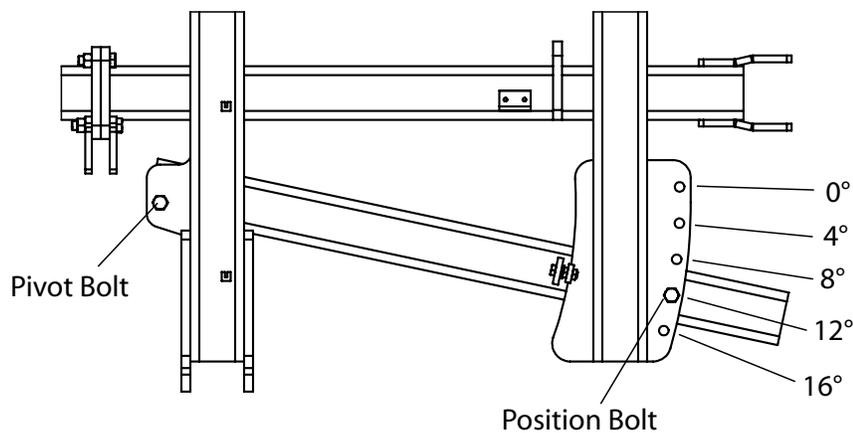
FIELD LEVELING PROCEDURE OVERVIEW

1. Adjust gangs to desired working angle.
2. Pre-level the machine front to back as outlined in step 1 of the operating adjustments.
3. Pre-level the wings to match the center as outlined in step 2 of the operating instructions.
4. Adjust the working depth of the machine using the single point hydraulic.
5. Run the machine in the field and fine tune the front to rear levelness.
6. Run the machine in the field and review all settings. Repeat steps 2, 3, 4 until satisfied.

OPERATING ADJUSTMENTS

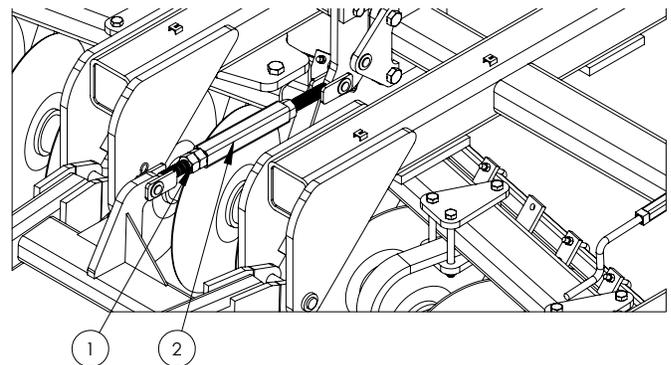
Before the machine can be used in the field some basic adjustments need to be made in order to level the machine from front to back and side to side. This is to be completed on a solid level surface.

1. With the implement hooked to the tractor, verify that the safety transport locks are in place and unfold the implement. Position the gangs to the desired working angle as shown in the image below (12° is recommended for general fall tillage). To move the gangs, loosen the pivot bolt and removed the position bolt. Roll the gang tube to the desired angle and reinstall the hardware. (Image shows front left center gang)

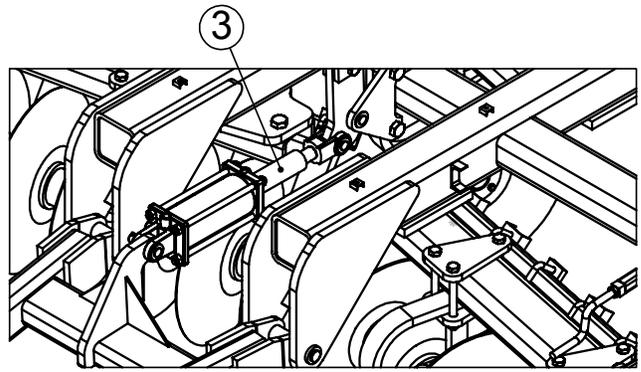


2. With the machine hooked to the tractor unfold and lower the machine so the coulter blades are 2" - 3" off the ground.

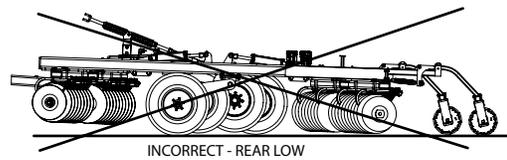
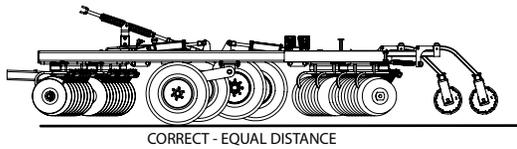
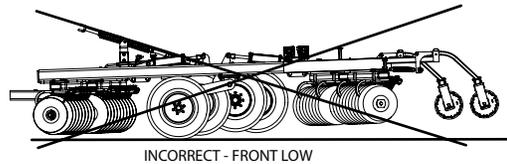
-If machine is equipped with a mechanical turnbuckle, loosen jamnut "1" with an adjustable wrench. Adjust turnbuckle "2" so that the machine is level front to back. Lengthen the turnbuckle to raise the front, shorten the turnbuckle to lower the front. When the front and rear blades are an equal distance off the ground retighten jamnut "1". Note: It may be necessary to lower the machine for ease of adjustment.



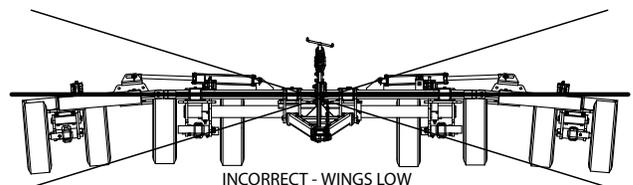
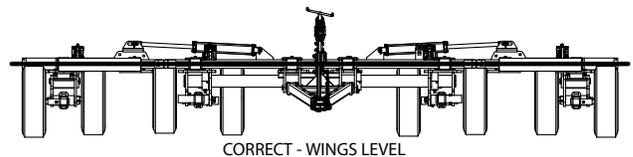
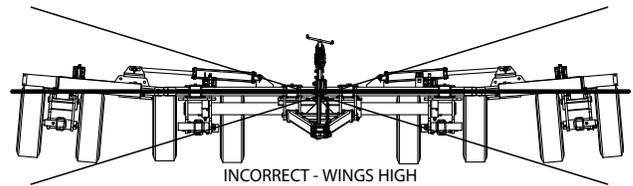
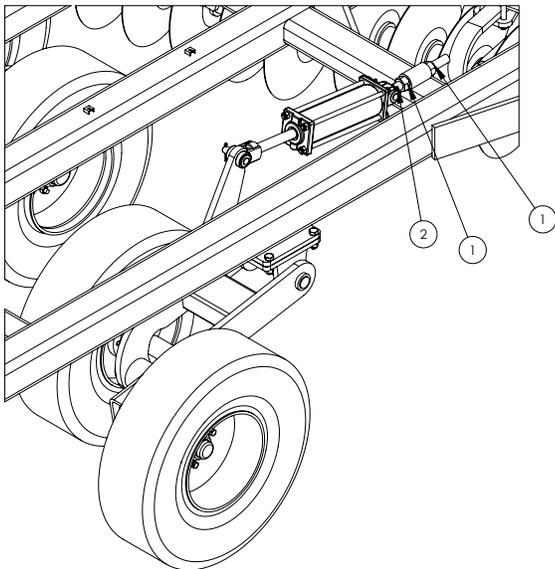
-If machine is equipped with a hydraulic leveling cylinder, verify that cylinder sleeve "3" is installed on the cylinder rod. Using the hydraulics, adjust the cylinder so the machine is level front to back for field operation. If necessary, for transportation purposes, the cylinder may be retracted against the cylinder sleeve to raise the rear of the unit higher off the ground.



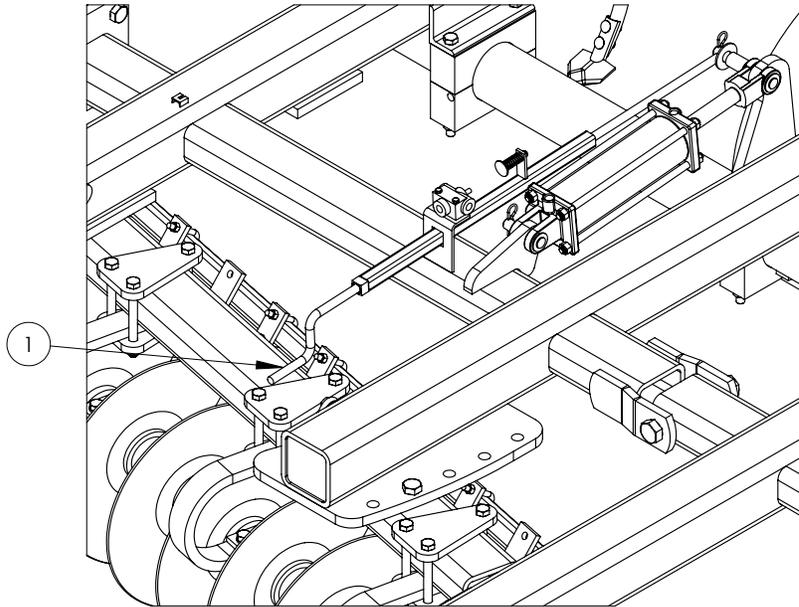
Correct Field Operating Position



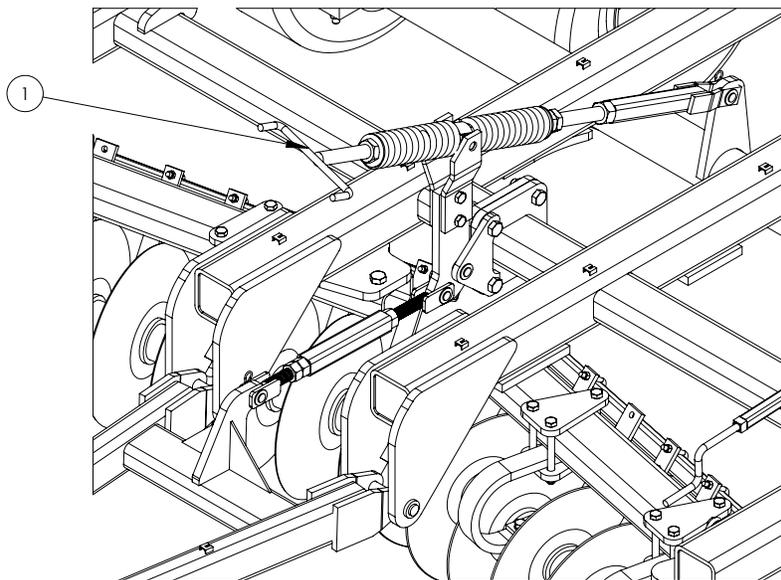
3. With the machine unfolded and in the raised position adjust the wings so they are level with the center. Adjust jamnuts "1" to position the cylinder anchor "2" so that the wing frames are level with the center frame. Move the cylinder eye forward to raise the wing and toward the rear to lower the wing. When the wingframes and center are level horizontally retighten the jamnuts "1". Note: It may be necessary to lower the machine for ease of adjustment.



4. Once the machine is level front to back and side to side it's time to set the working depth. Turn the crank "1" clockwise to raise the machine or decrease working depth. Turn the crank counter clockwise to lower the machine or increase working depth. One full turn of the handle will change the depth approximately 3/16".



5. After following the previous steps to pre-level the machine and set the initial working depth, the machine can be levelled in the field. This is accomplished by watching the machine run in the field and readjusting the front to rear and wing to center levelness. The front to rear levelness can be fine tuned by adjusting the crank "1" on the center frame as illustrated below. Turning the crank clockwise will raise the front of the machine and counter clockwise will lower the front of the machine. It may be necessary to lower or raise the machine to ease adjustment.



5. Repeat steps 2 - 4 until satisfied with levelness and working depth of the machine.

HYDRAULIC TROUBLE SHOOTING CHART

Problem	Cause	Remedy
1) Hydraulic cylinders do not work in unison. Cylinders seem spongy.	Air in System	Raise machine to highest transport position. Hold the hydraulic lever on the tractor in the "raise" position for approx. 30 seconds. Flow passes through the cylinder bypass ports to flush air out of the system.
2) Wing cylinder contracts when master extends.	Hose connections wrong.	Check circuit according to the hose layout diagram.
3) Wing cylinders stroke further than master cylinder when retracting wings too deep, or: One wing cylinder will not retract fully when all others are retracted.	<p>a) Wrong hose connections.</p> <p>b) Cylinder sizes or locations wrong.</p>	<p>Check circuit according to the hose layout diagram.</p> <p>Check cylinder locations and sizes according to hydraulic layout diagram.</p>
4) One section of implement settles down in use.	<p>a) System not being re-phased.</p> <p>b) External leak from cylinder, hose or fitting.</p> <p>c) Internal leak in cylinder.</p>	<p>When the cylinders are extended fully each cylinder bypasses a small amount of oil to allow other cylinders to catch up. This rephasing is done each time the implement is raised fully to the top and must be done periodically and is recommended at each end of the field.</p> <p>Repair leaking component.</p> <p>Install new cylinder seal kit in the wing cylinder that settles.</p>
5) Entire machine settles.	a) Tractor valve leaking back.	To check, remove hose from the tractor when implement is raised. This eliminates the tractor valve from the circuit. CAUTION: Make certain your tractor connections safely allow this operation.

Problem	Cause	Remedy
5) Entire machine settles.	b) External leak. c) Wing cylinder and master cylinder leaking internally.	Repair leaking component. Install new cylinder seal kits.
6) Machine settles in transport or while parked.	Not using the transport lock.	The hydraulic system is not intended to hold the implement up permanently. A slow settling when not in use is normal.
7) Cylinders will not rephase.	a) Dirt blocking bypass ports in cylinder. b) Faulty cylinder.	Air pressure can be used to determine which cylinder will not bypass when extended. Rephasing cylinder and repair parts must be used in this service.
8) Air returns to system causing problems 1, 4, 5 to recur.	a) Air entering system. b) See item 7.	Check tractor oil level. Check tractor hydraulic pump. See item 7. Note: A mixture of oil and air forms a foam which may give unexpected results. It may take a few hours use before all foam is expelled.
9) Center section is not level or goes out of level in use.	a) A frame or wheel link bolt or pin bent or broken. b) A frame or wheel linkage bent. c) Wheel links were not set in the same position.	Replace broken bolt. See Dealer for instructions on straightening ore replacement of bent parts. Always adjust wheel towers the same.
10) Both center section and one wing settle together. Remaining wing raises or stays at the top.	Internal leak in the master cylinder.	Install new cylinder seal kit.



WARRANTY

Kongskilde Limited and / or Kongskilde Incorporated, hereinafter referred to as Kongskilde, as manufacturer, warrants to the original retail purchaser of its products, that the products are constructed free from manufacturing defects. This warranty covers all Kongskilde group products including the brand names; Kongskilde, Overum, Howard and Progressive.

The Kongskilde obligation under this warranty is expressly limited, at their option, to the replacement or repair of such parts, as inspection shall disclose to have been defective, within 365 days from the date of delivery. Repair or replacement of defective part(s), to be made at an authorized Kongskilde dealer location, transportation charges prepaid by the end user.

No warranty of any kind is made by Kongskilde with regard to products which have been subject to normal wear, misuse, abuse, negligence or accident, or have been altered or repaired in any manner not authorized by Kongskilde or if repairs have been made with parts other than those obtainable from Kongskilde.

This warranty is subject to any conditions of supply, which may directly affect our ability to obtain materials or manufacture replacement parts.

Kongskilde reserves the right to make improvements in design or change in specifications at any time, without incurring any obligations to owners of units previously sold.

This warranty shall not be interpreted to render us liable for injury or damages of any kind of nature, direct, consequential, or contingent to person or property.

This warranty does not extend to loss of crops, loss because of delay or any expense of loss incurred for labor, supplies, substitute machinery, rental, or for any other reason.

Any defects in components purchased by Kongskilde as complete units for installation in or with Kongskilde equipment, will only be covered to the extent that the original manufacturer warrants them to Kongskilde, e.g.. Hydraulic cylinders, bearings, tires, etc.

Kongskilde makes no other express warranty, nor is anyone authorized to make any on behalf of Kongskilde.

THIS WARRANTY IS EFFECTIVE ONLY WHEN THE "WARRANTY REGISTRATION FORM" HAS BEEN COMPLETED AND RETURNED WITHIN 20 DAYS FROM THE TIME OF SALE TO THE ORIGINAL RETAIL PURCHASER.

KONGSKILDE INDUSTRIES INC.
19500 N 1425 EAST ROAD
HUDSON, IL 61748
Tel: 866-214-5664 / Fax: 866-264-5664



OWNER REGISTRATION & WARRANTY FORM

Covering Kongskilde, Overum, Howard and Progressive Products.

To initiate warranty coverage, this form must be filled out and signed by both Dealer and Owner at time of delivery and returned to:

KONGSKILDE INDUSTRIES INC.
19500 N 1425 EAST ROAD
HUDSON, IL 61748
Tel: 866-214-5664 / Fax: 866-264-5664

FAILURE TO COMPLETE AND FILE THIS REPORT OR ANY FALSE INFORMATION WILL INVALIDATE THE WARRANTY.

ITEM:.....	DELIVERY DATE:.....
MODEL #:.....	SERIAL #:.....
DEALER:.....	OWNER:.....
ADDRESS:.....	ADDRESS:.....
CITY:.....	CITY:.....
PROV/STATE:.....	PROV/STATE:.....
ZIP/P. CODE:.....	ZIP/P. CODE:.....
PHONE NUMBER:.....	PHONE NUMBER:.....

Dealer's Statement:

I have conducted a pre-delivery inspection and have thoroughly instructed the customer on the equipment described above. I have reviewed the owner's manual content including; proper equipment care, adjustments, safe operating practices and the attached warranty policy. I confirm that this equipment was assembled properly as directed by the manufacturer and that the safety equipment and decals provided have been installed and the unit is ready for delivery.

Dealer's Signature:..... Date:.....

Owner's Statement:

The above equipment appears to be set up properly and in good condition. I have been thoroughly instructed as to the proper care, adjustments and safe operating practices and use of the safety devices provided for this equipment. I have reviewed and received my copy of the owner's manual and warranty policy. I agree to accept delivery and responsibility for the safe operation, care and maintenance of this equipment in accordance with the local regulations and the warranty policy.

Owner's Signature:..... Date:.....

ORIGINAL COPY TO KONGSKILDE, HUDSON
2nd COPY TO DEALER
3rd COPY TO CUSTOMER

