



Scorpion 300/2430



Scorpion 350 Stinger

Setup / PDI Guide

Manual no. F6920T020

v1.0

Foreword

We thank you for your confidence towards DION-Ag Inc. agricultural equipment. We have prepared this setup guide with care & attention and have designed it as an essential tool that will allow you to prepare the machine for delivery adequately and safely.

Carefully read this guide in order to familiarize yourself with the adjustment procedures and operation, before delivering this machine. Keep in mind, this machine has been designed and tested to perform in most conditions. However, its performance is tightly linked to the maintenance it receives.

This guide has been prepared with the latest available information at the time of publishing. The company reserves the right to make any changes without prior notice.

Safety

The Safety section of your Operator's manual is intended to point out some of the basic safety situations which may be encountered during normal operation and maintenance of your Forage Harvester, and to suggest possible ways of dealing with those situations.

This section is NOT a replacement for other safety practices featured in other sections of this guide.

The safety of the operator is one of the main concerns in designing and developing a new Forage Harvester. Designers build in as many safety features as possible. However, every year accidents may occur which could have been avoided by a few seconds thought and a more careful approach to handling farm machinery and implements.

Read and implement the safety instructions detailed within and share them with other operators.

Work safely. Always block the harvester wheels and turn off the tractor before working on the harvester.

Upon Reception

Inspect for damage, transportation problems

- Parts that have moved
 - Movement of machines during transport
 - Loose straps or fasteners
- Damaged by transport or fasteners
 - Contact or friction
- Loose parts on the machine
- Validate parts received against the packing slip
 - Headers (Corn and/or hay)
 - Drive kit for respective header
- Validate the model of each unit
 - Serial number
 - Cutterhead, transmission, LOC range, etc.
 - Processor, PTO, Drawbar size, etc.
- Take note and notify us if there is a problem
 - Any breakage, damage and missing parts must be reported to DION-Ag within **5 days**
 - The delivery waybill must be signed and noted to identify any damage upon reception. Failure to do so will void the possibilities of a claim.
 - Contact the service department service@dion-ag.com 450-437-3449



Handling Instructions

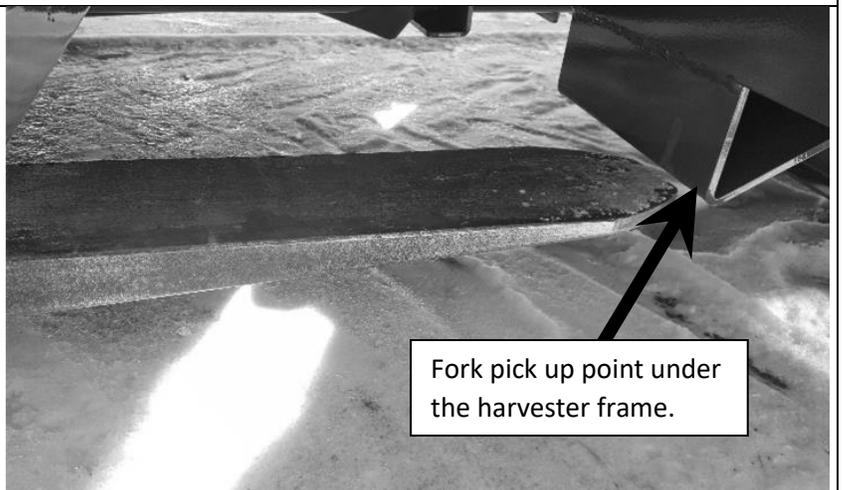
- ❑ Use a forklift with a capacity of at least 8500 lbs. and forks at least 42" long.



- ❑ There are 2 slots on the harvester frame for the forks. One perpendicular to the axle and one at a 45° angle.
- ❑ Approach the harvester perpendicular to the frame and axle mount.



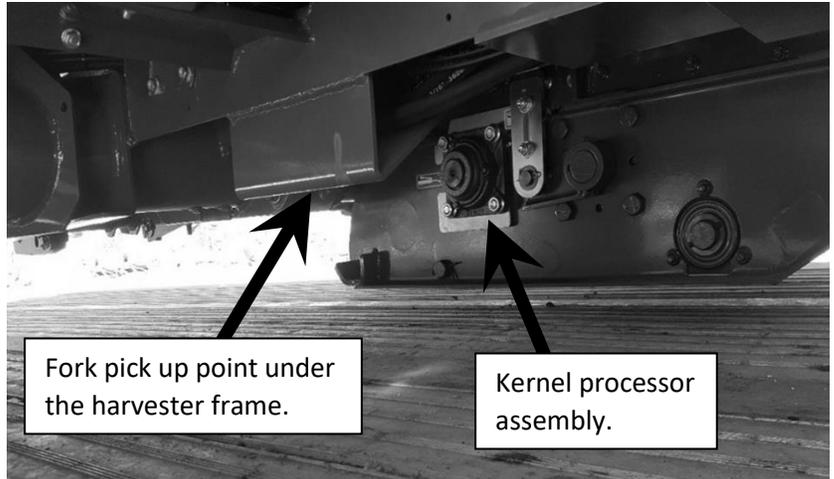
- ❑ Advance the forklift through the 2 fork slots until the forks are sufficiently under the pick up point.





WARNING: Approaching the harvester without minding the forks may result in severe damage to the kernel processor.

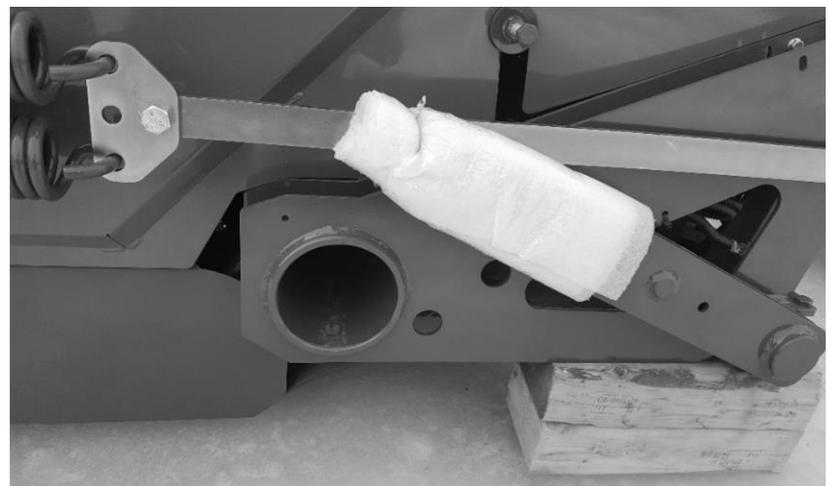
- ❑ Assistance is required when setting up to lift the harvester. Have a guide present to ensure no contact is made between the forks and the processor assembly.



- ❑ **NEVER** place the harvester directly on the ground.
- ❑ Ensure the harvester is properly supported on blocks with a minimum height of 6" (15cm) at 3 points as described.
- ❑ 1 point under the left axle.



- ❑ 1 point under the right header attachment location.
- ❑ 1 point at the tongue, supported by a block of wood OR the jack stand which the harvester is equipped with.

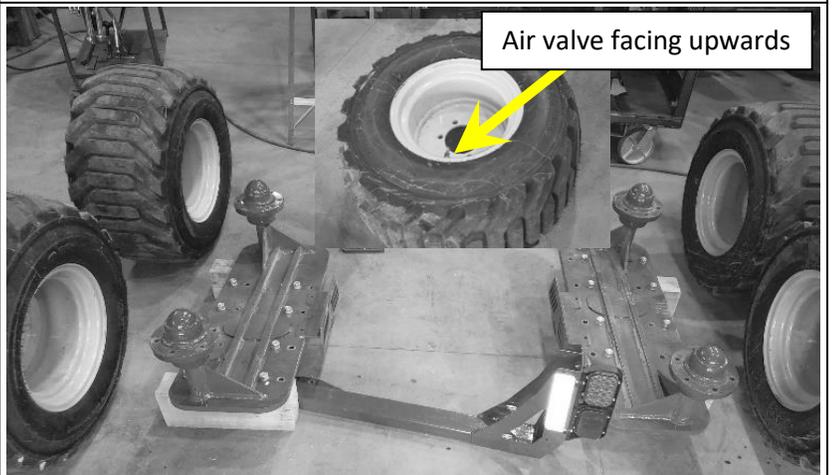


Axle and Wheel Installation

- ❑ Check all parts have been delivered.
 - Wheels, axles, axle mounting bolts.
- ❑ Delivery includes 2 left wheels and 2 right wheels.
- ❑ Install the wheels on the axles.
- ❑ Note: **Only 'TerraTrac' are directional tires!!**
 - They must be installed in "trailed" mode as shown.



- ❑ Position the axles flat on wooden blocks and remove the wheel bolts.
- ❑ Place the wheels onto the axles ensuring the air valves face upwards.

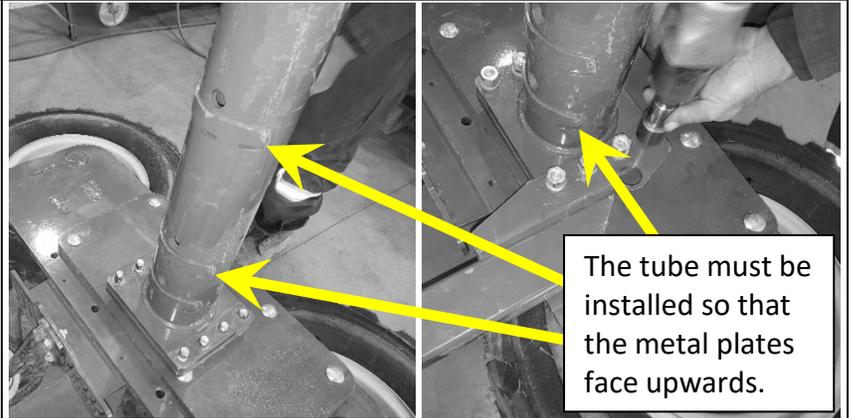


- ❑ Use a tire lifting tool OR two people to place the tire onto the axle.
- ❑ Install the 6 bolts by hand.
- ❑ Tighten the 6 bolts to **120lb-ft (163 N.m.)**. Wheel torque should be check after the first hour and every 20h for the first 60h.
- ❑ Repeat for all wheels.

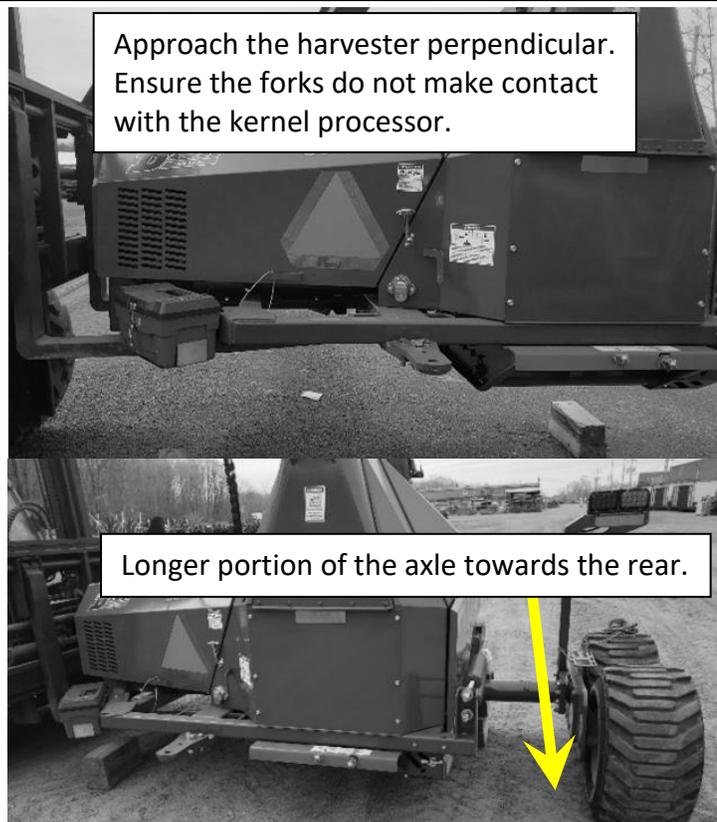


Axle Mounting (Right Side)

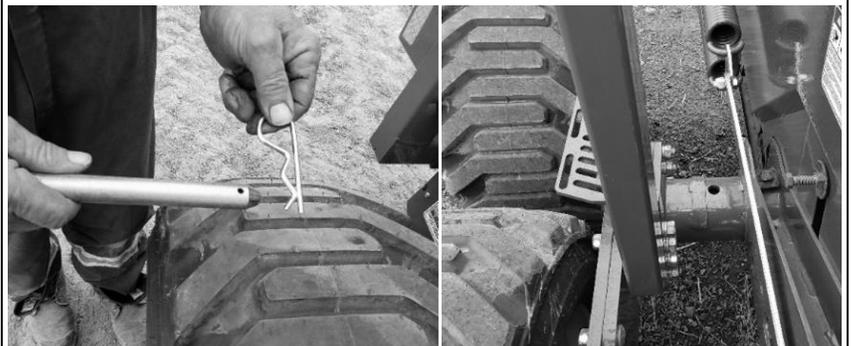
- ❑ Remove the nuts and lock washers on the right axle.
- ❑ Install the axle extension and the light pole (right side).
- ❑ Install the 8 lock washers and tighten all 8 nuts.



- ❑ Lift the harvester with a forklift.
- ❑ Advance the harvester to the right side tandem and slide the tube into the hole of the harvester.
- ❑ The axle should slide in easier when the harvester is lifted to approximately 18" between the ground and the frame.
- ❑ The longer portion of the axle should be towards the rear of the harvester.



- ❑ Use the lock pin and cotter pin in the toolbox to fix the axle to 1 of the 3 desired position (3 holes in the long tube).
- ❑ Typically, the axle should be installed with no holes exposed (axle tube assembly as close to the harvester as possible).

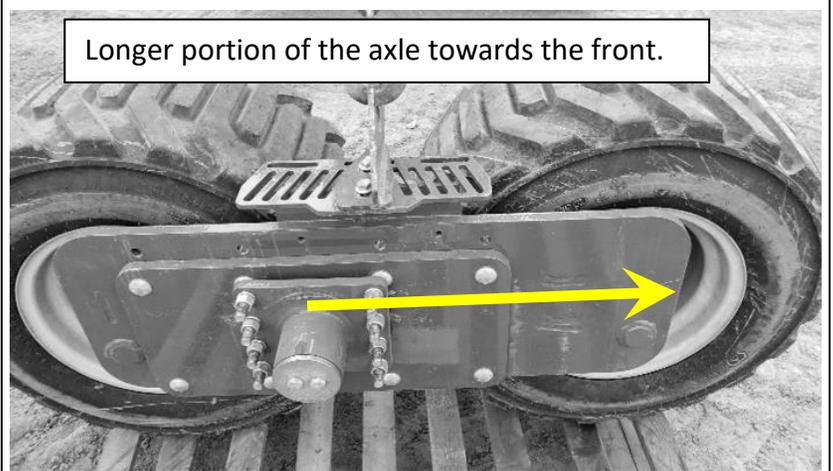


Axle Mounting (Left Side)

- ❑ After installing the tandems on the right side, approach the harvester perpendicularly.
- ❑ Place the left side of the harvester safely on blocks.
- ❑ Remove the nuts and lock washers from the axle assembly.



- ❑ Lift the tandem wheel assembly.
- ❑ Ensure the longer portion of the assembly faces the front of the harvester.

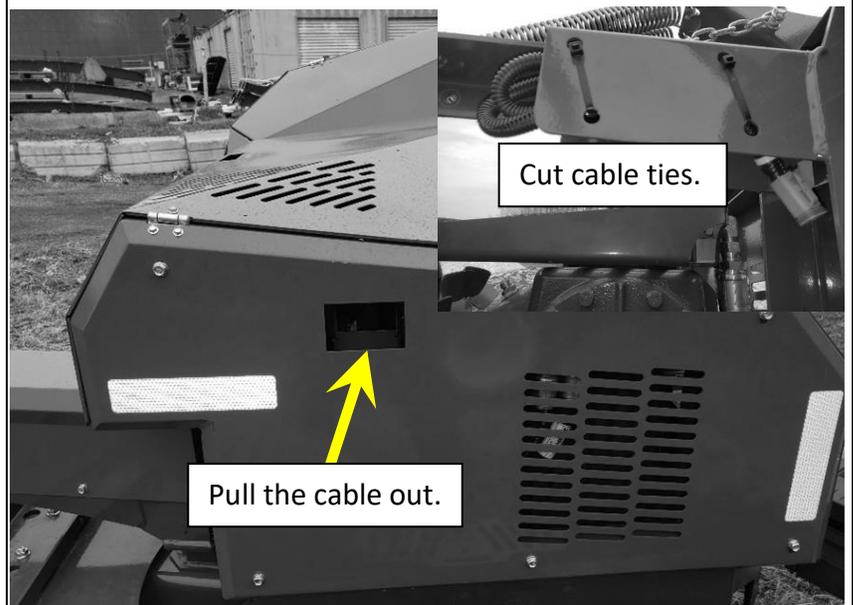


- ❑ Mate the axle assembly to the hub on the harvester and install the lock washers and nuts by hand.
- ❑ Tighten the 8 nuts ensuring the carriage bolts remain properly seated.
- ❑ Lift the harvester and remove blocks.

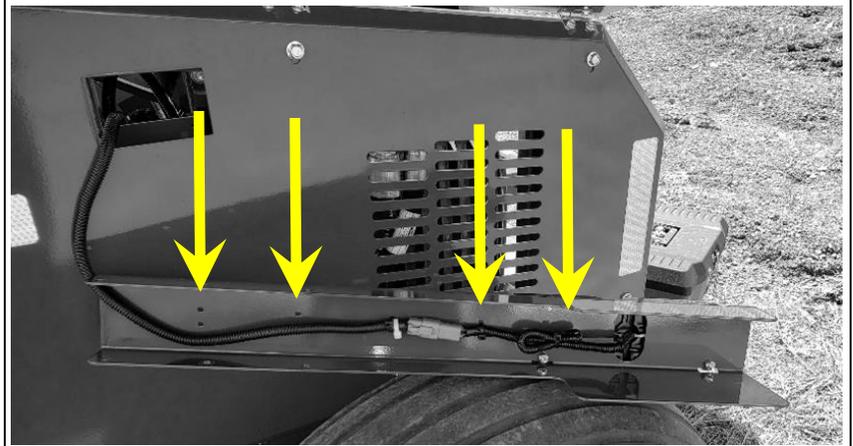


Light Installation (left side)

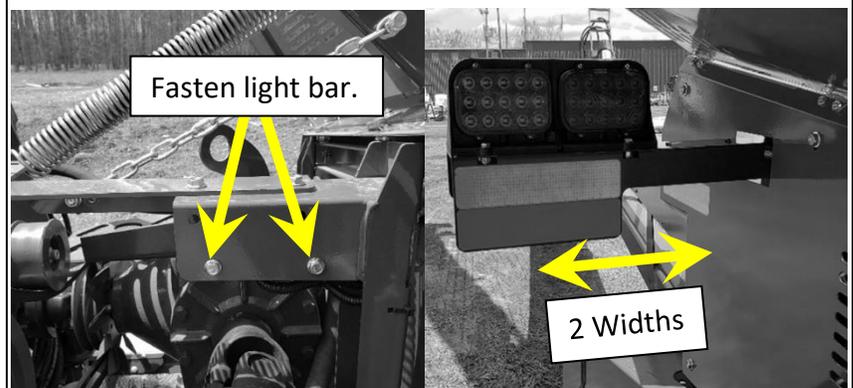
- ❑ Locate the lights in a carton underneath the butterfly guards of the harvester.
- ❑ The cable on the harvester is secured in place for transport. Open the main guard and cut the cable ties.
- ❑ Remove and keep the fasteners for the light assembly.
- ❑ Pull the cable through the opening.



- ❑ Use the cable ties in the toolbox to affix the cable to the arm.
- ❑ Place the connector as shown and loop any excess cable.
- ❑ Insert the light assembly through the opening.



- ❑ Fasten the assembly with the hardware you removed earlier.
- ❑ The light assembly can be installed to accommodate 2 widths. Install according to the desired width.



Light Installation (right side)

Install the correct light assembly according to the header being used.

If the header is one of the following, no extension is required:

- Hay pick up F46 – 2.13m (84")
- 3 Row corn head F64 – 2.3m (90")



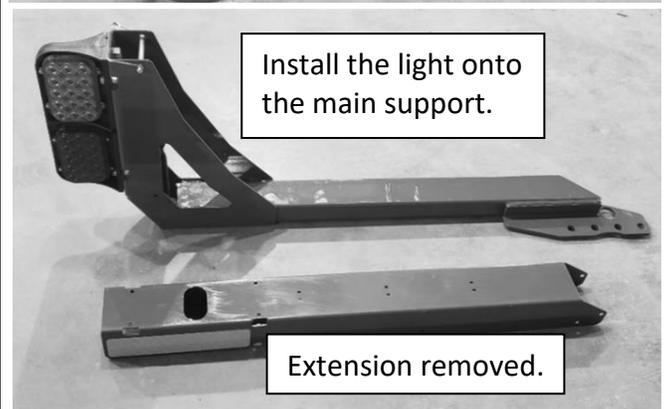
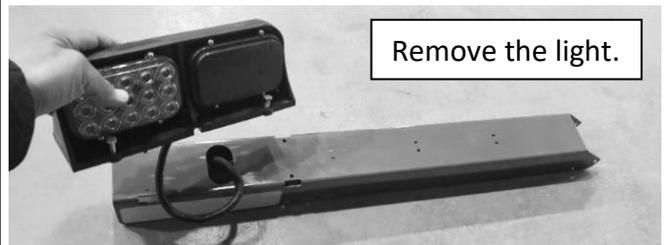
If the header is one of the following, an extension must be used:

- Hay pick up F71 – 2.74m (108")
- 4 Row corn head F61 – 3m (120")



Removing the extension arm to make the short base:

- Unscrew the 4 bolts securing the light to the extension.
- Install the light onto the main support using the same hardware.
- Ensure the wires are not pinched during the installation.
- Affix the cable to the assembly using cable ties.



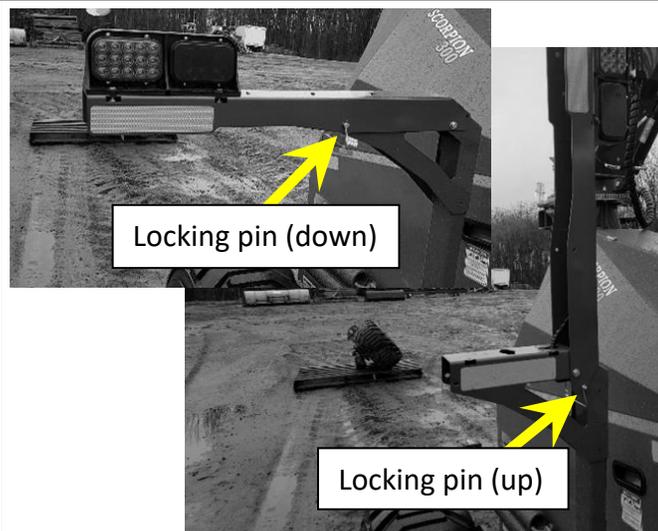
- ❑ Attach the extension to the pole with the provided bolts.
- ❑ The cable is looped within the frame section for transport. Cut it free.
- ❑ Pass the wire of the harvester through the light pole and guide it through the oblong hole.
- ❑ Prior to fastening the cable, ensure to leave sufficient slack in the cable for when the light is the raised position.
- ❑ Loop excess wire and fasten with cable ties and ensure wires do not get pinched.



- ❑ Use this locking pin when the extension arm is in the up or down position.
- ❑ Ensure the cable is not pinched when the extension arm is lowered to the down position.

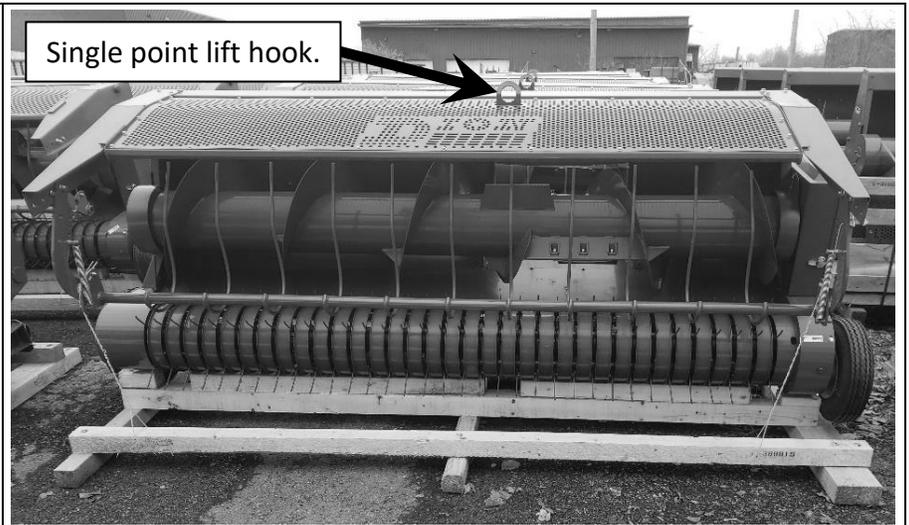


- ❑ Extension arm in the 'down' position.
- ❑ Extension arm in the 'up' position.



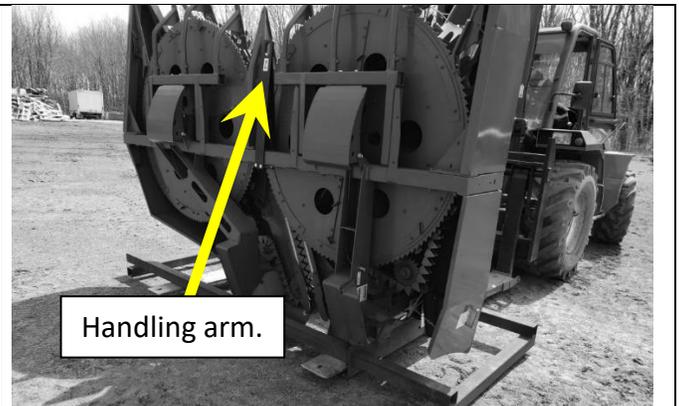
Hay head

- ❑ To remove the head from the transport skid, remove and discard all fixing hardware and all yellow securement wire.
- ❑ Lift the assembly using the single point lift hook.

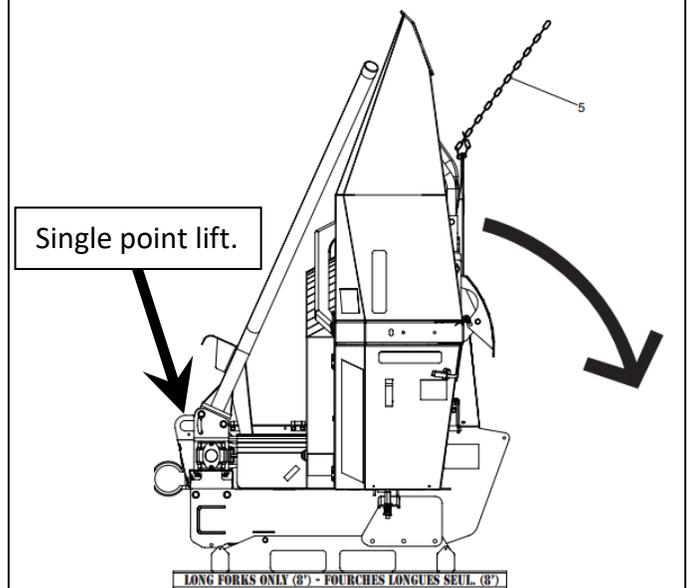


Rotary corn head

- ❑ **Do NOT lift the assembly using the handling arm.**
- ❑ This assembly is heavy. Use a forklift equipped with 8' forks.
- ❑ Prepare wood blocks to ensure the header is not placed directly onto the ground.
- ❑ **NEVER stand under or around an unsecured machine!**



- ❑ Attach the chain securely to the handling arm and the forks of the forklift.
- ❑ Provide enough slack in the chain so that when you reverse with the forklift, the head can be lowered slowly to the ground.
- ❑ Before reversing, start with the chain at $\sim 45^\circ$ angle as shown. Once the head pivots, lower the forks slowly as you continue to reverse.
- ❑ Once flat on the ground, unbolt and remove the metal skid and the handling arm.
- ❑ Use the single point lift to maneuver the head once it is safely on the ground, on wood blocks.

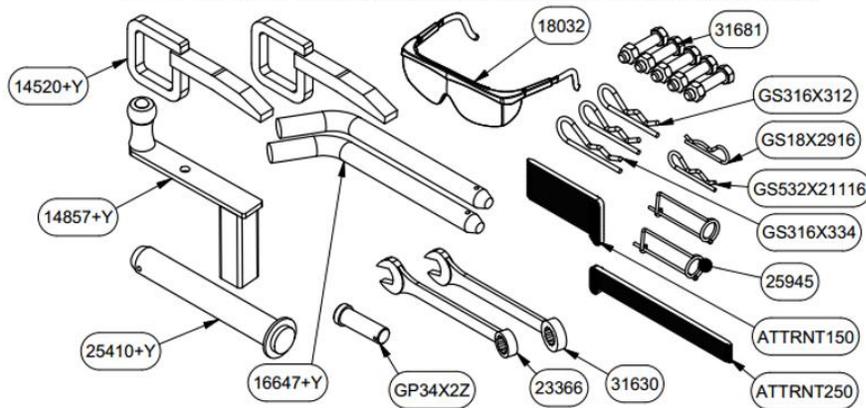


Toolbox Content



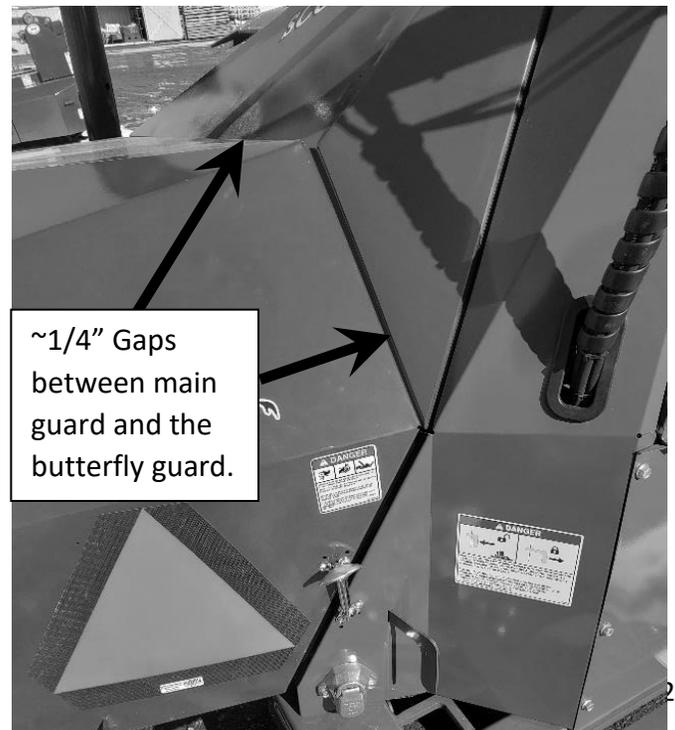
Check the toolbox

- Header locking pin (2x) (# 14520)
- Crank (1x) (# 14857)
- Axle pin (2x) (# 16647)
- Safety glasses (1x) (# 18032)
- Key wrench $\frac{3}{4}$ " (# 23366) (1X)
- Ratchet wrench $\frac{3}{4}$ " (1x) (# 31630)
- Lock pin (2x) (# 25945)
- Safety pin $\frac{3}{16}$ " x $3\text{-}3/4$ " (1x) (# GS316x334)
- Safety Pin $\frac{3}{16}$ " x $3\text{-}1/2$ " (2x) (# GS316x312)
- Safety Pin $5/32$ " x $2\text{-}1/16$ " Zinc (1x) (# GS532x21116)
- Safety Pin $1/8$ " x $2\text{-}9/16$ " (1x) (GS18x2916)
- Set of 5 shearbolts (5x) (# 31681)
- Small cable ties (# ATTRNT150)
- Large cable tie (# ATTRNT250)
- Tongue limiter pin (1x) (# 25410 + Y)



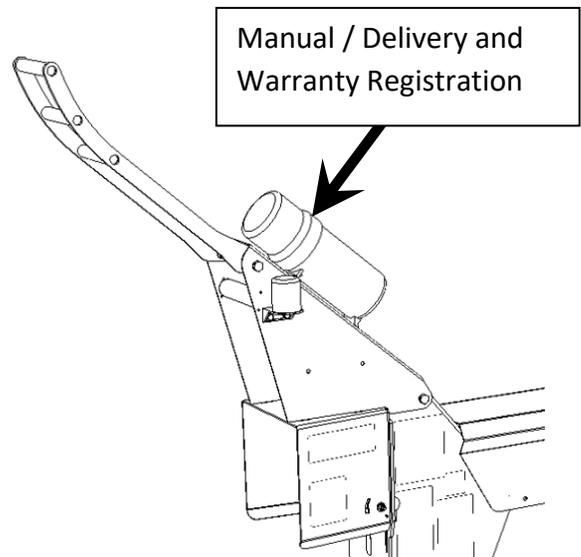
Static Inspection

- Fluid leak
- Gearbox & transmission oil level
- Pinched hydraulic line or electrical cable
- Gap of approximately $1/4$ " between closed guards
 - Main guard
 - Butterfly guards
- Loose bolts or loose parts
- Damaged or faded safety decals
- Shields and doors close smoothly
 - Main guard
 - Butterfly guards
 - Guillotine door



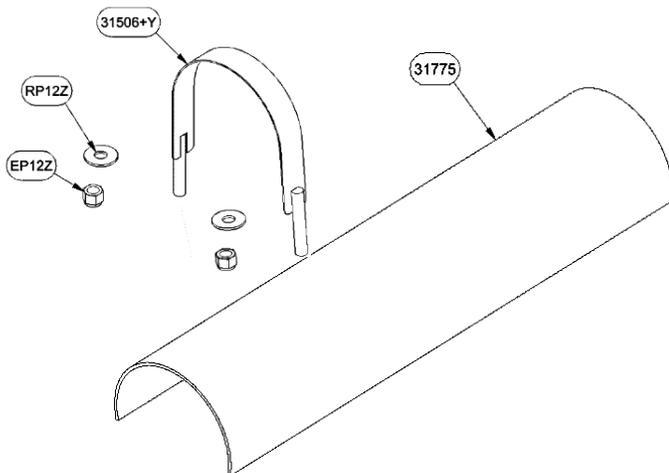
Parts Verification

- Wheels and axles
- Lights (left & right)
- PTO shaft
- Safety chain
- Operator's manual and registration (inside black plastic can on all DION machines)
- Control box and mounts (Scorpion 300/240)



Options Verification

- Stinger spout kit
- Camera(s) & monitor
- LED lights
- Quick attach kit
- Inoculant applicator kit
- Isobus & joystick (Scorpion 350)
- Processor roll clamp and rubber mat
 - Rubber mat (1x) (# 31775)
 - Strap (# 31506+Y)
 - Flat washer (2x) (# RP12Z)
 - Elastic nut (2x) (# EP12Z)



Inoculant system is standard with 1x 50GAL tank. Optional with an additional 50GAL tank.

Transport Plates

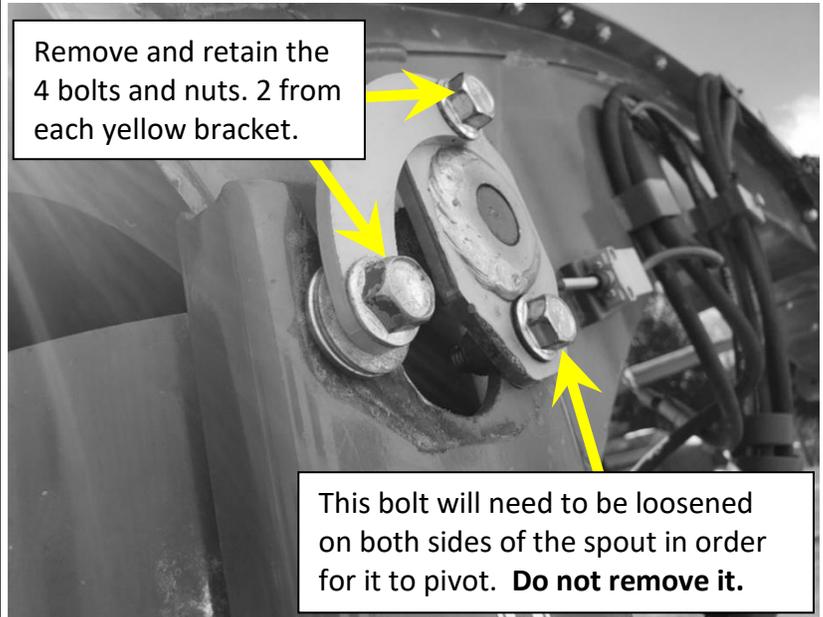
Spout



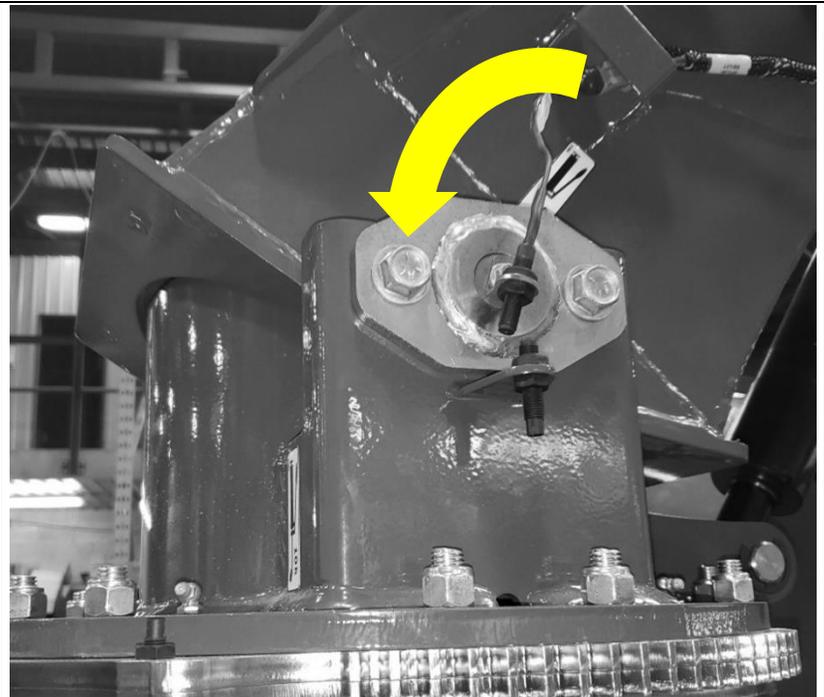
DANGER: Removal of this spout bracket must be done prior to operating any of the hydraulic systems. Failure to remove this bracket before operating the hydraulics could result in injury or death.

In certain transport scenarios, the spout must be lowered in order to fit transport enclosures. This is achieved by utilizing a **temporary** support bracket.

- ❑ The spout is heavy. Support the spout safely with a lifting strap and use an overhead chain block or another lifting implement to lift. Be mindful not to pinch hydraulic lines or wiring. **Do not use a chain to lift the spout.**
- ❑ Remove and retain the 4 bolts and nuts (2 each side).
- ❑ The spout may have shifted during transport. The spout may need to be jostled in order to remove the bolts.
- ❑ Discard the yellow curved support bracket.

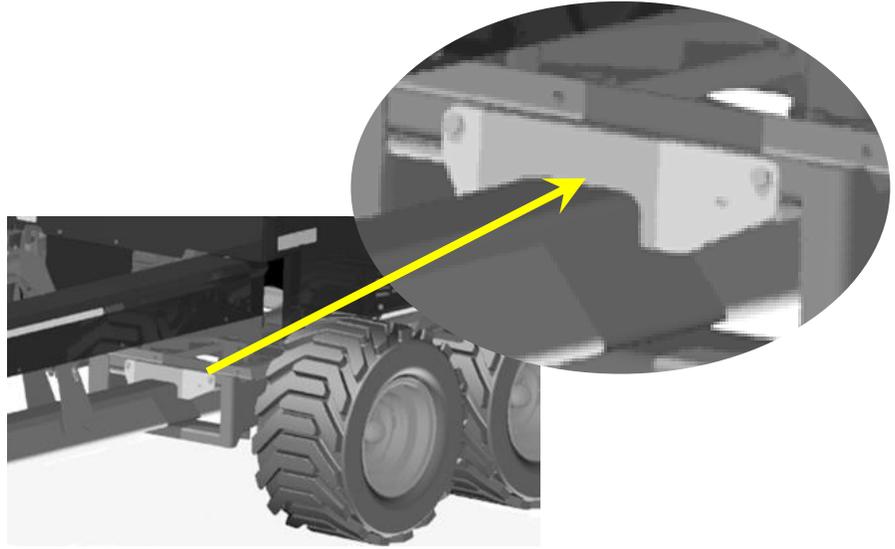


- ❑ Slowly lift the spout with the lifting implement. If it does not pivot, loosen the remaining 2 bolts more. **Do not remove them.**
- ❑ While lifting, the spout pivot should rotate and fall into place as shown in the photo.
- ❑ Once the pivot is fully seated, the bolts and nuts can be reinstalled.
- ❑ Tighten all 4 bolts and nuts (2 on each side).



Tongue

- ❑ The drawbar lock plate (yellow) is meant to act as a lock during transport.
- ❑ Remove the hardware affixing it to the frame and discard the hardware and the locking plate.



Setup Instructions

Refer to the operator's manual for additional preparation information.

❑ Tractor connections

The hydraulic lines are heavy. Do not route electrical lines through the same rung as the hydraulic lines.

- Route the hydraulic lines, through the handle, between the 1st and 2nd rung.
- Route the hydraulic lines, through the handle, between the 2nd and 3rd rung.

❑ Tractor setup (see operator's manual)

Scorpion 300/2430:

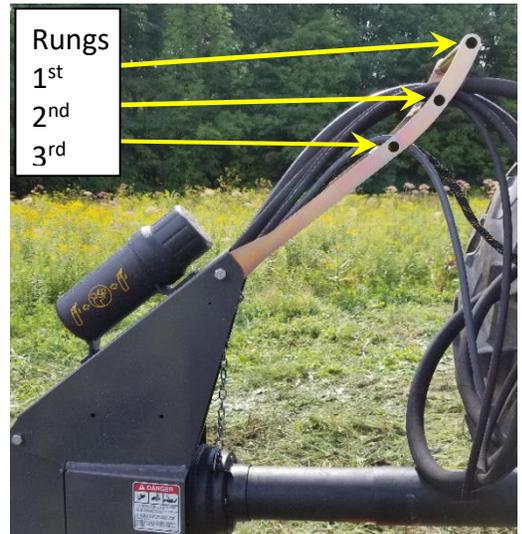
- Connect the "P" line to an SCV with continuous flow set at 10l/min (2.5gpm)
- Connect the "T" line to a 'Motor Return' port on the tractor. Connecting to an SCV might trap pressure or increase return line pressure and cause hydraulic malfunction.

Scorpion 350:

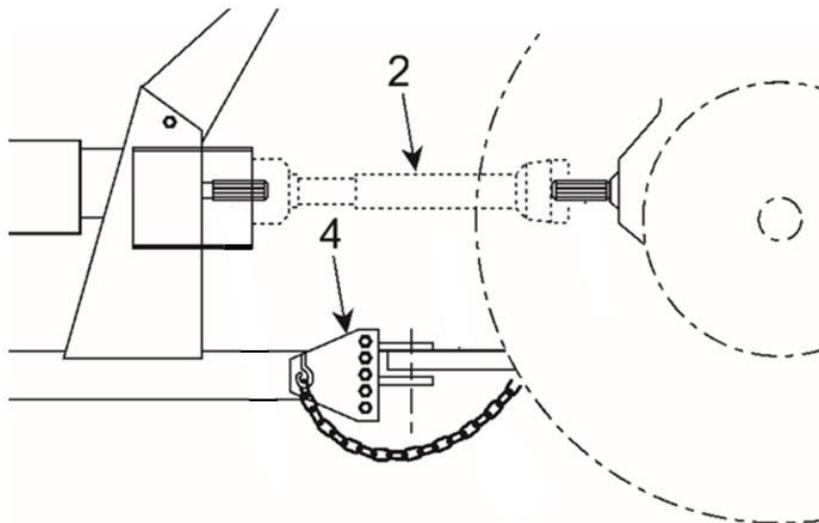
- Always ensure the tractor is **OFF** before making connections
- Ensure correct couplers are equipped

To prevent damage to the hydraulic system

- Connections should be made in order of: D, T, LS, P
- Disconnect in this order: P, LS, T, D

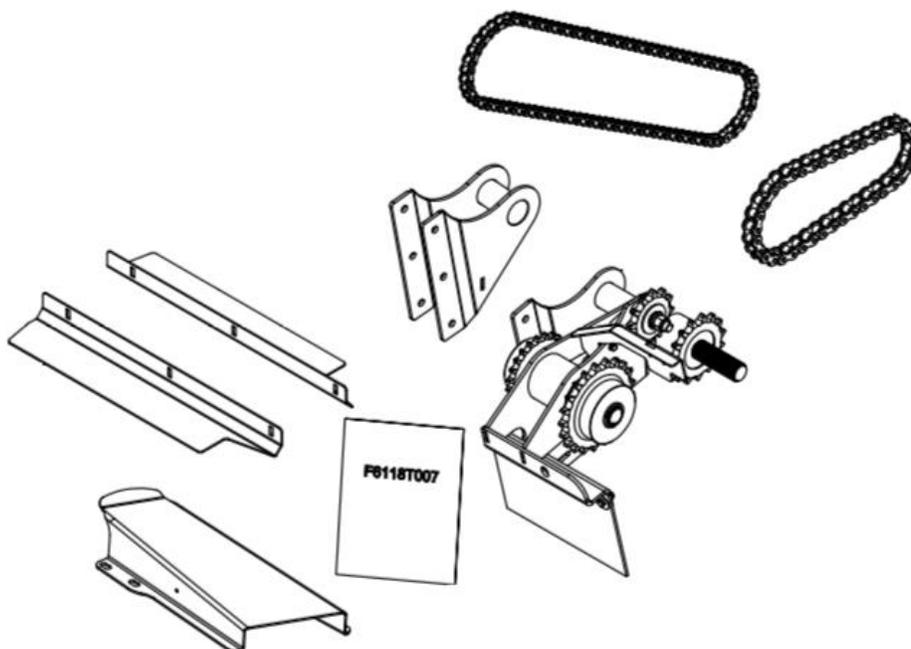


- Installation and alignment of draw bar (#4) and PTO (#2) (See operator's manual)

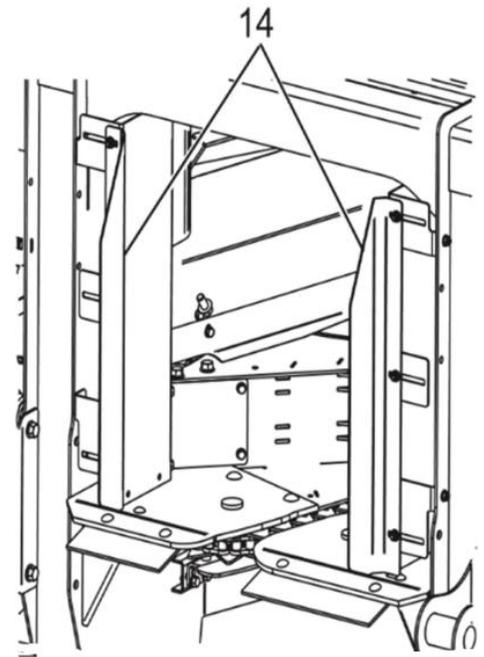


Install drive kits onto headers

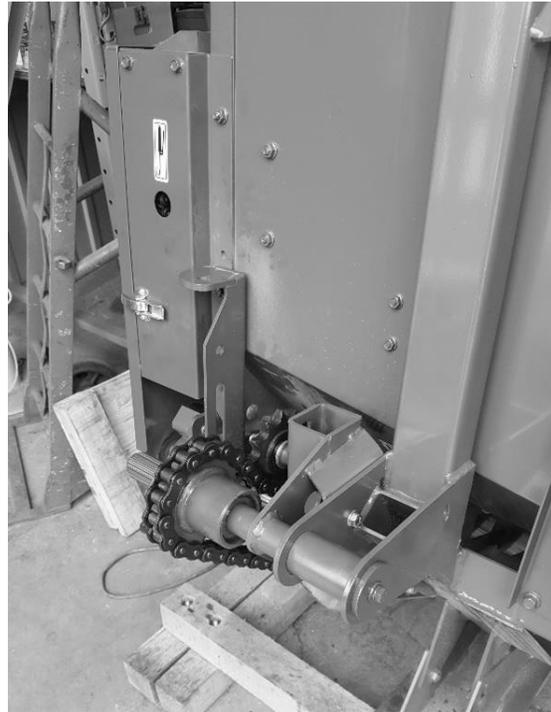
- Install the F64/F61 Corn head drive kit
 - An installation guide is provided with the Corn Head Drive Kit



- Adjust feed roll throat guards when mated to the harvester (#14)
- Test the corn header on the harvester to ensure drive and suspension functionality
- Clean & polish headers



- For a Scorpion 300 and 2430 models no drive kit is required to install on the hay pick-up.
- For the Scorpion 350, a special drive kit is required for the hay pick up. An installation guide is provided.



- Test ALL headers on the harvester to ensure drive and suspension functionality
- Hay / corn crop conversion on the harvester depending on crop to harvest (See operator's manual)

Pre-delivery Inspection

- Ensure you have the latest software version (update from <https://www.dion-ag.com/tech-en/>)



This pages contains information and links to service machine software for field technicians.

Dealerships or customers willing to make software updates are required to purchase the service tool kit from Dion-ag. Call us for details.

Click on the file link to download the desired version of software.

Windtools Service Software

[Installation and User manual F6919T01E](#)

File

[Windtools \(v2.1.0.23 build 83\)](#)

Date release

July 9th 2019

Description

July 2019 release update for Scorpion 300, 350 and Dion 2430 harvesters.

Scorpion 300/2430 Control Software

File

[Orlole Controller \(v1.3.300 build 29\)](#)

Date release

May 7th 2019

Description

Hour Counter Fix - Spring 2019 update release. For all Scorpion 300/2430 units.

Scorpion 350 Control Software

File

[Scorpion 350 bulk update v0.42.100 build 32\)](#)

Date release

July 9th 2019

Description

July 2019 release. Header reverse fix. For all Scorpion 350 units.

- Connect with the 'Windtools' service software (see Windtools manual)
 - In the live data tab, plot all speed sensors and check for abnormal noise levels with the machine in operation
 - Data #2011 and #2012 for Scorpion 300 and 2340
 - Data #2004, #2026, #2030, #2050, #2060 for Scorpion 350

The screenshot shows the 'SCORPION 300/2430 WIND TOOLS' interface. On the left is a navigation menu with options: Devices, System, Parameters, Date/Time, Files, Live Data (highlighted), Event Log, Data Logging, and Settings. The main area displays a 'Filter Results' search bar and a 'Show History' link. Below this, there are sections for 'LIVE DATA', 'METAL DETECTION', and 'SHEARBOLT DETECTION'. Each section contains various sensor parameters with checkboxes and input fields for values and units.

Section	Parameter	Value	Unit
METAL DETECTION	2007 Metal Detection Noise Signal Mea (Vnoise)	400	mV
	2010 Metal Detection Sample Voltage (VSample)	25	mV
	2013 Metal Detection Sensitivity Level	Level 2	
SHEARBOLT DETECTION	2003 Shearbolt Detection State	Cleared	
	2008 Feedroll Speed Input Frequency	0	Hz
	2009 Cutterhead Speed Input Frequency	337,1	Hz
	1007 Feedroll Error Speed Ratio	0,01	
	1008 Shearbolt Detection Speed Ratio	2	
	1023 Cutterhead Hours	0,1	

At the bottom right of the interface, there is a 'GRAPH (2)' button and the version number 'WindTools_2.1.0 V2.1.0.23'.



- Devices
- System
- Parameters
- Date/Time
- Files
- Live Data
- Event Log
- Data Logging
- Settings

SCORPION 300/2430 WIND TOOLS



WindTools_2.1.0 V2.1.0.23

- Adjust sensors gap and alignment, if necessary, to obtain very smooth lines
- Check metal detector signal noise at zero speed
 - ❑ Data #2010 for Scorpion 300 and 2430
 - ❑ Data #2040 for Scorpion 350
- Signal should be <math><100\text{mV}</math>. If higher, verify ground connection/bad ground OR moisture between connector (controllers, valves, etc.)
- Plot threshold, signal and mean voltage
 - ❑ Data #2006, #2007 and #2010 for **Scorpion 300 and 2430**
 - ❑ Data #2040, #2042 and #2041 for **Scorpion 350**



- Devices
- System
- Parameters
- Date/Time
- Files
- Live Data
- Event Log
- Data Logging
- Settings

SCORPION 300/2430 WIND TOOLS

Filter Results:

Show History

LIVE DATA

SHIFTER

2000 Shifter Control State

2001 Shifter Position

2005 Operation State

METAL DETECTION

2004 Metal Detection State

2005 Metal Detection Noise Signal Threshold mV (Vthreshold)

2007 Metal Detection Noise Signal Mean mV

2010 Metal Detection Sample Voltage (VSI) mV

2013 Metal Detection Sensitivity Level

SHEARBOLT DETECTION

2003 Shearbolt Detection State

2008 Feedroll Speed Input Frequency Hz

2011 Feedroll Speed RPM

2009 Cutterhead Speed Input Frequency Hz

2012 Cutterhead Speed RPM

1007 Feedroll Error Speed Ratio

2015 Feedroll to Cutterhead Speed Ratio

1008 Shearbolt Detection Speed Ratio

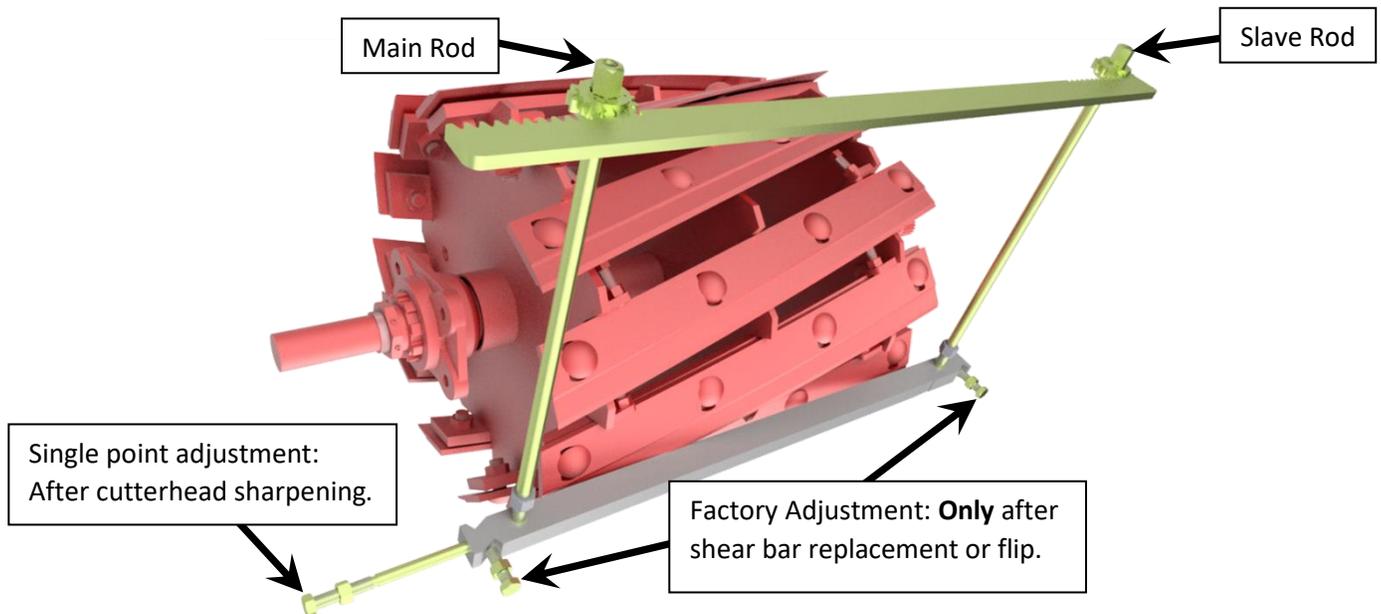
2014 Cutterhead to Feedroll Speed Ratio

1023 Cutterhead Hours

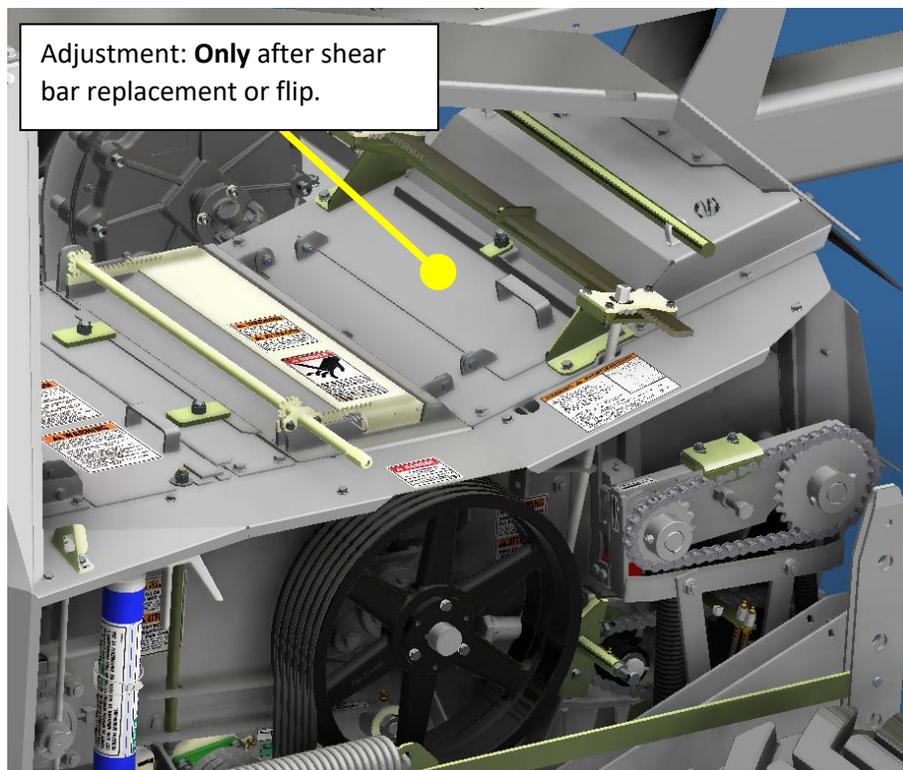
GRAPH (3)

WindTools_2.1.0 V2.1.0.23

- Ensure the lift cylinder lockout is functional (test in locked and unlocked position)
- Sharpen knives and adjust shear bar from the 'Single point adjustment' (Not necessary if machine has just been delivered from DION-Ag)
- Ensure shear bar rack and pinion rods apply even clamping force to hold the shear bar in place. If the clamping force is not even, see operator's manual.
- When adjusting the shear bar after having been changed or flipped, see operator's manual



- Check shear bar alignment with the knives (through top door)



- Confirm jack stand is installed and functional
- Lubricate joints and check oil levels
- Oil chains
- Final clean & polish
- Provide training to the customer and a review of the operator's manual
- Fill out and submit delivery and warranty registration to DION-Ag service department via email



Contact

For assistance, contact our service department.

service@dion-ag.com

450.437.3447 ext. 227