

# **OPERATOR'S MANUAL**

## **Detasseler Tool Bar (Export Edition)**



# **HAGIE MANUFACTURING COMPANY**

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## **OPERATOR'S MANUAL**

### **Detasseler Tool Bar (Export Edition)**

(Serial No. 220001-)

**OMKK90514    ISSUE REV A    (ENGLISH)**



# Introduction

## Foreword

READ THIS MANUAL carefully to learn how to operate and service your Detasseler Tool Bar (DTB) correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your attachment may also be available in other languages. (See your John Deere dealer to order).

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your attachment and should remain with the DTB when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I. N.) in the Specification or Identification Numbers section. Accurately record all the numbers to help in tracing the attachment should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the attachment or machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received from your dealer.

This warranty provides you the assurance that Hagie/John Deere will back its products where defects appear within the warranty period. In some circumstances, Hagie/John Deere also provide field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Installing unauthorized systems, or modifying Hagie-authorized systems to exceed design weight limitations will also void warranty.

THE DTB has been specifically constructed for the removal of tassels from the tops of corn plants ("Intended Use"). Intended Use also implies the observance of all user and maintenance instructions prescribed by the manufacturer.

THE DTB MUST ONLY be used and serviced by authorized persons who are informed about the hazards and correct operation of the attachment. The relevant safety regulations and all other generally accepted safety, technical, medical and traffic instructions must be observed.

If you are not the original owner of the DTB, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help

Hagie/John Deere notify you of any issues or product improvements.

## Pre-Delivery

After the DTB has been assembled, inspect to verify that it is in good running order before delivering to the customer. The following checklist is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Verify all safety decals are in place. (See Safety Signs section in this manual for decal locations).
- All grease fittings have been lubricated.
- Hydraulic systems operate properly and do not leak.
- Any parts scratched in shipment have been touched up with paint.
- Factory made entries in the Gen 4 display have been confirmed and/or reset to agree with calibration values.
- All mandatory open Product Improvement Programs (PIP) should be completed before delivering the DTB to the customer.

The DTB has been thoroughly checked and to the best of my knowledge is ready for delivery to the customer.

|         |  |
|---------|--|
| Signed: |  |
| Date:   |  |

## Delivery

At the time the DTB is delivered, the following checklist is a reminder of information which should be conveyed directly to the customer. Check off each item as it is fully explained to the customer.

- Tell the customer to use the proper tools.
- Explain to the customer that the life expectancy of this or any other equipment depends on regular lubrication as directed in the Operator's Manual.
- Give the Operator's Manual to the customer and explain all operating adjustments.
- Make the customer aware of all the safety precautions that must be exercised while using the DTB.
- When the DTB is transported on a road or highway, lights or devices must be used for an adequate warning to operators of other vehicles. In this regard, tell the customer to check local governmental regulations.

To the best of my knowledge, the DTB has been delivered ready for field use. The customer has been fully informed as to proper care and operation.

|         |  |
|---------|--|
| Signed: |  |
| Date:   |  |

### After-Sale

The following is a suggested list of items to be checked at the dealer-customer meeting during the first operating season, usually after 50 to 100 hours of operation.

- Check with the customer as to the performance of the DTB. Make certain the proper operating adjustments are understood.
- If possible, operate the DTB to ensure that it is functioning properly.
- Go over the entire attachment for loose or missing hardware.
- Check for broken or damaged parts.
- Ask the customer if the recommended periodic lubrication has been performed.
- Review the Operator's Manual with the customer and stress the importance of proper lubrication and safety precautions.

|         |  |
|---------|--|
| Signed: |  |
| Date:   |  |

### Owner Register

|                 |  |
|-----------------|--|
| Name:           |  |
| Address:        |  |
| City:           |  |
| State:          |  |
| Model Number:   |  |
| Serial Number:  |  |
| Date Purchased: |  |

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*Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.*

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# Safety

## Recognize Safety Information



T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-29SEP98

## Understand Signal Words



**▲ WARNING**

**▲ CAUTION**

TS187—19—30SEP88

**DANGER;** The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING;** The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION;** The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

## Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ-19-16JUN09

## French and Spanish Safety Signs and Operator's Manual

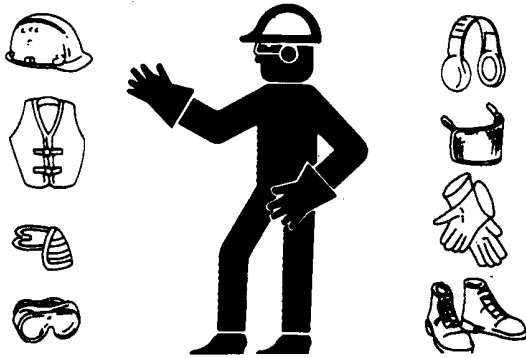


TS201—UN—15APR13

French and Spanish versions of the operator's manual and safety signs are available for this machine through authorized John Deere dealers. See your John Deere dealer.

OOU6075,0004A7E-19-12DEC18

## Wear Protective Clothing



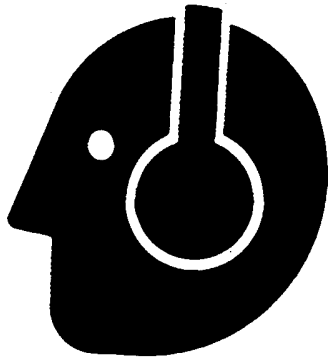
TS206—UN—15APR13

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

DX.WEAR2-19-03MAR93

## Protect Against Noise



TS207—UN—23AUG88

There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

Exposure to loud noise can cause impairment or loss of hearing.

**Always wear hearing protection.** Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

DX.NOISE-19-03OCT17

## Practice Safe Maintenance



TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX.SERV-19-28FEB17

## Avoid Backover Accidents



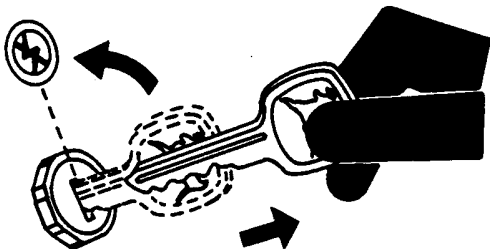
PC10857XW—UN—15APR13

Before moving machine, be sure that all persons are clear of machine path. Turn around and look directly for best visibility. Use a signal person when backing if view is obstructed or when in close quarters.

Do not rely on a camera to determine if personnel or obstacles are behind the machine. The system can be limited by many factors including maintenance practices, environmental conditions, and operating range.

DX,AVOID,BACKOVER,ACCIDENTS-19-30AUG10

## Park Machine Safely



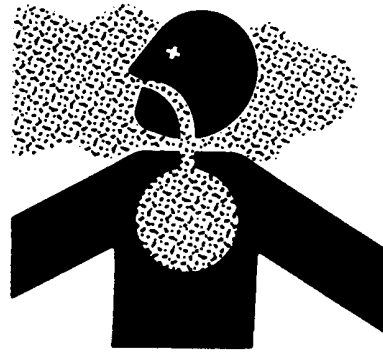
TS230—UN—24MAY89

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

DX,PARK-19-04JUN90

## Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

## Avoid Heating Near Pressurized Fluid Lines



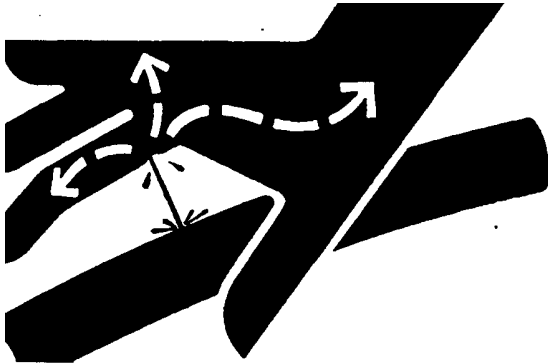
TS953—UN—15MAY90

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to

yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

## Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

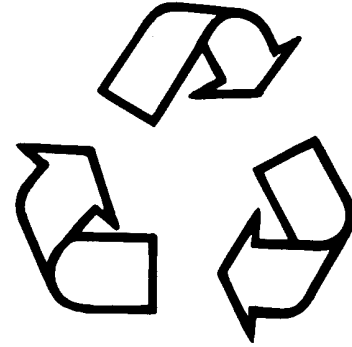
Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

## Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

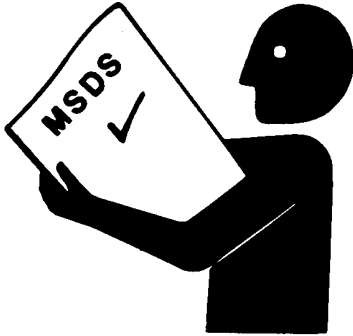
Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.

- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

## Handle Chemical Products Safely



TS1132—UN—15APR13

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)

DX,MSDS,NA-19-03MAR93

## Use Proper Tools



TS779—UN—08NOV89

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

DX,REPAIR-19-17FEB99

## Work In Ventilated Area



TS220—UN—15APR13

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

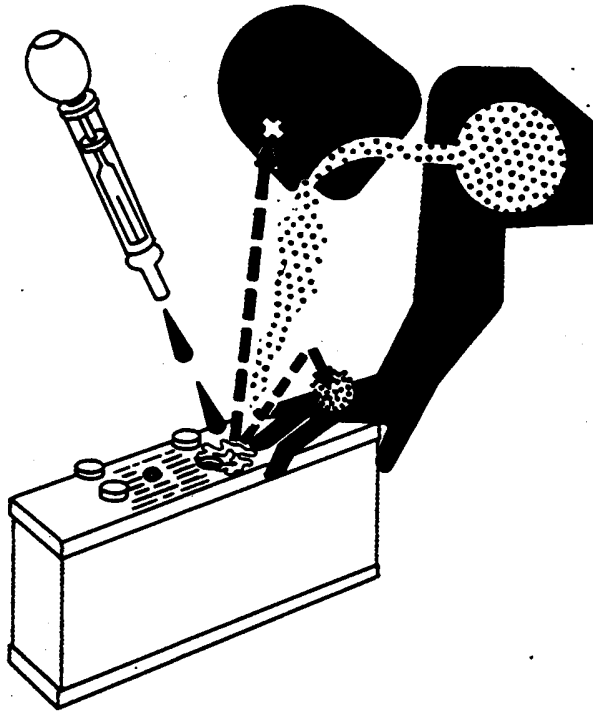
If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

DX,AIR-19-17FEB99

## Handling Batteries Safely



TS204—UN—15APR13



TS203—UN—23AUG88

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove grounded (-) battery clamp first and replace grounded clamp last.

Sulfuric acid in battery electrolyte is poisonous and strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

**Avoid hazards by:**

- Filling batteries in a well-ventilated area
- Wearing eye protection and rubber gloves
- Avoiding use of air pressure to clean batteries
- Avoiding breathing fumes when electrolyte is added
- Avoiding spilling or dripping electrolyte
- Using correct battery booster or charger procedure.

**If acid is spilled on skin or in eyes:**

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes. Get medical attention immediately.

**If acid is swallowed:**

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 qt.).
3. Get medical attention immediately.

**WARNING:** Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

DX,WW,BATTERIES-19-02DEC10

**Remove Accumulated Crop Debris**



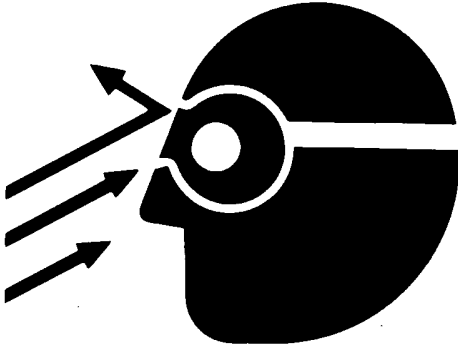
TS227—UN—15APR13

The build up of chaff and crop debris in the engine compartment, on the engine, in and around the exhaust aftertreatment housing, and near moving parts is a fire hazard. Check and clean these areas frequently. Before performing any inspection or service, shut off the engine, set the parking brake and remove the key.

EC82471,00003DD-19-03MAR21

**Using Compressed Air For Cleaning**

**CAUTION:** Reduce compressed air to 210 kPa (2 bar) (30 psi) or less when using for cleaning purposes. Clear area of bystanders, guard against flying debris, and wear personnel protective equipment, including eye protection.



TS266—UN—23AUG88  
AG,OUO6043,83-19-28JUL99

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## Maintain a Safe Area Around the Machine

Machine movements and parts in motion can cause serious injury. Product cannot be completely shielded due to application. Keep away from the application system while it is engaged.

EC82471,0000342-19-01SEP20

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## Operator Ability

- Machine owners must make sure that operators are responsible, trained, have read the operating instructions and warnings, and know how to operate the machine properly and safely.
- Age, physical ability, and mental capacity can be factors in machine-related injuries. Operators must be mentally and physically capable of accessing the operator station and/or controls, and operating the machine properly and safely.
- Never allow a child or an untrained person to operate the machine. Instruct all operators not to give children a ride on the machine or an attachment.
- Never operate machine when distracted, fatigued, or impaired. Proper machine operation requires the operator's full attention and awareness.

DX,ABILITY-19-07DEC18

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## Observe Road Traffic Regulations

Always observe local road traffic regulations when using public roads.

OUO6075,0000032-19-22JAN01

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## Check Machine Safety

Always check the road and general operating safety of the machine before using.

FX,READY-19-28FEB91

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## Working Area

The working area is defined and required as follows:

- an area of 1 meter around the machine for changing out and cleaning of the detasseling heads
- the seat on the machine from where the detasseling work is carried out

Danger zones are taken to mean:

- the working area of the operator in which changing out and cleaning of the detasseling heads takes place
- the "maneuvering zone" of the components of the detasseler, and in particular a 1 meter zone around the machine as a whole and the area required to fold out the outriggers

EC82471,000007A-19-18OCT21

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## Before Operating

- Become familiar with operator's manual, machine decals, and Safety section of this manual.
- Remove foreign objects from machine.
- Become familiar with all controls effecting machine functions.
- Make sure everyone is clear of the machine. Never allow riders on the machine or near machine while it is running.
- Inspect machine for loose, missing, or damaged hardware and parts. Replace any missing or damaged parts with proper specification items.
- Verify shields and guards are in place and in good condition before starting.

EC82471,0000340-19-01SEP20

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## Operate Safely

Always check general operating safety of the machine before using.

Before operating machine always check immediate vicinity of the machine for people and obstructions. Ensure adequate visibility.

Operate vehicle only when all guards are fitted and in their correct position.

DO NOT start engine with multi-function lever engaged.

DO NOT operate close to a ditch or creek.

DO NOT fold or unfold the tool bar near overhead wires.

Always come to a complete stop before reversing directions.

Drive slowly over rough ground.

Slow down when turning.

Always shut engine off when leaving machine. Remove

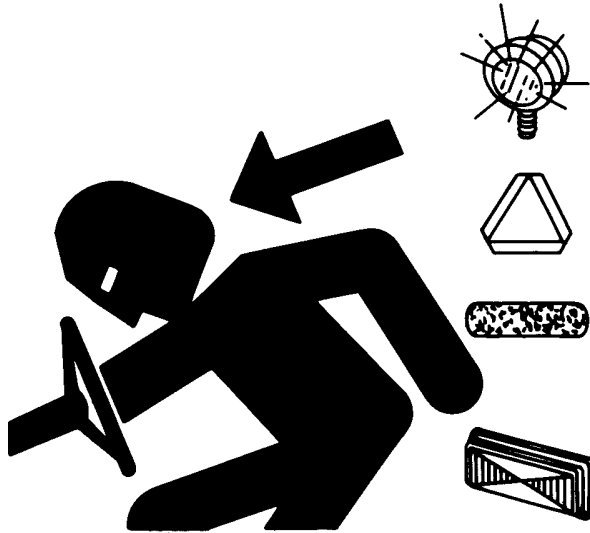
key when leaving machine unattended. Park brake engages when engine is turned off regardless of multi-function lever position.

Keep hands, feet, and clothing away from moving parts.

Wear relatively tight and belted clothing to prevent from being caught on some part of the machine.

EC82471,000007B-19-18OCT21

## Use Safety Lights and Devices



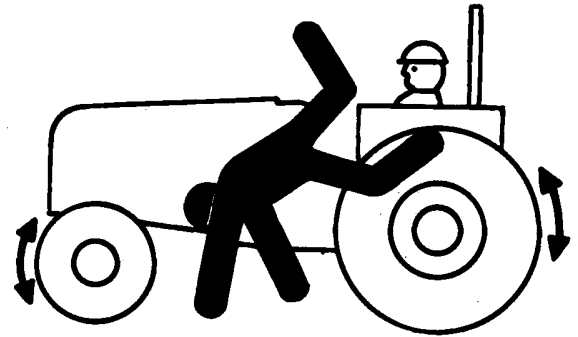
TS951—UN—12APR90

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.

DX,FLASH-19-07JUL99

## Keep Riders Off Machine



TS290—UN—23AUG88

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

DX,RIDER-19-03MAR93

## Passenger Seat



TS1730—UN—24MAY13

The passenger seat is intended only for transport of a passenger in on-road operations (that is, transport from farm to field).

If it is necessary to transport a passenger, the passenger seat is the only means of transporting a passenger provided by John Deere.

DX,SEAT,EU-19-28FEB17

## Vibration

All operator's seats approved by John Deere are component type-approved in accordance with 78/764/EEC or (EU) 1322/2014 Annex XIV, being allocated an average of the vibration acceleration actually measured at the seat ( $a_{ws}$ ), equivalent to  $\leq 1.25 \text{ m/s}^2$ .

This value must NOT be used to calculate vibration stress as per 2002/44/EC! Local John Deere dealers can provide assistance in assessing vibration stress.

Measures to reduce vibration may include:

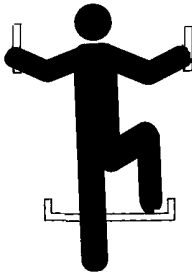
- Appropriate style of driving, e.g. not too fast
- Suspended front axle
- Suspended cab
- Correctly adjusted operator's seat
- Correct tire pressure

DX,VIBRATION,EU-19-28FEB17

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

OUC6092,00009E7-19-26OCT15

## Use Steps and Handholds Correctly



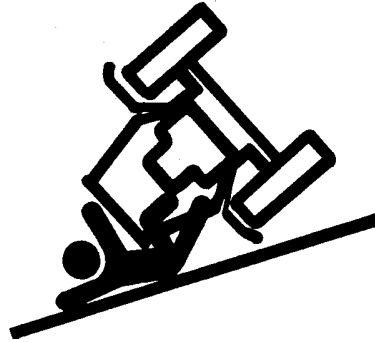
T133468—UN—15APR13

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

## Use Caution On Hillsides



RW13093—UN—07DEC88

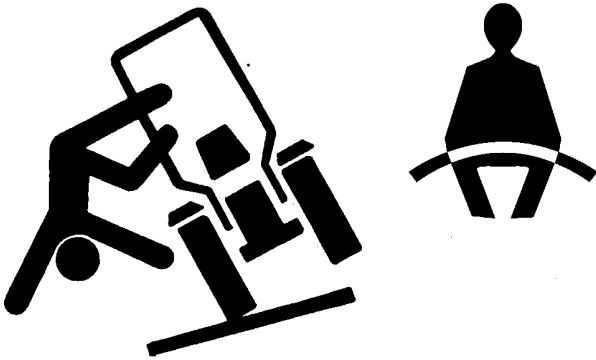
Avoid holes, ditches, and obstructions which may cause sprayer roll-over, especially on hillsides. Avoid sharp turns on hills.

Never drive near the edge of a gully or steep embankment.

Stay off slopes that are too steep for operation.

OUC6092,0000F99-19-28JUN07

## Use Seat Belt Properly



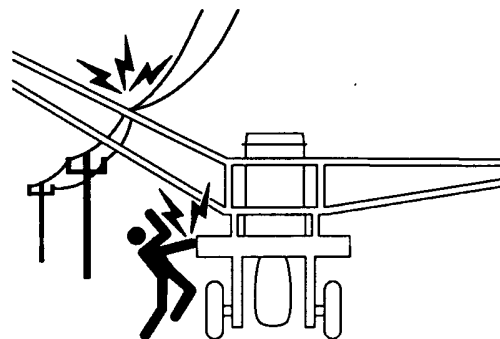
TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

## Transport and Operate Safely



N44191—UN—27APR92

Keep away from overhead power lines. Serious injury or death to you or others can result should machine contact electrical wires. Know the transport height, tool bar operating height and tool bar folding height of your machine.

Perform a complete assessment of the field before performing any detasseling operations to decide the best working method and tool bar folding/unfolding operations.

Stop slowly to avoid “nose diving”.

Keep SMV emblem and reflectors clean and in place.

Do not exceed maximum transport speed specified in the operator manual.

Reduce speeds for icy, wet, graveled or soft roadway surfaces.

Check and follow local regulations for equipment size, lighting and marking before driving on public roadways.

EC82471,000007C-19-18OCT21

## Transporting Machine Using Trailer

**CAUTION:** Avoid collisions. Before transporting on a public roadway check and follow local regulations regarding size limits, the use of lights, flags, signs, pilot vehicles, and other requirements for transporting loads using trailer.

KB78086,0000B63-19-17NOV11

## Prevent Machine Runaway



TS177—UN—11JAN89

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.

DX,BYPAS1-19-29SEP98

## Handle Fuel Safely—Avoid Fires



TS202—UN—23AUG88

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.

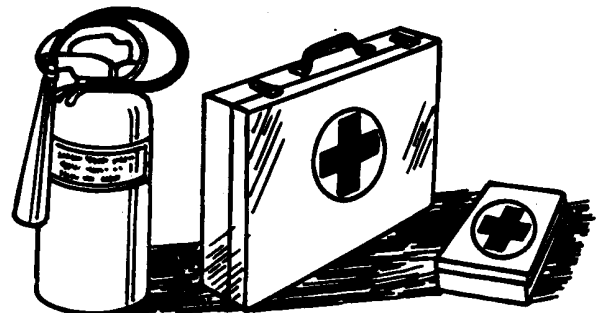
Use only an approved fuel container for transporting flammable liquids.

Never fill fuel container in pickup truck with plastic bed liner. Always place fuel container on ground before refueling. Touch fuel container with fuel dispenser nozzle before removing can lid. Keep fuel dispenser nozzle in contact with fuel container inlet when filling.

Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1-19-12OCT11

## Prepare for Emergencies



TS291—UN—15APR13

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance

service, hospital, and fire department near your telephone.

DX,FIRE2-19-03MAR93

## In Case of Fire



TS227—UN—15APR13

### CAUTION: Avoid personal injury.

Stop machine immediately at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. Because fire grows and spreads rapidly, get off the machine immediately and move safely away from the fire. Do not return to the machine! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

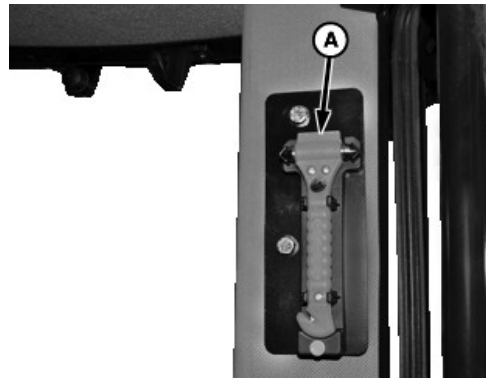
Read the fire extinguisher instructions and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

If your extinguisher does not have instructions, follow these general guidelines:

1. Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

DX,FIRE4-19-22AUG13

## Emergency Exit



N93801—UN—15AUG11

A—Hammer



SSL209118—UN—21MAY15

Break Window and Exit Decal

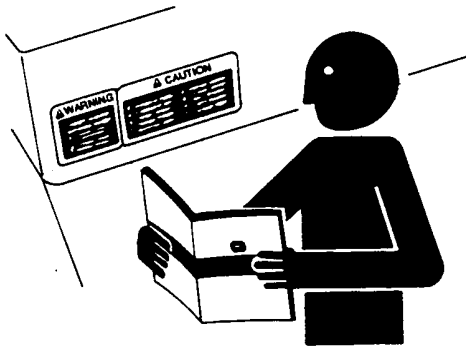
### CAUTION: Cover eyes, face and uncovered skin from jagged or broken glass when using break glass hammer.

In an emergency, exit the cab through the entrance door when possible. In the event an exit cannot be achieved via the entrance door, a hammer (A) is fitted in the cab that can be used to break a window to use as an exit.

EC82471,000035B-19-03NOV20

# Safety Signs

## Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09

## Cutter Blade Decal



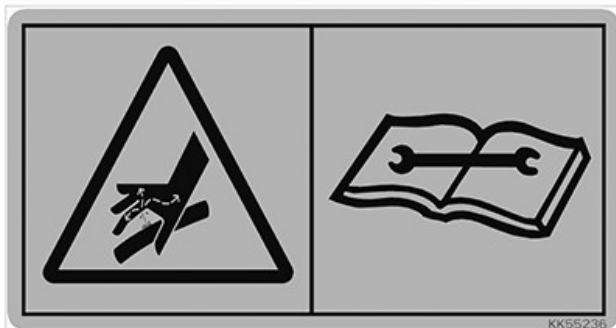
SS650258—UN—30MAR21

Located on each cutter head assembly

**CAUTION:** Severing of fingers or hand. Do not place fingers or hand near a moving cutter blade, attempt to stop a moving cutter blade, or perform maintenance near a moving cutter blade.

EC82471,0000419-19-18OCT21

## Hydraulic Oil Under Pressure Decal



SSKK55236—UN—26APR21

Located on front cross tube (2)

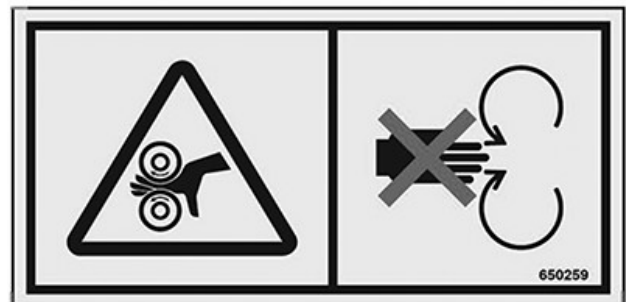
**WARNING:** Avoid serious injury from contact with hydraulic oil and gas under pressure. Before removing hydraulic components, disassembling or changing accumulators:

1. Relieve system hydraulic pressures. Refer to Operator Manual and Repair Manual for system information.
2. Stop engine and remove key.

Use only DRY NITROGEN for recharging accumulator. See your John Deere dealer.

EC82471,00004D8-19-20APR21

## Quad Puller Decal



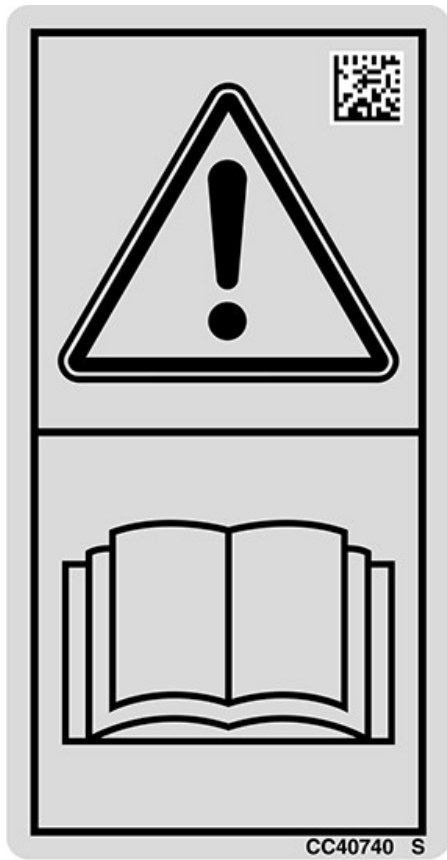
SS650259—UN—30MAR21

Located on each quad puller assembly

**CAUTION:** Risk of injury from rotating tires. Do not place fingers or hand near moving quad puller tires, dislodge a wedged object from moving tires, or perform maintenance near moving tires.

EC82471,000041A-19-29MAR21

## Attachment Decal



CC40740—UN—05AUG20

*Located on transom (2)*

**⚠ CAUTION:** Attachment may detach and fall to the ground if connection point is not in fully locked position. Do not operate machine without full engagement of pin lock assembly. See operator's manual.

EC82471,0000005-19-03AUG21

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# MD4 Display

## Determine Machine Specific Information

Information may vary depending on machine options and various software configurations. Some items are only displayed if the machine is equipped with the associated option. Verify the hardware and software components that are installed on your machine in order to choose the correct information.

EC82471,0000240-19-09JUL20

## Attachment - Detasseler Tool Bar (DTB)

### Detasseler Tool Bar (DTB)

#### Tasseltrol™ XL/LS System 12 - Light Sensing/Depth Control

#### Lifts and Motors (Auto/Manual Mode)

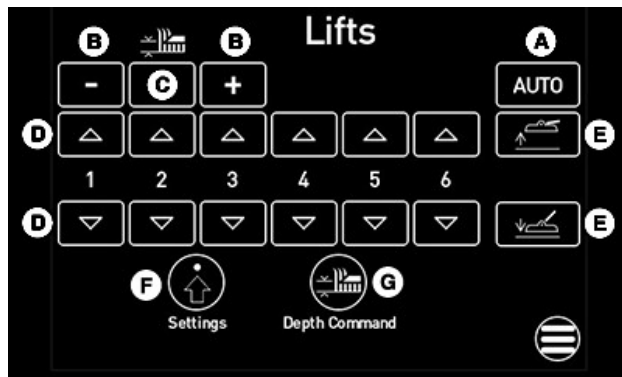
In **MANUAL MODE**, the lifts move manually, or not using the photoeyes to adjust the lift height. In **AUTO MODE**, the lifts will automatically raise if both photoeyes are covered, and lower if the bottom photoeye is not covered.



FA10138—UN—09JUL20

A—Attachment Button

1. On the main menu, press the attachment button (A).



FA10476—UN—31OCT20

DTB Lifts

- A—Auto Button
- B—“-”/“+” Buttons
- C—Depth Command Actuator Button
- D—Up/Down Arrow Buttons
- E—Lift Icon Buttons
- F—Settings Button
- G—Depth Command Button

2. Press the auto button (A) to enable manual or auto mode for **all lifts**.

*NOTE: This button will always say “AUTO”, but will illuminate when all lifts are in auto mode.*

3. Press the “-” or “+” buttons (B) to increase/decrease depth command height for all lifts.

*NOTE: Press the depth command actuator button (C) to set all depth command actuators to desired height.*

4. Press and hold the desired up or down arrow button (D) for the corresponding lift number to raise/lower the individual lifts.
5. Press and hold desired lift icon button (E) (up or down) to raise/lower all lifts together.

*NOTE: Same function can be done through the main lift button on the multi-function lever.*

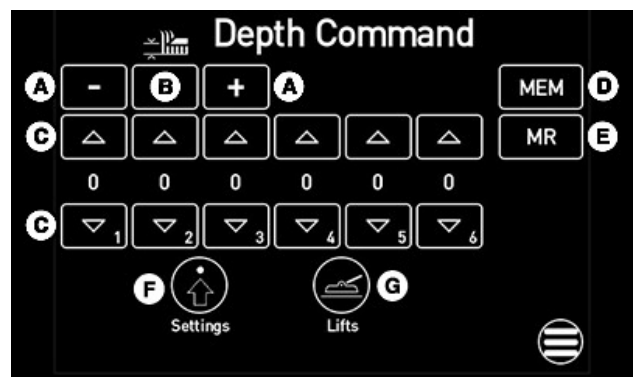
6. Press the settings button (F) to navigate to the DTB settings page.
7. Prep to Fold - press BOTH left and right level buttons on the multi-function lever either up or down **simultaneously**. The tool bar will then adjust the lifts and the depth command actuators will position to allow the main fold to be folded.

*NOTE: If equipped with the 4-2 detasseler tool bar, there will be a 10 second delay to allow the tool bar to retract.*

*NOTE: Once the tool bar is prepped to fold, a “DTB Prep to Fold Complete” message will appear on the display. Complete the folding procedure by pressing the reconfigurable A switch followed by the corresponding left/right level switch on the multi-function lever in the UP position to fold the main fold sections.*

8. Press the depth command button (G) to navigate to the DTB depth command page.

### Depth Command



FA10477—UN—31OCT20

DTB Depth Command

- A—“-”/“+” Buttons
- B—Depth Command Actuator Button
- C—Up/Down Arrow Buttons
- D—Memorize (MEM) Button
- E—Memory Recall (MR) Button
- F—Settings Button

**G—Lifts Button**

- Press the “-” or “+” buttons (A) to increase/decrease depth command height for all lifts.

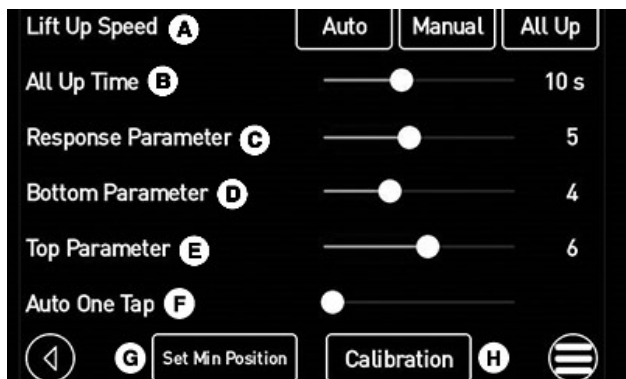
**NOTE:** Press the depth command actuator button (B) to set all depth command actuators to desired height.

- Press the desired up/down arrow button(s) (C) to raise/lower the corresponding depth command actuators.
- MEM (Memorize) - press the MEM button (D) to allow the system to remember the position of all photoeyes.
- MR (Memory Recall) - press the MR button (E) to allow the photoeyes to go back to the previously memorized position.
- Press the settings button (F) to navigate to the DTB settings page.
- Prep to Fold - press BOTH left and right level buttons on the multi-function lever either up or down **simultaneously**. The tool bar will then adjust the lifts and the depth command actuators will position to allow the main folds to be folded.

**NOTE:** If equipped with the 4-2 detasseler tool bar, there will be a 10 second delay to allow the tool bar to retract.

**NOTE:** Once the tool bar is prepped to fold, a “DTB Prep to Fold Complete” message will appear on the display. Complete the folding procedure by pressing the reconfigurable A switch followed by the corresponding left/right level switch on the multi-function lever in the UP position to fold the main fold sections.

- Press the lifts button (G) to navigate to the DTB lifts page.

**Settings**

DTB Settings

FA10225—UN—31OCT20

- A—Lift Up Speed
- B—All Up Time
- C—Response Parameter

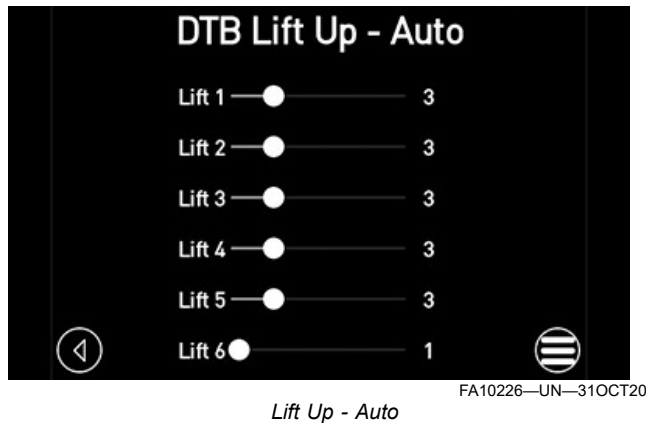
- D—Bottom Parameter
- E—Top Parameter
- F—Auto One Tap
- G—Set Min Position Button
- H—Calibration Button

- Lift Up Speed (A)** - Press the auto, manual, or all up button to navigate directly to the corresponding DTB lift up page to adjust lift speed for desired mode.
- All Up Time (B)** - Amount of time that the lifts will raise in the “all up” state. Slide the slide bar left or right to increase/decrease the amount of time (in five second intervals) that the lifts will travel up after the main lift button on the multi-function lever is pressed UP momentarily.

**NOTE:** With a value of 0 seconds, the lifts will stop raising when the all up switch is released.

- Response Parameter (C)** - Time delay between a change in the photoeye status until the lift responds. A higher number means that the lift will wait longer between a change in photoeye status until that lift responds to the change. (Example: Time delay between bottom photoeye being uncovered until that lift moves down. Also, time delay between the top photoeye being covered until that lift moves up).
- Bottom Parameter (D)** - Quickness of response for lift to move down when the bottom photoeye is uncovered. A higher number means that the output will reach the maximum auto speed for that lift faster.
- Top Parameter (E)** - Quickness of response for lift to move up when the top photoeye is covered. A higher number means that the output will reach the maximum auto speed for that lift faster.
- Auto One Tap (F)** - When this parameter is enabled (slide the slide bar right to activate, or left to deactivate) and the lift is in auto mode, that lift will lift up when the lift up button is pressed for that lift for the “all up time”. To set the lift back to auto mode, press the main lift button on the multi-function lever in the DOWN position, or the auto button on the DTB lifts/motors page.
- Set Minimum Lift Positions (Auto Mode)** - press the set min position button (G) to navigate to the DTB minimum lift positions page.
- Calibration** - press the calibration button (H) to navigate to the calibration page.

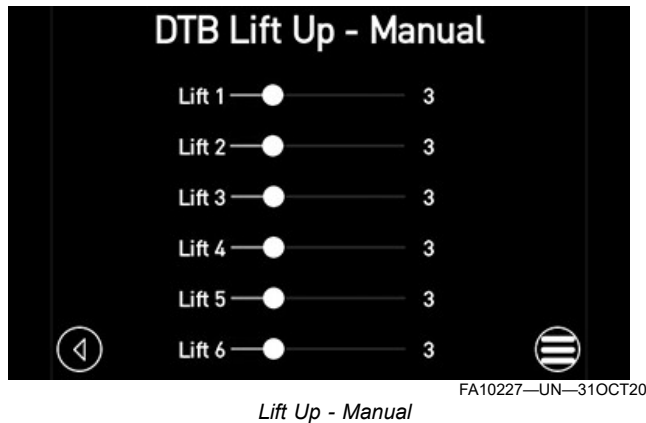
**Lift Up (Auto)**



Lift Up - Auto

Each lift speed can be adjusted in auto mode. Slide the slide bar right to increase speed, or left to decrease speed.

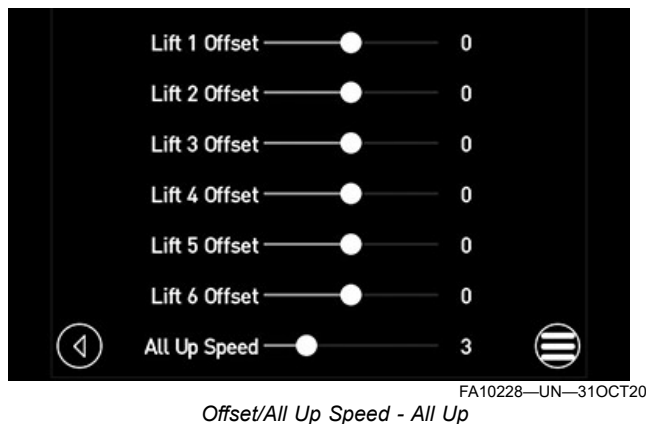
### Lift Up (Manual)



Lift Up - Manual

Each lift speed can be adjusted in manual mode. Slide the slide bar right to increase speed, or left to decrease speed.

### Offset/All Up Speed (All Up)

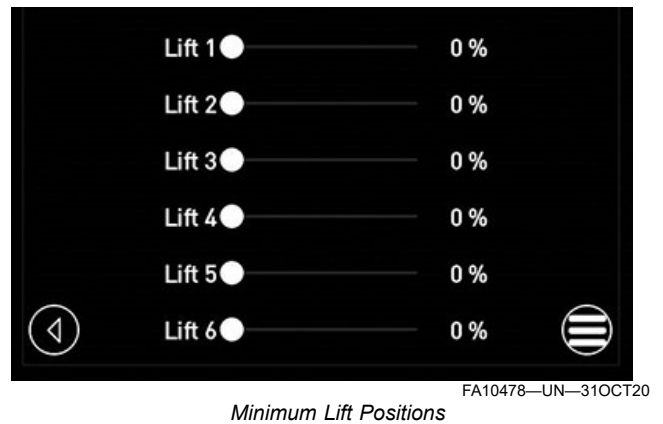


Offset/All Up Speed - All Up

Set all-up speed for entire tool bar by adjusting the all-up speed (last parameter). Slide the slide bar right to increase speed, or left to decrease speed.

**NOTE:** Each lift can be offset from this overall speed in order to match speeds of the other lifts.

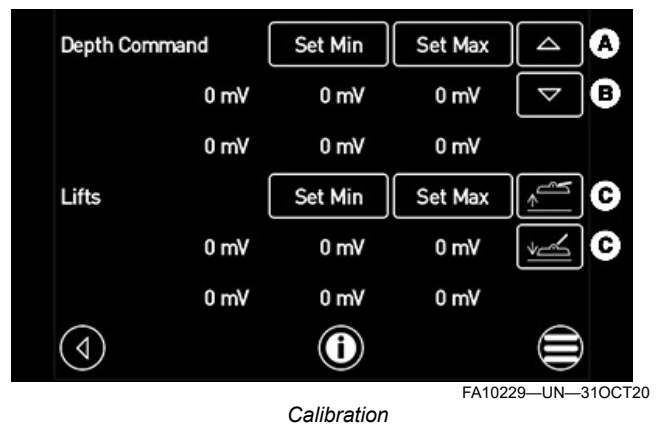
### Set Minimum Lift Position



Minimum Lift Positions

Each lift has a position between 0-100%. Setting this value above 0% in auto mode, if the lift drops below the designated height, the lift will not drop any further. Slide the desired lift slide bar(s) right to increase minimum lift height, or left to decrease minimum lift height.

### Calibration



Calibration

A—Depth Command Up Button  
B—Depth Command Down Button  
C—Lift Icon Buttons

1. Sensor Calibration - press the depth command UP button (A) to achieve lowest position sensor reading, then press SET MIN.
2. Press the depth command DOWN button (B) to achieve highest position sensor reading, then press SET MAX.
3. For lifts, move lifts to lowest position, then press SET MIN. Move lifts to highest position, then press SET MAX. Press and hold desired lift icon button (C) up or down to raise/lower all lifts together.

*NOTE: Sensor calibration only needs to be performed if a position sensor is replaced or the position sensor is not reading correctly.*

EC82471,0000404-19-25MAR21

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# Operate the DTB

## Operator Presence Switch (OPS)

Your machine is equipped with an Operator Presence Switch (OPS) located inside of the operator's seat, which protects the operator from exposure to moving parts or hazards when operating the detasseler quad pullers or cutter heads. This safety feature introduces an electrical interlock that ensures that when the operator is out of the cab, the operation of these functions have stopped. This is achieved by using the OPS to prevent the quad pullers or cutter heads from operating if the operator is not seated in the operator's seat for two (2) seconds.

*NOTE: When the operator leaves the operator's seat while the machine is running, a warning message will appear on the MD4 display to alert the operator to operate the machine from the operator's seat.*

EC82471,0000418-19-25MAR21

## Before Field Operation

**CAUTION:** Do not turn on the machine until you are sure that nobody is in the danger zone.

Verify that machine is properly prepared for field operation. Check the following items before operating:

- All maintenance has been performed.
- Operator is familiar with all machine controls, their functions, and safe operations. (In addition to this manual, see Operator's Station and Safety sections in your machine Operator's Manual).

EC82471,0000405-19-30MAR21

## Field Operation

**CAUTION:** Do not turn on the machine until you are sure that nobody is in the danger zone.

1. Ensure the multi-function lever is in the NEUTRAL position and park brake is engaged.
2. Start the engine.
3. Ensure the machine is in FIELD mode on the MD4 display.

*NOTE: The operator changes from field to transport mode through the transport switch on the CommandARM™.*

4. Unfold DTB and position tool bar at desired operating height. See DTB Unfold/Fold in the 6 Row, 8-10 Row, and 12-18 Row DTB section.

CommandARM is a trademark of Deere & Company



FA10138—UN—09JUL20

### A—Attachment Button

5. Press the attachment button (A) on the MD4 display main menu.
6. Program the Tasselrol™ XL system through the MD4 display. (See Attachment - Detasseler Tool Bar in the MD4 Display section).



FA10719—UN—23MAR21

### A—Main Motor Switch

7. Press the main motor switch (A) on the multi-function lever to activate the detasseling head motors.



FA10767—UN—30MAR21

### A—Engine Speed Increase Switch

8. Press the engine speed increase switch (A) on the CommandARM™ to achieve recommended engine RPM to operate the detasseling head motors. The detasseling heads will be available for immediate use by increasing engine RPM.

**IMPORTANT:** Operating the detasseling system below the recommended engine throttle (2100 RPM) will not provide the system with adequate hydraulic oil flow and may cause degraded or poor performance.



N135170—UN—13FEB18

**A—Multi-Function Lever**

9. Push the multi-function lever (A) forward slowly to start forward motion.

EC82471,0000406-19-13SEP21

## Attachment Headlights

*NOTE: The attachment headlights operate in both Field and Road mode.*

### Operating the Attachment Headlights

#### Road Lights (Headlights)



FA10968—UN—19MAY21

*Road Lights*

#### **A—Road Light**

The road lights are to be used when traveling on a public roadway at night.



H127046—UN—26SEP19

*Road Lights Switch*

- Press the road lights switch on the CommandARM™ to turn road lights on. Press again to turn off. Indicator light is on when active.

*NOTE: High/low beam is activated with the lever on the steering column.*

*NOTE: The road lights are enabled when the key switch is in the RUN position. However, prolonged use of these lights without the engine running is not recommended.*

## Hazard Lights



FA10969—UN—19MAY21

*Hazard Lights*

#### **A—Hazard Light**

The hazard lights are to be used at any time (day or night) that you are traveling on a public roadway, unless prohibited by law.

*NOTE: The machine's drive state must be in Road mode to activate the hazard lights.*

*NOTE: The hazard lights are tied to battery power and will operate when the machine is off.*

*NOTE: The hazard light flashers are also activated with the corresponding turn signal.*

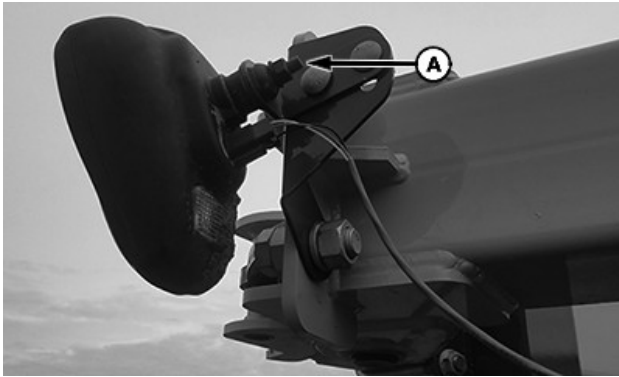


H127979—UN—04NOV19

*Hazard Lights Switch*

- Press the hazard lights switch on the CommandARM™ to turn hazard lights on. Press again to turn off. Indicator light is on when active.

## Adjusting the Attachment Headlights



FA10970—UN—19MAY21

### **A—Headlight Mounting Bolt**

1. Using a 3/4 in wrench, loosen headlight mounting bolt (A).
2. Pivot headlight to desired position.
3. Retighten headlight mounting bolt.
4. Repeat on opposite side of machine.

EC82471,0000407-19-20SEP21

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## 6 Row, 8-10 Row, 12-18 Row DTB

### Detasseling System Components

The detasseling system is a constantly monitored and continuously adjusted system. The MD4 display in the cab receives data from the photo light sensors to determine cutting/pulling height.

**IMPORTANT: DTB attachment maintenance and repair, including clearing blockages/unplugging detasseler components should be performed by qualified service personnel only.**

### Detasseler Tool Bar (DTB) Attachment



DTB Attachment

The DTB attachment paired with the STS provides a high clearance design along with adjustable automatic height control to perform timely detasseling of corn crops when timing is critical. The DTB unites functionality with option customizing to provide a solution that suits the individual needs of your operation.

### LS System 12/Depth Command



LS System 12/Depth Command

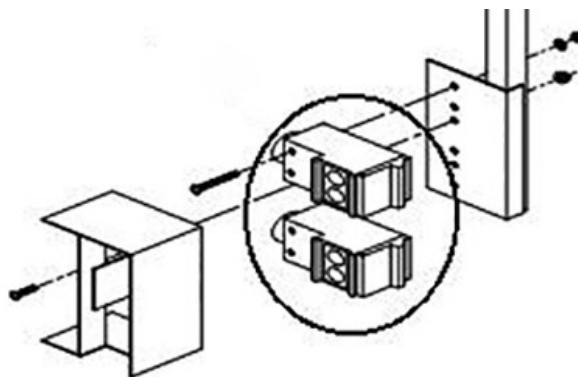
The LS (light sensing) System 12/Depth Command is an automatic height adjustment system controlled by the MD4 display in the cab.

### LS Photo Light Sensors

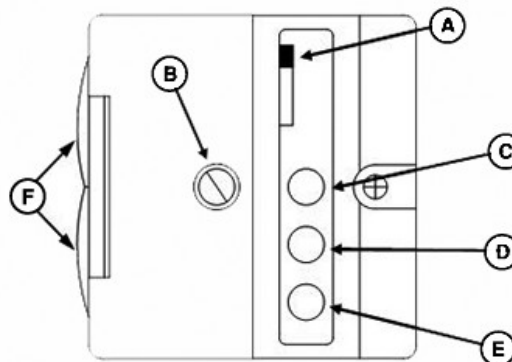


LS Photo Light Sensor

The LS Photo Light Sensors detect crop height and send a signal to the LS System 12/Depth Command, which controls automatic height adjustment.



LS Photo Lights (Upper/Lower)



- A—LT/DK Switch
- B—Sensitivity Adjustment Screw
- C—Yellow Indicator Light
- D—Green Indicator Light
- E—Red Indicator Light
- F—Photo Lenses

- The upper and lower LS photo lights are equipped with LED indicator lights (A, C, D, E) that indicate operation status.
- The LT/DK (light/dark) switch (A) changes the activated condition of the green LED light from On (LT) to Off (DK).

**NOTE:** The sensitivity adjustment screw (B) should always be set to **maximum**.

- The yellow indicator light (C) indicates that the power is ON.
- The green indicator light (D) indicates output energized (sending a signal to the Tasseltrol™ XL system).
- The red indicator light (E) indicates that the photo light is receiving reflected signal.

### Cutter Heads



Cutter Head

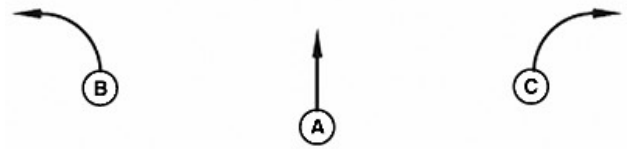
FA10759—UN—30MAR21

The hydraulically-driven cutter heads go through rows of corn and cut the tassels from the top of corn plants.

- Min Cutter Head Speed = 2900 RPM
- Mid Cutter Head Speed = 3000 RPM
- Max Cutter Head Speed = 3100 RPM

**NOTE:** It is recommended to set the cutter heads as close to "mid" speed range as possible.

**IMPORTANT:** Cutting blades must operate in correct direction.



A—Front  
B—Blade Rotation LEFT of Operation  
C—Blade Rotation RIGHT of Operation

FA10761—UN—30MAR21

### Quad Pullers

**NOTE:** Ensure quad puller tires have equal pressure. Check tire pressure daily.

**NOTE:** Maximum quad puller tire pressure is .7 bar (68.9 kPa) (10 psi).



Quad Pullers

FA10760—UN—30MAR21

The hydraulically-driven quad pullers go through rows of corn and pull the tassels from the top of corn plants by catching it between the quad puller tires moving at high speed in opposite directions.

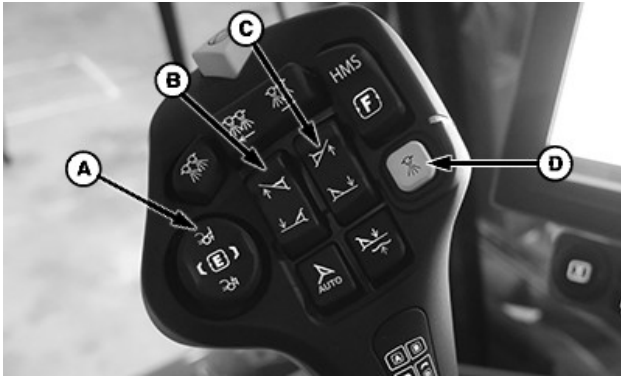
- Min Quad Puller Speed = 375 RPM
- Mid Quad Puller Speed = 400 RPM
- Max Quad Puller Speed = 425 RPM

**NOTE:** It is recommended to set the quad pullers as close to "mid" speed range as possible.

### MD4 Display

The MD4 display in the cab is used for programming detasseling heads to control tool bar functions, such as lift/motor control (auto/manual mode), depth command, light sensing, and calibration.

### Multi-Function Lever



FA10762—UN—30MAR21

Multi-Function Lever

- A—Main Lift Switch
- B—Left Level Switch
- C—Right Level Switch
- D—Main Motor Switch

- The main lift switch (A) is used to raise or lower all lifts simultaneously.

**NOTE:** In addition, the same all up/down function can be controlled by pressing the lift icon buttons (up/down) on the MD4 display “DTB Lifts/Motors” page. (See the MD4 Display section for further information).

- The left level switch (B) and right level switch (C) are used to hydraulically unfold/fold the left and right-hand outriggers.
- The detasseling head motors are controlled by the main motor switch (D). This switch must be in the ON position to enable detasseling head operation.

**NOTE:** The main motor switch is used for detasseling functions. This switch is referred to as the spray system master switch for spray application. Refer to your machine Operator’s Manual for further information.

EC82471,000041B-19-13SEP21

## DTB Unfold/Fold

### Unfolding/Folding the DTB Attachment

**CAUTION:** Tool bar moves quickly. Keep everyone out of the folding and unfolding area of the DTB attachment. Failure to stay out of the area can result in injury or death.

**NOTE:** The machine must be in **FIELD** mode to unfold/fold the DTB attachment.

**NOTE:** The multi-function lever must be in **NEUTRAL** and transport lock must be disengaged to unfold or fold the tool bar.



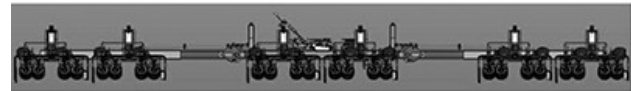
FA10766—UN—30MAR21

- A—Reconfiguration Switch A
- B—Left Level Switch
- C—Right Level Switch

1. **To Unfold:** Press reconfiguration switch A (A).

**NOTE:** Ensure the multi-function lever is in the **NEUTRAL** position. If the machine is put into gear during fold operation, tool bar movement will stop.

2. Press and hold left level switch (B) and right level switch (C) in the **DOWN** position until outriggers are fully unfolded, then release switches.



FA10763—UN—30MAR21

4-2 DTB (If Equipped)

3. **If equipped with the 4-2 DTB**, continue to press and hold the left and right level switches to extend the left and right-hand slide extensions.

**IMPORTANT:** Stagger detasseling heads before folding the outriggers. Failure to comply will result in property damage.

**IMPORTANT:** If equipped with the 4-2 DTB, ensure the outer slide extensions are fully retracted before folding the outriggers. Failure to comply will result in property damage.

1. **To Fold:** Stagger detasseling heads. (See Stagger Detasseling Heads in this section).



FA10765—UN—30MAR21

A—Left Level Switch  
B—Right Level Switch

2. Prep to Fold - press BOTH left level switch (A) and right level switch (B) either up or down **simultaneously**. The tool bar will then adjust the lifts and the depth command actuators will position to allow the main fold sections to be folded.

*NOTE: Once the tool bar is prepped to fold, a “DTB Prep to Fold Complete” message will appear on the MD4 display.*



FA10766—UN—30MAR21

A—Reconfiguration Switch A  
B—Left Level Switch  
C—Right Level Switch

3. Press reconfiguration switch A (A).
4. Press and hold left level switch (B) and right level switch (C) in the UP position until outriggers are fully folded, then release switches.

*NOTE: If equipped with the 4-2 DTB, there will be a 10 second delay to allow the tool bar to retract. The left and right-hand slide extensions will retract first, followed by the outriggers.*

EC82471,0000408-19-01JUN21

## Stagger Detasseling Heads

**CAUTION:** Tool bar moves quickly. Keep everyone out of the folding and unfolding area of the DTB attachment. Failure to stay out of the area can result in injury or death.

**IMPORTANT:** Stagger detasseling heads before folding the outriggers. Failure to comply will result in property damage.

Before folding the outriggers, the detasseling heads must be staggered in height. Damage will occur if the detasseling heads are all the same height when the outriggers are folded.

1. Ensure the multi-function lever is in the NEUTRAL position.
2. Start the engine.
3. Ensure the machine is in FIELD mode.



FA10138—UN—09JUL20

A—Attachment Button

4. Press attachment button (A) on the MD4 display main menu.



FA10765—UN—30MAR21

A—Left Level Switch  
B—Right Level Switch

5. Prep to Fold - press BOTH left level switch (A) and right level switch (B) either up or down **simultaneously**. The tool bar will then adjust the lifts and the depth command actuators will position to allow the main fold sections to be folded.

*NOTE: Once the tool bar is prepped to fold, a “DTB Prep to Fold Complete” message will appear on the MD4 display.*

6. Slowly fold the outriggers in, making adjustments (as necessary) to the height of the detasseling heads. (See DTB Unfold/Fold in this section).

**IMPORTANT: Do not attempt to make any adjustments to the detasseling heads after the outriggers are folded. Failure to comply may cause the stalk guides or depth command sensor bars to entangle, resulting in property damage.**

#### **Alternative Method for Staggering the Detasseling Heads**

If Prep to Fold is not completed or is unable to be completed, perform the following steps to stagger the detasseling heads.

- Lower the two center detasseling heads all the way DOWN.
- Raise all detasseling heads **on one side** to approximately half of the fully raised height.
- Raise detasseling heads **on the opposite side** to the fully raised height.
- Slowly fold the outriggers in, making adjustments (as necessary) to the height of the detasseling heads. (See DTB Unfold/Fold in this section).

**IMPORTANT: Do not attempt to make any adjustments to the detasseling heads after the outriggers are folded. Failure to comply may cause the stalk guides or depth command sensor bars to entangle, resulting in property damage.**

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EC82471,000041C-19-27MAY21

# Quick-Tach

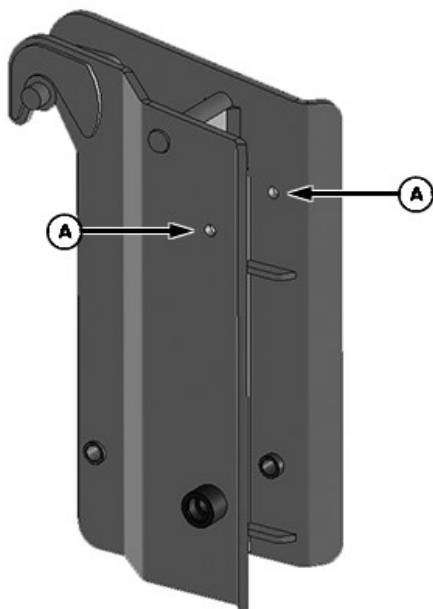
## Connecting/Disconnecting the DTB Attachment

**CAUTION:** Monitor both sides of the attachment during fold procedure. Select a safe area that is solid and level before unfolding/folding the attachment. Clear area of personnel. Check for overhead obstructions.

**CAUTION:** Do not unfold/fold the attachment near power lines. Contact with power lines can result in serious injury or death.

**CAUTION:** Turn the engine OFF and remove key before connecting/disconnecting any hoses or electrical lines. Failure to comply may result in serious injury or death.

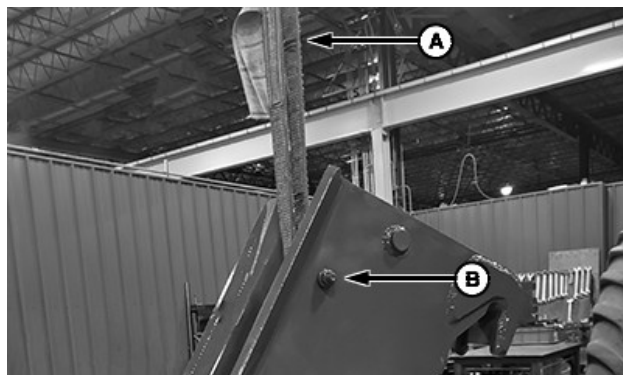
## Installing the Adapter Weldment



FA11334—UN—24AUG21

A—Lift Hole (2)

1. Install a 5/8 x 7 in bolt through the two (2) lift holes (A) on the adapter weldment.

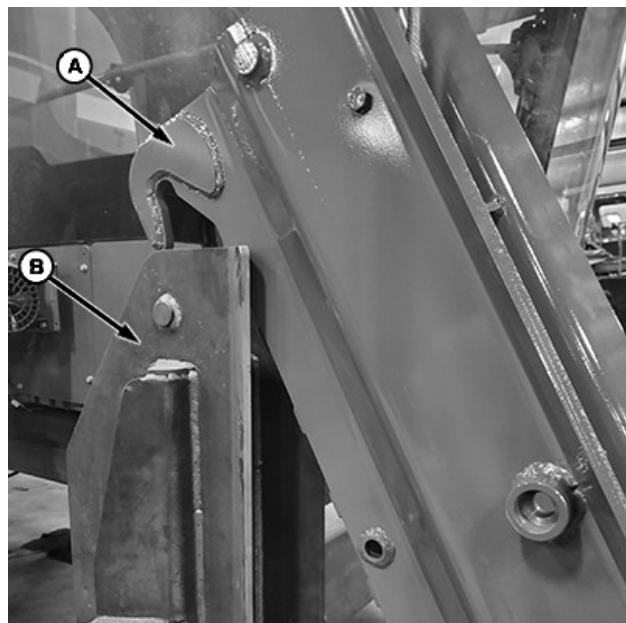


FA11335—UN—24AUG21

A—Lift Strap  
B—Bolt

2. Secure a suitable lift strap (A) to bolt (B).

**CAUTION:** A faulty lift strap may cause the adapter weldment to fall during installation/removal and cause severe injury or death to you or others. Inspect the lift strap for wear before attaching and lifting.



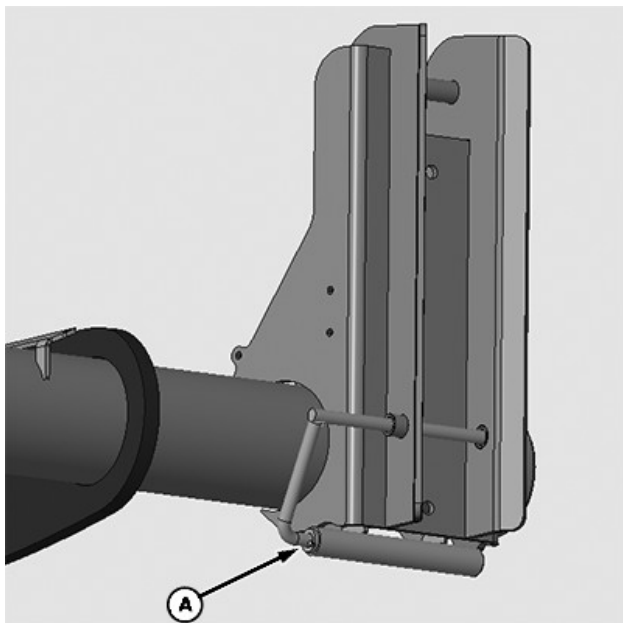
FA11336—UN—24AUG21

A—Adapter Weldment  
B—Mainframe Weldment

3. Lift adapter weldment (A) and mount onto mainframe weldment (B) at the quick-attach location.
4. Repeat steps to install adapter weldment on opposite side of machine.
5. Connect the DTB attachment. (See Connecting the DTB).

## Connecting the DTB

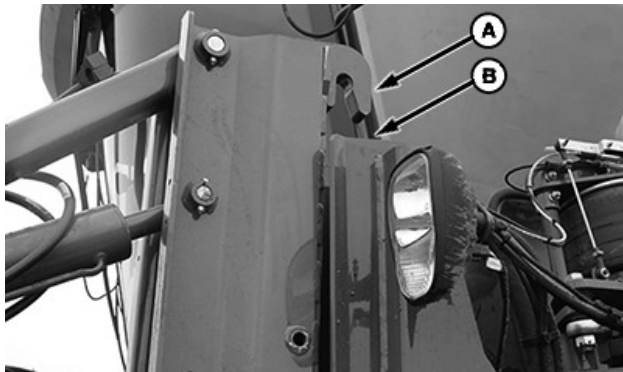
1. Square up to the DTB.
2. Deflate the air springs. (See Automatic Air Spring Leveling System in the Chassis section).



FA11518—UN—30SEP21

**A—Spring-Loaded Lock Pin (2)**

3. Retract spring-loaded lock pin (A) from quick attach tower by pulling lock pin **OUT on both sides of transom** to disengage the quick attach lock assemblies.
4. Slowly pull into the attachment.

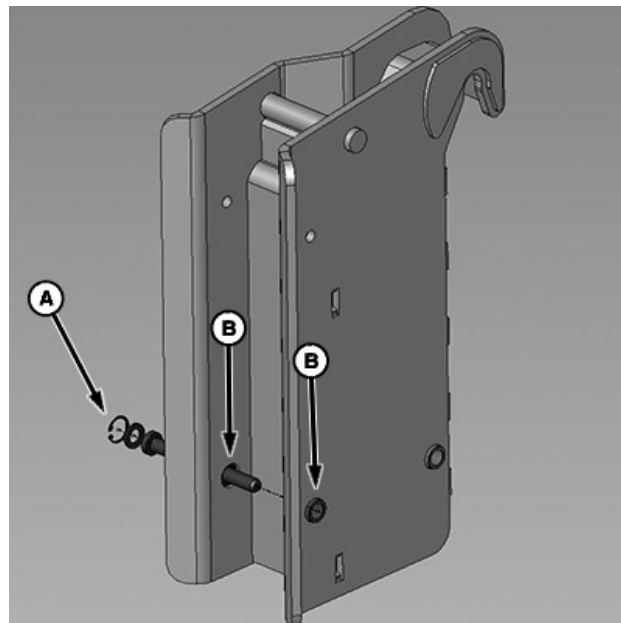


FA11066—UN—21JUN21

**A—Attachment**  
**B—Mounting Pin**

5. Ensure the attachment hooks (A) are high enough to clear the mounting pins (B).
6. Raise the machine and engage attachment hooks by inflating the air springs. (See Automatic Air Spring Leveling System in the Chassis section).

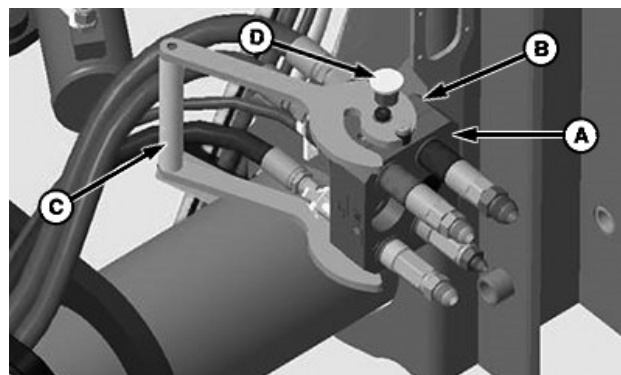
**NOTE:** Raising the machine will allow the weight of the attachment to pull the attachment hooks over the mounting pins. You will notice a change of weight as the machine begins to support the attachment.



FA11337—UN—24AUG21

**A—Pin Washer/Snap Ring (2)**  
**B—Mounting Holes (4)**

7. Install supplied pin washer/snap ring (A) through the two (2) mounting holes (B) to secure the DTB attachment to the previously installed adapter weldment **on both sides of machine**.
8. Install lock pin into adapter weldment and ensure retaining hardware (snap ring/washer) is properly seated **on both sides of transom**.
9. Engage the park brake.
10. **Turn the engine OFF before connecting any hoses or electrical lines.**



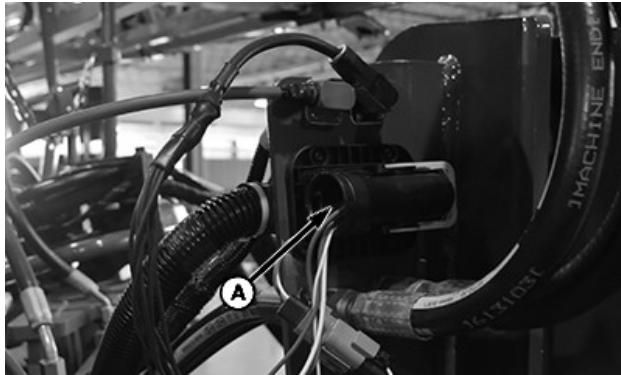
FA11510—UN—04OCT21

**Quick Attach (Left-Hand Side)**

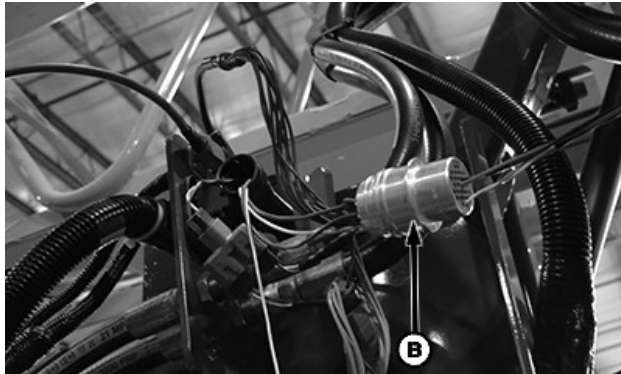
**A—Connections (Attachment Side)**  
**B—Multi-Coupler Receptacle (Machine Side)**  
**C—Quick-Connect Handle**  
**D—Lock Pin**

11. Install connections (on the left-hand side of the DTB attachment) (A) into the multi-coupler receptacle (B), ensuring full engagement. Push the quick-connect handle (C) **OUT** to engage connections.

**NOTE:** Remove lock pin (D) to allow the quick-connect handle to be rotated when engaging/disengaging connections. Reinstall lock pin after handle is rotated to desired position.



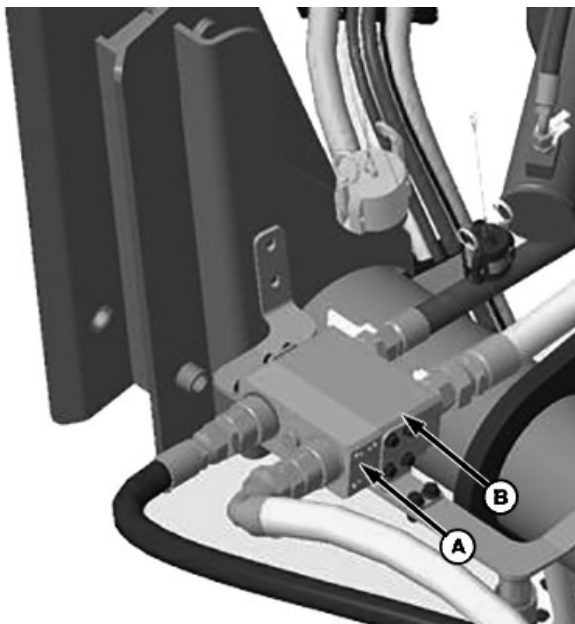
FA11459—UN—15SEP21



FA11460—UN—15SEP21

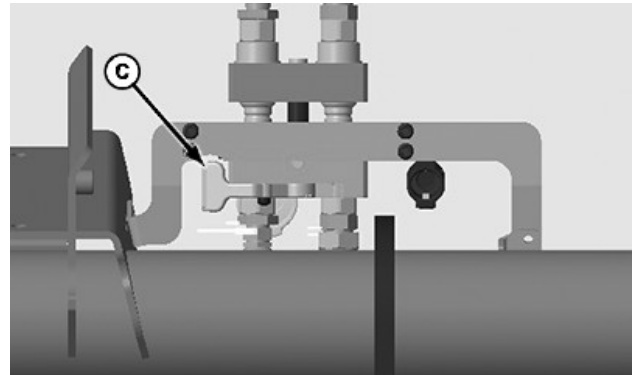
**A—Adapter Harness (Machine Side)**  
**B—Adapter Harness (Attachment Side)**

12. Connect adapter harness from machine side (A) to the DTB harness (B).



FA11511—UN—04OCT21

*Hydraulic Connections (Right-Hand Side)*



FA11512—UN—29SEP21

**A—Hydraulic Connections**  
**B—Multi-Coupler Receptacle**  
**C—Lock/Release Handle**

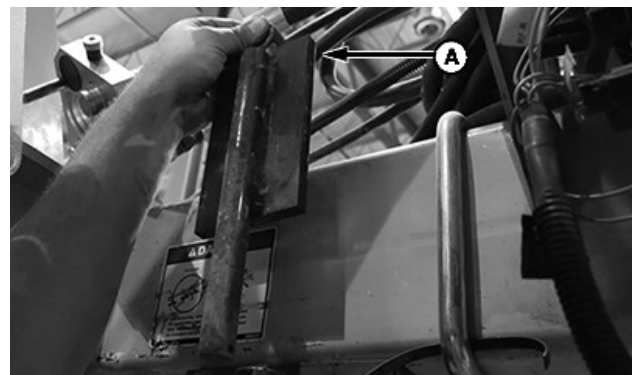
13. Install hydraulic connections (on the right-hand side of the DTB attachment) (A) into the multi-coupler receptacle (B), ensuring full engagement. Press and rotate the lock/release handle (C) in the CLOSED position to engage connections.



FA11379—UN—02SEP21

**A—Securement Pin (2)**

14. Remove securement pin (A) on the inside of each DTB attachment stand.



FA11380—UN—02SEP21

**A—Stop Plate (2)**

15. Remove the stop plate (A) on the inside of each DTB attachment stand.
16. Remove the DTB attachment stands.

## Disconnecting the DTB

**CAUTION:** Disconnecting attachment while extended for application may result in injury or death. Only disconnect attachment when folded for transport and properly supported.

**IMPORTANT:** Stagger detasseling heads before folding the outriggers. Failure to comply will result in property damage.

**IMPORTANT:** If equipped with the 4-2 DTB, ensure the outer slide extensions are fully retracted before folding the outriggers. Failure to comply will result in property damage.

Before disconnecting the DTB, determine a proper storage location. When choosing a place to store the attachment, there are three important things to keep in mind:

- **Is the ground level?** The ground must be level to help prevent the attachment from falling over. Level ground will also minimize stress on the frame of the attachment when in storage.
- **Is there enough space?** The DTB must be folded for it to stand properly. Be aware of the room that is needed for the attachment and adequate space to travel around it safely.
- **Is it accessible?** The attachment needs to be positioned so you can connect easily. Ensure there is enough room and that the attachment is not blocked, or blocking other items. If temporarily storing the attachment on a soft surface (such as grass), it is recommended to place blocks or wood beneath each of the DTB attachment stands to prevent the attachment from sinking into the ground.

**NOTE:** It is not recommended to store the attachment on a soft surface for an extended period of time, due to the risk of settling soil, even when blocks or wood are used.

1. Stagger the detasseling heads. (See Stagger Detasseling Heads in the 6 Row, 8-10 Row, 12-18 Row DTB section).



FA10765—UN—30MAR21

A—Left Level Switch  
B—Right Level Switch

2. Prep to Fold - press BOTH left level switch (A) and right level switch (B) either up or down **simultaneously**. The tool bar will then adjust the lifts and the depth command actuators will position to allow the main fold sections to be folded.

**NOTE:** Once the tool bar is prepped to fold, a "DTB Prep to Fold Complete" message will appear on the MD4 display.



FA10766—UN—30MAR21

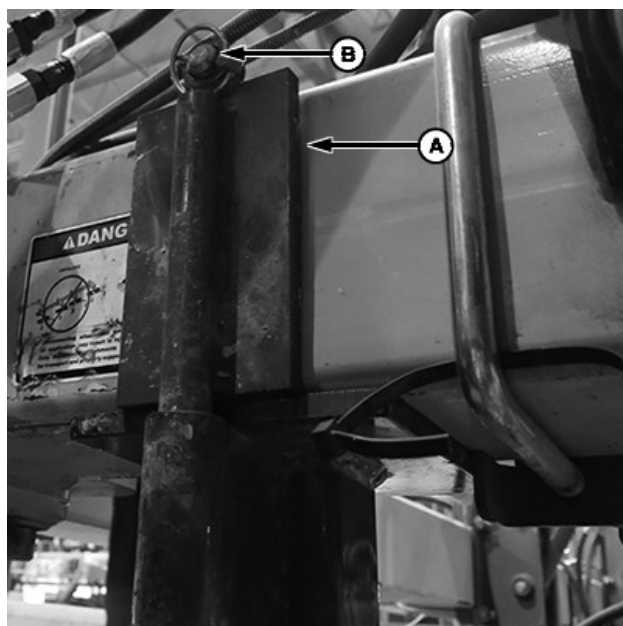
A—Reconfiguration Switch A  
B—Left Level Switch  
C—Right Level Switch

3. Press reconfiguration switch A (A).
4. Press and hold left level switch (B) and right level switch (C) in the UP position until outriggers are fully folded, then release switches.

**NOTE:** If equipped with the 4-2 DTB, there will be a 10 second delay to allow the tool bar to retract. The left and right-hand slide extensions will retract first, followed by the outriggers.

**IMPORTANT:** Do not attempt to make adjustments to the detasseling heads after the outriggers are folded. Failure to comply may cause the stalk guides or depth command sensor bars to entangle, resulting in property damage.

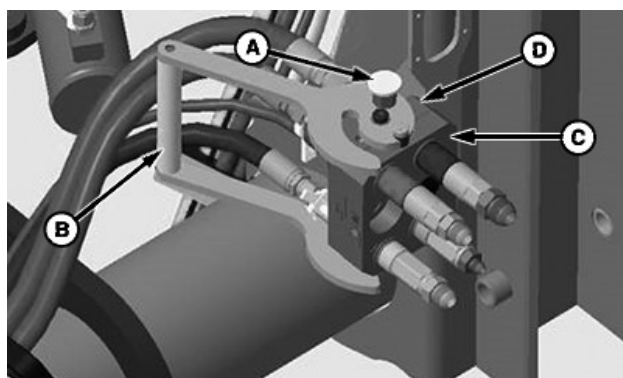
5. Engage the park brake.
6. Reinstall the DTB attachment stands beneath attachment.



FA11381—UN—02SEP21

- A—Stop Plate (2)  
B—Securement Pin (2)

7. Reinstall stop plate (A) and securement pin (B) on the inside of each DTB attachment stand.
8. **Turn the engine OFF before disconnecting any hoses or electrical lines.**



FA11513—UN—04OCT21

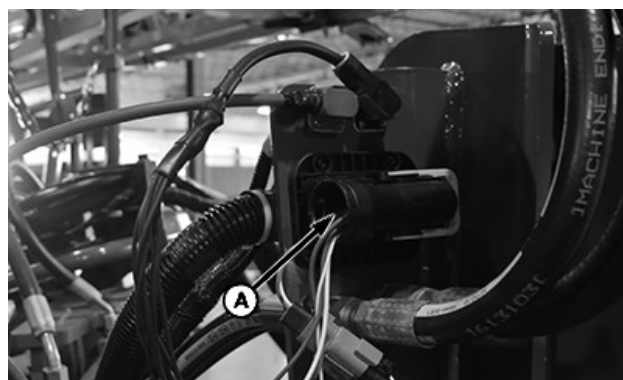
Quick Attach (Left-Hand Side)

- A—Lock Pin  
B—Quick-Connect Handle  
C—Connections  
D—Multi-Coupler Receptacle

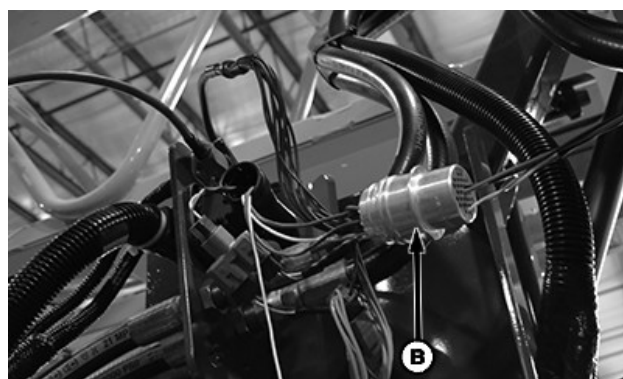
9. Remove lock pin (A).

*NOTE: Remove lock pin to allow the quick-connect handle to be rotated when engaging/disengaging connections. Reinstall lock pin after handle is rotated to desired position.*

10. Push the quick-connect handle (B) IN to disengage left-hand connections (C) from the multi-coupler receptacle (D). Reinstall lock pin.



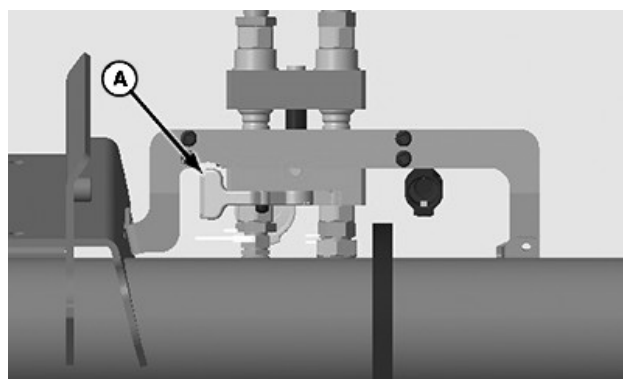
FA11459—UN—15SEP21



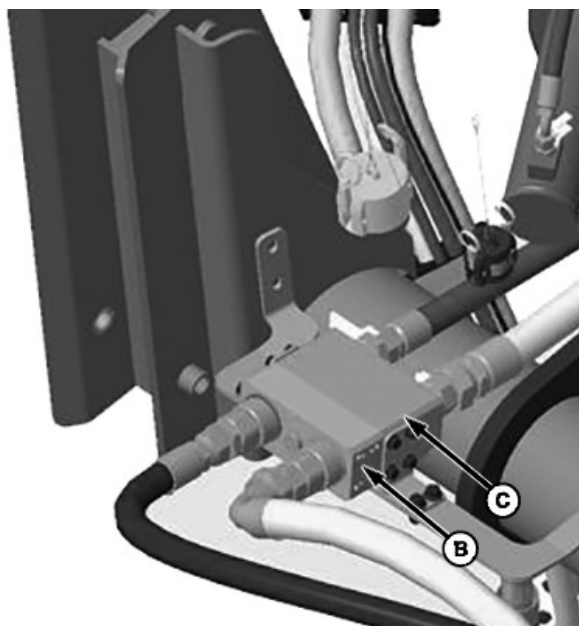
FA11460—UN—15SEP21

- A—Adapter Harness (Machine Side)  
B—Adapter Harness (Attachment Side)

11. Disconnect adapter harness from machine side (A) and DTB harness (B).



FA11514—UN—29SEP21



FA11515—UN—04OCT21

*Hydraulic Connections (Right-Hand Side)*

- A—Lock/Release Handle**  
**B—Hydraulic Connections**  
**C—Multi-Coupler Receptacle**

12. Press and rotate the lock/release handle (A) in the OPEN position to disengage right-hand connections. Remove hydraulic connections (B) from the multi-coupler receptacle (C).
13. Cap all connections after disconnecting.
14. Remove lock pin retaining DTB attachment to adapter weldment **on both sides of machine**.
15. Start the engine.
16. Deflate the air springs. (See Automatic Air Spring Leveling System in the Chassis section).
17. Disengage the park brake and slowly back away from the attachment.
18. Remove previously installed adapter weldments on both sides of machine.
19. Inflate the air springs.

EC82471,0000409-19-18OCT21

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# Lubrication and Maintenance

## Prevent Hydraulic System Contamination

**IMPORTANT:** Cleanliness is very important when working on the hydraulic system. Prevent contamination by assembling the cylinders, hoses, couplers, and valves in a clean area of the shop.

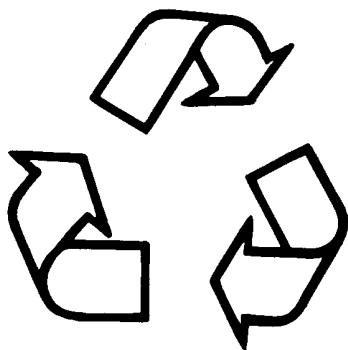
Leave protective caps on the fluid openings until ready to make the connection. When charging the system, use a tractor or other source that contains clean oil, free of abrasive materials. Keep couplers clean. Abrasive particles, like sand or metal fragments, can damage seals, barrels and pistons, causing internal leakage.

OUO6092,0001159-19-12MAR08

- Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with Hagie equipment includes such items such as oil, fuel, coolant, brake fluid, filters, and batteries.
- Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
- Do not pour waste onto the ground, down a drain, or into any water source.
- Air conditioning refrigerants escaping into the air can damage the earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.
- Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

EC82471,000033D-19-01SEP20

## Dispose of Waste Properly



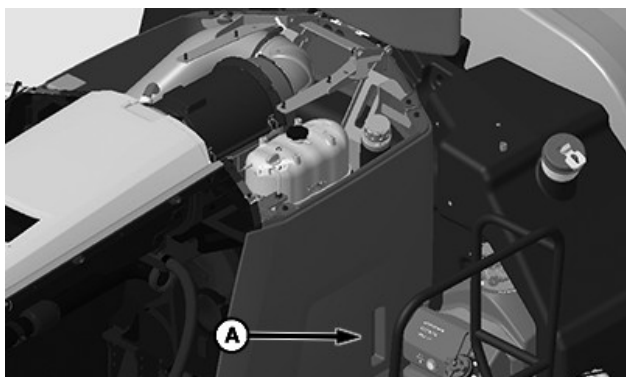
TS1133—UN—15APR13

## Service Intervals

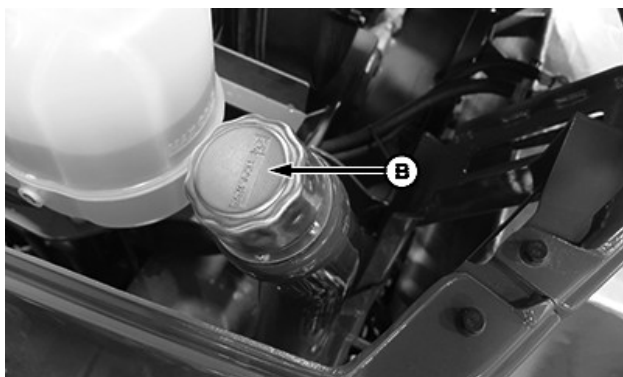
| SERVICE                                    | INTERVAL |          |           |        |
|--------------------------------------------|----------|----------|-----------|--------|
|                                            | Daily    | 50 Hours | 200 Hours | 1 Year |
| • Required service interval                | •        |          |           |        |
| Check hydraulic oil level                  | •        |          |           |        |
| Check quad puller tire pressure            | •        |          |           |        |
| Check/tighten cutter blade retaining bolts | •        |          |           |        |
| Lubricate quad puller head grease points   | •        |          |           |        |
| Lubricate outrigger fold grease points     |          | •        |           |        |
| Lubricate lift arm assembly grease points  |          | •        |           |        |
| Inspect DTB structure                      |          |          | •         |        |
| Clean DTB and coat exposed surfaces        |          |          |           | •      |

EC82471,000040A-19-13SEP21

## Check Hydraulic Oil Level—Daily



FA10505—UN—11NOV20



FA10080—UN—15JUN20

A—Sight Tube  
B—Fill Cap

Observe oil level in sight tube (A) with machine on level surface, tread adjusted to narrow position, tool bar folded, and engine stopped. Verify oil is at the proper level for the current oil temperature (between the high and low marks on the sight tube).

If oil level is below the lower mark for the current temperature range, remove fill cap (B) and add hydraulic oil. (See Hydrostatic/Hydraulic Oil in the Fuels, Lubricants and Coolants section in your machine Operator's Manual).

EC82471,00003A3-19-07JAN21

## Check Quad Puller Tire Pressure—Daily

Check quad puller tire pressure daily. Ensure all tires are adjusted to 68.9 kPa (.7 bar) (10 psi).

Always maintain correct tire pressure. Do not inflate the tires above the recommended pressure. During storage, protect tires from exposure to petroleum products, chemicals, and direct sunlight.

EC82471,000040D-19-31MAR21

## Check/Tighten Cutter Blade Retaining Bolts—Daily



FA10784—UN—05APR21

A—Retaining Bolt

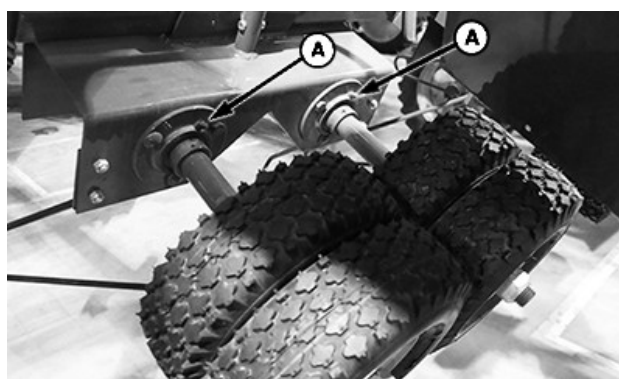
Check and tighten (if necessary) the cutter blade retaining bolt (A) on each cutter head assembly daily.

**NOTE:** Cutter blade retaining bolt torque is 50 N·m (37 lb-ft).

EC82471,000040E-19-02JUN21

## Lubricate Quad Puller Head Grease Points—Daily

**IMPORTANT:** Failure to properly lubricate pivot and friction points may result in unnecessary wear and damage.



FA10768—UN—30MAR21

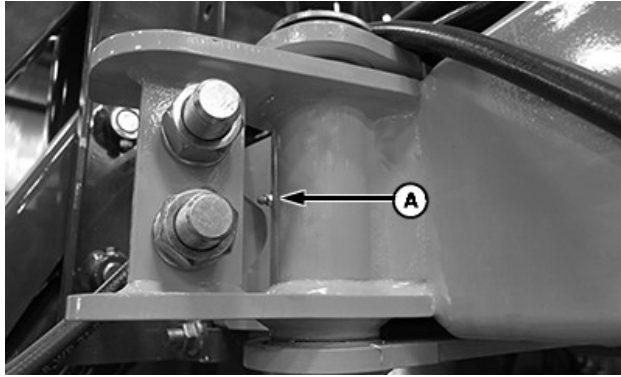
A—Grease Points (2 on each side)

Lubricate grease points on each quad puller head (two on each side) **twice** per day during use.

EC82471,000040F-19-31MAR21

## Lubricate Outrigger Fold Grease Points—50 Hours

**IMPORTANT:** Failure to properly lubricate pivot and friction points may result in unnecessary wear and damage.



FA10769—UN—30MAR21

**A—Grease Point (1 on each side)**

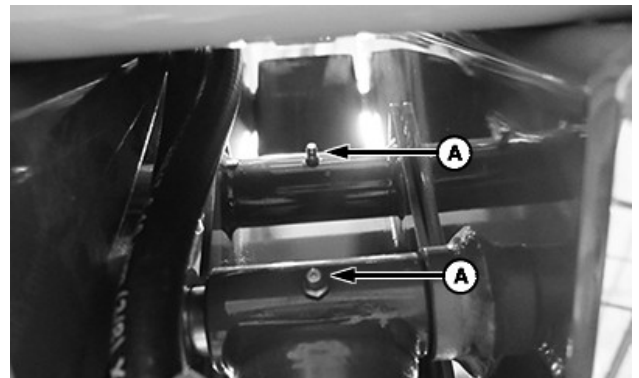
Lubricate grease point on each left and right-hand outrigger fold every 50 hours, or as needed.

EC82471,0000410-19-31MAR21



FA10773—UN—30MAR21

**Mid (2)**

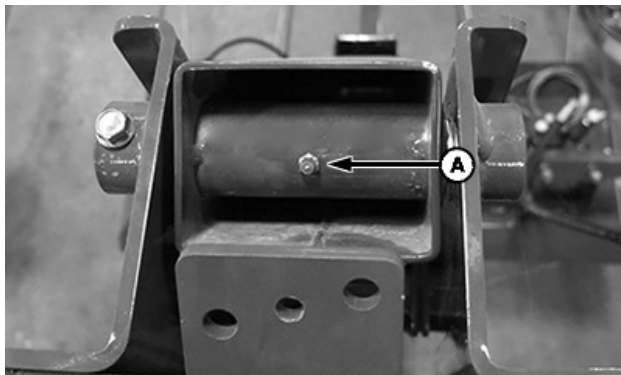


FA10774—UN—30MAR21

**Inner Arm (2)**

## Lubricate Lift Arm Grease Points—50 Hours

**IMPORTANT:** Failure to properly lubricate pivot and friction points may result in unnecessary wear and damage.



FA10772—UN—30MAR21

**Top (1)**

### **A—Grease Points**

Lubricate grease points (A) on each lift arm assembly every 50 hours, or as needed.

**NOTE:** An additional grease point is located inside of the lower lift arm frame.

EC82471,0000411-19-13SEP21

## Inspect Hydraulic Hoses—As Required



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with Hagie-approved replacement parts.

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

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

EC82471,00003A4-19-06JAN21

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## Inspect DTB Structure—200 Hours

Inspect the DTB structure for straightness, cracked welds, loose hardware, and other defects every 200 hours. Repair as necessary.

EC82471,000040B-19-31MAR21

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## Clean DTB and Coat Exposed Surfaces—Annually

Clean DTB annually or as necessary. (See Clean Vehicle of Hazardous Chemicals, Including Pesticides in the Storage section in your machine Operator's Manual).

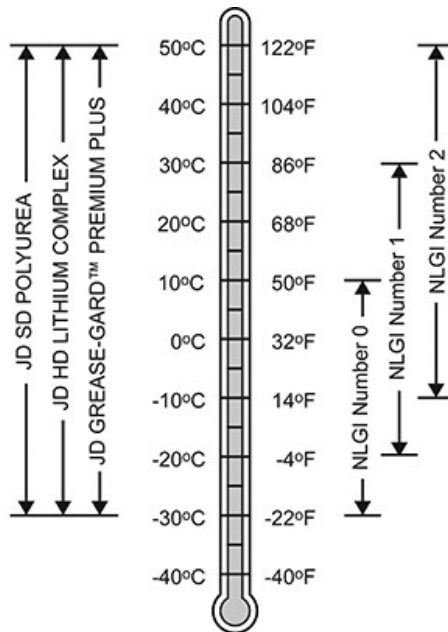
Treat exposed surfaces with coating TY25396 to prevent rust and corrosion.

EC82471,000040C-19-31MAR21

# Lubricant Specifications

## Multipurpose Extreme Pressure (EP) Grease

**IMPORTANT:** For automated lubrication systems different ambient air temperatures need to be considered.



RG30199—UN—08MAR18

*Greases for Air Temperature Ranges*

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

**John Deere SD Polyurea Grease is preferred.**

The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB
- ISO-L-X-BDHB 2 or DIN KP 2 N-10 Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm<sup>2</sup>/s @ 40°C)

**IMPORTANT:** Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

DX, GRE A1-19-13JAN18

# Troubleshooting

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## Detasseling System

| Symptom                                                                 | Problem                                             | Solution                                                                                          |
|-------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Cutter head blades, quad pullers, rollers, or ties will not turn</b> | Oil level in reservoir too low                      | Fill reservoir to proper level with approved oil.                                                 |
|                                                                         | Oil not reaching pump                               | Remove suction hose from pump and check for proper flow, reinstall hose and all suction fittings. |
|                                                                         | Faulty hydraulic pump                               | Replace hydraulic pump.                                                                           |
|                                                                         | Faulty hydraulic motor(s)                           | Replace motor(s).                                                                                 |
| <b>Lifting mechanism will not lift</b>                                  | Bad cylinder                                        | Check cylinder. Remove/rebuild or replace.                                                        |
|                                                                         | Blown relief valve                                  | Remove, inspect, replace.                                                                         |
|                                                                         | Relief valve set too low                            | Contact your John Deere dealer for assistance.                                                    |
|                                                                         | Lift arms seized                                    | Loosen mounting bolts, lubricate grease fittings.                                                 |
|                                                                         | Faulty electro-hydraulic valve                      | Contact your John Deere dealer for assistance.                                                    |
| <b>Hydraulic motor leaking</b>                                          | Seal failure                                        | Replace seal, turn heads on with low engine RPM.                                                  |
|                                                                         | Restricted case drain hose                          | Inspect and repair, or replace hose.                                                              |
| <b>No units will lift</b>                                               | Oil in hydraulic reservoir low                      | Fill reservoir to proper level with approved oil.                                                 |
|                                                                         | Faulty valve                                        | Repair or replace valve.                                                                          |
|                                                                         | Relief valve in electro-hydraulic valve set too low | Contact your John Deere dealer for assistance.                                                    |
| <b>No units will lower</b>                                              | Lift arm pivots too tight                           | Lubricate and loosen pivot points.                                                                |
| <b>Only one unit will not lower</b>                                     | Faulty valve                                        | Replace valve.                                                                                    |
|                                                                         | Lift arm pivot too tight                            | Lubricate and loosen pivot point.                                                                 |
| <b>All units lift slowly</b>                                            | Hydraulic oil not at operating temperature          | Allow time for oil to warm up.                                                                    |
|                                                                         | Faulty valve                                        | Replace valve.                                                                                    |
|                                                                         | Lift arm pivots too tight                           | Lubricate and loosen pivot points.                                                                |

## Troubleshooting

| Symptom                                                                            | Problem                                             | Solution                                                                       |
|------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------|
|                                                                                    | Relief valve in electro-hydraulic valve set too low | Contact your John Deere dealer for assistance.                                 |
| <b>Only one unit lifts slowly</b>                                                  | Faulty valve                                        | Replace valve.                                                                 |
|                                                                                    | Lift arm pivot point too tight                      | Lubricate/loosen pivot points.                                                 |
| <b>Only one unit will not hold position</b>                                        | Oil leak between valve and cylinder                 | Repair leak or replace hose.                                                   |
|                                                                                    | Faulty valve                                        | Replace valve.                                                                 |
|                                                                                    | Faulty lower poppet on lift valve                   | Remove and clean, or replace.                                                  |
| <b>No units will hold position</b>                                                 | Non-hydraulic issue                                 | Adjust response parameter, bottom parameter, top parameter, and/or auto speed. |
| <b>Only one unit lowers slowly</b>                                                 | Faulty valve                                        | Replace valve.                                                                 |
|                                                                                    | Faulty lower poppet on lift valve                   | Remove and clean, or replace.                                                  |
| <b>All units lower slowly</b>                                                      | Hydraulic oil not at operating temperature          | Allow time for oil to warm up.                                                 |
| <b>In MANUAL mode, more than one unit lifts or lowers using one up/down switch</b> | Faulty valve                                        | Replace valve.                                                                 |
| <b>In AUTO mode, more than one unit raises from photo sensor</b>                   | Faulty valve                                        | Replace valve.                                                                 |
| <b>In AUTO mode, wrong unit raises from photo sensor</b>                           | Cylinder hoses are connected to the wrong cylinder  | Connect hoses to correct cylinder.                                             |
|                                                                                    | Electronic malfunction                              | Contact your John Deere dealer for assistance.                                 |
| <b>No units will lift</b>                                                          | Blown fuse                                          | Find short in wire and repair, replace fuse.                                   |
|                                                                                    | Faulty #1 valve, coil, or loose coil mounting nut   | Tighten or replace coil.                                                       |
|                                                                                    | Loose wire connections                              | Find loose connection and tighten.                                             |
|                                                                                    | Faulty wire connections                             | Repair or replace.                                                             |
|                                                                                    | Faulty main wire assembly                           | Repair or replace.                                                             |
| <b>Only one unit will not lift</b>                                                 | Photo sensor inoperable                             | Replace photo sensor.                                                          |
|                                                                                    | Faulty valve, coil, or loose coil mounting nut      | Tighten nut or replace coil.                                                   |

## *Troubleshooting*

| Symptom                                                     | Problem                                                  | Solution                                                       |
|-------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|
|                                                             | Loose wire connections                                   | Find loose connections and tighten.                            |
|                                                             | Photo sensor lights not lined up with reflector          | Line up sensor with reflector.                                 |
|                                                             | Faulty row wire assembly                                 | Repair or replace.                                             |
|                                                             | Faulty sensor connector wire                             | Repair or replace.                                             |
| <b>No units will lower</b>                                  | Blown fuse                                               | Find short in wire and repair, replace fuse.                   |
|                                                             | In AUTO mode, LS valve assembly unplugged                | Plug in wire assembly.                                         |
|                                                             | Loose wire connection                                    | Find loose connection and tighten.                             |
| <b>Only one unit will not lower</b>                         | Photo sensor inoperable                                  | Replace photo sensor.                                          |
|                                                             | Faulty valve, coil, or loose coil mounting nut           | Tighten nut or replace coil.                                   |
|                                                             | Loose wire connection                                    | Find loose connection and tighten.                             |
|                                                             | Photo sensor lights not lined up with reflector          | Line up sensor with reflector.                                 |
|                                                             | Faulty row wire assembly                                 | Repair or replace.                                             |
|                                                             | Faulty sensor connector wire assembly                    | Repair or replace.                                             |
|                                                             |                                                          |                                                                |
| <b>No units will hold position</b>                          | In AUTO mode, no crop moving under assemblies            | Drive forward or select MANUAL mode.                           |
| <b>In AUTO mode, wrong unit raises from sensor assembly</b> | Row LS wire assembly plugged into wrong sensor connector | Plug wire assembly into correct row sensor connector assembly. |

EC82471,000041D-19-13SEP21

# Storage

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## Recommended Cleaners And Coatings

**IMPORTANT: As with any chemical product, always read and follow directions.**

Use John Deere SprayMaster cleaning agents, equipment coating and winterizer fluid for best results. These chemicals are available from your John Deere dealer.

- Spray Tank Cleaner N305631
- Winterizer Fluid N305634
- TY25396 Coating

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OUO6092,00011D9-19-02APR08

8. Review the Operator's Manual for operating adjustments and safety information.

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EC82471,0000413-19-30MAR21

## Prepare DTB for Storage

*NOTE: Refer to your machine Operator's Manual for proper procedure to prepare the overall machine for storage.*

1. Clean the DTB attachment thoroughly.
2. Perform daily level checks, lubrication, and bolt/linkage inspections.
3. Touch up painted surfaces that are scratched or chipped to prevent rust.
4. With the engine at normal operating temperature, cycle all hydraulic functions.
5. Apply multi-purpose grease to hydraulic cylinder rods.
6. If the attachment will be stored separately from the machine, ensure all electrical and hydraulic ends are capped or covered with a suitable covering.

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EC82471,0000412-19-30MAR21

## Remove DTB from Storage

1. Clean attachment thoroughly.
2. Check oil level in hydraulic oil reservoir. If low, check for leaks. Add oil as required.
3. Ensure that all hardware is tight.
4. Unseal any openings that were sealed for storage.
5. Remove any dried grease from the cylinder rods and re-apply as necessary.
6. Lubricate all grease fittings. (See the Lubrication and Maintenance section in this manual).
7. Manually cycle all of the DTB hydraulic functions two or three times to thoroughly lubricate components.

# Transporting

## Transporting Machine with an Attachment

Trailer in your machine Operator's Manual for further information.

EC82471,0000414-19-31MAR21

**⚠ CAUTION:** Never operate the sprayer on a public roadway with solution in the tank. Never load or unload the sprayer with solution in the tank.

**⚠ CAUTION:** Never stop the sprayer on trailer ramps. Failure to comply may cause the sprayer to tip over.

**⚠ CAUTION:** When transporting the sprayer, check for adequate clearance before driving under any overhead obstructions.

**⚠ CAUTION:** Do not contact electric lines when moving or operating the sprayer.

**⚠ CAUTION:** Ensure there is adequate clearance when transporting the sprayer near an object with clearance less than the transporting height and width of the overall machine and attachment.

**⚠ CAUTION:** Avoid collisions. Before transporting machine on a public roadway, check and follow local regulations regarding size limits, the use of lights, flags, signs, pilot vehicles, and other requirements for transporting loads using trailer.

**⚠ CAUTION:** Ensure the detasseling heads are staggered and the outriggers are in the fully folded position before transporting the machine. Failure to comply may result in injury and/or property damage.

**IMPORTANT:** Do not operate the machine at speeds exceeding 32 km/h (20 mph) with solution in the tank. Operating speeds exceeding 32 km/h (20 mph) with a fully loaded tank may result in tire blowout or wheel hub damage.

## Loading

**⚠ CAUTION:** Keep all persons away from trailer when loading or unloading the machine. Failure to comply may result in serious injury or death.

**IMPORTANT:** Read and understand the trailer manufacturer's operation manual. Hitch the trailer to the pulling vehicle according to the trailer manufacturer's recommendations.

**IMPORTANT:** The loaded height and width of the trailer must conform to state law in which it is being used. Do not exceed the trailer manufacturer's recommendations on loaded weight.

See Prepare Machine for Transport on Semi-Tractor

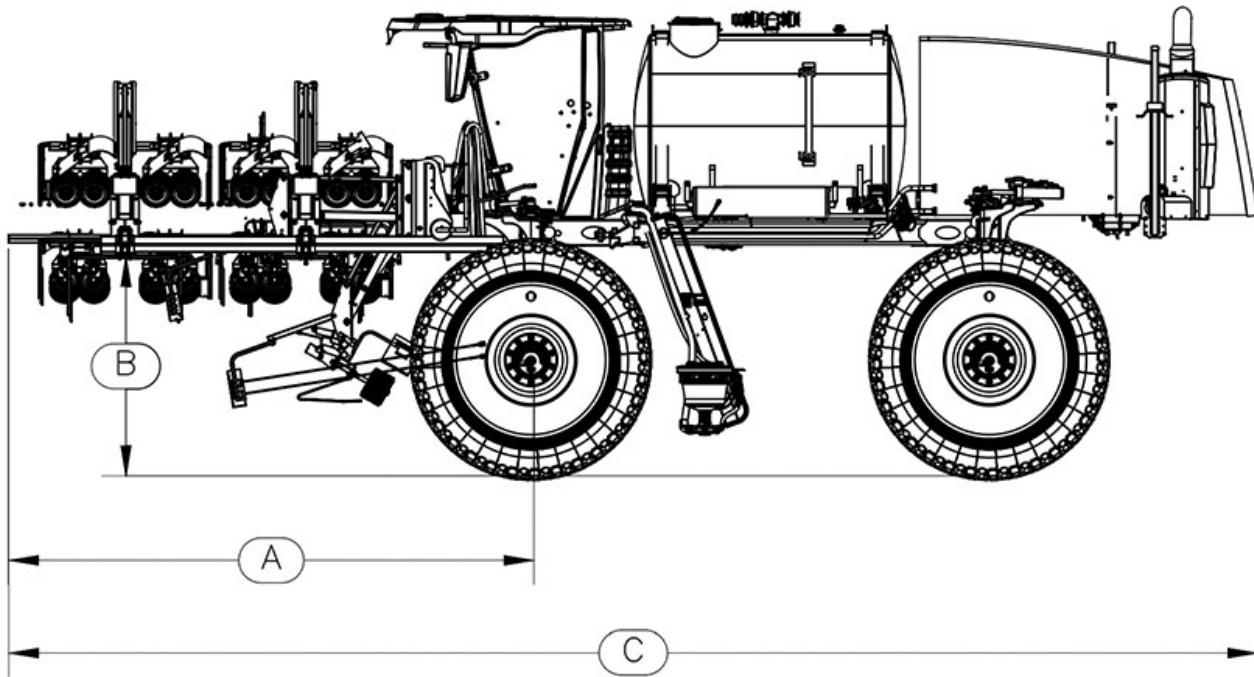
# Specifications

## Specifications

| Item                  | Specification                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERAL</b>        |                                                                                                                                                                                                                                                        |
| System                | Light sensing system, depth command, electrical disconnect, hydraulic couplers                                                                                                                                                                         |
| Controls              | MD4 Display                                                                                                                                                                                                                                            |
| Lighting              | Attachment Lights (2 highway running lights, 2 hazard/warning lights)                                                                                                                                                                                  |
| <b>OUTRIGGERS</b>     |                                                                                                                                                                                                                                                        |
| 8-Row                 | 190.5 cm (75 in) - 1 left, 1 right                                                                                                                                                                                                                     |
| 12-Row                | 340.4 cm (134 in) - 1 left, 1 right                                                                                                                                                                                                                    |
| <b>QUAD PULLERS</b>   |                                                                                                                                                                                                                                                        |
| Row Options           | 6, 8, 10, or 12                                                                                                                                                                                                                                        |
| Drive                 | Hydraulic                                                                                                                                                                                                                                              |
| Tire Size             | 4.10/3.50 (2-ply)                                                                                                                                                                                                                                      |
| Tire Pressure         | .7 bar (68.9 kPa) (10 psi)                                                                                                                                                                                                                             |
| Operating Speed       | <ul style="list-style-type: none"> <li>• Min Speed (375 RPM)</li> <li>• Mid Speed (400 RPM)</li> <li>• Max Speed (425 RPM)</li> </ul> <p><i>NOTE: It is recommended to set the quad puller speed as close to "mid" speed range as possible.</i></p>    |
| Pulling Height        | Minimum Range: 81.3-246.4 cm (32-97 in)<br>Maximum Range: 101.6-266.7 cm (40-105 in)                                                                                                                                                                   |
| Weight (per assembly) | 39 kg (86 lb)                                                                                                                                                                                                                                          |
| <b>CUTTER HEADS</b>   |                                                                                                                                                                                                                                                        |
| Row Options           | 6, 8, 10, or 12                                                                                                                                                                                                                                        |
| Drive                 | Hydraulic                                                                                                                                                                                                                                              |
| Blade Size            | 45.7 cm (18 in)                                                                                                                                                                                                                                        |
| Operating Speed       | <ul style="list-style-type: none"> <li>• Min Speed (2900 RPM)</li> <li>• Mid Speed (3000 RPM)</li> <li>• Max Speed (3100 RPM)</li> </ul> <p><i>NOTE: It is recommended to set the cutter head speed as close to "mid" speed range as possible.</i></p> |
| Cutting Height        | Minimum Range: 73.7-238.8 cm (29-94 in)<br>Maximum Range: 33-259.1 cm (13-102 in)                                                                                                                                                                      |
| Weight (per assembly) | 28 kg (62 lb)                                                                                                                                                                                                                                          |
| <b>WEIGHT</b>         | 8-10 Row Tool Bar: 1 453 kg (3 204 lb)                                                                                                                                                                                                                 |

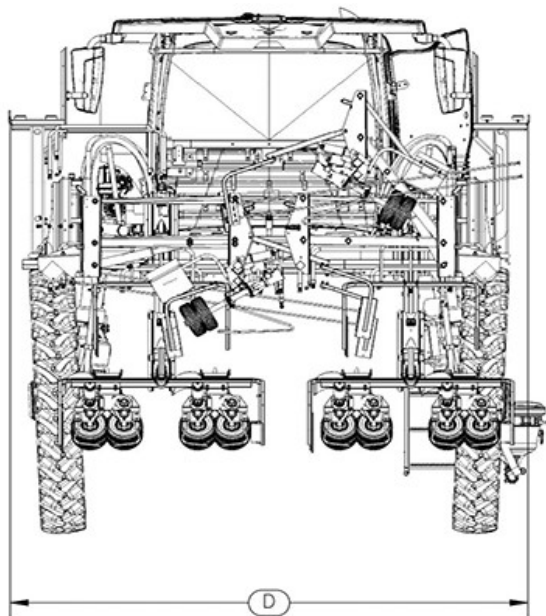
EC82471,0000415-19-25MAR21

## Dimensions



Side View

FA10749—UN—14JUN21



Front View

FA10750—UN—14JUN21

| Item | Description                                                        | Measurement<br>cm/m (in)                                                                     |
|------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| A    | Tool Bar Length<br>(from front of tool bar to center of wheel hub) | 6 Row: 204.5 cm (80.5 in)<br>8-10 Row: 326.4 cm (128.5 in)<br>12-18 Row: 473.7 cm (186.5 in) |
| B    | Height<br>(from bottom of tool bar to ground)                      | 192.4 cm (75.8 in)                                                                           |

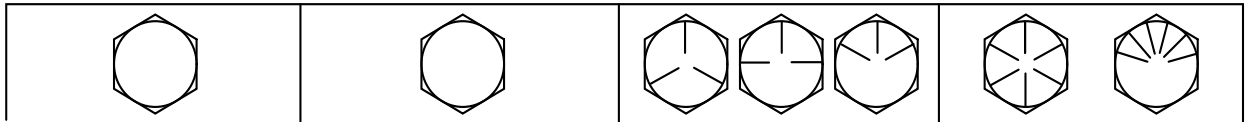
## Specifications

| Item | Description                                                     | Measurement<br>cm/m (in)                                                                                                                                                                                                                                    |
|------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                 | <i>NOTE: Refer to Replacement Tire Specifications in your machine Operator's Manual for a complete list of tire options when configuring specifications on your model.</i>                                                                                  |
| C    | Overall Machine Length<br>(from front of tool bar to rear hood) | 6 Row/Short Frame: 801.4 cm (315.5 in)<br>6 Row/Long Frame: 867.4 cm (341.5 in)<br>8-10 Row/Short Frame: 923.3 cm (363.5 in)<br>8-10 Row/Long Frame: 989.3 cm (389.5 in)<br>12-18 Row/Short Frame: 10 m (421.5 in)<br>12-18 Row/Long Frame: 11 m (447.5 in) |
| D    | Overall Width<br>(from outer side of each boom cradle)          | 388.6 cm (153 in)                                                                                                                                                                                                                                           |

### DTB Dimensions

EC82471.0000416-19-25MAR21

## Unified Inch Bolt and Screw Torque Values



TS1671—UN—01MAY03

| Bolt or Screw<br>Size | SAE Grade 1 <sup>a</sup> |       |                          |       | SAE Grade 2 <sup>b</sup> |       |                          |       | SAE Grade 5, 5.1 or 5.2 |       |                          |       | SAE Grade 8 or 8.2    |       |                          |       |
|-----------------------|--------------------------|-------|--------------------------|-------|--------------------------|-------|--------------------------|-------|-------------------------|-------|--------------------------|-------|-----------------------|-------|--------------------------|-------|
|                       | Hex Head <sup>c</sup>    |       | Flange Head <sup>d</sup> |       | Hex Head <sup>c</sup>    |       | Flange Head <sup>d</sup> |       | Hex Head <sup>c</sup>   |       | Flange Head <sup>d</sup> |       | Hex Head <sup>c</sup> |       | Flange Head <sup>d</sup> |       |
|                       | N·m                      | lb·in | N·m                      | lb·in | N·m                      | lb·in | N·m                      | lb·in | N·m                     | lb·in | N·m                      | lb·in | N·m                   | lb·in | N·m                      | lb·in |
| 1/4                   | 3.1                      | 27.3  | 3.2                      | 28.4  | 5.1                      | 45.5  | 5.3                      | 47.3  | 7.9                     | 70.2  | 8.3                      | 73.1  | 11.2                  | 99.2  | 11.6                     | 103   |
|                       |                          |       |                          |       |                          |       |                          |       |                         |       |                          |       | N·m                   | lb·ft | N·m                      | lb·ft |
| 5/16                  | 6.1                      | 54.1  | 6.5                      | 57.7  | 10.2                     | 90.2  | 10.9                     | 96.2  | 15.7                    | 139   | 16.8                     | 149   | 22.2                  | 16.4  | 23.7                     | 17.5  |
|                       |                          |       |                          |       |                          |       |                          |       | N·m                     | lb·ft | N·m                      | lb·ft |                       |       |                          |       |
| 3/8                   | 10.5                     | 93.6  | 11.5                     | 102   | 17.6                     | 156   | 19.2                     | 170   | 27.3                    | 20.1  | 29.7                     | 21.9  | 38.5                  | 28.4  | 41.9                     | 30.9  |
|                       |                          |       |                          |       | N·m                      | lb·ft | N·m                      | lb·ft |                         |       |                          |       |                       |       |                          |       |
| 7/16                  | 16.7                     | 148   | 18.4                     | 163   | 27.8                     | 20.5  | 30.6                     | 22.6  | 43                      | 31.7  | 47.3                     | 34.9  | 60.6                  | 44.7  | 66.8                     | 49.3  |
|                       | N·m                      | lb·ft | N·m                      | lb·ft |                          |       |                          |       |                         |       |                          |       |                       |       |                          |       |
| 1/2                   | 25.9                     | 19.1  | 28.2                     | 20.8  | 43.1                     | 31.8  | 47                       | 34.7  | 66.6                    | 49.1  | 72.8                     | 53.7  | 94                    | 69.3  | 103                      | 75.8  |
| 9/16                  | 36.7                     | 27.1  | 40.5                     | 29.9  | 61.1                     | 45.1  | 67.5                     | 49.8  | 94.6                    | 69.8  | 104                      | 77    | 134                   | 98.5  | 148                      | 109   |
| 5/8                   | 51                       | 37.6  | 55.9                     | 41.2  | 85                       | 62.7  | 93.1                     | 68.7  | 131                     | 96.9  | 144                      | 106   | 186                   | 137   | 203                      | 150   |
| 3/4                   | 89.5                     | 66    | 98                       | 72.3  | 149                      | 110   | 164                      | 121   | 230                     | 170   | 252                      | 186   | 325                   | 240   | 357                      | 263   |
| 7/8                   | 144                      | 106   | 157                      | 116   | 144                      | 106   | 157                      | 116   | 370                     | 273   | 405                      | 299   | 522                   | 385   | 572                      | 422   |
| 1                     | 216                      | 159   | 236                      | 174   | 216                      | 159   | 236                      | 174   | 556                     | 410   | 609                      | 449   | 785                   | 579   | 860                      | 634   |
| 1-1/8                 | 305                      | 225   | 335                      | 247   | 305                      | 225   | 335                      | 247   | 685                     | 505   | 751                      | 554   | 1110                  | 819   | 1218                     | 898   |
| 1-1/4                 | 427                      | 315   | 469                      | 346   | 427                      | 315   | 469                      | 346   | 957                     | 706   | 1051                     | 775   | 1552                  | 1145  | 1703                     | 1256  |
| 1-3/8                 | 564                      | 416   | 618                      | 456   | 564                      | 416   | 618                      | 456   | 1264                    | 932   | 1386                     | 1022  | 2050                  | 1512  | 2248                     | 1658  |
| 1-1/2                 | 743                      | 548   | 815                      | 601   | 743                      | 548   | 815                      | 601   | 1665                    | 1228  | 1826                     | 1347  | 2699                  | 1991  | 2962                     | 2185  |

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

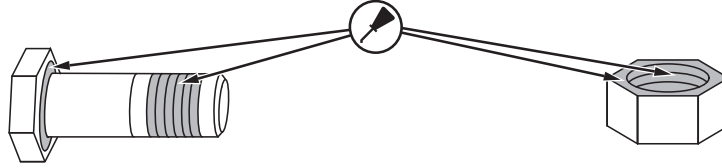
Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.

## Specifications

| Bolt or Screw Size | SAE Grade 1 <sup>a</sup> |                          | SAE Grade 2 <sup>b</sup> |                          | SAE Grade 5, 5.1 or 5.2 |                          | SAE Grade 8 or 8.2    |                          |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------|--------------------------|-----------------------|--------------------------|
|                    | Hex Head <sup>c</sup>    | Flange Head <sup>d</sup> | Hex Head <sup>c</sup>    | Flange Head <sup>d</sup> | Hex Head <sup>c</sup>   | Flange Head <sup>d</sup> | Hex Head <sup>c</sup> | Flange Head <sup>d</sup> |

- Properly start thread engagement.



TS1741—UN—22MAY18

<sup>a</sup>Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.

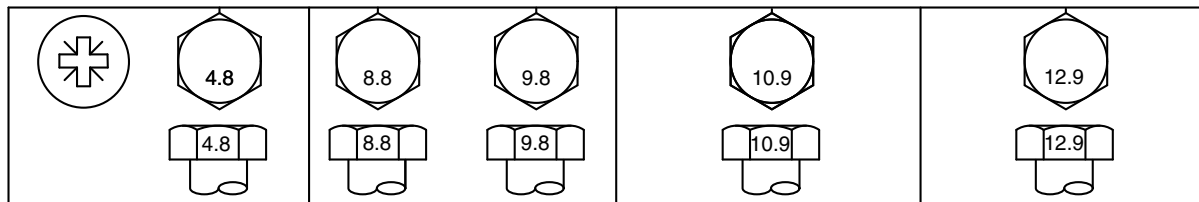
<sup>b</sup>Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.

<sup>c</sup>Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

<sup>d</sup>Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ1-19-30MAY18

## Metric Bolt and Screw Torque Values



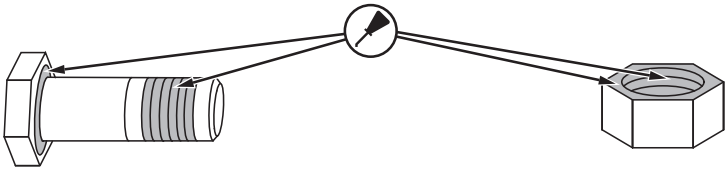
TS1742—UN—31MAY18

| Bolt or Screw Size | Class 4.8             |       |                          |       | Class 8.8 or 9.8      |       |                          |       | Class 10.9            |       |                          |       | Class 12.9            |       |                          |       |
|--------------------|-----------------------|-------|--------------------------|-------|-----------------------|-------|--------------------------|-------|-----------------------|-------|--------------------------|-------|-----------------------|-------|--------------------------|-------|
|                    | Hex Head <sup>a</sup> |       | Flange Head <sup>b</sup> |       | Hex Head <sup>a</sup> |       | Flange Head <sup>b</sup> |       | Hex Head <sup>a</sup> |       | Flange Head <sup>b</sup> |       | Hex Head <sup>a</sup> |       | Flange Head <sup>b</sup> |       |
|                    | N·m                   | lb·in | N·m                      | lb·in | N·m                   | lb·in | N·m                      | lb·in | N·m                   | lb·in | N·m                      | lb·in | N·m                   | lb·in | N·m                      | lb·in |
| M6                 | 3.6                   | 31.9  | 3.9                      | 34.5  | 6.7                   | 59.3  | 7.3                      | 64.6  | 9.8                   | 86.7  | 10.8                     | 95.6  | 11.5                  | 102   | 12.6                     | 112   |
|                    |                       |       |                          |       |                       |       |                          |       | N·m                   | lb·ft | N·m                      | lb·ft | N·m                   | lb·ft | N·m                      | lb·ft |
| M8                 | 8.6                   | 76.1  | 9.4                      | 83.2  | 16.2                  | 143   | 17.6                     | 156   | 23.8                  | 17.6  | 25.9                     | 19.1  | 27.8                  | 20.5  | 30.3                     | 22.3  |
|                    |                       |       | N·m                      | lb·ft | N·m                   | lb·ft | N·m                      | lb·ft |                       |       |                          |       |                       |       |                          |       |
| M10                | 16.9                  | 150   | 18.4                     | 13.6  | 31.9                  | 23.5  | 34.7                     | 25.6  | 46.8                  | 34.5  | 51                       | 37.6  | 55                    | 40.6  | 60                       | 44.3  |
|                    | N·m                   | lb·ft |                          |       |                       |       |                          |       |                       |       |                          |       |                       |       |                          |       |
| M12                | —                     | —     | —                        | —     | 55                    | 40.6  | 61                       | 45    | 81                    | 59.7  | 89                       | 65.6  | 95                    | 70.1  | 105                      | 77.4  |
| M14                | —                     | —     | —                        | —     | 87                    | 64.2  | 96                       | 70.8  | 128                   | 94.4  | 141                      | 104   | 150                   | 111   | 165                      | 122   |
| M16                | —                     | —     | —                        | —     | 135                   | 99.6  | 149                      | 110   | 198                   | 146   | 219                      | 162   | 232                   | 171   | 257                      | 190   |
| M18                | —                     | —     | —                        | —     | 193                   | 142   | 214                      | 158   | 275                   | 203   | 304                      | 224   | 322                   | 245   | 356                      | 263   |
| M20                | —                     | —     | —                        | —     | 272                   | 201   | 301                      | 222   | 387                   | 285   | 428                      | 316   | 453                   | 334   | 501                      | 370   |
| M22                | —                     | —     | —                        | —     | 365                   | 263   | 405                      | 299   | 520                   | 384   | 576                      | 425   | 608                   | 448   | 674                      | 497   |
| M24                | —                     | —     | —                        | —     | 468                   | 345   | 518                      | 382   | 666                   | 491   | 738                      | 544   | 780                   | 575   | 864                      | 637   |
| M27                | —                     | —     | —                        | —     | 683                   | 504   | 758                      | 559   | 973                   | 718   | 1080                     | 797   | 1139                  | 840   | 1263                     | 932   |
| M30                | —                     | —     | —                        | —     | 932                   | 687   | 1029                     | 759   | 1327                  | 979   | 1466                     | 1081  | 1553                  | 1145  | 1715                     | 1265  |
| M33                | —                     | —     | —                        | —     | 1258                  | 928   | 1398                     | 1031  | 1788                  | 1319  | 1986                     | 1465  | 2092                  | 1543  | 2324                     | 1714  |
| M36                | —                     | —     | —                        | —     | 1617                  | 1193  | 1789                     | 1319  | 2303                  | 1699  | 2548                     | 1879  | 2695                  | 1988  | 2982                     | 2199  |

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

## Specifications

| Bolt or Screw Size                                                                                                                                                                                                                                                                                                                                                                                                     | Class 4.8             |                          | Class 8.8 or 9.8      |                          | Class 10.9            |                          | Class 12.9            |                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                        | Hex Head <sup>a</sup> | Flange Head <sup>b</sup> | Hex Head <sup>a</sup> | Flange Head <sup>b</sup> | Hex Head <sup>a</sup> | Flange Head <sup>b</sup> | Hex Head <sup>a</sup> | Flange Head <sup>b</sup> |
| <ul style="list-style-type: none"> <li>Make sure that fastener threads are clean.</li> <li>Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.</li> <li>Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.</li> <li>Properly start thread engagement.</li> </ul> |                       |                          |                       |                          |                       |                          |                       |                          |
|                                                                                                                                                                                                                                                                                                                                      |                       |                          |                       |                          |                       |                          |                       |                          |

TS1741—UN—22MAY18

<sup>a</sup>Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

<sup>b</sup>Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-30MAY18

### Face Seal Fittings Assembly and Installation—All Pressure Applications

#### Face Seal O-Ring to Stud End Installation

1. Inspect the fitting surfaces. They must be free of dirt and/or defects.
2. Inspect the O-ring. It must be free of damage and/or defects.
3. Lubricate O-rings and install into groove using petroleum jelly to hold in place.
4. Push O-ring into groove with petroleum jelly so O-ring is not displaced during assembly.
5. Index angle fittings and tighten by hand pressing joint together to insure O-ring remains in place.
6. Tighten fitting or nut to torque value shown on the chart per dash size stamped on the fitting. DO NOT allow hoses to twist when tightening fittings.

#### Face Seal Adjustable Stud End O-Ring Installation

1. Back off lock nut (jam nut) and washer to full exposed turned down section of the fitting.
2. Install a thimble over the fitting threads to protect the O-ring from nicks.
3. Slide the O-ring over the thimble into the turned down section of the fitting.

4. Remove thimble.

#### Face Seal Straight Stud End O-Ring Installation

1. Install a thimble over the fitting threads to protect the O-ring from nicks.
2. Slide the O-ring over the thimble into the turned down section of the fitting.
3. Remove thimble.

#### Fitting Installation

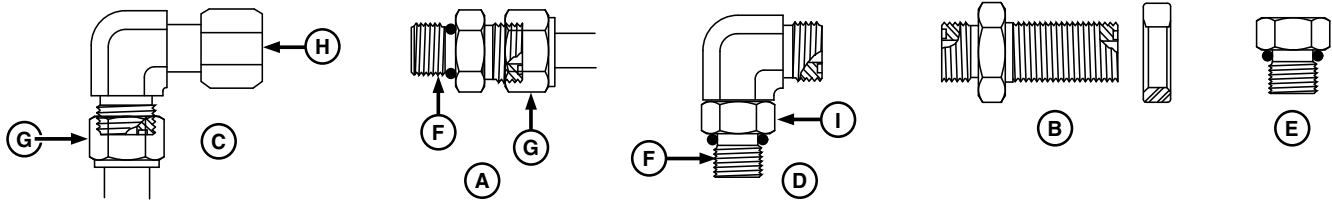
1. Install fitting by hand until snug.
2. Position adjustable fittings by unscrewing the fitting no more than one turn.
3. Apply assembly torque per table.

#### Assembly Torque

1. Use one wrench to hold the connector body and one wrench to tighten nut.
2. For a hydraulic hose, it may be necessary to use three wrenches to prevent twist; one on the connector body, one on the nut, and one on the body of the hose fitting.

OUO6435,0001557-19-29JUL04

## Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures



N79757—UN—13FEB08

A—Stud Straight and Tube Nut  
 B—Bulkhead Union and Bulkhead Lock Nut  
 C—90° Swivel Elbow and Tube Nut  
 D—90° Adjustable Stud Elbow  
 E—Port Plug

F—Stud End  
 G—Tube Nut  
 H—Swivel Nut  
 I—Lock Nut

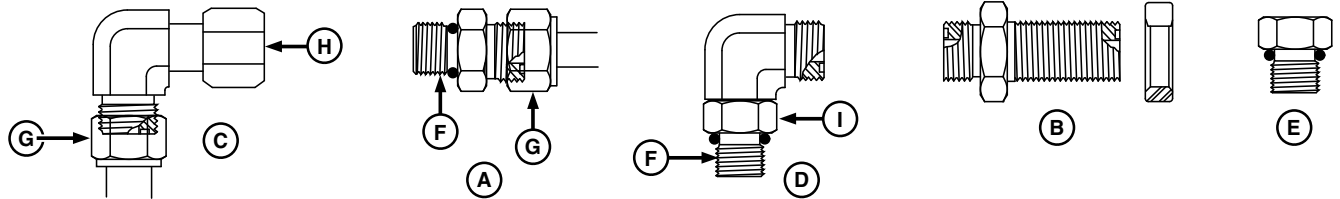
| Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI) |              |              |        |                                      |                              |                                   |       |                                         |                   |       |                                                                               |                                      |                                |                                    |       |                                                          |
|--------------------------------------------------------------------------------------------------------|--------------|--------------|--------|--------------------------------------|------------------------------|-----------------------------------|-------|-----------------------------------------|-------------------|-------|-------------------------------------------------------------------------------|--------------------------------------|--------------------------------|------------------------------------|-------|----------------------------------------------------------|
| Nominal Tube OD<br>Hose ID                                                                             |              |              |        | O-Ring Face Seal/<br>Tube Swivel Nut |                              |                                   |       | Bulkhead Jam Nut<br>Torque <sup>A</sup> |                   |       | O-Ring Straight, Adjustable, and External Port Plug Stud<br>Ends <sup>A</sup> |                                      |                                |                                    |       |                                                          |
| Metric<br>Tube<br>OD                                                                                   | Inch Tube OD |              |        | Thread<br>Size                       | Swivel<br>Nut<br>Hex<br>Size | Tube Nut/<br>Swivel Nut<br>Torque |       | Jam<br>Nut<br>Hex<br>Size               | Jam Nut<br>Torque |       | Thread Size                                                                   | Straight<br>Hex<br>Size <sup>B</sup> | Adj<br>Lock Nut<br>Hex<br>Size | Steel<br>or<br>Gray Iron<br>Torque |       | Alumi-<br>num<br>or<br>Brass<br>Tor-<br>que <sup>C</sup> |
|                                                                                                        |              |              |        |                                      |                              |                                   |       |                                         |                   |       |                                                                               |                                      |                                |                                    |       |                                                          |
|                                                                                                        | mm           | Dash<br>Size | in.    | mm                                   | mm                           | N·m                               | lb-ft | mm                                      | N·m               | lb-ft | mm                                                                            | mm                                   | mm                             | N·m                                | lb-ft |                                                          |
|                                                                                                        | N·m          | lb-ft        |        |                                      |                              |                                   |       |                                         |                   |       |                                                                               |                                      |                                |                                    |       |                                                          |
| 4                                                                                                      | -2           | 0.1-25       | 3.18   | —                                    | —                            | —                                 | —     | —                                       | —                 | —     | M8 X 1                                                                        | 12                                   | 12                             | 8                                  | 6     | 5 4                                                      |
| 5                                                                                                      | -3           | 0.1-88       | 4.76   | —                                    | —                            | —                                 | —     | —                                       | —                 | —     | M10 X 1                                                                       | 14                                   | 14                             | 15                                 | 11    | 10 7                                                     |
| 6                                                                                                      | -4           | 0.2-50       | 6.35   | 9/16-18                              | 17                           | 24                                | 18    | 22                                      | 32                | 24    | M12 X 1.5                                                                     | 17                                   | 17                             | 25                                 | 18    | 17 12                                                    |
| 8                                                                                                      | -5           | 0.3-12       | 7.92   | —                                    | —                            | —                                 | —     | —                                       | —                 | —     | M14 X 1.5                                                                     | 19                                   | 19                             | 40                                 | 30    | 27 20                                                    |
| 10                                                                                                     | -6           | 0.3-75       | 9.53   | 11/16-16                             | 22                           | 37                                | 27    | 27                                      | 42                | 31    | M16 X 1.5                                                                     | 22                                   | 22                             | 45                                 | 33    | 30 22                                                    |
| 12                                                                                                     | -8           | 0.5-00       | 12.7-0 | 13/16-16                             | 24                           | 50                                | 37    | 30                                      | 93                | 69    | M18 X 1.5                                                                     | 24                                   | 24                             | 50                                 | 37    | 33 25                                                    |
| 16                                                                                                     | -10          | 0.6-25       | 15.8-8 | 1-14                                 | 30                           | 69                                | 51    | 36                                      | 118               | 87    | M22 X 1.5                                                                     | 27                                   | 27                             | 69                                 | 51    | 46 34                                                    |
| 20                                                                                                     | -12          | 0.7-50       | 19.0-5 | 1-3/16-12                            | 36                           | 102                               | 75    | 41                                      | 175               | 129   | M27 X 2                                                                       | 32                                   | 32                             | 10-0                               | 74    | 67 49                                                    |
| 22                                                                                                     | -14          | 0.8-75       | 22.2-3 | 1-3/16-12                            | 36                           | 102                               | 75    | 41                                      | 175               | 129   | M30 X 2                                                                       | 36                                   | 36                             | 13-0                               | 96    | 87 64                                                    |
| 25                                                                                                     | -16          | 1.0-00       | 25.4-0 | 1-7/16-12                            | 41                           | 142                               | 105   | 46                                      | 247               | 182   | M33 X 2                                                                       | 41                                   | 41                             | 16-0                               | 118   | 1-07 79                                                  |
| 28                                                                                                     | —            | —            | —      | —                                    | —                            | —                                 | —     | —                                       | —                 | —     | M38 x 2                                                                       | 46                                   | 46                             | 17-6                               | 130   | 1-17 87                                                  |
| 32                                                                                                     | -20          | 1.2-50       | 31.7-5 | 1-11/16-12                           | 50                           | 190                               | 140   | 50                                      | 328               | 242   | M42 X 2                                                                       | 50                                   | 50                             | 21-0                               | 155   | 1-40 1-03                                                |
| 38                                                                                                     | -24          | 1.5-00       | 38.1-0 | 2-12                                 | 60                           | 217                               | 160   | 60                                      | 374               | 276   | M48 X 2                                                                       | 55                                   | 55                             | 26-0                               | 192   | 1-73 1-28                                                |
| 50                                                                                                     | -32          | 2.0-00       | 50.8-0 | —                                    | —                            | —                                 | —     | —                                       | —                 | —     | M60 X 2                                                                       | 65                                   | 65                             | 31-5                               | 232   | 2-10 1-55                                                |

<sup>A</sup> Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

<sup>B</sup> The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

<sup>C</sup> These torques were established using steel plated connectors in aluminum and brass.

## Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High-Pressure Applications



N79757—UN—13FEB08

A—Stud Straight and Tube Nut  
 B—Bulkhead Union and Bulkhead Lock Nut  
 C—90° Swivel Elbow and Tube Nut  
 D—90° Adjustable Stud Elbow  
 E—Port Plug

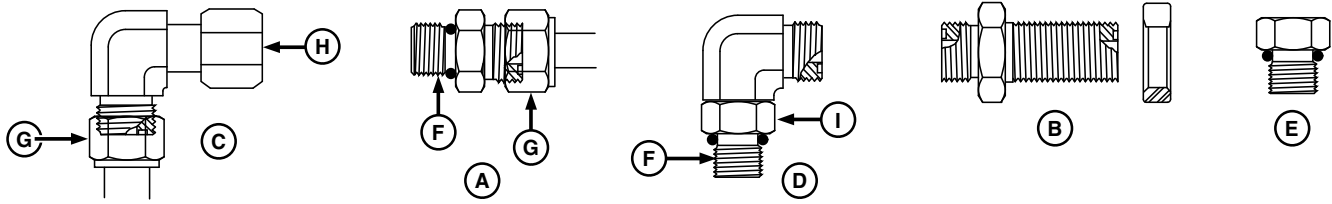
F—Stud End  
 G—Tube Nut  
 H—Swivel Nut  
 I—Lock Nut

| Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure: Above 27580 kPa (275.8 bar) (4000 psi), Working Pressure: 41370 kPa (413.7 bar) (6,000 psi) |                        |        |       |                                      |                              |                                   |       |                                          |                    |       |                                                                               |                                   |                                   |                                    |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-------|--------------------------------------|------------------------------|-----------------------------------|-------|------------------------------------------|--------------------|-------|-------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|-------|
| Nominal Tube OD<br>Hose ID                                                                                                                                           |                        |        |       | O-Ring Face Seal/<br>Tube Swivel Nut |                              |                                   |       | Bulkhead Lock Nut<br>Torque <sup>A</sup> |                    |       | O-Ring Straight, Adjustable, and External Port Plug<br>Stud Ends <sup>A</sup> |                                   |                                   |                                    |       |
| Metric<br>Tube<br>OD                                                                                                                                                 | Inch Tube OD           |        |       | Thread Size                          | Swivel<br>Nut<br>Hex<br>Size | Tube Nut/<br>Swivel Nut<br>Torque |       | Lock<br>Nut<br>Hex<br>Size               | Lock Nut<br>Torque |       | Thread Size                                                                   | Straight<br>Hex Size <sup>B</sup> | Adj<br>Lock<br>Nut<br>Hex<br>Size | Steel<br>or<br>Gray Iron<br>Torque |       |
| mm                                                                                                                                                                   | Da-<br>sh<br>Siz-<br>e | in     | mm    | in                                   | mm                           | N·m                               | lb-ft | mm                                       | N·m                | lb-ft | mm                                                                            | mm                                | mm                                | N·m                                | lb-ft |
| 4                                                                                                                                                                    | -2                     | 0.12-5 | 3.18  | —                                    | —                            | —                                 | —     | —                                        | —                  | —     | M8 X 1                                                                        | 12                                | 12                                | 8                                  | 6     |
| 5                                                                                                                                                                    | -3                     | 0.18-8 | 4.76  | —                                    | —                            | —                                 | —     | —                                        | —                  | —     | M10 X 1                                                                       | 14                                | 14                                | 15                                 | 11    |
| 6                                                                                                                                                                    | -4                     | 0.25-0 | 6.35  | 9/16-18                              | 17                           | 24                                | 18    | 22                                       | 32                 | 24    | M12 X 1.5                                                                     | 17                                | 17                                | 35                                 | 26    |
| 8                                                                                                                                                                    | -5                     | 0.31-2 | 7.92  | —                                    | —                            | —                                 | —     | —                                        | —                  | —     | M14 X 1.5                                                                     | 19                                | 19                                | 45                                 | 33    |
| 10                                                                                                                                                                   | -6                     | 0.37-5 | 9.53  | 11/16-16                             | 22                           | 37                                | 27    | 27                                       | 42                 | 31    | M16 X 1.5                                                                     | 22                                | 22                                | 55                                 | 41    |
| 12                                                                                                                                                                   | -8                     | 0.50-0 | 12.70 | 13/16-16                             | 24                           | 63                                | 46    | 30                                       | 93                 | 69    | M18 X 1.5                                                                     | 24                                | 24                                | 70                                 | 52    |
| 16                                                                                                                                                                   | -10                    | 0.62-5 | 15.88 | 1-14                                 | 30                           | 103                               | 76    | 36                                       | 118                | 87    | M22 X 1.5                                                                     | 27                                | 27                                | 100                                | 74    |
| 20                                                                                                                                                                   | -12                    | 0.75-0 | 19.05 | 1-3/16-12                            | 36                           | 152                               | 112   | 41                                       | 175                | 129   | M27 X 2                                                                       | 32                                | 32                                | 170                                | 125   |
| 22                                                                                                                                                                   | -14                    | 0.87-5 | 22.23 | 1-3/16-12                            | 36                           | 152                               | 112   | 41                                       | 175                | 129   | M30 X 2                                                                       | 36                                | 36                                | 215                                | 159   |
| 25                                                                                                                                                                   | -16                    | 1.00-0 | 25.40 | 1-7/16-12                            | 41                           | 214                               | 158   | 46                                       | 247                | 182   | M33 X 2                                                                       | 41                                | 41                                | 260                                | 192   |
| 28                                                                                                                                                                   | —                      | —      | —     | —                                    | —                            | —                                 | —     | —                                        | —                  | —     | M38 x 2                                                                       | 46                                | 46                                | 320                                | 236   |
| 32                                                                                                                                                                   | -20                    | 1.25-0 | 31.75 | 1-11/16-12                           | —                            | 286                               | 211   | 50                                       | 328                | 242   | M42 X 2                                                                       | 50                                | 50                                | 360                                | 266   |
| 38                                                                                                                                                                   | -24                    | 1.50-0 | 38.10 | 2-12                                 | —                            | 326                               | 240   | 60                                       | 374                | 276   | M48 X 2                                                                       | 55                                | 55                                | 420                                | 310   |

<sup>A</sup> Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

<sup>B</sup> The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

## SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures



N79757—UN—13FEB08

A—Stud Straight and Tube Nut  
 B—Bulkhead Union and Bulkhead Lock Nut  
 C—90° Swivel Elbow and Tube Nut  
 D—90° Adjustable Stud Elbow  
 E—Port Plug

F—Stud End  
 G—Tube Nut  
 H—Swivel Nut  
 I—Lock Nut

**SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI)**

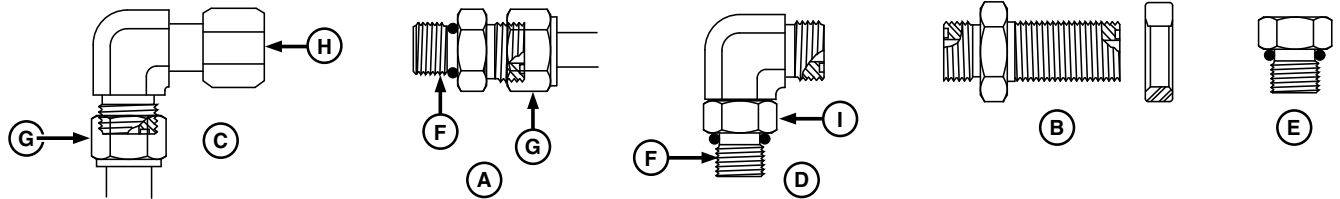
| Nominal Tube OD<br>Hose ID |                   |       |       | O-Ring Face Seal/<br>Tube Swivel Nut |                           |                                      | Bulkhead Jam<br>Nut Torque <sup>A</sup> |                   | O-Ring Straight, Adjustable, and External Port Plug<br>Stud Ends <sup>A</sup> |                                   |                                |                                       |       |                                                         |       |
|----------------------------|-------------------|-------|-------|--------------------------------------|---------------------------|--------------------------------------|-----------------------------------------|-------------------|-------------------------------------------------------------------------------|-----------------------------------|--------------------------------|---------------------------------------|-------|---------------------------------------------------------|-------|
| Metric<br>Tube<br>OD       | Inch Tube OD      |       |       | Thread Size                          | Swivel<br>Nut Hex<br>Size | Tube<br>Nut/<br>Swivel<br>Nut Torque | Jam<br>Nut Hex<br>Size                  | Jam<br>Nut Torque | Thread Size                                                                   | Straight<br>Hex Size <sup>B</sup> | Adj<br>Lock<br>Nut Hex<br>Size | Steel<br>or<br>Gray<br>Iron<br>Torque |       | Alumi-<br>um<br>or<br>Brass<br>Tor-<br>que <sup>C</sup> |       |
| mm                         | Das-<br>h<br>Size | in.   | mm    | in.                                  | in.                       | N·m                                  | lb-ft                                   |                   | N·m                                                                           | lb-ft                             | in.                            | in.                                   | in.   |                                                         |       |
| N·m                        | lb-ft             | N·m   | lb-ft |                                      |                           |                                      |                                         |                   |                                                                               |                                   |                                |                                       |       |                                                         |       |
| 5                          | -3                | 0.188 | 4.78  | —                                    | —                         | —                                    | —                                       | —                 | 3/8-24                                                                        | 5/8                               | 9/16                           | 12                                    | 9     | 8                                                       | 6     |
| 6                          | -4                | 0.250 | 6.35  | 9/16-18                              | 11/16                     | 2-4                                  | 18                                      | 13/16             | 7/16-20                                                                       | 5/8                               | 5/8                            | 16                                    | 1-2   | 11                                                      | 8     |
| 8                          | -5                | 0.312 | 7.92  | —                                    | —                         | —                                    | —                                       | —                 | 1/2-20                                                                        | 3/4                               | 11/16                          | 24                                    | 1-8   | 16                                                      | 1-2   |
| 10                         | -6                | 0.375 | 9.53  | 11/16-16                             | 13/16                     | 3-7                                  | 27                                      | 1                 | 9/16-18                                                                       | 3/4                               | 3/4                            | 37                                    | 2-7   | 25                                                      | 1-8   |
| 12                         | -8                | 0.500 | 12.70 | 13/16-16                             | 15/16                     | 5-0                                  | 37                                      | 1-1/8             | 3/4-16                                                                        | 7/8                               | 15/16                          | 50                                    | 3-7   | 33                                                      | 2-5   |
| 16                         | -10               | 0.625 | 15.88 | 1-14                                 | 1-1/8                     | 6-9                                  | 51                                      | 1-5/16            | 7/8-14                                                                        | 1-1/16                            | 1-1/16                         | 69                                    | 5-1   | 46                                                      | 3-4   |
| 20                         | -12               | 0.750 | 19.05 | 1-3/16-12                            | 1-3/8                     | 1-0-2                                | 75                                      | 1-1/2             | 1-1/16-12                                                                     | 1-1/4                             | 1-3/8                          | 1-02                                  | 7-5   | 68                                                      | 5-0   |
| 22                         | -14               | 0.875 | 22.23 | 1-3/16-12                            | —                         | 1-0-2                                | 75                                      | —                 | 1-3/16-12                                                                     | 1-3/8                             | 1-1/2                          | 1-22                                  | 9-0   | 81                                                      | 6-0   |
| 25                         | -16               | 1.000 | 25.40 | 1-7/16-12                            | 1-5/8                     | 1-4-2                                | 10-5                                    | 1-3/4             | 1-5/16-12                                                                     | 1-1/2                             | 1-5/8                          | 1-42                                  | 1-0-5 | 95                                                      | 7-0   |
| 32                         | -20               | 1.25  | 31.75 | 1-11/16-12                           | 1-7/8                     | 1-9-0                                | 14-0                                    | 2                 | 1-5/8-12                                                                      | 1-3/4                             | 1-7/8                          | 1-90                                  | 1-4-0 | 1-27                                                    | 9-3   |
| 38                         | -24               | 1.50  | 38.10 | 2-12                                 | 2-1/4                     | 2-1-7                                | 16-0                                    | 2-3/8             | 1-7/8-12                                                                      | 2-1/8                             | 2-1/8                          | 2-17                                  | 1-6-0 | 1-45                                                    | 1-0-7 |
| 50.8                       | -32               | 2.000 | 50.80 | —                                    | —                         | —                                    | —                                       | —                 | 2-1/2-12                                                                      | 2-3/4                             | 2-3/4                          | 3-11                                  | 2-2-9 | 2-07                                                    | 1-5-3 |

<sup>A</sup> Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

<sup>B</sup> The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

<sup>C</sup> These torques were established using steel plated connectors in aluminum and brass.

## SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure Applications



N79757—UN—13FEB08

A—Stud Straight and Tube Nut  
 B—Bulkhead Union and Bulkhead Lock Nut  
 C—90° Swivel Elbow and Tube Nut  
 D—90° Adjustable Stud Elbow  
 E—Port Plug

F—Stud End  
 G—Tube Nut  
 H—Swivel Nut  
 I—Lock Nut

| SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High-Pressure: Above Below 27580 kPa (275.8 bar) (4000 psi), Working Pressure: 41370 kPa (413.7 bar) (6,000 psi) |                        |        |       |                                      |                           |                                   |       |                                          |                    |       |                                                                               |                                   |                                   |                                    |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-------|--------------------------------------|---------------------------|-----------------------------------|-------|------------------------------------------|--------------------|-------|-------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|-------|
| Nominal Tube OD<br>Hose ID                                                                                                                                              |                        |        |       | O-Ring Face Seal/<br>Tube Swivel Nut |                           |                                   |       | Bulkhead Lock Nut<br>Torque <sup>A</sup> |                    |       | O-Ring Straight, Adjustable, and External Port Plug<br>Stud Ends <sup>A</sup> |                                   |                                   |                                    |       |
| Met-<br>ric<br>Tube<br>OD                                                                                                                                               | Inch Tube OD           |        |       | Thread Size                          | Swivel<br>Nut Hex<br>Size | Tube Nut/<br>Swivel Nut<br>Torque |       | Lock<br>Nut<br>Hex<br>Size               | Lock Nut<br>Torque |       | Thread<br>Size                                                                | Straight<br>Hex Size <sup>B</sup> | Adj<br>Lock<br>Nut<br>Hex<br>Size | Steel<br>or<br>Gray Iron<br>Torque |       |
| mm                                                                                                                                                                      | Da-<br>sh<br>Siz-<br>e | in     | mm    | in                                   | in                        | N·m                               | lb·ft |                                          | N·m                | lb·ft | in                                                                            | in                                | in                                | N·m                                | lb·ft |
| 5                                                                                                                                                                       | -3                     | 0.18-8 | 4.78  | —                                    | —                         | —                                 | —     | —                                        | —                  | —     | 3/8-24                                                                        | 5/8                               | 9/16                              | 18                                 | 13    |
| 6                                                                                                                                                                       | -4                     | 0.25-0 | 6.35  | 9/16-18                              | 11/16                     | 24                                | 18    | 13/16                                    | 32                 | 24    | 7/16-20                                                                       | 5/8                               | 5/8                               | 24                                 | 18    |
| 8                                                                                                                                                                       | -5                     | 0.31-2 | 7.92  | —                                    | —                         | —                                 | —     | —                                        | —                  | —     | 1/2-20                                                                        | 3/4                               | 11/16                             | 30                                 | 22    |
| 10                                                                                                                                                                      | -6                     | 0.37-5 | 9.53  | 11/16-16                             | 13/16                     | 37                                | 27    | 1                                        | 42                 | 31    | 9/16-18                                                                       | 3/4                               | 3/4                               | 37                                 | 27    |
| 12                                                                                                                                                                      | -8                     | 0.50-0 | 12.70 | 13/16-16                             | 15/16                     | 63                                | 46    | 1-1/8                                    | 93                 | 69    | 3/4-16                                                                        | 7/8                               | 15/16                             | 75                                 | 55    |
| 16                                                                                                                                                                      | -10                    | 0.62-5 | 15.88 | 1-14                                 | 1-1/8                     | 103                               | 76    | 1-5/16                                   | 118                | 87    | 7/8-14                                                                        | 1-1/16                            | 1-1/16                            | 103                                | 76    |
| 20                                                                                                                                                                      | -12                    | 0.75-0 | 19.05 | 1-3/16-12                            | 1-3/8                     | 152                               | 112   | 1-1/2                                    | 175                | 129   | 1-1/16-12                                                                     | 1-1/4                             | 1-3/8                             | 177                                | 131   |
| 22                                                                                                                                                                      | -14                    | 0.87-5 | 22.23 | 1-3/16-12                            | —                         | 152                               | 112   | —                                        | 175                | 129   | 1-3/16-12                                                                     | 1-3/8                             | 1-1/2                             | 231                                | 170   |
| 25                                                                                                                                                                      | -16                    | 1.00-0 | 25.40 | 1-7/16-12                            | 1-5/8                     | 214                               | 158   | 1-3/4                                    | 247                | 182   | 1-5/16-12                                                                     | 1-1/2                             | 1-5/8                             | 270                                | 199   |
| 32                                                                                                                                                                      | -20                    | 1.25   | 31.75 | 1-11/16-12                           | 1-7/8                     | 286                               | 211   | 2                                        | 328                | 242   | 1-5/8-12                                                                      | 1-3/4                             | 1-7/8                             | 286                                | 211   |
| 38                                                                                                                                                                      | -24                    | 1.50   | 38.10 | 2-12                                 | 2-1/4                     | 326                               | 240   | 2-3/8                                    | 374                | 276   | 1-7/8-12                                                                      | 2-1/8                             | 2-1/8                             | 326                                | 240   |
| <sup>A</sup> Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.                                                                         |                        |        |       |                                      |                           |                                   |       |                                          |                    |       |                                                                               |                                   |                                   |                                    |       |
| <sup>B</sup> The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.                   |                        |        |       |                                      |                           |                                   |       |                                          |                    |       |                                                                               |                                   |                                   |                                    |       |

## Four Bolt Flange Fittings Assembly and Installation—All Pressure Applications

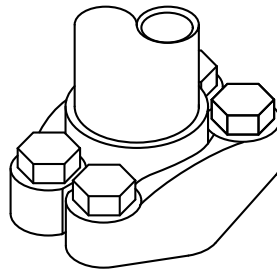
1. Inspect the sealing surfaces for nicks or scratches, roughness or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.
2. Install the correct O-ring (and back-up washer if required) into the groove using petroleum jelly to hold it in place.
3. For split flange; loosely assemble split flange halves, being sure that the split is centrally located and perpendicular to the port. Hand tighten cap screws to hold parts in place. Do not pinch O-ring.

4. For single piece flange; put hydraulic line in the center of the flange and install four cap screws. With the flange centrally located on the port, hand tighten cap screws to hold it in place. Do not pinch O-ring.
5. For both single piece flange and split flange, be sure the components are properly positioned and cap screws are hand tight. Tighten one cap screw, then tighten the diagonally opposite cap screw. Tighten the two remaining cap screws. Tighten all cap screws within the specified limits shown in the chart.

DO NOT use air wrenches. DO NOT tighten one cap screw fully before tightening the others. DO NOT overtighten.

OOU6435,000189F-19-20AUG02

## SAE Four Bolt Flange Cap Screw Torque Values—Standard Pressure Applications



H70423—UN—30NOV01

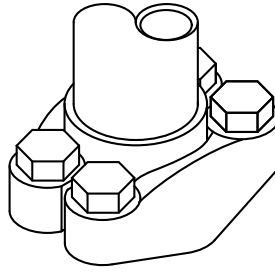
| SAE Four Bolt Flange Cap Screw Torque Values—27,600 KPA (4,000 PSI) Pressure Applications |                          |               |     |             |     |
|-------------------------------------------------------------------------------------------|--------------------------|---------------|-----|-------------|-----|
|                                                                                           |                          | Torque        |     |             |     |
|                                                                                           |                          | Newton Meters |     | Foot Pounds |     |
| Nominal Flange Size                                                                       | Screw Size <sup>ab</sup> | Min           | Max | Min         | Max |
| 1/2                                                                                       | 5/16-18 UNC              | 20            | 31  | 15          | 23  |
| 3/4                                                                                       | 3/8-16 UNC               | 28            | 54  | 21          | 40  |
| 1                                                                                         | 3/8-16 UNC               | 37            | 54  | 27          | 40  |
| 1-1/4                                                                                     | 7/16-14 UNC              | 47            | 85  | 35          | 63  |
| 1-1/2                                                                                     | 1/2-13 UNC               | 62            | 131 | 46          | 97  |
| 2                                                                                         | 1/2-13 UNC               | 73            | 131 | 54          | 97  |
| 2-1/2                                                                                     | 1/2-13 UNC               | 107           | 131 | 79          | 97  |
| 3                                                                                         | 5/8-11 UNC               | 187           | 264 | 138         | 195 |
| 3-1/2                                                                                     | 5/8-11 UNC               | 158           | 264 | 117         | 195 |
| 4                                                                                         | 5/8-11 UNC               | 158           | 264 | 117         | 195 |
| 5                                                                                         | 5/8-11 UNC               | 158           | 264 | 117         | 195 |

<sup>a</sup>JDM A17D, SAE Grade 5 or better cap screws with plated hardware.

<sup>b</sup>1.5.1.2 Lock washers are permissible but not recommended.

OOU6435,0001549-19-03FEB04

## SAE Four Bolt Flange Cap Screw Torque Values—High Pressure Applications



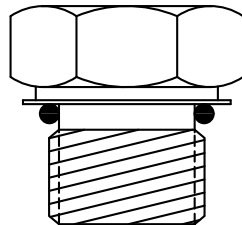
H70423—UN—30NOV01

| SAE Four Bolt Flange Cap Screw Torque Values—41,400 KPA (6,000 PSI) Pressure Applications |                          |               |     |             |     |
|-------------------------------------------------------------------------------------------|--------------------------|---------------|-----|-------------|-----|
| Nominal Flange Size                                                                       | Screw Size <sup>ab</sup> | Torque        |     |             |     |
|                                                                                           |                          | Newton Meters |     | Foot Pounds |     |
|                                                                                           |                          | Min           | Max | Min         | Max |
| 1/2                                                                                       | 5/16-18 UNC              | 20            | 31  | 15          | 23  |
| 3/4                                                                                       | 3/8-16 UNC               | 34            | 54  | 25          | 40  |
| 1                                                                                         | 7/16-14 UNC              | 57            | 85  | 42          | 63  |
| 1-1/4                                                                                     | 1/2-13 UNC               | 85            | 131 | 63          | 63  |
| 1-1/2                                                                                     | 5/8-11 UNC               | 159           | 264 | 117         | 195 |
| 2                                                                                         | 3/4-10 UNC               | 271           | 468 | 200         | 345 |

<sup>a</sup>JDM A17D, SAE Grade 5 or better cap screws with plated hardware.<sup>b</sup>1.5.1.2 Lock washers are permissible but not recommended.

OUO6435,000154C-19-17JUN04

## External Hexagon Port Plug Torque Chart



|         |                       |
|---------|-----------------------|
| M33 x 2 | 235 N·m (173.3 lb·ft) |
| M38 x 2 | 245 N·m (180.7 lb·ft) |
| M42 x 2 | 260 N·m (191.8 lb·ft) |
| M48 x 2 | 290 N·m (213.9 lb·ft) |
| M60 x 2 | 330 N·m (243.4 lb·ft) |

<sup>a</sup>Port to JDS-G173.1; stud end to JDS-G173.3.

OUO6435,00017FB-19-06JAN17

## Eurasian Economic Union



EAC Marking

TS1738—UN—26APR16

This information applies only to products which bear the EAC conformity mark of the Eurasian Economic Union member states.

H70356—UN—30NOV01

| Port or Stud End Thread Size <sup>a</sup> | Torque<br>+15%/-20%   |
|-------------------------------------------|-----------------------|
| M8 x 1                                    | 10 N·m (89 lb·in)     |
| M10 x 1                                   | 17 N·m (150 lb·in)    |
| M12 x 1.5                                 | 28 N·m (20.6 lb·ft)   |
| M14 x 1.5                                 | 39 N·m (28.7 lb·ft)   |
| M16 x 1.5                                 | 48 N·m (35.4 lb·ft)   |
| M18 x 1.5                                 | 60 N·m (44.2 lb·ft)   |
| M20 x 1.5                                 | 60 N·m (44.2 lb·ft)   |
| M22 x 1.5                                 | 85 N·m (62.7 lb·ft)   |
| M27 x 2                                   | 135 N·m (99.6 lb·ft)  |
| M30 x 2                                   | 165 N·m (121.7 lb·ft) |

**Manufacturer:**

Deere & Company, Moline, Illinois U.S.A.

**Name of the authorized representative in the Eurasian Economic Union:**

Limited Liability Company  
“John Deere Rus”

**Address of the authorized representative:**

142050, Russia, Moscow region, Domodedovo district,  
Domodedovo, Beliye Stolbi micro district, vladenye  
“Warehouse 104”, Building 2

For technical support, contact your dealer.

Date of manufacture is denoted by the product marking  
on or near the serial number plate.

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DX,EAC-19-27APR16

## Identification



FA10751—UN—30MAR21

**A—Product Identification Number**

The product identification number (A) is located on the  
main tool bar.

Product Identification Number

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EC82471,0000417-19-25MAR21

## Product Warranty

Contact your John Deere dealer.

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EC82471,00003AC-19-07JAN21

# John Deere Service Literature Available

## Technical Information

Technical information can be purchased from John Deere. Publications are available in print or CD-ROM format.

Orders can be made using one of the following:

- John Deere Technical Information Store: **www.JohnDeere.com/TechInfoStore**
- Call 1-800-522-7448
- Contact your John Deere dealer

Available information includes:



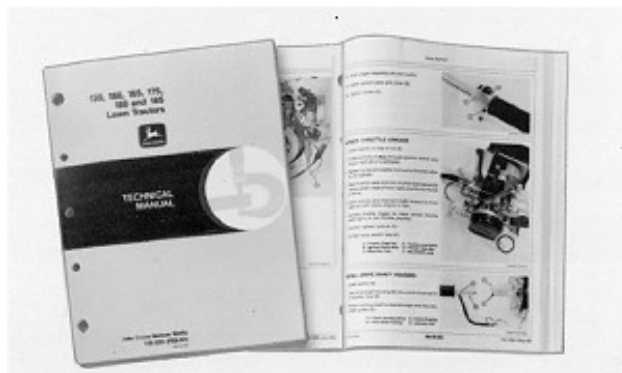
TS189—UN—17JAN89

**PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.



TS191—UN—02DEC88

**OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information.



TS224—UN—17JAN89

**TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in a separate component technical manual.



TS1663—UN—10OCT97

**EDUCATIONAL CURRICULUM** including five comprehensive series of books detailing basic information regardless of manufacturer:

- Agricultural Primer series covers technology in farming and ranching.
- Farm Business Management series examines “real-world” problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
- Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.
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DX,SERV LIT-19-07DEC16

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TS100—UN—23AUG88

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DX,IBC,A-19-04JUN90

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DX,IBC,D-19-04JUN90

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DX,IBC,B-19-04JUN90

## Well-Trained Technicians



TS102—UN—23AUG88

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