

SCHULTE®

DHX-360/DHX-600

DISC HARROW

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Part No.DH60-010C

OPERATOR'S MANUAL



This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. **READ, UNDERSTAND, and FOLLOW** the Safety and Operation Instructions contained in this manual before operating the equipment. C01-Cover str



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To the Owner/Operator/Dealer

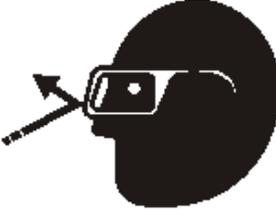
All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

BEFORE YOU START!! Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!

 **DANGER**

TO AVOID SERIOUS INJURY OR DEATH:

- **READ AND UNDERSTAND** the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- **CONTACT DEALER** immediately if you do not have manuals.
- **CONTACT DEALER** to explain any instructions not fully understood.
- **KNOW HOW** to stop tractor and equipment quickly for an emergency.
- **ALWAYS WEAR** safety glasses.
- **WEAR** hard hat, safety shoes and gloves for protection when operating equipment.


D604_3

WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. **DEALER TO COMPLETE WARRANTY REGISTRATION ONLINE AT www.schulteservicecenter.com.** LOCATED BEFORE TABLE OF CONTENTS.

To the Owner/Operator/Dealer

This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the implement at all times. A Manual canister is provided on the implement where this manual can be properly stored. If you lose or damage this manual a free replacement manual can be obtained from an authorized *Schulte* dealer or by down loading the manual from the *Schulte* website www.schulte.ca

BEFORE YOU START! READ, UNDERSTAND, and FOLLOW the information provided in this manual, and the tractor operator's manual carefully to learn how to operate and service your machine properly. Failure to do so could result in personal injury to you and bystanders. All implements with moving parts are potentially hazardous. Every effort has been made to ensure that the machine is safe but operators must avoid engaging in unsafe practices and follow the written instructions provided. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

The care you give your *Schulte* Implement will greatly determine your satisfaction with its performance and its service life. Carefully read and follow the instructions in this manual to provide you with a thorough understanding of your new implement and its intended use and service requirements.

All references made in this manual to right, left, front, rear, top or bottom are as viewed facing the direction of forward travel with the implement properly attached to the tractor.

Replacement Parts information is located in a separate Parts Manual. *Schulte* equipment uses balanced and matched system components. These parts are made and tested to *Schulte* specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce performance, void warranties, and present a safety hazard. Use genuine *Schulte* parts for economy and safety.

For future reference, record your *Schulte* product model number and serial number

Dealer		Telephone		Model Number	
Owner		Purchase Date		Serial Number	



FC-T-0002

DEALER to CUSTOMER Pre-Delivery / Operation Instructions

Dealer should inform the Purchaser of this product of Warranty terms, provisions, and procedures that are applicable. Dealer should also inform the Purchaser to review the contents of the Operator's Manual including safety equipment, safe operation and maintenance, to review the Safety Signs on the implement (and tractor if possible) and of Purchaser's responsibility to train his/her operators in safe operation procedures..

- **IMPLEMENTS:** I have explained that Deflectors, Chain Guards, or Solid Skirts must be installed and maintained in good repair
- **HYDRAULIC MACHINES:** I have explained the necessity of using clean hydraulic oil, changing filters as instructed, stopping leaks, damage caused by operating with over-heated oil, caring for hoses, using hoses of proper rating, maintaining the specified operating pressure and the potential hazard of oil's penetrating the skin.
- **FOLDING-TYPE IMPLEMENTS:** I have explained that it is not possible to guard against thrown objects when the head is lifted off ground and that operator is responsible to watch out for persons in the area. I have explained that the lifted head or boom can contact overhead obstructions with damage to cables and telephone lines and possible injury. I have explained that the extended head or boom or retracted boom can contact power lines with resulting electrocution, injury or death and that operator is responsible for keeping clear of such hazards.

PRE-DELIVERY SERVICE

CHECK AND ADJUST OR LUBRICATE AS REQUIRED

See Operator's Manual for Details

Inspection Performed - Warranty and Safety Procedures Explained - Installation Complete

LUBRICATION & HYDRAULICS

- Tractor Hydraulic Oil Level
- Hydraulic Hoses (Not Kinked Tighten Connections)

DISC HARROW

- All Hardware Properly Torqued
- Tire and Air Pressure/Lug Nuts (Correct Torque)
- Wheel Bearings (Check, Grease, and Preload)

ATTACHMENTS & INSTALLATION

- All Bolts - Pins And Nuts (Proper Torque)

DISC HARROW TO TRACTOR CONNECTION

- A-Frame Pivot & Links

SAFETY ITEMS

- Protective Shields (Operation And Installation)
- Safety Decals (Installed)
- Operator's Manual (Supplied)
- Tractor PTO Shield (Installed)
- S.M.V. Emblem (Installed If Needed)
- Safety Tow Chain (Installed)
- Safety Lighting (Installation and Operation)

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SAFETY SECTION

Safety Section 1-1

SAFETY

SAFETY

GENERAL SAFETY INSTRUCTIONS AND PRACTICES

A careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating, or servicing this Implement. This equipment should only be operated by those persons who have read the manual, who are responsible and trained, and who know how to do so responsibly.



The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: "ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!" The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment.

Practice all usual and customary safe working precautions and above all--remember safety is up to YOU. Only YOU can prevent death or serious injury from unsafe practices.



Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.



Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

NOTE: Identifies points of particular interest for more efficient and convenient operation or repair.

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Death or serious injury may occur unless care is taken to follow the warnings and instructions stated in this Manual and in the Safety Messages on the implement. Always follow the instruction in this manual and use good common sense to avoid hazards.



Pictographs are used throughout this manual to help bring your visual attention to safety issues.

SAFETY HAZARD	SAFETY AVOIDANCE	SAFETY PREVENTION
<p>Pictograph surrounded by a triangle indicates a Safety Hazard that must be avoided.</p> <p><i>Example:</i></p>  <p>Equipment contacting overhead electrical lines</p>	<p>Pictograph in a circle with blue or black background, by itself or inside a box, indicates an avoidance procedure or action that should be followed to prevent injuries.</p> <p><i>Example:</i></p>  <p>Wear safety footwear. Always shut off engine and remove key before working on equipment.</p>	<p>A circle with a slash through it indicates an action that is prohibited.</p> <p><i>Example:</i></p>  <p>No Smoking</p>

NOTE: If you want a translation of this safety section in one of the following Languages, please contact: Translations at 1502 E. Walnut Street Seguin, TX 78155; Fax: (830) 372-9529; Safety Section Translations are available in Spanish, Portuguese, French, German, Russian. GS01str

SAFETY

OPERATOR SAFETY INSTRUCTIONS AND PRACTICES

DANGER

Never operate the Tractor or Implement until you have read and completely understand this Manual, the Tractor Operator's Manual, and each of the Safety Messages found in the Manual or on the Tractor and Implement. Learn how to stop the tractor engine suddenly in an emergency. Never allow inexperienced or untrained personnel to operate the Tractor or Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation.

(SG-4)str



WARNING

The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items that may be thrown by the equipment. (SG-16)str



CAUTION

PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS! Tractors with or without an Implement attached can often be noisy enough to cause permanent hearing loss. We recommend that you always wear hearing protection if the noise in the Operator's position exceeds 80db. Noise over 85db over an extended period of time will cause severe hearing loss. Noise over 90db adjacent to the Operator over an extended period of time will cause permanent or total hearing loss. **NOTE:** *Hearing loss from loud noise [from tractors, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery.* (SG-17)str



WARNING

Always read carefully and comply fully with the manufacturer's instructions when handling oil, solvents, cleansers, and any other chemical agent. (SG-22)str



DANGER

KEEP AWAY FROM ROTATING ELEMENTS to prevent entanglement and possible death or serious injury. (SG-24)str



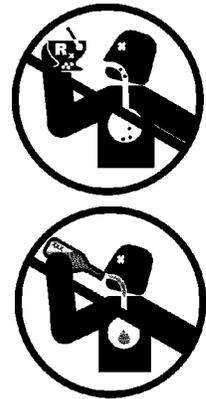
DANGER

Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be killed or injured. Inadvertent contact with controls can cause the Implement to shift or fall crushing themselves or others. (SG-25) str

SAFETY

⚠ DANGER

DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27) str



⚠ WARNING

Prolonged operation may cause operator boredom and fatigue affecting safe operation. Take scheduled work breaks to help prevent these potentially impaired operating conditions. Never operate the Implement and Tractor in a fatigued or bored mental state which impairs proper and safe operation. (SG-32) str

⚠ WARNING

Use extreme caution when getting onto the Implement to perform repairs, maintenance and when removing accumulated material. Only stand on solid flat surfaces to ensure good footing. Use a ladder or raised stand to access high spots which cannot be reached from ground level. Slipping and falling can cause serious injury or death. (SG-33) str

⚠ WARNING

Avoid contact with hot surfaces including hydraulic oil tanks, pumps, motors, valves and hose connections. Relieve hydraulic pressure before performing maintenance or repairs. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-34str)

⚠ DANGER

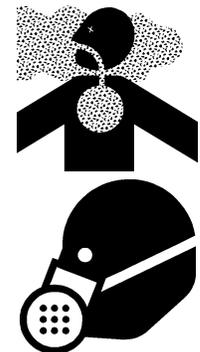
DO NOT operate this Implement on a Tractor that is not properly maintained. Should a mechanical or Tractor control failure occur while operating, immediately shut down the Tractor and perform repairs before resuming operation. Serious injury and possible death could occur from not maintaining this Implement and Tractor in good operating condition. (SG-36) str

⚠ WARNING

Avoid contact with hot surfaces of the engine or muffler. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-38) str

⚠ WARNING

Repeated or substantial breathing of hazardous dusts, including crystalline silica, could cause fatal or serious respiratory disease including silicosis. Concrete, masonry, many types of rock, and various other materials contain silica sand. California lists respirable crystalline silica as a substance known to cause cancer. Operation of this equipment under certain conditions may generate airborne dust particles that could contain crystalline silica. In those conditions, personal protective equipment including an appropriate respirator must be used. If excessive dust is generated, a dust collection or suppression system should also be used during operation. (SG-41) str



SAFETY



Be sure you have adequate knowledge of the property you will be working on. Take time to make yourself aware of any area underwater or underground lines or cables. Contact with buried lines or cable could result in serious injury or death. (STL-1) str



In wet conditions where there is a likelihood of material collecting on the Implement, make certain that this material is removed before traveling on public roadways. (STL-7) str

EQUIPMENT OPERATION SAFETY INSTRUCTIONS AND PRACTICES



Operate this Implement only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never operate in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the tractor and implement. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these types of items discontinue operating this equipment. (S3PT-21) str

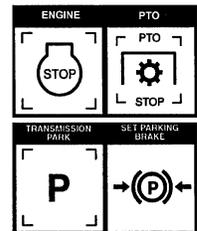


Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Death or serious injury could result from falling off the tractor, particularly during a turnover when the operator could be pinned under the ROPS. (SG-7) str



BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only.

(SG-9)str



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in death or serious injury. (SG-10)str



Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11) str



SAFETY

SAFETY

WARNING

Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. Dismounting a moving power unit can result in a crushing hazard that can cause death or serious injury. (SG-12) str



DANGER

Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in death or serious injury. Read the Tractor operators manual for proper starting instructions. (SG-13) str



WARNING

Do not operate this Equipment with hydraulic oil or fuel leaking. Oil and fuel are explosive and their presence could present a hazard. Do not check for leaks with your hand! High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. To check for a hose leak, SHUT the unit ENGINE OFF and remove all hydraulic pressure. Wear oil impenetrable gloves, safety glasses and use cardboard to check for evidence of oil leaks. If you suspect a leak, REMOVE the HOSE and have it tested at a Dealer. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15) str



DANGER

Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23) str

DANGER

Operate the Tractor and/or Implement controls only while properly seated in the Tractor seat with the seat belt securely fastened around you. Inadvertent movement of the Tractor or Implement may cause death or serious injury. (SG-29)str

WARNING

In case of mechanical difficulty during operation, place the transmission in the park position, set the parking brake, shut down all power, including the PTO and the engine and remove the key. Wait until all rotating motion has stopped before dismounting. (SG-39) str

WARNING

Do Not operate this equipment in areas where insects such as bees, may attack you and/or cause you to lose control of the equipment. If you must enter in such areas, use a tractor with an enclosed Cab and close the windows to prevent insects from entering. If a tractor cab is not available, wear suitable clothing including head, face, and hand protection to shield you from the insects. Attacking insects can cause you to lose control of the tractor, which can result in serious injury or death to you or bystanders. Never dismount a moving tractor. (SG-40) str

DANGER

DO NOT allow any person under a folded wing unless wing is securely locked up or supported. **DO NOT** approach the Implement unless the Tractor is turned off and all motion has ceased. Never work under the frame work, or any lifted component unless the implement is securely supported or blocked up. A sudden or inadvertent fall by any of these components could cause serious injury or even death. (STI-03) str



SAFETY

▲WARNING

Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before tilling. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop operating immediately if discs strike a foreign object. Repair all damage and make certain rotor and discs are in good condition before resuming operation.

▲WARNING

Many varied objects, such as wire, cable, rope, or chains, can become entangled in the rotating parts of the Implement. These objects could then swing outside the housing at greater velocity. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the area for such objects before working in the area. Remove any such objects from the site. Never allow the implement to contact such objects.

▲WARNING

Do not operate the Implement when bystanders or animals are near (within 50 feet) the equipment. This Implement is capable of throwing objects for significant distances and causing serious injury. Stop the Tractor and Implement immediately if a bystander or animal comes near the equipment. (STL-13) str

SAFETY

CONNECTING AND DISCONNECTING SAFETY INSTRUCTIONS AND PRACTICES

▲WARNING

Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death. (STI-04) str

MAINTENANCE SAFETY INSTRUCTIONS AND PRACTICES

▲WARNING

Always maintain the safety signs in good readable condition. If the safety signs are missing, damaged, or unreadable, obtain and install replacement safety signs immediately. (SG-5)str

▲WARNING

Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function. (SG-8)str

▲ DANGER

Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause death or serious injury. (SG-14)str



▲WARNING

Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running. (SG-20)str

SAFETY

⚠ WARNING

Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)str



⚠ WARNING

Perform service, repairs and lubrication according to the maintenance section. Ensure the unit is properly lubricated as specified in the lubrication schedule and all bolts and nuts are properly torqued. Failure to properly service, repair and maintain this Implement in good operating condition could cause component failure and possible serious injury or even death. (SG-35str)

⚠ WARNING

Use caution and wear protective gloves when handling sharp objects such as blades, knives, and other cutting edges. Be alert to worn component surfaces which have sharp edges. Sharp surfaces can inflict severe laceration injuries if proper hand protection is not worn. (SG-37) str

⚠ DANGER

Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23) str

⚠ WARNING

Cancer and Reproductive Harm www.P65Warnings.ca.gov

⚠ WARNING

Ensure any remote starting system is inoperative before servicing or cleaning the machine. Inadvertent engine start up could result in entanglement or runover causing serious injuries or death. (SSB-17) str

⚠ WARNING

Use extreme care when climbing onto the Equipment to perform repairs, maintenance, and cleaning. Use proper stands and ladders to access areas that cannot be reached from ground level. Slipping and falling off the Equipment can cause serious injury or death. (SSB-25) str

⚠ WARNING

Exercise care when handling the discs. Disc blades are SHARP and HEAVY. Wear gloves at all time to protect your hands. (STL-10) str

⚠ WARNING

Do not use your hands or feet to clean the disc gangs. The discs are sharp and serious injures could result from inadvertent contact with the discs. Never attempt to stand on the discs, tires, or frame members of the implement. (STL-11) str

SAFETY



Relieve hydraulic pressure prior to doing any maintenance or repair work on the Implement. Place the Implement on the ground or securely blocked up, disengage the PTO, and turn off the tractor engine. Push and pull the Remote Cylinder lever in and out several times. Disconnect and remove the Implement hydraulic hoses from the tractor prior to starting any maintenance or repair work. (STL-17) str

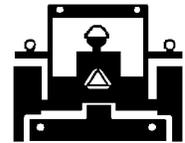


Never attempt to remove a jam or service the implement until the Implement Hydraulic Hoses have been DISCONNECTED AND REMOVED from the tractor. Serious body injury or death can result from entanglement with the rotating components of the conveyer. (STL-25) str

TRANSPORTING SAFETY INSTRUCTIONS AND PRACTICES



Make certain that the “Slow Moving Vehicle” (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)str



Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.

Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor’s flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)str



Be particularly careful when transporting the Implement using the tractor. Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor’s weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces. (STI-01) str

SAFETY

⚠️ WARNING

Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. DO NOT tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-06)str



⚠️ WARNING

Secure the Implement for transport before traveling on public roads. For pull-type Implements, secure the center axle using cylinder stops or transport pin and properly attach a safety chain between the Implement and Tractor. Secure wings in upright position on folding Implements using wing transport locks. (STI-7) str

⚠️ WARNING

Your driving vision may be reduced or impaired by the tractor, cab, or implement. Before driving on public roadways identify any limited vision areas, and make adjustments to your operating position, mirrors, and the implement transport position so that you can clearly see the area where you will be traveling, and any traffic that may approach you. Failure to maintain adequate vision of the public roadway and traffic can result in serious injury or even death. (STI-10)

⚠️ WARNING

Lock the disc gangs in the raised position before transporting the Implement. Serious Implement and/or road damage could result from unintentional dropping of the discs gangs. Be sure to pin the tractor drawbar rigid in the center position and properly attach the Implement safety tow chain. (STL-9) str

CONCLUDING SAFETY INSTRUCTIONS AND PRACTICES

In addition to the design and configuration of this Implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the Tractor and Equipment Manuals. Pay close attention to the Safety Signs affixed to the Tractor and Equipment. (SG-18)str

PARTS INFORMATION

Schulte Products use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Schulte Industry specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce the performance, void Schulte warranties, and present a safety hazard. Use genuine Schulte parts for economy and safety. (SPSI-1) str

SEE YOUR SCHULTE DEALER

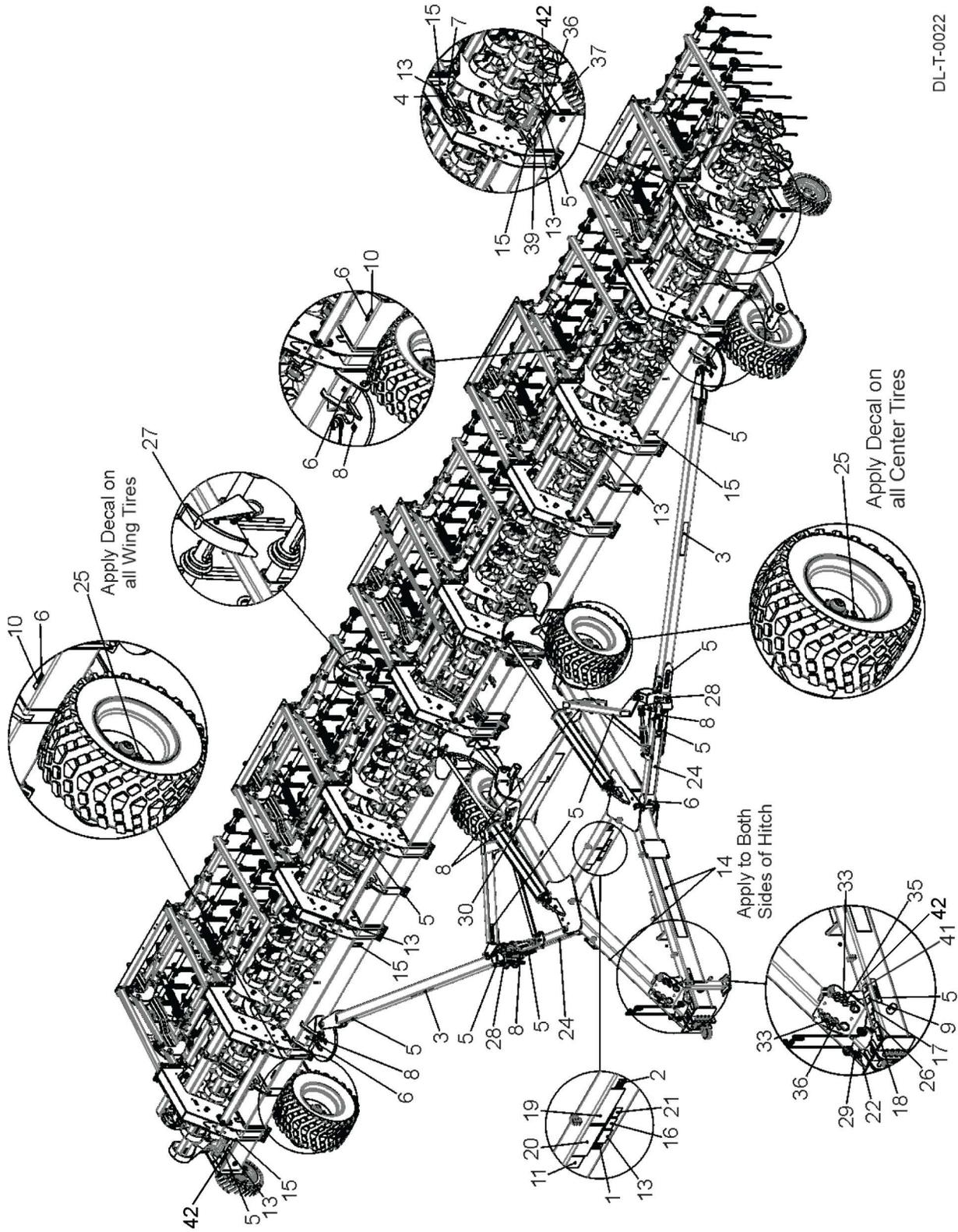
DECAL LOCATION

NOTE: Schulte supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Schulte cares about the safety of its customers, operators, and bystanders, and will replace the safety decals on this product in the field, free of charge (Some shipping and handling charges may apply). Contact your Schulte dealer to order replacement decals

DHX-360/DHX-600 06/23

Safety Section 1-10

SAFETY

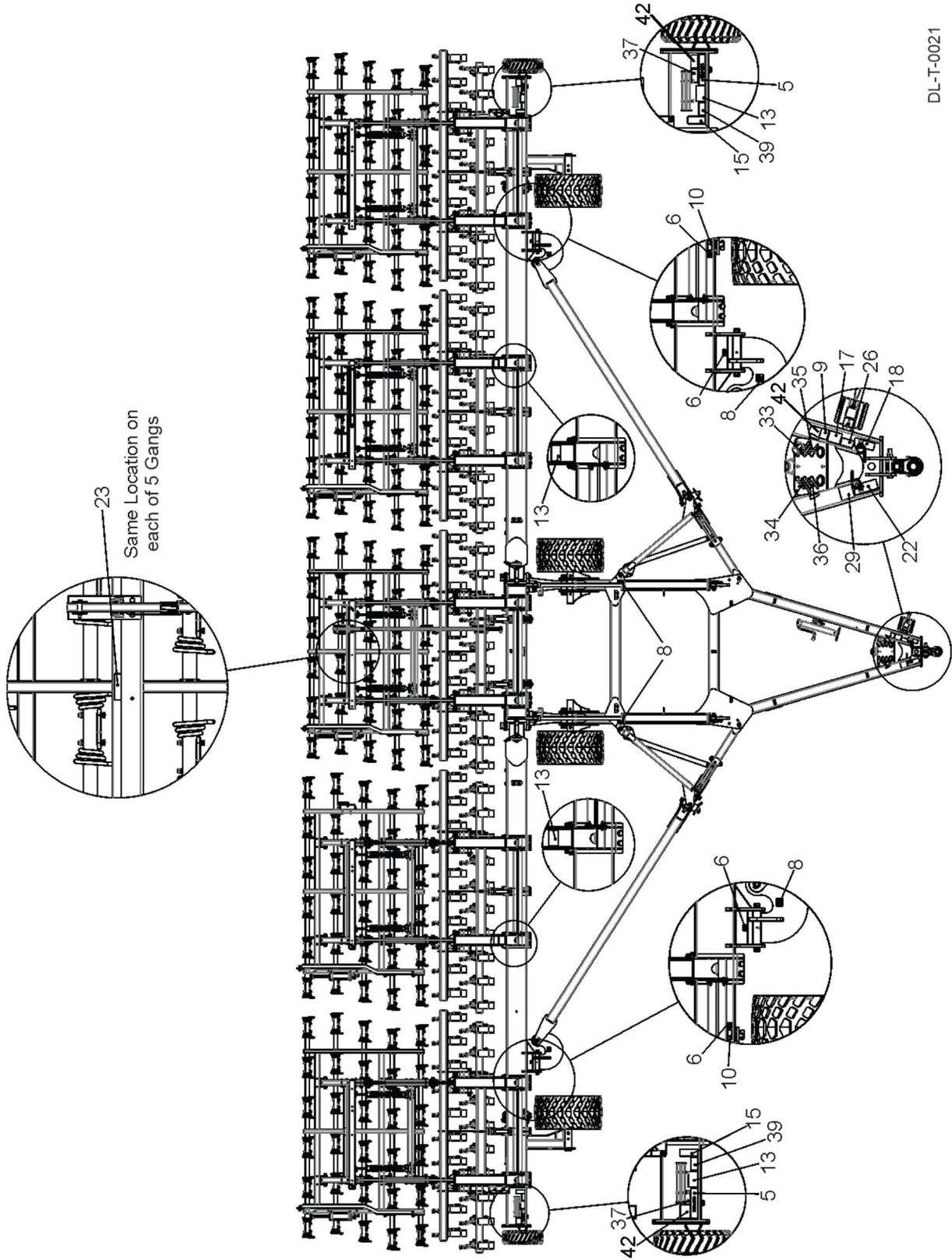


DL-T-0022

SAFETY

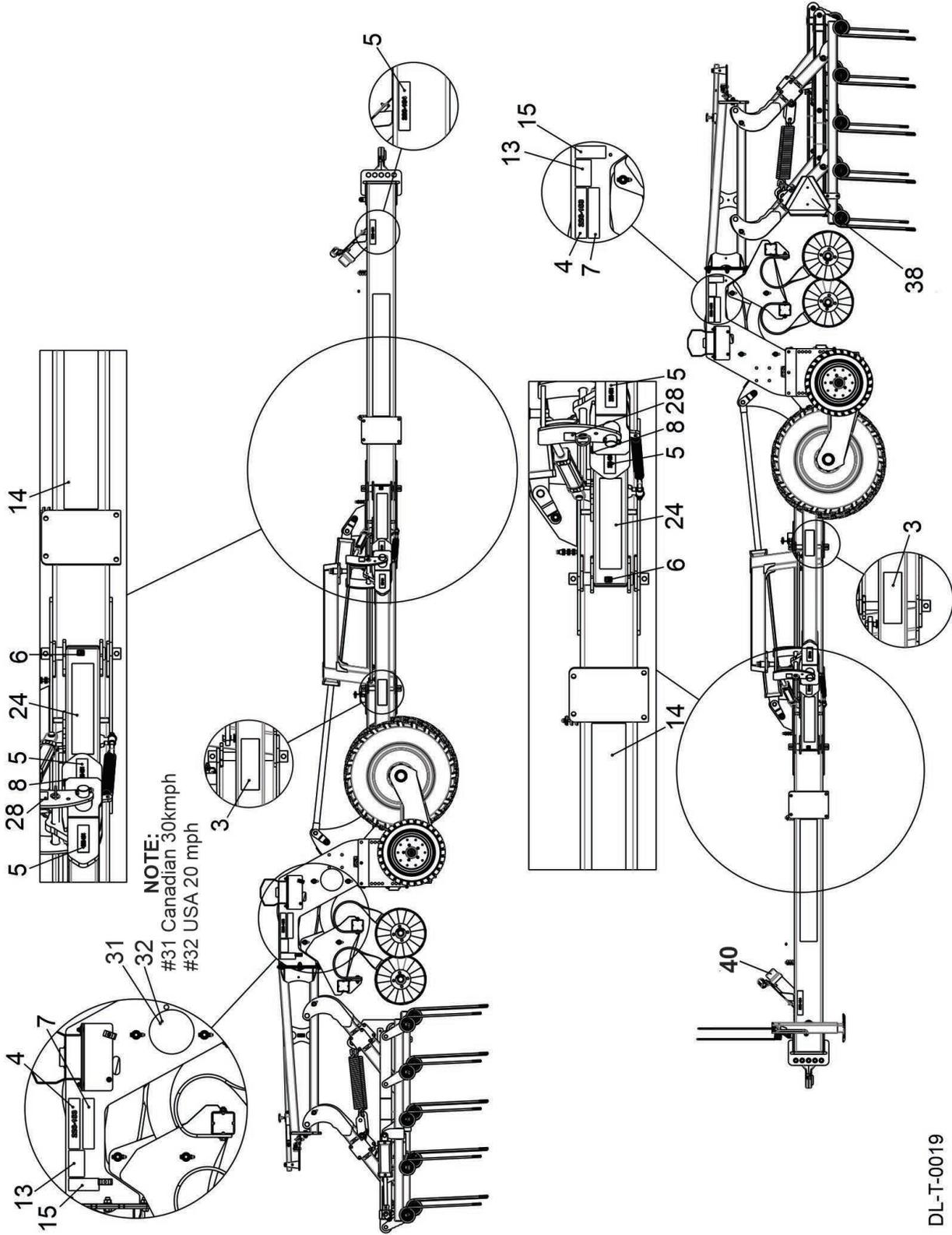
SAFETY

SAFETY



DL-T-0021

SAFETY



SAFETY

SAFETY

SAFETY

ITEM	PART NO.	60' QTY	36' QTY	TYPE	DESCRIPTION
1.	226-004	1	1	LOGO	FEMA Member
2.	226-100	1	1	SERIAL PLT	Serial Number Plate
3.	226-117	2	2	LOGO	Schulte Medium Profile
4.	226-153	2	2	REFLECT	Red Reflector
5.	226-154	14	14	REFLECT	Amber Reflector, 2 x 9
6.	226-181	6	8	INSTRUCT	8 Hour Greasing
7.	226-189	2	2	REFLECT	Fluorescent, 2 x 9
8.	226-335	6	6	WARNING	Pinch Points
9.	226-450	1	1	WARNING	Jack Decal
10.	226-459	2	2	IMPORTANT	Grease Fitting on Underside
11.	226-513	1	1	WARNING	Use Genuine Parts
12.	226-567	1	1	LOGO	Depth Decal
13.	226-573	7	7	DANGER	Crush & Pinch Point
14.	226-574	2	2	LOGO	Soil Pro
15.	226-577	6	6	WARNING	Do Not Touch Disc Gangs
16.	226-578	1	1	IMPORTANT	Read Operator's Manual
17.	226-579	1	1	IMPORTANT	Attach Safety Chain
18.	226-580	1	1	WARNING	Upward Movement Hazard
19.	226-581	1	1	DANGER	Multi-Hazard
20.	226-582	1	1	WARNING	Hydraulic Warning
21.	226-583	1	1	DANGER	Peligro Warning
22.	226-584	1	1	WARNING	Transportation Hazard
23.	226-589	5	3	WARNING	Crushing Hazard, Tines
24.	226-590	2	---	LOGO	DHX-600 Logo
	226-622	---	2	LOGO	DHX-360 Logo
25.	226-602	4	4	INFORMATION	58 PSI
26.	226-604	1	1	INFORMATION	DHX Tire PSI, 58 PSI
27.	226-614	1	1	INFORMATION	Angle Gauge Indicator
28.	226-623	2	2	IMPORTANT	DHX Field Lock Pin
29.	226-624	1	1	INFORMATION	DHX Negative Hitch Weight
30.	226-627	1	1	IMPORTANT	Ensure Discs are Raised
31.	226-628	1	1	IMPORTANT	20 MPH Speed

SAFETY

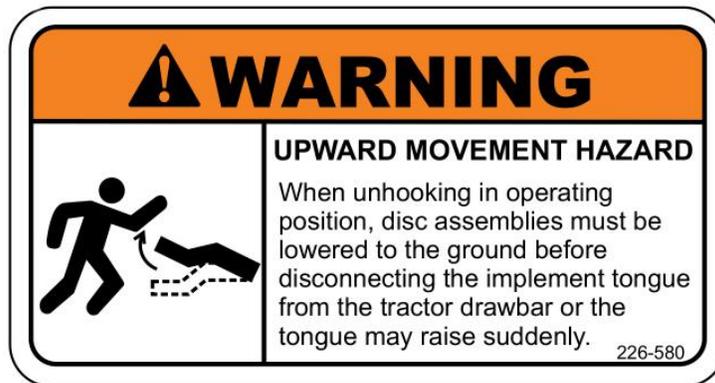
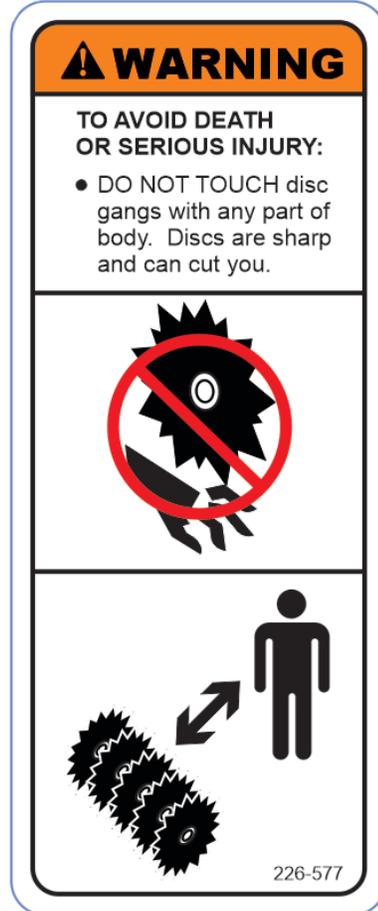
ITEM	PART NO.	60' QTY	36' QTY	TYPE	DESCRIPTION
32.	226-630	1	1	IMPORTANT	30 KMPH Speed
33.	226-632	1	1	LOGO	Wheel/Arm Lock (Red)
34.	226-633	1	1	LOGO	Harrow Adjustment (Blue)
35.	226-634	1	1	LOGO	Main Lift (Orange)
36.	226-635	1	1	LOGO	Disc Height (Black)
37.	226-646	2	2	INFORMATION	Check Hubs Daily
38.	226-013	1	1	REFLECT	SMV Sign
39.	226-648	2	2	INFORMATION	Do Not Turn with Disc in Ground
40.	280-201	1	1	---	Canister, Operator's Manual
	DH60-010C	1	1	---	Operator's Manual
41.	226-659	1	1	NOTICE	Park on Level Ground Max 10% Ground Slope
42.	226-690	3	3	INFORMATION	Check Discs for Wear

SAFETY

SAFETY

SAFETY

DECAL DESCRIPTION



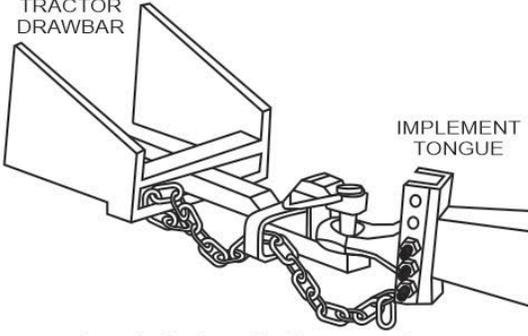
SAFETY

SAFETY

IMPORTANT

Required for Standard Pull Type Units.

TRACTOR DRAWBAR



IMPLEMENT TONGUE

Attach Safety Chain securely. 226-579

! DANGER

CRUSHING HAZARD AND PINCH POINTS



TO AVOID DEATH OR SERIOUS INJURY:

- KEEP AWAY from moving machinery parts that can pinch, crush or fall.

226-573

IMPORTANT

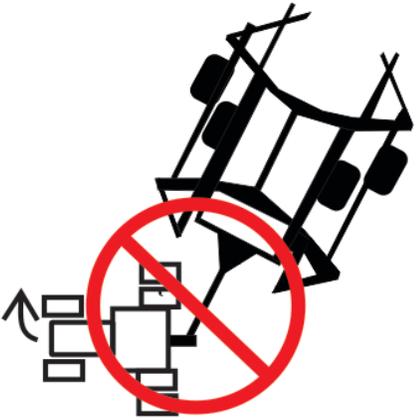
An OPERATOR'S MANUAL was attached to this implement during assembly. If they were not attached at the time of purchase, please contact your selling dealer at once or visit the Schulte website at: www.schulte.ca

- Read and understand the Operator's Manual before operating this implement.

226-578

SAFETY

SAFETY

	⚠ WARNING
	Transportation Hazard TO AVOID DEATH OR SERIOUS INJURY DURING TRANSPORTATION: <ul style="list-style-type: none">• DO NOT make sharp turns during transportation or when backing up.• Implement could contact tractor cab during sharp turns. <p>226-584</p>

⚠ WARNING	
	CRUSHING HAZARD Drive forward to ensure tines are in working position, before cleaning or working on tine assemblies. Tine assembly could fall if tines are vertical. <p>226-589</p>



SAFETY

SAFETY

⚠ DANGER

Crushing Hazard Injury or Death

<p>TO AVOID SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none">• USE tractor equipped with Rollover Protective Structure ("ROPS") including roll bar and seat belt. Keep roll bar in raised position.• KEEP ALERT and AVOID hitting stumps, holes, ruts, and uneven terrain.• ALWAYS BUCKLE UP seat belt.• STAND CLEAR when removing transport latch, lowering or raising wings.• CLEAR AREA of bystanders before lowering implement wings.• IMPLEMENT CAN FALL from hydraulic failure or accidental operation of controls.• BLOCK UP and securely support equipment before putting hands, feet or body under raised equipment or lifted components.	
--	--

226-581_1

⚠ DANGER

Run Over Hazard Injury or Death

<p>TO AVOID SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none">• ONLY START Tractor while seated in the operator's seat.• DO NOT MOUNT or DISMOUNT Tractor in motion.• NEVER ALLOW riders on tractor or implement.• NEVER ALLOW children to operate or ride on tractor or implement.• KEEP BYSTANDERS CLEAR of area before moving tractor or implement.• STOP ENGINE AND PTO, engage parking brake, lower implement, allow all moving parts to stop and remove key before dismounting from tractor.	
---	--

226-581_2

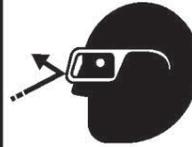
SAFETY

SAFETY

DANGER

TO AVOID SERIOUS INJURY OR DEATH:

- READ AND UNDERSTAND the provided Operator's Manuals, safety signs and information decals for tractor and implement before operating equipment.
- CONTACT DEALER immediately if you do not have manuals.
- CONTACT DEALER to explain any instructions not fully understood.
- KNOW HOW to stop tractor and equipment quickly for an emergency.
- ALWAYS WEAR safety glasses.
- WEAR hard hat, safety shoes and gloves for protection when operating equipment.



226-581_3

226-581

WARNING

TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENETRATING SKIN:

- DO NOT OPERATE equipment with oil or fuel leaks.
- KEEP all hydraulic hoses, lines and connections in good condition and tight before applying system pressure.
- Relieve hydraulic pressure before disconnecting lines or working on the system.
- REMOVE and replace hose if you suspect it leaks. Have dealer test it for leaks.

HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE. WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:

- DO NOT use hands to check for leaks.
- ALWAYS WEAR safety glasses and impenetrable gloves.
- USE paper or cardboard to search for leaks.
- KEEP hands and body AWAY from pin holes and nozzles ejecting hydraulic fluid.
- Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.



226-582_1

SAFETY

WARNING

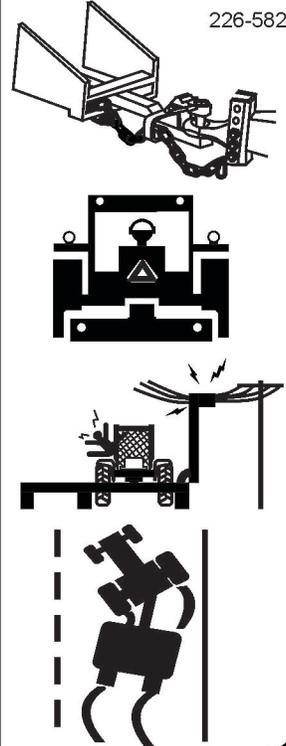
TO AVOID SERIOUS INJURY AND DEATH WHEN TOWING EQUIPMENT:

- DO NOT TOW with trucks or other vehicles.
- ONLY transport with properly sized and equipped tractor. (see Operator's Manual)
- ATTACH implement SAFETY CHAIN to tractor.
- CHECK SMV sign, reflectors and warning lights for visibility behind unit.
- TURN ON tractor flashing warning lights.
- KEEP implement AT LEAST 10 FEET AWAY from electric lines and pipe lines.

TO AVOID LOSS OF TOWING CONTROL:

- DO NOT tow at speeds over 20 mph.
- REDUCE SPEED on inclines, in turns and in poor towing conditions.

226-582_2



SAFETY

 **PELIGRO**

LEA EL INSTRUCTIVO

Si No Lee Ingles, Pida Ayuda a Alguien Que Si Lo Lea Para Que le Traduzca las Medidas de Seguridad.

226-583



SAFETY

SAFETY

WARNING

TO AVOID DEATH OR SERIOUS INJURY:

- ONLY use genuine SCHULTE replacement parts, which have been validated and tested to use on Schulte equipment by the manufacturer.
- The equipment manufacturer cannot verify the material or structural integrity of third-party supplied non-genuine replacement parts.
- Using non-genuine parts can result in the part failing, creating hazardous conditions for operator and bystanders.

Contact local dealer or SCHULTE about repair parts at:
PO BOX 70, Englefeld,
Saskatchewan Canada S0K 1N0
Customer Service: 306-287-3715.
Email: info@schulte.ca



www.algqr.com/swe

WARNING

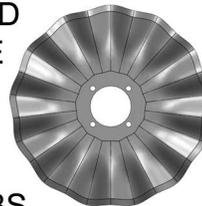
Cancer and Reproductive Harm

www.P65Warnings.ca.gov

226-513

IMPORTANT

DISCS NEED TO BE REPLACED ONCE THE DIAMETER OF THE DISC REACHES 16", OR SOONER. FAILURE TO DO SO COULD RESULT IN DAMAGE TO THE DISC HUBS.



226-690

SAFETY

IMPORTANT

LOCK PIN LOCATION
FOR
FIELD OPERATION



226-623

SAFETY

IMPORTANT

ENSURE DISCS ARE FULLY RAISED WHEN
FOLDING AND UNFOLDING THE MACHINE.
WHEN LIFTING, BE SURE TO FULLY RETRACT MAIN LIFT CYLINDERS.
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE MACHINE.
SEE OPERATOR'S MANUAL OR LAMINATED PLACARD FOR DETAILS.

226-627

NOTICE

Do not tow at speeds
greater than 20 MPH(30
KM/H.

Ensure mass of towing
vehicle is at least 2/3 times
the mass of the towed
machinery.

Be sure to park on level
ground to a maximum of
10% ground slope.

226-659

SAFETY

FEDERAL LAWS AND REGULATIONS

This section is intended to explain in broad terms the concept and effect of federal laws and regulations concerning employer and employee equipment operators. This section is not intended as a legal interpretation of the law and should not be considered as such.

Employer-Employee Operator Regulations

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

This Act Seeks:

“...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources...”

DUTIES

Sec. 5 (a) Each employer-

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA Training Requirements

Title 29, Code of Federal Regulations Part 1928.57(a)(6). www.osha.gov

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.

Keep all guards in place when the machine is in operation;

Permit no riders on equipment

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

Employer Responsibilities:

To ensure employee safety during Tractor and Implement operation, it is the employer's responsibility to:

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator's Manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop operation if bystanders or passersby come within 300 feet.

Child Labor Under 16 Years of Age

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)

INTRODUCTION SECTION

Introduction Section 2-1

INTRODUCTION

INTRODUCTION

This DISC HARROW implement is designed with care and built with quality materials by skilled workers. Proper assembly, maintenance, and operating practices, as described in this manual, will help the owner/operator get years of satisfactory service from the machine.

The purpose of this manual is to familiarize, instruct, and train. The Assembly Section instructs the owner/operator in the correct assembly of the DISC HARROW using standard and optional equipment. The Parts Listing section is designed to familiarize the owner/operator with replaceable parts on the Implement. This section provides exploded assembly drawings of each implement component illustrating each piece and the corresponding part number.

Careful use and timely service save extensive repairs and costly downtime losses. The Operation and Maintenance Sections of the manual train the owner/operator how to work the Implement correctly and attend to appropriate maintenance. The Troubleshooting Guide helps diagnose difficulties with implement and offers solution to the problems.

Safety is of primary importance to the owner/operator and to the manufacturer. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Many of the Safety Messages will be repeated throughout the manual. The owner/operator/dealer should know these Safety Messages before assembly and be aware of the hazards of operating this implement during assembly, use, and maintenance. The Safety Alert Symbol combined with a Signal Word, as seen below, is intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this machine



Indicates a hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.



Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

INTRODUCTION



The DHX-600 is designed to size and distribute crop residue. It has the capability of operating in two modes; with harrows and discs engaged or just the harrows engaged. The DHX is designed for operation in cereal crop ground, standing corn stalks, bean stubble, and other crop residues. This is accomplished by utilizing a double row of discs in combination with a 5 bar heavy harrow

INTRODUCTION

INTRODUCTION

ATTENTION OWNER/OPERATOR

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the Tractor and Implement.
2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the Implement. Mail within 30 days of delivery date of this implement.

NOTE: Warranties are honored only if completed "Owner Registration and Warranty" forms are received by Schulte within thirty days of delivery of the implement.

3. Record the Implement Model and Serial Numbers on the Warranty page at the front of the Operator's Manual. Keep this as part of the permanent maintenance file for the Implement.

INTRODUCTION



INT-T-0002

INTRODUCTION



SCHULTE INDUSTRIES LIMITED - DHX-360/600 TILLAGE

GENERAL STATEMENT AFFECTING ALL SCHULTE WARRANTY

Schulte Industries Ltd. warrants to the original purchaser only, that in the event of any defect in material or workmanship in the product sold by Schulte Industries, the subject of this warranty (“the goods”) during the warranty period mentioned below the manufacturer will provide the coverage specified below.

This warranty is in place of any other warranty or guarantee whether implied or expressed in any conditions of purchase of the buyer, and does not extend to impose any further liability on the manufacturer than set out below.

- Any work done to the product without being authorized by Schulte, may not be covered by Schulte.
- Any alterations, modifications, or additions done to the product without written permission from Schulte will void the warranty.
- Only Schulte replacement parts qualify under this coverage.
- All coverage applies to manufacturer’s defects only.
- This warranty shall not be interpreted to render Schulte Industries Ltd. liable for injury, death, property damage or damages of any kind.

Warranty Coverage:

For Agricultural Use (original owner, excluding commercial or rental)

- Parts, Freight & Labor.
- Structural Warranty is 1 year from the date of purchase.
- Component Warranty is 1 year from the date of purchase against manufacturer’s defects only. Components include, but not limited to, such non-wearing parts as hydraulic cylinders, hydraulic hoses, and hydraulic valves.
- Tires and Rims are covered by the tire manufacturers warranty against manufacturer’s defects only
- Only ground transportation will qualify for reimbursement.

For Rental Use (30 Days From First In Service Date):

- Parts, Freight & Labor.
- Tires and Rims are covered by the tire manufacturers warranty against manufacturer’s defects only
- Structural warranty is 30 days from the first in-service date.
- Component warranty is 30 days against manufacturer’s defects.
- Only ground transportation will qualify for reimbursement.

Replacement Parts:

- Warranted replacement parts will either be replaced or rebuilt at Schulte’s discretion.
- Replacement parts for machines out of warranty are warranted to be free from defects in material and workmanship under normal use for a period of 90 days from the date of delivery to the customer.
- Replacement parts for machines in warranty are covered for the duration of the 1 year warranty or 90 days, whichever is longer.
- Ground freight charges for shipping new or rebuilt warrantable replacement parts to the dealer or customer will be covered by Schulte. **Only ground transportation will qualify for reimbursement.**

INTRODUCTION

Dealers Responsibility:

- Warranty Validation must be received at Schulte Industries within 14 days of the sale for the warranty to be valid..
- The Pre-Delivery Inspection sheet must be sent with the Warranty registration. Failure to comply will result in warranty claims being denied.
- The dealer is responsible for any labor charges exceeding a reasonable amount as determined by the manufacturer.

Owners Responsibility:

- Operators must read the operator manual before operation. Failure to do so will be considered as misuse of the product.
- Warranty may be voided if used in soils with rock, stumps, or other obstructions.
- All warranty is conditional upon, care, maintenance and operation in accordance with the manufacturer's specifications and recommendations (as referred to in the "Operators Manual") supplied with the product.
- The customer is responsible to maintain and service prior to operation where continued use would cause failure or unsafe operating conditions.

Exclusions And Limitations:

This warranty does not extend to:

- Damage or deterioration after delivery from the manufacturer not attributable to defective material or workmanship, including accidental damage or acts of God.
- Consequential damages such as crop loss, loss of revenue, inconvenience, or rental costs are not covered.
- Travel cost, or transporting the unit to and from the place where the warranty service is performed is not covered unless specified under a campaign, service bulletin, or recall.
- Shop supplies such as the use of tool, oil, or grease used in the repair or replacement of a warrantable part of component.
- Normal wearing parts such as, but not limited to Tires, Discs, and Harrows.
- Warranty shall not apply to any machine that in the company's judgment has been subjected to misuse, negligence or incorrect off-site machine set up.

THE WARRANTY CLAIM PROCESS:

- A Warranty Claim must be submitted within (30) days of the repair.
- The dealer must allow for the examination of the goods by the manufacturer or one of its agents, when requested by the manufacturer to verify that the goods are defective in material or workmanship.
- The Dealer must keep the failed part until the claim is processed, to allow Schulte Industries the option of further examination of the part.

Further examination may mean that pictures are sent, or that the part be returned to Schulte.

- A Return Goods Authorization (RGA) must be sent with any returned part.
- Schulte will reimburse ground freight only on failed parts that are returned for examination. Any other types of freight will not be covered unless authorized on the RGA.

NOTE: For warranty service or parts the unit can be taken to any authorized Schulte dealer.

Warranty Contacts:

All warranty questions can be emailed to info@schulte.ca or phone Schulte Industries at 1-800-404-6044. Schulte reserves the right to change and modify this warranty policy at any time.

ASSEMBLY SECTION

Assembly Section 3-1

ASSEMBLY

TRACTOR PREPARATION

Have a tractor with sufficient horsepower and traction. Normally, 8 hp/ft of DISC HARROW is required. This horsepower requirement can be lower or higher depending upon field and soil conditions/type/moisture and desired disc depth and operating speed. Have your tractor adequately equipped to operate at speeds of 9 - 13 MPH as this speed will provide the best results.

WARNING

All personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times during the assembly process for protection from injury.

WARNING

Always read carefully and comply fully with the manufacturer's instructions when handling oil, solvents, cleansers, and any other chemical agent. (SG-22)str



DANGER

Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause death or serious injury. (SG-14)str



WARNING

The components of this implement are very heavy. Securely lift the components using appropriate and adequate lifting devices. Block all components up securely before working or reaching under components.

WARNING

Use extreme caution when getting onto the Implement to perform assembly procedures or maintenance. Only stand on solid flat surfaces to ensure good footing. Use a ladder or raised stand to access high spots which cannot be reached from ground level. Slipping and falling can cause serious injury or death.

WARNING

Use genuine SCHULTE parts and fasteners. These parts are made and tested to SCHULTE specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce the implements performance, void warranties, and present a safety hazard.

WARNING

Use caution and wear protective gloves when handling sharp objects such as blades, knives, and other cutting edges. Be alert to worn component surfaces which have sharp edges. Sharp surfaces can inflict severe laceration injuries if proper hand protection is not worn. (SG-37) str

ASSEMBLY

DEALER ASSEMBLY PREPARATION CHECKLIST FOR DH SCHULTE

NOTE: When unloading unit DO NOT unload from point "B" but from point "A". Point "B" should only be used.

	ITEM	COMPLETE
1.	All parts are assembled or accounted for.	
2.	The Operator's Manual is in the canister.	
3.	All Safety Warning decals are on the unit, readable and in good condition	
4.	The SMV sign is securely attached to the implement.	
5.	The Safety Tow Chain is properly attached to the implement tongue.	
6.	The tongue jack is in place on the implement.	
7.	All nuts, bolts and fasteners are properly installed and tightened to the specified torque.	
8.	All hydraulic fittings are tight.	
9.	No oil leaks are present.	
10.	All cylinders and hoses are filled with oil.	
11.	The hydraulic hoses are routed correctly and do not rub against sharp edges.	
12.	Electrical connects are secured.	
13.	Implement lights operate properly.	
14.	The tires are properly inflated to the recommended air pressure. (All tires inflated to 58 PSI on the DHX-360 and DHX-600)	
15.	The wheel lug bolts are tight.	
16.	The tires properly clear implement frame and discs.	
17.	The wheel hub bearings are properly greased.	
18.	All pivot points have been properly lubricated.	
19.	Does the implement paint look complete and acceptable?	

ASSEMBLY

OPERATION SECTION

Operation Section 4-1

OPERATION

SCHULTE DHX-360/DHX-600 DISC HARROW OPERATION INSTRUCTIONS

The DISC HARROW is manufactured with quality material by skilled workers. This implement is ideal in horticultural, agricultural, or commercial applications, especially for broad acre cereal and row crop corn farms

It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure oneself, others, animals, and property are not injured or damaged by the implement, tractor, or a thrown object. Do not operate the implement if passersby, pets, livestock, or property are directly in front or to the rear of the unit.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper implement use to the operator. Pictures contained in this section are intended to be used as a visual aid to assist in explaining the operation of a DISC HARROW implement. Some pictures may show shields removed for purposes of clarity. **NEVER OPERATE** this implement without all shields in place and in good operational condition. The operator must be familiar with the implement and tractor operation and all associated safety practices before operating the implement and tractor. Proper operation of implement, as detailed in this manual, will help ensure years of safe and satisfactory use of the implement.

IMPORTANT: To avoid implement damage, re-torque all bolts after the first 10 hours of operation. Refer to the Torque Chart at the end of the Maintenance Section to ensure bolts are properly tightened

READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND IMPLEMENT. If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the implement and tractor. *OPS-U- 0001str*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Death or serious injury may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2str)



Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3str)



OPERATION

1. STANDARD EQUIPMENT AND SPECIFICATIONS

	DHX-360	DHX-600
Working Width	36 ft	60 ft
Transport Width	15.25 ft	15.25 ft
Transport Height	15 ft	15 ft
Transport Length	33.5 ft	45 ft
Approximate Weight	25,000 lbs	33,000 lbs
Number of Disc Harrow Sections	3	5
Width of Sections	12 ft	12 ft
Rows of Discs	2	2
Size of Discs	18"	20"
Type of Disc	Straight, 8 wave Straight, 13 wave	Straight, 8 wave Straight, 13 wave
Width of Disc	2.25"	2.25"
Disc Spacing	8"	8"
Disc Hub	4 bolt, sealed	4 bolt, sealed
Harrow Layout	5 bar	5 bar
Harrow Tine	5/8" x 26" with tip	5/8" x 26" with tip
Harrow Angle Adjustment	35 - 90 degrees	35 - 90 degrees
Tires	560/45R22.5 Radials All tires inflated to 58 PSI on the DHX-360 and DHX-600	
Hubs	8 Bolt - 10,000 lbs	8 Bolt - 10,000 lbs
Main Boom Tubing	12" x 12" x 3/8"	12" x 12" x 3/8"
Number of Hydraulic Outlets	4	4
Safety Lighting, SMV	Standard	Standard
Horsepower Required	7 - 9 HP per foot width	7 - 9 HP per foot width

OPERATION

2. OPERATOR REQUIREMENTS

Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained in this manual, safety signs are affixed to the implement and tractor. If any part of the operation and safe use of this equipment is not completely understood, consult an authorized dealer for a complete explanation.

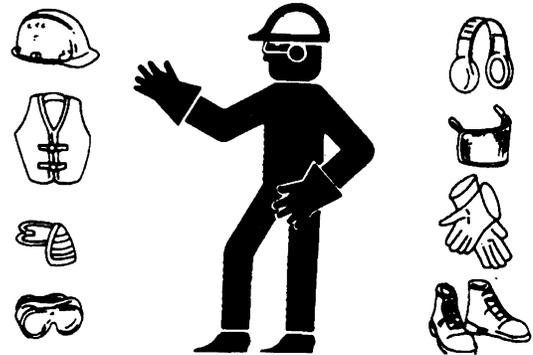
If the operator cannot read the manuals for themselves or does not completely understand the operation of the equipment, it is the responsibility of the supervisor to read and explain the manuals, safety practices, and operating instructions to the operator.

Safe operation of equipment requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions when attaching, operating, servicing, and repairing the equipment. PPE is designed to provide operator protection and includes the following safety wear:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Always Wear Safety Glasses (with side shields marked to comply with ANSI Z87)
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions)

OPS-U- 0002str



DANGER

DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27) str



OPERATION

3. TRACTOR REQUIREMENTS

Operating the implement with a tractor that does not meet the following requirements may cause tractor or implement damage and be a potential danger to the operator and passerby.

Tractor Requirements and Capabilities

- ASAE approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
- Tractor Safety Devices Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
- Tractor Horsepower 8 HP per foot of width (see note below)
- Pull Type - Drawbar Minimum CAT 4 recommended

3.1 ROPS and Seat Belt

The tractor must be equipped with a Roll-Over-Protective-Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened. Tractor models not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer. OPS-U- 0003str



Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Death or serious injury could result from falling off the tractor, particularly during a turnover when the operator could be pinned under the ROPS. (SG-7) str



3.2 Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem which are clearly visible from the rear of the unit. Lights and a SMV emblem must be equipped directly on implements if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position. OPS-U- 0004str

3.3 Tractor Horsepower

The power required to operate an implement is determined by the tractor PTO horsepower. For most operating conditions, implement requires a tractor with at least 8 HP per foot. This horsepower requirement can be lower or higher depending upon field and soil conditions/type/moisture and desired disc depth and operating speed

Operating the implement with a tractor that does not have adequate power may damage the tractor engine. Exceeding required HP may cause implement damage by overpowering the unit in heavy DISC HARROW conditions.

3.4 Tractor Hydraulics

The DHX-600 requires four hydraulic remotes for the base unit. The tractor hydraulic system will need to be able to produce at least 2,800 PSI of pressure.

OPERATION

4.GETTING ON AND OFF THE TRACTOR

Before getting onto the tractor, the operator must read and completely understand the implement and tractor operator manuals. If any part of either manual is not completely understood, consult an authorized dealer for a complete explanation. OPS-U- 0007str



Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. Dismounting a moving power unit can result in a crushing hazard that can cause death or serious injury. (SG-12) str



4.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when boarding the tractor. Never use control levers for support when mounting the tractor. Seat yourself in the operator's seat and secure the seat belt around you.

Never allow passengers to ride on the tractor or attached equipment. Riders can easily fall off and be seriously injured or killed from falling off and being ran over. It is the operator's responsibility to forbid all extra riders at all times. OPS-U- 0008str



Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11) str



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in death or serious injury. (SG-10)str



4.2 Dismounting the Tractor

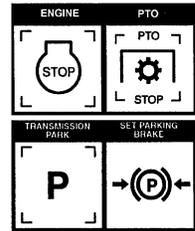
Before dismounting, park the tractor and implement on a reasonably level surface, apply the parking brake, idle the engine down, and lower the implement to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the tractor, its engine and all moving parts have come to a complete stop.

Use hand rails and steps when exiting the tractor. Be careful of your step and use extra caution when mud, ice, snow or other matter has accumulated on the steps or hand rails. Use all handrails and steps for support and never rush or jump off the tractor.

OPERATION



BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)str



OPERATION

5. STARTING THE TRACTOR

The operator must have a complete understanding of the placement, function, and operational use of all tractor controls before starting the tractor. Review the tractor operator's manual and consult an authorized dealer for tractor operation instructions if needed.

Essential Tractor Controls:

- Locate the light control switch.
- Locate the engine shut off control.
- Locate the brake pedals and the clutch.
- Locate the PTO control.
- Locate the 3-point hitch control lever.
- Locate the hydraulic remote control levers

Before starting the tractor ensure the following:

- Conduct all pre-start operation inspection and service according to the tractor operator's manual.
- Make sure all guards, shields, and other safety devices are securely in place.
- The parking brake is on.
- The PTO control lever is disengaged.
- The 3-point hitch control lever is in the lowered position.
- The hydraulic remote control levers are in the neutral position.
- The tractor transmission levers are in park or neutral.

Refer to the tractor owner's manual for tractor starting procedures. Only start the tractor while seated and belted in the tractor operator's seat. Never bypass the ignition switch by short circuiting the starter solenoid. After the tractor engine is running, avoid accidental contact with the tractor transmission to prevent sudden and unexpected tractor movement. OPS-U-0028_A str



Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23) str



Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in death or serious injury. Read the Tractor operators manual for proper starting instructions. (SG-13) str



OPERATION

6. CONNECTING THE IMPLEMENT TO THE TRACTOR

Use extreme caution when connecting the Implement to the tractor. The implement should be securely resting at ground level or setting on blocks. Keep hands and feet from under the implement frame and clear of pinch points between the tractor hitch arms and implement pins.



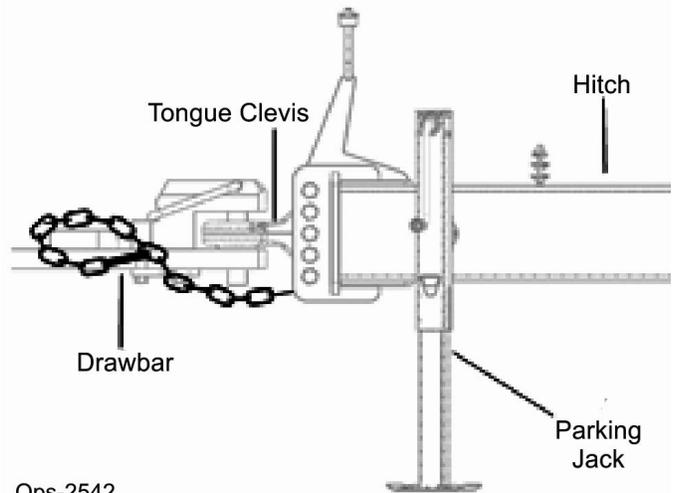
Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15) str

6.1 Connecting Tillage Hitch to Tractor

1. Make sure the tractor is equipped with the correct drawbar.
2. Block the unit wheels in place and use the attached parking jack to raise or lower the tongue clevis to the height of the tractor drawbar.

Note: Always place jack foot on firm surface or place board under jack for support.

3. Board the tractor and start the engine. Back the tractor to the unit aligning the drawbar hitch hole with the unit hitch clevis. Install the hitch pin. Turn off the tractor engine, set the parking brake, place the tractor in park, and dismount.
4. Securely attach unit safety chain to tractor drawbar or drawbar support frame.
5. Insert the Draw Pin and ensure the Draw Pin retainer is secured.
6. Lower the jack until the tongue is completely supported by the drawbar. Remove jack from the tongue and place on storage bracket of unit main frame.
7. Finally, attach the hydraulic hoses, circuits are color coded:
 - Wheel/Arm Lock Circuit = Red
 - Harrow Adjustment Circuit = Blue
 - Main Lift Circuit = Orange
 - Disc Height Circuit = Black
8. Connect implement warning light plug into tractor electrical receptacle.



Be sure to pin the tractor drawbar rigid in the center position and properly attach the implement safety tow chain.

6.2 Safety Chains

When towing implements on a public roadway, use a safety chain with tensile strength equal to or greater than the gross weight of the unit being towed. This will control the implement in the event the hitch pin is lost during transport.

OPERATION

After the ends of the safety chain are attached to the implement and the tractor, make a trial run by driving the tractor to the right and to the left to check for proper length. If necessary, readjust the chain to eliminate loose or tight chain lengths.

7.FOLDING THE DISC HARROW INTO FIELD OPERATING AND TRANSPORT POSITION



NEVER unhook the Disc Harrow partially raised. If disconnected the hitch will raise abruptly while the back of the DISC HARROW will drop abruptly.



Ensure a tractor with a Category 4 drawbar is used. The DISC HARROW will exert extensive upward force when lifting. To small of a tractor will upend.



Ensure the Disc Harrow is clean before lifting. Excess mud or dirt build up will cause greater upending forces on the tractor hitch

Ensure the Disc Harrow hitch is securely attached to the tractor, hitch pin is locked in place.

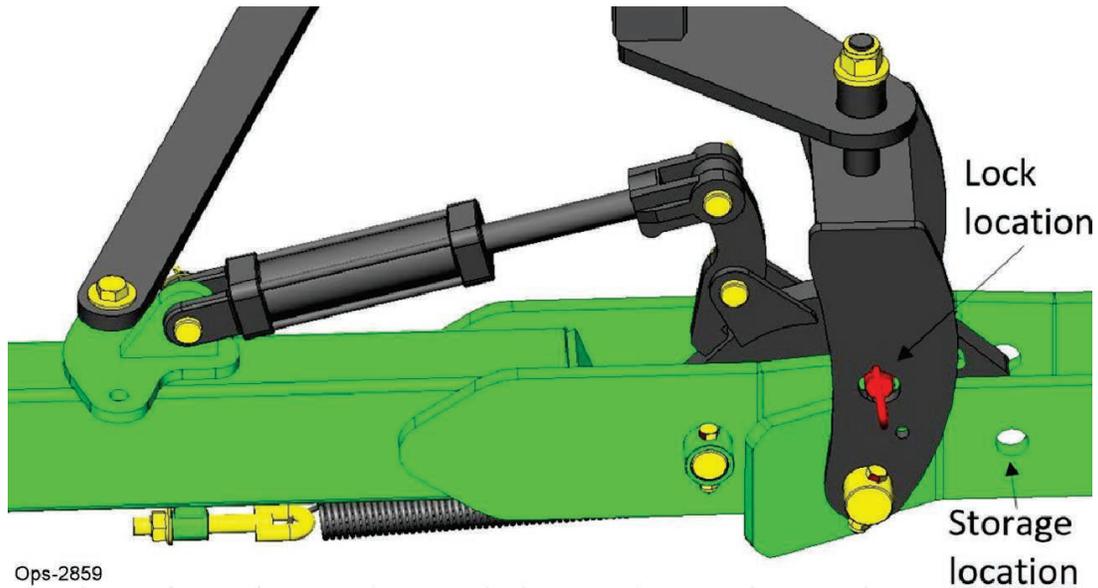
Only use with a tractor equipped with a minimum Category IV hitch and Hammer Strap. Check the Hammer Strap bolts to ensure they are tight and secure.



1. Remove the field operation lock pin from the lock position and install it below the frame in the storage position. See *Graphic below*.

OPERATION

OPERATION



2. Lift the harrow using the Main Lift Circuit until the hydraulic cylinders are fully retracted.



3. Rotate the Wing wheels into transport position. This will also release the wing tension link locks. If the tension link locks do not come undone you may have to back up slightly to release the lock if it is wedged. Note: The hydraulic cylinders for the wing wheels and wing lock are on one circuit. The wheel cylinders will not actuate until the lock cylinders retract completely as the lock cylinders take less pressure.

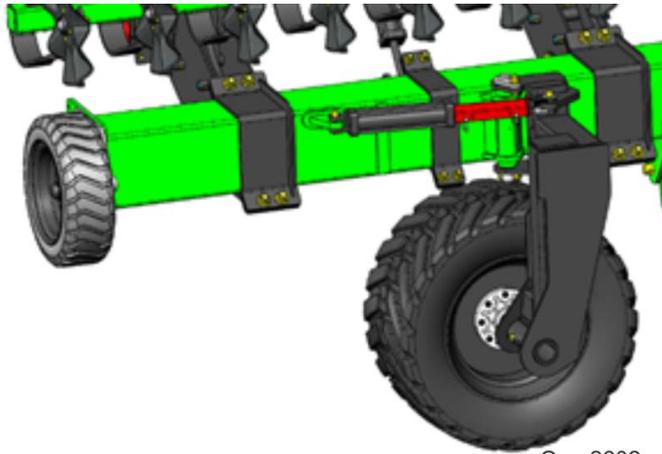


OPERATION

4. Drive Forward and the unit will fold into transport position.



5. Install the wheel transport locks as shown in the picture to ensure the wheel does not move during transport.



OPERATION

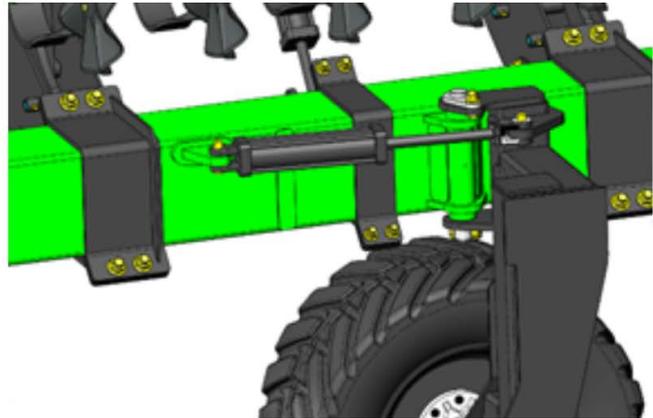
OPERATION

7.1 Un-Folding the Disc Harrow into Field Operating Position from Transport Position

1. Drive into the field and find a safe and level location to fold the unit from transport and into field position.
2. Remove the transport wheel lock and put it back into its storage location.



Storage Location



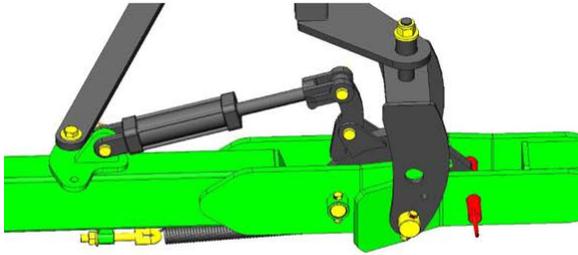
3. Actuate the Wing wheels so they are pointed slightly outwards as shown below. The locks on the wing tension links will close before the tires move, do not be alarmed. The wing locks are spring loaded and will still allow the wing to properly lock into place.



Once the wheels are slightly angled outwards back up and the unit will start to unfold.

OPERATION

4. Back up until the Disc Harrow wings lock in place.



Ops-2860



5. Rotate the wing wheel to field operating position. Failure to do so before lowering of the unit may cause damage to the machine.



Ops-2606

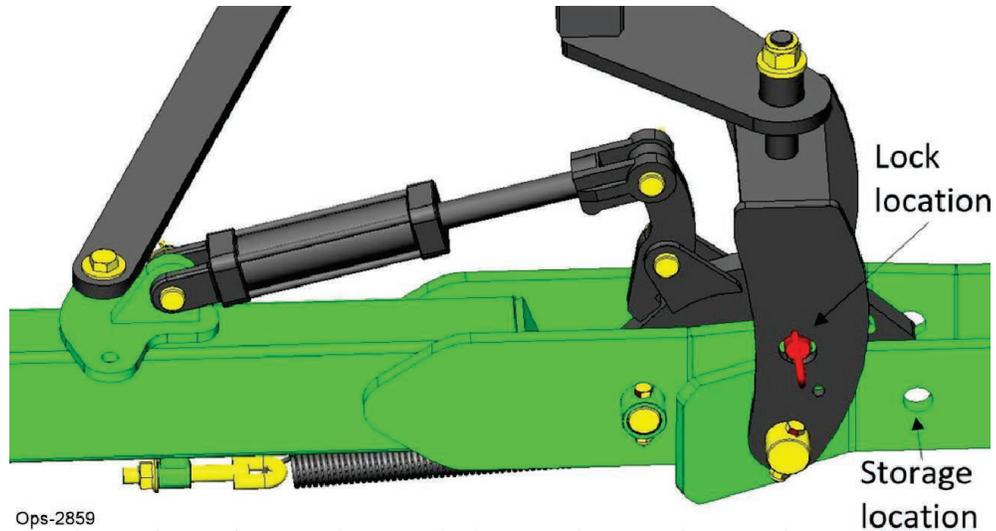
6. Lower the Harrow to the ground using the main lift circuit. Ensure hydraulic cylinder are extended fully



Ops-2607

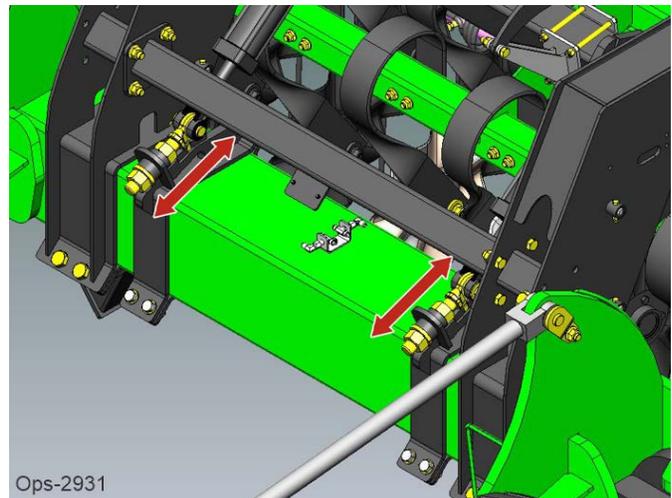
OPERATION

7. Install the lock pin in the lock position to ensure the latches do not open inadvertently during field operation.



8.LEVELING PROCEDURE

- Ensure the implement is parked on level ground.
- Lower the machine and drive forward slightly to ensure the harrows are laid back in working position.
- Lower disc frames until the discs on wing section are just touching the ground.
- Compare the height of the discs on the wing sections with the discs on the center section.
- If required, lower or raise the center section using the adjustment screws. Extending raises, retracting lowers.
- Re-tighten adjustment screw hardware once complete.



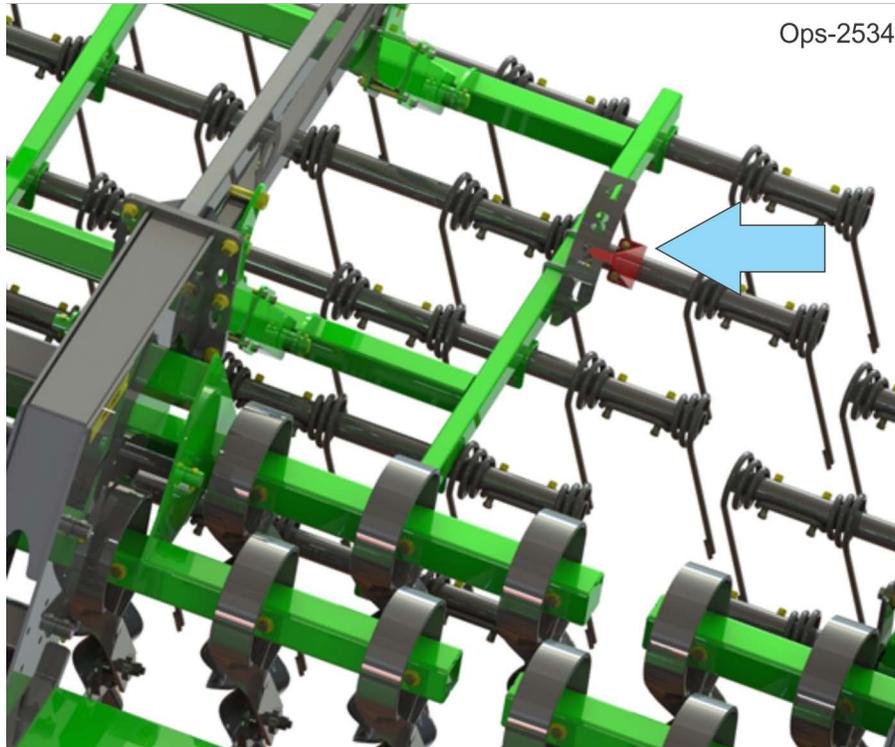
OPERATION

9. SETTING THE IMPLEMENT

9.1 Setting the DISC HARROW tine Angle

To adjust the angle of the harrow tines actuate the tine angle hydraulics circuit and observe the angle indicator.

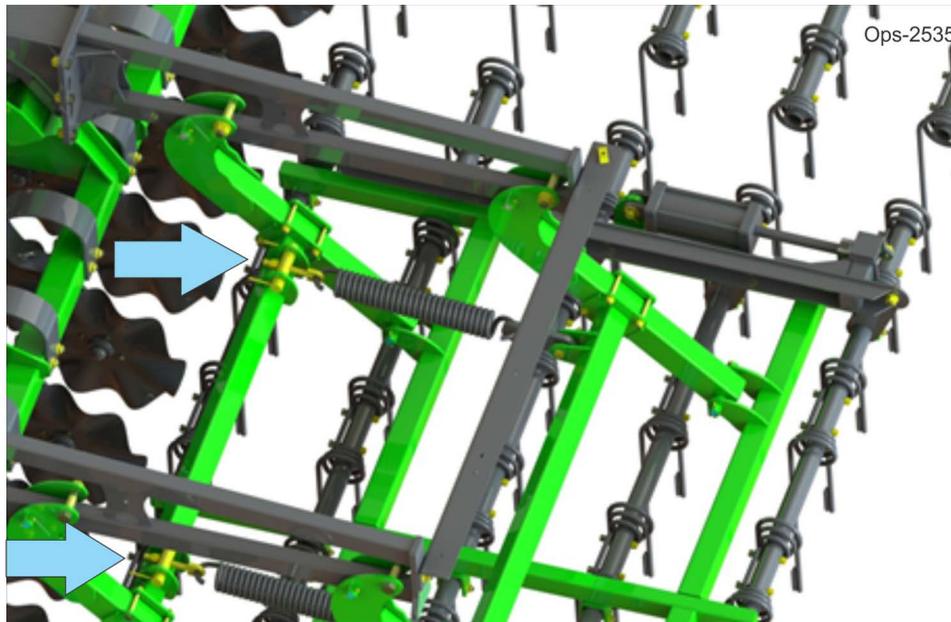
By increasing the indicator number the tine angle will become more aggressive. By reducing the indicator number the tine angle will become less aggressive. Adjust tine angle to the desired finish for your field.



OPERATION

9.2 Setting the HARROW Tine Down Force

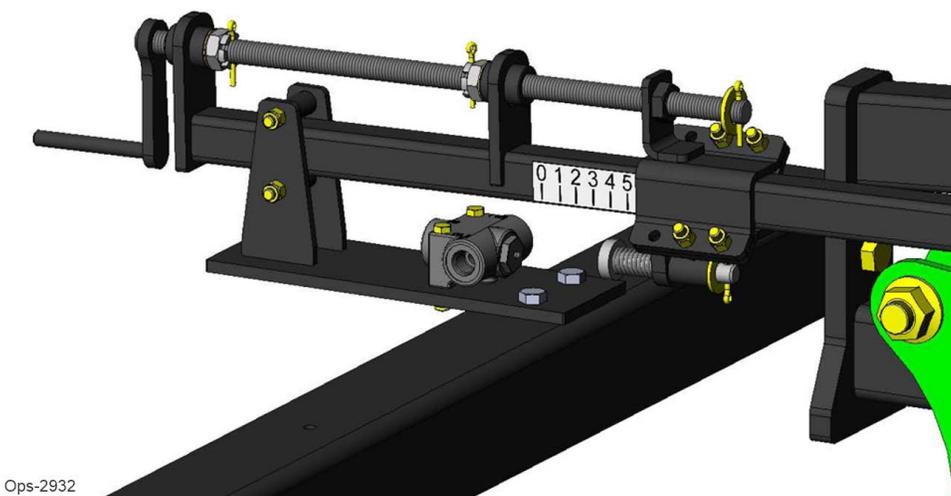
To increase the down pressure on the harrow sections adjust the spring tension. Tightening the eye bolt extends the spring and puts more pressure on the harrow. This is done using the nuts on the end of the spring tensioner as shown below.



9.3 Setting the DISC Depth

To adjust the depth of the discs use the depth stop on the rear of the center section as shown below. Turn the threaded handle to set to the depth of your choosing.

By increasing the depth more soil will be moved. By decreasing depth less soil will be moved. Adjust depth to the desired soil finish for your field.



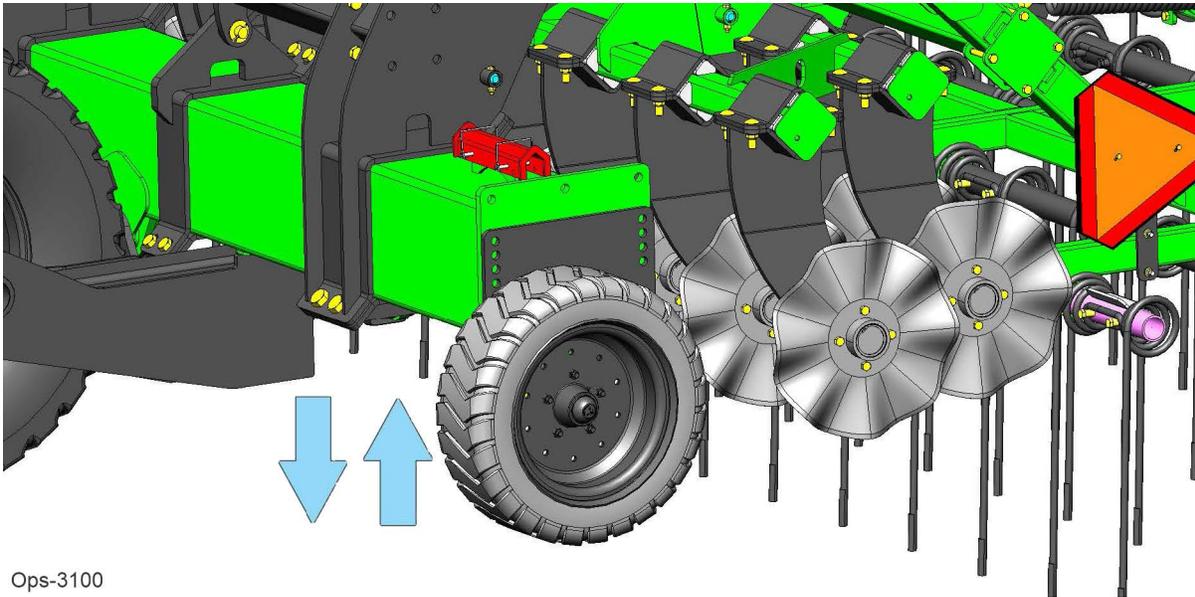
OPERATION

OPERATION

9.4 Setting the Wing Gauge Wheel

The wing gauge wheel provides a safety feature which helps to stop the shanks from becoming overloaded. If uneven terrain is encountered such as a drainage ditch or when turning on the end row and running the wing up onto the road ditch the wheel takes the weight of the machine rather than that weight being supported on only a few shanks.

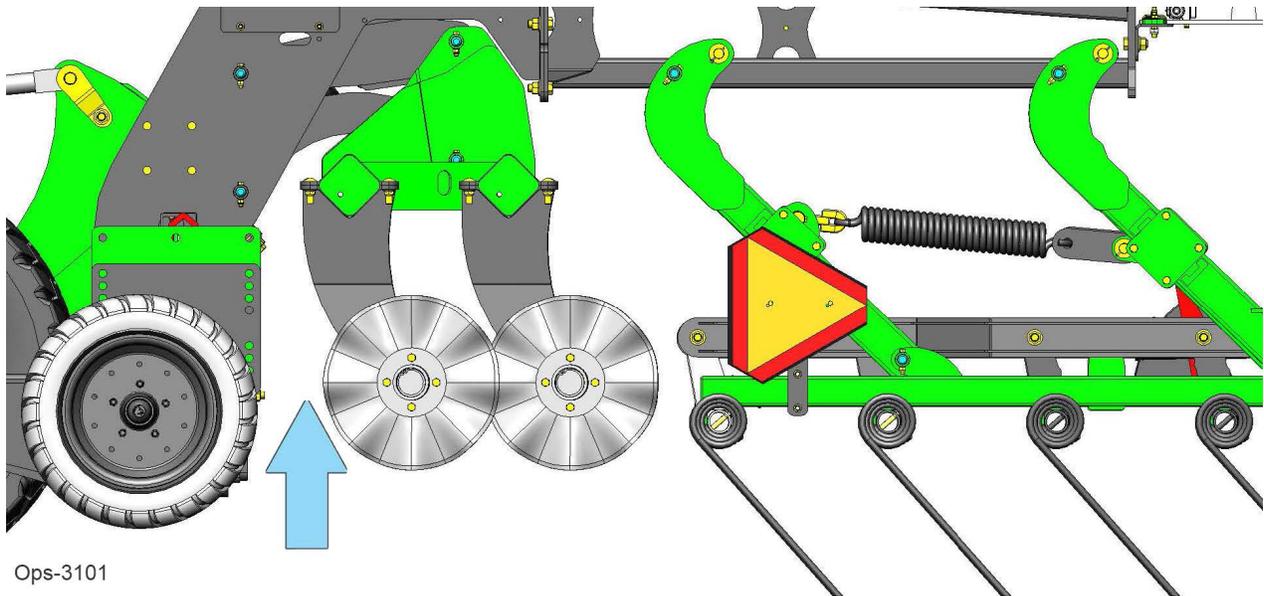
During normal field operating conditions the tire should be suspended in the air about one to two inches. Use the adjustment bolts and holes provided to adjust it accordingly.



Ops-3100

9.5 Turning in the Field

The discs are required to be lifted out of the ground when making turns in the field. Significant side forces can be generated during turns which could damage the disc shanks and discs over a period of time.

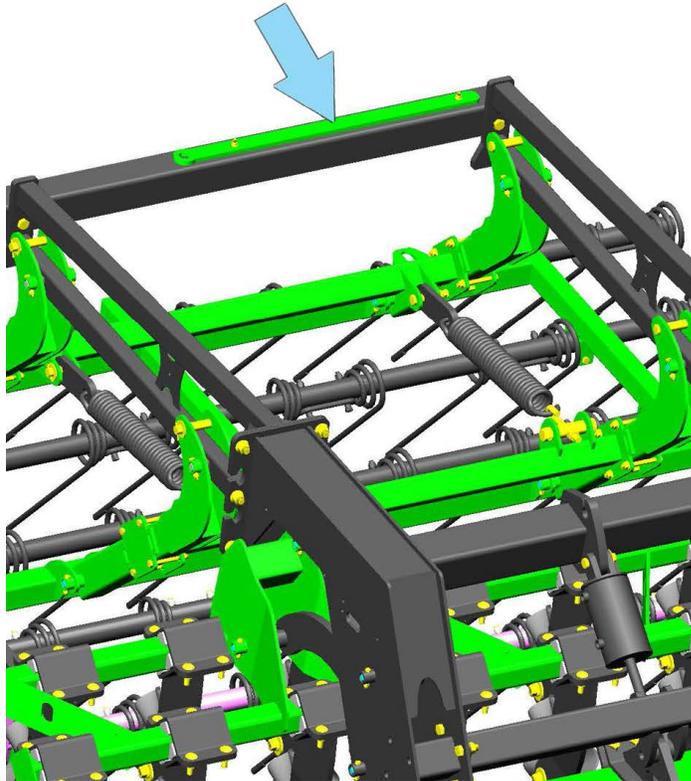


Ops-3101

OPERATION

9.6 Tightening Disc Hubs

Periodically check the tightness of the disc hub stud bolts. A long wrench has been provided for the disc hub nut. See location of wrench below. The disc hub attachment nut is to be tightened to 260 ft lbs.



Ops-3102

9.7 Disc Wear

Check all discs routinely. Discs need to be replaced once the diameter of the disc reaches 16" or sooner. Failure to replace discs could result in damage to the disc hubs.

OPERATION

OPERATION

10. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the implement and tractor must be performed. This includes routine maintenance and scheduled lubrication, inspecting that all safety devices are equipped and functional, and performing needed repairs. DO NOT operate the unit if the pre-operation inspection reveals any condition affecting safe operation. Perform repairs and replacement of damaged and missing parts as soon as noticed. By performing a thorough pre-operation inspection and service, valuable down time and repair cost can be avoided. OPS-U-0029str

⚠ WARNING

Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)str



10.1 Tractor Pre-Operation Inspection/Service

Refer to the tractor operator's manual to ensure a complete pre-operation inspection and scheduled service is performed according to the manufacturers recommendations. The following are some of the items that require daily service and inspection:

- Tire condition/air pressure
- Wheel lug bolts
- Steering linkage
- PTO shield
- SMV sign is clean and visible
- Tractor's lights are clean and functional
- Tractor Seat belt is in good condition
- ROPS is in the raised position
- No tractor oil leaks
- Radiator free of debris
- Engine oil level and condition
- Engine coolant level and condition
- Power brake fluid level
- Power steering fluid level
- Fuel condition and level
- Sufficient lubrication at all lube points
- Air filter condition *OPS-U-0030 str*



OPERATION

OPERATION

10.2 Implement Pre-Operation Inspection/Service

Before each implement use, a complete inspection and service is required to ensure the implement is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the implement is ready for operation, conduct the following. *OPS-T-0002 str*

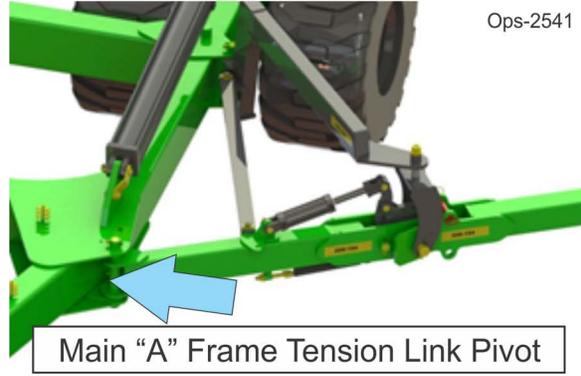
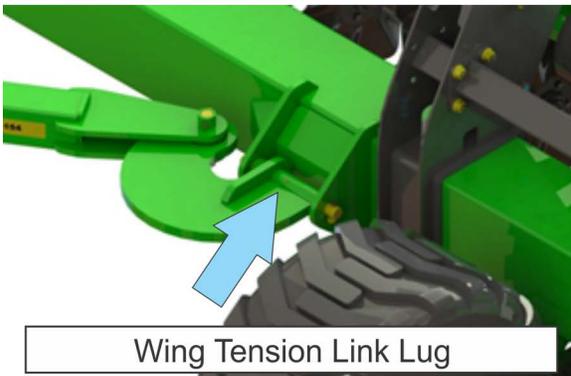
The operator's manual and safety signs affixed on the unit contain important instructions on the safe and proper use of the equipment. Maintain these important safety features on the implement in good condition to ensure the information is available to the operator at all times.

- Ensure the manual canister is secured to the equipment with the operator's manual inside.
- Ensure all safety signs are in place and legible. Replace missing, damaged, and illegible decals. *OPS-U- 0011 str*

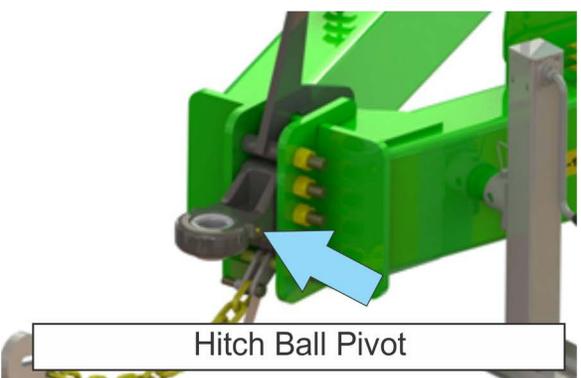


Op-14

- Perform scheduled lubrication as detailed in the maintenance section.
- Ensure all decals are in place and legible.
- Ensure that a properly rated safety tow chain is equipped securing the implement to the tractor.
- Refer to grease locations on images below.



Ops-2541

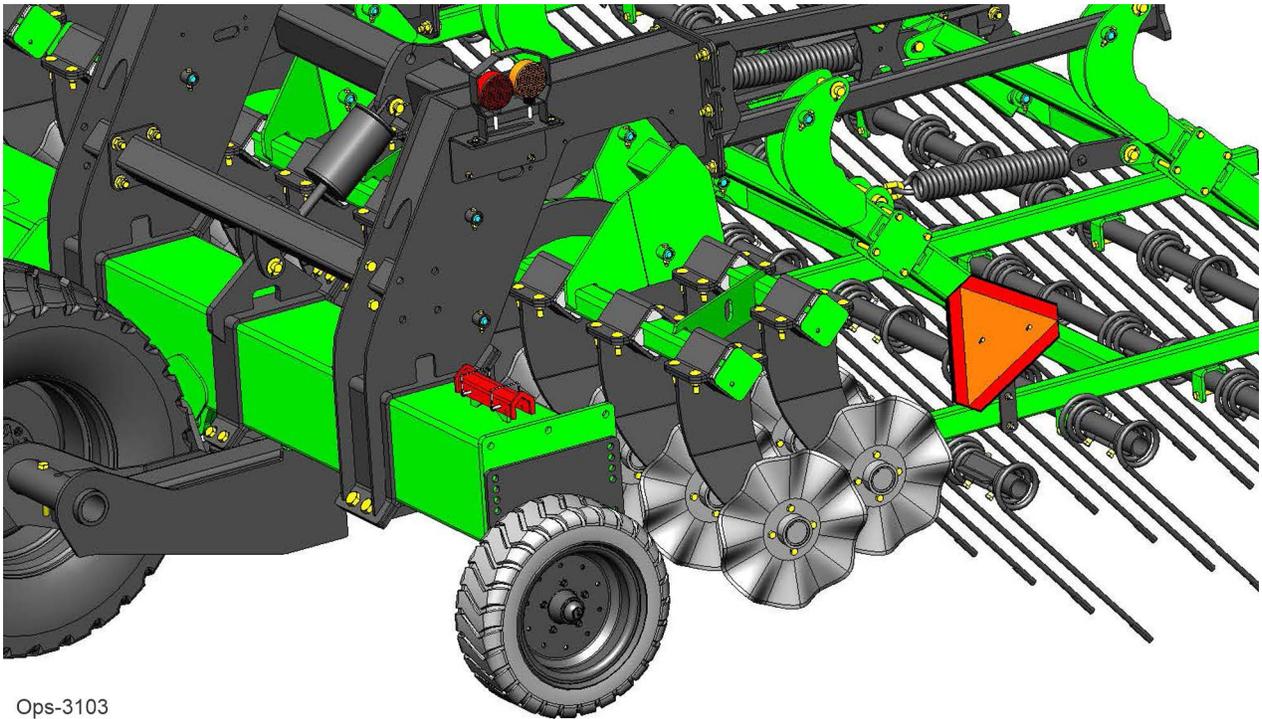


OPERATION

Before operation check disc blades and disc hubs for breakage or cracking and replace if needed. Ensure hubs spin freely.

Inspect every 8 hour use.

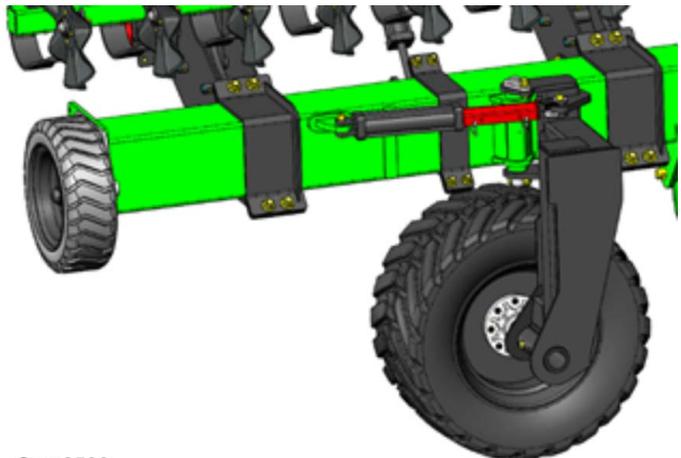
Inspect all bolts and screws and tighten to the recommended torque - disc bolts to 75 ft lbs and hub bolts to 260 ft lbs.



Ops-3103

10.3 Transport Locks

Always install the Transport Cylinder stops on the Disc Harrow transport wheel before transporting the Disc Harrow



Ops-2593

OPERATION

OPERATION

- Inspect tire condition, wheel bearings, and lug nut torque (550/45 22.5 tire nuts tighten to 170ft.lbs., outer wing forklift tires tighten to 80 ft. lbs.).
- Inspect all bolts and screws and tighten to the recommended torque. (See Maintenance Section)



Ops-2594

WARNING

Do not operate this Equipment with hydraulic oil or fuel leaking. Oil and fuel are explosive and their presence could present a hazard. Do not check for leaks with your hand! High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. To check for a hose leak, SHUT the unit ENGINE OFF and remove all hydraulic pressure. Wear oil impenetrable gloves, safety glasses and use cardboard to check for evidence of oil leaks. If you suspect a leak, REMOVE the HOSE and have it tested at a Dealer. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15) str



OPERATION

DISC HARROW PRE-OPERATION INSPECTION



Disc Harrowr ID# _____

Date: _____

Make: _____

Shift: _____



Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the harrow is resting on the ground or securely blocked up and all hydraulic pressure has been relieved..

Item	Condition at Start of Shift	Specific Comments if not OK
The Operator's Manual is in the canister on the tiller		
All safety decals are in place and legible		
There are no cracks in the hitch		
Drawbar connection is secure		
Lights working properly		
Hydraulics are working properly		
Tires are properly inflated		
Unit is level		
Check for cracked discs		
Gauge Wheels are set properly		
Driveline telescoping members and U-joints are lubricated		

Operator's Signature: _____

DO NOT OPERATE an UNSAFE TRACTOR or IMPLEMENT

OPERATION

OPERATION

TRACTOR PRE-OPERATION INSPECTION



Tractor ID# _____

Date: _____

Make : _____

Shift: _____



Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the implement is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.

OPERATION

Item	Condition at Start of Shift	Specific Comments if not OK
The flashing lights function properly		
The SMV Sign is clean and visible		
The tires are in good condition with proper pressure		
The wheel lug bolts are tight		
The tractor brakes are in good condition		
The steering linkage is in good condition		
There are no visible oil leaks		
The hydraulic controls function properly		
The ROPS or ROPS Cab is in good condition		
The seatbelt is in place and in good condition		
The 3-point hitch is in good condition		
The drawbar pins are securely in place		
The PTO master shield is in place		
The engine oil level is full		
The brake fluid level is full		
The power steering fluid level is full		
The fuel level is adequate		
The engine coolant fluid level is full		
The radiator is free of debris		
The air filter is in good condition		
Proper hourly greasing is done per Operator's Manual		

Operator's Signature: _____

DO NOT OPERATE an UNSAFE TRACTOR or IMPLEMENT

OPERATION

11.DRIVING THE TRACTOR AND IMPLEMENT

Safe tractor transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached implement. Ensure the tractor has the capacity to handle the weight of the implement and the tractor operating controls are set for safe transport. To ensure safety while driving the tractor with an attached implement, review the following. OPS-U- 0012str



Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23) str



Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.

Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)str



OPERATION

11.1 Starting the Tractor

The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the 3-point control lever is in the lowered position and the PTO is disengaged before starting the tractor. OPS-U-0033str



11.2 Brake and Differential Lock Setting

Make sure the tractor brakes are in good operating condition. Tractor brakes can be set to operate independently allowing single rear wheel braking action or locked together to provide simultaneous rear wheel braking. FOR MOST DRIVING AND OPERATING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION. .



Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal conditions, locking the differential provides no benefit and should not be used.

WARNING

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases; use extreme care and reduce your speed in these conditions. When operating in traffic, always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. OPS-U- 0013_A str

11.3 Raising and Lowering the Unit

When hydraulic pressure is applied to the main lift circuit the main lift cylinders will begin to retract. When the Main lift cylinders are fully retracted, the DISC HARROW will over center and be resting on the DISC HARROW hitch.

When hydraulic pressure is reversed, the lift cylinders will extend lowering the Disc Harrow frame.

NOTE: The raising and lowering of the unit can be reversed at any time during the sequence without causing problems.

OPERATION

11.4 Driving the Tractor and Implement

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the tractor and unit. Moving slowly at first will also prevent the tractor from rearing up and loss of steering control. The tractor should never be operated at speeds that cannot be safely handled or which will prevent the operator from stopping quickly during an emergency. If the power steering or engine ceases operating, stop the tractor immediately as the tractor will be difficult to control. If the tractor becomes stuck or the tires are frozen to the ground, reverse the tractor out to prevent overturning.

Perform turns with the tractor and unit at slow speeds to determine how the tractor with the unit handles a turn. Determine the safe operating speed to maintain proper control of the tractor when making turns. When turning with an attached rear implement, the overall length of the working unit is greatly increased. Allow additional clearance for the implement to swing when turning.

To avoid overturns, drive the tractor with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

Use extreme caution when operating on steep slopes. Keep the tractor in a low gear when going downhill. DO NOT coast or free-wheel downhill.

12. OPERATING THE TRACTOR AND IMPLEMENT

THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND IMPLEMENT AND ALL CONTROLS BEFORE ATTEMPTING TO OPERATE.

The operator must read and understand the Safety and Operation Sections of the implement and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the implement and tractor without complete operating instructions.

Before starting any operation, the operator must become familiar with the area to be worked in and any obstacles and hazards contained within to ensure safety to the operator, bystanders, and equipment. Special attention should be paid to foreign debris, rough terrain, steep slopes, and passersby and animals in the area.

OPS-U- 0015 str



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before working. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop immediately if implement strikes a foreign object. Repair all damage and make certain implement is safe to use.



OPERATION

12.1 Foreign Debris Hazards

Before operating, inspect the area to make sure there are no foreign objects that the implement could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly.

If you hit a solid object or foreign debris, stop the implement and tractor at once. Immediately idle the engine speed, raise the implement and move the tractor and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the implement and make any needed repairs immediately. Make sure the implement is not damaged before resuming operation.

Always wear your seat belt securely fastened and only operate the tractor and implement with the ROPS/Cab. If the tractor or implement hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat. The seat belt is your best protection from falling off the tractor and the ROPS/Cab provides protection from being crushed during a tractor roll-over. *OPS-T-0003_B str*



12.2 Operating the Implement

Only operate the implement from the tractor operator's seat with the seatbelt securely fastened. The tractor must be equipped with a ROPS Cab.

The implement is designed for horticultural, agricultural, or commercial applications cultivation. Maintained discs and harrows will produce a better cultivation and require less power. Travel at a speed that allows the implement sufficient time to cultivate the ground. Choose a driving pattern that provides the maximum pass length and minimizes turning.

▲WARNING

DO NOT operate in the reverse direction, damage to the DISC HARROW will occur. In situations where the implement must be backed to access areas, make sure the discs and harrows are in a raised position out of the ground and there are no persons or other foreign debris behind the implement before operating in reverse. When operating in reverse, operate the tractor and implement at a reduced ground speed to ensure tractor and implement control is maintained.

OPERATION

13. DISCONNECTING THE IMPLEMENT FROM THE TRACTOR

Move the implement to a level storage location and lower it to the ground. If the implement is not resting securely on the ground, block the implement up securely before attempting to disconnect it from the tractor.

Use extreme care to keep feet and hands from under the implement and clear of any pinch points caused by the tractor hitch arms and implement pins.

Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death.

****If unhooking DISC HARROW in field position ensure that the discs are in the lowered position touching the ground and not in the raised position.**

Never stand or allow another person to stand between a running Tractor and the Implement when disconnecting the Implement from the Tractor. Always shut the Tractor off completely and set the parking brake before attempting to disconnect the Implement pins from the Tractor hitch.

NOTE: Only unhook the DISC HARROW in field operating position or in transport position. DO NOT unhook the DISC HARROW in ANY intermediate positions.



Use extreme care to keep feet and hands from under the implement and clear of any pinch points caused by the tractor hitch arms and implement pins. Never stand or allow another person to stand between a running Tractor and the Implement when disconnecting the Implement from the Tractor. Always shut the Tractor off completely and set the parking brake before attempting to disconnect the Implement pins from the Tractor hitch.



Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death. (STI-04) str



Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15) str

OPERATION

14. IMPLEMENT STORAGE

Properly preparing and storing the implement at the end of the season is critical to maintaining its appearance and to help ensure years of dependable service. The following are suggested storage procedures:

- Thoroughly clean all debris off the implement to prevent damage from rotting grass and standing water.
- Lubricate all implement grease points as detailed in the maintenance section.
- Tighten all bolts and pins to the recommended torque.
- Check the implement for worn and damaged parts. Perform repairs and make replacements immediately so that the implement will be ready for use at the start of the next season.
- Store the implement in a clean, dry place with the implement housing resting securely on blocks or at ground level.
- Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the implement.



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in death or serious injury. (SG-10)str



Do not use your hands or feet to clean the disc gangs. The discs are sharp and serious injuries could result from inadvertent contact with the discs. Never attempt to stand on the discs, tires, or frame members of the implement. (STL-11) str

15. TRANSPORTING THE TRACTOR AND IMPLEMENT

Inherent hazards of operating the tractor and implement and the possibility of accidents are not left behind when you finish working in an area. Therefore, the operator must employ good judgment and safe operation practices when transporting the tractor and implement between locations. By using good judgment and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. OPS-U- 0017str



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in death or serious injury. (SG-10)str



15.1 Transporting on Public Roadways

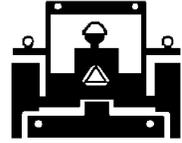
Extreme caution should be used when transporting the tractor and implement on public roadways. The tractor must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the tractor's presence. Remember that roadways are primarily designed for automotive drivers and most drivers will not be looking out for you, therefore, you must look out for them. Check your side view mirrors frequently and remember that vehicles will approach quickly because of the tractor's slower speed. Be extremely cautious when the piece of equipment that you are towing is wider than the tractor tire width and/or extends beyond your lane of the road.

Make sure that a proper size safety tow chain is secured between the tractor and implement before entering a public road. OPS-U- 0019 str

OPERATION

WARNING

Make certain that the “Slow Moving Vehicle” (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)str



The SMV (Slow-Moving Vehicle) emblem is universal symbol used to alert drivers of the presence of equipment traveling on roadways at a slow speed. SMV signs are a triangular bright orange with reflective red trim for both easy day and night visibility. Make sure the SMV sign is clean and visible from the rear of the unit before transporting the tractor and implement on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective. *OPS-U- 0020str*



Make sure that all tractor flashing warning lights, headlights, and brake/tail lights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models are only equipped with operating lights. Consult an authorized tractor dealer for lighting kits and modifications available to upgrade the lighting on older tractor models. *OPS-U- 0021str*



When operating on public roads, have consideration for other road users. Pull to the side of the road occasionally to allow all following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors. Always stay alert when transporting the tractor and implement on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area.

MAINTENANCE SECTION

Maintenance Section 5-1

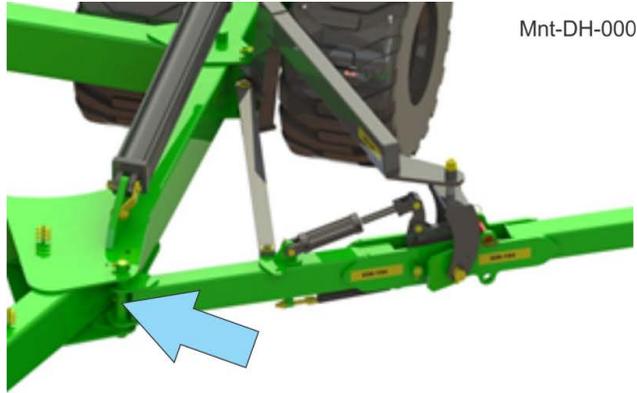
MAINTENANCE

GENERAL MAINTENANCE

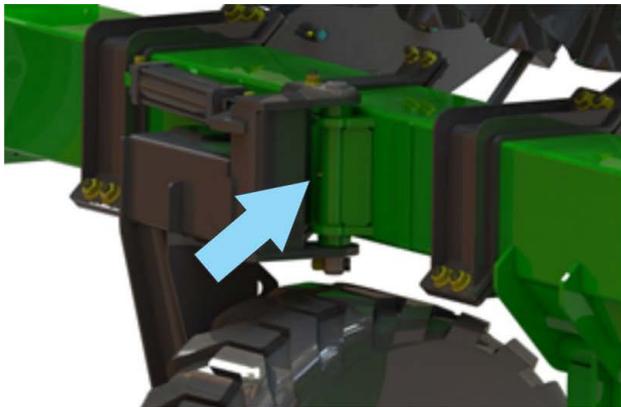
1. Grease Wing Tension Link Lug, A-Frame Tension Link Pivot, Wing Wheel Pivot and Hitch Ball pivot every 8 hours



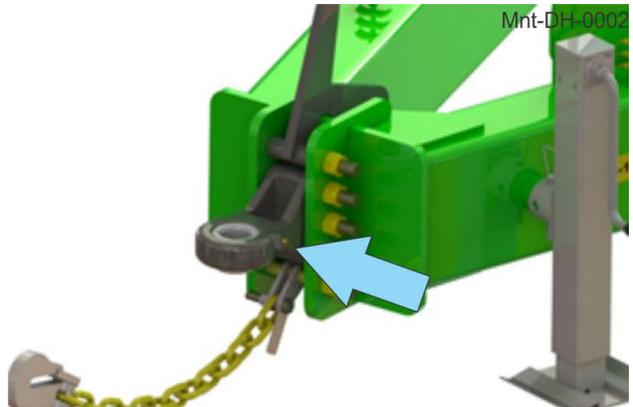
Wing Tension Link Lug



Main "A" Frame Tension Link Pivot

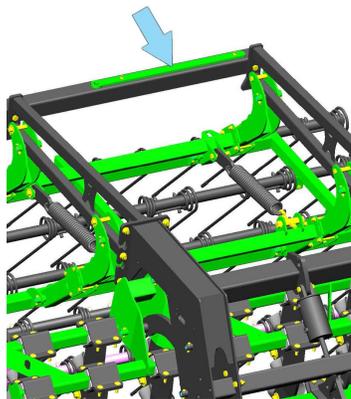


Wing Wheel - shown in transport position



Hitch Ball Pivot

2. Disc hub attachment nut is to be tightened to 260 ft lbs. There is a wrench provided

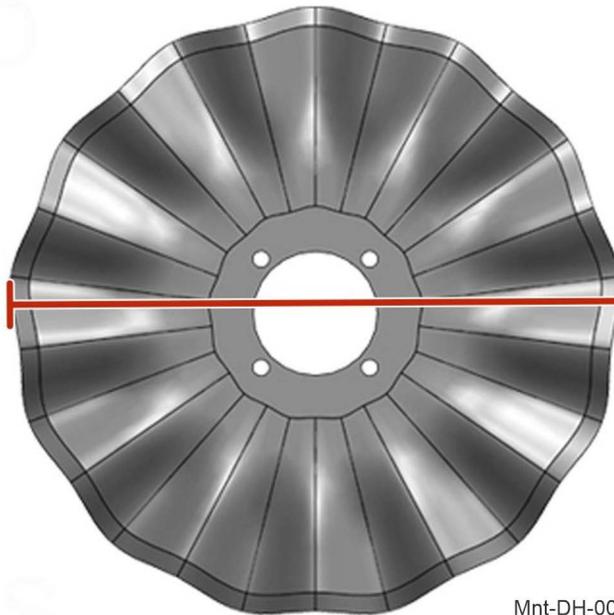


MAINTENANCE

3. Check all bolts for tightness periodically. Reference provided bolt chart for torque specifications.
4. Keep all tires inflated to 58psi on the DH60, 58psi on the DH36.
5. Check wheel lug bolts after first 4 hours of use and tighten if necessary (550/45 22.5 tire nuts tighten to 170ft.lbs., outer wing forklift tires tighten to 80 ft. lbs.). Inspect tire condition, wheel bearings and lug nut; torque periodically.
6. Inspect and repack with grease all main tire hubs yearly.
7. Inspect hubs after every field use for any signs of damage.
8. The discs are required to be lifted out of the ground when making turns in the field. Significant side forces can be generated during turns which could damage the disc shanks and discs over a period of time.
9. Check all discs routinely. Discs need to be replaced once the diameter of the disc reaches 16" or sooner. Failure to replace discs could result in damage to the disc hubs.



Mnt-DH-0004



Mnt-DH-0007

MAINTENANCE

MAINTENANCE

PROPER TORQUE FOR FASTENERS

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to this chart to determine the grade of bolts and the proper torque except when specific torque values are assigned in manual text.

RECOMMENDED TORQUE IN FOOT POUNDS UNLESS OTHERWISE STATED IN THE MANUAL*

NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.

**Torque Specifications for
37° JIC Fittings**

Size	Thread Size	Assembly Torque		Tube Connection F.F.F.T.	Swivel Nut or Hose Connection F.F.F.T.
		in. lb.	ft. lb.		
-4	7/16-20	140 ± 10	12 ± 1	2	2
-5	1/2-20	180 ± 15	15 ± 1	2	2
-6	9/16-18	250 ± 15	21 ± 1	1 1/2	1 1/4
-8	3/4-16	550 ± 25	45 ± 5	1 1/2	1
-12	1 1/16-12	1000 ± 50	85 ± 5	1 1/4	1
-16	1 5/16-12	1450 ± 50	120 ± 5	1	1
-20	1 5/8-12	2000 ± 100	170 ± 10	1	1
-24	1 7/8-12	2400 ± 150	200 ± 15	1	1
-32	2 1/2-12	3200 ± 200	270 ± 20	1	1

Mnt-L-0054

**Torque Specifications for
SAE O-Ring Fittings**

Size	Thread Size	Assembly Torque		
		in. lb.	ft. lb.	F.F.F.T.
2	5/16-24	90 ± 5	7.5 ± 0.5	1 ± .25
3	3/8-24	170 ± 10	14 ± 1	1 ± .25
4	7/16-20	220 ± 15	18 ± 1	1 ± .25
5	1/2-20	260 ± 15	22 ± 1	1 ± .25
6	9/16-18	320 ± 20	27 ± 2	1.5 ± .25
8	3/4-16	570 ± 25	48 ± 2	1.5 ± .25
10	7/8-14	1060 ± 50	90 ± 5	1.5 ± .25
12	1 1/16-12	1300 ± 50	110 ± 5	1.5 ± .25
14	1 3/16-12	1750 ± 75	145 ± 6	1.5 ± .25
16	1 5/16-12	1920 ± 25	160 ± 6	1.5 ± .25
20	1 5/8-12	2700 ± 150	225 ± 12	1.5 ± .25
24	1 7/8-12	3000 ± 150	250 ± 12	1.5 ± .25
32	2 1/2-12	3900 ± 200	325 ± 15	1.5 ± .25

DISC HUB REBUILD INSTRUCTIONS

1. Press bearing into hub.
2. Insert retaining ring over bearing.
3. Press wear sleeve into hub.
4. Press triple lip seal onto spindle.
5. Grease triple lip seal, slip spindle and seal through bearings.
6. Press counter face into hub.
7. Grease and add V-Seal to guard.
8. Press guard and V-Seal onto spindle.
9. Fasten washer with nut to 70 ft. lbs., add cotter pin, bend pin to side.
10. Fill dust cap cavity with grease.
11. Press dust cap into hub.
12. Insert retaining ring over dust cap.

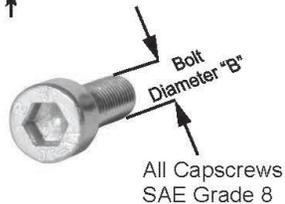
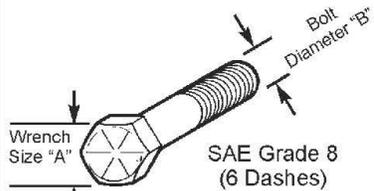
MAINTENANCE

MAINTENANCE

TORQUE SPECIFICATIONS - DRY TORQUE

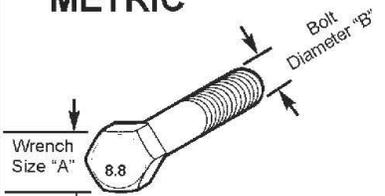
Proper torque for American fasteners.
Recommended Torque in Foot Pounds (Newton Meters).*

AMERICAN Bolt Head Markings



WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



Numbers appearing on bolt heads indicate ASTM class.

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Proper torque for Metric fasteners.
Recommended torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (826)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

Mnt-B-0005

